Universal CMDB

Software Version: Content Pack 22.00 (CP22)

Release Notes

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Hewlett Packard Enterprise

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HPE Universal CMDB Content Pack Release Notes

This document provides information about HPE Universal CMDB (UCMDB) and Universal Discovery (UD) Content Pack 22.

Important Notes - CMS Content Pack Release Strategy Change

Dear Valued CMS Customer,

Starting with the release of UCMDB/UD Content Pack 17, we are making changes to our CMS content pack release strategy:

- CMS Content Packs will be moving to quarterly release schedule going forward to allow a more agile delivery mechanism for addressing customer needs and adding new functionality.

- Content Packs will be Backward Compatible with the latest minor-minor releases of the immediately preceding last three major/minor releases after UCMDB version 10.11. For example, Content Pack 22 is compatible with UCMDB versions 10.31, 10.30, 10.22, and 10.11.

- Content Packs will be Forward Compatible with the next minor-minor or minor/major release. For example, Content Pack 22 will be compatible with the next available minor-minor release of UCMDB.

- Content Packs Updates will be issued only for critical issues.

- Discovery Knowledge Packs containing the Normalization Rules and Software Application Index (SAI) SAI Libraries will continue with the existing monthly release schedule available on the HPE Live Network website (https://hpln.hpe.com/).

On behalf of HPE CMS Product Management, R&D, and Support, we sincerely appreciate you as a CMS customer and value your feedback. We are excited to implement this new format aimed at helping our customers to stay current with the latest content more easily.

Thank you very much,

The HPE Configuration Management System (CMS) Team

What's New in Content Pack 22

This section provides information about new features and enhancements to Content Pack 22.

Discovered Applications

Added support for discovering the following applications:

- IBM DB2 Universal Database 11.1

- IBM WebSphere MQ 9.0

- JBoss Application Server 10.1

- Microsoft Active Directory on Windows Server 2016

- Microsoft Cluster Services on Windows Server 2016

- Microsoft Hyper-V on Windows Server 2016

- Microsoft Network Load Balancer on Windows Server 2016

Discovered Operating Systems

Added support for discovery and inventory (including agent support) for the following operating systems:

- Apple macOS Sierra 10.12

- Windows Server 2016 (Nano Server is not yet supported)

New Discoveries

Added support for Cloud Foundry Event Discovery.

Cloud Foundry provides RESTful API to get the events. The **Cloud Foundry Event Monitor** job queries the events every 30 seconds and reports them into UCMDB.

For more details, see the *HPE UCMDB Discovery and Integrations Content Guide - Discovery Modules*.

Integrations

- Added support for integrating HPE Network Automation (NA) 10.21.

- Added a new parameter **NNMiHost** to the **Pull Topology from NNMi** adapter. **NNMiHost** is the host name to use with the NNMi integration. You must fill in this parameter if FIPS is enabled. **NNMiHost** has priority over IP address, which means instead of IP address, **NNMiHost** will be used if it is filled in.

Others

- Added a new parameter **max_include_depth** to the **JEE WebSphere Liberty Core by Shell** job. This parameter defines the maximum recursion depth of the included file discovery. The default value is **5**.

- Added a new parameter **OracleHomePath** to the **Oracle Application Server by Shell** job. This parameter defines the Oracle home path(s), separated by semicolons.

- Added a new topic *Brief Introduction to Storage Discovery* to the *HPE UCMDB Discovery and Integrations Content Guide - Discovery Modules*.

- Based on IP addresses, the node has more applications than the real ones after running the **Host Applications/Resources by Shell** job. Therefore, a new parameter **checkHostName** is added to the **Host Resources by Shell** and **Host Applications by Shell** jobs.

  This parameter checks whether the host name from input CI is the same with the current one. If the host name from input CI is different from the current one, the relationship between IP address and node is removed.

- Brocade switches do not represent the LLDP local interface mapping in LLDP OIDs to the real local interface OIDs based on indexes. Therefore, a new parameter **mapLLDPPortsByNames** is added to the **Layer2 Topology CDP-LLDP based by SNMP** job.

  If setting the parameter to **true**, the LLDP entry is mapped to the local port based on names. If setting the parameter to **false**, the LLDP entry is mapped to the local port based on indexes. The default value is **false**.

  This parameter is recommended to be set to **true** in case of LLDP based discovery of Brocade switches; otherwise the data might be missing or incorrect.

- QLogic Host Bus Adapter (HBA) can be discovered on Red Hat Enterprise Linux 4.

- The **Storage Devices Topology by CIM** job can discover logical unit numbers (LUNs). The LUN is identified by its ID and one of connected FC ports or iSCSI adapters. The LUN can be used to map the logical volume at the storage side to the physical volume (or disk device) at the server side.

- Scanner version: 10.31.000.155

- Universal Discovery Agent version: 10.31.000.155

- Inventory Discovery Knowledge version: 2016.12

System Requirements

- CP22 can be installed on:

    - UCMDB 10.11 CUP6 (or a later CUP)

    - UCMDB 10.22 (or with a CUP on top of 10.22)

    - UCMDB 10.30

    - UCMDB 10.31

- You must install UCMDB 10.11 CUP6 (or a later CUP), 10.22 (or with a CUP on top of 10.22), UCMDB 10.30, or UCMDB 10.31 before installing CP22.

Important Note:

- Before you deploy CP22 on top of version 10.31 or 10.30, you must install version 10.31 or 10.30 of UCMDB and UD, and then deploy version 10.31 or 10.30 Data Flow Probes. Do not deploy CP22 while you are still updating the Data Flow Probes.

    Version 10.30 (and later) of the HPE Configuration Management System does not include a new release for UCMDB Configuration Manager (CM). The latest release of CM is version 10.22 CUP4.

- Before you deploy CP22 on top of version 10.22, you must install version 10.22 on the UCMDB, UD, and (optionally) CM servers, and deploy version 10.22 Data Flow Probes. Do not deploy CP22 while you are still updating the Data Flow Probes.

- Before you deploy CP22 on top of version 10.11, you must install 10.11 CUP6 (or a later CUP) on the UCMDB, UD, and (optionally) CM servers, and deploy version 10.11 Data Flow Probes. Do not deploy CP22 while you are still updating the Data Flow Probes.

For a complete list of system requirements, see the *Universal CMDB Support Matrix* document available from the UCMDB Online Help home page.

For more details, see the *Discovery and Integrations Content Guide - Support Matrix* on the **HPE Live Network**.

Content Pack Installation

The following procedure explains how to install Content Pack 22.00 for Universal CMDB.

> **Note:** Rolling back the installation is not supported as it can lead to system inconsistencies. If you are upgrading from earlier versions of the content pack, it is strongly recommended to ensure that you have backed up your database.

1. **Prerequisites**

   ○ The UCMDB Server must be running when you install the Content Pack.

   ○ During installation, Setup may restart the Probe to load the new content jar file.

   ○ Back up your database.

   > **Note:** If you have deployed the **ASM_Enhanced.zip** package, delete all Service Connection Point CIs and undeploy the package before you proceed with the installation.

2. **Retrieve the Content Pack 22.00 ZIP file**

   The name of the installation file is **CP22_installation.zip**. This file is located on the HPE Live Network website.

   The ZIP file contains the following resources:

   ○ Packages (**CP22.zip**)

   ○ Online help

   ○ The *HPE UCMDB Discovery and Integrations Content Guide* PDF files.

   ○ Permissions.pdf

3. **Extract packages from the Content Pack 22.00 ZIP file**

   Unpack the contents of the **CP22_installation.zip** file to *<UCMDB_Server_Home>*.

4. **Back up existing packages**

   a. Launch a Web browser and enter the following address:

      https://localhost:8443/jmx-console

      Log in using the JMX console authentication credentials.

> **Note:** Starting with UCMDB version 10.30, by default the HTTPS protocol is enabled for UCMDB server, with the HTTP protocol being disabled.
>
> If necessary, you can enable HTTP communication for UCMDB Server. For instructions, see "How to Enable HTTP Communication for UCMDB Server" in the *HPE Universal CMDB Administration Guide*.

b. Click the **UCMDB:service=Packaging Services** link.

c. On the JMX MBEAN View page, locate the following JMX function: **exportPackages ()**.

> **Note:** The JMX function **exportPackages ()** exports packages that contain OOTB Jython scripts customized by the UCMDB administrator. The customizations will be lost after the CP22 deployment.

- In the **customerID** field, enter **1**.

- In the **packagesNames** field, leave this field empty to export all packages.

- In the **outputDir** field, enter the full path to a directory where UCMDB should place the backed-up packages, for example, *<UCMDB_Server_Home>\content\my_packages_backup*. The directory is created automatically.

- In the **userOnly** field, select **False** to export all packages (and not only the user-created packages).

d. Click **Invoke**.

e. Verify that all relevant packages have been backed up to the folder mentioned in the previous step, and that there are no errors in the **mam.packaging.log** file, located in *<UCMDB_Server_Home>\runtime\log*.

5. Install Content Pack 22.00

You can install the Content Pack from the Universal CMDB user interface, using UCMDB JMX Console, or using UCMDB Browser standalone 4.12 or later.

> **Note:** When you install a Content Pack, you may want to retain your customized resources separate from the installed Content Pack. Therefore, starting from UCMDB 10.31, the functionalities of comparing and merging packages or Content Packs are introduced. For more details, see the "Compare and Merge Packages or Content Packs" section in the *HPE Universal CMDB Administration Guide*.

○ **From Universal CMDB:**

    i. Stop UCMDB.

    ii. Make sure that **CP22.zip** is in the following directory:

        *<UCMDB_Server_Home>***\content\content_packs**

    iii. Start UCMDB server.

    iv. Log in to the UCMDB.

    v. Access the **Package Manager (Administration > Package Manager).**

    vi. On the toolbar, click the **Install Content Pack** button.

    vii. In the Install Content Pack dialog box that opens, select the CP22 version of the Content Pack and click **Install**.

○ **Using UCMDB JMX Console:**

    i. Log in to the UCMDB JMX-Console (**https://localhost:8443/jmx-console**).

    ii. Open **UCMDB > Content Pack Services.**

    iii. Invoke **displayAvailableContentPackVersions** to see available versions of the Content Pack.

    iv. Enter the CP22 version in the version field, and invoke **installContentPack**.

○ **Using UCMDB Browser standalone 4.12 or later**

    i. Use the following URL:

        *<protocol>***://***<server_name>***:***<port_number>***/ucmdb-browser/admin#panel=packagemanager**

> **Note:**
>
> - You can also access the Package Manager from **UCMDB Browser > Administration Console > Package Manager** module. For details, see the "Logging In" section in the *HPE Universal CMDB Browser Installation and Configuration Guide*.
>
> - The Package Manager requires UCMDB Browser standalone 4.12 or later, and UCMDB server 10.31 or later.

    ii. Click **Install Package**.

    iii. Click the **Content Pack** tab.

    iv. Click **Explore Content Pack**, select **CP22.zip**, and then click **Install Selected**.

> **Note:** Make sure that **CP22.zip** is in the following directory:
>
> ***<UCMDB_Server_Home>\content\content_packs***

For more details on using UCMDB Browser standalone 4.12 or later, see the "How to Install/Deploy a Discovery and Integration Content Pack" section of the *HPE Universal CMDB Package Manager Guide*.

6. **Verify installation**

    Verify that there are no errors in the **mam.packaging.log** file, located in ***<UCMDB_Server_Home>\runtime\log***.

7. If you are installing the Content Pack on a High Availability system, copy all files from the following folder on the active UCMDB server to the same folder on the passive UCMDB server: ***<UCMDB_Server_Home>\runtime\fcmdb\CodeBase***.

Discovery Knowledge Content

Starting from April 2015 to ensure more regular updates to the Normalization Rules and Software Application Index (SAI), the new Inventory Discovery Knowledge Packs are introduced on a monthly schedule.

Normalization Rules contain information to identify hardware devices in your environment. Normalization Rules determine the device's operating system, application, device family, and model. Then, the Normalization Rules Engine assigns a device type to your device model.

SAI files contain information to identify applications on a discovered node. Universal Discovery employs a number of installed software application recognition techniques, including file-based recognition, version data, and installed package rule-based recognition. The data that is required for this recognition to work is stored in the application library files (SAI).

For details about Normalization Rules and SAI Updates, see *Universal CMDB Inventory Discovery Knowledge Pack Release Notes* available at https://hpln.hpe.com/contentoffering/inventory-discovery-knowledge-pack.

Recently released content that is currently included in this version of Universal Discovery can be found on the Universal Discovery Community (https://hpln.hpe.com/product/universal-discovery/content) website on the HPE Live Network.

> **Note:** You need an HP Passport user name and password to log in to this site.

Accessing Content Pack Documentation

To read the latest versions of the relevant documents, access the following URLs:

- **<http://SERVER_NAME:PORT/ucmdb-ui>/docs/DDMContent.jsp** – Discovery and Integrations Content Guide

- **<http://SERVER_NAME:PORT/ucmdb-ui>/docs/permissions.jsp** – the Permissions document

Known Issues, Limitations, and Workarounds

Content Pack Installation

PROBLEM: If you have deployed the **ASM_Enhanced.zip** package before installing Content Pack (CP) 22, you may see the following error message in the Status Report: "`ASM_Enhanced.zip: Package operation has failed`".

Workaround: To avoid this error message, do the following:

1. Delete all CIs of the Service Connection Point CI type.

2. Undeploy the **ASM_Enhanced.zip** package.

3. Install CP22.

PROBLEM: If you deploy CP22 on UCMDB before you upgrade UCMDB to 10.22 (or later), the parent of the ConsumerProvider relationship does not change to Usage but remains as Dependency.

Workaround: To resolve this issue, follow these steps:

1. Extract the **ASM_Enhanced.zip** package from the CP22 package.

2. Log in to UCMDB, and then go to **Administration > Package Manager**.

3. Deploy the **ASM_Enhanced.zip** package that you just extracted.

Content Pack Upgrade

PROBLEM: When upgrading the Content Pack (CP), if the old CIM driver is not removed, the new CIM driver that is introduced in the new CP will not take effect, causing the Storage Management Initiative Specification (SMI-S) discovery jobs that need the new driver to fail.

Workaround: Manually remove the **sblim-cim-client.jar** file from the *<DataFlowProbe_ Home>\content\lib* directory.

PROBLEM: After you upgrade from UCMDB 10.20 to 10.21, 10.22, 10.30, or 10.31, the following jobs are moved to the **<<No module>>** group in the **Discovery Modules** tree.

- DB2 Dependencies

- F5 BIG0IP LTM Tunnel Job

- IIS Application dependencies via URL

- IIS Application dependencies via WebService

- J2EE Application Dependencies via Context Root

- J2EE Application Dependencies via JNDI

- J2EE Application Dependencies via WebService

- JEE WebSphere Connections by JMX for Top-down

- JMS Destination Dependencies via JNDI

- MessageQueue Dependencies via JNDI

- Next-Hop Provider for Running Software

- Next-Hop Provider

- Oracle Access Management Dependencies

- Oracle Dependencies

- Oracle Schema Dependencies

- Running Software Dependencies via TCP Connection

- Running Software Dependencies via URL

- SQL Server Dependencies

- Tomcat Application dependencies via URL

- URL Resolver

- Web Server Dependencies via URL

These jobs are not used any longer.

Workaround: You can either delete them manually or leave them in the **Discovery Modules** tree.

Universal Discovery - General

LIMITATION: CP22 does not contain the latest MindTerm JAR file (**mindterm-4.1.5.jar**), which is provided by UCMDB 10.20 and later versions.

Workaround: If you are using UCMDB 10.11 and want to upgrade your MindTerm from version 4.0beta6 to 4.1.5, contact HPE support and refer to the hotfix for QCCR1H90627.

Universal Discovery - Content

LIMITATION: In UCMDB 10.30 and earlier versions, using multiple threads in the event-based discovery may cause the missing of events.

Workaround: It is recommended to upgrade UCMDB to 10.31 or a later version. For UCMDB 10.30 and earlier versions, setting **useMultiThreadForEventHub** to **false** in **globalsetting.xml**; however, this operation may affect the performance of event-base discovery jobs. For details about this setting, see the "globalSettings.xml File" section in the *HPE UCMDB Discovery and Integrations Content Guide - General Reference*.

LIMITATION: The NTCMD protocol password cannot contain the following special characters: **^&**

Workaround: Do not use the following special characters in the NTCMD protocol password: **^&**

LIMITATION: When running the Microsoft SQL Server Always On Failover Cluster Instances discovery on both real IP addresses and Cluster IP addresses, duplicate Microsoft SQL instances are reported.

Workaround: Exclude the cluster IP addresses of Microsoft SQL AlwaysOn Cluster from the discovery range.

LIMITATION: ASM does not support multiple domains in UCMDB 10.31.

Workaround: None.

LIMITATION: ASM does not support discovering the running software and its related ConsumerProvider relationships on a Solaris Local zone.

Workaround: None.

PROBLEM: (**db2_ipse_only** trigger query only) The **DB2 Universal Database Connection by SQL** job returns "`No credentials defined for the triggered IP`" error. The triggered CIs that are triggered by the **db2_ipse_only** trigger query have no associated database instance, which is required to establish a connection. Then the job will get a database name from the DB2 credential. When no database name is defined in the DB2 credential, the job returns the error. (QCCR1H99802)

Workaround: When using the **db2_ipse_only** trigger query, it requires a database name in the DB2 credential. Make sure you define a database name in the DB2 credential.

PROBLEM: When running the **Mainframe topology by SNMP** job and the Mainframe by EView discovery jobs, the zOS and Mainframe Logical Partition CI types that are discovered get merged. (QCCR1H97603)

Workaround: Do not use the **Mainframe topology by SNMP** job when you run the Mainframe by EView discovery jobs. If you have run the Mainframe topology by SNMP discovery before installing the EView mainframe agent, HPE recommends you to deactivate this discovery and delete any CIs that are created by this discovery.

LIMITATION: Child CIs are no longer included in reconciliation rules when considering identification for Business Applications. An optional identifier based on the ID (App_ID) can be used to uniquely identify each Business Application CI. Business Applications that are synced from external sources must have a unique name or ID in order to be included during data synchronization. Note that multiple Business Applications with the same name and no ID will not be synchronized.

Additional CI types for which child CIs are no longer included in reconciliation rules are Business Process, Business Service, CI Collection, Business Transaction Flow, and Dynamic Node Group. No optional identifier can be specified for these CI types.

Workaround: None.

LIMITATION: The **vCloud Director by vCloud API** and **vCloud Director URL by vCloud API** jobs do not automatically discover VMware vCloud, because the **httpcore.jar** and **httpclient.jar** files no longer exist in the **<Probe>/content/lib** folder.

Workaround: To fix this issue, copy the **httpcore.jar** and **httpclient.jar** files from the **<Probe>/discoveryResources/http** folder to the **<Probe>/content/lib** folder.

HPE Integrations

PROBLEM: On the first synchronization from Service Anywhere to UCMDB, you may see an error message displayed similar to the following:

```
Integration Point doesn't exist. No adapter for given target.
```

Workaround: To remedy this, do the following:

1. Log in to the UCMDB instance.

2. Go to **Data Flow Management > Integration Studio**.

3. Right-click the integration point: **<endpoint name>_<tenant id>**, and click **Edit**. The Edit Integration Point dialog box is displayed.

4. Deselect **Is Integration Activated**.

5. Click **OK**.

6. Reselect **Is Integration Activated**.

7. Click **OK**.

8. Go to the job in UCMDB and run a full synchronization.

Third Party Integrations

PROBLEM: In UCMDB 10.22 (or later), after deploying the **ServiceNow_pull_integration_patch.zip** patch, the ServiceNow integration does not work anymore.

Workaround: When deploying the **ServiceNow_pull_integration_patch.zip** patch on UCMDB 10.22 (or later), do not overwrite the existing files **httplib.py** and **urllib2.py** in the **<DataFlowProbe_Home>/jython/lib** directory. This is because Jython is upgraded to version 2.7 in UCMDB version 10.22.

LIMITATION: Data population into UCMDB using ServiceNow integration jobs fail because a package called "suds" is missing.

Workaround: To fix this issue, download and install a patch on the Data Flow Probe to supply the missing package as follows:

1. Download the **ServiceNow_pull_integration_patch.zip** file from the **<UCMDB_Server_Home>\DataFlowProbe\runtime\probeManager\discoveryResources\Service-Now-Pull** folder.

2. Extract the patch archive into the Data Flow Probe's installation folder. As a result, the **<DataFlowProbe_Home>/jython/suds** folder is created, and two files (**<DataFlowProbe_ Home>/jython/httplib.py** and **<DataFlowProbe_Home>/jython/ urllib2.py**) are updated. You do not need to restart the Data Flow Probe.

FIPS Mode

LIMITATION: When the FIPS mode is on, the Universal Discovery Agent cannot start on the non-FIPS compliant HP-UX HPPA platform. Therefore, the FIPS mode for the Universal Discovery Agent is turned off in order to run the Universal Discovery Agent on the HP-UX HPPA platform. (QCCR1H100684)

Workaround: None.

Inventory Discovery

PROBLEM: When setting the **enableSSHSharedHomeDir** parameter to **true**, running the agentless **Inventory Discovery by Scanner** job fails on Linux platforms. (QCCR1H100769)

Workaround: To run the agentless **Inventory Discovery by Scanner** job successfully on Linux platforms,

1. On your Linux instance, locate and open the **/etc/exports** file.
2. Add the **no_root_squash** parameter to the shared directory information.

   For example, if you have the following line in the file:

   ```
   /home *(rw)
   ```
   where `/home` is shared directory, ***** means that everyone has access to it.

   Then, add **no_root_squash** into the line as follows:

   ```
   /home *(rw,no_root_squash)
   ```
3. Save the change.

Service Manager Integration Known Issues and Limitations

Global ID	Description	Workaround
QCCR1E118141	Cannot disable a field that does not have a mapping entry configured in the federation configuration file (smFedConf.xml).	None
QCCR1E119726	Structure fields are not supported for pushing CIs from UCMDB to Service Manager.	None
QCCR1E119141	The 'Ignore on null' option is not supported for data push from UCMDB to Service Manager.	None
QCCR1E117760	The Visual Mapping tool is not disabled for some out-of-the-box XML mapping scripts in which the external class cannot be displayed in the External Class Model pane. Such out-of-the-box mapping scripts include: - CLIP Downtime Population mapping script - Relationship push and population mapping scripts - Federation mapping scripts	None
QCCR1E118871	If a TQL query has different exposed fields for the child CI types of the root, the Visual Mapping tool cannot display all of the exposed fields. As a result, you cannot configure mapping for fields that are not displayed by using a drag and drop in the Visual Mapping interface.	Configure mapping for the fields directly in the XML editor. Alternatively, split the query into multiple ones and then use the Visual Mapping tool.
QCCR1E119548	CI relationship deletions cannot be synchronized to UCMDB through population.	

Enhancement Requests

This release includes the following enhancement type fixes.

Global ID	Problem	Solution
QCCR1H110559	QLogic Host Bus Adapter (HBA) cannot be discovered on Red Hat Enterprise Linux 4.	QLogic HBA can now be discovered on Red Hat Enterprise Linux 4.
QCCR1H109066	Request for discovery to identify Oracle Database 12c PBD and CDB and the relationship between them.	The **Oracle Topology by SQL** job can now discover Oracle Database 12c PDB and CDB, and the relationship between them.
QCCR1H111109	Need mention in the documentation and in UCMDB help that if **discoverUnknownIps** is set to **false**, the **VMware vCenter Topology by VIM** job also ignores virtual machines that have the corresponding IP address outside the configured probe IP ranges because they have a Virtual-Join relationship.	Added the following note to the "VMware vCenter Topology by VIM Job" section in the *HPE UCMDB Discovery and Integrations Content Guide - Discovery Modules* and UCMDB help: **Note:** If this parameter is set to **false**, the job also ignores virtual machines that have the corresponding IP address outside the configured probe IP ranges because they have a Virtual-Join relationship.
QCCR1H111237	The WebLogic **vendor** value should be changed to **oracle_corp** in the XML files where it applies.	Now the WebLogic **vendor** value is **oracle_corp**.

Global ID	Problem	Solution
QCCR1H111910	For WebSphere Liberty Core Server, several different instances can be installed on the same server in different folders, and all of them can be called a same name **defaultServer**. In this situation, the **Host Application by Shell** job merges all these instances to one CI. Customer also requests to add logical into the **JEE WebSphere Liberty Core by Shell** job to discover included configuration files.	Updated the **applicationsSignature.xml** of WebSphere Liberty Core Server combining the **application_install_path** and server name as the **Name** attribute value of CI instances. Added the discovery logic of nested or included files into the **JEE WebSphere Liberty Core by Shell** job. Added a new parameter **max_include_depth** to the **JEE WebSphere Liberty Core by Shell** job. This parameter defines the maximum recursion depth of the included file discovery. The default value is **5**.
QCCR1H112171	The **Oracle Topology by SQL** job reports duplicate Oracle CIs.	The **Oracle Topology by SQL** job now reports Oracle (with blank name attribute) CI and Service Name CI in case DB Link is configured based on Service Names.
QCCR1H112381	Universal Discovery agent does not support Windows Server 2016.	Added Windows Server 2016 into the **AgentsSupportMatrix.xml** file.
QCCR1H112577	Request to support Windows Server 2016 discovery.	Windows Server 2016 discovery is now supported.

Fixed Defects

The following table lists the defects that were fixed in HPE UCMDB Content Pack 22.

Global ID	Problem	Solution
QCCR1H104330	The SAP Solution Manager discovery jobs do not discover the relationship between SAP systems and their database.	The relationship between SAP systems and their database is reported where possible.
QCCR1H108999	When a WMI query fails because of the Protocol timeout, a success message is returned by the **Host Applications by Shell** job and the CI is deleted.	Fixed the issue by adding an extra check for timeouts and empty data. When a WMI query fails because of the Protocol timeout, a warning message is returned so that the CI will not be deleted.

QCCR1H109091	The following error message occurs in the CM and UCMDB error log:
	
	`[ErrorCode [802] General Integration Error {Configuration Manager Policy Adapter}]`
	
	`CMDB Operation Internal Error: class com.mercury. topaz.cmdb.shared. fcmdb.dataAccess.exception. AdapterAccessGeneral Exception : null : operation Data Access Query: Calculate By Pattern`
	
	`[ErrorCode [802] General Integration Error {Configuration Manager Policy Adapter}]`
	
	`null`
		Such error messages will not occur.

Global ID	Problem	Solution
QCCR1H109231	If the subnet mask in the Network Automation (NA) integration is set to **undefined**, an error is thrown and the job stops.	If the subnet mask in the NA integration is set to **undefined**, the job still creates the IP address without using the subnet mask.
QCCR1H109291 QCCR1H111383	Customer cannot run the **Host Applications by Shell** job in clustered servers with the following fatal error message returned: "`Cycle in identification and dependencies`". The root cause of the issue is that the Node, Cluster Resource Group, and concrete (**nt**) CI types are present in the same vector for the same IP address.	Fixed the issue by making the following changes: - In Microsoft Cluster Plug-in, container Node is set explicitly to **nt**. - In the general flow, start reusing the already defined concrete CIT that is already in UCMDB for the particular destination (Adapter Parameters and **applications.py**). - Refactored the vector elements' update in order to update relationships as well.
QCCR1H109864	For the **Inventory Discovery by Scanner** and **Inventory Discovery by Manual Scanner Deployment** job, request to troubleshoot and detect which scan file has the error so that it can be fixed or looked into.	The scan file name is included in the error message when there is an error detected during the enrichment process.
QCCR1H110097	The Vlan ID is not populated on the Port Group CI for VMware Distributed Virtual Switch when running the **VMware vCenter Topology by VIM** job.	Fixed the issue by copying Vlan ID from VMware Networking Policy to VMware Port Group.
QCCR1H110188	In Apple macOS 10.11, the Scanner may not be able to discover the Installed Software.	Inventory Scanner can now discover Installed Software in Apple macOS 10.11.
QCCR1H110506	The **DB Connections by Shell** job discovers Oracle clients as Oracle DB.	Fixed the issue by stopping reporting the instance whose name contains **client**.

Global ID	Problem	Solution
QCCR1H110543	The **Host Connection by Shell** and **Inventory Discovery by Scanner** jobs report different Workgroups.	The **Host Connection by Shell** and **Inventory Discovery by Scanner** jobs now report the same Workgroup.
QCCR1H110568	The attribute **discoveredVendor** value should not be changed among the **Inventory Discovery by Scanner**, **Inventory Discovery by Manual Scanner Deployment**, **Host Applications by Shell** and **Host Resources by Shell** jobs for Installed Software.	Fixed the issue by changing the attribute **discoveredVendor** value from **Microsoft Corporation** to **Microsoft** to avoid the data flipping.
QCCR1H110635	Some Solaris zones are running on a Logical Domain (LDOM) that is discovered as a node. When the LDOM is changed, a new node is discovered with the same serial number. If the LDOM is changed again, a third node is discovered and re-conciliated with the other two. Request to have always a single node with correct attributes.	The LDOM node (with installed Solaris zones) will not cause duplicate CIs when the LDOM is changed.
QCCR1H110656	When deploying the agent to an Apple macOS device, the agent deployment fails if there is a space in the name of the effective user group.	Fixed the issue by using the group number (`id -g`) instead of the group name (`id -gn`).
QCCR1H110701	The data collected for Emulex HBA is inaccurate.	Fixed the issue by parsing the Emulex LPFC SCSI driver to get the actual driver version, and for the vendor, always reporting it as Emulex Corporation.
QCCR1H110712	The **Veritas Cluster by Shell** job does not correctly support the discovery via the Universal Discovery shell protocol (UDA).	The **Veritas Cluster by Shell** job now supports the discovery via the Universal Discovery shell protocol (UDA).
QCCR1H110772	The **Enable Aging** attribute is repeatedly set from **False** to **True** by the SCCM population job within UCMDB, which causes the aging of Windows CIs.	Fixed the issue by enabling the aging flag in the code. The **Enable Aging** attribute now works properly.

Global ID	Problem	Solution
QCCR1H110858	The IBM DB2 database discovery does not reconcile databases properly.	Fixed the issue by altering the logic to properly match the referenced DB2 databases if they are indeed local but referenced as remote on the other instances.
QCCR1H110980	The **F5 BIG-IP LTM by Shell** job needs to turn off the pagination. Because of the pagination, the discovery does not get the full outputs.	Enhanced the logic of the **F5 BIG-IP LTM by Shell** job to turn off the pagination.
QCCR1H110983	The **Import from Excel Workbook** job fails with the "NullPointerException" error.	The **Import from Excel Workbook** job now works properly.
QCCR1H111011	The NTCMD discovery does not work, because the credential check for the NTCMD protocol fails when the password contains the special character ^ or &.	Added the following note to the "NTCMD Protocol" section of the *HPE UCMDB Discovery and Integrations Content Guide - Supported Content*: The password cannot contain the following special characters: **^&**
QCCR1H111034	Some HP-UX servers cannot be discovered using the **Host Connection by Shell** job.	HP-UX servers can now be discovered using the **Host Connection by Shell** job.
QCCR1H111035	The related SSH CIs are not generated by the **Host Connection by Shell** job on a few Solaris servers. This is because UCMDB cannot parse the result from `ifconfig -a` correctly when there is an underscore character (_) in the interface name.	Fixed the issue by adding the underscore character (_) into the regex matching pattern in the code.
QCCR1H111039	For the customized asset data that is defined in the post script of scanner, the preceding or tailing white spaces are not stripped by scanner (**Inventory Discovery by Scanner** and **Inventory Discovery by Manual Scanner Deployment** jobs). Then the enrichment process cannot map the discovery result that may have preceding or tailing white spaces in asset data key to the customized asset definition without the preceding and tailing white spaces.	For the customized asset data that is defined in the post script of scanner, the preceding or tailing white spaces will be stripped by scanner, and now the enrichment script can process the customized asset data properly.

Global ID	Problem	Solution
QCCR1H111116	Management Zone (MZ) based the **Host Applications by Shell** job returns different **disk_size** values with the non-MZ based job.	Fixed the issue by changing the size unit to megabytes. The MZ based job now returns the same value as the non-MZ based job does.
QCCR1H111153	In the "Configure Filtering Using the globalFiltering.xml File" section of the *HPE Universal CMDB Data Flow Management Guide*, the default value of recursiveFilter is **true**, which is incorrect.	Modified the document as follows: **Note:** By default, recursive filtering is disabled, that is **recursiveFilter = false**.
QCCR1H111200	The **Oracle Application Server by Shell** job does not retrieve the right Oracle home path.	Fixed the issue by adding a new parameter **OracleHomePath** to the **Oracle Application Server by Shell** job. This parameter defines the Oracle home path (s), separated by semicolons.
QCCR1H111205	The IBM WebSphere MQ discovery does not always populate the version information.	Fixed the issue by adding a plug-in in the **Host Applications by Shell** job to get the MQ version on UNIX.
QCCR1H111227	For Host Applications jobs, when attempting to use Regular Expressions to parse the HAbS command line output, the inconsistent parsing behavior is observed. The issue is because the parsing rule is not evaluated if its value is not used for setting value to any kind of attribute.	Fixed the issue by adding an extra step to look for such kind of configurations. This method evaluates only those parsing rules that do not affect the attribute values. Those parsing rules are defined due to the validation or identification of Applications, for example, an Application should be created only if the parsing rule has matched.
QCCR1H111367	The **Oracle Topology by SQL** job creates duplicate databases from the RAC environment. This is because of the missing credential for the Oracle connection.	Fixed the issue by setting the credential ID when connecting to Oracle.

Global ID	Problem	Solution
QCCR1H111380	The attribute values flip back and forth by the **Host Connection by Shell** and **Inventory Discovery by Scanner** jobs on Red Hat Enterprise Linux Server.	Fixed the flipping issues for the attributes **DiscoveredOsVersion**, **Node Operating System Installation Type** and **OsFamily**.
QCCR1H111385	The **JEE WebSphere by Shell** job discovers the wrong WebSphere version.	Fixed the issue by taking the right configuration file to get the WebSphere version.
QCCR1H111442	Based on IP addresses, the node has more applications than the real ones after running the **Host Applications/Resources by Shell** job.	Fixed the issue by adding a new parameter **checkHostName** to the **Host Applications/Resources by Shell** and **Host Applications by Shell** jobs. This parameter checks whether the host name from input CI is the same with the current one. If the host name from input CI is different from the current one, the relationship between IP address and node is removed.
QCCR1H111461	The **Citrix Xen Connection** and **Citrix Xen Topology** jobs fail to discover the Slave hosts with a warning message.	The **Citrix Xen Connection** and **Citrix Xen Topology** jobs can now discover the Slave hosts.
QCCR1H111467	A script and fatal error (KeyError) occurs when running the **A10 vThunder by SNMP** job to discover A10 vThunder Load Balancer.	The **A10 vThunder by SNMP** job now works properly.
QCCR1H111476	The **Inventory Discovery by Scanner** job skips to collect the primary IP address.	The **Inventory Discovery by Scanner** job can now collect the primary IP address correctly.

Global ID	Problem	Solution
QCCR1H111500	The **Host Connection by Shell** job obtains the host configuration information as one result whereas the **Inventory Discovery by Scanner** job obtains different host configuration information; Specific attributes include but not limited to **DnsServers**and **Node Operating System Installation Type**.	Now **DnsServers** and **Node Operating System Installation Type** are reported correctly without flipping issues.
QCCR1H111535	The **Host Networking by SNMP** job cannot discover the stack switch (Cisco 3750/3850).	Fixed the issue by updating the **phys_sw_oids** list in **SNMP_Networking_ Utils.py**.
QCCR1H111622	The attribute values flip back and forth by the **Host Connection by Shell** and **Inventory Discovery by Scanner** jobs on SUSE Linux.	Fixed the flipping issues for the attributes **Node Operating System Installation Type** and **Node Operating System Release**.
QCCR1H111623	The discovery of EMC storage by SMI-S fails with the following error message: "`CIM_ERR_ INVALID_CLASS (The specified class does not exist. (Clar_ AllocatedFromStoragePool_PSP_SPSP is not a valid className for namespace root/emc))`". This is because the older versions of EMC agents do not contain a new set of classes that are currently used for discovery.	Fixed the issue by adding a set of fallbacks to revert to the old classes in case new ones are not there.
QCCR1H111624	The attribute values flip back and forth by the **Host Connection by Shell** and **Inventory Discovery by Scanner** jobs on the Apple Mac operating system.	The attribute **OsFamily unix** will be reported by the **Host Connection by Shell** job. For the attributes **OsVersion** and **OsName**, scanner will always report the correct version instead of 10.0.0.
QCCR1H111626	The attribute values flip back and forth by the **Host Connection by Shell** and **Inventory Discovery by Scanner** jobs on Oracle Solaris.	Now the values of the attributes **DiscoveredOsVersion** and **DiscoveredOsVendor** reported by the **Host Connection by Shell** and **Inventory Discovery by Scanner** jobs are the same.

Global ID	Problem	Solution
QCCR1H111680	The UCMDB-SCCM integration job fails with the following error message: "`Failed running population. destID:SCCM, Failed during query:SCCM Nodes Population`".	The UCMDB-SCCM integration job now works properly.
QCCR1H111705	The attribute values flip back and forth by the **Host Connection by Shell** and **Inventory Discovery by Scanner** jobs on Windows 10.	Now the attribute **Node Operating System Installation Type** values reported by the **Host Connection by Shell** and **Inventory Discovery by Scanner** jobs are the same.
QCCR1H111944	The **Host Applications by Shell** job discoveries the JBoss information wrongly.	The **Host Applications by Shell** job now discoveries the JBoss related information properly.
QCCR1H111979	The **Host Applications by Shell** job fails with the following error message: "`SSH: Failed detecting OS type`".	The **Host Applications by Shell** job now works properly.
QCCR1H112016	The **IBM LPAR and VIO Server Topology by Shell** job fails because of the missing relationship end.	The **IBM LPAR and VIO Server Topology by Shell** job now works properly.
QCCR1H112038	The **VMware vCenter Topology by VIM** job fails with the SOAP fault error and does not get the complete data.	The **VMware vCenter Topology by VIM** job now works properly.
QCCR1H112128	Inventory scanner cannot collect the **asset** field from text files if CRCRLF is at the end of the file.	Now inventory scanner can collect the **asset** field from text files if CRCRLF is at the end of the file.

Global ID	Problem	Solution
QCCR1H112170	For the **Layer2 Topology CDP-LLDP based by SNMP** job, the port indexes of the local ports fetched from LLDP do not match the actual ones, which results in the failure of mapping.	Fixed the issue by adding a new parameter **mapLLDPPortsByNames** to the **Layer2 Topology CDP-LLDP based by SNMP** job. If setting the parameter to **true**, the LLDP entry is mapped to the local port based on names. If setting the parameter to **false**, the LLDP entry is mapped to the local port based on indexes. The default value is **false**.
QCCR1H112222	When running the UCMDB-NNMi integration, the following error message occurs: `"javax.net.ssl.SSLHandshakeException: java.security.cert.CertificateException: No subject alternative names matching IP address <IP Excluded> found"`.	Fixed the issue by adding a new parameter **NNMiHost** to the **Pull Topology from NNMi** adapter. **NNMiHost** is the host name to use with the NNMi integration. You must fill in this parameter if FIPS is enabled. **NNMiHost** has priority over IP address, which means instead of IP address, **NNMiHost** will be used if it is filled in.
QCCR1H112269	The **F5 BIG-IP LTM by Shell** job fails when F5 is configured with the "Any Port" configuration.	Fixed the issue by adding support for the requested configuration type for the **F5 BIG-IP LTM by Shell** job.
QCCR1H112278	The **Solaris Zones by TTY** job cannot discover the file system type captured for Solaris zones.	The **Solaris Zones by TTY** job can now discover the file system type captured for Solaris zones.

Global ID	Problem	Solution
QCCR1H112282	The **Inventory Discovery by Scanner** job fails to create a temporary file name.	Scanner will create a temporary file in the following three folders: • Specified folder by context • Folder specified by the TMP environment variable • **/tmp** under UNIX or the current folder in Windows Scanner will go through all the three choices. Now the temp file can be created.

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