Automation Success Utility

Automation Success (Level 1)

Version 2.0 | Last Updated 2020-05-22

Contents

Overview

The Automation Success Utility has been designed to empower the customer's networking engineer to quickly jumpstart their Automation Success initiatives.

The Automation Success Utility executable must be executed following the import of the Automation Success Package that NetBrain will be delivering to the customer automatically using the NetBrain Knowledge Cloud or manually following contact with NetBrain Technical Support.

With successful execution of the Automation Success Utility, the NetBrain platform will start tracking up to tens of thousands of data points for data comparison, alerting, and visualization on pre-existing NetBrain maps with vendor specific Data Views.

NetBrain also highly recommends that consumers of the Automation Success Utility explore the content associated with Automation Success in NetBrain University:

- Power User Learning Path: The complete NetBrain University course track for developing content with NetBrain Integrated Edition.
- NB203 – Deploying Automation Success Level-1: Register for the NetBrain University instructor led training for deploying and using the Automation Success Utility.
- Delivering Value with NetBrain Automation Success Utility (Video): A pre-recorded video that reviews the execution of the of the Automation Success Utility.

Note: You must be logged into NetBrain University to register for instructor led classes, Power User learning path coursework, and to watch the *Automation Level-1* video content.

User Environment Pre-Requisites

The Automation Success Utility executable should be deployed on a separate machine from the NetBrain platform, if possible. NetBrain suggests deploying the executable package on the NetBrain Application (Web) server if no other machine is available.

NetBrain Environmental Pre-Requisites

The NetBrain Automation Success Utility application has the following environmental pre-requisites for deployment:

- The NetBrain Automation Success Package and Automation Success Utility will offer the highest value to users in environments where devices have been "fully discovered" using SSH/Telnet. Devices discovered by SNMP only are not supported.
- The NetBrain Domain has been properly maintained by the customer following NetBrain Domain maintenance best practices or verified by NetBrain Support and Services.

Note: If there is any concerns that the local NetBrain domain may not meet the environmental pre-requisites, contact NetBrain Technical Support so that an environmental review can be performed: support@netbraintech.com.

NetBrain User Account Pre-Requisites

NetBrain requires that a user account with the following privilege level be available in the NetBrain system prior to deploying the Automation Success Utility.

User Account	NetBrain Domain Privilege Level (Minimum)
Advanced User	Domain Management & System Administrator

Importing the NetBrain Automation Success Package

IMPORTANT: The Automation Success Package is only available to customers with NetBrain Integrated Edition 8.0, 8.01, and 8.02 release(s) deployed. If you are interested in upgrading your environment, please contact NetBrain Technical Support at support@netbraintech.com

NetBrain Automation Success Package: Online Update

For customers that permit their NetBrain environment to have internet access – Starting with Integrated Edition 8.0 (and newer), NetBrain has the capability to deliver the Automation Success Package without any customer intervention using NetBrain Knowledge Cloud. This feature is automatically enabled following upgrade to any IE 8.x version.

To help identify if the local NetBrain system is enabled for automatic NetBrain Knowledge Cloud delivery, follow these steps:

1. Log into the NetBrain Admin interface with an account that has *System Management* and *Tenant Administrator* privileges.
   http://<NetBrain IP Address or Hostname>/admin.html

2. Within the *System Management* interface, in the *Quick Access Toolbar*, click "Operations" then "Resource Update".
3. If the local NetBrain system has received a recent update from the NetBrain Knowledge Cloud infrastructure indicating receipt of the Automation Package, the user interface will present as follows indicating the date on which the most recent update was attempted and whether it was a successful (or failed) resource update:

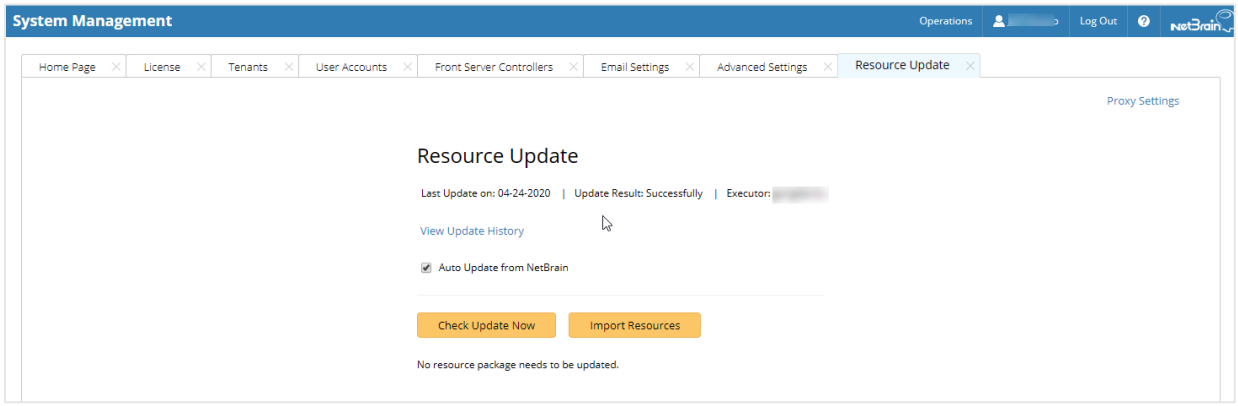

Image – *Resource Update (Successful Online Update)*

Note: If the Resource Update screen reports an Update Result value of *Failed*, contact NetBrain Technical Support: support@netbraintech.com

4. If the local NetBrain system has not received an update or is unable to connect to the internet the Resource Update screen will look like the image below and will most likely require an "Offline Update".

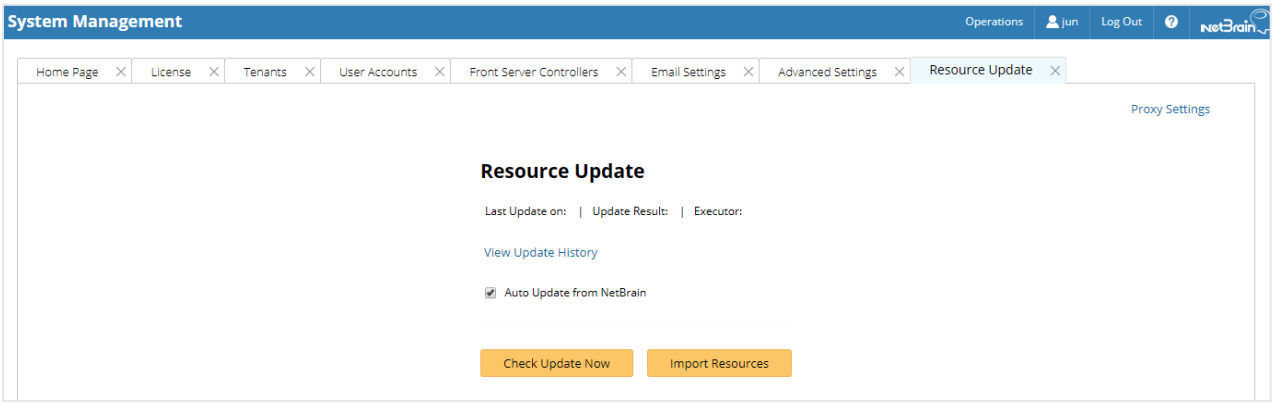

Image – *Resource Update (System Offline)*

If there is any concern regarding the online update process or availability, contact NetBrain Technical Support (support@netbraintech.com) for assistance.

NetBrain Automation Success Package: Online Update - Confirming Package Availability

Once the Automation Success Package is made available by NetBrain to the customer, the local user environment will download and import the package within 24 hours. Following successful import of the Automation Success Package as determined in the previous section, execution of the Automation Success Utility will be required.

To help identify if the local NetBrain system has already downloaded and imported the Automation Success Package using NetBrain Knowledge Cloud, follow these steps:

1. Log into the NetBrain End User Interface with an account that has *System Management* and *Tenant Administrator* privileges.
   http://<NetBrain IP Address or Hostname>

2. From the main user interface desktop, navigate to the NetBrain *Data View Template Manager*
   Start Menu > Dynamic Map > Data View Template Manager

3. In the Data View Template Manager, confirm that a new directory has been made available under the *Built-in Data View Templates* directory called *Auto_Data_View_Template.*

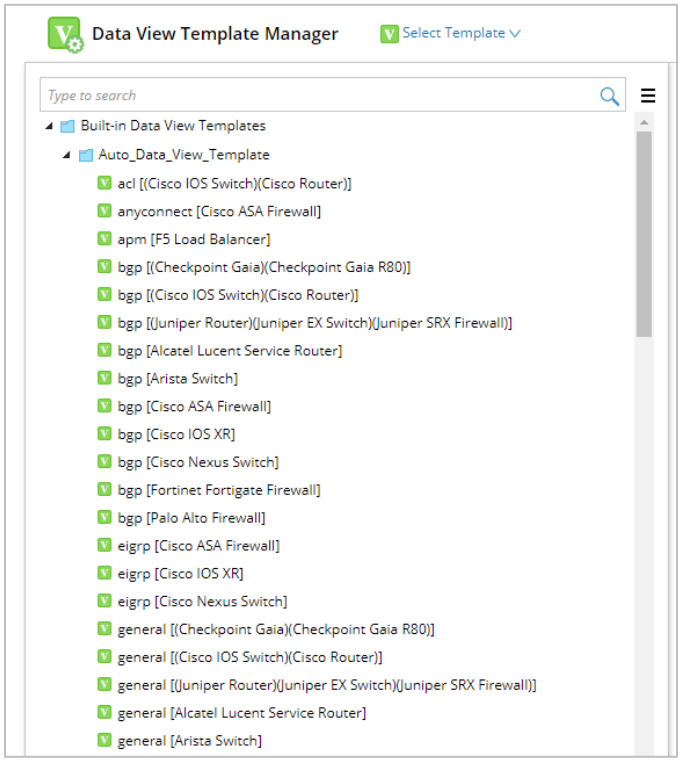

Image – *Data View Template Manager (Auto Data View Templates)*

Note: The Data View Template Manager may need to be manually refreshed to make the new Data Views visible. Click the three horizontal lines, then click "Refresh".

4. If the *Auto_Data_View_Template* directory is not present, the NetBrain system is verified for ONLINE Knowledge Cloud Update, and a manual refresh has been attempted, contact NetBrain Technical Support (support@netbraintech.com) for assistance.

NetBrain Automation Success Package: Offline Update

For customers that do not allow the NetBrain environment to have internet access, NetBrain can still provide the Automation Success Package. NetBrain Technical Support engineers will deliver this in the form of a downloadable package that must be manually imported in the local NetBrain user environment.

Once the Automation Success Package has been imported into the local NetBrain system, execution of the Automation Success Utility will be required.

To import the Automation Success Package provided into the local NetBrain system, follow these steps:

1. Log into the NetBrain Admin interface with an account that has *System Management* and *Tenant Administrator* privileges.
   http://<NetBrain IP Address or Hostname>/admin.html

2. Within the *System Management* interface, in the *Quick Access Toolbar*, click "Operations" then "Resource Update".

3. If the local NetBrain system has not received an update or is unable to connect to the internet the Resource Update screen will look like the image below:

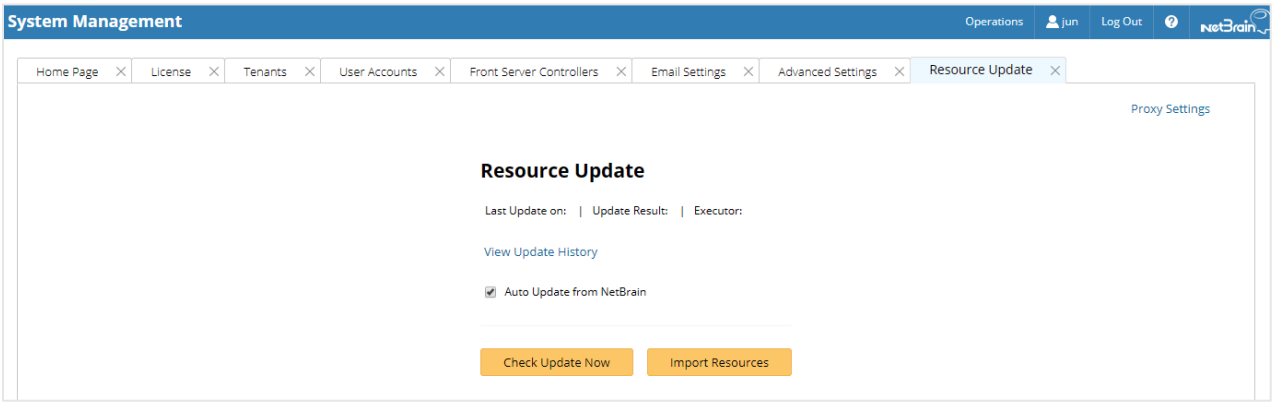

Image – *Resource Update (System Offline)*

4. Click “Import Resources”.
5. Navigate to the location on the local drive where the NetBrain Automation Success package was downloaded to, select it in the *Open* dialog, then click “Open”.
6. Confirm that the Update Result reports “Successful”.

   Note: If the resource update action results in state *Failure*, contact NetBrain Technical Support, (support@netbraintech.com) for assistance.

Getting Started

Before execution of the Automation Success Utility, information about the NetBrain Tenant and Domain must be collected. These data points will be used to ensure that the Automation Success Utility executes correctly on the local NetBrain environment.

Getting Started: Confirming NetBrain IE Version

1. Log into the NetBrain End User interface with an account that has *System Management* and *Tenant Administrator* privileges.

   http://<NetBrain IP Address or Hostname>

2. From the main user interface desktop, in the *Quick Access Toolbar*, click "Help (?)", then "About NetBrain".

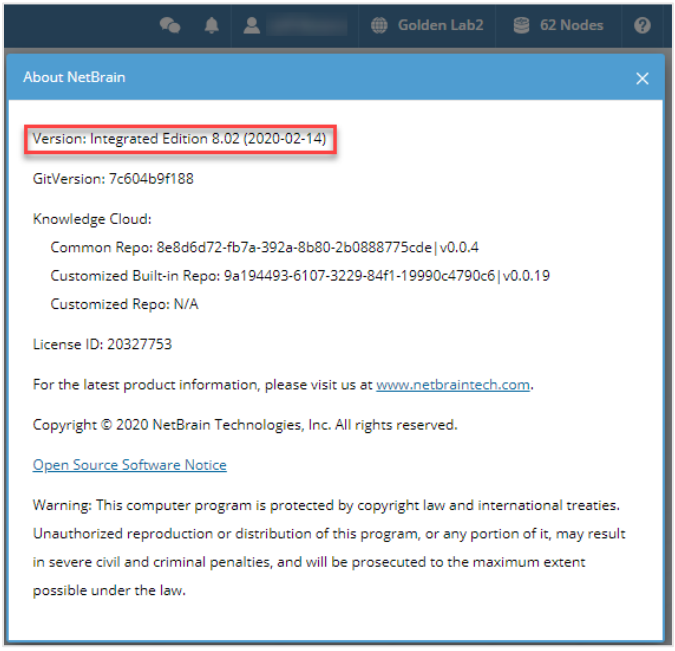

Image – *About NetBrain (Integrated Edition Version)*

3. In the *About NetBrain* dialog, note the version displayed for *Integrated Edition* below:

   NetBrain Integrated Edition Version: _____

Getting Started: Identifying the NetBrain Tenant and Domain

1. Log into the NetBrain End User Interface with an account that has *System Management* and *Tenant Administrator* privileges.

   https://<NetBrain IP Address or Hostname>

2. From the main user interface desktop, navigate to the Quick Access Toolbar and click on the Domain Name.

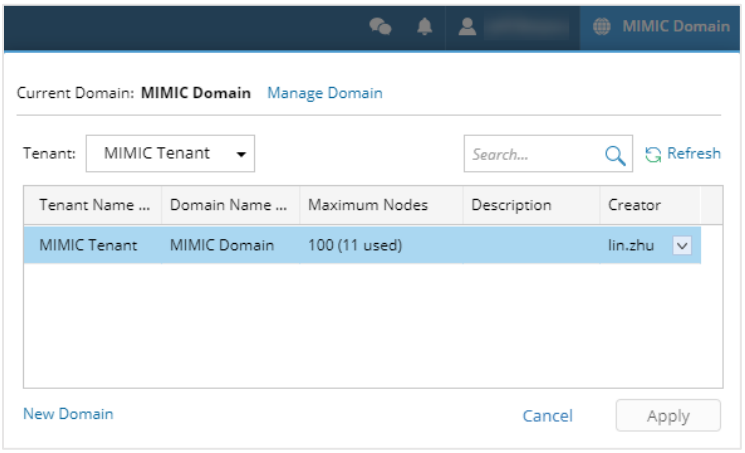

Image – *Domain Selection*

3. In the *Domain Selection* dialog, note the Tenant and Domain IDs below:

   Tenant Name: _____

   Domain Name: _____

Note: This section must be repeated for each Tenant and Domain in the NetBrain system, if applicable.

Getting Started: Creating a NetBrain Device Group

1. Log into the NetBrain End User Interface with an account that has *System Management* and *Tenant Administrator* privileges.
   https://<NetBrain IP Address or Hostname>

2. From the main user interface desktop, navigate to the NetBrain *Device Group Manager*
   Start Menu > Network Resources > Device Group

3. Right-Click “Public” folder, then click “New Device Group”.
4. In the Device Group Properties dialog, complete as follows:

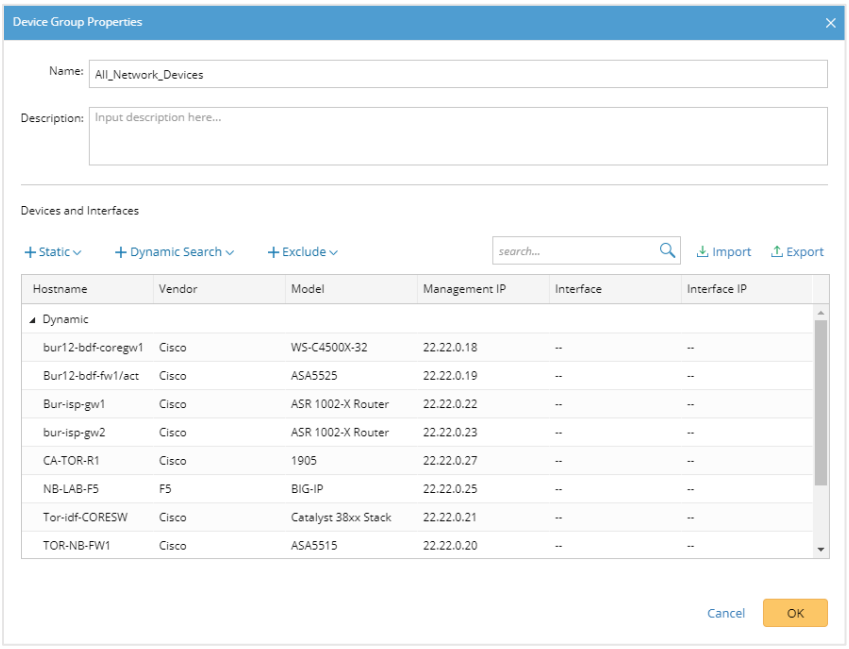

Image – *Device Group Properties*

Field / Setting	**Value**
Name	All_Network_Devices
Description	<Leave Blank>
Devices and Interfaces	Click “+Dynamic Search”, then “Dynamic Search Device” In the *Dynamic Search Device* dialog, set *Device Criteria* to the following: *Front Server > Matches > All Available Front Servers* Click “Search”, then “OK”.

5. Validate that *Devices and Interfaces* is populated with a list of devices, then click “OK”.
6. In the *Device Group Manager*, confirm that the *All_Network_Devices* device group exists, and that the device count is equal to (or greater) than the number of nodes listed in the NetBrain node count in the Quick Access Toolbar.

Note: This section must be repeated for each Tenant and Domain in the NetBrain system, if applicable.

Deploying the Automation Success Utility Package

Automation Success Utility: Installation

The Automation Success Utility application should be installed on a Windows Jump Server or other Windows-based machine that can access the NetBrain platform. If this type of machine is not available in the customer network, the NetBrain Web (Application Server) may be used. The NetBrain Worker / Front Server server(s) should not be used for the Automation Success Utility Application due to the CPU/Memory utilization of the application.

1. Using Microsoft Remote Desktop (or equivalent), log into the local Windows environment with an account that has *administrator* privileges.
2. On the local disk, create a directory called "NetBrain" with a sub-directory of "Automation Success Utility".

   C:\NetBrain\Automation Success Utility

3. Copy the *AS1_Automation_Success_Utility.zip* package to the local machine and extract to the *C:\NetBrain\Automation Success Utility* directory.
4. Using Windows Explorer, navigate to the *C:\NetBrain\Automation Success Utility\bin_windows_Release_x64* directory.
5. Confirm that three directories exist under the *Automation Success Utility* directory

   \Automation Success Utility
   \bin_windows_Release_x64
   \conf
   \data

Executing the Automation Success Utility

Automation Success Utility: Executing the Application

1. Using Microsoft Remote Desktop (or equivalent), log into the local Windows environment with an account that has *administrator* privileges.
2. Using Windows Explorer, navigate to the *C:\NetBrain\Automation Success Utility\bin_windows_Release_x64* directory.
3. Double-click the *NBSupportAssist.exe* file to launch the Automation Success Utility application.

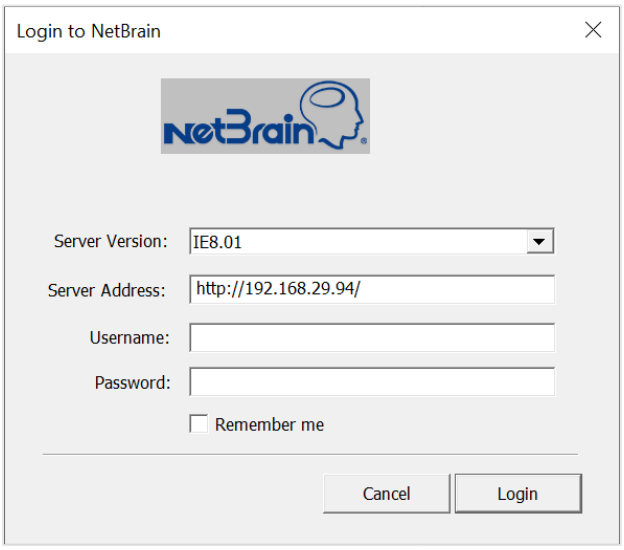

Image – *NetBrain Automation Success Utility (Login Screen)*

4. In the *Login to NetBrain* screen, populate the interface as described below:

Field	Value
Server Version	The deployed NetBrain Integrated Edition version ○ IE8.0 ○ IE8.01 ○ IE8.02
Server Address	http://<WebUI_IPAddress>
Username	NetBrain *Advanced User* account username
Password	NetBrain *Advanced User* account password
Remember me	<Unchecked>

5. On successful login, the *NetBrain Automation Success Utility* application will present the following user interface:

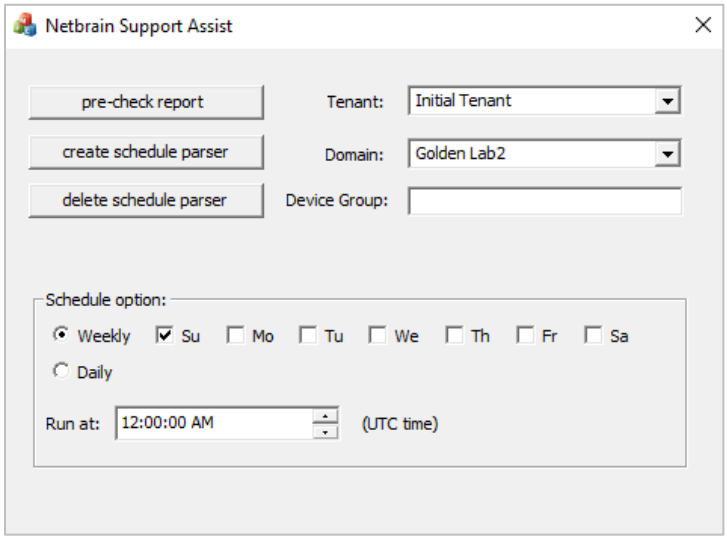

Image – *NetBrain Automation Success Utility (Main Interface)*

6. In the *NetBrain Automation Success Utility* dialog, configure the Tenant, Domain, and Device Group fields that were identified in the chapter, *Getting Started*, earlier in this document:

Field	Value
Tenant	The NetBrain Tenant of the device domain
Domain	The NetBrain Domain Name found in the *Quick Access Toolbar* in the NetBrain End User Interface
Device Group	The manually configured NetBrain Device Group

Note: The *Tenant* and *Domain* fields will be auto populated with information gathered from the local NetBrain system. The Device Group field is a case-sensitive text field that must be manually populated.

7. In the *NetBrain Automation Success Utility* dialog, configure the interface as described below:

Field	Value
Schedule Option	Daily
Run At	12:00AM local system time

Note: NetBrain recommends configuring the application to schedule data collection daily vs. weekly, though the option has been provided.

8. Click the "Create Schedule Parser" button to begin execution. Execution time will be dependent on configured Device Group size and access to the NetBrain platform. Execution time can be anywhere from 10 minutes to 5 hours.

IMPORTANT: During execution the NetBrain Automation Success Utility application will appear unresponsive, however, it is performing its tasks. Ensure that the local Windows environment does not auto-logoff the user otherwise execution will be interrupted and must be restarted.

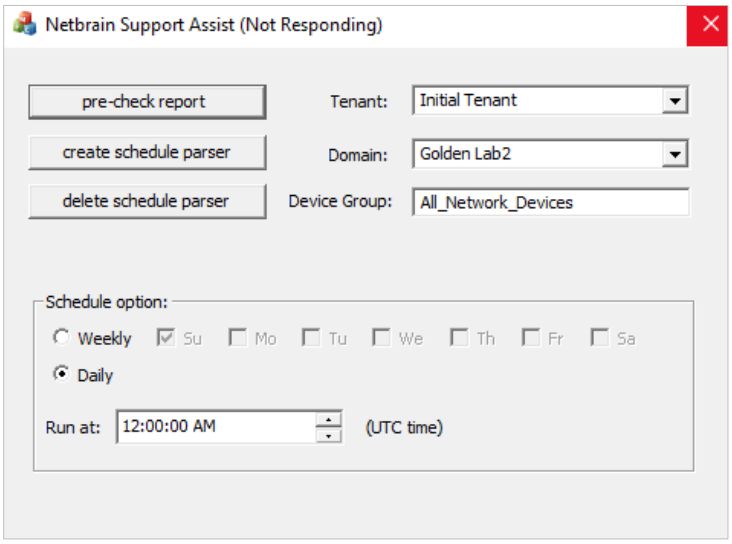

Image – *NetBrain Automation Success Utility (Execution in progress)*

9. Once the scheduling operation has been completed, the NetBrain Automation Success Utility application will pop up a completion dialog indicating that the parsers have been successfully scheduled.

Automation Success Utility: Confirming the Results (Output Report)

1. Using Windows Explorer, navigate to the *C:\NetBrain\Automation Success Utility\data\output* directory.
2. Confirm that the *output* directory contains a directory for each of the Tenant IDs configured in the NetBrain platform.
3. Navigate to the tenant directory that was configured in the *devicegroup.json* file
4. In the tenant directory, confirm that a *DomainName.csv* file exists in the directory with the domain name configured in the *devicegroup.json* file.
5. Using Microsoft Excel (or Notepad++), open the *DomainName.csv* file
6. Scroll to the bottom of the file and review the values:

Field	Value
Total Matched Devices	Number of devices in the Device Group that matches an available parser provided by NetBrain
Total Matched Parsers	The total number of CLI parsers matched to enabled features on the devices (multicast, ospf, bgp, etc)
Total # of Parsers	Total number of matched CLI parsers that have been scheduled across all matched devices.

7. Close the *DomainName.csv* file

Automation Success Utility: Confirming the Results (Scheduled Parsers)

1. Log into the NetBrain End User Interface with an account that has *System Management* and *Tenant Administrator* privileges.

   http://<NetBrain IP Address or Hostname>

2. From the main user interface desktop, click the Domain Name in the quick access toolbar.

3. In the *Domain Selection* dialog, click “Manage Domain”.
4. In the *Domain Management* user interface, click “Schedule Task”.
5. In the *Schedule Task* tab, click “Schedule Data View Template/Parser”.
6. Confirm that parsers have been properly scheduled and enabled. All parsers scheduled by the NetBrain Automation Success Utility application will be called *_nb_schedule_parsers_*.*

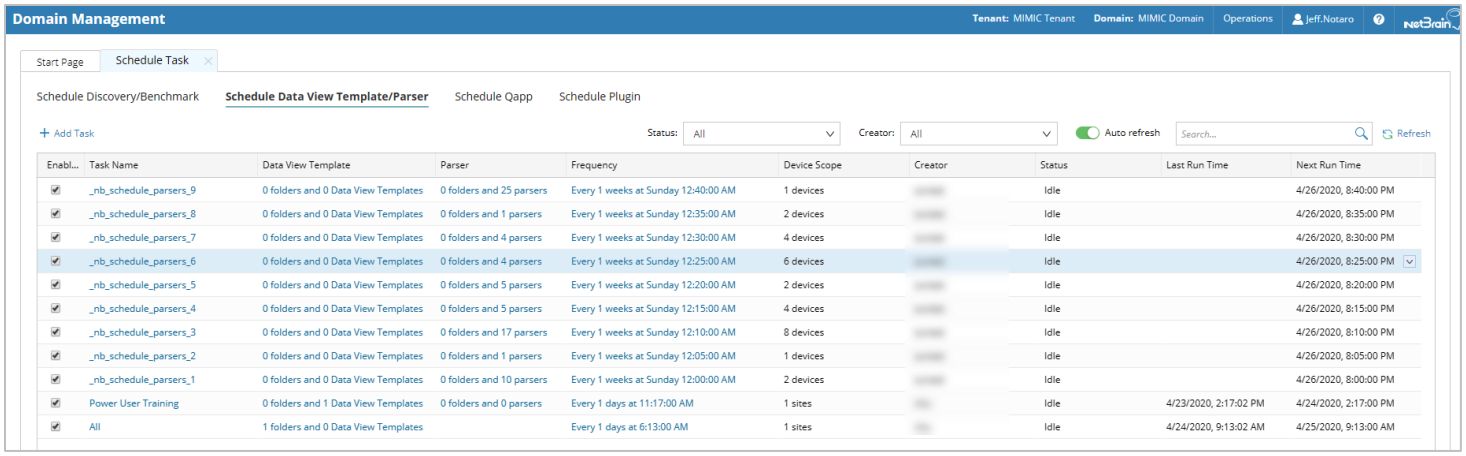

Image – *NetBrain Schedule Data View Template/Parser*

7. Right-click the first *_nb_schedule_parser_* task in the list, then click “Run Now”.
8. Confirm that the task status transitions to Status of *Running*.
9. Repeat steps 7 and 8 for each *_nb_schedule_parser_* task in *Schedule Data View Template / Parser* list.

Note: Executing each of the *_nb_schedule_parser_* tasks ensure that there will be at single data point gathered when attempting to use the associated Auto DVT.

Automation Success Utility: Confirming the Results (Auto DVT)

1. Log into the NetBrain End User Interface with an account that has *System Management* and *Tenant Administrator* privileges.

   http://<NetBrain IP Address or Hostname>

2. From the main user interface desktop, navigate to the NetBrain *Data View Template Manager*

   Start Menu > Dynamic Map > Data View Template Manager

3. In the Data View Template Manager, confirm that the *Auto_Data_View_Template* directory still exists under *Built-in Data View Templates*.

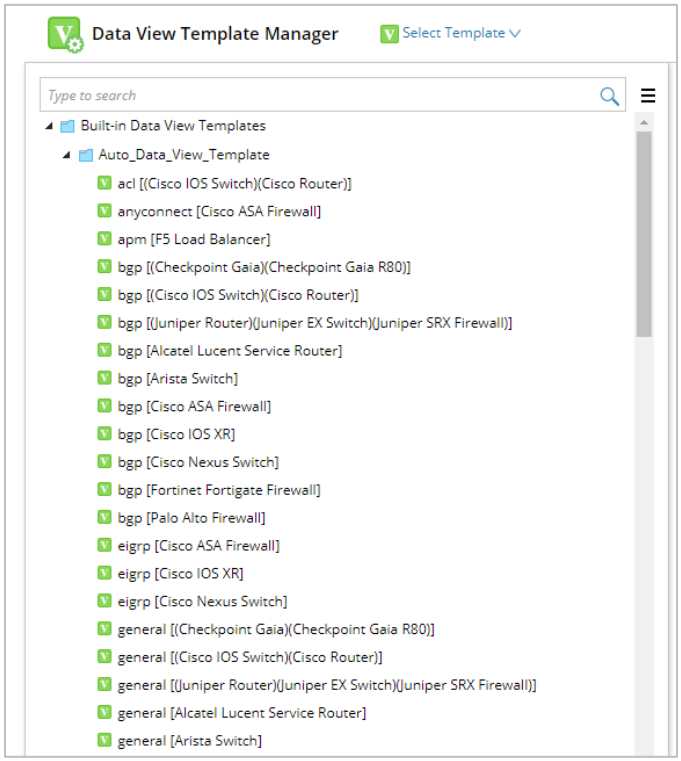

Image – *Data View Template Manager (Auto Data View Templates)*

4. Manually refresh the *Data View Template Manager* by clicking the three horizontal lines next to the search box, then click “Refresh”.
5. Open an existing NetBrain map and confirm that the *Auto_Data_View_Template* directory is now available with DVTs applicable for devices on the NetBrain map.

   Note: If the *Auto_Data_View_Template* directory is not present, click the three horizontal lines next to the search box, then click “Refresh”. If the *Auto_Data_View_Template* directory is still not visible, contact NetBrain Technical Support (support@netbraintech.com) for assistance.

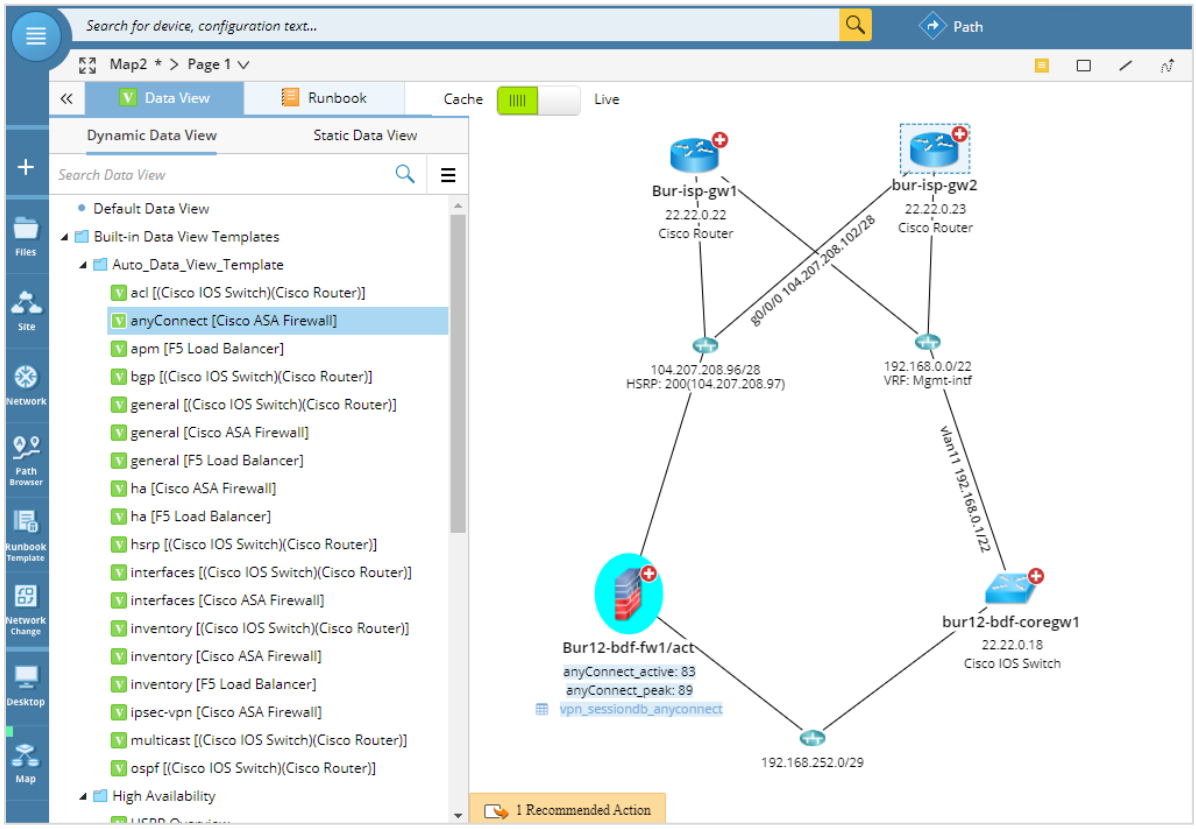

Image – *NetBrain Map with anyConnect [Cisco ASA Firewall] DVT Applied*

Recommended Scheduled Maintenance

No network remains static – As new network devices are onboarded into the NetBrain platform they will not automatically be included for consideration with the scheduled parsers. NetBrain recommends performing the Parser reschedule operation described below at least once a month to ensure that historical data points are being tracked for these new devices.

Scheduled Maintenance: Manually Updating the Device Group

1. Log into the NetBrain End User Interface with an account that has *System Management* and *Tenant Administrator* privileges.

   https://<NetBrain IP Address or Hostname>

2. From the main user interface desktop, navigate to the NetBrain *Device Group Manager*

   Start Menu > Network Resources > Device Group

3. Expand the "Public" folder, then right-click "All_Network_Devices", click "Edit".
4. In the Device Group Properties dialog, complete as follows:

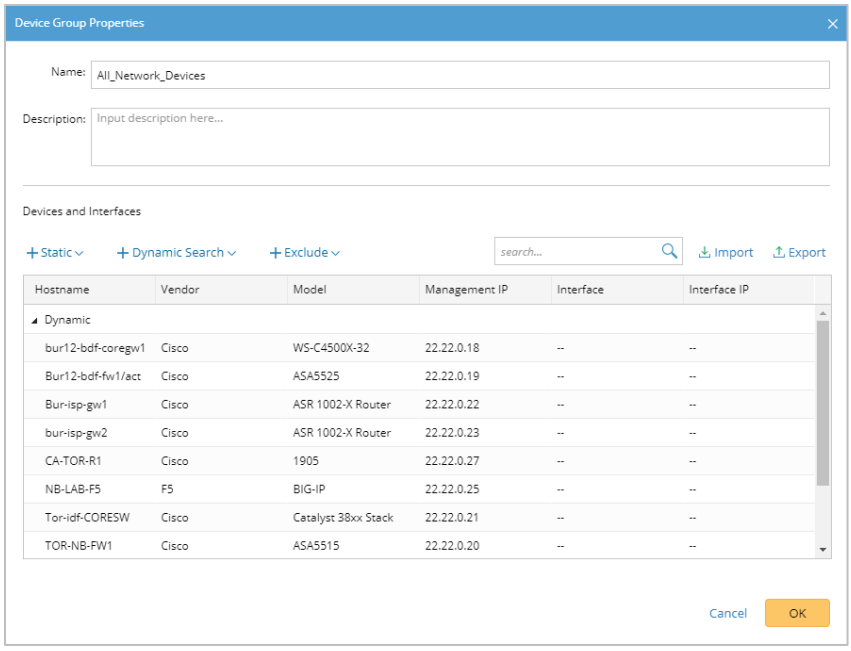

Image – *Device Group Properties*

Field / Setting	Value
Devices and Interfaces	Click "+Dynamic Search", then "Dynamic Search Device" In the Dynamic Search Device dialog, click "Search", then "OK".

5. Validate that *Devices and Interfaces* is populated with a list of devices, then click "OK".
6. In the *Device Group Manager*, confirm that the *All_Network_Devices* device group exists, and that the device count is equal to (or greater) than the number of nodes listed in the NetBrain node count in the Quick Access Toolbar.

Note: This section must be repeated for each Tenant and Domain in the NetBrain system.

Scheduled Maintenance: Automatically Updating the Device Group

To avoid having to make manual updates to the Device Group that has been created to support Automation Success, it is possible to have the nightly Benchmark task automatically update this device group as a post-benchmark activity step. This will help ensure that the device group is always up to date with the newly discovered devices on the network that are accessible and available.

1. Log into the NetBrain End User Interface with an account that has *System Management* and *Tenant Administrator* privileges.

   https://<NetBrain IP Address or Hostname>

2. From the main user interface desktop, navigate to the Quick Access Toolbar and click on the Domain Name.

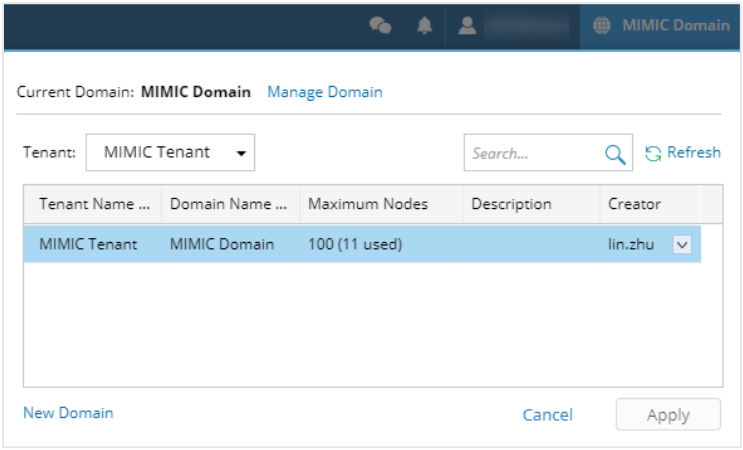

Image – *NetBrain Domain Selection*

3. In the *Domain Selection* dialog, click “Manage Domain”.
4. In the *Domain Management* user interface, click “Schedule Task”.
5. In the *Schedule Task* tab, click “Schedule Discovery/Benchmark”.
6. Right-Click on the “Basic System Benchmark” task, then click Edit”.
7. In the *Edit Benchmark Task* dialog, click the “Additional Operations after Benchmark” ribbon.
8. Scroll down “System Operations”.

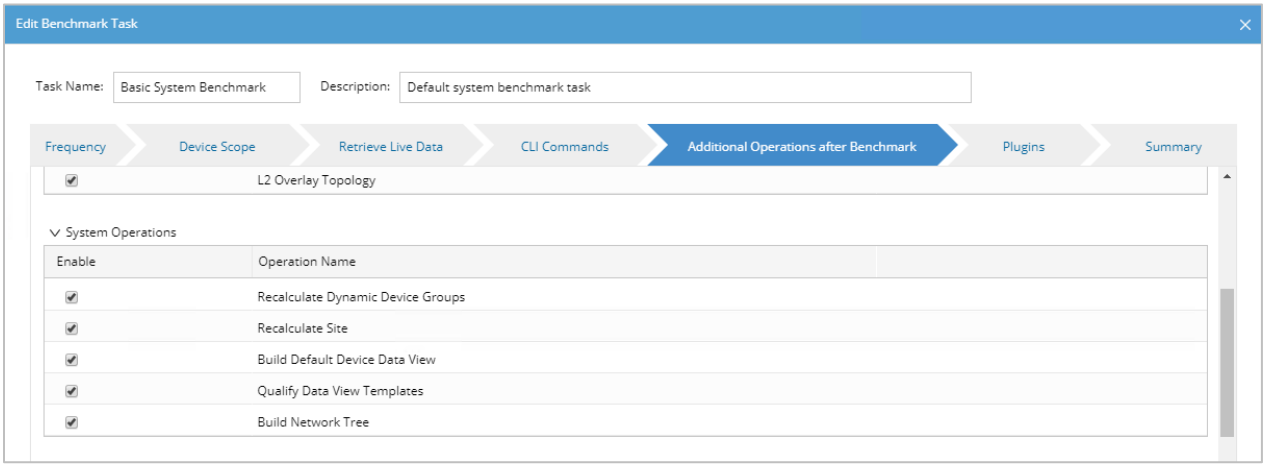

Image – *Additional Operations after Benchmark*

9. Validate that *Recalculate Dynamic Device Groups* is set to *Enabled*. If not, click "Enable".
10. If changes were made to enable the operation, click "Submit". Otherwise, click "Cancel" to dismiss the *Edit Benchmark Task* dialog.

Note: This section must be repeated for each Tenant and Domain in the NetBrain system.

Scheduled Maintenance: Re-Applying the Parsers

1. Using Microsoft Remote Desktop (or equivalent), log into the local Windows environment with an account that has *administrator* privileges.
2. Using Windows Explorer, navigate to the *C:\NetBrain\Automation Success Utility\bin_windows_Release_x64* directory.
3. Double-click the *NBSupportAssist.exe* file to launch the *Automation Success Utility* application.

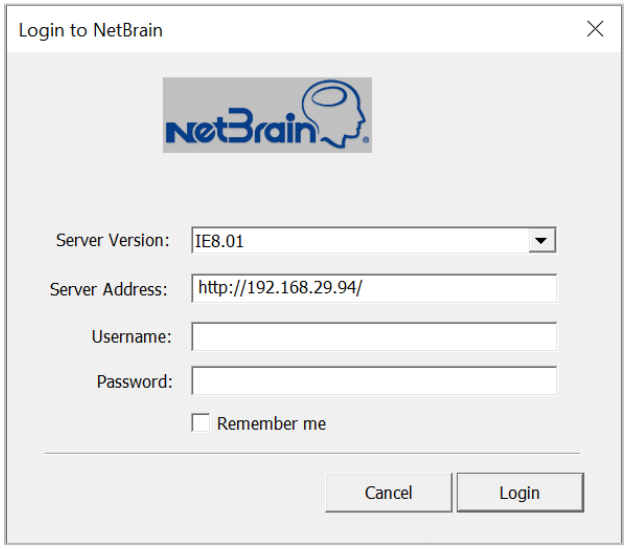

Image – *NetBrain Automation Success Utility (Login Screen)*

4. In the *Login to NetBrain* screen, populate the interface as described below:

Field	Value
Server Version	The deployed NetBrain Integrated Edition version ○ IE8.0 ○ IE8.01 ○ IE8.02
Server Address	http://<WebUI_IPAddress>
Username	NetBrain *Advanced User* account username
Password	NetBrain *Advanced User* account password
Remember me	<Unchecked>

5. On successful login, the *NetBrain Automation Success Utility* application will present the following user interface:

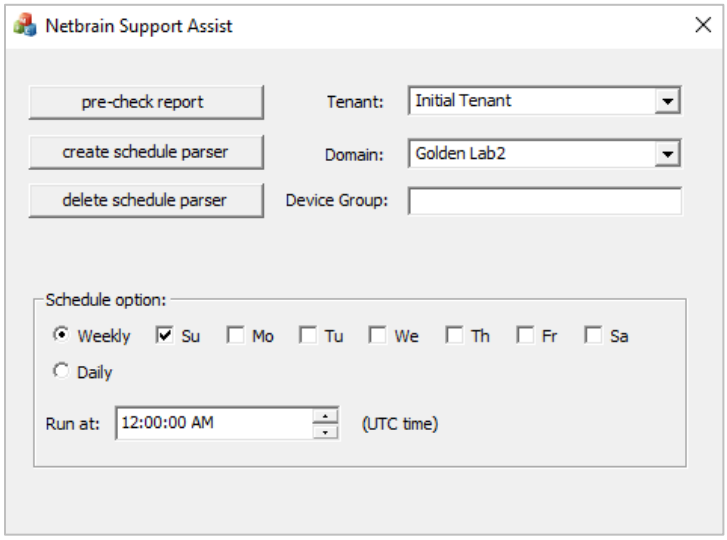

Image – *NetBrain Automation Success Utility (Main Interface)*

6. Click the "Delete Automation Success Utility" button to begin execution. Execution time will be dependent on configured Device Group size and access to the NetBrain platform. Execution time can be anywhere from 10 minutes to 5 hours.

   IMPORTANT: During execution the NetBrain Automation Success Utility application will appear unresponsive, however, it is performing its tasks. Ensure that the local Windows environment does not auto-logoff the user otherwise execution will be interrupted and must be restarted.

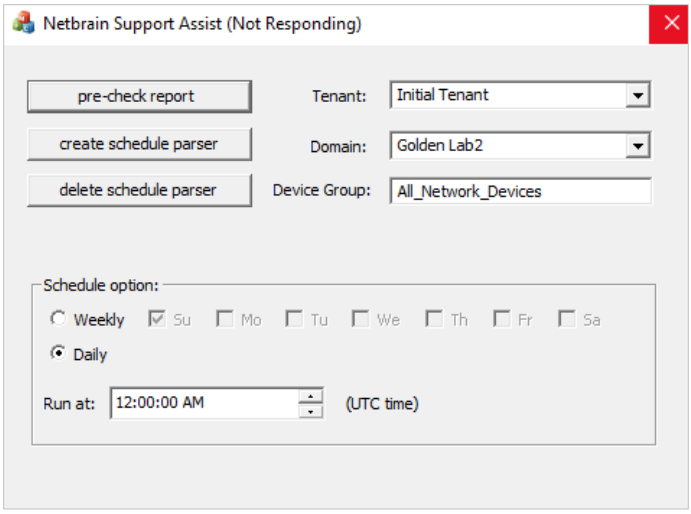

Image – *NetBrain Automation Success Utility (Execution in progress)*

7. Once the deletion operation completed, the NetBrain Automation Success Utility application will pop up a completion dialog indicating that the parsers have been successfully deleted.
8. Re-execute the procedures documented in "Executing the Automation Success Utility" to re-apply the parsers.