opentext™

OpenText ECS®

Connect every corner of your enterprise with OpenText ECS communications server. Fluent in a wide variety of data transfer protocols and standards, ECS moves data across your enterprise and trading partner community, seamlessly connecting your customers, suppliers, and back-end systems into one cohesive operation.

At the heart of ECS is its ability to route and process data using today's prevalent Internet communications protocols. This core function happens at the server level, where ECS runs quietly in the background without the need for user intervention.

While ECS can be used on its own, it is most typically run in conjunction with Delta, an OpenText data translator. When paired together, ECS and Delta provide a complete enterprise application integration (EAI) solution capable of coordinating the many diverse applications, databases, and e-commerce formats found across your enterprise.

ECS Editions

OpenText offers three editions of OpenText ECS: ECS Lite, ECS Standard, and ECS Enterprise. Each edition includes online access to ECS operations via the ECS OpenAPI and a responsively designed web-based interface.

ECS Lite

ECS Lite is the entry-level version of ECS. This edition provides base-level communications and processing capabilities for small-to-mid-size enterprises that intend to exchange data with no more than 10 trading partners. As a streamlined edition of ECS, it does not support many top-level features (as noted in the table) that are supported by the other editions.

ECS Standard

ECS Standard is a significant leap in functionality from ECS Lite. It supports Web services, integration with several security standards, custom scripts and commands, reporting capabilities, and advanced event rule logic.

ECS Enterprise

ECS Enterprise incorporates all the features of ECS Standard, with the addition of two major features: scale-out processing and integrated failover technology. Scale-out processing allows you to manage the work load over multiple servers. Integrated failover technology ensures that if the primary server (controller) fails, a back-up controller provides service in its place. In addition to scale-out and failover capabilities, ECS Enterprise also offers access to the RosettaNet extensions, the ability to bind certificates at the trading partner level, access to the ECS Cloud Connector, and the ability to transfer data using JMS.

Feature Comparison Across ECS Editions

Feature	Lite	Standard	Enterprise
Trading Partner Support	Up to 10	Unlimited	Unlimited
Delta Compatibility	✓	✓	✓
Web-based User Interface	✓	✓	✓
Scale-out Processing			✓
Integrated Failover Technology			✓
Web Services		✓	✓
SMTP Listener	One	Unlimited	Unlimited
HTTP Listener	◊	✓	✓
FTP Listener			✓
JMS Listener			✓
Priority Message Queuing		✓	✓
Execution of Custom Commands/Scripts		✓	✓
Management Reports	✓	✓	✓
Management Report Scheduling		✓	✓
Advanced Event Rule Handling		✓	✓
Exception Handling	✓	✓	✓
Data Exceptions		✓	✓
Parallel Sessions per Channel		✓	✓
RosettaNet HTTP Extensions			✓
Certificate Binding at Trading Partner Level			✓
ECS OpenAPI	✓	✓	✓
ECS Cloud Connector			✓
SAP Integration	✓	✓	✓
Data Transfer Method	**Lite**	**Standard**	**Enterprise**
SMTP	✓	✓	✓
HTTP & Secure HTTP	◊	✓	✓
POP3 & FTP (Client)	✓	✓	✓
User-Defined		✓	✓
SFTP & FTP/S	◊	✓	✓
AS1/AS2/AS3	◊	✓	✓
JMS			✓

◊ ECS Lite can be enhanced with these items

ECS Server System Requirements

ECS can be installed on Windows or Linux. In addition, ECS can also be installed in virtualized environments such as VMWare ESXi, Hyper-V, and Parallels Desktop for Mac virtual machines. The system requirements mentioned below apply to all editions of ECS as well as ECS Gateway Server.

Component	Minimum Requirement
Computer	Two Intel-Pentium compatible CPUs (1.8 GHz or higher processor required); four Intel-Pentium compatible CPUs if SQL Server or MySQL is installed on the same computer
Memory*	• 1.5 GB of RAM dedicated to ECS • 4 GB or more total for the system
Hard Disk Space	750 MB free disk space
Operating System (Windows)	• Microsoft Windows® Server 2019, 2016, or 2012 • Windows 10 or Windows 8 (Professional or Enterprise editions)
Operating System (Linux)	Debian 7.4.0, Ubuntu 14.04 LTS, Fedora 20, Red Hat 6.5, and distributions with Linux kernel 2.6 or higher
Database Server	• Microsoft SQL Server 2016, 2014, or 2012 • MySQL 5.6 and 5.7+ • Apache Derby (required for ECS Gateway) • MJDBC Driver 7.2 to connect with SQL Server, which supports SQL Server 2008 r2, SQL Server 2012, SQL Server 2014, SQL Server 2016, SQL Server 2017 • MySQL 8 (Currently, only 32-bit MySQL JDBC driver is supported on Windows)
Java	• Java 8 (32-bit systems) or Java 11 (64-bit systems). ECS installs the appropriate JDK version during the installation
Linux Permissions	The user must have root level permissions in order to complete the installation process and start the ECS daemon
Internet Connection	Full-time connection to the Internet via a dedicated access line

*Maximum recommended batch size should not exceed 125 MB; actual limits may be larger depending on server's available virtual memory

+ The MySQL database does not support the ECSArchiver functionality

Multi-Server Deployment

It's quite common for companies to run ECS on multiple servers. These ECS servers can be independent of one another or they can be clustered.

Multiple Independent ECS Servers

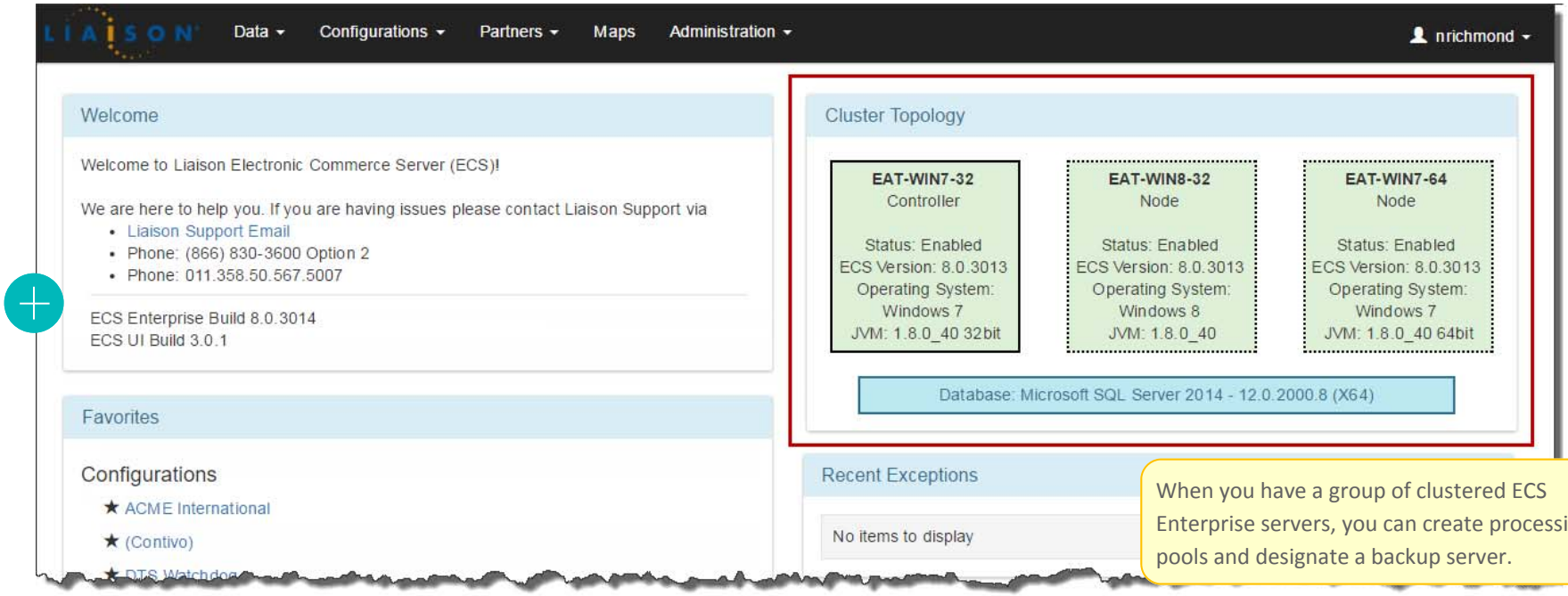
Independent ECS servers have individual databases and are completely unaware of one another. An example of a grouping of independent servers would be separate development, testing, and production environments. All of ECS' client utilities feature helpful tools that allow you to easily register additional ECS servers and move among them.

When you have multiple independent servers, you can mix the various editions of ECS as needed. For example, your development and test servers could run ECS Standard while your production server runs ECS Enterprise.

Clustered ECS Servers

Using ECS Enterprise, you can scale out your processing and manage the workload over a cluster of ECS servers. All ECS servers within a cluster share the same database; when one server is busy, another steps in and handles the processing. For even more efficiency, you can "pool" servers in different configurations. For example, you could create a pool that consists of all servers and assign your most time-sensitive processing to that pool. A second pool could then be created using a subset of servers for less urgent processing.

Beyond scale-out processing, ECS Enterprise also offers integrated failover capabilities. By configuring a backup server, you can avoid downtime in the event that the primary server (controller) fails.



OpenText ECS User Interface

ECS has a web-based user interface, available for all ECS editions, that lets you manage various aspects of ECS from your browser rather than from a command line. From the web-based user interface you can configure, track, and summarize your ECS operations from any computer with a commonly used Web browser such as Google Chrome, Mozilla Firefox, and Apple Safari.

Secure Access

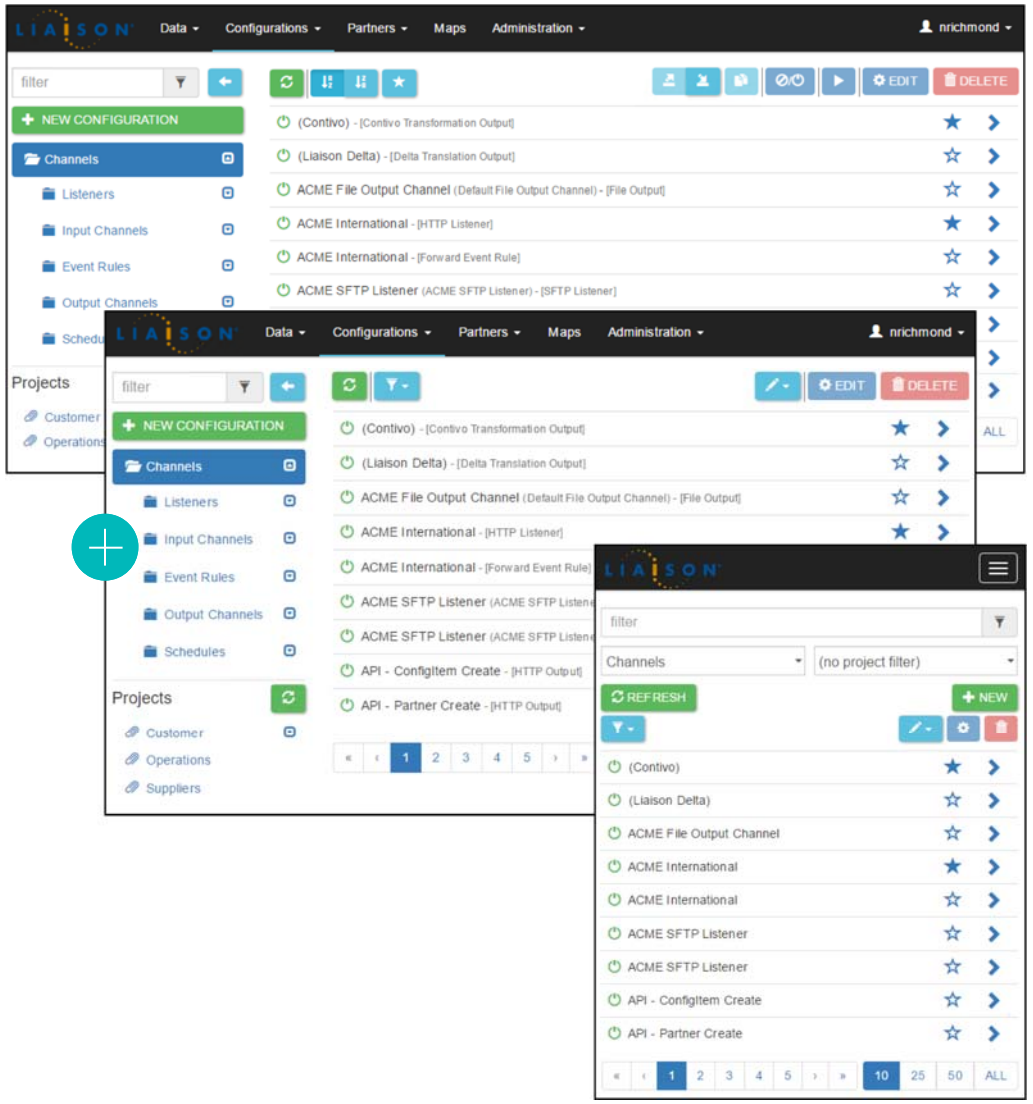
The ECS user interface can be accessed from your browser via the HTTP or HTTPS protocol. Whether your connection to ECS is secured via SSL is based on the configurations you establish for ECS' built- in HTTP listener.

Multi-Tab Support

When working with ECS, you can open multiple browser tabs for a single instance of ECS. This is exceptionally helpful when you are creating a new configuration item (such as an Input Channel) in one window but discover that you need to create a listener to assign to the new input channel. Instead of leaving the record, you can open a new tab in which to create the listener record.

Responsively Designed User Interface

The ECS user interface is designed to be viewed on various types of devices (desktop, laptop, tablet, mobile phone, tablet). The user interface layout changes depending on the screen size and type of device you are using to view the application. At it's smallest, the toolbar and left pane collapse in order to maximize screen real estate.



Sample ECS screen layouts for desktop, tablet, and mobile

As of this writing, the user interface has not yet been rebranded to reflect the OpenText aquisition of Liaison.

Menu Overview

At the heart of ECS is its ability to route and process data. This core function happens at the server level, where ECS runs quietly in the background without user intervention. You'll use these menus to configure how data moves through ECS, to view and track the data that's passing through, and to summarize the data.

Although the ECS menus are only briefly described here, you'll find more detailed information for many of them as you explore the various feature topics in this brochure.

Dashboard

The Dashboard provides a snapshot of your ECS installation and all the activities that have recently occurred. You can configure the dashboard to show any number of modules. Some of the modules, such as the Recent Exceptions module, are interactive. You can click on the Batch ID listed for an exception and the View Data page for that batch opens in a new browser tab.

Data Menu

The Data menu is a window to ECS' data repository, allowing you to review repository data; troubleshoot and restage failed communications; and verify whether items are received or delivered as expected. Additionally, the Data menu provides access to archived data.

Log Viewer

The Log Viewer displays all system events that ECS initiates, including communications sessions, command and script executions, and data translation events to name a few.

Message Bus

The message bus gives you real-time insight into ECS' operations. You can use this menu to view and filter current and pending activity, as well as directly affect current processes. For example, you can change data priority, pause and delete work on the message bus, pause and resume data channels and servers, and view ECS activity in a graphic format.

Configurations Menu

From the Configurations menu you can govern data flow. You'll use it to configure where, when, and how ECS retrieves and delivers data, as well as the events that are applied to the data as it travels through ECS.

Partners Menu

The Partners menu stores trading partner information such as sender/receiver IDs, security settings, and EDI formatting requirements. ECS relies on trading partner information for many functions including data authentication and security application, user account management, and recognition of data senders and recipients.

Maps Menu

If you have Delta and/or Contivo installed, you will have a Maps menu, which allows you to manage your maps directly from the ECS user interface.

Administration Menu

Administrators can create and manage user records, certificates, security groups and other system-wide security settings for ECS.

User Menu

Individual users can set the look and feel of their user interface.

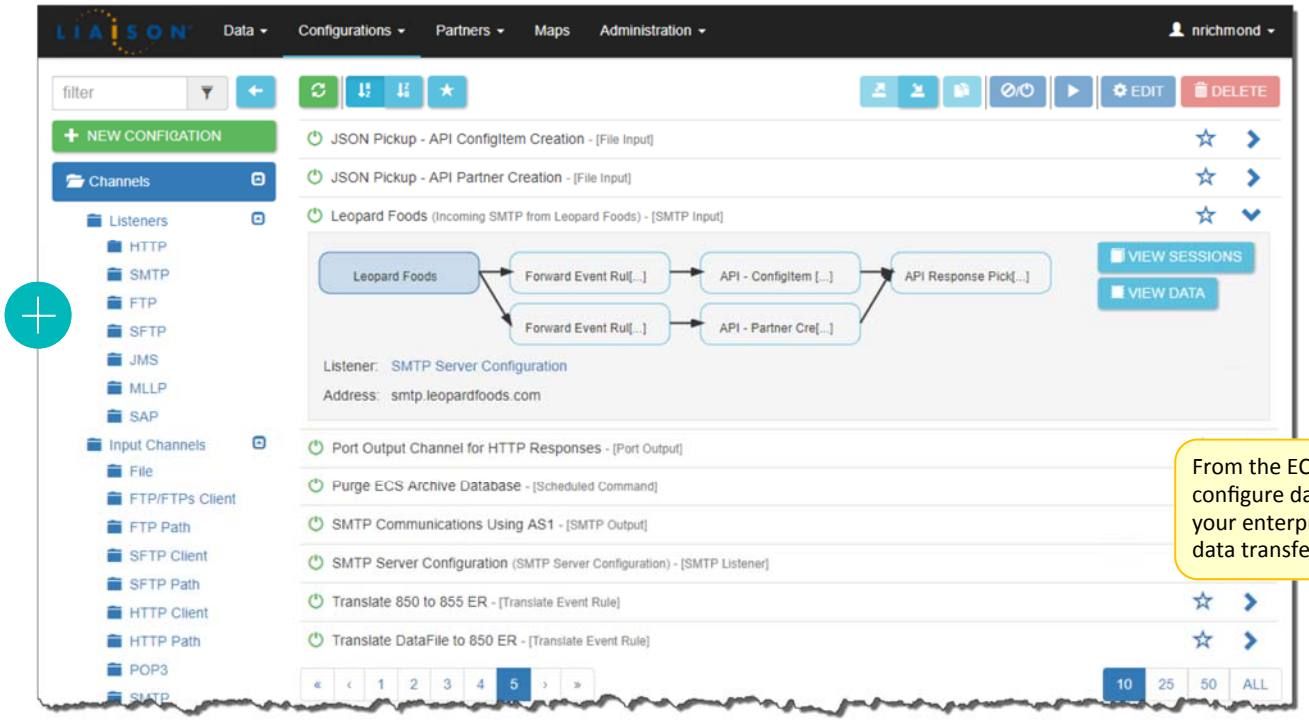
Data Transfer & Security Protocols

ECS communicates using a variety of Internet communications, data transfer, and security protocols. You can use ECS to connect directly with your trading partners or you can use OpenText's value-added network in conjunction with ECS. These protocols provide the following security features for incoming and outgoing messages in ECS:

- **Authentication**. ECS uses digital certificates to verify the identities of the parties that send signed messages to your organization.
- **Integrity**. When digitally signed messages arrive in ECS, ECS performs a hash-based integrity check to verify that message contents were not altered during transmission.
- **Privacy**. ECS uses public-key encryption to ensure that the messages sent by your organization can be viewed and modified only by their intended recipients.

Standard Communication Protocols

- EDIINT AS1, AS2, AS3
- HTTP/S
- FTP, FTP/S, SFTP
- PGP
- SMTP/POP3
- JMS
- SOAP, SwA
- File System
- FTP Server
- OpenPGP & S/MIME (email encryption)
- SSH & SSL/TLS (communications encryption)
- File system
- User-defined (custom command/script)



From the ECS user interface you can configure data to flow into and out of your enterprise using a variety of data transfer and security protocols.

Data Flow Management

Data flow in ECS is governed by input channels, output channels, and event rules. All three of these data flow components can be configured from the ECS user interface.

Input Channels

Input channels determine where, when, and how ECS retrieves data. Each input channel type has its own unique set of properties that you will use to set the parameters for the retrieval and processing of data. These parameters, to name just a few, include where and how often ECS retrieves data, whether duplicate data should be processed, data authentication settings, and the actions that will be performed on the data.

Output Channels

Output channels determine where, when, and how ECS delivers data to external recipients or internal applications. ECS can deliver data as soon as it is queued or according to a schedule. As with input channels, output channels have unique sets of properties for configuring data delivery.

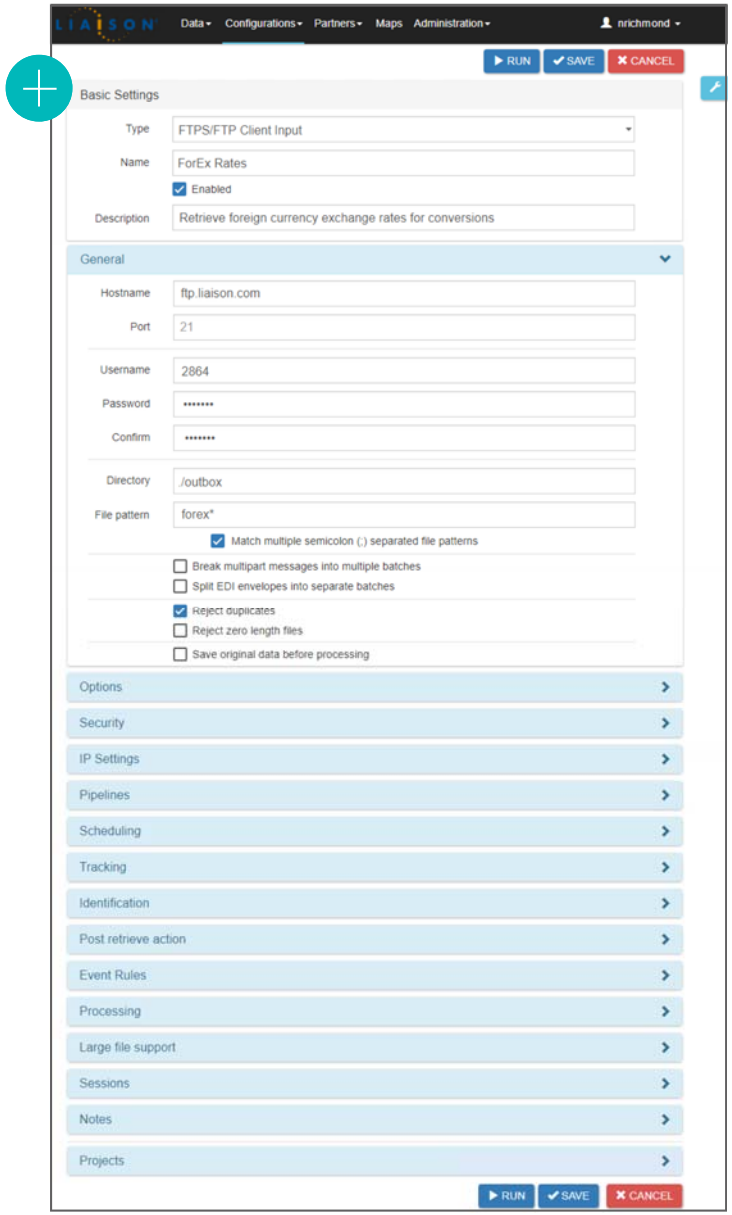
Event-Driven Processing

Event rules determine how data is processed. For example, event rules forward data to output channels, send e-mail messages, and run custom commands and scripts. If the Delta data translator is installed, event rules can also pass data to Delta for translation and integration with your back-end systems.

Typically, event rules are tied to input channels, telling ECS what to do with data when it arrives. But event rules can also be associated with output channels and even other event rules to initiate chains of events upon the completion (or failure) of deliveries or events.

Prioritization

For standard and enterprise edition users, data flow prioritization can be established according to a task's importance to your organization. Every incoming batch receives a priority via the priority assigned to its input channel. As the batch moves through ECS, it retains the highest priority encountered.



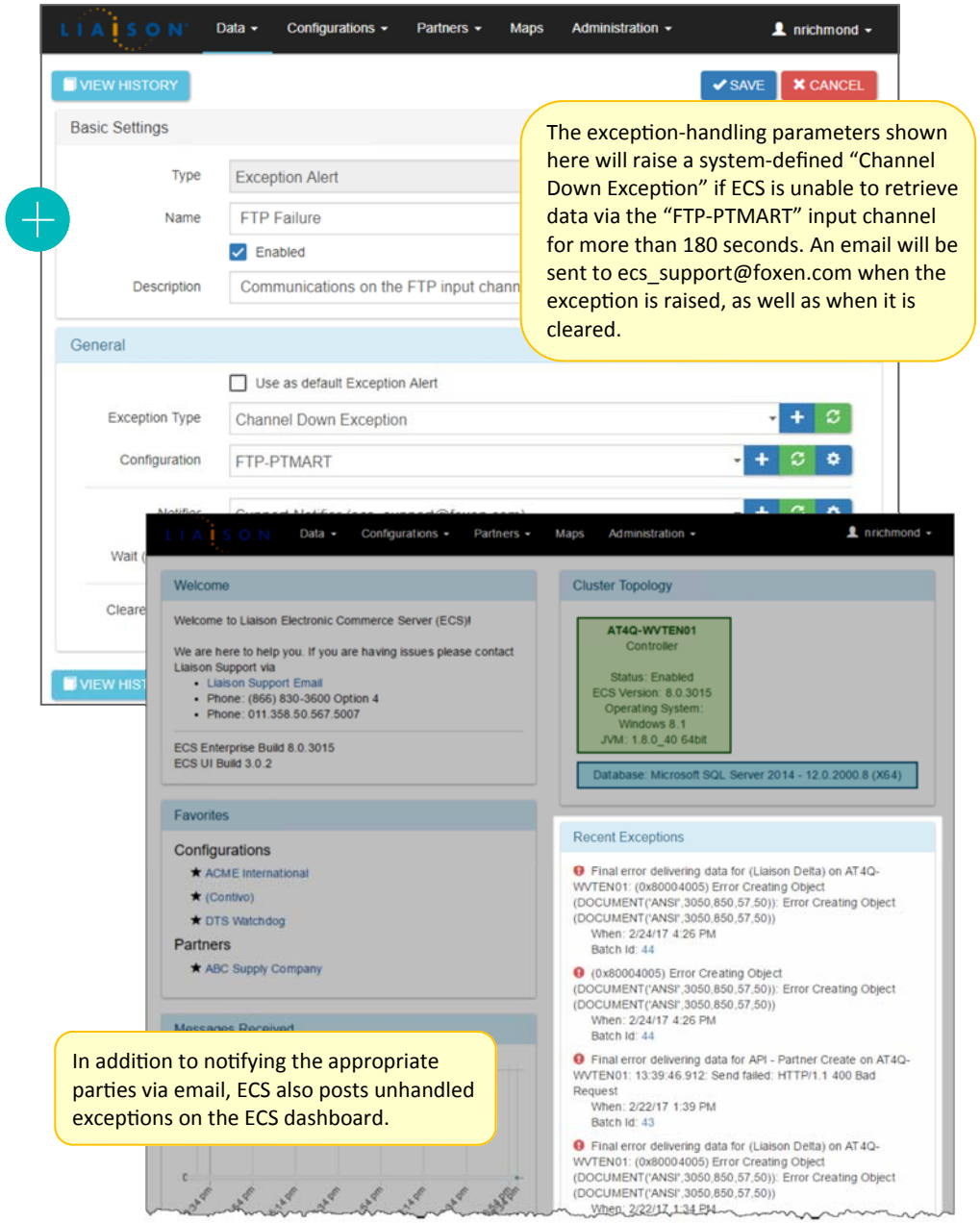
FTP Input Channel Properties

Exception Handling

Some errors require immediate attention. For example, the failure of an important delivery could have a serious impact on your business operations if it goes unnoticed. To ensure that critical errors are brought to your attention in real time, you can configure ECS to notify you when a particular type of error (i.e., exception) occurs. ECS supports several types of exceptions:

- **System-defined exceptions.** These are common types of errors that ECS users universally want to know about such as delivery failures, server failures, of Delta mapping failures.
- **User-defined data exceptions.** ECS Standard and ECS Enterprise users can also create user-defined data exceptions, which monitor the absence of data. For example, you could configure an exception to check for the arrival of monthly production schedules; if a schedule didn't arrive within so many hours or days of its expected arrival, ECS would raise the custom data exception, alerting you to the missing data whose absence might otherwise go unnoticed due to its infrequency.
- **User-defined Delta exceptions.** Delta users can identify mapping conditions that cause user-defined Delta exceptions to be raised in ECS. Unlike ECS' system-defined mapping exceptions, which specifically look for mapping errors, user-defined Delta exceptions can be raised when any type of mapping condition is met. For example, you could create a Delta exception that looked for line item quantities in excess of 1,000 to an older version of a solution or resource, or roll forward to a newer version.

When the conditions of an exception are met during ECS processing, ECS looks to the exception-handling parameters you've defined for that exception. These parameters include how long ECS should wait before raising the exception, as well as who should be notified of the exception — both when it's raised and when it's cleared.

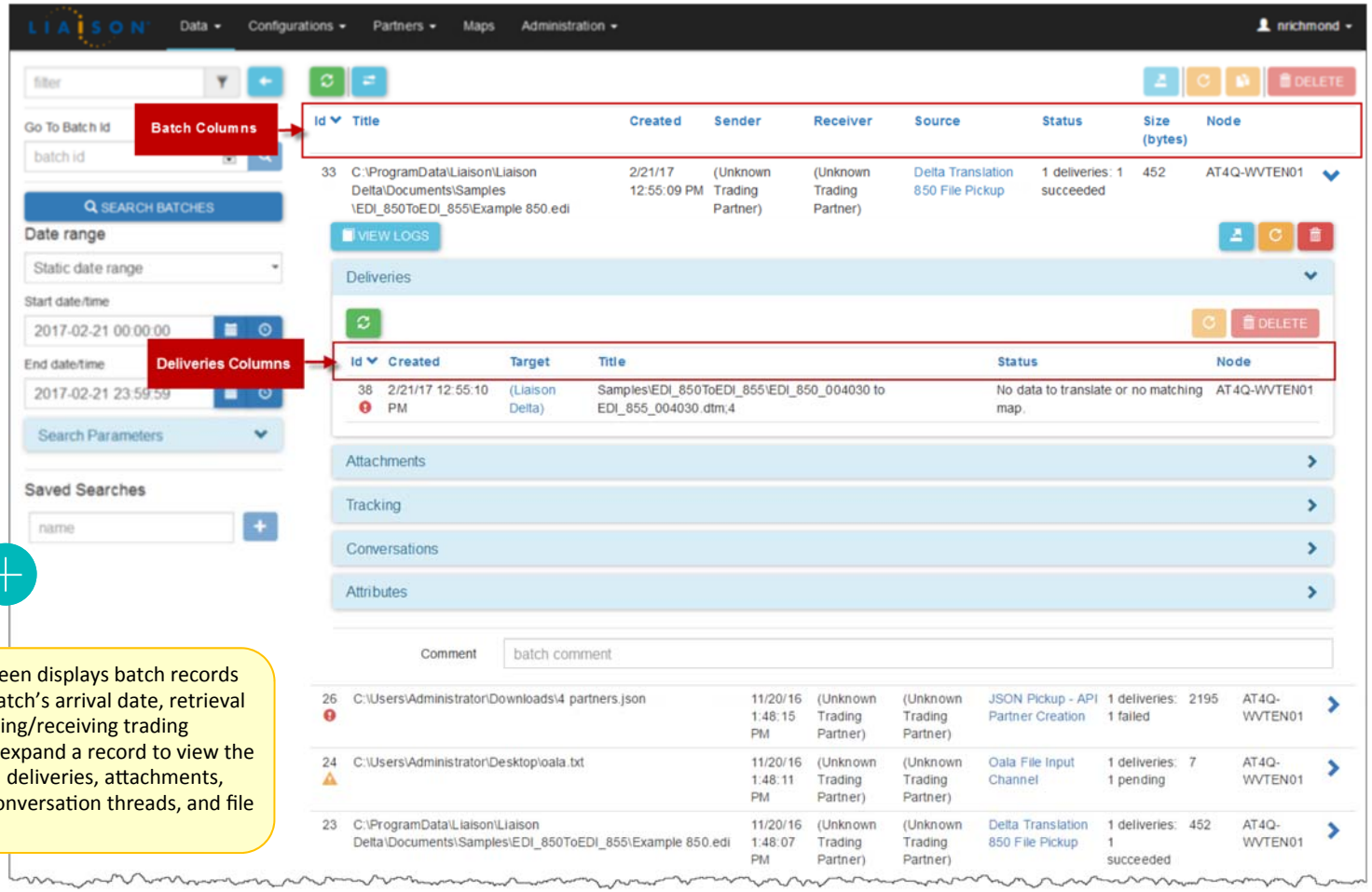


The exception-handling parameters shown here will raise a system-defined "Channel Down Exception" if ECS is unable to retrieve data via the "FTP-PTMART" input channel for more than 180 seconds. An email will be sent to ecs_support@foxen.com when the exception is raised, as well as when it is cleared.

In addition to notifying the appropriate parties via email, ECS also posts unhandled exceptions on the ECS dashboard.

Data Viewing & Tracking

All data that passes through ECS is stored in the ECS data repository. You can view, copy, restage, or restore this data from the View Data page of the ECS user interface. To easily find the data you're looking for, you can filter data in the ECS repository by a number of criteria—used alone or in combination—including retrieval date, input channel, output channel, and delivery status. In addition, you can search for EDI and XML data using document-specific criteria such as document type, interchange control number, and sending or receiving trading partner. When data displays on the View Data page, not only do you see a wide variety of helpful data attributes, but also the processes applied to the data as it moved through ECS. For example, an arriving batch of data forever remains associated with the event rule(s) it triggers and the output channel(s) used to move data through the enterprise.



The View Data screen displays batch records that include the batch's arrival date, retrieval method, and sending/receiving trading partners. You can expand a record to view the batch's associated deliveries, attachments, tracking details, conversation threads, and file attributes.

Security

ECS supports the key aspects of security including access control, privacy, session security, and non-repudiation.

Access Control

ECS manages user access to its various utilities via four predefined roles:

- **Restricted user.** Read only access to the ECS database.
- **Standard user.** Read and write access to the ECS database.
- **Power user.** Read, write, and delete access to the ECS database.
- **Administrator.** Unrestricted access to the ECS database, including the ability to manage other user accounts.

Password Policy

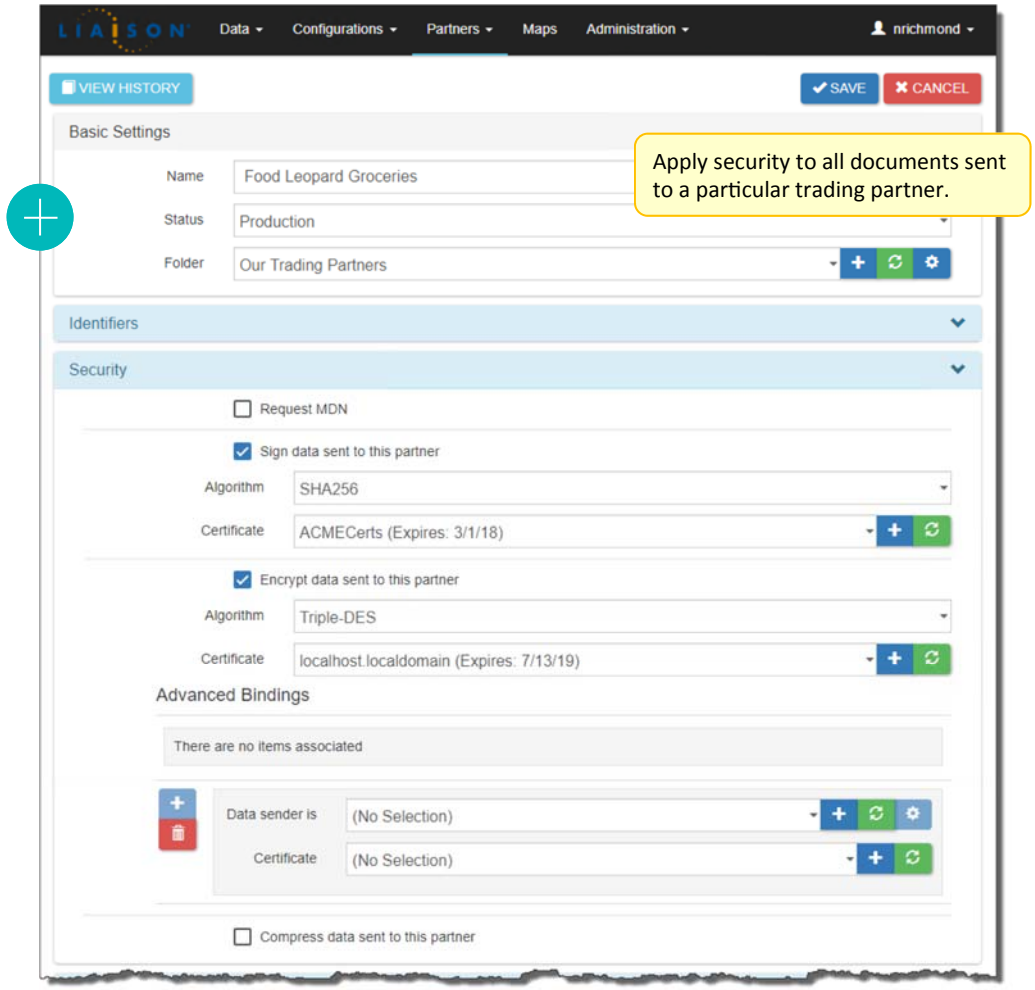
Establish system-wide requirements for user accounts from the ECS UI.

Security Groups

You can further limit access to data by configuring security groups, which limit the data types and the partner data that an ECS user can view. *This feature is not supported in ECS Lite.*

Data Security

To ensure the integrity and non-repudiation of your data, ECS fully supports S/ MIME security, including certificate management, document encryption, digital signatures, and message disposition notifications (MDNs). ECS also fully supports the EDIINT AS1, AS2, and AS3 security specifications, which are built upon S/ MIME security features. Throw in SSL/TLS session-level security for FTP, HTTP, and SMTP communications and your data is secure from every angle.

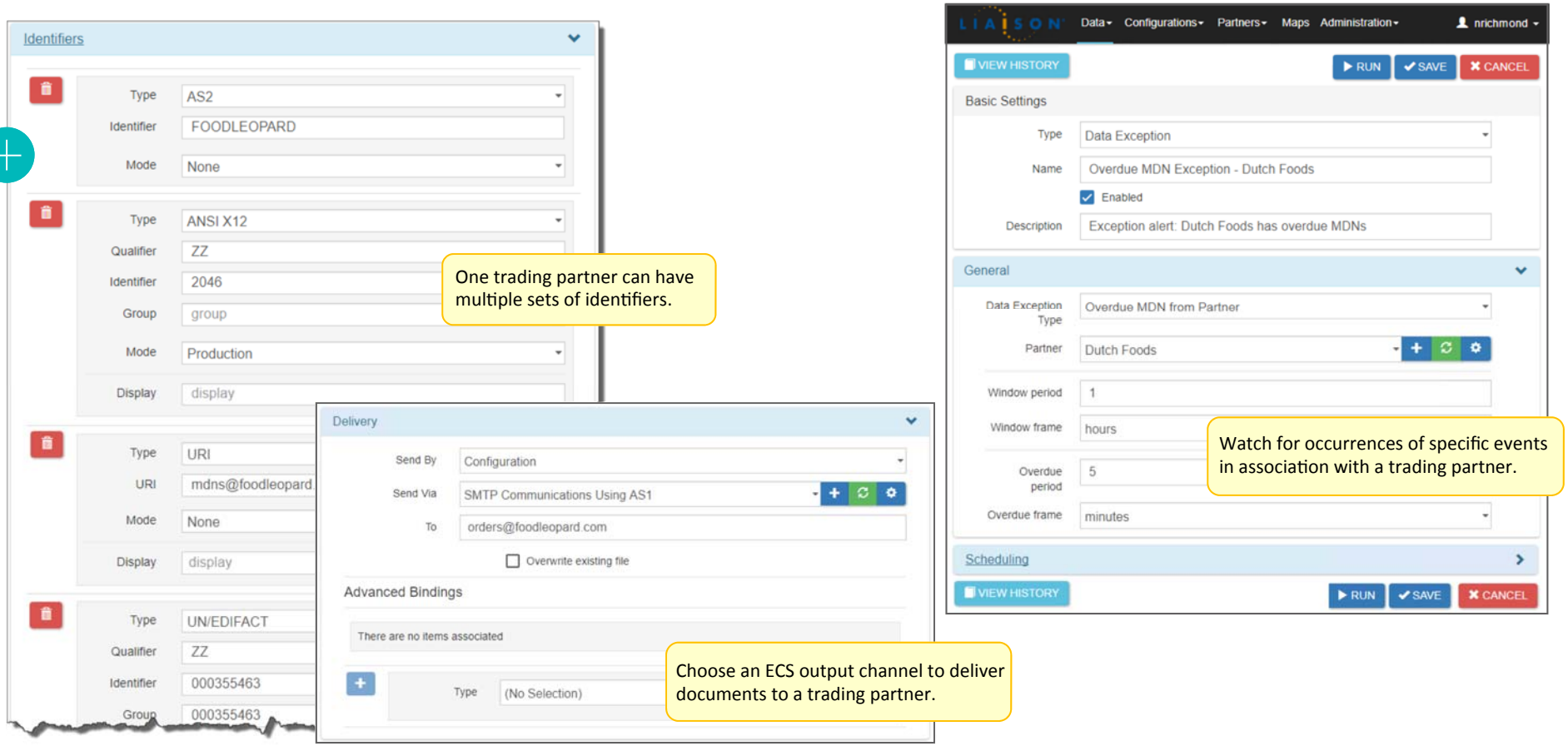


Trading Partner Data Security Settings

Trading Partner Management

From the Partners menu, you can store a wide variety of information for your trading partners such as sender and receiver IDs, security settings, and EDI formatting requirements. By storing sender and receiver IDs, ECS is able to cross-reference the IDs found in incoming and outgoing data and substitute them for your trading partners' names when tracking the data found on the Data menu or generating management reports. In addition, ECS uses the sender and receiver IDs to watch for data that meets the criteria of any event rules that may be assigned to a trading partner's record.

When the Delta data translator is run in conjunction with ECS, trading partner records play a vital role in multiple scenarios such as helping to determine the maps that are run against arriving data, functional acknowledgment generation procedures, the sender and receiver IDs that are applied to outgoing documents, and the ECS output channels to which outgoing documents are handed off.



Additional Components

ECS OpenAPI

Advanced ECS users can fully control, configure, and monitor ECS using ECS OpenAPI, a JSON-based RESTful API provided by OpenText. All functionality found in the ECS web application can be executed using the ECS OpenAPI.

ECS Gateway Server

ECS Gateway Server is an easy to install and configure add-on to ECS Standard or Enterprise Edition. With ECS Gateway you can remove the security risk of opening your firewall to allow direct connections between your external customers and your ECS platform. ECS Gateway allows files to be securely transferred through less secure networks; which typically involves transferring files between ECS and external business partners through a demilitarized zone (DMZ).

Multiple instances of ECS Gateway can be installed to provide scalability and redundancy. It also eliminates the need for expensive third-party solutions to communicate through the firewall to the safe side of the network. The benefits of adding ECS Gateway Server include:

- **Easy to configure.** Once you register ECS Gateway Server in the DMZ, you can simply "promote" a channel out to the DMZ, making configuration as easy as two mouse clicks.
- **Easy to monitor.** ECS Gateway Server runs in the background and has monitoring tools which understand ECS natively, making it intuitive to monitor network traffic and connections.
- **Secure and private.** ECS Gateway Server itself, which runs in the DMZ, communicates to ECS on the safe-side over a secure encrypted port, so all data moving between DMZ and the safe-side will be secure. Also, no temp files or data of any kind are stored permanently or temporarily in the DMZ, so there's no risk of data being accessible.

Note: *ECS Gateway is not available with ECS Lite.*

EDI Notepad

EDI Notepad is the ultimate EDI editor, providing all those clever features you've always wanted when working with EDI transactions. These features include several viewing modes, syntax validation for all EDI standards and versions, edit tools to edit or build EDI documents, document delivery capabilities, and automated functional acknowledgment generation.

Integration with OpenText Delta™

Pair ECS with Delta, our data translator, and you have an enterprise application integration (EAI) solution capable of coordinating the many diverse applications, databases, and e-commerce formats found in your enterprise. In this role as middleware, the two applications work seamlessly together, with ECS delivering data to Delta for translation and then picking it up again for delivery to external trading partners or internal back-end systems. When ECS passes arriving EDI or XML data to Delta, Delta uses the data's content to automatically determine the appropriate map(s) to run. In addition, you can establish map execution schedules from ECS.

When Delta and ECS are run in tandem, you'll have the following additional capabilities, technologies, and features at your fingertips:

- Automated application-to-application integration
- Automated e-commerce -to-application integration
- XML data tracking
- Web services*
- Extensive solution management*

*Requires the Enterprise version of Delta

Need support? Click the link below to visit our OpenText-Liaison support web page:

↳ https://www.opentext.com/support/contact/liaison

ERP App Connectivity

OpenText Delta's ability to map data to and from XML, data file, and database formats makes it an excellent tool for ERP integration. Our clients use Delta everyday to integrate with a wide variety of ERP systems including CargoWise, Infor, and Microsoft Dynamics.

Professional Services

When you purchase an OpenText solution, you're getting a powerful set of tools with which to integrate your enterprise. These tools become even more powerful when used to their fullest potential. OpenText's professional services are designed to help you reach that potential within your own unique business environment. Our talented advisors are always available to share their considerable experience, insight, and knowledge with you — through any or every phase of your enterprise application integration efforts.

Consulting Services

The planning phase is crucial in setting expectations and ensuring a well-thought-out and timely implementation with no surprises. Our consulting service can provide detailed analysis of your current system(s), followed by detailed recommendations on how to best proceed.

Implementation Services

Bring any solution to life with our implementation assistance. From the development of a single map to the installation and development of a fully- functioning EAI system, no implementation job is too big or small for our Professional Services Group.

Training Services

TOpenText offers integration training for ECS and Delta users. In just three days, you will gain a solid understanding of how to use ECS and Delta to accomplish all your e-commerce integration goals.

Managed Services

When you take advantage of OpenText's managed services, our Professional Services Group becomes a natural extension of your IT department, remotely managing any or all aspects of your OpenText integration solution. We can even host your solution at our facilities!

When you allow OpenText to play an active, ongoing role in your e-commerce operations, the benefits are far reaching. Not only do you conserve internal IT resources, but you also have one of the best enterprise application integration teams in the world working proactively on your behalf to help you plan for, implement, and maintain a top-notch integration solution.

To learn more about OpenText's professional services and packages, click the link below:

https://www.opentext.com/products-and-solutions/services