



Configuration Management System (CMS)

Software Version: Content Pack 28.00 (CP28)

Release Notes

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CMS Content Pack Release Notes

This document provides information about CMS Content Pack 28.

What's New

This section provides information about new features and enhancements added to Content Pack 28.

Updated Versions for Discovered Applications

Added support for discovering the following application versions to the existing discovery jobs:

- IBM High Availability Cluster Multiprocessing (HACMP) 7.x
- Microsoft Windows PowerShell 3.0, 4.0, 5.0, 5.1
- VMware ESX & ESXi 6.7
- VMware vCenter 6.7
- VMware vCloud Director 8.0, 8.1, 8.2

New and Extended Discovery

- Added the following new discovery:
 - **Oracle Enterprise Manager Discovery (Beta):** Discover data from Oracle Enterprise Manager (OEM) with an integration to OEM as a data source for the entire Oracle stack, including databases, application topology, and infrastructure topology.

Note: This capability is available in the ITOM Marketplace [Community Content for UD](#). If you are interested in this capability, you can download and try it out. If this capability receives positive feedback, it will be included in a future content pack.

- **SAP FRUN Discovery:** Discover all the SAP systems (and their topology) for each customer network by accessing SAP Focused Run with CIM Protocol.

- Enhanced Amazon Web Services Discovery as follows:
 - Created a relationship between AWS Account and Region.
 - Created the following new views for AWS discovery: Amazon EC2 Topology, Amazon ECS Topology, Amazon S3 Topology, Amazon VPC Topology, Amazon ECR Topology, Amazon EC2 Topology by AMI, and Amazon EC2 Topology by Volume.
 - Simplified Amazon Elastic Load Balancing (ELB) topology.
 - The **Name** attribute of Amazon EBS and Amazon ECS Resource CIs that was hidden becomes visible now.
- Enhanced the **VMware vROps Topology by WebServices** job to discover the OS type, IP address, and host resource information.
- Enhanced the **Inventory Discovery by Scanner**, **Inventory Discovery by Manual Scanner Deployment**, **Host Connection by PowerShell**, **Host Connection by Shell**, and **Host Connection by WMI** jobs to discover BIOS date and version on all platforms.

Universal Discovery Inventory

Enhanced the **Inventory Discovery by Scanner** and **Inventory Discovery by Manual Scanner Deployment** jobs by adding:

- A new attribute **LPar SMT** to the **IBM LPar Profile** CIT for reporting the simultaneous multithreading (SMT) information of LPAR CPU
- A new attribute **OS User Last Logon** to the **OS User** CIT for reporting the current OS user last logon time

Integrations

- Added Microsoft Intelligent Asset Manager Universal Inventory (IAMUI) Integration.

The direct integration between Microsoft IAMUI and UCMDB, that is, the UCMDB push integration with IAMUI, allows UD to push discovered software inventory data into IAMUI.

- **Enhanced SM-UCMDB integration by adding capability to populate deleted CI relationships to UCMDB**

When you delete CI relationships in Micro Focus Service Manager, the CI relationships are now removed from UCMDB after you run a population job. This capability requires additional configuration of Service Manager and of the Service Manager Enhanced Adapter in UCMDB. For details, see "Enable the Automatic Deletion of CI Relationships from UCMDB" in the ServiceManagerEnhancedAdapter9.41 User Guide included in the Content Pack help (**Integrate > Micro Focus Integrations > Micro Focus Service Manager Integration**).

- Enhanced the NNMi Integration as follows:
 - Added a new adapter **Pull Topology from NNMi by REST API Adapter**. This adapter is needed when you can only discover switches and Layer2 connection to servers in NNMi, and the servers are discovered in Universal Discovery. This adapter can populate Layer2 connection from NNMi to Universal Discovery.

Note: The **Pull Topology from NNMi by REST API** adapter requires NNMi 2018.05.

- Added a new parameter **NNMiHost** to the **NNMi Update IDs** adapter. **NNMiHost** is the host name to be used with the NNMi integration. **NNMiHost** has higher priority over IP address, which means instead of IP address, **NNMiHost** will be used if it is provided.

For details, see "Micro Focus Network Node Manager (NNMi) Integration" in **Content Pack help > Integrate > Micro Focus Integrations**.

- Enhanced the CSV mapping file to support a new converter `stringToList` for the **Import from CSV File** integration job. For details, see "How to Convert Strings to Numbers" in **Content Pack help > Integrate > Third Party Integrations**.

Others

- Enhancements to the SNMP Protocol version 3
 - Added non-standard encryption algorithm support for AES-192 and AES-256 (now both standard and non-standard are supported). For example, non-standard AES-256 is used by Cisco switches.
 - Added authentication algorithm support for SHA224, SHA256, SHA384, and SHA512.
- Added a new parameter **unsetHistFile** to the **globalSettings.xml** file. This parameter indicates whether to prevent the SSH protocol from recording the executed command to the environment variable **\$HISTFILE** on UNIX server. If the value is **true**, the executed command is not recorded in the environment variable **\$HISTFILE** on UNIX server. The default value is **false**.

- Added a new parameter **reportPoweredOffZones** to the **Solaris Zones by TTY** job to determine whether to report zones that are not running. The default value is **true**.
- Added a new parameter **reportPoweredOffLdomServers** to the **Oracle VM Server for SPARC Technology by Shell** job to determine whether to report LDOM servers that are not running. The default value is **true**.
- Added a new parameter **filterInstalledSoftwareByName** to the **Host Resources/Applications by Shell** job. This parameter specifies the Installed Software names that are not reported. It is a blacklist mechanism in order to avoid the reporting of unwanted Installed Software.
- Added a new parameter **ignoreHostsWithoutHostNames** to the **VMware ESX Topology by VIM** and **VMware vCenter Topology by VIM** jobs. This parameter indicates whether to ignore hosts without host names that can be considered as unwanted nodes for reporting. The default value is **false**.
- Added a new parameter **reportEmptySchemas** to the **Oracle Database Topology by SQL** and **Oracle Database Topology by SQL - Service Name** jobs. This parameter indicates whether to report empty schemas. The default value is **true**.
- Scanner version: 11.20.000.450
- Universal Discovery Agent version: 11.20.000.450
- Inventory Discovery Knowledge version: 2018.07

System Requirements

- CP28 can be installed on:
 - UCMDB 10.22 CUP6 (or a later CUP)
 - UCMDB 10.33 (with or without a CUP)
 - UCMDB 11.0
 - UCMDB 2018.05
 - UCMDB 2018.08
- You must install UCMDB 10.22 CUP6 (or a later CUP), 10.33 (with or without a CUP), 11.0, 2018.05, or 2018.08 before installing CP28.

Important Note:

- In case UCMDB is using a Microsoft SQL Server database and replication is enabled in the database server before upgrading the Content Pack, temporarily disable the replication in the Microsoft SQL Server database. For more details, see the *Database section of UCMDB Help*.
- Starting with CP23, Content Pack is no longer compatible with UCMDB 10.11 (with or without a CUP on top of it).
- Before you deploy CP28 on top of version 2018.08, you must install version 2018.08 of UCMDB and UD, and then deploy version 2018.08 Data Flow Probes. Do not deploy CP28 while you are still updating the Data Flow Probes.
- Before you deploy CP28 on top of version 2018.05, you must install version 2018.05 of UCMDB and UD, and then deploy version 2018.05 Data Flow Probes. Do not deploy CP28 while you are still updating the Data Flow Probes.
- Before you deploy CP28 on top of version 11.0, you must install version 11.0 of UCMDB and UD, and then deploy version 11.0 Data Flow Probes. Do not deploy CP28 while you are still updating the Data Flow Probes.
- Before you deploy CP28 on top of version 10.33, you must install version 10.33 of UCMDB and UD, and then deploy version 10.33 Data Flow Probes. Do not deploy CP28 while you are still updating the Data Flow Probes.
- Before you deploy CP28 on top of version 10.22, you must install version 10.22 CUP6 on the UCMDB, UD, and (optionally) CM servers, and deploy version 10.22 Data Flow Probes. Do not deploy CP28 while you are still updating the Data Flow Probes.

For a complete list of system requirements, see the *Support Matrix* section of the UCMDB Online Help.

For CP Supported Matrix, see [Discovery and Integrations Content Pack - Support Matrix](#).

Content Pack Installation

The following procedure explains how to install Content Pack 28.00 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 28.00 ZIP file

The name of the installation file is **CP28_installation.zip**. This file is located on the [ITOM Marketplace](#).

The ZIP file contains the following resources:

- Packages (**CP28.zip**)
- Online Help

3. Extract packages from the Content Pack 28.00 ZIP file

Unpack the contents of the **CP28_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 *Administer section of the UCMDB Help*.

- 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 CP28 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 28.00

You can install the Content Pack from the Universal CMDB user interface, using JMX Console, or using CMS UI 2018.08.

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 *Administer section of the UCMDB Help*.

- **From Universal CMDB:**
 - i. Stop UCMDB.
 - ii. Make sure that **CP28.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 CP28 version of the Content Pack and click **Install**.
- **Using JMX Console:**

- i. Log in to 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 CP28 version in the version field, and invoke **installContentPack**.
- **Using CMS UI 2018.08**
 - i. Go to CMS UI, click the **Menu** icon () to expand the CMS Modules pane, and then click **Package Manager**.
 - ii. Click **Install Package**.
 - iii. Click the **Content Pack** tab.
 - iv. Click **Explore Content Pack**, select **CP28.zip**, and then click **Install Selected**.

Note: Make sure that **CP28.zip** is in the following directory:

<UCMDB_Server_Home>\content\content_packs

For more details on using CMS UI 2018.08, see the "How to Install/Deploy a Discovery and Integration Content Pack" section of the *Universal CMDB Package Manager Online Help*.

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 *UCMDB Inventory Discovery Knowledge Pack Release Notes* available on the [ITOM Marketplace](#).

Accessing Content Pack Documentation

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

- **<https://SERVER_NAME:PORT/ucmdb-ui/docs/DDMContent.jsp>** – Universal Discovery and Integrations Content Help
- **<https://SERVER_NAME:PORT/ucmdb-ui/docs/permissions.jsp>** – the Permissions document

Known Issues

Content Pack 28 has the following known issues and limitations. This is a cumulative list of known issues and limitations in Content Pack, including those that are already documented in previous release notes.

ID	Issue
Content Pack Installation	
QCCR1H104758	<p>PROBLEM: If you deploy CP28 in 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.</p> <p>Workaround: To resolve this issue, follow these steps:</p> <ol style="list-style-type: none">1. Extract the ASM_Enhanced.zip package from the CP28 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	

ID	Issue
QCCR1H112667	<p>PROBLEM:</p> <ul style="list-style-type: none">• When upgrading the Content Pack to CP28 in UCMDB 10.22, you may see the following error messages: "CM1030PolicyAdapter.zip: Unsupported CMDB version" and "CM1030KpiAdapter.zip: Unsupported CMDB version".• When upgrading the Content Pack to CP28 in UCMDB version 10.33, you may see the following error messages: "CMPolicyAdapter.zip: Unsupported CMDB version" and "CMKpiAdapter.zip: Unsupported CMDB version". <p>Cause: Starting with CP23, two new CM adapters CM1030KpiAdapter and CM1030PolicyAdapter are added to CP. These two new adapters can be deployed with CP only from UCMDB 10.30 or later. The old adapters CMKpiAdapter and CMPolicyAdapter can be deployed with CP only from UCMDB 10.22 or earlier.</p> <p>Workaround: You can just ignore the error messages.</p>
QCCR1H102405	<p>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.</p> <p>Workaround: Manually remove the sblim-cim-client.jar file from the <DataFlowProbe_Home>\content\lib directory.</p>

ID	Issue
N/A	<p>PROBLEM: After you upgrade from UCMDB 10.20 to 10.21, 10.22, 10.30, 10.31, or 10.32, the following jobs are moved to the <<No module>> group in the Discovery Modules tree.</p> <ul style="list-style-type: none"> • 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 <p>These jobs are not used any longer.</p> <p>Workaround: You can either delete them manually or leave them in the Discovery Modules tree.</p>
Universal Discovery - General	
N/A	<p>PROBLEM: If deploying the Universal Discovery agents from CP28 with a third-party tool, the UD agents may fail to communicate with Data Flow Probe if UCMDB is deployed with CP22 or an earlier Content Pack.</p> <p>Workaround: None.</p>

ID	Issue
QCCR1H115484	<p>PROBLEM: (Upgrade only) After upgrading UCMDB from 10.30 to 10.31, 10.32, or 10.33, when running the JEE Weblogic by JMX job, all the CIs are reported normally; however, in the end an error message occurs to the job: "Failed to connect to remote process".</p> <p>Workaround: To resolve the issue,</p> <ol style="list-style-type: none"> 1. On the Data Flow Probe machine, open the java.policy file (in the <DataFlowProbe>\bin\jre\lib\security directory) using a text editor. 2. Add the following permission: <pre>javax.management.MBeanTrustPermission "register"</pre> 3. Save the file. 4. Restart the Data Flow Probe.
Universal Discovery - Content	
QCCR1H120884	<p>LIMITATION: UD SNMP client in CP28 is compiled based on SNMP4J version 2.5.11, which is incompatible with the previous SNMP4J in the SNMP Version 3 (SNMPv3) part.</p> <p>Workaround: You need to manually upgrade the SNMP4J library to version 2.5.11 in Data Flow Probe if SNMP Protocol uses SNMPv3 and works in CP28 that is installed on UCMDB 10.22 (with a CUP), 10.33 (with a CUP), or 11.0.</p> <p>To do so,</p> <ol style="list-style-type: none"> 1. Download SNMP4J from http://www.snmp4j.org/html/download.html. 2. Extract snmp4j-2.5.11-distribution.zip. 3. Rename snmp4j-2.5.11.jar in the snmp4j-2.5.11\dist folder to snmp4j.jar, and then copy this file to the <DataFlowProbe_Home>\content\lib folder. 4. Restart the Data Flow Probe service.
N/A	<p>LIMITATION: In UCMDB 10.30 and earlier versions, using multiple threads in the event-based discovery may cause the missing of events.</p> <p>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 <i>UCMDB Discovery and Integrations Content Guide - General Reference</i>.</p>

ID	Issue
N/A	<p>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.</p> <p>Workaround: Exclude the cluster IP addresses of Microsoft SQL AlwaysOn Cluster from the discovery range.</p>
N/A	<p>LIMITATION: ASM does not support multiple domains in UCMDB 10.31 or later.</p> <p>Workaround: None.</p>
N/A	<p>LIMITATION: ASM does not support discovering the running software and its related ConsumerProvider relationships on a Solaris Local zone.</p> <p>Workaround: None.</p>
QCCR1H99802	<p>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.</p> <p>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.</p>
QCCR1H97603	<p>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.</p> <p>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, it is recommended to deactivate this discovery and delete any CIs that are created by this discovery.</p>

ID	Issue
QCCR1H89922	<p>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.</p> <p>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.</p> <p>Workaround: None.</p>
QCCR1H91943	<p>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.</p> <p>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.</p>
Micro Focus Integrations	
N/A	<p>PROBLEM: On the first synchronization from Service Anywhere to UCMDB, you may see an error message displayed similar to the following:</p> <pre>Integration Point doesn't exist. No adapter for given target.</pre> <p>Workaround: To remedy this, do the following:</p> <ol style="list-style-type: none"> 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	

ID	Issue
N/A	<p>PROBLEM: In UCMDB 10.22 (or later), after deploying the ServiceNow_pull_integration_patch.zip patch, the ServiceNow integration does not work anymore.</p> <p>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.</p>
QCCR1H93029	<p>LIMITATION: Data population into UCMDB using ServiceNow integration jobs fail because a package called "suds" is missing.</p> <p>Workaround: To fix this issue, download and install a patch on the Data Flow Probe to supply the missing package as follows:</p> <ol style="list-style-type: none"> 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	
QCCR1H100684	<p>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.</p> <p>Workaround: None.</p>
Inventory Discovery	

ID	Issue
QCCR1H100769	<p>PROBLEM: When setting the enableSSHSharedHomeDir parameter to true, running the agentless Inventory Discovery by Scanner job fails on Linux platforms.</p> <p>Workaround: To run the agentless Inventory Discovery by Scanner job successfully on Linux platforms,</p> <ol style="list-style-type: none"> 1. On your Linux instance, locate and open the /etc/exports file. 2. Add the no_root_squash parameter to the shared directory information. <p>For example, if you have the following line in the file:</p> <pre>/home *(rw)</pre> <p>where /home is shared directory, * means that everyone has access to it.</p> <p>Then, add no_root_squash into the line as follows:</p> <pre>/home *(rw,no_root_squash)</pre> <ol style="list-style-type: none"> 3. Save the change.
Service Manager Integration	
QCCR1E118141	<p>PROBLEM: Cannot disable a field that does not have a mapping entry configured in the federation configuration file (smFedConf.xml).</p> <p>Workaround: None.</p>
QCCR1E119726	<p>PROBLEM: Structure fields are not supported for pushing CIs from UCMDB to Service Manager.</p> <p>Workaround: None.</p>
QCCR1E119141	<p>PROBLEM: The Ignore on null option is not supported for data push from UCMDB to Service Manager.</p> <p>Workaround: None.</p>

ID	Issue
QCCR1E117760	<p>PROBLEM: 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.</p> <p>Such out-of-the-box mapping scripts include:</p> <ul style="list-style-type: none">• CLIP Downtime Population mapping script• Relationship push and population mapping scripts• Federation mapping scripts <p>Workaround: None.</p>
QCCR1E118871	<p>PROBLEM: 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.</p> <p>Workaround: Configure mapping for the fields directly in the XML editor. Alternatively, split the query into multiple ones and then use the Visual Mapping tool.</p>
QCCR1E119548	<p>PROBLEM: CI relationship deletions cannot be synchronized to UCMDB through population.</p> <p>Workaround: None.</p>

Enhancements

The following table lists the enhancement type fixes in Content Pack 28.

ID	Component	Summary
QCCR1H64721	Universal Discovery - Content - Host Resources	The Host Resources/Applications by WMI job can now properly discover Windows mount points on FileSystem CI.

ID	Component	Summary
QCCR1H77089	Universal Discovery - Content - Enterprise Applications	<p>Added the following new discovery:</p> <p>Oracle Enterprise Manager Discovery (Beta): Discover data from Oracle Enterprise Manager (OEM) with an integration to OEM as a data source for the entire Oracle stack, including databases, application topology, and infrastructure topology.</p> <p>Note: This capability is available in the ITOM Marketplace Community Content for UD. If you are interested in this capability, you can download and try it out. If this capability receives positive feedback, it will be included in a future content pack.</p>
QCCR1H77646	Universal Discovery - Content - Host Connection	The Host Connection by SNMP job can now report the IOS version on Cisco 3750.
QCCR1H79648	Universal Discovery - Content - Virtualization - VMware	Added a new attribute Disk Allocation(MB) to VMware Host Resource CI type to indicate the total disk size allocated to VM in megabytes (MB).
QCCR1H82199	Universal Discovery - Content	<p>Stopped reporting the server name on the Name attribute for Web Server Virtual Host CI.</p> <p>Added the identification rule for Web Server Virtual Host CI to identify it by the name and server name.</p>
QCCR1H83928	Universal Discovery - Content - Host Connection	Enhanced the Host Connection by WMI job to report meaningful messages when required permissions are missing.
QCCR1H85355	Universal Discovery - Content - Host Resources	<p>The Host Resources/Applications by PowerShell job now uses the following command for the memory discovery:</p> <pre>wmic path Win32_PhysicalMemory get Capacity /format:list</pre>
QCCR1H86861	Universal Discovery - Content - Host Resources	Added a new attribute OSInstalledDate to Node CIT. The Host Connection by Shell , Host Connection by WMI , Inventory Discovery by Scanner , and Inventory Discovery by Manual Scanner Deployment jobs can now discover the OS installed date.

ID	Component	Summary
QCCR1H91081	Universal Discovery - Content - Database	Enhanced the MSSQL Topology by SQL job to report the database size by adding a new attribute DB Size on MSSQL Database CI.
QCCR1H101031	Integration	Enhanced the CSV mapping file to support a new converter <code>stringToList</code> for the Import from CSV File integration job. For details, see "How to Convert Strings to Numbers" in Content Pack help > Integrate > Third Party Integrations .
QCCR1H101477	Universal Discovery	Added multiple normalization rules to accurately identify more Linux distributions.
QCCR1H101552	Data related modules - Identification	Added Name as key attributes to identify the CI type FunctionalGroup.
QCCR1H107917	Universal Discovery - Content - Database	Enhanced the MSSQL Topology by SQL job to populate the database size and database instance mirror. For the database instance location, it has already been populated on SQL File CI.
QCCR1H109230	Universal Discovery - Content - Virtualization - VMware	Added a new parameter ignoreHostsWithoutHostNames to the VMware ESX Topology by VIM and VMware vCenter Topology by VIM jobs. This parameter indicates whether to ignore hosts without host names. The default value is false .
QCCR1H109988	Universal Discovery - Content - Virtualization - VMware	Added two new attributes Tools Running Status and Tools Version Status to the CI type VMware Host Resource to represent the VMware tools running status and version status respectively.
QCCR1H110889	Universal Discovery - Protocols	Added a new parameter unsetHistFile to the globalSettings.xml file. This parameter indicates whether to prevent the SSH protocol from recording the executed command to the environment variable \$HISTFILE on UNIX server. If the value is true , the executed command is not recorded in the environment variable \$HISTFILE on UNIX server. The default value is false .
QCCR1H114467	Universal Discovery - Content - Host Resources	The Host Resources by Shell job can now populate the File System Type for UNIX on FileSystem CI.

ID	Component	Summary
QCCR1H115018	Universal Discovery - Content - Host Resources	The Host Resources by Shell job can now discover Installed Software on a node under Debian operating system.
QCCR1H115400	Universal Discovery - Content - Host Resources	<p>Added a new parameter filterInstalledSoftwareByName to the Host Resources/Applications by Shell job. This parameter specifies the Installed Software names that are not reported. It is a blacklist mechanism in order to avoid the reporting of unwanted Installed Software.</p> <p>Regular expressions are supported. For example, if you set the value to KB.*, all Installed Software names starting with KB are filtered out.</p>
QCCR1H116285	Universal Discovery - Content - Database	Added a new parameter reportEmptySchemas to the Oracle Database Topology by SQL and Oracle Database Topology by SQL - Service Name jobs. This parameter indicates whether to report empty schemas. The default value is true .
QCCR1H116863	Universal Discovery - Content - Virtualization - Solaris Zones	<p>Added a new parameter reportPoweredOffZones to the Solaris Zones by TTY job to determine whether to report zones that are not running. The default value is true.</p> <p>Added a new parameter reportPoweredOffLdomServers to the Oracle VM Server for SPARC Technology by Shell job to determine whether to report LDOM servers that are not running. The default value is true.</p>
QCCR1H117597	Universal Discovery - Content - J2EE	WebSphere Discovery by Shell using fs_discovery_method in globalSettings.xml will try another method if the configured one fails.
QCCR1H117819	Universal Discovery - Inventory Discovery	Enhanced the Inventory Discovery by Scanner and Inventory Discovery by Manual Scanner Deployment jobs by adding a new OS User Last Logon attribute to the OS User CIT for reporting the current OS user last logon time.

ID	Component	Summary
QCCR1H119428	Universal Discovery - Content - J2EE	<p>Updated the remoteJVMArgs parameter value from -Xms64m -Xmx256m -XX:PermSize=256m -XX:MaxPermSize=256m to -Xms64m -Xmx256m -XX:MaxMetaspaceSize=256m in the following jobs aligned with the JRE8 non-heap memory:</p> <ul style="list-style-type: none"> • JEE JBoss by JMX • JEE JBoss Connections by JMX • JEE Weblogic Connections by JMX • JEE Weblogic by JMX Job • JEE WebSphere Connections by JMX • JEE WebSphere by Shell or JMX • SAP Solution Manager by SAP JCO • SAP ABAP Connection by SAP JCO • SAP ABAP Topology by SAP JCO • SAP Applications by SAP JCO • SAP Java Topology by SAP JMX • SAP Solution Manager by SAP JCO • SAP Solution Manager Topology by SAP JCO
QCCR1H119640	Universal Discovery - Content - Network	<p>Updated the PowerShell discovery related documentation as follows:</p> <ul style="list-style-type: none"> • The supported Windows PowerShell versions are updated to 2.0, 3.0, 4.0, 5.0, and 5.1. • Added Microsoft .NET Framework Requirements in "PowerShell Protocol".
QCCR1H119890	Universal Discovery - Content - Virtualization - HPE nPar	<ul style="list-style-type: none"> • Added the correct message if the destination host is an HPVM vPar. • Updated the message "No guests currently configured" to report a warning instead of an error in the HPE IVM by Shell job. • Updated the message "The destination host is not a part of HP IVM system" to report a warning instead of an error in the HPE IVM by Shell job.
QCCR1H121298	Universal Discovery - Content - Virtualization - VMware	<p>Added support for VMware vCloud 8.0, 8.1, and 8.2.</p>

ID	Component	Summary
QCCR1H121786	Data related modules - Generic integrations - Generic push adapter	Enhanced the relationship deletion logic for the Push DB Adapter.
QCCR1H122592	Universal Discovery - License	Changed the licensing requirement of the Host Fingerprint by NMAP job from Advanced to Basic .
QCCR8D64724	Server - Data Model	"BusinessCriticality" is already described in Data Model documents. For details, refer to https://docs.microfocus.com/UCMDB/2018.08/cp-docs/docs/eng/class_model/html/index.html .

Fixed Issues

The following table lists the issues that were fixed in Content Pack 28.

ID	Component	Summary
QCCR1H121134	Universal Discovery - UD Agent	The agentinstall.sh script will properly handle an exception when creating the agent directory.
QCCR1H121336	Universal Discovery - Content - Virtualization - IBM HMC	<p>The IBM PureFlex Topology by Shell job fails on the trigger CI.</p> <p>Cause: In the environment, there is one FSM Host that manages several bare metal servers. Among those servers, there are two servers with primary_state Not Available and one of them has in addition no name configured.</p> <p>Fixed the issue by modifying the script to skip these servers.</p>
QCCR1H121636	Universal Discovery - Content - Virtualization - VMware	<p>The VMware vCenter Topology by VIM and VMware VMotion Monitor by VIM jobs return different names for the same ESX server.</p> <p>Fixed the issue by changing the key attribute Name as the host name rather than the full host name when a host exists.</p>
QCCR1H121729	Universal Discovery - Content - Host Resources	<p>The MSSQL server plug-in of the Host Applications by Shell job sometimes causes a wrong topology.</p> <p>Fixed the wrong topology issue by modifying the MSSQL plug-in to parse the CRG IP address correctly.</p>

ID	Component	Summary
QCCR1H121753	Universal Discovery - Content - Host Resources	<p>The Web Server by Shell job fails to discover the configuration file because the file cannot be found.</p> <p>When running this job, there are two configuration files in different paths.</p> <p>Fixed the issue by modifying the script to add two paths.</p>
QCCR1H121777	Universal Discovery - Content - Host Resources	<p>Some error messages are returned by the JEE JBoss by Shell job.</p> <p>Fixed the issue by modifying the jboss_discoverer.py to report more meaningful messages.</p>
QCCR1H121847	Universal Discovery - Content - Host Resources	<p>During the Host Applications by Shell job's run, there is a set of UI propagated warnings with Stack Traces.</p> <p>Root cause: WebSphere plug-in fails to find WebSphere configuration file in the listening endpoint flow.</p> <p>Fixed the issue by adding the try catch in the code in case some error occurs.</p>
QCCR1H121848	Universal Discovery - Content - Host Resources	<p>During the Host Applications by Shell job's run, Stack Trace is present in the UI.</p> <p>Root cause: JBoss plug-in invalid exception handling during the endpoint by the configuration file reporting flow.</p> <p>Fixed the issue by adding the try catch in the code in case some error occurs.</p>
QCCR1H121890	Universal Discovery - Inventory Discovery	Enhanced the Inventory Discovery by Scanner and Inventory Discovery by Manual Scanner Deployment jobs by adding a new attribute LPar SMT to the IBM LPar Profile CIT for reporting the simultaneous multithreading (SMT) information of LPAR CPU.
QCCR1H121891	Universal Discovery - Inventory Scanner	<p>The Host Connection by Shell and Inventory Discovery by Scanner jobs return duplicate CIs because of two different serial numbers found.</p> <p>Fixed the duplicate issue by modifying the Inventory Discovery by Scanner job.</p>
QCCR1H121893	Universal Discovery - Inventory Discovery - Manual Scanning	Now Node CIs will not be merged into one node and the ud_unique_id of node CIs will be filled with proper values after running the Inventory Discovery by Scanner job.
QCCR1H121898	Universal	Citrix Xen discovery fails to get the results with the error

ID	Component	Summary
	Discovery - Content - Virtualization - Citrix Xen	message returned. Fixed the issue by adding the original method to get the host so that the discovery can get the result.
QCCR1H121920	Integration - Integration Adapters - Generic DB Adapter - SCCM/SMS Adapter	FileSystem CIs populated by the SCCM adapter fail with the reconciliation issue and all servers link to the same FileSystem CI. Fixed the issue by modifying orm.xml .
QCCR1H121947	Integration - Integration Adapters - Generic Push Adapter - ServiceNow	With ServiceNow Enhanced Generic Adapter Integration, pushing relationships for certain jobs now succeeds.
QCCR1H121966	Universal Discovery - Content - Host Resources	Fibre Channel host bus adapters (HBA) can now be properly discovered by the Host Resources/Applications by Shell job against UNIX endpoints.
QCCR1H121994	Universal Discovery - Discovery Troubleshooting	The Host FingerPrint by NMAP job fails with the error message. Fixed the issue by modifying the NMAP discovery Jython script.
QCCR1H121996	Universal Discovery - Inventory Discovery	The attribute dns_servers discovered by the Host Connection by Shell job contains the old data. Fixed the issue by only keeping the new value for the attribute dns_servers .
QCCR1H122000	Universal Discovery - Content - Host Resources	The Host Resources by Shell job can now successfully discover Hitachi HBAs on Linux.
QCCR1H122062	Integration - Integration Adapters - Jython Based Integrations - NNM Integration	Added a new parameter NNMiHost to the NNMI Update IDs adapter. NNMiHost is the host name to be used with the NNMi integration. NNMiHost has higher priority over IP address, which means instead of IP address, NNMiHost will be used if it is provided.

ID	Component	Summary
		If using NNMiHost instead of IP address in the population from NNMi integration, you must configure the same NNMiHost here as well for the update.
QCCR1H122098	Universal Discovery - UD Agent	Silent installation of UD Agent fails on Windows systems. Fixed the issue by adding /log <log_file_name.txt> to enable the logging function in the existing UD Agent installation example of the "How to Install the Universal Discovery Agent Manually" section in the Data Flow Management section of the UCMDB Help.
QCCR1H122101	Universal Discovery - Content - Host Resources	The Host Resources by Shell job can now discover HBAs properly using the new fcinfo command.
QCCR1H122136	Universal Discovery - Inventory Discovery	The scanner process would release the lock on directories after finishing the processing.
QCCR1H122138	Universal Discovery - Content - Virtualization - IBM HMC	HMC hosts are merged incorrectly by the IBM Virtualization by Shell job due to the same bios_serial_number . Fixed the issue by reporting the bios_version instead of bios_serial_number for the HMC hosts, as the output of lshmc -b is bios_version not biso_serial_number .
QCCR1H122194	Universal Discovery - Content - Virtualization - IBM HMC	The IBM Virtualization by Shell job can now correctly report the Online Virtual Cpu attribute value of IBM Lpar Profile CIs.
QCCR1H122210	Universal Discovery - Inventory Scanner	The MAC address can now be discovered by the Inventory Discovery by Manual Scanner Deployment job if the new Linux kernel is 4.1.12 and only IPv6 is configured.
QCCR1H122211	Universal Discovery - Content - Clustering & Load Balancing - F5 BIG-IP	The F5 BIG IP by Shell job can now discover the complete topology (UNIX, Windows, and F5).
QCCR1H122229	Universal Discovery -	HP-UX disk device discovery by the Inventory Discovery by Scanner job results in hundreds of floppy disks.

ID	Component	Summary
	Inventory Discovery - Parsing Scan file results	Now the scanner sets hwPhysicalDiskType as Fixed Disk .
QCCR1H122361	Universal Discovery - Content - Clustering & Load Balancing - IBM HACMP	Updated the "Supported Versions" section of IBM High Availability Cluster Multiprocessing (HACMP) Discovery as follows: This discovery supports HACMP5.x on AIX 5.x, and HACMP 7.x on AIX 7.x.
QCCR1H122426	Universal Discovery - Inventory Discovery	On RPM-based Linux machines, the release/architecture is not properly set for InstalledSoftware. Fixed the issue by adding the command output for Red Hat to get the full software version information.
QCCR1H122444	Universal Discovery - Content - Host Resources	The Host Applications by PowerShell job can now get all KB for all Windows versions.
QCCR1H122447	Universal Discovery - Content - Host Resources	The DiscoveredVendor and Serial Number of printers can now be correctly discovered by the Host Connection by SNMP job.
QCCR1H122465	Universal Discovery - Inventory Scanner	The scanner can now obtain the correct serial number on AIX VIOs on E870.
QCCR1H122490	Universal Discovery - Content - Clustering & Load Balancing - Microsoft Cluster	The MS Cluster by NTCMD or UDA or PowerCmd job returns the following error message: "'NoneType' object has no attribute 'splitlines'". Fixed the issue as follows: If the result returned by the job contains "The specified module 'FailoverClusters' was not loaded", a warning message "The cluster service is not running or this is not a cluster" will occur. If the result returned by the job is empty, a warning message "Can not get cluster" will occur.
QCCR1H122533	Universal Discovery - Content - Host Connections	Cent OS node hosted on Microsoft Azure can now be discovered by the Host Connection by Shell job.

ID	Component	Summary
QCCR1H122589	Universal Discovery - Configuration - Discovery Resources	The NetScaler device name can now be properly discovered by the Citrix NetScaler by SNMP job.
QCCR1H122618	Universal Discovery - Content - J2EE	The JEE Weblogic by Shell job returns the following error message: "Failed to find config.xml. Seems not a 9.x version". Fixed the issue so that Perl script can parse files using sudo.
QCCR1H122741	Universal Discovery - Inventory Scanner	The scanner can now upload scan files to FTP successfully. However, need to manually copy the following DLL files from the Universal Discovery agent installation folder (for example, C:\Program Files\MicroFocus\Discovery Agent\bin32) to the same folder where the generated scanner locates: For x64 : libeay64-disc-v09.dll ssleay64-disc-v09.dll For x86 : libeay32-disc-v09.dll ssleay32-disc-v09.dll
QCCR1H122748	Universal Discovery - Content - Cisco UCS	The Cisco UCS Topology job can now discover Cisco UCS servers properly.
QCCR1H122786	Universal Discovery - Content - Virtualization - VMware	Red Hat Enterprise Virtualization Manager (RHEVM) discovery generates thousands of login or logout requests. Fixed the issue by using token authentication to reduce the login or logout.

Deprecations

The following items are now deprecated.

Note: The following integration adapters are still available but are now deprecated and may be

removed in a future content pack release.

Item	Deprecaded since version	Notes
CM KPI Adapter	CP26	
DDMi integration adapter	CP26	
EnterpriseView integration adapter	CP26	
Executive Scorecard integration adapter	CP26	
Service Manager integration adapters: <ul style="list-style-type: none"> • Service Center 6.2x • Service Manager 7.0x • Service Manager 7.1x - 9.2x • Service Manager Enhanced Adapter9.x 	CP26	Use the following supported adapters instead: <ul style="list-style-type: none"> • ServiceManagerAdapter9.41 • ServiceManagerAdapter9.41 • ServiceManagerEnhancedAdapter9.41
Storage Essentials integration adapter	CP26	
HP SOM Integration adapter	CP26	
ServiceNow integration adapters: <ul style="list-style-type: none"> • Push to Service-Now • ServiceNow to UCMDB 	CP26	Use ServiceNowEnhancedAdapter instead.
Troux integration adapters: <ul style="list-style-type: none"> • Data Push into Troux • Population from Troux 	CP26	

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