



# HP Universal CMDB

Software Version: 10.20

## DDMI to Universal Discovery Migration Walkthrough Guide

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# Chapter 1: DDMI to Universal Discovery Migration

## Overview

This guide describes how to migrate from DDMI versions 7.6x- 9.32 to Universal Discovery. In addition, it provides upgrade information for DDMA users.

This guide covers the following:

- Migrating DDMI server configuration data to Universal Discovery
- Migrating DDMI agents to Universal Discovery agents
- Configuring Universal Discovery agents to work with both DDMI and Universal Discovery

After you perform the migration, review the other documents in this guide to help you to make the transition to Universal Discovery.

## Migration Considerations

Consider the following when selecting migration options:

- Migration Preferences
  - **Partial or phased.** You can continue using DDMI for inventory discovery while simultaneously utilizing discovery features of Universal Discovery. In this way, you can implement a parallel environment while gradually making the transition to Universal Discovery.
  - **Complete cutover.** You can migrate all configurations to Universal Discovery and then retire DDMI services.
- Upgrading DDMA (DDMA users only)
  - If DDMA is also running in your environment, upgrade to Universal Discovery as follows:
    - Locate the UCMDB installation media and perform the following:
      - Install UCMDB on the server where you want to run the UCMDB server. On the **Installation Type** page of the setup wizard, select **Upgrade from <VersionNumber>**.

where **<VersionNumber>** is the version of DDMA that is currently installed.

- Install the Data Flow Probe on the server where you want to run the Data Flow Probe server.

For complete details on installing UCMDB, see the interactive *HP Universal CMDB Deployment Guide*.

- Interoperating DDMI and Universal Discovery
  - In a partial or phased migration approach, the Universal Discovery agent can be utilized by both the DDMI server and the UCMDB Data Flow Probe for discovery and inventory. This functionality lets you upgrade from DDMI to Universal Discovery in a gradual way—running DDMI until the full migration from DDMI to Universal Discovery is completed.

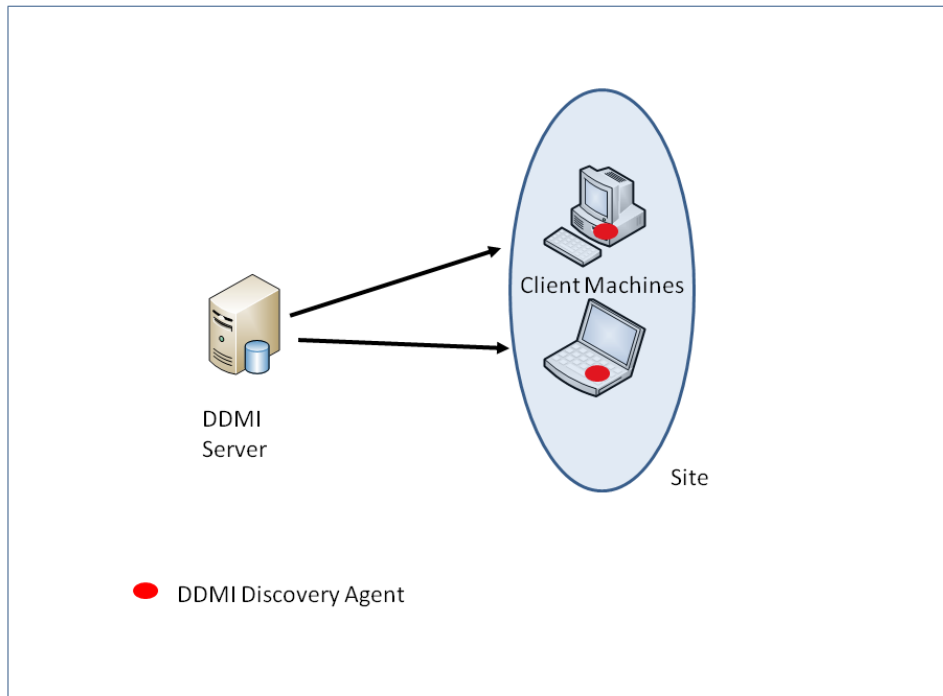
## Architectural Changes

From a physical perspective, the DDMI and Universal Discovery architectures look similar. Most of the differences are from a logical perspective.

### DDMI Deployment Scenarios

- DDMI Deployment Scenario 1

A DDMI server acts as both an aggregator and a collector for a site or region.

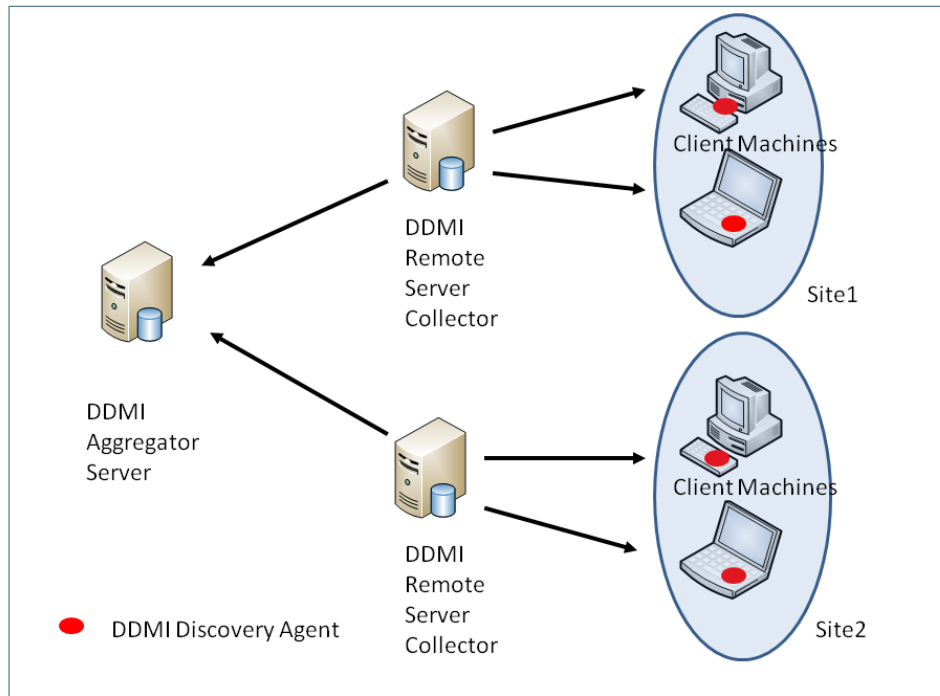


Comparing this deployment scenario to the Universal Discovery deployment scenario below, the DDMI server role is split into two distinct roles—UCMDB Server and Data Flow Probe.

- **DDMI Deployment Scenario 2**

Multiple DDMI servers act in a collector server role (also called “remote” servers) for each of their respective sites or regions and then write results to local, built-in MySQL databases. Aggregator servers pull data from collector servers and then write the results to local, built-in MySQL databases and aggregate the data. Results are displayed in the Aggregator Health Panel. Each DDMI Remote Server Collector can independently display results for its respective sites.

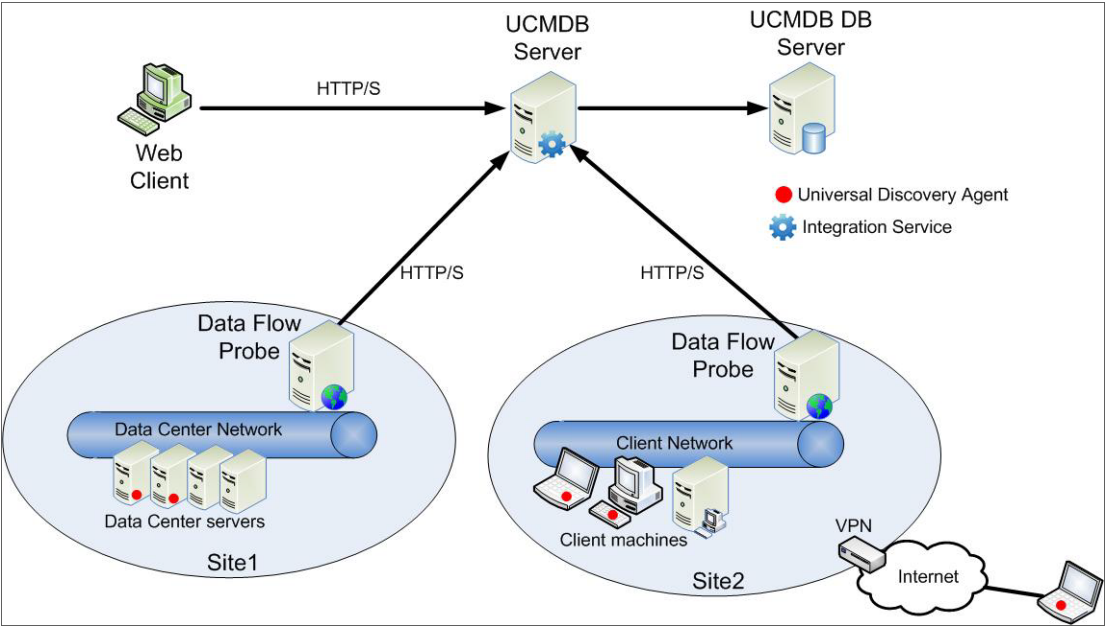




Comparing this deployment scenario to the Universal Discovery deployment scenario below, the physical architecture looks similar. One prominent difference is the functionality of the DDMI Remote Server Collector and the UCMDB Data Flow Probe. The DDMI Remote Server Collector acts independently—able to report data for its respective site or region. The UCMDB Data Flow Probe has no reporting capabilities and serves only to execute jobs and maintain communication with UD Agents on remote discovery nodes.

### Universal Discovery Deployment Scenario

The Data Flow Probe acts as the collector server for each of its respective sites. The Data Flow Probe converts collected data to Configuration Items (CIs) and reports the data to UCMDB which acts as an Aggregator Server. UCMDB uses an Oracle or SQL Server database system. The data is displayed using reports or modeling tools.



## Chapter 2: Before Migration

This chapter includes:

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| Choose an Inventory Discovery Mode .....                     | 19 |

### DDMI to Universal Discovery Migration Options Overview

**Tip:** Read this entire section to ensure that you choose the migration options that are appropriate for your environment and migration preferences.

The migration options that you select depend on your migration preferences, and whether DDMA is also installed in your environment.

The following table lists all of the options that are available when migrating to Universal Discovery:

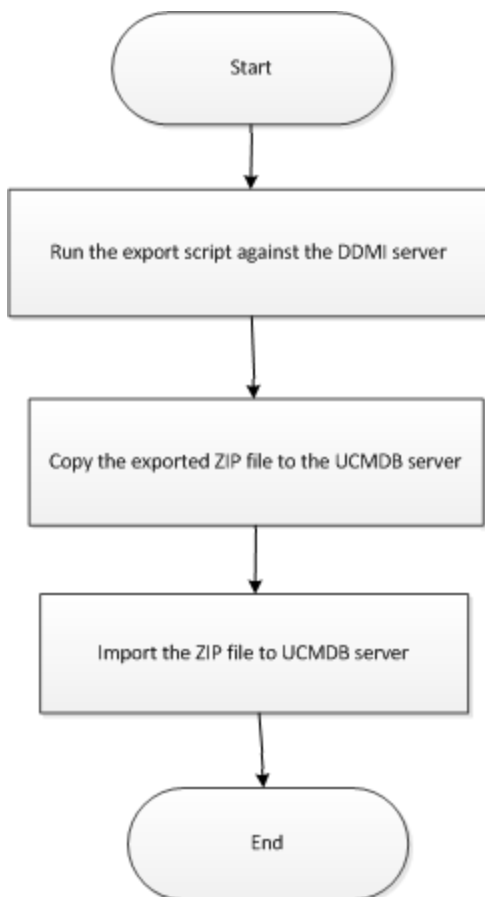
| Option                                 | Description  |
|--|--|
| Migrate DDMI Server Configuration Data | Export DDMI server configurations, such as User SAs, certificates, and IP ranges to Universal Discovery  |
| Migrate DDMI Agents                    | Migrate DDMI agents to Universal Discovery agents.   |
| Configure Agents for Interoperability  | (Optional) After DDMI agents are migrated to Universal Discovery agents, configure the DDMI server and Universal Discovery to interoperate in a partial/phased migration strategy. |

The following matrix suggests the best options for your migration preferences. It also takes into account whether DDMA is installed.

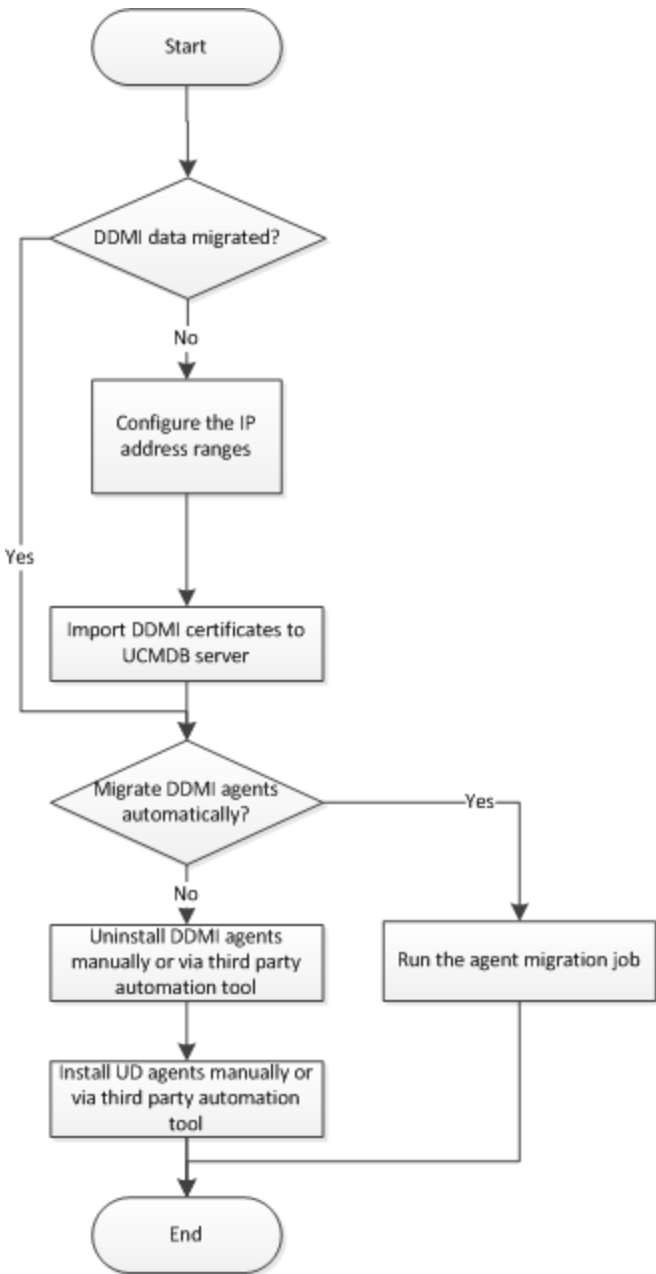
| Retire DDMI?   | DDMI and DDMA Installed  | Only DDMI Installed  |
|--|--|--|
| Yes, I want a complete cutover to Universal Discovery.   | <a href="#">Migrate Agents</a>   | <ul style="list-style-type: none"> <li>• <a href="#">Migrate DDMI Server Configuration Data</a></li> <li>• <a href="#">Migrate Agents</a></li> </ul>   |
| No, I want a partial/phased migration; migrate DDMI agents to Universal Discovery agents and run both systems in parallel. | <ul style="list-style-type: none"> <li>• <a href="#">Migrate Agents</a></li> <li>• <a href="#">Agent Interoperability</a></li> </ul> | <ul style="list-style-type: none"> <li>• <a href="#">Migrate DDMI Server Configuration Data</a></li> <li>• <a href="#">Migrate Agents</a></li> <li>• <a href="#">Agent Interoperability</a></li> </ul> |

The following diagrams show each process step which corresponds to a step in the documentation.

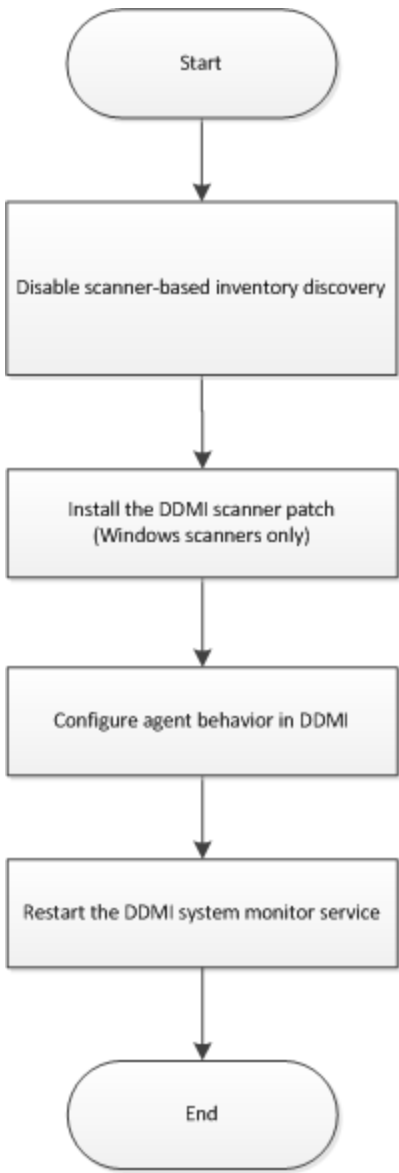
#### Migrate DDMI Server Configuration Data



Migrate Agents



**Agent Interoperability**



The following table provides links to documentation for each option.

| Option Name                            | Documentation Link  |
|--|---|
| Migrate DDMI Server Configuration Data | <a href="#">"How to Migrate DDMI Server Configuration Data to Universal Discovery" on page 37</a> |
| Migrate DDMI Agents                    | <a href="#">"How to Migrate DDMI Agents to Universal Discovery Agents" on page 72</a>             |
| Configure Agents for Interoperability  | <a href="#">"How to Configure DDMI and Universal Discovery for Interoperability" on page 73</a>   |

## Check the DDMI Environment

Before Migrating DDMI to Universal Discovery (UD), check the following information with your DDMI administrator:

### DDMI server

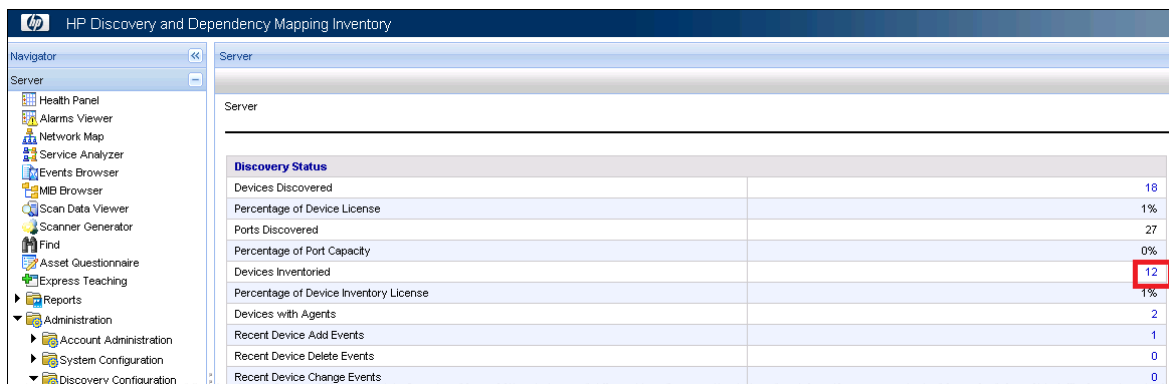
Each DDMI server will be mapped to a UD probe. However, the DDMI aggregator is not required to be migrated if it is not used to discover any devices.

To smoothly migrate, it is recommended to use a duplicate device of the DDMI server to install the UD probe. The duplicate device means the device with the same security configuration and the same position in the network as the DDMI server.

The DDMI server can be removed after the whole migration.

### The number of devices that you have on each probe

**Devices Inventoried** that is shown below means devices that are discovered and managed by UD.



| Discovery Status                       |    |
|--|----|
| Devices Discovered                     | 18 |
| Percentage of Device License           | 1% |
| Ports Discovered                       | 27 |
| Percentage of Port Capacity            | 0% |
| Devices Inventoried                    | 12 |
| Percentage of Device Inventory License | 1% |
| Devices with Agents                    | 2  |
| Recent Device Add Events               | 1  |
| Recent Device Delete Events            | 0  |
| Recent Device Change Events            | 0  |

In DDMI, the maximum number of **Devices Inventoried** that is allowed is 50,000. However, each UD probe cannot handle this number.

If this number is larger than 10,000, contact HP Software Support for further suggestion. It is recommended to split the DDMI server on several UD probes.

### The number of device groups that you have on each probe

Each device group will be mapped to a management zone. DDMI can handle thousands of device groups; however, the maximum number of device groups that UD management zone can handle is 20.

**Caution:** Creating too many management zones may cause performance issues.

It is recommended to reconfigure the management zone. For details on how to configure the management zone, see the relevant section in ["Configure Inventory Discovery" on page 45](#).

**Note:** Do not create a device group with the passive discovery profile including 0.0.0.0 - 255.255.255.255. Although this is a valid configuration in DDMI, it can cause serious issues for UD.

## DDMI credential

The UD agent requires absolute root privilege (or sudo) during installation.

## Configure DDMI

The DDMI configuration here is the preparation for DDMI and UD Interoperability.

To configure DDMI, do the following:

1. Forbid the agent or scanner upgrade.
  - Go to **DDMI > Server > Administration > Discovery Configuration > Configuration Profiles > Agent Configuration Profiles > Settings** tab.



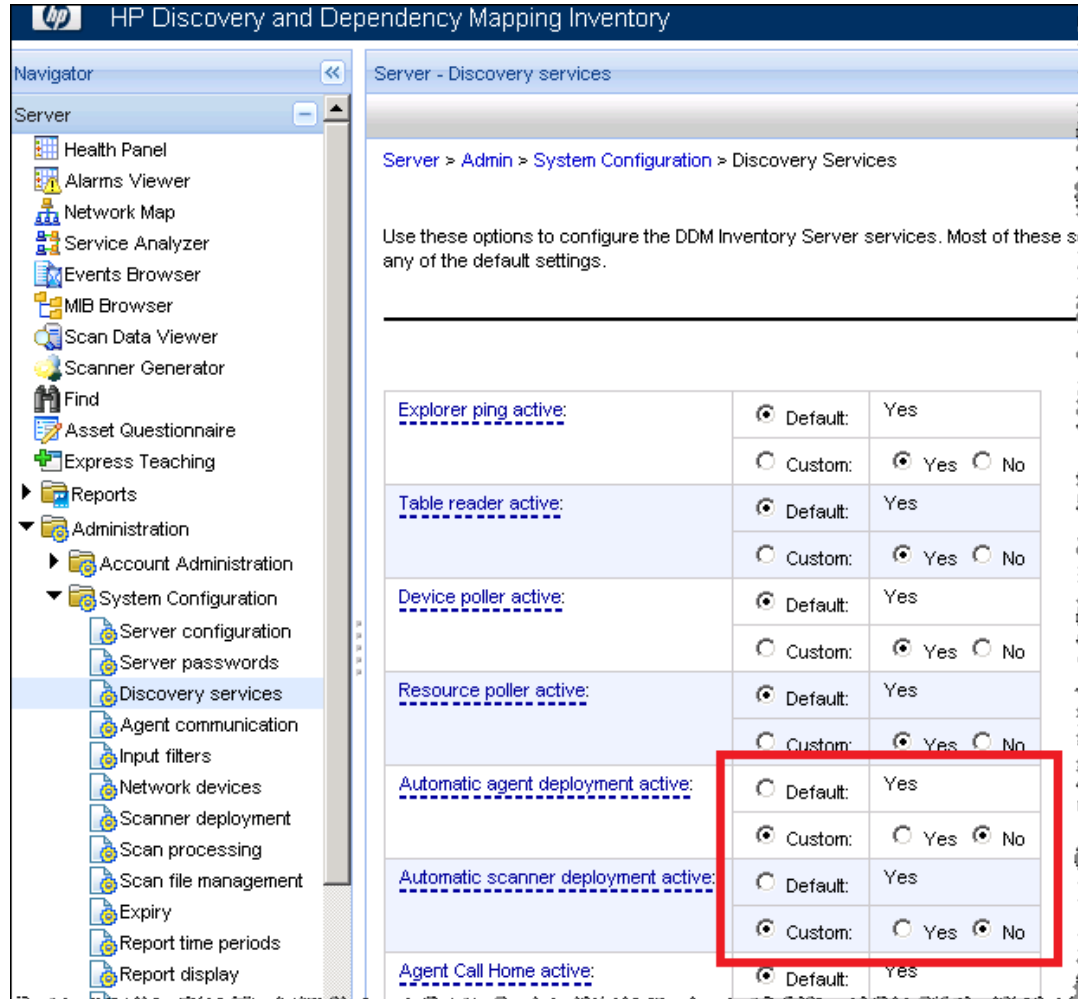
Ensure that **Allow agent communication** is selected. In the **Agent deployment actions** drop-down list box, select **No action**.

The screenshot shows the HP Discovery and Dependency Mapping Inventory (DDMI) interface. The left sidebar contains a Navigator with a tree view under 'Server' including Health Panel, Alarms Viewer, Network Map, Service Analyzer, Events Browser, MIB Browser, Scan Data Viewer, Scanner Generator, Find, Asset Questionnaire, Express Teaching, Reports, Administration, System Configuration, and Discovery Configuration. The 'Discovery Configuration' folder is expanded, showing Configuration Profiles, Device Groups, Deployment Credentials, Schedules, Scanner Configurations, Import/Export, and Activation. The main pane displays 'Server - Configuration Profile Details - Agent' with a breadcrumb 'Server > Admin > Discovery Configuration > Configuration Profiles'. Below the breadcrumb are 'Save and Close' and 'Cancel' buttons. The 'Name' field contains 'cls agent' and the 'Description' field is empty. The 'Settings' tab is active, showing a list of configuration options. The 'Allow agent communication' checkbox is checked, and the 'Agent deployment action' dropdown is set to 'No action' (highlighted with a red box). Other options include 'Allow agent upgrade' (checked), 'Agent automatic upgrade schedule' (set to '<All the time>'), 'Collect utilization data' (unchecked), 'Allow agentless scanner execution' (unchecked), 'Remove scan data' (unchecked), 'Accept new public client key' (unchecked), 'Accept changed public client key' (unchecked), and 'Limit bandwidth for data transfers' (set to 0 Kb/s).

- Go to **DDMI > Server > Administration > System Configuration > Discovery services**.

For **Automatic agent deployment active**, click **Custom > No**.

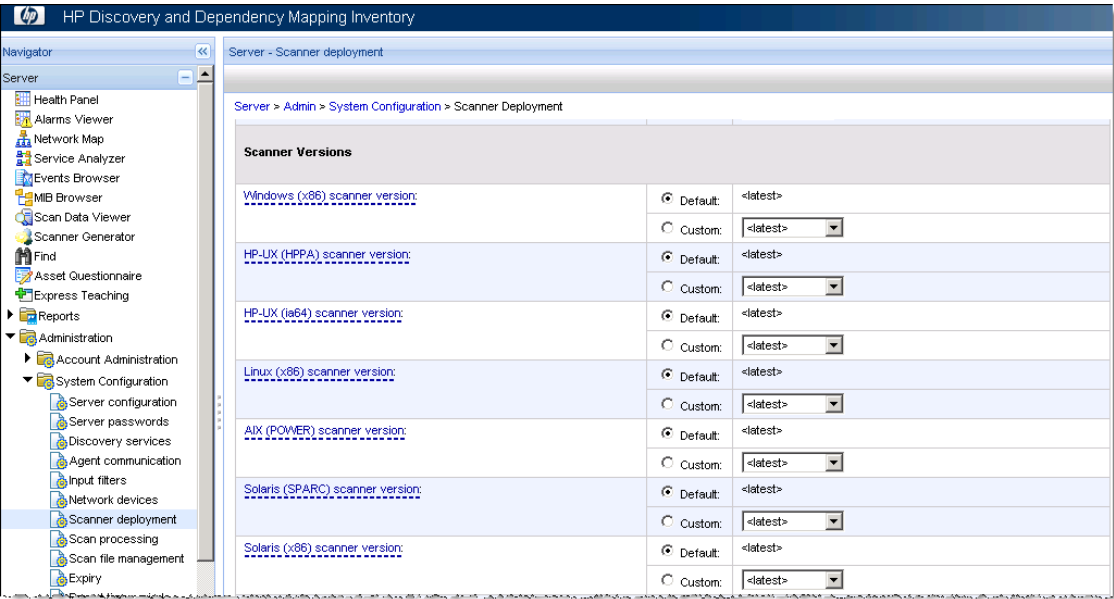
For **Automatic scanner deployment active**, click **Custom > No**.



2. Confirm that no specific scanner is selected.

Go to **DDMI > Server > Administration > System Configuration > Scanner deployment**.

Ensure that **Scanner Deployment** is configured as follows:



**Note:** For Interoperability issues before DDMI 9.32 Update2, contact HP Software Support if your DDMI is not updated.

## Choose an Inventory Discovery Mode

This section includes:

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|---|----|
| Inventory Discovery Mode Concepts ..... | 19 |
| Inventory Discovery Mode Types .....    | 20 |

## Inventory Discovery Mode Concepts

This section describes the main concepts of Inventory Discovery Mode:

### Inventory Discovery Mode

Inventory Discovery Mode is the way to obtain inventory data of devices.

Client

Client means devices without a bound IP address.

This kind of device usually requests a dynamic IP address to the DHCP (Dynamic Host Configuration Protocol) server when the device is connected to the network.

Data Center

Data Center means devices with relatively stable IP addresses, such as a server, database, and so on.

**Note:** You must be able to know if any IP address changes in the environment and you can manipulate the IP address manually in UCMDB.

Active discovery

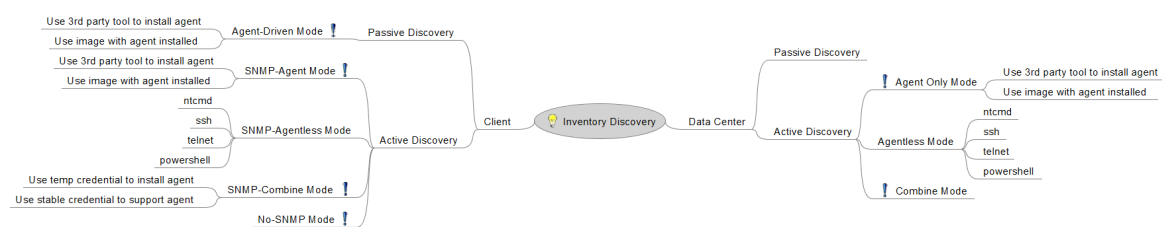
Data Flow Probe actively searches for devices. The whole discovery workflow is started by Universal Discovery.

Passive Discovery

Data Flow Probe just waits for devices to call home.

For details on Call Home, see the *HP Universal CMDB Data Flow Management Guide*.

Inventory Discovery Mode Types



This section includes:

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Agentless Mode ..... 23

Combined Mode ..... 24

Agent-Driven Mode ..... 26

SNMP-Agent Mode .....28

SNMP-Combined Mode .....30

SNMP-Agentless Mode .....32

No-SNMP Agent Mode .....34

Agent-Only Mode

In this mode, an agent is preinstalled on devices. Data Flow Probe only has the Universal Discovery Protocol. When a device is in the network, the probe will ping it and create an IpAddress CI, and a series of jobs can be triggered to discover Node and NodeElement CI.

This mode is a recommended mode for the Data Center environment. Each agent has its own UUID that is saved in the agent configuration file. If the agent is preinstalled in an image, pay attention to the UUID. Contact HP Software Support for advice.

| Agent-Only Mode | Description  |
|-----------------|--|
| Basic discovery | <div><p>Describes how UCMDB knows that the device exists in the environment.</p><p>The basic discovery workflow of this mode is as follows:</p><div><p>Ping the device</p><pre>sequenceDiagram     participant UCMDBServer1 as UCMDBServer     participant Probe1 as Probe     participant Device as Device     participant UCMDBServer2 as UCMDBServer     participant Probe2 as Probe     participant Device2 as Device      UCMDBServer1-&gt;&gt;Probe1: Run IP Range by ICMP job     Probe1-&gt;&gt;Device: Ping     Device--&gt;&gt;UCMDBServer2: Create IpAddress CI</pre><p>www.websequencediagrams.com</p></div></div> |

| Agent-Only Mode     | Description   |
|---------------------|---|
| Inventory discovery | <p>Describes how UCMDB obtains the detailed Inventory data of a device.</p> <p>The inventory discovery workflow of this mode is as follows:</p> <p style="text-align: right; font-size: small;">www.websequencediagrams.com</p>   |
| Advantages          | <ul style="list-style-type: none"> <li>• Simple and clear scenario without Call Home in it.</li> <li>• Secure because UCMDB do not need any other credentials but the Universal Discovery Protocol.</li> </ul>  |
| Disadvantages       | <ul style="list-style-type: none"> <li>• Need a preinstalled agent on every device.</li> <li>• No remedy if the agent fails because the agent is the only connection channel.</li> <li>• Difficult to troubleshoot if there is no remote access to the device.</li> </ul> |
| Prerequisite        | To apply this mode, you must have a method to install and upgrade an agent without UCMDB.   |
| Related jobs        | <ul style="list-style-type: none"> <li>• Range IPs by ICMP</li> <li>• Host Connection by Shell</li> <li>• Inventory Discovery by Scanner</li> </ul>   |
| Attention           | <b>9.</b> A score (1 - 10) to evaluate the mode. The higher the score is, the more recommended the mode is for you.   |
| Other information   | You must disable Call Home in this mode.  |

## Agentless Mode

No Universal Discovery agent is installed in the whole environment. Data Flow Probe manages credentials of different protocols (NTCMD, SSH, and so on) to connect to the target device and discover. The scanner is copied and run by the remote control.

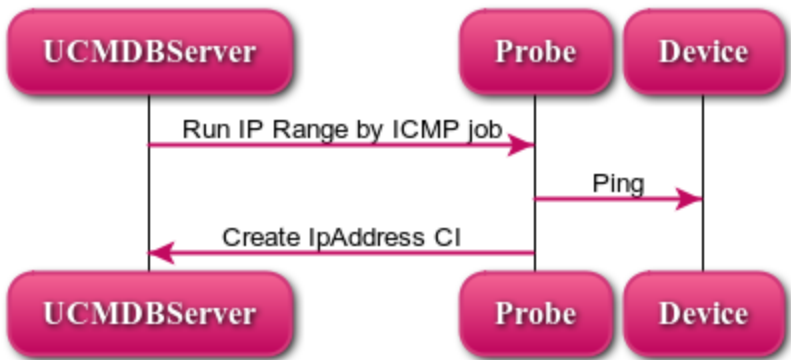
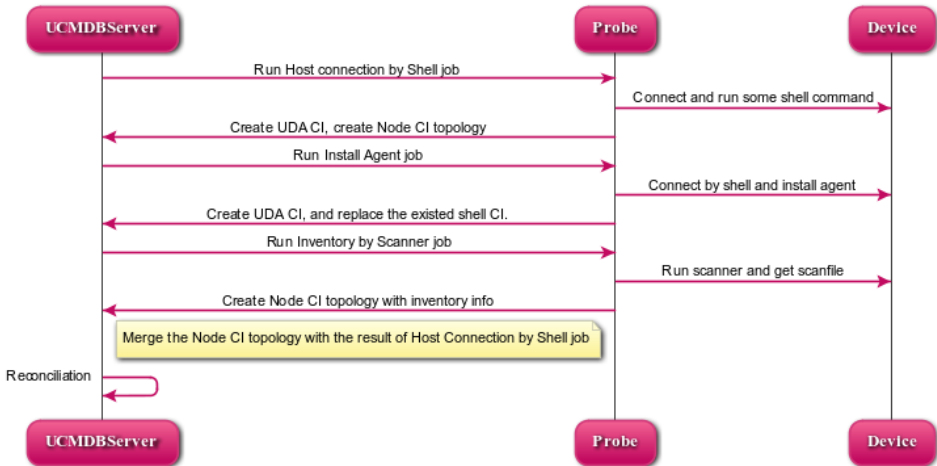
| Agentless Mode      | Description  |
|---------------------|--|
| Basic discovery     | <p>Describes how UCMDB knows that the device exists in the environment.</p> <p>The basic discovery workflow of this mode is as follows:</p> <p style="text-align: center;"><b>Ping the device</b></p> <pre>sequenceDiagram     participant UCMDBServer     participant Probe     participant Device     UCMDBServer-&gt;&gt;Probe: Run IP Range by ICMP job     Note over Probe, Device: Ping     Device--&gt;&gt;Probe:      Probe-&gt;&gt;UCMDBServer: Create IpAddress CI</pre> <p style="text-align: right;">www.websequencediagrams.com</p>   |
| Inventory discovery | <p>Describes how UCMDB obtains the detailed Inventory data of a device.</p> <p>The inventory discovery workflow of this mode is as follows:</p> <p style="text-align: center;"><b>Inventory with agent workflow</b></p> <pre>sequenceDiagram     participant UCMDBServer     participant Probe     participant Device     UCMDBServer-&gt;&gt;Probe: Run Host connection by Shell job     Note over Probe, Device: Connect and run some shell command     Device--&gt;&gt;Probe:      Probe-&gt;&gt;UCMDBServer: Run Inventory by Scanner job     UCMDBServer-&gt;&gt;Probe: Create Node CI topology with inventory info     Note over Probe, Device: Run scanner and get scanfile     Device--&gt;&gt;Probe:      Probe-&gt;&gt;UCMDBServer: Merge the Node CI topology with the result of Host Connection by Shell job     Note over UCMDBServer: Reconciliation</pre> <p style="text-align: right;">www.websequencediagrams.com</p> |

| <b>Agentless Mode</b> | <b>Description</b>   |
|-----------------------|--|
| Advantages            | <ul style="list-style-type: none"> <li>• Simple and clear workflow.</li> <li>• No need to install an agent.</li> </ul>   |
| Disadvantages         | <ul style="list-style-type: none"> <li>• Lower security level than that of Agent-Only Mode. You must allow Universal Discovery to manage the credentials to access all devices.</li> <li>• Rely on third-party tools. Defects of xCmd and MindTerm can affect the product.</li> <li>• Lower success ratio to obtain the scan file than that of Agent-Only Mode.</li> <li>• Difficult to troubleshoot.</li> </ul> |
| Prerequisite          | To apply this mode, you must configure all needed credentials in UCMDB.  |
| Related jobs          | <ul style="list-style-type: none"> <li>• Range IPs by ICMP</li> <li>• Host Connection by Shell</li> <li>• Inventory Discovery by Scanner</li> </ul>  |
| Attention             | <b>5.</b> A score (1 - 10) to evaluate the mode. The higher the score is, the more recommended the mode is for you.  |
| Other information     | If the scan file is important to you, use the agent.   |

## Combined Mode

In this mode, you must provide all credentials to access devices. Universal Discovery can perform all tasks for the inventory discovery. You do not need to use the third-party tool to install the agent. Compared with the previous two modes, this mode charges the probe more.



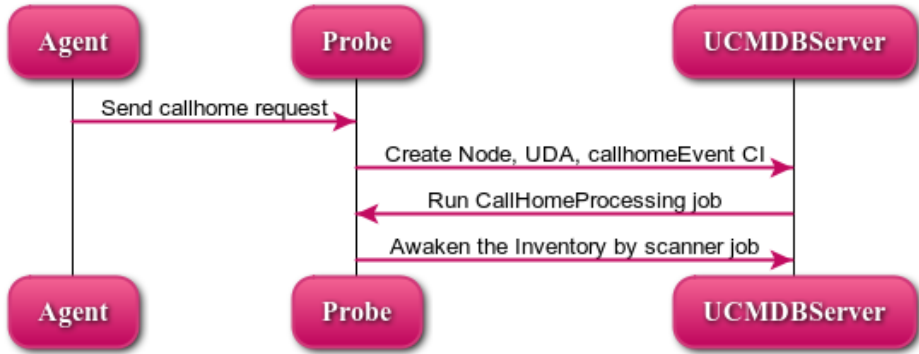
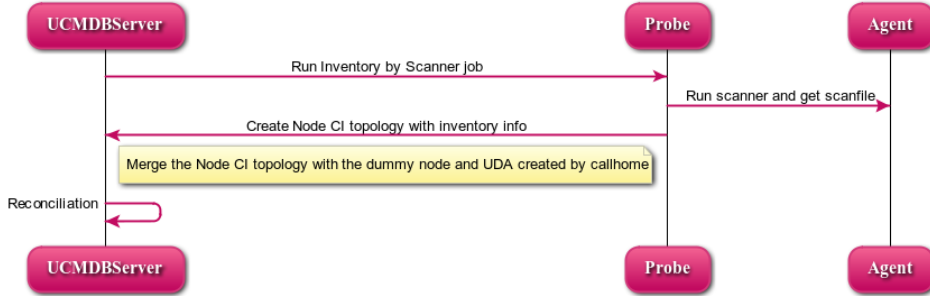
| Combined Mode              | Description  |
|----------------------------|--|
| <p>Basic discovery</p>     | <p>Describes how UCMDB knows that the device exists in the environment.</p> <p>The basic discovery workflow of this mode is as follows:</p> <p style="text-align: center;"><b>Ping the device</b></p>  <pre> sequenceDiagram     participant UCMDBServer     participant Probe     participant Device     UCMDBServer-&gt;&gt;Probe: Run IP Range by ICMP job     Probe-&gt;&gt;Device: Ping     Device--&gt;&gt;UCMDBServer: Create IpAddress CI   </pre> <p style="text-align: right;">www.websequencediagrams.com</p>   |
| <p>Inventory discovery</p> | <p>Describes how UCMDB obtains the detailed Inventory data of a device.</p> <p>The inventory discovery workflow of this mode is as follows:</p> <p style="text-align: center;"><b>Inventory with agent workflow</b></p>  <pre> sequenceDiagram     participant UCMDBServer     participant Probe     participant Device     UCMDBServer-&gt;&gt;Probe: Run Host connection by Shell job     Probe-&gt;&gt;Device: Connect and run some shell command     Device--&gt;&gt;UCMDBServer: Create UDA CI, create Node CI topology     UCMDBServer-&gt;&gt;Probe: Run Install Agent job     Probe-&gt;&gt;Device: Connect by shell and install agent     Device--&gt;&gt;UCMDBServer: Create UDA CI, and replace the existed shell CI.     UCMDBServer-&gt;&gt;Probe: Run Inventory by Scanner job     Probe-&gt;&gt;Device: Run scanner and get scanfile     Device--&gt;&gt;UCMDBServer: Create Node CI topology with inventory info     UCMDBServer-&gt;&gt;Probe: Merge the Node CI topology with the result of Host Connection by Shell job     Probe--&gt;&gt;UCMDBServer: Reconciliation   </pre> <p style="text-align: right;">www.websequencediagrams.com</p> |
| <p>Advantages</p>          | <ul style="list-style-type: none"> <li>• Robust agent. If the agent fails, it can be recovered by other shell commands.</li> </ul>   |
| <p>Disadvantages</p>       | <ul style="list-style-type: none"> <li>• Complicated workflow, especially the mechanism of Shell CI. Make it difficult to troubleshoot.</li> <li>• Lower security level than that of Agent-Only Mode. You must allow Universal Discovery to manage the credentials to access all devices.</li> </ul>   |

| Combined Mode     | Description  |
|-------------------|--|
| Prerequisite      | To apply this mode, you must configure all needed credentials in UCMDB.  |
| Related jobs      | <ul style="list-style-type: none"> <li>• Range IPs by ICMP</li> <li>• Host Connection by Shell</li> <li>• Install UD Agent</li> <li>• Update UD Agent</li> <li>• Inventory Discovery by Scanner</li> </ul> |
| Attention         | <b>8.</b> A score (1 - 10) to evaluate the mode. The higher the score is, the more recommended the mode is for you.  |
| Other information | The customer base is large in this mode.   |

## Agent-Driven Mode

In this mode, an agent is preinstalled on devices. Data Flow Probe only has the Universal Discovery Protocol. The probe is waiting for the agent to call home. When Call Home is finished, the probe will create a dummy node and Universal Discovery Agent (UDA) CI, and then trigger the **Inventory Discovery by Scanner** job.

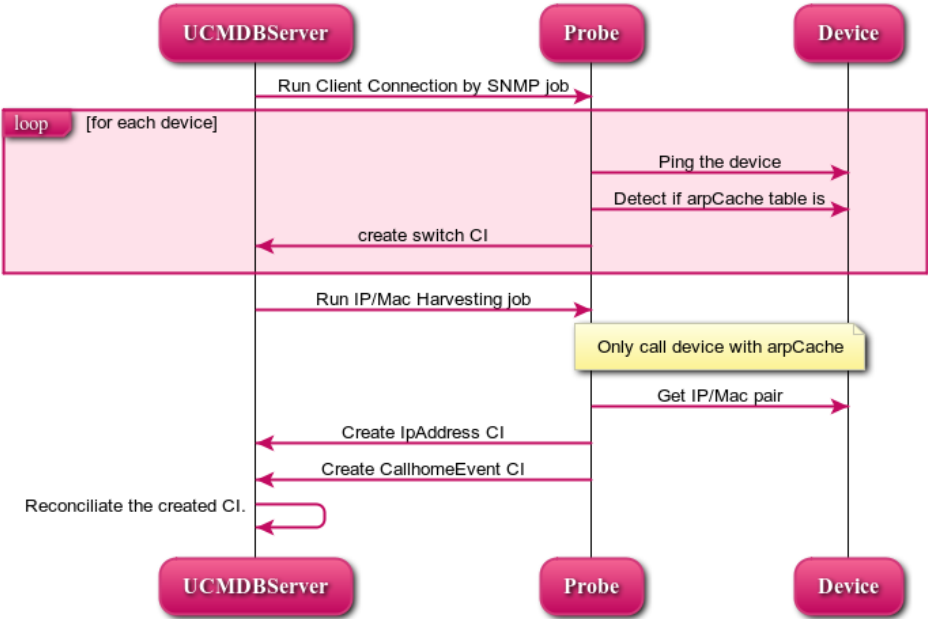
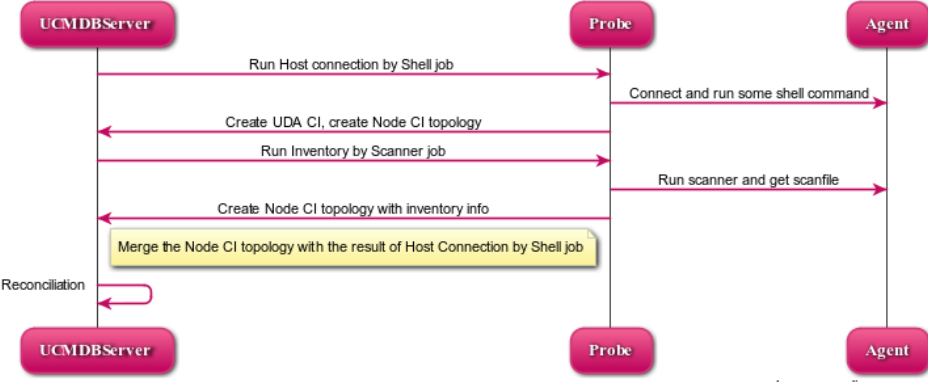
This mode is a recommended mode for you.

| Agent-Driven Mode   | Description  |
|---------------------|--|
| Basic discovery     | <p>Describes how UCMDB knows that the device exists in the environment.</p> <p>The basic discovery workflow of this mode is as follows:</p> <p style="text-align: center;"><b>CallHome workflow</b></p>  <pre> sequenceDiagram     participant Agent     participant Probe     participant UCMDBServer     Agent-&gt;&gt;Probe: Send callhome request     Note over Probe: Create Node, UDA, callhomeEvent CI     Probe-&gt;&gt;UCMDBServer: Create Node, UDA, callhomeEvent CI     UCMDBServer-&gt;&gt;Probe: Run CallHomeProcessing job     UCMDBServer-&gt;&gt;Probe: Awaken the Inventory by scanner job     </pre> <p style="text-align: right;">www.websequencediagrams.com</p>  |
| Inventory discovery | <p>Describes how UCMDB obtains the detailed Inventory data of a device.</p> <p>The inventory discovery workflow of this mode is as follows:</p> <p style="text-align: center;"><b>Inventory triggered by Callhome</b></p>  <pre> sequenceDiagram     participant UCMDBServer     participant Probe     participant Agent     UCMDBServer-&gt;&gt;Probe: Run Inventory by Scanner job     Probe-&gt;&gt;Agent: Run scanner and get scanfile     Agent-&gt;&gt;Probe:      Probe-&gt;&gt;UCMDBServer: Create Node CI topology with inventory info     Note over UCMDBServer: Merge the Node CI topology with the dummy node and UDA created by callhome     UCMDBServer-&gt;&gt;UCMDBServer: Reconciliation     </pre> <p style="text-align: right;">www.websequencediagrams.com</p> |
| Advantages          | <ul style="list-style-type: none"> <li>• The only available solution for the Client environment without SNMP.</li> <li>• Secure because UCMDB do not need any other credentials but the Universal Discovery Protocol.</li> </ul>   |
| Disadvantages       | <ul style="list-style-type: none"> <li>• Need a preinstalled agent on every device.</li> <li>• No remedy if the agent fails because the agent is the only connection channel.</li> <li>• Difficult to troubleshoot if there is no remote access to the device.</li> </ul>  |

| <b>Agent-Driven Mode</b> | <b>Description</b>  |
|--------------------------|---|
| Prerequisite             | To apply this mode, you must have a method to install and upgrade an agent without UCMDB.   |
| Related jobs             | <ul style="list-style-type: none"> <li>• Call Home Processing</li> <li>• Inventory Discovery by Scanner</li> </ul>  |
| Attention                | <b>9.</b> A score (1 - 10) to evaluate the mode. The higher the score is, the more recommended the mode is for you.   |
| Other information        | <ul style="list-style-type: none"> <li>• Call Home must be processed in time.</li> <li>• It is recommended to create an Enrichment rule to clean the dummy node. For details on an Enrichment rule, see <i>HP Universal CMDB Data Flow Management Guide</i>.</li> </ul> |

## SNMP-Agent Mode

In this mode, an agent is preinstalled on devices. Data Flow Probe only has the Universal Discovery Protocol. When a device is in the network, the probe can detect its IP address by using the **IP MAC Harvesting by SNMP** job, and a series of jobs can be triggered to discover Node and Node Element CI.

| SNMP-Agent Mode     | Description  |
|---------------------|--|
| Basic discovery     | <p>Describes how UCMDB knows that the device exists in the environment.</p> <p>The basic discovery workflow of this mode is as follows:</p> <p><b>IP/Mac Harvesting</b></p>  <pre>sequenceDiagram     participant UCMDBServer     participant Probe     participant Device     Note over UCMDBServer, Probe: Run Client Connection by SNMP job     UCMDBServer-&gt;&gt;Probe: Run Client Connection by SNMP job     Note over UCMDBServer, Probe, Device: loop [for each device]     UCMDBServer-&gt;&gt;Probe: Ping the device     Probe-&gt;&gt;Device: Ping the device     UCMDBServer-&gt;&gt;Probe: Detect if arpCache table is     Probe-&gt;&gt;Device: Detect if arpCache table is     Device--&gt;&gt;Probe: create switch CI     Probe--&gt;&gt;UCMDBServer: create switch CI     Note over UCMDBServer, Probe: Run IP/Mac Harvesting job     UCMDBServer-&gt;&gt;Probe: Run IP/Mac Harvesting job     Note over Probe: Only call device with arpCache     Probe-&gt;&gt;Device: Get IP/Mac pair     Device--&gt;&gt;Probe: Create IpAddress CI     Probe--&gt;&gt;UCMDBServer: Create IpAddress CI     Device--&gt;&gt;Probe: Create CallhomeEvent CI     Probe--&gt;&gt;UCMDBServer: Create CallhomeEvent CI     Note over UCMDBServer: Reconciliate the created CI.     UCMDBServer-&gt;&gt;UCMDBServer: Reconciliate the created CI.</pre> <p>www.websequencediagrams.com</p> |
| Inventory discovery | <p>Describes how UCMDB obtains the detailed Inventory data of a device.</p> <p>The inventory discovery workflow of this mode is as follows:</p> <p><b>Inventory with agent workflow</b></p>  <pre>sequenceDiagram     participant UCMDBServer     participant Probe     participant Agent     UCMDBServer-&gt;&gt;Probe: Run Host connection by Shell job     Probe-&gt;&gt;Agent: Connect and run some shell command     Agent--&gt;&gt;Probe: Create UDA CI, create Node CI topology     Probe--&gt;&gt;UCMDBServer: Create UDA CI, create Node CI topology     UCMDBServer-&gt;&gt;Probe: Run Inventory by Scanner job     Probe-&gt;&gt;Agent: Run scanner and get scanfile     Agent--&gt;&gt;Probe: Create Node CI topology with inventory info     Probe--&gt;&gt;UCMDBServer: Create Node CI topology with inventory info     Note over UCMDBServer, Probe: Merge the Node CI topology with the result of Host Connection by Shell job     UCMDBServer-&gt;&gt;UCMDBServer: Reconciliation</pre> <p>www.websequencediagrams.com</p>  |

| <b>SNMP-Agent Mode</b> | <b>Description</b>   |
|------------------------|--|
| Advantages             | <ul style="list-style-type: none"> <li>• Simple and clear scenario without Call Home in it.</li> <li>• Secure because UCMDB do not need any other credentials but the Universal Discovery Protocol.</li> <li>• With the <b>IP MAC Harvesting by SNMP</b> job, all new IP addresses can be discovered in real time.</li> </ul>                    |
| Disadvantages          | <ul style="list-style-type: none"> <li>• SNMP is a must, which is not acceptable for many customers.</li> <li>• Need a preinstalled agent on every device.</li> <li>• No remedy if the agent fails because the agent is the only connection channel.</li> <li>• Difficult to troubleshoot if there is no remote access to the device.</li> </ul> |
| Prerequisite           | To apply this mode, you must have a method to install and upgrade an agent without UCMDB. The SNMP community string is necessary to run the <b>IP MAC Harvesting by SNMP</b> job.  |
| Related jobs           | <ul style="list-style-type: none"> <li>• IP MAC Harvesting by SNMP</li> <li>• Host Connection by Shell</li> <li>• Inventory Discovery by Scanner</li> </ul>  |
| Attention              | <b>9.</b> A score (1 - 10) to evaluate the mode. The higher the score is, the more recommended the mode is for you.  |

## SNMP-Combined Mode

In this mode, the SNMP credential is required to connect to a router or switch. Data Flow Probe first pings the Client environment and discovers routers with arpCache enabled. Then the probe reads the arpCache table to get the IP address or MAC address pair. With the IpAddress CI, the probe discovers all other elements.

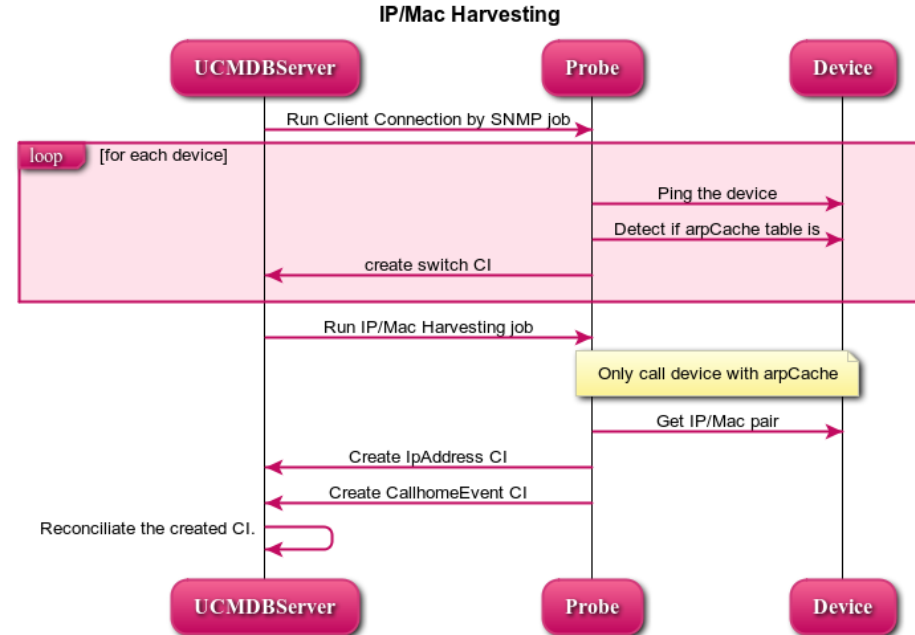
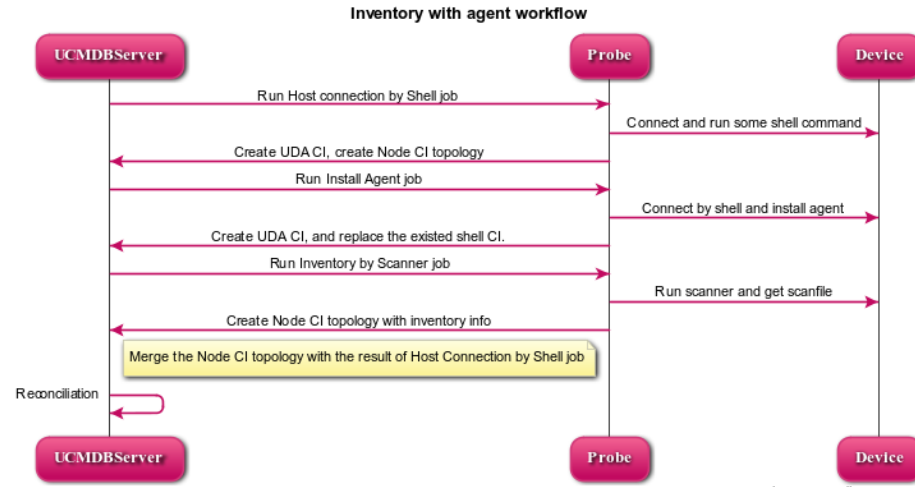
| SNMP-Combined Mode  | Description   |
|---------------------|---|
| Basic discovery     | <p>Describes how UCMDB knows that the device exists in the environment.</p> <p>The basic discovery workflow of this mode is as follows:</p> <p style="text-align: center;"><b>IP/Mac Harvesting</b></p> <p style="text-align: right;">www.websequencediagrams.com</p>                 |
| Inventory discovery | <p>Describes how UCMDB obtains the detailed Inventory data of a device.</p> <p>The inventory discovery workflow of this mode is as follows:</p> <p style="text-align: center;"><b>Inventory with agent workflow</b></p> <p style="text-align: right;">www.websequencediagrams.com</p> |

| <b>SNMP-Combined Mode</b> | <b>Description</b>  |
|---------------------------|---|
| Advantages                | <ul style="list-style-type: none"> <li>• With the <b>IP MAC Harvesting by SNMP</b> job, all new IP addresses can be discovered in real time.</li> </ul>   |
| Disadvantages             | <ul style="list-style-type: none"> <li>• SNMP is a must, which is not acceptable for many customers.</li> <li>• The <b>Host Connection by SNMP</b> job runs by default and can cause performance issues.</li> <li>• Certain ratio of lost devices exists, because the long discovery process cannot catch the changing IP address.</li> <li>• No method to troubleshoot the lost device problem.</li> </ul> |
| Prerequisite              | <p>To apply this mode, you must have the following credential:</p> <ul style="list-style-type: none"> <li>• SNMP credential</li> <li>• Root privilege credential to install an agent</li> </ul>   |
| Related jobs              | <ul style="list-style-type: none"> <li>• Client Connection by SNMP</li> <li>• IP MAC Harvesting by SNMP</li> <li>• Host Connection by Shell</li> <li>• Host Connection by SNMP</li> <li>• Install UD Agent</li> <li>• Update UD Agent</li> <li>• Inventory Discovery by Scanner</li> </ul>  |
| Attention                 | <p><b>9.</b> A score (1 - 10) to evaluate the mode. The higher the score is, the more recommended the mode is for you.</p>  |
| Other information         | <p>For the Client environment, it is recommended to use the passive discovery if you can accept the Agent-Driven mode. For details, see <a href="#">"Agent-Driven Mode" on page 26</a>.</p>   |

## SNMP-Agentless Mode

This mode is rarely seen because the Client environment is usually upgraded from DDMI.



| SNMP-Agentless Mode | Description  |
|---------------------|--|
| Basic discovery     | <p>Describes how UCMDB knows that the device exists in the environment.</p> <p>The basic discovery workflow of this mode is as follows:</p> <p><b>IP/Mac Harvesting</b></p>  <pre>sequenceDiagram     participant UC as UCMDBServer     participant P as Probe     participant D as Device     Note over UC,P: Run Client Connection by SNMP job     UC-&gt;&gt;P     loop [for each device]         Note over UC,P,D: Ping the device         P-&gt;&gt;D         Note over UC,P,D: Detect if arpCache table is         P-&gt;&gt;D         Note over UC,P: create switch CI         P-&gt;&gt;UC     end     Note over UC,P: Run IP/Mac Harvesting job     UC-&gt;&gt;P     Note over P: Only call device with arpCache     P-&gt;&gt;D: Get IP/Mac pair     P-&gt;&gt;UC: Create IpAddress CI     P-&gt;&gt;UC: Create CallhomeEvent CI     Note over UC: Reconciliate the created CI.     UC-&gt;&gt;UC</pre> <p>www.websequencediagrams.com</p>                            |
| Inventory discovery | <p>Describes how UCMDB obtains the detailed Inventory data of a device.</p> <p>The inventory discovery workflow of this mode is as follows:</p> <p><b>Inventory with agent workflow</b></p>  <pre>sequenceDiagram     participant UC as UCMDBServer     participant P as Probe     participant D as Device     UC-&gt;&gt;P: Run Host connection by Shell job     P-&gt;&gt;D: Connect and run some shell command     P-&gt;&gt;UC: Create UDA CI, create Node CI topology     UC-&gt;&gt;P: Run Install Agent job     P-&gt;&gt;D: Connect by shell and install agent     P-&gt;&gt;UC: Create UDA CI, and replace the existed shell CI.     UC-&gt;&gt;P: Run Inventory by Scanner job     P-&gt;&gt;D: Run scanner and get scanfile     P-&gt;&gt;UC: Create Node CI topology with inventory info     Note over UC,P: Merge the Node CI topology with the result of Host Connection by Shell job     UC-&gt;&gt;UC: Reconciliation</pre> <p>www.websequencediagrams.com</p> |

| <b>SNMP-Agentless Mode</b> | <b>Description</b>  |
|----------------------------|---|
| Advantages                 | <ul style="list-style-type: none"> <li>• With the <b>IP MAC Harvesting by SNMP</b> job, all new IP addresses can be discovered in real time.</li> <li>• Less request for the credential privilege.</li> </ul>   |
| Disadvantages              | <ul style="list-style-type: none"> <li>• SNMP is a must, which is not acceptable for many customers.</li> <li>• The <b>Host Connection by SNMP</b> job runs by default and can cause performance issues.</li> <li>• Certain ratio of lost devices exists, because the long discovery process cannot catch the changing IP address.</li> <li>• No method to troubleshoot the lost device problem.</li> <li>• Minor credential privilege can cause scanner issues.</li> </ul> |
| Prerequisite               | To apply this mode, you must have the SNMP credential.  |
| Related jobs               | <ul style="list-style-type: none"> <li>• Client Connection by SNMP</li> <li>• IP MAC Harvesting by SNMP</li> <li>• Host Connection by Shell</li> <li>• Host Connection by SNMP</li> <li>• Install UD Agent</li> <li>• Update UD Agent</li> <li>• Inventory Discovery by Scanner</li> </ul>  |
| Attention                  | <b>2.</b> A score (1 - 10) to evaluate the mode. The higher the score is, the more recommended the mode is for you.   |
| Other information          | This mode is a less used mode.  |

## No-SNMP Agent Mode

This is a new feature in UCMDB 10.20. With this mode, you can perform the Inventory discovery without the SNMP community string to routers or switches.

This mode is the only available active mode for the Client environment without the SNMP protocol.

| No-SNMP Agent Mode         | Description  |
|----------------------------|--|
| <p>Basic discovery</p>     | <p>Describes how UCMDB knows that the device exists in the environment.</p> <p>The basic discovery workflow of this mode is as follows:</p> <div data-bbox="483 470 1284 915"><p style="text-align: center;"><b>Ping the device</b></p><pre>sequenceDiagram     participant UCMDBServer     participant Probe     participant Device     UCMDBServer-&gt;&gt;Probe: Run IP Range by ICMP job     Note over Probe: Ping     Probe-&gt;&gt;Device: Ping     Probe--&gt;&gt;UCMDBServer: Create IpAddress CI</pre><p style="text-align: right;">www.websequencediagrams.com</p></div>   |
| <p>Inventory discovery</p> | <p>Describes how UCMDB obtains the detailed Inventory data of a device.</p> <p>The inventory discovery workflow of this mode is as follows:</p> <div data-bbox="464 1075 1382 1570"><p style="text-align: center;"><b>Inventory with agent workflow</b></p><pre>sequenceDiagram     participant UCMDBServer     participant Probe     participant Device     UCMDBServer-&gt;&gt;Probe: Run Host connection by Shell job     Note over Probe: Connect and run some shell command     Probe-&gt;&gt;Device: Connect and run some shell command     UCMDBServer-&gt;&gt;Probe: Create UDA CI, create Node CI topology     UCMDBServer-&gt;&gt;Probe: Run Install Agent job     Note over Probe: Connect by shell and install agent     Probe-&gt;&gt;Device: Connect by shell and install agent     UCMDBServer-&gt;&gt;Probe: Create UDA CI, and replace the existed shell CI.     UCMDBServer-&gt;&gt;Probe: Run Inventory by Scanner job     Note over Probe: Run scanner and get scanfile     Probe-&gt;&gt;Device: Run scanner and get scanfile     UCMDBServer-&gt;&gt;Probe: Create Node CI topology with inventory info     Note over UCMDBServer,Probe: Merge the Node CI topology with the result of Host Connection by Shell job     UCMDBServer-&gt;&gt;UCMDBServer: Reconciliation</pre><p style="text-align: right;">www.websequencediagrams.com</p></div> |
| <p>Advantages</p>          | <p>Can work without the SNMP community string.</p>   |
| <p>Disadvantages</p>       | <p>Without the <b>IP MAC Harvesting by SNMP</b> job, all new IP addresses cannot be discovered in real time.</p>   |

| No-SNMP Agent Mode | Description  |
|--------------------|--|
| Related jobs       | <ul style="list-style-type: none"><li>• Range IPs by ICMP</li><li>• Host Connection by Shell</li><li>• Install UD Agent</li><li>• Update UD Agent</li><li>• Inventory Discovery by Scanner</li></ul> |
| Attention          | <b>8.</b> A score (1 - 10) to evaluate the mode. The higher the score is, the more recommended the mode is for you.  |

## Chapter 3: Migration Procedure

This chapter includes:

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| How to Configure Universal Discovery .....                                 | 41 |
| How to Migrate DDMI Agents to Universal Discovery Agents .....             | 72 |
| Check the Migration Status .....   | 73 |
| How to Configure DDMI and Universal Discovery for Interoperability .....   | 73 |

### How to Migrate DDMI Server Configuration Data to Universal Discovery

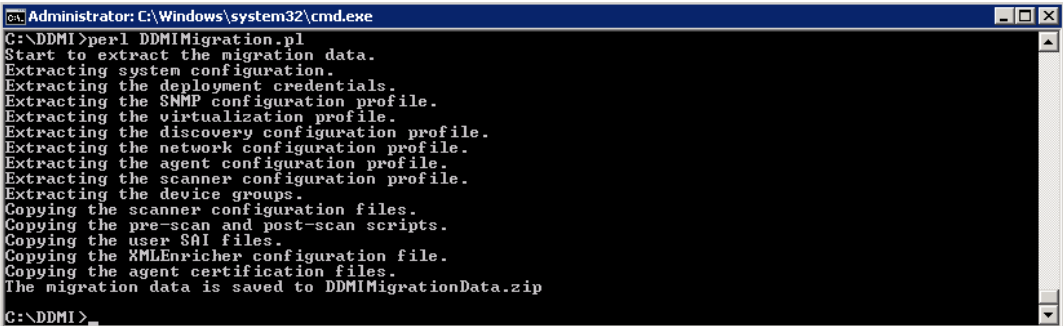
To migrate DDMI server configuration data to Universal Discovery, do the following:

1. Export DDMI server configuration data
  - a. Locate the **DDMIMigration.pl** script on the UCMDB Server at the following location:

- **Windows:** C:\hp\UCMDB\UCMDBServer\tools\migration
    - **Linux:** C:/opt/hp/UCMDB/UCMDBServer/tools/migration
  - b. Copy the script to any directory on each DDMI server that you want to migrate.
  - c. For each DDMI server, open a Command prompt and navigate to the directory where you copied the script. At the Command prompt, run the following command:

**perl DDMIMigration.pl**

You can see the following message:



**Note:**

- By default, the data is archived in a file called **DDMIMigrationData.zip**.
- For options that are available for this script, see ["Server Configuration Data Export Script Resources"](#) on page 83.
- Maximum amount of device groups that can be imported is 20. If device groups exceed 20, remove some groups and run the script again. Then, create the remaining management zones in Universal Discovery manually.

For more information about the type of information that is migrated, see ["Results"](#) on page 40.

2. Import the data to Universal Discovery

- Open the JMX Console, enter **importMigrationDatafromDDMI** in the quick search field and click the link that appears.

**importMigrationDataFromDDMI**

*Import Migration Data from DDMI*

| Name                                  | Type             | Value   | Description   |
|---------------------------------------|------------------|---|---|
| customerid                            | int              | <input type="text"/>  | Customer Id   |
| isCreateActivity                      | boolean          | <input checked="" type="radio"/> True <input type="radio"/> False | True if you want to create activities.  |
| probeName                             | java.lang.String | <input type="text"/>  | Name of the Probe that you want to use to manage all of the IP ranges.                                |
| primaryCallHomeAddress                | java.lang.String | <input type="text"/>  | The primary call home address for Data Flow Probe. If blank, the IP Address of "probeName" is used.   |
| SecondaryCallHomeAddress              | java.lang.String | <input type="text"/>  | The secondary call home address for Data Flow Probe. If blank, the IP Address of "probeName" is used. |
| configurationZipPackageName           | java.lang.String | DDMIMigrationData.zip   | File name of the archive (.zip) file.   |
| overrideGlobalConfig                  | boolean          | <input checked="" type="radio"/> True <input type="radio"/> False | True if the global configuration file in UCMDB is overwritten.  |
| stopWhenConflict                      | boolean          | <input checked="" type="radio"/> True <input type="radio"/> False | True if imported data has conflicting with the existed data in UCMDB.                                 |
| <input type="button" value="Invoke"/> |                  |   |   |

- In the **importMigrationDataFromDDMI** method, the following parameters are displayed:

- **customerId.** The customer ID that you want to migrate.

If you do not know the **customerId** parameter for the customer you are migrating, do the following:

- In UCMD, go to **Data Flow Management > Data Flow Probe Setup**.
- In the **Domains and Probes** pane, select a Data Flow Probe and note the customer name at the top right of the window.
- Go to **JMX Console > Customer and States > ShowAllCustomers** method and note the **customerId** that maps to the customer name.
- **isCreateActivity.**
  - **True.** Creates new activities in Management Zones. These activities contain the migrated data.
  - **False.** No activities are created. However, Management Zones are created.
- **primary|Secondary Call Home Address.** The primary and the secondary Call Home IP addresses for the Data Flow Probe.

For example:

**<UD\_CallHomeIPAddressPrimary> , <UD\_CallHomeIPAddressSecondary>**

**Note:**

- If this field is left blank, the IP address of the Data Flow Probe is used.
- In some cases, data that is entered in these fields may not appear in the UCMD Infrastructure activity. In these cases, reenter the data in the activity.
- The DDMI Call Home IP addresses are pre-populated, so it is not necessary to enter this information.

- **probeName.** The name of the Data Flow Probe to which to map the data.
- **configurationzipPackageName.** The name of the archive file that was created in step 1.
- **overrideGlobalConfig.**

- **True.** The XML Enricher global configuration file in UCMDB is overwritten by the DDMI configuration file.
- **False.** The XML Enricher global configuration file in UCMDB is not overwritten and the DDMI configuration file is ignored.
- **stopWhenConflict.**

Specifies how to handle IP address range conflicts.

- **True.** If overlapping IP address ranges exist in DDMI and UCMDB, no IP address ranges are imported to UCMDB.
- **False.** If the same IP address range exists in UCMDB, only IP address ranges that are not in conflict are imported. Ranges that are in conflict are ignored. Additionally, Management Zones that contained the conflicted ranges are not imported.

**Note:** It is recommended to import DDMI server configuration data to a clean probe because of IP Address conflict issues.

### 3. Results

- Success messages and warning messages are displayed.
- For some common issues that may occur, see ["Server Configuration Data Import Troubleshooting" on page 91](#).
- In addition to the data that is contained in the archive file that was created in step 1, the following information is imported into UCMDB:
  - **Deployment credentials.** Credentials are imported and keys are regenerated automatically.
  - **SNMP configuration profile.**
  - **Device groups.**
  - **System configuration.**
  - **VMware configuration.**
  - **XML Enricher configuration file.** For details, see ["overrideGlobalConfig." on the previous page](#).



- **Certificates.**
  - acstrust.cert
  - agentca.pem
  - acskeystore.bin
- **IP address ranges.**
- Additionally, the following resources are imported:
  - Pre-scan and post-scan scripts
  - Scanner configuration files (.cxz)
  - User SAI files
- However, not all information exported from DDMI can work properly in Universal Discovery, further tuning is required. For details, see ["How to Configure Universal Discovery" below](#).
- Basically, only the following information from DDMI is used for Universal Discovery without any change:
  - **Deployment credentials.**
  - **SNMP configuration profile.**
  - **VMware configuration.**
  - **XML Enricher configuration file.**
  - **Certificates.**
  - **Pre-scan and post-scan scripts.**
  - **User SAI files.**

## How to Configure Universal Discovery

This task describes how to configure Universal Discovery to run Inventory Discovery in your environment.

This section includes:

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| Configure Data Flow Probe .....                        | 43 |
| Configure Inventory Discovery .....                    | 45 |
| Step-by-Step Configuration for Experienced Users ..... | 69 |


## Change of the Migrated Configuration

Before configuring the Universal Discovery, perform the following steps:

### Check the IP address range of the probe

Basically, all IP addresses configured on DDMI will be imported as Client IP addresses. The importation cannot merge continuous IP address ranges or remove duplicated IP addresses. Therefore, it is recommended to review the IP address configuration here.


If the imported IP address ranges do not meet your expectation, manually delete all imported IP address ranges and add new IP address ranges as follows:

- Select **Data Flow Management > Data Flow Probe Setup > Domains and Probes > a domain > Data Flow Probes > the probe.**
- In the Ranges pane, select the IP address range that you want to delete, and click .
- For details on how to add IP address ranges, see ["Configure Data Flow Probe" on the next page.](#)

### Check the management zone

The notion of DDMI Device Group do not match perfectly with the Universal Discovery Management Zone. The Management Zone defines jobs to run on defined IP addresses. There is no need to create too many zones if you are running the same job. One zone corresponding to one probe is the normal configuration that is widely used.

Delete all management zones and recreate one zone that covers the whole probe as follows:

- Go to **Data Flow Management > Universal Discovery > Zone-Based Discovery tab > Management Zones** tree, select the management zone and click .
- For details on how to create a management zone, see the relevant section in ["Configure Inventory Discovery" on page 45.](#)


## Change the migration job schedule

In the zone-based mode, the schedule is defined for the activity instead of for each specific job. You can use the **No module** as a workaround. For details, see ["Step-by-Step Configuration for Experienced Users" on page 69](#).

## Change the aging time

The default frequency for the **Inventory Discovery by Scanner** job is 14 days. The default value of **Actual Deletion Period** is 40 days, which is too short and can cause data loss.


For the Node CI type and NodeElement CI type, change the **Default Value** of **Actual Deletion Period** as follows:

- Select **Modeling > CI Type Manager > CI Types** pane > **Managed Object** tree > **ConfigurationItem > InfrastructureElement > Node** or **NodeElement** CI type.
- Click the **Attributes** tab in the right-hand pane, select **Actual Deletion Period**, and Click .
- In the **Edit Attribute** dialog box, Click the **Details** tab, change **40** to **140** in the **Default Value** field.
- Click **OK**.

## Configure Data Flow Probe

After you install Universal Discovery, perform the following steps to configure the Data Flow Probe:

1. Manually add the IP address range.

Select **Data Flow Management > Data Flow Probe Setup > Domains and Probes > a domain > Data Flow Probes > the probe**, and in the Ranges pane click **New Range** .


For more information, see the section that describes how to edit IP Ranges in the *HP Universal CMDB Data Flow Management Guide*.

### Note:

- It is not recommended to mix Data Center IP address with Client IP address in a single probe.

- Merge a single IP into the IP Range if possible, because too many IP ranges can be the root cause of performance issues.
- Do not overuse **Excluded IP Ranges**. For example, split one IP range into two IP ranges instead of having one IP range with an excluded IP range.

2. Manually add the credential if the credential imported from DDMI is not enough.

Select **Data Flow Management > Data Flow Probe Setup > Domains and Probes > a domain > Credentials > the protocol**, and in the right-hand pane click .

For more information, see the *Define Credentials* section in the *HP Universal CMDB Data Flow Management Guide*.

**Note:** Limit your credential list because too many credentials can cause performance issues.

3. Import the IP range and credential.

You can import the IP range and credential by JMX Console. Do the following:

- Open JMX Console and enter **importCredentialsAndRangesInformation** in the quick search field and click the link that appears.

importCredentialsAndRangesInformation

Imports from a provided file credentials and ranges.

| Name              | Type             | Value   | Description  |
|-------------------|------------------|---|--|
| customerId        | int              | <input type="text"/>  | Customer Id  |
| fileName          | java.lang.String | <input type="text"/>  | Name of file to import   |
| password          | java.lang.String | <input type="text"/>  | Password to use for imported file's decryption (if the file was encrypted)   |
| isEncrypted       | boolean          | <input checked="" type="radio"/> True <input type="radio"/> False | True if the imported file is encrypted. False if the imported file is not encrypted (please note that non-encrypted file doesn't contain credentials' sensitive information (like passwords)). |
| includeProbeRange | boolean          | <input checked="" type="radio"/> True <input type="radio"/> False | True for the exported file will include the probe ranges.  |
| notAllowOverlap   | boolean          | <input checked="" type="radio"/> True <input type="radio"/> False | True if overlap ranges will not be imported  |

- Specify the value that you need.
- Click **Invoke**.

**Note:**

- It is recommended to clear the probe's IP range before the importation, because UCMDB do not allow duplicate IPs in the same domain.

- To clear the probe’s IP range, remove the probe from UCMDB UI and wait until the probe is detected by the server again.

## Configure Inventory Discovery

This section includes:

|                                     |    |
|-------------------------------------|----|
| Modify the UCMDB Environment .....  | 45 |
| Configure Agent-Only Mode .....     | 48 |
| Configure Agentless Mode .....      | 50 |
| Configure Combined Mode .....       | 52 |
| Configure Agent-Driven Mode .....   | 55 |
| Configure SNMP-Agent Mode .....     | 57 |
| Configure SNMP-Agentless Mode ..... | 60 |
| Configure SNMP-Combined Mode .....  | 63 |
| Configure No-SNMP Mode .....        | 66 |

## Modify the UCMDB Environment

The following configuration changes are suitable for powerful Data Flow Probes that are aimed to immediately collect information. If your probe hardware is limited, contact HP Software Support for recommendation.

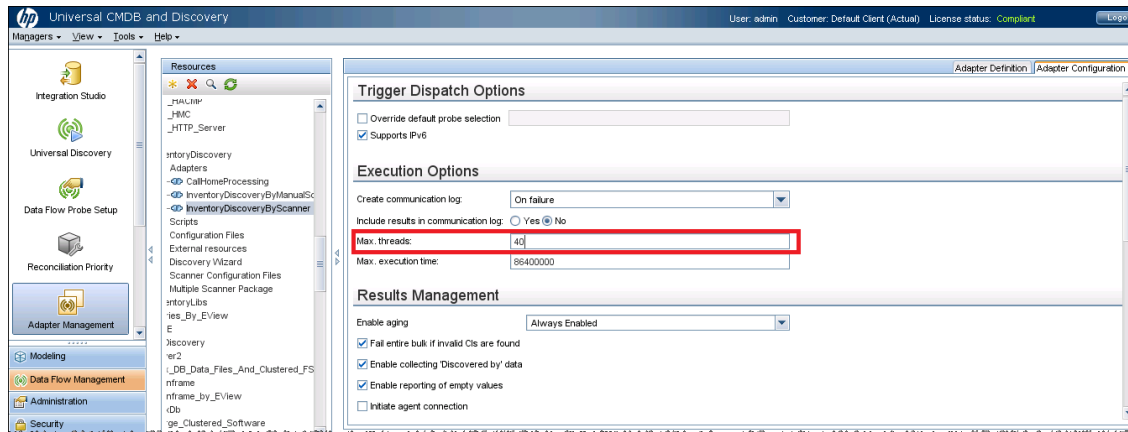
To modify the UCMDB environment, do the following:

- Open **<install>\hp\UCMDB\DataFlowProbe\bin\WrapperEnv.conf** and do the following change:  
  

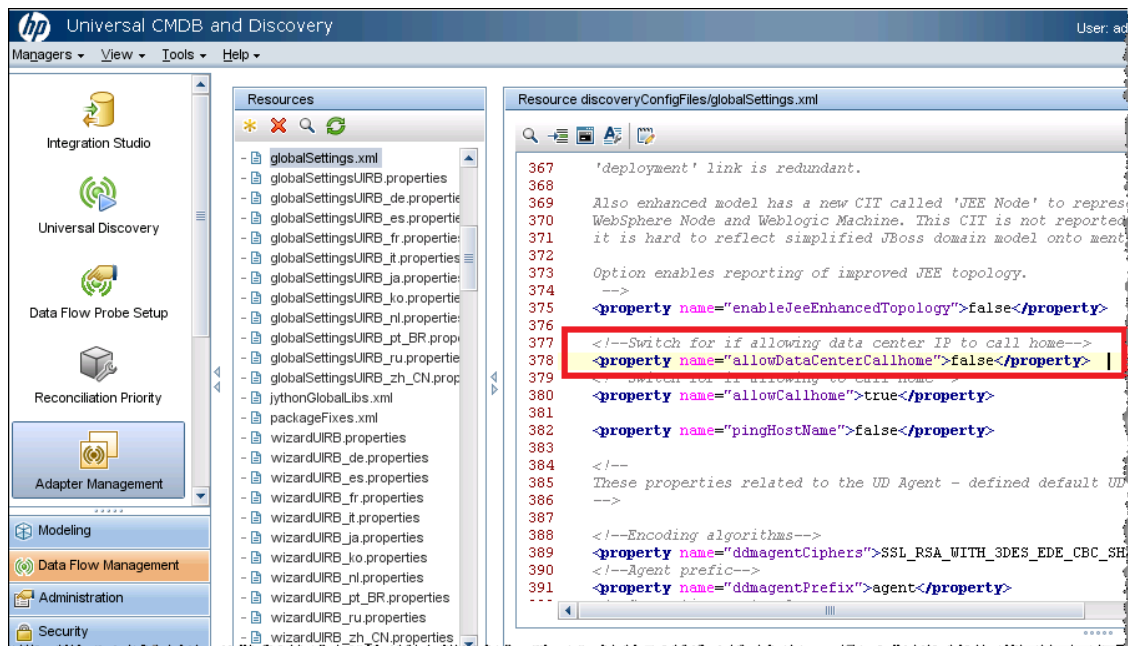
```
set.GATEWAY_MIN_MEM=512
set.GATEWAY_MAX_MEM=3072
```
- Open **<install>\hp\UCMDB\DataFlowProbe\bin\DataFlowProbe.properties** and do the following change:  
  

```
appilog.agent.local.services.poolThreads = 160
appilog.agent.local.services.defaultMaxJobThreads =16
appilog.agent.probe.maxConnection = 40
```

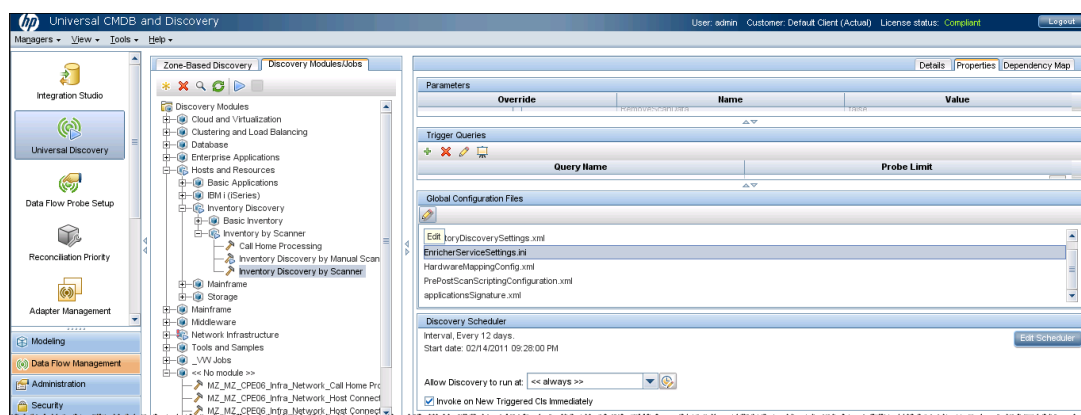
- Change **Max. threads** of **Inventory Discovery by Scanner** to **40** as follows:
  - a. Go to **Data Flow Management > Adapter Management > Resources** pane > **Packages** tree > **InventoryDiscovery > Adapters**, and click **InventoryDiscoveryByScanner**.
  - b. In the right-hand pane, click the **Adapter Configuration** tab, change **Max. threads** to **40** in the **Execution Options** pane.



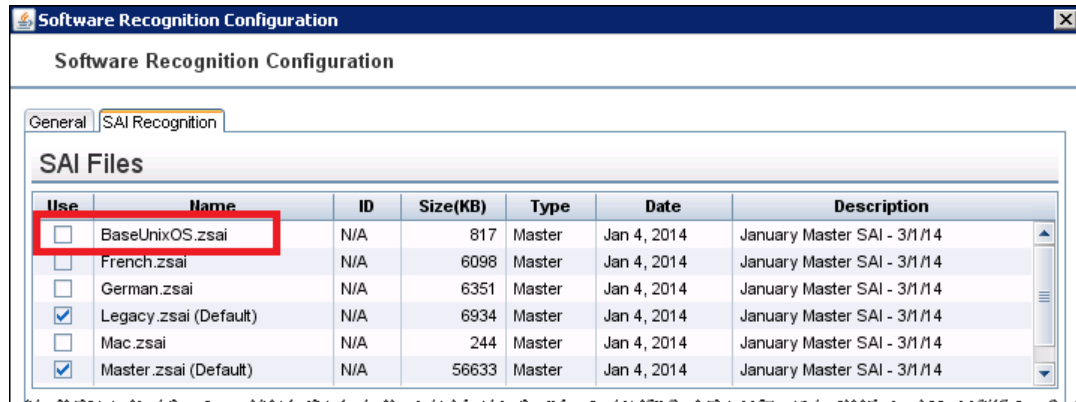
- Disable Data Center Call Home in the **globalSettings.xml** file as follows:
  - a. Go to **Data Flow Management > Adapter Management > Resources** pane > **Packages** tree > **AutoDiscoveryContent > Configuration Files**, and click **globalSettings.xml**.
  - b. In the right-hand pane, change the value of **allowDataCenterCallhome** to **false**.



- Disable **BaseUnixOS.zsai** as follows:
  - a. Go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs tab > Discovery Modules tree > Hosts and Resources > Inventory Discovery > Inventory by Scanner**, and click **Inventory Discovery by Scanner**.
  - b. In the right-hand pane, click the **Properties** tab, select the **EnricherServiceSettings.ini** file in the Global Configuration Files pane, and click the **Edit** button.




- c. In the Software Recognition Configuration dialog box, click the **SAI Recognition** tab, and clear the **BaseUnixOS.zsai** check box if it is selected.



## Configure Agent-Only Mode


To configure the Agent-Only mode, do the following:

1. Create a management zone.

Go to **Data Flow Management > Universal Discovery > Zone-Based Discovery** tab, click **New** , and select **New Management Zone**.

For details on how to create a management zone, see *HP Universal CMDB Data Flow Management Guide*.

2. Create an Infrastructure Discovery activity.

- a. Select the management zone that you created, click , and select **New Discovery Activity > Infrastructure**.
- b. On the Define Credentials page, only choose the credential that you need.



- c. If the default Preferences page is not suitable for this mode, you can specify it as follows:

**New Infrastructure Discovery Activity**

Activity Name  
Define Credentials  
**Preferences**  
Universal Discovery Agent Deployment  
Schedule Discovery  
Summary

**Preferences**  
Configure the discovery preferences.

IPv4 Ping Sweep Strategy for Data Center Ranges ? ☐ No Ping Sweep  
☒ Ping Sweep within the ranges of the Management Zone  
☐ Ping only discovered Class C Networks  
☐ Ping only discovered Class B or C Networks

☐ Ping all IPv6 addresses within the ranges of the Management Zone


☐ IP/MAC Address Harvesting ?  
 Delay between SNMP requests (ms) 50 ?

☐ Discover Network Devices in Client IP Ranges ?

☐ Resolve DNS Names ?  
 DNS Servers ?

☐ Microsoft Windows Domains ?

- d. On the Universal Discovery Agent Deployment page, select **Update UD Agent**. For the Agent-Only mode, it is not recommended to use the Call Home feature.
3. Activate the Infrastructure Discovery activity.
- Right-click the Infrastructure Discovery activity that you created, and select **Activate**.
4. Create an Inventory Discovery activity.

Select the management zone that you created, click , and select **New Discovery Activity > Inventory**.

**Note:**

- Only **Scanner-based Inventory Discovery** is involved here.

- You can skip the Schedule Discovery page, because the **Inventory Discovery by Scanner** job is designed to be run every two weeks and the period cannot be changed.

5. Active the Inventory Discovery activity.

Right-click the Inventory Discovery activity that you created, and select **Activate**.

## Configure Agentless Mode


To configure the Agentless mode, do the following:

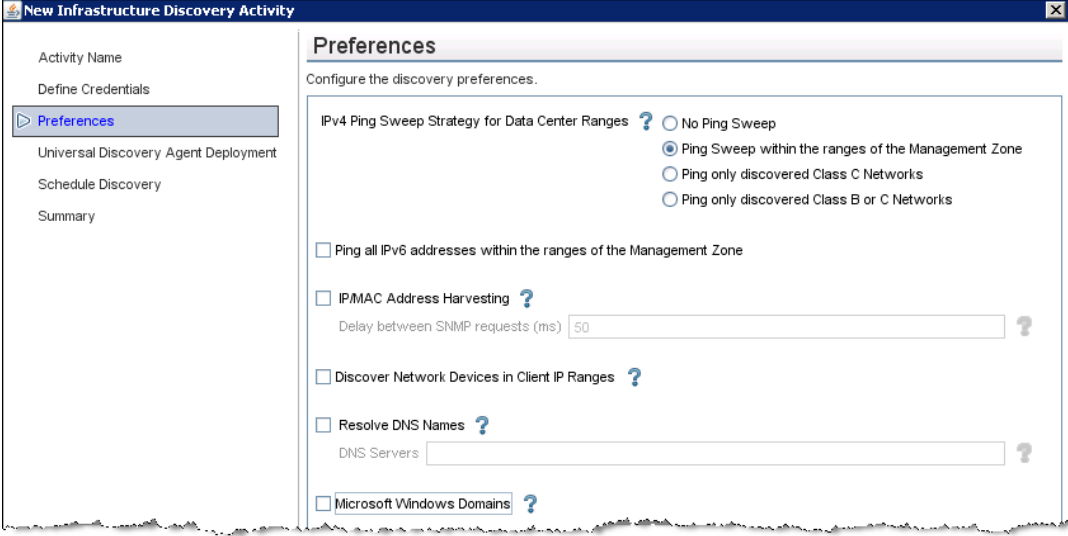
1. Create a management zone.

Go to **Data Flow Management > Universal Discovery > Zone-Based Discovery** tab, click **New** , and select **New Management Zone**.


For details on how to create a management zone, see *HP Universal CMDB Data Flow Management Guide*.

2. Create an Infrastructure Discovery activity.

- a. Select the management zone that you created, click , and select **New Discovery Activity > Infrastructure**.
- b. On the Define Credentials page, select **NTCMD Protocol** and **SSH Protocol** to respectively cover Windows and Non-Windows (Unix, Linux, Solaris, and so on) devices.
- c. If the default Preferences page is not suitable for this mode, you can specify it as follows:

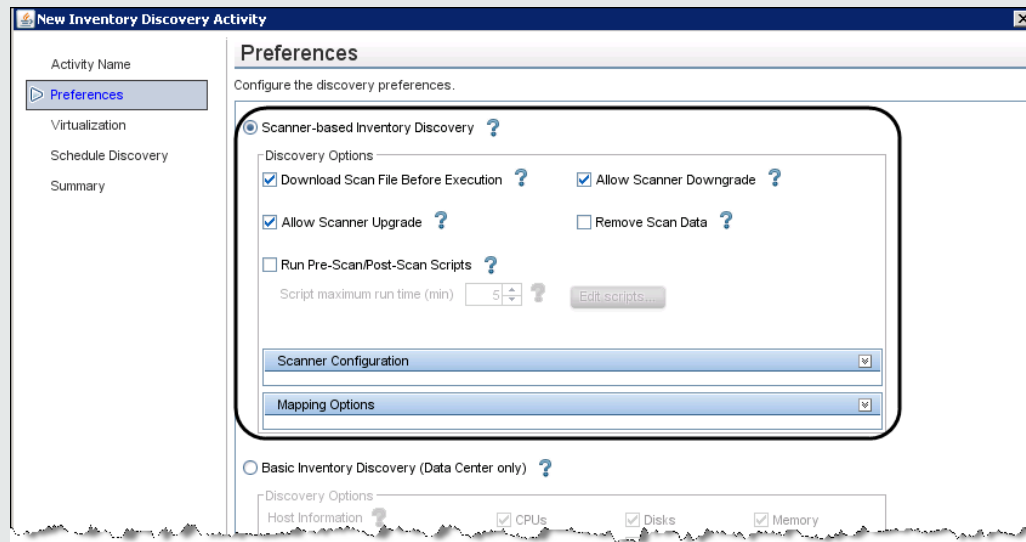


- d. On the Universal Discovery Agent Deployment page, do not select any check box.
3. Activate the Infrastructure Discovery activity.  
Right-click the Infrastructure Discovery activity that you created, and select **Activate**.
  4. Create an Inventory Discovery activity.

Select the management zone that you created, click , and select **New Discovery Activity > Inventory**.

**Note:**

- Only **Scanner-based Inventory Discovery** is involved here.



- You can skip the Schedule Discovery page, because the **Inventory Discovery by Scanner** job is designed to be run every two weeks and the period cannot be changed.

5. Active the Inventory Discovery activity.

Right-click the Inventory Discovery activity that you created, and select **Activate**.

## Configure Combined Mode


To configure the Combined mode, do the following:

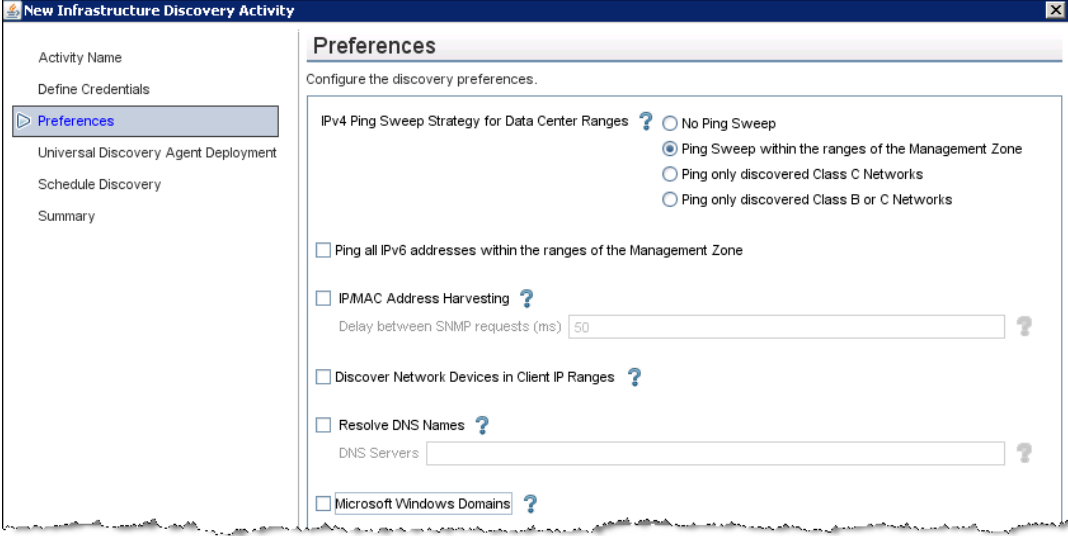
1. Create a management zone.

Go to **Data Flow Management > Universal Discovery > Zone-Based Discovery** tab, click **New** , and select **New Management Zone**.

For details on how to create a management zone, see *HP Universal CMDB Data Flow Management Guide*.

2. Create an Infrastructure Discovery activity.

- a. Select the management zone that you created, click , and select **New Discovery Activity > Infrastructure**.
- b. On the Define Credentials page, select **NTCMD Protocol** and **SSH Protocol** to respectively cover Windows and Non-Windows (Unix, Linux, Solaris, and so on) devices.
- c. If the default Preferences page is not suitable for this mode, you can specify it as follows:



**New Infrastructure Discovery Activity**

Activity Name

Define Credentials

**Preferences**

Universal Discovery Agent Deployment

Schedule Discovery

Summary

### Preferences

Configure the discovery preferences.

IPv4 Ping Sweep Strategy for Data Center Ranges ? ☐ No Ping Sweep  
☒ Ping Sweep within the ranges of the Management Zone  
☐ Ping only discovered Class C Networks  
☐ Ping only discovered Class B or C Networks

☐ Ping all IPv6 addresses within the ranges of the Management Zone

☐ IP/MAC Address Harvesting ?  
Delay between SNMP requests (ms)  ?

☐ Discover Network Devices in Client IP Ranges ?

☐ Resolve DNS Names ?  
DNS Servers  ?

☐ Microsoft Windows Domains ?

- d. On the Universal Discovery Agent Deployment page, select **Install UD Agent**, **Update UD Agent** and **Install UD Agent to run under root account on UNIX machines**, and type a Call Home probe address if you want to use the Call Home feature.


The screenshot shows the 'Universal Discovery Agent Deployment' window within the 'Edit Infrastructure Discovery Activity' application. The left sidebar contains a navigation menu with the following items: 'Define Credentials', 'Preferences', 'Universal Discovery Agent Deployment' (which is highlighted with a blue bar and a play icon), 'Schedule Discovery', and 'Summary'. The main content area is titled 'Universal Discovery Agent Deployment' and has a subtitle 'Control the UD Agent deployment'. It contains several configuration options:
 

- Agent Deployment**: Includes checkboxes for 'Install UD Agent' (checked), 'Migrate DDMI Agent' (unchecked), 'Update UD Agent' (checked), and 'Uninstall UD Agent' (unchecked).
- Install UD Agent to run under root account on UNIX machines**: This checkbox is checked.
- Software utilization period (days)**: A dropdown menu currently set to '31'.
- Primary Call Home Probe Address**: A text input field containing '16.186.86.186'.
- Secondary Call Home Probe Address**: An empty text input field.
- Call Home Request Frequency**: A text input field containing '3'.
- Credential for UD Agent Installation**: A dropdown menu showing 'Universal Discovery Protocol Credential 1' with a 'Select Credential' button to its right.
- Credential for UD Agent Update**: A dropdown menu showing 'Universal Discovery Protocol Credential 1' with a 'Select Credential' button to its right.

3. Activate the Infrastructure Discovery activity.

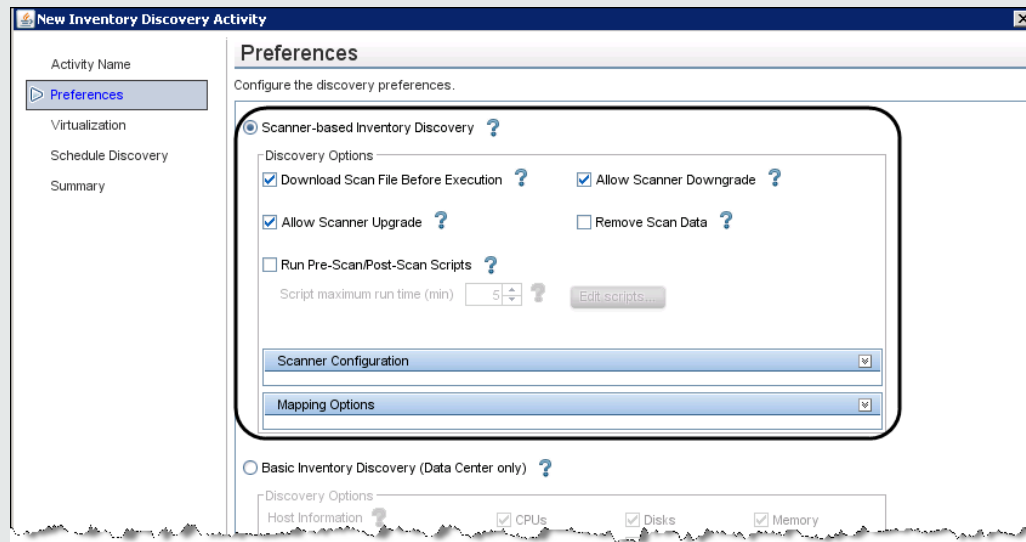
Right-click the Infrastructure Discovery activity that you created, and select **Activate**.

4. Create an Inventory Discovery activity.

Select the management zone that you created, click , and select **New Discovery Activity > Inventory**.

**Note:**

- Only **Scanner-based Inventory Discovery** is involved here.



- You can skip the Schedule Discovery page, because the **Inventory Discovery by Scanner** job is designed to be run every two weeks and the period cannot be changed.

## 5. Active the Inventory Discovery activity.

Right-click the Inventory Discovery activity that you created, and select **Activate**.

## Configure Agent-Driven Mode


To configure the Agent-Driven mode, do the following:

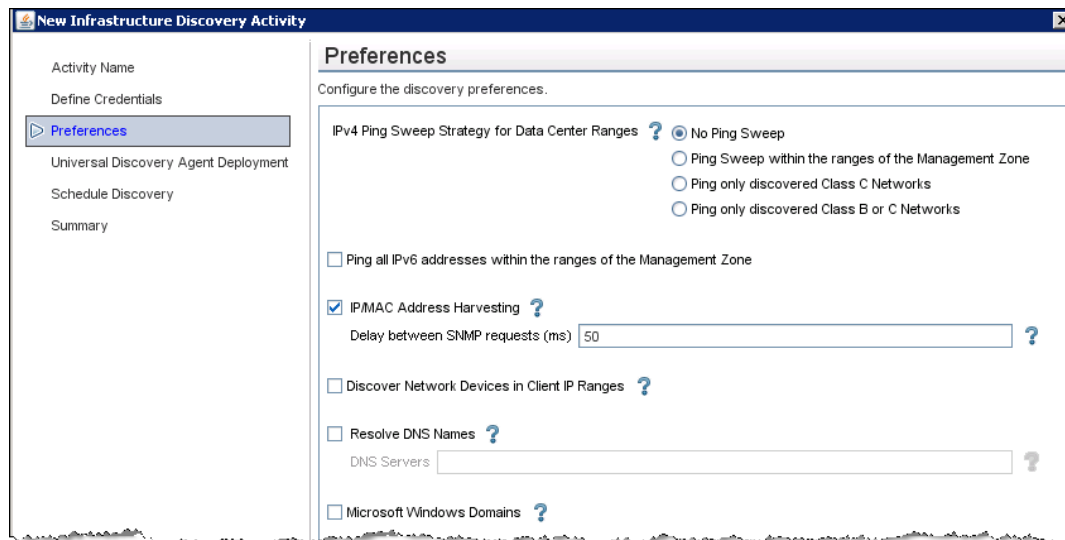
1. Create a management zone.

Go to **Data Flow Management > Universal Discovery > Zone-Based Discovery** tab, click **New** , and select **New Management Zone**.

For details on how to create a management zone, see *HP Universal CMDB Data Flow Management Guide*.

2. Create an Infrastructure Discovery activity.

- a. Select the management zone that you created, click , and select **New Discovery Activity > Infrastructure**.
- b. On the Define Credentials page, only choose the credential that you need.
- c. If the default Preferences page is not suitable for this mode, you can specify it as follows:



**New Infrastructure Discovery Activity**

Activity Name  
Define Credentials  
**Preferences**  
Universal Discovery Agent Deployment  
Schedule Discovery  
Summary

**Preferences**  
Configure the discovery preferences.

IPv4 Ping Sweep Strategy for Data Center Ranges ? ☒ No Ping Sweep  
☐ Ping Sweep within the ranges of the Management Zone  
☐ Ping only discovered Class C Networks  
☐ Ping only discovered Class B or C Networks

☐ Ping all IPv6 addresses within the ranges of the Management Zone

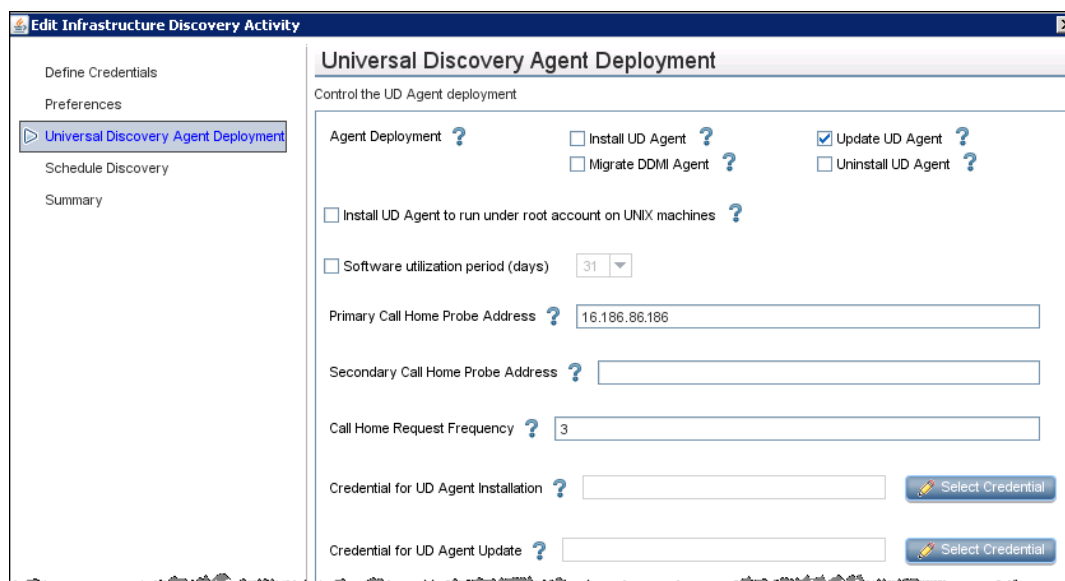
☒ IP/MAC Address Harvesting ?  
 Delay between SNMP requests (ms)  ?

☐ Discover Network Devices in Client IP Ranges ?

☐ Resolve DNS Names ?  
 DNS Servers  ?

☐ Microsoft Windows Domains ?

- d. On the Universal Discovery Agent Deployment page, select **Update UD Agent**, and type a Call Home probe address if you want to use the Call Home feature.



**Edit Infrastructure Discovery Activity**

Define Credentials  
Preferences  
**Universal Discovery Agent Deployment**  
Schedule Discovery  
Summary

**Universal Discovery Agent Deployment**  
Control the UD Agent deployment

Agent Deployment ? ☐ Install UD Agent ? ☒ Update UD Agent ? ☐ Uninstall UD Agent ?

☐ Migrate DDMI Agent ?


☐ Install UD Agent to run under root account on UNIX machines ?


☐ Software utilization period (days)

Primary Call Home Probe Address ?

Secondary Call Home Probe Address ?

Call Home Request Frequency ?

Credential for UD Agent Installation ?  


Credential for UD Agent Update ?  



3. Activate the Infrastructure Discovery activity.

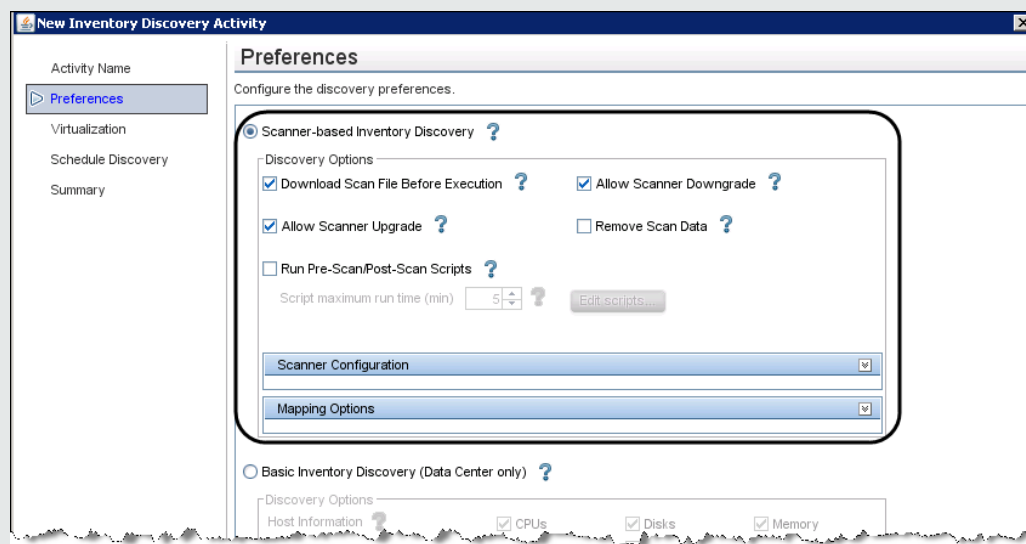
Right-click the Infrastructure Discovery activity that you created, and select **Activate**.

4. Create an Inventory Discovery activity.

Select the management zone that you created, click , and select **New Discovery Activity > Inventory**.

**Note:**

- Only **Scanner-based Inventory Discovery** is involved here.



- You can skip the Schedule Discovery page, because the **Inventory Discovery by Scanner** job is designed to be run every two weeks and the period cannot be changed.

5. Active the Inventory Discovery activity.

Right-click the Inventory Discovery activity that you created, and select **Activate**.

## Configure SNMP-Agent Mode


To configure the SNMP-Agent mode, do the following:

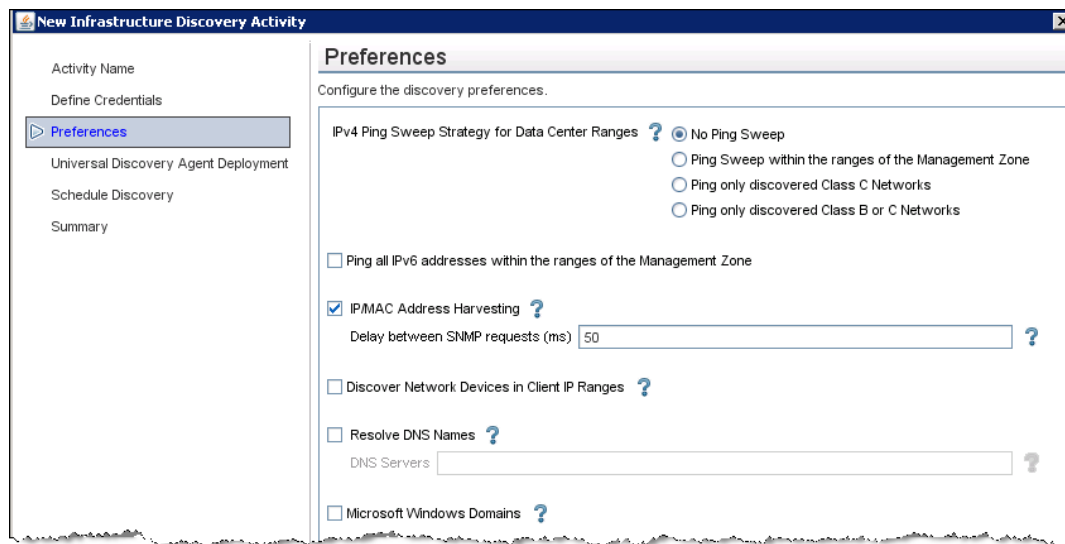
1. Create a management zone.

Go to **Data Flow Management > Universal Discovery > Zone-Based Discovery** tab, click **New** , and select **New Management Zone**.

For details on how to create a management zone, see *HP Universal CMDB Data Flow Management Guide*.

2. Create an Infrastructure Discovery activity.

- a. Select the management zone that you created, click , and select **New Discovery Activity > Infrastructure**.
- b. On the Define Credentials page, only choose the credential that you need.
- c. If the default Preferences page is not suitable for this mode, you can specify it as follows:



**New Infrastructure Discovery Activity**

Activity Name  
Define Credentials  
**Preferences**  
Universal Discovery Agent Deployment  
Schedule Discovery  
Summary

**Preferences**  
Configure the discovery preferences.

IPv4 Ping Sweep Strategy for Data Center Ranges ? ☒ No Ping Sweep  
☐ Ping Sweep within the ranges of the Management Zone  
☐ Ping only discovered Class C Networks  
☐ Ping only discovered Class B or C Networks

☐ Ping all IPv6 addresses within the ranges of the Management Zone

☒ IP/MAC Address Harvesting ?  
 Delay between SNMP requests (ms) 50 ?

☐ Discover Network Devices in Client IP Ranges ?

☐ Resolve DNS Names ?  
 DNS Servers ?

☐ Microsoft Windows Domains ?

- d. On the Universal Discovery Agent Deployment page, select **Update UD Agent**, and type a Call Home probe address if you want to use the Call Home feature.


The screenshot shows the 'Universal Discovery Agent Deployment' window. On the left is a sidebar with navigation links: 'Define Credentials', 'Preferences', 'Universal Discovery Agent Deployment' (highlighted with a play icon), 'Schedule Discovery', and 'Summary'. The main area is titled 'Universal Discovery Agent Deployment' and contains the text 'Control the UD Agent deployment'. It features several configuration options:
 

- Agent Deployment:** Includes checkboxes for 'Install UD Agent', 'Migrate DDMI Agent', 'Update UD Agent' (which is checked), and 'Uninstall UD Agent'.
- Install UD Agent to run under root account on UNIX machines:** An unchecked checkbox.
- Software utilization period (days):** A dropdown menu currently set to '31'.
- Primary Call Home Probe Address:** A text field containing '16.186.86.186'.
- Secondary Call Home Probe Address:** An empty text field.
- Call Home Request Frequency:** A text field containing '3'.
- Credential for UD Agent Installation:** An empty text field with a 'Select Credential' button to its right.
- Credential for UD Agent Update:** An empty text field with a 'Select Credential' button to its right.

3. Activate the Infrastructure Discovery activity.

Right-click the Infrastructure Discovery activity that you created, and select **Activate**.

4. Create an Inventory Discovery activity.

Select the management zone that you created, click , and select **New Discovery Activity > Inventory**.

**Note:**

- Only **Scanner-based Inventory Discovery** is involved here.

The screenshot shows the 'New Inventory Discovery Activity' window with the 'Preferences' tab selected. The 'Scanner-based Inventory Discovery' section is highlighted with a red box. It contains the following options:

- ☒ Download Scan File Before Execution ?
- ☒ Allow Scanner Upgrade ?
- ☐ Run Pre-Scan/Post-Scan Scripts ?
- ☒ Allow Scanner Downgrade ?
- ☐ Remove Scan Data ?

Below these options is a 'Script maximum run time (min)' field set to 5, with an 'Edit scripts...' button. Further down are sections for 'Scanner Configuration' and 'Mapping Options', each with a dropdown arrow. At the bottom, the 'Basic Inventory Discovery (Data Center only) ?' section is visible, with options for 'Host Information ?' (unchecked), 'CPUs' (checked), 'Disks' (checked), and 'Memory' (checked).

- You can skip the Schedule Discovery page, because the **Inventory Discovery by Scanner** job is designed to be run every two weeks and the period cannot be changed.

## 5. Active the Inventory Discovery activity.

Right-click the Inventory Discovery activity that you created, and select **Activate**.

### Note:

If you use any UCMDB versions before 10.20, do the following in the Client environment, and consult HP Software Support for details.

- Apply Hotfix for virtual IP addresses.
- Apply the Enrichment rule to clean the Call Home event.

## Configure SNMP-Agentless Mode


To configure the SNMP-Agentless mode, do the following:

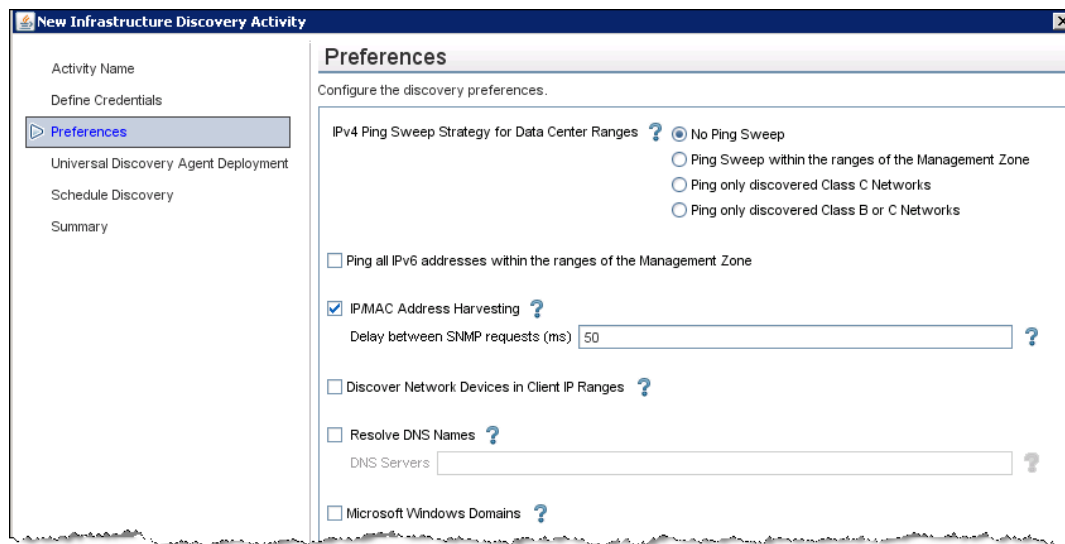
1. Create a management zone.

Go to **Data Flow Management > Universal Discovery > Zone-Based Discovery** tab, click **New** , and select **New Management Zone**.

For details on how to create a management zone, see *HP Universal CMDB Data Flow Management Guide*.

2. Create an Infrastructure Discovery activity.

- a. Select the management zone that you created, click , and select **New Discovery Activity > Infrastructure**.
- b. On the Define Credentials page, only choose the credential that you need.
- c. If the default Preferences page is not suitable for this mode, you can specify it as follows:



**New Infrastructure Discovery Activity**

Activity Name  
Define Credentials  
**Preferences**  
Universal Discovery Agent Deployment  
Schedule Discovery  
Summary

**Preferences**  
Configure the discovery preferences.

IPv4 Ping Sweep Strategy for Data Center Ranges ? ☒ No Ping Sweep  
☐ Ping Sweep within the ranges of the Management Zone  
☐ Ping only discovered Class C Networks  
☐ Ping only discovered Class B or C Networks

☐ Ping all IPv6 addresses within the ranges of the Management Zone

☒ IP/MAC Address Harvesting ?  
 Delay between SNMP requests (ms) 50 ?

☐ Discover Network Devices in Client IP Ranges ?

☐ Resolve DNS Names ?  
 DNS Servers ?

☐ Microsoft Windows Domains ?

- d. On the Universal Discovery Agent Deployment page, select **Update UD Agent**, and type a Call Home probe address if you want to use the Call Home feature.


The screenshot shows the 'Edit Infrastructure Discovery Activity' window with the 'Universal Discovery Agent Deployment' tab selected. The left sidebar contains links for 'Define Credentials', 'Preferences', 'Universal Discovery Agent Deployment' (highlighted), 'Schedule Discovery', and 'Summary'. The main panel is titled 'Universal Discovery Agent Deployment' and 'Control the UD Agent deployment'. It includes several configuration options:

- Agent Deployment:**
  - ☐ Install UD Agent
  - ☒ Update UD Agent
  - ☐ Migrate DDMI Agent
  - ☐ Uninstall UD Agent
- ☐ Install UD Agent to run under root account on UNIX machines
- ☐ Software utilization period (days): 31
- Primary Call Home Probe Address: 16.186.86.186
- Secondary Call Home Probe Address: (empty field)
- Call Home Request Frequency: 3
- Credential for UD Agent Installation: (empty field) [Select Credential]
- Credential for UD Agent Update: (empty field) [Select Credential]

3. Activate the Infrastructure Discovery activity.

Right-click the Infrastructure Discovery activity that you created, and select **Activate**.

4. Create an Inventory Discovery activity.

Select the management zone that you created, click , and select **New Discovery Activity > Inventory**.

**Note:**

- Only **Scanner-based Inventory Discovery** is involved here.

**New Inventory Discovery Activity**

Activity Name

Preferences

Virtualization

Schedule Discovery

Summary

**Preferences**

Configure the discovery preferences.

☒ **Scanner-based Inventory Discovery** ?

Discovery Options

☒ Download Scan File Before Execution ?

☒ Allow Scanner Upgrade ?

☐ Run Pre-Scan/Post-Scan Scripts ?

Script maximum run time (min) 5 ?

☒ Allow Scanner Downgrade ?

☐ Remove Scan Data ?

Edit scripts...

Scanner Configuration

Mapping Options

☐ **Basic Inventory Discovery (Data Center only)** ?

Discovery Options

Host Information ?

☒ CPUs

☒ Disks

☒ Memory

- You can skip the Schedule Discovery page, because the **Inventory Discovery by Scanner** job is designed to be run every two weeks and the period cannot be changed.

## 5. Active the Inventory Discovery activity.

Right-click the Inventory Discovery activity that you created, and select **Activate**.

### Note:

If you use any UCMDB versions before 10.20, do the following in the Client environment, and consult HP Software Support for details.

- Apply Hotfix for virtual IP addresses.
- Apply the Enrichment rule to clean the Call Home event.

## Configure SNMP-Combined Mode


To configure the Combined mode, do the following:

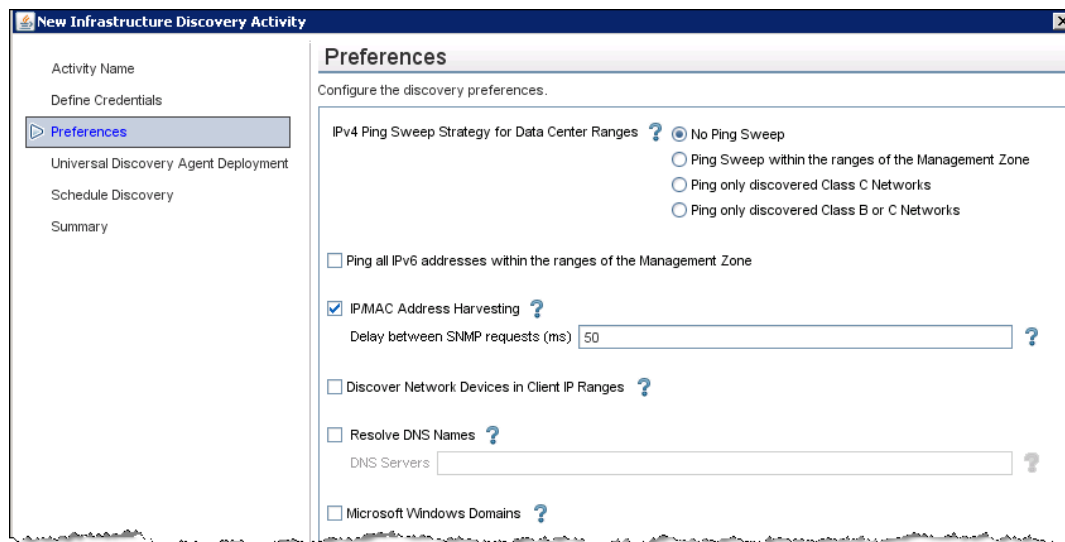
## 1. Create a management zone.

Go to **Data Flow Management > Universal Discovery > Zone-Based Discovery** tab, click **New** , and select **New Management Zone**.

For details on how to create a management zone, see *HP Universal CMDB Data Flow Management Guide*.

## 2. Create an Infrastructure Discovery activity

- a. Select the management zone that you created, click , and select **New Discovery Activity > Infrastructure**.
- b. On the Define Credentials page, select **NTCMD Protocol** and **SSH Protocol** to respectively cover Windows and Non-Windows (Unix, Linux, Solaris, and so on) devices.
- c. If the default Preferences page is not suitable for this mode, you can specify it as follows:



**New Infrastructure Discovery Activity**

Activity Name  
Define Credentials  
**Preferences**  
Universal Discovery Agent Deployment  
Schedule Discovery  
Summary

**Preferences**  
Configure the discovery preferences.

IPv4 Ping Sweep Strategy for Data Center Ranges ? ☒ No Ping Sweep  
☐ Ping Sweep within the ranges of the Management Zone  
☐ Ping only discovered Class C Networks  
☐ Ping only discovered Class B or C Networks

☐ Ping all IPv6 addresses within the ranges of the Management Zone

☒ IP/MAC Address Harvesting ?  
 Delay between SNMP requests (ms)  ?

☐ Discover Network Devices in Client IP Ranges ?

☐ Resolve DNS Names ?  
 DNS Servers  ?

☐ Microsoft Windows Domains ?



- d. On the Universal Discovery Agent Deployment page, select **Install UD Agent**, **Update UD Agent** and **Install UD Agent to run under root account on UNIX machines**, and type a Call Home probe address if you want to use the Call Home feature.


The screenshot shows the 'Universal Discovery Agent Deployment' window within the 'Edit Infrastructure Discovery Activity' application. The left sidebar contains a navigation menu with the following items: 'Define Credentials', 'Preferences', 'Universal Discovery Agent Deployment' (which is highlighted with a blue bar and a play icon), 'Schedule Discovery', and 'Summary'. The main content area is titled 'Universal Discovery Agent Deployment' and has a subtitle 'Control the UD Agent deployment'. It contains several configuration options:
 

- Agent Deployment**: A section with three checkboxes: 'Install UD Agent' (checked), 'Migrate DDMI Agent' (unchecked), and 'Update UD Agent' (checked). There are also checkboxes for 'Uninstall UD Agent' (unchecked) and 'Install UD Agent to run under root account on UNIX machines' (checked).
- Software utilization period (days)**: A dropdown menu currently set to '31'.
- Primary Call Home Probe Address**: A text input field containing '16.186.86.186'.
- Secondary Call Home Probe Address**: An empty text input field.
- Call Home Request Frequency**: A text input field containing '3'.
- Credential for UD Agent Installation**: A text input field containing 'Universal Discovery Protocol Credential 1' and a 'Select Credential' button.
- Credential for UD Agent Update**: A text input field containing 'Universal Discovery Protocol Credential 1' and a 'Select Credential' button.

3. Activate the Infrastructure Discovery activity.

Right-click the Infrastructure Discovery activity that you created, and select **Activate**.

4. Create an Inventory Discovery activity.

Select the management zone that you created, click , and select **New Discovery Activity > Inventory**.

**Note:**

- Only **Scanner-based Inventory Discovery** is involved here.

- You can skip the Schedule Discovery page, because the **Inventory Discovery by Scanner** job is designed to be run every two weeks and the period cannot be changed.

##### 5. Active the Inventory Discovery activity.

Right-click the Inventory Discovery activity that you created, and select **Activate**.

#### Note:

If you use any UCMDB versions before 10.20, do the following in the Client environment, and consult HP Software Support for details.

- Apply Hotfix for virtual IP addresses.
- Apply the Enrichment rule to clean the Call Home event.

## Configure No-SNMP Mode


To configure the No-SNMP mode, do the following:

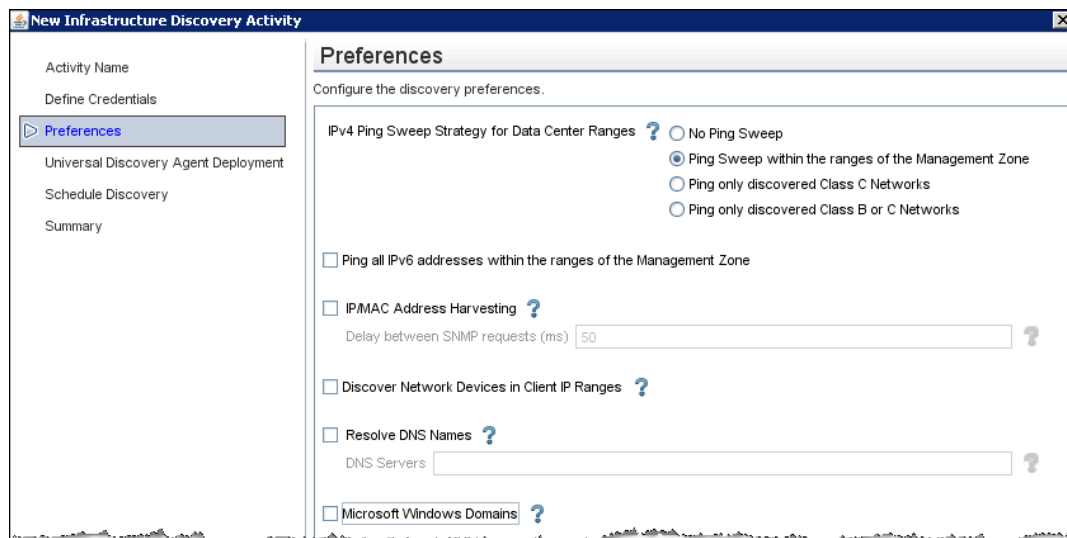
1. Create a management zone.

Go to **Data Flow Management > Universal Discovery > Zone-Based Discovery** tab, click **New** , and select **New Management Zone**.

For details on how to create a management zone, see *HP Universal CMDB Data Flow Management Guide*.

2. Create an Infrastructure Discovery activity.

- a. Select the management zone that you created, click , and select **New Discovery Activity > Infrastructure**.
- b. On the Define Credentials page, only choose the credential that you need.
- c. If the default Preferences page is not suitable for this mode, you can specify it as follows:



The screenshot shows the 'New Infrastructure Discovery Activity' window with the 'Preferences' tab selected. The left sidebar contains a list of steps: 'Activity Name', 'Define Credentials', 'Preferences' (highlighted), 'Universal Discovery Agent Deployment', 'Schedule Discovery', and 'Summary'. The main area is titled 'Preferences' and contains the following settings:

- Configure the discovery preferences.**
- IPv4 Ping Sweep Strategy for Data Center Ranges** (with a help icon):
  - ☐ No Ping Sweep
  - ☒ Ping Sweep within the ranges of the Management Zone
  - ☐ Ping only discovered Class C Networks
  - ☐ Ping only discovered Class B or C Networks
- ☐ Ping all IPv6 addresses within the ranges of the Management Zone
- ☐ IP/MAC Address Harvesting (with a help icon):
  - Delay between SNMP requests (ms):  (with a help icon)
- ☐ Discover Network Devices in Client IP Ranges (with a help icon)
- ☐ Resolve DNS Names (with a help icon):
  - DNS Servers:  (with a help icon)
- ☐ Microsoft Windows Domains (with a help icon)

- d. On the Universal Discovery Agent Deployment page, select **Update UD Agent**, and type a Call Home probe address if you want to use the Call Home feature.


The screenshot shows the 'Universal Discovery Agent Deployment' configuration window. On the left is a sidebar with navigation links: 'Define Credentials', 'Preferences', 'Universal Discovery Agent Deployment' (highlighted), 'Schedule Discovery', and 'Summary'. The main panel is titled 'Universal Discovery Agent Deployment' and contains the following settings:

- Agent Deployment:** Includes checkboxes for 'Install UD Agent', 'Migrate DDMI Agent', 'Update UD Agent' (checked), and 'Uninstall UD Agent'.
- Install UD Agent to run under root account on UNIX machines:** An unchecked checkbox.
- Software utilization period (days):** A dropdown menu set to '31'.
- Primary Call Home Probe Address:** A text field containing '16.186.86.186'.
- Secondary Call Home Probe Address:** An empty text field.
- Call Home Request Frequency:** A text field containing '3'.
- Credential for UD Agent Installation:** An empty text field with a 'Select Credential' button.
- Credential for UD Agent Update:** An empty text field with a 'Select Credential' button.

3. Activate the Infrastructure Discovery activity.

Right-click the Infrastructure Discovery activity that you created, and select **Activate**.

4. Create an Inventory Discovery activity.

Select the management zone that you created, click , and select **New Discovery Activity > Inventory**.

**Note:**

- Only **Scanner-based Inventory Discovery** is involved here.

**New Inventory Discovery Activity**

Activity Name

▶ Preferences

Virtualization

Schedule Discovery

Summary

**Preferences**

Configure the discovery preferences.

☒ **Scanner-based Inventory Discovery** ?

Discovery Options

☒ Download Scan File Before Execution ?

☒ Allow Scanner Upgrade ?

☒ Allow Scanner Downgrade ?

☐ Remove Scan Data ?

☐ Run Pre-Scan/Post-Scan Scripts ?

Script maximum run time (min) 5 ?

Edit scripts...

Scanner Configuration

Mapping Options

☐ **Basic Inventory Discovery (Data Center only)** ?

Discovery Options

Host Information ?

☒ CPUs

☒ Disks

☒ Memory

- You can skip the Schedule Discovery page, because the **Inventory Discovery by Scanner** job is designed to be run every two weeks and the period cannot be changed.

5. Active the Inventory Discovery activity.

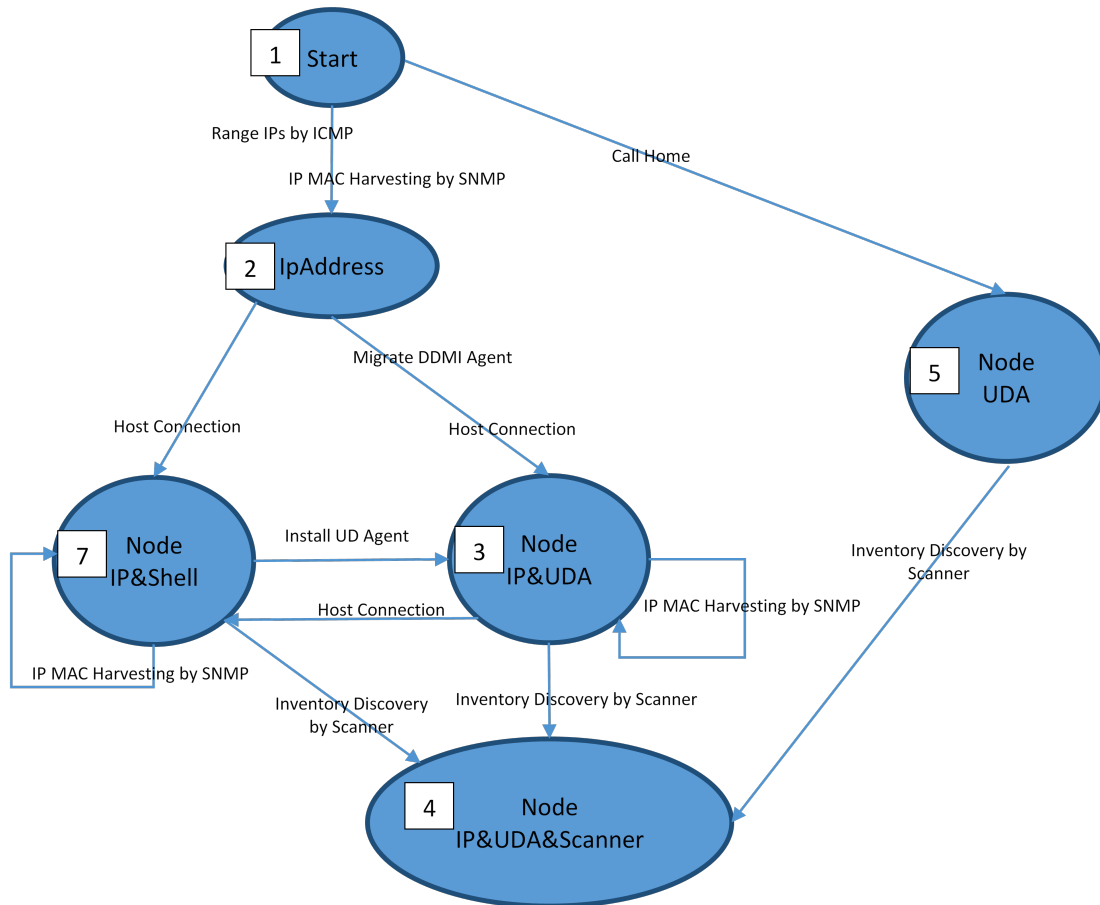
Right-click the Inventory Discovery activity that you created, and select **Activate**.

## Step-by-Step Configuration for Experienced Users

This task describes the procedure of step-by-step configuration for experienced users only.

## 1. CI Status transition

The following diagram is the fundamental idea of the step-by-step configuration.



In this diagram, the discovery status is defined by picking up some combination of key CIs. Those CIs play an important role in triggering fundamental jobs.

All the discovery modes mentioned above are included in this diagram, for example:

**Agent-Only Mode:** 1 (Range IPs by ICMP) > 2 (Host Connection by Shell) > 3 (Inventory Discovery by Scanner) > 4

**Agentless Mode:** 1 (Range IPs by ICMP) > 2 (Host Connection by Shell) > 7 (Inventory Discovery by Scanner) > 4

**Combine Mode:** 1 (Range IPs by ICMP) > 2 (Host Connection by Shell) > 7 (Inventory Discovery by Scanner) > 3 (Install UD Agent) > 4

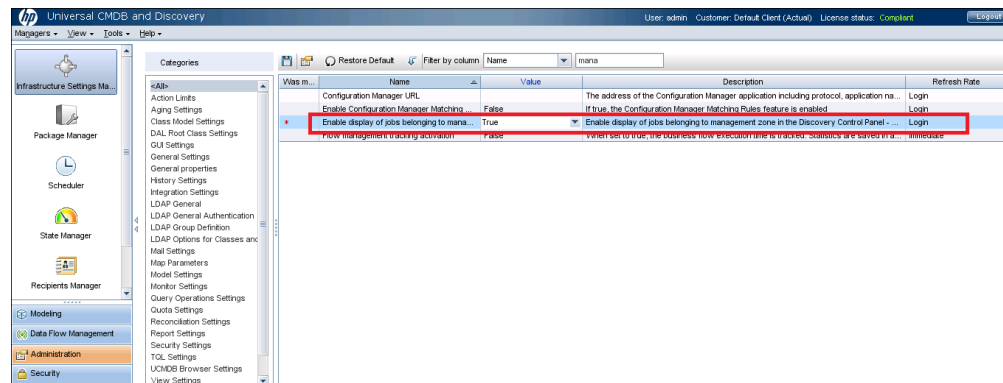
**SNMP-Agent Mode:** 1 (IP MAC Harvesting by SNMP) > 2 (Host Connection by Shell) > 3 (Inventory Discovery by Scanner) > 4

## 2. Step-by-step discovery

- a. Decide the mode that you want to use for discovery.
- b. Configure the mode. For details, see the relevant section in ["Configure Inventory Discovery" on page 45](#).
- c. Modify the job.

The default activated job may be inappropriate, so you must manually disable the unnecessary job according to the environment.

- i. Go to **Administration > Infrastructure Settings Management**, and change the value of the **Enable display of jobs belonging to management zone** attribute to **True**.



- ii. Go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs** tab > **Discovery Modules** tree, and activate or deactivate jobs under **<< No module>>**.

### Note:

- When you edit the activity, it is recommended to deactivate unrelated jobs under **<< No module>>** to keep your system robust.

- Do not start a job until its precedent job finishes.
- Use the right-hand pane to troubleshoot when jobs fail or do not return the expected CIs for the next job to be triggered.

## How to Migrate DDMI Agents to Universal Discovery Agents


This task describes how to migrate DDMI agents to Universal Discovery agents.

Agents can be migrated using automatic, semi-automatic, or manual methods.

### • Automatic migration

Agent migration is performed automatically using activities in UCMDB.

In UCMDB, configure the Infrastructure Discovery activity as follows:

- a. On the Universal Agent Deployment page, ensure the **Migrate DDMI Agent** check box is selected.
- b. On the Summary page, save the changes and click  on the toolbar to activate the activity.

For more information, see the section describing the Infrastructure Discovery Activity in ["Configure Inventory Discovery" on page 45](#).

**Note:** In this method, the **Migrate DDMI Agent** job can trigger all single IP addresses with no Node related. This operation can cause performance issues if you have the dynamic environment.

### • Semi-automatic migration

Agent migration is performed semi-automatically. Besides using activities in UCMDB, you can manually activate the **Migrate DDMI Agent** job. If no DDMI agent remains in the environment, this job can be deactivated. For details on modifying the job, see ["Step-by-Step Configuration for Experienced Users" on page 69](#).

**Note:** It is recommended to use this method if you want to control the migration closely.



- **Manual migration**

Agent migration is performed manually using remote access technology, third-party tools, or any other distribution method.

- a. Uninstall the DDMI agents. For details, see the documentation that was supplied with your version of DDMI.
- b. Install the Universal Discovery agent manually. For details, see the section describing how to install the Universal Discovery agent manually in *HP Universal CMDB Data Flow Management Guide*.

**Note:** (UNIX) To remove legacy customized start-up scripts during migration, see the section describing ["How to Clean Up Legacy DDMI Agent Start-Up Scripts" on page 81](#).

## Check the Migration Status

When you begin to migrate Universal Discovery agents, you can perform the following steps to check the migration status:

1. Run the **UDA Status Collector** job.

Go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs** tab > **Discovery Modules** tree > **Tools and Samples > UD Agent Management**, right-click **UDA Status Collector**, and select **Activate**.

2. Check the **Agent Status Report**.

Go to **Modeling > Reports > Custom Reports** pane > **Custom** tree > **Discovery Status**, double-click **Agent Status Report**. For details, see the *How to Generate a Custom Report* section in *HP Universal CMDB Modeling Guide*.

## How to Configure DDMI and Universal Discovery for Interoperability

This task describes how configure Universal Discovery agents to interoperate with DDMI and Universal Discovery in a phased migration approach.

The Universal Discovery Agent can be utilized by both the DDMI server and the Universal Discovery Data Flow Probe for discovery and inventory.

In this mode, Universal Discovery agents provide inventory data to DDMI servers. However, only shell communication capabilities are provided to Data Flow Probes.

**Note:** In UCMDB 10.01, the scan file can be collected by both DDMI and Universal Discovery. In UCMDB 10.20, this feature is disabled. Universal Discovery cannot collect the scan file, and the Universal Discovery Agent only works as a shell command. Contact HP Software Support if you want the scan file on the Universal Discovery side.

This task includes the following steps:

1. ["Prerequisites" below](#)
2. ["Configure Universal Discovery" below](#)
3. ["Configure DDMI" on the next page](#)
4. ["Results " on the next page](#)

1. Prerequisites
  - Ensure that the DDMI server database is running.
  - Ensure that UCMDB is running.
2. Configure Universal Discovery
  - **Zone Based Activities.** In the **Inventory Discovery** wizard on the **Preferences** page, ensure that **Scanner Based Inventory** is not selected.
  - **Manual.** Ensure that you do not run the **Inventory Discovery by Scanner** job.

**Note:**

- Universal Discovery cannot perform scanner-based inventory discovery during a phased migration period. During this period, only DDMI can perform a scanner-based inventory discovery. You can enable scanner-based inventory discovery or run scanner-based inventory discovery after DDMI is retired.

- For details on configuring activities and on configuring jobs manually, see *HP UCMDB Discovery and Integrations Content Guide* and the *HP Universal CMDB Data Flow Management Guide* respectively.

### 3. Configure DDMI

- Install scanner patch.** Apply the latest patch to the DDMI server. Download the patch from the [HP Software Support Online Portal](http://support.openview.hp.com/selfsolve/patches) (<http://support.openview.hp.com/selfsolve/patches>). Search for **DDMI > Cumulative Scanner Patches**.
- Set Agent Communications options.** **DDMI > Server > Administration > Discovery Configuration > Configuration Profiles > Agent Configuration Profiles > Settings** tab.
  - Ensure that **Allow Agent Upgrade** is not selected.
  - Ensure that **Allow Agent Communication** is selected. Additionally, in the **Agent deployment actions** drop down, select **No action**.
- Restart the system monitor service.** Stop and restart the **HP DDMI System Monitor** service on the server that is running DDMI.

### 4. Results

- The Universal Discovery agent can provide services to both the DDMI server and UCMDB.
- The software utilization plug-in-runs according to the **collect utilization data** setting for your DDMI server.

## Chapter 4: After Migration

This chapter includes:

|  |    |
|--|----|
| How to Run the Device Inventory Report ..... | 76 |
| How to Import DDMI SAls to UCMDB .....       | 77 |

### How to Run the Device Inventory Report

This task describes how to run the Device Inventory Report. This report is useful for troubleshooting device migration issues. For example, if you notice that certain devices or certain components were not migrated to Universal Discovery, this report will show the possible reasons.

#### 1. Prerequisites

UCMDB server is running.

#### 2. Copy the script

Copy the script file from the following location in UCMDB to each DDMI Server you want to migrate: **<UCMDB Server> Tools folder > Migration folder > DDMIInventoryReport.pl**

#### 3. Run the script

On the DDMI Server, open a command line shell and type the following at the command prompt:

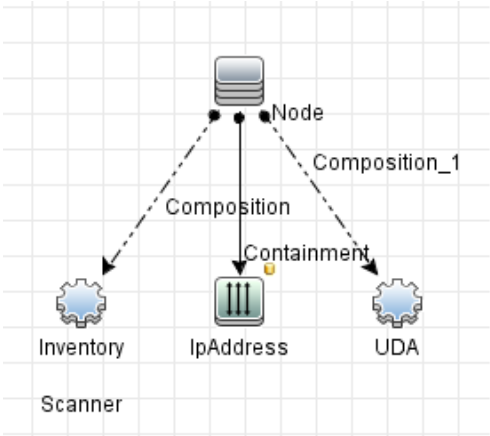
```
perl DDMIInventoryReport.pl
```

#### 4. Results

- Summary data about each device is displayed.
- A file is created that contains detailed information about each device. The format for the file is as follows: **<DDMIServerName>.csv**

where **<DDMIServerName>** is the name created for each DDMI Server.

- After the migration is complete, analyze the summary data and the accompanying .csv file. Compare the data to the data in UCMDB. To do this, you can create customized TQL queries in UCMDB to ensure that devices were migrated as expected. For example, the following TQL query may be used:



**Note:** This example assumes that all device information is current and available in DDMI. Customize this topology to suit your specific conditions.

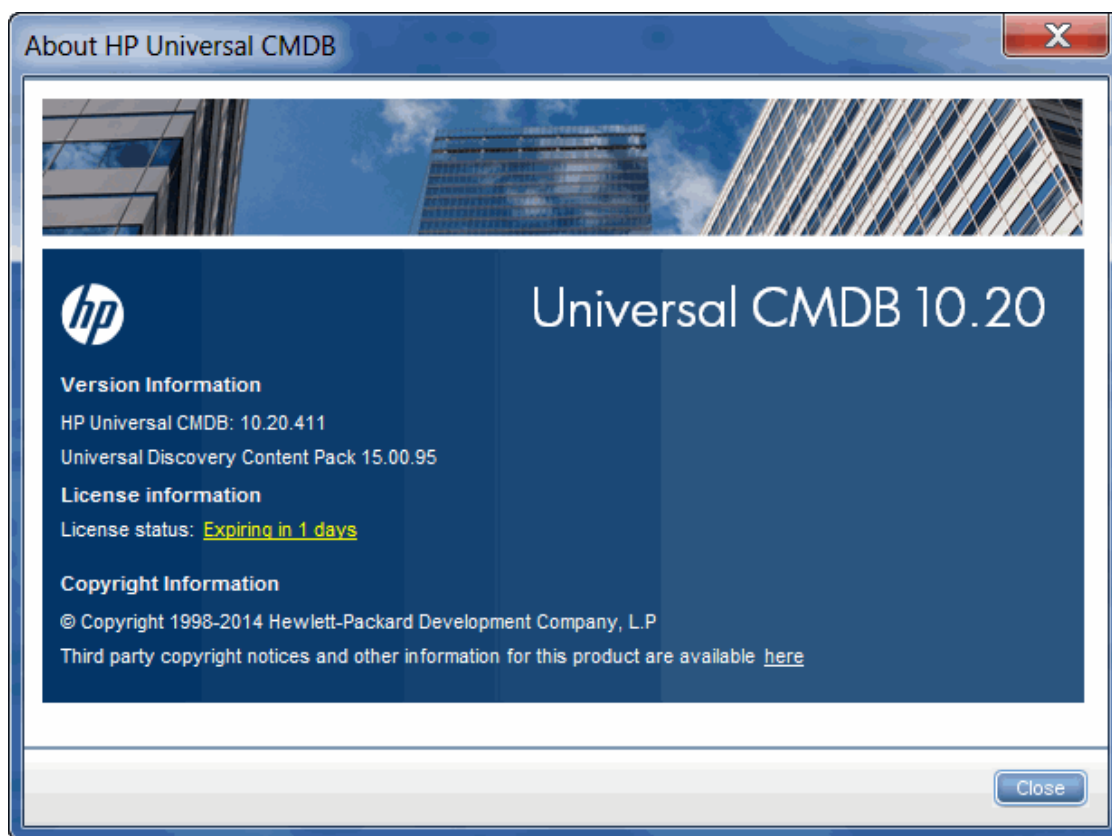
Null or inconsistent data in the .csv file may yield answers why certain information was not migrated as follows:

| Issue  | Result                                    |
|--|---|
| Agent Version value is null                                    | Universal Discovery Agent is not migrated |
| Scan File value is null  | Inventory Scanner is not migrated         |
| Scan Date value is less than two months before migration date. | Inventory Scanner may not be migrated     |

## How to Import DDMI SAls to UCMDB

To import the latest DDMI SAls to UCMDB,

1. Download the latest DDMI 9.32 DK package.
  - a. Download the latest DDMI 9.32 DK package (**HPED\_XXXXX.zip**) from the [Discovery Knowledge Packs for DDMI](#) community on HP Live Network.
  - b. Extract the zip file to get the SAI summary html files and **DiscoveryKnowledge-9.3.XXXX.cab**.
  - c. Then extract the **DiscoveryKnowledge-9.3.XXXX.cab** file to get the Master SAI files.
2. Check the current UCMDB and Content Pack update versions by going to **Help > About HP Universal CMDB** in UCMDB.



3. Create a new .dat file with a file name **version.dat**
  - a. Add the file content in the following format:

```
<CP_version>-minVersion=<UCMDB_version>
```

For example, Based on the version information available from the screenshot above, the file content is as follows:

```
15.00.95-minVersion=10.2
```

- b. Modify the CP version in the **version.dat** file to make sure the version is higher than the current CP version. The new version does not have to be a real version number. The purpose is to enable the import.

For example, if the current content is 15.00.95-minVersion=10.2, modify it to something like 15.0**1**.95-minVersion=10.2.

- c. Save the file.

4. Create fake CP packages with the SAI files you get from the DDMI DK package, so that the SAI files can be imported like you are importing them from real CP packages.

Create two zip packages (**SAI.zip** and **SAI\_HTML-summary.zip**) to include the SAIs and the SAI HTML files. Make sure you follow the folder structures below strictly:



```
SAI.zip
- packages
  - Sai.zip
    - discoverySaiResources
      - BaseUnixOS.zsai
      - French.zsai
      - German.zsai
      - Legacy.zsai
      - Mac.zsai
      - Master.zsai
      - Unix.zsai
  - version.dat
```

```
SAI_HTML-summary.zip
- discoverySaiResources
  - SAI_DOC
    - BaseUnixOS-summary.html
    - French-summary.html
    - German-summary.html
    - Legacy-summary.html
    - Mac-summary.html
    - Master-summary.html
    - Unix-summary.html
```

5. Import the **SAI.zip** and **SAI\_HTML-summary.zip** packages.

- a. Go to **Data Flow Management > Software Library**.

- b. In the SAI Files pane, click **Import**  and select **Import SAI From CP**.

- c. In the Import CP Files dialog box, locate the **SAI.zip** package you created and click **Open**.
- d. Go to **Administration > Package Manager**.
- e. Click **Deploy packages to server (from local disk)** .
- f. In the Deploy Packages to Server dialog box, click **Add** .
- g. In the Deploy packages to server (from local disk) dialog box, locate the **SAI\_HTML-summary.zip** package you created and click **Open**.
- h. Click **Deploy**.

**Note:** Once you upgrade the UCMDB to a newer version, the SAls and SAI HTML summary files you imported will be replaced by the newer ones in the UCMDB.



## Chapter 5: Reference Information

This chapter includes:

|  |     |
|--|-----|
| How to Clean Up Legacy DDMI Agent Start-Up Scripts .....   | 81  |
| Server Configuration Data Export Script Resources .....    | 83  |
| Universal Discovery Resources for UNIX .....               | 84  |
| Universal Discovery Resources for Windows .....            | 88  |
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| Terminology Changes from DDMI to Universal Discovery ..... | 91  |
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| Mapping Attributes from DDMI to UCMDB .....                | 99  |
| Java Viewer Mapping from DDMI to Universal Discovery ..... | 110 |

### How to Clean Up Legacy DDMI Agent Start-Up Scripts

This task describes how to remove any customized start-up scripts that may be running on UNIX discovery nodes. You may need to remove these scripts when you have removed DDMI agents and are installing Universal Discovery agents.

**Note:** Perform this task only if you have legacy start-up scripts.

This task includes the following steps:

1. ["Prerequisites " on the next page](#)
2. ["Export the installation file" on the next page](#)
3. ["Edit the installation file" on the next page](#)
4. ["Copy the script to the remote node" on the next page](#)
5. ["Results " on page 83](#)

### 1. Prerequisites

Customized start-up scripts for DDMI agents are installed on the discovery nodes that you want to migrate.

### 2. Export the installation file

- a. In UCMDB, go to **Administration > Package Manager** and export the **UDAgentManagement** archive file.
- b. From the **discoveryResources\ud\_agents** directory, extract the **agentinstall.sh** file.

**Note:** For more information on exporting resources, see the section describing exporting resources using the Package Manager in the *HP Universal CMDB Administration Guide*.

### 3. Edit the installation file

Edit the **agentinstall.sh** file as follows:

- a. In the line **#DDMI\_SCRIPT\_FILE=/tmp/sample\_script.sh**, replace the placeholder **/tmp/sample\_script.sh** with the path to your customized startup script that you want to remove. Then, uncomment the line.
- b. Uncomment the next four lines of code.

### 4. Copy the script to the remote node

#### **Automatic.**

Using the Package Manager, deploy the newly-edited **agentinstall.sh** file to UCMDB.

**Note:** For more information, see the section describing deploying packages using the Package Manager in the *HP Universal CMDB Administration Guide*. You can deploy specific resources without deploying the entire package. See the sub-section describing how to deploy specific resources.

#### **Manual.**

Copy the **agentinstall.sh** file, together with other Universal Discovery Agent installation files and certificate files, to the remote machine.

**Note:** For more information, see the section describing how to copy the UD Agent installation and the UD Protocol certificate in *HP Universal CMDB Data Flow Management Guide*.

## 5. Results

To confirm that your customized startup script for the DDMI agent is removed, go to the path that you specified in the **agentinstall.sh** file and verify the start-up script is removed.

# Server Configuration Data Export Script Resources

The Perl export script that is used for exporting data from DDMI is named as follows:

## DDMIMigration.pl

The following command options are available:

| Option         | Description   |
|----------------|---|
| -filename      | <p>Changes the name of the archive (.zip) file.</p> <p><b>Note:</b> It is not recommended to use this option to change file names for files that are contained in the archive.</p> <p><b>Tip:</b> You can also change the name of the archive file by using the operating system.</p> |
| -scancfgprefix | <p>By default, the host name of the DDMI server is appended as a prefix to each scanner configuration file. This option replaces this host name with the specified value.</p> <p><b>Note:</b> This option can only be used for scanner configuration files.</p>                       |
| -help          | <p>Displays copyright information and command line usage instructions. Additionally, help messages are displayed.</p>   |

The following is an example command:

```
perl DDMIMigration.pl -filename:samplefile.zip
```

## Universal Discovery Resources for UNIX

### Resources

The following script files are available for manual agent installations and upgrades:

| Platform | Resource Name   | Description  |
|----------|-----------------|--|
| UNIX     | agentinstall.sh | <ul style="list-style-type: none"> <li>Installs the Universal Discovery Agent.</li> <li>Replaces the non-native version of the UD Agent with a version that is packaged in the native operating system version of the discovery node.</li> </ul> |
|          | agentupgrade.sh | Upgrades the DDMI agent to a Universal Discovery agent. However, this version of the Universal Discovery agent is not packaged in the native operating system version of the discovery node.   |

These files are available in the **Package Manager**. For more information on exporting resources, see *How to Export a Package* in the *HP Universal CMDB Administration Guide*.

Additionally, discovery resources for UNIX and the UNIX variants that are also available in the **Package Manager** are as follows:

| Operating System                      | Platform | File Name                       |
|---------------------------------------|----------|---------------------------------|
| HP-UX                                 | ia64     | hp-ud-agent-hpux-ia64.depot     |
|                                       | HPPA     | hp-ud-agent-hpux-hppa.depot     |
| Linux (Red Hat, SUSE, CentOS, Oracle) | x86,x64  | hp-ud-agent-linux-x86.rpm       |
| Linux (Ubuntu)                        | x86,x64  | hp-ud-agent-linux-x86.deb       |
| AIX                                   | POWER    | hp-ud-agent-aix-ppc.bff         |
| Solaris                               | x86      | hp-ud-agent-solaris-x86.i86pc   |
|                                       | SPARC    | hp-ud-agent-solaris-sparc.sparc |
| Mac OS X                              | x86      | hp-ud-agent-macosx-x86.dmg      |

### Parameters

You can use parameters in a command line interface to customize the discovery installation as follows:

```
filename [--help] [--url0 ipaddress] [--url1 ipaddress] [--url2 ipaddress] [--port number] [--timeout
seconds] [--cert path] [--usage] [--softwareutilization] [--softwareutilizationonly] [--period days] [--
home path] [--upgrade] [--uninstall] [--clean] [--temp] [--user] [--group] packagename
--isnative
```

where:

| Parameter Name | Description   |
|----------------|---|
| cert           | Path to install certificate files.<br><b>Default:</b> Working directory   |
| clean          | Specifies a type of uninstall procedure. Most Universal Discovery Agent files and scanner files are deleted.<br><br><b>Note:</b> This parameter can only be used together with the <b>uninstall</b> and <b>home</b> parameters. |
| filename       | The name of the installation file.<br><br><b>Note:</b> <ul style="list-style-type: none"> <li>This is a mandatory parameter.</li> <li>The filename is usually <b>agentinstall.sh</b>.</li> </ul>                                |
| group          | Specifies the group name for the user account that you want to run the Universal Discovery Agent under.<br><br><b>Note:</b> Use this parameter together with the <b>user</b> parameter.   |
| help           | Displays help messages.   |
| home           | Directory that contains the Universal Discovery Agent log and the software utilization data files.<br><b>Default:</b> HOME directory  |

| Parameter Name          | Description  |
|-------------------------|--|
| packagename             | <p>Full path for the package installation file.</p> <p><b>Default:</b> Working directory</p> <p><b>Note:</b> This parameter is required when installing or upgrading the Universal Discovery Agent.</p>  |
| period                  | <p>Number of days to retain software utilization data.</p> <p><b>Default:</b> 365 days</p>   |
| port                    | <p>Port number for the Universal Discovery Agent to use for communication with the Data Flow Probe.</p> <p>Type <b>2738</b> or <b>7738</b></p> <p><b>Default:</b> 2738</p> <p><b>Note:</b> If you change this port number manually after installation, the new port number takes effect only after the Universal Discovery Agent is restarted.</p> |
| softwareutilization     | Enables software utilization.  |
| softwareutilizationonly | <p>Enables the Software Utilization plug-in only.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• The Universal Discovery Agent is disabled.</li> <li>• This parameter is supported only when installing the Universal Discovery Agent manually.</li> </ul>   |
| temp                    | <p>Directory that contains Universal Discovery Agent and scanner temporary files.</p> <p><b>Default:</b> \$TEMP directory.</p>   |
| timeout                 | <p>Frequency (in seconds) that the Universal Discovery Agent contacts the Data Flow Probe for Call Home.</p> <p><b>Default:</b> 86400 seconds</p>  |

| Parameter Name | Description   |
|----------------|---|
| uninstall      | <p>Uninstalls the Universal Discovery Agent.</p> <p><b>Note:</b> When you use this parameter:</p> <ul style="list-style-type: none"> <li>• All parameters except the <b>clean</b> parameter are ignored.</li> <li>• The <b>filename</b> parameter is required.</li> </ul> |
| upgrade        | Upgrades the Universal Discovery Agent.   |
| url0 url1 url2 | <p>IP address for Data Flow Probe that is used for Call Home messages.</p> <p><b>Note:</b> If you are performing a migration from DDMI to Universal Discovery, this parameter is also used for the DDMI server.</p>   |
| usage          | <p>Displays help messages.</p> <p><b>Note:</b> This parameter provides the same information as the <b>help</b> parameter.</p>   |
| user           | The user account that is used to start up the Universal Discovery Agent.  |
| isnative       | Returns whether a native or non-native Universal Discovery Agent is installed.  |

## Universal Discovery Agent Error Codes

The following error codes may be returned when using installation or upgrade scripts as follows:

| Error Code | Description           |
|------------|-----------------------|
| 1          | General error         |
| 2          | Wrong parameter       |
| 3          | Not root user         |
| 4          | File creation error   |
| 5          | Wrong platform        |
| 6          | Install package error |

| Error Code | Description   |
|------------|---|
| 7          | Directory missing   |
| 8          | File missing  |
| 9          | File not executable   |
| 10         | Link startup script error   |
| 11         | Startup script error  |
| 12         | Universal Discovery Agent is already installed<br><br><b>Note:</b> Applicable only when performing an installation operation. |
| 13         | System package installer error  |
| 14         | Run agent with non-root user error  |
| 15         | The DDMI agent is installed.  |

## Universal Discovery Resources for Windows

### Resources

Discovery resources for Windows are as follows:

| Platform      | Resource Name  | Description   |
|---------------|--|---|
| Windows (x86) | hp-ud-agent-win32-x86- <b>&lt;VersionNumber&gt;</b> .msi | This installer package is required for all installations.                   |
|               | agentupgrade.cmd   | Used when upgrading or migrating DDMI agents to Universal Discovery Agents. |

### Parameters

You can use parameters in a command line interface to customize the Universal Discovery Agent installation, uninstallation, or upgrade as follows.

```
c:\AgentTest>msiexec <InstallOption> <Product.msi> /log <UPGRADELOGFILEPATH> [CLEAN=ON]
SETUPTYPE=Enterprise PORT=7738 TIMEOUT=900 CERTPATH=c:\ PERIOD=90
```



**SOFTWAREUTILIZATION=ON URL0=15.178.179.124 URL1=15.178.179.125 URL2=15.178.179.126**

| Parameter Name     | Description  |
|--------------------|--|
| InstallOption      | <p>Indicates the type of operation. The following options are supported:</p> <ul style="list-style-type: none"> <li>• <b>/i</b>: Installs the Universal Discovery Agent.</li> <li>• <b>/x</b>: Uninstalls the Universal Discovery Agent.</li> </ul>  |
| Product.msi        | <p>Indicates the product file name.</p> <p>For example, <b>hp-ud-agent-win32-x86-10.20.000.xxx.msi</b></p>   |
| UPGRADELOGFILEPATH | <p>Specify a path to save a log file.</p> <div> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• Only use with the <b>agentupgrade.cmd</b> script.</li> <li>• Use together with the <b>/log</b> switch.</li> </ul> </div>  |
| CLEAN              | <p>Indicates the type of uninstall procedure. Most Universal Discovery Agent files and scanner files are deleted.</p> <div> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• This parameter must be used together with the uninstall option.</li> <li>• If you do not want to use this option, omit the parameter from the string.</li> </ul> </div> |
| SETUPTYPE          | <p>Indicates the operational mode.</p> <p>Type <b>Enterprise</b> or <b>Manual</b>.</p> <div> <p><b>Note:</b> The <b>manual</b> parameter value is called "Software Utilization Plug In Only" in the <b>Agent Installation Wizard</b> User Interface.</p> </div>  |

| Parameter Name      | Description  |
|---------------------|--|
| PORT                | <p>Port number for Universal Discovery Agent to use for communication with Data Flow Probe.</p> <p>Type <b>2738</b> or <b>7738</b>.</p> <p><b>Note:</b> The default value is 2738. If you change this port number manually after installation, the new port number takes effect only after the Universal Discovery Agent is restarted.</p> |
| TIMEOUT             | <p>Frequency that the Universal Discovery Agent contacts the Data Flow Probe when the Universal Agent sends Call Home messages.</p> <p>Measured in seconds.</p> <p>Default is 86400 seconds.</p> <p><b>Note:</b> This parameter is called <b>Call Home Frequency</b> in the Infrastructure Discovery activity.</p>                         |
| CERTPATH            | <p>Path to install certificate files.</p> <p>Default is the working directory.</p>   |
| PERIOD              | <p>Number of days to retain software utilization data.</p> <p>Default is 365 days.</p>   |
| SOFTWAREUTILIZATION | <p>Enable or disable Software Utilization plug in.</p> <p>Use "ON" to enable and "OFF" to disable.</p> <p>Default is "OFF".</p>  |
| URL0 URL1 URL2      | <p>IP address for Data Flow Probe that is used for Call Home messages.</p> <p><b>Note:</b> If you are performing a migration from DDMI to Universal Discovery, this parameter is also used for the DDMI server.</p>  |

## Universal Discovery Agent Error Codes

For error codes that may be returned when using installation or upgrade packages, see [http://msdn.microsoft.com/en-us/library/windows/desktop/aa376931\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/windows/desktop/aa376931(v=vs.85).aspx).

## Server Configuration Data Import Troubleshooting

Issues and error messages that can occur when importing server configuration data are as follows:

| Issue  | Description   |
|--|---|
| An error message is displayed warning about duplicate or overlapping IP address ranges | <p>These IP ranges are not migrated. Either modify the IP ranges in DDMI or modify IP ranges in UCMDB and run the migration script again.</p> <div><b>Tip:</b> To continue migrating data even though a conflict occurs, set the <b>stopWhenConflict</b> option to <b>false</b> in the <b>importMigrationDataFromDDMI</b> method that is accessible from the JMX console.</div> |
| An error message is displayed warning about duplicate credentials.                     | These credentials are not migrated. The migration scripts analyze the <b>user label</b> for each credential to determine if a duplicate exists.   |
| Some device groups in DDMI have the same name as Management Zones in UCMDB             | The Management Zone that has the same name as a device group is overwritten, including the activity information.  |

## Terminology Changes from DDMI to Universal Discovery

This section describes terminology and methodology changes from DDMI to Universal Discovery.

## Conceptual Changes

| DDMI  | Universal Discovery   |
|---|---|
| <p><b>Device Groups.</b> Device Groups are logical groupings of devices based on IP ranges, and devices can belong to more than one group. Configuration profiles are applied to a device group.</p> <p>To access device groups, <b>Administration &gt; Discovery Configuration &gt; Device Groups</b>. To specify how the devices in groups are discovered, you create and assign a configuration profile to a device group.</p> | <p><b>Management Zones.</b> Management Zones are defined by a collection of IP ranges or device types. Management Zones are used when you want to discover all the managed objects of the region using the same scheduling policy and parameters. You assign IP ranges to Data Flow Probes, and then you assign Data Flow Probes to Management Zones.</p> <p>For more information about IP ranges, see Effects of Range Type on Discovery Workflows in the <i>HP Universal CMDB Data Flow Management Guide</i>.</p> <p>For more information about Management Zones, see Zone-based Discovery Overview in the <i>HP Universal CMDB Data Flow Management Guide</i>.</p> |
| <p><b>Passive Discovery.</b> In Passive Discovery, DDM Inventory utilizes IP/MAC Address Harvesting as the first method of discovery. The job does not actively look for devices via ICMP, but will include them if it already has the IP to MAC address mapping.</p> <p>The Passive Discovery configuration profile is applied to the device group.</p>  | <p><b>IP/MAC Harvesting.</b> IP/MAC Address Harvesting is offered as a discovery preference in the Infrastructure Discovery Activity. Additionally, when an IP range is Client type, IP/MAC Address Harvesting is the only method of discovery.</p> <p>Passive Discovery jobs are still available. Configure the IP range as Client type when configuring an IP range on the Data Flow Probe. For more information on setting up IP range types, see Effects of Range Type on Discovery Workflows and Data Reconciliation. Then, run the Infrastructure Discovery Activity with IP/MAC Harvesting enabled.</p>  |

## Product Configuration

In Universal Discovery, activities have simplified the administration of jobs. For example, both active and passive jobs can be run on the same schedule and using the same parameters- by activating a single activity.

| Discovery Type            | DDMI   | Universal Discovery  |
|---------------------------|--|--|
| <b>Active Discovery</b>   | The Active Discovery configuration profile is applied to the device group. | Run the Infrastructure Discovery Activity for a Management Zone. For more information, see the section describing the Infrastructure Discovery Activity in the <i>HP UCMDB Discovery and Integrations Content Guide</i> .                        |
| <b>Discovery via SNMP</b> | The SNMP configuration profile is applied to the device group.             | Run the Infrastructure Discovery Activity and ensure that IP/MAC Harvesting is enabled. For more information, see the section describing the Infrastructure Discovery Activity in the <i>HP UCMDB Discovery and Integrations Content Guide</i> . |

### Committing/Activating Configuration Changes

| DDMI  | Universal Discovery  |
|---|--|
| All configuration changes are activated at <b>Administration &gt; Discovery Configuration &gt; Activation</b> . | All configuration changes are activated when you select <b>Activate Activity</b> on the <b>Summary</b> page of an activity wizard. |

### Agent

| Feature                 | DDMI | Universal Discovery   |
|-------------------------|------|---|
| <b>Interoperability</b> | N/A  | UD Agents automatically detect whether a DDMI server or a Data Flow Probe is attempting communication by examining message headers. Therefore, the UD Agent can support both environments simultaneously. |

| Feature                           | DDMI  | Universal Discovery   |
|-----------------------------------|---|---|
| <b>Data Directory</b>             | N/A   | Each time the UD Agent is run, it checks the UD default data directory. If no files exist, it checks the DDMI default data directory. If files exist, it moves the files from the DDMI default directory to the UD default directory. For information about UD Agent file locations, see <i>Universal Discovery Agent Installation Resources</i> .  |
| <b>Agent deployment/migration</b> | This is performed at the following location: <b>Administration &gt; Discovery Configuration &gt; Configuration Profiles &gt; Agent</b> tab. | <p>This is performed automatically using the Infrastructure Discovery Activity, or performed manually using third party tools or remote access technologies.</p> <p>For details on the Infrastructure Discovery activity, see <i>HP UCMDB Discovery and Integrations Content Guide</i>.</p> <p>For complete agent migration information, see <a href="#">"DDMI to Universal Discovery Migration Options Overview" on page 11</a>.</p> |

| Feature                         | DDMI  | Universal Discovery  |
|---------------------------------|---|--|
| <b>Call Home</b>                | Call Home is enabled at the following location: <b>Administration &gt; System Configuration &gt; Discovery services</b>   | <p>Call Home is always enabled. The UD Agent calls home using a fixed frequency regardless of whether the device has been scanned successfully or not, or whether the scan file has been successfully uploaded to the Data Flow Probe or not. Additionally, Call Home occurs at more frequent intervals than in DDMI. For more information, see the section that describes how to configure call home.</p> <p><b>Note:</b> Call Home settings are automatically migrated when using the Server Migration Tool.</p> |
| <b>Inventory Scanning</b>       | Scanners are configured at <b>Administration &gt; Discovery Configuration &gt; Configuration Profiles &gt; Scanner</b> tab  | <b>Inventory Discovery Activity &gt; Preferences.</b> For more information, see the section that explains inventory discovery scanners.  |
| <b>Virtualization discovery</b> | You apply the Virtualization profile to a device group. In the Scanner Generator, you select the <b>Virtual Machines</b> option on the <b>Hardware Data</b> page to enable or disable detection, and you can indicate if you want containers included in a hardware detection scan. Scanners can detect if they are in a virtual environment and stop running if you set the time out option in the <b>Miscellaneous</b> tab. | In the <b>Inventory Discovery</b> wizard on the <b>Virtualization</b> page, select <b>Include Virtualization Topology</b> .  |

| Feature            | DDMI   | Universal Discovery  |
|--------------------|--|--|
| <b>Credentials</b> | You can specify a collection of deployment credentials that are valid for devices in your network. You can then associate one or more sets of these credentials with an Agent configuration profile. | <p>You specify login credentials when you configure an Infrastructure Discovery Activity for a Management Zone. For more information, see the section describing the Infrastructure Discovery activity in the <i>HP UCMDB Discovery and Integrations Content Guide</i>.</p> <div> <p><b>Note:</b> Credentials are automatically migrated from DDMI to Universal Discovery when using the Server Migration Tool.</p> </div> |

## Data Access

| DDMI   | Universal Discovery  |
|--|--|
| Data can be directly accessed using DBI connections to the MySQL database. | <p>The following APIs are available:</p> <ul style="list-style-type: none"> <li>• UCMDB Java API</li> <li>• UCMDB Web Service API.</li> <li>• Data Flow Management Web Service API</li> </ul> <p>In addition to searching the database via TQL, you can use a text search using the search engine.</p> <p>For more information, see the section describing the UCMDB APIs in the <i>HP Universal CMDB Developer Reference Guide</i>.</p> |

## Data Migration

When using the Perl import script and JMX console to migrate server data, DDMI Profile data is imported into Universal Discovery activities as follows:



| DDMI Profile | Universal Discovery Activity   |
|--------------|--|
| Basic        | Infrastructure Discovery activity  |
| Network      | <b>Note:</b> Schedule data for network profiles are migrated only when <b>Force ARP Table To Be Read</b> is selected in DDMI.  |
| Agent        |  |
| Scanner      | Inventory Discovery activity   |
| VmWare       | <b>Note:</b> If you want to run virtualization topology discoveries, you must have VmWare credentials configured for VmWare profiles in DDMI before you migrate to Universal Discovery. Alternatively, enable Virtualization Topologies discoveries manually on the Virtualization Page in the Inventory Discovery Activity after you migrate. |

DDMI data is imported into Universal Discovery as follows:

| DDMI                                   | Universal Discovery  |
|--|--|
| <b>Deployment credentials</b>          | SSH, NTCMD, and VmWare credentials are imported and keys are regenerated automatically.  |
| <b>SNMP configuration profile</b>      | Mapped to protocol parameters for the SNMP protocol.   |
| <b>Device groups</b>                   | Device groups are migrated to Management Zones and appear using the following convention: <b>&lt;DDMIServerHostName_DeviceGroup&gt;</b>  |
| <b>System configuration</b>            | Agent and scanner-related configurations.  |
| <b>VMware configuration</b>            | VMware VIMware protocol.   |
| <b>XML Enricher configuration file</b> | To import, set the <b>overrideGlobalConfig</b> parameter to <b>True</b> in the JMX console import method. For more information, see <a href="#">"How to Migrate DDMI Server Configuration Data to Universal Discovery"</a> on page 37. |

| DDMI                           | Universal Discovery   |
|--------------------------------|---|
| <b>Certifacts (DDMi agent)</b> | <p>The following files are imported:</p> <ul style="list-style-type: none"> <li>acstrust.cert</li> <li>agentca.pem</li> <li>acskeystore.bin</li> </ul> <p><b>Note:</b> The UD Agent protocol is created from these files.</p>   |
| <b>IP address ranges</b>       | <p>IP address ranges are mapped to either Client or Data Center type according to the following criteria:</p> <p>The IP address range is set to Client type when <b>Actively Ping Devices</b> is <b>disabled</b> and <b>Allow ICMP and SNMP</b> is <b>enabled</b> for the configuration profile that is applied to the device group for the range. All other ranges are set to Data Center type.</p> <p>For more information on IP range types, see the section that describes the effects of range types on discovery workflows and data reconciliation.</p> |

## Migrated Reports from DDMI to Universal Discovery

The following table displays DDMI reports and their corresponding reports in Universal Discovery.

| DDMI  | Universal Discovery  |
|---|--|
| Scanned Device Summary Report and all its child reports | <b>Custom &gt; Inventory &gt; Node Summary Report</b>            |
| Recognized Applications/App Lic                         | <b>Custom &gt; Inventory &gt; Application License Report</b>     |
| Recognized Applications/App Running Util                | <b>Custom &gt; Inventory &gt; Software Utilization Report</b>    |
| Recognized Applications/OS Reported                     | <b>Custom &gt; Inventory &gt; Recognized Applications Report</b> |
| Recognized Applications/Virtual Devices - Solaris Zones | <b>Custom &gt; Virtualization &gt; Solaris Zone Report</b>       |

| DDMI   | Universal Discovery  |
|--|--|
| Recognized Applications/Virtual Devices - VMware Hosts, Virtual Machines | <b>Custom &gt; Virtualization &gt; VMware Host Report</b>                        |
| Recognized Applications/Virtual Devices - VMware Virtual Center          | <b>Custom &gt; Virtualization &gt; VMware Virtual Center Report</b>              |
| Recognized Applications/Network Disc/Device Inventory by Virtual         | <b>Custom &gt; Inventory &gt; Node Summary by VLAN Report</b>                    |
| Status/Device Status/Agent status  | <b>Custom Report &gt; Discovery Status &gt; Agent Status Report</b>              |
| Status/Device Status/Scanner execution details                           | <b>Custom Report &gt; Discovery Status &gt; Scanner Execution Details Report</b> |
| Status/Device Status/Scan file status                                    | <b>Custom Report &gt; Discovery Status &gt; Scan File Status Report</b>          |
| Status/Device Status/Device exceptions                                   | <b>Custom Report &gt; Discovery Status &gt; Discovery Error Report</b>           |

## Mapping Attributes from DDMI to UCMDB

This section describes mappings between DDMI attributes to UCMDB CIs and attributes.

**Note:** You can create a custom mapping of attributes that are contained in scan files to UCMDB CIs. To do this, see the section on how to map scan file attributes to UCMDB.

## Scanner

| DDMI Attribute       | UCMDB CI          | UCMDB Attribute      |
|----------------------|-------------------|----------------------|
| hwScannerVersion     | inventory-scanner | version              |
| hwScanCmdLine        |                   | scanner_command_line |
| hwScanDuration       |                   | scan_duration        |
| hwScanDate           |                   | startup_time         |
| hwScannerDescription |                   | description          |
| hwCreationMethod     |                   | scanner_type         |
| hwFilesTotal         |                   | files_total          |
| hwFilesProcessed     |                   | files_processed      |
| hwFilesRecognised    |                   | files_recognized     |

## Node Elements

| DDMI Attribute                   | UCMDB CI         | UCMDB Attribute                   |
|----------------------------------|------------------|-----------------------------------|
| hwDisplayGraphicsAdapterName     | graphics_adapter | name                              |
| <index_of_card>                  |                  | board_index                       |
| hwDisplayGraphicsAdapterMemoryMB |                  | graphics_card_memory              |
| hwDisplayDesktopResolutionX      |                  | current_display_mode_resolution_x |
| hwDisplayDesktopResolutionY      |                  | current_display_mode_resolution_y |
| hwDisplayDesktopColourDepth      |                  | current_display_mode_colour_depth |
| hwDisplayDesktopColours          |                  | current_display_mode_colours      |
| hwDisplayDesktopRefreshRate      |                  | current_display_mode_refresh_rate |
| hwDisplayDesktopResolution       |                  | current_display_mode_resolution   |

| DDMI Attribute                | UCMDB CI        | UCMDB Attribute         |
|-------------------------------|-----------------|-------------------------|
| hwsmbiosBaseBoardSerialNumber | hardware_board  | serial_number           |
| <index of board>              |                 | board_index             |
| hwsmbiosBaseBoardVersion      |                 | hardware_version        |
| hwsmbiosBaseBoardName         |                 | name                    |
| hwsmbiosBaseBoardManufacturer |                 | vendor                  |
| hwCardName                    |                 | name                    |
| <index of board>              |                 | board_index             |
| hwCardClass                   |                 | type                    |
| hwCardBus                     |                 | bus                     |
| hwCardVendor                  |                 | vendor                  |
| hwCardID                      |                 | vendor_card_id          |
| hwCardRevision                |                 | hardware_version        |
| hwOSServiceName               | windows_service | service_name            |
| hwOSServiceDisplayName        |                 | name                    |
| hwOSServiceFileName           |                 | service_commandline     |
| hwOSServiceUser               |                 | service_startuser       |
| hwOSServiceType               |                 | service_type            |
| hwOSServiceStartup            |                 | service_starttype       |
| hwOSServiceStatus             |                 | service_operatingstatus |
| hwOSServiceDescription        |                 | service_description     |
| hwOSServiceName               | daemon          | name                    |
| hwOSServiceFileName           |                 | daemon_path             |
| hwMonitorName                 | display_monitor | name                    |
| hwMonitorVendorCode           |                 | vendor                  |
| hwMonitorSerialNumber         |                 | serial_number           |

**SMBIOS**

| DDMI Attribute      | UCMDB CI | UCMDB Attribute |
|---------------------|----------|-----------------|
| hwsmbiosChassisType | node     | chassis_type    |

**BIOS**

| DDMI Attribute                         | UCMDB CI | UCMDB Attribute |
|--|----------|-----------------|
| hwBiosDate                             | node     | bios_date       |
| hwBiosVersion    hwBiosBootPromVersion |          | bios_version    |
| hwBiosSource                           |          | bios_source     |

**Cluster**

| DDMI Attribute         | UCMDB CI  | UCMDB Attribute         |
|------------------------|-----------|-------------------------|
| hwOSClusterName        | mscluster | name                    |
| hwOSClusterDescription |           | description             |
| hwOSClusterVendor      |           | vendor                  |
| Microsoft Cluster SW   |           | discovered_product_name |

## Network

| DDMI Attribute                                 | UCMDB CI   | UCMDB Attribute       |
|--|------------|-----------------------|
| hwNICInterfaceName                             | interface  | interface_name        |
| hwNICDescription                               |            | interface_description |
| hwNICPhysicalAddress                           |            | mac_address           |
| hwNICType                                      |            | interface_type        |
| hwNICCurrentSpeed                              |            | interface_speed       |
| hwNICIPAddresses                               |            | containment           |
| hwNICPrimaryWins                               |            | primary_wins          |
| hwNICSecondaryWins                             |            | secondary_wins        |
| hwNICGateway                                   |            | gateways              |
| hwNICIPAddress                                 | ip_address | ip_address/name       |
| hwNICSubnetMask                                |            | ip_netmask            |
| hwNICIPAddressType                             |            | ip_address_type       |
| <not available>                                |            | routing_domain        |
| hwNICUsesDHCP hwNICIPAddressType hwNICFeatures |            | ip_address_property   |

## Software

| DDMI Attribute        | UCMDB CI           | UCMDB Attribute                  |
|-----------------------|--------------------|----------------------------------|
| name                  | installed_software | name                             |
| publisher             |                    | discovered_vendor                |
| maindir               |                    | file_system_path                 |
| licencedby            |                    | is_suite_component               |
| lastUsed              |                    | last_used_date                   |
| typeid                |                    | software_category_id             |
| language              |                    | software_language                |
| version               |                    | version                          |
| release               |                    | release                          |
| type                  |                    | software_type                    |
| hwRecognitionMethod   |                    | recognition_level                |
| versionid             |                    | sai_version_id                   |
| useddayslastmonth     |                    | usage_days_last_month            |
| useddayslastquarter   |                    | usage_days_last_quarter          |
| useddayslastyear      |                    | usage_days_last_year             |
| usagehourslastmonth   |                    | usage_hours_last_month           |
| usagehourslastquarter |                    | usage_hours_last_quarter         |
| usagehourslastyear    |                    | usage_hours_last_year            |
| useddailypeak         |                    | usage_hours_last_year_daily_peak |
| usagepercent          |                    | usage_percent                    |
| commercial            |                    | software_license_type            |



| DDMI Attribute           | UCMDB CI           | UCMDB Attribute                             |
|--------------------------|--------------------|---|
| usedayslastmonthfoc      | installed_software | infocus_usage_days_last_month               |
| usedayslastquarterfoc    |                    | infocus_usage_days_last_quarter             |
| usedayslastyearfoc       |                    | infocus_usage_days_last_year                |
| usagehourslastmonthfoc   |                    | infocus_usage_hours_last_month              |
| usagehourslastquarterfoc |                    | infocus_usage_hours_last_quarter            |
| usagehourslastyearfoc    |                    | infocus_usage_hours_last_year               |
| usedailyaveragefoc       |                    | infocus_usage_hours_last_year_daily_average |
| usedailypeakfoc          |                    | infocus_usage_hours_last_year_daily_peak    |
| usagepercentfoc          |                    | infocus_usage_percent                       |

**Note:** Scan file attributes ending with "foc" are also contained in the Software Utilization CI.

**Basic Node**

| DDMI   | UCMDB CI | UCMDB Attribute       |
|--|----------|-----------------------|
| hwMemoryData.hwMemTotalMB                            | node     | memory_size           |
| hwSwapFiles.hwMemSwapFileSize (Array)                |          | swap_memory_size      |
| hwOSHostWindowsName (Windows)                        |          | discovered_os_name    |
| hwOSHostUnixType (Linux)                             |          |                       |
| hwOSHostUnixType (HP-UX)                             |          |                       |
| hwOSHostUnixType (Sun)                               |          |                       |
| hwOSHostUnixType (AIX)                               |          |                       |
| hwOSHostUnixType (Mac)                               |          |                       |
| hwOSHostOsCategory                                   | node     | discovered_os_vendor  |
| hwOSInternalVersion (Linux)                          |          | discovered_os_version |
| hwOSInternalVersion + "." + hwOSBuildLevel (Windows) |          |                       |
| hwOSHostVersion (HP-UX)                              |          |                       |
| hwOSInternalVersion AIX - hwOSHostVersion (Sun)      |          |                       |
| hwOSHostVersion (Mac)                                |          |                       |
| hwOSHostLinuxType (Linux)                            |          | host_osinstalltype    |
| hwOSHostWindowsNTMode + hwOSHostEdition (Windows)    |          |                       |
| hwOSHostMacOsType (Mac)                              |          |                       |

| DDMI  | UCMDB CI | UCMDB Attribute   |
|---|----------|-------------------|
| "release" + hwOSHostVersion (Red Hat Linux)   | node     | host_osrelease    |
| hwOSBuildLevel (Windows)  |          |                   |
| hwOSServiceLevel (HP-UX)  |          |                   |
| hwOSServiceLevel (AIX)  |          |                   |
| hwOSServiceLevel (Sun)  |          |                   |
| hwOSHostOsCategory  |          | os_family         |
| hwBiosAssetTag  |          | bios_asset_tag    |
| hwsmbiosSystemUUID  |          | bios_uuid         |
| hwsmbiosProductName    hwBiosData.hwBiosMachineModel  |          | discovered_model  |
| hwsmbiosSystemManufacturer   <br>hwBiosData.hwBiosManufacturer                                |          | discovered_vendor |
| hwLocalMachineID (Windows)  |          | net_bios_name     |
| hwDomainName  |          | domain_name       |
| hwNetworkTcpip.hwIPRoutingEnabled   |          | node_role         |
| hwVirtualMachine.hwVirtualMachineType   |          |                   |
| hwIPHostName + "." + hwIPDomain   | nt       | primary_dns_name  |
| hwBiosData.hwBiosSerialNumber   <br>hwsmbiosSystemSerialNumber    hwsmbiosChassisSerialNumber |          | serial_number     |
| hwNetworkDNSServer (Unix)   |          | dns_servers       |
| hwNICDNSServer (Windows) (Mac)  |          |                   |
| hwOSDefaultUserName   |          | registeredowner   |
| hwOSDefaultOrganisationName   |          | registrationorg   |
| hwOSServiceLevel  |          | servicepack       |

| DDMI                                      | UCMDB CI   | UCMDB Attribute   |
|---|------------|-------------------|
| hwCPUs.hwCPUDescription                   | Cpu        | cpu_type          |
| hwCPUs.hwCPUSpeed                         |            | cpu_clock_speed   |
| hwCPUCoreCount/hwPhysicalCPUCount         |            | core_number       |
| hwCPUCount/hwPhysicalCPUCount             |            | logical_cpu_count |
| hwCPUs.hwCPUType                          |            | cpu_specifier     |
| hwCPUs.hwCPUVendor                        |            | cpu_vendor        |
| index                                     |            | cpu_id            |
| hwPhysicalDiskData.hwPhysicalDiskType     | DiskDevice | disk_type         |
| hwPhysicalDiskData.hwPhysicalDiskSize     |            | Device.disk_size  |
| hwPhysicalDiskData.hwPhysicalDiskID       |            | name              |
| hwPhysicalDiskData.hwPhysicalDiskNumber   |            |                   |
| hwSCSIDevices.hwSCSIDeviceName            |            | model_name        |
| hwSCSIDevices.hwSCSIDeviceVendor          |            | vendor            |
| hwMountPoints.hwMountPointMountedTo       | FileSystem | mount_point       |
| hwMountPoints.hwMountPointVolumeMedia     |            | disk_type         |
| hwMountPoints.hwMountPointVolumeTotalSize |            | disk_size         |
| hwMountPoints.hwMountPointVolumeFreeSpace |            | free_space        |
| hwMountPoints.hwMountPointVolumeType      |            | filesystem_type   |
| hwMountPoints.hwMountPointVolumeDevice    |            | name              |

| DDMI  | UCMDB CI               | UCMDB Attribute          |
|---|------------------------|--------------------------|
| hwMountPoints.hwMountPointVolumeType                                      | LogicalVolume          | logicalvolume_<br>fstype |
| hwMountPoints.hwMountPointVolumeFreeSpace                                 |                        | logicalvolume_<br>free   |
| hwMountPoints.hwMountPointVolumeTotalSize                                 |                        | logicalvolume_<br>size   |
| hwNetworkSharePath  | file_system_<br>export | file_system_<br>path     |
| hwNetworkShareName  |                        | share_names              |
| hwNetworkSharePath  |                        | name                     |
| hwNetworkShareRemark  |                        | description              |
| hwsmbiosMemoryArrayDeviceLocator -else-<br>hwsmbiosMemoryArrayBankLocator | memory_unit            | name                     |
| index   |                        | memory_unit_<br>index    |
| hwsmbiosMemoryArraySize   |                        | size                     |
| hwsmbiosMemoryArraySerialNumber   |                        | serial_number            |
| hwsmbiosMemoryModuleSocketDesignation                                     |                        | name                     |
| index   |                        | memory_unit_<br>index    |
| hwsmbiosMemoryModuleInstalledSize   |                        | size                     |
| hwMemoryBank  |                        | name                     |
| index   |                        | memory_unit_<br>index    |
| hwMemoryDIMMSizeMB  |                        | size                     |
| hwNetworkLogonName  | winosuser              | name                     |
| hwNetworkLogonDomain  |                        | winosuser_<br>domain     |

| DDMI               | UCMDB CI | UCMDB Attribute |
|--------------------|----------|-----------------|
| hwNetworkLogonName | osuser   | name            |

## Java Viewer Mapping from DDMI to Universal Discovery

The following is a mapping of sections in the Java Viewer to Universal Discovery reports:

| Java Viewer        | UCMDB                                 |
|--------------------|---------------------------------------|
| Software Inventory | Recognition Application Report        |
| Software Inventory | Software Utilization Report           |
| Hardware           | Hardware Node Element Topology Report |
|                    | Node Inventory Report                 |

Attribute values that are contained in Configuration Items (CIs) can be displayed in the Configuration Item Properties dialog box. For more information, see the section describing the CI properties dialog box in the *HP Universal CMDB Modeling Guide*.

## Chapter 6: Inventory Discovery Troubleshooting

This chapter includes:

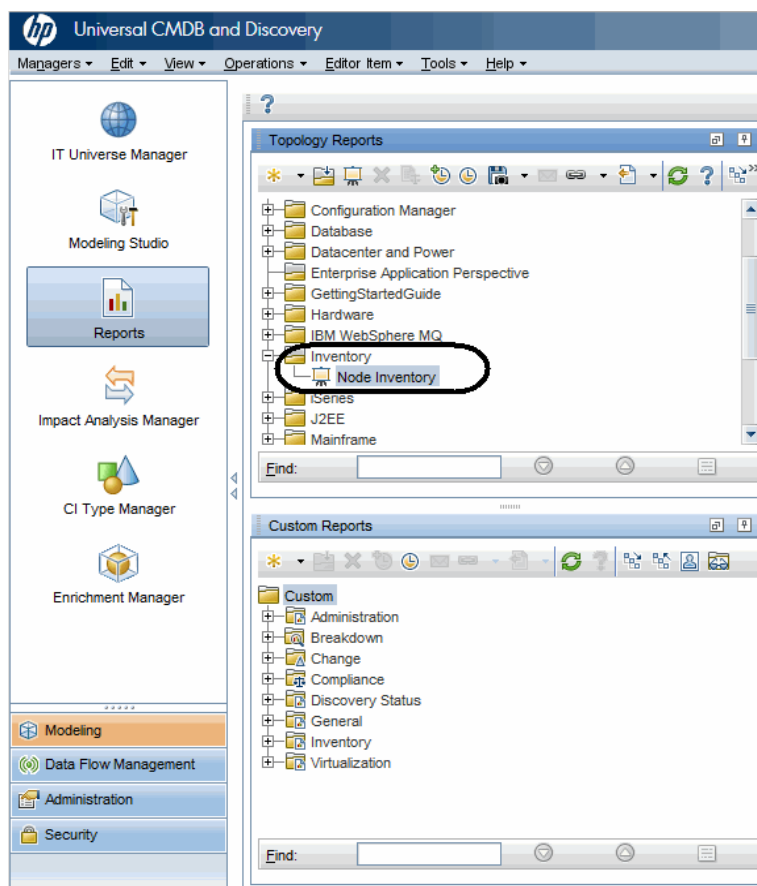
|   |     |
|---|-----|
| How to view all information related to a device in a centralized view? .....  | 112 |
| How to troubleshoot network availability and latency issue related to a device? .....   | 114 |
| How to check the key indexes of the discovery history information for a discovered device? .....                                      | 120 |
| How to check device related logs for a discovered device? .....   | 126 |
| How to invoke discovery job relevant to the discovered device manually and check status to identify potential discovery errors? ..... | 129 |
| How to check which pattern (management zone) is used in the discovery for a discovered device? .....                                  | 139 |
| How to check detailed discovery settings used in the discovery for a discovered device? .....   | 141 |
| How to check the SNMP credentials used in the discovery for a discovered device? .....  | 145 |

## How to view all information related to a device in a centralized view?

### Question: How can I view all relevant information to a device in a centralized view?

To view all information related to a device in a centralized view,

1. Select **Modeling > Reports**.
2. In the Topology Reports pane, expand **Inventory > Node Inventory**.



3. Double-click **Node Inventory** or right-click it and select **Open Report**.

The Node Inventory report opens in the right pane.

4. Do either of the following to view device details:



- The exported PDF file opens, displaying all details in grid view.

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## How to troubleshoot network availability and latency issue related to a device?

### **Question: How should I troubleshoot network availability and latency issue related to a device?**

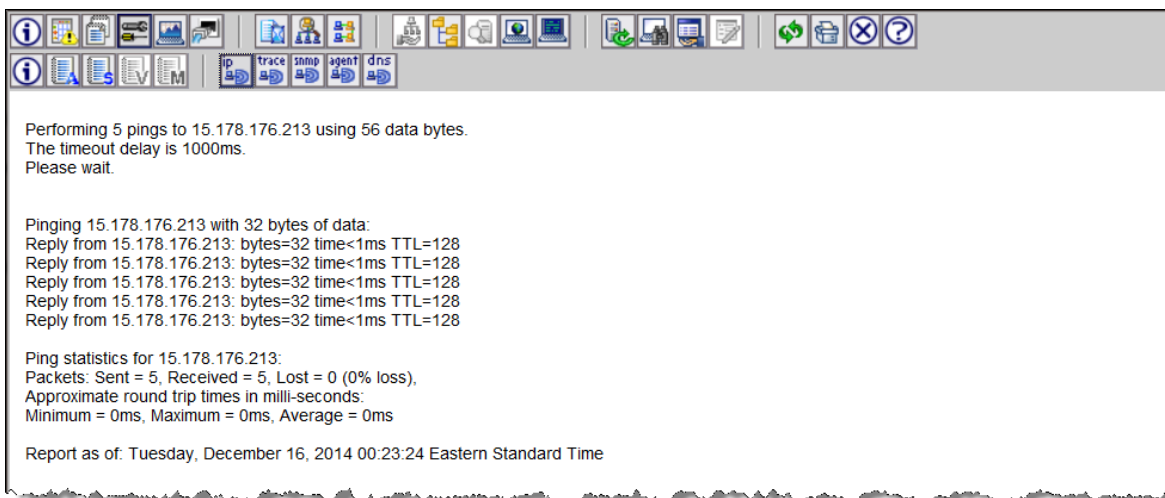
You can troubleshoot network availability and latency issue related to a device in the following ways:

- [IP Ping and Agent Ping](#)
- [SNMP Ping](#)
- [Tracert and DNS Query](#)

### IP Ping and Agent Ping

In DDMI, you can use IP ping and agent ping.

Result of the IP ping looks similar to the following:



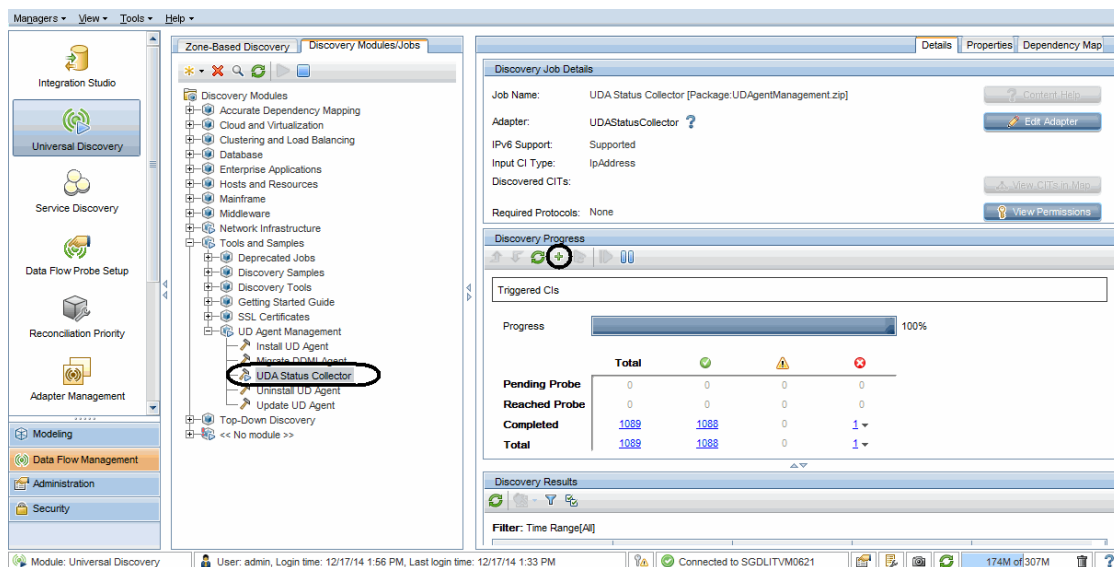
Result of the agent ping looks similar to the following:





In UD, you can also use IP ping and agent ping via the UDA Status Collector job.

## To use IP ping and agent ping

1. In UCMDB, go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs** tab.
2. In the Discovery Modules tree, select **Tools and Samples > UD Agent Management > UDA Status Collector**.
3. If the UDA Status Collector job is not activated, right-click **UDA Status Collector**, and select **Activate**.



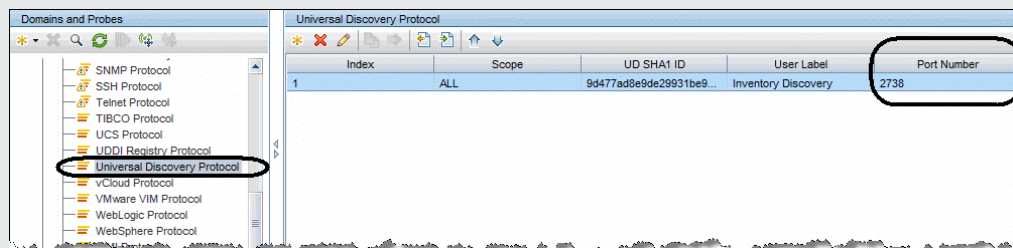
4. In the Discovery Progress pane, click the **Add CI**  button.
5. In the Choose CIs to Add dialog box, select the IP address of your interest, and click the **Add**  button.

The UDA Status Collector job will ping using IP and agent port to check.

**Note:** Agent port can be found in the **Port Number** parameter value of the Universal Discovery Protocol credential. This is a default parameter in the protocol, and is applied to all agent connections using this protocol.

To view the agent port,

- a. In the Data Flow Management module, go to **Data Flow Probe Setup**.
- b. In the Domains and Probes tree, select a domain of your interest and expand the **Credentials** node, and then select **Universal Discovery Protocol**.
- c. In the Universal Discovery Protocol credentials displayed in the right pane, check the value for the **Port Number** column.



6. Click the **Close** button to exit the Choose CIs to Add dialog box.

## To view the IP ping and agent ping result

1. Access the JMX console on the Data Flow Probe by launching the Web browser and enter the following address:

**http://<machine name or IP address>.<domain\_name>:1977/**

where **<machine name or IP address>** is the machine on which the Data Flow Probe is installed. You may have to log in with the user name and password.

2. Locate the **exportUdaStatus** operation to invoke.

On the MBean View page, select **type=JobsInformation**. Locate the **exportUdaStatus** operation.

Invoke

exportJobsExecutionTimelineXML

Export the job execution history time line as xml file to be used by Excel

| Name         | Type    | Value   | Description |
|--------------|---------|---|-------------|
| groupByCycle | boolean | <input checked="" type="radio"/> True <input type="radio"/> False |             |

Invoke

exportUdaStatus

Export UDA Status to CSV

| Name | Type             | Value        | Description |
|------|------------------|--------------|-------------|
| path | java.lang.String | c:\udastatus |             |

Invoke

resumeNowWorkflowJobOnDestination

resumes a workflow trigger ci that is currently in the state of parking

| Name  | Type             | Value | Description |
|-------|------------------|-------|-------------|
| jobId | java.lang.String |       |             |

3. Provide a folder name in the **Value** field.

4. Click **Invoke** to run the operation.

The UDA status is exported to a CVS file.

5. Open the exported CSV file to view details of the result from the UDA Status Collector job.

The CSV file shows status details similar to the following:

| ipaddress    | computerName                        | alive | portAlive | isDDMI | isWin | osType | agentVersion            | UDUniqueid                           | isNative |
|--------------|-------------------------------------|-------|-----------|--------|-------|--------|-------------------------|--------------------------------------|----------|
| 16.60.169.33 | myd-vm11101.hpswl-abs.adapps.hp.com | TRUE  | TRUE      | FALSE  | FALSE | Linux  | v10.20.000<br>build:346 | 73a911c4-b0fa-4e10-2047-b270e5a0cb18 | TRUE     |

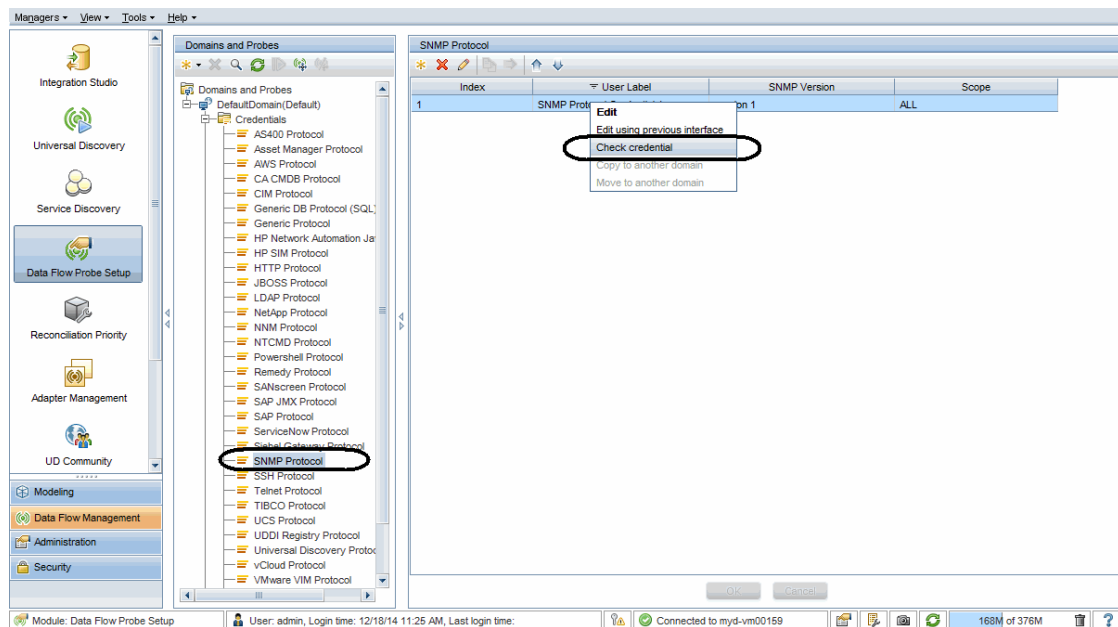
## SNMP Ping

To run SNMP ping in UDI,

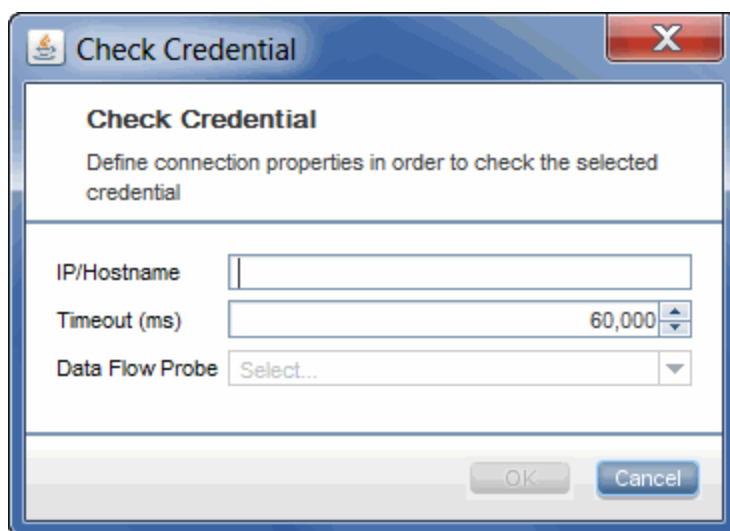
1. In the Data Flow Management module, go to **Data Flow Probe Setup**.
2. In the Domains and Probes tree, expand the **Credentials** node, and select **SNMP Protocol**.

All SNMP credentials are displayed in the right pane.

3. Right-click the SNMP credential you want to use to run SNMP ping, and select **Check credential** from the pop-up menu.



4. In the Check Credential dialog box, specify the host name or IP address (in IPv4/IPv6 format) of the remote machine on which you want the protocol to run SNMP ping, specify a connection timeout (in milliseconds), and select the probe to use.



5. Click **OK**.

The result returns soon.

## Tracert and DNS Query

Currently UD does not have such functionalities as DDMi did.

## How to check the key indexes of the discovery history information for a discovered device?

**Question: For a discovered device, how should I check the key indexes of the discovery history information? For example, when was the device first discovered? When was it last seen?**

To answer this question, let's take a look at the information available from DDMi first:

| DDMi Parameter                               | Value  |
|--|--|
| First discovered:                            | 3 weeks 5 days 0 hours ago at:<br>Wednesday, November 19, 2014 20:20:45 Eastern Standard Time                              |
| Added to map:                                | 3 weeks 5 days 0 hours ago at:<br>Wednesday, November 19, 2014 20:48:51 Eastern Standard Time                              |
| Last seen:                                   | 2 minutes 1 second ago at:<br>Monday, December 15, 2014 21:06:55 Eastern Standard Time in<br>ping or poll by DDM Inventory |
| Last moved:                                  | 3 weeks 5 days 0 hours ago at:<br>Wednesday, November 19, 2014 20:50:47 Eastern Standard Time                              |
| Agent last contacted:                        | 1 day 17 hours 7 minutes ago at:<br>Sunday, December 14, 2014 04:01:01 Eastern Standard Time                               |
| Agent upgrade time:                          | 2 weeks 6 days 1 hour ago at:<br>Tuesday, November 25, 2014 19:56:04 Eastern Standard Time                                 |
| Scanner model last updated:                  | 2 weeks 6 days 0 hours ago at:<br>Tuesday, November 25, 2014 20:12:35 Eastern Standard Time                                |
| Device last modeled as an unmanaged device:  | 3 hours 12 minutes 6 seconds ago at:<br>Monday, December 15, 2014 17:56:50 Eastern Standard Time                           |
| Device last replied to ICMP during modeling: | 2 weeks 3 days 21 hours ago at:<br>Thursday, November 27, 2014 23:12:44 Eastern Standard Time                              |
| Mean break diagnosis time:                   | 2 minutes (major alarm)  |
| Agent platform:                              | Windows (x86)  |
| Agent port number:                           | 2738   |



| DDMi Parameter                          | Value  |
|---|--|
| Agent version:                          | 10.20.000.346  |
| AUM agent upgrade state:                | No AUM agent   |
| Workflow type:                          | Agent  |
| Scanner version:                        | 9.32.000.2421  |
| Scanner configuration:                  | <default_delta>  |
| Scan file location:                     | https://15.155.155.155/nm/scans/QASERVER1_005056B81459.xsf                             |
| Scan type:                              | HP Discovery and Dependency Mapping Inventory  |
| Scan CRC:                               | 295532891  |
| Scan modification time:                 | 2014-11-25 22:47:26  |
| Mean device modeler update run time:    | 4 minutes 52 seconds   |
| Recent device modeler update run times: | 4 minutes 48 seconds, 4 minutes 17 seconds, 6 minutes 32 seconds, 3 minutes 53 seconds |
| Rulebase id:                            | 266305   |

In Universal Discovery, you can find similar attributes for most of DDMi parameters as shown in the table below:



| DDMi Parameter                              | Corresponding Attributes in UD   |
|---|--|
| First discovered:                           | <b>Create Time</b> attribute (of the <b>node</b> CI)                       |
| Added to map:                               | N/A  |
| Last seen:                                  | <b>Last Access Time</b> attribute (of the <b>node</b> CI)                  |
| Last moved:                                 | N/A  |
| Agent last contacted:                       | <b>Last Access Time</b> attribute (of the <b>UDA</b> CI Type)              |
| Agent upgrade time:                         | <b>LastModifiedTime</b> attribute (of the <b>UDA</b> CI Type)              |
| Scanner model last updated:                 | <b>LastModifiedTime</b> attribute (of the <b>InventoryScanner</b> CI Type) |
| Device last modeled as an unmanaged device: | N/A  |

| DDMi Parameter                               | Corresponding Attributes in UD  |
|--|---|
| Device last replied to ICMP during modeling: | N/A   |
| Mean break diagnosis time:                   | N/A   |
| Agent platform:                              | <b>Platform</b> attribute (of the <b>UDA</b> CI Type)   |
| Agent port number:                           | <b>Application Listening Port Number</b> attribute (of the <b>UDA</b> CI Type)                                      |
| Agent version:                               | <b>Version</b> attribute (of the <b>UDA</b> CI Type)  |
| AUM agent upgrade state:                     | N/A   |
| Workflow type:                               | N/A   |
| Scanner version:                             | <b>Version</b> attribute (of the <b>InventoryScanner</b> CI Type)   |
| Scanner configuration:                       | <b>ScannerConfiguration</b> attribute (of the <b>InventoryScanner</b> CI Type)                                      |
| Scan file location:                          | <b>ProcessedScanFilePath</b> attribute (of the <b>InventoryScanner</b> CI Type)                                     |
| Scan type:                                   | <b>Scan Type</b> attribute (of the <b>InventoryScanner</b> CI Type)   |
| Scan CRC:                                    | N/A   |
| Scan modification time:                      | <b>Last Access Time</b> or <b>Scan File Last Downloaded Time</b> attribute (of the <b>InventoryScanner</b> CI Type) |
| Mean device modeler update run time:         | N/A   |
| Recent device modeler update run times:      | <b>Scan Duration</b> attribute (of the <b>InventoryScanner</b> CI Type)   |
| Rulebase id:                                 | N/A   |

**Note:** "N/A" indicates that there is no corresponding attribute in UD now.

To check similar information in UD,

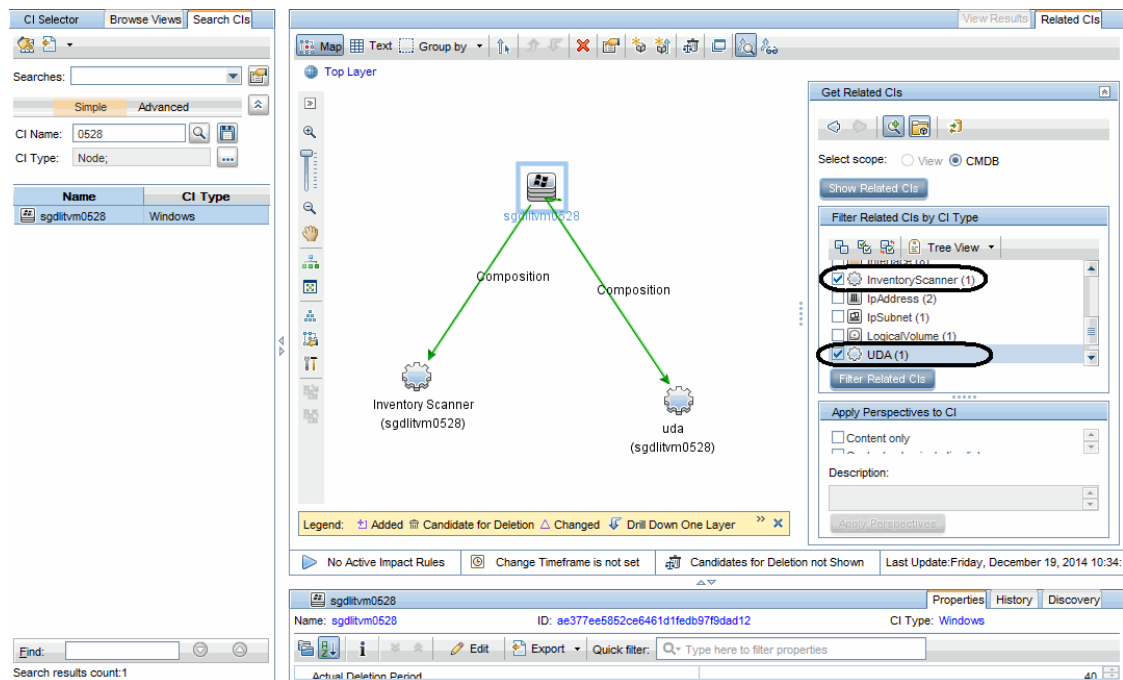
1. In UCMDB, go to **Modeling > IT Universal Manager**.
2. In the CI Selector pane, go to the **Search CIs** tab.

3. In the Simple search mode, search for a CI of Node CI type.
  - a. In the **CI Name** field, enter a keyword to search, for example, **0528**.
  - b. For the **CI Type** field, click , locate and select the **Node** CI type.
  - c. Click .
4. Click the node CI in the search result list.

The node CI map displays in the Related CIs pane.

5. In the Filter Related CIs by CI Type sub-pane, locate and select **Inventory Scanner** and **UDA** CI types, then click **Filter Related CIs**.

The Related CIs map refreshes.



The screenshot displays the HP Universal CMDB interface. On the left, the 'CI Selector' pane shows a search for 'sgdlitvm0528' with 'Node' as the CI Type. The search results list shows 'sgdlitvm0528' as a 'Windows' CI. The main pane shows a map view of the CI 'sgdlitvm0528' (represented by a server icon) with two related CIs: 'Inventory Scanner (sgdlitvm0528)' and 'uda (sgdlitvm0528)', both connected by 'Composition' relationships. The right pane, 'Get Related CIs', shows the 'Filter Related CIs by CI Type' sub-pane with 'InventoryScanner (1)' and 'UDA (1)' selected. The bottom pane shows the details for 'sgdlitvm0528', including its ID 'ae377ee5852ce6461d1fedb97f9dad12' and CI Type 'Windows'.

6. Click the **uda** or **Inventory Scanner** CI icon in the map.

In the CI Details pane below the map, check attributes that correspond to DDMI parameters.

The highlighted **uda** attributes in the screenshot below correspond to similar DDMI parameters.

uda (sgdlitvm0528)

PropertiesHistoryDiscovery

Name: uda (sgdlitvm0528)ID: b4d11b46f879822f59d86b66dfc3a98cCI Type: UDA

The highlighted **Inventory Scanner** CI attributes in the screenshot below correspond to similar DDMI parameters.

Inventory Scanner (sgdlitvm0528)

Properties


History

Discovery

Name: Inventory Scanner (sgdlitvm0528)

ID: 00601fdc3845ee3a50e5b148618e8be3

CI Type: InventoryScanner



Edit

Export

Quick filter:

|                                   |   |
|-----------------------------------|---|
| Actual Deletion Period            | 40  |
| Allow CI Update                   | True  |
| Application Category              |   |
| Application Installed Path        |   |
| Application IP                    |   |
| Application IP Routing Domain     |   |
| Application IP Type               | IPv4  |
| Application Listening Port Number |   |
| Application Timeout               |   |
| Application Username              |   |
| Application Version Description   |   |
| classification                    |   |
| Container name                    | (sgdlitvm0528)  |
| Create Time                       | Thu Dec 18 2014 03:51 PM GMT+08:00                            |
| Created By                        | UCMDBDiscovery: Inventory Discovery by Scanner                |
| Deletion Candidate Period         | 20  |
| Description                       | Hardware-only Inventory Scanner                               |
| DiscoveredProductName             | Inventory Scanner   |
| Display Label                     | Inventory Scanner (sgdlitvm0528)                              |
| Edition                           |   |
| Enable Aging                      | True  |
| FilesProcessed                    | 0   |
| FilesRecognized                   | 0   |
| FilesTotal                        | 0   |
| Global Id                         | 00601fdc3845ee3a50e5b148618e8be3                              |
| Is Candidate For Deletion         | False   |
| Last Access Time                  | Thu Dec 18 2014 11:57 PM GMT+08:00                            |
| LastModifiedTime                  | Thu Dec 18 2014 11:57 PM GMT+08:00                            |
| layer                             | software  |
| Name                              |   |
| Note                              |   |
| Origin                            |   |
| ProcessedScanFilePath             | C:\hp\UCMDB\DataFlowProbe\runtime\xmlenricher\Scans\pr...     |
| ProcessedScanFileProbe            | DataFlowProbe   |
| ProductName                       |   |
| root_iconproperties               |   |
| Scan File Last Downloaded Time    | Thu Dec 18 2014 03:49 PM GMT+08:00                            |
| ScanDuration                      | 1   |
| ScannerCommandLine                | -cfg:scan.cxz -l:local.xsf -appliance                         |
| ScannerConfiguration              | _hwnonly.cxz  |
| * ScannerType                     | WINDOWS_X64   |
| StartupTime                       | Thu Dec 18 2014 10:13 AM GMT+08:00                            |
| Updated By                        | Enrichment: Enrichment's rule: SoftwareElementDisplayLabel... |
| Upgrade Date                      | Thu Dec 18 2014 03:43 PM GMT+08:00                            |
| User Label                        |   |
| Vendor                            |   |
| Version                           | 10.20.000 build 364   |

## How to check device related logs for a discovered device?

**Question: For a discovered device, where should I check the device related logs? Such as agent deployment log, scanner deployment log, virtualization log, and so on.**


The following sections provide details about checking device related log in Universal Discovery.

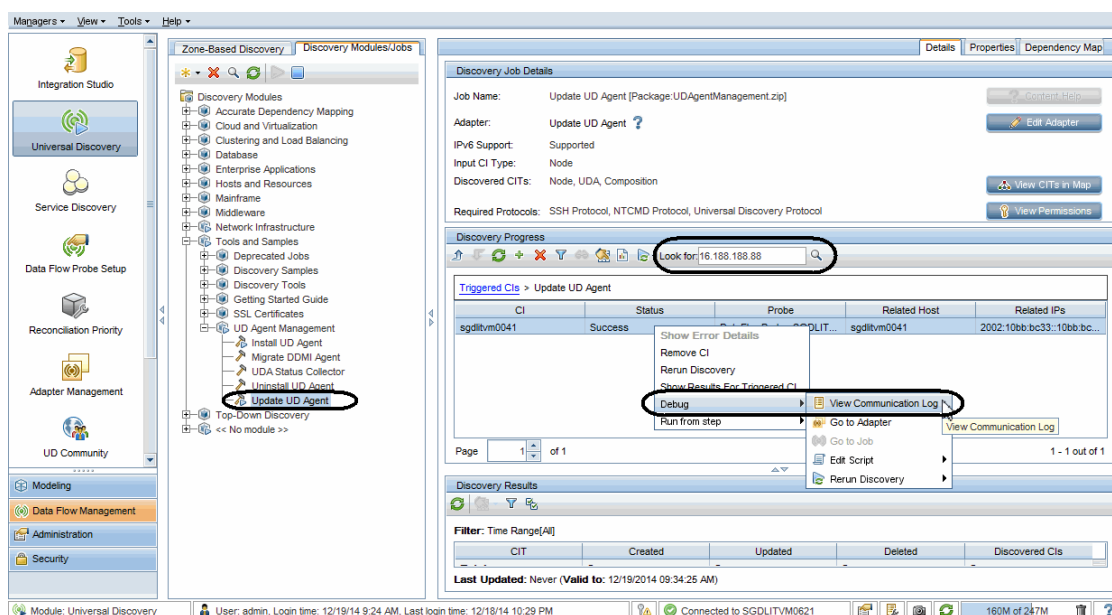
- [Agent deployment log](#)
- [Scanner deployment log](#)
- [Virtualization log](#)

### Agent deployment log

The agent related action record (the Install UD Agent job and the Update UD Agent job) can be found in the Communication Log.

To view communication log for agent related jobs,

1. In UCMDB, go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs** tab.
2. In the Discovery Modules tree, select **Tools and Samples > UD Agent Management > Install UD Agent** (or **Update UD Agent**).
3. Right-click **Install UD Agent** (or **Update UD Agent**), select **Activate** from the context menu if the job is not activated, and wait for the Triggered CIs list to refresh.
4. In the Triggered CIs list in the Discovery Progress pane, click a number with link.
5. In the **Look for** field that is just enabled, enter the IP address for the target agent and click .
6. Right-click the returned entry, and from the context menu, select **Debug > View Communication Log**.



7. In the communication log that opens,


- search **Step [Install Agent]** as keyword to locate the log entry where probe starts the agent installation
- search **Step [Check Agent Installed]** as keyword to locate the log entry that indicates whether the agent is installed

## Scanner deployment log

The Inventory Discovery by Scanner job related action record (the Install UD Agent job and the Update UD Agent job) can be found in the Communication Log.

To view communication log for scanner deployment related jobs,

1. In UCMDB, go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs** tab.
2. In the Discovery Modules tree, select **Hosts and Resources > Inventory Discovery > Inventory Discovery by Scanner**.
3. Right-click **Inventory Discovery by Scanner**, select **Activate** from the context menu if the job is not activated, and wait for the Triggered CIs list to refresh.
4. In the Triggered CIs list in the Discovery Progress pane, click a number with link of your interest.

5. In the **Look for** field that is just enabled, enter the IP address for the scanner and click .
6. Right-click the returned entry, and from the context menu, select **Debug > View Communication Log**.
7. In the communication log that opens,
  - search **Step [Run Scanner]** as keyword to locate the log entry where the probe starts running the scanner
  - search **Step [Download Scan File]** as keyword to locate the log entry that indicates the probe starts downloading the scan file

## Virtualization log

This log is not frequently used in DDMI. However, in UD, the Communication Log for the following jobs can provide you detailed logs about virtualization environments:

- VMware ESX Connection by VIM job
- VMware vCenter Connection by VIM job



## How to invoke discovery job relevant to the discovered device manually and check status to identify potential discovery errors?

**Question: For a discovered device, to identify any potential discovery errors, how should I invoke discovery job relevant to the device manually, and check the progress/on-going status of the discovery?**

In DDMI, if you find any error in the discovery result, you can run the DDMI jobs in an ad-hoc way. In UD, similar jobs are available to provide similar functionalities.


The table below describes DDMI jobs and the corresponding UD jobs that can be run in an ad-hoc way:

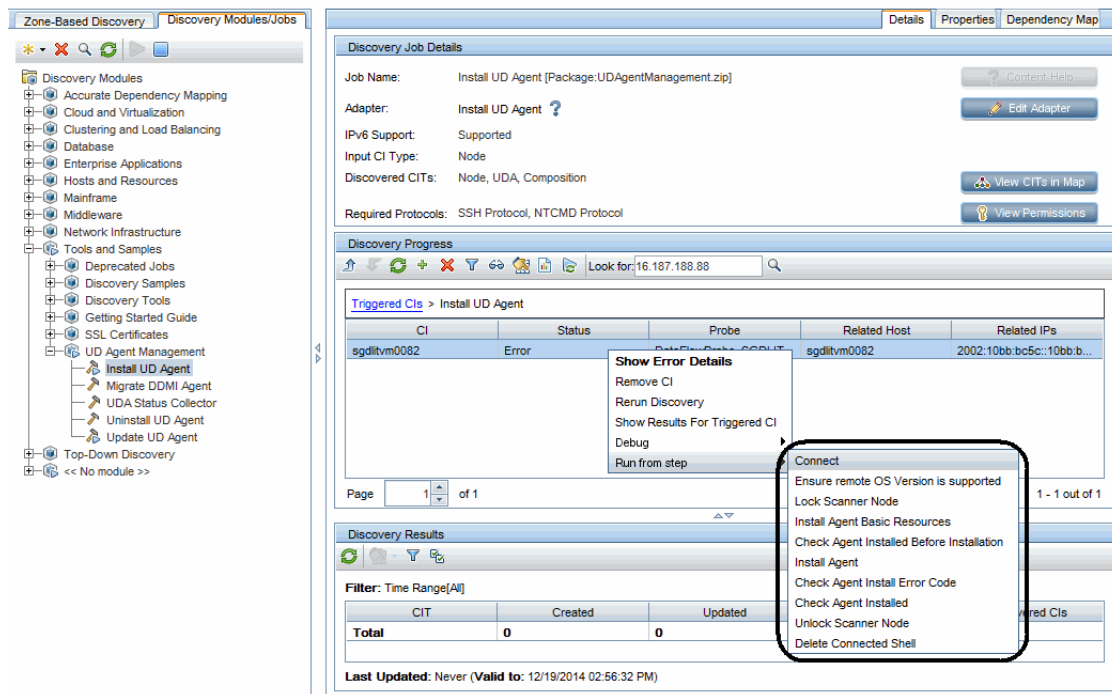
| DDMi Job              | UD Job  |
|-----------------------|---|
| Deploy Agent          | <a href="#">Install UD Agent</a>  |
| Upgrade Agent         | <a href="#">Update UD Agent</a>   |
| Run Scanner           | <a href="#">Run Scanner</a>   |
| Retrieve Scan File    | <a href="#">Download Scan File</a>  |
| Uninstall Agent       | <a href="#">Uninstall UD Agent</a>  |
| Run Agentless Scanner | <a href="#">Run Agentless Scanner</a>   |
| Enrich XML            | <a href="#">Parse Enriched Scan File</a>  |
| Run Rulebase          | The normalization functionality is included the <a href="#">Rerun Discovery</a> option for each job |
| Run VMware Discovery  | <a href="#">VMware discovery jobs</a>   |

For details, click the UD job of your interest in the table above.

## Install UD Agent

**To invoke discovery job relevant to the device manually,**

1. In UCMDB, go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs** tab.
2. In the Discovery Modules tree, select **Tools and Samples > UD Agent Management > Install UD Agent**.
3. Right-click **Install UD Agent**, select **Activate** from the context menu if the job is not activated, and wait for the Triggered CIs list to refresh.
4. In the Triggered CIs list in the Discovery Progress pane, click a number with link.
5. In the **Look for** field that is just enabled, enter the IP address for the target device and click .
6. Right-click the returned entry, and from the context menu, select **Run from step > <Select an action>**.

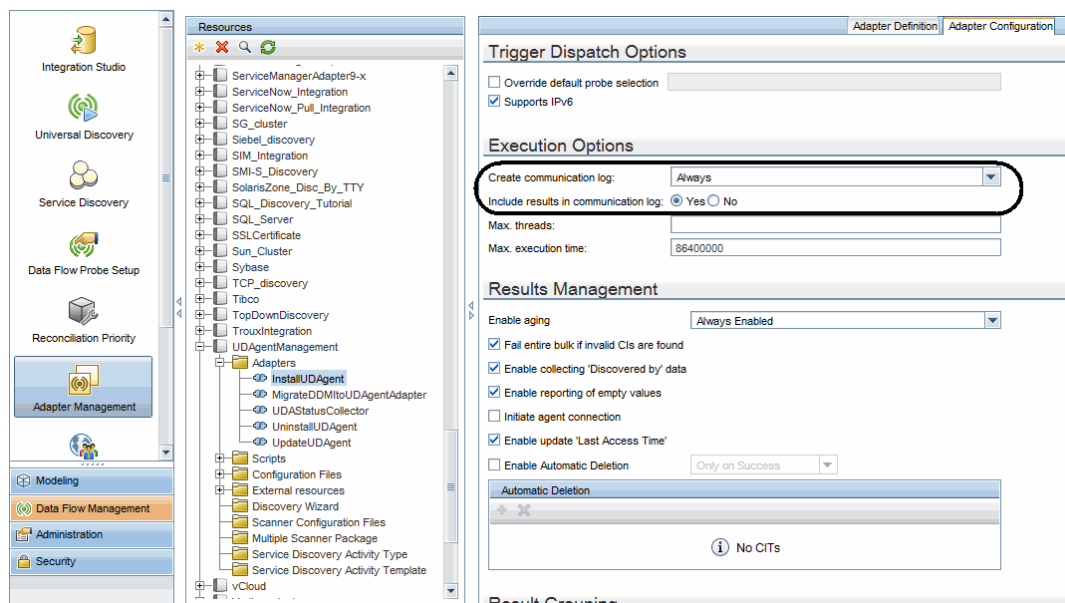


### To check the progress/on-going status of the discovery job,

1. Modify the adapter's configuration to make sure that the communication log is always created.

In this case, modify the Install UD Agent adapter's configuration.

- a. In the Data Flow Management module, go to **Adapter Management**.
- b. In the Resources pane, expand **UDAgentManagment > Adapters > InstallUDAgent**.
- c. In the right pane, click the **Adapter Configuration** tab.
- d. In the Execution Options section, set the following:
  - **Create communication log: Always**
  - **Include results in communication log: Yes**




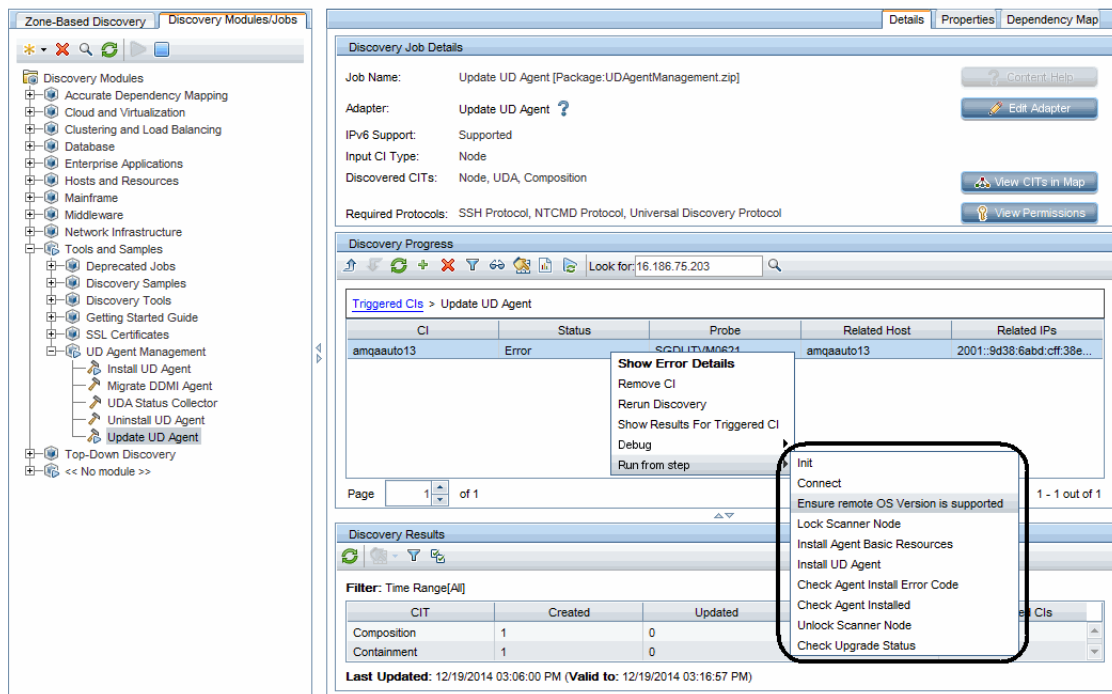
2. Return to the Universal Discovery window, right-click the returned entry, from the context menu, select **Debug > View Communication Log**

For details, see ["How to check device related logs for a discovered device?"](#) on page 126.

## Update UD Agent

To invoke discovery job relevant to the device manually, and check progress and status of the discovery job:

1. In UCMDB, go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs** tab.
2. In the Discovery Modules tree, select **Tools and Samples > UD Agent Management > Update UD Agent**.
3. Right-click **Update UD Agent**, select **Activate** from the context menu if the job is not activated, and wait for the Triggered CIs list to refresh.
4. In the Triggered CIs list in the Discovery Progress pane, click a number with link.
5. In the **Look for** field that is just enabled, enter the IP address for the target device and click .
6. Right-click the returned entry, and from the context menu, select **Run from step > <Select an action>**.



The screenshot displays the UCMDB interface for the 'Update UD Agent' discovery job. The left pane shows the 'Discovery Modules/Jobs' tree with 'Update UD Agent' selected under 'Tools and Samples > UD Agent Management'. The main pane shows the 'Discovery Job Details' for 'Update UD Agent [Package:UDAgentManagement.zip]'. Below this is the 'Discovery Progress' section, which includes a 'Triggered CIs' table. The table has columns for CI, Status, Probe, Related Host, and Related IPs. One entry is shown: 'amqaauto13' with a status of 'Error'. A context menu is open over this entry, showing options like 'Show Error Details', 'Remove CI', 'Rerun Discovery', 'Show Results For Triggered CI', 'Debug', and 'Run from step'. The 'Run from step' option is highlighted, and a sub-menu is open showing various actions such as 'Init', 'Connect', 'Ensure remote OS Version is supported', 'Lock Scanner Node', 'Install Agent Basic Resources', 'Install UD Agent', 'Check Agent Install Error Code', 'Check Agent Installed', 'Unlock Scanner Node', and 'Check Upgrade Status'. The 'Discovery Results' section at the bottom shows a table with columns for CIT, Created, and Updated, with data for 'Composition' and 'Containment'.

| CIT         | Created | Updated |
|-------------|---------|---------|
| Composition | 1       | 0       |
| Containment | 1       | 0       |

Last Updated: 12/19/2014 03:06:00 PM (Valid to: 12/19/2014 03:16:57 PM)

7. To check the progress/on-going status of the discovery job,

- a. Modify the Update UD Agent adapter's configuration to make sure that the communication log is always created.


For detailed instructions, see ["To check the progress/on-going status of the discovery job," on page 130.](#)

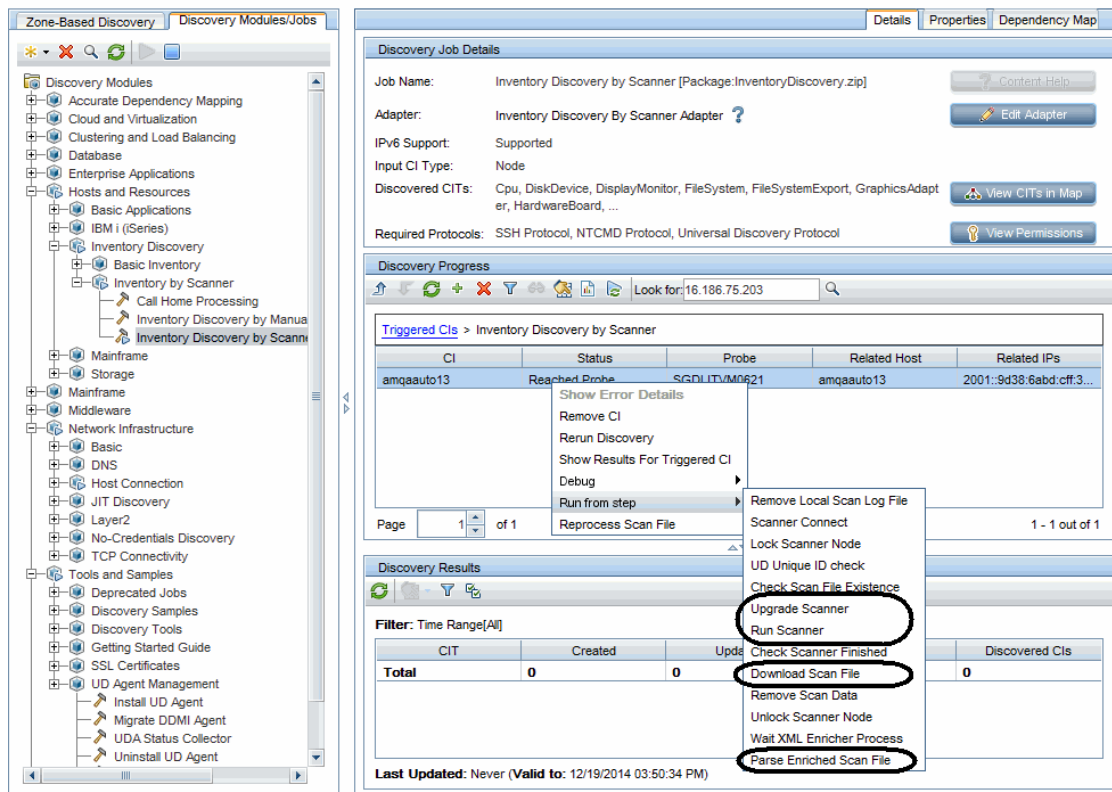
- b. Right-click the returned entry in the Discovery Progress pane, from the context menu, select **Debug > View Communication Log**.

For details, see ["How to check device related logs for a discovered device?" on page 126.](#)

## Upgrade Scanner / Run Scanner / Download Scan File / Parse Enriched Scan File / Run Agentless Scanner



To invoke discovery job relevant to the device manually, and check progress and status of the discovery job:

1. In UCMDB, go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs** tab.
2. In the Discovery Modules tree, select **Hosts and Resources > Inventory Discovery > Inventory Discovery by Scanner**.
3. Right-click **Inventory Discovery by Scanner**, select **Activate** from the context menu if the job is not activated, and wait for the Triggered CIs list to refresh.
4. In the Triggered CIs list in the Discovery Progress pane, click a number with link of your interest.
5. In the **Look for** field that is just enabled, enter the IP address for the scanner and click .
6. Right-click the returned entry, and from the context menu, select **Run from step > <Select an action>**.



**Note:** To Run Agentless Scanner, before selecting a **Run from step** option, set Universal Discovery Protocol scope to **Probes: Disabled**.

To do so,

- In the Data Flow Management module, go to **Data Flow Probe Setup**.
- Expand **Domains and Probes > DefaultDomain(Default) > Credentials > Universal Discovery Protocol**.
- In the right Universal Discovery Protocol pane, right-click a protocol and select **Edit**.
- In the Universal Discovery Protocol Parameters dialog box, click the **Edit**  button for the Network Scope field.
- In the Scope Definition dialog box, click the **Edit**  button for the Selected Probes section.

f. In the Selected Probes dialog box, clear the check box for **All Data Flow Probes** and click **OK** three times to exit.

g. Repeat [step c](#) through [step f](#) for other protocols.



| Index | Scope            | UD SHA1 ID               | User Label                 | Port Number |
|-------|------------------|--------------------------|----------------------------|-------------|
| 1     | Probes: Disabled | 76d388aed5256fc385f27... | Universal Discovery Pro... | 2738        |

h. Click **OK** to save the changes.

7. To check the progress/on-going status of the discovery job,

a. Modify the Inventory Discovery by Scanner adapter's configuration to make sure that the communication log is always created.

For detailed instructions, see ["To check the progress/on-going status of the discovery job," on page 130.](#)


b. Right-click the returned entry in the Discovery Progress pane, from the context menu, select **Debug > View Communication Log**.

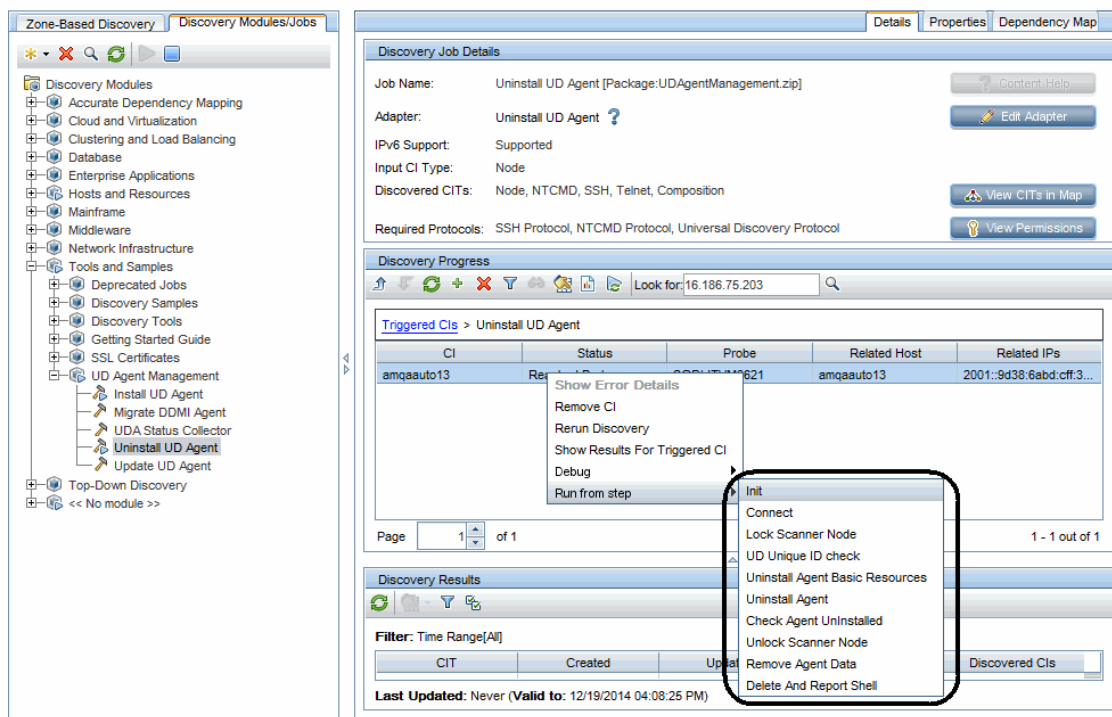
For details, see ["How to check device related logs for a discovered device?" on page 126.](#)

## Uninstall Agent

To invoke discovery job relevant to the device manually, and check progress and status of the discovery job:

1. In UCMD, go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs** tab.
2. In the Discovery Modules tree, select **Tools and Samples > UD Agent Management > Uninstall UD Agent**.
3. Right-click **Uninstall UD Agent**, select **Activate** from the context menu if the job is not activated, and wait for the Triggered CIs list to refresh.
4. In the Triggered CIs list in the Discovery Progress pane, click a number with link.

5. In the **Look for** field that is just enabled, enter the IP address for the target device and click .
6. Right-click the returned entry, and from the context menu, select **Run from step** > **<Select an action>**.



7. To check the progress/on-going status of the discovery job,
  - a. Modify the Uninstall UD Agent adapter's configuration to make sure that the communication log is always created.

For detailed instructions, see ["To check the progress/on-going status of the discovery job,"](#) on page 130.

- b. Right-click the returned entry in the Discovery Progress pane, from the context menu, select **Debug** > **View Communication Log**.

For details, see ["How to check device related logs for a discovered device?"](#) on page 126.



## Rerun Discovery

The Run Rulebase feature is implemented in UD normalization, which covers all jobs.

To invoke the normalization manually, in the Discovery Progress pane, right-click the CI entry returned from your search and select **Rerun Discovery** from the context menu, which will perform the normalization.

**Note:** Normalization cannot be invoked alone in UD. By selecting **Rerun Discovery**, you can invoke the normalization, but would also trigger other operations included in the discovery job in addition to the normalization.

To check the progress/on-going status of the discovery job,

1. Modify the concerning adapter's configuration to make sure that the communication log is always created.


For detailed instructions, see ["To check the progress/on-going status of the discovery job," on page 130.](#)

2. Right-click the returned entry in the Discovery Progress pane, from the context menu, select **Debug > View Communication Log.**

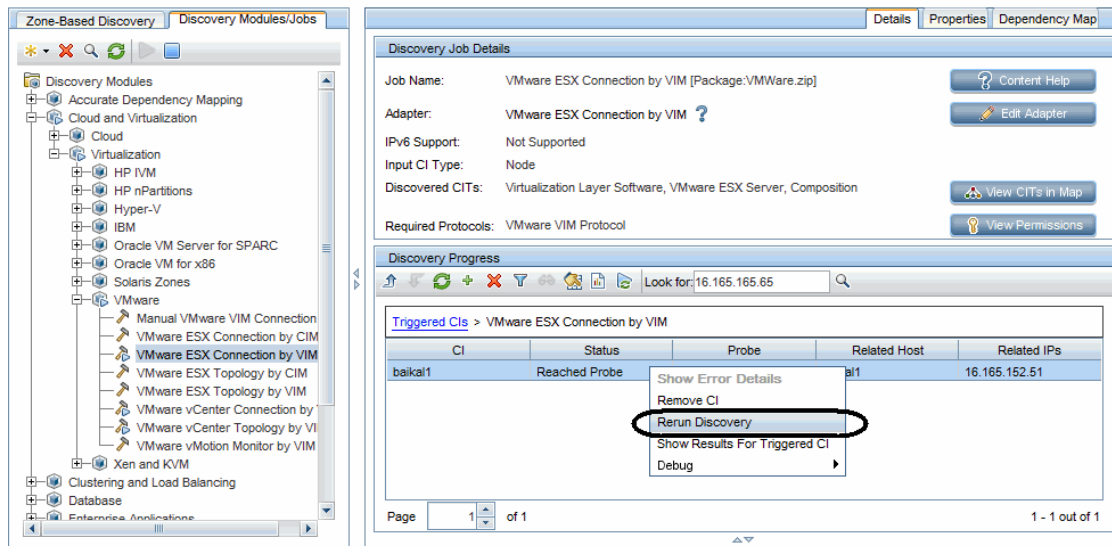
For details, see ["How to check device related logs for a discovered device?" on page 126.](#)

## VMware Discovery Jobs

To invoke the VMware discovery job manually,

1. In UCMDB, go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs** tab.
2. In the Discovery Modules tree, select **Cloud and Virtualization > VMware > <select a job>.**
3. Right-click the selected job, select **Activate** from the context menu if the job is not activated, and wait for the Triggered CIs list to refresh.
4. In the Triggered CIs list in the Discovery Progress pane, click a number with link.
5. In the **Look for** field that is just enabled, enter the IP address for the target device and click .

6. Right-click the returned entry, and select **Rerun Discovery** from the context menu.



7. To check the progress/on-going status of the discovery job,

- a. Modify the concerning adapter's configuration to make sure that the communication log is always created.

For detailed instructions, see ["To check the progress/on-going status of the discovery job," on page 130.](#)

- b. Right-click the returned entry in the Discovery Progress pane, from the context menu, select **Debug > View Communication Log**.


For details, see ["How to check device related logs for a discovered device?" on page 126.](#)

## How to check which pattern (management zone) is used in the discovery for a discovered device?

**Question: For a discovered device, how should I check which pattern (management zone) is used in the discovery?**

In UD, there are two ways to check the management zone used:

- **From IT Universe Manager**

- In the Modeling module, go to **IT Universe Manager**.
- On the Search CIs tab, enter the IP address for a discovered device in the **CI Name** field, select **Managed Object** for the **CI Type** field, and click .
- Click the returned entry on the Search CIs tab. CI details are displayed in the right pane.
- Go to the **Properties** tab for the CI and check the value for the following attributes:
  - Created By
  - Updated By

For example,

|                           |   |
|---------------------------|---|
| Create Time               | Thu Dec 4 2014 10:36 PM IST   |
| Created By                | UCMDBDiscovery: MZ_SGDLITVM0567 test_infrastructure_Network_Range IPs by ICMP |
| Deletion Candidate Period |   |

|                    |  |
|--------------------|--|
| UcddbRoutingDomain | DefaultDomain  |
| Updated By         | UCMDBDiscovery: MZ_SGDLITVM0567 test_infrastructure_Network_Host Connection by Shell |
| User Label         |  |

- **From the Management Zone Description**

- In the Data Flow Management module, go to **Universal Discovery > Zone-Based Discovery**.
- From the Management Zones tree, select a management zone. The Management Zone description displays in the right pane.

For example

Management Zone: 

SGDLITVM0567\_AIX Machines

Description:

Ranges Method: Based on partial Data Flow Probe ranges

Ranges:

Domains and Probes

Default Domain

QASERVER7

| Range          | Type        |
|----------------|-------------|
| 16.157.130.92  | Data Center |
| 16.157.132.236 | Data Center |
| 16.157.132.237 | Data Center |
| 16.173.232.59  | Data Center |

## How to check detailed discovery settings used in the discovery for a discovered device?

**Question: For a discovered device, how should I check the detailed discovery settings (such as job parameters and scan settings) used in the discovery?**

In UD, there are two ways to check detailed settings used in the discovery:

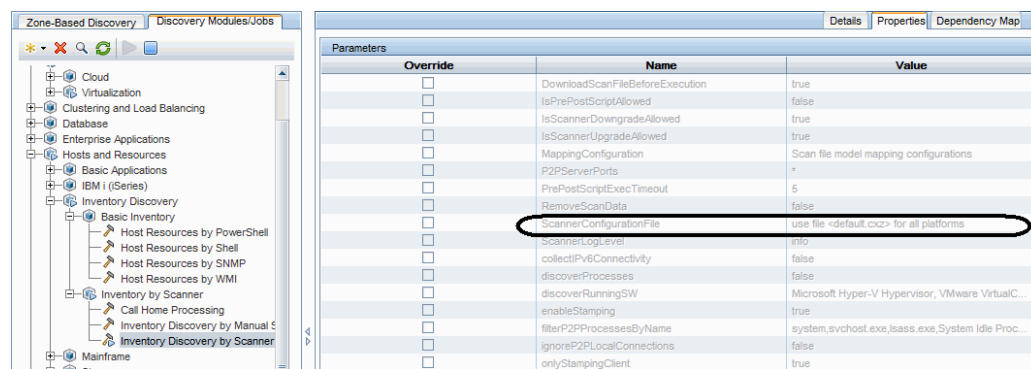
- **From UI** (the Properties tab and the Edit Inventory Discovery Activity dialog box)

- **Run jobs in Discovery Modules/Jobs**

The Properties tab of the Inventory Discovery by Scanner job displays all parameters and scanner settings of the job

- In UCMDB, go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs** tab.
- In the Discovery Modules tree, select **Hosts and Resources > Inventory Discovery > Inventory Discovery by Scanner**.
- In the pane, go to the **Properties** tab.

All parameters and scanner settings of the job are displayed.



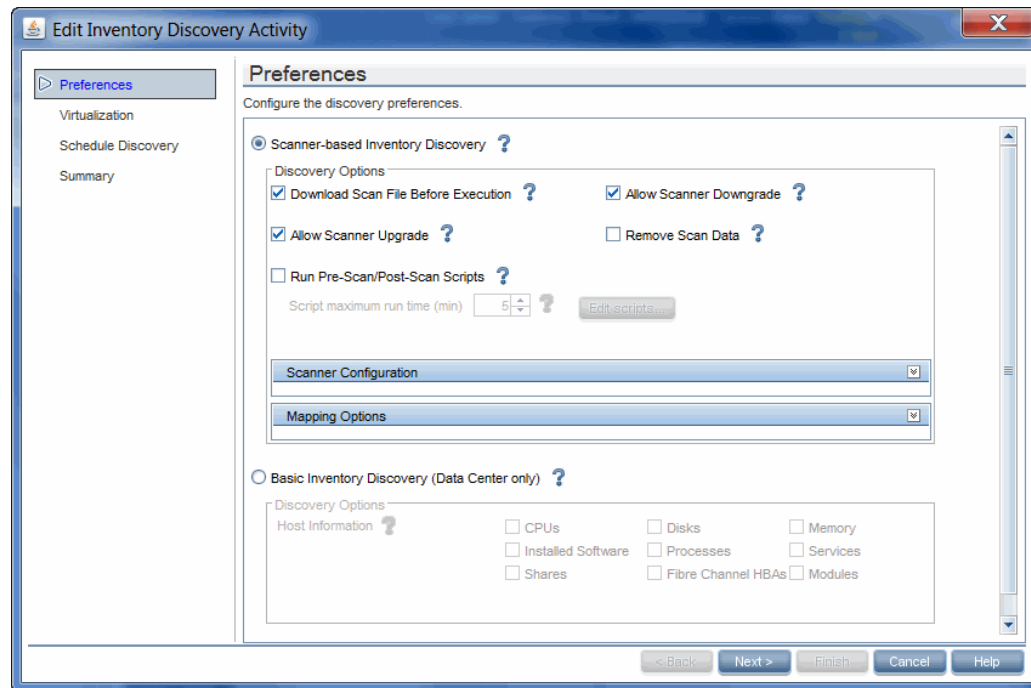
| Override                 | Name                            | Value  |
|--------------------------|---------------------------------|--|
| <input type="checkbox"/> | DownloadScanFileBeforeExecution | true   |
| <input type="checkbox"/> | IsPrePostScriptAllowed          | false  |
| <input type="checkbox"/> | IsScannerDowngradeAllowed       | true   |
| <input type="checkbox"/> | IsScannerUpgradeAllowed         | true   |
| <input type="checkbox"/> | MappingConfiguration            | Scan file model mapping configurations           |
| <input type="checkbox"/> | P2PServerPorts                  | *  |
| <input type="checkbox"/> | PrePostScriptExecTimeout        | 5  |
| <input type="checkbox"/> | RemoveScanData                  | false  |
| <input type="checkbox"/> | ScannerConfigurationFile        | use file default cxx for all platforms           |
| <input type="checkbox"/> | ScannerLogLevel                 | info   |
| <input type="checkbox"/> | collectIPv6Connectivity         | false  |
| <input type="checkbox"/> | discoverProcesses               | false  |
| <input type="checkbox"/> | discoverRunningSW               | Microsoft Hyper-V Hypervisor, VMware VirtualC... |
| <input type="checkbox"/> | enableStamping                  | true   |
| <input type="checkbox"/> | filterP2PProcessesByName        | system,svchost.exe,lsass.exe,System Idle Proc... |
| <input type="checkbox"/> | ignoreP2PLocalConnections       | false  |
| <input type="checkbox"/> | onlyStampingClient              | true   |

- **Run jobs in Zone-Based Discovery**

- In the **Data Flow Management** module, go to **Universal Discovery > Zone-Based Discovery**.

- ii. From the Management Zones tree, select a management zone.
- iii. Right-click a discovery job and select **Edit** from the context menu.

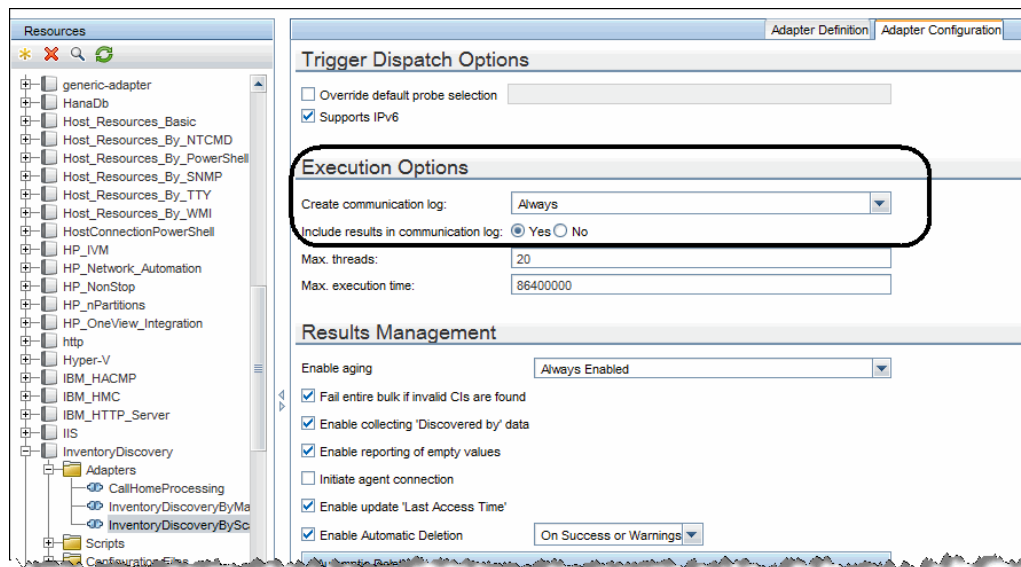
The Edit Discovery Activity dialog box opens.




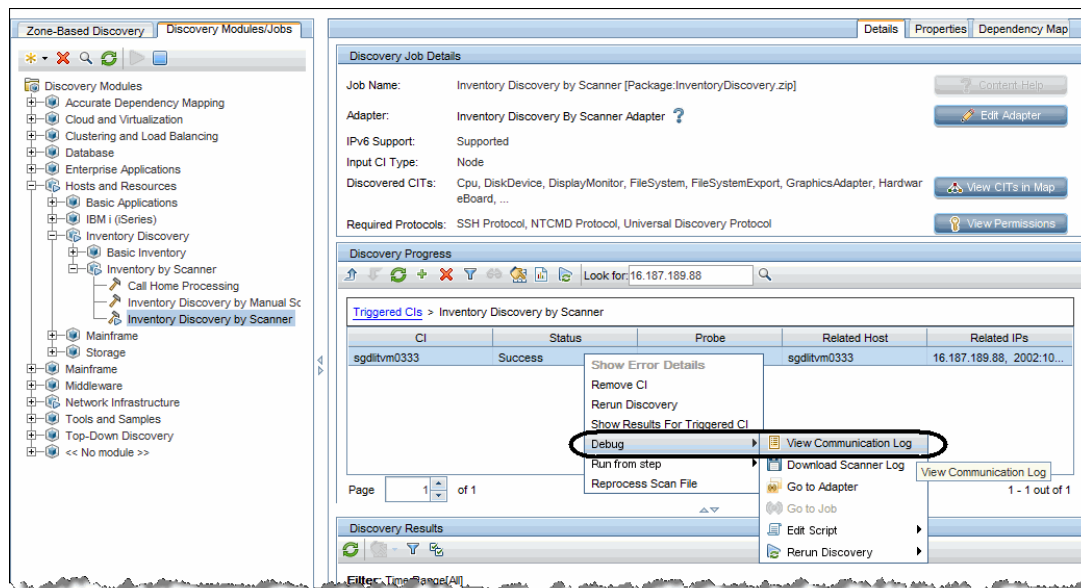
You can find the discovery job parameters and scanner settings in this dialog box.

- From the **Communication Log**
  - a. Modify the configuration of the adapter for the Inventory Discovery by Scanner job to make sure that the communication log is always created.
    - i. In the Data Flow Management module, go to **Adapter Management**.
    - ii. In the Resources pane, expand **InventoryDiscovery > Adapters > InventoryDiscoveryByScanner**.
    - iii. In the right pane, click the **Adapter Configuration** tab.
    - iv. In the Execution Options section, set the following:
      - **Create communication log: Always**

- **Include results in communication log: Yes**



- In UCMDB, go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs** tab.
- In the Discovery Modules tree, select **Hosts and Resources > Inventory Discovery > Inventory Discovery by Scanner**.
- (Optional) Right-click **Inventory Discovery by Scanner**, select **Activate** from the context menu if the job is not activated, and wait for the Triggered CIs list to refresh.
- In the Triggered CIs list in the Discovery Progress pane, click a number with link of your interest.
- In the **Look for** field that is just enabled, enter the IP address for the scanner and click .
- Right-click the returned entry, and from the context menu, select **Debug > View Communication Log**.



h. In the log that opens, search keywords to check details:

- To locate where the job parameters start in the log, search **<params>**.
- To locate where the job parameters end in the log, search **</params>**.
- To locate where the scanner configuration file is used in the log, search **Config file to be used:**.




## How to check the SNMP credentials used in the discovery for a discovered device?

**Question: For a discovered device, how should I check the SNMP credentials used in the discovery?**

To check the SNMP credentials used in the discovery, you can search the Communication Log of the Host Connection by SNMP job.

To view communication log for agent related jobs,

1. In UCMDB, go to **Data Flow Management > Universal Discovery > Discovery Modules/Jobs** tab.
2. In the Discovery Modules tree, select **Network Infrastructure > Host Connection > Host Connection by SNMP**.
3. (Optional) Right-click **Host Connection by SNMP**, select **Activate** from the context menu if the job is not activated, and wait for the Triggered CIs list to refresh.
4. In the Triggered CIs list in the Discovery Progress pane, click a number with link.
5. In the **Look for** field that is just enabled, enter the IP address for the target device and click .
6. Right-click the returned entry, and from the context menu, select **Debug > View Communication Log**.
7. In the log that opens, search **<CONNECT start** as keyword to locate the entry in the log that indicates starting from when the device is connected.

For example:

```
<CONNECT start="08:05:20" duration="4" CMD="client_connect" RESULT="success"
type="snmp" credentialsId="7_1_CMS">
  <ClientProperties>
    <prop name="protocol_index" value="1" />
    <prop name="protocol_timeout" value="3000" />
    <prop name="credentialsId" value="7_1_CMS" />
    <prop name="cm_credential_id" value="7_1_CMS" />
    <prop name="snmpprotocol_version" value="version 2c" />
    <prop name="protocol_type" value="snmpprotocol" />
```

```

    <prop name="snmpprotocol_postfix" value="" />
    <prop name="port" value="161" />
    <prop name="protocol_netaddress" value="DEFAULT" />
    <prop name="ip_address" value="16.187.190.19" />
    <prop name="snmpprotocol_privalg" value="3DES" />
    <prop name="snmpprotocol_authalg" value="MD5" />
    <prop name="protocol_port" value="161" />
    <prop name="snmpprotocol_retry" value="2" />
    <prop name="snmpprotocol_snmpmethod" value="getnext" />
    <prop name="user_label" value="SNMP Protocol Credential 1" />
    <prop name="snmpprotocol_authmethod" value="noAuthNoPriv" />
    <prop name="retry" value="2" />
    <prop name="protocol_username" value="" />
    <prop name="protocol_in_use" value="false" />
  </ClientProperties>
</CONNECT>

```

This log example indicates that the device is connected successfully by SNMP and the credential ID is **7\_1\_CMS**.

The log information between the **<ClientProperties>** and **</ClientProperties>** tags are the details of the SNMP credential used in the discovery. Among these properties information, to find out the credential name, you can check the value for the **user\_label** attribute (highlighted above) of the SNMP credential that you defined in the SNMP protocol.

**Note:** The SNMP community strings you defined in the protocol are encrypted in UD, therefore they are not visible in the log.

## Send Documentation Feedback

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**Feedback on DDMI to Universal Discovery Migration Walkthrough Guide (Universal CMDB 10.20)**

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