

Procedural Document

Unified Parser 2.3

NetApp June 2015

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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.

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

2.1 System Requirements

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

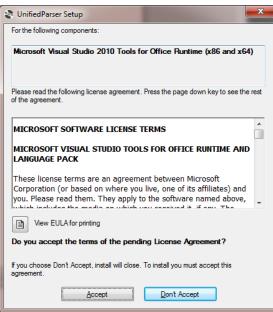
Figure 1) Install Microsoft .NET Framework.

😵 UnifiedParser Setup				
For the following components:				
Microsoft .NET Framework 4.5 (x86 and x64)				
Please read the following license agreement. Press the page down key to see the rest of the agreement.				
MICROSOFT SOFTWARE SUPPLEMENTAL LICENSE TERMS				
.NET FRAMEWORK 4.5 FOR MICROSOFT WINDOWS OPERATING SYSTEM AND ASSOCIATED LANGUAGE PACKS				
Microsoft Corporation (or based on where you live, one of its affiliates) licenses this supplement to you. If you are licensed to use Microsoft Windows operating system software (the "software") you must his complement to the fit				
Wew EULA for printing				
Do you accept the terms of the pending License Agreement?				
If you choose Don't Accept, install will close. To install you must accept this agreement.				
Accept Don't Accept				

Figure 2) Install SQL Server 2012 Express LocalDB.

😵 UnifiedParser Setup				
For the following components:				
SQL Server 2012 Express LocalDB				
Please read the following license agreement. Press the page down key to see the rest of the agreement.				
MICROSOFT SOFTWARE LICENSE TERMS				
MICROSOFT SQL SERVER 2012 EXPRESS LOCALDB				
These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms are specific to a sub-live activity of the software terms are the second terms.	÷			
View EULA for printing				
Do you accept the terms of the pending License Agreement?				
If you choose Don't Accept, install will close. To install you must accept this agreement.				
Accept Don't Accept				

Figure 3) Install Visual Studio 2010.



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

UnifiedParser Setup			
Setup must reboot before proceeding.			
Choose 'Yes' to reboot now or 'No' to manually reboot later.			
Details << No			
Component Microsoft .NET Framework 4.5 (x86 and x64) requires a reboot before setup can continue.			
The following components were successfully installed but a reboot is required: - Microsoft .NET Framework 4.5 (x86 and x64)			
The following components will install after reboot: - SQL Server 2012 Express LocalDB - Microsoft Visual Studio 2010 Tools for Office Runtime (x86 and x64)			

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

JnifiedPar	rser Setup	X
2-	Installing SQL Server 2012 Express LocalDB	
		4
		Cancel

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

-0	Installing Microsoft Visual Studio	2010 Tools for Office Runtime (x86 and x64)

10. Click Yes to reboot the system again.

UnifiedPars	er Setup			×
20-	Setup must reboot before proceeding.			
Choose 'Ye	es' to reboot now or 'No' to manually reboot later.			
<u>D</u> eta	ils >>	Yes	No	

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

🔁 UnifiedParser
Welcome to the UnifiedParser Setup Wizard
The installer will guide you through the steps required to install UnifiedParser on your computer.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel < Back Next >

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

🔁 UnifiedParser			
Select Installation Folder			
The installer will install UnifiedParser to the following folder.			
To install in this folder, click "Next". To install to a different folder, enter it below or click "Browse".			
<u>F</u> older:			
C:\Program Files (x86)\NetApp\UnifiedParser\ Browse			
Disk Cost			
Install UnifiedParser for yourself, or for anyone who uses this computer:			
○ <u>E</u> veryone			
Cancel < <u>B</u> ack <u>N</u> ext >			

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

🖶 UnifiedParser	_ _ ×
Confirm Installation	
The installer is ready to install UnifiedParser on your computer.	
Click "Next" to start the installation.	
Cancel < Back	Next >

14. Click Close.

UnifiedParser			
Installation Complete			
UnifiedParser has been successfully installed.			
Click "Close" to exit.			
Please use Windows Update to check for any critical updates to the .NET Framework.			
Cancel < <u>B</u> ad	ck Close		

3 Starting Unified Parser

This chapter provides the steps for starting Unified Parser.

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

NetAp	p.UnifiedParse	r.exe (Version:	2.3.0.14)
?	System needs to Would you like to	be configured. o configure your sy	ystem now?
	Yes	No	Cancel

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

NetApp.UnifiedParser.exe (Version: 2.3.0.14) - - -	×
Source Type:	
C:\Users\Robert\Documents\NetApp\UnifiedParser\Input\	
Output Folder:	
C:\Users\Robert\Documents\NetApp\UnifiedParser\Output\	
Status:	
Ready to process a new batch	
Messages: Show message	e tail
Information: 0 : 2015-05-12 09.11.12.5248294 AM: Ready to process a new batch	< >
About <u>Settings</u> Process Close	

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.

	NetApp.UnifiedParser.exe (Version: 2.3.0.14)	X
Input Folder:	Source Type:	
C:\Users\Robert\Documents\Net	etApp\UnifiedParser\Input\	
Output Folder:		
C:\Users\Robert\Documents\Net	etApp\UnifiedParser\Output\	

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

Su	pport Note
•	Currently, the selection of individual file is not supported.
•	Along with .xml and .gz files, .upout and .uptrm files will also be selectedupout is an output XML file created by Unified Parseruptrm 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

a. Verify output files in Output folder.

input files together.

- 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.

Precheck s	election	
✓ Include cDOT 8.2 Trans Include cDOT 8.3 Trans	-	
Do not ask me again. (Use Settings to restore	to your selection)	
ОК	Cancel	

- 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.

		NetApp.UnifiedPars	er.exe (Versi	on: 2.3.0.14)			– 🗆 🗙
Input Folder:	-	Source Type:) nSANity C	ASUP			
C:\Users\Rc	obert\Documer	nts\Netapp\UnifiedParser\Input\					
Output Fold	er:						
C:\Users\Ro	obert\Documer	nts\NetApp\UnifiedParser\Output	١				
Status:							
ld	IsSelected	Name	Size	Warnings	Errors	Status	Message
▶ 1	✓	20141218043326_nsanity.xml	294743745	<u>587</u>	<u>(</u>) Finished	Processing [*]
< #2/#2 Buildir	ng database ca	ache Conroller: (system_serial_n	number=7000	01467079)			>
Messages:						Show	message tail
Information: Information: (system_set Information:	0 : 2015-05-12 0 : 2015-05-12 rial_number=7 0 : 2015-05-12	14_2015-05-12T09-53-05_1.upc 2 09.53.06.0092746 AM: Building 2 09.53.06.0202780 AM: #1/#2 Bu 00001467067) 2 09.53.09.6285577 AM: #2/#2 Bu 00001467079)	database ca uilding databa	ase cache Con			~
<u>About</u> Setti	ings				Ρ	rocess	Cancel

- 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.

Nathay			NetA	pp.Unifie	dParser.exe (Ve	ersion: 2.3.0.	.14)		- 🗆 🗙
Se	rial Numb	ers:	Sc	ource Typ	e: O nSANity	ASUP			
20	00005540	19 940001035	393						
Ou	tput Fold	er:							
C:\	Users\R	bert\Documer	nts\NetApp\Unified	IParser\0	utput\				
Sta	atus:								
	ld	IsSelected	Name	Size	Warnings	Errors	Status	Message	
	1	<	200000554019	1	<u>0</u>	<u>0</u>	Ready		
	2	<	940001035393	1	<u>0</u>	<u>0</u>	Ready		
Re	ady to pr	ocess a new b	atch						
	ssages:	0.0015.05.10	10.00 15 074010	2 AM: D.			. L.	✓ Sho	ow message tail
Into	ormation:	0 : 2015-05-12	2 10.00.15.674812	3 AMI: Re	ady to process	a new dato	n		~
Ab	out <u>Setti</u>	ngs						Process	Close

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

NetApp Domain User Authentication
Enter NetApp Domain Credentials
User Name:
Password:
Remember my credentials
OK Cancel

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.

•	5 • ?•		.0.14_2015-05-12T10-02-31_2_cDOT_8_3.xlsx - Excel ? 📧 🗕 🗖
FILE	HOME	NSERT PAGE LAYOUT FOR	MULAS DATA REVIEW VIEW DEVELOPER 🔥 Robert Zimmardi 🔻
-	X Calibri		😑 📴 🛛 🖬 🐨 🔚 Conditional Formatting 🗸 🔛 Insert 🔹 🔎 🛣 Ž 🛪 Ž
Ľ			
aste		┘ · │ · │ <u>◇</u> · ▲ · │ ॡ ॠ	E ≫ - 500 - 00
pboa	rd 🗔		nment 🖬 Number 🖬 Styles Cells Editing
1			fx
Α	В	С	D
L.]	Legend
-	Worksheet	Name	Description
-	1	Legend	Table of Contents
-	2	Summary Report	Storage controller summary report
-	3	Storage Controllers	Details on storage controllers contained in this report
-	4	Aggregates	Details aggregate inventory and configurations
-	5	Vfilers	Details vFiler inventory and configurations
-	6	Volumes	Details volume inventory and configurations
-	<u>7</u>	Volume Options	Details of volume options
-	8	Qtrees	Details gtree inventory and configurations
-	<u>9</u>	Quotas	Details Qtree quota configurations
-	<u>10</u>	Luns	Details lun inventory and configurations
-	<u>11</u>	Lun Maps	Details SAN lun host mappings
-	12	iGroups	Details SAN lun iGroups inventory and configurations
-	13	CIFS Shares	Details share inventory and configurations
-	<u>14</u> 15	CIFS Share ACLs	Details share acl inventory and configurations
-	<u>15</u> 16	NFS Exports	Details export inventory and configurations
-		SnapMirror	Details SnapMirror inventory and configurations
-	<u>17</u>	SnapMirror Interconnectivity	
-	<u>18</u> 19	SnapVault	Details SnapVault inventory and configurations
-	20	SnapVault Interconnectivity Network Interfaces	Details SnapVault interconnectivity relative to other controllers
-	20		Details Network Interfaces and configurations
-	21	SAN Interfaces	Details on storage controller FC and iSCSI interface inventory and configurations
-	22	Options Licenses	Details on storage controller configured options
	23	Licenses Local Users	Details on storage controller configured licenses Details on local user accounts
	24	Local Groups	Details on local user accounts Details on local user groups
	25	UserMap	Details on account user groups Details on account usermap inventory and configurations
-	20	DNS	Details on account usermap inventory and configurations Details on DNS inventory and configurations
-	28	Vfiler Paths	Details on Viler storage paths
1	29	Snapshots	Details on storage snapshots
-	30	Storage Shelves	Details on storage controller shelves
-	31	Hosts	Details on SAN host inventory and configurations
	27		Details CAN best bis inventory and configurations
4	► Leger	nd Summary Report Stor	age Controllers 🛛 Aggregates 🛛 Vfilers 🖉 Volumes 🖉 Volume Op 🕂 🕴 📢

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

		11 • A A		eral 🔹 🛃 Cond	itional Formatting • at as Table •	· Insert · ∑· E× Delete · ↓ · (
B I <u>I</u>	<u> </u>	- <u>A</u> -	€ 🔁 🗞 - 😚 -	🔅 🐺 Cell S		🧮 Format 👻 🗶 👻	
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2 Pa	sseu n	JUSSBUC	Chandler AZ PDC5	FA35240	NetApp	540001055555	10030

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:

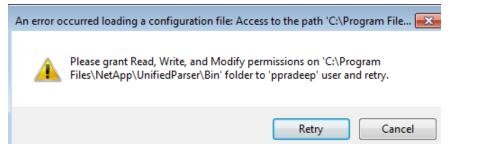
- 1. Uninstall the Unified Parser application. You do not need to uninstall the following prerequisites:
 - Microsoft .Net Framework 4.5
 - Microsoft SQL Server 2012 express LocalDB
 - Microsoft Visual Studio 2010 Tools for Office Runtime 2010 (x32 and x64)
- 2. Reboot the system.

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

- Select Input Files if nSANity is chosen as Source Type. If AutoSupport is selected, it selects serial 1 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-DDTHHmm-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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