Procedural Document

Unified Parser 2.3

NetApp
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Disclaimer

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1 Overview

The Unified Parser is a Data ONTAP® parsing tool that leverages nSANity output files and AutoSupport™ data to parse them and prepare for a 7-Mode to clustered Data ONTAP transition. The Unified Parser has a GUI interface and is a standalone, single-instance application that assists in NetApp 7-Mode to clustered Data ONTAP transition. The Unified Parser creates a detailed inventory output in XML and Excel formats.

Unified Parser Features and Functionality

The Unified Parser has the following features and functionality:

- Supports parsing details of nSANity output files.
- Supports parsing details of AutoSupport data.
- Supports parsing details of ICT output files.
- Available on Windows® 64-bit (Windows 7, Windows 8, Windows 2008, Windows 2012).
- Supports parsing of Data ONTAP operating in 7-Mode (7.0.x, 7.1.x, 7.2.x, 7.3.x, 8.0.x, 8.1.x, 8.2.x).
- Supports parsing of Hosts (Windows, Linux®, HP-UX, AIX)
- Supports parsing of FC switches (Brocade and Cisco®).
- Creates detailed inventory output in XML and Excel formats.
- Creates summary of objects (aggregates, volumes, LUNs, qtrees, CIFS shares, NFS exports).
- Provides details about SnapMirror®, SnapVault® relationships and interconnectivity between each instance of NetApp storage.
- Supports precheck assessment for NetApp 7-Mode controllers.
- Provides NAS and SAN migration data.
- Provides transition precheck details.

1.1 About this Document

This document describes how to install and run the Unified Parser tool.

1.2 Audience

The primary audience for this document is Professional Service engineers.

2 Installing Unified Parser

This chapter provides the system requirements and steps for installing and configuring Unified Parser.

2.1 System Requirements

Category	Requirements
Operating system	Windows 64-bit
Minimum free space	4GB
System memory	4GB
Applications	Microsoft® Excel 2010 and above

2.2 Installation and Configuration

This section provides the steps for installing and configuring Unified Parser.

1. Download the Unified Parser installation file for a Windows 64-bit-based system.
2. Unified Parser information and download can be found here:

   http://mysupport.netapp.com/tools/index.html?PageNumber=2

   Web-based version: https://up.netapp.com/
3. Ensure that the `setup.exe` and `NetApp_UnifiedParser_x64.msi` files are located in a local folder.

   Note: Do not run the `.msi` file.
4. Run the executable `setup.exe` to install the software listed in this step. If the setup does not install automatically, then individually download the following files:
   - Microsoft .NET Framework 4.5
   - Microsoft SQL Server® 2012 Express LocalDB
   - Microsoft Visual Studio 2010 Tools for Office Runtime (x32 and x64)
   - Unified Parser 2.3
5. Read the license agreement and click Accept to proceed with the installation of the following software.
   - Microsoft .NET Framework
   - Microsoft SQL Server 2012 Express LocalDB
   - Microsoft Visual Studio 2010 Tools for Office Runtime

Figure 1) Install Microsoft .NET Framework.

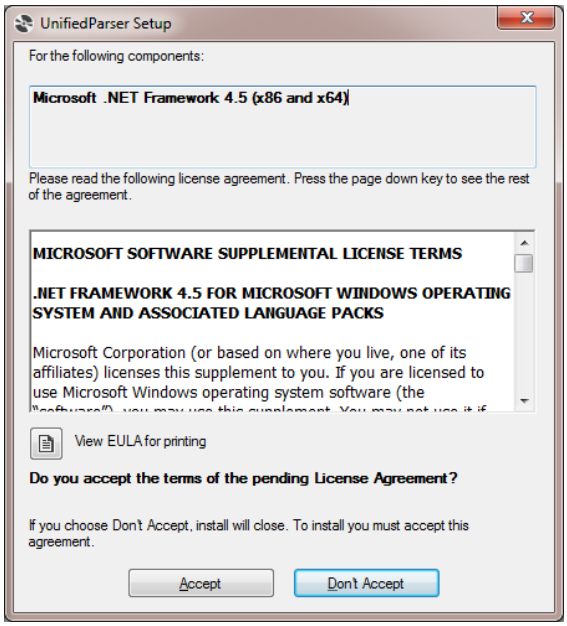


Figure 2) Install SQL Server 2012 Express LocalDB.

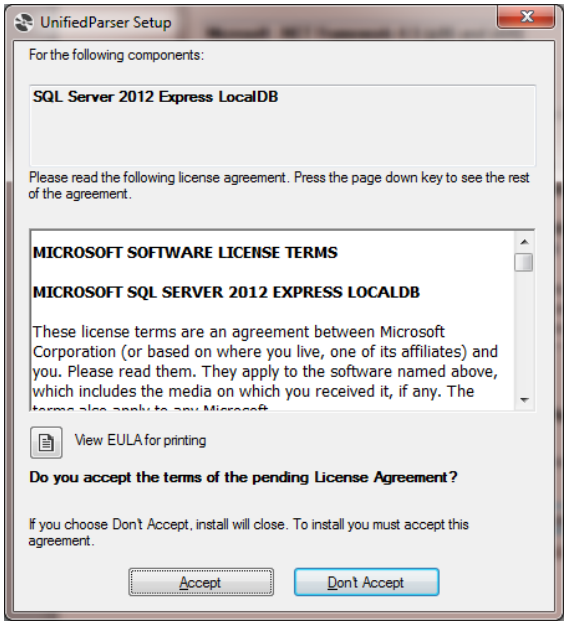
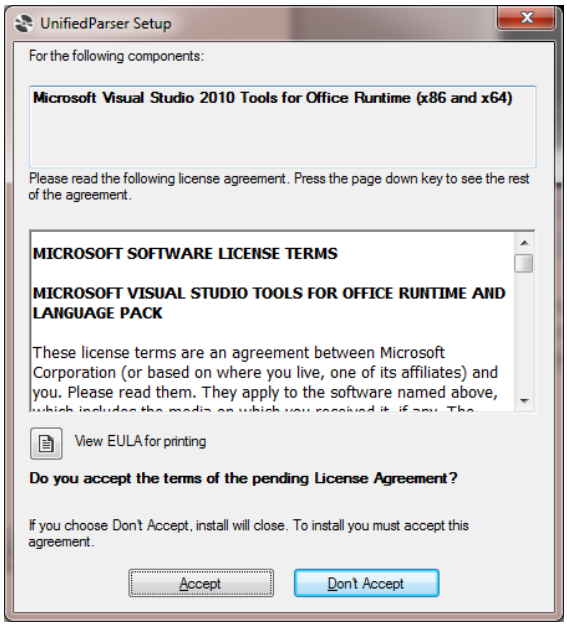
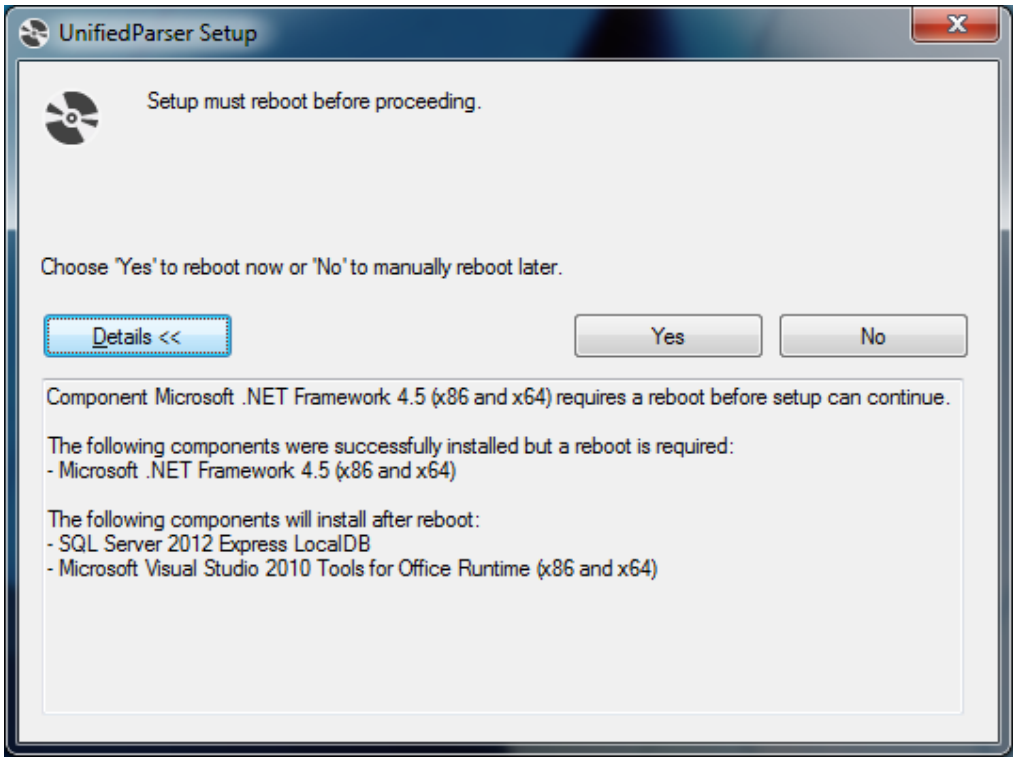


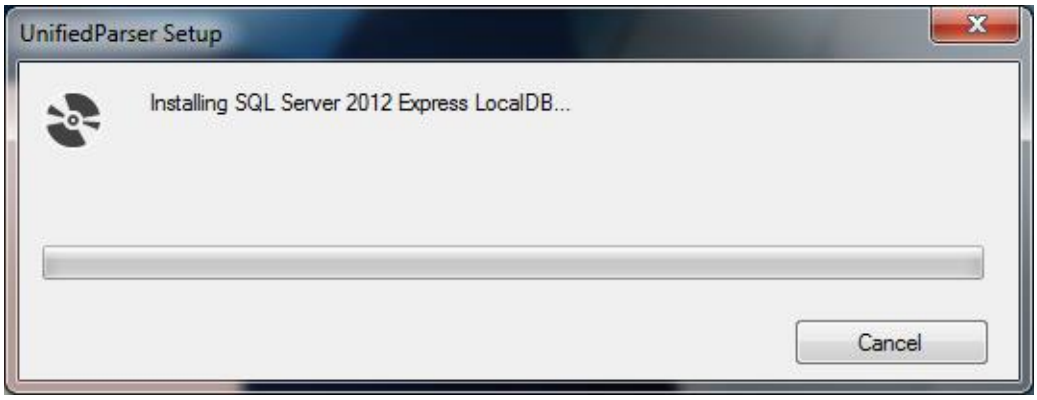
Figure 3) Install Visual Studio 2010.



6. Click Yes to proceed with the installation.
7. Click Yes to reboot the system.

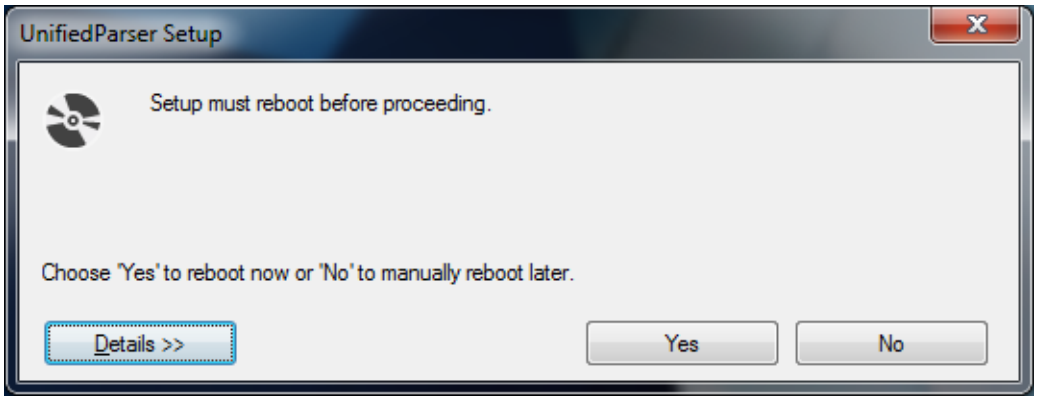


8. Once system reboot is complete, click Yes to proceed with the installation.

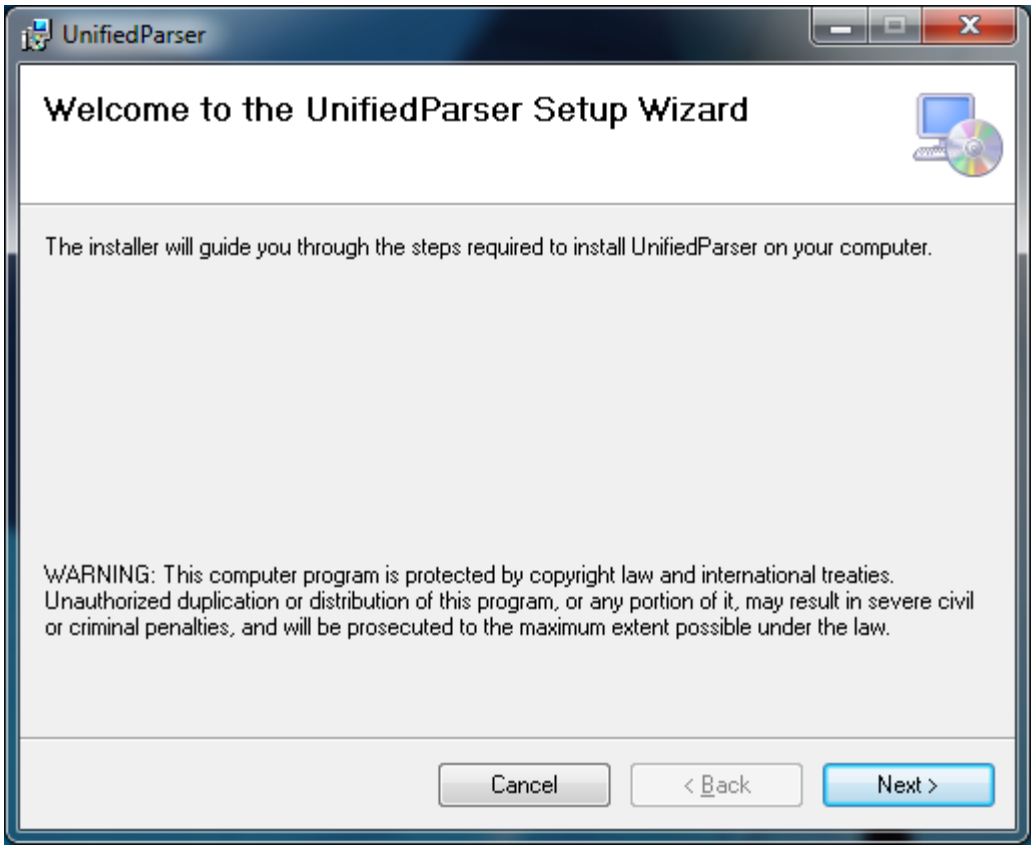


9. Click Yes to allow making changes to the system.

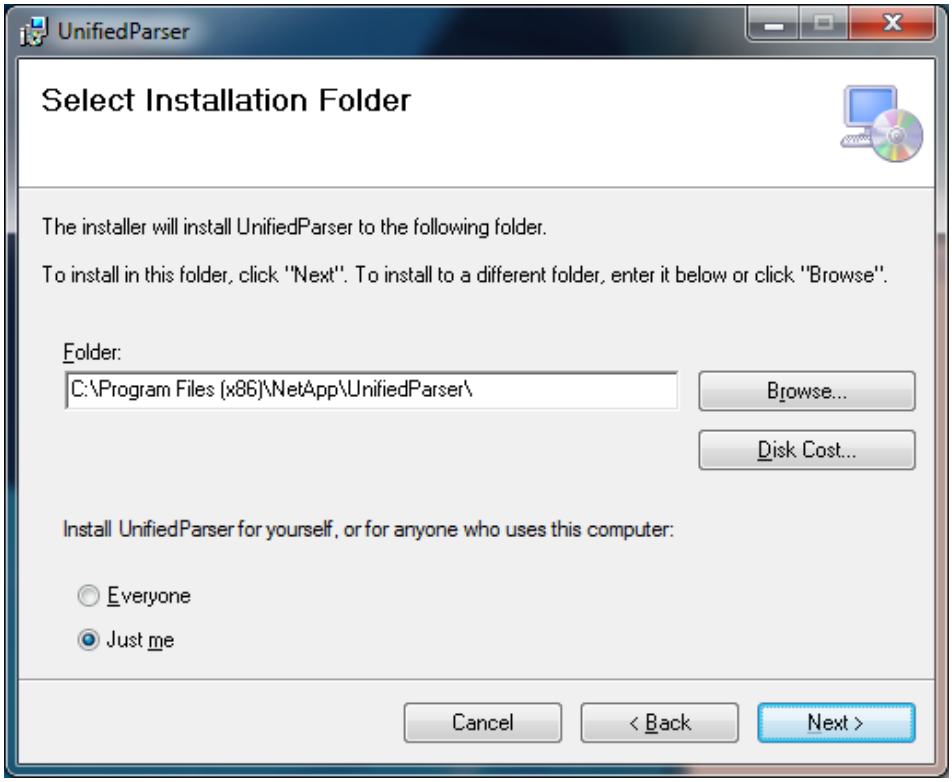
10. Click Yes to reboot the system again.



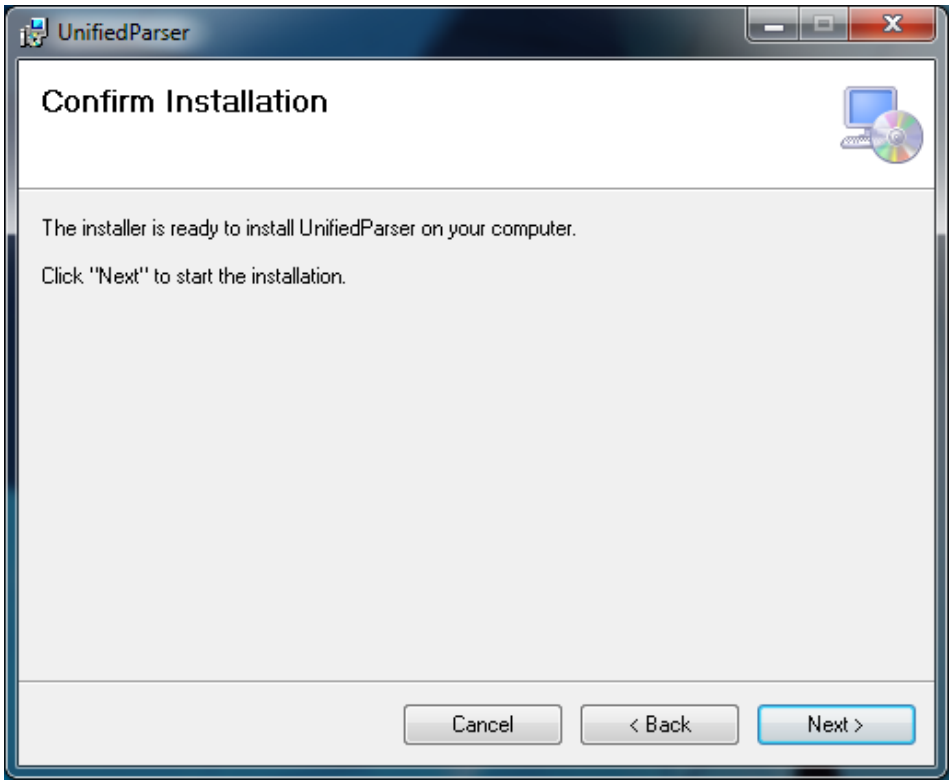
11. Once system reboot is complete, click Yes to proceed with the installation of Unified Parser.



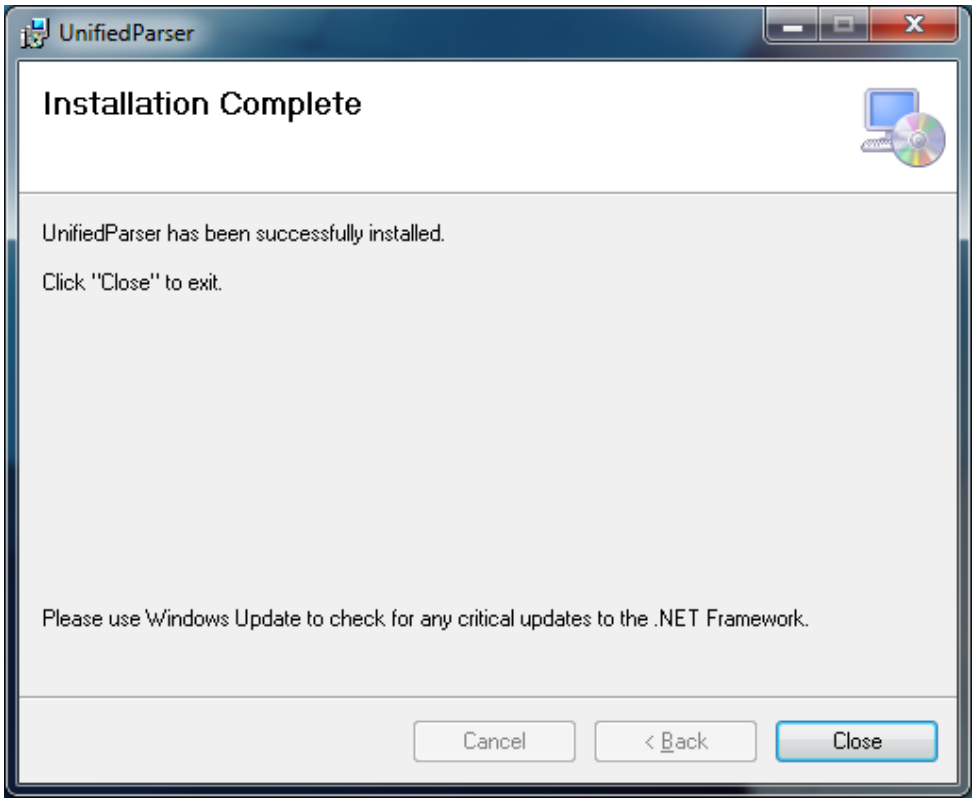
12. Click Browse to choose the installation folder and select the applicable user option. Click Next.



13. Click Next to confirm and Yes on the following screen to complete.



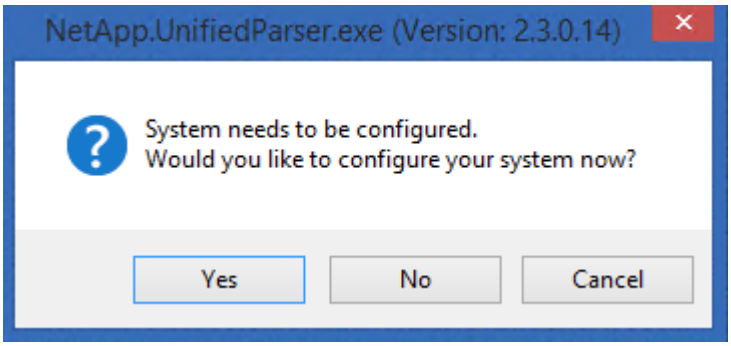
14. Click Close.



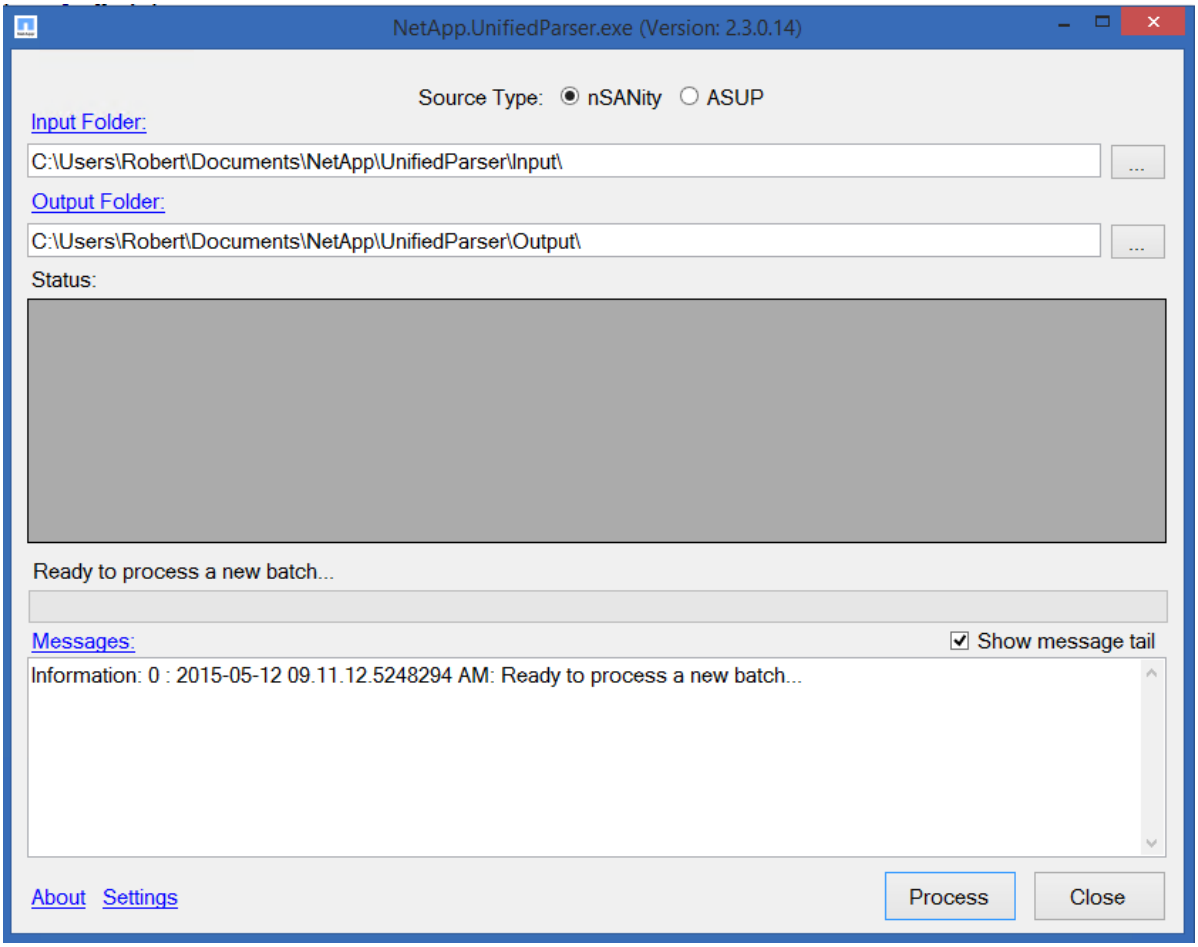
3 Starting Unified Parser

This chapter provides the steps for starting Unified Parser.

1. Click the Unified Parser icon on the desktop to launch the tool.
2. Select Yes to configure Unified Parser.

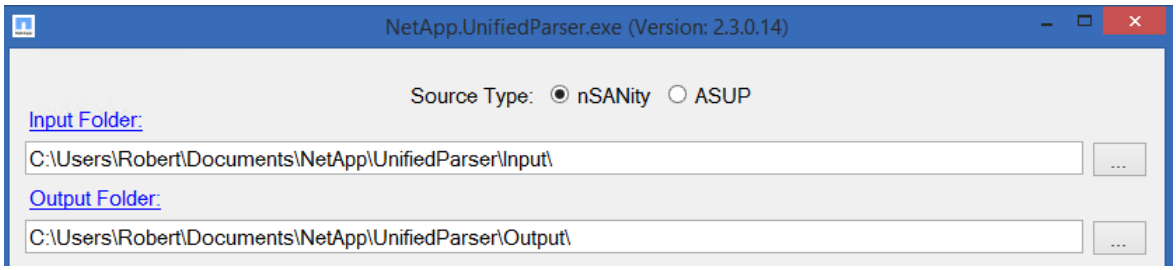


3. A Ready to process a new batch message appears.



Note: The Ready to process a new batch message indicates that the system is configured correctly. To obtain more information about the message, click Messages.

4. To parse nSANity and ICT output files, select nSANity as the Source Type. Click Browse to select an input folder.



5. A Folder Selection Dialog box appears. All `.xml and.gz` files are automatically selected for parsing.

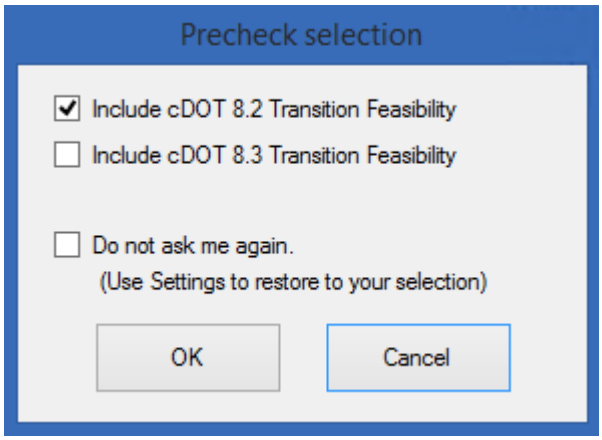
Support Note

- Currently, the selection of individual file is not supported.
- Along with `.xml` and `.gz` files, `.upout` and `.uptrm` files will also be selected. `.upout` is an output XML file created by Unified Parser. `.uptrm` is a trimmed version of input XML file.
- If Unified Parser should detect any formatting or data collection issues with the given input file, then Unified Parser will try to rename `.xml` file to `.uperr` and automatically unselects it on the grid view.
- If one or more `.upout` files are selected in the grid view control then Unified Parser will automatically choose the first selected `.upout` file and ignore all the other files. Unified Parser cannot process more than one `.upout` files at a time; also it cannot process `.upout` and other input files together.

a. Verify output files in Output folder.

b. Click Process to start parsing. Parsing begins.

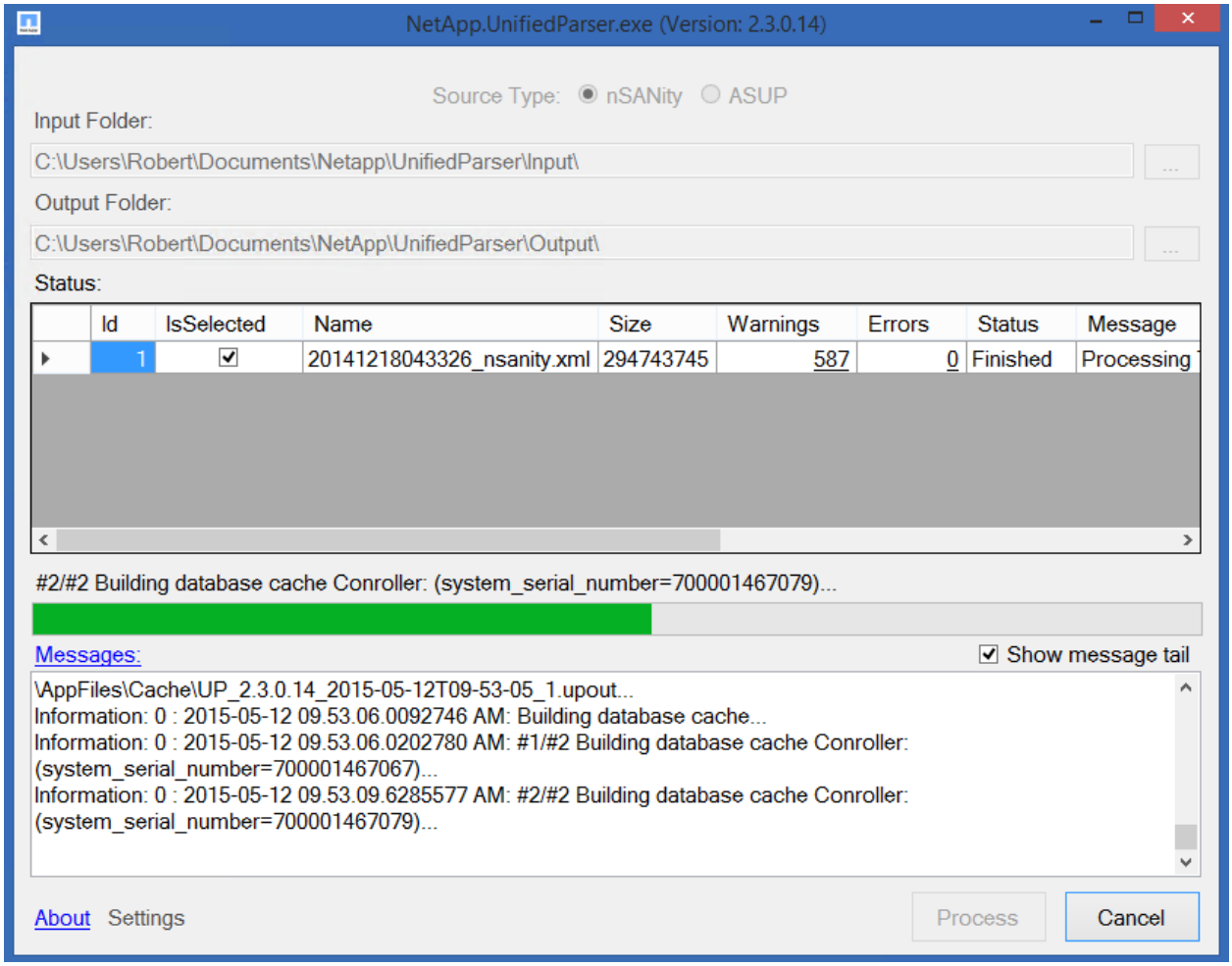
c. A window to select Precheck appears. Choose Target clustered Data ONTAP version or you can choose “Do not ask me again” to parse without prechecks.



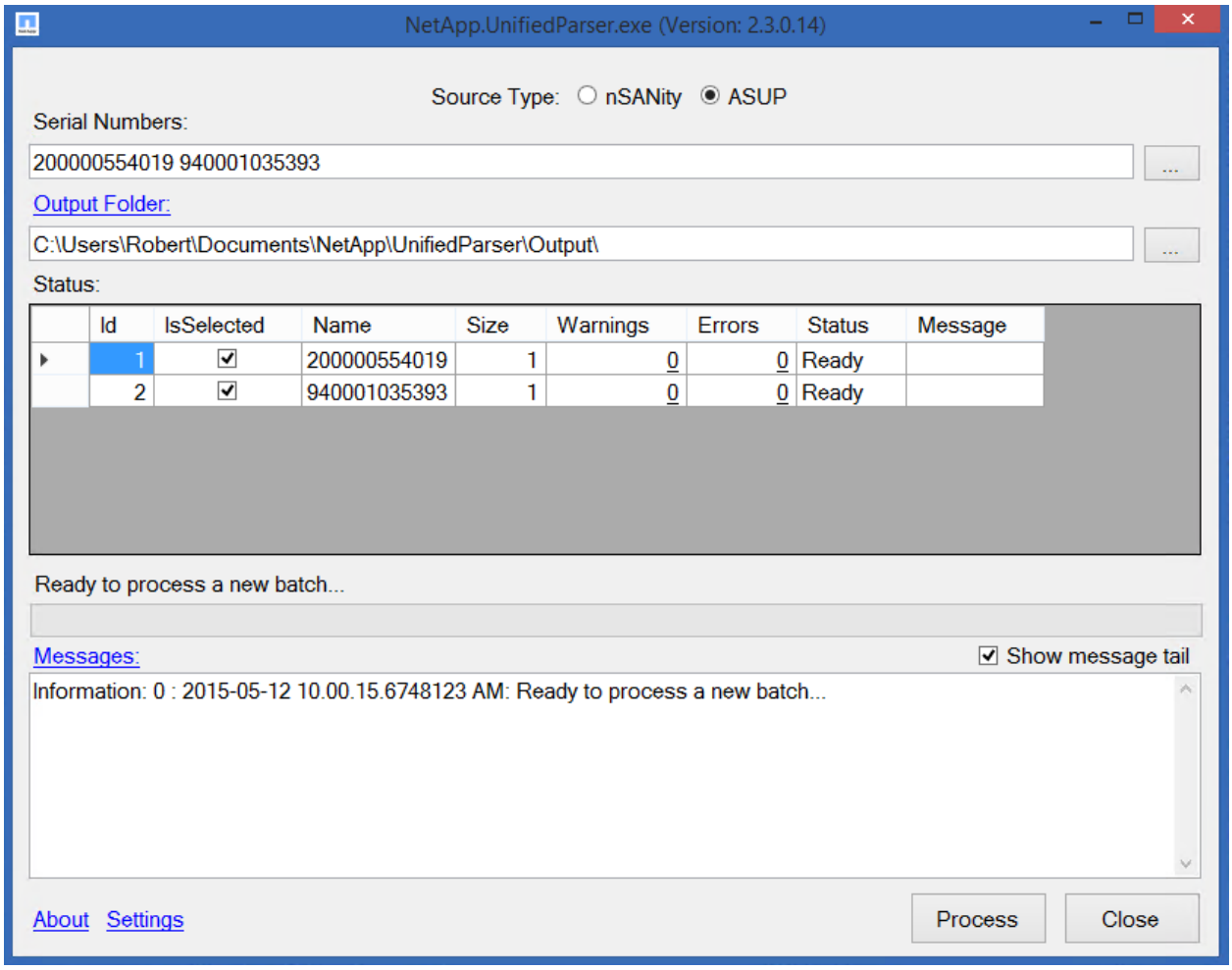
d. The status of the individual file is displayed in the Status grid.

e. The message box provides the status of the parsing process.

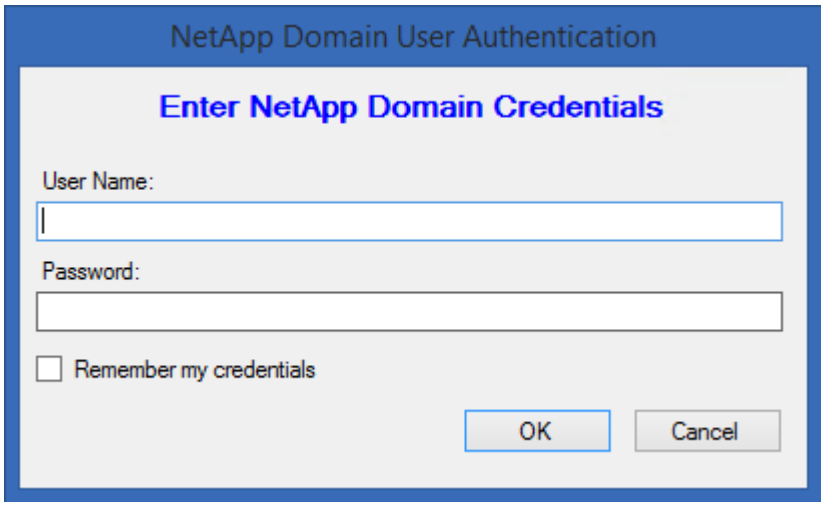
f. A partial view of the message is displayed. To view the entire message, click Messages.



6. The output of the collected data is created in an Excel file. This Excel file automatically opens for viewing and can be saved with a new file name.
7. Choose ASUP as source type to parse AutoSupport data, provide serial numbers in a text file, and provide the path to that text file as input under Serial Numbers. Alternatively you can provide serial number in the serial number text box by separating each number by space or comma or semicolon.
8. Choose Process to start processing.
9. Process begins by downloading AutoSupport data and parsing it.
10. The message box provides the status of the parsing process.
11. The output is collected in an Excel file. The file automatically opens for viewing and can be saved with a new file name.



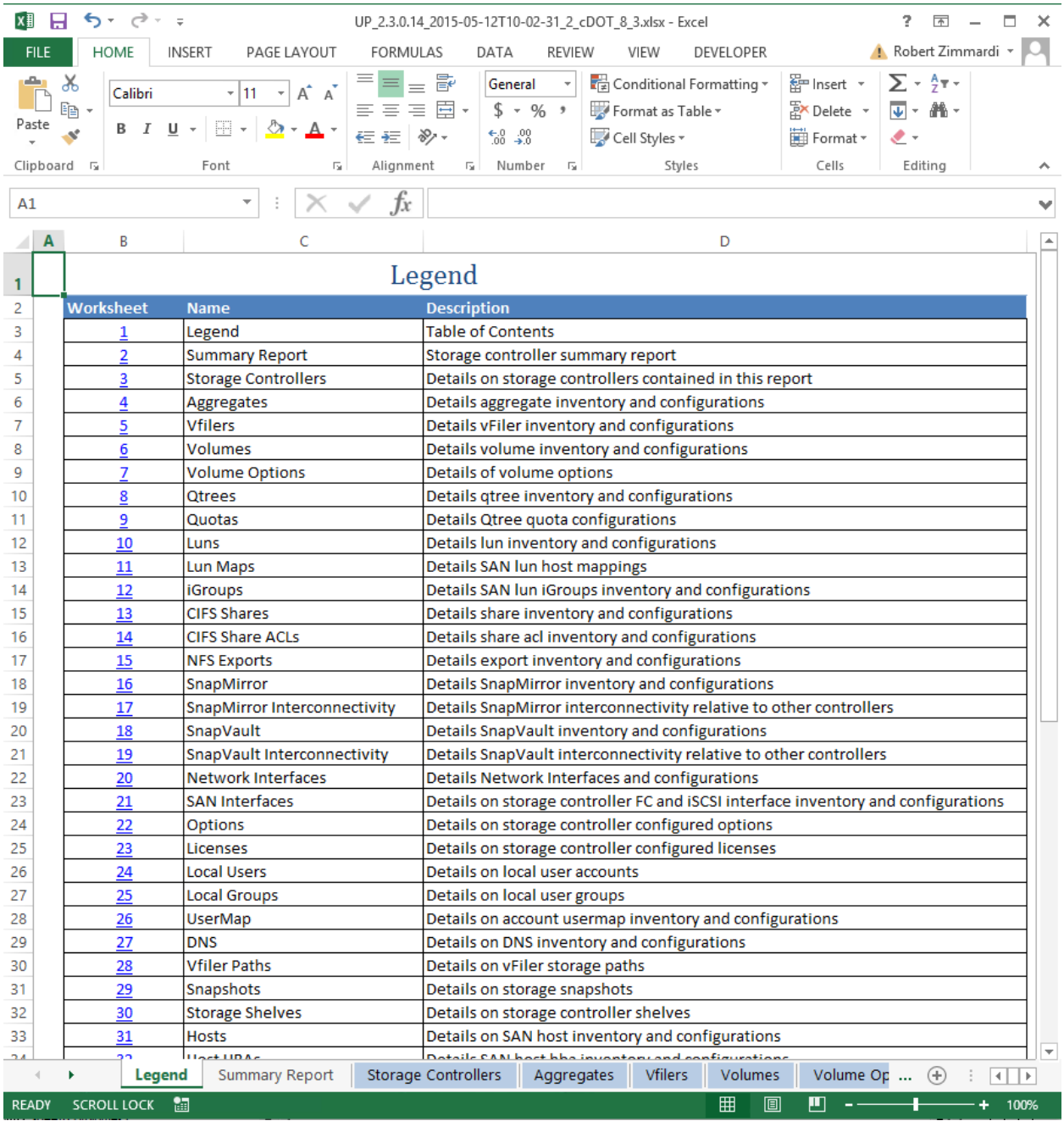
12. After clicking on Process, Enter NetApp SSO credentials.



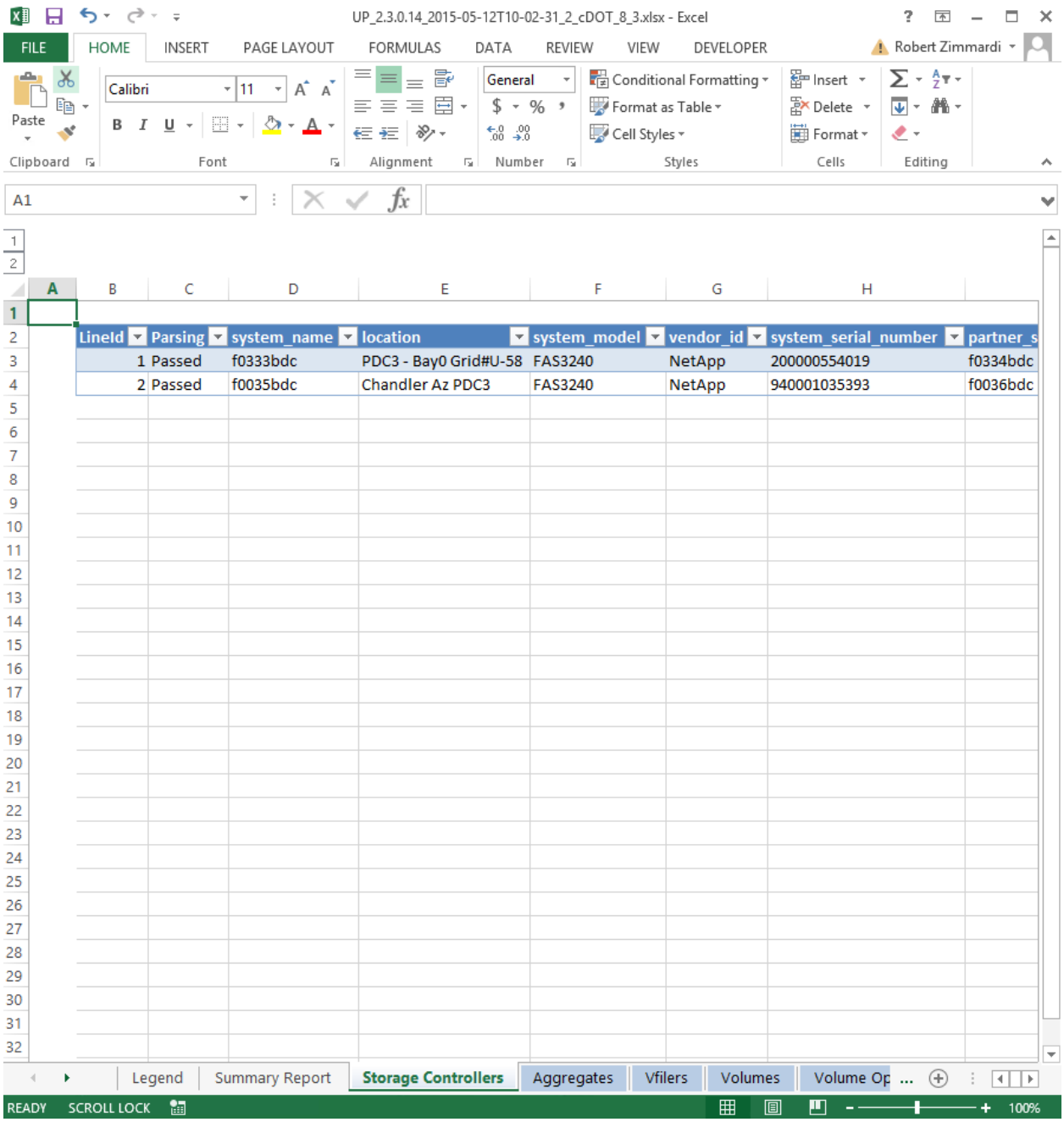
4 Parsing nSANity Data to Create Workbook

This chapter describes the steps for parsing nSANity data to create a workbook.

1. Open the `Unified Parser_[up version number]_YYYY-MM-DDTHH-mm-SS.xlsx` file in the output folder using Microsoft Excel.
   Sample name: `UnifiedParser_2.3.1411.301_2014-11-03T18-38-28.xlsx`.



2. Review the parsed information details in each individual worksheet.



The following are the list of worksheets, which provide the parsed details.

- Legend
- Summary Report
- Storage controllers
- Aggregates
- vFilers
- Volumes
- Qtrees
- Quotas

- LUNs
- LUN maps
- Igroups
- CIFS shares
- CIFS share ACLs
- NFS exports
- SnapMirror
- SnapMirror Interconnectivity
- SnapVault
- SnapVault Interconnectivity
- Network interfaces
- SAN interfaces
- Options
- Licenses
- Local users
- Local groups
- User map
- DNS
- vFiler paths
- Snapshots
- Storage Shelves
- Hosts
- Host HBAs
- Host HBA Ports
- Host LUNs
- Host Partitions
- Host File systems
- Switches
- Switch Ports
- Switch VSANs
- Switch Configs
- Switch Zones
- Switch Aliases
- Migration Master Volume View
- 7MTT NAS Migration Data
- Host NAS Migration Data
- SAN Migration Data
- Undermined Migration Data
- Transition Feasibility
- Transition Precheck Summary
- Transition Precheck Details
- Batch information

5 Uninstalling Unified Parser

This chapter provides steps to uninstall the Unified Parser using Microsoft Programs and Features.

To uninstall the Unified Parser and remove user data, do the following:

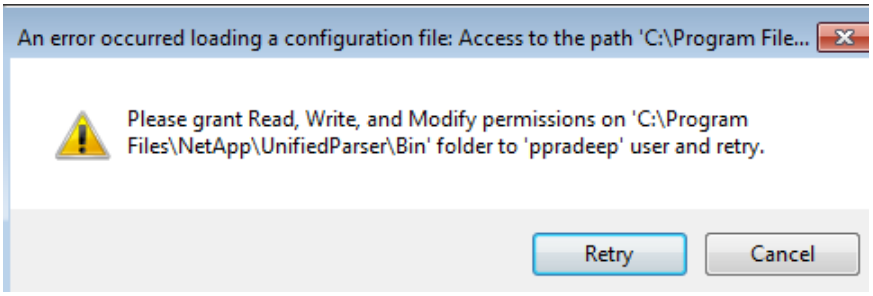
1. Uninstall the Unified Parser application. You do not need to uninstall the following prerequisites:
   - Microsoft .Net Framework 4.5
   - Microsoft SQL Server 2012 express LocalDB
   - Microsoft Visual Studio 2010 Tools for Office Runtime 2010 (x32 and x64)
2. Reboot the system.

   Reboot is a safe way to make sure that your database and other files are not held open by other processes. However, if you know how to verify and make sure the files are available for exclusive access, then you do not need to do a reboot.

6 Troubleshooting and Technical Support

This chapter lists the error messages that might occur, what they mean, and how to remedy the situation.

- **Grant read, write, and modify permissions:** If you get the following error while launching the Unified Parser tool, grant the permission to the folder specified and restart the tool.



- **Unknown error:** If there is any unknown error while uploading the database, then the entire batch is rejected. An unknown error can be the following exception:

```
System.InvalidOperationException : An attempt was made to remove a
relationship between a Batch and a StorageController.
```

  Note: One of the relationship's foreign keys, `StorageController.BatchId`, cannot be set to null.

- Parsing status is displayed in storage controller, hosts and switches tabs in output file as passed or failed. If failed, Unified Parser will list the first error in the second to last column on the worksheet. Unified Parser also details the source file that it used for parsing.
- Unified Parser GUI provides hyperlinks to the errors and warnings allowing users to open the detail on that specific parsing object.

6.1 Support

For support or queries related to Unified Parser, mail your comments to ng-ToolsTeam-UnifiedParser.

Appendix Error Handling Workflow

The Unified Parser 2.3 implements optimistic parsing logic; the parser tries to continue parsing the input data by removing the defecting part of the input data set. A detailed log of all the errors is provided in the log file.

Parsing Stages

1. Select Input Files if nSANity is chosen as Source Type. If AutoSupport is selected, it selects serial numbers from the input text file.
2. Select all `.xml`, `.gz`, `.uptrm` and `.upout` files from the given input folder.
3. Decompress all the `.gz` files. It starts downloading AutoSupport data if ASUP is selected.
4. If an error occurs while decompressing a file, then the entire batch is rejected. When Unified Parser rejects the entire file it tries to rename it to `.uperr` and unselect it from the grid view.
5. Collect or recollect all the `.xml` files from the input folder and start processing the files one by one.

    1.1. Input file validation.
    Validate input XML file with expected XML schema; on error, reject the entire file.

    1.2. Verify nSANity version.
    Unified parser does not support data collected by nSANity versions below 1.2.12; on error, reject the entire file.

    1.3. Remove unwanted components and commands from the file.
    Error: On error, reject the entire file.
    Success: On success, it creates `.uptrm` files.

    1.4. Collect storage controller data from the `trimmed.xml` file.
    If there are no storage controllers, then file is marked **FinishedWithSuccess**.

    1.5. For each file, it processes all the controllers individually.

        1.5.1. The parser code is selected based on component and component type provided in the XML. If no matching parser is found, then that component is ignored.

List of supported components and component types:

```
component
      storage_controller
component_type
      ontap7
      7-mode
      ontap-vfiler
component
      host
component_type
      windows
      linux
      hpux
      aix
component
      switch
component_type
```



```
brocade
cisco
```

1.5.2. The serial number is checked; if it is already processed, then the new controller and remaining contents of the file are rejected. For hosts and switches, name is used to detect a duplicate item.

1.5.3. If the same command is repeated, but the values of collected data are different, then the entire controller is rejected.

1.5.4. Parser commands one by one.

- On unknown errors, reject the entire controller.
- On unknown errors, reject the entire file and mark it with **FinishedWithError**.

Note: If you see similar errors, email your `-trimmed.xml` files to ng-ToolsTeamUnifiedParser.

1.5.5. Add collected data to interim output XML file.

Output file name syntax: `UnifiedParser_[up version number]_YYYY-MM-DDTHH-mm-SS.out`.

Output file name example: `UnifiedParser_2.3.1411.301_2014-11-03T18-38-28.upout`.

Note: File is marked as **FinishedWithSuccess** in the following instances:

- If data is parsed with no errors, then all storage controller data is ready to be cached into the database.
- If either of the following instances occurs, then all the input data associated with that controller is ignored.
  - **No data:** If the parsing process completes, input file has no controller: there was no controller data to parse.
  - **Data known errors:** Two controllers, where one controller has no issue but second controller had duplicate data; this duplicate data is rejected.

    Note: File status does not change beyond this point.

Known Issues

1. If there is an unknown error while uploading the database, then the entire batch is rejected. An unknown error occurs through exceptions such as the following:

   ```
   System.InvalidOperationException : An attempt was made to remove a
   relationship between a Batch and a StorageController.
   ```

   Note: A relationship's foreign keys (`StorageController.BatchId`) cannot be set to null.

2. Cancellation does not work while downloading AutoSupport data.

Refer to the Interoperability Matrix Tool (IMT) on the NetApp Support site to validate that the exact product and feature versions described in this document are supported for your specific environment. The NetApp IMT defines the product components and versions that can be used to construct configurations that are supported by NetApp. Specific results depend on each customer's installation in accordance with published specifications.

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