HP Universal CMDB

Software Version: 10.10

DDMI to Universal Discovery Migration Guide

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Contents

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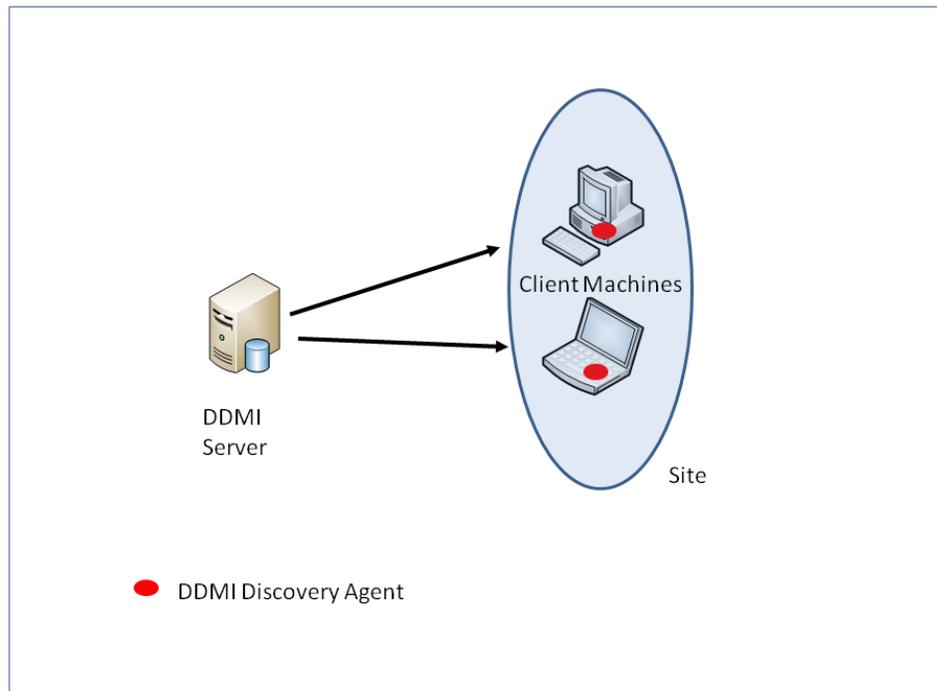
Comparing this deployment scenario to the Universal Discovery deployment scenario below, the DDMI server role is split into two distinct roles–UCMDB Server and Data Flow Probe.

- 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.
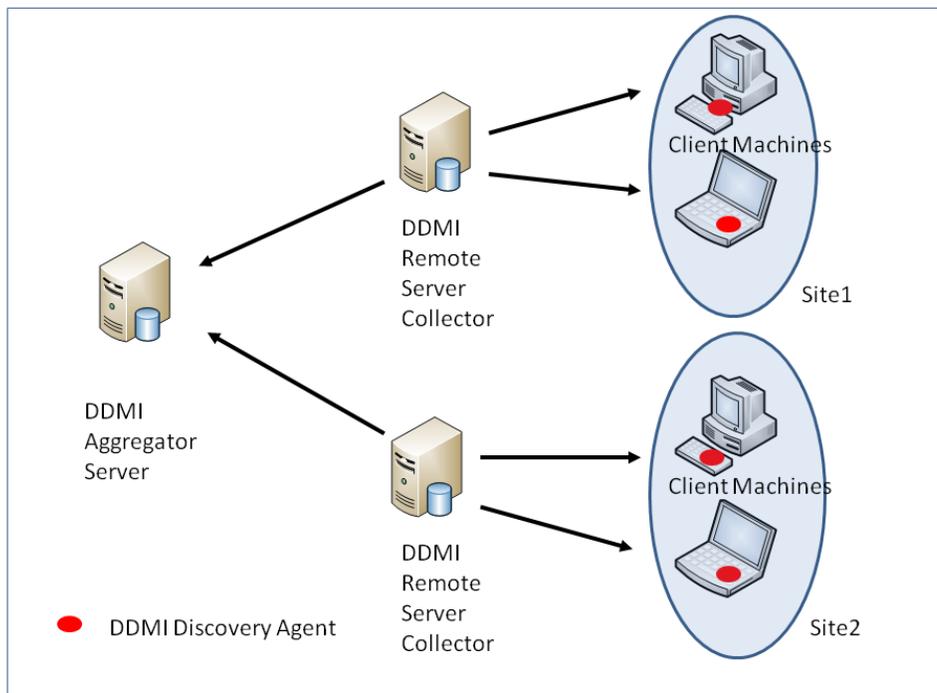

Comparing this deployment scenario to the Universal Discovery deployment scenario below, the physical architecture looks similar. One prominent difference is the functionality of the DDMI Remote Server Collector and the UCMDB Data Flow Probe. The DDMI Remote Server Collector acts independently—able to 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.
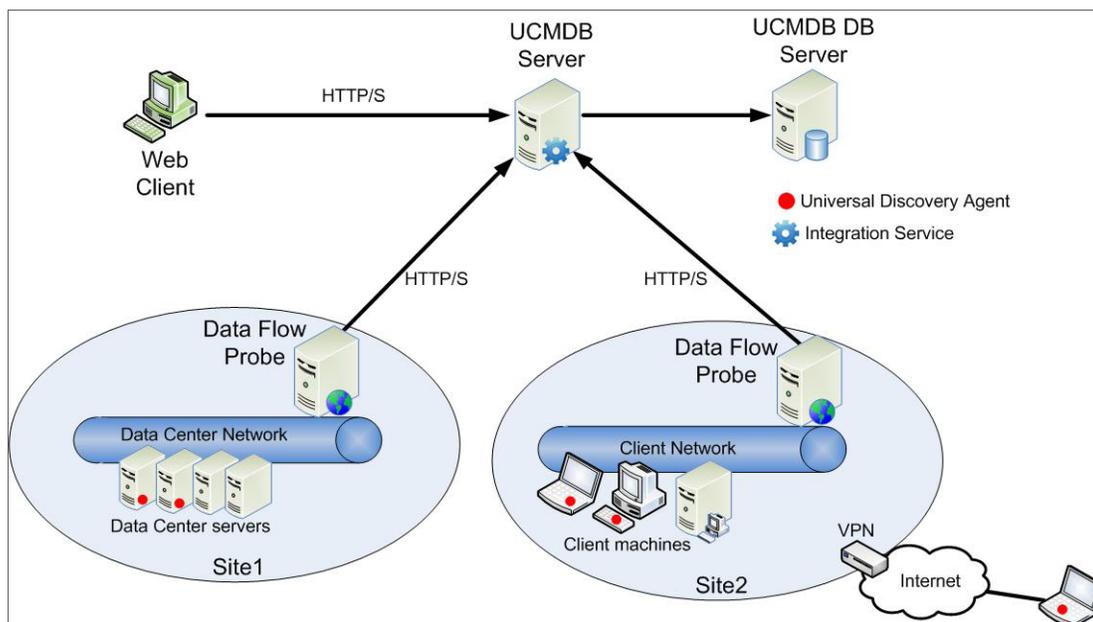
DDMI to Universal Discovery Migration Options Overview

> **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:

> **Note:** Most organizations will select P1 and P2, and optionally P3.

Option	Description
Migrate DDMI Server Configuration Data	Export DDMI server configurations, such as User SAIs, certificates, and IP ranges to Universal Discovery
Migrate DDMI Agents	Migrate DDMI agents to Universal Discovery agents.
Configure Agents for Interoperability	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 also installed.

Retire DDMI?	DDMI and DDMA Installed	Only DDMI Installed
Yes, I want a complete cutover to Universal Discovery.	Migrate Agents	Migrate DDMI Server Configuration Data, Migrate Agents
No, I want a partial/phased migration; migrate DDMI agents to Universal Discovery agents and run both systems in parallel.	Migrate Agents, Agent Interoperability	Migrate DDMI Server Configuration Data, Migrate Agents, Agent Interoperability

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

Migrate DDMI Server Configuration Data

```
                    Start


         Run the export script against the DDMI server


         Copy the exported ZIP file to the UCMDB server


         Import the ZIP file to UCMDB server


                    End
```
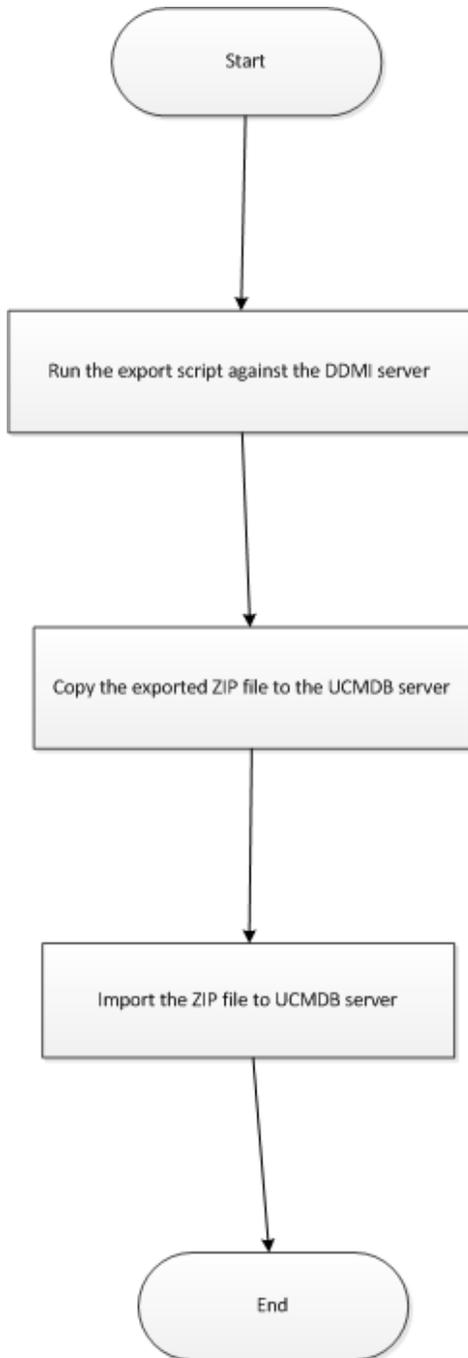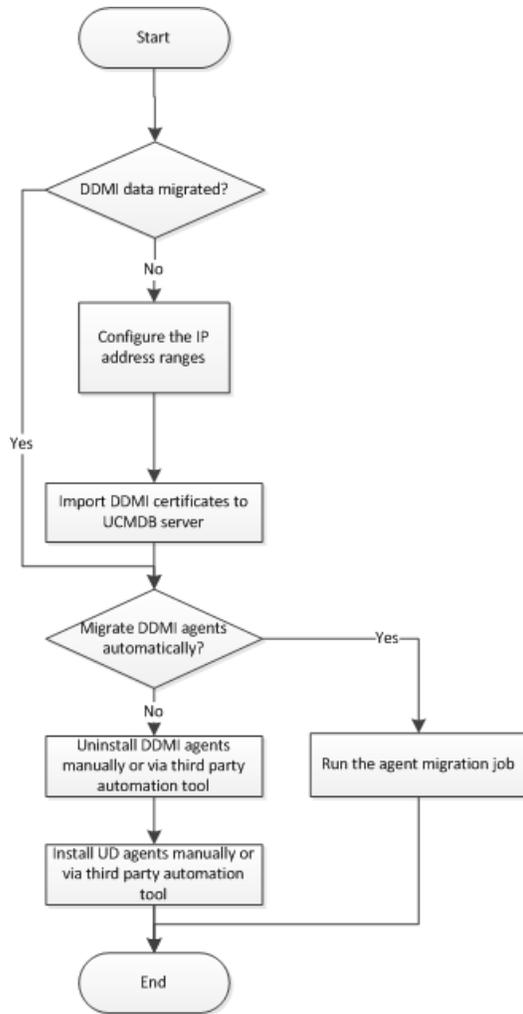
Migrate Agents

Agent Interoperability
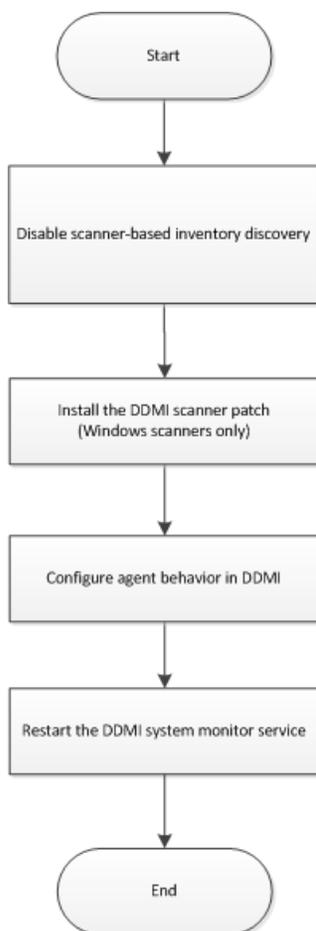
The following table provides links to documentation for each option.

Option Name	Documentation Link
Migrate DDMI Server Configuration Data	"How to Migrate DDMI Server Configuration Data to Universal Discovery" below
Migrate DDMI Agents	"How to Migrate DDMI Agents to Universal Discovery Agents " on page 16
Configure Agents for Interoperability	"How to Configure DDMI and Universal Discovery for Interoperability" on page 18

How to Migrate DDMI Server Configuration Data to Universal Discovery

The following task describes how to migrate DDMI server configuration data to Universal Discovery. Migration tools, including a Perl script and JMX console are provided which automatically export DDMI server data and automatically import the data to UCMDB. In most cases, server data from DDMI is migrated into newly-created activities in UCMDB. For more

information about activities in UCMDB, see the *HP UCMDB Discovery and Integrations Content Guide*.

Note:

- Perform this task for each DDMI server that you want to migrate

- DDMI Aggregator Server configuration data is not supported

- Data Flow Probes that are members of probe clusters are not supported and should not be migrated

This task includes the following steps:

1. "Prerequisite" below

2. "Run the export script" on the next page

3. "Copy the archive file" on the next page

4. "Import the migration data" on page 14

5. "How to Migrate DDMI Server Configuration Data to Universal Discovery" on the previous page

1. Prerequisite
   - Ensure that UCMDB is running.

     Note: For information about installing UCMDB, see the interactive *HP Universal CMDB Deployment Guide*.

   - Ensure that the DDMI server database is running.

   - (Optional) Back-up the UCMDB database. For more information, see the documentation for your database product

   - If you want the discovery schedules that are contained in DDMI network profiles to migrate to Universal Discovery, ensure that the Force ARP Table to Be Read option is selected.

   - (Optional) If you do not know the **customer id** parameter for the customer you are migrating, do the following:

     i. In UCMDB, go to **Data Flow Management** > **Data Flow Probe Setup**.

     ii. In the **Domains and Probes** pane, select a Data Flow Probe and note the customer name at the top right of the window.

      iii. Go to the **JMX console** > **Customer & States** > **Show all Customers** method and note the **customer Id** that maps to the customer name.

2. Run the export script

  a. Locate the **DDMIMigrate.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 should see the following message:

> "The migration data is successfully saved to **DDMIMigrationData.zip**".

> **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 21.

For more information about the type of information that is migrated, see "Results" on page 15.

3. Copy the archive file

Copy the archive file that was created in step 2 to the following location on the UCMDB Server:

> ▪ Windows: **C:\hp\UCMDB\UCMDBServer\conf\discovery\customer_<customer id>**
>
> ▪ Linux: **C:/opt/hp/UCMDB/UCMDBServer\conf\discovery\customer_<customer id>**
>
> where **customer id** is the value for the **customer id** parameter.

> **Note:** Usually, this value is **1** by default.

(Optional) If you do not know the **customer id** parameter for the customer who you want to migrate, see "Prerequisite" on page 12.

4. Import the migration data

   a. Open the JMX Console and go to **Discovery Manager** > **ImportMigrationDatafromDDMI**.

   b. In the **importMigrationDataFromDDMI** method, the following parameters are displayed:

      ◦ **customerId.** The customer ID that you want to migrate. For details, see "Prerequisite" on page 12.

      ◦ **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 UCMDB 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 2.

      ◦ **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.

5. Results
   - Success messages and warning messages are displayed.

   - For some common issues that may occur, see .

   - In addition to the data that is contained in the archive file that was created in step 2, 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 .

     ○ **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

How to Migrate DDMI Agents to Universal Discovery Agents

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

This task includes the following steps:

1. "Prerequisites" below

2. "Configure IP ranges and import certificates" below

3. "Migrate Agents" on the next page

1. Prerequisites

2. Configure IP ranges and import certificates
   If server configuration data was not imported from DDMI servers to Universal Discovery, do the following:

   a. Configure the IP address ranges.

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

   b. Copy certificate files from the DDMI server to UCMDB.

      On the DDMI server you want to migrate, navigate to **$datadir/cert** and copy the following files to your local computer:

      - acstrust.cert

      - agentca.pem

      - acskeystore.bin

   c. Import certificates to UCMDB:

      i. Go to **UCMDB** > **Data Flow Probe Setup** > **Domains and Probes** pane > click

      Universal Discovery Protocol, and click **Import DDMI Certificate** .

     ii. Select the certificate file. A message displays "File Loaded".

    iii. Click **OK**. A value in the **UDSHAID** column is displayed.

> **Note:** Ensure that the port number used for the certificate file is the same port number that is used by the DDMI agent.

> **Tip:** Note the port number that is configured for the certificate.

3. Migrate Agents

   Agents can be migrated using discovery activities or manual methods.

   - **Automatic migration using activities.** Agent migration is performed automatically using activities in UCMDB. For more information, see the section describing the Infrastructure Discovery Activity in the *HP UCMDB Discovery and Integrations Content Guide*.

   > **Note:** If you have not migrated server configuration data from DDMI to Universal Discovery, skip to here.

       i. In UCMDB, locate the migrated Infrastructure Discovery activity that relates to the Management Zone that you want to run discovery for.

         DDMI Device groups are migrated to Management Zones and appear in the following format: **<DDMIServerHostName_DDMIDeviceGroup>**

         Alternatively, in UCMDB, create a new Infrastructure Discovery activity.

       ii. In UCMDB, configure the Infrastructure Discovery activity as follows:
         i. On the Universal Agent Deployment page, ensure the **Migrate DDMI Agent** option is selected.

         ii. On the Summary page, save the changes and click on the toolbar to activate the activity.

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

       i. Uninstall the DDMI agents. For details, see the documentation that was supplied with your version of DDMI.

ii. 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 the next page.

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.

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

   a. **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). Search for **DDMI** > **Cumulative Scanner Patches**.

   b. **Set Agent Communications options. DDMI** > **Server** > **Administration** > **Discovery Configuration** > **Configuration Profiles** > **Agent Configuration Profiles** > **Settings tab**.

      i. Ensure that **Allow Agent Upgrade** is not selected.

      ii. Ensure that **Allow Agent Communication** is selected. Additionally, in the **Agent deployment actions** drop down, select **No action**.

   c. **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.

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

   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	Changes the name of the archive (.zip) file. > **Note:** It is not recommended to use this option to change file names for files that are contained in the archive. > **Tip:** You can also change the name of the archive file by using the operating system.
-scancfgprefix	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. > **Note:** This option can only be used for scanner configuration files.
-help	Displays copyright information and command line usage instructions. Additionally, help messages are displayed.

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	• Installs the Universal Discovery Agent. • 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.
	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 the section describing exporting resources 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. **Default:** Working directory
clean	Specifies a type of uninstall procedure. Most Universal Discovery Agent files and scanner files are deleted. **Note:** This parameter can only be used together with the **uninstall** and **home** parameters.
filename	The name of the installation file. **Note:** • This is a mandatory parameter. • The filename is usually **agentinstall.sh**.
group	Specifies the group name for the user account that you want to run the Universal Discovery Agent under. **Note:** Use this parameter together with the **user** parameter.
help	Displays help messages.
home	Directory that contains the Universal Discovery Agent log and the software utilization data files. **Default:** HOME directory
packagename	Full path for the package installation file. **Default:** Working directory **Note:** This parameter is required when installing or upgrading the Universal Discovery Agent.

Parameter Name	Description
period	Number of days to retain software utilization data. **Default:** 365 days
port	Port number for the Universal Discovery Agent to use for communication with the Data Flow Probe. Type **2738** or **7738** **Default:** 2738 **Note:** If you change this port number manually after installation, the new port number takes effect only after the Universal Discovery Agent is restarted.
softwaretutilization	Enables software utilization.
softwareutilizationonly	Enables the Software Utilization plug-in only. **Note:** • The Universal Discovery Agent is disabled. • This parameter is supported only when installing the Universal Discovery Agent manually.
temp	Directory that contains Universal Discovery Agent and scanner temporary files. **Default:** $TEMP directory.
timeout	Frequency (in seconds) that the Universal Discovery Agent contacts the Data Flow Probe for Call Home. **Default:** 86400 seconds
uninstall	Uninstalls the Universal Discovery Agent. **Note:** When you use this parameter: • All parameters except the **clean** parameter are ignored. • The **filename** parameter is required.
upgrade	Upgrades the Universal Discovery Agent.

Parameter Name	Description
url0|url1|url2	IP address for Data Flow Probe that is used for Call Home messages. **Note:** If you are performing a migration from DDMI to Universal Discovery, this parameter is also used for the DDMI server.
usage	Displays help messages. **Note:** This parameter provides the same information as the **help** parameter.
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
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 **Note:** Applicable only when performing an installation operation.

Error Code	Description
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- **<VersionNumber>**.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	Indicates the type of operation. The following options are supported: • **/i**: Installs the Universal Discovery Agent. • **/x**: Uninstalls the Universal Discovery Agent.
Product.msi	Indicates the product file name. For example, **hp-ud-agent-win32-x86-10.10.000.xxx.msi**

Parameter Name	Description
UPGRADELOGFILEPATH	Specify a path to save a log file. **Note:** • Only use with the **agentupgrade.cmd** script. • Use together with the **/log** switch.
CLEAN	Indicates the type of uninstall procedure. Most Universal Discovery Agent files and scanner files are deleted. **Note:** • This parameter must be used together with the uninstall option. • If you do not want to use this option, omit the parameter from the string.
SETUPTYPE	Indicates the operational mode. Type **Enterprise** or **Manual**. **Note:** The **manual** parameter value is called "Software Utilization Plug In Only" in the **Agent Installation Wizard** User Interface.
PORT	Port number for Universal Discovery Agent to use for communication with Data Flow Probe. Type **2738** or **7738**. **Note:** 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.

Parameter Name	Description
TIMEOUT	Frequency that the Universal Discovery Agent contacts the Data Flow Probe when the Universal Agent sends Call Home messages. Measured in seconds. Default is 86400 seconds. **Note:** This parameter is called **Call Home Frequency** in the Infrastructure Discovery activity.
CERTPATH	Path to install certificate files. Default is the working directory.
PERIOD	Number of days to retain software utilization data. Default is 365 days.
SOFTWAREUTILIZATION	Enable or disable Software Utilization plug in. Use "ON" to enable and "OFF" to disable. Default is "OFF".
URL0|URL1|URL2	IP address for Data Flow Probe that is used for Call Home messages. **Note:** If you are performing a migration from DDMI to Universal Discovery, this parameter is also used for the DDMI server.

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.

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	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. **Tip:** To continue migrating data even though a conflict occurs, set the **stopWhenConflict** option to **false** in the **importMigrationDataFromDDMI** method that is accessible from the JMX console.
An error message is displayed warning about duplicate credentials.	These credentials are not migrated. The migration scripts analyze the **user label** 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.

Terminology Changes from DDMI to Universal Discovery

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

Conceptual Changes

DDMI	Universal Discovery
Device Groups. 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. To access device groups, **Administration** > **Discovery Configuration** > **Device Groups**. To specify how the devices in groups are discovered, you create and assign a configuration profile to a device group.	**Management Zones.**Management Zones are defined by a collection of IP ranges or device types. Management Zones are usedne 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. For more information about IP ranges, see Effects of Range Type on Discovery Workflows and Data Reconciliation. For more information about Management Zones, see Zone-based Discovery Overview.

DDMI	Universal Discovery
Passive Discovery. 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 adddress mapping. The Passive Discovery configuration profile is applied to the device group.	**IP/MAC Harvesting.**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. 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.

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
Active Discovery	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 *HP UCMDB Discovery and Integrations Content Guide*.
Discovery via SNMP	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 *HP UCMDB Discovery and Integrations Content Guide*.

Committing/Activating Configuration Changes

DDMI	Universal Discovery
All configuration changes are activated at **Administration** > **Discovery Configuration** > **Activation**.	All configuration changes are activated when you select **Activate Activity** on the **Summary Page** of an activity wizard.

Agent

Feature	DDMI	Universal Discovery
Interoperability	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.
Data Directory	N/A	Each time the UD Agent is run, it checks the UD default data directory. If no files exists, 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 Universal Discovery Agent Installation Resources.
Agent deployment/migration	This is performed at the following location: **Administration** > **Discovery Configuration** > **Configuration Profiles** > **Agent** tab.	This is performed automatically using the Infrastructure Discovery Activity, or performed manually using third party tools or remote access technologies. For details on the Infrastructure Discovery activity, see *HP UCMDB Discovery and Integrations Content Guide*. For complete agent migration information, see "DDMI to Universal Discovery Migration Options Overview" on page 7.

Feature	DDMI	Universal Discovery
Call Home	Call Home is enabled at the following location: **Administration** > **System Configuration** > **Discovery services**	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. **Note:** Call Home settings are automatically migrated when using the Server Migration Tool.
Inventory Scanning	Scanners are configured at **Administration** > **Discovery Configuration** > **Configuration Profiles** > **Scanner** tab	**Inventory Discovery Activity** > **Preferences**. For more information, see the section that explains inventory discovery scanners.
Virtualization discovery	You apply the Virtualization profile to a device group. In the Scanner Generator, you select the **Virtual Machines** option on the **Hardware Data** 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 **Miscellaneous** tab.	In the **Inventory Discovery** wizard on the **Virtualization** page, select **Include Virtualization Topology**.

Feature	DDMI	Universal Discovery
Credentials	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.	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 *HP UCMDB Discovery and Integrations Content Guide*. **Note:** Credentials are automatically migrated from DDMI to Universal Discovery when using the Server Migration Tool.

Data Access

DDMI	Universal Discovery
Data can be directly accessed using DBI connections to the MySQL database.	The following APIs are available: • UCMDB Java API • UCMDB Web Service API. • Data Flow Management Web Service API In addition to searching the database via TQL, you can use a text search using the search engine. For more information, see the section describing the UCMDB APIs in the *HP Universal CMDB Developer Reference Guide*.

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	**Note:** Schedule data for network profiles are migrated only when **Force ARP Table To Be Read** is selected in DDMI.
Agent	
Scanner	Inventory Discovery activity
VmWare	

DDMI data is imported into Universal Discovery as follows:

DDMI	Universal Discovery
Deployment credentials	SSH and NTCMD credentials are imported and keys are regenerated automatically.
SNMP configuration profile	Mapped to protocol parameters for the SNMP protocol.
Device groups	Device groups are migrated to Management Zones and appear using the following convention: **<DDMIServerHostName_DeviceGroup>**
System configuration	Agent and scanner-related configurations.
VMware configuration	VMware VIMware protocol.
XML Enricher configuration file	To import, set the **overrideGlobalConfig** parameter to **True** in the JMX console import method. For more information, see "How to Migrate DDMI Server Configuration Data to Universal Discovery" on page 11.
Certifacts (DDMi agent)	The following files are imported: • acstrust.cert • agentca.pem • acskeystore.bin **Note:** The UD Agent protocol is created from these files.

DDMI	Universal Discovery
IP address ranges	IP address ranges are mapped to either Client or Data Center type according to the following criteria: The IP address range is set to Client type when **Actively Ping Devices** is **disabled** and **Allow ICMP and SNMP** is **enabled** for the configuration profile that is applied to the device group for the range. All other ranges are set to Data Center type. For more information on IP range types, see the section that describes the effects of range types on discovery workflows and data reconciliation.

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	**Custom** > **Inventory** > **Node Summary Report**
Recognized Applications/App Lic	**Custom** > **Inventory** > **Application License Report**
Recognized Applications/App Running Util	**Custom** > **Inventory** > **Software Utilization Report**
Recognized Applications/OS Reported	**Custom** > **Inventory** > **Recognized Applications Report**
Recognized Applications/Virtual Devices - Solaris Zones	**Custom** > **Virtualization** > **Solaris Zone Report**
Recognized Applications/Virtual Devices - VMware Hosts, Virtual Machines	**Custom** > **Virtualization** > **VMware Host Report**
Recognized Applications/Virtual Devices - VMware Virtual Center	**Custom** > **Virtualization** > **VMware Virtual Center Report**
Recognized Applications/Network Disc/Device Inventory by Virtual	**Custom** > **Inventory** > **Node Summary by VLAN Report**
Status/Device Status/Agent status	**Custom Report** > **Discovery Status** > **Agent Status Report**
Status/Device Status/Scanner execution details	**Custom Report** > **Discovery Status** > **Scanner Execution Details Report**

DDMI	Universal Discovery
Status/Device Status/Scan file status	**Custom Report** > **Discovery Status** > **Scan File Status Report**
Status/Device Status/Device exceptions	**Custom Report** > **Discovery Status** > **Discovery Error Report**

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

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

DDMI Attribute	UCMDB CI	UCMDB Attribute
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
usagedayslastmonth		usage_days_last_month
usagedayslastquarter		usage_days_last_quarter
usagedayslastyear		usage_days_last_year
usagehourslastmonth		usage_hours_last_month
usagehourslastquarter		usage_hours_last_quarter
usagehourslastyear		usage_hours_last_year
usagedailypeak		usage_hours_last_year_daily_peak
usagepercent		usage_percent
commercial		software_license_type
usagedayslastmonthfoc		infocus_usage_days_last_month
usagedayslastquarterfoc		infocus_usage_days_last_quarter
usagedayslastyearfoc		infocus_usage_days_last_year
usagehourslastmonthfoc		infocus_usage_hours_last_month
usagehourslastquarterfoc		infocus_usage_hours_last_quarter

DDMI Attribute	UCMDB CI	UCMDB Attribute
usagehourslastyearfoc	installed_software	infocus_usage_hours_last_year
usagedailyaveragefoc		infocus_usage_hours_last_year_daily_average
usagedailypeakfoc		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) hwOSHostUnixType (Linux) hwOSHostUnixType (HP-UX) hwOSHostUnixType (Sun) hwOSHostUnixType (AIX) hwOSHostUnixType (Mac)		discovered_os_ name
hwOSHostOsCategory		discovered_os_ vendor
hwOSInternalVersion (Linux) hwOSInternalVersion + "." + hwOSBuildLevel (Windows) hwOSHostVersion (HP-UX) hwOSInternalVersion AIX - hwOSHostVersion (Sun) hwOSHostVersion (Mac)		discovered_os_ version
hwOSHostLinuxType (Linux) hwOSHostWindowsNTMode + hwOSHostEdition (Windows) hwOSHostMacOsType (Mac)		host_ osinstalltype

DDMI	UCMDB CI	UCMDB Attribute
"release" + hwOSHostVersion (Red Hat Linux) hwOSBuildLevel (Windows) hwOSServiceLevel (HP-UX) hwOSServiceLevel (AIX) hwOSServiceLevel (Sun)	node	host_osrelease
hwOSHostOsCategory		os_family
hwBiosAssetTag		bios_asset_tag
hwsmbiosSystemUUID		bios_uuid
hwsmbiosProductName || hwBiosData.hwBiosMachineModel		discovered_ model
hwsmbiosSystemManufacturer || hwBiosData.hwBiosManufacturer		discovered_ vendor
hwLocalMachineID (Windows)		net_bios_name
hwDomainName		domain_name
hwNetworkTcpip.hwIPRoutingEnabled hwVirtualMachine.hwVirtualMachineType		node_role
hwIPHostName + "." + hwIPDomain		primary_dns_ name
hwBiosData.hwBiosSerialNumber || hwsmbiosSystemSerialNumber || hwsmbiosChassisSerialNumber		serial_number
hwNetworkDNSServer (Unix) hwNICDNSServer (Windows) (Mac)		dns_servers
hwOSDefaultUserName	nt	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 hwPhysicalDiskData.hwPhysicalDiskNumber		name
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
hwMountPoints.hwMountPointVolumeType	LogicalVolume	logicalvolume_ fstype
hwMountPoints.hwMountPointVolumeFreeSpace		logicalvolume_ free
hwMountPoints.hwMountPointVolumeTotalSize		logicalvolume_ size

DDMI	UCMDB CI	UCMDB Attribute
hwNetworkSharePath	file_system_ export	file_system_ path
hwNetworkShareName		share_names
hwNetworkSharePath		name
hwNetworkShareRemark		description
hwsmbiosMemoryArrayDeviceLocator -else- hwsmbiosMemoryArrayBankLocator	memory_unit	name
index		memory_unit_ index
hwsmbiosMemoryArraySize		size
hwsmbiosMemoryArraySerialNumber		serial_number
hwsmbiosMemoryModuleSocketDesignation		name
index		memory_unit_ index
hwsmbiosMemoryModuleInstalledSize		size
hwMemoryBank		name
index		memory_unit_ index
hwMemoryDIMMSizeMB		size
hwNetworkLogonName	winosuser	name
hwNetworkLogonDomain		winosuser_ domain
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

Java Viewer	UCMDB
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*.