**Ariba Buyer™**

# Configuration Guide

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# Table of Contents

# Chapter 1 Introduction

This document describes how to configure features related to managing and maintaining Ariba Buyer.

This chapter serves as an introduction to the configuration process and a roadmap to the rest of the document. It includes the following sections:

- “About the Configuration Process” on page 13
- “How to Use This Document” on page 15

## About the Configuration Process

When you install Ariba Buyer, the configuration program prompts for settings such as the names of databases, language and locale settings, and parameters. The configuration program uses the information you supply to create a default configuration with basic configuration settings and parameters. To *configure* Ariba Buyer is to adjust those initial settings by modifying configuration files and parameters.

This document assumes you have completed the Ariba Buyer installation process. This document describes configuration steps that apply to all features, such as setting up scheduled tasks, locales, user authentication, logging, performance, and security.

### Ariba Spend Management Integration Configuration

You can configure Ariba Buyer to integrate with other Ariba Spend Management applications. For integration configuration information, see the *Ariba Spend Management Integration Guide*.

### Data Integration Configuration

Data integration involves setting up your Ariba configuration with your own data, pulled from your own data sources. Ariba uses *integration channels* to exchange information with data sources. An integration channel is a communications channel that passes data between Ariba applications and an external system. The information sent on the integration channel is called a *message*.

Ariba Spend Management applications currently support the following integration channels:

| Integration Channel | Description |
|---|---|
| Ariba File Channel | An integration channel that allows Ariba Buyer applications to exchange data with CSV files. |
| Ariba cXML Channel | An integration channel that allows Ariba Buyer applications to exchange data with Ariba Network (Ariba Network). It is also used to communicate between Ariba Buyer and Ariba Sourcing. |
| Ariba Web Services Channel | An integration channel that allows Ariba Buyer applications to exchange data with third-party enterprise integration products enabled for web services. |

| Integration Channel | Description |
|---|---|
| Ariba HTTP Channel | An integration channel that allows Ariba Spend Management application to exchange data via the HTTP protocol. A typical use of the HTTP channel is synchronization of common data (CDS[a]) between Ariba Sourcing and Ariba Buyer. |
| IBM WebSphere Business Integration Adapter | An enterprise integration channel that Ariba Buyer applications can use to exchange data with databases and ERP systems. |

a. Common Data Server (CDS) is a set of platform components that enables a common object model and Application Program interface (API) for core data that is shared across all Ariba Spend Management™ (ASM) applications.

Different Ariba Spend Management applications use different combinations of channels. For example, a typical Ariba Spend Management application uses the Ariba HTTP Channel to read shared data such as users, addresses, and suppliers from CDS, but then reads additional data from other data sources, with other channels.

You can also use the Ariba File Channel for some integrations, and an enterprise channel, such as the Ariba Web Services Channel or the IBM WebSphere Business Integration Adapter, for others. For example, you might pull most of your user information from a Human Resource Management System (HRMS), but use a CSV file to add additional fields that aren't available in the HRMS.

For information on integrating Ariba Buyer with specific ERP systems, see the following documents:

- *Ariba Buyer PeopleSoft Integration Guide*
- *Ariba Buyer SAP Integration Guide*
- *Ariba Buyer Oracle Financials Integration Guide*

For complete information on configuring data integration, see the *Ariba Spend Management Channels Guide*.

## Procurement Configuration

Configuring Ariba Buyer for procurement involves setting up the data that your users need to create requisitions. It also involves defining how Ariba Buyer creates and sends orders, and how it handles receipts.

Optionally, you might want also want to set up your configuration for use with purchasing cards, or to integrate with Ariba Network (Ariba Network).

For information on configuring Ariba Buyer for procurement, see the *Ariba Buyer Procurement Implementation Guide*.

## Catalog Configuration

Ariba Buyer displays catalog items in the Ariba Buyer product catalog. This catalog appears on the Add Items screen when users create a requisition. Users can also click the Catalogs link on the Ariba Buyer home page to display the catalog. Users can browse through product categories in the product catalog, or they can find items by using the Search option.

Catalog configuration involves obtaining supplier products and setting up the Ariba Buyer product catalog so that users can find items quickly and easily. You obtain supplier catalogs from Ariba Network (Ariba Network) or another source and import them into the Ariba Buyer database. You can also allow users to go directly to a supplier's site to select items using a process called *PunchOut*.

For information on catalog configuration, see the *Ariba Buyer Catalog Administration Guide*.

### Optional Feature Configuration

When you purchase Ariba Buyer, you can specify one or more of the following optional features:

- Ariba Travel & Expense
- Ariba Invoice
- Ariba Contracts Solution
- Ariba Services Procurement
- eForms

To use these features, you might need to perform additional configuration tasks. For more information, see the following documents:

- *Ariba Travel & Expense Guide*
- *Ariba Invoice Guide*
- *Ariba Contract Compliance Guide*
- *Ariba Services Procurement Guide*
- *Ariba Buyer Customization Guide* (eForms chapter)

## How to Use This Document

This early chapters of this document describe basic configuration files and configuration steps that are required to get your initial configuration up and running. Later chapters describe configuration for system administration, logging, security and performance.

This section lists the chapters and appendixes in this document, describing the type of information found in each.

### Basic Configuration

The following chapters describe basic configuration files:

- Chapter 2, "Configuration Files and Parameters," specifies where to find configuration files, the syntax rules and format restrictions, and instructions on how to modify the default configuration files.
- Chapter 3, "Scheduled Tasks," introduces scheduled task configuration files, and describes how you use these files to set the schedule and parameters for scheduled tasks.
- Chapter 4, "Approvable Document Configuration," describes how to define the set of approvable documents in your configuration and specify the properties of each document type.
- Chapter 5, "Non-English Configurations," describes how to configure resource files and parameter settings for international configurations.

## Administration and Security

The following chapters describe aspects of configuration related to system administration and security:

- Chapter 6, "Notifications," describes how to configure notifications. It also explains how to enable the email approval feature and customize the content of notification messages.
- Chapter 7, "Passwords," describes how to configure Ariba Buyer to authenticate your users, typically by requiring passwords, but possibly by requiring other credentials as well. This chapter describes how Ariba Buyer authenticates users, and the password adapters that are supported in the default configuration.
- Chapter 8, "Security Considerations," describes how to configure Ariba Buyer for security, including how to use Secure Sockets Layer (SSL) and how to encrypt passwords and other sensitive data.
- Chapter 9, "Logging and Auditing," describes how to configure the logging and auditing features.
- Chapter 10, "Data Archiving and Purging," describes tools for reducing your database size by purging old approvable documents that are no longer in use.
- Chapter 11, "Sample Features," describes where you can find sample customizations and optional features that are not installed as part of the default Ariba Buyer configuration.
- Chapter 12, "Reporting," describes how to set up the integration events and parameters for reporting.
- Chapter 13, "Remote Authentication," describes how to set up corporate authentication to let users log in once and move transparently from application to application.

## Final Configuration

The final chapters of this document describes performance tuning and optional features. These chapters might not be necessary during initial configuration, but you might want to refer to them later as specific issues arise:

## Reference Appendixes

This document contains the following appendixes:

- Appendix A, "Login URL Reference," provides a reference description of the parameters and settings that you can use in the login URL, to specify which password adapter or locale to use during login.
- Appendix B, "Command Reference," provides the syntax of the commands reference in this document.
- Appendix C, "Purge DTD Reference," provides reference information for writing purge configuration files in metadata XML.
- Appendix D, "Meta Parameters DTD Reference," describes the elements and attributes that can appear in a meta parameter XML file.
- Appendix E, "Configuration File Reference," lists the files in the `config` directory under your Ariba installation directory, and describes how to make changes to each file.
- Appendix F, "Email Notification Messages," describes the email messages that Ariba Buyer sends to users and administrators to inform those users of status changes or problems that must be addressed.
- Appendix G, "Permissions, Roles, and Groups," provides a list of permissions, roles and groups.
- Appendix H, "Scheduled Task Reference," describes Ariba scheduled tasks.

# Chapter 2 Configuration Files and Parameters

This chapter describes the configuration files and parameters you use to define your Ariba Buyer configuration. It includes the following sections:

## Configuration File Directories

After you install Ariba Buyer and load the sample data, you have a *default configuration*. The default configuration consists of a set of configuration files that define data and parameters.

An Ariba Buyer configuration consists of two kinds of configuration files:

| Type of File | Description |
|---|---|
| System files | System files reside under the directory *BuyerServerRoot*/`ariba`.<br><br>System files define the default Ariba Buyer configuration. You never change system files as part of an implementation. |
| Extension files | Extension files reside under the directory *BuyerServerRoot*/`config`.<br><br>Extension files are files that you create or modify during implementation. |

To make changes, you modify files in the `config` directory. You never modify the files in the `ariba` directory.

### config Directory

Within the `config` directory, Ariba Spend Management applications use a hierarchical structure of subdirectories to indicate which files apply to which pieces of your configuration. The structure under the `config` directory depends which Ariba Spend Management applications are configured in your installation.

Ariba Buyer originally established the directory structure convention that is now used by all Ariba Spend Management applications. The Ariba Buyer structure is implemented using the concept of variants and partitions. Variants and partitions are used to support pushing transaction data to different ERP systems with different physical data structures.

Each variant typically represents a single physical ERP structure. Variants define the structure and shape of data within Ariba Buyer. For example, if your Ariba Buyer instance integrates with an Oracle Financials system, the shape of the data in Ariba Buyer must match the shape of the data in Oracle Financials.

Partitions divide data into subsets within a variant. They are used to separate data based on its content. For example, if two regions have different sets of cost centers, you would not want to display the eastern cost centers to a user in the western region. Similarly, different regions likely have different users and suppliers as well. Partitions can be used to model content-based data separation.

In Ariba Buyer, some configuration files apply to the entire configuration, and there is exactly one copy of such files in a configuration. Other configuration files apply to only one partition, and you typically have several versions of those files, one for each partition.

When you install Ariba Buyer the installation process creates a hierarchical structure of configuration files, with the files for each variant or partition grouped together in a directory. This approach makes it easy to add additional variants or partitions later without disturbing your initial configuration. In general:

- Files that are shared across your entire configuration reside at the top level, directly in `config`.
- Files that vary by variant reside in a subdirectory of `config/variants`.
- Files that vary by partition reside in a subdirectory of `config/variants/`*`variant`*`/partitions,` where *`variant`* is the variant name.

Ariba Buyer applications do not have the requirement of pushing data to different ERP systems with different data structures. However, to leverage the directory structure architecture that is already in place for Ariba Buyer, Ariba Buyer applications are implemented using the same directory structure convention as Ariba Buyer. The difference is that Ariba Buyer configurations only have the following directory structures:

```
config/variants/Plain
```

```
config/variants/Plain/None
```

## Plain Variant

Every configuration includes one standard variant, called Plain.Plain acts as a template for other variants. If you make changes or customizations in the Plain variant, those changes apply throughout your configuration, to all variants. In Ariba Buyer, if you make changes or customizations to any other variant, those changes affect only the variant where you make the changes.

To make a customization that applies across your configuration, make that customization in Plain, and save your files in the following directory:

```
config/variants/Plain
```

To make a customization that affects only one piece of your configuration, you make that customization only in the appropriate variant, and save your files in the following directory:

`config/variants/`*`variant`*

## None Partition

Every configuration includes a directory called None, which resides in the file system in the following directory:

`config/variants/Plain/partitions/None`

`None` is a directory in the file system where you store unpartitioned data (data that is not associated with a partition).

The directory `config/variants/Plain/partitions/None` must exist in every configuration.

## List of Subdirectories

The *`BuyerServerRoot`* directory includes the following subdirectories:Appendix E, "Configuration File

| Directory | Description and Purpose |
|---|---|
| `3rdParty` | Third-party scripting and server management tools. |
| `ariba` | Default configuration. Do not modify these files. |
| `bin` | Command-line tools, such as `initdb`. |
| `classes` | Compiled Java class files. |
| `channels` | Integration channel configuration files |
| `config` | Configuration files that you use to tailor your configuration. |
| `configTemplates` | Template configuration files for use in creating a configuration. These files are used only by the configuration program. |
| `docroot` | Web server files. |
| `etc/certs` | SSL certificates. For more information, see "Security Considerations" on page 99. |
| `internal` | Internal Ariba files. Do not modify these files. |
| `lib` | Operating system library files. |
| `logs` | Log files. For more information, see "Logging and Auditing" on page 125. |
| `punchout` | Punchout Configuration files. |
| `realm_0` | For internal Ariba use only. Do not modify these files. |
| `sample` | Template files for sample configurations. |
| `searchindex` | Catalog index files. |
| `servers` | Node Manager configuration files. |
| `transactiondata` | Data generated by Ariba transactions such as attachments, excel import files, images, invoices, orders and remittance information. |

Reference," lists the files in the `config` directory under your Ariba installation directory, and describes how to make changes to each file.

## File Formats

Ariba Buyer uses different file extensions for different kinds of files. The file types that appear in the `config` directory are as follows:

| Type of File | File Extension |
|---|---|
| Comma-separated value (CSV) files | `.csv` |
| Table files | `.table` |
| Metadata XML configuration files | `.aml` |
| Meta parameter XML files | `.pml` |
| Wizard XML configuration files | `.awz and .afr` |
| Workflow XML definition files | `.awf, .efm, and .awx` |
| Administration XML configuration files | `.acf` |
| JavaScript files | `.js` |
| Ariba Web Language (AWL) files[1] | `.awl` |

Notes:

Except for the `OrderRequestEncode.awl` file in the `config` directory, customizing AWL files is not supported.

## CSV Files

CSV files, with extension .csv, are used for reading data. Each CSV file is a list of data fields, separated by commas. For example:

```
"jbenning","Janice Benning","USD","en_US",15,1000467
```

Ariba Buyer uses CSV files for resource files, and as the data source for integration events that read data from files. *Resource files* are used for internationalization of strings in the user interface.

You can edit CSV files with a text editor such as vi, emacs, or Notepad.

**Note:** Do not use Microsoft Excel to edit CSV files. Excel handles line returns and other special characters incorrectly and creates files that are not correctly formatted.

### Syntax

A CSV file consists of rows of data. Every row must have the same number of columns, which are separated by a comma. If you want to leave out a field, you have to omit that field explicitly by using a comma. For example:

```
Column1,Column2,Column3
Column1,,Column3
,,Column3
```

In the previous example, each row consists of three columns. The first row contains values for all three columns. The second row contains values for the first and last column; the middle column is blank. The third row contains a value only for the last column.

The commas are required. The lines must observe the following syntax:

- The first data row in a CSV file is a header row, listing the column names. The column names cannot contain period (.) characters. If the column names include spaces, you must surround the names in quotation marks.
- Each new line is a new entry. All white space is significant. Do not include spaces, line returns, or tabs in a CSV file unless they are part of the content of the file.
- Commas are significant. Each comma in a CSV file means "go to the next field." If you want to include a comma in a field, surround the entire field in quotes. For example, if you wanted to include this name in your phone list:

  ```
  Norman Adams, Jr.
  ```

  Surround the whole field in quotation marks, like this:

  ```
  adams,"Norman Adams, Jr.",(415) 964-3063, ….
  ```

  A quoted field can span multiple lines in the CSV file, like this:

  ```
  Field1,"Field 2 which extends over
  a line",Field3
  ```

- Quotes are significant. Each quote means "part of a matched pair surrounding a field." To include a quote in a field, you have to use an extra quote immediately before it. For example, here is an item description that includes an inch measurement. Notice the four quotation marks:

  ```
  Field1, "This flashlight is 5"" long",Field3,Field4
  ```

- If you want to leave out a field, delimit the field with a comma, with no space before or after it. In some cases, the result is two commas immediately next to each other. For example:

  ```
  Field1,field2,,field4
  ```

- Fields are limited to 1000 characters. Any field with more than 1000 characters is truncated.

## Encoding

For multilingual use, the first line of a CSV file can optionally indicate the character encoding of the data in that file. For example, if the first line of a CSV file is:

```
8859_1,,
```

- That CSV file uses `ISO-8859-1` (ISO Latin 1) character encoding.

The encoding can be any value supported by the Java VM, such as `8859_1, SJIS, EUC_JP`, or `ISO2022JP`. (For more information on character encoding standards, see "Character Encoding Formats" on page 32.)

The encoding specification appears in every CSV file used for string resources and can optionally appear in CSV files used as data sources for integrations. If a CSV file does not include an encoding, the default is to use the default encoding in the system environment where Ariba Buyer is running (that is, UTF-8).

## Table Files

Table files, with extension `.table`, are used for setting parameters to specified values. This format is used for a number of configuration files, such as for parameters, integration events, and scheduled tasks. The following are sample lines:

```
{
    DefaultBillToAddress = 15;
    DefaultLanguage = English;
}
```

You can edit table files with a text editor such as vi, emacs, or Notepad. You can include single-line comments or multi-line comments:

```
// single-line comment

/* multi-line

comment */
```

### Syntax of Names and Values

Each line in a table file is a pair, consisting of a name and a value. For example:

```
{
    Name2 = "value2";
    Name1 = "value1"
}
```

The entire list is enclosed in braces {}. The pairs are separated with semicolons; there is no semicolon after the last pair. The entries can appear in any order.

The names are case-sensitive: choose a capitalization for each name and use it consistently. Do not use spaces or periods in names. If you need a separator, use an underscore, as in `Address_Oracle`. The names must be unique. If you have duplicate names, the second value overrides the first.

The value can be a string, a vector, or a nested table.

- **A string.** If the string includes any special characters, such as spaces, you must surround it in quotes. Quotes are always acceptable, even if the string has no special characters.

  To include quotes, tabs, newlines, form feeds, or slash characters, put the backslash (\) character in front of the character you want to quote, as shown below:

  ```
  \" (quote)
  \t (tab)
  \n (newline)
  \r (form feed)
  \\ (backslash)
  ```

Strings must consist only of ASCII characters. You cannot include non-ASCII characters in `.table` files. However, you can construct references to resource files that contain non-ASCII text. For example:

```
Name =  "@ariba.client.admin/EM_RuleEditor";
```

- **A vector** (or list) of values, surrounded in parentheses (`"string1", "string 2", "string3"`). The values are separated with commas. Do not add a comma after the last value (before the closing parenthesis). Here is an example that shows one field with a vector value (`Name1`) and another with a string value (`Name2`):

```
{
    Name1 = ( Value1, Value2, Value3, Value4 );
    Name2 = "This is a string"
 }
```

- A **nested table**, surrounded in braces: { }. For example:

```
NestedTableExample= {
    SomeKey = {
        MyBoolean = true;
        MyClassName = "ariba.oracle.server.OracleReceiptFormatter";
        AnotherValue = "Red";
    }
}
```

## Metadata XML Configuration Files

Ariba Buyer uses metadata XML configuration files, with extension `.aml`, to describe the data in the Ariba Buyer database. Metadata XML configuration files can define behavior of data, such as the type and size of fields, and can also be used to describe the user interface properties of that data. Metadata XML configuration files provide a layer of abstraction on top of the database, so that you can describe database properties without requiring database expertise.

Metadata XML configuration files are in XML format, and you can edit them either with a structured editor or with a text editor.

For complete information on these files, see the *Ariba Spend Management Customization Guide*.

## Meta Parameter XML Files

Ariba Buyer uses meta parameter XML files, with extension `.pml`, to describe metadata for parameters.

Meta parameter XML files are in XML format, and you can edit them either with a structured editor or with a text editor.

For complete information on meta parameter XML files, see “Parameter Metadata” on page 25.

## Wizard XML Configuration Files

Ariba Buyer uses wizard XML configuration files, with extensions `.awz` and `.afr`, to describe the flow and structure of wizards, specifying which frames appear and in what order.

Wizard XML configuration files are in XML format, and you can edit them either with a structured editor or with a text editor.

For more information on these files, see the *Ariba Buyer Data Load Guide*.

### Workflow XML Definition Files

Ariba Buyer uses workflow XML definition files, with extensions `.awf` and `.efm`, to define the workflow of a document after it has been fully approved. The pre-approval workflow is implemented in Java code, and cannot be customized.

Workflow XML definition files are in XML format, and you can edit them either with a structured editor or with a text editor.

For more information on these files, see the *Ariba Buyer Data Load Guide*.

### Administration XML Configuration Files

Ariba Buyer uses administration XML configuration files, with the extension `.acf`, to define access control and control the behavior of object managers and workspaces in Ariba Administrator.

Administration XML configuration files are in XML format, and you can edit them either with a structured editor or with a text editor. For more information, see the *Ariba Buyer Release Guide* for Version 9r1 and the *Ariba Buyer Administrator Customization Guide* for Version 8.2. (This document is no longer provided in Version 9r1.)

### JavaScript Files

JavaScript files, with extension `.js`, are used for approval rules. To edit approval rules, use the Rule Editor in Ariba Administrator, or the command line tool `ruleeditor`.

For complete information on approval rules, see the *Ariba Spend Management Approval Rules Guide*.

**Note:** You **must** use the Rule Editor, and not a text editor, to edit approval rules. You must never edit approval rules outside of the Rule Editor.

## Parameters.table File

The file `Parameters.table` is the main configuration file for Ariba Buyer. It consists of a collection of parameters, which are the basic settings for Ariba Buyer. For example, you use parameters to specify:

- The names of your own database computer, accounts, and administrative accounts.
- Your preferred names for configuration files.

This section provides an overview of the `Parameters.table` file.

### File Location

During the installation phase, the configuration tool creates an initial version of the `Parameters.table` file for your configuration. The `Parameters.table` file is located in the following directory:

*BuyerServerRoot*/config/Parameters.table

**Note:** A second `Parameters.table` file exists in the `ariba` directory. Like all other system files in the `ariba` directory, you never modify it.

## Dot Notation

This document uses *dot notation* to refer to parameter names in the `config/Parameters.table` file. A parameter name includes the category and subcategory (or subcategories) where the parameter can be found.

For example, `System.Performance.MoneyUpdateHours` means “go to the `System` section, go to the `Performance` section, and find the parameter named `MoneyUpdateHours`.”

When you view the `config/Parameters.table` file with a text editor, you see the `MoneyUpdateHours` parameter inside the `Performance` section, which is inside the `System` section, as follows:

```
System = {
    Performance = {
        MoneyUpdateHours = 6;
    };
}
```

## Parameter Metadata

Every parameter in the `config/Parameters.table` file is defined in a meta parameter XML file. Meta parameter XML files are located in the following directory:

```
ariba/parameters/meta
```

Parameter metadata includes the parameter’s name and the data type of its value. Parameter metadata can also include the following information:

- The parameter’s default value. This is the value of the parameter when it is not set in the `config/Parameters.table` file.
- Whether changes to the parameter require a system restart to take effect.
- Whether the parameter is *private* or *documented*. Private parameters are intended for Ariba internal use only. Documented parameters are intended for customer use.
- Whether the parameter value can be null.

The following example shows the metadata definition for the parameter `System.Performance.MoneyUpdateHours`. Notice that it includes a default value.

```
<parameter name="System.Performance.MoneyUpdateHours" type="int" defaultValue="6"/>
```

You cannot modify or override the parameter metadata in the default configuration, but you can add metadata for custom parameters. For more information, see “Custom Parameters” on page 28.

For information on the elements and attributes that can appear in a meta parameter XML file, see Appendix D, “Meta Parameters DTD Reference.”

## Parameter Values in Parameters.table

The `Parameters.table` file is in table file format and consists of a collection of keys (the parameters) and values (the settings). The following example shows some `config/Parameters.table` parameters and their associated values:

```
OrderContractFile = "config/data/contract.txt";
DefaultCurrency = USD;
DatabaseConnections = 7;
```

Parameter values are usually strings, as shown in the example, but can also be lists or nested tables.

The value specified for a parameter in the `config/Parameters.table` file overrides the default value specified for the parameter in the parameter metadata.

Some parameters do not appear in the default `config/Parameters.table` file (typically private parameters and documented parameters that are not often modified). To modify these parameters, you must manually add them to the `config/Parameters.table` file.

## Case and Special Characters

Whenever you work with parameters, note the following:

- **Case**. Parameter names are case-sensitive.
- **Special characters**. To include quotes, tabs, new lines, form feeds, or slash characters, quote those characters with a preceding backslash (\) character. As examples:

```
\"  (quote)
\\ (backslash)
```

## Application and System Parameters

Every configuration has just one set of parameters, shared by all partitions in your configuration. Within the `config/Parameters.table` file, parameters are grouped into two sections:

| Section | Description |
|---|---|
| `System` | Contains parameters that apply across your configuration, at the server level.<br><br>When you set a value for a parameter in the `System` section, that value applies in every partition in your configuration. You cannot specify different values for different partitions. |
| `Application` | Contains parameters that are different for different partitions.<br><br>The value you set for a parameter in the `Application` section initially applies to all partitions, but you can later provide different values for different partitions. |

Within the `System` and `Application` sections, parameters are grouped into categories of related parameters. For example, the `Authentication` category contains parameters related to authentication and the `Logging` category that contains parameters related to logging.

You can create custom parameter under the `System` or `Application` section. For more information, see "Custom Parameters" on page 28.

## Partition-Specific Parameters

To set partition-specific parameters, you use a third category, called `Partitions`. Parameters in the `Partitions` section are overrides for parameters in the `Application` section.

The parameters in the `Partitions` section always have the same name as parameters in the `Application` section. The `Application` section defines a default. The `Partitions` section defines a value for one specific partition. You add parameters to the `Partitions` section when you want to define a setting for just one partition.

The `Partitions` section is optional and contains only parameters that you want to set differently for different partitions. Typically, you have only a few parameters in the `Partitions` section.

## Parameter Security

Some Ariba Buyer configuration files include potentially sensitive information, such as computer names, passwords, or personnel information. By default, all parameter values are in plain text. For information on how to encode parameters, see "Parameter Security" on page 99.

## Parameter Reference

Ariba provides an HTML reference system called Parametersdoc for the parameters in the `config/Parameters.table` file.

▼ **To read reference information on Ariba Buyer configuration parameters:**

1 Log into Ariba Buyer as an administrator.

2 On the command bar, choose **Manage > Core Administration**.

3 Choose **Help > Guides**.

4 Click the **Ariba Buyer Parametersdoc** link located under Reference Documents.

5 Click the name of a parameter in the left-hand navigation pane to see reference information for that parameter.

You can use the links in the upper left corner of the reference to display **All Parameters**, or only **Application** or **System** parameters.

## How to Edit Parameters

The recommended way to edit parameters in the `config/Parameters.table` file is to use the Parameters task in the Server Manager workspace in Ariba Administrator. The Parameters task displays the parameter settings in the current `config/Parameters.table` file. It also provides detailed descriptions of each parameter.

In general, after making changes to parameters in the `System` section of the `config/Parameters.table` file, you must restart Ariba Buyer to have your changes take effect. (There are a few system parameters that do not require a restart.) Most changes to parameters in the `Application` section take effect immediately and do not require a system restart.

You can also make changes to the `config/Parameters.table` file with a text editor by using the Config Files task in the Server Manager workspace. The Config Files task lets you download the `config/Parameters.table` file to your local hard drive for editing, and then upload your modified file to the server.

**Warning:** Do not manually edit the `config/Parameters.table` file while Ariba Buyer is running. If you do, your modifications are discarded and a warning message is logged to the main log file.

## AppInfo.xml File

The `AppInfo.xml` file is used to integrate all Ariba Spend Management applications. The Ariba Buyer configuration program writes values to this file.

In the default configuration, the `AppInfo.xml` file is located in the following directory:

*`UpstreamPlatformInstallRoot`*`/shared/AppInfo.xml`

For complete information on the `AppInfo.xml` file, see the *Ariba Spend Management Integration Guide*.

## Message Configuration Files

Ariba Buyer uses *integration events* to exchange data with external systems. Each integration event defines the details of one particular data exchange.

Integration event data is processed through an *integration channel*, which is a communication channel that passes data between Ariba Buyer and an external system. Integration events are defined in *message configuration files*.

For complete information on integration channels and message configuration files, see the *Ariba Spend Management Channels Guide*.

## Scheduled Task Configuration Files

Scheduled task configuration files contain configuration information for Ariba Buyer scheduled tasks. Scheduled tasks are administrative tasks that run in the background on a regular schedule.

For more information on scheduled task configuration files, see Chapter 3, “Scheduled Tasks.”

## Custom Parameters

During the customization phase, you might occasionally add custom Java to your configuration. Ariba Buyer provides API support for custom parameters in the `config/Parameters.table` file, created and referenced by custom Java code in your configuration.

### Adding a Custom Parameter to Parameters.table

You put custom parameters in the `Customer` section under the `System` or `Application` section of the `config/Parameters.table` file, as appropriate. In the default configuration, there are no parameters in either `Customer` section.

### Defining Metadata for a Custom Parameter

When you add a custom parameter to `config/Parameters.table`, you must also add metadata for it to a meta parameter XML extension file. Meta parameter XML extension files are located in the following directory:

```
config/parameters/meta
```

You can add your custom parameter to an existing meta parameter XML file, or create a new meta parameter XML file for your custom parameters. Except for the `.pml` extension, there is no convention for meta parameter XML filenames.

**Note:** You cannot modify or override the parameter metadata in the default configuration.

The following example shows two custom parameter definitions in a meta parameter XML extension file:

```
<!DOCTYPE metadata SYSTEM "../../../etc/dtds/metaParameters.dtd">
<metadata>
    <parameter name="System.Customer" type="Map"/>
    <parameter name="System.Customer.SSOHost" type="String"/>
</metadata>
```

For information on all the elements and attributes that can appear in a meta parameter XML file, see Appendix D, "Meta Parameters DTD Reference."

## Data Formats

This section describes the formats for parsing data such as dates and fax numbers.

### Fax Numbers

When you include fax numbers in configuration files, those fax numbers are typically handed directly to fax software or ordering modules, which send the fax message. It's important that the format of the fax number in your configuration files matches the format expected by the underlying software.

The preferred format for fax numbers is either:

```
+1 (408) 543-4180
```

or

```
+1 408 543-4180
```

For backward compatibility, in the United States and Canada only, you can specify local numbers without the prefix, as in:

```
5551212
```

For backward compatibility, in the United States and Canada only, you can specify international numbers with the prefix `011`, like this:

```
011<country code><area code><number>
```

## Dates

When you enter dates in configuration files, such as `config/Parameters.table` or a metadata XML file, Ariba Buyer parses those dates as strings and then translates those strings into dates. The valid formats for dates vary by locale. An application can define the valid formats for dates in each locale.

Ariba Buyer uses the key `SystemFormats` in the resource file `resource/en_US/strings/resource.date.csv` to parse date strings in configuration files. This key defines a list of the possible date formats for parsing a date string, separated by a comma.

**Note:** Date strings in CSV files loaded through the Ariba File Channel must be in `en_US` format.

The following example shows a valid entry in `resource.date.csv`:

```
SystemFormats, "MMM-d-yyyy,MMM-d-yy", example of date formats
```

Since a comma is a separator, this example defines two distinct formats:

```
MMM-d-yyyy
MMM-d-yy
```

The following table defines the symbols you can use in date formats.

### Date Symbols

| Key | Explanation | Data Type | Example |
|---|---|---|---|
| G | era designator | (Text) | AD |
| y | year | (Number) | 1996 |
| M | month in year | (Text & Number) | July<br>07 |
| d | day in month | (Number) | 10 |
| h | hour in am/pm (1~12) | (Number) | 12 |
| H | hour in day (0~23) | (Number) | 0 |
| m | minute in hour | (Number) | *30* |
| s | second in minute | (Number) | 55 |
| S | millisecond | (Number) | 978 |
| E | day in week | (Text) | Tuesday |
| D | day in year | (Number) | 189 |
| F | day of week in month | (Number) | 2 (2nd Wed in July) |
| w | week in year | (Number) | 27 |
| W | week in month | (Number) | 2 |

### Date Symbols (continued)

| Key | Explanation | Data Type | Example |
|---|---|---|---|
| a | am/pm marker | (Text) | `PM` |
| k | hour in day (1~24) | (Number) | `24` |
| K | hour in am/pm (0~11) | (Number) | `0` |
| z | time zone | (Text) | `Pacific Standard Time` |
| ' | escape for text | (Delimiter) | |
| '' | single quote | (Literal) | `'` |

The number of characters in each field indicates the degree of padding for that field. So, for example, `MMM` indicates three-digit month names (`Jul`, `May`); `MM` indicates month numbers padded to 2 digits (11, 04), and `M` indicates no padding (11, 4).

The rules for padding and number of digits are as follows:

- For text, a pattern of 4 or more pattern letters uses the full form. Less than 4 pattern letters uses the short or abbreviated form if one exists.
- For numbers, the pattern indicates the minimum number of digits. Shorter numbers are padded with zeros to fit that number of digits. For example, DD always pads to 2 digits. Year is handled specially: if the count of y is 2, the year is truncated to 2 digits.
- For a field that can be either a text or a number (such as month), the digit count indicates whether the value uses text or numbers. If the count is 3 or over, use text; otherwise, use a number. So `MMM` uses text for months and `MM` uses numbers.

The following table shows examples that use the `en_US` locale:

| Example | Output |
|---|---|
| `"yyyy.MM.dd G 'at' hh:mm:ss z"` | `2004.07.10 AD at 15:08:56 PDT` |
| `"EEE, MMM d, ''yy"` | `Wed, July 10, '04` |
| `"h:mm a"` | `12:08 PM` |
| `"hh 'o''clock' a, zzzz"` | `12 o'clock PM, Pacific Daylight Time` |
| `"yyyyy.MMMMM.dd GGG hh:mm aaa"` | `2004.July.10 AD 12:08 PM` |

For more information on date formats, see the Javadoc for the `java.text.SimpleDateFormat` class, at:

`http://java.sun.com/j2se/1.3/docs/api/java/text/SimpleDateFormat.html`

## Specifying Currency Codes

Ariba Network validates currency codes in new purchase orders. All currency values must have three-letter ISO 4217 currency codes, such as FRF, GBP, or USD.

Ariba Network rejects purchase orders that contain invalid codes. Therefore, you need to ensure that Ariba Buyer and any connected ERP systems use ISO 4217 currency codes. For a list of these codes, see `http://www.unece.org/etrades/codesindex.htm`. In Ariba Buyer, you specify the default currency using the parameter `Application.Base.Data.DefaultCurrency`.

For test Ariba Buyer accounts, Ariba Network rejects purchase orders that contain invalid or missing currency codes. For production Ariba Buyer accounts, Ariba Network uses the following rules to resolve problems with currency codes:

| Currency Code Problem | **Ariba Network Behavior** |
|---|---|
| Missing currency code | Maps to USD |
| Invalid currency code | Rejects purchase order |
| Obsolete currency code | Maps to current valid code |

Ariba Network maps obsolete currency codes to current valid codes as follows:

| | |
|---|---|
| ARP to ARS | CDN to CAD |
| ARA to ARS | IRL to IEP |
| BGL to BGN | MXP to MXN |
| BRE to BRL | PLN to PLZ |
| BRR to BRL | RUB to RUR |
| CAN to CAD | |

## Character Encoding Formats

In general, Ariba uses terminology from IANA (Internet Assigned Numbers Authority) to name character sets. For a list of the official IANA names for character sets, see:

`http://www.iana.org/assignments/character-sets`

In a few specific instances, such as the `System.Database.<schema>.AribaDBCharset` parameter, Ariba uses Java names instead of IANA names. Read the documentation for each parameter to understand the required value.

# Chapter 3 Scheduled Tasks

This chapter introduces scheduled task configuration files and describes how to use them to set schedules and parameters for scheduled tasks. It includes the following sections:

## Introduction to Scheduled Tasks

*Scheduled tasks* are processes that run on a regular basis, in the background. You use scheduled tasks for any administrative or maintenance task that must run on a regular schedule, such as daily, weekly, or monthly.

Scheduled tasks usually run on their designated schedule, in the background. An administrative user can also run a scheduled task manually, by explicitly starting it. You can start a scheduled task on demand:

- From Ariba Administrator using the Scheduled Tasks task in the Server Manager workspace.
- With the `servermonitor` command. For more information, see Appendix B, "Command Reference."

## Scheduled Task Configuration Files

You configure scheduled tasks by editing a *scheduled task configuration file.* A scheduled task configuration file is a list of scheduled tasks, together with a schedule for each and the parameters that apply to that task.

All scheduled tasks recognize a shared set of standard parameters. Most scheduled tasks also recognize additional task-specific parameters. For example, the Ariba Buyer default configuration defines a scheduled task to clean out old scheduled task status messages at regular intervals. That scheduled task takes parameters that indicate the number of days to keep messages before deleting them and whether or not to delete not run status messages.

A configuration typically has one scheduled task configuration file for each partition, plus an additional one that applies to all partitions (None partition).

Scheduled tasks themselves are not partitioned, but some scheduled tasks act on partitioned data. For example, a scheduled task that acts on approvable documents might apply only within a given partition, but scheduled tasks that operate on log files, database logs, or reports apply throughout your configuration.

## Location of Scheduled Task Configuration Files

The locations of scheduled task configuration files are specified by the `config/Parameters.table` parameter `Application.Base.ScheduledTasksFile`.

The following example shows the scheduled task configuration file definition that applies to all partitions:

```
Partitions = {
    None = {
        Application = {
            Base = {
                ScheduledTasksFile = "variants/Plain/partitions/None/ScheduledTasks.table";
            };
        };
    };
};
```

The next example shows a scheduled task configuration definition for a specific partition (in this case, the `pcsv` partition):

```
Partitions = {
    pcsv = {
        Application = {
            Base = {
                ScheduledTasksFile = "variants/vcsv/partitions/pcsv/ScheduledTasks.table";
            };
        };
    };
};
```

If you decide to move or rename a scheduled task configuration file, you must adjust the entry in `config/Parameters.table` accordingly.

## Changing Scheduled Task Configuration Files

You make changes to scheduled task configuration files by editing the default configuration files in the `config` directory. You can edit scheduled task configuration files with any text editor.

You can also make changes to scheduled task configuration files by using the Config Files task in the Server Manager workspace. The Config Files task lets you download the file to your local hard drive for editing, and then upload your modified file to the server.

## Reloading Scheduled Task Configuration Files

Scheduled task configuration files are reloaded each time you start Ariba Buyer. If there are any errors in the scheduled task configuration file, Ariba Buyer still starts, but the scheduled tasks are not initialized. If there is an error in an individual scheduled task entry, that entry is skipped and the scheduled task is not configured. You must look at the log file, find and correct the error, and reload the scheduled tasks.

You can also reload the scheduled task list from Ariba Administrator, or with the `servermonitor -refreshtasks` command.

For more information on `servermonitor`, see Appendix B, “Command Reference.”

## Scheduled Task Configuration File Format

A scheduled task configuration file is in table file format and consists of a list of scheduled task definitions, one for each scheduled task. For example:

```
AribaNetworkFullSubscriptionSync = {
    ScheduledTaskClassName = "ariba.catalog.admin.server.SubscriptionFullSyncTask";
   Schedules = { Schedule1 = { DayOfWeek = Weekday; Hour = 1; } ; };
};
```

Each entry has a name and a collection of parameters, such as `ScheduledTaskClassName`.

Scheduled task names must be unique within each partition.

### Scheduled Task Properties

Each scheduled task defines at least one required property, `ScheduledTaskClassName`, which is the name of a Java class file that runs the scheduled task. For example:

```
ScheduledTaskClassName = "ariba.approvable.server.EscalateApprovables";
```

Most scheduled tasks also have a `Schedules` property, which defines when and how often the scheduled task runs. If there is no `Schedules` property, the scheduled task does not run on a regular basis.

The following example is an entry for a scheduled task that runs an Ariba Analysis report every Monday and Thursday at 9 PM:

```
Report_104 = {
    ScheduledTaskClassName = ariba.analytics.core.ScheduledQueryOperation;
    UniqueReportName = Report_104;
    Schedules = {
        Schedule1 = {DayOfWeek = Monday; Hour = 21 };
        Schedule2 = {DayOfWeek = Thursday; Hour = 21 };
    };
};
```

If a scheduled task is configured to run on a specific logical node but that logical node becomes unavailable before the scheduled task finishes, Ariba Buyer attempts to run the scheduled task on another available logical node.

Similarly, if a scheduled task is configured with the `ExecutionNode` parameter (for example, `ExecutionNode =` “`Node1:Node2:Node3`”), and the first logical node in the list goes down, Ariba Buyer selects the next logical node in the list to run the scheduled task.

If no logical node is not available to run the scheduled task, Ariba Buyer attempts to run the scheduled task again at the next scheduled time.

For more information, see “Logical Node Assignment” on page 37.

Most scheduled tasks take additional properties, which are specific to that scheduled task.

## Syntax of Schedules

The Schedules property defines the time and frequency for running a scheduled task. The Schedules key can use the following keywords:

```
DayOfWeek = Weekday | Everyday | Monday | Tuesday …
DayOfMonth = 0..31;
Hour = 0..24;
Minute = 0..59;
Second = 0..59;
```

The keys, such as DayOfWeek and Everyday, and the values are case-sensitive.

Every schedule must include either DayOfWeek or DayOfMonth.

After you have specified DayOfWeek or DayOfMonth, you can define the time with Hours, Minutes, and Seconds. The times are optional. If not set, they default to 0. For example, the following schedule runs the scheduled task at midnight every day:

```
Schedules = {
    Schedule1 = {DayOfWeek = Monday};
};
```

The schedule names (Schedule1 in this example) are arbitrary labels. Ariba Buyer determines the schedules for a given scheduled task by enumerating all schedules under the Schedules key, ignoring the label names.

You can schedule the same scheduled task to run at several times by defining multiple schedules. For example:

```
TaskA = {
    ScheduledTaskClassName = ariba.package.server.name;
    Schedules = {
        Schedule1 = {
            DayOfWeek = Monday; Hour = 21};
        Schedule2 = {
            DayOfWeek = Thursday; Hour = 21;
        };
    };
}
```

You can also schedule a task to run periodically, with the Period parameter. For example:

```
TaskB = {
    ScheduledTaskClassName = ariba.procure.server.name;
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 0;
            Period = {
                Unit = Hours; Quantity = 1;
            };
    };
}
```

A periodic scheduled task determines when to run by adding the time specified by the Period parameter to the time it last ran. For example, suppose TaskB in the previous example last ran on Friday at 10:30 AM. TaskB will run next at 11:30 AM., then at 12:30 PM., and so on.

When a scheduled task is scheduled to run periodically, the `DayOfWeek` and `Hour` parameters apply only to the first time the scheduled task runs (the *start time*). The `Period` parameter determines when the scheduled task runs after the start time.

The `Unit` parameter can be `Seconds`, `Minutes`, `Hours`, `Days`, or `Weeks`. The value for `Quantity` is interpreted as an integer. If you specify a decimal, such as 3.6, the value is truncated down to an integer (3 in this example). To run a scheduled task every month, use the `DayOfMonth` parameter.

You cannot specify multiple periodic schedules, and you cannot specify both periodic and regular schedules for the same scheduled task.

**Note:** Ariba recommends you do not schedule tasks to run less than 30 minutes apart.

## Logical Node Assignment

You can configure a scheduled task to run on a specific logical node by using one of the following scheduled task configuration parameters:

- `ServerRole`
- `ExecutionNode`

Both parameters are optional. If neither parameter is specified, Ariba Buyer selects a logical node arbitrarily from the set of available logical nodes.

### ServerRole Parameter

The `ServerRole` parameter lets you configure a scheduled task to run on any logical node configured with a specific server role. For example:

```
Task = {
    ScheduledTaskClassName = myTaskClassName;
    Schedules = {
        Schedule1 = {
...
        };
    };
    ServerRole = "TaskRole1";
}
```

The `ServerRole` parameter can specify only one server role.

When you configure a scheduled task with the `ServerRole` parameter, Ariba Buyer selects a logical node from all the available logical nodes that have the specified server role. The scheduled task runs on only one logical node at a time, even when multiple logical nodes have the same server role.

If the logical node on which a scheduled task is running becomes unavailable, Ariba Buyer arbitrarily selects another available logical node with the same server role.

Server roles are case sensitive. For complete information on server roles, see the *Ariba Buyer Installation Guide* guide.

Because the `ServerRole` parameter is supported for both scheduled tasks and integration events, you might want to use a naming convention for server roles that differentiates between the two, for example, `TaskRole` and `EventRole`. For information on using the `ServerRole` parameter for integration events, see the *Ariba Spend Management Channels Guide*.

### ExecutionNode Parameter

The `ExectionNode` parameter can specify one logical node name, or a colon-separated list of logical node names. For example:

```
Task = {
    ScheduledTaskClassName = myTaskClassName;
    Schedules = {
        Schedule1 = {
...
        };
    };
    ExecutionNode = "Node1";
}
```

When you configure a scheduled task with the `ExecutionNode` parameter, Ariba Buyer assigns the scheduled task to run on a specific logical node based on the logical node's name. The scheduled task runs on only one logical node at a time, even when the `ExecutionNode` parameter specifies multiple logical nodes.

If the logical node on which a scheduled task is running becomes unavailable and only that one logical node is specified in the `ExecutionNode` parameter, the scheduled task does not run.

If the logical node on which a scheduled task is running becomes unavailable and more than one logical node is specified in the `ExecutionNode` parameter, Ariba Buyer arbitrarily assigns the scheduled task to another available logical node in the `ExecutionNode` list. Consider the following example:

```
ExecutionNode = "Node1:Node2:Node5";
```

In this example, if the scheduled task is running on `Node1` and that logical node fails, Ariba Buyer assigns the scheduled task to run on either `Node2` or `Node5`. If neither `Node2` nor `Node5` is available, the scheduled task does not run.

Because the `ServerRole` parameter dynamically selects a logical node on which to run the scheduled task, Ariba recommends using it instead of the `ExecutionNode` parameter.

**Note:** The `ExecutionNode` parameter also takes `AllNodes` as a value. `AllNodes` specifies that the scheduled task run on all logical nodes simultaneously. `AllNodes` is used only for the `ArchiveLog` scheduled task.

### When Logical Node Assignment Changes

Logical node assignment stays in effect until one of the following situations occur:

- The logical node becomes unavailable.
- A new logical node joins the group.
- An administrator reinitializes the configuration file that defines the scheduled task.

## Chained Scheduled Tasks

Scheduled tasks can be *chained*, so that one scheduled task is started when a previous scheduled task finishes.

To define chained scheduled tasks, you specify one of the following class names as the `ScheduledTaskClassName`:

- `ariba.util.scheduler.ChainedScheduledTask`
- `ariba.app.server.ChainedScheduledTask`

Both classes recognize two additional parameters, which specify how the scheduled tasks are chained.

For `ariba.`**`util.scheduler`**`.ChainedScheduledTask`, the syntax is as follows:

```
ChainedTaskName = {
  ScheduledTaskClassName = ariba.util.scheduler.ChainedScheduledTask;
  ChainedScheduledTasks = ("BakeBread", "EatBread");
  ContinueOnFailure = "true";
  Schedules = {...}
  }
```

The `ChainedScheduledTasks` parameter specifies a list of scheduled task names, in the order in which you want them to run. `ContinueOnFailure` is a Boolean, specifying whether linked scheduled tasks must run if an earlier scheduled task fails.

With `ariba.`**`app.server`**`.ChainedScheduledTask`, you use the same parameters, but the syntax for the `ChainedScheduledTasks` parameter is the full name of the scheduled task, using the same syntax as in `Loaddb.txt`. For example:

```
CSGroupPullChained = {
  ApplicationHints = { Parameters = { Visible = true;};};
    ChainedScheduledTasks = (
      "None.IntegrationEvent.GroupPull",
      "None.Task.UpdateAribaNetworkProfile"
      );
    ContinueOnFailure = false;
    ScheduledTaskClassName = "ariba.app.server.ChainedScheduledTask";
    ;
```

In this case, you can chain integration events, as well as scheduled tasks. With `ariba.`**`util`**`.scheduler.ChainedScheduledTask`, you can chain only scheduled tasks.

When using the `ServerRole` parameter in chained scheduled tasks, subtasks run in the same logical node as the chained scheduled task. Additionally, a chained scheduled task does not run if there are conflicts in the logical node assignments for the chained scheduled task and subtasks.

In the following example, the `MyChainedTask` scheduled task is assigned the `TaskRole1` server role. One of its subtasks is also assigned the `TaskRole1` server role, but the other is assigned the `TaskRole2` server role.

For the chained scheduled task and all its subtasks to run, there must be a logical node configured with both the `TaskRole1` and `TaskRole2` server roles. If there are logical nodes only configured with either the `TaskRole1` or `TaskRole2` server role, the chained scheduled task and its subtasks does not run.

```
MyChainedTask = {
  ScheduledTaskClassName = ariba.app.server.ChainedScheduledTask;
  ChainedScheduledTasks = (
    "None.Task.Subtask1",
    "None.IntegrationEvent.Subtask2");
  ServerRole = "TaskRole1";};
  ...
  Subtask1 = {
    ...
    ServerRole = "TaskRole1";
  };
  Subtask2 = {
    ...
    ServerRole = "TaskRole2";
  };
};
```

If you run a subtask in standalone mode (not as part of a chained scheduled task), the subtask might not run on the exact same logical node as the chained scheduled task. It does, however, run on a logical node with the appropriate server role.

If you want to make sure a chained scheduled task and a subtask (run in standalone mode) run on the same logical node, you can do one of the following:

- Use the `ServerRole` parameter and make sure the server role is assigned to only one logical node.
- Use the `ExecutionNode` parameter and specify the same logical node. The drawback to this approach is there is no failover functionality if the logical node becomes unavailable.

## Log Message Suppression

You can configure a scheduled task so that it does not write informational (`info` level) log messages to the main log file by specifying the `SuppressInfoMessages` parameter. For example:

```
MyFrequentRunner = {
    ScheduledTaskClassName = ariba.foo.bar.myFrequentRunner;
    SuppressInfoMessages = true;
    Schedules = {
        Schedule1 = {
            DayOfWeek = Everyday;
            Hour = 21;
            Period = { Quantity = 1; Unit = Minutes; };
        };
    };
};
```

You might want to suppress informational messages for scheduled tasks that run very frequently and fill up the log file with informational log messages. Because informational messages are useful in diagnosing scheduled tasks, Ariba recommends you suppress informational log messages for short periods of time only.

The `SuppressInfoMessages` parameter suppresses informational log messages when the scheduled task runs at its regularly scheduled time only. If an administrator runs the scheduled task on demand, some informational log messages will still be logged.

## Reference List of Properties

The following table describes properties that are common to all scheduled tasks.

| Property | Description |
|---|---|
| `ScheduledTaskClassName` | Names the Java class for this scheduled task. This parameter is the only required parameter. |
| `Schedules` | Defines when and how often the scheduled task runs. If this parameter is not set, the scheduled task does not run on a regular basis.<br><br>For information on the syntax of this parameter, see "Syntax of Schedules" on page 36. |
| `ChainedScheduledTasks` | Names a set of scheduled tasks to run, with a required order. Specify the scheduled tasks in the order you want them to run. For example:<br><br>`ChainedScheduledTasks = ("RunFirst", "RunSecond");`<br><br>This parameter is valid only with chained scheduled tasks, as described in "Chained Scheduled Tasks" on page 39. |
| `ContinueOnFailure` | When using chained scheduled tasks, specifies whether to continue running the next scheduled task in the chain when one of them fails. If set to `true`, the chained scheduled task fails only if **all** scheduled tasks in the chain fail. If set to `false`, the chained scheduled task fails if **any** of the scheduled tasks in the chain fail. For example:<br><br>`ContinueOnFailure = "true";` |
| `ServerRole` | Specifies a logical node on which the scheduled task can run, based on a logical node's server role configuration. When more than one logical node has the same server role, Ariba Buyer dynamically selects the logical node.<br><br>A valid value for this parameter is one server role. This parameter is optional.<br><br>For more information, see "ServerRole Parameter" on page 37. |
| `ExecutionNode` | Specifies the logical node on which the scheduled task can run, based on the static assignment of a logical node's name.<br><br>Valid values for this parameter are a logical node name, a colon-separated string of logical node names, or `AllNodes` (used only for the `ArchiveLog` task). This parameter is optional.<br><br>For more information, see "ExecutionNode Parameter" on page 38. |

## Weekends and Holidays

Several of the scheduled tasks send email notification messages to users, to alert those users of situations that require attention. To avoid sending too many such messages or sending them too soon, you can configure Ariba Buyer to recognize (and ignore) weekends and holidays when deciding whether to send the message.

You define your company's holidays in the `config/Parameters.table` file, with the following parameters:

- `Application.Base.SkipWeekendsAndHolidays` is a Boolean that specifies whether scheduled tasks skip weekends and holidays when counting days.
- `Application.Base.CompanyHolidays` specifies the actual dates to skip. This parameter is used only when `SkipWeekendsAndHolidays` is `true`.

You specify the holidays as a string of dates, separated by colons. For example:

```
CompanyHolidays = "Jul-4-2004:Dec-25-2004:Jan-1-2004";
```

## Permissions Associated with Scheduled Tasks

Many of the scheduled tasks send email notification messages to administrative users. For example, there is a scheduled task that checks for pending new catalog data and loads it into your configuration. In the event that the catalog load fails for some reason, Ariba Buyer sends a notification message alerting an administrator to the problem.

Ariba Buyer uses *permissions* to determine which users receive the email notification messages from scheduled tasks. For example, the catalog load scheduled task sends its notification message to users who have the permission `CatalogImportFailedEmail`.

As you set up your configuration, you can choose the set of administrative personnel who receives such notification messages, and set up the permissions accordingly.

## Scheduled Tasks and Database Initialization

For a few of the scheduled tasks, it is appropriate to run the scheduled task during database initialization, as part of your initial configuration, rather than running it on a regular basis. An example of such a scheduled task is `InitIndexLoad`, which lets you import catalog files during database initialization.

To include scheduled tasks as part of the database initialization process, you add them to the configuration file `LoadDB.txt`. The `LoadDB.txt` file lists each integration event or scheduled task in the order in which you want them to run.

For example, if your configuration has one partition, called `partition1`, the `LoadDB.txt` file would include entries similar to the following—some for unpartitioned data and some for `partition1`:

```
None.IntegrationEventIntegrationEvent.LanguagePull
None.IntegrationEvent.LanguageLanguagePull
None.IntegrationEvent.CurrencyGroupPull
None.IntegrationEvent.CurrencyPull
,,,
partition1.ScheduledTask.SomeTaskName
partition1.IntegrationEvent.CurrencyConversionRatePull
partition1.IntegrationEvent.PermissionPull
```

## Scheduled Tasks Thread Pool

When a scheduled task runs depends on whether a thread is available for the task in the scheduled tasks thread pool. Therefore, the actual time a scheduled task runs might not be exactly the same time as the time specified in the scheduled tasks configuration file.

The scheduled tasks thread pool consists of a set of threads and a queue. The pool size is defined by two numbers: the minimum number of threads, and the maximum number of threads.

If all the threads are already busy when a scheduled task is scheduled to run, the scheduled task is queued. If the queue is full, the scheduled task is rescheduled to run at the next time it is scheduled.

You can configure the minimum number of threads, the maximum number threads, and the size of the queue when no more threads are available by modifying the following `config/Parameters.table` file parameters:

- `System.ThreadPools.Scheduler.Min`
- `System.ThreadPools.Scheduler.Max`
- `System.ThreadPools.Scheduler.QueueSize`

# Chapter 4 Approvable Document Configuration

An *approvable document* in Ariba Buyer is a request that needs to be approved. Ariba Buyer represents your business objects with different approvable documents, and uses those approvable documents to track the approval process.

This chapter describes how to configure approvable documents in your configuration. It includes the following sections:

## Introduction to Approvable Documents

The business features of Ariba Buyer model business processes using a standard set of approvable documents, such as purchase requisitions and user profile change requests. The specific set of document types that are available depends on the features that you have installed. For example, if you have installed Ariba Travel & Expense, your configuration also includes approvable documents for tracking expense reports and travel authorizations.

The default configuration defines a standard set of approvable document types, using the ApprovableTypePull integration event. This event both defines the approvable document types for the features you have installed and sets properties for each document type. Those properties control behavior, such as the following:

- How approvable documents are numbered and named
- Which users have permission to create approvable documents, run queries to find them, or edit the approval flow
- Which information is included in notification messages

By adjusting the data source for the integration event, you can modify the properties of existing approvable document types.

Ariba Buyer also provides administrative tasks, such as scheduled tasks and notification messages, that administrators can use to manage and monitor approvable document status.

This chapter introduces approvable documents and describes how to configure and administer the document types in your configuration.

## ApprovableTypePull Integration Event

The ApprovableTypePull integration event defines the set of approvable documents in a configuration. This integration event lists a set of document types and the properties of each such document.

The ApprovableTypePull integration event specifies properties of approvable documents, including:

- Who can create documents of that type
- How the documents are numbered
- What users have permissions to run queries to locate such documents
- What information is included in notification messages about approvables of that type
- Which users can make changes to an approvable document after it has been submitted for approval

For example, in the default configuration, users are allowed to create purchase requisitions, but are not allowed to create new purchase orders directly from the user interface. Similarly, in the default configuration, notification messages about requisitions show just a summary of the requisition, and not the full history or set of comments.

The ApprovableTypePull integration event loads partitioned data. Ariba Buyer supplies one implementation of this integration event, which reads from the following file:

`config/variants/`*`variant`*`/partitions/`*`partition`*`/data/ApprovableType.csv`

Every configuration uses this implementation.

The following table lists the fields in the `ApprovableType.csv` file.

| **Field** | **Description** |
|---|---|
| `ApprovableClassName` | The Java class name for this approvable, which must be a subclass of `ariba.approvable.core.Approvable`. |
| `Restricted` | A Boolean, to indicate if there are restrictions on who can create document of this type. If set to `false`, anyone can create documents of this type. If set to `true`, Ariba Buyer checks the `Permission` field to decide which users have create permission. |
| `Permission` | The name of a permission, which applies only if the `Restricted` column is `true`. Only users who have this permission are able to choose this approvable document type from the **Create** menu. For more information, see "Create Permission" on page 48. |
| `QueryRestricted` | A Boolean to indicate whether there are restrictions on queries for documents of this type. If set to `false`, there are no query restrictions. If set to `true`, Ariba Buyer checks the `QueryPermission` field to decide which users see this type as an option. |
| `QueryPermission` | The name of a permission, specifying who can define searches on documents of this type. When a user chooses **Create Search** from the Ariba Buyer home page, Ariba Buyer checks this permission to determine which approvable document types to list in the menu. For more information, see "Query Permission" on page 48. |

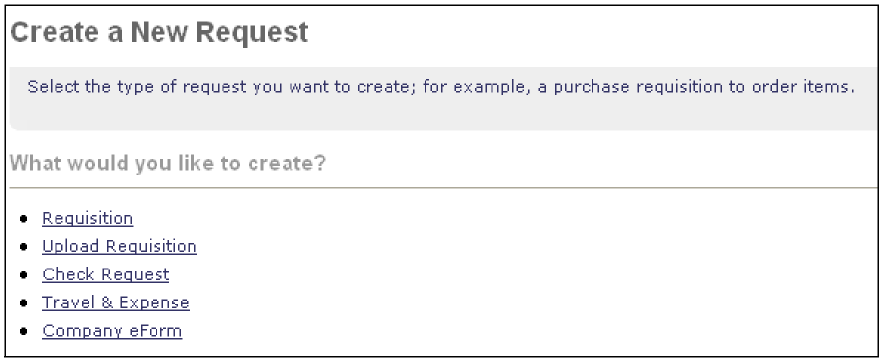
| Field | Description |
|---|---|
| `ChooserPermission` | This permission indicates whether the user has access to every user's approvables of this type. If this field is blank, users cannot set the On Behalf Of field. If this field is set to a named permission, users who have that permission can set the field. |
| `EditApprovable` | The name of a permission, specifying who can make post-submission edits to documents of this type. |
| `RemoveApprovalRequest` | The name of a permission, specifying who can remove approval requests on documents of this type. |
| `AddApprovalRequest` | The name of a permission, specifying who can add approval requests to documents of this type. |
| `ApprovableIdPrefix` | The prefix for this document type, such as PR or VA. This field is required. Must be US-ASCII, not accented European characters or CJK characters. There is no default. |
| `ApprovableIdInitialValue` | Defines the starting number for new approvables of this type. The default is 10.<br><br>Do not change this value in a running configuration. |
| `NotificationPreferences ClassName` | The name of a Java class, specifying the module that Ariba Buyer uses for setting notification preferences. This field must either be set to `ariba.common.core. ApprovableNotificationPreferences` or be left blank.<br><br>If set to `ApprovableNotificationPreferences,` users can set notification preferences independently for this approvable. If left blank, all approvables that are left blank are grouped together. The user sets preferences for that group of approvables with the "default preferences for all approvable types" menu choice. |
| `NotificationPreferences ClassRank` | A numeric rank, used to specify the order of notification preferences when they are displayed to the user. |
| `ShowApprovableDetailsInEmail`<br>`ShowApprovableSummaryInEmailShowApprovalFlowInEmail`<br>`ShowCommentsInEmail`<br>`ShowHelpInEmail`<br>`ShowHistoryInEmail`<br>`ShowWebJumperInEmail` | (Plain-text email notifications only)<br><br>These fields are Booleans, used to indicate whether the specified information appears in notification messages sent about this approvable type.<br><br>For notification messages sent by HTML email, use the `OrderFormat.xsl` template to select the content and layout to include in HTML orders. For more information, see the *Ariba Buyer Procurement Guide*. |
| `ModuleName` | The name of an installed Ariba Buyer module. Must be set to a keyword allowed in `System.Base.Modules,` such as `Expense`, `Procure`, `Settlement`, or `Eform`. |

## Create, Query, Chooser, and Edit Permissions

This section provides additional details on the Create, Query, Chooser, and Edit permissions in `ApprovableType.csv`.

### Create Permission

The Create permission restricts which users can create new approvable documents. When a user chooses the **Create** button on the Ariba Buyer Home page, Ariba Buyer generates a list of document types available to that user. For example:



Create a New Request

Select the type of request you want to create; for example, a purchase requisition to order items.

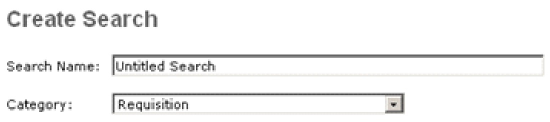
What would you like to create?

- Requisition
- Upload Requisition
- Check Request
- Travel & Expense
- Company eForm

An approvable type appears in this menu only if the user has Create permission for that approvable type. In the default configuration, there are no restrictions on who can create approvable documents. If you have external users, such as supplier users who connect to Ariba Buyer, you might choose to restrict create access for approvable documents.

### Query Permission

The Query permission restricts the approvable document types that appear in the Create Search screen. When a user creates a search, Ariba Buyer offers a menu of approvable types in a chooser. For example:



Create Search

Search Name: Untitled Search

Category: Requisition

A document type appears in this menu only if the user has Query permission for that document type. Note that the Query permission does not affect the database query that determines which documents are returned. The rules for queries are as follows:

- If a user has the permission `QueryAll`, the user is authorized to view all documents
- If a user does not have the permission `QueryAll`, that user can search for approvables only if one of these conditions is true:
  - The user created that approvable
  - The approvable was created on his or her behalf
  - The approvable was created on behalf of one of his direct reports
  - The user is on the approval chain, either directly or as a member of a role

#### ChooserPermission Permission

The ChooserPermission permission indicates whether the user has access to every user's approvables of this type. If this field is blank, users cannot set the On Behalf Of field. If this field is set to a named permission, users who have that permission can set the field.

#### EditApprovable Permission

The EditApprovable permission controls the visibility of the **Edit** button. During the approval process, approvers sometimes have to modify approvable documents, to make changes such as setting a supplier, or updating a description.

Only users with the EditApprovable permission can make changes to approvables of that type.

If you require more complex logic for who can edit, under what circumstances, you can set an editability condition on the document type. For more information on editability conditions, see the *Ariba Spend Management Customization Guide*.

## Numbering and Naming

Each approvable document has a unique identifier, created by concatenating a *prefix* and a *number*. For example, a purchase requisition might have the identifier PR182.

In the default configuration, numbering is by partition. Each document type is numbered sequentially within a partition, starting from your specified initial document number. For example, the first user profile in a partition might be UP100 and the second UP101.

For information on how purchase orders are numbered, see the *Ariba Buyer Procurement Guide*.

If you require finer granularity in numbering, you can define a Java class for approvable document numbering. For example, you can write a numbering class that defines several different series of numbers within a partition.

▼ **To create a custom Java class:**

1. Implement `ariba.approvable.core.ApprovableIdMethod`
2. Specify the name of your class as `Application.Base.ApprovableIdMethod`.

For a sample implementation, see `sample/procure/misc/java/procure/server/TestApprovableIdMethod`. For more information on the Java API for document numbering, see the legacy version 8.2 *Ariba Spend Management API Guide* available at `https://connect.ariba.com`.

## Configuring Notification Content of Text-Format Notifications

Ariba Buyer lays out each notification message as a collection of distinct sections. If your system is configured to send notifications in text format instead of HTML format, during configuration, you can include or exclude any of these sections, per approvable, from `ApprovableType.csv`,. For example, you might want notifications about user profile requests to include the entire history of the request, but not want the history to appear in notifications of catalog changes.

You specify the content of the notification message for each document type with a set of Booleans, turning on or off each section of the mail. The sections you can hide or display are as follows:

| This section... | Displays this content.... |
|---|---|
| Summary | Document type, document number, create date, and Preparer name. |
| ApprovalFlow | A summary of approvers, showing a summary of which users have taken action and which still have to approve. |
| Comments | Any comments that approvers have added |
| Help | A hyperlink to an associated help page. |
| History | The information from the History tab of the approvable document. |
| WebJumper | A hyperlink that users can follow to reach the document itself, in Ariba Buyer. |

For more information about notifications, including how to customize the content and how to configure HTML-format notifications, see Chapter 6, "Notifications."

## Approval Flow

Ariba Buyer determines the initial approval flow for a document by checking the *approval rules* for that document type. Every approvable document has an associated set of *approval rules*, which define who must approve that request and under what circumstances. You can paraphrase most approval rules as **if...then...** sentences. For example:

**If** the requester and the preparer are not the same person, **then** ask the requester to approve.

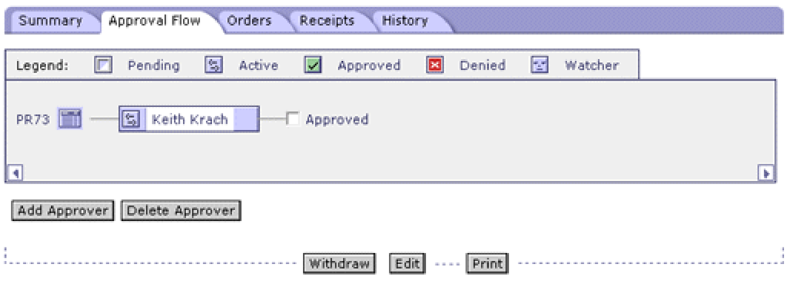
**If** an expense report has violations, **then** the violation manager must approve.

For information on how to configure the rules that define the initial approvers, see the *Ariba Spend Management Approval Rules Guide*.

### Approval Diagrams

When an approvable document is submitted for approval, Ariba Buyer runs the approval rules for that document type to generate an *approval diagram*, which shows the order of approvals for that document. This approval diagram appears in the user interface, on the approval flow tab.

The following illustration is an example of an approval diagram:



## Approval Flow Changes

After a document is submitted for approval, the approval flow can be changed in any of the following ways:

- Authorized users can add or remove other approvers from the approval flow.
- A user can delegate approval authority to another user, or an administrator can delegate approval authority of one user to another user, for a specified period of time.
- An approval request can be escalated to a user's supervisor if the initial user has not taken action within a designated period of time.
- An approval request can time out, if it has remained in the system for a designated period of time without being fully approved.

This section describes how users, administrators, and scheduled tasks can modify the initial approval flow of an approvable document.

### Adding or Removing Approvers

Authorized users can modify the approval flow of an approvable document dynamically, from the Approval Flow screen. For any document, the following users can make changes:

- The preparer of an approvable document can add approvers, before submitting the document.

  From Ariba Buyer 9r1 SP16 and later releases, manually added approvers before submitting the document are retained when the approvable is changed or cancelled.
- Any user who is on the default approval flow can add new approvers, during the approval process.

  The newly added approvers are not retained when the approvable is changed or cancelled.

To allow other authorized users to add approvers, assign to those users the AddApprovalRequest permission for the document type. To allow authorized users to remove approvers, assign to those users the RemoveAnyApprovalRequest permission for the document type.

**Important:** The RemoveAnyApprovalRequest permission can potentially be a security hole, because it lets a user remove the entire approval flow for an approvable document. In a typical configuration, you assign this permission to a very small set of administrative users.

### Adding Approvers After an Approvable Document is Submitted

After an approvable document is submitted, manually added approvers are not retained when the approval diagram is regenerated. Whenever an approvable document is changed, its approval diagram is regenerated.

Because manually added approvers are not automatically retained in a regenerated approval diagrams, you must write a custom trigger action implementation that reinserts the approvers back into the appropriate places in the approval diagram.

You specify your custom trigger action implementation to the `ApprovalGraphGenerated` trigger. The `ApprovalGraphGenerated` trigger takes effect whenever the approval diagram is regenerated.

For more information on triggers, see the *Ariba Spend Management Customization Guide*. For information on writing custom Java code, see the legacy version 8.2 *Ariba Spend Management API Guide* available at `https://connect.ariba.com`.

### Adding Approvers in the Composing State

For approvable documents that are in the Composing state, users can add approvers only at the start of, or in parallel to, the approval flow.

**Important:** Do not change the setting of the parameter `System.Base.AllowAddApprovalRequestAnywhereInComposingState` unless you are using Ariba Sourcing or Ariba Contract Management **in addition to** Ariba Buyer. If you are using **only** Ariba Buyer, the parameter must be set to the default value, false. Otherwise, approval flows might be cleared for approvable documents that are resubmitted.

### Delegating Approval Authority

*Delegation of approval authority* allows users and administrators to temporarily assign, or delegate, approval authority from one user to another for a specified period of time.

A user can delegate his own approval authority to another user. For example, if a manager is leaving town for a vacation, he might choose to delegate approval authority during the scheduled vacation time. Any Ariba Buyer user can delegate his own approval authority to another user from the Preferences screen. A delegation of authority is a user profile change, and must be approved according to your corporation's business rules for user profile changes.

Ariba Buyer uses the ExpireDelegations scheduled task to enable and disable delegations of approval authority. This task determines when to remove delegations that have expired, or to activate those that are scheduled to go into effect. Typically you run this task once a day, to pick up any delegation changes scheduled for that day.

An administrative user with the DelegateApprovalAuthority permission can delegate authority for another user. For example, if a manager leaves the office unexpectedly, an administrator can delegate that manager's authority to another user. When an administrator delegates approval authority, the change takes effect immediately. Delegations that are created by administrators are tracked by the `ThirdPartyDelegation` class.

In Ariba Administrator, administrators with the DelegateApprovalAuthority permission have access to these tasks in the User Manager workspace:

- Create Delegation: Used to create delegations.
- List Delegation: Used to view and undo current delegations.

#### Scoped Delegations in Suite Integrated Systems

Starting in Service Pack 15, in suite integrated systems, you can enable users to assign separate delegatees for procurement and strategic sourcing workflows. If you set the parameter `System.Base.EnableScopedDelegation` to `true`, users who are are authorized to work with both procurement and strategic sourcing will be able to create delegations based on scope. Customers upgrading to SP15 must manually add the parameter to `Parameters.table` in order to use this feature.

### Understanding Escalation and Timeout

Ariba Buyer uses scheduled tasks to handle approvable document escalation and timeout. The scheduled tasks related to approvable document handling are as follows:

| Scheduled Task | Description |
|---|---|
| `EscalateApprovables` | Looks for requests waiting to be approved and escalates those requests up to the approver's immediate supervisor. Before performing the escalation, it sends Notification 17 (Notification of Approaching Escalation) to the original approver.<br><br>Requests are not escalated if the approver has the NoEscalation permission, or if the approver is a role or group. Requests are escalated only to specific users. |
| EscalateTravel Authorizations | Looks for travel authorizations that have not been approved and are approaching the expiration of the travel authorization order quote (reservations made with the travel booking provider) and escalates those requests to the approver's immediate supervisor. Before performing the escalation, a notification message warning of the upcoming escalation is sent to the original approver.<br><br>Requests are not escalated if the approver has the NoEscalation permission, or if the approver is a role or group. Requests are escalated only to specific users. |
| `TimeoutApprovables` | Withdraws requests that have been in Ariba Buyer a specified period of time without being approved. Before doing the timeout, it sends Notification 11 (Notification of Approaching Withdrawal) to the requester and all required approvers, indicating that the request is about to be withdrawn. |

For complete information on these scheduled tasks, and the associated notification messages and permission, see the *Ariba Buyer Configuration Guide*.

## Cross-Partition Approvals

If your configuration includes multiple partitions, approvers can take action on approvable documents from all partitions, regardless of the partition in which they are currently logged in. The exception to this is invoice reconciliations, which cannot be approved cross-partition. Invoice reconciliations are accessible only from the partition in which they are created.

**Note:** When a user logs in to a partition, the approval rules are evaluated relative to that partition. An approval rule might be valid in some partitions, but not in partitions such as Supplier Direct, which have a more limited set of fields and objects available. For this reason, users typically avoid doing approvals in Supplier Direct.

## Performance Considerations for Status Folder

By default, all approvable documents appear in the Status folder for the preparer. In the case of purchase orders, which are created by the system, the preparer is set to the user named as `Application.Base.Data.AribaSystemUser` (usually `aribasystem`). Because this user is not typically someone who logs in regularly, the Status folder can become a performance bottleneck in configurations with a large number of generated orders.

If this becomes an issue in your configuration, you can change the setting of the `System.Procure.AribaNetwork.AddPurchaseOrderToOutBoxOnCreate` parameter in `config/Parameters.table`.

If this parameter is set to `true`, the generated orders are sent to `aribasystem`'s Status folder. If set to `false`, they do not appear in the Status folder and users must set up a Saved Search to retrieve them. Set this parameter to `false` to avoid performance problems with the size of `aribasystem`'s Status folder.

### How to Customize Approval Rules

Approval rules are written in JavaScript. The default configuration provides a default set of approval rules for each approvable document in your configuration. To tailor your configuration to follow your company's business processes, you can modify or extend the rules in the default configuration with your own new JavaScript rules.

To modify or create approval rules, you can use the Rule Editor in Ariba Buyer Administrator, or the `ruleeditor` command.

For information on how to define and adjust the approval rules for any document type, see the *Ariba Spend Management Approval Rules Guide*.

## Navigation Panel Configuration

This section describes how Ariba Buyer determines which links to display on the Navigation Panel, and how to configure the flashing that alerts users to requests pending attention.

You cannot customize or configure the links on the Navigation Panel. Ariba Buyer determines which links to display based on the modules you have installed, and the permissions of the logged-in user.

### Create Links

The Create section of the Navigation Panel contains links for creating requests, such as requisitions, travel and expense requests, and company eForms. For some approvable documents, the link goes directly to that document. For others, the link goes to an additional page that lists the available documents.

**Notes:**

- If a user is logged in under delegation of approval authority, most links on the Navigation Panel are not available. A user can approve requests, but nothing else.
- If the user is logged in to the supplier direct partition, most links are not available. A user can explore folders, but nothing else.

## Approvable Document Deletion

An approvable document is stored in the database and visible to users in folders. Ariba Buyer supports two methods to remove approvable documents:

- A user can *delete* an approvable document. Deleting a document removes it from that user's folders, and from the database.
- An administrator can use appropriate administrative tools to *purge* an approvable document from the database. The purge process archives the data to disk before doing the purge.

This section describes how users can delete approvable documents. For information on purging old data, see Chapter 10, "Data Archiving and Purging."

## Configuring Approvable Document Deletion

In the default configuration, users can delete approvable documents that are in the Composing state, or that have been withdrawn. After a document is submitted for approval, it typically remains in the user's folders, although the user can choose to file the document into a different folder.

You can configure Ariba Buyer to allow users to delete approvable documents with the **Delete** command. The **Delete** command removes the approvable document from an approver's folder, and deletes it.

You can configure when the **Delete** command is available by setting the following parameters:

- To prevent users from deleting approvables that have been withdrawn, set `System.Approvable.AllowDeletionOfWithdrawnApprovables` to `false.`

  If this parameter is set to `true` (the default), users can delete withdrawn approvables.

- To allow users to delete approvable documents even if they have been submitted for approval, set `System.Approvable.AllowDeletionOfNonComposingApprovables` to `true.`

  If this parameter is set to `true`, Ariba Buyer displays a **Delete** command in the Approval, Status, and Watcher folders. In this case, approvers can delete an approvable document after taking action on it. When this parameter is set to `false`, approvers can move an approvable document to another folder after taking action, but cannot delete it.

  Even if this parameter is set to `true`, required approvers must take action (approve or deny) a document before deleting it.

# Chapter 5 Non-English Configurations

This chapter summarizes the steps involved in setting up Ariba Buyer for configurations that do not use English as the primary language or that combine Asian and Western European languages (global instance). It includes the following sections:

Before you begin, check the Ariba Technical Support website at `https://connect.ariba.com` to make sure that your configuration is certified.

For information on known limitations with any configuration, check the *Ariba Buyer Release Guide*.

## Supported Languages

Translations of the user interface are available in the following languages:

- German
- French
- Spanish
- Italian
- Dutch
- Brazilian Portuguese
- Swedish
- Simplified Chinese
- Japanese

User interface translations are provided in the main product and updated in the standard product Service Packs.

**Note:** French Canadian locale users default to the standard French translation.

## Database Character Encodings

In Version 9r1, Ariba Buyer supports only Unicode encoded databases (UTF-8 for Oracle, and DB2 and UCS2 for SQL Server). Latin-1 databases are no longer supported. You cannot migrate from Version 8.2.2 to Version 9r1 with a Latin-1 database. Before migrating from Version 8.2.2 to Version 9r1, you must convert your Latin-1 database to UTF-8 by using the 8.2.2 convertglobalinstance tool. This procedure is not part of the migration process. The converttoglobalinstance tool and document were included with Version 8.2.2. They are not providedwith Version 9r1.

In the default configuration, all default character encodings are set to Unicode and have been tested to ensure that Asian and European languages work together. You can have a global instance that supports Simplified Chinese, Japanese, and European users. For information on the software requirements for a global instance, see the *Ariba Buyer Installation Guide*.

To use Ariba Buyer in a non-English configuration, your Ariba Buyer database and channel repository database must specify appropriate character encodings.You must verify all database character encodings with your database administrator.

▼ **To specify character encodings:**

**1** In `config/Parameters.table`, set the `System.DatabaseSchemas.`*`schema`*`.AribaDBCharset` parameter.

For example, on a Microsoft SQL Server database:

```
AribaDBCharset = UCS2;
```

On an IBM DB2 UDB or Oracle database:

```
AribaDBCharset = UTF8;
```

For a European configuration, make sure that the charset you choose supports Unicode Euro characters.

**2** For your Ariba Buyer database, set the charset for that database as follows:

| Database Type | Charset |
|---|---|
| Oracle | UTF-8 |
| Microsoft SQL Server | Use default setting. For more information, see the *Ariba Spend Management Setup Guide*. |
| IBM DB2 UDB | UTF-8 |

## Data File Encoding

You must modify the comma-separated value (CSV) files used to load data to indicate that the character set used in the data.

▼ **To specify character sets for data:**

Make sure that the first line of all CSV files specify the character encoding used in that file.

For example, CSV files used in Japanese configurations might specify `Shift_JIS` as the character encoding. `EUC_JP` is also a valid encoding for Japanese CSV files.

## Database Parameter

The `config/Parameters.table` parameters used to configure the Ariba Buyer database is:

- `System.DatabaseSchemas`. The value is a nested table, with an entry for each database schema. For example:

  ```
  DatabaseSchemas = {
     DefaultDatabaseSchema = "Schema1";
     Default = {
     ...
     };
     Schema1 = {
     ...
     };
  };
  ```

- The `System.DatabaseSchemas.DefaultDatabaseSchema` parameter specifies the name of the default database schema. By default, this parameter is set to `Schema1`. Ariba Buyer supports only one database schema.
- The `Default` section sets values for parameters that are common to all database schemas. You can override a parameter in the `Default` section for a particular database schema by specifying that parameter in the `System.DatabaseSchemas.<schema>` section for that database schema.
- The `System.DatabaseSchemas.NumberOfDedicatedDatabaseSchemas` parameter specifies the number of database schemas for dedicated use. By default, this parameter is set to 0.
- The `DatabaseConnections` and `OpenStatements` parameters which were located in the `System.Performance` section are now in the `System.DatabaseSchemas` section.
- In Version 9r, there is a database monitor that monitors and manages database connectivity. The database monitor periodically contacts (“pings”) the database to make sure the database is operational. If the database monitor cannot contact the database within a specified number of retries, Ariba Buyer is shut down. The following parameters configure the database monitor:
  - `System.DatabaseSchemas.schema.DatabaseMonitor.PingIntervalInSeconds`
  - `System.DatabaseSchemas.schema.DatabaseMonitor.RetryAttempts`
  - `System.DatabaseSchemas.schema.DatabaseMonitor.RetryIntervalInSeconds`

## Parameters in config/Parameters.table

To configure Ariba Buyer for use in a multilingual configuration, you must verify and possibly change the following parameters:

▼ **To set parameters:**

1 Set `Application.Base.Data.DefaultCurrency` and `System.Base.Data.BaseCurrency` to the preferred or default currency for the partition. For example:

```
DefaultCurrency= JPY;
BaseCurrency=JPY;
```

The value you specify must be a valid currency name in your configuration.

2 Set `Application.Base.Data.DefaultLanguage` to specify the primary or most commonly accessed language for data display.

For example:

```
DefaultLanguage= Japanese;
```

This specifies the language used as a fallback when no translated string that maps to the user's locale is available. If neither the user's language or the default language has an appropriate string, the empty string is used.

Any change to this parameter requires an `initdb`.

3 Verify that `System.Logging.Encoding` is set to UTF-8 (the default value). This setting ensures that log files are generated in UTF-8.

4 Set `System.Base.DefaultLocale` to your preferred locale. The `DefaultLocale` parameter determines which resources are used if resources in a user's preferred locale are not available. For example:

```
DefaultLocale = fr;
```

The value for *`locale`* must be a supported locale, such as those listed in the following table. The default setting is `en_US`.

| Language | Locale |
|---|---|
| BrazilianPortuguese | `pt_BR` |
| Dutch | `nl_NL` |
| US English | `en_US` |
| French | `FR_fr` |
| German | `de_De` |
| Italian | `it_IT` |
| Spanish | `es_ES` |
| Swedish | sv_SE |

5 Set `Application.Base.Data.DefaultOrganicUserLocale, and` `Partition.`*`partition_name`*`.Application.Base.Data.DefaultLocale` to the locale to use for new users. For example, in a Japanese configuration:

```
DefaultOrganicUserLocale = ja_JP;
```

6 Set `Application.Reports.CSVReportsCharset` to specify the character set for CSV reports. For example:

```
CSVReportsCharset= UTF-8;
```

Typical values are UTF-8 and UCS2:

- UTF-8 is identical to US-ASCII for ASCII text. Excel cannot read the generated file if it has any non-ASCII text (accented or Asian).
- UCS2 is different from ASCII and Latin-1, but can be read by Excel. If you choose this character set, you must use Excel's Text Import wizard to tell Excel to use comma delimiters.

7 If you are integrating with SAP, set the parameter `Partitions.`*`sap_partition`*`.Application.Messaging.Channels.Tibco.GlobalProcesses.SAPAdapterLocale` to pass an appropriate locale to SAP. The value is a nested table, listing the operating system where you run the SAP adapter and a valid encoding to be passed to SAP's `setlocale` command. For example:

```
SAPAdapterLocale = { HPUX = ibm-943 }
```

## Considerations for Asian Language Configurations

This section summarizes the configuration specific to Asian language configurations.

For non-ASCII language searches, the default catalog search algorithm in Ariba Buyer uses lexing that breaks words at spaces. For information on the language lexer, see the *Ariba Buyer Catalog Guide*.

### Requirements for Asian Language Support

This section describes requirements for Asian language support. Japanese and Simplified Chinese are the currently supported languages that do not use the Latin-1 character set.

#### UNIX Account Requirements

For new installations on UNIX systems, Ariba Buyer requires that you specify UTF-8 locales to support the global instance. Native language environments are no longer required. The following table shows the appropriate Asian language character encoding for each platform:

| Platform | Encoding |
|---|---|
| HP-UX | `ja_JP.utf8` (Japanese) |
| | `zh_CN.utf8` (Simplified Chinese) |
| IBM AIX | `JA_JP.UTF-8` (Japanese) |
| | `ZH_CN.UTF-8` (Simplified Chinese) |
| Solaris | `ja_JP.UTF-8` (Japanese) |
| | `zh_CN.UTF-8` (Simplified Chinese) |

### Parameter Settings

In `config/Parameters.table`, you must set `AribaDBCharset` to the following values for the specified databases. Japanese language installations encounter problems if these parameters are not specified correctly:

- Microsoft SQL Server: `UCS2`
- Oracle: `UTF8`
- IBM DB2: `UTF8`

The `system integration encoding parametes` in `config/Parameters.table` must always be `UTF-8` for any Japanese or global instance configuration of Ariba Buyer.

## Where to Find Additional Information

Use the following table to locate multilingual and non-English configuration information in other documents in the Ariba Buyer documentation set.

| For information on | See this document |
|---|---|
| DBMS encodings<br><br>Global instance, Japanese-language, or Simplified Chinese-language configurations | *Ariba Buyer Installation Guide* |
| Reloading data from `LoadDBLanguages.txt`<br><br>Tablespace sizes for UTF-8 encoding | *Ariba Spend Management Database Configuration Guide* |
| Localizing logging messages in custom Java code | Legacy version 8.2 *Ariba Spend Management API Guide* available at `https://connect.ariba.com` |
| Catalog hierarchy in multilingual configurations | *Ariba Buyer Catalog Guide* |
| Specifying language resource locations (non-English) for ERP system integrations | *Ariba Spend Management Channels Guide* |
| ERP system-specific multilingual considerations | *Ariba Buyer Oracle Financials Integration Guide*<br><br>*Ariba Buyer PeopleSoft Integration Guide*<br><br>*Ariba Buyer SAP Integration Guide* |
| Language changes in any Ariba Buyer release | Connect web site (`https://connect.ariba.com`) |

# Chapter 6 Notifications

This chapter describes how to configure notifications. It also explains how to enable the email approval feature and customize the content of notification messages.

This chapter includes the following sections:

## Introduction to Notifications

*Notifications* are email messages that Ariba Buyer sends to users and administrators to inform those users of status changes or problems that must be addressed.

For example, if Ariba Buyer encounters problems parsing data while loading charge information, it sends the following notification message to users who have the permission `Level2ChargeLoader`:

```
PR-2.0-1349a-301: Cannot load PCard statements
Problem running adapter (...)
```

Many notification messages include a URL in the body of the notification message. Users can follow these links directly to Ariba Buyer.

## Users Who Receive Notifications

Users receive notification messages when they are involved with an approvable document, or when they have special permissions. This section uses the following terms:

- A *preparer* is the person who fills out and submits a request.
- A *requester* is the user on whose behalf the request is submitted.

  Often the requester and preparer are the same, but not always. For example, if a personal assistant fills out all purchase requisitions for the Technical Publications Manager, then the assistant is the preparer and the Technical Publications Manager is the requester.

- An *approver* is a required approver. Required approvers must either approve or deny the request.
- A *watcher* is an optional approver, who is notified of changes in approval flow but does not have to take action.

### Notification By Permission

Many notification messages are sent to users who have specific permissions. Such notification messages typically reflect administrative notifications, which require intervention from an administrative user such as a Purchasing Agent or Invoice Administrator.

### Notification To Interested Users

Users who are involved with a document (requester, preparer, approvers and watchers) receive notification messages when action is required, and also when there are changes to the approval flow of a document. The following examples illustrate a few situations when notification messages are sent:

- A document is denied or becomes fully approved
- Another user modifies an approvable document
- Another user replies to a comment in an approvable document
- Ariba Buyer automatically withdraws an approvable document
- Ariba Buyer escalates an approvable document to an approver's supervisor
- Expense report receipts are overdue in accounts payable

#### Notifications Received by Requesters

Requesters receive notification messages when the following events occur:

- Someone submits an approvable document on their behalf
- A purchasing card has overdue charges

#### Notifications Received by Watchers

Watchers receive notification messages when the following events occur:

- A user adds them as a watcher to an approvable document
- A user submits an approvable document that they are watching

#### Notifications Received by Approvers and Delegates

Approvers and delegates receive notification messages in situations such as the following:

- An approvable document is submitted (or resubmitted) and requires approval
- Someone withdraws an approvable document
- Ariba Buyer escalates an approvable document to them
- Ariba Buyer is preparing to escalate an approvable document to their supervisor
- Ariba Buyer escalates an approvable document to their supervisor

## User Notification Preferences

From the user interface, users can specify whether they prefer to have notifications send individually, or consolidated together. Users set one set of preferences for requests where they act as approvers, and can set different preferences for situations where they act as watchers.

### Consolidated Notifications

If a user specifies consolidated notifications, notifications to that user are not sent immediately, but are sent by scheduled tasks:

- The `ConsolidatedNotifications` scheduled task groups together notifications to a specific user and sends them out as a unit.
- The `ReceiptNotifier` scheduled task sends out consolidated receipt notification messages to requesters, grouping any pending receipt notification messages together as a unit.

Users always set preferences from the user interface.

### User Notification Preferences by Type of Approvable

The screen for setting notification preferences provides a chooser, showing the approvable documents for which users can set preferences. By setting the `NotificationClassPreferences` field, you can specify whether users can set preferences for a given approvable type individually. If this field is not set, that approvable type is lumped under the choice **Default preferences for all approvable types**.

## Notification Failures

The `FailedDurableEmails` scheduled task is an error-recovery task that retries the sending of notification messages. This task is intended to handle situations where the Simple Mail Transfer Protocol (SMTP) server that Ariba Buyer uses to send notifications goes down.

## Notification Configuration

This section describes how to configure Ariba Buyer to send basic notification messages. It describes the following topics:

- "Locating SMTP Server and Setting Return Address" on page 65
- "Disabling Notifications" on page 66

After you have configured notifications, you can optionally configure an additional feature that lets users approve (or deny) documents by responding to email notification messages. With this feature, called *email approval*, users can approve or deny approvable documents by responding to email notification messages. For information on email approval, see "Email Approval Feature" on page 67.

### Locating SMTP Server and Setting Return Address

To enable basic notification messages, you must configure the following:

- How to reach the SMTP server
- The email address used as the From field on notification messages

### Locating an SMTP Server

Ariba Buyer sends notification messages using a standard Simple Mail Transfer Protocol (SMTP) server on your network. You specify how to reach that SMTP server by setting the following parameters in `config/Parameters.table`:

- `System.Base.SMTPServerName`
- `System.Base.SMTPDomainName`

The `SMTPServerName` parameter can be either a simple host name or it can include the name, depending on your mail server configuration. The `SMTPDomainName` must be your official domain name, and not a nickname. Both parameters are required. For example:

```
SMTPServerName="mailhost.acome.com";
```

```
SMTPDomainName="acme.com";
```

### Configuring the From Address for Notifications

Notification messages sent from Ariba Buyer must have a valid From field. You configure the value in the From field with the following parameters:

- `Application.Base.NotificationFromAddress`
- `Application.Base.NotificationFromNameKey`

The From address has two components: the email address itself, and a user-visible form of the name, which is defined in a resource file because it can potentially be translated. `NotificationFromAddress` specifies the email address and `NotificationFromNameKey` specifies the user-visible name. The value of `NotificationFromAddress` is a string. The value of `NotificationFromNameKey` is the name of a key in the resource file `ariba.server.objectserver.csv`. By default, this parameter is set to `DefaultNotificationFromName`.

For example:

```
NotificationFromAddress="aribasystem@aribaserver.domain.com"
```

```
NotificationFromNameKey="DefaultNotificationFromName"
```

## Disabling Notifications

You cannot completely disable notifications. You can disable one specific notification (that of approval required), and you can configure Ariba Buyer to ignore weekends and holidays when determine the schedule for sending notification messages. This section describes settings you can use for disabling or reducing notifications in specific circumstances.

### Turning Off Approval Notifications

You can turn off some notification messages by specifying the `NoApprovalNotification` permission. This permission turns off notification messages to users when their approval is required. For example, some users might prefer not to receive these notifications, because they are logged in daily anyway.

**Note:** The `NoApprovalNotification` permission applies to approval notification messages only. You cannot turn off other types of notification messages.

### Suppressing Notifications on Weekends and Holidays

You can use the parameter `Application.Base.SkipWeekendsAndHolidays` in `config/Parameters.table` file to specify that scheduled tasks do not send notification messages on weekends and holidays. For example:

```
SkipWeekendsAndHolidays = true;
```

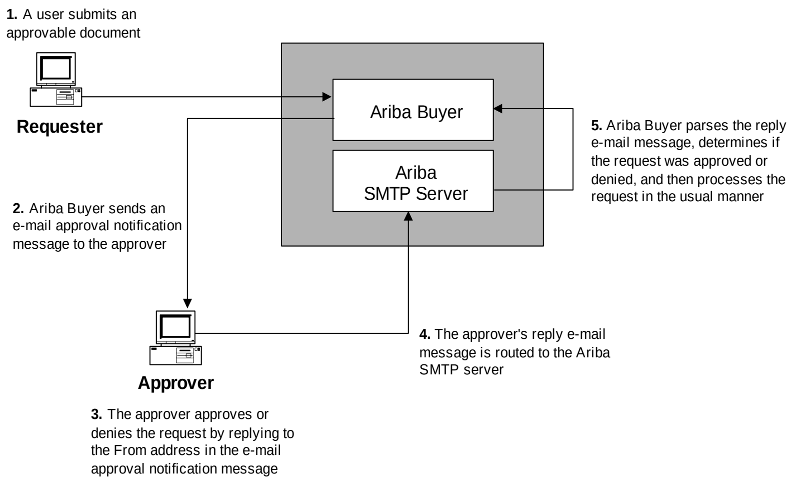
By default, this parameter is set to `true`. Configuring the Content of Notifications

## Email Approval Feature

The email approval feature lets users approve or deny approvable documents by responding to email notification messages directly, without logging in to Ariba Buyer. This section describes how to enable the email approval feature.

## Process Flow

The email approval feature lets users approve or deny approvable documents by responding to email notification messages. The following diagram shows what happens when a user submits an approvable document and email approval is enabled.


**1.** A user submits an approvable document
Requester
Ariba Buyer
Ariba SMTP Server
**5.** Ariba Buyer parses the reply e-mail message, determines if the request was approved or denied, and then processes the request in the usual manner
**2.** Ariba Buyer sends an e-mail approval notification message to the approver
Approver
**4.** The approver's reply e-mail message is routed to the Ariba SMTP server
**3.** The approver approves or denies the request by replying to the From address in the e-mail approval notification message

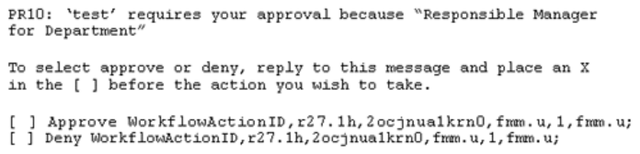
The following text describes each step in the diagram in more detail.

**1** A user submits an approvable document in Ariba Buyer.

**2** Ariba Buyer uses an SMTP server to send an outgoing email approval notification message to the first approver in the approval flow for the approvable document.

**3** The approver responds to the email approval notification message by marking an Approve or Deny check box, or by clicking an Approve or Deny `mailto:` link.

The following example shows an email approval notification message that contains Approve and Deny check boxes:

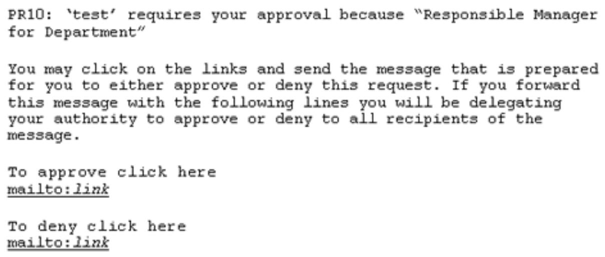


```
PR10: 'test' requires your approval because "Responsible Manager
for Department"

To select approve or deny, reply to this message and place an X
in the [ ] before the action you wish to take.

[ ] Approve WorkflowActionID,r27.1h,2ocjnua1krn0,fmm.u,1,fmm.u;
[ ] Deny WorkflowActionID,r27.1h,2ocjnua1krn0,fmm.u,1,fmm.u;
```

The next example shows an email approval notification message that contains Approve and Deny `mailto:` links:



```
PR10: 'test' requires your approval because "Responsible Manager
for Department"

You may click on the links and send the message that is prepared
for you to either approve or deny this request. If you forward
this message with the following lines you will be delegating
your authority to approve or deny to all recipients of the
message.

To approve click here
mailto:link

To deny click here
mailto:link
```

When the approver replies, the response is routed to an address on the internal SMTP server. The address is specified by the following parameter:

`System.Base.EmailApprovalReplyTo`

4 The Ariba SMTP server redirects the approver's reply to Ariba Buyer.

Ariba Buyer parses the reply, determines if the request was approved or denied, and then processes the approvable document in the usual manner.

### When Approval Notifications are Forwarded

Forwarding an email approval notification message delegates the authority to approve or deny the request to all recipients of the message. To respond, the new approver must manually correct the To: field so that the reply goes to Ariba Buyer and not to the user who forwarded the message.

When an email approval notification message is forwarded, the approval flow diagram still shows the original approver, not the delegated approver. The email approval feature does not allow users to add or delete approvers, or to change approvers in the approval flow.

### When the First Approver Must Supply Content

For some approvable documents, such as invoice reconciliations and purchasing card reconciliations, the first approver must supply content to finish filling out the approvable document. For example, on a purchasing card reconciliation, the first approver must add line item adjustments to be sure the numbers balance.

For such approvable documents, the first approver cannot use email approval, because the user is required to log in to Ariba Buyer. For such documents, the notification sent to the first approver does not include the Approve and Deny checkboxes or `mailto:` links.

After the first approver completes the approvable document and submits it, all subsequent approvers receive email notification messages that contain Approve and Deny checkboxes or `mailto:` links.

**Note:** In the case of receipts, which also require action from the first approver, the first notification is sent by the ReceiptNotifier scheduled task based on the due on date of the receipt. This task can also include a configured delay.

## Email Approval Configuration

This section describes how to set up an internal SMTP server and set all available options for email approval.

**Note:** The following procedure assumes you have configured basic notification. For more information, see "Notification Configuration" on page 65.

▼ **To set up the email approval feature:**

1 Specify the following parameter settings in `config/Parameters.table`:

- Set the `System.Base.SMTPServerNameList` parameter to an appropriate value. It can be a simple host name or it can include the name (depending on your mail server configuration). For example:

  ```
  SMTPServerNameList = devmail.ariba.com;
  ```

- Set `System.Base.SMTPDomainName` to the domain name. It must be the actual domain name and not a nick name. For example:

  ```
  SMTPDomainName = ariba.com;
  ```

- Set `System.Base.EmailApprovalEnabled` to `true`.

- Set `System.Nodes.NodesDefault.LocalSMTPServerPort` = *`port`*, where *`port`* is the port number you want to use for the SMTP server. You can override the default port value on any local node by setting a node-specific value for this port, for example, 9090. The default port number is 25.

  **Note:** If you are running Ariba Buyer on UNIX, be aware that some UNIX systems servers require root access to use reserved ports (port numbers less than 1024). On such a UNIX system, you cannot use port 25 unless your application server is running as root.

- For each node where you want to run the SMTP server, set `System.Base.`*`nodeName`*`.ServerRole` to include the `SMTPServer` server role. For example:

  ```
  System = {
      Nodes = {
         Node1 = {
              ServerRole = ( SMTPServer );
            ....
         }
  }
  ```

- Set the `System.Base.EmailApprovalReplyTo` parameter to the name of an account on your Ariba Buyer computer that can receive email messages. For example:

  ```
  EmailApprovalReplyTo = "approve@aribaserver.domain.com"
  ```

  This is the email address that receives replies to email approval notification messages. It must be a valid account on the computer hosting your primary node. Email messages sent to this account go directly to Ariba Buyer, not to an actual user.

  **Note:** Your IT department must set up the email router to route emails from the users' email accounts to the `aribaserver` host machine (`aribaserver.`*`domain`*`.com`). They must change the email server/gateway/router settings so that the emails are routed back to the `aribaserver` machine.

- Set `System.Base.EmailApprovalMailToLink.` Set the parameter to `true` if you want email approval notification messages to include `mailto:` links. Set it to `false` to have users select an Approve or Deny check box.
- Set `System.Base.EmailApprovalIncludeComment` to `true` to have email approval notification messages include a comments section.
- Set the `System.Base.AdministratorEmailAddress` parameter to the email address of an administrator who can assist users with problems arising from email approvals. For example:

  `AdministratorEmailAddress = “admin@`*`domain`*`.com”;`

  This address must be the address of a real user, using your domain.

**2** **(This step applies only to email approval configuration on Windows. For UNIX installations, go directly to step 3.)** Setup email approval as shown in the following sample configuration, which uses an email server example named `devmail.ariba.com`:

```
SMTPDomainName = ariba.com;
SMTPServerNameList = ( devmail.ariba.com );
SMTPAddressBCC = "";
SMTPAddressRedirect = "user1@devmail.ariba.com";
LocalSMTPServerPort = 25;
EmailApprovalEnabled = true;
EmailApprovalIncludeComment = true;
EmailApprovalReplyTo = "approval@user1.ariba.com";
```

As this example uses an alternate email server (`devmail.ariba.com`), a new user account must be created on it and an email client must be set up to send and recive emails to this email server. Your IT department can set up this account on the email server.

In this example, the email approval flow is as follows:

**a** The email server (`devmail.ariba.com`) receives outgoing emails from the Ariba Buyer server and delivers it to `user1@devmail.ariba.com`.

**b** User `user1` responds to the email , approves or denies the request, and replies to `approval@user1.ariba.com`.

**c** `devmail.ariba.com` delivers the email sent to the address `approval@user1.ariba.com` to the server running on `user1.ariba.com`.

**d** Ariba Buyer server processes the email and approves or denies the request.

**Note:** If you are configuring the Ariba SMTP server to use the port 25, then make sure the Micorosft SMTP server that comes with IIS is not running, because it runs on port 25. If this is not done, Ariba SMTP server will not start properly and emails will not reach the server.

**After this step, go directly to step 6 to continue with the email approval configuration.**

**3** Define an alias in `/etc/aliases` that redirects approval emails to the `redirectemail` command. You can install this command on any UNIX computer serving as an SMTP server. Edit `/etc/aliases` so the email account for email approvals points to the `redirectemail` command on your Ariba Buyer instance. The syntax is:

*`username`*`: "|`*`BuyerServerRoot`*`/bin/redirectemail `*`server port name`*`"`

where *`username`* is the username in the `EmailApprovalReplyTo` parameter, host is your host name, and *`port`* is the port where you are running the SMTP daemon. For example:

```
approve: "| /opt/ariba/app/buyer/Server/bin/redirectemail buck 9090 approve"
```

**4** Run `/usr/bin/newaliases` to update your aliases.

**5** Make sure that the `PATH` setting for `redirectemail` includes the default bin directory for your shell, for example, `/usr/bin.` If the path is not set by default in environment variables you can edit the `redirectemail` command to set `PATH` correctly. For example, you can add the following line to extend the existing definition of $`PATH`:

```
PATH=/usr/bin:/bin:$PATH;export PATH
```

**6** If you have installed Ariba Buyer 9r1 Service Pack 9 or later, consider increasing the maximum allowable size of approval emails (including attachments) using the parameter `System.Base.DurableEmail.MaxMailSizeInBytes`. The default is 100,000 bytes (100 KB), which is smaller than ideal for PDA users.

**7** Restart Ariba Buyer to apply your changes.

**Note:** If you want to install the `redirectemail` command on a computer other than your Ariba Buyer computer, you must do the following:

- Choose the files appropriate to your OS platform from the following list, and copy only those files from the *BuyerServerRoot*/`Server` directory to a directory on the computer where you want to install the SMTP `redirectemail` command—for example, the `/home/ariba` directory. When copying, preserve the ownership and permissions of the original files.

```
./bin/redirectemail
./bin/redirectemail.pl
./bin/runperl
./bin/HP-UX/perl
./bin/Solaris/perl
./bin/AIX/perl
./classes/ariba.util.core.zip
./classes/ariba.util.net.zip
./classes/jakarta-oro-2.0.jar
./classes/classpath.txt
```

- Similarly, choose the directories appropriate to your OS platform from the following list, and copy the entire directories, preserving the ownership and permissions of the original files:

```
lib/perl
lib/HP-UX
lib/Solaris
lib/AIX
./3rdParty/jre/HP-UX/1.3.1
./3rdParty/jre/Solaris /1.3.1
./3rdParty/jre/AIX/1.3.1
```

See the following additional parameters for setting up the email approval feature:

- `System.Base.EmailApprovalAudit`
- `System.Base.EmailApprovalAutoReject`
- `System.Base.EmailApprovalAutoRejectAudit`
- `System.Base.EmailApprovalAutoRejectNotification`

## System.Base.EmailApprovalAudit

A Boolean value that specifies whether incoming approval emails are tracked. This parameter applies only if you enabled the email approval feature by setting `System.Base.EmailApprovalEnabled` to Yes. If the value of `System.Base.EmailApprovalAudit` is Yes, the application keeps a record of all approval emails.

The default value is No.

### System.Base.EmailApprovalAutoReject

A Boolean value that specifies whether the sender of an incoming approval email is checked against the recipient of the original approval request. This parameter applies only if you enabled the email approval feature by setting `System.Base.EmailApprovalEnabled` to Yes. If the value of `System.Base.EmailApprovalAutoReject` is Yes, when the sender of the approval email does not match the recipient of the approval request, the application rejects the approval. This prevents the acceptance of approvals from users to whom the approval request was forwarded.

The default value is No.

### System.Base.EmailApprovalAutoRejectAudit

A Boolean value that determines whether auto-rejected approval emails are tracked. This parameter applies only if you enabled email approvals and auto-rejection of email approvals, by setting `System.Base.EmailApprovalEnabled` and `System.Base.EmailApprovalAutoReject` to Yes. If the value of `Application.Base.EmailApprovalAudit` is Yes, the application keeps a record of all auto-rejected approval emails.

The default value is No.

### System.Base.EmailApprovalAutoRejectNotification

A Boolean value that specifies whether notification of an auto-rejected approval email is sent to the recipient of the approval request. This parameter applies only if you enabled email approvals and auto-rejection of email approvals, by setting the parameters `System.Base.EmailApprovalEnabled` and `System.Base.EmailApprovalAutoReject` to Yes. If `System.Base.EmailApprovalAutoRejectNotification` is set to Yes, the user to whom the approval request was sent receives a notification about the rejection.

The default value is No.

## Troubleshooting Replies with Bad Characters

If approval reply messages from some locales contain garbage characters, it may be because the international characters in the `mailto:` link were not correctly encoded by the web browser or email client application. Incorrect encoding causes the subject and body of the reply to contain incorrect information. For the `mailto:` link to function correctly, UTF-8 encoding should be used. Some web browsers and email client applications do not use UTF-8 automatically.

Ariba Buyer 9r1 Service Pack 10 introduced a new system parameter for setting `mailto:` link encoding. The new parameter, `System.Base.EmailApprovalMailToLinkEncoding`, should be set to UTF8 to correct the issue. Access the parameter in the `config/Parameters.table` file. (If you are not experiencing this issue, you do not need to make any changes.)

If you upgraded to Service Pack 10 from a previous release of Ariba Buyer 9r1, you must manually add this parameter to your `config/Parameters.table` file before you can use it. The `Parameters.table` entry for `System.Base.EmailApprovalMailToLinkEncoding` should look similar to this:

```
System = {
   Base = {
     EmailApprovalMailToLinkEncoding = UTF-8;
              };
         }
```

## Customizing HTML-Format Notifications for Approvables

By default, the preferred format for email notifications is HTML. The format is determined by the parameter Application.Base.PreferredEmailFormat.

Ariba Buyer uses simple HTML template files to generate the HTML content of email notifications sent out for approvable documents. By default, Ariba Buyer includes standard email templates for most approvable types and notification events.

The following sections explain how you can customize the templates and wording or develop new templates based on the features supported by the template parsing engine:

- "What Can Be Changed in Email Notifications" on page 73
- "Location of Email Templates" on page 73
- "Modifying the Wording of Emails" on page 74
- "Modifying Email Templates Using Tags" on page 74
- "Images and CSS" on page 77
- "Generic and Consolidated Templates" on page 77
- "Adding New Templates" on page 78
- "Email Template Parsing Engine and Formatter" on page 78

### What Can Be Changed in Email Notifications

You can customize the appearance of notification email, including what information each contains, and notification wording. The appearance of each notification is controlled by its HTML notification email template. These templates are located in the directory discussed in the section "Location of Email Templates" on page 73.

### Location of Email Templates

Email templates for different types of approvable documents are stored in the following directory:

`*BuyerServerRoot*/ariba/resource/*locale*/templates/email`

Each approvable type directory consists of templates for various notification actions. The `common` directory contains templates that you can reuse by including them in other templates. Examples of common templates include the header template, generic template, and consolidated template.

**Note:** You should never modify the templates in the directory *BuyerServerRoot*`/ariba/resource/`*locale*`/templates/email`. If you want to customize the email templates, copy the `email` directory to *BuyerServerRoot*`/config/resource/`*locale*`/templates/email`, and make the modifications to the copied files.

You can modify copies of the respective templates to specify the sections that you want to have appear in the notification for each approvable document type. For example, to customize the requisition approval notification, you modify the following template:
`/config/resource/en_US/templates/email/requisition/requisitionapprove.htm`

The template mapping file, *BuyerServerRoot*`/config/EmailSimpleTemplate.table`, specifies which template to use for each approvable type and notification action.

## Modifying the Wording of Emails

The wording of each email is made up of a combination of the email templates and the information pulled into them from a resource CSV file. To make changes to the wording in a particular email, you must change the wording in the referenced CSV file.

In the default configuration, email templates reference the following string resource file:

*BuyerServerRoot*/ariba/resource/*locale*/strings/ariba.htmlemail.csv

**Note:** You should never modify the strings in the directory *BBuyerServerRoot*/ariba/resource/*locale*/strings/ariba.htmlemail.csv. If you want to customize the email strings, copy the ariba.htmlemail.csv file to *BuyerServerRoot*/config/resource/*locale*/strings, and make the modifications to the copied files.

## Modifying Email Templates Using Tags

The HTML email template parsing engine parses through the email templates and replaces tags (for example, tags that indicate string content) with dynamic content. This section describes the tags that are supported. You can use the tags to customize email notifications.

### Localization of Static Strings

Static strings used in the email templates can be tagged as resource lookups for easy localization. The default template parsing engine supports resource key lookup in the same way as the application. The resource table file located under appropriate locale contains the required key/value pair for the resource being looked up.

All resource string lookups must be placed in the @@@*sometable*/*resourcekey*@@ tag, where *sometable* represents a resource lookup file such as ariba.htmlemail.csv, and *resourcekey* identifies the string to look up within that file. In the default configuration, static string references are in the ariba.htmlemail.csv resource file under the en_US locale. All templates refer to this file for any static string reference.

For example, on encountering the following resource key lookup tag in a template:

```
@@@ariba.htmlemail/TotalCost@@
```

the parsing engine searches for the resource file ariba.htmlemail.csv under the appropriate locale directory, looks up the TotalCost key in the file, and replaces the tag with the localized value string from the file.

For example, if user locale is fr_FR, and the system default locale is ja_JP, the sequence of the *locale* directory look up is:

fr_FR, fr, ja_JP, ja, en, en_US

Users can add to the ariba.htmlemail.csv file in the appropriate locale for the above tag to work.

To add a localized template for a default notification, you must put the template (as indicated in the config/EmailSimpleTemplate.table configuration file) into the appropriate directory under *BuyerServerRoot*/config/resource/*locale*/templates/email/. For example, to localize header.htm for the fr_FR locale, put the updated header.htm file in the directory *BuyerServerRoot*/config/resource/fr/templates/email/common/.

### Web Server Resources

Resources that are served from the web server—for example, images and CSS files—must be tagged using the `@@Resource@@` tag.

For example, `@@Resource=template/images/test.gif@@` will be replaced by actual HTTP HREF string pointing to the image file `test.gif`.

### Variables

All variables must be wrapped with `@@`. These tags are replaced with dynamic content pulled from the underlying business object, an approvable object.

For example, to specify the requester's unique name, use the following:

```
@@Requester.UniqueName@@
```

All variables must start from the approvable object you are working with. For example, if you are working with a requisition email, every variable must originate from the Requisition object. Use dot notation to indicate multiple levels down from the approvable object. For example, to specify the requester's address information, use the following:

```
@@Requester.ShipTo.Lines@@
```

### Vectors

Vector declarations must adhere to the following rules:

- Each vector must start with `StartVector<KEY>` and end with `EndVector<KEY>`.
- `<KEY>` can be any number, character, or combination of both. It distinguishes the starting and ending points of a vector when sub-vectors are declared within it.
- Each vector must reference the vector object with `=<FieldName>`.

For example, to specify information from the `LineItems` vector on a requisition, use the following:

```
@@StartVector1=LineItems@@
….
@@EndVector1@@
```

All code within the vector tags will be repeated for each vector item. For example, for a requisition with five line items, the following code produces a table with five rows, one for each line item in the `LineItems` vector:

```
<table border=1>
@@StartVector1=LineItems@@
  <TR class=tableRow2>
    <TD>@@NumberInCollection@@</TD>
  </TR>
@@EndVector1=LineItems@@
</table>
```

### Conditional Statements

The default template engine supports conditional inclusions using the `@@ifdef@@` tags.

The following example includes of a block of template code under the condition that the underlying approvable is in Approved state:

```
@@ifdef=isApproved@@
   <span class="brandDkText">@@DFL.LastModified@@</span><br/>
   <span class="approved">@@DerivedApprovalState@@</span> by @@ApprovedBy.Name.PrimaryString@@
@@endifdef@@
```

The condition checking happens when the formatter implements the `checkCondition` method of the formatter interface. The engine resolves the call by looking for the corresponding method name (in this example, `isApproved`) and returning a Boolean value, `true` or `false`. The engine then includes the code block between `@@ifdef@@` and `@@endifdef@@` tags of the template.

### Include Statements

Reuse of existing templates helps in designing new templates quickly and allows for a consistent look and feel across different templates. The default template engine provides support for inclusion of component templates from within other templates using the `@@Include@@` tag.

For example, you could include a set of action buttons in a reusable template, `buttons.html`. You can then use these action buttons in any other template without having to repeat the template code. Also, if you make changes to the look and feel of the buttons, all the templates that include the buttons get the new look and feel. To include the button template within a separate template called `requisitionapprove.html`, embed the following snippet in the `requisitionapprove.html` file:

```
@@Include=buttons.htm@@
```

### Date Formats

To indicate date format, use the tags `@@DFS` (short format) and `@@DFL` (long format). For example, the following code displays the `Comments.Date` field in the long date format:

```
 @@StartVector5=Comments@@
   <div id="reply3"><span class="brandDkText">@@DFL.Date@@</span><br />
```

The long and short date formats are governed by following resource keys in the `resource.date.csv` file:

- Long date format: `LongDayDateMonthYearFmt` (EEEE, MMMM d, yyyy)
- Short Date format: `HourMinuteAMPM + LongDayDateMonthYearFmt` (h:mm a EEEE, MMMM d, yyyy)

### Functions

You can use functions in combination with variables and vectors when simple object references are not sufficient. For example, printing the requester's name cannot be achieved with `@@Requester.Name@@` because `Name` is of the type MultiLingualString.

A function is always preceded with `FCN`. For example, the function to get the requester's name is `FCN.getMyName()`. Along with the `Requester` variable, the complete reference is:

```
@@Requester.FCN.getMyName()@@
```

A function can be standalone, or you can combine it with variables or vectors, for example:

```
@@StartVector1=FCN.getCurrentChanges()@@
```

`@@FCN.getResourceURL()@@` is a standalone function that returns the value for the parameter `System.Base.ResourceURL`.

When the parser encounters `FCN` while parsing a variable, it makes a call to the `FunctionCallMap()` method of the `<Formatter>` class, with the approvable as the argument. `FunctionCallMap()` checks whether the function name exists within the mapping method. If the function name exists, a call is made to the appropriate method corresponding to the function call. If the function name does not exist, an empty string is returned.

To add a new function, follow these basic steps:

1 Add more function calls to `AribaSimpleTemplateFormatter`.

2 Create a new formatter that extends from `CommonSimpleTemplateFormatter`.

3 Create a new formatter that implements `SimpleTemplateFormatter`. In this case, you specify the formatter in the parameter `System.Base.EmailSimpleTemplateFormatter`.

For information about the email template parsing engine and formatter, see "Email Template Parsing Engine and Formatter" on page 78.

## Images and CSS

Customized email templates can potentially use links to any images or CSS files. In the default configuration, images and CSS files are located in the following directory:

*BuyerWebComponents*`/images/email/`

The style sheet file `email.css` contains various styles used by the out of the box email sample. You can add more styles to this file and use them in your templates.

## Generic and Consolidated Templates

### Generic Email Template

The following entry indicates a generic template (`generic.htm`), used when there is no entry specified for a particular approval type. For example, if there is no entry for receipts in the `EmailSimpleTemplate.table` configuration file, the default generic template is used to send the HTML email.

```
Default = {
  Subject = "@@@ariba.htmlemail/Notification@@: @@UniqueName@@ - @@Name@@";
  Body = "templates/email/common/generic.htm";
};
```

### Consolidated Email Template

The following entry indicates the template `consolidated.htm`, used for sending consolidated email to users who have set their preferences to receive consolidated (summary) email notifications.

```
Consolidation = {
   Body = "templates/email/common/consolidated.htm";
};
```

## Adding New Templates

The `config/EmailSimpleTemplate.table` configuration file contains the mapping between approvable types and notification events. The format of this file is fixed. Do not change it.

For example, the following entry in this configuration file indicates that the engine uses the `requisitionpushfail.htm` file under `WebComponents/config/resource/`*`locale`*`/templates/email/requisition/` for all ERPPushFailed notification events for requisitions:

```
ariba.procure.core.Requisition = {
Email =
   {
   ERPPushFail = {
      Subject = "@@@ariba.htmlemail/ActionRequired@@: @@UniqueName@@ - @@Name@@
      (@@@ariba.htmlemail/ERPPushFailed@@)";
                     Body = "templates/email/requisition/requisitionpushfail.htm";
   };
```

▼ **To add a new template:**

1 Create an entry in the `config/EmailSimpleTemplate.table` file for the required approval type following the format shown in the preceding example.

2 Create the corresponding template file using the supported tags and object model.

3 Restart the server to use the new template.

## Email Template Parsing Engine and Formatter

The following system parameters indicate the template parsing engine and formatter used.

- `System.Base.EmailSimpleTemplateEngine` determines the template engine. The value of this parameter is `ariba.htmlui.htmlemail.AribaEmailSimpleTemplateEngine`.
- `System.Base.EmailSimpleTemplateFormatter` determines the template formatter. The value of this parameter is `ariba.htmlui.htmlemail.AribaSimpleTemplateFormatter`.

The engine and formatter are Java classes. You can extend them by downloading and unzipping the following file:

*`BuyerServerRoot`*`/classes/ariba.buyer.mainui.zip`

In the ZIP file, the following files are under `ariba/htmlui/htmlemail`:

- `AribaEmailSimpleTemplateEngine.class`: The template engine that retrieves the template and formatter and generates the HTML email notification.

- `SimpleTemplateFormatter.class`: An interface that defines what a formatter does: mainly resolves function calls that fetches dynamic data used by the template. You can write your own formatter by implementing this interface. Alternatively, you can extend the default formatters described below.
- `CommonSimpleTemplateFormatter.class`: An abstract class that implements the SimpleTemplateFormatter interface. This class addresses function calls for most basic data, such as user name and partition.
- `AribaSimpleTemplateFormatter.class`: Extends the CommonSimpleTemplateFormatter. Contains more function calls to make sample HTML templates work. This is the default formatter.
- `EmailTemplatesCache.class`: A simple aging cache that holds various referenced templates in memory, allowing for faster email generation.

## Customizing Text-Format Notifications for Approvables

If the parameter Application.Base.PreferredEmailFormat is set to Text instead of HTML, use the instructions in this section to customize email notifications.

For each outgoing notification message, Ariba Buyer formats the message dynamically, using text as the output format. You can customize the content of the notification messages, much as you can customize the content of printed output.

Ariba Buyer lays out each notification message as a collection of distinct sections. During customization and configuration, you can include or exclude any of these sections, per approvable. For any section you choose to include, you can further tailor the content of that section by adding or removing fields from groups.

### Configuring Sections of Notification Messages

For each approvable document type, you specify the sections that you want to have appear in the notification message.

The sections of notification messages are as follows:

- ApprovableDetails
- ApprovableSummary
- ApprovalFlow
- Comments
- History
- WebJumper

You specify which sections to include by setting appropriate fields in `ApprovableType.csv` file. (For information, see "ApprovableTypePull Integration Event" on page 46.) Within the ApprovableDetails and ApprovableSummary sections, you can do further customizations by adding or removing fields from groups.

## Groups For Customizing the Header

To customize the header section of a notification message, you use groups whose name is formed by appending “PrintText” to the approvable name: `<Approvable>PrintText.` For example:

```
<group name="Level2ChargePrintText">
    <groupClass name="ariba.l2charge.core.Level2Charge">
        <groupField name="PCardNumber"/>
        <groupField name="TransactionDate"/>
        <groupField name="MerchantName"/>
        <groupField name="OrderNumber"/>
    </groupClass>
</group>
```

## Groups For Customizing the Line Items

To customize the line items section of a notification message related to a requisition, you use the following groups:

- `LineItemPrintTextDetails`
- `LineItemPrintTextSummary`

For example:

```
<group name="LineItemPrintTextDetails">
    <groupClass name "ariba.procure.core.ProcureLineItem">
        <groupClassVariant name="myVariant">
            <groupField name="TaxCode.Name"/>
        </groupClassVariant>
    </groupClass>
</group>
```

To customize the details of split line item accounting, you use these groups:

- `SplitLineItemPrintTextSummary`
- `SplitLineItemPrintTextDetails`

# Chapter 7 Passwords

This chapter describes how to configure Ariba Buyer to authenticate users by checking login credentials, such as passwords. It includes the following sections:

## Introduction to Password Adapters

When a user logs in, Ariba Buyer authenticates that user by checking the login credentials specified on the login screen. The credentials on the login screen are passed to a password adapter, which verifies those credentials against a data source.

The most common login credential is a password, but different password adapters can require different credentials. For example, the NT Domain Login adapter validates Ariba Buyer users using credentials from an NT Domain system, including both a password and an NT domain.

### Default Password Adapters

To set up your configuration, you define one or more password adapters, as appropriate for your configuration. The default configuration supplies the following password adapter implementations:

| Adapter | How It Works |
|---|---|
| Crypt Database Password Adapter | Authenticates buyer users using passwords loaded into the database from a password file. |
| SAP Password Adapter | Authenticates using credentials from an SAP system. |
| NT Domain Login Adapter | Verifies passwords and domain against an NT Lan Manager authentication source, using the Win32 API LogonUser. |
| External Authentication Password Adapter | Verifies password credentials against an external authentication server. Typically you use this adapter to access an NTDomainLogin Password Adapter running a service on a remote Windows server. |
| No Authentication Password Adapter | Always lets users log in, with no authentication credentials. Appropriate only for development or test instances. |

Depending on your business requirements, you can use any or all of these implementations. For specialized requirements, you can also implement a custom password adapter, in Java. For information on writing custom password adapters, refer to the 8.2 *Ariba Spend Management API Guide*.

Every Ariba Buyer configuration also defines the following password adapters:

- `AribaSupplierNetworkUser`
- `SourcingSupplierUser`

`AribaSupplierNetworkUser` is used for Ariba Network users who have already been authenticated by Ariba Network. `SourcingSupplierUser` is used for supplier users authenticated by Ariba Sourcing.

These values are defined internally, and do not appear in `config/Parameters.table`. The password adapters are visible in the PasswordAdapter chooser in Ariba Administrator, and also in notification URLs.

## Authentication of External Users

Ariba Buyer also uses password adapters to authenticate external users who punch in to Ariba Buyer to use specific features. For example, supplier users can punch in to Ariba Buyer to do collaborative invoicing. For information on how to configure Ariba Buyer for users who are logging in from other applications, see the version 8.2 *Ariba Spend Management API Guide* legacy document which is available on `https://connect.ariba.com`.

Ariba Buyer also provides a sample feature called *Single SignOn*, which illustrates how to authenticate users just once, instead of requiring users to log in each time they use Ariba Buyer. For information on the Single SignOn feature and the password adapter that it uses, see Chapter 14, *Single Sign-On with Corporate Authentication* and the `README.txt` file in `sample/auth/SingleSignOn`.

## Password Update and Password Expiration

The implementation of a password adapter specifies whether that password adapter supports *password updates* and/or *password expiration*.

If the password adapter supports updates, users can change their password from the User Preferences screens. If the password adapter does not support updates, these screens are not accessible to users. For example, in the default configuration, the Crypt Database Password Adapter supports updates but the NT Domain Login Adapter does not.

If the password adapter supports password expiration, users are required to update their passwords on a regular basis.

This chapter describes the default behavior of the standard implementations. For information on how to modify the Java implementation of a password adapter to change its behavior for password updates or password expiration, see the version 8.2 *Ariba Spend Management API Guide* legacy document which is available on `https://connect.ariba.com`.

## Password Adapter Configuration

To configure password adapters in your configuration, you define all available password adapters in `config/Parameters.table` and create login URLs that indicate which password adapter to use for authenticating users as they log in and log out.

### Defining Available Password Adapters

You use the parameter `System.PasswordAdapters` to define the set of available password adapters in your configuration. The value of this parameter is a nested table, with entries for each possible password adapter. For example:

```
System = {
  ....
    PasswordAdapters = {
         PasswordAdapter1 = {
            AllowNoPasswordExpirationPermission = true;
            ClassName =
             "ariba.auth.password.CryptDBPasswordAdapter";
            Enabled = true;
            LegacyPasswordCheck = true;
            OrganicPasswordGrowth = true;
            PasswordExpireLimit = 90;
            PasswordFile = "passwd.txt";
            MaxPasswordLength = 16;
            MinPasswordLength = 4;
            MaxLoginAttemptAllowed = 3;
            LockoutPeriodInMinutes = 120;
            MaxAnswerAttemptAllowed = 5;
            MinQuestionLength = 5;
            MinAnswerLength = 5;
            PasswordTokenExpirationPeriodInHours = 24;
            MatchPasswordPatternEnabled = true;
         }
         PasswordAdapter2 = {
            ClassName = "ariba.sap.server.SAPPasswordAdapter";
            Enabled=false;
         };
         PasswordAdapter3 = {
            ClassName =            "ariba.auth.external.client.ExternalAuthPasswordAdapter";
            Enabled=false;
            ExternalPasswordAdapterHost = "localhost";
            ExternalPasswordAdapterPort = 8090;
         }
         PasswordAdapter4 = {
            ClassName =
                 "ariba.auth.password.NTDomainLoginAdapter";
            Enabled=true;
         };
         PasswordAdapter5 = {
            ClassName = "ariba.auth.core.NoAuthenticationPasswordAdapter";
            Enabled=false;
         };
    }
}
```

The `Enabled` parameter indicates whether the password adapter is initialized and in use. To enable or disable a specific password adapter in your configuration, change the value of this parameter.

For information on how to implement a custom password adapter, in Java, see the legacy version 8.2 *Ariba Spend Management API Guide* available at `https://connect.ariba.com`.

## Specifying an Adapter During Login

If your configuration uses multiple password adapters, you must set up Ariba Buyer login URLs so that users are authenticated with the correct password adapter when they log in. You set up login links to different password adapters by including a password adapter as a parameter to the URL.

The following example shows how to include the password adapter on the Ariba Buyer login URL:

```
http://myserver/Buyer/Main/ad/webjumper?passwordadapter=PasswordAdapter1
```

The value you supply for the `passwordadapter` argument is the name of a password adapter, as defined in the `System.PasswordAdapter` entry in `config/Parameters.table`.

## Setting the URL For Logout

When a user logs out from Ariba Buyer, the browser returns to a login URL. You specify the ‘return’ URL with the parameter `System.UI.LogoutDestinationURL`.

If this parameter is not set, or is set to an empty string, users return to the login URL specified at login, including the `passwordadapter` argument, if any. If this parameter is set to a URL, users return to the specified value.

For example, suppose a user logs into Ariba Buyer using the password adapter `PasswordAdapter1`:

```
http://myserver/Buyer/Main/ad/webjumper?passwordadapter=PasswordAdapter1
```

If `LogoutDestinationURL` is empty, the user is returned to this URL, including the `passwordadapter`, after logging out.

If `LogoutDestinationURL` is set to a value, such as `http://myserver.mycompany.com/Buyer/Main`, the password adapter information is discarded and the user is taken to the specified URL on logout.

## Hiding the Forgotten Password Link

In Service Pack 5 and later, you can hide the forgotten password link on the login page for users with specific password adapters. To hide the forgotten password link, set the parameter `System.PasswordAdapters.pwadapter.ShowLoginHelp` to false for the password adapter value for which you want to hide the link.

## Crypt Database Password Adapter

The Crypt Database Password Adapter reads passwords from a text file. It initially loads passwords from the password file to the database during database initialization.

In the default configuration, the Crypt Database Password Adapter is defined as follows:

```
PasswordAdapter1= {
    AllowNoPasswordExpirationPermission = true;
    ClassName = "ariba.auth.password.CryptDBPasswordAdapter";
    Enabled = true;
    LegacyPasswordCheck = true;
    OrganicPasswordGrowth = true;
    PasswordExpireLimit = 0;
    PasswordFile = "passwd.txt";
    MaxPasswordLength = 16;
    MinPasswordLength = 4;
    MaxLoginAttemptAllowed = 3;
    LockoutPeriodInMinutes = 120;
    MaxAnswerAttemptAllowed = 5;
    MinQuestionLength = 5;
    MinAnswerLength = 5;
    PasswordTokenExpirationPeriodInHours = 24;
    MatchPasswordPatternEnabled = true;

};
```

### Parameters

The Crypt Database Password Adapter recognizes the following parameters:

| Parameter | Description |
|---|---|
| `AllowNoPasswordExpirationPermission` | Boolean that specifies whether to allow exceptions to your rules for requiring password expiration. By default, this parameter is set to `true`.<br><br>For more information, see "Password Expiration" on page 92. |
| `ClassName` | The Java class for the password adapter. Do not modify this value. |
| `Enabled` | Boolean that specifies whether the password adapter is enabled. |
| `LegacyPasswordCheck` | This parameter is not used for version 9r1. |
| `PasswordExpireLimit` | Specifies the number of days between when a user sets the password and when the password expires. For example:<br><br>`PasswordExpireLimit = 100;`<br><br>This parameter is optional. If you set it to `0`, or omit the parameter, passwords never expire. By default, this parameter is set to `0`.<br><br>For more information, see "Password Expiration" on page 92. |
| `OrganicPasswordGrowth` | Determines whether users are allowed to set up their own initial passwords. This parameter is optional. If you omit the parameter, the default is `false`.<br><br>By default, this parameter is set to `true`.<br><br>For more information, see "Organic Password Growth" on page 87. |

| | |
|---|---|
| `PasswordFile` | Names the file that contains password information. Typically, this file resides in *`BuyerServerRoot`*`/config`. The file must exist and Ariba Buyer must have read and write access to it.<br><br>By default, this parameter is set to `passwd.txt`.<br><br>For information on how to create and maintain this file, see "Password File" on page 93. |
| `MaxPasswordLength` | Specifies the maximum number of characters for a password.<br><br>This parameter is optional. If you omit the parameter, the default is `16`. By default, this parameter is set to `16`. |
| `MinPasswordLength` | Specifies the minimum number of characters for a password.<br><br>This parameter is optional. You can set it to an integer value less than or equal to `8`. If you omit the parameter, the default is `4`. By default, this parameter is set to `4`. |
| `MaxLoginAttemptAllowed` | Specifies the maximum number of incorrect login attempts allowed before a user is locked out of the system.<br><br>This parameter is optional. If you set it to `0` or omit this parameter, users are never locked out. By default, this parameter is set to `3`.<br><br>Users with the `SiteAdmin.NoLockout` permission are never locked out of the system, regardless of the `MaxLoginAttemptAllowed` value. |
| `LockoutPeriodInMinutes` | Specifies how long, in minutes, a locked out account remains inaccessible before it is automatically released.<br><br>This parameter is optional. If you set it to `0` or omit this parameter, locked accounts are never automatically released and an administrator must manually unlock them.<br><br>By default, this parameter is set to `120`. |
| `MaxAnswerAttemptAllowed` | Specifies the maximum number of incorrect answers allowed to the security question before users are locked out of the system.<br><br>This parameter is optional. If you set it to `0` or omit this parameter, the password recovery feature is not enabled for the password adapter. By default, this parameter is set to `5`.<br><br>For more information security questions and answers, see "Password Recovery" on page 95. |
| `MinQuestionLength` | Specifies the minimum number of characters users must specify when creating a security question. By default, this parameter is set to `5`.<br><br>For more information on security questions, see "Password Recovery" on page 95. |
| `MinAnswerLength` | Specifies the minimum number of characters users must specify when creating a security answer. By default, this parameter is set to `5`.<br><br>For more information on security answers, see "Password Recovery" on page 95. |

| | |
|---|---|
| `PasswordTokenExpirationPeriod InHours` | Specifies the amount of time, in hours, a temporary password token remains valid. By default, this parameter is set to 24.<br><br>For more information on temporary password tokens, see "Password Recovery" on page 95. |
| `RestrictLastXPasswordsUsed` | Specifies the number of previously used passwords that cannot be reused. The last X passwords are remembered and cannot be used. |
| `MatchPasswordPatternEnabled` | Boolean that indicates whether password pattern matching is enabled. When password pattern matching is enabled, passwords must contain at least one one letter, and at least one numeral between the first and last character. |
| `UseCustomMessage` | Boolean that indicates whether the password adapter uses a custom message to notify users when a login fails. By default, this parameter is set to `false`. |

## Organic Password Growth

When the Crypt Database Password Adapter is enabled, you can use a feature called *organic password growth*, which lets users set their own initial passwords.

With organic password growth, users are asked to supply one or more *credentials* to be allowed to set the initial password. To configure this feature, you specify which field to use as a credential in `Parameters.table`, and then add that field to a group so that it is visible in the user interface and users can enter the credential.

The credential you choose must be either a field of `ariba.user.core.User` or accessible from the User object with dot notation, and must be of type `String`. For example, the default configuration uses `User.Supervisor.UniqueName`. Typically you define an extrinsic on User, such as mother's maiden name, and use that extrinsic as the credential.

### ▼ To configure organic password growth:

1. Set the parameter `Application.Authentication.OrganicPasswordGrowth` to `true`.
2. Set the parameter `Application.Authentication.OrganicPasswordGrowthCredential` to name the field to be used as the login credential.

   For example, you can use `Supervisor.Name.PrimaryString`.
3. Create a metadata XML extension file and add the login credential fields to the group `PasswordEntryGroup`.

   This group is used on the screen where new users log in, and lets the users enter the specified credential.

   For general information on metadata XML extension files, see the *Ariba Spend Management Customization Guide*.
4. Set `Application.Authentication.AllowNullPasswordWizardCredential` to specify whether users with a null credential are allowed to log in.

   For example, if a user has no supervisor, but you want that user to be able to use organic password growth, you might choose to set `AllowNullPasswordWizardCredential` to true.

   When you allow users to log in with null credentials, Ariba Buyer sends Notification 10, "Notification of Password Entry," to users who have the `AllowNullPasswordWizardCredentialEmail` permission each time a user logs in with null credentials.

   The recipient of the notification does not have to take any action. The notification is just a precaution.

▼ **To administer organic password growth after it is configured:**

1. Add the new user (for example, “jbenning”) into your shared user list (such as `SharedUser.csv`) and your Ariba Buyer user list (`User.csv`).
2. Run the integration events to load your user data.
3. Invite the new user (“Janice Benning”) to log in.

   If you have multiple password adapters configured, you must include the password adapter as a parameter to the login URL. For example:

   `http://myserver/Buyer/Main/ad/webjumper?`**`passwordadapter=PasswordAdapter1`**

Ariba Buyer directs the new user to screens where she can create a new password. To be authenticated to set her own password, Janice must supply the appropriate login credential.

## SAP Password Adapter

The SAP Password Adapter class provides a sample implementation of the SAP Password Adapter, which authenticates using password information from an SAP system. The sample implementation provides an SAP function (`Z_ARIBA_PASS_CHECK`) that reads the parameters username and password from the SAP system. Most configurations can use this sample implementation without modification.

In the default configuration, the SAP Password Adapter is defined in the `System.PasswordAdapters` section as follows:

```
PasswordAdapter2 = {
    ClassName = "ariba.sap.server.SAPPasswordAdapter";
    SAPSystem = "@SAPSystemName@";
    TopicName = "@partition@.SAPPasswordCheck";
}
```

### Parameters

The SAP Password Adapter recognizes the following parameters:

| Parameter | Description |
|---|---|
| `SAPSystem` | The name of an SAP system, against which users are authenticated. You must change the value `@SAPSystemName@` to specify a valid SAP system name in your configuration. |
| `TopicName` | Passed to the SAP Password adapter to identify the Ariba Buyer partition being authenticated. To set up your configuration, you must change the value `@partition@` to specify a correct partition name for your configuration. |

To authenticate against different SAP systems, you can define multiple instances of the SAP Password Adapter. For example:

```
PasswordAdapters = {
    PasswordAdapter2 = {
        ClassName = "ariba.sap.server.SAPPasswordAdapter";
        SAPSystem = "ASH";
        TopicName = "psap1.SAPPasswordCheck";
    }
    PasswordAdpater3 = {
        ClassName = "ariba.sap.server.SAPPasswordAdapter";
        SAPSystem = "ELM";
        TopicName = "psap3.SAPPasswordCheck";
    }
}
```

This example uses two different SAP boxes (`ASH` and `ELM`), and two different Ariba Buyer partitions (`psap1` and `psap3`). If you have several Ariba Buyer partitions that authenticate against the same SAP box, you can choose any one partition name to include in the `TopicName` parameter. For example, if you have another partition `psap2` that also uses the `ELM` SAP box, you can use this same password adapter entry.

## External Authentication Password Adapter

The External Authentication Password Adapter validates authentication credentials against an external system.

In the default configuration, the External Authentication Password Adapter is defined in the `System.PasswordAdapters` section as follows:

```
PasswordAdapter3 = {
    ClassName =
        "ariba.auth.external.client.ExternalAuthPasswordAdapter";
    ExternalPasswordAdapterHost = "myserver";
    ExternalPasswordAdapterPort = 8090;
}
```

You almost always use this adapter running on a UNIX system, in combination with the NT Domain Authentication Adapter running on a Windows system.

The NT Domain Login Adapter depends on the Ariba Authentication Service. To use this adapter:

- You must be running the Ariba Authentication Service as a Windows NT service.
- The Ariba Authentication Service must be logged in as domain user, with local administrative privileges on the computer where the Ariba Authentication Service is running.

### Parameters

The External Authentication Password Adapter recognizes the following parameters.

| Parameter | Description |
|---|---|
| `ExternalPasswordAdapterHost` | Specifies the hostname of the computer where the external password adapter, such as NT Domain Authentication Adapter, is running. |
| `ExternalPasswordAdapterPort` | Specifies the RPC port used by the external password adapter. By default, this parameter is set to 8090. |

On the machine where the Authentication Service is running, you must configure the following parameters.

| Parameter | Description |
|---|---|
| `System.Nodes.NodeAuth.Host` | Specifies the hostname of the computer where the Ariba Authentication Service is running. |
| `System.Nodes.NodeAuth.Port` | Specifies the RPC port used by the Ariba Authentication Service. By default, this parameter is set to 8090. |
| `System.Performance.SSLRPC` | A Boolean that determines whether data transmitted using the RPC port is encrypted. For more information, see "Parameters for SSL" on page 114. |
| `System.Nodes.NodeAuth.SSLKeyStoreFile` | Used only with SSLRPC, and specifies the location of the keystore. |
| `System.Nodes.NodeAuth.SSLKeyStorePassword` | Used only with SSLRPC, and specifies the password for the keystore. |

## NT Domain Login Adapter Implementation

The NT Domain Login Adapter authenticates using password and domain information from an NT Domain system.

In the default configuration, the NT Domain Login Adapter is defined in the `System.PasswordAdapters` section as follows:

```
PasswordAdapter4 = {
    ClassName = "ariba.auth.password.NTDomainLoginAdapter";
}
```

If you are using Active Directory Service (ADS) you must have NTLM compatibility enabled.

If your Ariba Buyer server is on a UNIX platform, you must run the NT Domain Login adapter on a remote authentication server and use the ExternalAuth adapter to access that remote server.

**Note:** The Windows user account password must be 13 characters or less. This is a Microsoft Windows limitation.

## Login Screen Credentials

In the default configuration, there are only two credentials on the login screen: name and password. If you have a configuration with several NT domains, and are using NT Domain Authentication, you might want to add a domain field to the login screen, to allow users to specify the domain for authentication.

For information on other changes to the login screen, see the *Ariba Buyer Customization Guide*.

The file that controls the fields on the login screen is as follows:

*BuyerServerRoot*/config/login/Login.fpl

To add an additional field to the login screen, you add an entry for that field to `Login.fpl`.

Ariba Buyer supplies an example of adding a domain credential in the file `sample/auth/NTLogin/config/login/NTLogin.fpl`. The contents of the sample file `NTLogin.fpl` file are as follows:

```
{
    Domain = {
        Type = "java.lang.String";
        Label = "Domain";
        Controller = "ariba.htmlui.fieldsui.fields.ARFPickList";
        PickListStyle = "TransparentComboBox";
        ValidChoices = ("finance", "flash", "training");
        Rank = 30;
        Group = ("LoginView");
    }
}
```

This entry defines an additional field, `Domain`.

### ▼ To add a domain to your authentication credentials:

1 Copy the entry for the `Domain` field from the `NTLogin.fpl` sample to the file `config/login/Login.fpl.`

2 Edit the `ValidChoices` key to list your own domains. The values in this list are the choices available to users, in the user interface.

Note that all partitions share the same version of `Login.fpl`. If you customize `Login.fpl`, your customizations are visible in all partitions. If your modification does not apply in all partitions, you can modify the field label to indicate when it is required. For example:

```
Domain = {
    Type = "java.lang.String";
    Label = "Domain for NT Users";
,,,
```

Another option is to include a blank string in the set of domain names; users who are not using NT Domain authorization can choose the blank string. For example:

```
Domain = {
  ...
    ValidChoices = ("",
      "flash",
      "training");
  ...
```

### Domain Names in Configuration Files

When you implement the NT Domain Login Adapter, you must ensure that all user names in your configuration files include the domain name.

For example, if your domain name is “fred,” and you are reading users from a CSV file, the lines in your `User.csv` file must appear as follows:

```
fred\user1
fred\user2
```

Both components—username and domain name—must be lowercase.

You must add domain names to every configuration file that includes user names, such as files that map users to groups, roles, or permissions. For information on these map files, see the *Ariba Spend Management Data Load Guide*.

## No Authentication Adapter Implementation

The No Authentication Password Adapter lets users log in without providing login credentials. It requires no additional arguments or parameters.

In the default configuration, the No Authentication Password Adapter is defined in the `System.PasswordAdapters` section as follows:

```
PasswordAdapter5 = {
    ClassName = "ariba.auth.core.NoAuthenticationPasswordAdapter"
};
```

This password adapter is not recommended for configurations using organic user growth. If you use organic growth and this adapter, Ariba Buyer creates a new user each time anyone enters an unrecognized user name — so every typing mistake in the login field results in a new user being created.

## Password Expiration

The implementation of a password adapter defines whether it supports password expiration. When an adapter supports expiration, you can enable or disable it with appropriate settings in `config/Parameters.table`. If the underlying adapter does not support password expiration, the parameter settings are ignored.

When password expiration is enabled, Ariba Buyer enforces the following requirements:

- Users must change passwords after a given time period.
- All new users must update their passwords the first time they log in.

If the password adapter supports expiration, you configure it as follows:

- To enable password expiration, set the `PasswordExpireLimit` parameter to a value other than `0`.
- To disable required password updates for certain users, set the `AllowNoPasswordExpirationPermission` parameter to `true` and give those users the `NoPasswordExpiration` permission. Users who have the `NoPasswordExpiration` are not required to make regular password changes.

### Immediate Password Expiration

An administrator can reset a user's password through Ariba Administrator. When the user logs in, the user's password is immediately expired and the user must update the password to complete the login process. Immediate password expiration can occur regardless of whether password expiration is enabled for the user's password adapter.

## Password File

The format of the password file used by the Crypt Database Password Adapter is similar to that used in UNIX operating systems: one line per user, where each line has a username and an encrypted password. The encryption is performed with a one-way hash function, using the same algorithm that UNIX systems use to encrypt passwords for `/etc/passwd`. For example:

```
jglanville:DCXfqzOBlM/tg
```

Ariba Buyer provides a utility called `aribacrypt` that you use to generate encrypted passwords. Ariba supplies versions of this utility for both Windows NT and UNIX. The syntax of `aribacrypt` is as follows:

```
aribacrypt [salt] password
```

The *`salt`* argument is an optional argument that seeds the random number used for generating encrypted passwords. It can be more than two characters in length, but only the first two characters of the argument are used in generating the encrypted value. The argument is limited to the following characters: a-z, A-Z, 0-9, and the characters "." and "/".

For compatibility with UNIX systems, the password file recognizes only the first eight characters of an encrypted password. For example, the passwords `12345678` and `123456789ABCD` are the considered to be identical.

### Changing User Passwords

An administrator can change a user password by reloading the password file, or by resetting the password from the User Manager in Ariba Administrator.

#### Reloading the Password File

You reload the password file using the `ReloadPasswordFile` scheduled task. During the reload process, passwords are created and updated in the database. If a password already in the database does not appear in the password file, it is not deleted from the database.

#### Changing Passwords from Ariba Administrator

The following procedure describes how to change a password from Ariba Administrator.

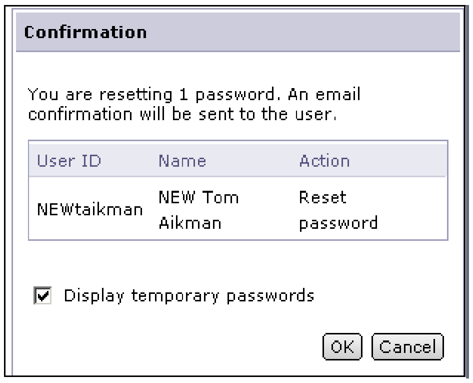
▼ **To change a password from Ariba Administrator:**

1 Choose **User Manager > Users**.

2 Click **List All** to display all users, or enter search criteria and then click **Search** or press the **Enter** key.

3 Click the check box next to the name of the user whose password you want to change and click **Generate** to have the system randomly generate a new password for the user.

4 The confirmation dialog illustrated below:
- Specifies of the number of passwords being reset
- Informs you that a confirmation email will be sent to the users
- Lists which users are having their passwords reset
- Optionally allows you to display the values of the temporary passwords



**Confirmation**

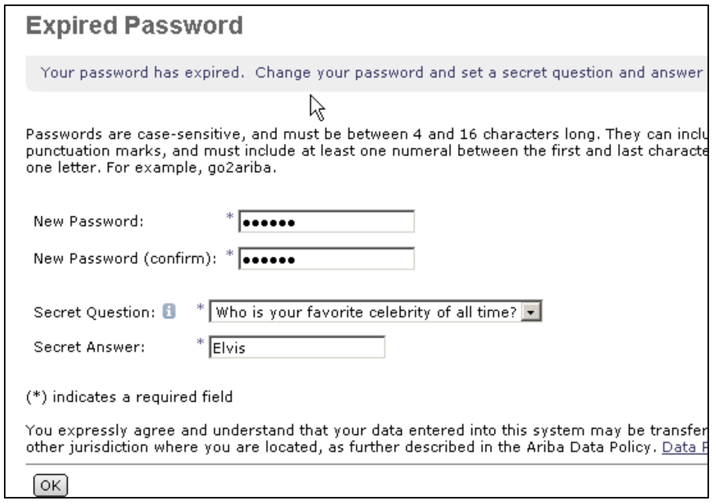
You are resetting 1 password. An email confirmation will be sent to the user.

| User ID | Name | Action |
|---|---|---|
| NEWtaikman | NEW Tom Aikman | Reset password |

☑ Display temporary passwords

5 Then you either, click **OK** to generate the new password and then click **Done**, or click **Cancel** to return to the previous screen without changing the password.

6 If your password has been reset by an administrator, you receive an email notification that contains a link to reset your password. When you click the link, Ariba presents the Expired Password page:



**Expired Password**

Your password has expired. Change your password and set a secret question and answer

Passwords are case-sensitive, and must be between 4 and 16 characters long. They can inclu
punctuation marks, and must include at least one numeral between the first and last characte
one letter. For example, go2ariba.

New Password: * ••••••

New Password (confirm): * ••••••

Secret Question: * Who is your favorite celebrity of all time?

Secret Answer: * Elvis

(*) indicates a required field

You expressly agree and understand that your data entered into this system may be transfer
other jurisdiction where you are located, as further described in the Ariba Data Policy. Data P

7 Enter a new password in the **New Password** and **New Password Confirm** fields

8 Select a secret question and enters the secret answer

9 Click **OK**.

## Password Recovery

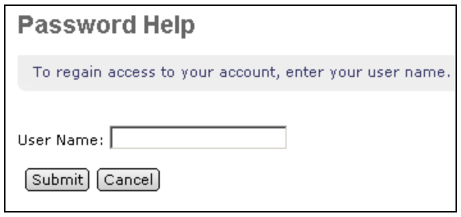
The password recovery feature lets users reset the passwords for their Ariba Buyer accounts.

The password recovery feature is supported by the Crypt Database Password Adapter. To enable the password recovery feature, set the `System.PasswordAdapters.`*`passwordadapter`*`.MaxAnswerAttemptAllowed` to a non-zero value.

When the password recovery feature is enabled for a password adapter, users authenticated by that password adapter can set up a security question and answer for their Ariba Buyer accounts. Users enter the security answer in response to the security question to obtain a temporary password token and reset their passwords.

The following example illustrates how the password recovery feature works:

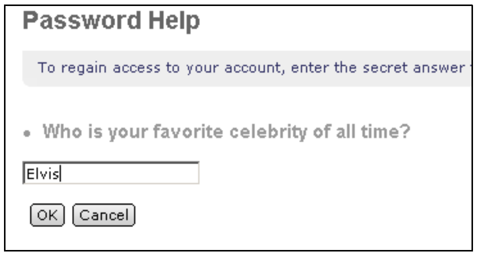
1. John forgets his password, clicks the **password** link in “Forgot your username or password?” in the login screen.
2. After Ariba Buyer successfully validates John’s temporary password, it presents the Password Help page and enters his username and clicks **Submit**:


Password Help

To regain access to your account, enter your user name.

User Name:

3. After Ariba Buyer successfully validates John’s temporary password, it presents the Password Help page. The Password Help page contains the security question that John set up for his Ariba Buyer account:


Password Help

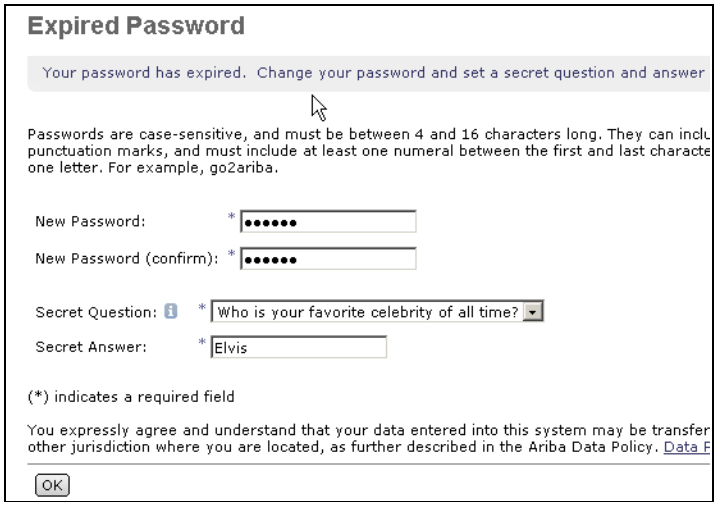
To regain access to your account, enter the secret answer

• Who is your favorite celebrity of all time?

Elvis

4. John enters the security answer he set up for his Ariba Buyer account on the Password Help page.
5. After Ariba Buyer has successfully validated John’s security answer, John is sent an email that contains a link to reset his password.
6. John clicks the link and is prompted again to enter the answer to his secret question and clicks **OK**.

**7** After Ariba successfully validates John's answer to the secret question, it presents the Expired Password page:



Expired Password

Your password has expired. Change your password and set a secret question and answer

Passwords are case-sensitive, and must be between 4 and 16 characters long. They can inclu
punctuation marks, and must include at least one numeral between the first and last characte
one letter. For example, go2ariba.

| | |
|---|---|
| New Password: * | •••••• |
| New Password (confirm): * | •••••• |
| Secret Question: * | Who is your favorite celebrity of all time? |
| Secret Answer: * | Elvis |

(*) indicates a required field

You expressly agree and understand that your data entered into this system may be transfer
other jurisdiction where you are located, as further described in the Ariba Data Policy. Data F

**8** John:

**a** Enters a new password in the New Password and New Password Confirm fields

**b** Selects a secret question and enters the secret answer

**c** Clicks **OK**.

## Temporary Password Token Expiration

In the default configuration, the temporary password token remains valid for 24 hours and then expires. If a user does not use a temporary password token before it expires, the user must repeat the password recovery process to obtain a new temporary password token.

You can change the temporary password token expiration period by modifying the `System.PasswordAdapters.`*`passwordadapter`*`.PasswordTokenExpirationPeriodInHours` parameter.

## Security Answer Attempts

If a user doesn't answer the security question correctly within the number of attempts specified by the `System.PasswordAdapters.`*`passwordadapter`*`.MaxAnswerAttemptAllowed` parameter, the user is locked out of the system. Ariba Buyer resets the number of incorrect answer attempts when the user successfully logs in to the system.

**Note:** Users with the `SiteAdmin.NoLockout` permission are never locked out of the system, regardless of the `MaxAnswerAttemptAllowed` value.

Users who are locked out of the system cannot log back in until their accounts are either:

- Automatically released after the number of minutes specified by the `System.PasswordAdapters.`*`passwordadapter`*`.LockoutPeriodInMinutes` parameter, or
- Manually reset by an administrator.

If `LockoutPeriodInMinutes` is set to `0` or is omitted, accounts are not automatically released and must be manually reset by an administrator.

## Display Names for Password Adapters

When it displays password adapter names, Ariba Administrator uses the name specified in the `config/Parameters.table` file (for example, `PasswordAdapter1`) unless you configure a different display name.

To configure a display name for a password adapter, add a string for the display name to the resource file named `ariba.html.commonadmin.csv`. The key in the resource file must be the same as the adapter name in the `config/Parameters.table` file. For example:

```
PasswordAdapter1,"Enterprise User"
```

In this example, `PasswordAdapter1` is the resource key and `Enterprise User` is the display name.

For more information on resource files, see the *Ariba Spend Management Customization Guide*.

# Chapter 8 Security Considerations

This chapter describes how to configure Ariba Buyer for security. It describes how to encrypt values in configuration files, and how to use Secure Sockets Layer (SSL) for secure communication. It includes the following sections:

**Note:** Most of the SSL implementation is handled by your web server. This chapter assumes your web server is configured for SSL. If your web server is not already SSL-enabled, consult the documentation from your web server provider for instructions on implementing SSL.

## Parameter Security

Ariba Buyer configuration files can contain potentially sensitive information, such as computer names, passwords, or personnel information. By default, all parameter values are in plain text. To protect the security and privacy of your data, you can encrypt specific parameters.

You use the `aribaencrypt` command to encrypt a value. When you run `aribaencrypt`, you supply a string as argument, and `aribaencrypt` returns an encrypted string and automatically updates `config/Parameters.table` with the encrypted value.

Usage:

```
aribaencrypt [-key <key>] [-value <value>] [-tablefile <tablefile>][-allownewkey|-noallownewkey*]
[-skipconfirm*|-noskipconfirm] [-secureparameterskey <secureparameterskey>]
```

### ▼ To encrypt a parameter value in `config/Parameters.table`:

Type `aribaencrypt -key <key>` where key is the name of an existing parameter in `Parameters.table`. Your will be prompted to confirm the operation. Upon confirmation, the key is properly encrypted and stored in `Parameters.table`. No further steps are required.

▼ **To encrypt one or more values in `config/Parameters.table`:**

Type `aribaencrypt [-secureparameterskey <secureparameterskey>]` where `<secureparameterskey>` specifies the name of the parameter whose value is a list of keys that are to be encrypted. The default value for `<secureparameterskey> is "System.Base.SecureParameters".` For example, to use encrypted values for your Ariba Buyer database username and password, you would add the following entry to your `config/Parameters.table` file:

```
System  {
    Base {
        SecureParameters = (
            System.DatabaseSchemas.Schema1.AribaDBPassword,
            System.DatabaseSchemas.Schema1.AribaDBUsername
        );
```

The full set of `aribaencrypt` options and their descriptions follow.

## Options

`-key` *<key>*

Use this option to specify the key (in dotted notation) whose value is to be encrypted. For example: `-key "System.Database.AribaDBPassword"`. If the parameter is not in the file, the encrypted value will be output to the console. Otherwise, the encrypted value will be stored in the table file as the value of the key.

`-value` *value*

Use this option to specify the clear text to encrypt. If `<key>` is specified and if it exists in `<tablefile>`, you will be prompted to select which value is used if `-skipconfirm` is `false`). If confirmation is skipped, the `value` parameter overrides the current `key` value.

**Note:** The value of this option cannot be an empty string. Specifying an empty string for this option is the same as not specifying this option.

`-tablefile` *tablefile*

Use this option to specify the table file in which to store the encrypted parameter. The default is `config/Parameters.table`. If present, this value must be a valid table file.

`-allownewkey|-noallownewkey`

Use this option to specify whether a new key can be added if it does not already exist in the table file. If the new key is allowed, and if the given key is not present, then the value parameter must be specified also. The default is `-noallownewkey`.

`-skipconfirm`

Use this option to skip the confirmation step. The default is to prompt for confirmation.

`-secureparameterskey`

Use this option to specify the name of the parameter whose value is a list of keys whose values are to be encrypted. The default parameter is "`System.Base.SecureParameters`". If you are using `aribaencrypt` on `Parameters.table` do not specify this parameter it will be used by default.

## Ariba Administrator Security

Ariba Buyer provides the following methods to control access to data through Ariba Administrator:

- You can restrict access to integration events and scheduled tasks from Ariba Administrator by using the ExecutePermissionPull integration event.
- You can control which configuration files are visible to administrators in Ariba Administrator by implementing file-level security by using the EditPermissionPull integration event.
- You can change workspace and task permissions in the workspace configuration files.

### Restricting Access to Integration Events and Scheduled Tasks

You can restrict access to integration events and scheduled tasks from Ariba Administrator by assigning permissions to specific events and tasks in the `ExecutePermission.csv` file, and then loading the CSV file through the ExecutePermissionPull integration event.

When you assign a permission to an integration event or scheduled task in the `ExecutePermission.csv` file, an administrator must have that permission to view and run the event or task from Ariba Administrator.

If you do not load the ExecutePermissionPull integration event, or if there are no entries in the `ExecutePermission.csv` file, then any administrator who has the proper workspace and task permissions can run an integration event or scheduled task from Ariba Administrator.

**Note:** To run an integration event or scheduled task from the `serverMonitor` command, an administrator must have the `SiteAdmin.AdminClient` permission.

In the default configuration, the `ExecutePermission.csv` file is located in the following directory:

`config/variants/Plain/partitions/None/data`

The fields in `ExecutePermission.csv` are as follows:

| Field | Description |
|---|---|
| `TaskOrIntegrationEventName` | The name of a integration event or scheduled task. To specify an integration event, use the following format:<br><br>*`partition`*`.IntegrationEvent.`*`eventname`*<br><br>To specify a scheduled task, use the following format:<br><br>*`partition`*`.Task.`*`taskname`*<br><br>Names are case sensitive. |
| `ExecutePermission` | The `UniqueName` of a valid permission in your configuration. |

The following example shows sample lines from the `ExecutePermission.csv` file:

```
"TaskOrIntegrationEventName", "ExecutePermission"
"None.IntegrationEvent.AccountTypePull", PurchasingAgent
"None.Task.SupplierLocationCheck", PurchasingAgent
```

To associate multiple permissions with a particular integration event or task, add a separate line for each permission. For example:

```
"TaskOrIntegrationEventName", "ExecutePermission"
"None.IntegrationEvent.AccountTypePull", PurchasingAgent
"None.IntegrationEvent.AccountTypePull", ExpenseManager
```

### Considerations for Export Events

Ariba recommends that you do not use the `ExecutePermission.csv` file to assign permissions to specific export events.

You can restrict access to export events by using the `enableExport` and `exportPermission` attributes. The `enableExport` attribute specifies whether administrators can use the object manager to export objects. When this attribute is set to `true`, administrators may export objects from the object manager if they have the permission specified in the `exportPermission` attribute for the object manager.

## Allowing Access to Files

You can allow access to configuration files, log files, and rule set (`.rul`) files by assigning permissions to specific files in the `EditPermission.csv` file, and then loading the CSV file through the EditPermissionPull integration event.

When you assign a permission to a file in the `EditPermission.csv` file, an administrator who has that permission (or the `SiteAdmin.ConfigurationFiles` permission) can see the file listed and access it from Ariba Administrator.

If you do not assign an edit permission to a file, or if there are no file entries in the `EditPermission.csv` file, only administrators who have the `SiteAdmin.ConfigurationFiles` permission can access configuration files, log files, and rule set files from Ariba Administrator.

In the default configuration, the `EditPermission.csv` file is located in the following directory:

```
config/variants/Plain/partitions/None/data
```

The fields in `EditPermission.csv` are as follows:

| Field | Description |
|---|---|
| `FileName` | The path name of a file. Specify the file name relative to your Ariba Spend Management application's `Server` directory with percent signs (`%`) instead of slashes (`/`) as separators. For example:<br><br>`config%variants%plain%rules%JavaScriptRequisitionRules.rul` |
| `EditPermission` | The `UniqueName` of a valid permission in your configuration.<br><br>**Note:** You would never assign the `SiteAdmin.ConfigurationFiles` permission to a file because administrators with this permission already have access to all files. |

The following example shows a sample line from the `EditPermission.csv` file:

```
"FileName", "EditPermission"
"config%cataloghierarchy.xml", PurchasingAgent
```

To associate multiple permissions with a particular file, add a separate line for each permission. For example:

```
"FileName", "EditPermission"
"config%cataloghierarchy.xml", PurchasingAgent
"config%cataloghierarchy.xml", ExpenseManager
```

### Wildcards

You can use wildcards in the `FileName` field to specify files in multiple directories. You can use any regular expression defined by Perl 5, as long as the file name is an exact match. For example:

```
“config%variants%[\W\w]+%partitions%[\W\w]+%data%ExpenseGuidelines.table”,ExpenseManager
```

This example gives users who have the `ExpenseManager` permission access to the `ExpenseGuidelines.table` file in any variant in any partition.

You can only wildcard directory names; you cannot wildcard file names.

**Note:** If you change the name of a file in `EditPermission.csv` after running the EditPermissionPull integration event, you must manually add the new file name to `EditPermission.csv` and rerun EditPermissionPull.

### Considerations for Configuration Files

The default Ariba Administrator configuration restricts access to the Config Files task to administrators who have the `SiteAdmin.ConfigurationFiles` permission (as well as the permissions required to access the Server Manager workspace). When you implement file-level security, you must edit the Server Manager workspace and Config Files task permissions so that users who do not have `SiteAdmin.ConfigurationFiles` permission can access the Config Files task.

For example, suppose you want an administrator who has the `PurchasingAgent` permission to be able to download and upload the file `Organization.csv` and you have already assigned this permission to the `Organization.csv` file. To allow an administrator with the `PurchasingAgent` permission to access the file through the Config Files task, you would need to add the `PurchasingAgent` permission to the Server Manager workspace and to the Config Files task.

Only administrators who have `SiteAdmin.ConfigurationFiles` permission can upload new files.

If an administrator has the ability to edit data directly in the database, then restricting access to certain configuration files might not provide the intended security.

### Considerations for Rule Set Files

If you assign an edit permission to a rule set file (`.rul` extension), an administrator must have that permission, or the `SiteAdmin.ConfigurationFiles` permission, to upload or download the rule set file with the Rule Editor task.

If you do not assign an edit permission to a rule set file, or if there are no entries for rule sets in `EditPermission.csv`, then only administrators who have the `SiteAdmin.ConfigurationFiles` permission can import and export rule set files.

## Workspace and Task Security

The permissions in the default workspace configuration files control which workspaces and tasks are available to administrators.

To access Ariba Administrator from an Ariba Spend Management application, an administrator must have access to at least one workspace or task in Ariba Administrator. To access a particular workspace or task, an administrator must have permissions that match the permissions associated with that workspace or task.

Permissions in the workspace configuration file are specified in sets. A *permission set* consists of one or more permissions. For example, the Rule Editor task is associated with one permission set:

```
<task
    name = "ApprovalRulesTask"
    hint        = "@ariba.admin.hint/ApprovalRulesTaskHint"
    displayName = "@ariba.html.admin/ApprovalRulesTask"
    help        = "@ariba.admin.help/ApprovalRulesTask_Help"
    howTo       = "@ariba.admin.help/ApprovalRulesTaskHowTo"
    screenDetails = "@ariba.admin.help/ApprovalRulesTaskScreenDetails"
    component   = "ARPRuleEditor"
    rank        = "50"
    >
    <permissionSet name = "RuleEditor">
        <permission name = "RuleEditor"/>
        <permission name = "SiteAdmin.ConfigurationFiles"/>
    </permissionSet>
    </task>
```

The `RuleEditor` permission set contains the standard permissions `RuleEditor` and `SiteAdmin.ConfigurationFiles`. When a permission set contains multiple permissions, as in this example, an administrator must have all the permissions in that permission set. Therefore, to access the Rule Editor task, an administrator must have both the `RuleEditor` permission and the `SiteAdmin.ConfigurationFiles` permission.

When multiple permission sets are specified, an administrator must have permissions that match those in at least one of the permission sets. For example, an administrator must have the `SiteAdmin.ConfigurationFiles` permission or the `ParametersEditor` permission to access the Parameters task in the Server Manager:

```
<task
    name = "ParametersTask"
    hint = "@ariba.admin.hint/ParametersTaskHint"
    displayName = "@ariba.html.admin/ParametersPageTitle"
    help = "@ariba.admin.help/ParametersTask_Help"
    howTo = "@ariba.admin.help/ParametersTaskHowTo"
    screenDetails = "@ariba.admin.help/ParametersTaskScreenDetails"
    component = "ARPParams"
    rank = "20"
    >
```

```
        <permissionSet name = "ConfigurationFiles">
            <permission name =  "SiteAdmin.ConfigurationFiles"/>
        </permissionSet>
        <permissionSet name = "ParametersEditor">
            <permission name =  "ParametersEditor"/>
        </permissionSet>
        <taskProperty name = "PageHint"
            value = "@ariba.admin.hint/ServerManagerParametersPageHintMessage">
        </taskProperty>
    </task>
```

If no permissions are assigned to a task, then an administrator needs only the permissions assigned to the workspace to access the task.

## Object Security

You can restrict access to specific objects by assigning read and edit permissions to objects in the `ObjectPermission.csv` file, and then loading the CSV file through the ObjectPermissionPull integration event.

When you assign read and edit permissions to an object in the `ObjectPermission.csv` file, an administrator must have those permissions to perform certain operations on that object. If you do not load the ObjectPermissionPull integration event, or if there are no entries in the `ObjectPermission.csv` file, there is no object level security.

In the default configuration, `ObjectPermission.csv` is located in the following directory:

`config/variants/Plain/partitions/None/data/ObjectPermission.csv.`

The fields in `ObjectPermission.csv` are as follows:

| Field | Description |
|---|---|
| `ObjectClassName` | The Java class name of the object. |
| `FieldName` | The name of a field in the class specified in `ObjectClassName`, in dotted field notation. You cannot specify a vector field, or a partition-specific field. |
| `FieldValue` | The value of the field specified in `FieldName`. The field value must be either a string or an integer. |
| `ReadPermission` | The permission you want to use to restrict read access to the object. It must match the `UniqueName` of a valid permission in your configuration. |
| `EditPermission` | The permission you want to use to restrict edit access to the object. It must match the `UniqueName` of a valid permission in your configuration. |

The following example shows a sample `ObjectPermission.csv` file that assigns permissions to User objects:

```
ObjectClassName,FieldName,FieldValue,ReadPermission,EditPermission
ariba.common.core.User,ShipTo.Country.UniqueName,US,US_UserManager_Read,US_UserManager_Edit
ariba.common.core.User,ShipTo.Country.UniqueName,CA,US_UserManager_Read,US_UserManager_Edit
ariba.common.core.User,ShipTo.Country.UniqueName,FR,Euro_UserManager_Read,Euro_UserManger_Edit
ariba.common.core.User,ShipTo.Country.UniqueName,DE,Euro_UserManager_Read,Euro_UserManger_Edit
ariba.common.core.User,ShipTo.Country.UniqueName,<$default$>,US_UserManager_Read,
US_UserManager_Edit
```

In this example:

- If a user's `ShipTo.Country.UniqueName` is `US` or `CA`, then an administrator must have `US_UserManager_Read` permission to read the object and `US_UserManager_Edit` permission to edit the object:

  ```
  ariba.common.core.User,ShipTo.Country.UniqueName,US,US_UserManager_Read,US_UserManager_Edit
  ariba.common.core.User,ShipTo.Country.UniqueName,CA,US_UserManager_Read,US_UserManager_Edit
  ```

- If a user's `ShipTo.Country.UniqueName` is `FR` or `DE`, then an administrator must have `Euro_UserManager_Read` permission to read the object and `Euro_UserManager_Edit` permission to edit the object:

  ```
  ariba.common.core.User,ShipTo.Country.UniqueName,FR,Euro_UserManager_Read,Euro_UserManger_Edit
  ariba.common.core.User,ShipTo.Country.UniqueName,DE,Euro_UserManager_Read,Euro_UserManger_Edit
  ```

- If a user's `ShipTo.Country.UniqueName` is a value **other than** `US`, `CA`, `FR`, or `DE`, then an administrator must have `US_UserManager_Read` permission to read the object and `US_UserManager_Edit` to edit the object:

  ```
  ariba.common.core.User,ShipTo.Country.UniqueName,<$default$>,US_UserManager_Read,US_UserManager
  _Edit
  ```

  The field value `<$default$>` indicates all values other than those listed for the object in the `ObjectPermission.csv` file. You can specify `<$default$>` only once for each object.

In addition to adding these permissions to the `ObjectPermission.csv` file and running the ObjectPermissionPull integration event, to use this example you would also need to do the following:

- Create the permissions `US_UserManager_Read`, `US_UserManager_Edit`, `Euro_UserManager_Read`, and `Euro_UserManger_Edit`, and assign the new permissions to different administrators.
- Add the new permissions to the User Manager workspace so that administrators who have these permissions can view the User Manager workspace.

### Considerations for Object Level Permissions

Ariba Administrator displays an error if an administrator attempts to edit, reference, or view details for data and does not have appropriate permissions to do so. However, table views of object data—in choosers and in search results—might display header information for rows of data for which an administrator does not have read or edit access.

You cannot assign read and write permissions to Rule objects in the `ObjectPermission.csv` file. Read and write permissions assigned to Rule objects are ignored.

## Inspector Security

The Inspector is a basic administrative tool that lets you view and, in certain cases, modify the data in an Ariba Spend Management application database. You can use the Inspector for a variety of purposes, such as to verify that you are making the database changes you expect, to view connectivity information about your Ariba Spend Management applications, or to examine `config/Parameters.table` for your application. It is especially useful in diagnosing any problems that you encounter.

To enable the Inspector, set the `System.Inspector.Enabled` parameter to `true`. To enable Inspector authentication, set the `System.Inspector.Authenticate` parameter to `true`.

Ariba recommends that you always enable authentication in production environments. If authentication is not enabled, a warning appears at the top of the Inspector page stating, "This Inspector Access is Not Secure!" in large red letters.

At installation, both the Inspector and Inspector authentication are enabled by default and the passwords are blank. You must either disable authentication, or supply passwords encrypted using the `aribaencrypt` command. For more information about `aribaencrypt`, see the configuration guide for your Ariba Spend Management application. Ariba recommends that you enter the passwords in clear text in `Parameters.table`, then use `aribaencrypt` with the `-key` option.

Three username/password pairs correspond to the three Inspector access tiers described in *Ariba Spend Management Customization Guide*. These parameters are:

- `System.Inspector.DebugUserName`
- `System.Inspector.DebugPassword`
- `System.Inspector.AdminUserName`
- `System.Inspector.AdminPassword`
- `System.Inspector.ReadOnlyUserName`
- `System.Inspector.ReadOnlyPassword`

When authentication is disabled, the HTTP dialog no longer appears and the user is logged in at the Debug access level.

To control the access level for the ASM Connectivity Information module of the Inspector. Set `System.Inspector.AppInfoModuleSecurity` to **`true`**. This parameter does not appear in `config/Parameters.table` by default. To set the parameter, you must add it.

To control the access level for the Base36 Conversion or Base64 Conversion module of the Inspector, set the `System.Inspector.Base36ModuleSecurity` or the `System.Inspector.Base64ModuleSecurity` to **`true`**. These parameters do not appear in `config/Parameters.table` by default. To set the parameters, you must add them.

To set the maximum number of entries that are displayed in the Inspector when browsing a base vector, adjust the `System.Inspector.BaseVectorDisplaySize` parameter. This is a performance tuning parameter that prevents large data sets from crashing the server. The value is an integer and the default value is 5000. This parameter does not appear in `config/Parameters.table` by default. To set the parameter, you must add it.

The `System.Inspector.ClearResourceStringCacheModuleSecurity` parameter controls the access level for the Clear ResourceService String Cache module of the Inspector. This parameter does not appear in `config/Parameters.table` by default. To set the parameter, you must add it.

</description>

Administrators can control access to individual Inspector modules by adding parameters to `config/Parameters.table`. For more information about these individual module parameters, see *`Ariba Spend Management Customization Guide`*.

## Remote Authentication for the Inspector

**(Feature introduced in Ariba Spend Management 9r1 SP16)**

This section covers the following topics:

- "Overview" on page 108
- "Backward Compatibility" on page 108
- "Limitations" on page 109

- "New Parameter" on page 109
- "New Permissions, Roles, and Groups" on page 109
- "Workflow for Accessing the Inspector with Remote Authentication" on page 110
- "Enabling Remote Authentication for the Inspector" on page 110

## Overview

Before remote authentication became available, access to Inspector was controlled exclusively through the parameters.table file, with no capability of incorporating third party remote authentication. Users could either have no authentication or be asked to provide an Inspector username and password as listed in the parameters.table file.

Now, you can control access to the Inspector through the corporate authenticator used by Ariba Spend Management applications. Using remote authentication for Inspector access enables you to leverage your existing authentication mechanism and set of users to control access to the Inspector tool.

When you enable remote authentication for the Inspector:

- Users access the Inspector through application authentication. With application authentication, users have Ariba application usernames and passwords that they manually enter on the Ariba application login page. The user ids and passwords are maintained by the customer administrator within the Ariba application.
- You control access to the tool by assigning new Inspector-related permissions to Ariba Spend Management application users. (In the legacy method of Inspector authentication, which is still supported, there are three separate, Inspector-specific users defined for inspector access.)
- As with the legacy method of Inspector authentication, there are three levels of access: Read Only, Admin, and Debug.
- The customer's password authentication functionality will integrate with the Ariba corporate authenticator using an appropriate protocol.
- Users who access the Inspector through a user-entered URL are first routed to a login page before being returned to the Inspector. This way, they are authenticated by your authentication mechanism. They then access Inspector based on their Inspector access permissions.
- Remote authentication is used regardless of whether the user accesses Inspector through Ariba Administrator or a user-input URL.
- Access to the Inspector is available using a secure HTTP channel only (https://...).
- Inspector opens in the same window rather than in a new window.

For general information about remote authentication, see the *Ariba Buyer Configuration Guide* or the *Ariba Upstream Platform Configuration Guide*.

## Backward Compatibility

This feature has no effect on customers who do not turn it on.

The Inspector still supports basic password authentication. However, when one authentication method is in use, the other method is turned off. That is, the Inspector does not support both the new and legacy authentication methods at the same time. If you enable remote authentication for the Inspector, but you then want to access the Inspector using the legacy password authentication, you must turn off Inspector remote authentication.

Enabling and disabling Inspector remote authentication does not affect the remote authentication used by Ariba Spend Management applications.

For information about legacy Inspector authentication, see the *Ariba Spend Management Customization Guide*.

### Limitations

There is no auditing that reveals which users are logging in to the Inspector.

### New Parameter

The new parameter `System.Inspector.UseAppAuthentication` enables the Inspector to use remote application authentication. The parameter is applicable only when the parameter `System.Inspector.Authenticate` is set to Yes (true).

`System.Inpsector.UseAppAuthentication` takes a Boolean value. The default value is No (false).

### New Permissions, Roles, and Groups

Following are the new permissions, roles, and groups added to control Inspector access. The three access levels—Read Only, Admin, and Debug—provide the same access as they do with the legacy Inspector authentication. For information on Inspector access levels, see the *Ariba Spend Management Customization Guide*.

#### Permissions

**`Inspector Read-Only Access`**: Provides access to Inspector in read-only mode.

**`Inspector Admin Access`**: Provides access to Inspector in admin mode.

**`Inspector Debug Access`**: Provides access to Inspector in debug mode.

#### Roles

**`Inspector Read-Only`**

**`Inspector Admin`**

**`Inspector Debug`**

#### Groups

**`Inspector Users`**

**`Inspector Administrators`**

**`Inspector Debug Administrators`**

You can assign Inspector permissions to users regardless of the `System.Inspector.UseAppAuthentication` setting. However, if `System.Inpsector.UseAppAuthentication` is set to No (false) and `System.Inspector.Authenticate` is set to Yes (true), the legacy Inspector authentication is used, and the permissions have no effect.

### Workflow for Accessing the Inspector with Remote Authentication

When the Inspector is configured to use remote authentication (`System.Inspector.Authenticate = true` and `System.Inspector.UseAppAuthentication = true`), users who need to use the Inspector must be valid Ariba Spend Management users with the appropriate Inspector group and role assignments.

#### Accessing the Inspector through Ariba Administrator

**▼ To access through Ariba Administrator**

1. The user logs into the Ariba application and opens Ariba Administrator.
2. The user chooses **Server Manager** > **Inspector**.
3. If remote authentication is set (`System.Inspector.Authenticate = true` and `System.Inspector.UseAppAuthentication = true`), and the user is assigned Inspector permissions, the Inspector opens in one of the three modes based on the user's level of authority (Read-Only, Debug, Admin). If the user does not have Inspector permissions, a message about lack of authorization is displayed.

#### Accessing the Inspector through a User-Entered URL

When the Inspector is configured to use remote authentication (`System.Inspector.Authenticate = true` and `System.Inspector.UseAppAuthentication = true`), users can specify the following new Direct Action URLs.

**Note:** Users who enter the old Inspector URL (`https://<host>:<port>/Buyer/inspector` or `https://<host>:<port>/Sourcing/inspector`) are redirected to the Direct Action URL.

- Direct Action URL for Ariba Buyer:
  `https://<host>:<port>/Buyer/Main/ad/inspector/InspectorDirectAction`
- Direct Action URL for Ariba Sourcing or Ariba Contract Management:
  `https://<host>:<port>/Sourcing/Main/ad/inspector/InspectorDirectAction`

**▼ To access through a User-Entered URL**

1. The user opens any browser currently certified by Ariba.
2. The user enters one of the Inspector URLs listed above.
3. If remote authentication is set (`System.Inspector.Authenticate = true` and `System.Inspector.UseAppAuthentication = true`), the user is redirected to the application login page.
4. The user enters their application username and password and clicks **Login**.
5. The remote authentication service authenticates the user.
6. If the user is authenticated, the Inspector opens in one of the three modes based on the user's level of authority (Read-Only, Debug, Admin).
7. If the user is not authenticated, the login page is cleared, and the user can enter the information again.

### Enabling Remote Authentication for the Inspector

By default, remote authentication for the Inspector tool is turned off. To enable this feature, you must perform the following manual updates. The details are covered in this section.

**Note:** This section assumes you have already configured remote authentication for your Ariba Spend Management applications. For information, see the the *Ariba Buyer Configuration Guide* or the *Ariba Upstream Platform Configuration Guide*.

Add the `System.Inpsector.UseAppAuthentication` parameter and set it to true. Set the `System.UI.LogoutDestinationURL` parameter, if it is not already set. Add the new Inspector permissions, roles, and groups to your configuration. Assign the new permissions, roles, and groups to the appropriate users.

**Important:** Before making these changes, shut down the running server instances. After making the following changes, you must restart the server to have the changes take effect.

### Parameter updates

1 Make sure `System.Inspector.Authenticate` is set to Yes (true).

2 Navigate to the `<ServerRoot>/config` directory.

3 Open `Parameters.table`.

4 Under `System.Inspector`, add the following parameter to tell Inspector to use remote authentication: `System.Inspector.UseAppAuthentication="true"`

5 Make sure `System.UI.LogoutDestinationURL` is set correctly. This parameter specifies the URL to which a user returns after logging out.

### Adding the new permissions, roles, and groups to your configuration

To add the new permissions, roles, and groups to your Ariba system, you must merge new CSV files with existing ones.

1 Navigate to the directory `<ServerRoot>/ariba/variants/Plain/partitions/None/data`, and make backup copies of the following files: `Permission.csv Role.csv Group.csv RolePermissionMap.csv GroupRoleMap.csv`

2 Navigate to the directory `<ServerRoot>/bin`.

3 Run the following five merge commands to merge the changes in the CSV files from the `configTemplates` area into the Ariba `install` and `config` areas. In these commands, replace `<ServerRoot>` with the directory path to the server root directory for your Ariba application. (Do not include the angle brackets.)

```
mergecsv -rjvmopt -Dfile.encoding=ISO-8859-1 -pf <ServerRoot>/ariba/variants/
Plain/partitions/None/data/Permission.csv -cf <ServerRoot>/config/variants/
Plain/partitions/None/data/Permission.csv -af <ServerRoot>/configTemplates/
Common-basic/plain-system/ariba/partition/data/Permission.csv -output
<ServerRoot>/ariba/variants/Plain/partitions/None/data/Permission.csv -append
```

```
mergecsv -rjvmopt -Dfile.encoding=ISO-8859-1 -pf <ServerRoot>/ariba/variants/Plain/
partitions/None/data/Role.csv -cf <ServerRoot>/config/variants/Plain/partitions/
None/data/Role.csv -af <ServerRoot>/configTemplates/Common-basic/plain-system/
ariba/partition/data/Role.csv -output <ServerRoot>/ariba/variants/Plain/partitions/
None/data/Role.csv -append
```

```
mergecsv -rjvmopt -Dfile.encoding=ISO-8859-1 -pf <ServerRoot>/ariba/variants/Plain/
partitions/None/data/Group.csv -cf <ServerRoot>/config/variants/Plain/partitions/
None/data/Group.csv -af <ServerRoot>/configTemplates/Common-basic/plain-system/
ariba/partition/data/Group.csv -output <ServerRoot>/ariba/variants/Plain/partitions/
None/data/Group.csv -append
```

```
mergecsv -rjvmopt -Dfile.encoding=ISO-8859-1 –pf <ServerRoot>/ariba/variants/Plain/
partitions/None/data/RolePermissionMap.csv –cf <ServerRoot>/config/variants/Plain/
partitions/None/data/RolePermissionMap.csv –af <ServerRoot>/configTemplates/
Common-basic/plain-system/ariba/partition/data/RolePermissionMap.csv –output
<ServerRoot>/ariba/variants/Plain/partitions/None/data/RolePermissionMap.csv -append
```

```
mergecsv -rjvmopt -Dfile.encoding=ISO-8859-1 –pf <ServerRoot>/ariba/variants/Plain/
partitions/None/data/GroupRoleMap.csv –cf <ServerRoot>/config/variants/Plain/
partitions/None/data/GroupRoleMap.csv –af <ServerRoot>/configTemplates/
Common-basic/plain-system/ariba/partition/data/GroupRoleMap.csv -output
<ServerRoot>/ariba/variants/Plain/partitions/None/data/GroupRoleMap.csv -append
```

4 In Ariba Administrator, choose **Server Manager** > **Data Import/Export**.

5 Run the following data import tasks, choosing the data import operations indicated below. When prompted for location of the CSV file, refer to the file in the directory `<ServerRoot>/ariba/variants/Plain/partitions/None/data`. `Import Permissions (operation = Create) Import Roles (operation = Create) Import Role Permission Map (operation = Load) Import User Groups (operation = Create) Import Group/Role Relationships (operation = Load)`

6 Restart the Ariba application.

### Assigning the new permissions, roles, and groups to users

1 In Ariba Administrator, use the **User Manager** task to assign Inspector permissions, roles, and groups to the users who need access to the Inspector tool.

2 Restart the Ariba application again.

## Inspector Authentication for WebLogic

The following information is relevant only if your application server is BEA WebLogic.

WebLogic has its own authentication mechanism which is enabled by default. If inspector authentication is enabled, users will not be able to access inspector with the Ariba authentication credentials because WebLogic's authentication mechanism takes precedence over Ariba's authentication mechanism. To resolve this conflict, you need to disable WebLogic's authentication mechanism by adding the `enforce-valid-basic-auth-credentials` property under security configuration in the `config.xml` file and setting the value to false.

Perform the following steps to add the entry to the `config.xml` file:

- Stop the Servers, Node Manager and the Admin Servers
- Navigate to `<user_projects>/<domain>/config` directory and open the `config.xml` file.
- Add the following tag in the `<security configuration>` section:

  `<enforce-valid-basic-auth-credentials>false</enforce-valid-basic-auth-credentials>`
- Restart the Servers, Node Manager and the Admin Servers.

## How Ariba Buyer Uses SSL

Ariba Spend Management applications exchange data with each other by sending cXML documents over the Internet. If those documents are exchanged with the HTTP protocol, the communication is not encrypted. If they are exchanged with the HTTPS protocol, the communication is encrypted with an underlying protocol called Secure Sockets Layer (SSL).

If a URL starts with the `https` prefix, your web server uses SSL to establish those connections. You do not need to set any parameters explicitly to use SSL, although your web server must be configured to support SSL. If your web server is not already SSL-enabled, consult the documentation from your web server provider for instructions on implementing SSL.

Ariba Buyer also uses SSL for secure RPC in communications sent outside the firewall, in the following situations:

- For RPC requests exchanged between command-line clients, such as `servermonitor`, and the application server. Such requests use the port specified by the `System.Nodes.`*`nodename`*`.Port` parameter.
- For RPC requests exchanged between Ariba Buyer and the Ariba Authentication Service. Such requests use the port specified by the `System.Nodes.NodeAuth.Port` parameter.

Communication between individual logical nodes does not require encryption because logical nodes are inside the firewall. These requests use the port specified by the `System.Nodes.`*`nodename`*`.InterNodePort` parameter.

This section describes how to enable and disable SSL to secure the HTTP communication channel, and how to enable and disable encrypted RPC requests.

### Digital Certificates

To provide a secure communication channel, you must obtain and install a valid *digital server certificate*. A digital server certificate identifies your server and lets users authenticate your server and establish a secure connection.

Digital certificates are usually issued and endorsed by a mutually trusted third-party organization called a certificate authority (CA). If you are using your certificate only for encrypted RPC, you might choose to use a self-signed certificate instead of using a CA. In this case, you are choosing to assume responsibility for validating identification information and issuing server certificates.

If your configuration uses the NT Domain Login adapter, you must create a second certificate (keystore) file for the Ariba Authentication Service. The NT Domain Login adapter depends on the Ariba Authentication Service. For more information on creating and using digital certificates, see "How To Create and Configure Digital Certificates" on page 121.

### Security Checks For Production Instances

Ariba highly recommends that you use secure communication in all production instances of Ariba Buyer.

In the default configuration, Ariba Buyer assumes that every production instance uses secure communication and validates your configuration to make sure that your settings are consistent.

When you configure Ariba Buyer, you can disable these security checks so that it is possible to run in production mode with a non-secure communication channel. If you choose to use a non-secure communication channel in production mode, you are knowingly reducing the level of security in your system and are potentially compromising the protection of your data and your system. You are fully responsible for the security of your data and your system.

### Performance Considerations

Providing secure services can impair the performance of your web server. The data encryption and decryption routines used as part of SSL consist of high-level, processor-intensive mathematical functions. Most web servers are not designed to perform these calculations in addition to providing normal page retrieval services.

Installing your web server and logical nodes on different computers improves SSL performance. You can also discuss other options with your hardware vendor, such as using an SSL accelerator, which is an optimized device built to handle the processor-intensive requirements of processing encryption and decryption.

## Parameters for SSL

If the URLs you use for accessing Ariba Buyer use the prefix `https`, then your web server uses SSL for those connections. You do not need to explicitly set any Ariba Buyer parameters to use SSL. Ariba Buyer does provide a parameter that enables the use of encrypted RPC connections.

Ariba Buyer provides parameters that allow you to disable the security checks required in a production environment. If your configuration is in production mode, Ariba Buyer checks to make sure that the following conditions are met:

- the URLs specified for accessing Ariba Buyer use the `https` prefix, and not `http`
- the parameter `System.Performance.SSLRPC` is set to `true`

If security checks are enabled, Ariba Buyer does not start if the checks fail.

You use the following parameters to configure secure communications:

| Parameter | Description |
|---|---|
| `System.Base.Production` | A Boolean that specifies whether your Ariba Buyer instance is running in production mode. Set this parameter to `true` for production mode. Set this parameter to `false` for non-production mode. |
| `System.Performance.SSLRPC` | A Boolean that specifies whether RPC requests are encrypted. Set this parameter to `true` to use encrypted RPC. Set this parameter to `false` to use non-encrypted RPC. |
| `IncomingHttpServerURL` (in `AppInfo.xml`) | The URL specified as `IncomingHttpServerURL` parameter in `AppInfo.xml` must use `https` for SSL, and `http` if you are not using SSL. |

| Parameter | Description |
|---|---|
| `System.Base.DisableLoginSecurity` | A Boolean that enables or disables security checks for SSL in production environments. Set this parameter to `false` to enable security checks. Set this parameter to `true` to disable security checks. |
| `System.Base.DisableRPCSecurity` | A Boolean that enables or disables security checks for encrypted RPC in production instances. Set this parameter to `false` to enable security checks. Set this parameter to `true` to disable security checks. |

By adjusting these parameters, you can enable or disable secure communication in different scenarios, as described in the following sections.

## Non-Production Mode

In non-production mode (for example, in a development or test instance), SSL is neither expected nor required. Set the parameters as follows:

| Parameter | Setting |
|---|---|
| `System.Base.Production` | `false` |
| `System.Performance.SSLRPC` | Either `true` or `false`. When `Production` is `false`, Ariba Buyer does not require SSLRPC to be `true.` |
| `System.Base.DisableLoginSecurity` | Ignored |
| `System.Base.DisableRPCSecurity` | Ignored |
| System.Base.`ResourceURL` | Set to a URL that starts with `http`. For example:<br><br>http://myserver.mycompany.com/*asmapp* |
| `IncomingHttpServerURL`<br>(in `AppInfo.xml`) | Set to a URL that starts with `http`. For example:<br><br>http://server.company.com |

## Production Mode With Secure Communication

To use secure communication for both RPC and HTTP requests, set the parameters as follows:

| Parameter | Setting |
|---|---|
| `System.Base.Production` | `true` |
| `System.Performance.SSLRPC` | `true` |
| `System.Base.DisableLoginSecurity` | `false` |
| `System.Base.DisableRPCSecurity` | `false` |

| Parameter | Setting |
|---|---|
| System.Base.ResourceURL | Set to a URL that starts with `https`. For example:<br><br>https://myserver:433/*appname* |
| `IncomingHttpServerURL`<br>(in `AppInfo.xml`) | Set to a URL that starts with `https`. For example:<br><br>https://server.company.com |

To use secure communication, you must also obtain and configure a digital certificate. For more information, see "How To Create and Configure Digital Certificates" on page 121.

## Production Mode With Non-Secure Communication

If you are running in production mode, Ariba recommends that you always use secure communication.

In production mode, Ariba validates your configuration, to ensure that the communication settings are correct for secure communication. You can disable these security checks, either for SSL (HTTP requests) or for RPC (command-line tools), by setting appropriate parameters in `config/Parameters.table`.

If your configuration is in production mode, Ariba Buyer makes sure that:

- the URLs specified for accessing Ariba Buyer use the `https` prefix, and not `http`
- the parameter `System.Performance.SSLRPC` is set to `true`

To use unencrypted RPC for command-line tools and the NT Domain Login adapter, set the parameters as follows:

| Parameter | Setting |
|---|---|
| `System.Performance.SSLRPC` | `false` |
| `System.Base.DisableRPCSecurity` | `true` |

These settings disable the security check requiring `SSLRPC` in production mode.

To disable SSL in a production instance, change the parameters as follows:

| Parameter | Setting |
|---|---|
| `System.Base.DisableLoginSecurity` | `true` |
| System.Base.ResourceURL | Set to a URL that starts with `http`. For example:<br><br>http://server.mycompany.com/AribaBuyer |

In this scenario, the URL specified by the `IncomingHttpServerURL` parameter in `AppInfo.xml` must use `http`.

## Security of Ariba Client Automation

*Ariba Client Automation* is an Ariba Spend Management feature that allows Ariba applications to export data from the browser to Microsoft Office applications such as Word, Excel, and Outlook. For example, the **Export to Excel** capability in Ariba Analysis allows users to export data to Excel for further analysis.

With Ariba Client Automation, Ariba Spend Management applications send directives to Microsoft Office components on the client machines. The directives sent to clients are always digitally signed, to guarantee safety and security.

### Deploying to Clients

To use the export capabilities, each client machine must load the Ariba Client Automation software. To distribute this software to your client machines, you have two options:

1. *On-demand deployment*. You can configure your applications to download Ariba Client Automation to client desktops on demand, when the user initiates an action that requires client automation. Users must acknowledge and accept the download.
2. *Bulk deployment*. You can distribute Ariba Client Automation to all personal computers in your organization.

Ariba recommends on-demand deployment, which ensures that client desktops are always upgraded with newer releases of Ariba Client Automation as necessary. To support this configuration, users must set the following browser options on the Internet Options (Security tab):

| | |
|---|---|
| Download signed ActiveX controls | Either **Prompt** or **Enabled** |
| Run ActiveX controls and plug-ins | Either **Prompt** or **Enabled** |

For more information on what happens if a user chooses the **Prompt** setting, and the screens visible to users in this situation, see the online help for your web server.

If your security policies do not allow on-demand deployment, you can run an installation program that installs the Ariba Client Automation software on each client desktop. With this option, your IT department (or end users) must manually install the Ariba Client Automation software on each user desktop, and must perform manual upgrades whenever the software is upgraded.

In this configuration, the browser settings for downloading and running ActiveX controls can be set to **Administrator approved**, which is more restrictive.

### Deploying a Digital Certificate in Your Application Server

To ensure safety and security of the directives sent to client machines, Ariba Client Automation is digitally signed. To ensure security, you must deploy a digital certificate in your application server. Ariba Client Automation uses this digital certificate to initiate a session using a shared and secret session key. Once the session key is established, all server directives are digitally signed, and Ariba Client Automation validates all server directives with the session key.

For maximum security, you should acquire and install a digital certificate from a well-known Certification Authority (CA), instead of using the Ariba-signed certificate. The certificate you use can be the same one that you use to certify other applications, such as your web server.

To specify the location of your digital certificate, you use the following parameters in `config/Parameters.table`:

| Parameter | Description |
|---|---|
| `Application.Base.CertificateUrl` | The URL that Ariba Client Automation uses to access the server certificate. The value can be either absolute or relative to server's `ResourceURL`. |
| `Application.Base.SSLKeyStoreFile` | File path to a file that contains the server's private key. The default for this parameter is `etc/aribakeystore`.For information about generating a keystore file, see the information about `keytool` in the <BookTitle>Ariba Buyer Configuration Guide. |
| `Application.Base.SSLKeyStorePassword` | Password to access the keystore specified in `SSLKeyStoreFile.` |

## Enabling Enhanced Security

(**This section applies to you, if you have installed Ariba Spend Management 9r1 SP21 or later.** )

Administrators of Ariba Spend Management solutions can configure enhanced security for the ActiveX exchange used to install the DFS ActiveX control file. This security feature is not enabled by default. Ariba recommends that you enable it as soon as it is convenient for you.

When the enhanced security feature is enabled, the Ariba host uses an enhanced security certificate to authenticate itself during the ActiveX exchange. You must get your 2048-bit RSA SSL certificate from SSL providers like VeriSign.

This feature has the following enhancements:

- The certificate is issued by SSL providers like VeriSign, and uses SHA-1 and a 2048-bit RSA key for its signature algorithm.
- The Ariba host uses a password-protected secure storage scheme to protect its private key.

The enhanced security feature also includes a new CAB archive file that contains a DFS ActiveX control file. The certificate used to sign the CAB file has been updated with a new expiration date.

To configure enhanced ActiveX security, administrators can set the following parameter to Yes:

```
Application.Base.ClientAutomation.UseThirdPartyCertificate
```

The default value for the `UseThirdPartyCertificate` parameter is No [false] (you can continue using the existing certificate and CAB file).

If you set the `UseThirdPartyCertificate` parameter to Yes [true], you also need to add the following parameters in the same place and copy the certificates to the corresponding locations.

```
CertificateUrl = "etc/certs/trustedPublisher/my_cert.cer";

SSLKeyStoreFile = "etc/certs/my_keystore.p12";

SSLKeyStorePassword = "my_password";
```

You can locate the `etc` folder in the following locations in your installation:

- For `CertificateUrl`, under `installRoot/WebComponents/etc`

- For `SSLKeyStoreFile` under `installRoot/etc`

**Important:**

1. The certificate used for setting the `CertificateUrl` parameter must be of `.cer` or `.der` type.
2. The KeyStore file used for setting the `SSLKeyStoreFile` parameter must be of key store type `PKSC12`. If your KeyStore file is in any other format, you must convert it to `PKSC12`. You can convert the file using open source tools like OpenSSL, or by using https://www.sslshopper.com/ssl-converter.html. Note that these options are mentioned as examples, and Ariba does not recommend any tool or site as preferred options.

You use the `aribaencrypt` command to encrypt a value. When you run `aribaencrypt`, you supply a string as the argument, and `aribaencrypt` returns an encrypted string and automatically updates `config/Parameters.table` with the encrypted value.

Run the command as shown in the following example:

```
aribaencrypt -key Partitions.None.Application.Base.ClientAutomation.SSLKeyStorePassword -value xyz
-allownewkey
```

If the `UseThirdPartyCertificate` parameter is enabled, the Ariba solution will download a new security certificate and the new CAB file for the DFS ActiveX Control (signed by the private key associated with the certificate) when a user first enables DFS. Users who already have DFS enabled will continue to use the existing CAB file, but will be prompted to accept the new certificate and CAB file if they disable and then re-enable DFS. The new CAB file contains a DFS ActiveX control file with security enhancements that prevent the execution of unauthorized code on client systems.

## Manually Installing the Client Control

This section describes how to install the Ariba Client Automation control on a user's desktop. For general information on how to distribute software or files over a network to individual personal computers, see the Microsoft documentation.

To install this control, you must first extract the dynamic load library `clientautomation.dll` from the archive file. The archive file is located as follows:

*`InstallRoot`*`/install/docroot/ariba/resource/`*`locale`*`/lib/clientautomation.cab`

If you are using enhanced security for the DFS ActiveX Control (i.e. `Application.Base.ClientAutomation.UseThirdPartyCertificate` is set to Yes), request the following archive file:

`clientautomation_v21.cab`

Open the archive file using Internet Explorer or a file extraction utility.

### ▼ To install the signed control on a desktop:

1. Copy the Ariba-signed control to the same directory where Internet Explorer searches for installed ActiveX controls. For example:

   ```
   copy clientautomation.dll "c:\WINDOWS\Downloaded Program Files\clientautomation.dll"
   ```

2 Register the control with the Windows operating system:

```
regsvr32 -s "c:\WINDOWS\Downloaded Program Files\clientautomation.dll"
```

3 (Optional) Load or publish the Ariba certificate in a location so that it is automatically retrieved by the clients instead of requiring each user to install the certificate locally. For example, you can use the Microsoft Certificate Manager or `certmgr` utility to load the certificate in a folder in a server's certificate store, such as in the Trusted People folder.

On Ariba 9r1 systems, the certificate file is available on the server in the following location:

```
installRoot/install/docroot/etc/certs/trustedPublisher/ariba.cer
```

If you are using enhanced security for the DFS ActiveX Control (i.e. `Application.Base.ClientAutomation.UseThirdPartyCertificate` is set to Yes), request the following certificate files:

```
<<ssl_cert_name>>.com.cer
```

Install the certificate on the Microsoft Active Directory server, or use the Microsoft `certmgr` utility to load the certificate in the client's certificate store, or a Microsoft Enterprise CA. You could use a syntax similar to the following:

```
certmgr -add -c -n commonNameInCertificate cer_file -s TrustedPeople
```

Where:

`commonNameInCertificate` is the commonName (CN) attribute of the distinguishedName (DN) of the certificate subject. Microsoft Explorer displays this in the **Issued to** field of a certificate.

`cer_file` is the name of the certificate file.

For example:

```
certmgr -add -c -n "analysis.ariba.com" ariba.cer -s TrustedPeople
```

▼ **To uninstall the signed control:**

1 Unregister `clientautomation.dll` with the Windows operating system:

```
regsvr32 -s /u "c:\WINDOWS\Downloaded Program Files\clientautomation.dll"
```

2 (Optional) Remove the web server certificate from the certificate store.

```
certmgr -del -c -n [commonNameInCertificate] -s TrustedPeople
```

For example:

```
certmgr -del -c -n analysis.ariba.com -s TrustedPeople
```

### Checking Installation

You can check if the Ariba Client Automation controls have been installed by reviewing the browser settings. You can also use these steps to delete the Ariba Client Automation control from your machine.

▼ **To see if Ariba ActiveX controls have been installed on a particular computer:**

1 In Internet Explorer, in the **Tools** menu, choose **Internet Options**.

2 On the **General** tab of **Internet Options**, click **Settings** in the **Temporary Internet Files** area.

3 In the **Settings** window, click **View Objects**.

4 Look for **Ariba Client Automation ActiveX Control**.

If that file is labelled as **Installed** in the **Downloaded Program Files** directory, the Ariba-signed control has been installed on the computer.

## How To Create and Configure Digital Certificates

This section describes how to create and configure digital certificates.

### Specifying a Hostname

When you create a digital certificate, you must specify a hostname as the `commonName` in the certificate. If your configuration includes multiple logical nodes running on different physical computers, the `commonName` you supply must be a DNS alias that resolves to all the physical computers.

If you have a single-server configuration, the `commonName` must be the hostname of your computer.

### Using the NT Domain Login Adapter

The NT Domain Login Adapter depends on the Ariba Authentication Service. The Ariba Authentication service uses the parameter `System.Performance.SSLRPC` to determine whether to use secure or non-secure communication.

If `SSLRPC` is set to `true` and you are using the NT Domain Login Adapter, you must create and configure a separate keystore file for the Ariba Authentication Service. The hostname in the keystore file must match the hostname you specify in the `System.PasswordAdapters.`*`passwordadapter`*`.ExternalPasswordAdapterHost` parameter, which must be identical to the value of `System.Nodes.NodeAuth.Host`.

To ensure that the hostnames match properly, you must create a keystore file specifically for use with the Ariba Authentication Service.

### Setting Parameters for Keystore Files

You use the following parameters to specify your keystore file (or files):

| Parameter | Setting |
|---|---|
| System.Performance.SSLKeyStorePassword | Set to the password for your keystore file. The default is `aribakeystore`. |
| System.Performance.SSLKeyStoreFile | Set to the name of your keystore file. The default is `etc/aribakeystore.jks`. |

| | |
|---|---|
| System.Nodes.NodeAuth.SSLKeyStorePassword | If you are using the NT Domain Login adapter, set this parameter to the password for the keystore file for the Ariba Authentication Service. The default is `ntauthkeystore`. |
| System.Nodes.NodeAuth.SSLKeyStoreFile | If you are using the NT Domain Login adapter, set this parameter to the name of the keystore file for the Ariba Authentication Service. The default is `etc/ntauthkeystore.jks.` |

## Setting Up Certificate Authentication

To enable secure communication, you must obtain a digital certificate from a Certificate Authority (CA), store it in a designated file, and supply that file name as a parameter in `config/Parameters.table`.

The following procedure describes how to set up certificate authentication.

▼ **To set up certificate authentication:**

**1** Using a third party tool such as `keytool` or `ikeyman`, create a public key, a private key, and a client certificate request file.

For more information on the supported key generation tools, see the installation guide for your Ariba Spend Management application.

**2** Submit the contents of the client certificate request file to a CA. The CA returns a Base64-encoded X.509 V3 Class 3 signed digital certificate.

**3** Obtain the "root" certificate from the CA and put it in the `/etc/certs` directory under the Ariba Buyer Server installation directory. The certificate must be in DER format.

**4** Paste the contents of the Base64-encoded X.509 V3 Class 3 signed certificate into a certificate file (`.cer` file extension) on the computer where the Ariba Buyer Server installation directory resides. The contents of the file must begin with `---- BEGIN CERTIFICATE ----` and end with `---- END CERTIFICATE ----`. Make sure you save the certificate file in a secure location.

**5** Using a third-party tool such as `keytool` or `ikeyman`, create a keystore file. The keystore file must meet the following requirements:

- The keystore must be of type JKS
- The keystore must contain a single key entry
- The key algorithm used must be RSA

For example:

```
keytool -genkey -alias myAlias -dname "cn=myHost ou=PSS o=Ariba 1=Sunnyvale s=California c=US"
-keystore keystore_location -keypass password -storepass password -sigalg RSA
```

**Note:** The password must be identical for both `keypass` and `storepass`.

**6** Using a third-party tool such as `keytool` or `ikeyman`, import the signed certificate, your matching private key, and the root certificate into the keystore file.

**7** In `config/Parameters.table`, set `System.Performance.KeyStoreFileName` to the name of your keystore file. For example:

```
KeyStoreFileName = "etc/aribakeystore.jks";
```

8 Set `System.Performance.KeyStorePassword` to the password you assigned to your keystore file. For example:

```
KeyStorePassword = "aribaKeyStore";
```

**Note:** You must encode the `KeyStorePassword` parameter value.

9 Restart Ariba Buyer.

If `SSLRPC` is set to `true` and you are using the NT Domain Login Adapter, you must create and configure a separate keystore file for the Ariba Authentication Service.

### Creating a Self-Signed Certificate

You can extract a self-signed certificate from your keystore file. Use the following syntax:

```
keytool - export -keystore keystore_location -storepass password -alias alias -file
location_of_the_certificate
```

## Installing a Digital Certificate

To make your digital certificate available to the web server, or to use SSLRPC, you must export your digital certificate to *BuyerServerRoot*`\etc\certs` directory (Windows) or *BuyerServerRoot*`/etc/certs` (UNIX).

The digital certificate must be in DER format and have a `.der` file extension.

In Microsoft Internet Explorer, you can export a digital certificate to DER format by using the Certificate Manager Export Wizard.

▼ **To export a digital certificate using the Certificate Manager Export Wizard:**

1 Start Microsoft Internet Explorer, and navigate to your Ariba Buyer login URL.

2 In the lower right corner of the browser window, double-click the padlock icon:

🔒

3 In the Certificate dialog box, click the **Certification Path** tab.

4 In the Certification Path property sheet, select your root digital certificate, and then click **View Certificate**. The root digital certificate is the top level in the tree.

5 In the new Certificate dialog box, click the **Details** tab.

6 In the Details property sheet, make sure `<All>` appears in the **Show** list, and then click **Copy to file**.

7 In the Certificate Manager Export Wizard welcome dialog box, click **Next**.

8 In the Certificate Export File dialog box, click the **DER encoded binary X.509 (.CER)** radio button, and then click **Next**.

9 In the Export File Name dialog box, type a name in the **File name** box (for example, `mycertificate.cer`), and then click **Next**.

10 In the Certificate Manager Export Wizard completion dialog box, click **Finish**.

**11** Rename the CER file to a DER file. For example, rename `mycertificate.cer` file to `mycertificate.der`.

**12** Copy the DER file to the Ariba Buyer `etc/certs` directory.

For more information on the Certificate Manager Export Wizard, see the Internet Explorer online help.

## Guest User Account

Guest users have a limited view of the user interface. In the default configuration, there are no permissions, roles, or groups associated with the guest user account.

The following parameters configure the guest user account:

- `System.Sessions.GuestUser.EditableClasses`
- `Application.Base.Data.AribaGuestSystemUser`
- `Application.Base.Data.AribaGuestSystemUserPasswordAdapter`

### System.Sessions.GuestUser.EditableClasses

Specifies the objects that can be edited by the guest user. By default, this parameter is set to:

- `ariba.user.core.User`
- `ariba.user.core.Organization`
- `ariba.auth.password.Password`
- `ariba.common.core.User`

### Application.Base.Data.AribaGuestSystemUser

Specifies the guest user account. By default, this parameter is set to `aribaguestsystem` for all partitions. You can override this value at the partition level if you require different guest user accounts for different partitions.

### Application.Base.Data.AribaGuestSystemUserPasswordAdapter

Specifies part of the unique lookup key to identify the guest user named by the `Application.Base.Data.AribaGuestSystemUser` parameter. By default, this parameter is set to `PasswordAdapter1`. You can override this value at the partition level.

# Chapter 9 Logging and Auditing

This chapter describes how to configure the logging and auditing features. It contains the following sections:

- "Log Files and Directories" on page 125
- "Categories and Logging Levels" on page 127
- "Log Message Format" on page 128
- "Log Appenders" on page 129
- "Scheduled Tasks for Logging" on page 133
- "Logging Customization in Java" on page 133

## Log Files and Directories

The log files for Ariba Buyer are in *BuyerServerRoot*/`logs`. Some log file names include the name of the logical node that generated them. For example:

```
AribaBuyerNode1Log.txt
metrics-Node1.csv
```

The following table lists the files in the `logs` directory.

| File Name | Description |
|---|---|
| `LoadDBLog.txt` | Contains messages generated during the data loading process. |
| `BuyerNode1Log.txt` | The main log file for Ariba Buyer. |
| `AribaBuyerbuyerserver1InspectorAuditLog.txt` | Logs messages generated by Inspector activity. |
| `AribaMetaConfigurationLog.txt` | Logs messages associated with metadata XML files. |
| `AribaOrderTransmitterLog.txt` | Logs order transmission messages. |
| `classMetrics-`*`nodename`*`.txt`<br><br>metrics-*nodename*.csv | Contain Ariba Buyer performance data. |
| `configuration.txt` | Contains messages generated during configuration. |
| `configureasmsharedlog.txt` | Contains messages generated by the Ariba Spend Management integration program. For more information, see the *Ariba Spend Management Integration Guide*. |
| `dbinit.txt` | Contain messages generated during the database initialization process. |
| `emptychannel.`*`channel`*`.txt` | Created when you run `initdb` with the `-emptychannel` option. |

| File Name | Description |
|---|---|
| `EmptyDBLog.txt` | Log messages associated with the `emptydb` phase of `initdb`. |
| `initchannel.`*`channel`*`.txt` | Log messages generated during the channel initialization process. *`channel`* is the name of the integration channel. This file is created when you run `initdb` with the `-initdball` or `-initchannel` option. |
| `installlog.txt` | Log messages generated during the installation. |
| `j2eeSetupLog.txt` | Records the running of the `j2eesetup` script, which is invoked by the `configure` command. This log is in *`BuyerServerRoot`*`/etc/install/logs`. |
| `loadchannel.`*`channel`*`.txt` | Created when you run `initdb` with the `-loadchannel` option. |
| `LoadMetaLog.txt` | Log messages associated with the `loadmeta` phase of `initdb`. |
| `AuthServiceInstallLog.txt` `WebLogicServiceInstallLog.txt` | Contains messages related to installing and starting Windows services. For more information, see the *Ariba Buyer Installation Guide*. |

Administrators can view and download log files using the Log Files task in Ariba Administrator.

## Application Server Logs

The Standard Out and Standard Error (`stdout` and `stderr`) log files for the application server hosting Ariba Buyer are located in the logs directory, in a subdirectory named for the application server instance. For example, if your server instance is called `server1`, the logs for the application server are in *`BuyerServerRoot`*`/logs/server1`.

For IBM WebSphere Application Server, the logs are as follows:

```
BuyerServerRoot/logs/managedserver/SystemOut.log
BuyerServerRoot/logs/managedserver/SystemErr.log
```

For BEA WebLogic Server, the logs are as follows:

| | |
|---|---|
| **Directory** | *`BuyerServerRoot`*`/logs/managed_server` |
| **Filename** | *`managed_server`*`.log` |
| **Example** | *`BuyerServerRoot`*`/logs/`*`managedserver`*`/server1.log` |

For more information on application server log files, see the *Ariba Spend Management Database Configuration Guide*.

## Categories and Logging Levels

Each log message in the main log file, `BuyerNode1Log.txt`, has an associated category and logging level.

### Categories

Categories are used to group related log messages. For example, log messages that have to do with approvable transactions are part of the `approvable` log message category.

### Logging Levels

A *logging level* is used to indicate the importance of a log message, and is specified at the category level. The following table describes the logging levels in the default configuration.

| Level | Log messages of this level... |
|---|---|
| `error` | Indicate that a fatal error has occurred. You might need to send these messages to Ariba for analysis. |
| `warning` | Do not cause Ariba Buyer to halt, but must be handled to avoid potential problems. |
| `info` | Are informational only. Because informational messages are more verbose than warning messages, they can be useful for diagnosing problems. |
| `debug` | Are intended for use during the implementation phase and for debugging production problems. Do not use this log level in a production instance. |

Logging levels are cumulative. For example, if you specify the `debug` logging level, messages of all four logging levels are logged. Similarly, if you specify the `warning` logging level, `warning` and `error` level messages are logged. If you do not specify a logging level, `error` is assumed.

In the default configuration, Ariba Buyer logs `error` and `warning` level messages for all log message categories to the console and to the main log file. You can change the logging level of a category by modifying the category entries in the `System.Logging.Categories` parameter. For more information, see "Log Appenders" on page 129.

### Log Messages in Ariba Administrator

You can view log files and change the logging levels for individual log categories in Ariba Administrator. To view log files, use the Log Files task in the Server Manager workspace of Ariba Administrator. To change the logging levels for individual log categories, use the Log Settings task in the Server Manager workspace of Ariba Administrator.

## Log Message Format

Log messages in `BuyerNode1Log.txt` usually have the following format:

```
timestamp (nodename) (category:level:number): (partition): message stacktrace ]
```

For example:

```
Wed Nov 06 23:59:30 PST 2004 (*:*:vmu6dx:Node1) (general:info:1674): (None): Finished running
ArchiveLog
```

In some cases, the logging message is followed by a *stacktrace*, which is used by Ariba Technical Support.

## Logging and Auditing Parameters

The following parameters configure logging. They are global and are located in `System.Logging`:

| Parameter | Description |
|---|---|
| `AribaAuditing.*` | Specifies auditing of all user activity. |
| `AribaCommitNowAuditing` | Specifies auditing of database commits. |
| `Categories` | Specifies the log message categories to be logged by the log listener. The syntax is a colon-separated list of categories, where each category has the form category/severity. For example:<br>`Categories = "startup/debug:supplierdm/debug";`<br>This parameter is required for every log listener. |
| `Console.Disable` | Disables the log listener that sends log messages to the Java console. This log listener is enabled in the default configuration. |
| `DatabaseLog.Disable` | It is possible to track changes made to objects and configuration settings using the audit capability. Audit activities are stored to the database instead of to files. Auditing is enabled in the default configuration. This parameter enables or disables database audit logging. |
| `InspectorAuditFile.*` | Specifies auditing of all inspector activity. |
| `J2EELogger.Disable` | Disables the J2EELogger that logs events to the default log files of the application server. This log listener is enabled in the default configuration, and is configured as a managed listener, so that it acts like the console logger or the main log file listener (writing error and warning messages to the console). |
| `LocaleForLogMessages` | Specifies the locale to be used for choosing log messages, for internationalization. The locale must match a locale defined in your configuration. This parameter is not recognized by the DatabaseLogger. |
| `MainLogFile.Disable` | Disables the log listener that is defined to require that Ariba Buyer logs error and warning level messages for all log message categories by default. |
| `NTServiceLogging.Disable` | Disables log listener that sends log messages to the Windows NT Event Viewer. |
| `SupplierDMLog.Disable` | Disables the a log listener that uses the FileLogger to write log messages related to catalogs to a specified file. |

| Parameter | Description |
|---|---|
| `SupplierDMLog.File` | Specifies the name of the file used for the SupplierDMLog messages. |
| `Suppression` | Logging messages with specific ID numbers may be suppressed, which means that message will not be repeated in the log within a certain time span, given in seconds. |

## Log Appenders

*Appenders* direct messages to a specified location. Each category can be associated with zero or more appenders.

Appenders are defined in the `System.Logging` section of the `config/Parameters.table` file. This section describes the appenders in the default configuration.

### Common Parameters

The following parameters are common to most log appenders:

| Parameter | Description |
|---|---|
| `Categories` | Specifies the log message categories and logging levels to be logged by the log appender. The syntax is a colon-separated list in the form ***`category/severity`*** where ***`category`*** is the log message category and ***`severity`*** is the logging level. For example:<br><br>`util/info:general/info:startup/warning`<br><br>If you do not specify a logging level, the `error` logging level is assumed. For more information on logging levels, see "Logging Levels" on page 127. |
| `ClassName` | Specifies the class file for the log appender. |
| `Disable` | A Boolean parameter that indicates whether the log appender is enabled. When this parameter is set to `true`, the log appender is disabled. When this parameter is set to `false`, the log appender is enabled. |
| `LocaleForLogMessages` | Specifies the locale for internationalization. The locale must match a locale defined in your configuration. |

### Console Log Appender

The `Console` log appender sends log messages to the Java console. This log appender is enabled by default, and must be left enabled. You can modify the category's logging level.

This log appender ensures that Ariba Buyer logs `error` and `warning` level messages for all log message categories to the console by default. You can extend this parameter by adding additional categories, but you cannot disable the logging of error messages to the console.

## J2EELogger Log Appender

The `J2EELogger` log appender logs events to the default log files of the application server.

In the default configuration, the `J2EELogger` log appender is configured as follows:

```
J2EELogger = {
    Categories = "util/info:general/info";
    ClassName = ariba.server.util.J2EELogAppender;
    Disable = false;
    LocaleForLogMessages = en_US;
    LogName = Buyer;
};
```

The `LogName` parameter specifies the name under which `J2EELogger` log messages are logged in the application server log files, to help differentiate Ariba Buyer log messages from other application server messages.

## MainLogFile Log Appender

The `MainLogFile` log appender writes log messages to the main log file, `BuyerNode1Log.txt`. By modifying this log appender you can change the log message categories that are logged to the main log file. You must not disable this log appender.

In the default configuration, Ariba Buyer logs `error` and `warning` level messages for all log message categories to the main log file.

## DatabaseLog Log Appender

The `DatabaseLog` log appender writes messages to the Ariba Buyer database. In the default configuration, the `DatabaseLog` log appender is disabled. You must explicitly enable this log appender if you want to use it.

**Note:** Database logging is meant to supplement file-based logging, not replace it.

In the default configuration, the disabled log appender entry is as follows:

```
DatabaseLog = {
    ClassName = "ariba.base.server.DatabaseLogger";
    Categories = "audit/info";
    Disable = true;
    EventsPerTransaction = 1;
    };
```

The `EventsPerTransaction` parameter determines how many messages are batched before writing to the database.

When the `DatabaseLog` log appender is enabled, Ariba Buyer adds new tasks and links to the Server workspace in Ariba Administrator. The links that appear depend on the specific categories listed:

- If you include the `audit/info` log category in the Categories parameter, the **DB Audit Activity** task and **My Audit Activity** link are enabled.
- If you include at least one log message category (other than `audit/info`), the **DB Log Activity** task and **My Log Activity** link are enabled.

### Performance Considerations

In some situations, logging messages to the database might not be desirable because of performance or database space restrictions. For example, logging `startup` messages to the database slows start up of Ariba Buyer, and is not recommended.

If you choose to enable database logging for non-audit messages, you can minimize the performance impact by specifying less verbose log message categories and logging levels.

You cannot log `debug` level messages to the database. If you specify `debug` level messages in the `Categories` parameter, that setting is ignored and the following warning message is logged to the main log file:

```
For performance reasons DatabaseLogger does not support Debug severity logging. Please correct your
Logging configuration.
```

## NTServiceLogging Log Appender

The `NTServiceLogging` log appender sends messages to the Windows NT Event Viewer. In the default configuration, the `NTServiceLogging` log appender is configured as follows:

```
NTServiceLogging = {
    ClassName = "ariba.server.ntloggingserver.client.NTLogAppender";
    Categories = "startup/info:util/info";
    Disable = true;
    LocaleForLogMessages = en_US;
    NTLogListenerHost = localhost;
    NTLogListenerPort = 8093;
    };
```

This log appender is disabled by default. You can enable it by modifying the parameters.

▼ **To enable the NTServiceLogging log appender:**

**1** Set the `Disable` parameter to `false`.

**1** Set the `NTLogListenerHost` parameter to the hostname of the computer where the Ariba NT Logging Service is running.

The hostname for the Ariba NT Logging Service is specified by `System.Nodes.NodeLog.Host` parameter in `config/Parameters.table`. You do not need to include a domain name.

**2** Set the `NTLogListenerPort` parameter to the RPC port used by the Ariba NT Logging Service.

This port is specified by the `System.Nodes.NodeLog.InterNodePort` parameter in `config/Parameters.table`.

**Note:** Transmission through this port is always unencrypted.

This log appender must be used only in configurations that run Ariba Buyer as a Windows NT service.

## SupplierDMLog Log Appender

The `SupplierDMLog` log appender writes log messages related to catalogs to a log file. This log appender is a variation of the FileLogger that logs only messages for debugging catalogs.

In the default configuration, the `SupplierDMLog` log appender is disabled and configured as follows:

```
SupplierDMLog = {
    Categories = "supplierdm/debug";
    ClassName = ariba.util.log.FileLogger;
    Disable = true;
    LogFileName = SupplierDMLog;
    };
```

If you want to enable catalog logging, modify this entry to enable the `SupplierDMLog` log appender, and use the `LogFileName` parameter to specify the name of the log output file. Ariba Buyer appends the extension `.txt`.

## ObjectArchive Log Appender

The ObjectArchive scheduled task, which is run as part of the database archive and purge tools, defines two log appenders: ObjectArchiveDetailLogger and ObjectArchiveSummaryLogger. For more information on these log appenders, see "ObjectArchive Scheduled Task" on page 141.

## MappingLog Log Appender

The `MappingLog` log appender watches the main log file for error messages pertaining to PunchOut items with commodity codes that are not mapped correctly, and sends Notification 49, "Notification of Import Mapping Failure," to users who have the `CatalogManager` permission if such errors are found.

In the default configuration, the `MappingLog` log appender is disabled and configured as follows:

```
MappingLog = {
    Categories = "aribaMappingException/debug";
    ClassName = ariba.server.objectserver.NotificationLogger;
    Disable = true;
    TitleStringTable = "ariba.common.core.validator";
    TitleStringKey = "ImportMappingFailureTitle";
    PermissionGroup = "CatalogManager";
    };
```

You modify this log appender when you want to enable import mapping failure notification.

▼ **To enable the MappingLog log appender:**

1. Set the `Disable` parameter to `false`.
2. Set the `TitleStringTable` parameter to the name of the resource file (CSV file) that contains the title string used for the email notification message.

   In the default configuration, this resource file is `*BuyerServerRoot*/resource/*locale*/strings/ariba.common.core.validator`.
3. Set the `TitleStringKey` parameter to the resource key for the message title in the resource file named by `TitleStringTable`.
4. Set the `PermissionGroup` parameter to a valid permission in your configuration. Users who have that permission receive the notification message from this log appender.

### File Encoding Format

Most of the entries in `System.Logging` define log appenders. The only general parameter is `System.Logging.Encoding`. The default value is UTF-8.

This is an optional parameter. If it is missing, the default is UTF-8, which is the correct setting for almost all configurations.

## Scheduled Tasks for Logging

To control the size of log files, Ariba Buyer uses the scheduled task `ArchiveLog`. This scheduled task archives `BuyerNode1Log.txt` into the `logs/archive` directory, with a timestamp, and then starts logging to a new log file.

The `ArchiveLog` scheduled task runs on all logical nodes in your configuration.

The default configuration of Ariba Buyer also includes the following scheduled tasks related to logging and auditing:

| Scheduled Task | Description |
|---|---|
| `CleanDatabaseLog` | This scheduled task removes non-audit messages that were logged to the database by the `DatabaseLog` log appender. You can also configure this task to archive messages to a file.<br><br>For information on the `DatabaseLog` log appender, see "DatabaseLog Log Appender" on page 130. |
| `CleanAuditDatabaseLog` | This scheduled task removes and optionally archives audit messages that were logged to the database by the `DatabaseLog` log appender. You can also configure this task to archive messages to a file.<br><br>For information on the `DatabaseLog` log appender, see "DatabaseLog Log Appender" on page 130. |

For a detailed description of these scheduled tasks, see Appendix H, "Scheduled Task Reference".

## Logging Customization in Java

You can customize the logging interface by using the logging API to create your own log messages and log appenders. For more information, see the Logging API chapter in the *Ariba Spend Management API Guide*.

## Audit Log Task

It is possible to track changes made to objects and configuration settings using the audit capability. Audit activities are stored to the database instead of to files. Auditing is enabled in the default configuration.

Auditing as a feature can be turned on or off on server startup via the parameters:

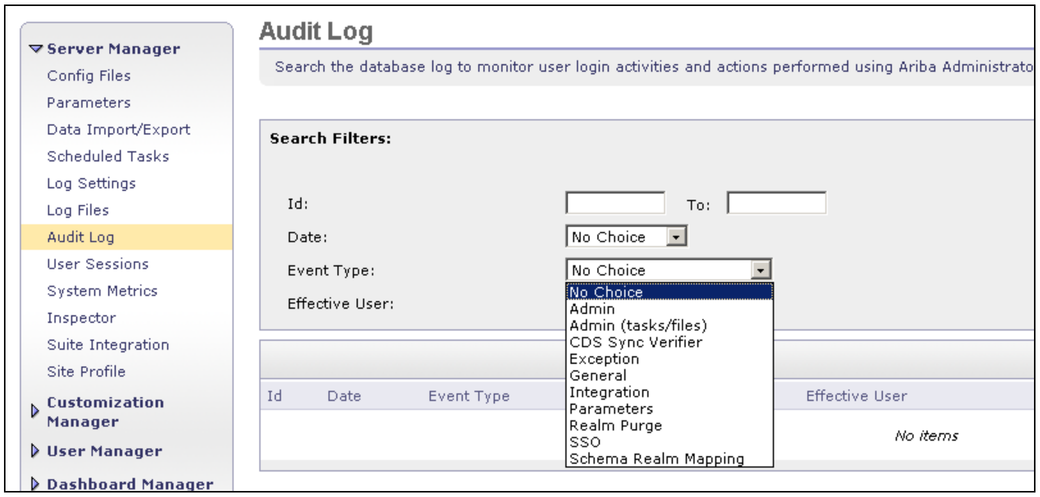
- `System.Logging.<logListenerName>`

- `System.Logging.DatabaseLog.DisableLogListener`

The scheduled task CleanAuditDatabaseLog can be run to periodically clean up older audit records.

The LogListener is `DatabaseLog`. The log category "Audit/info" turns on auditing to the database. Available logging levels are: Off, Info, Warning, Debug.

You can view the audit logs through `Manage > Core Administration > Server Manager > Audit Log`. The following screen captures demonstrate the appearance of the Audit Log user interface:



Audit Log

Search the database log to monitor user login activities and actions performed using Ariba Administrato

Search Filters:

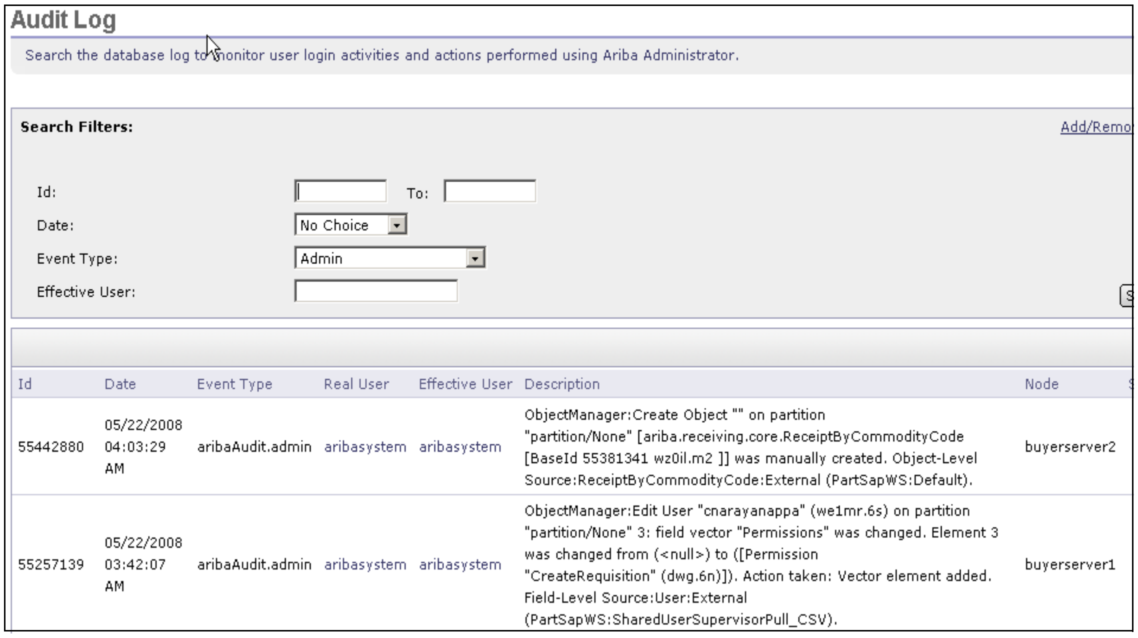
Id: To:

Date: No Choice

Event Type: No Choice

Effective User:

| Id | Date | Event Type | Effective User |
|---|---|---|---|
| No items | | | |



Audit Log

Search the database log to monitor user login activities and actions performed using Ariba Administrator.

Search Filters: Add/Remo

Id: To:

Date: No Choice

Event Type: Admin

Effective User:

| Id | Date | Event Type | Real User | Effective User | Description | Node |
|---|---|---|---|---|---|---|
| 55442880 | 05/22/2008 04:03:29 AM | aribaAudit.admin | aribasystem | aribasystem | ObjectManager:Create Object "" on partition "partition/None" [ariba.receiving.core.ReceiptByCommodityCode [BaseId 55381341 wz0il.m2 ]] was manually created. Object-Level Source:ReceiptByCommodityCode:External (PartSapWS:Default). | buyerserver2 |
| 55257139 | 05/22/2008 03:42:07 AM | aribaAudit.admin | aribasystem | aribasystem | ObjectManager:Edit User "cnarayanappa" (we1mr.6s) on partition "partition/None" 3: field vector "Permissions" was changed. Element 3 was changed from (<null>) to ([Permission "CreateRequisition" (dwg.6n)]). Action taken: Vector element added. Field-Level Source:User:External (PartSapWS:SharedUserSupervisorPull_CSV). | buyerserver1 |

# Chapter 10 Data Archiving and Purging

This chapter describes Ariba Buyer's archive and purge tools, which enable you to remove old data from your Ariba Buyer database. It includes the following sections:

- "About Archive and Purge" on page 135
- "Purge Configuration File" on page 138
- "How to Archive to Disk" on page 141

**Note:** To configure purge, you must be comfortable writing Ariba Query API expressions. For information on the Ariba Query API, see the *Ariba Spend Management Query API Guide*.

## About Archive and Purge

As you use Ariba Buyer over time, your Ariba Buyer database requires an increasing amount of space to store approvable documents and related data. To help you keep your database size in check, Ariba Buyer provides tools for archiving the data onto your disk and purging it from the database.

The archive/purge tools are configurable, allowing you to specify which data you are ready to purge. You specify that data at the approvable document level, by writing an Ariba Query API expression that specifies the set of documents to be purged. For example, you can archive all requisitions approved before a specified date, or all invoices in a specific state.

In a purge specification, you write a query that selects documents of a given *primary class* (such as `Requisition`). From that initial set of documents, the purging algorithm determines which *related classes* can safely be purged. For example, if you ask to purge a purchase requisition, the purge algorithm finds and purges all purchase orders, receipts, receipt trackers, file attachments, and other data related to that requisition.

**Note:** Flex classes cannot be archived/purged in Version 9r1. Beginning with Service Pack 2, flex fields are archived/purged if the flex field definition specifies an exact type (such as `<type class="ariba.purchasing.core.PurchaseOrder">`) rather than a generic ClusterRoot type.

The logic of locating all related business objects that can safely be purged is internal to the archive and purge tools. Your responsibility is only to specify the primary documents you want to purge.

### Archive and Purge Process

The archive/purge process runs in distinct phases:

1 **Preview Phase**

The preview phase reads a configuration file as input, and creates a preview of the objects that would be purged. You can browse that preview from the Inspector.

The preview phase shows the data that would be purged, without actually initiating the purge. It doesn't make any database changes. If you restart Ariba Buyer without running the mark phase, the Ariba Buyer database is unchanged.

2 **Mark Phase**

The mark phase reads the same configuration file as input, finds all objects that would be purged, and marks them in the database. If you restart Ariba Buyer after running the mark phase, Ariba Buyer cannot access any of the objects that are marked to be purged.

3 **Sweep Phase**

The sweep phase reviews the marked objects in the database and performs the actual archive/purge.

The preview and mark phases use a command-line tool called `runpurge`. The `runpurge` command initiates the purge server, which examines your database and determines the references between objects. For complete information on the options to `runpurge`, see "runpurge" on page 189.

The sweep phase uses a scheduled task ObjectArchive, which scans your database for the objects marked in the mark phase, and then does the archive/purge. This task runs during normal operation of Ariba Buyer. For more information on the sweep phase, see "How to Archive to Disk" on page 141.

### Obtaining the Most Recent Preview Result

If you run a second preview phase, the result from the first preview phase is displayed unless you click the **Repaginate** button. The **Repaginate** button synchronizes to the latest preview result.

## Purge Configuration Files

You configure archive and purge with a *purge configuration file*. A purge configuration file is an XML file that you pass to the archive and purge tools. It defines the objects you want to purge, and specifies the conditions under which objects must be purged or preserved.

When you start a preview or mark phase, the `runpurge` command reads this configuration file and does the following:

- Creates an Ariba Query API query that selects a set of candidate documents
- Traces through the database to find all objects related to those purge candidates
- Filters the candidates through any defined keep conditions, potentially removing purge candidates

Each purge configuration file centers around a specific approvable document type, and selects the documents of that type that can be purged. It includes the following kinds of information:

- An Ariba Query API expression that specifies the initial set of *purge candidates*.
- One or more Ariba Query API expressions used as *keep conditions.* You use keep conditions to filter the purge candidates and remove objects that you want to keep.
- A set of *metadata annotations*, which provide additional typing information for specific objects, such as type narrowing and information about whether a given field creates references outside the current cluster root.

Writing purge configuration files is the only task you perform to configure archive and purge. For full information on purge configuration files, see "Purge Configuration File" on page 138.

## Purge Scopes

The archive and purge tools operate in the context of a named *purge scope*. A purge scope defines the relationships between primary classes and related classes, and helps the archive and purge tools to determine which objects can safely be purged.

For Version 9r1, there is just one predefined scope, `Procurement`. The definition of a scope is intrinsic to Ariba Buyer. You cannot define new scopes, or modify the existing scope.

To see a list of defined scopes, use the `-printscopenames` option to `runpurge:`

```
runpurge -printscopenames
```

To list the primary classes in each scope, use the `-printscope` *`scope`* option to `runpurge`. For example:

```
runpurge -printscope Procurement
```

## Summary of Steps

This section summarizes the steps for using the archive and purge tools.

Ariba Buyer must always be shut down when the `runpurge` command is running to preview or mark.

**▼ To run archive and purge:**

1. Create a purge configuration file.
2. Shut down Ariba Buyer and start the preview phase with the `runpurge` command, specifying the following arguments:

   ```
   runpurge -configPath config/purge/YourPurgeConfig.xml
   ```

   The argument after `configPath` names your purge configuration file.
3. Verify the marked objects, by browsing through the Inspector:

   `http://`*`yourserver`*`:`*`yourport`*`/inspector/purgeBrowser`
4. Make any changes to the configuration file, as appropriate.
5. Start the mark phase by starting `runpurge` again, with the `-purge` option:

   ```
   runpurge -configPath config/purge/YourPurgeConfig.xml -purge
   ```
6. Start Ariba Buyer.
7. Run the scheduled task ObjectArchive.

   This task implements the sweep phase. It scans your database for the objects marked in the first phase, and then does the archive/purge.

   This scheduled task runs during normal operation of Ariba Buyer. You can run it on a regular schedule, from Ariba Administrator, or with the `servermonitor` command.
8. Check the summary log file, stored as *`BuyerServerRoot`*`/objectArchive/Node1.`*`date`*`/Log.summary.txt.`

## Purge Configuration File

You specify the data to be purged by writing a purge configuration file. In the configuration file, you use Ariba Query API expressions to specify which data to purge. You use the same configuration file for both the preview phase and the mark phase.

The default configuration includes a sample configuration file in `config/purge/purgeConfig.xml`, which you can modify to suit your configuration.

The basic layout of a purge configuration file is as follows:

```
<!DOCTYPE purgeConfig SYSTEM "purgeConfig.dtd">
<purgeConfig>
   <purgeCandidates scope="Procurement">
     <primaryClass name="ariba.procure.core.Requisition"
                   includeInactive="false"/>
     <whereCondition>"Name like 'Req%' and LastModified &lt; Date('2002-09-04 13:12:28 PDT') and
StatusString in ('Received','Ordered','Denied','Canceled','Submitted')"</whereCondition>
        <options>
            <partition name="pcsv"/>
        </options>
    </purgeCandidates>
    <keepConditions>
        <keepCondition class="ariba.procure.core.ERPOrder">
            <whereCondition>StatusString in ('Received','Ordered')</whereCondition>
        </keepCondition>
    </keepConditions>
    <metadataAnnotations>....</metadataAnnotations>
</purgeConfig>
```

The top-level elements are as follows:

- `<purgeCandidates>` specifies how to select the initial set of purge candidates. This example selects documents of type `Requisition` that match the specified `WHERE` clause.
- `<keepConditions>` specifies filters that apply after the initial set of purge candidates has been identified. The keep conditions can optionally reject purge candidates.
- `<metadataAnnotations>` provides typing hints on specific fields, to help determine which related objects can safely be purged and which objects contain references to one another.

The rest of this section summarizes these top-level elements. For a reference description of the elements that can appear in a purge configuration file, see "Purge DTD Reference" on page 199.

**Note:** A purge configuration file always reads `purgeConfig.dtd` from a well-known location. You do not have to specify the pathname to the DTD file and you can locate your purge configuration file at any point in the file system.

### The <purgeCandidates> Element

The `<purgeCandidates>` element specifies an initial set of objects to be considered as purge candidates. You can later discard those candidates with keep conditions.

There are two ways to select purge candidates:

- By specifying a primary class, and an associated `<whereCondition>` element. For example:

```
<purgeCandidates scope="Procurement">
    <primaryClass name="ariba.procure.core.Requisition"/>
    <whereCondition>Name like 'Req%' and
                    LastModified &lt; Date('2002-09-04 13:12:28 PDT')     </whereCondition>
    <options>...</options>
</purgeCandidates>
```

In this case, Ariba Buyer constructs a select statement that selects requisitions, using the specified where clause. The primary class cannot be an arbitrary class. It must be defined within the scope as a valid primary class. To see which primary classes are valid within a scope, use `runpurge -printscope`.

- By specifying a full Ariba Query API query (a select statement), using the `<aqlQuery>` element. This approach is more complex, and you must use it only when the simpler design does not meet your needs.

```
<purgeCandidates scope="Procurement">
    <aqlQuery>SELECT ariba.procure.core.Requisition WHERE
                  Name like 'Req%' and
                  LastModified &lt; Date('2002-09-04 13:12:28 PDT')"/>
</purgeCandidates>
```

  For a list of restrictions on the query statement that can appear within `<aqlQuery>`, see "<aqlQuery>" on page 199.

**Notes:**

- Ariba recommends that you always include a date constraint, to ensure that you do not purge any recently-modified items.
- Purge configuration files are case-sensitive. For example, consider this condition:

  `<whereCondition>StatusString='submitted'</whereCondition>`

  This condition selects nothing, because the status string must be capitalized as `Submitted`. Note that Inspector is not case-sensitive, so a query that works in the Inspector does not necessarily work in a purge configuration file.
- Ariba Query API expressions are parsed as XML. You must escape any XML special characters. For example, to write a statement using the < operator, you must use `&lt;` in your query.
- For any purge candidate that has attachments, the attachments are also archived and purged.
- If you are writing conditions that specify date literals, use this format for the dates:

  `YYYY-MM-DD [hh:mm[:ss]] [ZZZ]`

  For example:

```
<whereCondition>StatusString in ('Received','Ordered') and LastModified &lt; Date('2002-09-04
13:12:28 PDT')"</whereCondition>
```

## The <relatedClasses> Element

Each scope defines a standard set of related classes. For example, the related classes for the Procurement scope include `ariba.pcard.core.PCardOrder`, `ariba.procure.core.OrderRecipient`, and `ariba.procure.core.ReceiptTracker`. For a complete list of the related classes in a scope, use the `runpurge -printscope` command.

In a purge configuration file, you can define additional related classes to be included in a named scope. The syntax is as follows:

```
<purgeCandidates scope="Procurement">
     <primaryClass name="ariba.procure.core.Requisition"/>
     <whereCondition>...</whereCondition>
     <relatedClasses>
           <class name="acme.custom.Class1"/>
```

```
        </relatedClasses>
        <options>...</options>
</purgeCandidates>
```

The classes you add must be custom classes (*extrinsics*) that you have defined. It is an error to add additional intrinsic classes to the list of related classes.

## The <keepConditions> Element

A keep condition is a condition that can potentially remove objects from the list of purge candidates. Each purge candidate is filtered through all keep conditions. If any of the keep conditions returns true, the purge candidate is discarded (not purged).

You define keep conditions as Ariba Query API where conditions. For example:

```
<keepCondition class="ariba.purchasing.core.PurchaseOrder">
    <whereCondition>
        (OrderedState != 16 AND ReceivedState != 4) AND Active=true
</whereCondition>
```

For more examples, see the keep conditions defined in the default purge configuration file.

## The <metadataAnnotations> Element

Metadata annotations provide additional typing information on specific fields. The default configuration provides metadata annotations for fields in the standard object model, which are used to help determine which related objects can safely be purged.

You can use metadata annotations to provide information on extrinsics you have defined, or to modify the existing annotations in the default configuration. If you do choose to modify annotations in the default configuration, do so with caution: incorrect metadata annotations can adversely affect performance of the archive/purge tools.

You use metadata annotations to add two kinds of additional information:

- Type narrowing. For example, if a field is declared to be of type `Approvable`, you can use metadata annotations to provide information about which subclasses of `Approvable` can actually be stored in that field.
- Location of indirect references. When a field is an indirect reference to a BaseObject, that field contains the BaseID rather than the BaseObject itself. You can use metadata annotations to indicate whether the target of the reference is in the same cluster root as the containing class.

Metadata annotations are generally optional, although they can become important if the annotations are required to tune performance of the purge. The following is an example that shows the syntax:

```
<metadataAnnotations>
    <classAnnotation name="acme.test.MyClass" variant="Plain">
        <field name="MyField" indirect="local"/>
    </classAnnotation>
    <classAnnotation name="acme.test.AnotherClass" variant="Plain">
        <field name="SomeApprovable">
            <typeNarrowing kind="subType">
                <narrowingClass name="ariba.procure.core.Requisition"/>
              </typeNarrowing>
        </field>
    </classAnnotation>
</metadataAnnotations>
```

The first example specifies that the field `MyField` is an indirect base object that is "local" — that is, it refers to another object within the same cluster root.

The second example specifies that the field `SomeApprovable` is defined to be of type `Approvable`, but in practice can safely be narrowed to be of type `Requisition`.

**Note:** When you create annotations in a purge configuration file, those annotations overwrite any existing annotations for fields of that name. For example, the previous example overrides any existing type narrowing for fields called `SomeApprovable`, even in a different class.

For more information on the syntax of metadata annotations, see the reference information in "Purge DTD Reference" on page 199.

## How to Archive to Disk

The scheduled task ObjectArchive implements the sweep phase. It scans your database for fields that have been marked for purge, and does two things:

- Archives those fields to disk files
- Deletes the objects from the Ariba Buyer database

This section introduces the task and summarizes available parameters. For a reference list of all parameters for this scheduled task, see Appendix H, "Scheduled Task Reference".

### ObjectArchive Scheduled Task

The ObjectArchive scheduled task is defined in your scheduled tasks configuration file. A typical entry for the ObjectArchive scheduled task is as follows:

```
ObjectArchive = {
    Directory = "objectArchive";
    PurgeScope = "Procurement";
    RunningTimeInMinute = 480;
    ScheduledTaskClassName = ariba.encoder.soap.base.ArchiveTask;
     Schedules = {
        Schedule1 = { DayOfWeek = Everyday; Hour = 20; Minute = 30};
        };
    };
}
```

The `Directory` parameter specifies the output directory where the files are to be created. The value specifies a subdirectory of *BuyerServerRoot*. The output files are written to files under *BuyerServerRoot*/*Directory*, in the following structure:

```
BuyerServerRoot/
  objectArchive/
     DetailLog.Node1.2004-03-13_11.50.12.11.txt
     SummaryLog.Node1.2004-03-13_11.50.12.11.txt
     Node1.2003-10-30_19.17.49.1/
      ariba.procure.core.PurchaseOrder_psap/
        1000.1f--1zzz.1f/
           PO0_2zbo.e.htm
```

```
            POO_2zbo.e.xml
```

where:

- `Node1.2003-10-30_19.17.49.1` is a directory formed from the node name and the date. Different subdirectories reflect different runs of the scheduled task.
- `ariba.procure.core.PurchaseOrder_psap` is a directory formed by concatenating the class name and partition name.
- `1000.1f--1zzz.1f` is a subdirectory, used to limit the total number of files in any given directory.

The task generates both XML files and HTML files. For more information on the output format, see "Format of Output Files" on page 143.

## Archive Parameters

Within a purge scope, certain classes can be designated as no-archive classes. The `PurgeScope` parameter to ObjectArchive specifies the scope, and therefore controls which classes are not archived. Within that scope, classes specified as no-archive classes are purged, but not archived. For example, in the Procurement scope, objects of type `OrderRecipient` can be purged without being archived, because the object has no business data.

No-archive classes are specified in metadata XML, with the `generateArchive` class property. You must not modify this property for any existing classes, but there might be situations in which you want to designate extrinsic classes as no-archive classes.

To mark an extrinsic as a no-archive class, create a metadata XML extension file that sets the `generateArchive` property for that class. For example:

```
<group name="ProcurementPurgeScope">
    <groupClass name="acme.custom.MyClassName">
        <groupField name="ClassProperties">
            <properties generateArchive="false"/>
        </groupField>
    </groupClass>
</group>
```

## Variant-Specific Properties

Purge scope properties must apply to all variants. A field property definition might specify a particular variant. For example:

```
<group name="SchoolPurgeScope">
    <groupClass name="test.ariba.base.core.SchoolUser">
        <groupClassVariant name="vus">
            <groupField name="ClassProperties">
                <properties purgePrimaryClass="true"
                    generateArchive="true"/>
            </groupField>
        </groupClassVariant>
    </groupClass>
</group>
```

In this case, you can either remove the `<groupClassVariant>` element from the field property definition or set the `<groupClassVariant>` to `Plain`.

### Error-Handling Parameters

The ObjectArchive task recognizes the following additional optional parameters related to error-handling:

- `MaximumAllowedErrors` ensures that the task stops quickly if there is a basic problem, such as a full disk. After the specified maximum number of errors, the taks stops.
- `IgnoreBadFieldValue` is a Boolean, indicating whether errors such as missing attachments or invalid links are handled as errors or warnings. If this parameter is set to false, invalid data is not ignored: it is treated as an error. If this parameter is `true`, the task prints a warning, but does not consider invalid data an error when counting `MaximumAllowedErrors`.
- `ArchiveObjectsInGroups` restricts the set of objects to a list of explicitly specified groups. You typically use this parameter only for error recovery, to archive a specific set of groups that previously failed. The value is a list of group IDs, separated by comma and surrounded by parentheses. For example:

  ```
  ArchiveObjectsInGroups = (abc.xy, cde.xy);
  ```

  You can obtain the group IDs from the Inspector, or from log file output.

### Performance-Tuning Parameters

The ObjectArchive task recognizes the following optional parameters for performance-tuning:

- `RunningTimeInMinute` specifies a maximum running time.
- `SleepIntervalInMillis` specifies a delay period during archiving, to allow other processes access to system resources. After archiving each group, the task pauses for the specified number of milliseconds (5000 by default).
- `DeleteOnly` is a Boolean that you can use to disable archiving, if you want to purge without also writing the data out to disk. If not set, the default is false, which means to do both archive and purge.

## Format of Output Files

The ObjectArchive scheduled task writes its output in two formats, HTML and XML. The HTML format is easier to browse, while the XML files are convenient for parsing.

The HTML output uses the same code that is used for printing approvable documents, and recognizes the same groups for customizing the output. For example, the archive format for requisitions includes all fields in the `RequisitionPrintHTML` group, including any extrinsic fields you have added to that group. For more information on customizing print output, see the *Ariba Buyer Customization Guide*.

**Note:** For some objects, such as CollaborationThreads, the archived output is empty. The reference is archived, but there is no content available to browse.

The XML output file format uses the Simple Object Access Protocol (SOAP) encoding standard. SOAP defines a set of encoding rules for translating data structures into XML elements. For more information on SOAP, refer to Internet specifications for SOAP, such as the material found at `http://www.w3.org`.

The SOAP output always includes all fields of the approvable, and is not customizable. For null fields, the output resembles the following:

```
<AmountAccepted xsi:type="xsi:null">1</AmountAccepted>
```

That is, the SOAP encoding writes null fields with the attribute `xsi:null` and `1` as the value.

## Logging for ObjectArchive

The ObjectArchive scheduled task writes two log files, one summary log and one detail log with object-by-object details. Typical path names for the log files are as follows:

*BuyerServerRoot*/objectArchive/Node1.2003-10-30_19.17.49.1/Log.summary.txt

*BuyerServerRoot*/objectArchive/Node1.2003-10-30_19.17.49.1/Log.detail.txt

Each time you run the ObjectArchive scheduled task, it writes the log files to a different subdirectory name, constructed from the date, time, and node name. The top-level directory name (`objectArchive` in this example) is the value specified as the `Directory` parameter to the ObjectArchive scheduled task.

These log files are generated by two log listener entries in `config/Parameters.table`, `System.Logging.ObjectArchiveDetailLogger` and `System.Logging.ObjectArchiveSummaryLogger`. For example, the entry for the detail logger is as follows:

```
ObjectArchiveDetailLogger = {
    Categories = "util/info:general/info:archiveMaster/info:soap/info";
    ClassName = "ariba.encoder.soap.base.ObjectArchiveLogger";
    DisableLogListener = false;
    LocaleForLogMessages = en_US;
    LogMode = detail;
};
```

## Error Recovery

If the ObjectArchive task encounters errors during the archive operation, it moves the objects with errors into a failed state, and writes an appropriate message to the log file. For example, this task might fail if there is not enough disk space to finish the archiving operation.

When there are errors, fix the errors manually and then run the FailedObjectArchive scheduled task. The FailedObjectArchive task does not retry the entire archive operation, but it does retry any objects that failed the first time.

The FailedObjectArchive task recognizes the same parameters as ObjectArchive.

# Chapter 11 Sample Features

Ariba Buyer provides a number of optional samples in the standard Ariba Buyer distribution that are not installed by default. These samples are available as examples and suggestions of ways to customize Ariba Buyer.

This chapter describes the general-purpose samples. It includes the following sections:

- "Sample Directory" on page 145
- "Hooks" on page 146
- "Single SignOn" on page 146

Samples related to specific Ariba Buyer features, such as the Procurement feature, are provided in the guides for those features.

## Sample Directory

The optional features are located in the `sample` directory, which is located in your Ariba Buyer Server installation directory. You can install these features from the `sample` directory, and use them without modification, but in general consider them as starting points for additional customizations of your own. For each sample, there is a file called `README.txt`, which describes how to perform the basic installation and integration.

The following table provides a brief overview of some of the major features available in the `sample` directory. For complete information on each sample, read the `README.txt` file associated with the sample.

**Note:** Additional unsupported samples, including some samples that were available in the `sample` directory in earlier releases, are available on `http://connect.ariba.com`.

The following table describes the contents of the `sample` directory.

| sample Subdirectory | What It Contains |
|---|---|
| `auth/NTLogin` | An example of adding a domain credential that you can use with `NTDomainLogin`. |
| `auth/SingleSignOn` | Single SignOn feature sample, which illustrates how to configure Ariba Buyer to use existing user authentication information, and not require the user to reauthenticate to use Ariba Buyer. |
| `branding` | Rebranding samples. |
| `common/misc` | A sample LineItemCollection client-side approvable hook. For more information on approvable hooks, see the *Ariba Buyer Customization Guide*. |
| `eforms` | Sample eForms. For more information, see the *Ariba Buyer Customization Guide*. |

| **sample Subdirectory** | **What It Contains** |
|---|---|
| `excelimport` | Sample Microsoft Excel spreadsheets for use with the Microsoft Excel contract request (CR) feature. For more information, see the *Ariba Contract Compliance Guide*. |
| `expense` | Sample expense report implementation. For more information, see the *Ariba Travel & Expense Guide*. |
| `invoicing` | Staging Table Payment Push sample, which illustrates how to use the Ariba Buyer API to export payment documents to a database staging table. For more information, see the *Ariba Invoice Guide*. |
| `oracle/Oracle11OCustomCatalog` | Sample files to implement CustomCatalogs and CustomPricing for an Oracle variant. For more information, see the legacy version 8.2 *Ariba Spend Management API Guide* available at `https://connect.ariba.com`. |
| `procure/misc` | Approvable hook samples. For more information on approvable hooks, see the *Ariba Buyer Customization Guide*. |
| `procure/requisitionimport` | Requisition Import sample, which illustrates how to pull requisitions created from an external system into Ariba Buyer. For more information, see the *Ariba Buyer Procurement Guide*. |
| `sap/BudgetCheck` | Budget Check sample. |
| `timesheetpull` | Time Sheet Pull sample, which illustrates how to import time sheets from CSV files into Ariba Buyer. For more information, see the *Ariba Services Procurement Guide*. |

## Hooks

As a document moves through the approval process, there are a few places where you can insert custom Java code into the processing, to check requirements before you allow a document to continue through the system.

For example, you might want to insert a check just before a purchase requisition is submitted, to make sure that the items on the requisition meet your company's budget requirements.

To make use of a hook, you write Java code that implements your preferred logic, and then specify that class in a metadata XML file, using a class property on the class `Approvable`.

In the default configuration, the hooks reside in `sample/procure` and `sample/common`.

## Single SignOn

The Single SignOn feature illustrates how you can configure Ariba Buyer to use existing user authentication information, and not require the user to reauthenticate to use Ariba Buyer.

For complete instructions on how to set up this feature, see the `README.txt` file in `sample/auth/SingleSignOn`.

# Chapter 12 Reporting

This chapter describes how to configure and customize reporting. It includes the following sections:

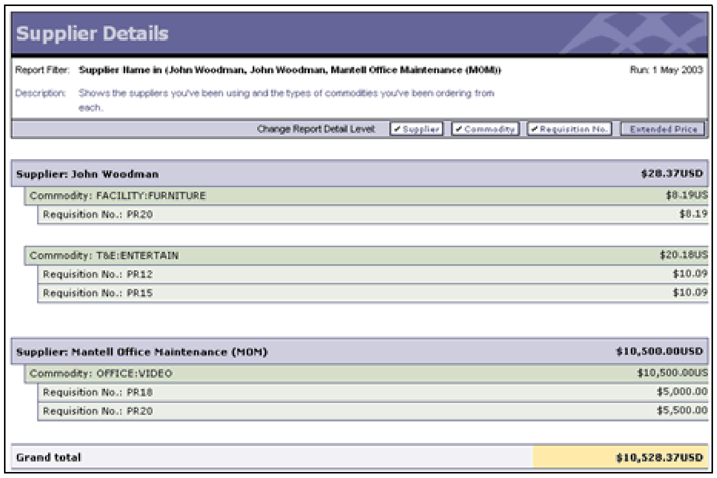
- "Introduction to Reporting" on page 147
- "Report Configuration" on page 148
- "Report Customization" on page 158

For a description of the standard reports packaged with Ariba Buyer and instructions on how to run them, see the Ariba Buyer online help system.

## Introduction to Reporting

Ariba Buyer provides a set of prepackaged reports, which the user can adjust by specifying *filters*. The reporting process is as follows:

1. In Ariba Buyer, a user chooses a standard report and tailors it with filters. For example, a user might choose to view a report on a particular supplier.
2. When the user finishes setting up filters, Ariba Buyer generates an Ariba Query API query based on the user's selected report and the filters.
3. Ariba Buyer formats the data returned from the query, as described by your report configuration files, and generates HTML, an Excel spreadsheet, or CSV.
4. Ariba Buyer displays the data to the user, for example, in a Web browser window if the report is HTML:



Supplier Details

Report Filter: Supplier Name in (John Woodman, John Woodman, Mantell Office Maintenance (MOM)) Run: 1 May 2003

Description: Shows the suppliers you've been using and the types of commodities you've been ordering from each.

Change Report Detail Level ✓ Supplier ✓ Commodity ✓ Requisition No. Extended Price

| | |
|---|---|
| Supplier: John Woodman | $28.37USD |
| Commodity: FACILITY:FURNITURE | $8.19US |
| Requisition No.: PR20 | $8.19 |
| Commodity: T&E:ENTERTAIN | $20.18US |
| Requisition No.: PR12 | $10.09 |
| Requisition No.: PR15 | $10.09 |
| Supplier: Mantell Office Maintenance (MOM) | $10,500.00USD |
| Commodity: OFFICE:VIDEO | $10,500.00US |
| Requisition No.: PR18 | $5,000.00 |
| Requisition No.: PR20 | $5,500.00 |
| Grand total | $10,528.37USD |

You can also configure reports by changing configuration files, to specify default parameters or layout, or control reporting permissions. You can create custom reports, based on existing reports. Users can configure reports from the user interface, by adding and removing filters, and changing display fields.

This chapter describes how to configure and customize reports from configuration files. For information on how users configure reports, see the online help.

## Report Configuration

The default configuration supplies a standard set of reports, which are defined with integration events. You can modify the CSV files that pull report data, to specify report properties or permissions. You can configure reports in the following ways:

- "ReportQueryPull Integration Event" on page 148
- "ReportMetaPull Integration Event" on page 149
- "ReportPermissionMap.csv File" on page 156
- "Reporting on Currency and Money" on page 157

### ReportQueryPull Integration Event

You use the ReportQueryPull integration event to define the Ariba Query API queries associated with each report. For information on how to write Ariba Query API queries, see the *Ariba Spend Management Query API Guide*.

Ariba Buyer supplies one implementation of the ReportQueryPull integration event, which reads from a CSV file. In the default configuration, the ReportQueryPull integration event reads from the following file:

`*BuyerServerRoot*/*variant*/data/ReportQuery.csv`.

The fields in `ReportQuery.csv` are as follows:

| Field | Description |
|---|---|
| `VariantName` | The variant in which the report is being run. |
| `UniqueName` | A unique identifier for this query. Every query in `ReportQuery.csv` must have a distinct `UniqueName`, `VariantName` combination. |
| `SavedStatement` | The query used to generate the report. For example:<br><br>SELECT<br><br>Year(SubmitDate) * 100 + Month(SubmitDate) AS YearMonth,<br><br>LineItems.IsAdHoc AS IsAdHoc,<br><br>SUM(LineItems.Amount.ApproxAmountInBaseCurrency) AS SumExtendedPrice,<br><br>COUNT(*) AS CountLineItems<br><br>FROM<br><br>ariba.procure.core.PurchaseOrder<br><br>GROUP BY<br><br>Year(SubmitDate) * 100 + Month(SubmitDate), LineItems.IsAdHoc<br><br>For information on queries that operate on money fields, see "Reporting on Currency and Money" on page 157. |

| Field | Description |
|---|---|
| `UseToCreateSummaryTable` | A Boolean that specifies whether to create a summary table for this report's query. For more information on summary tables, see "Summary Tables" on page 149. |
| `SummaryTableLocale` | Specifies which locale to use in the report query if a multilingual string is present. If you do not specify a value for this field, the default system locale is used. |
| `CreateSummaryTableFrequency` | The frequency in hours at which the summary table must be regenerated for this report. The value cannot be less than 24, that is, you cannot regenerate the summary table more frequently than every 24 hours. |

### Summary Tables

For reports with long-running queries, you can improve performance by creating a summary table for the query. A *summary table* stores all the data specified by the query, so that when a user runs a report, the data is pulled from the summary table instead of querying the database.

The summary table is updated regularly by the CreateReportingSummaryTables scheduled task. When this task runs, it uses the properties in `ReportQuery.csv` to determine which reports have summary tables, and whether the data in the summary table needs to be regenerated. Because summary tables must not be regenerated more frequently than every 24 hours, you must not use a summary table for a query that requires real-time data.

Additionally, summary tables have the following restrictions:

- Summary tables can only store primitive fields. They cannot store objects. If you are using a summary table, the query must specify each field separately.
- Because summary tables do not store objects, they cannot support any custom formatting or conversions based on the Money object, such as the EuroDualCurrencyDisplay feature. For more information, see "Multi-Currency Reports" on page 157.
- Fields defined as Calendar Date are stored in the database without being offset to GMT, causing incorrect dates in the report. In the default configuration, the `ExpenseReport.LineItems.Date` field is the only field defined as Calendar Date. If you need to use a Calendar Date field with summary tables, you must use the formatter `ariba.server.ormsserver.ReportingCalendarDate` in the `FormatterClassName` field in `ReportColumnMeta.csv`.
- If you add a Boolean field to a query, it is stored as `int (0, 1)` in the summary table, just as it is stored in the database. If you want to include a Boolean in a report that uses summary tables, you must create a custom formatter to convert the value to `true` or `false`.
- Multilingual strings are returned in the specified locale see (see "ReportQueryPull Integration Event" on page 148), or the system locale, not the user's locale.

## ReportMetaPull Integration Event

The `ReportMetaPull` integration event defines the visual appearance and properties of reports.

It reads data from the following CSV files in *BuyerServerRoot*/*variant*/`data`:

- `ReportMeta.csv`, which describes attributes that apply to the entire report
- `ReportColumnMeta.csv`, which describes attributes of a particular column

- `ReportPermissionMap.csv`, which describes how to restrict access to reports

The rest of this section describes each of these files in detail.

## ReportMeta.csv File

You use `ReportMeta.csv` to set up the list of reports in your system and to specify report-wide details for each. `ReportMeta.csv` contains one line for each report in the system.

By making appropriate changes to this configuration file, you can remove a report, and change overall report properties such as report title and graph properties.

The fields in `ReportMeta.csv` are as follows:

| Field | Description |
|---|---|
| `VariantName` | The variant in which the report is being run. |
| `UniqueName` | A unique identifier for this report. Every line in `ReportMeta.csv` must have a distinct `UniqueName`. |
| `QueryUniqueName` | An identifier for the query associated with this report. This field must match a query specified in `ReportQuery.csv`. |
| `ReportTitle` | A resource key for the title that appears at the top of the report. The resource key matches a string resource in `resource.reportmetadata.csv`. |
| `CompanyName` | Your company name as you want it displayed on reports. |
| `GraphName` | A resource key for the label that appears above the graph in the report. The resource key matches a string resource in `resource.reportmetadata.csv`.<br><br>If the `GraphName` field is empty, the report does not have a graph. |
| `ExtraWClause` | Adds an additional `WHERE` clause to the default query. The value of this field is added to the existing query. For example, for the Ariba Items Rejected report, you can add the following:<br><br>ReceiptItem.NumberRejected > 0 |
| `GraphType` | Specifies the output format for the graph. The valid values are “Pie” “Bar,” and no value. |
| `Category` | Specifies a report category, such as Requisition, PCard, or Order. The categories are used to group reports in the user interface. If you specify a value that does not already exist, a new category is created. The value is typically a key in the resource file `resource.reportmetadata.csv`. |
| `Restricted` | A Boolean that indicates whether access to this report must be restricted. If set to `false`, there are no restrictions. If set to `true`, Ariba Buyer checks `ReportPermissionMap.csv` to find out which permissions are required. For more information, see “ReportPermissionMap.csv File” on page 156. |
| `Description` | A resource key for the report description displayed to users. The value is a key in the resource file `resource.reportmetadata.csv`. |
| `IsCrossPartition` | A Boolean that indicates whether the query associated with the report must be run in the user’s partition or across partitions. |

The following example shows the first few lines from `ReportMeta.csv`:

```
"VariantName","UniqueName","QueryUniqueName","ReportTitle","CompanyName","GraphName",
"ExtraWClause","GraphType","Category","Restricted","Description","IsCrossPartition"
"voracle","aribaReqDetails","ReqLISA","RequisitionDetail","Ariba","RequisitionDetail",,"Pie",
"Requisition_Category","FALSE","aribaReqDetails_Description","false"
"vorcale","aribaReqSummary","ReqHeader","RequisitionSummary","Ariba","RequisitionSummary",,"Bar",
"Requisition_Category","FALSE","aribaReqSummary_Description","true"
```

### Resource Keys in ReportMeta.csv

For `ReportMeta.csv` fields that are displayed in the user interface, the value is a resource key that is mapped to a string in the following resource file:

*BuyerServerRoot*/ariba/resource/*locale*/strings/resource.reportmetadata.csv

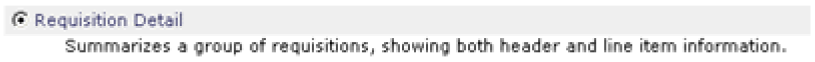
The `ReportMeta.csv` fields that are mapped to strings in `resource.reportmetadata.csv` are as follows:

- `ReportTitle`
- `GraphName`
- `Description`
- `Category`
- Column headings

For each of these fields, the value in `ReportMeta.csv` is interpreted as a key in the resource file. For example, consider the following values:

| Field | Value in ReportMeta.csv | Value in resource.reportmetadata.csv |
|---|---|---|
| ReportTitle | "SomeKeyName" | "SomeKeyName","Requisition Detail" |
| Description | "aribaReqDetails_Description" | "Summarizes a group of requisitions, showing both header and line item information." |

With these values, the user interface appears as follows:


Requisition Detail
Summarizes a group of requisitions, showing both header and line item information.

If you specify a value that does not exist as a key in the resource file, the value appears as a literal. For example, if the key `SomeKeyName` did not exist, then the string SomeKeyName would appear in the user interface.

### ReportColumnMeta.csv File

Each row in `ReportColumnMeta.csv` describes a single column in the report. You use the fields in the row to specify two kinds of information:

- **Output format**. Each column includes formatting information that determines how the column's data is displayed in the report. This includes attributes such as layout, order, grouping, basic formatting, and totalling.
- **Filtering**. You can associate a column with a filter. For example, you can add a filter that lets the user report only on requisitions that have a status of Submitted.

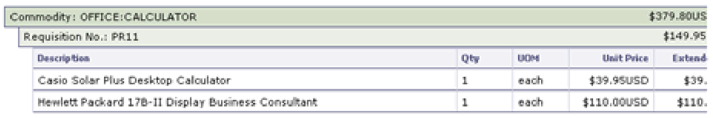
This section describes these topics in more detail.

## Output Format

Every report is laid out as a matrix of groups and columns, as follows:

```
         Col1  Col2  Col3....Coln
Group 1
Group 2
Group 3
....
```

For example, in the following report excerpt, each group is a row, so (for example) Commodity might be group 1 and Requisition group 2. Similarly, Description is column 1, Qty is column 2, and UOM is column 3.



Commodity: OFFICE:CALCULATOR $379.80US

Requisition No.: PR11 $149.95

| Description | Qty | UOM | Unit Price | Extend |
|---|---|---|---|---|
| Casio Solar Plus Desktop Calculator | 1 | each | $39.95USD | $39. |
| Hewlett Packard 17B-II Display Business Consultant | 1 | each | $110.00USD | $110. |

You use a variety of different fields in `ReportColumnMeta.csv` to specify the layout of the report. For example, the `DisplayLevel` value specifies the level of indentation where the field appears in the report, the `ColumnOrder` value specifies the order of columns within the same `DisplayLevel` (such as Description, Qty, and so on), and `GroupOrder` specifies the vertical order in which to display the groups.

## Filtering

The Ariba Query API query associated with each report returns a set of objects. Each report can add additional filters to that query, which allow users to further restrict the data that appears in the report. Internally, a filter consists of an additional `WHERE` clause, added to the query. For example:

```
WHERE ... AND Requester = 'Norman Adams' AND ...
```

Filters are visible in the user interface: users select filters when setting up a report. You can specify layout properties of filters in the metadata XML file. For example, you can specify field controllers, override field labels, and other standard user interface customizations.

To add a filter to a report, you specify the class and field, in `ReportColumnMeta.csv`, using the following properties:

| Field | Description |
|---|---|
| `FilterClassName` | The class name being filtered, such as Approvable or Requisition. The class name can be either the class where the field is defined, or a subclass that matches the Ariba Query API query. |
| `FilterFieldPath` | The field path to be used as a filter, which is a field that is accessible from the specified `FilterClassName`. |

For example, suppose you set the `FilterFieldPath` to `LineItems.IsAdHoc`, and the `FilterClassName` to `ariba.procure.core.PurchaseOrder`.

`LineItems.IsAdHoc` is defined on the `ReceivableLineItemCollection` object, like this:

```
<group name="ReportFilters">
...
  <groupClass name="ariba.procure.core.ReceivableLineItemCollection">
```

```
<groupField name="LineItems.IsAdHoc">
  <properties editable="true"
    label="@aml.Requisition/Adhoc"/>
</groupField>
```

In the sample entry, the `FilterClassName` is `ariba.procure.core.PurchaseOrder`. In the metadata XML, `LineItems.IsAdHoc` is defined on the `ReceivableLineItemCollection` class. Because `PurchaseOrder` is a subclass of `ReceivableLineItemCollection`, it can use any field defined in that class, including `LineItems.IsAdHoc`.

It is possible to filter on a field, without having that field appear in the report. For example, you might want to filter on commodities purchased from a particular supplier, but not want to display the supplier as a report column. In this case, you add a line in `ReportColumnMeta.csv` for the filter, but set DisplayLevel to 0 to keep the field from appearing in the report.

The fields in `ReportColumnMeta.csv` are as follows.

| **Field** | **Description** |
|---|---|
| `ReportUniqueName` | The name of the associated report, which must match a `UniqueName` in `ReportMeta.csv`. |
| `UniqueName` | A unique identifier for this entry that matches a field or alias returned by the associated Ariba Query API query. For example, suppose your report is based on this query:<br>`“Plain","SimpleQuery","SELECT`<br>`Requester.Name AS` **`Requester`**`,`<br>`Requisition.SubmitDate AS` **`SubmitDate`**`,`<br>`FROM  Requisition"`<br>To display these columns in the report, you use the unique names `Requester` and `SubmitDate`. |
| `ColumnLabel` | A resource key for the column display label, used for column headings, graph labels, and group headings. The actual text that is displayed in the user interface is typically in the `resource.reportmetadata.csv` file. For more information, see “Resource Keys in ReportColumnMeta” on page 156. |
| `FilterFieldPath` | The path used to look up a field to be used as a filter. If you set a value for this field, it must match a `groupField` name specified in a `ReportFilters` group. For more information, see “Filtering” on page 152. |
| `FilterOrder` | Specifies the order in which filters are displayed to the user, with the lowest positive value displaying first. |
| `DisplayGroupLabel` | (HTML reports only) A Boolean that indicates whether to display the column as a label row at the beginning of each group. If this field is `FALSE`, the column displays next to other columns at the same `DisplayLevel`. If this field is `TRUE`, the column displays as a separate row containing `ColumnLabel: group value` at the beginning of each new group. |

| Field | Description |
|---|---|
| DisplayLevel | (HTML reports only) Specifies the indentation level for this column. You use this field in conjunction with the ColumnOrder field, which specifies the order in which columns at the same DisplayLevel appear.<br><br>Fields at the same DisplayLevel display next to each other. Furthermore, Description has a ColumnOrder value of 1 so that it displays first, Qty has a ColumnOrder value of 2 so that it displays next, and so on.<br><br>If a column's DisplayGroupLabel is set to TRUE, the column is displayed as a separate line and does not have a DisplayLevel. Instead, the GroupOrder value determines the level of indentation. If the column's DisplayGroupLabel is set to FALSE, and the DisplayLevel is set to 0 or is left blank, the column does not appear in the report. |
| TotalMe | (HTML reports only) A Boolean that indicates whether this is the column to add up for subtotals and the grand total in the report. Each report can have only one column with TotalMe set to TRUE. |
| CountRows | (HTML reports only) A Boolean that indicates whether the group displays the number of rows it contains. |
| SubtotalGroup | (HTML reports only) A Boolean that indicates whether this column displays a subtotal of the TotalMe column by group. When this field is set to TRUE, this column displays a subtotal each time the group changes.<br><br>This field applies only when this column has a GroupOrder greater than 0. |
| ColumnOrder | (HTML reports only) Specifies the order in which to display columns that are all at the same DisplayLevel. Columns that have lower ColumnOrder numbers display to the left. Higher ones display to the right. Giving a column a ColumnOrder value of 1 indicates that it is the first column displayed at that DisplayLevel. |
| GroupOrder | (HTML reports only) Indicates how to group the data. For example, in the Supplier Details report, the data is grouped first by Supplier (GroupOrder value of 1), then by Commodity (GroupOrder value of 2), then by Requisition Number (GroupOrder value of 3), and then by Extended Price.<br><br>Groups equate roughly to the indentation of the report. A group level of 1 is the outermost group, with each higher number indicating another level of nesting. The topmost group level must always be 1, and you cannot skip levels. For example, a sequence of 1, 2, 4 is not allowed. One column from each DisplayLevel must specify the GroupOrder. |
| Width | (HTML reports only) The maximum width of this column, in pixels. When you set a column width, include indentation from nesting. For example, if you are setting the column width for Item 2 in the following example, and you know that it is always five digits long, you must set the width to about 75 (15 for the indentation and 60 for the content):<br><br>Item 1 12345<br><br>    Item 2 67890<br><br>Typically, you set the width to between 30 and 150. All widths are approximate. If you set the width to 0, the column expands and contracts as the window is resized. |
| Justification | (HTML reports only) Left, Right, or Center justification. |

| Field | Description |
|---|---|
| FontSize<br>IsBold, IsItalic | (HTML reports only) No longer used. To set font characteristics, use the style sheet instead. for more information, see "Customizing the Style Sheets" on page 161. |
| FontFace | (HTML reports only) Indicates the font to use for the text. The font must be a TrueType font, such as "Arial". If you specify a different font in a style sheet class and add that style sheet class to the ExtraCSSClasses field, the font in the style sheet class is used instead. The FontFace value is used to draw a label in the report chart.<br><br>The default FontFace value is good for Windows operating systems. For Unix and Linux, you might need to change the value, especially for Japanese and Chinese locales. |
| Graph | (HTML reports only) Specifies the columns to use as the X axis (categories) and Y axis (totals) in the graph. In the X axis column, set the Graph value to Category; in the Y column, set it to Expression. Because the Expression column is totalled, it is appropriate only for columns of type big decimal, double, or Integer. If either the Category or the Expression is missing, the graph does not display.<br><br>For example, to display a graph of spending by Cost Center, you would set the CostCenter column to Category and set the ExtendedPrice column to Expression. |
| FormatterClassName | The name of a Java class, which must be a subclass of Formatter. You use this field if you want to override the default formatter for the field. For more information on custom formatters, see the legacy version 8.2 *Ariba Spend Management API Guide* available at https://connect.ariba.com. |
| FilterClassName | The name of a Java class, which is used to filter. Must match a groupClass name specified in ReportFilters. For more information, see "Filtering" on page 152. |
| ValidationClassName | Specifies the name of a condition, used to validate the filter. For more information on validity conditions, see the *Ariba Spend Management Customization Guide*. |
| ValidationParameters | Specifies values for the parameters required by the validation class, if any. The value is a set of key=value pairs, separated by semicolon. For example: MaxQty=100;Qty=50; |
| ExtraCSSClasses | Specifies any style classes from the cascading style sheet that you want to apply specifically to this column. For more information, see "Customizing the Style Sheets" on page 161. |
| NotARequiredFilter | Boolean that specifies whether this filter is required. Set this field to true if you want to make the filter optional. By default, it is false (the filter is required). |
| NotDisplayedByDefault | Boolean that specifies whether this filter is displayed by default. When set to true, the field is unchecked in the user interface and does not appear in the report unless the user explicitly checks the box. |

The following example shows several lines from ReportColumnMeta.csv:

```
"ReportUniqueName","UniqueName","ColumnLabel","FilterFieldPath","FilterOrder",
"DisplayGroupLabel","DisplayLevel","TotalMe","CountRows","SubtotalGroup","ColumnOrder",
"GroupOrder","Width","Justification","FontSize","IsBold","IsItalic","Graph","FormatterClassName",
"FilterClassName","NotARequiredFilter","NotDisplayedByDefault”

"aribaCostCenterDetails","RequesterBaseID",,"Requester","1","FALSE","0","FALSE","FALSE","FALSE",
"0","0","0","Left","8","FALSE","FALSE",,,"ariba.procure.core.Requisition"
```

```
"aribaCostCenterDetails","CostCenterBaseID",,"LineItems.Accountings.SplitAccountings.CostCenter",
"2","FALSE","0","FALSE","FALSE","FALSE","0","0","0","Left","8","FALSE","FALSE",,,
"ariba.procure.core.Requisition",,,
```

### Resource Keys in ReportColumnMeta

In `ReportColumnMeta.csv`, only the field `ColumnLabel` is mapped to a string in `resource.reportmetadata.csv`. The value of this field is interpreted as a resource key. If the resource key does not exist in `resource.reportmetadata.csv`, the value is interpreted as a literal.

## ReportPermissionMap.csv File

You use `ReportPermissionMap.csv` to set restrictions for who can run a particular report. This information determines the set of reports that a user sees when he or she logs in to Ariba Buyer. This file is used only if the `Restricted` flag in `ReportMeta.csv` is set to `TRUE`.

The fields of `ReportPermissionMap.csv` are as follows:

| Field | Description |
|---|---|
| `ReportUniqueName` | Names a report. Must match the `UniqueName` of a report defined in `ReportMeta.csv`. |
| `PermissionName` | Names a permission. Must match the `UniqueName` of a permission defined in `Permission.csv`. |

The following example shows the first few lines of `ReportPermissionMap.csv`:

```
"ReportUniqueName","PermissionName"
"aribaCommodityBySupplier","PurchasingAgent"
"aribaCommodityByCC","PurchasingAgent"
"aribaOSummaryBySupplier","PurchasingAgent"
```

To make a report restricted, set its `Restricted` field to `TRUE` in `ReportMeta.csv`. and add an entry for the report to `ReportPermissionMap.csv`. If a report is not set to be restricted, it is accessible to all users.

### User Access to Report Data

`ReportPermissionMap.csv` determines which reports users can access when they log into Ariba Buyer, but does not determine what data can be included in those reports. The rules for accessing approvable data through reports are as follows:

- In general, users can only see approvables they have created themselves.
- Supervisors can see approvable data created by their subordinates (both direct and indirect subordinates).
- Administrative users with Query All permission can see everyone's approvable data.
- Reports generally show only approvable data that was created in the current partition. This rule does not apply to reports that are defined as cross-partition. For more information, see `isCrossPartition` on page 150.

## Reporting on Currency and Money

This section describes reporting issues related to currency and money fields.

### Total Currency Parameter

You specify the currency used for report totals with the parameter `Application.Reports.ReportsTotalCurrency`.

If this parameter is missing, Ariba Buyer uses the currency specified as `System.Base.Data.BaseCurrency`.

### Multi-Currency Reports

Ariba Buyer provides two options for defining reports that use multiple currencies:

- You can display reports using EMU currencies in dual currency mode, showing both the original currency and the euro
- You can display money amounts in dual currencies, showing both the transaction currency and the user currency

**▼ To enable dual currency display for EMU currencies:**

1 In `config/Parameters.table`, set `Application.Reports.EnableEuroCurrencyDisplay to true.`

In this case, when the reporting currency is an EMU currency, the report displays money values in both the EMU currency and the euro.

**▼ To enable dual currency display for user currency and transaction currency:**

1 In `config/Parameters.table`, set `Application.Reports.EnableUserCurrencyDisplay to true.`

2 In `ReportQuery.csv`, make sure that your query returns a column of type Money. Money objects include a currency, which Ariba Buyer needs to access to do the multi-currency display.

3 In `ReportColumnMeta.csv`, remove the formatter class for the money column, or be sure that it is set to a formatter that supports multi-currency display. Removing the formatter tells Ariba Buyer to use the default formatter for fields of type Money, which is `ariba.server.ormsserver.ReportingCurrencyMoneyFormatter`. This formatter implements the logic of multi-currency display.

### Reporting on Money

When working with reports that include money fields, be aware that mathematical operations can be performed only on fields inside Money objects, not on Money objects themselves. If you want to do math operations on a money field, you must make sure your query includes the amount field.

For example, consider the following query:

```
SELECT LineItems.Amount.ApproxAmountInBaseCurrency,
LineItems.Quantity,
LineItems.Amount.ApproxAmountInBaseCurrency * LineItems.Quantity
FROM PurchaseOrder
```

`Amount` is an object of type `Money`, but `ApproxAmountInBaseCurrency` is a `BigDecimal`. You can perform math operations on the `ApproxAmountInBaseCurrency` field, as shown here ,but not on the Amount field itself because it is an object.

When formatting money amounts, however, the formatter operates on the `Money` object, not the `BigDecimal`. The default formatter for `Money` fields is `ariba.server.ormsserver.ReportingCurrencyMoneyFormatter`.

### Other Parameters for Reporting

In addition to the parameters for dual-currency display, `config/Parameters.table` also contains the following reporting-related parameters:

- `System.Reports.ReportsMaxCategories`, which specifies the number of categories in a report.
- `System.Reports.ReportsMaxRows`, which specifies the number of rows in a report.
- `Application.Reports.CSVReportsCharset`, which specifies the character encoding to use when writing reports. If this parameter is missing or not specified, Ariba Buyer uses the default VM encoding.

## Report Customization

To modify existing or add new reports, you make the necessary changes to the configuration files, run the `ReportQueryPull` and `ReportMetaPull` integration events, and test your changes.

You can classify customizations into several levels:

- *Simple report changes*, which involve `ReportMeta.csv` and `ReportColumnMeta.csv` and possibly some minor metadata XML modifications. You can change the layout of an existing report or create new reports this way. This process is described in "Adding a New Report" on page 158.
- *Style sheet customizations*, which involve editing the cascading style sheet (CSS) files used to format reports that display in HTML format. This process is described in "Customizing the Style Sheets" on page 161.
- *Complex customizations*, which require you to specify new queries, write views, or add extrinsic report filters. This process is described in "Creating Reports Based on Custom Queries" on page 162.

If you want to customize a standard report, be aware that your changes are overwritten the next time you upgrade Ariba Buyer. To avoid migration problems, consider copying the queries from the standard report into your own new report. For more information, see "Adding a New Report" on page 158.

### Adding a New Report

To add a new report, you add a line to `ReportMeta.csv` and a series of lines to `ReportColumnMeta.csv`. In most cases, you create a new report that is based on an existing query.

▼ **To add a new report:**

**1** In `ReportMeta.csv`:

**a** Find an existing report definition that uses the query you want to use in your new report.

**b** Copy the entry for the existing report as a new row in `ReportMeta.csv`.

**c** Change the value of the `UniqueName` field to a new value.

**d** If you want to set restrictions for who can run the report, set the `Restricted` field value to `TRUE`.

**e** Change the other fields as appropriate. Remember that `UniqueName` must be unique, and `QueryUniqueName` must match a query defined in `ReportQuery.csv`.

**2** Add a row to the `ReportColumnMeta.csv` for each column displayed in the report, or used as a filter. Each row in this file describes a single column in the report. You can specify the layout, order, grouping, and summation. Typically, you base your column definitions on existing column definitions as follows:

**a** In `ReportColumnMeta.csv`, find the set of column definitions associated with the report you're copying.

**b** Make a copy of those definitions at the end of the `ReportColumnMeta.csv` file.

**c** Change the `ReportUniqueName` to match the `UniqueName` of the report you just added to `ReportMeta.csv`.

**d** Make any other changes you need, such as to group orders, column orders, and column widths.

**e** Write the columns for your new report on a piece of paper so that they are indented by group and in the proper order. You can then assign numbers to each group and to each column as in the following example that corresponds to the Spending Analysis Report.

```
(g1) Cost Center: <value>

  (g2) Requester: <value>

              (c1)     (c2)     (c3)        (c4)        (c5)  (total)

    (g3)      Item #   Vendor   Description Transaction Date  Amount
```

The (g) values correspond to the group level, the ( c ) values correspond to the column order, and the total indicates the column to be totaled.

If you want a group to have a subtotal, set the `SubtotalGroup` value for the group name.

The `g1` and `g2` groups have the `DisplayGroupLabel` set to `TRUE` to indicate that the report display a `ColumnLabel: group value` for each group break.

The `GroupOrder` for Cost Center is 1. The `GroupOrder` for Requester is 2.

The `DisplayLevel` for each of the columns in `g3` is 3 and the `GroupOrder` in this case is on `Item #` with a value of 3.

The widths for the columns can be whatever you choose as long as they can fit on a printed page (widths are in pixels.)

**3** If you want to set restrictions for who can run the report, add an entry for the report to `ReportPermissionMap.csv`. For more information, see "ReportPermissionMap.csv File" on page 156.

**4** After modifying the CSV files, run the `ReportQueryPull` and `ReportMetaPull` integration events to see your changes.

## Using Resource Files

When you add a new report, fields such as report title and description can be string literals, or they can be keys to fields in `resource.reportmeta.csv`. This section describes how to put your values in a resource file.

**▼ To update the string resource file:**

1. Add a file called `resource.reportmetadata.csv` to the directory *BuyerServerRoot*/`config/resource/`*`locale`*`/strings`.
2. Add an entry to `resource.reportmetadata.csv` for the `Description` field in your `ReportMeta.csv` file. For example:

   `"MyPersonalReport_Description","This is my personal report",`
3. Add an entry for the `ReportMeta.csv ReportTitle` field, for example:

   `"MyPersonalReport", "My Personal Report",`
4. If your report includes a graph, add an entry for the `ReportMeta.csv GraphName` field, for example:

   `"MyPersonalReport Graph","My Personal Report Graph",`
5. Add an entry for each `ColumnLabel` in the new report. For example:

   `"HoldUntil","Hold Until",`

## Adding a Filter

As described in "Filtering" on page 152, there are three fields in a `ReportColumnMeta.csv` entry that can be used to define filtering attributes for a column:

- `FilterFieldPath`
- `FilterOrder`
- `FilterClassName`

Ariba Buyer provides a set of filters for all the objects you would typically include in a report. Normally, you just use one of these predefined filters. There might be cases (for example, if you are running a report on your own custom objects) where you need to define your own filters.

To use a filter in a report, the field you want to use as a filter must be defined in the `ReportFilters` group, in a metadata XML file. The default configuration adds many commonly-used filter fields to this group. For example:

```
<group name="ReportFilters">
  <groupClass name="ariba.approvable.core.Approvable">
    <groupField name="Requester">
      <properties showByDefaultForSearch="true"
        allowNullValue="false"
        chooserField="Name"
        nameTableClass=
          "ariba.common.core.nametable.RestrictedUserNameTable"/>
    </groupField>

    <groupField name="Preparer">
      <properties showByDefaultForSearch="false"
        allowNullValue="false"
        chooserField="Name"
        nameTableClass=
          "ariba.common.core.nametable.RestrictedUserNameTable"/>
    </groupField>
```

**▼ To add a filter to a report:**

1. Find the filter you want to use, by verifying that it is defined in a metadata XML file.
2. Add the `FilterFieldPath`, `FilterOrder`, and `FilterClassName` to an entry in `ReportColumnMeta.csv`.

For example, in the following entry, "SubmitDate" is the FilterFieldPath, "3" is the FilterOrder, and "ariba.procure.core.Requisition" is the FilterClassName:

```
"aribaReqDetails","SubmitDate","SubmitDate","SubmitDate","3","FALSE","1","FALSE","FALSE","FALSE
","5","0","80","Right","8","FALSE","FALSE",,,"ariba.procure.core.Requisition"
```

Filters use dot notation and are relative to the FilterClassName field. For example, you might have a FilterClassName that is ariba.procure.core.Requisition, and a FitlerFieldPath that is LineItems.CommodityCode.

### Removing a Filter

You can remove a filter from a report by modifying the ReportColumnMeta file. To remove a filter, you find the row associated with that filter, set the FilterOrder to 0 in the ReportColumnMeta file, and then run the ReportMetaPull integration event from Ariba Administrator.

### Removing a Graph

Another simple customization is to remove a graph from one of the standard reports.

▼ **To remove a graph:**

1. In ReportMeta.csv, set the GraphName field to be empty.
2. In ReportMeta.csv, set the GraphType field to be empty.
3. In ReportColumnMeta.csv, set the Graph field to be empty.

## Customizing the Style Sheets

When generating reports in HTML format, Ariba Buyer uses the following cascading style sheet (CSS) file to format the report:

- report.css—formats HTML reports dispalyed on the screen
- reportPrint.css—formats HTML reports that the user prints

These files are located in *BuyerServerRoot*/ariba/resource/en_us/styles directory. You modify these files the same way you would modify the main Ariba Buyer style sheet, ariba.css. For more information on ariba.css, see the readme file in the *BuyerServerRoot*/branding/ariba directory.

The style sheets contain the following sections:

- **Header**. The header controls the top portion of the report, including the title and logo. There are two different logos, each of which has been carefully designed to be optimized for display or print. For best results, do not change the logo.
- **Levels**. You control how far a level is indented as well as its formatting. For example, you define table styles separately for each level. By default, the report stylesheets contain five levels of indentation, each of which indents the data by 15 pixels. You can add additional levels as needed. You can also modify the JavaScript for the level buttons, which, by default, show and hide levels.
- **Groups**. You can specify the amount of vertical space between group levels. You define label styles separately for each group.
- **Footer**. The footer controls the bottom portion of the report, including the grand total and the graph, if any.

You can also specify the font characteristics. Note the following recommendations:

- For best results, choose one font and size. Typically, 8 or 10 point size works best.
- Because column headers are always bold, leaving the rest of the text non-bold makes the report easier to read.
- Use italics sparingly.

You can create new classes in the style sheet. To apply a class to a specific column, add the class to the `ExtraCSSClasses` field for the column in `ReportColumnMeta.csv`.

## Creating Reports Based on Custom Queries

In some cases, adding a new report involves creating a custom Ariba Query API query.

### ▼ To create a report based on a custom query:

1. In `ReportQuery.csv`, find the query that's the closest to the one you want to create.
2. Copy the query at the end of the file.
3. Modify the query. The following example shows a simple query that returns a list of Requester names:

```
"Plain","SimpleQuery","SELECT
    Requester.Name AS Requester
FROM
    Requisition"
```

4. Test the query in the Inspector to make sure that it runs successfully.
5. Add a report to `ReportMeta.csv` in which the value for the `QueryUniqueName` field matches the `UniqueName` of the new query you just added to `ReportQuery.csv`. Using the previous example, the value for `UniqueName` would be `SimpleQuery`.
6. For every field or alias selected in the query that is to be displayed, add a corresponding entry to `ReportColumnMeta.csv` with a `UniqueName` that matches the name of the corresponding column returned by the query.
7. Add any filtering information to `ReportColumnMeta.csv`. For information on adding existing filters, see "Adding a Filter" on page 160.
8. In Ariba Administrator, run the ReportQueryPull and ReportMetaPull integration events to see your changes.

## Custom Filters

In most cases, you can use an existing filter, as described in "Adding a Filter" on page 160. There are some times when you might need to create a custom filter. For example:

- If you add a field to an existing object
- If you create your own custom classes and want to include them in reports

### ▼ To create a custom filter:

1. Create a metadata extension file, and put it in an appropriate location:
   - If the filter applies to all variants, put the file in `config/variants/Plain/extensions`.
   - If the filter applies to only one variant, put the file in `config/variants/`*`variantname`*`/extensions`.

2 Add a filter definition to your extension file. For example:

```
<group name="ReportFilters">
  <groupClass name="ariba.procure.core.Requisition">
    <groupClassVariant name="vorcl">
      <groupField name="LineItems.Accountings.SplitAccountings.CostCenter">
        <properties chooserField="Name"
          label="@aml.OracleCoreExt/UserProfileDetailsCostCenterLabel"/>
      </groupField>
    </groupClassVariant>
  </groupClass>
</group>
```

3 After you define a filter in metadata XML, you can reference it in `ReportColumnMeta.csv`, as described in "Adding a Filter" on page 160.

## Debugging Report Changes

This section provides hints for debugging common problems with custom reports.

**Problem:**

The Report Wizard displays an error saying you attempted to execute a report name that has not been defined.

**Solution:**

- Check `ReportMeta.csv` for spelling errors.
- Look in the database to ensure that the `reportname` is in the `reportmetatab`.

**Problem:**

The Report Wizard displays an error that a filter has not been defined.

**Solution:**

- Check the `ReportColumnMeta.csv` file `ColumnName` field to ensure that the column is defined for the report.
- Check the database `reportcolumnmetatab` to ensure that the `ColumnName` was loaded.
- Try restarting Ariba Buyer. Ariba Buyer caches `ReportColumnMeta.csv`.

### ▼ To use the Inspector to examine your report object:

1 Start the Inspector from Ariba Administrator, or point your browser to the Inspector URL. For example:

```
https://myserver:443/Buyer/inspector
```

2 Go to the "Lookup and Create ClusterRoots" label, and then choose "ReportMeta - ariba.common.core.ReportMeta" from the list.

3 Click **Submit Query** next to the "List ClusterRoots in Partition" field. The Inspector displays all the report objects in the system.

4 Find your custom report in the list, and click on it. The Inspector lists the current values for all the object's fields.

5 Make sure your report's fields have the values you expect. In particular, check the `ReportColumns` field to make sure the report includes columns. If it does not, your report failed to generate properly. Check your entries in `ReportColumnMeta.csv` to make sure they are specified correctly.

# Chapter 13 Remote Authentication

This chapter describes how to configure basic remote authentication and remote authentication with single sign-on. It includes the following sections:

## About Remote Authentication

Remote authentication is a session/user authentication process that allows users to access Ariba applications using the same username and password that they use for their corporate identity. Remote authentication can be integrated with a single-sign-on (SSO) authentication system in the enterprise so that users login just once in order to access all applications within the enterprise. SSO authentication systems store user credentials for multiple applications and automatically submit those credentials on behalf of users when needed. Users log in once rather than re-authenticating with a separate set of credentials for each application they access. Using remote authentication with SSO can also provide centralized control and enforcement of corporate authentication policies.

### Overview of Authentication Options

Users can log in to Ariba applications using three possible methods:

- **Application authentication.** Users have Ariba application usernames and passwords that they manually enter on the Ariba application login page. The user ids and passwords are maintained by the customer administrator within the Ariba application.
- **Corporate authentication.** This is a remote authentication mechanism wherein users manually log into Ariba applications using the same username and password that they use for their corporate identity (this requires the Ariba solution usernames to be the same as the corporate usernames).
- **Corporate authentication with SSO.** This is a remote authentication mechanism wherein users simply log into their corporate network, which automatically logs them into Ariba applications when needed.

In order to leverage your organization's SSO solution for Ariba applications, your network administrators need to enable communication between your user authentication systems and Ariba applications.

## Benefits of Remote Authentication

Remote authentication offers the following benefits over regular application authentication:

- **Convenience for users**. You do not need to remember separate usernames or passwords for your Ariba accounts. Also, if your organization uses SSO, users are automatically authenticated for Ariba applications whenever they log in to your corporate network.
- **Better security control**. Your organization might have greater security requirements than the authentication mechanism of Ariba applications. For example, your corporate network policy might require more frequent password changes. Or, your network might require the use of advanced authentication devices, such as RSA SecurID® devices or fingerprint scanners.
- **Better account management**. When users leave your organization, their access to Ariba applications is automatically revoked as part of your organization's network policy. Removing their login permission from your corporate network means that they can no longer access Ariba applications.

## Remote Authentication Protocol

Remote authentication for Ariba applications uses the remote authentication relay protocol. The remote authentication relay protocol is a simple yet secure protocol based on industry-standard Public Key Infrastructure (PKI). It is easy to implement and does not require additional software from third-party vendors.

The remote authentication relay protocol is:

- **Secure.** It uses Public Key Infrastructure (PKI) and RSA technology, which are industry standard methods for keeping data secure on the Internet.
- **Internet friendly.** It integrates with your corporate network infrastructure without requiring a specialized topology. You do not need to deploy special services, such as VPNs, DMZs, or custom web services.
- **Compatible with all Ariba applications.** After you set it up, you can use it for additional Ariba applications without having to make modifications.

Ariba provides sample scripts for Microsoft Internet Information Services (IIS) using Active Server Pages and for Apache using Perl; alternatively, you can write your own scripts using any scripting language of your choice.

## Requirements

The following components are required on your network to enable remote authentication:

- **User database**. You must have a system that maintains a list of your corporate users and authenticates them. This authentication can use any technology, such as LDAP or Microsoft Domain Controller.
- **Web server**. You must have a web server. It must accept HTTP connections from your users' web browsers.
- **Cookies:** User’s browser must allow first-party cookies.

### Limitations

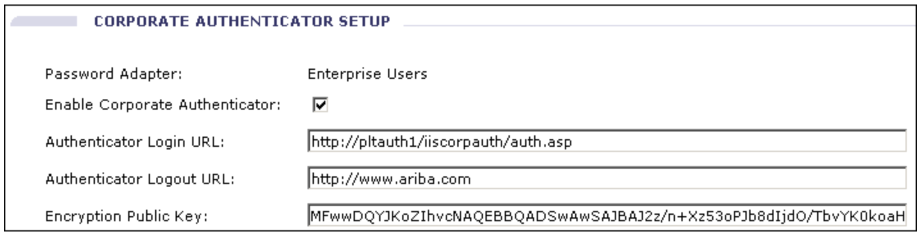
There are a few limitations in using the remote authentication mechanism:

- Suppliers cannot use remote authentication; it is only for buying organizations.
- Users must have access to your corporate authentication mechanism, which typically means they must have approved access to your network.
- After you turn on remote authentication for your organization, users can no longer log directly in to the Ariba application; they must use your authentication mechanism.
- You must continue to manage users within the Ariba application. Each user must be a valid user within the Ariba application for login to succeed.

### Data Needed by Ariba Applications

Ariba applications require information from you about your environment. You must provide the following information in the Site Profile of the Ariba application:

- Your public RSA key (for information about generating a private/public key pair if you do not already have a public RSA key, see "Generating a Private/Public Key Pair" on page 172)
- The URL of your remote authentication relay page (auth.asp) that will serve as a login URL (for more information, see "Example ASP Relay Page" on page 171)
- The URL of a logout page, which is the page you want users to see after their sessions end (for more information, see "Logout Page" on page 170)


CORPORATE AUTHENTICATOR SETUP

| | |
|---|---|
| Password Adapter: | Enterprise Users |
| Enable Corporate Authenticator: | ✓ |
| Authenticator Login URL: | http://pltauth1/iiscorpauth/auth.asp |
| Authenticator Logout URL: | http://www.ariba.com |
| Encryption Public Key: | MFwwDQYJKoZIhvcNAQEBBQADSwAwSAJBAJ2z/n+Xz53oPJb8dIjdO/TbvYK0koaH |

## Overview of the Remote Authentication Relay Protocol

The remote authentication relay protocol uses your existing corporate network protection mechanisms (such as IIS basic authentication or a third-party SSO system) to authenticate users when they want to use an Ariba application. The protocol uses web browser redirects to communicate between the Ariba application and your network authenticator.

The protocol uses a relay page on your network that you protect with the authentication mechanism of your choice. The Ariba application does not need to know anything about your authentication or your company user directory; these decisions are left to you. If your authentication mechanism allows a user to access your relay page, the Ariba application grants access to that user.

Here is the setup flow:

1. You install a relay page in your corporate web server and protect it with an authentication mechanism of your choice.
2. You generate a public/private key pair if you do not already have a pair from a trusted source.

3 In the Site Profile of the Ariba application, you set your public key, the URL of your relay page, and the URL of your logout page.

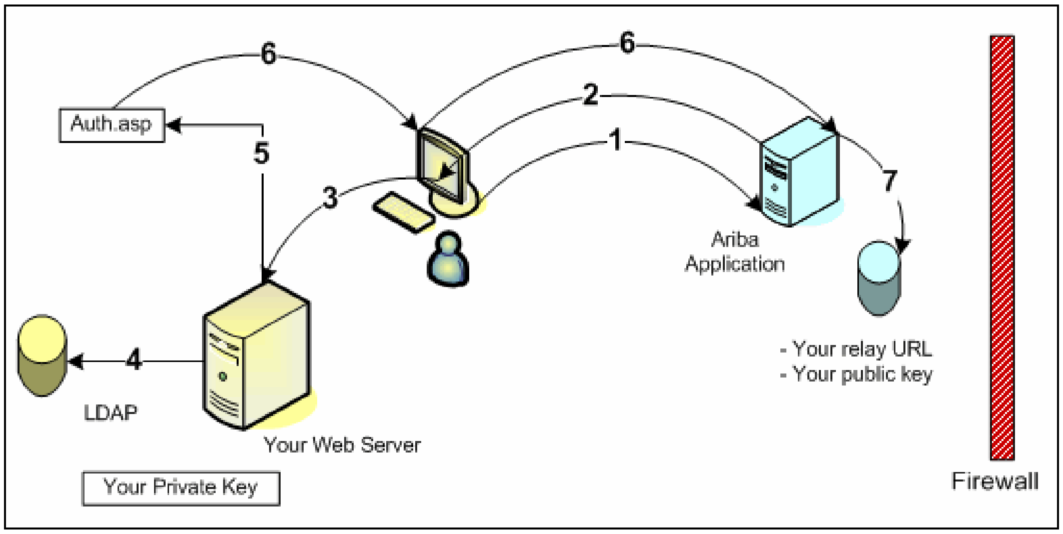
## Corporate Authentication Usage Flows

This section describes the following corporate authentication usage flows:

- Basic corporate authentication
- Corporate authentication using a third-party SSO application

### Corporate Authentication Flow Using the Basic Setup

The following figure illustrates the flow for the basic corporate authentication setup.



The following steps explain the flow with basic corporate authentication:

1 A user accesses the URL of the Ariba application.

2 The Ariba application notices that your organization is configured for corporate authentication. Instead of displaying a login page, it redirects the user to your relay page (auth.asp), passing a randomly generated challenge key and a return URL. The challenge key is stored in the session during this interaction.

3 Your authentication mechanism (such as an IIS web server with basic authentication) intercepts the request from the Ariba application.

4 Your authentication mechanism checks the user against your user database (such as Active Directory). If authentication succeeds, your authentication mechanism forwards the request to your relay page.

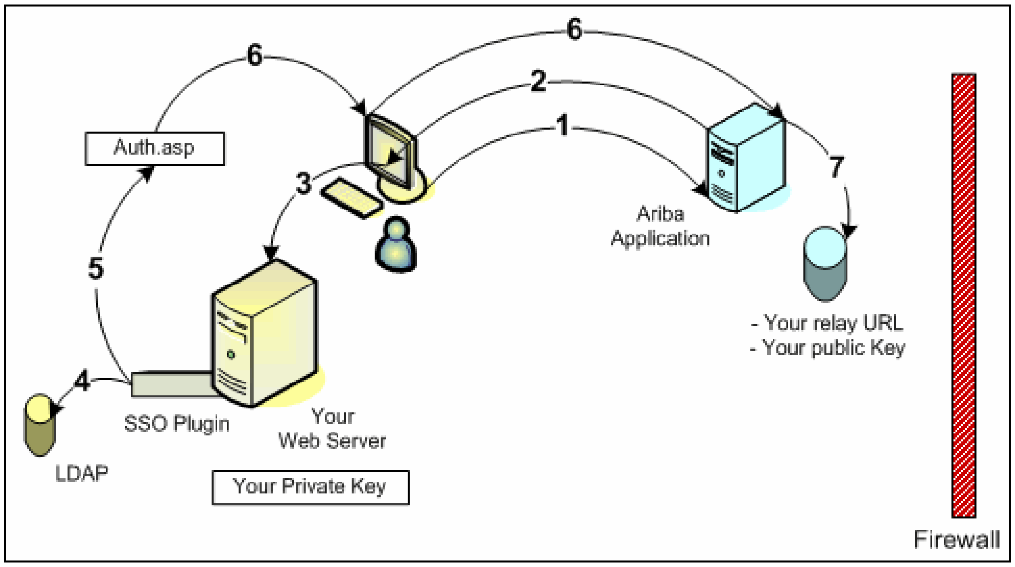
5 Your relay page (auth.asp) receives the request from your authentication mechanism. It verifies that the request is coming from the Ariba application. After verification, it concatenates the challenge key and the username and signs the result (SHA1+RSA) with your private key. It then base64 encodes this signature. Lastly, if the relay page uses HTTP GET with the return URL, then the signature is URL-encoded.

6 Your relay page sends the username and signature back to the Ariba application, using the return URL.

7 The Ariba application finds the session based on the session cookie in user's browser, retrieves the challenge key from the session, concatenates the challenge key and username and verifies the signature with its copy of your public key. A match indicates that the user is authenticated. The Ariba application then completes the login process as if the user had successfully entered a username and password on its login page. A failure in the process will display a proper error page and generate an audit record for debugging.

## Corporate Authentication Flow with Third-Party Single Sign-On

The following figure illustrates the flow of corporate authentication with IIS authentication and with a third-party SSO system.



The following steps explain the flow in the preceding figure:

1 A user accesses the URL of the Ariba application.

2 The Ariba application notices that your organization is configured for SSO with corporate authentication, and instead of displaying a login page, it redirects the user to your relay page, passing a randomly generated challenge key and a return URL.

3 The SSO plug-in running on your corporate web server intercepts the access to the protected relay page and checks for an existing SSO cookie. If the cookie does not exist (the user has not logged in), it redirects the user to your SSO authenticator, which displays your corporate login page. Your authentication mechanism (such as an IIS web server with basic authentication) intercepts the request from the Ariba application.

4 The user enters authentication information, and the SSO plug-in checks it against your user database (such as Active Directory). If authentication succeeds, the SSO plug-in forwards the original request to your relay page.

5 Your relay page (auth.asp) receives the request from your authentication mechanism. It first verifies that the request comes from the Ariba application. After verification, it concatenates the username and the challenge key and signs the result (SHA1+RSA) with your private key. The signature is then encoded using Base64. Lastly, if the relay page uses HTTP GET with the return URL, the signature is URL encoded.

6 Your relay page sends the signature back to the Ariba application, using the return URL.

7 The Ariba application finds the session based on the session cookie in user's browser, retrieves the challenge key from the session, concatenates the challenge key and username and verifies the signature with its copy of your public key. A match indicates that the user is authenticated. The Ariba application then completes the login process as if the user had successfully entered a username and password on its login page. A failure in the process will display a proper error page and generate an audit record for debugging.

### Logout Page

When users finish their sessions, they click a **Logout** link in the Ariba application, which redirects them to your logout page. The logout page can be any URL you determine, such as the home page on your intranet.

Typically, you would not log users out from your network. However, you might require your corporate authenticator to log users out of your network when they log out of the Ariba application. In this case, provide a logout URL that activates a script that logs users out of your corporate authenticator and redirects them to a final page.

### Non-Authorized Users

If your authentication mechanism determines that a user is not authorized, your relay page displays either an error page or a login page. It does not forward the request to the Ariba application.

## Implementations of the Protocol

The remote authentication relay protocol offers flexible deployment options to suit your enterprise requirements, as described in the following table.

| Deployment Option | Description |
|---|---|
| ASP | Employs a combination of Microsoft Active Server Page technology and OpenSSL. |
| Perl | Employs Perl scripting language and OpenSSL. |
| Java | Employs a Java servlet-based solution together with the Java Security Package. |

## Redirect Examples

To better understand the communication between the Ariba application and your relay page, it helps to see realistic redirect examples.

### Redirect from the Ariba Authenticator

When a user attempts to access the Ariba application, the solution redirects the user to your relay page with a randomly-generated challenge key (key) and the return URL (ret). For example:

```
http://www.acme.com/auth.asp?key=o82hS2aC6mKfj1aJS2fObztErG1Jk%2FPAVKxbWgTzTP4%3D&ret=https://ari
ba.com/253AaHR0cDovL0tTQUxFSDI6O
```

### Redirect from Your Relay Page

If your relay page authenticates the user, it redirects the user back to the Ariba application's return URL, with the username (user) and the encrypted signature (sig). For example:

```
http://ariba.com/253AaHR0cDovL0tTQUxFSDI6O&user=jsmith&sig=EGMFbimuTKHZA3J91KaDFltUyVXVwFydZNaTOD
0z%2BFMj5IcZ9SzNawBdAZqD0ytZ%0A3wowO7Oh8J%2BEH2gWS1by6Q%3D%3D%0A
```

These redirects can be transmitted through HTTP, because they contain encrypted information.

## Example ASP Relay Page

Below is pseudo code for an example relay page (auth.asp). It is implemented in a single ASP page and uses the OpenSSL command-line toolkit:

```
// AUTH_USER is added by a web server authentication mechanism (or
   // 3rd-party SSO) when the user is authenticated. The key is the
   // challenge key from Ariba.
   username = Request.ServerVariables("AUTH_USER")
   key = Request("key")

   // Concatenate the challenge key and username and pipe the result
   // through OpenSSL to sign it. Pipe the result through OpenSSL
   // again to base64 encode it.
   signature = key + username | openssl "dgst -sha1 -sign " & PrivKey
          | openssl enc -base64

   // Redirect the user back to Ariba using Ariba's return URL and
   // include the username and encrypted signature.
   retURL = Request("ret") // return URL
   Response.Redirect(retURL + "user=" + username
                            + "&sig=" Server.URLEncode(sigEncode))
```

The command-line arguments to the openssl utility in the above example are:

```
openssl "dgst -sha1 -sign" & PrivKey
```

Encrypt stdin using the SHA-1 algorithm and sign it with your private key

```
openssl enc -base64
  Base64 encode stdin
```

## Generating a Private/Public Key Pair

The remote authentication relay protocol requires an RSA public/private key pair. If you do not already have a pair, you can use the open source OpenSSL command-line toolkit to generate one.

**▼ To use the OpenSSL toolkit to generate public/private key pairs:**

1. Download the OpenSSL toolkit from www.openssl.org. OpenSSL is also distributed by Ariba in the example remote authentication relay ZIP file.
2. Issue the following commands:

   ```
   > openssl genrsa -out private.pem 1024
   > openssl rsa -in private.pem -out public.pem -outform PEM -pubout
   ```

   The first command generates a 1,024-bit private RSA key from a random seed and stores it in a file named `private.pem`. The second command generates a public RSA key from the private key and stores it in a file named `public.pem`. The public key is in Privacy Enhanced Mail (PEM) format, which is required by the Ariba application.

Save the private key so that your relay page can use it to encrypt signatures to send to the Ariba application. Add the public key to the Site Profile so the Ariba application can decrypt signatures from your relay page.

## Remote Authentication Relay Example for IIS

The following instructions describe how to install and use the example ASP remote authentication relay files for IIS on Windows Server 2003. There are two main steps:

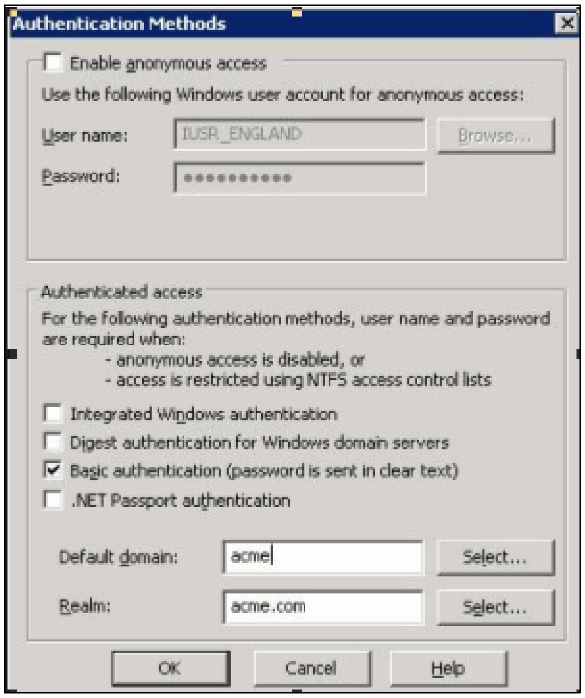
- Configure IIS and generate keys.
- Test the configuration.

### 1. Configure IIS and Generate Keys

**▼ To unzip the example files, configure IIS to use them, and generate a public/private key pair:**

1. Obtain the remote authentication relay ZIP file from Ariba and unzip it on your web server.
2. Open the Internet Information Services Management Console (inetmgr).
3. In the IIS Management Console, navigate to the **local computer > Web Sites > Default Web Site** directory.
4. Right click the Default Web Site directory and select **New > Virtual Directory**. Create a virtual directory named `Login` for the `IIS-ASP` folder.
5. Make the Login directory authentication-protected:
   a. Right-click the **Login** virtual directory and choose **Properties**.
   b. On the Properties panel, click the **Directory Security** tab.
   c. In the Anonymous access and authentication control area, click **Edit**.
   d. On the Authentication Methods panel, turn off **Enable anonymous access** and turn on **Basic authentication**.

**e** Set your company's Default Domain and Realm.


Authentication Methods
Enable anonymous access
Use the following Windows user account for anonymous access:
User name: IUSR_ENGLAND
Browse...
Password: ••••••••••
Authenticated access
For the following authentication methods, user name and password are required when:
- anonymous access is disabled, or
- access is restricted using NTFS access control lists
Integrated Windows authentication
Digest authentication for Windows domain servers
Basic authentication (password is sent in clear text)
.NET Passport authentication
Select...
Select...
OK
Cancel
Help

- [ ] Enable anonymous access
- [ ] Integrated Windows authentication
- [ ] Digest authentication for Windows domain servers
- [✓] Basic authentication (password is sent in clear text)
- [ ] .NET Passport authentication

Default domain: acme

Realm: acme.com

**6** If necessary, edit the example `IIS-ASP/auth.asp` and `LoginTest/login.asp` files to update the paths and URLs to reflect the install location of this directory and the URLs for your web server.

**7** Generate a public/private key pair by running the genkeys.bat batch file in the keys directory. This batch file does the steps described in "Generating a Private/Public Key Pair" on page 172. It creates two files: `private.pem` and `public.pem`.

## 2. Test

The LoginTest directory contains two solutions that simulate the authentication mechanism of the Ariba application:

- The `login.asp` application, which redirects users to your relay page.
- The `login_verify.asp` application, which accepts the redirect from your relay page and interprets the signature.

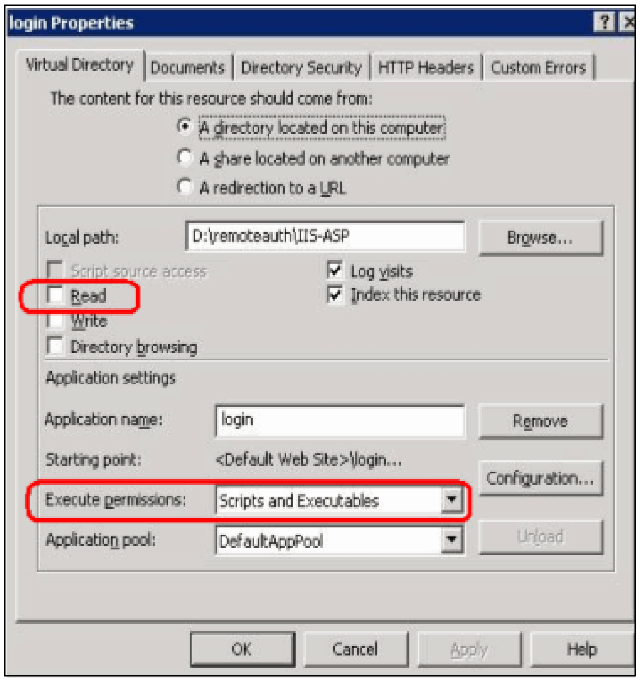
### ▼ To test the configuration:

**1** In IIS, create a virtual directory named "LoginTest" for the LoginTest directory and make it unprotected (anonymous access).

**2** Right-click the **LoginTest** virtual directory and choose **Properties**.

**3** Turn off **Read** permission.

4 Choose **Scripts and Executables** on the **Execute permissions** pull-down menu.


login Properties

Virtual Directory | Documents | Directory Security | HTTP Headers | Custom Errors

The content for this resource should come from:
[✓ A directory located on this computer]
A share located on another computer
A redirection to a URL

Local path: D:\remoteauth\IIS-ASP

Script source access
Read
Write
Directory browsing
[✓ Log visits]
[✓ Index this resource]

Application settings

Application name: login
Starting point: <Default Web Site>\login...
Execute permissions: Scripts and Executables
Application pool: DefaultAppPool

5 Test your configuration by using a web browser to access `http://<yourserver>/LoginTest/login.asp`.

If you set up authentication correctly, Windows prompts for your username and password. If, after you enter your username and password, the `login_verify.asp` page displays "Authenticated: True" then authentication succeeded and IIS is configured correctly. If testing is successful, you can delete the `LoginTest` virtual directory.

Perform a final test it by attempting to access the Ariba application.

## Remote Authentication Relay Example for Apache

The following instructions describe how to install and use the example Perl remote authentication relay file for Apache. There are two main steps:

- Test the script.
- Integrate the script with Apache.

This example uses the following Perl script named sso.pl:

```
#!/usr/bin/perl -w
use strict;
use CGI;
use URI;

my $private_key = "/tmp/private.pem";
my $query = new CGI;
my $username = $query->remote_user();
my $nonce = $query->param("key");
my $sigdata = $nonce . $username;
my $signature = qx{perl -e "print '$sigdata' "| openssl dgst -sha1 -sign $private_key | openssl
base64};
my $url = new URI($query->param("ret"));
$url->query_form($url->query_form(), "user" => $username, "sig" => $signature);

print $query->redirect($url);
```

## 1. Test the Script

**▼ To test the script:**

1 Obtain the remote authentication relay ZIP file from Ariba and unzip it on your web server.

2 Ensure that the `openssl` executable is in your path.

3 Generate a public/private key pair by running the genkeys.bat batch file in the keys directory. This batch file performs the steps described in "Generating a Private/Public Key Pair" on page 172. It creates two files: `private.pem` and `public.pem`.

4 Edit the Perl script to ensure that the `$private_key` variable at the top of the script points to your private key.

5 Test the script by entering:

```
> env REMOTE_USER=testuser ./sso.pl key=randomstring ret=http://foo.bar.com/
```

The output of the test should resemble the following:

```
Status: 302 Moved
Location:
http://foo.bar.com/?user=testuser&sig=Wq%2B18Z2z7%2BEilK8YzKpcX3DGQ6USpG9KzxwCHZS%2F4vApdlM%2FI
p0wD8buNKWGRHlD%0AxSdaYbPmW126Q5USyEkIaDIc9TgMBCWUI22XzVyLtyu1fV2mIncYd69PqIPg2h9t%0AxOmAPx84HR
xvx%2FaZ4DiCpUiS1Umo7cqdj3UfHfH5fGI%3D%0A
```

## 2. Integrate the Script with Apache

Integrate the script with Apache by protecting it with the authentication method of your choice. The following example shows how to protect the script with digest authentication:

```
ScriptAlias /sso/sso.cgi /path/to/sso.pl

  <Location "/sso/sso.cgi">
    AuthType Digest
    AuthName "Our Corporate Intranet"
    AuthDigestFile /tmp/digest_pw
    AuthDigestDomain /sso/sso.cgi https://your.web.server/sso/sso.cgi
    Require valid-user
  </Location>
```

You can create the `/tmp/digest_pw` file with the following command:

```
> htdigest -c /tmp/digest_pw "Our Corporate Intranet" testuser
```

To add subsequent users, omit the `-c` flag; otherwise, the file will be overwritten with a new file containing only one user. The `/tmp` path names in the example are for illustration only; use the directories dictated by your security policy.

This digest authentication example is for demonstration only. Your implementation must protect the URL `/sso/sso.cgi` with your network authentication mechanism. Use your authentication system and Apache to protect the URL containing the `sso.cgi` script.

## Configuring Ariba Buyer Server as a Corporate Authenticator

This is only for the Ariba Buyer application. An instance of Ariba Buyer uses Parameter.table to define a list of password adapters supported by that instance. The following example illustrates a password adapter in Parameter.table configured to use a corporate authenticator.

```
PasswordAdapter1 = {
                AllowNoPasswordExpirationPermission = true;
                ClassName = ariba.auth.password.CryptDBPasswordAdapter;
                Enabled = true;
                OrganicPasswordGrowth = true;
                PasswordExpireLimit = 0;
                PasswordFile = passwd.txt;
                CorpAuthEnabled = true;
                CorpAuthURL = "http://ksaleh2/login/auth82.asp";
                CorpAuthPublicKey =
"MFwwDQYJKoZIhvcNAQEBBQADSwAwSAJBAJ2z/n+Xz53oPJb8dIjdO/TbvYKOkoaHnRH+MsdyV8CQM5n06qFgpXCOG2/Quv
tTWnJNEIE4IRbTwFvWvdZ9/rUCAwEAAQ==";
                CorpAuthLogoutURL = "http://ksaleh2/thirdpartysso/logout.html";
            };
```

You need to edit the `Parameter.table` file used by your Ariba Buyer instance to include a password adapter that is configured to use a corporate authenticator.

To enable a password adapter to use a corporate authenticator:

1. Set the `CorpAuthEnabled` parameter to **true**.
2. Set the `CorpAuthURL` parameter to the URL of your remote authentication relay page. (For more information, see "Example ASP Relay Page" on page 171.)
3. Set the `CorpAuthPublicKey` parameter to the public key contained in public.pem. (For more information, see "Generating a Private/Public Key Pair" on page 172.)
4. Set the `CorpAuthLogoutURL` parameter to the URL of the logout page you want users to see after their sessions end.

# Chapter 14 Performance

This chapter presents an overview of the configuration parameters that affect Ariba Buyer performance. This chapter includes the following sections:

- "Java Heap and Java Stack" on page 177
- "Worker Threads" on page 177
- "Cache Size and Cache Tuning" on page 178
- "Data Queue" on page 180
- "Catalog Load" on page 180
- "Timeout Values" on page 181
- "Database-Related Parameters" on page 181
- "Search-Related Parameters" on page 182

For information on performance tuning, consult your Ariba Technical Support representative.

## Java Heap and Java Stack

You set the Java heap and Java stack sizes in either WebSphere Administrative Server or WebLogic Administration Server, depending on which application server you use. For recommended values, consult your Ariba Technical Support representative.

The `System.Base.ToolsDefault` section in the `config/Parameters.table` file contains parameters used to set Java heap and Java stack values for Ariba tools.

## Worker Threads

The following parameters in `config/Parameters.table` configure worker threads:

```
System.Nodes.NodesDefault.WorkerQueues.BackgroundQueue
System.Nodes.NodesDefault.WorkerQueues.CXMLObjectCreateQueue
System.Nodes.NodesDefault.WorkerQueues.ForegroundQueue
System.Nodes.NodesDefault.WorkerQueues.WorkflowQueue
```

Each worker thread holds a database connection, so when you configure worker threads, you must ensure that you have enough database connections. For information on configuring the maximum number of database connections, see "Database Connections" on page 181.

**Note:** The `NodesDefault` section sets values for parameters that are common to all logical nodes in the logical node group. You can override a parameter in the `NodesDefault` section for a particular logical node by specifying that parameter in the `System.Nodes.`*`nodename`* section for that logical node.

### Background Queue

The `BackgroundQueue` parameter specifies the maximum number of worker threads that Ariba uses for the background queue. *Background worker threads* are used by background events, such as processing of an approval request to recreate the approval graph.

### cXML Object Create Queue

The `CXMLObjectCreateQueue` parameter specifies the maximum number of worker threads that Ariba Buyer uses for handling objects that are created from cXML when an Ariba Sourcing user connects to Ariba Contracts Solution to create a contract request (CR).

### Foreground Queue

The `ForegroundQueue` parameter specifies the maximum number of worker threads that Ariba uses for the foreground threaded queue. *Foreground worker threads* are used by RPC requests, such as calls from the `servermonitor` command.

You might need to increase the number of foreground worker threads if you run concurrent scheduled tasks and integration events in a multiserver configuration. Use the following formula as a general guideline:

```
Number_of_foreground_worker_threads = number_of_logical_nodes +
maximum_number_concurrent_scheduled_tasks_and_integration_events
```

### Workflow Queue

The `WorkflowQueue` parameter specifies the maximum number of worker threads that Ariba uses for processing workflow events.

## Cache Size and Cache Tuning

This section summarizes the performance tuning parameters for various caches in Ariba.

### Object Cache

The *object cache* is a collection of objects retained in a cache. As users access objects in the database, Ariba keeps a cache of those objects in memory to improve performance. The object cache is segmented, for multi-threaded access, and is purged when it becomes full.

The following parameters in `config/Parameters.table` file configure the object cache:

```
System.Nodes.NodesDefault.ObjectCacheSize
System.Nodes.NodesDefault.ObjectCacheMaxLoad
System.Nodes.NodesDefault.ObjectCachePurgeBy
System.Nodes.NodesDefault.ObjectCacheSegments
```

ObjectCacheSize specifies the cache segment size (the number of elements in each segment), and ObjectCacheSegments defines the number of segments. ObjectCacheMaxLoad specifies when the cache is considered full and must be purged, and ObjectCachePurgeBy specifies the amount of the object cache Ariba removes when the object cache becomes full.

To tune the object cache, you typically adjust only the number of cache segments (the ObjectCacheSegments parameter). Do not adjust the object cache size.

**Note:** The NodesDefault section sets values for parameters that are common to all logical nodes in the logical node group. You can override a parameter in the NodesDefault section for a particular logical node by specifying that parameter in the System.Nodes.*nodename* section for that logical node.

## Query Result Cache

The *query result cache* caches the results of previously-executed Ariba Query API queries. Using the cache improves performance for queries that have static data, such as queries that pull data read in by integration events. It is not appropriate for queries that change frequently, such as queries that take user parameters. Each query is explicitly tagged to indicate whether it is an appropriate candidate for the cache.

You can configure the query result cache by setting the parameter System.Performance.QueryCacheSize.

The value of the QueryCacheSize parameter is an integer, which indicates the number of entries (query results) to allocate in the query cache. When the total number of cached queries exceeds this number by 35 percent, Ariba reduces the cache size back to the value specified as QueryCacheSize.

## Catalog Search Results Query Cache

The *catalog search result cache* caches the results of catalog queries, to improve performance of commonly-used queries.

You configure the catalog search results query cache with the following parameters in config/Parameters.table:

System.Catalog.Search.QueryCacheRowLimit

System.Catalog.Search.QueryCacheSize

The QueryCacheRowLimit parameter tunes the cache by defining which queries are “large enough” to be cached.

The QueryCacheSize parameter configures the catalog search results query cache, which is used to cache results of catalog searches. This parameter determines the amount of memory used for the cache, by specifying how many result sets are included in the cache.

For more information on the catalog search results query cache, see the *Ariba Buyer Catalog Guide*.

## Session Cache

The *session cache* caches recently-used objects within a user session. You can configure this cache by setting the following parameters in config/Parameters.table:

System.Performance.SessionRecentObjectCacheSize

```
System.Performance.UseSoftReferenceForSessionCache
```

The `SessionRecentObjectCacheSize` parameter specifies how many objects are stored in the cache.The `UseSoftReferenceForSessionCache` parameter is a Boolean that indicates whether soft references are cached.

You must not modify these parameters unless directed to do so by Ariba Technical Support.

## Data Queue

The `System.Messaging.Channels.Tibco.DataQueueSize` and `System.Messaging.Channels.File.DataQueueSize` parameters in `config/Parameters.table` specify a queue length for data exchanged during pull integration events. When the queue is filled to the specified size, Ariba Buyer must empty the queue before pulling more data.

If you experience time-outs from the channel, you must decrease this parameter to keep the Producer active. If you experience slower data pulls, you can try increasing this parameter. By increasing the size of the queue, you can pull more objects in each exchange, at the cost of occupying more process memory.

You can override this value for a specific integration event by specifying the `DataQueueSize` property in the message configuration for that event. For information on configuring integration events, see the *Ariba Spend Management Channels Guide*.

## Catalog Load

The following parameters in `config/Parameters.table` configure the performance of catalog load:

```
System.Catalog.Workflow.IndexPromoteThreadCount
System.Catalog.Workflow.PromoteCommitBatchSize
System.Catalog.Workflow.PromoteQueueLength
```

The `IndexPromoteThreadCount` parameter specifies the number of threads Ariba Buyer uses for loading catalog items. If you expect a heavy load during catalog loads, you might want to increase the value of this parameter to achieve some concurrency. Depending on what server platform you are using for your server, you might want a value of approximately 3 or 4.

The `PromoteCommitBatchSize` parameter specifies how many catalog items Ariba Buyer creates before each database commit. You can use this parameter to reduce the number of database round trips involved in catalog loads.

The `PromoteQueueLength` parameter specifies how many catalog items can be stored at a time in a memory queue during catalog load. If the threads that load the catalog items (controlled by the `IndexPromoteThreadCount` parameter) are not processing the items as fast as they are loaded into memory, the queue stops storing additional items when it reaches the limit set by `PromoteQueueLength`. When the threads catch up and the number of items in the queue drops below this limit, the queue begins storing additional items again.

## Timeout Values

Timeout values can affect how well the system appears to be performing. An example of a timeout value is the number of seconds an employee can keep an approvable document "locked" while editing.

The following parameters in `config/Parameters.table` configure timeout values:

```
System.Performance.EditLockTimeout
System.Performance.HTTPSocketTimeout
System.Performance.RPCIdleConnectionTimeout
System.Performance.WorkerThreadRunningTimeWarningThreshold
System.Procure.AribaNetwork.RequestTimeoutSeconds System.Catalog.Publishing.Executable.TimeOut
System.Catalog.Search.SearchTimeout
System.DatabaseSchemas.Default.SQLStatementTimeoutInSeconds
```

## Database-Related Parameters

This section describes the parameters in the `config/Parameters.table` file that affect the performance of your underlying database.

### Database Connections

The `System.DatabaseSchemas.Default.DatabaseConnections` parameter specifies the maximum number of transient database connections that an Ariba Buyer logical node can make to the Ariba Buyer database. The value of `DatabaseConnections` is based on the following factors:

- The maximum number of concurrent threads that can be used for integration events, which depends on settings in your integration events configuration file. Each thread uses one database connection.
- The number of transient database connections, such as those used for monitoring the database server. This value is typically 4.

The total number of database connections is the sum of these two numbers. For example, suppose you have the following configuration:

- You have three integration events—IntegrationEvent_1, IntegrationEvent_2, and IntegrationEvent_3—that are expected to run at the same time.
- IntegrationEvent_1 has `Threads = 3`.
- IntegrationEvent_2 doesn't have a `Threads` parameter, or has `Threads = 1`.
- IntegrationEvent_3 has `Threads = 4`.

In this configuration, the maximum number of possible concurrent integration threads is 8 (3 + 1 + 4). Assuming that there are 5 transient connections, the `DatabaseConnections` parameter must be set to 12 (8 + 4).

If you receive a warning message such as "Lock Database connections wait time of 10 sec exceeded...", you must increase the value of the `DatabaseConnections` parameter.

At any given time, there must be sufficient database connections to support all the integration events that can run concurrently. If any of the concurrent integration events has a `Threads` parameter that exceeds a value of 1, additional Java threads (not worker threads) is used. These additional Java threads require transient database connection support.

For information on persistent database connections, see "Worker Threads" on page 177.

Be sure to read this description if you decide to modify the `DatabaseConnections` parameter.

### Tablespaces and FileGroups

By default, Ariba Buyer stores all Ariba Buyer database objects in a single tablespace/filegroup. For performance reasons, you might choose to spread your database objects among several tablespaces or filegroups. For example, grouping large objects together in a separate tablespace can improve performance.

For information on how to specify how to partition objects in the database into different tablespaces/filegroups, see the *Ariba Spend Management Database Configuration Guide*.

### Read Uncommitted

When you set `System.DatabaseSchemas.Default.ReadUncommitted` to `true`, Ariba Buyer resets the transactions isolation mode of your Microsoft SQL Server database connection to Read Uncommitted. This parameter is set to `false` by default.

This option is available to alleviate locking contention on Microsoft SQL Server when running with a high transaction volume. Consult your Microsoft database administrator to see if this setting is appropriate in your configuration.

### Open Database Cursors

The `System.DatabaseSchemas.Default.OpenStatements` parameter specifies the cursor cache performance of your database by specifying the maximum number of cursors that the application uses. This parameter indicates the number of cursors used by the underlying database as well as cursors used by the application.

Estimate that 25 percent of the available cursors are used by the database. For example, if you set this parameter to 40, then about 30 cursors are available.

This parameter affects performance on your database. Ariba strongly recommends you specify a maximum of five cursors. If you change this parameter, consult your database administrator.

## Search-Related Parameters

The `Application.UI.ShowInitialSearchResults` parameter controls the search result on the Search page.

1. If this parameter is set to Yes (the default value), the Search page will display all the records of the document type when it first comes up.

2. Set this parameter to No if too many records in the result slow down the performance of the page. When setting this parameter to No, the search will be initiated only when the user hits the Search button, or when they click on a Saved Search or a Label Search.

# Appendix A Login URL Reference

This appendix provides a reference of the configurations and features that require login URL customizations. It includes the following sections:

- "Webjumper Direct Action" on page 183
- "Locale Parameter on Login" on page 185
- "Daylight Saving Time and Macintosh Clients" on page 186

For information on setting up links to the standard login URLs, see *Ariba Spend Management Application and Web Server Guide*.

## Webjumper Direct Action

To specify details of a login, such as specifying the destination page or the password adapter used to authenticate the user, you use the `webjumper` direct action. To use the webjumper, you must direct users to a URL that has the following form:

```
https:/myserver:444/Buyer/Main/ad/webjumper?name1=value1&name2=value2
```

For example:

```
https:/myserver:444/Buyer/Main/ad/webjumper?Page=CreateHomePageName&passwordAdapter=passwordAdapt
er2
```

The `webjumper` URL recognizes standard HTML query string syntax. The valid values for the query string arguments are as follows:

- `Page`
- `partition`
- `passwordadapter`

### WebJumper URL Arguments

This section describes the arguments that can appear in the query string portion of a webjumper URL.

#### Destination Page Argument

The webjumper URL can include a `Page` argument to specify a well-known page, which is used as the destination of the login. For example:

```
https:/myserver:444/Buyer/Main/ad/webjumper?Page=CreateHomePageName
```

In this example, the user is taken to the Create a New Request page after logging in.

The following table describes the page names you can specify in the `Page` argument.

| Page Name | Destination in Ariba Buyer |
|---|---|
| ARPAdminHomePage | Ariba Administrator home page |
| `UserProfileHomePageName` | Personal Information page |
| `ReconcileInvoicesPageName` | Reconcile Invoices page |
| `HomePageName` | Ariba Buyer home page |
| `CreateHomePageName` | Create a New Request page |
| `StatusPageName` | Status page |
| `ExploreMasterAgreementsPageName` | Contracts page |
| `SourcingStatusPageName` | Sourcing page |
| `RequiredApprovePageName` | Approve Requests page |
| `OptionalApprovePageName` | View Requests page |
| `ReconcilePageName` | Reconcile Charges page |
| ReconcileInvoicesPageName | Reconcile Invoices page |
| `ExpenseReceiptsPageName` | Reconcile Receipts page |
| `FormHomePageName` | Create Request Using Company eForm page |
| `SearchHomePageName` | Searches page |
| `ReportsHomePageName` | Reports page |
| `ExploreHomePageName` | Explore page |
| `ExploreCatalogHomePageName` | Explore Catalog page |
| `ExploreFoldersHomePageName` | Explore Folders page |
| `createRequisition` | Add Title page in the requisition wizard |
| `createExpenseReport` | Add Title page in the expense report wizard |
| `createTravelAuthorization` | Add Title page in the travel authorization wizard |
| `createMasterAgreementRequest` | Definitions page in the contract request wizard |
| `createMASourcingRequest` | Add Title page in the contract sourcing request wizard |

If the page specified in the `Page` argument does not exist, or if the user does not have permission to view the page, the user is taken to the Ariba Buyer home page.

## Password Adapter Argument

If your configuration includes multiple password adapters, you must set up login URLs so that users are authenticated by the correct password adapter.

You set up login links to different password adapters by including a `passwordadapter` parameter to the webjumper URL. For example:

```
https://myserver:444/Buyer/Main/ad/webjumper?passwordadapter=PasswordAdapter1
https://myserver:444/Buyer/Main/ad/webjumper?passwordadapter=PasswordAdapter2
```

The value you supply after `passwordadapter` is the name of the password adapter as defined in the `System.Authentication` section of `config/Parameters.table`.

If you use organic user growth in your configuration, you must ensure that all new users logging in with organic growth include the `passwordadapter` on the URL.

To indicate whether password adapter information is stored when a user logs out from Ariba Buyer, you use the `System.UI.IgnorePasswordAdapterOnLogout` parameter. For more information, see Chapter 7, "Passwords."

### Partition Argument

The `partition` argument is used only with organic user growth and only to restrict the partition where the user is allowed to log in. For example:

```
http://myserver:444/Buyer/Main/ad/webjumper?passwordadapter=PasswordAdapter4&partition=part1
```

If you do not specify the `partition` argument, organic user growth users can log in to any partition where `Application.Authentication.OrganicGrowth` is set to true.

## Configuration for Authentication Field

When a user follows a webjumper URL, Ariba Buyer checks to see if the user associated with the webjumper is the same user who is currently logged in. If the users are the same, the webjumper takes the user to the appropriate page, without requiring reauthentication. If a different user is logged in, Ariba Buyer logs out the first user and asks the new (webjumper) user to authenticate.

In the default configuration, Ariba Buyer uses the `ariba.user.core.User.UniqueName` field to determine whether the two users are the same. If the user who is currently logged in has the same `UniqueName` as the user in the webjumper, they are considered to be the same user.

You can configure the field that is used to compare users by setting the parameter `System.Base.WebjumperUserNameField`.

## Locale Parameter on Login

In a multilingual configuration, users can include a locale as a parameter to the Ariba Buyer login URL. The `locale` argument specifies the name of a locale. For example:

```
https://myserver:444/Buyer/Main?locale=en_US
```

If a user does not specify a locale in the login URL, Ariba Buyer gets the locale from the Web browser's preference.

## Daylight Saving Time and Macintosh Clients

For Macintosh clients, you must specify the argument `dayLightSaving=true` in the Ariba Buyer login URL to adjust to daylight saving time changes.

For example, the `dayLightSaving=true` argument might appear in the Ariba Buyer login URL as follows:

`https://myserver:444/Buyer/Main`**`?dayLightSaving=true`**

The `dayLightSaving=true` argument specifies that daylight saving time is in effect. If you do not specify this argument, the time and date displayed in the Ariba Buyer and Ariba Administrator applications is not adjusted for daylight saving time.

**Note:** The `dayLightSaving=true` argument is only required for Macintosh clients.

# Appendix B Command Reference

This appendix provides command-line reference information on the syntax of the commands referenced in this document. It includes the following sections:

- "Notation Conventions" on page 187
- "aribaencrypt" on page 187
- "runpurge" on page 189
- "servermonitor" on page 190

## Notation Conventions

This following table describes the general notation conventions used in this appendix to describe command line options.

| Notation | Description |
|---|---|
| `[ ]` | Encloses optional elements. |
| - | Precedes all options. |
| \| | Separates either/or choices. |
| + and - | Turns options on and off. |
| : | Separates multiple arguments to the same option. There must not be any spaces around the colon. |

## aribaencrypt

Ariba Buyer configuration files can contain potentially sensitive information, such as computer names, passwords, or personnel information. By default, all parameter values are in plain text. To protect the security and privacy of your data, you can encrypt specific parameters.

You use the `aribaencrypt` command to encrypt a value. When you run `aribaencrypt`, you supply a string as argument, and `aribaencrypt` returns an encrypted string and automatically updates `config/Parameters.table` with the encrypted value.

### Syntax

```
aribaencrypt [-key <key>] [-value <value>] [-tablefile <tablefile>][-allownewkey|-noallownewkey*]
[-skipconfirm*|-noskipconfirm] [-secureparameterskey <secureparameterskey>]
```

▼ **To encrypt a parameter value in `config/Parameters.table`:**

Type `aribaencrypt -key <key>` where key is the name of an existing parameter in `Parameters.table`. Your will be prompted to confirm the operation. Upon confirmation, the key is properly encrypted and stored in `Parameters.table`. No further steps are required.

### ▼ To encrypt one or more values in `config/Parameters.table`:

Type `aribaencrypt [-secureparameterskey <secureparameterskey>]` where `<secureparameterskey>` specifies the name of the parameter whose value is a list of keys that are to be encrypted. The default value for `<secureparameterskey> is "System.Base.SecureParameters".` For example, to use encrypted values for your Ariba Buyer database username and password, you would add the following entry to your `config/Parameters.table` file:

```
System  {
    Base {
        SecureParameters = (
            System.DatabaseSchemas.Schema1.AribaDBPassword,
            System.DatabaseSchemas.Schema1.AribaDBUsername
        );
```

The full set of `aribaencrypt` options and their descriptions follow.

## Options

`-key` *`<key>`*

Use this option to specify the key (in dotted notation) whose value is to be encrypted. For example: `-key "System.Database.AribaDBPassword"`. If the parameter is not in the file, the encrypted value will be output to the console. Otherwise, the encrypted value will be stored in the table file as the value of the key.

`-value` *`value`*

Use this option to specify the clear text to encrypt. If `<key>` is specified and if it exists in `<tablefile>`, you will be prompted to select which value is used if `-skipconfirm` is `false`). If confirmation is skipped, the `value` parameter overrides the current `key` value.

**Note:** The value of this option cannot be an empty string. Specifying an empty string for this option is the same as not specifying this option.

`-tablefile` *`tablefile`*

Use this option to specify the table file in which to store the encrypted parameter. The default is `config/Parameters.table`. If present, this value must be a valid table file.

`-allownewkey|-noallownewkey`

Use this option to specify whether a new key can be added if it does not already exist in the table file. If the new key is allowed, and if the given key is not present, then the value parameter must be specified also. The default is `-noallownewkey`.

`-skipconfirm`

Use this option to skip the confirmation step. The default is to prompt for confirmation.

`-secureparameterskey`

Use this option to specify the name of the parameter whose value is a list of keys whose values are to be encrypted. The default parameter is "`System.Base.SecureParameters`". If you are using `aribaencrypt` on `Parameters.table` do not specify this parameter it will be used by default.

## runpurge

You use the `runpurge` command to initiate the preview or mark phase of data archive and purge. For more information on this process, see "Data Archiving and Purging" on page 135.

**Note:** The `runpurge` command reads the parameter `System.Base.PurgeFlushBatchSize` for performance tuning during the mark phase. You do not need to change the value of this parameter.

### Syntax

The `runpurge` command has three forms:

*runpurge* `-printscope` *scope*

*runpurge* `-printscopenames`

*runpurge* `-configpath` *pathname [-purge]*

The `printscope`* forms report information about your current configuration. The `-configpath` starts the purge server, either to do a mark phase or just a preview. For example:

```
runpurge -configpath config/purge/simplePurgeConfig.xml
```

### Options

`-configpath` *pathname*

Use this option to specify the location of a configuration file. This option either starts the mark phase or the preview phase, depending on whether `-purge` is present.

The value of `configpath` is a filename, which can be either absolute or relative to *BuyerServerRoot*. There is no default pathname. When you use this option to preview data, you can access the preview data from `http://`*yourserver*`:8050/inspector/purgeBrowser`.

If you use `-configpath`, you cannot specify `-printscope` or `-printscopenames.`

`-printscope` *scope_name*

Use this option to print information about the named scope. This option lists all classes in the named scope and indicates which are marked as primary and which are marked as no-archive classes. You use this information to learn the details of a scope that is defined in the default configuration.

If you use `-printscope`, you cannot specify `-configpath` or `-printscopenames.`

`-printscopenames`

Use this option to print the names of all scopes that have been defined. Use this option to verify that you have the correct name of a scope, as required in the purge configuration file. For more information on purge scopes, see "Purge Scopes" on page 137.

If you use `-printscopenames`, you cannot specify `-configpath` or `-printscope`

`-purge`

Use this option to indicate that you want to mark data for purge, and not just preview. This option is valid only when you use `-configpath`.

## servermonitor

You use the `servermonitor` command for command-line access to basic system administration functions, such as running scheduled tasks and integration events, reloading JavaScript files, listing nodes in a configuration, and enabling or disabling log categories.

### Syntax

To run `servermonitor`, type the following command at the command prompt in your Ariba Buyer `bin` directory:

```
servermonitor  [ [ option ] [ option ] . . . ]
```

The general format of a typical `servermonitor` command is as follows:

```
servermonitor -username aribasystem -password aSecret -port 8052...
```

Most uses of the `servermonitor` command require a username and password and a port, followed by additional options that specify one or more operations.

- The `username` and `password` are checked to verify that the user has appropriate permissions to perform this operation. Most commands require the user to have the `SiteAdmin.AdminClient` permission.
- The `port` specifies the RPC port for connecting to Ariba Buyer. The port is usually required as an explicit argument, unless your configuration is using the default, which is port 8052.
- The remaining options are used to specify one or more operations, using the basic connection and login information.

If your configuration uses multiple password adapters, the `-passwordadapter` argument is required as well, to specify the password adapter to be used for authentication.

### Options

This section lists the options to the `servermonitor` command that apply to approval rules. All options are case sensitive. The options are grouped into the following sections:

- "Standard Options" on page 190, which describes the basic options to `servermonitor`.
- "Options to Disable" on page 197, which lists options that act as the inverse of the basic options. For example, `-listevents` and `-nolistevents` are inverses of one another, as are `-ssl` and `-nossl`.

To display all available options, run `servermonitor -usage` from the command line.

#### Standard Options

This section lists basic options to the `servermonitor` command. Many of these options can be disabled by the related inverse forms, as described in "Options to Disable" on page 197.

`-configDir` *`location of the config directory`*

Use this option to indicate the location of the `config` directory. This can be a relative path like `../config` if you're running the `servermonitor` command from the `bin` directory. Alternatively, you can use an absolute path for `-configDir` if `servermonitor` is in your path and you want to run `servermonitor` from anywhere.

`-disconnectuser` *`nodename`*`:`*`connectionID`*

Use this option to disconnect a user. You indicate which user to disconnect by specifying the node name and connection ID. To find the connection ID, run the `-users` option first. For example:

```
servermonitor -username sysadmin -password aSecret -disconnectuser Node1:N1454188116
```

To use this option, the user specified by `-username` must have the permission `SiteAdmin.AdminClient`.

`-docroot` *`docRoot`*

Use this option to specify the location of the Ariba Buyer Web Components.   You use this option in conjunction with `-locale`.

If you do not specify this option, the `System.Base.DocRoot` parameter value in the `config/Parameters.table` file is used.

`-domain` *`domain`*

Use this option to specify a Windows domain to use for authentication. This option is relevant only when you are using Windows NT Domain Authentication. For example:

```
servermonitor -username me -domain FLASH -runevent RolePull
```

`-host` *`hostname`*

Use this option to set a specific host for Ariba Buyer. The host must be explicitly specified. Do not use `localhost`.

`-inspectorurl`

Use this option to view the URL used to start the Inspector. For example:

```
servermonitor -username sysadmin -password aSecret -inspectorurl
```

The output for this command resembles the following:

```
https://myserver:444/Buyer/inspector
```

The user specified by `-username` must have the permission `SiteAdmin.AdminClient`.

`-listevents`

Use this option to see a list of available integration events. `-listevents` is useful when you want to find the names of scheduled tasks to use as arguments to the `-runevent` option. With this command, you must specify a `partition` option as well. For example:

```
servermonitor -username sysadmin -password xxx -partition psap -listevents
```

To use this option, the user specified by `-username` must have the permission `SiteAdmin.AdminClient.`

See also `-nolistevents`.

`-listnodes`

Use this option to list the logical nodes in your multiserver configuration. The output of this command resembles the following:

```
Node1 (Primary Server)
Node2
Node3
```

Notice that the words `(Primary Server)` appear next to the name of the primary logical node.

See also `-nolistnodes`.

`-listpartitions`

Use this option to see a list of available partitions. This option is useful when you want to find the name of a partition to use as an argument to the `-partition` option.

See also `-partition`.

`-listtasks`

Use this option to see a list of the available scheduled tasks. This option is particularly useful when you want to find the names of scheduled tasks to use as arguments to the `-runtasks` option. For example:

```
servermonitor -username sysadmin -password aSecret -listtasks
```

The output of the command resembles the following:

```
ArchiveLog:Node1
ArchiveLog:Node1
ArchiveLog:Node1
AribaCommerceServicesNetworkFullSubscriptionSync:Node1
```

In a multiserver configuration, the name of the logical node where the scheduled task is configured to run is shown following the scheduled task name.

To use this option, the user specified by `-username` must have the permission `SiteAdmin.AdminClient`.

See also `-nolisttasks`.

`-loadexts`

Use this option to load all metadata XML extension files without stopping Ariba Buyer. You can use this option only in development mode, in a single-server configuration, and when the metadata does not change the shape of the data.

If you are running in a production mode or in a multiserver configuration, you restart Ariba Buyer instead of using `-loadexts`. If the metadata changes the shape of the data, you use `../bin/simplemigrator` instead. Note that all regular servers must be down when `simplemigrator` is run.

To use this option, the user specified by `-username` must have the permission `SiteAdmin.AdminClient`.

`-locale` *`locale`*

Use this option to define the locale when creating a resource service. *`locale`* must correspond to a valid locale in your configuration. You use this option in conjunction with `-docroot.`

The default is `en_US`.

`-log {+|-}`*`category/level1`*`[:{+|-}`*`category/level`*`] ...]`

Use this option to enable and disable logging of particular categories and logging levels. You precede a logging category with a plus (+) to enable it.

**Note:** You cannot disable specific logging levels. You must set `level` to ERROR (for example, `-log -query/ERROR`), which disables all logging levels.

When you enable a logging level, messages at that logging level and higher are logged. For example, the command `-log +query/info` enables the `info`, `warning`, and `error` logging levels. If you do not specify a logging level, the `info` logging level is assumed, for example, the command `-log +query` is equivalent to the command `-log +query/info`.

You can specify multiple categories at the same time, separated by a colon. For example:

```
servermonitor -log +sqlio/warning:-query/info
```

By default, logging categories are set to display messages at the `warning` and `error` logging levels.

If you have a multiserver configuration, you can use the `-node` option in conjunction with `-log` to specify the logical node (or nodes) where you want the command to execute.

See also `-node`.

**Note:** The `-log` option changes the default log settings for Ariba Buyer, not just the logging settings for Ariba Administrator.

`-passwordadapter` *`passwordadapter`*

Use this option to specify a password adapter to be used for authentication. For example:

```
servermonitor -user fred -passwordadapter PasswordAdapter3 -partition None -runevent RolePull
```

`-logstatus`

Use this option to find out if logging is turned on for various log categories. The output from this option resembles the following:

```
Node    Severity    PrintWhere    Name
Node1   DEBUG       ERROR         aribaInternalDev
Node1   DEBUG       ERROR         aribawebvalidation.state
Node1   DEBUG       ERROR         table
Node1   INFO        ERROR         general
```

- The `Node` column specifies the logical node name.
- The `Severity` column specifies the logging level set for the log category. For information on logging levels, see Chapter 9, "Logging and Auditing."
- The `PrintWhere` column specifies the PrintWhere severity level. If the PrintWhere severity level is `ERROR` (the default), a stack trace is automatically appended to all log messages that have a logging level of `error`. If the PrintWhere level is `WARNING`, a stack trace is appended to both `error` and `warning` level log messages.
- The `Name` column specifies the name of the log category.

If you have a multiserver configuration, you can use the `-node` option in conjunction with `-logstatus` to specify the logical node (or nodes) where you want the command to execute.

To use this option, the user specified by `-username` must have the permission `SiteAdmin.AdminClient`.

See also `-nologstatus` and `-node`.

`-logtoconsole`

Use this option to send log messages only to the console. The `servermonitor` command runs with this option turned on unless you turn it off with the `-nologtoconsole` option.

See also `-nologtoconsole`.

`-logtofile`

Use this option to send log messages only to the log files. The `servermonitor` command runs with this option turned on unless you turn it off with the
`-nologtofile` option.

See also `-nologtofile`.

`-logwhere {+|-}`*`category/level`*`[:{+|-}`*`category/level`*`]...]`

Use this option to enable and disable stack traces for particular logging categories and logging levels. Precede a logging category with a plus (+) to enable stack tracing, or a minus (-) to disable stack tracing.

You can specify multiple categories and logging levels, separated by a colon. For example:

```
servermonitor -logwhere +approvable/info:+sqlio/warning
```

If you have a multiserver configuration, you can use the `-node` option in conjunction with `-logwhere` to specify the logical node (or nodes) where you want the command to execute.

See also `-node`.

`-metrics`

Use this option to obtain general information about the load and performance of Ariba Buyer. The output from this option resembles the following:

```
Up Time: 1 d 23 h 30 min
Total User Connections Since Server Start: 207
Concurrent User Connections At This Moment: 6
Cache Size: 1110
Total Memory (Kb): 14443
Free Memory (Kb): 31928
Number of Threads: 29
BackgroundQueue,ForegroundQueue,WorkflowQueue: 0,0,0,
```

If you have a multiserver configuration, you can use the `-node` option in conjunction with `-metrics` to specify the logical node (or nodes) where you want the command to execute.

See also `-nometrics` and `-node`.

`-node` *node*`[:`*node*`] ... ]`

Use this option to specify one or more logical nodes. You use `-node` in conjunction with the following options:

- `-log`
- `-logstatus` and `-nologstatus`
- `-logwhere`
- `-metrics` and `-nometrics`
- `-runtask`

*node* can be one of the following values:

- The logical node name, for example, `Node1`.
- `AllNodes`, which specifies all the logical nodes in your configuration.

You can specify multiple node names at the same time, separated by a colon. For example:

```
servermonitor -logstatus -node Node2:Node4
```

**Note:** When the `-users` option is used with the `-node` option, the `-node` option is ignored. All logged in users from all nodes are returned.

`-partition` *`partition`*

Use this option to specify a partition for the following options:

- `-listevents` and `-nolistevents`
- `-listtasks` and `-nolisttasks`
- `-runevent`
- `-runtask`

See also `-listpartitions`.

`-password` *`password`*

Use this option to specify a password for use with `-username`. For example:

```
servermonitor -username sysadmin -password aSecret
```

`-port` *`port`*

Use this option to specify the RPC port Ariba Buyer is using. This option is required. The RPC port number is defined by the `System.Nodes.`*`node`*`.Port` parameter in the `config/Parameters.table` file.

In the default multiserver configuration, the RPC port for the logical node `Node1` is 8052. For logical node `Node2`, the port is 8056. You can override the default port with any valid port number. If you don't explicitly set the port, port 8052 is used by default.

`-refreshevents`

Use this option to reload an integration event configuration file.

See also `-norefreshevents`.

To use this option, the user specified by `-username` must have the permission `SiteAdmin.AdminClient`.

`-refreshtasks`

Use this option to reload a scheduled tasks table file.

To use this option, the user specified by `-username` must have the permission `SiteAdmin.AdminClient`.

`-runevent` *`integrationEvent`* `-partition` *`partition`*

Use this option to run a specific integration event. The `-partition` option specifies the partition in which the integration event belongs. For example:

```
servermonitor -username sysadmin -password aSecret -runevent RolePull -partition CSV_1
```

Another integration event is `SourcingDestinationPull`, which uses the following syntax:

```
servermonitor –username username -password password -port portnumber (if different than the
default port 8052) -configDir location of the config directory -runEvent integration event
-partition partition in which to run the integration event
```

The following example assumes that you're running `servermonitor` from the `bin` directory:

```
servermonitor –username admin9276 -password sm4j9_85 -port 8078 -configDir ../config -runEvent
SourcingDestinationPull -partition poracle
```

This command forks the event asynchronously and always returns immediately, with a status code of 0 if the event is successfully forked and a status code of 1 if the event cannot be successfully forked (or an RPC error occurs). The status code indicates the status of the connection, not the status of the integration event. If the integration event is unsuccessful, the `servermonitor` command writes any listed errors to `stdout`.

For example, integration events can fail if you specify the name incorrectly, or if the command times out before the integration event finishes executing. You can extend the `servermonitor` command timeout by setting the `-sessiontimeout` option.

The `-runevent` option takes only one event as argument. If you run this command on different events in succession, be sure that each event completes before you start the next one. Also be aware that integration events can potentially have dependencies on other integration events and must be run in a designated order.

To use this option, the user specified by `-username` must have the permission `SiteAdmin.AdminClient`.

See also `-configDir`, `-partition` and `-sessiontimeout`.

For more information about `SourcingDestinationPull`, see the *Ariba Spend Management Integration Guide.*

`-runtask` *`scheduledtask`* `-partition` *`partition`*

Use this option to run a scheduled task. The `-partition` option specifies the partition in which the scheduled task belongs. You can use `-listtasks` first to find out which scheduled tasks are available. For example, to run a task called `ReloadPasswordFile`, you would type:

```
servermonitor -username sysadmin -password aSecret -partition myPartition -runtask
ReloadPasswordFile
```

You can use the `-node` option in conjunction with `-runtask` to specify the name of the logical node (or nodes) where you want the command to execute. If you do not specify the `-node` option, the command executes on the primary logical node only.

To use this option, the user specified by `-username` must have the permission `SiteAdmin.AdminClient`.

See also `-partition` and `-node`.

`-sessiontimeout` *`timeoutseconds`*

Use this option to specify how long the `servermonitor` command can remain connected to Ariba Buyer before the connection "times out." The *`timeoutSeconds`* value must be an integer, representing the maximum number of seconds the `servermonitor` command can remain connected to Ariba Buyer before the timeout takes effect. You must set *`timeoutseconds`* to at least 60 seconds.

If you do not specify this option, the default is determined by the value of the `System.Performance.RPCIdleConnectionTimeout` parameter in the `config/Parameters.table` file. By default, the `RPCIdleConnectionTimeout` parameter is set to 3600 (one hour).

The purpose of this option is to prevent long-running processes, such as loading integration events, from disconnecting the `servermonitor` command after the timeout period specified by the `RPCIdleConnectionTimeout` parameter.

`-stopevent -stopevent` *`eventname`* `-partition` *`partitionName`*

Use this option to stop the currently running integration event on the specified partition on the TIBCO and file channels.

`-ssl`

This option enables secure (encrypted) RPCs when using Secure Sockets Layer (SSL). The `servermonitor` command runs with this option unless you use the `-nossl` option.

`-stdinpassword`

Use this option to read a password from standard input.

See also `-nostdinpassword`.

`-username` *`username`*

Use this option to log in as a specific user. The `-username` option is almost always used with the `-password` option. The `-username` option is useful only in conjunction with other options. For example:

```
servermonitor -username sysadmin -password aSecret -runtask LoadMyFile
```

`-users`

Use this option to find out which users are connected to Ariba Buyer. This option is useful when you want to disconnect some users and want to know who is currently logged in. For example:

```
servermonitor -username sysadmin -password aSecret -users
```

**Note:** When the `-users` option is used with the `-node` option, the `-node` option is ignored. All logged in users from all nodes are returned.

Users must have the permission `SiteAdmin.AdminClient` to use this option.

See also `-noUsers`.

## Options to Disable

This section describes options that turn off options described in the previous section. For example, the `-nolistevents` option is the inverse of `-listevents`, and `-nolistnodes` is the inverse of `-listnodes`.

`-noinspectorurl`

Use this option to turn off the `-inspectorurl` option. The `servermonitor` command runs with this option unless you use the `-inspectorurl` option.

See also `-inspectorurl`.

`-nolistevents`

Use this option to turn off the `-listevents` option. The `servermonitor` command runs with this option unless you use the `-listevents` option.

See also `-listevents`.

`-nolistnodes`

Use this option to turn off the `-listnodes` option. The `servermonitor` command runs with this option unless you use the `-listnodes` option.

See also `-listnodes`.

`-nolistpartitions`

Use this option to turn off the `-listpartitions` option. The `servermonitor` command runs with this option unless you use the `-listpartitions` option.

`-nolisttasks`

Use this option to turn off the `-listtasks` option. The `servermonitor` command runs with this option unless you use the `-listtasks` option.

See also `-listtasks`.

`-nologstatus`

Use this option to turn off the `-logstatus` option. The `servermonitor` command runs with this option, unless you use the `-logstatus` option.

If you have a multiserver configuration, you can use the `-node` option in conjunction with `-nologstatus` to specify the logical node (or nodes) where you want the command to execute.

See also `-logstatus` and `-node`.

`-nologtoconsole`

Use this option to turn off console logging.

See also `-logtoconsole`.

`-nologtofile`

Use this option to turn off the `-logtofile` option.

See also `-logtofile`.

`-nometrics`

Use this option to turn off the `-metrics` option. The `servermonitor` command runs with this option, unless you use the `-metrics` option.

If you have a multiserver configuration, you can use the `-node` option in conjunction with `-nometrics` to specify the logical node (or nodes) where you want the command to execute.

See also `-metrics` and `-node`.

`-norefreshevents`

Use this option to turn off the `-refreshevents` option. The `servermonitor` command runs with this option unless you use the `-refreshevents` option.

See also `-refreshevents`.

`-norefreshtasks -partition` *`partition`*

Use this option to turn off the `-refreshtasks` option. The `servermonitor` command runs with this option unless you use the `-refreshtasks` option. The `-partition` option specifies the partition in which you want to turn off the `-refreshtasks` option.

See also `-refreshtasks`.

`-nossl`

Use this option to turn off the `-ssl` option. The `servermonitor` command runs with the `-ssl` option unless you use the `-nossl` option.

**Note:** If you use the `-nossl` option when the system is configured for SSL, the `servermonitor` command hangs.

`-nostdinpassword`

Use this option to turn off the `-stdinpassword` option. The `servermonitor` command runs with this option unless you use the `-stdinpassword` option.

See also `-stdinpassword`.

`-nousers`

Use this option to turn off the `-users` option. The `servermonitor` command runs with this option unless you use the `-users` option.

See also `-users`.

# Appendix C Purge DTD Reference

This appendix lists the elements and attributes of purge configuration files.

## <aqlQuery>

The `<aqlQuery>` element appears within `<purgeCandidates>`. It specifies which approvable documents are purge candidates by expressing an Ariba Query API query. It has no elements or attributes.

```
<purgeCandidates>
    <aqlQuery>SELECT ariba.procure.core.Requisition WHERE
                Name like 'Req%' and
                LastModified &lt; Date('2002-09-04 13:12:28 PDT')"/>
    </aqlQuery>
     ...
</purgeCandidates>
```

The query in an `<aqlQuery>` has the following restrictions:

- It cannot use UNION clauses.
- There can only be one select element in the select list.
- The type of the select element must be `ClusterRoot.`
- The select element must be a class alias or a simple class name. That is, it must refer to one of the ClusterRoots explicitly selected.
- Any query with a `SUBCLASS` clause is converted to `SUBCLASS None`. For example:

  ```
  SELECT PurchaseOrder from ariba.purchasing.core.PurchaseOrder SUBCLASS PCardOrder
  ```

  becomes:

  ```
  SELECT PurchaseOrder from ariba.purchasing.core.PurchaseOrder SUBCLASS None
  ```

## <keepConditions>

| | | Required? | Default value |
|---|---|---|---|
| Attributes<br>Contains | | | |
| | <keepCondition>+ | | |

The `<keepConditions>` element appears within `<purgeConfig>` and specifies conditions that define when to keep a purge candidate (not purge it). The `<keepConditions>` element can include any number of keep conditions. If any of the keep conditions is valid (returns `true`), the candidate is kept and not purged.

```
<purgeConfig>
...
    <keepConditions>
        <keepCondition>...</keepCondition>
        <keepCondition>...</keepCondition>
    </keepConditions>
</purgeConfig>
```

## <keepCondition>

| | | Required? | Default value |
|---|---|---|---|
| Attributes | | | |
| | class | | |
| | variant | | |
| Contains | | | |
| | <whereCondition> | | |

The `<keepCondition>` element appears within `<keepConditions>` and specifies a condition under which a purge candidate is kept, rather than purged. Each condition is expressed with a `<whereCondition>`, which is an Ariba Query API expression.

### The class Attribute

The `keepCondition` attribute restricts a keep condition by specifying a class of objects. Only objects in that class are considered for this condition.

```
<keepCondition class="ariba.procure.core.ERPOrder">
    <whereCondition>StatusString in ('Received')</whereCondition>
</keepCondition>
```

### The variant Attribute

The `variant` attribute restricts a keep condition, so that it applies only to the named variant.

```
<keepCondition variant="vfr">
    <javaClass name="acme.custom.CustomKeepCondition"/>
</keepCondition>
```

## <class>

| | | Required? | Default value |
|---|---|---|---|
| Attributes | | | |
| | name | Required | |

The `<class>` element appears within `<relatedClasses>`, and defines a class name that can be purged when the associated primary document type is purged. A `<relatedClasses>` entry can potentially contain several `<class>` elements.

```
         <relatedClasses>
               <class name="acme.custom.MyCoolClass"/>
               <class name="acme.custom.MyCoolClass"/>
...
         </relatedClasses>
```

### The name Attribute

The `name` attribute identifies the class. The value is a fully-qualified class name.

## <classAnnotation>

| | | Required? | Default value |
|---|---|---|---|
| Attributes | | | |
| | `name` | Required | |
| | `variant` | Optional | Plain |
| Contains | | | |
| | <field>+ | | |

The `<classAnnotation>` element always appears within `<metadataAnnotations>` and specifies typing information about a named class, either to indicate its type or to indicate whether it refers to an external cluster root. Each `<classAnnotation>` element contains detailed typing information about one or more fields within that class.

```
<classAnnotation name="acme.example.Custom">
     <field name="SomeField" indirect="local"/>
</classAnnotation>
```

If the specified class has any subclasses or extension classes, those subclasses inherit the annotations of the parent.

### The name Attribute

The `name` attribute identifies the class for which annotations are being made. The value is a fully-qualified class name.

### The variant Attribute

The `variant` attribute restricts an annotation to a specific variant. If this attribute is not specified, the default is Plain.

```
<classAnnotation name="acme.example.Custom" variant="myVariant">
     <field name="SomeField" indirect="local"/>
</classAnnotation>
```

## <field>

| | | Required? | Default value |
|---|---|---|---|
| Attributes | | | |
| | `name` | Required | |
| | `indirect` | Optional | local |
| Contains | | | |
| | <typeNarrowing>? | | |

The `<field>` element always appears within `<classAnnotation>` and specifies type narrowing information about a field within the specified class.

```
<classAnnotation name="acme.example.Custom" variant="Plain">
    <field name="SomeField" indirect="local"/>
</classAnnotation>
```

### The name Attribute

The `name` attribute identifies the field for which annotations are being made. The value must name a field within the class specified in the `<classAnnotation>`.

### The indirect Attribute

The `indirect` attribute is used to supply additional information about fields that are indirect BaseObjects, pointing to other ClusterRoots. The value of this attribute indicates whether the field points to an object within the same cluster. The value is either `local` or `remote`. If set to `local`, the field is a reference to an object within the same ClusterRoot as the containing class. If set to `remote`, the field refers to an object in a different cluster root.

```
<classAnnotation name="acme.example.Custom" variant="Plain">
     <field name="SomeField" indirect="local"/>
</classAnnotation>
```

## <metadataAnnotations>

| | | Required? | Default value |
|---|---|---|---|
| Attributes<br>Contains | | | |
| | <classAnnotation>+ | | |

The `<metadataAnnotations>` element always appears within `<purgeConfig>` and specifies annotations about object types that provide additional typing information about those objects.

```
<purgeConfig>
    <purgeCandidates>...</purgeCandidates>
    <keepConditions>...</keepConditions>
    <metadataAnnotations>
        <classAnnotation name="acme.test.ChangedField" variant="Plain">
            ...</classAnnotation>
        <classAnnotation name="acme.test.anotherField" variant="Plain">
            ...</classAnnotation>
    </metadataAnnotations>
</purgeConfig>
```

Metadata annotations can appear either in metadata XML files or in purge configuration files. The annotations in purge configuration files override those in metadata XML files, if there is overlap.

## <options>

| | | Required? | Default value |
|---|---|---|---|
| Contains | | | |
| | <partition>+ | | |

The `<options>` element appears within `<purgeCandidates>`, and can supply options that restrict the scope of the query. The `<options>` element can contain one or more `<partition>` elements. If this element is missing, the query includes all partitions.

```
<purgeCandidates>
   <primaryClass name="ariba.procure.core.Requisition"/>
```

```
            <options>
                <partition name="pcsv"/>
            </options>
...
```

## <partition>

| | | Required? | Default value |
|---|---|---|---|
| Attributes | | | |
| | name | Required | |

The `<partition>` element appears only within the context of `<options>` and is used to restrict the set of initial set of purge candidates based on a partition. The partition is used to select a variant. Purge candidates can be in any partition within that variant.

```
<purgeCandidates>
   <primaryClass name="ariba.procure.core.Requisition"/>
      <options>
          <partition name="pcsv"/>
      </options>
```

### The name Attribute

The `name` attribute names a partition.

## <primaryClass>

| | | Required? | Default value |
|---|---|---|---|
| Attributes | | | |
| | name | Required | |
| | includeInactive | Optional | false |

The `<primaryClass>` element appears within `<purgeCandidates>`, to specify the primary document type for this configuration file.

```
<purgeCandidates>
   <primaryClass name="ariba.procure.core.Requisition"
                 includeInactive="false"/>
```

### The name Attribute

The `name` attribute is the Java class name of the class.

### The includeInactive Attribute

The `includeInactive` attribute specifies whether the query includes objects marked in the database as inactive. The default is false.

The default is `false` because most inactive documents in the Ariba Buyer database are previous versions of existing documents. For example, if a requisition is changed, the initial version is marked as inactive. Inactive documents of this sort are found by the related classes search, and don't need to be included in the query.

## <purgeCandidates>

| | | **Required?** | **Default value** |
|---|---|---|---|
| Attributes | | | |
| | `scope` | Required | |
| (either) Contains | | | |
| | `<primaryClass>`<br>`<whereCondition>`<br>`<relatedClasses>?`<br>`<options>?` | | |
| (or) Contains | | | |
| | `<aqlQuery>`<br>`<options>?` | | |

The `<purgeCandidates>` element always appears within `<purgeConfig>` and defines the set of candidates for purge. It can contain either a simple candidate specification (a where clause) or a full candidate specification (an Ariba Query API query).

### The scope Attribute

The `scope` attribute restricts a set of purge candidates to a named scope. This attribute is required. For Version 9r1, the only defined scope is Procurement. For example:

```
<purgeCandidates scope="Procurement">
```

The definition of a scope determines which values are valid as the primary class (for constructing the query) and the classes that are defined as related classes.

### Simple Candidate Specifications

The `<purgeCandidates>` element can contain either a simple candidate specification or a full candidate specification.

A simple candidate specification defines the primary document class, the WHERE condition, the related classes, and partitions used to restrict the query:

```
<purgeConfig>
    <purgeCandidates scope=”Procurement”>
         <primaryClass name="ariba.procure.core.Requisition"/>
         <whereCondition>Name like 'Req%'/>
         <relatedClasses>...</relatedClasses>
         <options>
                <partition name="pcsv"/>
         </options>
    </purgeCandidates>
</purgeConfig>
```

### Full Candidate Specifications

The <purgeCandidates> element can contain either a simple candidate specification or a full candidate specification.

A full candidate specification defines an Ariba Query API query, and a set of related classes.

```
<purgeConfig>
    <purgeCandidates scope="Procurement">
         <aqlQuery>SELECT ariba.procure.core.Requisition...</aqlQuery>
         <relatedClasses>...</relatedClasses>
    </purgeCandidates>
</purgeConfig>
```

You can specify the partition in the purge configuration file (with <options>) or you can include the partition as part of the query.

## <purgeConfig>

| | | Required? | Default value |
|---|---|---|---|
| Attributes | | | |
| Contains | | | |
| | <purgeCandidates> | | |
| | <keepConditions>? | | |
| | <metadataAnnotations>? | | |

The <purgeConfig> element is the outermost tag in a purge configuration file. It must include a <purgeCandidates> element, and can optionally include keep conditions or metadata annotations.

```
<purgeConfig>
   <purgeCandidates>...</purgeCandidates>
</purgeConfig>
```

## <relatedClasses>

| | | Required? | Default value |
|---|---|---|---|
| Contains | | | |
| | <class>+ | | |

The <relatedClasses> element appears within <purgeCandidates> and specifies one or more classes to be selected, relative to the primary document type.

```
      <purgeCandidates>
         <primaryClass name="ariba.procure.core.Requisition"/>
         <whereCondition>Name like 'Req%'/>
         <relatedClasses>
               <class name="acme.custom.MyCoolClass"/>
...
         </relatedClasses>
```

You use this element to specify extrinsic classes, which are added to those defined as the default set of related classes. The intrinsic classes that can be purged are defined as part of a named purge scope, and are internal to Ariba Buyer.

## <typeNarrowing>

| | | Required? | Default value |
|---|---|---|---|
| Attributes | | | |
| | kind (containerAnchored\|none\|null\|subType\|) | | |
| Contains | | | |
| | narrowingClass | | |

The <typeNarrowing> element appears only within <field>. For the named field, the narrowing element indicates more specific typing information, typically used to narrow the type from a superclass to one or more of its subclasses.

```
<classAnnotation name="acme.test.Course" variant="Plain">
    <field name="MyField">
        <typeNarrowing kind="subType">
            <narrowingClass name="acme.test.SomeType"/>
```

### The kind Attribute

Several kinds of type narrowing are supported. The kind attribute indicates the nature of the typing information being specified. The value must be one of the following:

- containerAnchored

  Indicates the type of a field can be assumed to be the same as the parent object. For example, on a Requisition, the field ApprovalRequest.Approvable can be specified as containerAnchored, to indicate that the field type is also Requisition.

- none

  Disables any type narrowing previously defined. You can use this to remove typing information defined in the default configuration.

- null

  Indicates that this field can be ignored for the purposes of deciding when an object can be purged.

```
<classAnnotation name="ariba.approvable.core.LineItem" variant="Plain">
    <field name="OldValues">
        <typeNarrowing kind="null"/>
    </field>
</classAnnotation>
```

- subType

  Restricts the type of a field to one or more named subclass. Each valid subclass is specified with a <narrowingClass> element.

```
<classAnnotation name="acme.test.Course" variant="Plain">
    <field name="Instructors">
        <typeNarrowing kind="subType">
            <narrowingClass name="acme.test.TA"/>
            <narrowingClass name="acme.test.Professor"/>
        </typeNarrowing>
    </field>
</classAnnotation>
```

## <whereCondition>

| | | **Required?** | **Default value** |
|---|---|---|---|
| Attributes | | | |
| | `text` | | |

The `<whereCondition>` element appears only within `<purgeCandidates>`. It defines the `WHERE` condition used in the select statement to select potential purge candidates.

```
<purgeCandidates>
     <primaryClass name="ariba.procure.core.Requisition"/>
     <whereCondition>Name like 'Req%'/>
</purgeCandidates>
```

# Appendix D Meta Parameters DTD Reference

## Parameter Metadata

Metadata for a parameter in `config/Parameters.table` includes the parameter's name and the data type of its value. It can also include the parameter's default value, whether changes to the parameter require a system restart to take effect, whether the parameter is private or documented, and whether the parameter value can be null.

Parameter metadata is defined in meta parameter XML files, which have the file extension `.pml` and are located in the `ariba/parameters/meta` directory. You cannot modify or override the parameter metadata in the default configuration, but you can add metadata for custom parameters. This appendix lists the elements and attributes that can appear in meta parameter XML files. The contents of a meta parameter XML file must conform to the DTD file `metaParameters.dtd`.

## <metadata>

| | | **Required?** | **Default value** |
|---|---|---|---|
| Attributes | | | |
| Contains | | | |
| | <parameter>* | | |

The `<metadata>` element is the outermost tag in a meta parameter XML file. It must contain at least one `<parameter>` element. For example:

```
<metadata>
    <parameter ... />
</metadata>
```

## <parameter>

| | | **Required?** | **Default value** |
|---|---|---|---|
| Attributes | | | |
| | name | Required | (none) |
| | type | Required | (none) |
| | defaultValue | | (none) |
| | restartRequired | | For system parameters: `true`<br>For application parameters: `false` |
| | privacy | | `documented` |
| | nullAllowed | | `false` |
| Contains | | | |
| | <description>?<br><br><properties>? | | |

The `<parameter>` element defines a parameter.

### name Attribute

The `name` attribute identifies the fully qualified name of the parameter. For example:

```
<parameter name="System.Base.SecureParameters" type="List"/>
```

### type Attribute

The `type` attribute specifies the data type of the parameter value. Valid data types are as follows:

- `boolean`
- `int`
- `long`
- `double`
- `String`
- `List`
- `Map`

For example:

```
<parameter name="System.Admin" type="Map"/>
```

### defaultValue Attribute

The `defaultValue` attribute specifies the value of the parameter when it is not set in the `config/Parameters.table` file. For example:

```
<parameter name="System.Admin.AllowTemplateRules" type="boolean" defaultValue="false"/>
```

If you do not specify this attribute, the parameter must be set in the `config/Parameters.table` file unless the `nullAllowed` attribute is set to `true`. For more information, see "nullAllowed Attribute" on page 211.

### The restartRequired Attribute

The `restartRequired` attribute is a Boolean that specifies whether a system restart is required for changes to the parameter to take effect. For example:

```
<parameter name="System.Procure.ReceiptSendMethods.Silent.Sender" type="String"
restartRequired="false"/>
```

This attribute is optional. If there is not an explicit specification for whether changes to the parameter require a system restart to take effect and if the parameter is a system parameter, **`restartRequired`** defaults to **`true`**. If it is an application parameter, the **`restartRequired`** defaults to **`false`**.

### privacy Attribute

The `privacy` attribute specifies whether a parameter is for internal or customer use. Valid values are as follows:

- `private` (the parameter is for Ariba internal use only)
- `documented` (the parameter is intended for customer use)

For example:

```
<parameter name="System.Base.SecureParameters" type="List" privacy="private"/>
```

The privacy of a parameter does not relate to its presence in the `config/Parameters.table` file. For example, a private parameter might appear in the file and a documented parameter might not appear in the file.

### nullAllowed Attribute

The `nullAllowed` attribute is a Boolean that specifies whether a parameter can have a null value. For example:

```
<parameter name="Application.Contract.MasterAgreement.ContractERPSendMethodName" type="String"
nullAllowed="true"/>
```

When this attribute is set to `true`, the parameter does not need to be set in the `config/Parameters.table` file.

This attribute is valid only when the `type` attribute is set to `String`, `Date`, `List`, or `Map`. It is overridden if the `defaultValue` attribute is specified. For more information, see "defaultValue Attribute" on page 210.

For more information on parameters, see `.pml` files located in the `ariba/parameters/meta` directory and the `Parametersdoc` available in the Help@ariba documentation site for administrators:

▼ **To read reference information on Ariba configuration parameters:**

1 In Ariba Administrator, choose **Help > Guides**.

2 Click the **Ariba Buyer Parametersdoc** link located under **Reference Documents**.

3 Click the name of a parameter in the left-hand navigation pane to see reference information for that parameter.

You can use the links in the upper left corner of the reference to display **All Parameters**, or only **Application** or **System** parameters.

# Appendix E Configuration File Reference

This appendix lists the files in the `config` directory under your Ariba Buyer Server installation directory, and describes how to make changes to each file. It separates the files into three categories:

- "Shared Configuration Files" on page 213
- "Files That Vary By Variant" on page 214
- "Files That Vary By Partition" on page 215

## Shared Configuration Files

This section describes the configuration files that apply across your configuration, to all variants and partitions.

These files reside in the top-level configuration directory (`config`).

| File or Directory | Description | How To Update It |
|---|---|---|
| `ConnectionInfo.table` | Defines how Ariba Buyer connects to external systems, such as ERP systems. | Restart Ariba Buyer. |
| `LoadDB.txt` | Defines the load order for data integrations and scheduled tasks. | Read only at `initdb` time. |
| `LoadDBLanguage.txt` | Defines the load order for languages in a multi-lingual configuration. | Read with `initdb -loadlanguage`. |
| `Parameters.table` | The main configuration file for Ariba Buyer. | Use the Parameters task in the Server Manager workspace in Ariba Administrator. |
| catalog | Directory where catalogs and type definition files are stored. | Use the Catalog Manager in Ariba Administrator. |
| `java` | Directory for custom Java files. | Put `.class` files in this directory, and then add to the package `config.java` so Ariba Buyer can find them. |
| `standards` | Directory for commodity code standards files. These are public standards and are not meant to be modified extensively. | Restart Ariba Buyer. |

## Files That Vary By Variant

This section describes the configuration files that apply only to a particular variant. In a typical configuration, these files are located in the directory `config/variants/`*`variant`*, where *`variant`* is the name of the variant.

| File or Directory | Description | How To Update It |
|---|---|---|
| admin | | |
| `ObjectManager.acf` | Controls the appearance and behavior of object managers in Ariba Administrator. | If `ReReadFiles` is set to `false`, restart Ariba Buyer.<br><br>If `ReReadFiles` is set to `true`, log out and log back in to Ariba Buyer. |
| AdminConfig.acf | Controls the appearance and behavior of workspaces and tasks in Ariba Administrator. | If `ReReadFiles` is set to `false`, restart Ariba Buyer.<br><br>If `ReReadFiles` is set to `true`, log out and log back in to Ariba Buyer. |
| `data` | | |
| `*csv` | CSV data files for data that is not partitioned. Most data is by partition. Only a few files reside here. | Run the integration event from Ariba Administrator. |
| `extensions` | | |
| `*aml` | Metadata XML extension files. | Restart Ariba Buyer or run `../bin/simplemigrator`. |
| `messages` | | |
| `MessageDefinition.table` | Configuration file that describes the integration events for a variant. | Restart Ariba Buyer. |
| `rules` | | |
| `PurchaseOrderRules.js`<br>`RequistionRules.js`<br>`UserProfileRules.js`<br>`...` | JavaScript files for approval rules. | Use the Rule Editor in Ariba Administrator. |
| `wizards` | | |
| `*./*.afr`<br><br>`*./*.awz` | Directory for each wizard in Ariba Buyer. | Restart Ariba Buyer. |

## Files That Vary By Partition

This section describes the configuration files that apply only to a particular partition. In a typical configuration, these files are located in the directory `config/variants/`*`variant`*`/partitions/`*`partition`* where *`variant`* is the name of a variant and *`partition`* is the name of the partition.

| File or Directory | Description | How To Update It |
|---|---|---|
| `MessageConfiguration.table` | Configuration file that describes the integration events for a partition. | Reinitialize the integration events from Ariba Administrator. |
| `ScheduledTasks.table`<br><br>The file name is specified with the parameter `Application.Base.ScheduledTasks`. | Configuration file that describes the scheduled tasks for a partition. | Reinitialize the scheduled tasks from Ariba Administrator. |
| `data` | | |
| `*csv` | CSV data files for integrations that read from CSV files as the data source. | Run the integration event from Ariba Administrator. |

# Appendix F Email Notification Messages

This appendix describes the email notification messages generated by Ariba Buyer that are common to all modules. For information on email notification messages generated by specific Ariba Buyer modules, such as Ariba Payment, see the "Email Notification Messages" appendix in the administration guide for that module.

Users receive notification messages when they are involved with an approvable document, or when they have special permissions.

The following table describes the labels used in this chapter to describe the recipients of notification messages.

| Label | Description |
|---|---|
| preparer | A user who prepares and submits a request. |
| requester | The same user as the preparer, unless the preparer submits a request on behalf of another user. In that case, the user who submits the request is the preparer, and the other user is the requester. |
| watcher | A user who has been assigned to observe a request. Watchers receive the same notification messages as preparers. |
| approver | A user who has been assigned to approve or deny a request. |
| delegate | A user to whom an approver has delegated approval authority. Delegates receive the same notification messages as approvers. |

## Notification of Password Entry

User <*username*> allowed to create password with no credentials.

**Cause:**

When a user sets an initial password using a null credential, Ariba Buyer sends this notification message to users who have the `AllowNullPasswordWizardCredentialEmail` permission. System administrators are usually assigned this permission. The credential type that was required is described in the body of the notification message.

This notification message is sent only when organic password growth is enabled.

**Action:**

This notification message is for information only, and does not require any action.

If you want to disallow the use of null credentials in the future, you can do so as part of your system configuration. For more information, see the *Ariba Buyer Configuration Guide*.

## Notification of Approaching Withdrawal

*<ID>*:'*<approvable>*' will be automatically withdrawn on *<date>*

**Cause:**

The TimeoutApprovables scheduled task sends this notification message to the requester and all required approvers when a request is about to be automatically withdrawn because it has not been approved or denied within the configured timeout period. For example:

```
PR13: 'My Req' will be automatically withdrawn on Thu, 25 May 2004

To view this request in the Ariba system, use the following URL:
http://Ariba_Buyer_URL

Requisition No. PR13
Created on Wed, 05 May, 2004 by John Doe
```

When a request is prepared by one user on behalf of another (that is, when the requester and preparer are different users), this notification message is sent to the preparer, not the requester.

**Action:**

To prevent the automatic withdrawal, the recipient of this notification message must review the request to determine where it stalled in the approval process, and then resolve the problem manually. To take immediate action, the recipient can follow the link in the notification message.

You can adjust the amount of time that a request can wait for approval before this notification message is sent by modifying the `TimeoutWarningPeriod` parameter in the TimeoutApprovables scheduled task definition.

## Notification of Withdrawn Request

<*ID*>:'<*approvable*>' has been withdrawn

**Cause:**

The TimeoutApprovables scheduled task sends this notification message to a requester when a request is automatically withdrawn because an approver did not approve it within the configured timeout period, or when the requester withdraws it manually. For example:

```
PR13: 'My Requisition' has been withdrawn
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL

Requisition No. PR13
Created on Wed, 05 May, 2004 by John Doe
```

When a request is prepared by one user on behalf of another (that is, when the requester and preparer are different users), this notification message is sent to the preparer, not the requester.

**Action:**

This notification message is for information only, and does not require any action. To see more details, the recipient can follow the link in the message to access the request in Ariba Buyer.

You can adjust the amount of time that a request can wait for approval or denial before it is withdrawn by modifying the `TimeoutPeriod` parameter in the TimeoutApprovables scheduled task definition.

## Notification of Approaching Escalation

<*ID*>:'<*approvable*>' will be automatically escalated to <*username*> on <*date*>

**Cause:**

The EscalateApprovables scheduled task sends this notification message to an approver when a request is about to be escalated to his or her immediate supervisor because the approver did not approve it within the configured timeout period. For example:

```
PR34: 'My Requisition' will be automatically escalated to Jane Doe on Wed May 26 14:09:13 PDT 2004
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL
```

```
Requisition No. PR34
Created on Wed, 05 May, 2004 by John Doe
```

**Action:**

To prevent the automatic escalation, the recipient of this notification message must take action—approve or deny the request—before the scheduled escalation. To take immediate action, the recipient can follow the link in the notification message. The recipient can also log in to Ariba Buyer and click **Approve** on the Ariba Buyer Home Page.

You can adjust the amount of time that a request can wait for approval before this notification message is sent by modifying the `EscalateWarningPeriod` parameter in the EscalateApprovables scheduled task definition.

## Notification of Escalation To You

*<ID>*:'*<approvable>*' has been automatically escalated to you from *<username>*

**Cause:**

The EscalateApprovables scheduled task sends this notification message to an approver when a request is escalated to him or her. For example:

```
PR-2.0-1349a-301: 'My Requisition' has been automatically escalated to you from Jane Doe

http://Ariba_Buyer_URL

Requester: John Doe
```

**Action:**

To take immediate action, the recipient can follow the link in the notification message. The recipient can also log in to Ariba Buyer and click **Approve** on the Ariba Buyer Home Page.

You can adjust the amount of time that a request can wait for approval before it is escalated by modifying the `EscalatePeriod` parameter in the EscalateApprovables scheduled task definition.

## Notification of Escalation to Supervisor

*<ID>*:'*<approvable>*' has been automatically escalated to *<username>*

**Cause:**

The EscalateApprovables scheduled task sends this notification message to an approver when a request has been escalated to his or her immediate supervisor because the approver did not approve the request within the configured timeout period. For example:

```
PR-2.0-1349a-301: 'My Requisition' has been automatically escalated to Jane Doe

http://Ariba_Buyer_URL

Requester: John Doe
```

**Action:**

This notification message is for information only, and does not require any action. After an escalation, the approver can no longer approve the document.

You can adjust the amount of time that a request can wait for approval before it is escalated by modifying the `EscalatePeriod` parameter in the EscalateApprovables scheduled task definition.

## Notification of Modification

*<ID>*:'*<approvable>*' has been modified by *<username>*

**Cause:**

Ariba Buyer sends this notification message to a requester when someone has modified a request that he or she has submitted for approval. For example:

```
PR28: 'My Requisition' has been modified by Jane Doe
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL

Requisition No. PR28
Created on Wed, 05 May, 2004 by John Doe
```

When a request is prepared by one user on behalf of another (that is, when the requester and the preparer are different), this notification message is sent to the preparer, not to the requester.

**Action:**

This notification message is for information only, and does not require any action. To see more details, the recipient can follow the link in the message to access the request in Ariba Buyer.

## Notification of a Reply to a Comment

<*ID*>: Receipt for <*approvable_ID*>: '<*approvable*>' has a new reply comment by <*username*>

**Cause:**

Ariba Buyer sends this notification message to a requester when someone replies to a comment in his or her request. For example:

```
RC35: Receipt for DO30 PR28: 'My Requisition' has a new reply comment by John Doe
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL

Requisition No. PR28
Created on Wed, 05 May, 2004 by Jane Doe
```

When a request is prepared by one user on behalf of another (that is, when the requester and the preparer are different), this notification message is sent to the preparer, not to the requester.

**Action:**

This notification message is for information only, and does not require any action. To see more details, the recipient can follow the link in the message to access the request in Ariba Buyer.

## Notification of Resubmitted Request

<*ID*>:'<*approvable*>' has been resubmitted

**Cause:**

Ariba Buyer sends this notification message to an approver when a request that he or she has previously denied is resubmitted by the original requester. For example:

```
R28: 'My Requisition' has been resubmitted
To view this request in the Ariba system, use the following URL:
```

```
http://Ariba_Buyer_URL

Requisition No. R28
Created on Wed, 05 May, 2004 by Jane Doe
```

**Action:**

To review the request immediately, the recipient can follow the link in the notification message. The recipient can also log in to Ariba Buyer and click **Approve** on the Ariba Buyer Home Page.

## Notification of Approval

*<ID>*:'*<approvable>*' has been approved by *<username>*

**Cause:**

Ariba Buyer sends this notification to a requester when an approver in the approval flow approves his or her request. For example:

For example:

```
PR173265: 'My Requisition' has been approved by John Doe
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL

Requisition No. PR173265
Created on Wed, 05 May, 2004 by Jane Doe
```

When a request is prepared by one user on behalf of another (that is, when the requester and the preparer are different), this notification message is sent to the preparer, not to the requester.

**Action:**

This notification message is for information only, and does not require any action. To see more details, the recipient can follow the link in the message to access the request in Ariba Buyer.

## Notification of Full Approval

*<ID>*:'*<approvable>*' has been fully approved

**Cause:**

Ariba Buyer sends this notification message to a requester when his or her request becomes fully approved. For example:

```
PR30: 'My Requisition' has been fully approved
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL

Requisition No. PR30
Created on Wed, 05 May, 2004 by John Doe
```

When a request is prepared by one user on behalf of another (that is, when the requester and the preparer are different), this notification message is sent to the preparer, not to the requester.

**Action:**

This notification message is for information only, and does not require any action. To see more details, the recipient can follow the link in the message to access the request in Ariba Buyer.

## Notification of Denial

<ID>:'*<approvable>*' has been denied by *<username>*

**Cause:**

Ariba Buyer sends this notification message to a requester when an approver denies his or her request. For example:

```
RC35: 'My Receipt' has been denied by John Doe
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL

RC35: Receipt for DO30
Created on Wed, 05 May, 2004 by Jane Doe
```

When a request is prepared by one user on behalf of another (that is, when the requester and the preparer are different), the notification is sent to the preparer, not to the requester.

**Action:**

After a request is denied, the recipient of this notification message must decide whether to edit that request and resubmit it. To see more details, the recipient can follow the link in the message to access the request in Ariba Buyer.

## Notification of Watcher

*<ID>*:'*<approvable>*' has had you added as a watcher because "*<reason>*"

**Cause:**

Ariba Buyer sends this notification message to a user when someone has added him or her as a watcher on an approvable document. The body of the notification message describes the reason for the action. For example:

```
RC173141: 'My Requisition' has had you added as a watcher because "Requester needs to confirm for
Preparer"
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL

RC173141: Receipt for PCO173128
```

**Action:**

This notification message is for information only, and does not require any action. To see more details, the recipient can follow the link in the message to access the request in Ariba Buyer.

## Notification of Submittal

*<ID>*:'*<approvable>*' has been submitted

**Cause:**

Ariba Buyer sends this notification message to a designated watcher of the request so that he or she can observe the request as it goes through the approval flow. Ariba Buyer also sends this notification message to a user when a request is submitted on his or her behalf. For example:

```
PR28: 'My Requisition' has been submitted
To view this request in the Ariba system, use the following URL:
```

```
http://Ariba_Buyer_URL

Requisition No. PR28
Created on Wed, 05 May, 2004 by John Doe
```

**Action:**

This notification message is for information only, and does not require any action. To see more details, the recipient can click the link in the message to access the request in Ariba Buyer.

## Notification of Added Watcher

*<ID>*:'*<approvable>*' has had *<username>* added as a watcher by *<username>*

**Cause:**

Ariba Buyer sends this notification to a requester when someone adds a watcher to the approval flow for his or her request. For example:

```
RC173141: 'My Requisition' has had John Doe added as a watcher by Jane Doe
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL

RC173141: My Requisition
```

**Action:**

This notification message is for information only, and does not require any action. To see more details, the recipient can follow the link in the message to access the request in Ariba Buyer.

## Notification of Deleted Watcher

*<ID>*:'*<approvable>*' has had the watcher *<username>* deleted from the approval chain by *<username>*

**Cause:**

Ariba Buyer sends this notification to a requester when someone deletes a watcher from the approval flow for his or her request. For example:

```
RC173141: 'My Requisition' has had John Doe deleted as a watcher by Jane Doe
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL

RC173141: My Requisition
```

**Action:**

This notification message is for information only, and does not require any action. To see more details, the recipient can follow the link in the message to access the request in Ariba Buyer.

## Notification of Required Approval

*<ID>*:'*<approvable>*' requires your approval because "*<reason>*"

**Cause:**

Ariba Buyer sends this notification message to a user when a request requires his or her approval. If the approval required is that of a permission rather than an individual, this notification message goes to all users who have that permission. For example:

```
PR35: 'My Requisition' requires your approval because "Responsible Manager for Department"
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL
```

When it generates a Supplier Data Update request, Ariba Buyer sends this notification message to users in the `SupplierDirect` partition who have the `Catalog Manager` role.

When it is sent to a delegate (another user to whom an approver has given approval authority), the notification message includes a description resembling the following:

```
John  Doe has been asked to act on the following request, but has delegated approval authority to
you temporarily. To fill in for John Doe, please use one of the links below to log into the Ariba
Buyer, to act as a temporary delegate.
```

Users who have the `NoApprovalNotification` permission do not receive this notification message. The `NoApprovalNotification` permission turns off notification messages to users when their approval is required.

**Action:**

To take immediate action, the recipient can follow the link in the notification message. The recipient can also log in to Ariba Buyer and choose **Approve** on the Ariba Buyer Home Page.

## Notification of Added Approver

*<ID>*:'*<approvable>*' has had *<username>* added as an approver by *<username>*

**Cause:**

Ariba Buyer sends this notification to a requester when someone adds an approver to the approval flow for his or her request. For example:

```
PR15: 'My Requisition' has had the approver John Doe added to the approval chain by Jane Doe
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL

Requisition No. PR15
Created on Wed, 05 May, 2004 by John Doe
```

When a request is prepared by one user on behalf of another (that is, when the requester and the preparer are different), this notification message is sent to the preparer, not to the requester.

**Action:**

This notification message is for information only, and does not require any action. To see more details, the recipient can follow the link in the message to access the request in Ariba Buyer.

## Notification of Deleted Approver

<*ID*>:'<*approvable*>' has had the approver <*username*> deleted from the approval chain by <*username*>

**Cause:**

Ariba Buyer sends this notification to a requester when someone deletes an approver from the approval flow for his or her request. For example:

```
PR15: 'My Requisition' has had the approver John Doe deleted from the approval chain by Jane Doe
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL

Requisition No. PR15
Created on Wed, 05 May, 2004 by John Doe
```

**Action:**

This notification message is for information only, and does not require any action. To see more details, the recipient can follow the link in the message to access the request in Ariba Buyer.

## Notification of Scheduled Task Failure

Scheduled task failure.

**Cause:**

The CleanDatabaseLog and CleanAuditDatabaseLog scheduled tasks send this notification message to users who have a specified permission when Ariba Buyer is unable to delete non-audit or audit messages from the database, and when it cannot write deleted messages to the specified archive file.

The body of the notification message describes the type of error that was encountered. For example:

```
There were errors writing to the archive file.

Check that the location is valid, there is enough disk space, and system permissions allow writing
to this location.
```

The permission to which this notification message is sent is specified in the `NotifyErrorsPermission` parameter and the archive file name is specified in the `ArchiveDirectory` parameter in the scheduled task definition. If an invalid permission is specified in `NotifyErrorsPermission`, this notification is sent to users who have the `SystemAdministrator` permission.

**Action:**

The body of the notification message includes suggested actions to correct the problem.

## Notification of Full Milestone Verification

*<ID>*: '*<milestone>*' Milestone verified

**Cause:**

This notification is sent to a requester when a milestone tracker has been verified and approved. For example:

```
MT32: 'Milestone: Milestone#1' has been verified and approved
To view this request in the Ariba system, use the following URL:
```

http://*Ariba_Buyer_URL*

```
MT32: Milestone: Milestone#1
```

When a request is prepared by one user on behalf of another (that is, when the requester and the preparer are different), this notification message is sent to the preparer, not to the requester.

**Action:**

This notification message is for information only, and does not require any action. To see more details, the recipient can follow the link in the message to access the request in Ariba Buyer.

## Notification of Required Milestone Verification

*<ID>*: *<approvable>* requires your verification because *<reason>*.

**Cause:**

The MilestoneNotifier scheduled task sends this notification message to the verifier of a milestone tracker a specified number of days before the milestone completion due date. For example:

```
MT24: 'Milestone#1' requires your verification because "Milestone verifier must verify".
To view this request in the Ariba system, use the following URL:
```

```
http://Ariba_Buyer_URL

MT24: Milestone: Milestone#1
```

Users specify the number of days before the milestone completion due date to send this notification message when defining the milestone item in the contract request (CR) or requisition.

**Action:**

The recipient of this notification message should verify the milestone tracker before the milestone completion due date. To take immediate action, the recipient can follow the link in the notification message.

## Notification of Milestone Verification

*<ID>*: '*<milestone>*' has been verified by *<username>*.

**Cause:**

This notification is sent to a requester when a milestone tracker has been verified by an approver in the approval flow. For example:

```
MT32: 'Milestone: Milestone#1' has been verified by Jane Doe.
To view this request in the Ariba system, use the following URL:

http://Ariba_Buyer_URL

MT32: Milestone: Milestone#1
```

When a request is prepared by one user on behalf of another (that is, when the requester and the preparer are different), this notification message is sent to the preparer, not to the requester.

**Action:**

This notification message is for information only, and does not require any action. To see more details, the recipient can follow the link in the message to access the request in Ariba Buyer.

## Notification of Unknown Supplier

Unknown Supplier

**Cause:**

Ariba Buyer sends this notification message to users who have the `SupplierManager` permission when it determines that a supplier needs to be added to your Ariba Buyer configuration. This notification can be sent in the following situations:

- When loading a catalog from Ariba Network, if the Ariba Network catalog references a supplier that is not defined in your Ariba Buyer configuration.
- With Catalog Item PunchOut, if the supplier's organization ID on the PunchOut item is not defined on a partitioned supplier in Ariba Buyer. For more information on Catalog Item PunchOut and loading catalogs from Ariba Network, see the *Ariba Spend Management Data Load Guide*.
- When Ariba Contract Compliance is integrated with Ariba Category Management, and the supplier selected for a contract in the Ariba Category Management is not defined in your configuration.

The body of the notification message includes the supplier involved, the name of the requester, the title of the request, and the associated partition. If a supplier profile for the new supplier is available, the profile is attached to the notification message.

**Action:**

The body of the notification message describes the required action, which is to load the new supplier into Ariba Buyer, or add appropriate supplier organization IDs.

## Notification of Overdue Unknown Supplier Resolution

Unknown Supplier Resolution Overdue

**Cause:**

The UpdateSupplierPendingItems scheduled task sends this notification message when it determines that a supplier in Ariba Buyer is still unknown, after the overdue time limit has been reached.

If the supplier originated from the load of an Ariba Network catalog, the message is sent to users who have the `CatalogManager` permission.

The overdue time limit is specified by the `System.Procure.PendingUnknownSupplierOverdueLimitInDays` parameter in the `config/Parameters.table` file. In the default configuration, this parameter is set to 14 days.

**Action:**

The recipient of this notification message can do one of the following:

- Choose to buy the item from a different supplier.
- Ask the Supplier Manager to add the supplier to Ariba Buyer.

## Notification of Unknown Partitioned Supplier Resolution

Unknown Partitioned Supplier Resolved

**Cause:**

The UpdateSupplierPendingItems scheduled task sends this notification message when it determines that the Supplier Manager has resolved an unknown supplier by creating a partitioned supplier.

If the supplier originated from the load of an Ariba Network catalog, the message is sent to users who have the `CatalogManager` permission.

**Action:**

In the case of a catalog load from Ariba Network, no action is required.

## Notification of Invalid Supplier Locations

Invalid Supplier Locations

**Cause:**

When a supplier has invalid contact information, the SupplierLocationCheck scheduled task sends this notification message to users who have the `SupplierLocationCheckEmail` permission. Purchasing managers are usually assigned this permission.

The body of the notification message lists the suppliers and error messages. For example:

```
15 Phil Brinkley : BRACKNELL: Value does not have an e-mail address.
1000018 Sue : LONDON: Value does not have a preferred ordering method.
1001034 Charly : LONDON: Value does not have a preferred ordering method.
1001055 Anish Badwani : LONDON: Value does not have a preferred ordering method.
1001074 Anish Badwani : SAN JOSE: Value does not have a preferred ordering method.
1000007 Mike Jones : ODIHAM: Value does not have a preferred ordering method.
1000006 John Smith : BRACKNELL: Value does not have a preferred ordering method.
```

**Action:**

The purchasing manager (or other administrator) should use the Supplier Manager in Ariba Buyer Administrator to correct the information for the supplier.

For more information on the SupplierLocationCheck scheduled task, see the *Ariba Spend Management Data Load Guide*.

**Note:** The Supplier Manager is not appropriate for making changes to supplier information that is pulled from an underlying ERP system through an integration event. If you try to make such changes, you see error messages explaining why you should not overwrite suppliers loaded from an integration event.

## Notification of Import Mapping Failure

Import Mapping Failure Report

**Cause:**

When the `MappingLog` log listener detects error messages pertaining to PunchOut items with commodity codes that are not mapped correctly, it sends this notification message to users who have the `CatalogManager` permission. The body of the notification message contains the error messages.

This notification message is sent only if the `MappingLog` log listener is enabled in the `System.Logging` section of the `config/Parameters.table` file.

**Note:** You can customize the subject of this notification message, and the permission to which it is sent, by setting parameters in the `MappingLog` log listener definition in `config/Parameters.table`.

**Action:**

The catalog manager (or other administrator) should examine the error messages in this notification message to determine the commodity codes that caused the problem.

For information on mapping commodity codes, see the *Ariba Spend Management Data Load Guide*.

# Appendix G Permissions, Roles, and Groups

## Permissions

This section describes the Ariba Buyer best practice permissions in the default configuration.

**Note:** Unless stated otherwise, this appendix describes a stand-alone Ariba Buyer configuration. If your instance is integrated with other Ariba Spend Management applications, you may see additional permissions, roles and groups. For more information, see the *Ariba Upstream Platform Configuration Guide.*

### AccessibilityEnabled

This permission is for users who require or prefer the accessibility-enabled user interface. This enhanced user interface changes the page layouts and makes navigation easier for users with disabilities, such as vision or motor ability limitations. For example, when this parameter is enabled, large volumes of data will be displayed in multiple pages without scroll bars. The page number is displayed and users can select the page number to view a particular page.

In the default configuration, this permission is not assigned to any users or roles. An administrator assigns this permission to the appropriate users, or users can add the permission manually and would have to get the addition approved by an administrator. In the default configuration, this permission is not assigned to any roles.

### ActOnBehalf

This permission authorizes users to initiate a delegation as someone else. In the default configuration, this permission is assigned to the `Administrator` role. For more information, see the section on acting as another user in the *Ariba Spend Management Data Load Guide*.

### AddApprovalRequest

This permission authorizes users to add approvers to the approval chain for approvable documents. In the default configuration, this permission is assigned to the `Edit Approvable` role.

### AddApprovalRequestER

Users who have this permission are authorized to add approvers to expense report. In the default configuraiton, this permission is assigned to the `Executive Approver` and `Expense Manaer` roles.

### AddApprovalRequestTA

Users who have this permission are authorized to add approvers to a travel authorization. In the default configuraiton, this permission is assigned to the `Executive Approver` and `Expense Manaer` roles.

### AddCustomInvitedSupplier

Users who have this permission are able to add custom invited suppliers to a collaborative requisition. In the default configuraiton, this permission is assigned to the `Add Custom Invited Supplier` role.

### AdjustExpenseReport

Users who have this permission are able to adjust or reject individual expense items. In the default configuraiton, this permission is not assigned to any role.

### AdjustExpenseReportNotAllowed

Users who have this permission are prevented from adjusting or rejecting individual expense items. In the default configuraiton, this permission is not assigned to any role.

### AdvancedAdmin

This permission authorizes users to perform advanced administration tasks. For example, in the default Ariba Buyer configuration, you must have this permission to run the VersionCommodityCodeDomainNameTask scheduled task. In the default configuration, this permission is assigned to the `Administrator` role.

### AdvancedShipNoticeErrorNotification

Users who have this permission receive Notification 75 (Notification of Ship Notice Error). In the default configuraiton, this permission is assigned to the `Purchasing Administrator` and `Receiving Manager` roles.

### AdvancedShipNoticeSuccessNotification

Users who have this permission receive Notification 78 (Notification of Ship Notice Received) when a ship notice message for a purchase order is successfully received from Ariba Network. In the default configuraiton, this permission is assigned to the `Purchasing Administrator` and `Receiving Manager` roles.

### AllowNullPasswordWizardCredentialEmail

This permission is used for notifications and applies only to configurations using organic password growth to allow users to set their own new passwords after supplying appropriate credentials. Users who have this permission receive Notification 10 (Notification of Password Entry) when a new user logs in to the Password Entry Wizard to set an initial password and uses a null credential as verification.

### AML Uploader

This permission authorizes users to upload AML files. In the default configuration, this permission is assigned to the `Administrator and AMLEditor` roles.

### AnalysisAdmin

This permission gives users access to the Ariba Administrator Reporting Manager, which allows users to perform reporting-related administrative tasks in Ariba Analysis. Users with this permission can also debug slow-running reports using the **Show Report Query** link on the Refine Data page of the report wizard. In the default configuration, this permission is assigned to the `Analysis Administrator` and `Report Administrator` roles.

### AnalysisAuthorized

This permission authorizes users to view Ariba Analysis report pages. In the default configuration, this permission is assigned to the `Analyst`, `Report Administrator`, `Reporting`, `Report Manager` and `Report User` roles.

### AnalysisCreateCompoundReports

This permission authorizes users to create and edit Ariba Analysis compound reports. In the default configuration, this permission is assigned to the `Report Administrator, Report Manager` and `Senior Analyst` roles.

### AnalysisCreateReports

This permission authorizes users to create and edit analytical reports in Ariba Analysis, including single and multi-fact reports. They can also edit Excel template for report export. In the default configuration, this permission is assigned to the `Report Administrator, Report Manager` and `Senior Analyst` roles.

### AnalysisPublishReport

This permission authorizes users to save Ariba Analysis reports to the Public folder, where they are available for use by other users. In the default configuration, this permission is assigned to the `Senior Analyst` role.

### AnalysisRunCompoundReports

This permission authorizes users to run and save Ariba Analysis compound reports. In the default Ariba Strategic Sourcing configuration, this permission is assigned to the `Analyst`, `Reporting`, `Report Manager`, `Report User` and `Senior Analyst` roles.

### AnalysisRunReports

This permission authorizes users to run the Ariba Analysis prepackaged reports that they are authorized to use, save them, and export them to Microsoft Excel. In the default configuration, this permission is assigned to the `Analyst`, `Reporting`, `Report Manager, Report User` and `Senior Analyst` roles.

### AnalysisScheduleReport

This permission authorizes users to schedule Ariba Analysis reports to run at specified times. In the default configuration, this permission is assigned to the `Senior Analyst` role.

### AnalysisViewAllAvailableFields

This permission authorizes users to view all available fields in Ariba Analysis reports, including slow fields (fields that, with the current filters on the report, contain large data sets and produce a report query that might time out) and dimensions that contain no data. Users with this permission can set a reporting preference on the command bar in order to view slow fields and empty dimensions, which are hidden by default. In the default configuration, this permission is assigned to the `Senior Analyst` role.

### ASMDashboardAuthorized

This permission determines that a user is authorized for a dashboard and gives the user a dashboard home on the Ariba Strategic Sourcing. Users with the `ASMDashboardAuthorized` permission have a dashboard home in Ariba Strategic Sourcing application. In the absence of both the `ASMDashboardAuthorized` and `P2PDashboardAuthorized` permissions, users have a dashboard home based on the value of the `FallbackDashboardHome` parameter.

In the default configuration, this permission is assigned to the `Buyer, Event Administrator, Junior SPM Manager, Professional Buyer, Sourcing Manager, SPM Authorized` and `Sourcing Manager` roles.

### AuditorOnDemand

This permission authorizes users to query and audit expense reports that are flagged through on demand audit policies. In the default configuration, this permission is assigned to the `Auditor On Demand` role.

### AuditorRealTime

This permission authorizes users to query and audit expense reports that are flagged through on demand audit policies. In the default configuration, this permission is assigned to the `Auditor Real Time` role.

### AuditViewer

This permission authorizes users to see the audit logs. In the default configuration, this permission is assigned to the `Administrator` role.

### BatchDataNotify

This permission authorizes users to receive notifications for data loads. In the default configuration, this permission is assigned to the `Batch Data Notification` role.

### BatchDataPost

This permission authorizes users to post data files to the data drop servlet. In the default configuration, this permission is assigned to the `Batch Data Post` role.

### BusinessContactManager

This permission authorizes users to administer business contacts. In the default configuration, this permission is assigned to the `Administrator` and `Customer User Admin` roles.

### BuyerAuthorized

This permission authorizes users to view links to access and work with Ariba Buyer. It is assigned to users of Ariba Spend Management applications who should have access to Ariba Buyer. In the default configuration this permission is not assigned to any roles.

### BuyerReportsQueryAll

This permission authorizes Ariba Buyer users to run Ariba Analysis reports with report queries that include data created by other users. Without this permission, any report a user runs will only include data for that user and his or her subordinates. In the default configuration, this permission is assigned to the `Report Manager` role.

### CatalogAuthorized

This permission authorizes users to view Global Catalog Reports. In the default configuration, this permission is not assigned to any roles. In the default configuration, this permission is assigned to the `Catalog Manager`, `Report Administrator`, `Report Manager` and `Report User` roles.

### CatalogImportFailedEmail

Users who have this permission receive the following notifications: Notification 15 (Notification of Supplier Data Import Failure) Notification 73 (Notification of Ariba Network Subscription Delete).

### CatalogManager

This permission is used for notification and authorization. In the default configuration, this permission is assigned to the `Catalog Manager` role. Users who have this permission receive the following notifications:

• Notification 49 (Notification of Import Mapping Failure) when the MappingLog log listener detects error messages pertaining to PunchOut items with commodity codes that are not mapped correctly.

• Notification 60 (Notification of Unknown Supplier Resolution), when the Supplier Manager has added a supplier profile that is required for loading a new catalog from Ariba Network.

• Notification 61 (Notification of Unknown Partitioned Supplier Resolution), when the Supplier Manager has added a partitioned supplier profile that is required for loading a new catalog from Ariba Network. Users who have this permission receive notification messages related to problems loading catalogs.

### CommodityCodeManager

This permission authorizes users to administer commodity codes and related mappings. In the default configuration, this permission is assigned to the `Administrator`, `Category Manager`, and `Commodity Code Manager` roles.

### CreateContract

This permission authorizes users to create contract requests (CRs) and to create and edit contracts. In the default configuration, this permission is assigned to the `Contract Agent` role

### DashboardAdmin

This permission gives users access to the Dashboard Manager workspace in Ariba Administrator. In the default configuration, this permission is assigned to the `Customer Dashboard Admin` role.

### DashboardAuthorized

This permission authorizes users to view and work with their own Ariba Spend Management dashboards. In the default configuration, this permission is assigned to the following roles:

- `Analyst`
- `Category Management`
- `Contract Agent`
- `Contract Authorized`
- `Contract Manager`
- `Expense Manager`
- `Expense User`
- `Invoice Manager`
- `Payment Agent`
- `Payment Manager`
- `Report Administrator`
- `Report Manager`
- `Reporting`
- `Tax Manager`

### DiscoveryAuthorized

**Note:** This permission is available on SP26 or higher.

### DelegateApprovalAuthority

An administrative user who has this permission can delegate authority for another user. For example, if a manager leaves the office unexpectedly for an emergency, an administrator can delegate that manager's authority to another user. When an administrator delegates approval authority, the change takes effect immediately. Delegations that are created by administrators are tracked by the `ThirdPartyDelegation` class.

In Ariba Administrator, administrators with this permission have access to these tasks in the User Manager workspace:

- Create Delegation: Used to create delegations.
- List Delegation: Used to view and undo current delegations.

In the default configuration, this permission is assigned to the `CustomerUserAdmin` role.

### ExpenseManager

Users who have this permission are authorized to log in to Ariba Buyer Administrator and use the Ariba Travel & Expense workspace to perform administrative tasks. In the default configuration, this permission is assigned to the `Expense Manager` role.

### External

This permission defines external users of Ariba Spend Management systems, who are typically suppliers and other outside entities, and is used to distinguish them from users with `Internal` permission, who are usually members of buying organizations.

In the default configuration, this permission is assigned to the `Supplier Collaboration User, Supplier Invoice Entry User,` and `Supplier Manage Order User roles.`

### GroupEditor

This permission authorizes users to edit Group Views at runtime, directly from the user interface. In the default configuration, this permission is assigned to the `AMLEditor` role.

### IntegrationEvents

This permission authorizes users to run integration events from Ariba Administrator. In the default configuration, this permission is assigned to the `Administrator` and `Catalog Manager` roles.

### Internal

This permission defines internal users of Ariba Spend Management systems, and is used to distinguish them from users with `External` permission, who are typically suppliers and other outside entities. In the default configuration, this permission is assigned to the `Internal` role.

### NoApprovalNotification

Users who have this permission don't receive notification messages when their approval is required. In the default configuration, this permission is not assigned to any role.

### NoEscalation

Users who have this permission don't have approvables escalated to them. In the default configuration, this permission is assigned to the `No Escalation` role.

### NoNonCatalogItems

Users who have this permission cannot order non-catalog items and are restricted to ordering only catalog items. In the default configuration, this permission is assigned to the `No Ad-hoc Item` role.

### NoPasswordExpiration

Users who have this permission are exempt from password expirations and are not required to make regular password changes. This permission applies only in configurations where passwords expire and users are required to make regular password changes. In the default configuration, this permission is not assigned to any role.

### NoSupervisor

This permission authorizes users to have an account without having a supervisor. Supervisors are usually required, because they're used in approval escalation and often in other approval rules as well. In the default configuration, this permission is assigned to the `No Supervisor` role.

### NoWatcherNotification

By default, users receive notifications when they are listed as a watcher on an approvable document. Users who have this permission don't receive such notifications. In the default configuration, this permission is not assigned to any role.

### P2PAuthorized

This permission grants user access to Ariba Buyer and authorizes users to view the following default prepackaged reports in Ariba Analysis:

- Ariba Buyer Operational Reports
- Contingent Labor Analysis
- Contract Analysis
- Contract Savings Analysis
- Demand Aggregation
- Invoice Exception Analysis
- Invoice Processing Analysis
- PCard Reports
- PO Analysis
- Requisition Reports
- Supplier Order Delivery Analysis
- Travel and Expense Reports

In the default configuration, this permission is assigned to the `Report Administrator`, `Report Manager`, `Report User` and `Reporting` roles.

### P2PDashboardAuthorized

This permission determines that a user is authorized for an Ariba Buyer dashboard. In the absence of the `ASMDashboardAuthorized` permission, the `P2PDashboardAuthorizedPermission` gives the user a home dashboard in Ariba Buyer. In the absence of both the `ASMDashboardAuthorized` and `P2PDashboardAuthorized` permissions, a user will have a dashboard home based on the value of the `FallbackDashboardHome` parameter. In the default configuration, this permission is assigned to the `Expense Admininstrator, Expense Manager, Expense Receipt Manager, Expense User, Expense Violation Manager, Invoice Administrator, Invoice Agent, Invoice Entry User, Invoice Manager, Payment Agent, Payment Manager, PCard Manager, Professional Buyer, Purchasing Manager, Purchasing User, Receiving Manager, Report Administrator, Report Manager, and Tax Manager.`

### ParametersEditor

This permission authorizes users to add, edit, and delete parameters in Ariba Administrator. In the default configuration, this permission is assigned to the `Administrator` role.

### ProcurementAuthorized

This permission authorizes users to view Ariba Buyer data in Ariba Analysis reports. In the default configuration, this permission is assigned to the `Catalog Manager, Report Administrator`, `Report Manager`, `Report User` and `Reporting` roles.

### RuleEditor

This permission authorizes users to make changes to company business rules using the Rule Editor. In the default configuration, this permission is assigned to the `Administrator` role.

### ScheduledTasks

This permission authorizes users to run scheduled tasks in Ariba Administrator. In the default configuration, this permission is assigned to the `Administrator` role.

### SiteAdmin.AdminClient

This permission authorizes users to perform the system administration functions, such as running scheduled tasks and integration events. In the default configuration, this permission is assigned to the `Administrator` role.

### SiteAdmin.ClassEditor

This permission authorizes users to customize the application. In the default configuration, this permission is assigned to the `AMLEditor` role.

### SiteAdmin.ConfigurationFiles

This permission authorizes users to:

- Access all files in the `config` and `logs` directories in Ariba Administrator
- Edit all rules, regardless of other permissions

The `SiteAdmin.ConfigurationFiles` permission is also used in combination with other permissions to allow administrative users access to various Ariba Administrator functions. In the default configuration, this permission is assigned to the `Administrator` role.

### SiteAdmin.LogFilesandSettings

This permission gives users access to log files and authorizes them to modify log settings. In the default configuration, this permission is assigned to the `Administrator` role.

### SiteAdmin.NoLockout

Users who have this permission are not locked out of the system, even after exceeding the maximum number of failed login attempts. In the default configuration, this permission is assigned to the `Administrator` role.

### SiteAdmin.SiteAdmin

Users who have this permission manage the use of permissions that begin with `SiteAdmin`, for example, `SiteAdmin.ConfigurationFiles`. In the default configuration, this permission is assigned to the `Administrator` role.

### SiteAdmin.TemplateEditor

This permission authorizes users to edit JavaScript templates. In the default configuration, this permission is assigned to the `Administrator` role.

### SourcingAuthorized

This permission authorizes users to punch out to Ariba Sourcing to view sourcing information. Users with this permission can also view the default Health Check, Sourcing Project Analysis, and Event Reports prepackaged reports in Ariba Analysis. In the default configuration, this permission is assigned to the `Sourcing Authorized` role.

**Note:** In a stand-alone Ariba Buyer installation, this permission will not appear in the default configuration. It is defined only in Ariba Strategic Sourcing and integrated Ariba Spend Management configurations.

### SuiteIntegration

This permission authorizes users to integrate the Ariba Strategic Sourcing with Ariba Buyer. In the default configuration, this permission is assigned to the `aribasystem` role.

### SupplierManager

This permission authorizes users to administer supplier profile information. In the default configuration, this permission is assigned to the `Buyer Administrator` and `Supplier Manager` roles.

### Support administrator

This permission authorizes users to administer/support the application and administer all projects in the application. In the default configuration, this permission is not assigned to any roles.

This permission has the same capabilities as a permission assigned to the `ProjectAdminPermission` parameter in previous releases. (The `ProjectAdminPermission` parameter is obsolete.)

### SVAuthorized

This permission authorizes users to use Ariba Spend Analysis features and data, and to view the default Spend Visibility prepackaged reports. In the default configuration, this permission is not assigned to any roles.

### SVSupplierDiversityAuthorized

This permission authorizes users to view prepackaged Ariba Spend Analysis supplier diversity certificate reports. In the default configuration, this permission is not assigned to any roles.

### TEAuthorized

This permission grants user access to the Travel & Expense feature. In the default configuration, this permission is not assigned to any roles.

### UserManager

This permission enables users to view the User Manager workspace of the Ariba Administrator to view, add, edit, and delete users, groups, roles and permissions. In the default configuration, this permission is assigned to the `Administrator` and `Customer User Admin` roles.

### UserManager_Group

This permission enables users to view the Groups task in the User Manager workspace of the Ariba Administrator to view, add, edit, and delete groups. In the default configuration, this permission is assigned to the `Administrator` role.

### UserManager_Organization

This permission enables users to view the Organizations task in the User Manager workspace of the Ariba Administrator to view, add, edit, and delete to add, edit, and delete organizations. In the default configuration, this permission is assigned to the `Administrator` role.

### UserManager_Role

This permission enables users to view the Roles task in the User Manager workspace of the Ariba Administrator to view, add, edit, and delete roles. In the default configuration, this permission is assigned to the `Administrator` and `Customer User Admin` roles.

### UserManager_User

This permission enables users to view the Users task in the User Manager workspace of the Ariba Administrator to view, add, edit, and delete users. In the default configuration, this permission is assigned to the `Administrator` and `Customer User Admin` roles.

### UserSessions

This permission authorizes users to view a list of the existing sessions and force the termination of sessions. In the default configuration, this permission is assigned to the `Administrator` role.

### View Secure Parameter

This permission authorizes users to view secure parameters in plain text. In the default configuration, this permission is assigned to the `Administrator` role.

## Roles

This section describes the Ariba Buyer best practice roles in the default configuration. Ariba Spend Management roles can include child roles; a role includes all of the permissions it inherits from all child roles.

### Administrator

In the default configuration, this role serves as the administrator role for all Ariba Spend Management applications.

This role contains the following permissions:

- `AMLUploader`
- `ASMDashboardAuthorized`
- `ActOnBehalf`
- `AdvancedAdmin`
- `AnalysisAdmin`
- `AnalysisAuthorized`
- `AnalysisCreateCompoundReports`
- `AnalysisCreateReports`
- `AnalysisPublishReport`
- `AnalysisRunCompoundReports`
- `AnalysisRunReports`
- `AnalysisScheduleReport`
- `AnalysisViewAllAvailableFields`
- `AuditViewer`
- `BusinessContactManager`
- `CommodityCodeManager`
- `CreateContract`
- `DashboardAdmin`
- `DashboardAuthorized`
- `IntegrationEvents`
- `Internal`
- `ParametersEditor`
- `RuleEditor`
- `SVAuthorized`
- `ScheduledTasks`
- `SiteAdmin.AdminClient`
- `SiteAdmin.ConfigurationFiles`
- `SiteAdmin.LogFilesAndSettings`
- `SiteAdmin.NoLockout`
- `SiteAdmin.SiteAdmin`
- `SiteAdmin.TemplateEditor`
- `SourcingAuthorized`
- `SupplierManager`
- `UserManager`
- `UserManager_Group`
- `UserManager_Organization`
- `UserManager_Role`
- `UserManager_User`
- `UserSessions`
- `ViewSecureParameter`

### AML Editor

Users with this role can customize the application. In the default configuration, this role contains the following permissions:

- `AMLUploader`
- `GroupEditor`
- `SiteAdmin.ClassEditor`

### Analysis Administrator

This role is for users who log into Ariba Administrator to perform administrative tasks in the Reporting Manager and to manage other users. In the default configuration, this role contains the following permissions:

- `AnalysisAdmin`
- `AnalysisAuthorized`
- `AnalysisCreateCompoundReports`
- `AnalysisCreateReports`
- `AnalysisPublishReport`
- `AnalysisRunCompoundReports`
- `AnalysisRunReports`
- `AnalysisScheduleReport`
- `DashboardAuthorized`
- `Internal`
- `SourcingAuthorized`
- `SVAuthorized`
- `UserManager_Group`
- `UserManager_Role`
- `UserManager_User`

### Analyst

This role enables users to run prepackaged Ariba Analysis reports. In the default configuration, this role contains the following permissions:

- `AnalysisAuthorized`
- `AnalysisRunCompoundReports`
- `AnalysisRunReports`
- `DashboardAuthorized`
- `Internal`

### aribasystem

This role is a “superuser” role for those who can perform any system administrative task and business-specific administrative functions. This role contains the following permissions:

- `AMLUploader`
- `ASMDashboardAuthorized`
- `ActOnBehalf`
- `AdvancedAdmin`

- `AnalysisAdmin`
- `AnalysisAuthorized`
- `AnalysisCreateCompoundReports`
- `AnalysisCreateReports`
- `AnalysisPublishReport`
- `AnalysisRunCompoundReports`
- `AnalysisRunReports`
- `AnalysisScheduleReport`
- `AnalysisUploadAllDataFiles`
- `AnalysisViewAllAvailableFields`
- `AnalysisViewDataLoadingSchema`
- `AuditViewer`
- `BusinessContactManager`
- `CommodityCodeManager`
- `CreateContract`
- `DashboardAdmin`
- `DashboardAuthorized`
- `IntegrationEvents`
- `Internal`
- `ParametersEditor`
- 
- `RuleEditor`
- `SVAuthorized`
- `ScheduledTasks`
- `SiteAdmin.AdminClient`
- `SiteAdmin.ConfigurationFiles`
- `SiteAdmin.LogFilesAndSettings`
- `SiteAdmin.NoLockout`
- `SiteAdmin.SiteAdmin`
- `SiteAdmin.TemplateEditor`
- `SourcingAuthorized`
- `SuiteIntegration`
- `SupplierManager`
- `UserManager`
- `UserManager_Group`
- `UserManager_Organization`
- `UserManager_Role`
- `UserManager_User`
- `UserSessions`
- `ViewSecureParameter`

### Batch Data Post

Users with this role can post data files to the data drop servlet.In the default configuration, this role contains the `BatchDataPost` permission.

### Batch Data Notifications

Users with this role receive notifications for data loads. In the default configuration, this role contains the `BatchDataNotify` permission.

### Buyer Administrator

This role enables users to perform administrator tasks in Ariba Buyer. In the default configuration, this role contains the following permissions:

- `AllowNullPasswordWizardCredentialEmail`
- `CSVEditor`
- `ContractManager`
- `ExpenseAdministrator`
- `ForceCancelPaymentTransaction`
- `ForcePayInvoiceReconciliation`
- `ForcePayPaymentTransaction`
- `ForceReconcileInvoice`
- `ForceRejectInvoiceReconciliation`
- `ForceSendPayment`
- `InvoiceAdministrator`
- `InvoiceLoaderEmail`
- `ObjectSecurityManager`
- `P2PAdminAccess`
- `P2PDashboardAuthorized`
- `PaymentAdministrator`
- `PaymentManager`
- `PaymentSendingEmail`
- `PurchasingAgent`
- `QueryAllInvoice`
- `QueryAllPayment`
- `RemoveApprovalRequestIR`
- `RemoveApprovalRequestPayment`
- `SearchManager`
- `SendCCInvoiceFailureEmail`
- `SendIRFailureEmail`
- `SupplierLocationCheckEmail`
- `SupplierManager`
- `WorkforceManager`

### Category Management

User with this role have access to category management functionality. In the default configuration, this role contains the following permissions:

- `DashboardAuthorized`

### Category Manager

Users with this role can create and manage contracts and categories and can create sourcing events. In the default configuration, this role contains the following permissions:

- `AnalysisAuthorized`
- `AnalysisRunCompoundReports`
- `AnalysisRunReports`
- `CreateContract`
- `CreateExpenseReport`
- `CreateRequisition`
- `CreateTravelAuthorization`
- `CreateTravelProfile`
- `DashboardAuthorized`
- `EditContractRequest`
- `EditMilestoneTracker`
- `GeneratedCatalogSubscription`
- `Internal`
- `QueryAllContract`
- `QueryMyContract`
- `SupplierManager`

### CFO

A role used in several approval rules as a fallback for situations where a manager or supervisor cannot be found. In the default configuration, this role does not contain any permissions.

### Commodity Code Manager

In the default configuration, this role contains the `CommodityCodeManager` permission.

### Contract Administrator

In the default configuration, this role contains the following permissions:

- `ContractAdministrator`
- `GeneratedCatalogSubscription`
- `RemoveContractApprovalRequest`
- `RemoveMilestoneApprovalRequest`

### Contract Agent

Users with this role can create and launch sourcing events.In the default configuration, this role contains the following permissions:

- `CreateContract`
- `DashboardAuthorized`
- `EditContractRequest`
- `EditMilestoneTracker`
- `QueryAllContract`

- `QueryMyContract`

### Contract Manager

Users with this role can create, manage, and approve contracts and define contract processes. In the default configuration, this role contains the following permissions:

- `AddApprovalRequest`
- `AnalysisAuthorized`
- `AnalysisRunCompoundReports`
- `AnalysisRunReports`
- `ContractManager`
- `ContractTypeImpactReport`
- `CreateContract`
- `CreateExpenseReport`
- `CreateRequisition`
- `CreateTravelAuthorization`
- `CreateTravelProfile`
- `DashboardAuthorized`
- `EditApprovable`
- `EditContractRequest`
- `EditMilestoneTracker`
- `Internal`
- `QueryAllContract`
- `QueryAllContractRequest`
- `QueryMyContract`
- `QueryMyContractRequest`

### CustomerDashboardAdmin

Users with this role can use the Dashboard Templates task in the Dashboard Manager workspace in Ariba Administrator to manage dashboard templates. They can also configure the News content item. In the default configuration, this role contains the `DashboardAdmin` permission.

### CustomerUserAdmin

Users with this role can use the Users, Buyer Users, Create Delegation, Delegations, Groups, Roles, Permissions, Organization, Data Import/Export, and Business Contacts tasks in the User Manager workspace in Ariba Administrator. Members of this group cannot use the Act As command to act as another user. In the default configuration, this role contains the following permissions:

- `BusinessContactManager`
- `DelegateApprovalAuthority`
- `UserManager`
- `UserManager_Role`
- `UserManager_User`

### Discovery Authorized

**Note:** This role is available on SP26 or higher.

### EditApprovable

In the default configuration of Ariba Buyer, this role contains the following permissions for business process experts who are allowed to make post-submission edits to approvable documents:

- `AddApprovalRequest`
- `EditApprovable`

### Expense Manager

Users with this role can:

- Create expense reports and travel authorizations
- Query all the expense reports and travel authorizations in the system
- Add approval requests to the approval flow for expense reports and travel authorizations
- Make post-submission edits to expense reports and travel authorizations

This role contains the Analyst subrole and the following permissions:

- `AddApprovalRequestER`
- `AddApprovalRequestTA`
- `AnalysisAuthorized`
- `AnalysisRunCompoundReports`
- `AnalysisRunReports`
- `CreateExpenseReport`
- `CreateRequisition`
- `CreateTravelAuthorization`
- `CreateTravelProfile`
- `DashboardAuthorized`
- `EditExpenseReport`
- `EditTravelAuthorization`
- `ExpenseManager`
- `Internal`
- `P2PDashboardAuthorized`
- `QueryAllExpenseReport`
- `QueryAllTravelAuthorization`

### External

This role is generally applied to suppliers and other users of an Ariba Spend Management who are not part of the buyer organization. In the default configuration, this role contains the `External` permission.

### Facilities Manager

A role used in the `Facilities Capper` approval rule, which is a filter rule that removes any approver who has an approval limit less than $50,000, if the approver has the Facilities Manager role. In the default Ariba Buyer configuration, this role contains no permissions.

### HR Manager

A role used to approve specific commodity codes. See the *BuyerServerRoot*`/ConfigTemplates/Common-demo/default/config/variant/data/CommodityApprovers.csv` file for more information. In the default Ariba Buyer configuration, this role contains no permissions.

### Internal

This role is generally applied to any user of the system that is not a supplier. In the default configuration, this role contains the `Internal` permission.

### IS Manager

A role used to approve specific commodity codes. See the *BuyerServerRoot*`/ConfigTemplates/Common-demo/default/config/variant/data/CommodityApprovers.csv` file for more information. In the default Ariba Buyer configuration, this role contains no permissions.

### Professional Buyer

This role allows users to perform purchasing agent functions, including negotiating prices with suppliers, analyzing purchasing data, creating projects, reconciling invoice exceptions, and launching sourcing events. In the default configuration, this role contains the following permissions:

- `ChangeAutoSelectedContract`
- `DashboardAuthorized`
- `DirectReleaseContract`
- `EditReq`
- `ModifyCommentsAndAttachments`
- `P2PDashboardAuthorized`
- `PurchasingAgent`
- `QueryAllPurchasing`

### Reporting

This role allows users to run prepackaged Ariba Analysis reports. In the default configuration, it contains the following permissions:

- `AnalysisAuthorized`
- `AnalysisRunCompoundReports`
- `AnalysisRunReports`
- `DashboardAuthorized`
- `P2PAuthorized`

- `ProcurementAuthorized`

### Senior Analyst

This role is for advanced users of Ariba Analysis, who create reports for themselves and other users. In the default configuration, this role contains the following permissions:

- `AnalysisAuthorized`
- `AnalysisCreateCompoundReports`
- `AnalysisCreateReports`
- `AnalysisPublishReport`
- `AnalysisRunCompoundReports`
- `AnalysisRunReports`
- `AnalysisScheduleReport`
- `AnalysisViewAllAvailableFields`
- `CreateExpenseReport`
- `CreateRequisition`
- `CreateTravelAuthorization`
- `CreateTravelProfile`
- `DashboardAuthorized`
- `Internal`
- `QueryAll`

### Sourcing Authorized

This role is for users who are authorized to view links to access and work with Ariba Sourcing. In a stand-alone Ariba Buyer instance, this role does not contain any permissions.

### Sourcing Manager

This role is for users who manage and analyze Ariba Sourcing project activity. In the default configuration, this role contains the following permissions:

- `AnalysisAuthorized`
- `AnalysisRunCompoundReports`
- `AnalysisRunReports`
- `CreateContract`
- `CreateExpenseReport`
- `CreateRequisition`
- `CreateTravelAuthorization`
- `CreateTravelProfile`
- `DashboardAuthorized`
- `EditContractRequest`
- `EditMilestoneTracker`
- `GeneratedCatalogSubscription`
- `Internal`
- `QueryAllContract`
- `QueryMyContract`

- `SupplierManager`

### Supplier Manager

This role is for users who manage suppliers in Ariba Spend Management. In the default configuration, this role contains the following permissions:

- `DashboardAuthorized`
- `SupplierManager`

## Groups

This section describes the Ariba Buyer best practice groups in the default configuration. Ariba Spend Management groups can contain child groups; a group includes all of the roles it inherits from all parent groups.

### Analysis Administrator

In the default configuration of Ariba Analysis, this group contains the `Analysis Administrator` role.

### Commodity Code Manager

In the default configuration, this group contains the `Commodity Code Manager` role.

### Contract Administrator

In the default configuration, this group contains the `Contract Administrator` role.

### Contract Agent

In the default configuration, this group contains the `Contract Agent` role.

### Contract Approver

In the default configuration, there are no roles assigned to this group.

### Contract Manager

In the default configuration, this group contains the `Contract Manager` and `Senior Analyst` roles.

### Customer Administrator

In the default configuration, this group includes the following roles:

- `Administrator`
- `aribasystem`
- `BatchDataNotify`

- `CustomerUserAdmin`
- `UserProfileAdministrator`

### CustomerDashboardAdmin

In the default configuration, this group includes the `CustomerDashboardAdmin` role.

### CustomerUserAdmin

In the default configuration, this group includes the `CustomerUserAdmin` role.

### DebuggingEngineer

In the default configuration, this group does not contain any roles. This group contains the following permissions:

- `IntegrationEvents`
- `SiteAdmin.AdminClient`
- `SiteAdmin.LogFilesAndSettings`

### Discovery Authorized

**Note:** This group is available on SP26 or higher.

### Expense Manager

In the default configuration, this group contains the `ExpenseManager` role.

### External

In the default configuration, this group contains the `External` role.

### Finance

In the default configuration, this group contains the following roles:

- `Category Management`
- CFO
- `Internal`

### Internal

In the default configuring, this group contains the `Internal` role.

### Junior Procurement Agent

In the default Ariba Buyer configuration, this group does not contain any roles.

### Procurement Agent

In the default configuration, this group contains the following roles:

- `Category Management`
- `Central Receiving`
- `Contract Agent`
- `Invoice Agent`
- `Payment Agent`
- `Professional Buyer`
- `Sourcing Authorized`

### Procurement Manager

In the default configuration, this group contains the following roles:

- `Analyst`
- `Category Management`
- `Contract Agent`
- `Contract Manager`
- `EditApprovable`
- `Expense Manager`
- `Internal`
- `Invoice Agent`
- `Invoice Manager`
- `Management Reports`
- `Payment Manager`
- `PCard Administrator`
- `PCard Manager`
- `Professional Buyer`
- `Purchasing Manager`
- `Receiving Manager`
- `Senior Analyst`
- `Sourcing Authorized`
- `Tax Administrator`
- `Tax Manager`

### Senior Analyst

In the default configuration, this group contains the `Senior Analyst` role.

### Supplier Manager

In the default configuration, this group contains the `Supplier Manager` role.

# Appendix H Scheduled Task Reference

- "Global Scheduled Tasks" on page 259
- "Partitioned Scheduled Tasks" on page 284

This appendix describes scheduled tasks that are common to all Ariba Buyer modules. For information on scheduled tasks for specific Ariba Buyer modules, such as Ariba Payment, see the "Scheduled Tasks"appendix in the administration guide for that module.

## Global Scheduled Tasks

This section describes global scheduled tasks—those that operate on unpartitioned data. In a typical configuration, these scheduled tasks are defined in a configuration file such as `config/variants/Plain/partitions/None/ScheduledTasks.table`.

### ArchiveLog

```
ArchiveLog = {
    ScheduledTaskClassName =
        "ariba.util.log.scheduler.ScheduledLogArchive";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 11;
            Minute = 59;
            Second = 30;
        };
    };
    ExecutionNode = “AllNodes”;
};
```

The ArchiveLog scheduled task rolls over the log files for Ariba Buyer. When it runs, it takes the current log file, moves it into the archive directory, and starts logging to a new file.

This task recognizes the following parameter:

- The `ExecutionNode` parameter specifies that the task will run on all logical nodes simultaneously (`AllNodes`) in your configuration.

Assigning the `AllNodes` value to the `ExecutionNode` parameter is only allowed for this scheduled task. When using the `ExecutionNode` parameter for other scheduled tasks, the task will run on only one logical node at a time.

For information on using the parameter for integration events, see the *Ariba Spend Management Channels Guide*.

## AribaNetworkOrganizationSync

```
AribaNetworkOrganizationSync = {
    BatchSize = 10;
    SyncANSuppliersWithDunsNumbers = true;
    ScheduledTaskClassName =
        "ariba.user.messaging.AribaNetworkOrganizationSyncScheduledTask";
        Schedules = {
            Schedule1 = {
                DayOfWeek = Saturday; Hour = 08; Minute = 59; Second = 30};
         };
};
```

The AribaNetworkOrganizationSync scheduled task downloads supplier profile information from Ariba Network and uses it to update supplier organization information in Ariba Buyer.

AribaNetworkOrganizationSync determines which suppliers to download information for based on the supplier organization ID, which must be either an Ariba Network ID (`networkid` domain) or a D-U-N-S ID (`duns` domain).

For each supplier organization that has either an Ariba Network ID or D-U-N-S ID, AribaNetworkOrganizationSync sends an organization data request to Ariba Network. Ariba Network replies with the following information about the supplier:

- Name
- Credentials (domain and value)
- Postal address
- Telephone and fax numbers
- Corporate URL
- Corporate information (year founded, number of employees, minimum and maximum annual revenue, state of incorporation, ownership type)
- Payment provider information (provider ID, payment method)
- Contact information (name, postal address, email address, telephone and fax numbers)
- Industry classification
- Classification code information
- Payment information (preferred payment method, payment method type, remittance address)

This task recognizes the following parameters:

- `BatchSize`, which determines how many items to include in each cXML message. This parameter effectively controls the load placed on Ariba Network from supplier profiles. If Ariba Network times out, and you see an error to that effect in the Ariba Buyer log file, you can adjust this parameter to be smaller. A smaller value increases the network traffic, however, since more messages are exchanged.
- `SyncANSuppliersWithDunsNumbers`, which specifies whether to pull data for suppliers with D-U-N-S numbers. Suppliers with Ariba Network ID are always pulled; suppliers with D-U-N-S numbers are pulled only if this parameter is true.

For more information on how to load and update supplier data, see the *Ariba Spend Management Data Load Guide*.

## AssignFeaturesToSystemRealmTask

```
AssignFeaturesToSystemRealmTask = {
        ScheduledTaskClassName = "ariba.app.core.AssignFeaturesToSystemRealmTask";
    };
```

The AssignFeaturesToSystemRealmTask scheduled task enables and assigns all licensed features and permissions to the system realm.

In the default configuration, this task does not run on a defined schedule. The task is run as part of database initialization during setup.

Administrative users can run the task from Ariba Administrator.

## BestPracticeGroupRoleLanguagePullTask

Default permissions, roles, and groups are referred to as “best practice data” in Version 9r1. In Ariba Administrator, best practice data has the adapter source “BestPracticeData.” The following scheduled tasks have been added to load the best practice roles and groups:

| Scheduled Task | Description |
|---|---|
| BestPracticeGroupRolePullTask | Loads the best practice roles and groups. Runs during database initialization. |
| BestPracticeGroupRoleLanguagePullTask | Loads translations for the best practice roles and groups. Runs during database initialization. |
| BestPracticeGroupRoleMappingsPullTask | Loads the best practice group, role, and permission mappings. Runs during database initialization. This task only updates the elements in the mappings. You can use also this task to add additional mappings to the best practices data, or to add the best practice data to custom groups and roles. |
| LoadBestPracticeMasterDataTask | Runs the BestPracticeGroupRolePullTask, BestPracticeGroupRoleLanguagePullTask, and BestPracticeGroupRoleMappingsPullTask scheduled task. You can run this task after migration to load the best practice data. Best practice data is not automatically loaded during migration because of potential naming conflicts. |
| LoadAndDeleteBestPracticeMasterDataTask | Same as LoadBestPracticeMasterDataTask, but it reloads (Load and Delete) the best practice data. You can use this task to restore the best practice data to its original state after making unwanted changes.<br><br>**Note:** After you use this task and before you reconnect the realm, click the **Reset** button on the Suite Integration page (**Administration > Server Manager > Suite Integration**). |

The BestPracticeGroupRoleLanguagePullTask loads the translations for Ariba Best Practice groups and roles.

```
BestPracticeGroupRoleLanguagePullTask = {
    ApplicationHints = {
    Description = "@ariba.html.commonadmin/BestPracticeGroupRoleLanguagePullTaskDescription";
    Parameters = { ACL = None; Advanced = true;};
    };
    ContinueOnFailure = false;
    DisplayName = "@ariba.html.commonadmin/BestPracticeGroupRoleLanguagePullTaskDisplayName";
    EventNames = (
      "all.@partitionName@.IntegrationEvent.RoleLanguagePull;Operation=Load;EventSource=BestPract
iceData;ResourceFilename=ariba/variants/Plain/partitions/None/data/translations/*/Role.csv",
      "all.@partitionName@.IntegrationEvent.GroupLanguagePull;Operation=Load;EventSource=BestPrac
ticeData;ResourceFilename=ariba/variants/Plain/partitions/None/data/translations/*/Group.csv"
        );
    ScheduledTaskClassName = "ariba.app.server.LoadBestPracticeMasterData";
};
```

## BestPracticeGroupRoleMappingsPullTask

The BestPracticeGroupRoleMappingsPullTask loads Ariba's Best Practice group, role and permission mappings. This pull only updates the elements in the mappings. It is run during `intdb` and can also be used to add additional mappings to the Best Practices data or add the Best Practices data to customized groups and roles.

```
BestPracticeGroupRoleMappingsPullTask = {
    ApplicationHints = {
    Description = "@ariba.html.commonadmin/BestPracticeGroupRoleMappingsPullTaskDescription";
    Parameters = { ACL = None; Advanced = true;};
    };
    ContinueOnFailure = false;
    DisplayName = "@ariba.html.commonadmin/BestPracticeGroupRoleMappingsPullTaskDisplayName";
    EventNames = (
      "all.@partitionName@.IntegrationEvent.RoleChildRoleMapPull;Operation=Update Elements
Only;EventSource=BestPracticeData;HeaderFileName=ariba/variants/Plain/partitions/None/data/Role.c
sv;DetailFileName=ariba/variants/Plain/partitions/None/data/RoleChildRoleMap.csv:config/variants/
Plain/partitions/None/data/RoleChildRoleMap.csv",
      "all.@partitionName@.IntegrationEvent.RolePermissionMapPull;Operation=Update Elements
Only;EventSource=BestPracticeData;HeaderFileName=ariba/variants/Plain/partitions/None/data/Role.c
sv;DetailFileName=ariba/variants/Plain/partitions/None/data/RolePermissionMap.csv:config/variants
/Plain/partitions/None/data/RolePermissionMap.csv",
      "all.@partitionName@.IntegrationEvent.GroupChildGroupMapPull;Operation=Update Elements
Only;EventSource=BestPracticeData;HeaderFileName=ariba/variants/Plain/partitions/None/data/Group.
csv;DetailFileName=ariba/variants/Plain/partitions/None/data/GroupChildGroupMap.csv:config/varian
ts/Plain/partitions/None/data/GroupChildGroupMap.csv",
      "all.@partitionName@.IntegrationEvent.GroupRoleMapPull;Operation=Update Elements
Only;EventSource=BestPracticeData;HeaderFileName=ariba/variants/Plain/partitions/None/data/Group.
csv;DetailFileName=ariba/variants/Plain/partitions/None/data/GroupRoleMap.csv:config/variants/Pla
in/partitions/None/data/GroupRoleMap.csv",
      "all.@partitionName@.IntegrationEvent.GroupPermissionMapPull;Operation=Update Elements
Only;EventSource=BestPracticeData;HeaderFileName=ariba/variants/Plain/partitions/None/data/Group.
csv;DetailFileName=ariba/variants/Plain/partitions/None/data/GroupPermissionMap.csv:config/varian
ts/Plain/partitions/None/data/GroupPermissionMap.csv",
        "all.@partitionName@.IntegrationEvent.GroupSharedUserMapPull;Operation=Update Elements
Only;EventSource=BestPracticeData;HeaderFileName=ariba/variants/Plain/partitions/None/data/Group.
csv;DetailFileName=ariba/variants/Plain/partitions/None/data/GroupSharedUserMap.csv:config/varian
ts/Plain/partitions/None/data/GroupSharedUserMap.csv");
    ScheduledTaskClassName = "ariba.app.server.LoadBestPracticeMasterData";
};
```

## BestPracticeGroupRolePullTask

```
BestPracticeGroupRolePullTask = {
        ApplicationHints = {
            Description = "@ariba.html.commonadmin/BestPracticeGroupRolePullTaskDescription";
            Parameters = { ACL = None; Advanced = true;};
        };
        ContinueOnFailure = false;
        DisplayName = "@ariba.html.commonadmin/BestPracticeGroupRolePullTaskDisplayName";
        EventNames = (

"all.@partitionName@.IntegrationEvent.RolePull;Operation=Load;EventSource=BestPracticeData;Filena
me=ariba/variants/Plain/partitions/None/data/Role.csv",

"all.@partitionName@.IntegrationEvent.GroupPull;Operation=Load;EventSource=BestPracticeData;Filen
ame=ariba/variants/Plain/partitions/None/data/Group.csv"
        );
        ScheduledTaskClassName = "ariba.app.server.LoadBestPracticeMasterData";
    };
```

## CleanAuditDatabaseLog

```
CleanAuditDatabaseLog = {
    ScheduledTaskClassName = "ariba.base.server.CleanAndArchiveDatabaseLog";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 1;
        };
    };
    EventsOlderThan = 10;
    MaxNumberOfEvents = 5000;
    EnableArchiveToFile = true;
    ArchiveDirectory = “logs/archive”;
    NotifyErrorsPermission = “SiteAdmin.LogFilesAndSettings”;
    AuditCleanUp = true;
};
```

The CleanAuditDatabaseLog scheduled task clears audit log messages from the database that are either:

- Older than the number of days specified in the `EventsOlderThan` parameter, or
- Greater than the number of events specified in `MaxNumberOfEvents`

If both `EventsOlderThan` and `MaxNumberOfEvents` are set to `0`, then the scheduled task is effectively disabled. If you specify both parameters, the task cleans by both thresholds. If you specify only one, the task uses only that one.

This task recognizes the following parameters:

- `EventsOlderThan` specifies how many working days (not including weekends and company defined holidays) to keep data in the database. If this value is 0 or is not defined, there is no limit to the number of days to keep data in the database.

- `MaxNumberOfEvents` specifies how many records to keep in the database. The oldest records are removed first. If this value is 0 or is not defined, there is no limit to the number of records to keep in the database.

  **Note:** Because Ariba Buyer does not delete records that occur within the same second as the oldest record to keep, the actual number of records kept might be as many as 500 more than `MaxNumberOfEvents`. For example, 500 records might have the same second timestamp as the oldest record to keep and will not be deleted.

- `EnableArchiveToFile` is a Boolean that specifies whether to back up deleted audit messages to a file. When this parameter is set to `true`, deleted audit messages are written in CSV format to the file specified in the `ArchiveDirectory` parameter. When this parameter is set to `false`, deleted audit messages are not archived.
- `ArchiveDirectory` specifies the location of the file where deleted audit messages are archived. Ariba Buyer must have write permission to this file.
- `NotifyErrorsPermission` specifies a valid permission in your configuration. Users with this permission are sent Notification 72 (Notification of Scheduled Task Failure) when Ariba Buyer is unable to delete audit log messages from the database, or when it cannot write audit log messages to the file specified in `ArchiveDirectory`. If an invalid permission is specified, this notification message is sent to users who have the `SiteAdmin.LogFilesAndSettings` permission.
- `AuditCleanUp` is a Boolean. This parameter must be set to `true` to clean the database of audit messages and write audit messages to an archive file. If it is set to `false` or is undefined, the task will cleanup and archive only non-audit messages.

## CleanDatabaseLog

```
CleanDatabaseLog = {
    ScheduledTaskClassName = "ariba.base.server.CleanAndArchiveDatabaseLog";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 0;
        };
    };
    EventsOlderThan = 10;
    MaxNumberOfEvents = 5000;
    EnableArchiveToFile = false;
    ArchiveDirectory = “logs/archive”;
    NotifyErrorsPermission = “SiteAdmin.LogFilesAndSettings”;
};
```

The CleanDatabaseLog scheduled task clears non-audit log messages from the database that are either:

- Older than the number of days specified in the `EventsOlderThan` parameter, or
- Greater than the number of events specified in `MaxNumberOfEvents`

If both `EventsOlderThan` and `MaxNumberOfEvents` are set to 0, then the scheduled task is effectively disabled. If you specify both parameters, the task cleans by both thresholds. If you specify only one, the task uses only that one.

This task recognizes the following parameters:

- `EventsOlderThan` specifies how many working days (not including weekends and company defined holidays) to keep data in the database. If this value is 0 or is not defined, there is no limit to the number of days to keep data in the database.
- `MaxNumberOfEvents` specifies the maximum number of records to keep in the database. The oldest records are removed first. If this value is 0 or is not defined, there is no limit to the number of records to keep in the database.

  **Note:** Because Ariba Buyer does not delete records that occur within the same second as the oldest record to keep, the actual number of records kept might be as many as 500 more than `MaxNumberOfEvents`. For example, 500 records might have the same second timestamp as the oldest record to keep and will not be deleted.

- `EnableArchiveToFile` is a Boolean that specifies whether to archive deleted non-audit log messages to a file. When this parameter is set to `true`, deleted non-audit log messages are written in CSV format to the file specified in the `ArchiveDirectory` parameter. When this parameter is set to `false`, deleted non-audit log messages are not archived.
- `ArchiveDirectory` specifies the location of the file where deleted non-audit log messages are archived. Ariba Buyer must have write permission to this file.
- `NotifyErrorsPermission` specifies a valid permission in your configuration. Users with this permission are sent Notification 72 (Notification of Scheduled Task Failure) when Ariba Buyer is unable to delete non-audit log messages from the database, or when it cannot write non-audit log messages to the file specified in `ArchiveDirectory`. If an invalid permission is specified, this notification message is sent to users who have the `SiteAdmin.LogFilesAndSettings` permission.

## CleanExpiredAuthData

```
CleanExpiredAuthData = {
    ScheduledTaskClassName = "ariba.auth.server.CleanExpiredAuthData";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 22;
            Minute = 58;
            Second = 30;
        };
    };
};
```

The CleanExpiredAuthData scheduled task removes expired `AuthData` objects. When a user is authenticated via the Authentication API, and the authentication succeeds, an `AuthData` object is instantiated and stored in the database. This object has an associated timestamp that specifies how long the authentication remains valid. The `CleanExpiredAuthData` scheduled task looks for `AuthData` objects that have expired, and removes them from the database.

This task is relevant only for configurations using the Authentication EJBs. For more information on the Authentication API, see the 8.2 *Ariba Spend Management API Guide*.

## CleanScheduledTaskStatus

```
CleanScheduledTaskStatus = {
    ApplicationHints = { Parameters = { Advanced = true;};};
    DeleteNotRunStatus = true;
    DeleteOldStatusDays = 90;
    ScheduledTaskClassName = "ariba.base.server.CleanScheduledTaskStatus";
    Schedules = { Schedule1 = { DayOfWeek = Saturday; Hour = 23;};};
```

The `CleanScheduledTaskStatus` scheduled task clears scheduled task status messages from that are older than the number of days specified in the `DeleteOldDays` parameter and when the `DeleteNotRunStatus` is `true`.

## CleanupInactiveTokens

```
CleanupInactiveTokens = {
        ScheduledTaskClassName = "ariba.app.util.CleanupInactivePersistedTokens";
        Schedules = {
            Schedule1 = {
                DayOfWeek = Everyday;
                Hour = 1;
                Period = {
                   Unit = Hours;
                   Quantity = 12;
                }
            }
        }
    };
```

The CleanupInactiveTokens scheduled task deletes expired security tokens. In the default configuration, the task runs every 12 hours.

## CommonSupplierSyncUsingSupplierLocationID

```
CommonSupplierSyncUsingSupplierLocationID = {
    BatchSize = 10;
    SyncANSuppliersWithDunsNumbers = true;
    ScheduledTaskClassName =
        "ariba.server.ormsserver.CommonSupplierReconcilerTask";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Saturday; Hour = 15; Minute = 59; Second = 30};
    };
};
```

The CommonSupplierSyncUsingSupplierLocationID scheduled task is a variation of the AribaNetworkOrganizationSync task, but is specialized for the situation of a supplier that has different Ariba Network ID or a D-U-N-S ID.

CommonSupplierSyncUsingSupplierLocationID creates a new supplier organization when a supplier organization does not have an Ariba Network ID or a D-U-N-S ID, and the supplier organization includes a supplier that has a supplier location with an Ariba Network ID. You can see the Ariba Network ID for a supplier location when you view supplier location details in Ariba Administrator.

This task recognizes the following parameters:

- `BatchSize`, which determines how many items to include in each cXML message. This parameter effectively controls the load placed on Ariba Network from supplier profiles. If Ariba Network times out, and you see an error to that effect in the Ariba Buyer log file, you can adjust this parameter to be smaller. A smaller value increases the network traffic, however, since more messages are exchanged.
- `SyncANSuppliersWithDunsNumbers`, which specifies whether to pull data for suppliers with D-U-N-S numbers. Suppliers with Ariba Network ID are always pulled; suppliers with D-U-N-S numbers are pulled only if this parameter is true.

For more information on how to load and update supplier data, see the *Ariba Spend Management Data Load Guide*.

## CommodityCodeReport

```
CommodityCodeReport = {
    ReportFileName =
"config/variants/Plain/partitions/None/data/CommodityCodeExportMapReport.csv";
    CEMEFieldExtensions = {
        psoft1 = ("SetId");
        mypar1 = ("extField1");
    };
    ScheduledTaskClassName = "ariba.common.core.CommodityCodeReport";
};
```

The CommodityCodeReport scheduled task is an administrative task that writes a report showing the mappings between partitioned commodity codes and commodity codes. During certain operations, such as sending commodity codes to an ERP system, Ariba Buyer must be able to map directly from commodity codes to partitioned commodity codes. If the mapping is not 1:1, there is no way to determine which partitioned commodity code to use.

This task writes a CSV file listing the existing mapping. Administrators can review this report to find erroneous mappings that should be corrected.

In the default configuration, this task does not run on a pre-defined schedule. Administrative users can run it on demand, from Ariba Administrator.

This task recognizes the following parameters:

- `CEMEFieldExtensions`, which lists any extrinsic fields on the commodity export map entry (CEME).
- `ReportFileName`, which specifies the name of the output file. The output file location is relative to *BuyerServerRoot*.

For more information on commodity codes and partitioned commodity codes, see the *Ariba Spend Management Data Load Guide*.

## ConsolidatedNotifications

```
ConsolidatedNotifications = {
    ScheduledTaskClassName =
                "ariba.approvable.server.ConsolidatedNotifications";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 0;
        };
    };
};
```

The ConsolidatedNotifications scheduled task tells Ariba Buyer when to group together notifications to a single user and send them out as a unit. Typically you run this task once a day during the week.

Individual users can choose whether to have notification messages consolidated by choosing **the Send email summary** option in the Set email Notifications Preferences screen in the Ariba Buyer user interface. If a user has chosen not to enable consolidated notifications, the notification messages are sent as soon as they are created.

The ConsolidatedNotifications scheduled task groups and sends all types of notification messages except those for Receivables, which are grouped and sent by the ReceiptNotifications scheduled task.

## CreateRealmProfiles

```
CreateRealmProfiles = {
    ScheduledTaskClassName = "ariba.base.core.CreateRealmProfiles";
};
```

This scheduled task is for Ariba internal use only.

## CustomObjectPullTask

```
CustomObjectPullTask = {
        ExternalRelationPullTopics = ( );
        PullTopics = ( CDSHttpEditPermissionPull );
        ScheduledTaskClassName = ariba.asm.tasks.CustomPull;
    };
```

The `CustomObjectPullTask` allows you to do pull customization by adding new events on `CustomObjectPullTask` task in the `ScheduledTasks.table` file. All the user defined pull tasks should have `ScheduledTaskClassName` as `ariba.asm.tasks.CustomPull`. You can add the topics on `PullTopics`. These topics run sequentially to perform the pull task. You can also add entries to `ExternalRelationPullTopics` (this is optional however), to indicate the external relation topics.

## CustomObjectPushTask

```
CustomObjectPushTask = {
    ScheduledTaskClassName = "ariba.asm.tasks.CommonPush";
        // add customized pushes here.
    PushTopics = ();
};
```

The CustomObjectPushTask allows you to do push customization by adding new events on CustomObjectPushTask in the `ScheduledTasks.table` file. All the user defined push tasks should have `ScheduledTaskClassName` as ariba.asm.tasks.CustomPush. You can add the topics on `PushTopics`. These topics run sequentially to perform the push task. You can also add entries to `ExternalRelationPushTopics` (this is optional however), to indicate the external relation topics.

## DumpAssociatedTranslationsTask

This task is for internal Ariba personnel only.

```
DumpAssociatedTranslationsTask = {
        IsSampleOnly = false;
        MaxTaskTimeInMillis = 14400000;
        ObjectsToReconstituteInBatch = 100;
        ScheduledTaskClassName = "ariba.base.core.DumpAssociatedTranslationsTask";
        TaskDumpFile = DumpMLSMLocS.csv;
        TaskSleepTimeInMillis = 10000;
    };
```

The DumpAssociatedTranslationsTask scheduled task (display name Dump Associated Translations) is used by Ariba Quality Assurance personnel to test the LoadAssociatedTranslationsTask scheduled task.

Never run this scheduled task.

## DumpDashboards

```
DumpDashboards = {
        Directory = "ariba/variants/Plain/exportedDashboards";
        ObjectType = ariba.dashboard.core.Dashboard;
        Operation = Export;
        ScheduledTaskClassName = ariba.dashboard.core.ObjectEncoding;
        Versioning = false;
        ApplicationHints = { Parameters = { Advanced = true;};};
    };
```

The DumpDashboards scheduled task exports dashboard templates to an XML file. You can import the exported XML file by running the LoadDashboards scheduled task.

## DumpPortletConfigs

```
DumpPortletConfigs = {
        Directory = "ariba/variants/Plain/exportedPortletConfigs";
        ObjectType = ariba.portlet.core.PortletConfig;
        Operation = Export;
        ScheduledTaskClassName = ariba.dashboard.core.ObjectEncoding;
        Versioning = false;
        ApplicationHints = { Parameters = { Advanced = true;};};
    };
```

The DumpPortletConfigs scheduled task exports dashboard portlets to an XML file. You can import the exported XML file by running the LoadPortletConfigs scheduled task.

## EncryptedAttachmentUpdater

```
EncryptedAttachmentUpdater = {
        ScheduledTaskClassName = "ariba.approvable.core.EncryptedAttachmentUpdater";
        RequiresPrivilegedSession = true;
        Schedules = {
            Schedule1 = {
                DayOfWeek = Saturday;
                Hour = 20;
                Minute = 59;
                Second = 30;
            };
        };
    };
```

The EncryptedAttachementUpdater scheduled task scans through all the attachments in the system and updates them to the latest encryption key.

This task runs once every Saturday starting at 8:59:30 PM.

## EncryptedBlobUpdater

```
EncryptedBlobUpdater = {
        ApplicationHints = {
            Description = "@ariba.html.commonadmin/EncryptedBlobUpdaterDescription";
        };
        BatchSize = 100;
        DisplayName = "@ariba.html.commonadmin/EncryptedBlobUpdaterDisplayName";
        IntervalBetweenEncryptionsInMillis = 3000;
        MaxRunTimeInMinutes = 360;
        RequiresPrivilegedSession = true;
        ScheduledTaskClassName = "ariba.cxml.base.client.EncryptedBlobUpdater";
        Schedules = { Schedule1 = { DayOfWeek = Everyday; Hour = 23;};};
```

```
    };
```

The UpdateEncryptedBLOBS scheduled task (display name Update Encrypted Blobs) scans the database for encrypted BLOBs and attempts to re-encrypt the data using the latest crypt.

## EncryptedStringUpdater

```
EncryptedStringUpdater
    ScheduledTaskClassName = "ariba.base.server.EncryptedStringUpdater";
    RequiresPrivilegedSession = true;
    Schedules = {
        Schedule1 =
            DayOfWeek = Saturday;
            Hour = 21;
            Minute = 59;
            Second = 30;
        };
    };
};
```

The `EncryptedStringUpdater` scheduled task scans all database tables that contain encrypted strings and attempts to re-encrypt the data using the latest crypt. Crypt keys are changed periodically for security reasons. This scheduled task ensures that sensitive data is encrypted with the latest crypt.

## ExpireDelegations

```
ExpireDelegations = {
    ScheduledTaskClassName = "ariba.user.server.ExpireDelegations";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 0
        };
    };
};
```

The `ExpireDelegations` scheduled task determines when to remove delegations of approval authority that have expired (based on the end date) or activate those that should go into effect (based on the start date). This task applies to both delegations made by users (reassigning their own approval authority) and by administrators (reassigning other users' approval authority). When an administrator undoes a delegation, the delegation automatically expires.

Typically you run this task once a day, to pick up any delegation changes scheduled for that day.

This task does not send any notification messages.

## FailedApprovalUpdates

```
FailedApprovalUpdates = {
    ScheduledTaskClassName = "ariba.approvable.server.FailedApprovalUpdates";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 1;
        };
    };
};
```

Ariba Buyer makes approval updates (approving and denying requests) in the background, using a separate process. Since those updates may occasionally fail due to a situation such as a power failure or a machine crash, the FailedApprovalUpdates scheduled task is an error-recovery task that retries the processing of approval updates that have not completed successfully.

Each time it runs, this task scans the database for all such events (approve or deny approvables) and tries to process any such events that it finds. It can potentially retry the same event each time it runs, as long as the event remains unprocessed.

## FailedDurableEvents

```
FailedDurableEvents = {
    ScheduledTaskClassName = "ariba.server.workflowserver.FailedDurableEvents";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 1;
           Period = {
              Unit = Hours;
              Quantity = 6;
           };
        };
    };
};
```

The FailedDurableEvents scheduled task is an error-recovery task that retries the processing of approvable documents that have reached the Approved state but not successfully transitioned to the Processed state. This task is intended to handle situations where the approvable processor was unable to process a document due to a situation such as a power failure, machine crash, or a node going down in the middle of processing the approvable.

Each time it runs, this task scans the database for all such documents and tries to process any such documents that it finds. It can potentially retry the same document each time it runs, as long as the document remains unprocessed.

## FailedObjectArchive

```
FailedObjectArchive = {
    ScheduledTaskClassName = ariba.encoder.soap.base.FailedObjectArchiveTask;
    Directory = "objectArchive";
    PurgeScope=”Procurement”;
    RunningTimeInMinute = 480;
    MaximumAllowedErrors = 15;
}
```

The FailedObjectArchive scheduled task is associated with database purge and archive. The scheduled task ObjectArchive (see “ObjectArchive” on page 277) runs on a regular schedule, and writes all documents marked for archiving out to disk. If that task fails to archive any marked items, it moves those items to an error state. The FailedObjectArchive task looks for objects in that error state, and retries the archive operation.

This task recognizes the same parameters as ObjectArchive, as described on page 277.

**Note:** For FailedObjectArchive, the default value of `IgnoreBadFieldValue` is `true`; for ObjectArchive, the default value of `IgnoreBadFieldValue` is `false`. For all other parameters, the defaults are the same.

## GeneratingReportingEntries

```
GenerateReportingEntries = {
    ScheduledTaskClassName =       "ariba.procure.server.GenerateCatalogEntriesForReporting";
};
```

The GeneratingReportingEntries scheduled task is run to update catalog data before running the Global Catalog report in Ariba Buyer. This scheduled task must be run to convert catalog date to a form that Ariba Buyer's reporting infrastructure can consume. Run this scheduled task before running the Global Catalog report for the first time and then as often as needed to refresh catalog data before running the report. However, depending on the number of catalogs in your Ariba Buyer instance, this task can take up to several hours to run, and thus you should run it during hours that are not peak user load.

Even after running this scheduled task, the Global Catalog report does not have the ability to report on extrinsics. If you have extended the catalog reporting entry, that information is not pulled into Ariba Buyer during this task.

For more information on customizing with extension files, see the *Ariba Spend Management Customization Guide*.

## GetPendingAribaNetworkOrganizationSync

```
GetPendingAribaNetworkOrganizationSync = {
    ScheduledTaskClassName =
       "ariba.user.messaging.GetPendingNetworkOrganizationUpdatesTask";
};
```

The GetPendingAribaNetworkOrganizationSync scheduled task polls Ariba Network for recent updates to supplier information. When a supplier profile changes on Ariba Network, those updates are queued up on the Ariba Network side. Each time this task runs, it downloads updates to supplier information that have been made on Ariba Network.

For more information on synchronizing supplier information, see the *Ariba Spend Management Data Load Guide*.

## GroupListRepopulate

```
GroupListRepopulate= {
    ClassName = "ariba.user.core.Group";
    ScheduledTaskClassName = "ariba.user.core.GroupAndRoleVectorRepopulate";
    Schedules = {
       Schedule1 = { DayOfWeek = Weekday; Hour = 02; Minute = 59; };
        };
};
```

The GroupListRepopulate scheduled task is a system maintenance task that maintains data related to groups. Every configuration should run this task. You should not typically need to change the configuration entry for this task, except possibly to choose a different schedule.

This task should be scheduled so that it does not conflict with administrators making manual changes to groups.

## JobPersistTaskForAssociatedTranslationsDump

This task is for internal Ariba personnel only.

```
"JobPersistTaskForAssociatedTranslationsDump" = {
        ScheduledTaskClassName = "ariba.base.core.JobPersistTaskForAssociatedTranslationsDump";
    };
```

The JobPersistTaskForAssociatedTranslationsDump scheduled task creates a job that triggers the DumpAssociatedTranslationsTask scheduled task, which is used by Ariba Quality Assurance personnel to test the LoadAssociatedTranslationsTask scheduled task.

Never run this scheduled task.

## JobPersistTaskForAssociatedTranslationsLoad

This task is for internal Ariba personnel only.

```
"JobPersistTaskForAssociatedTranslationsLoad" = {
        ScheduledTaskClassName = "ariba.base.core.JobPersistTaskForAssociatedTranslationsLoad";
    };
```

The JobPersistTaskForAssociatedTranslationsLoad scheduled task creates a job that triggers the LoadAssociatedTranslationsTask scheduled task.

Never run this scheduled task.

## LoadAllRules

```
LoadAllRules = {
    AllVariants = true;
    ScheduledTaskClassName = "ariba.approvable.server.LoadRules";
};
```

The LoadAllRules scheduled task loads approval rules.

## LoadAndDeleteBestPracticeMasterDataTask

Same as `LoadBestPracticeMasterDataTask`, but it reloads (Load and Delete) the best practice data. You can use this task to restore the best practice data to its original state after making unwanted changes.

**Note:** After you use this task and before you reconnect the realm, click the **Reset** button on the Suite Integration page (**Administration > Server Manager > Suite Integration**).

```
LoadAndDeleteBestPracticeMasterDataTask = {
    ApplicationHints = {
    Description = "@ariba.html.commonadmin/LoadAndDeleteBestPracticeMasterDataTaskDescription";
    Parameters = { ACL = None; Advanced = true;};
    };
    ContinueOnFailure = false;
    DisplayName = "@ariba.html.commonadmin/LoadAndDeleteBestPracticeMasterDataTaskDisplayName";
    EventNames = (
      "all.@partitionName@.IntegrationEvent.RolePull;Operation=Load And
Delete;EventSource=BestPracticeData;Filename=ariba/variants/Plain/partitions/None/data/Role.csv",
      "all.@partitionName@.IntegrationEvent.RoleLanguagePull;Operation=Load;EventSource=BestPract
iceData;ResourceFilename=ariba/variants/Plain/partitions/None/data/translations/*/Role.csv",
      "all.@partitionName@.IntegrationEvent.RoleChildRoleMapPull;Operation=Update;EventSource=Bes
tPracticeData;HeaderFileName=ariba/variants/Plain/partitions/None/data/Role.csv;DetailFileName=ar
iba/variants/Plain/partitions/None/data/RoleChildRoleMap.csv:config/variants/Plain/partitions/Non
e/data/RoleChildRoleMap.csv",
      "all.@partitionName@.IntegrationEvent.RolePermissionMapPull;Operation=Update;EventSource=Be
stPracticeData;HeaderFileName=ariba/variants/Plain/partitions/None/data/Role.csv;DetailFileName=a
riba/variants/Plain/partitions/None/data/RolePermissionMap.csv:config/variants/Plain/partitions/N
one/data/RolePermissionMap.csv",
      "all.@partitionName@.IntegrationEvent.GroupPull;Operation=Load And
Delete;EventSource=BestPracticeData;Filename=ariba/variants/Plain/partitions/None/data/Group.csv"
,
      "all.@partitionName@.IntegrationEvent.GroupLanguagePull;Operation=Load;EventSource=BestPrac
ticeData;ResourceFilename=ariba/variants/Plain/partitions/None/data/translations/*/Group.csv",
      "all.@partitionName@.IntegrationEvent.GroupChildGroupMapPull;Operation=Update;EventSource=B
estPracticeData;HeaderFileName=ariba/variants/Plain/partitions/None/data/Group.csv;DetailFileName
=ariba/variants/Plain/partitions/None/data/GroupChildGroupMap.csv:config/variants/Plain/partition
s/None/data/GroupChildGroupMap.csv",
      "all.@partitionName@.IntegrationEvent.GroupRoleMapPull;Operation=Update;EventSource=BestPra
cticeData;HeaderFileName=ariba/variants/Plain/partitions/None/data/Group.csv;DetailFileName=ariba
/variants/Plain/partitions/None/data/GroupRoleMap.csv:config/variants/Plain/partitions/None/data/
GroupRoleMap.csv",
      "all.@partitionName@.IntegrationEvent.GroupPermissionMapPull;Operation=Update;EventSource=B
estPracticeData;HeaderFileName=ariba/variants/Plain/partitions/None/data/Group.csv;DetailFileName
=ariba/variants/Plain/partitions/None/data/GroupPermissionMap.csv:config/variants/Plain/partition
s/None/data/GroupPermissionMap.csv",
        "all.@partitionName@.IntegrationEvent.GroupSharedUserMapPull;Operation=Update;EventSource
=BestPracticeData;HeaderFileName=ariba/variants/Plain/partitions/None/data/Group.csv;DetailFileNa
me=ariba/variants/Plain/partitions/None/data/GroupSharedUserMap.csv:config/variants/Plain/partiti
ons/None/data/GroupSharedUserMap.csv"
    );
    ScheduledTaskClassName = "ariba.app.server.LoadBestPracticeMasterData";
};
```

## LoadAssociatedTranslationsTask

```
LoadAssociatedTranslationsTask = {
        MaxTaskTimeInMillis = 21600000;
        ObjectsToReconstituteInBatch = 100;
        ScheduledTaskClassName = "ariba.base.core.LoadAssociatedTranslationsTask";
        Schedules = { Schedule1 = { DayOfWeek = Everyday; Hour = 23;};};
        TaskSleepTimeInMillis = 10000;
    };
```

The LoadAssociatedTranslationsTask scheduled task (display name Load Associated Translations) updates and fixes the default MultiLocaleString and MultiLingualString translations.

## LoadBestPracticeMasterDataTask

Runs the `BestPracticeGroupRolePullTask`, `BestPracticeGroupRoleLanguagePullTask`, and `BestPracticeGroupRoleMappingsPullTask` scheduled task. You can run this task after migration to load the best practice data. Best practice data is not automatically loaded during migration because of potential naming conflicts.

```
LoadBestPracticeMasterDataTask = {
    ApplicationHints = {
    Description =     "@ariba.html.commonadmin/LoadBestPracticeMasterDataTaskDescription";
    Parameters = { ACL = None; Advanced = true;};
    };
    ChainedScheduledTasks = (
      BestPracticeGroupRolePullTask,
      BestPracticeGroupRoleLanguagePullTask,
      BestPracticeGroupRoleMappingsPullTask
    );
    ContinueOnFailure = false;
    DisplayName =
    "@ariba.html.commonadmin/LoadBestPracticeMasterDataTaskDisplayName";
    ScheduledTaskClassName = "ariba.util.scheduler.ChainedScheduledTask";
};
```

## LoadDashboards

```
LoadDashboards = {
        Directory = "ariba/variants/Plain/dumpDashboards";
        ObjectType = "ariba.dashboard.core.Dashboard";
        Operation = "Import";
        ScheduledTaskClassName = "ariba.dashboard.core.ObjectEncoding";
        Versioning = "true";
    };
```

The LoadDashboards scheduled task imports a dashboard XML file. This task does not run on a defined schedule. Administrative users can run it from Ariba Administrator.

## LoadPortletConfigs

```
LoadPortletConfigs = {
        Directory = "ariba/variants/Plain/dumpPortletConfigs";
        ObjectType = "ariba.portlet.core.PortletConfig";
        Operation = "Import";
        ScheduledTaskClassName = "ariba.dashboard.core.ObjectEncoding";
        Versioning = "true";
    };
```

The LoadPortletConfigs scheduled task imports a portlet configuration XML file. This task does not run on a defined schedule. Administrative users can run it from Ariba Administrator.

## MakeDomainNameVersionExplicit

```
MakeDomainNameVersionExplicit = {
    ScheduledTaskClassName = "ariba.basic.core.MakeDomainNameVersionExplicit";
    Classes = {
        ariba.basic.core.CommodityCode = {
            Fields = ( "Domain" );
            UpdateSystemDomainParam = true;
        };
        ariba.basic.core.ClassificationCodeMap = {
            Fields = ( "DomainFrom", "DomainTo" );
        };
    };
};
```

The MakeDomainNameVersionExplicit scheduled task transforms implicit commodity code domain versions to explicit commodity code domain versions (for example, `unspsc` to `unspsc_v12.2`) for all domains. It also changes the `Application.ClassificationCodes.SystemCommodityCodeDomainName` parameter setting to an explicit commodity code domain version.

This MakeDomainNameVersionExplicit scheduled task recognizes the following parameters:

- `Fields`, which specifies the fields to be modified in the domain. In the default configuration, the MakeDomainNameVersionExplicit scheduled task modifies the `CommodityCode.Domain`, `ClassificationCodeMap.DomainFrom`, and `ClassificationCodeMap.DomainTo` fields.
- `UpdateSystemDomainParam`, which is a Boolean that specifies whether the system domain should be updated. In the default configuration, this parameter is set to `true` for the `CommodityCode.Domain` field.

You must restart Ariba Buyer after running the MakeDomainNameVersionExplicit scheduled task.

The MakeDomainValueVersionExplicit scheduled task changes domain versions in memory only. It does **not** modify the contents of CSV files. After running the MakeDomainValueVersionExplicit scheduled task, you must manually modify the domain versions in the following CSV files so that the data in memory and the data in the CSV files is identical:

- `CommodityCode.csv`
- `ClassificationCodeMap.csv`
- `ClassificationDomainMeta.csv`

You must run the MakeDomainNameVersionExplicit scheduled task before changing the commodity code system domain. For information on changing the commodity code system domain, see the *Ariba Spend Management Data Load Guide*.

## MigrateCommodityCodesToCCCHierarchy

```
MigrateCommodityCodesToCCCHierarchy = {
    ScheduledTaskClassName = "ariba.common.migrate.ConvertDefaultCCCodesToHierarchyTask";
    FileName = "CommodityCodeNames.csv";
    OutputFileName = "HierarchyCommodityCodes.csv";
    ColumnName = "Name";
    SeparatorChar = ";";
    DomainName = "ccc";
}
```

The MigrateCommodityCodesToCCCHierarchy scheduled task is an optional scheduled task that you can use to help convert your commodity code data during the process of migrating to Version 9r1. For more information on this scheduled task, see the appropriate *Ariba Buyer Migration Guide*.

## MigrateCommodityCodesToUNSPSC

```
MigrateCommodityCodesToUNSPSC = {
    FileName = CommodityCodeNames.csv;
    OutputFileName = HierarchyUnspscCommodityCodes.csv;
    ColumnName = Name;
    DomainName = ccc;
    ScheduledTaskClassName =
        "ariba.common.migrate.ConvertDefaultUnspcCodesToHierarchyTask";
    UnspscCodeFileName = "config/standards/unspscaudit122.csv";
    };
```

The MigrateCommodityCodesToUNSPSC scheduled task is an optional scheduled task that you can use to help convert your commodity code data during the process of migrating to Version 9r1. For more information on this scheduled task, see the *Ariba Buyer Migration Guide*.

## ObjectArchive

```
ObjectArchive = {
    Directory = "objectArchive";
    RunningTimeInMinute = 480;
    MaximumAllowedErrors = 15;
    DeleteOnly="false";
    PurgeScope = Procurement
    ScheduledTaskClassName = ariba.encoder.soap.base.ArchiveTask;
     Schedules = {
        Schedule1 = { DayOfWeek = Everyday; Hour = 20; Minute = 30};
        };
    };
}
```

The ObjectArchive scheduled task is associated with database purge and archive. It looks for data in the Ariba Buyer database that has been marked for purging, writes that data out to disk files as an archive, and then purges it from the database.

This task recognizes the following parameters:

- `ArchiveObjectsInGroups` restricts the set of objects to a list of explicitly specified groups. You typically use this parameter only for error recovery, to archive a specific set of groups that previously failed. The value is a list of group IDs, separated by comma and surrounded by parentheses. For example:

  ```
  ArchiveObjectsInGroups = (abc.xy, cde.xy);
  ```

- `DeleteOnly` is a Boolean, indicating whether to archive data before the purge. If set to `true`, data is purged but not archived. If set to false, data is archived to disk before purging. The default is false.
- `Directory` specifies the output directory, where the files are to be created. The path name is relative to *BuyerServerRoot*.
- `IgnoreBadFieldValue` is a Boolean, indicating whether invalid data is handled as an error or a warning. This parameter determines the severity of errors such as invalid links or missing attachments. If this parameter is set to `false`, invalid data is treated as an error (and included when counting `MaximumAllowedErrors`). If it is set to `true`, invalid data generates a warning only. In the default configuration, this parameter is set to `false`.
- `MaximumAllowedErrors` is a performance-tuning parameter. If the task encounters errors as it runs, it stops after encountering `MaximumAllowedErrors.` You use this parameter to ensure that the task stops quickly in the event of a serious error such as a full disk. In the default configuration, this parameter is set to 10.
- `PurgeScope` names a purge scope, such as Procurement. Within each scope, certain objects are tagged to indicate that they can be purged wtihout being archived; the `PurgeScope` parameter is used to identify those objects. For example, in the Procurement scope, workflow state objects can be purged without being archived.
- `RunningTimeInMinute` is a performance -ttuning parameter that specifies a maximum running time. In the default configuration, the value is 480 minutes, or 8 hours. If the task is still running when the specified number of minutes have elapsed, the task will terminate and start again at the next scheduled time.

- `SleepIntervalInMillis` is a performance-tuning parameter. During the archiving phase, the task "sleeps" for the specified number of milliseconds after archiving each group. The point of this parameter is to reduce the overall system load so that resources are available to other processes, if necessary. The default is 5000 milliseconds (5 seconds).

If the archive operation fails, the FailedObjectArchive task is used to retry the failed items. For more information on this task, see "FailedObjectArchive" on page 271.

## PurgeLocalTempDirTask

```
PurgeLocalTempDirTask = {
    ScheduledTaskClassName = "ariba.base.server.PurgeLocalTempDir";
    MinimumFileAge = 72;
    ExceptionSuffixList = (".lob");
    Schedules = {
        Schedule1 = {
            DayOfWeek = Everyday;
            Hour = 1;
        };
    };
    ExecutionNode = "AllNodes";
};
```

The `PurgeLocalTempDirTask` scheduled task removes files from the temporary directory specified by the `config/Parameters.table` parameter `System.Base.LocalTempDirectory`.

This task recognizes the following parameters

- `MinimumFileAge`, which specifies the minimum age, in hours, of files that should be purged.
- `ExceptionSuffixList`, which specifies file types that should not be purged.

## PurgeSharedTempDirTask

```
PurgeSharedTempDirTask = {
    ScheduledTaskClassName = "ariba.base.server.PurgeSharedTempDir";
    MinimumFileAge = 72;
    ExceptionSuffixList = (".lob");
    Schedules = {
        Schedule1 = {
            DayOfWeek = Everyday;
            Hour = 1;
        };
    };
    ExecutionNode = "AllNodes";
};
```

The `PurgeSharedTempDirTask` scheduled task removes files from the temporary directory specified by the `config/Parameters.table` parameter `System.Base.SharedTempDirectory`.

This task recognizes the following parameters

- `MinimumFileAge`, which specifies the minimum age, in hours, of files that should be purged.
- `ExceptionSuffixList`, which specifies file types that should not be purged.

## ReceiptNotifications

```
ReceiptNotifications = {
        ScheduledTaskClassName = ariba.receiving.ReceiptNotifications;
        Schedules = { Schedule1 = { DayOfWeek = Weekday; Hour = 0;};};
    };
```

The ReceiptNotifications scheduled task processes receipt notifications.

## RefreshKitsFromCatalog

```
RefreshKitsFromCatalog = {
        ApplicationHints = {
            Description = "@ariba.catalog.admin/RefreshKitsFromCatalogTaskDescription";
        };
        DisplayName = "@ariba.catalog.admin/RefreshKitsFromCatalog";
        ScheduledTaskClassName = "ariba.kitting.core.RefreshKitsFromCatalog";
        Schedules = { Schedule1 = { DayOfWeek = Weekday; Hour = 5;};};
    };
```

The RefreshKitsFromCatalog scheduled task Updates the price of individual catalog items in catalog kits, as well as the entire catalog kit price.

## ReindexCatalogs

```
  ReindexCatalogs = {
          ApplicationHints = {
              Description = "@ariba.catalog.admin/ReindexCatalogsTaskDescription";
          };
          DisplayName = "@ariba.catalog.admin/ReindexCatalogs";
          ScheduledTaskClassName = "ariba.catalog.admin.server.ReindexCatalogsTask";
  };
```

The ReindexCatalogs scheduled task generates a new index from all the activated catalogs. This is necessary when changes are made to the catalog hierarchy.

## ReloadPasswordFile

```
ReloadPasswordFile = {
    ScheduledTaskClassName = "ariba.auth.server.ReloadPasswordFile";
    PasswordAdapterName="PasswordAdapter1";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 0;
        };
    };
};
```

The `ReloadPasswordFile` scheduled task reads password information from a text file and loads it into the database. This task runs during the database initialization process. An administrator might want to run this task after database initialization to reload password information.

The `ReloadPasswordFile` scheduled task is relevant only for the Crypt Database Password Adapter. If you are not using the Crypt Database Password Adapter, you can either remove this scheduled task from your configuration or set its schedule so that it never runs.

This task recognizes the following parameter:

- `PasswordAdapterName`, which specifies the password adapter to be reloaded. The value must match a password adapter name, as defined in `System.PasswordAdapters`.

## RoleListRepopulate

```
RoleListRepopulate= {
    ClassName = "ariba.user.core.Role";
    ScheduledTaskClassName = "ariba.user.core.GroupAndRoleVectorRepopulate";
    Schedules = {
       Schedule1 = { DayOfWeek = Weekday; Hour = 02; Minute = 39; };
    };
};
```

The RoleListRepopulate scheduled task is a system maintenance task that maintains data related to roles. Every configuration should run this task. You should not typically need to change the configuration entry for this task, except possibly to choose a different schedule.

This task should be scheduled so that it does not conflict with administrators making manual changes to roles.

## RemoveOutdatedIR

```
RemoveOutdatedIR = {ScheduledTaskClassName = ariba.approvable.server.RemoveOutdatedIR;};
```

The RemoveOutdatedIR scheduled task removes invoice reconciliations from a user's To Do list when the invoice reconciliationss have reached a final state of Rejected, Paying Failed, Paying, and Paid.

## RetryFailedContractSubscriptionTrackers

```
RetryFailedContractSubscriptionTrackers = {
    ApplicationHints = {
    Description =
      "@ariba.contract.core/RetryFailedContractSubscriptionTrackersTaskDescription";
    Parameters = {
      Feature = (
        AribaP2PBasic,
        AribaP2PProfessional,
        AribaContractCompliance
      );
    };
    };
    DisplayName =
      "@ariba.contract.core/RetryFailedContractSubscriptionTrackersTaskDisplayName";
    ScheduledTaskClassName =       "ariba.contract.RetryFailedContractSubscriptionTrackers";
    Schedules = { Schedule1 = { DayOfWeek = Weekday; Hour = 3;};};
};
```

The RetryFailedContractSubscriptionTrackers scheduled task retrieves all contract subscription trackers that are in the LoadFailed, ActivateFailed, and DeactivateFailed states, and then retries the load, activate, or deactivate operation.reprocesses failed attempts for generating contract subscriptions.

## SourcingDataPull

```
SourcingDataPull = {
    ScheduledTaskClassName = ariba.server.ormsserver.ChainedScheduledTask;
    ChainedScheduledTasks = (
        "None.IntegrationEvent.SourcingAddressPull",
        "None.IntegrationEvent.SourcingCurrencyPull",
        "None.IntegrationEvent.SourcingCurrencyConversionRatePull",
        "None.IntegrationEvent.SourcingUserRoleMapPull",
        ...
    );
    ContinueOnFailure = "true";
    ReportFailure = "true";
```

The SourcingDataPull scheduled task is an administrative task that you run when setting up integration with Ariba Sourcing. This entry is a chained scheduled task that runs a set of integration events, which read data generated from Ariba Sourcing and load that data into Ariba Buyer.

You run this task manually, during migration or initial integration between Ariba Sourcing and Ariba Buyer. For more information, see the *Ariba Spend Management Integration Guide*.

## SupplierLocationCheck

```
SupplierLocationCheck = {
    ScheduledTaskClassName = "ariba.procure.server.SupplierLocationCheck";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 4;
        };
    };
};
```

The SupplierLocationCheck scheduled task is a routine administration task, used to check that every supplier location has valid contact information (fax number or email address, depending on the supplier).

Although supplier configuration information is partitioned, this scheduled task is not. When it runs, it checks through the supplier profile information for each partition in your configuration.

If there are errors, the scheduled task sends a notification message to users who have the `SupplierLocationCheckEmail` permission.

For more information on validation at submission, see the *Ariba Spend Management Data Load Guide*.

## UpdateAribaNetworkProfile

```
UpdateAribaNetworkProfile = {
    ScheduledTaskClassName = "ariba.procure.server.UpdateAribaNetworkProfile";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 1;
        };
    };
};
```

The UpdateAribaNetworkProfile scheduled task allows Ariba Buyer to obtain updated profile information from Ariba Network.

An Ariba Buyer configuration uses several URLs to contact Ariba Network for order status PunchOut, order PunchOut, and order request. The UpdateAribaNetworkProfile looks for changes to those URLs, as published by Ariba Network, and updates your Ariba Buyer configuration accordingly.

## UpdateContractSubscriptionTrackerStates

```
UpdateContractSubscriptionTrackerStates = {
    ApplicationHints = {
      Description =
        "@ariba.contract.core/UpdateContractSubscriptionTrackerStatesTaskDescription";
      Parameters = {
        Feature = (
          AribaP2PBasic,
          AribaP2PProfessional,
          AribaContractCompliance
        );
      };
    };
    DisplayName =
      "@ariba.contract.core/UpdateContractSubscriptionTrackerStatesTaskDisplayName";
    ScheduledTaskClassName =     "ariba.contract.UpdateContractSubscriptionTrackerStates";
    Schedules = { Schedule1 = { DayOfWeek = Weekday; Hour = 1;};};
    };
```

The UpdateContractSubscriptionTrackerStates task manages internal state transitions for contract subscription trackers.

## UpdateDatabaseStatsTask

```
UpdateDatabaseStatsTask = {
    ApplicationHints = { Parameters = { Advanced = true;};};
    ScheduledTaskClassName = ariba.base.server.UpdateDatabaseStats;
    Schedules = {
      Schedule1 = {
        DayOfWeek = Everyday;
        Period = { Quantity = 1; Unit = Hours;};
      };
    };
};
```

The UpdateDatabaseStatsTask scheduled task (display name Update Database Status) refreshes stale database statistics on the transaction database. (Cost-based query optimizers use statistics to determine the most efficient way to execute a query.) The task calls the following statement:

```
private static final String OracleUpdateStatsProcedure =
  "{call DBMS_STATS.gather_schema_stats(ownname=>null, " +
  "options=>\'GATHER STALE\', cascade=>true)}";
```

This task can be time consuming on large schemas. You can opt out by disabling it, and then you can run it outside of the Ariba system when you need updated statistics.

## UpdateReactivatedCategoryData

```
UpdateReactivatedCategoryData = {
    ApplicationHints = {
      Description =       "@ariba.main.adminui/UpdateReactivatedCategoryDataTaskDescription";
      Parameters = { ACL = None; Feature = ( AribaCategoryProcurement );};
    };
    DisplayName =       "@ariba.main.adminui/UpdateReactivatedCategoryDataTaskDisplayName";
    ScheduledTaskClassName =       "ariba.procure.core.category.UpdateReactivatedCategoryData";
};
```

## UpdateSupplierPendingItems

```
UpdateSupplierPendingItems = {
    ScheduledTaskClassName =
           "ariba.server.ormsserver.UpdateSupplierPendingItems";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday; Hour = 0; Minute = 30;
        };
    };
};
```

The UpdateSupplierPendingItems scheduled task manages pending requests to add new suppliers to Ariba Buyer, and makes updates if those suppliers have been added to your configuration. Requests to create new suppliers can originate in several ways:

- From catalog load, if a catalog being loaded from Ariba Network refers to a supplier that does not yet exist in Ariba Buyer.
- From catalog PunchOut, if the user chooses a PunchOut item from a supplier that does not yet exist in Ariba Buyer.
- From Ariba Contract Compliance, if a supplier selected in Ariba Category Management does not yet exist in Ariba Buyer.

When Ariba Buyer determines that a supplier must be added to your configuration, it sends the Notification of Unknown Supplier message to users who have the `SupplierManager` permission, who are responsible for creating the new supplier.

When UpdateSupplierPendingItems runs, it checks each supplier pending item in the database that has an unknown supplier and determines if the supplier has been created in Ariba Buyer. If the supplier now exists, UpdateSupplierPendingItems updates the pending items. For example, if a line item originated from a PunchOut item, and the supplier is now valid, UpdateSupplierPendingItems updates that line item.

The task sends notification messages in the following circumstances:

- If it determines that the supplier has been added to Ariba Buyer, the task sends the Notification of Unknown Supplier Resolution message to indicate that the supplier has been created.
- If it determines that the supplier has not been added to Ariba Buyer within the period specified by `System.Procure.PendingUnknownSupplierOverdueLimitInDays`, the task sends the Notification of Overdue Unknown Supplier Resolution message.

Ariba recommends that you set up your configuration to run this task once a day.

For information on adding unknown suppliers, see the *Ariba Spend Management Data Load Guide*.

### UserReplaceTask

```
UserReplaceTask = {
        FileLocation = "./config/variants/Plain/partitions/None/data/UserRename.csv";
        RecordsPerCommit = 200;
        ScheduledTaskClassName = ariba.collaborate.tasks.UserReplaceTask;
        UsersPerBatch = 200;
    };
```

The UserReplaceTask is used to do a mass update of multiple users. It is similar in function to the Replace User in All Projects command, which however can replace only one user at a time.

### ValidateCatalogUrl

```
ValidateCatalogUrl = {
    ApplicationHints = {
      Description = "@ariba.catalog.admin/ValidateCatalogUrlDescription";
    };
    DisplayName = "@ariba.catalog.admin/ValidateCatalogUrl";
    };
```

The ValidateCatalogUrl task checks if the specified catalogs's image, thumbnail, supplier, and manufacture urls are valid or not.

### VersionCommodityCodeDomainNameTask

If you are using the UNSPSC versioning Catalog Feature, this task sets the current system UNSPSC version.

```
VersionCommodityCodeDomainNameTask = {
    ApplicationHints = {
      Parameters = {
         ACL = System;
         Advanced = true;
         Permissions = ( AdvancedAdmin ); Visible = true
      ;}
    ;};
    NewSystemVersion = unspsc_v12.2;
    ScheduledTaskClassName = "ariba.basic.core.VersionCommodityCodeDomainName";
};
```

## Partitioned Scheduled Tasks

This section describes the tasks that can operate on partitioned data. In a typical configuration, you define the scheduled tasks for a partition in a file such as `config/variants/`*`variant`*`/partitions/`*`partition`*`/ScheduledTasks.table`.

### ArchiveApprovables

```
ArchiveApprovables_MyPartition = {
    ScheduledTaskClassName ="ariba.approvable.server.ArchiveApprovables";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 0;
        };
    };
    ApprovableClassName = "ariba.procure.core.Requisition";
    ApprovableStatusString = "Received";
    ArchivePeriod = 30;
    ArchiveLabelName = "Archive Items";
    SourceLabelName = "My Documents";
};
```

The ArchiveApprovables scheduled task moves approvables from one label or content item to another label, “archiving” them so that they are no longer visible in the main inbox. For example, you might choose to set things up so that all documents more than a month old are automatically moved from the To Do content item to the Archive Items label.

This task recognizes the following parameters:

- `ApprovableClassName` is the full class name of the approvable type you want to move.
- `ApprovableStatusString` indicates the status of approvables you want to move.
- `ArchivePeriod` defines how long approvables are in the source label before they are eligible for archiving. The value is a number, representing the number of days.
- `ArchiveLabelName` is the name of the destination label. Must be an Ariba Buyer system label display name—such as Status Items, Approve Items, Archive Items, or Reconcile Items—or the resource key for the label name display string.
- `SourceLabelName` is the name of the source label or content item. Must be an Ariba Buyer system label display name—such as My Documents, To Do, Archive Items, or Reconcile Items—or the resource key for the label name display string.

Examining the content items and labels of all users can potentially have significant performance impact. To improve the performance of this task, you can constrain this task to operate only on specific users by specifying the following parameters:

- `UserUniqueName` is the user ID of a specific Ariba Buyer user. If you specify a user name (such as `aribasystem`), the task examines the labels of only that specific user. If you do not specify a user name, the task affects labels of all users.
- `UserPasswordAdapter` is name of the password adapter for the Ariba Buyer user specified in `UserUniqueName`. If you specify `UserUniqueName`, you must also specify `UserPasswordAdapter`.

There is no entry for this scheduled task in the default configuration. If you choose to use this task in your configuration, you must add it to the scheduled task configuration file.

## CreateReportingSummaryTables

```
CreateReportingSummaryTables = {
    ScheduledTaskClassName = "ariba.server.ormsserver.CreateReportingSummaryTables";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 0;
        };
    };
};
```

The CreateReportingSummaryTables scheduled task creates or updates summary tables used by reports. The task reads information from the report query object, which is created by the ReportQueryPull integration event. If the query has the `UseToCreateSummaryTable` field set to `true` and the time specified in `CreateSummaryTableFrequency` field has passed, the summary table is created (if it doesn't exist) or is updated.

## CXMLProcessUndeliveredPayloads

```
CXMLProcessUndeliveredPayloads = {
  Oldest = 3;
  Units = Days;
    ScheduledTaskClassName = "ariba.cxml.base.core.CXMLProcessUndeliveredPayloads";
    Schedules = {
     Schedule1 = {
      DayOfWeek = Everyday;
         Hour = 3;
         Minute = 30;
  };
};
```

The CXMLProcessUndeliveredPayloads scheduled task recovers any cXML documents that have been queued for delivery but haven't been delivered because the destination has been unreachable or the application server has shut down.

In the following example, the CXMLProcessUndeliveredPayloads is configured to select messages between one and three days old and reschedule them for reliable delivery.

```
  {
    Youngest = 1;
    Oldest = 3;
    Units = Days;
  }
```

`Youngest` and `Oldest` are integer values that specify the age range of messages to select. The value is subtracted from the current time, scaled by the `Units` parameter, in days, minutes, or hours.

## EscalateApprovables

```
EscalateApprovables = {
    EscalatePeriod = 14;
    EscalateWarningPeriod = 7;
    ScheduledTaskClassName = "ariba.approvable.server.EscalateApprovables";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 0;
            Minute = 01;
            Second = 30;
        };
    };
    Exclusion1 = {
        EscalatePeriod = 3;
        EscalateWarningPeriod = 2;
        ApprovableTypes =
            "ariba.common.core.UserProfile:ariba.expense.core.ExpenseReport";
    };
    Exclusion2 = {
        EscalatePeriod = 10;
        EscalateWarningPeriod = 8;
        ApprovableTypes = "ariba.procure.core.Requisition";
        Condition = "Requisition.LineItems.CommodityCode LIKE ‘1122%'";
    };
};
```

The EscalateApprovables scheduled task looks for requests that are waiting to be approved and escalates those requests to the approver’s immediate supervisor. Before doing the escalation, it sends a notification message to the original approver, with a warning about the upcoming escalation.

**Notes:**

- Escalation occurs only when the approver is a User, and not when the approver is a role, group, custom approver, or approver list. If the approver is not a user, EscalateApprovables does nothing. (If the active approver is not a single User, the task is unable to determine the supervisor, and thus cannot escalate the request.)
- Requests are not escalated to approvers who have the NoEscalation permission; the escalation process ends and the request remains in the approval folder of the delinquent approver.

### Escalation Periods

This task recognizes the following parameters:

- `EscalatePeriod`, which is the amount of time that a request can wait for a particular approver before it is escalated. The value is in days. You can specify decimals to indicate partial days. For example, a value of 1.5 days means every 36 hours. The minimum period is 1 day.

  In the case of a receipt, the escalation period does not start until the “first approver” has filled out the receipt. That is, the period during which approvers are expected to take action on a receipt starts only after the requester has filled out the receipt.

- `EscalateWarningPeriod`, which is the amount of time that a request can wait for a particular approver before that approver is warned of a coming escalation. The value is in days. You can specify decimals to indicate partial days. For example, a value of 1.5 days means every 36 hours. The minimum period is 1 day.

  `EscalateWarningPeriod` should typically be less than the `EscalatePeriod` (so that the warning arrives before the escalation occurs). If the two are equal, there is no warning. If they are set up backwards (so that the `EscalateWarningPeriod` is larger than the `EscalatePeriod`), the task does not run at all.

Because it affects users (by expecting them to take action), the schedule ignores weekends and your company’s holidays.

### Exclusions

The EscalateApprovables task can include any number of named *exclusions*, which specify different time periods for certain types of approvables. Each exclusion defines an Ariba Query API query that specifies which approvables are covered by that exclusion, and then specifies an escalation and warning period for those designated approvables. For example:

```
Exclusion1 = {
    EscalatePeriod = 21;
    EscalateWarningPeriod = 18;
    ApprovableTypes = "ariba.procure.core.Requisition";
    Condition = "Requisition.LineItems.CommodityCode LIKE ‘1122%'";
```

This exclusion specifies a different escalation period and warning period for requisitions that have the commodity code 1122. For example, requisitions that contain this code have an escalation period of 21 days, whereas all other approvable types and requisitions that do not contain this commodity code use the default escalation period specified outside of the exclusion.

Exclusions can use the following parameters:

- `ApprovableTypes`, which is a colon-separated list of approvable document types affected by this exclusion.
- `Condition`, which is an Ariba Query API condition, used to create a `WHERE` clause restricting the approvables that are selected for this exclusion. In this example, the condition is used to generate a query of the form `SELECT * FROM ariba.procure.core.Requisition WHERE Requisition.LineItems.CommodityCode LIKE '1122%'`. For more information on the format of the query string for Ariba Query API conditions, see the *Ariba Spend Management Query API Guide*.

Approvables that match the `ApprovableTypes` parameter but do not match the `Condition` parameter are escalated according to the parameters specified outside the exclusion.

To prevent a particular type of approvable from being escalated at all, specify the approvable type you want to exclude, and then set the `EscalatePeriod` and `EscalateWarningPeriod` parameters within the exclusion to a very high number, such as 36500 (100 years).

You can define any number of numbered exclusions for `EscalateApprovables`, but they must be named `Exclusion1`, `Exclusion2`, and so on, in numeric order.

## ProcessHeldApprovables

```
ProcessHeldApprovables_MyPartition = {
    ScheduledTaskClassName = "ariba.purchasing.ProcessHeldApprovables";
    Schedules = {
        Schedule1 = {
            DayOfWeek = Weekday;
            Hour = 0;
        };
    };
};
```

The ProcessHeldApprovables scheduled task queries for all approvable documents that have been put on hold and that have reached the specified hold date. (When a user submits a request with a hold date, that request is not processed until the hold date arrives. When the hold date arrives, this scheduled task moves the request back into the workflow.)

A typical configuration runs this task once a day, to pick up all approvable documents with a hold date of that day.

## TimeoutApprovables

```
TimeoutApprovables = {
    ScheduledTaskClassName = "ariba.approvable.server.TimeoutApprovables";
        TimeoutPeriod = "28";
        TimeoutWarningPeriod = "21";
        Schedules = {
            Schedule1 = {
                DayOfWeek = Weekday;
                Hour = 0;
            };
        };
    };
```

The TimeoutApprovables scheduled task looks for requests that have been in Ariba Buyer for a specified period of time without being approved and withdraws them. Before it actually withdraws the request, it sends the Notification of Approaching Withdrawal message to the requester and all required approvers, indicating that the request is about to be withdrawn.

This task ignores any approvable documents that are auto-submitted (purchasing card reconciliations and invoice reconciliations). It sends notifications only for documents that were explicitly submitted by an Ariba Buyer user.

This task recognizes the following parameters:

- `TimeoutPeriod` is the number of days between request submission date or the last modified date, and the date it times out. So, for example, if the timeout period is 21, the request times out three weeks after it was submitted, if it has not been approved or denied. You can specify a fraction, to describe partial days, like "1.5" to mean every 36 hours.
- `TimeoutWarningPeriod` specifies when to send the notification message warning that the request is about to time out. The `TimeoutWarningPeriod` should be less than the `TimeoutPeriod` (so that the warning arrives before the timeout happens). You can specify a fraction, to describe partial days, like "1.5" to mean every 36 hours.

A document is eligible to time out if `TimeoutPeriod` days have passed since it was submitted or last modified. The actual timeout occurs the next time the scheduled task runs.

Because it affects users (by sending mail), the schedule ignores weekends and your company's holidays.

**Note:** The last modified date of the requisition may change if an approver who has the `EditApprovable` permission makes changes to the requisition or the EscalateApprovables scheduled task is run.

## EDMDataExtractTask

This task is for internal Ariba personnel only.

This is a system task that assists with data extraction for reporting.

Never run this scheduled task.

## MonitorAnalysisBgWork

This task is for internal Ariba personnel only.

This is a system task that is used to monitor the threads performing work (normally loads) for the analysis application.

Never run this scheduled task.

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