APTARE IT Analytics Data Collector Installation Guide for Fabric Manager

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VERITAS™

APTARE IT Analytics Data Collector Installation Guide for Fabric Manager

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https://sort.veritas.com/data/support/SORT_Data_Sheet.pdf

Contents

Chapter 1

Fabric Manager Data Collection Overview

This chapter includes the following topics:

Introduction

The Data Collector is a centralized and remotely managed data collection mechanism. This Java application is responsible for interfacing with enterprise objects, such as backup servers and storage arrays, gathering information related to storage resource management.

The Data Collector continuously collects data and sends this data, using an http or https connection, to another Java application, the Data Receiver. The Data Receiver runs on the Portal Server and stores the data that it receives in the Reporting Database. When you use the Portal to generate a report, the Portal requests this information from the Reporting Database, then returns the results in one of the many available reports.

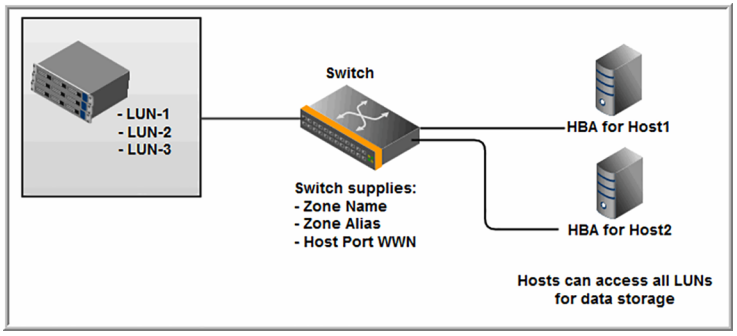
The Data Collector obtains all of its monitoring rules from a Data Collector configuration file. This file resides in the Reporting Database in XML format. When the Data Collector first starts, it downloads this file from the Reporting Database. The Data Collector uses this file to determine the list of enterprise objects that are to be monitored and included in its data collection process.

Fabric Manager: Collection of SAN Switch Data

- A single Data Collector can include all supported switches--Brocade, and Cisco. In fact, this single Data Collector can be used for other enterprise objects, such as backup products and storage arrays.
- The Data Collector accesses the SMI agent server to retrieve data, so the user ID and password for that server is required.

Switch Zone Alias Collection

Often large enterprise environments simply want to collect host inventory data, as well as host-to-LUN mappings, for capacity reporting--particularly allocated capacity chargeback reporting. The necessary host data can be mined directly from switches rather than running a full host data collection. This zone alias data collector leverages zone alias and IP address data, available from a switch, to identify the WWN of a host. The host WWN, in turn, maps to a LUN on an array to locate the storage that is being used by a host, as shown in the following diagram.



Zone alias collection is available via the following Data Collector policies:

- See “Cisco Zone Alias Data Collector Policy” on page 36.

Chapter 2

Pre-Installation Setup for Brocade Switch

This chapter includes the following topics:

Pre-Installation Setup for Brocade Switch

In most cases, a single instance of the Data Collector can support any number of enterprise objects. However, each environment has its own unique deployment configuration requirements, so it is important to understand where the Data Collector software must be installed so that you can determine how many Data Collectors must be installed and which servers are best suited for the deployment.

When the APTARE IT Analytics system collects data from any vendor subsystem, the collection process expects name/value pairs to be in US English, and requires the installation to be done by an Administrator with a US English locale. The server's language version can be non-US English.

Prerequisites for Adding Data Collectors (Brocade Switch)

- 64-bit OS. See the *Certified Configurations Guide* for supported operating systems.
- Verify the rpm fontconfig is installed. Fontconfig is a library designed to provide system-wide font configuration, customization and application access. If the rpm fontconfig is not installed, the installer will not be able to load User Interface Mode. This is a prerequisite for a new Data Collector installation.
- Support Amazon Corretto 11. Amazon Corretto is a no-cost, multi-platform, production-ready distribution of the Open Java Development Kit (OpenJDK).
- For performance reasons, do not install Data Collectors on the same server as the APTARE IT Analytics Portal. However, if you must have both on the same server, verify that the Portal and Data Collector software do not reside in the same directory.
- Install only one Data Collector on a server (or OS instance).
- A single Data Collector can include all supported switches--Brocade, and Cisco. In fact, this single Data Collector can be used for other enterprise objects, such as backup products and storage arrays.
- The Data Collector accesses the SMI agent server to retrieve data, so the user ID and password for that server is required.
- A single Data Collector can be installed for multiple backup, storage, and fabric products.
- Verify that a host-based SMI agent is installed. The SMI agent must be installed on a host that can communicate with the Fabric. See the relevant switch vendor documentation for details.

Upgrade Troubleshooting: Brocade BNA SMI-S (CIM) Server and Java 11

With the introduction of support for Java 11, older versions of Brocade BNA may encounter compatibility issues. The following section covers potential workarounds. Collection occurs from the SMI-S (CIM) server component of the BNA the data collector is collecting from. The version of Java used by APTARE IT Analytics disables some insecure TLS algorithms by default. If collection fails with the following error in the collector logs, the version of Brocade BNA may be incompatible and not allow collection using the TLS algorithms enabled by default with Java 11.

```
Failed to establish JDBC connection to: jdbc:jtds:sqlserver://...
java.sql.SQLException: Network error IOException: null
at net.sourceforge.jtds.jdbc.JtdsConnection.<init>
(JtdsConnection.java:437)
```

Upgrade Brocade BNA to the latest version to enable secure collection. If upgrade is not possible, a workaround can be attempted to restore compatibility. If the following steps do not resolve the issue, your version of Brocade BNA is not supported.

1. Edit <collector install dir>/java/conf/security/java.security.
2. Search for jdk.tls.disabledAlgorithms.
3. Copy the existing lines and comment (to have a backup for easy restore).

```
#jdk.tls.disabledAlgorithms=SSLv3, RC4, DES, MD5withRSA,
DH keySize < 1024, \
#    EC keySize < 224, 3DES_EDE_CBC, anon, NULL
jdk.tls.disabledAlgorithms=SSLv3, RC4, DES, MD5withRSA,
DH keySize < 1024, \
    EC keySize < 224, 3DES_EDE_CBC, anon, NULL
```

4. One at a time, remove an algorithm from the jdk.tls.disabledAlgorithms and test the collection, starting at the last algorithm and working backward. Stop once you reach an algorithm containing 'keySize <'.
   - Remove one algorithm - for example NULL

     ```
     jdk.tls.disabledAlgorithms=SSLv3, RC4, DES, MD5withRSA,
     DH keySize < 1024, \
         EC keySize < 224, 3DES_EDE_CBC, anon
     ```

   - Save the file.
   - Run `checkinstall` and verify collection succeeds.
   - If `checkinstall` does not succeed, restore jdk.tls.disabledAlgorithms to its original state.
5. Change to DH keySize<768 - for example.

   ```
   jdk.tls.disabledAlgorithms=SSLv3, RC4, DES, MD5withRSA,
   DH keySize < 768, \
   EC keySize < 224, 3DES_EDE_CBC, anon, NULL
   ```

   - Save the file.
   - Run `checkinstall` and verify collection succeeds.

6. If a working configuration is found, restart the collector service.

Supported Switches

Refer to the *Certified Configurations Guide* for a complete list.

Brocade Switches: Default Ports and Firewall Considerations

The default ports for APTARE IT Analytics collection of Brocade switch data include:

- HTTP - 5988
- HTTPS - 5989

The following ports are not an APTARE IT Analytics specific requirement, however, the Brocade SMI agent contacts the switch via RPC on port mapper port 111. Other RPC calls use ports 897 (non-secure) and 898 (secure). If a firewall exists between the Brocade SMI agent and the Brocade fabric, the following ports must be open:

- RPC on port mapper - 111
- RPC (non-secure) - 897
- RPC (secure) - 898

Installation Overview (Brocade Switch)

Use the following list to ensure that you complete each step in the order indicated.

1. Update the Local Hosts file. This enables Portal access.
2. In the Portal, add a Data Collector, if one has not already been created.
3. In the Portal, add the Brocade Switch data collector policy.
4. On the Data Collector Server, install the Data Collector software.
5. If collecting from Windows hosts, install the WMI Proxy Service on one of the Windows hosts.
6. Validate the Data Collector Installation.

Brocade Switch Data Collector Policy

- Before adding the policy: A Data Collector must exist in the Portal, to which you will add Data Collector Policies.

For specific prerequisites and supported configurations for a specific vendor, see the *Certified Configurations Guide*.

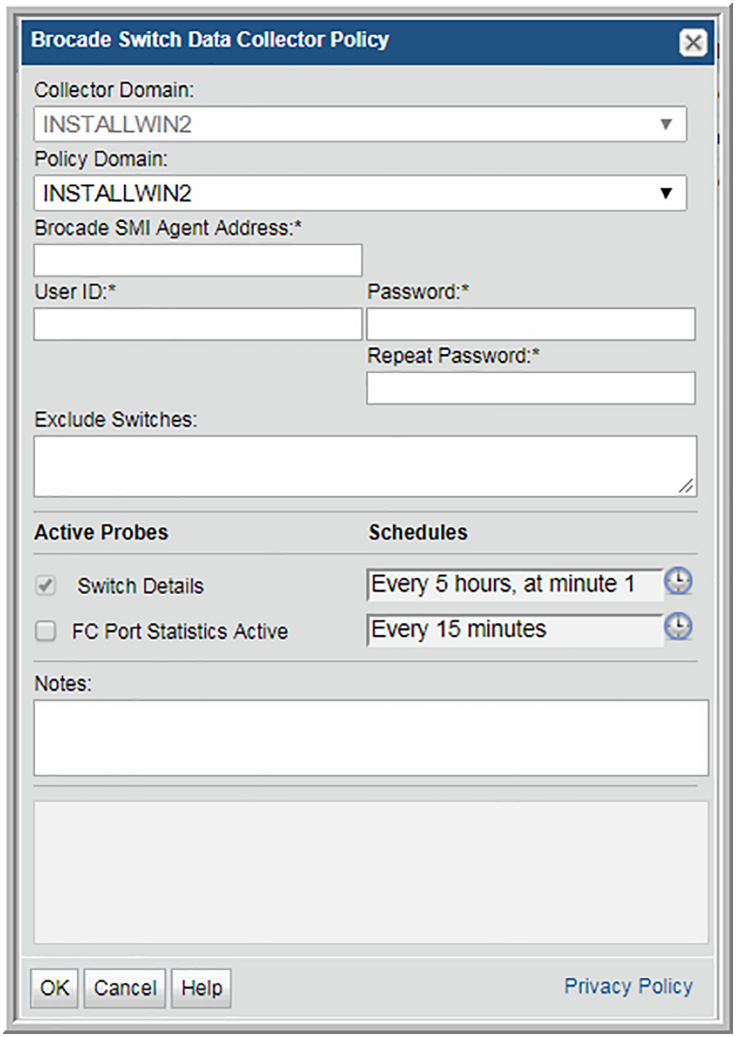
- After adding the policy: For some policies, collections can be run on-demand using the Run button on the Collector Administration page action bar. The Run button is only displayed if the policy vendor is supported.
  On-demand collection allows you to select which probes and devices to run collection against. This action collects data the same as a scheduled run, plus logging information for troubleshooting purposes. For probe descriptions, refer to the policy.

To add the policy

1. Select **Admin > Data Collection > Collector Administration**. Currently configured Portal Data Collectors are displayed.
2. Search for a Collector if required.
3. Select a Data Collector from the list.

4 Click **Add Policy**, and then select the vendor-specific entry in the menu.

Best Practices: Interconnected switches should be configured in the same Data Collector policy.



5 Enter or select the parameters. Mandatory parameters are denoted by an asterisk (*):

Field	Description	Sample Value
Collector Domain	The domain of the collector to which the collector backup policy is being added. This is a read-only field. By default, the domain for a new policy will be the same as the domain for the collector. This field is set when you add a collector.	
Policy Domain	The Collector Domain is the domain that was supplied during the Data Collector installation process. The Policy Domain is the domain of the policy that is being configured for the Data Collector. The Policy Domain must be set to the same value as the Collector Domain. The domain identifies the top level of your host group hierarchy. All newly discovered hosts are added to the root host group associated with the Policy Domain. Typically, only one Policy Domain will be available in the drop-down list. If you are a Managed Services Provider, each of your customers will have a unique domain with its own host group hierarchy. To find your Domain name, click your login name and select **My Profile** from the menu. Your Domain name is displayed in your profile settings.	`yourdomain`

Field	Description	Sample Value
Brocade SMI agent address*	Enter the IP address of the Brocade SMI agent and port number in the format: <ip_address>:port_number The port number is NOT required if you want to use the default port numbers: 5988 (http) or 5989 (https).	192.1.1.1
User ID*	Use the User ID and passcode for accessing the switch. This typically would be an administrator privilege, but must be a minimum privilege of a view-only user.	`Administrator`
Password*	**Note:** The password is encrypted prior to saving in the database and is never visible in any part of the application.	Password1
Exclude Switches	Enter a switch WWN - e.g., 10:00:00:60:69:90:04:9F, 100000606990049F Colons within the WWN are NOT required. A comma-separated list is supported.	10:00:00:60:69:90:04:9F, 100000606990049F

Field	Description	Sample Value
Switch Details	Click the check box to collect switch details. Click the clock icon to create a schedule. Every Minute, Hourly, Daily, Weekly, and Monthly schedules may be created. Advanced use of native CRON strings is also available. Examples of CRON expressions: */30 * * * * means every 30 minutes */20 9-18 * * * means every 20 minutes between the hours of 9am and 6pm */10 * * * 1-5 means every 10 minutes Mon - Fri. **Note:** Explicit schedules set for a Collector policy are relative to the time on the Collector server. Schedules with frequencies are relative to the time that the Data Collector was restarted.	
FC Port statistics Active	Click the check box to collect FC Port statistics. This may have a performance impact, which can be optimized with the FC Port statistics schedule. Click the clock icon to create a schedule.	
Notes	Enter or edit notes for your data collector policy. The maximum number of characters is 1024. Policy notes are retained along with the policy information for the specific vendor and displayed on the Collector Administration page as a column making them searchable as well.	

Chapter 3

Pre-Installation Setup for Cisco Switch

This chapter includes the following topics:

Pre-Installation Setup for Cisco Switch

In most cases, a single instance of the Data Collector can support any number of enterprise objects. However, each environment has its own unique deployment configuration requirements, so it is important to understand where the Data Collector software must be installed so that you can determine how many Data Collectors must be installed and which servers are best suited for the deployment.

Prerequisites for Adding Data Collectors (Cisco Switch)

- 64-bit OS. See the *Certified Configurations Guide* for supported operating systems.

- When the APTARE IT Analytics system collects data from any vendor subsystem, the collection process expects name/value pairs to be in US English, and requires the installation to be done by an Administrator with a US English locale. The server's language version can be non-US English.
- Verify the rpm fontconfig is installed. Fontconfig is a library designed to provide system-wide font configuration, customization and application access. If the rpm fontconfig is not installed, the installer will not be able to load User Interface Mode. This is a prerequisite for a new Data Collector installation.
- Support Amazon Corretto 11. Amazon Corretto is a no-cost, multi-platform, production-ready distribution of the Open Java Development Kit (OpenJDK).
- For performance reasons, do not install Data Collectors on the same server as the APTARE IT Analytics Portal. However, if you must have both on the same server, verify that the Portal and Data Collector software do not reside in the same directory.
- Install only one Data Collector on a server (or OS instance).
- A single Data Collector can include all supported switches--Brocade and Cisco. In fact, this single Data Collector can be used for other enterprise objects, such as backup products and storage arrays.
- The Data Collector accesses the SMI agent server to retrieve data, so the user ID and password for that server is required.
- A single Data Collector can be installed for multiple backup, storage, and fabric products.
- For Interconnected Cisco switches: Interconnected switches, which share the same VSAN, must all be configured in the same Data Collector policy.
- Verify that a host-based SMI agent is installed. The SMI agent must be installed on a host that can communicate with the Fabric. See the relevant switch vendor documentation for details.

Upgrade Troubleshooting: Cisco DCNM SMI-S (CIM) Server and Java 11

With the introduction of support for Java 11, older versions of Cisco DCNM may encounter compatibility issues. The following section covers potential workarounds. Collection occurs from the SMI-S (CIM) server component of the DCNM the data collector is collecting from. The version of Java used by APTARE IT Analytics disables some insecure TLS algorithms by default. If collection fails with the following error in the collector logs, the version of Cisco DCNM may be incompatible and not allow collection using the TLS algorithms enabled by default with Java 11.

```
Failed to establish JDBC connection to: jdbc:jtds:sqlserver://...
java.sql.SQLException: Network error IOException: null
at net.sourceforge.jtds.jdbc.JtdsConnection.<init>
(JtdsConnection.java:437)
```

Upgrade Cisco DCNM to the latest version to enable secure collection. If upgrade is not possible, a workaround can be attempted to restore compatibility. If the following steps do not resolve the issue, your version of Cisco DCNM is not supported.

1. Edit <collector install dir>/java/conf/security/java.security.
2. Search for jdk.tls.disabledAlgorithms.
3. Copy the existing lines and comment (to have a backup for easy restore).

```
#jdk.tls.disabledAlgorithms=SSLv3, RC4, DES, MD5withRSA,
DH keySize < 1024, \
#    EC keySize < 224, 3DES_EDE_CBC, anon, NULL
jdk.tls.disabledAlgorithms=SSLv3, RC4, DES, MD5withRSA,
DH keySize < 1024, \
    EC keySize < 224, 3DES_EDE_CBC, anon, NULL
```

4. One at a time, remove an algorithm from the jdk.tls.disabledAlgorithms and test the collection, starting at the last algorithm and working backward. Stop once you reach an algorithm containing 'keySize <'.
   - Remove one algorithm - for example NULL

     ```
     jdk.tls.disabledAlgorithms=SSLv3, RC4, DES, MD5withRSA,
     DH keySize < 1024, \
         EC keySize < 224, 3DES_EDE_CBC, anon
     ```

   - Save the file.
   - Run `checkinstall` and verify collection succeeds.
   - If `checkinstall` does not succeed, restore jdk.tls.disabledAlgorithms to its original state.
5. Change to DH keySize<768 - for example.

   ```
   jdk.tls.disabledAlgorithms=SSLv3, RC4, DES, MD5withRSA,
   DH keySize < 768, \
   EC keySize < 224, 3DES_EDE_CBC, anon, NULL
   ```

   - Save the file.
   - Run `checkinstall` and verify collection succeeds.

6. If a working configuration is found, restart the collector service.

Cisco Switches: Default Ports and Firewall Considerations

The default ports for APTARE IT Analytics collection of Cisco switch data include:

- HTTP - 5988
- HTTPS - 5989

Installation Overview (Cisco Switch)

Use the following list to ensure that you complete each step in the order indicated.

1. Update the Local Hosts file. This enables Portal access.
2. In the Portal, add a Data Collector, if one has not already been created.
3. In the Portal, add the Cisco Switch data collector policy.
4. On the Data Collector Server, install the Data Collector software.
5. If collecting from Windows hosts, install the WMI Proxy Service on oneof the Windows hosts.
6. Validate the Data Collector installation.

Cisco Switch Data Collection Policy

- Before adding the policy: A Data Collector must exist in the Portal, to which you will add Data Collector Policies.
  For specific prerequisites and supported configurations for a specific vendor, see the *Certified Configurations Guide*.
- After adding the policy: For some policies, collections can be run on-demand using the **Run** button on the Collector Administration page action bar. The **Run** button is only displayed if the policy vendor is supported.
  On-demand collection allows you to select which probes and devices to run collection against. This action collects data the same as a scheduled run, plus logging information for troubleshooting purposes. For probe descriptions, refer to the policy.

To add the policy

1. Select **Admin > Data Collection > Collector Administration**. Currently configured Portal Data Collectors are displayed.
2. Search for a Collector if required.
3. Select a Data Collector from the list.
4. Click **Add Policy**, and then select the vendor-specific entry in the menu.

   Requirement: Interconnected switches, which share the same VSAN, must be configured in the same Data Collector policy for Cisco Switches.

Note: Data collection for Cisco switches uses SMI, however, a non-default port number is not configurable.

See "Before You Start Cisco Switch Data Collection" on page 26.

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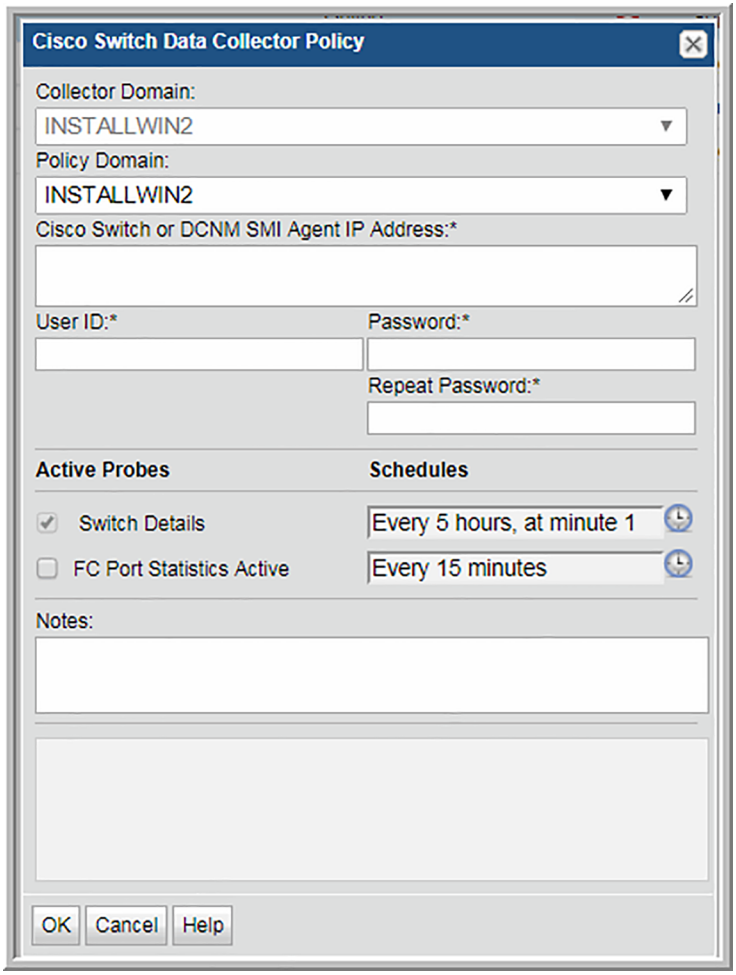
5 Specify Data Collector Properties.



6 Add or select the parameters. Mandatory parameters are denoted by an asterisk (*):

Field	Description	Sample Value
Domain	The domain identifies the top level of your host group hierarchy. The name was supplied during the installation process. All newly discovered hosts are added to the root host group associated with this domain. Typically, only one Domain will be available in the drop-down list. If you are a Managed Services Provider, each of your customers will have a unique domain with its own host group hierarchy. To find your Domain name, click your login name and select **My Profile** from the menu. Your Domain name is displayed in your profile settings.	`yourdomain`

Field	Description	Sample Value
Cisco switch or DCNM SMI Agent IP address*	Enter the IP address of the Cisco switch. Multiple switch IP addresses, separated by commas, can be entered for this field. Interconnected switches, which share the same VSAN, must be included in the same Data Collector policy. If you are using the Data Center Network Manager (DCNM) for central control, a separate Data Collector policy is needed for each DCNM. Enter the DCNM SMI agent address (and optionally, its port number) in the format: <ip_address>:<port_number> For DCNM v6.2.x, you will need a valid (or temporary) license in order for the SMI agent to be able to get data.	192.1.1.1
User ID*	Use the User ID and passcode for accessing the switch. This typically would be an administrator privilege, but must be a minimum privilege of a view-only user.	`Administrator`
Password*	**Note:** The password is encrypted prior to saving in the database and is never visible in any part of the application.	Password1

Field	Description	Sample Value
Switch Details	Click the check box to collect switch details. Click the clock icon to create a schedule. Every Minute, Hourly, Daily, Weekly, and Monthly schedules may be created. Advanced use of native CRON strings is also available. Examples of CRON expressions: */30 * * * * means every 30 minutes */20 9-18 * * * means every 20 minutes between the hours of 9am and 6pm */10 * * * 1-5 means every 10 minutes Mon - Fri. **Note:** Explicit schedules set for a Collector policy are relative to the time on the Collector server. Schedules with frequencies are relative to the time that the Data Collector was restarted.	
FC Port Statistics Active	Click the check box if you want to collect FC Port statistics. This may have a performance impact, which can be optimized with the FC Port schedule.	
Notes	Enter or edit notes for your data collector policy. The maximum number of characters is 1024. Policy notes are retained along with the policy information for the specific vendor and displayed on the Collector Administration page as a column making them searchable as well.	

Before You Start Cisco Switch Data Collection

The Data Collector uses SMI-S to communicate with the Cisco switches to gather data. To ensure that the SMI-S provider is running, be sure to enable the Common Information Model (CIM) Server on the switch using the following CLI commands:

- cimserver status: To execute this command, you need to be in enable mode.
- show cimserver
- config t - This puts you into configuration mode.
- comserver enable - Once you are in configuration mode, this command turns on the SMI-S provider.

Chapter 4

Pre-Installation Setup for Brocade Zone Alias

This chapter includes the following topics:

Pre-Installation Setup for Brocade Zone Alias

In most cases, a single instance of the Data Collector can support any number of enterprise objects. However, each environment has its own unique deployment configuration requirements, so it is important to understand where the Data Collector software must be installed so that you can determine how many Data Collectors must be installed and which servers are best suited for the deployment.

Prerequisites for Adding Data Collectors (Brocade Zone Alias)

- 64-bit OS. See the *Certified Configurations Guide* for supported operating systems.
- When the APTARE IT Analytics system collects data from any vendor subsystem, the collection process expects name/value pairs to be in US English, and requires

the installation to be done by an Administrator with a US English locale. The server's language version can be non-US English.

- Verify the rpm fontconfig is installed. Fontconfig is a library designed to provide system-wide font configuration, customization and application access. If the rpm fontconfig is not installed, the installer will not be able to load User Interface Mode. This is a prerequisite for a new Data Collector installation.
- Support Amazon Corretto 11. Amazon Corretto is a no-cost, multi-platform, production-ready distribution of the Open Java Development Kit (OpenJDK).
- For performance reasons, do not install Data Collectors on the same server as the APTARE IT Analytics Portal. However, if you must have both on the same server, verify that the Portal and Data Collector software do not reside in the same directory.
- Install only one Data Collector on a server (or OS instance).
- A single Data Collector can include all supported switches--Brocade and Cisco. In fact, this single Data Collector can be used for other enterprise objects, such as backup products and storage arrays.
- The Data Collector accesses the SMI agent server to retrieve data, so the user ID and password for that server is required.
- A single Data Collector can be installed for multiple backup, storage, and fabric products.
- Verify that a host-based SMI agent is installed. The SMI agent must be installed on a host that can communicate with the Fabric. See the relevant switch vendor documentation for details.

Brocade Switches: Default Ports and Firewall Considerations

The default ports for APTARE IT Analytics collection of Brocade switch data include:

- HTTP - 5988
- HTTPS - 5989

The following ports are not an APTARE IT Analytics-specific requirement, however, the Brocade SMI agent contacts the switch via RPC on port mapper port 111. Other RPC calls use ports 897 (non-secure) and 898 (secure). If a firewall exists between the Brocade SMI agent and the Brocade fabric, open the following ports:

- RPC on port mapper - 111
- RPC (non-secure) - 897

- RPC (secure) - 898

Installation Overview (Brocade Zone Alias)

Use the following list to ensure that you complete each step in the order indicated.

1. Update the Local Hosts file. This enables Portal access.
2. In the Portal, add a Data Collector, if one has not already been created.
3. In the Portal, add the Brocade Zone Alias data collector policy.
4. On the Data Collector Server, install the Data Collector software.
5. If collecting from Windows hosts, install the WMI Proxy Service on one of the Windows hosts.
6. Validate the Data Collector installation.

Brocade Zone Alias Data Collector Policy

- Before adding the policy: A Data Collector must exist in the Portal, to which you will add Data Collector Policies.

  For specific prerequisites and supported configurations for a specific vendor, see the *Certified Configurations Guide*.
- After adding the policy: For some policies, collections can be run on-demand using the **Run** button on the **Collector Administration** page action bar. The **Run** button is only displayed if the policy vendor is supported.

  On-demand collection allows you to select which probes and devices to run collection against. This action collects data the same as a scheduled run, plus logging information for troubleshooting purposes. For probe descriptions, refer to the policy.

To add the policy

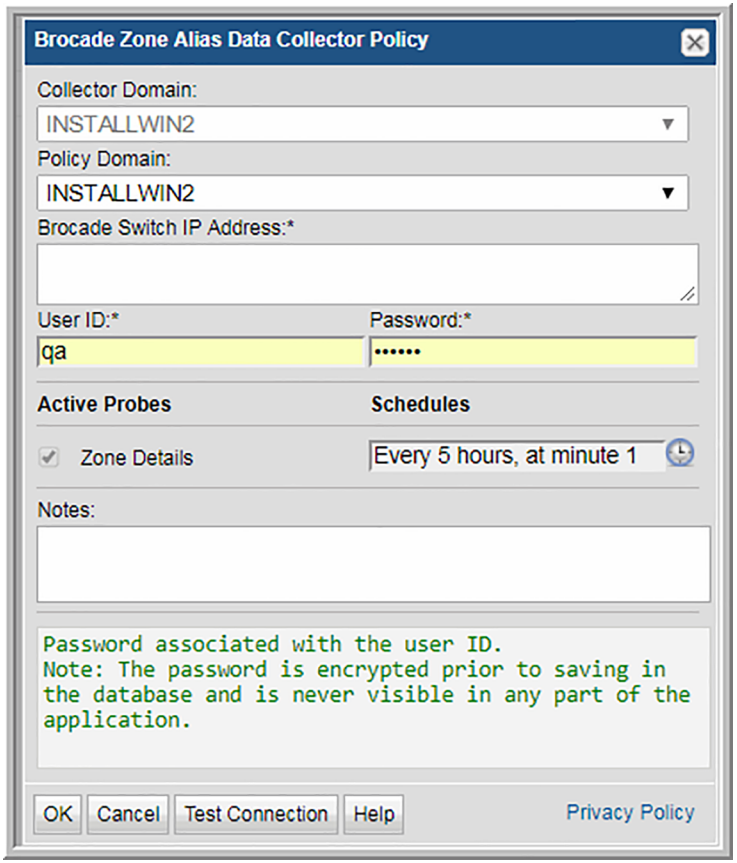
1 Select **Admin > Data Collection > Collector Administration**. Currently configured Portal Data Collectors are displayed.

2 Search for a Collector if required.

3 Select a Data Collector from the list.

4 Click **Add Policy**, and then select the vendor-specific entry in the menu.

5 Specify Data Collector Properties.



6 Add or select the parameters. Mandatory parameters are denoted by an asterisk (*):

Field	Description	Sample Value
Collector Domain	The domain of the collector to which the host alias policy is being added. This is a read-only field. By default, the domain for a new policy will be the same as the domain for the collector. This field is set when you add a collector.	`yourdomain`
Policy Domain	The Collector Domain is the domain that was supplied during the Data Collector installation process. The Policy Domain is the domain of the policy that is being configured for the Data Collector. The Policy Domain must be set to the same value as the Collector Domain. The domain identifies the top level of your host group hierarchy. All newly discovered hosts are added to the root host group associated with the Policy Domain. Typically, only one Policy Domain will be available in the drop-down list. If you are a Managed Services Provider, each of your customers will have a unique domain with its own host group hierarchy. To find your Domain name, click your login name and select **My Profile** from the menu. Your Domain name is displayed in your profile settings.	192.1.1.1

Field	Description	Sample Value
Brocade Switch IP Addresses*	Enter the IP address of the Brocade switch. A comma-separated list of addresses may be entered for multiple switches that have the same credentials.	
User ID*	Enter the User ID and passcode for accessing the Brocade switch. This typically would be an administrator privilege, but must be a minimum privilege of a view-only user.	`Administrator`
Password*	Password associated with the user ID. **Note:** The password is encrypted prior to saving in the database and is never visible in any part of the application.	Password1
Test Connection	Test Connection initiates a Data Collector process that attempts to connect to the switches using the IP addresses and credentials supplied in the policy. This validation process returns either a success message or a list of specific connection errors. Several factors affect the response time of the validation request, causing some requests to take longer than others. For example, there could be a delay when connecting to the switch. Likewise, there could be a delay when getting the response, due to other processing threads running on the Data Collector. Test Connection requires that Agent Services are running.	

Field	Description	Sample Value
Zone Details	Click the clock icon to create a schedule. Every Minute, Hourly, Daily, Weekly, and Monthly schedules may be created. Advanced use of native CRON strings is also available. Examples of CRON expressions: */30 * * * * means every 30 minutes */20 9-18 * * * means every 20 minutes between the hours of 9am and 6pm */10 * * * 1-5 means every 10 minutes Mon - Fri. **Note:** Explicit schedules set for a Collector policy are relative to the time on the Collector server. Schedules with frequencies are relative to the time that the Data Collector was restarted.	
Notes	Enter or edit notes for your data collector policy. The maximum number of characters is 1024. Policy notes are retained along with the policy information for the specific vendor and displayed on the Collector Administration page as a column making them searchable as well.	

Chapter 5

Pre-Installation Setup Cisco Zone Alias

This chapter includes the following topics:

Pre-Installation Setup Cisco Zone Alias

In most cases, a single instance of the Data Collector can support any number of enterprise objects. However, each environment has its own unique deployment configuration requirements, so it is important to understand where the Data Collector software must be installed so that you can determine how many Data Collectors must be installed and which servers are best suited for the deployment.

Prerequisites for Adding Data Collectors (Cisco Zone Alias)

- 64-bit OS. See the *Certified Configurations Guide* for supported operating systems.
- When the APTARE IT Analytics system collects data from any vendor subsystem, the collection process expects name/value pairs to be in US English, and requires

the installation to be done by an Administrator with a US English locale. The server's language version can be non-US English.

- Verify the rpm fontconfig is installed. Fontconfig is a library designed to provide system-wide font configuration, customization and application access. If the rpm fontconfig is not installed, the installer will not be able to load User Interface Mode. This is a prerequisite for a new Data Collector installation.
- Support Amazon Corretto 11. Amazon Corretto is a no-cost, multi-platform, production-ready distribution of the Open Java Development Kit (OpenJDK).
- For performance reasons, do not install Data Collectors on the same server as the APTARE IT Analytics Portal. However, if you must have both on the same server, verify that the Portal and Data Collector software do not reside in the same directory.
- Install only one Data Collector on a server (or OS instance).
- A single Data Collector can include all supported switches--Brocade and Cisco. In fact, this single Data Collector can be used for other enterprise objects, such as backup products and storage arrays.
- The Data Collector accesses the SMI agent server to retrieve data, so the user ID and password for that server is required.
- For Interconnected Cisco switches: Interconnected switches, which share the same VSAN, must all be configured in the same Data Collector policy.
- Verify that a host-based SMI agent is installed. The SMI agent must be installed on a host that can communicate with the Fabric. See the relevant switch vendor documentation for details.

Cisco Switches: Default Ports and Firewall Considerations

The default ports for APTARE IT Analytics collection of Cisco switch data include:

- HTTP - 5988
- HTTPS - 5989

Installation Overview (Cisco Zone Alias)

Use the following list to ensure that you complete each step in the order indicated.

1. Update the Local Hosts file. This enables Portal access.
2. In the Portal, add a Data Collector, if one has not already been created.

3. In the Portal, add the Cisco Zone Alias data collector policy.
4. On the Data Collector Server, install the Data Collector software.
5. If collecting from Windows hosts, install the WMI Proxy Service on oneof the Windows hosts.
6. Validate the Data Collector installation.

Cisco Zone Alias Data Collector Policy

- Before adding the policy: A Data Collector must exist in the Portal, to which you will add Data Collector Policies.

  For specific prerequisites and supported configurations for a specific vendor, see the *Certified Configurations Guide*.
- After adding the policy: For some policies, collections can be run on-demand using the **Run** button on the **Collector Administration** page action bar. The **Run** button is only displayed if the policy vendor is supported.

  On-demand collection allows you to select which probes and devices to run collection against. This action collects data the same as a scheduled run, plus logging information for troubleshooting purposes. For probe descriptions, refer to the policy.

To add the policy

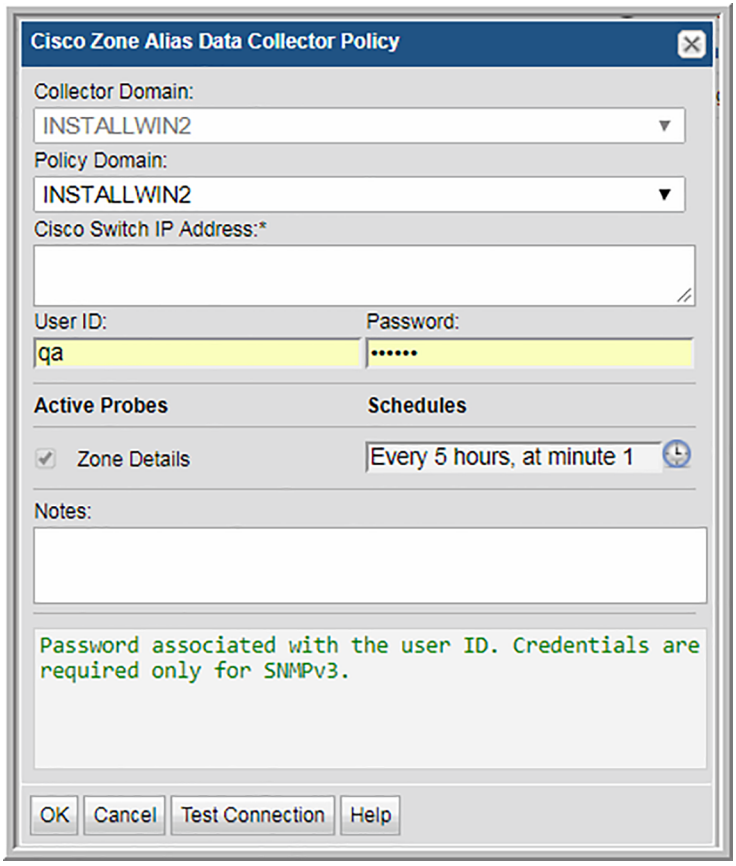
1 Select **Admin > Data Collection > Collector Administration**. Currently configured Portal Data Collectors are displayed.

2 Search for a Collector if required.

3 Select a Data Collector from the list.

4 Click **Add Policy**, and then select the vendor-specific entry in the menu**.**

5 Specify Data Collector properties.



6 Add or select the parameters. Mandatory parameters are denoted by an asterisk (*):

Field	Description	Sample Value
Collector Domain	The domain of the collector to which the host alias policy is being added. This is a read-only field. By default, the domain for a new policy will be the same as the domain for the collector. This field is set when you add a collector.	`yourdomain`
Policy Domain	The Collector Domain is the domain that was supplied during the Data Collector installation process. The Policy Domain is the domain of the policy that is being configured for the Data Collector. The Policy Domain must be set to the same value as the Collector Domain. The domain identifies the top level of your host group hierarchy. All newly discovered hosts are added to the root host group associated with the Policy Domain. Typically, only one Policy Domain will be available in the drop-down list. If you are a Managed Services Provider, each of your customers will have a unique domain with its own host group hierarchy.	192.1.1.1
Cisco Switch IP Addresses*	Enter the IP address of the Cisco switch. A comma-separated list of addresses may be entered for multiple switches that have the same credentials.	

Field	Description	Sample Value
User ID	Use the User ID and passcode for accessing the Cisco switch. This typically would be an administrator privilege, but must be a minimum privilege of a view-only user. Credentials are not mandatory because depending on the version of the Cisco switch software, a user ID and password may not be required.	`Administrator`
Password	Password associated with the user ID. Credentials are not mandatory because depending on the version of the Cisco switch software, a user ID and password may not be required. **Note:** The password is encrypted prior to saving in the database and is never visible in any part of the application.	Password1

Field	Description	Sample Value
Zone Details	Click the clock icon to create a schedule. Every Minute, Hourly, Daily, Weekly, and Monthly schedules may be created. Advanced use of native CRON strings is also available. Examples of CRON expressions: */30 * * * * means every 30 minutes */20 9-18 * * * means every 20 minutes between the hours of 9am and 6pm */10 * * * 1-5 means every 10 minutes Mon - Fri. **Note:** Explicit schedules set for a Collector policy are relative to the time on the Collector server. Schedules with frequencies are relative to the time that the Data Collector was restarted.	
Notes	Enter or edit notes for your data collector policy. The maximum number of characters is 1024. Policy notes are retained along with the policy information for the specific vendor and displayed on the Collector Administration page as a column making them searchable as well.	

Field	Description	Sample Value
Test Connection	Test Connection initiates a Data Collector process that attempts to connect to switches using the IP addresses and credentials supplied in the policy. Credentials are not mandatory because depending on the version of the Cisco switch software, a user ID and password may not be required. This validation process returns either a success message or a list of specific connection errors. Several factors affect the response time of this validation request, causing some requests to take longer than others. For example, there could be a delay when connecting to the switch. Likewise, there could be a delay when getting the response, due to other processing threads running on the Data Collector. Test Connection requires that Agent Services are running.	

Chapter 6

Installing the Data Collector Software

This chapter includes the following topics:

Introduction

This section includes the instructions for installing the Data Collector software on the Data Collector Server. In addition, if you are collecting data from host resources, you may need to install the WMI Proxy Service. The WMI Proxy Service is installed by default, as part of the storage array Data Collector installation on a Windows server.

In addition to the GUI version, the installer supports a console (command line) interface for Linux systems that do not have X-Windows installed. You will be directed to the console interface instructions, if appropriate.

When the APTARE IT Analytics system collects data from any vendor subsystem, the collection process expects name/value pairs to be in US English, and requires

the installation to be done by an Administrator with a US English locale. The server's language version can be non-US English.

Note: Log in as a Local Administrator to have the necessary permissions for this installation.

Installing the WMI Proxy Service (Windows Host Resources only)

To collect data from Windows hosts, choose a Windows host on which to install the WMI proxy.

- This is only required if you are collecting data from Windows Host Resources.
- The WMI Proxy needs to be installed on only one Windows host.
- If the Data Collector is on a Windows server, the WMI Proxy will be installed there as part of the storage array Data Collector installation.
- If the Data Collector is on a Linux server, you'll need to identify a Windows server on which to install the WMI proxy service.

1. Locate the executable on the Portal and copy it to the Data Collector server.

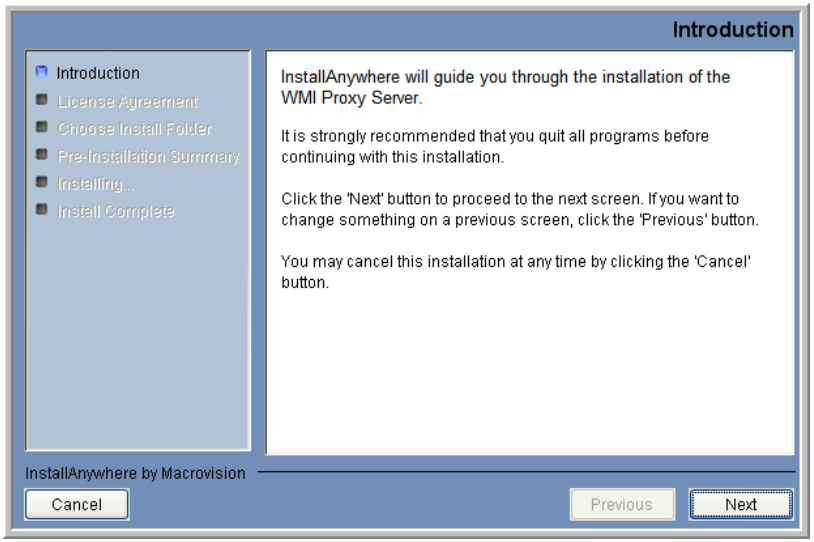
   On Windows:

   ```
   c:\opt\aptare\utils\aptarewmiproxyserver.exe
   ```

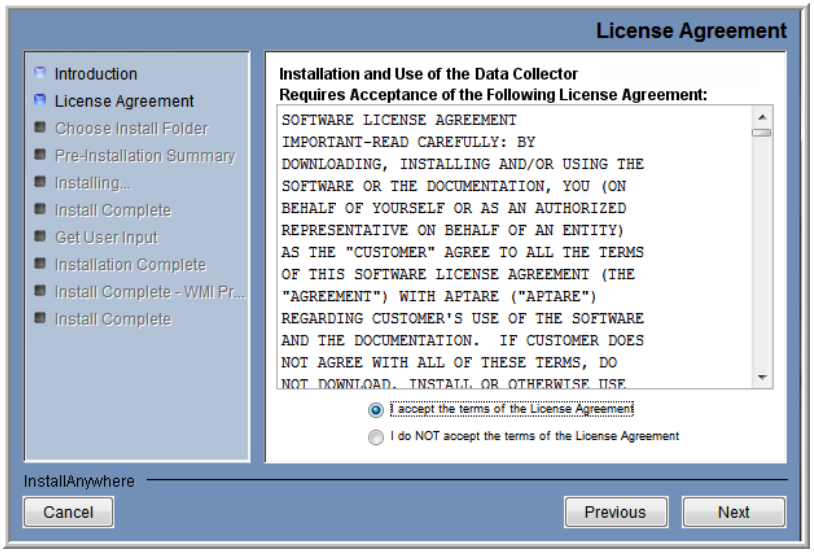
   On Linux:

   ```
   /opt/aptare/utils/aptarewmiproxyserver.exe
   ```

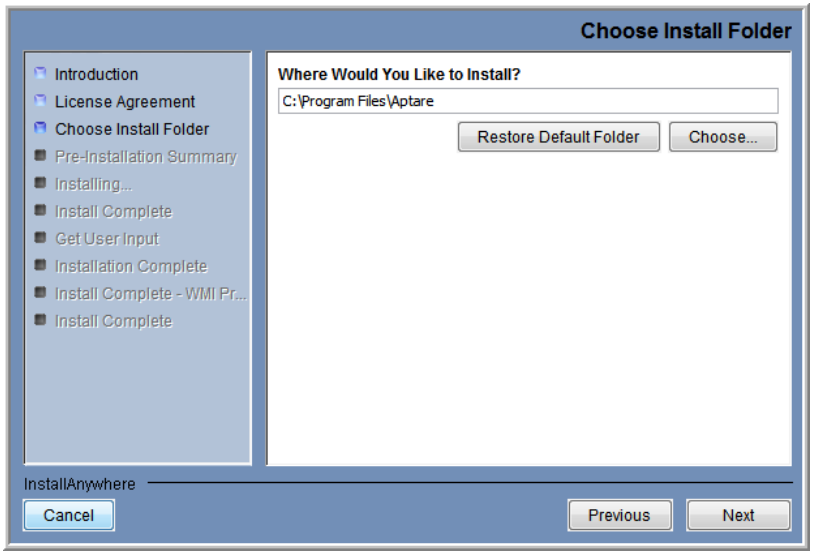
2. Install Anywhere will prepare to install the Data Collector Software. An Introduction dialog box will outline the installation process.



3. Click **Next** to view the License Agreement.



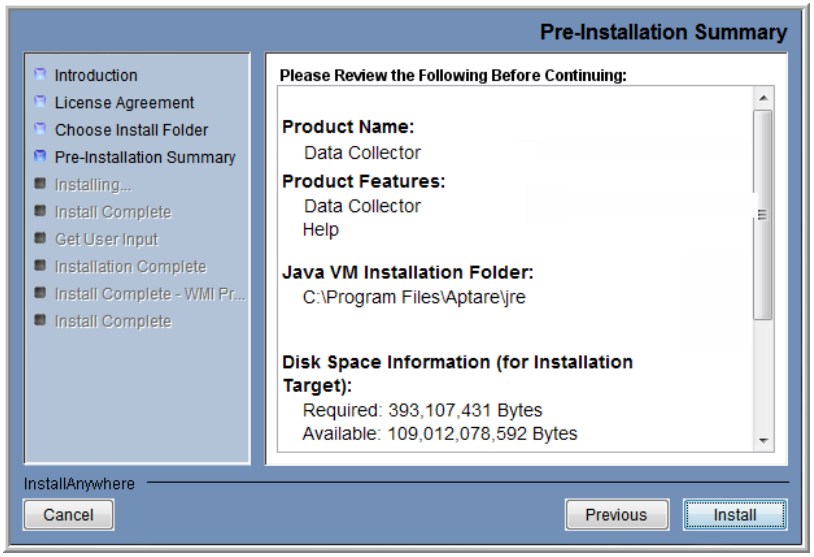
4. Read the agreement.
5. Click on the “I accept the terms of the License Agreement” radio button.
6. Click **Next** to display the window where you will choose the installation folder.



7. Specify the directory where you would like to install the Data Collector software.
   - Default for Windows: **C:\Program Files\Aptare**
   - Default for Linux: **/opt/aptare**

   Note: Accepting the default path is recommended.

8. Click **Next**.
9. Verify the pre-installation summary.



10. Click **Install** to proceed with the installation.
11. If the installer detects that you do not have Microsoft .NET already installed on the server, it will notify you of this required dependency. Microsoft .NET contains several necessary libraries. Refer to the *Certified Configurations Guide* for the required version of .NET.
12. Click **OK** to enable the installer to proceed with the installation of Microsoft .NET.

    The wizard will step you through the process and its progress.

    When the WMI Proxy installation completes, the WMI Server will be listed in the Windows Services list with a Startup Type of Automatic, however, this first time you will need to start the service from the Services window. Each time you re-start this Windows server, the proxy services will start automatically.
13. To access the Windows Services list to start the WMI Proxy Server:

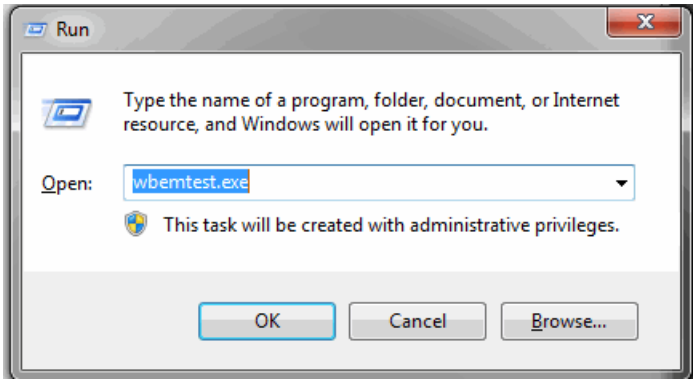
    Startup > Control Panel > Administrative Tools > Services
14. A window will be displayed when the installation is complete.
15. Click **Done** to complete the process.
16. It is recommended that you run the C:\Program Files\Aptare\mbs\bin\checkinstall.bat batch file to validate the Data Collector Installation.

Testing WMI Connectivity

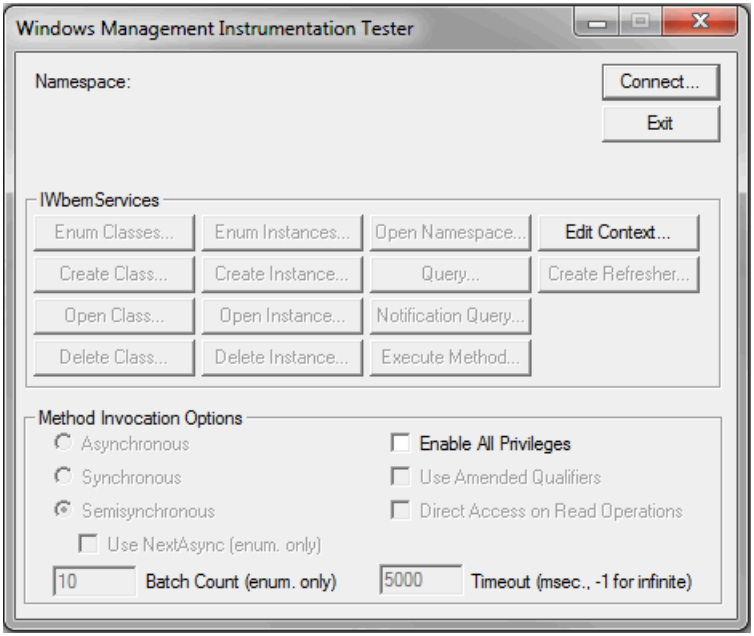
The Windows Management Instrumentation (WMI) Proxy is used by APTARE IT Analytics to collect data from Windows hosts. Should you have connectivity issues, these steps can be taken to test and troubleshoot connectivity.

To verify that WMI is working properly, take the following steps:

1. Log in to the Data Collector server as an Administrator.
2. From the Windows Start menu, type Run in the search box to launch the following window where you will enter **wbemtest.exe** and click **OK**.

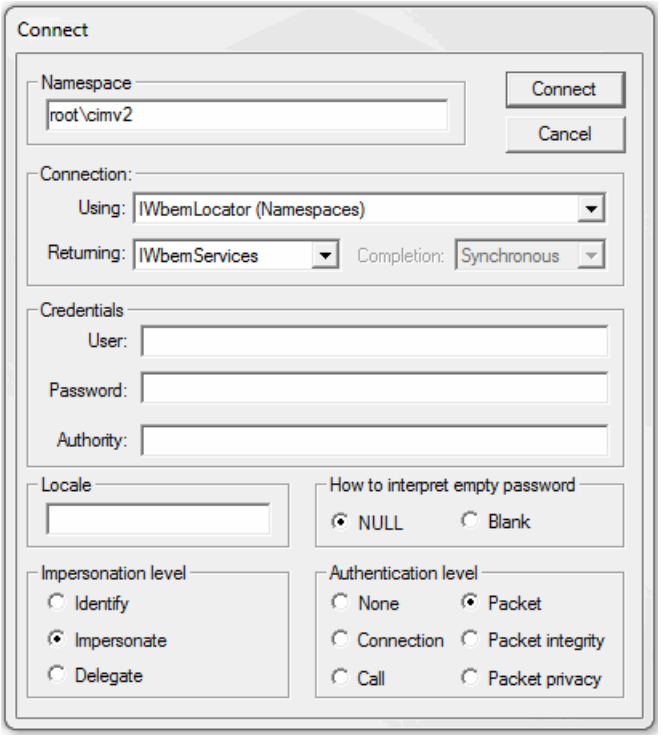


3. In the Windows Management Instrumentation Tester window, click **Connect**.



4. In the Connect window, preface the Namespace entry with the IP address or hostname of the target remote server in the following format:

   ```
   \\<IP Address>\root\cimv2
   ```



5. Complete the following fields in the Connect window and then click **Connect**.
   - User - Enter the credentials for accessing the remote computer. This may require you to enable RPC (the remote procedure call protocol) on the remote computer.
   - Password
   - Authority: Enter **NTLMDOMAIN:<NameOfDomain>**
     where NameOfDomain is the domain of the user account specified in the User field.
6. Click **Enum Classes**.
7. In the Superclass Info window, select the **Recursive** radio button, but do not enter a superclass name. Then, click **OK**.
8. The WMI Tester will generate a list of classes. If this list does not appear, go to the Microsoft Developer Network web site for troubleshooting help.

   http://msdn.microsoft.com/en-us/library/ms735120.aspx

Installing Data Collector Software: From the Internet

Follow these instructions if you are installing on a Data Collector Server that has Internet access and a web browser.

Log in as a Local Administrator to have the necessary permissions for this installation.

If your Data Collector Server does not have Internet access or web browser access--for example, X-Windows not available, proceed to the following section.

See "Installing Data Collector Software: No Internet Available from the Data Collector Server" on page 50.

1. Start the web browser on the **Data Collector Server**.
2. Navigate to the Support website to access the relevant download link.
3. Select the Data Collector Installer that corresponds to the platform of the **Data Collector Server**.
   - Linux: sc_datacollector_linux_<releaseversion>_<MMDDYYYY>.bin
   - Windows: sc_datacollector_win_<releaseversion>_<MMDDYYYY>.exe
4. Execute the OS-specific Data Collector installer.
5. Proceed to the UI Deployment of the Data Collector.

   See "Installing Data Collector Software: UI Deployment " on page 51.

Installing Data Collector Software: No Internet Available from the Data Collector Server

Use these instructions if you are installing via the Internet where Internet access is not available from the data collector server.

1. Note the Platform/OS of the **Data Collector Server**on which you want to install the Data Collector.
2. Open a browser on a client with web access (you will download the installer to this client, and then copy it to the **Data Collector Server**).
3. Navigate to the Support website to access the relevant download link.
4. Download the Data Collector Installer that corresponds to the platform of the **Data Collector Server**.
   - Linux: sc_datacollector_linux_<releaseversion>_<MMDDYYYY>.bin

- Windows: sc_datacollector_win_<releaseversion>_<MMDDYYYY>.exe

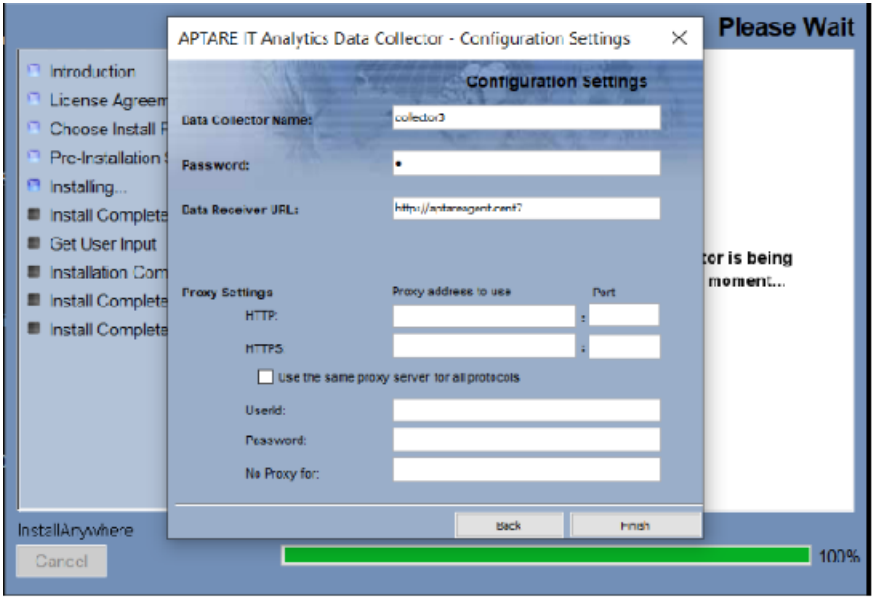
5. At the prompt, save the Data Collector Installer to a directory on the client.
6. Copy the Data Collector Installer to the Data Collector Server where the Data Collector is to be installed.
7. Go to the Data Collector Server and run the installer.
   - **On Windows:**
     Execute sc_datacollector_win_<releaseversion>_<MMDDYYYY>.exe
   - Proceed to the UI deployment.
     See “Installing Data Collector Software: UI Deployment ” on page 51.
   - **On Linux:**
     If the **Data Collector Server** has X-Windows, take these steps, substituting the relevant Data Collector Installer name for **<installer_file>**
     chmod +x <installer_file>
     sh ./<installer_file> -i swing
   - Proceed to the UI deployment.
     See “Installing Data Collector Software: UI Deployment ” on page 51.
     If the **Data Collector Server** does not have X-Windows:
   - Proceed to the Console Installation instructions.

Installing Data Collector Software: UI Deployment

InstallAnywhere will prepare to install the Data Collector software. After checking the available disk space and downloading the installer, an introduction dialog window outlines the installation process.

1. Review the installation process and click **Next**. The License Agreement displays for your acknowledgement.
2. Read the agreement and click the “I accept” radio button and then **Next**. The installer will display a window, which prompts you for an Install Folder.
3. Specify the directory where you would like to install the Data Collector software. Accepting the default paths is recommended. Windows default directory:
   `C:\Program Files\Aptare`
4. Click **Next** to display the Pre-Installation Summary.

5. Review the summary and click **Install**. The dialog tracks the installation as it progresses.
6. A Configuration Settings window will prompt you to select a Data Collection Task. The configuration choices are: Data Collector (includes WMI Proxy) or WMI Proxy Server (only). A single Data Collector can be installed for multiple products on a single server. When you select a backup product, if you are installing on a Windows server, the WMI Proxy Server is automatically included with the installation. When you select a storage array, the Host Resources setup is automatically included in the installation. The WMI Proxy Server also can be installed individually.
7. Enter the configuration settings for your particular environment.



8. After entering the configuration settings, click **Next**. At this point, the Data Collector has been successfully installed, however, to validate the Data Collector installation, it is recommended that you run the `C:\Program Files\Aptare\mbs\bin\checkinstall.bat` batch file.
9. Choose **Run now** and click **Done** in the **Get User Input** window to validate the installation and then quit the installer. The InstallAnywhere portion of the installation is now complete and the process continues with the command-line script execution.

Field	Description
Data Collector Name *	A unique name assigned to this Data Collector. This is the name that you used during the pre-Installation setup. The Data Collector will use this value for authentication purposes.
Password *	The password assigned to this Data Collector. The password is encrypted prior to saving in the APTARE IT Analytics database and is never visible in any part of the application.
Data Receiver URL*	This is the URL the Data Collector uses to communicate to the Portal server. The format of this URL should be: http://aptareagent.yourdomain.com It is similar to the URL you use to access the web-based Portal (http://aptareportal.yourdomain.com). **Note:** Be sure to enter the URL with the prefix aptareagent and NOT aptareportal.
Proxy Settings (Optional)	Enter the proxy server details for both http and https, including the User ID and Password for the server. HTTP/HTTPS: Enter a hostname or IP address and a port number. Use the same proxy server for all protocols: Check this box if the proxy server is used for all. User ID & Password: Enter the credentials for the proxy server. No Proxy for: List hostnames or IP addresses that will not be proxied. Examples: 192.168.1.1/21, localhost

Installing Data Collector Software: From the Console

Follow these instructions when installing on a Linux server that does not have X-Windows. The Installer will guide you through the sequence of steps to install and configure the Data Collector. If at any time you need to go back a step, simply type ‘back’ at the prompt.

Note: The Data Collector installer does not support console-based installation for the Windows operating system.

---

1. From your telnet session **cd** to the location where the Data Collector Installer file has been saved.

2. Execute the following commands, substituting the relevant Data Collector Installer name for <installer_name>.bin.

```
chmod +x <installer_name>.bin
sh ./<installer_name>.bin -i console
```

3. InstallAnywhere will prepare to install the Data Collector software.
4. The License Agreement will be displayed.
5. Read the agreement and type **Y** to accept it.
6. The installer will prompt for the installation location.
7. A Pre-Installation Summary will be displayed.
8. The installation process will track the progress.
9. The installer will prompt for the **Data Collector Name**. This is the ID that will be used on the Portal side to authenticate the Data Collector. This value should be the same value you configured on the Portal for the field “ID” during the Pre-Installation step.
10. The installer will prompt for the **Data Collector Password**. This is the password that will be used on the Portal side to authenticate the Data Collector. This value should be the same value you configured on the Portal for the field “passcode” during the Pre-Installation step.
11. The installer will prompt for the **Data Receiver URL**. This is the URL the Data Collector uses to communicate to the Portal server. This is the URL the Data Collector uses to communicate to the Portal server. The format of this URL should be:

    http://aptareagent.yourdomain.com

    It is similar to the URL you use to access the web-based Portal (http://aptareportal.yourdomain.com).

    IMPORTANT NOTE: Be sure to enter the URL with the prefix aptareagent and NOT aptareportal

```
Configuration Settings - 3
        -------------------------
        Enter Data Receiver URL
        (Required Field)
        Data Receiver URL (DEFAULT: ):
http://aptareagent.yourdomain.com
        The installer will perform a post-install validation:
        The installer will now configure the installation.
        This may take a few minutes.
```

12. Web Proxy (HTTP) settings can be configured.

```
Configuration Settings- 4
---------------------------
Connection Settings
Use Proxies? (Y/N) (DEFAULT: N): y
```

```
Configuration Settings - 5
--------------------------
Enter HTTP Proxy IP Address
(Please leave field empty if there is no Proxy/Firewall)

HTTP Proxy IP Address (DEFAULT: ): 10.2.2.116
```

```
Configuration Settings - 6
--------------------------
Enter HTTP Proxy Port
(Please leave field empty if there is no Proxy/Firewall)

HTTP Proxy Port (DEFAULT: ): 3128
```

```
Configuration Settings - 7
--------------------------
Enter HTTPs Proxy IP Address
(Please leave field empty if there is no Proxy/Firewall)

HTTPs Proxy IP Address (DEFAULT: ):
```

```
Configuration Settings - 8
--------------------------
Enter HTTPs Proxy Port
```

```
        (Please leave field empty if there is no Proxy/Firewall)

        HTTPs Proxy Port (DEFAULT: ):

================================================================

        Configuration Settings - 9
        --------------------------
        Enter Proxy UserId
        (Please leave field empty if there is no Proxy/Firewall)

        Proxy UserId (DEFAULT: ):

================================================================

        Configuration Settings - 10
        ---------------------------
        Enter Proxy Password
        (Please leave field empty if there is no Proxy/Firewall)

        Proxy Password:

================================================================

        Configuration Settings - 11
        ---------------------------
        Enter comma separated IP Addresses to exclude from Proxy

        (Please leave field empty if there is no Proxy/Firewall)

        No Proxy for (DEFAULT: ):

================================================================

        The installer will now configure the installation.
        This may take a few minutes.
        PRESS <ENTER> TO
CONTINUE:==================================
        Installation Complete
        ---------------------------------
        To validate the Data Collector installation, it is
recommended that you run the
        <home>/mbs/bin/checkinstall.sh script.
```

Chapter 7

Validating Data Collection

This chapter includes the following topics:

Validation Methods

Validation methods are initiated differently based on subsystem vendor associated with the Data Collector policy, but perform essentially the same functions. Refer to the following table for vendor-specific validation methods.

- Test Connection - Initiates a connection attempt directly from a data collector policy screen that attempts to connect to the subsystem using the IP addresses and credentials supplied in the policy. This validation process returns either a success message or a list of specific connection errors.
- On-Demand data collection run - Initiates an immediate end-to-end run of the collection process from the Portal without waiting for the scheduled launch. This on-demand run also serves to validate the policy and its values (the same as Test Connection), providing a high-level check of the installation at the individual policy level, including a check for the domain, host group, URL, Data Collector policy and database connectivity. This is initiated at the policy-level from **Admin>Data Collection>Collector Administration.**
  See “Working with On-Demand Data Collection” on page 60.

- CLI Checkinstall Utility- This legacy command line utility performs both the Test Connection function and On-Demand data collection run from the Data Collector server.
  See "Using the CLI Checkinstall Utility" on page 62.

Note: APTARE IT Analytics does not recommend using the CLI Checkinstall utility for any Data Collector subsystem vendor which supports On-Demand runs.

Data Collectors: Vendor-Specific Validation Methods

Table 7-1

Vendor Name	Test Connection	On-Demand	CLI Checkinstall Utility
Amazon Web Services (AWS)	x	x	
Brocade Switch		x	
Brocade Zone Alias	x	x	
Cisco Switch		x	
Cisco Zone Alias	x	x	
Cohesity DataProtect	x	x	
Commvault Simpana			x
Dell Compellent			x
Dell EMC Elastic Cloud Storage (ECS)	x	x	
Dell EMC NetWorker Backup & Recovery	x		
Dell EMC Unity	x	x	
EMC Avamar		x	
EMC Data Domain Backup	x	x	
EMC Data Domain Storage	x	x	

Table 7-1 *(continued)*

Vendor Name	Test Connection	On-Demand	CLI Checkinstall Utility
EMC Isilon		x	
EMC NetWorker			x
EMC Symmetrix	x	x	
EMC VNX CLARiiON	x	x	
EMC VNX Celerra			x
EMC VPLEX			x
EMC XtremIO	x	x	
HDS HCP	x	x	
HDS HNAS		x	
HP 3PAR			x
HP Data Protector			x
HP EVA			x
HPE Nimble Storage	x	x	
Hitachi Block			x
Hitachi Content Platform (HCP)	x	x	
Hitachi NAS	x	x	
Huawei OceanStor	x	x	
IBM Enterprise			x
IBM SVC			x
IBM Spectrum Protect (TSM)		x	
IBM VIO	x	x	
IBM XIV			x
INFINIDAT Infinibox	x	x	
Microsoft Azure	x	x	

Table 7-1 *(continued)*

Vendor Name	Test Connection	On-Demand	CLI Checkinstall Utility
Microsoft Hyper-V	x	x	
Microsoft Windows Server	x	x	
NAKIVO Backup & Replication	x	x	
NetApp E Series			x
Netapp		x	
Netapp Cluster Mode		x	
OpenStack Ceilometer	x	x	
OpenStack Swift	x Test Connection is included with the Get Nodes function.	x	
Oracle Recovery Manager (RMAN)	x	x	
Pure FlashArray	x	x	
Rubrik Cloud Data Management	x	x	
VMWare			x
Veeam Backup & Replication	x	x	
Veritas Backup Exec			x
Veritas NetBackup	x	x	
Veritas NetBackup Appliance	X	x	

Working with On-Demand Data Collection

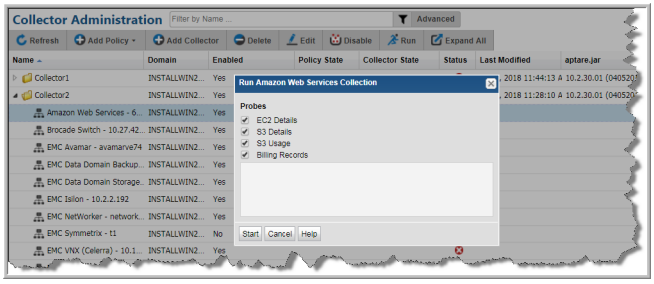
Note: On-Demand data collection is not available for all policies.

On-Demand data collection serves multiple purposes. You can use it to:

- Validate the collection process is working end-to-end when you create a data collector policy
- Launch an immediate run of the collection process without waiting for the scheduled run
- Populate your database with new/fresh data
- Collections can run on a schedule or On-Demand using the Run button on the action bar. On-Demand allows you to select which probes and devices to run. The On-Demand run collects data just like a scheduled run plus additional logging information for troubleshooting. A stopped Policy still allows an On-Demand collection run, providing the policy is one of the specified vendors and the Collector is online.

To initiate an on-demand data collection

1. Select **Admin > Data Collection > Collector Administration**. All Data Collectors are displayed.
2. Click **Expand All** to browse for a policy or use **Search**.
3. Select a data collector policy from the list. If the vendor is supported, the **Run** button is displayed on the action bar.
4. Click **Run**. A dialog allowing you to select individual probes and servers to test the collection run is displayed. The following example shows the Amazon Web Services dialog. See the vendor specific content for details on probes and servers.



5. Click **Start**. Data is collected just like a scheduled run plus additional logging information for troubleshooting. Once started, you can monitor the status of the run through to completion.

Note: If there is another data collection run currently in progress when you click **Start**, the On-Demand run will wait to start until the in-progress run is completed.

Using the CLI Checkinstall Utility

This legacy utility performs both the Test Connection function and On-Demand data collection run from a command line interface launched from the Data Collector server.

Note: APTARE IT Analytics does not recommend using the CLI Checkinstall utility for any Data Collector subsystem vendor which supports On-Demand runs.

The following directions assume that the Data Collector files have been installed in their default location:

Windows (`C:\Program Files\Aptare`) or Linux (**/opt/aptare**).

If you have installed the files in a different directory, make the necessary path translations in the following instructions.

Note: Some of the following commands can take up to several hours, depending on the size of your enterprise.

To run Checkinstall

1. Open a session on the Data Collector server.

   Windows: Open a command prompt window.

   Linux: Open a telnet session logged in as root to the **Data Collector Server**.

2. Change to the directory where you'll run the validation script.

   Windows: At the command prompt, type:

   ```
   cd C:\Program Files\Aptare\mbs\bin <enter>
   ```

   Linux: In the telnet session, type:

   ```
   cd /opt/aptare/mbs/bin <enter>
   ```

3 Execute the validation script.

Windows: At the command prompt, type: `checkinstall.bat` <enter>

Linux: In the telnet session. type: `./checkinstall.sh` <enter>

The **checkinstall** utility performs a high-level check of the installation, including a check for the domain, host group and URL, Data Collector policy and database connectivity. This utility will fail if a Data Collector policy has not been configured in the Portal. For a component check, specifically for Host Resources, run the **hostresourcedetail.sh|bat**utility.

Checkinstall includes an option to run a probe for one or more specific devices. Note that certain Data Collectors will not allow individual selection of devices. Typically these are collectors that allow the entry of multiple server addresses or ranges of addresses in a single text box. These collectors include: Cisco Switch, EMC CLARiiON, EMC Data Domain, EMC VNX arrays, HP 3PAR, IBM mid-range arrays, IBM XIV arrays and VMWare. Data Collectors that probe all devices that are attached to a management server also do not allow individual selection of devices: EMC Symmetric, File Analytics, Hitachi arrays and IBM VIO.

4 If the output in the previous steps contains the word **FAILED**, then contact Support and have the following files ready for review:
`/opt/aptare/mbs/logs/validation/`

`C:\Program Files\Aptare\mbs\logs\validation\`

List Data Collector Configurations

Use this utility to list the various child threads and their configurations encapsulated within a data collector configuration. This utility can be used in conjunction with other scripts, such as **checkinstall.[sh|bat]**.

On Linux: **./listcollectors.sh**

On Windows: **listcollectors.bat**

Chapter 8

Uninstalling the Data Collector

This chapter includes the following topics:

Uninstall the Data Collector on Linux

Note: This uninstall process assumes that the Data Collector was installed using the standard installation process.

1. Login to the **Data Collector Server** as **root**.
2. Stop the Data Collector service, using the command appropriate for the operating system.

```
[Data Collector Home Folder]/mbs/bin/aptare_agent stop
```

3. Run the `Uninstall Data Collector Agent` script, located in the following directory:

```
[Data Collector Home Folder]/UninstallerData
```

Uninstall the Data Collector on Windows

1. Login to the **Data Collector Server**. (User must have Administrator privileges.)
2. Stop the Data Collector services.
   - Click **Start** > **Settings** > **Control Panel**
   - Click **Administrative Tools**.
   - Click **Services**.
3. Click **Uninstall APTARE IT Analytics Data Collector in Start Menu/Programs/APTARE IT Analytics Data Collector**
4. Follow the prompts in the uninstall windows.

Note: The uninstaller may not delete the entire Data Collector directory structure. Sometimes new files, created after the installation, along with their parent directories, are not removed. You may need to manually remove the root install folder (default C:\Program Files\Aptare) and its sub-folders after the uninstaller completes.

Chapter 9

Manually Starting the Data Collector

This chapter includes the following topics:

Introduction

The installer configures the Data Collector to start automatically, however, it does not actually start it upon completion of the installation because you must first validate the installation.

Follow these steps, for the relevant operating system, to manually start the Data Collector service:

On Windows

The installer configures the Data Collector process as a Service.

To view the Data Collector Status:

1. Click **Start > Settings > Control Panel**
2. Click **Administrative Tools**.
3. Click **Services**. The Microsoft Services dialog is displayed. It should include entries for **Aptare Agent**. Start this service if it is not running.

On Linux

The installer automatically copies the Data Collector “start” and “stop” scripts to the appropriate directory, based on the vendor operating system.

To start the data collector, use the following command:

```
etc/init.d/aptare_agent start
```

Appendix A

Firewall Configuration: Default Ports

This appendix includes the following topics:

Firewall Configuration: Default Ports

The following table describes the standard ports used by the Portal servers, the Data Collector servers, and any embedded third-party software products as part of a standard “out-of-the-box” installation.

Table A-1 Components: Default Ports

Component	Default Ports
Apache Web Server	http 80 https 443
Linux Hosts	SSH 22, Telnet 23
Managed Applications	Oracle ASM 1521 MS Exchange 389 MS SQL 1433 File Analytics CIFS 137, 139
Oracle Oracle TNS listener port	1521

Table A-1 Components: Default Ports *(continued)*

Component	Default Ports
Tomcat - Data Receiver Apache connector port and shutdown port for Data Receiver instance of tomcat	8011, 8017
Tomcat - Portal Apache connector port and shutdown port for Portal instance of tomcat	8009, 8015
Windows Hosts	TCP/IP 1248 WMI 135 DCOM TCP/UDP > 1023 SMB TCP 445

Table A-2 Storage Vendors: Default Ports

Storage Vendor	Default Ports and Notes
Dell Compellent	1433 SMI-S http (5988) SMI-S https (5989)
Dell EMC Elastic Cloud Storage (ECS)	REST API 80/443
Dell EMC Unity	REST API version 4.3.0 on 443 or 8443
EMC Data Domain Storage	SSH 22
EMC Isilon	SSH 22
EMC Symmetrix	SymCLI over Fibre Channel 2707
EMC VNX (CLARiiON)	NaviCLI 443, 2163, 6389, 6390, 6391, 6392
EMC VNX (Celerra)	XML API 443, 2163, 6389, 6390, 6391, 6392
EMC VPLEX	https TCP 443
EMC XtremIO	REST API https 443
HP 3PAR	22 for CLI

Table A-2 Storage Vendors: Default Ports *(continued)*

Storage Vendor	Default Ports and Notes
HP EVA	2372
HPE Nimble Storage	5392, REST API Reference Version 5.0.1.0
Hitachi Block Storage	TCP 2001 For the HIAA probe: 22015 is used for HTTP and 22016 is used for HTTPS.
Hitachi Content Platform (HCP)	SNMP 161 REST API https 9090
Hitachi NAS (HNAS)	SSC 206
Huawei OceanStor Enterprise Storage	8080
IBM Enterprise	TCP 1751, 1750, 1718 DSCLI
IBM SVC	SSPC w/CIMOM 5988, 5989
IBM XIV	XCLI TCP 7778
INFINIDAT InfiniBox	REST API TCP 80, 443
Microsoft Windows Server	2012 R2, 2016 WMI 135 DCOM TCP/UDP > 1023
NetApp E-Series	SMCLI 2436
NetApp ONTAP 7-Mode and Cluster-Mode	ONTAP API 80/443
Pure Storage FlashArray	REST API https 443
Veritas NetBackup Appliance	1556

Table A-3 Data Protection: Default Ports

Data Protection Vendor	Default Ports and Notes
Cohesity DataProtect	REST API on Port 80 or 443

Table A-3 Data Protection: Default Ports *(continued)*

Data Protection Vendor	Default Ports and Notes
Commvault Simpana	1433, 135 (skipped files) 445 (CIFS over TCP) DCOM >1023
Dell EMC Networker Backup & Recovery	Port used for Dell EMC NetWorker REST API connection. Default: 9090.
EMC Avamar	5555 SSH 22
EMC Data Domain Backup	SSH 22
EMC NetWorker	■ NSRADMIN TCP 7937-7940 ■ WMI Proxy range of ports ■ SSH 22 (Linux)
HP Data Protector	5555 WMI ports SSH 22 (Linux)
IBM Spectrum Protect (TSM)	1500
NAKIVO Backup & Replication	Director Web UI port (Default: 4443)
Oracle Recovery Manager (RMAN)	1521
Rubrik Cloud Data Management	REST API 443
Veeam Backup & Replication	9392
Veritas Backup Exec	1433
Veritas NetBackup	1556, 13724 WMI ports SSH 22 (Linux)

Table A-4 Network & Fabrics: Default Ports

Network & Fabrics Vendor	Default Ports and Notes
Brocade Switch	SMI-S 5988/5989
Cisco Switch	SMI-S 5988/5989

Table A-5 Virtualization Vendors: Default Ports

Virtualization Vendor	Default Ports and Notes
IBM VIO	SSH 22, Telnet 23
Microsoft Hyper-V	WMI 135 DCOM TCP/UDP > 1023
VMware ESX or ESXi,vCenter,vSphere	vSphere VI SDK https TCP 443

Table A-6 Replication Vendors: Default Ports

Replication Vendor	Default Ports and Notes
NetApp ONTAP 7-Mode	ONTAP API 80/443

Table A-7 Cloud Vendors: Default Ports

Cloud Vendor	Default Ports and Notes
Amazon Web Services	https 443
Microsoft Azure	https 443
OpenStack Ceilometer	8774, 8777 Keystone Admin 3537 Keystone Public 5000
OpenStack Swift	Keystone Admin 35357 Keystone Public 5000 SSH 22