Cloud Manager 2.5.1 Patch 7 Release Notes

December 2018

Cloud Manager 2.5 Support Pack 1 Patch Update 7 (2.5.1 Patch 7) resolves several issues for Cloud Manager 2.5.1. This patch is cumulative. It includes hotfixes and patches that have been provided since the Cloud Manager 2.5.1 release.

The documentation for this product is available in HTML and PDF formats at the Cloud Manager 2.5 Documentation website (https://www.netiq.com/documentation/cloud-manager-2-5).

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1 Version

This patch includes all of the files you need to update the Application Server 2.5.1 component of Cloud Manager to Application Server 2.5.1 Patch 7, and to update the Orchestration Server 3.5.1 component of Cloud Manager to Orchestration Server 3.5.1 Patch 7.

2 Resolved Issues for Patch 7

Cloud Manager 2.5.1 Patch 7 resolves the following issue:

- **Reversion of Elevated Privileges.** Some instances of a user session that uses impersonation of the Cloud Manager System User to obtain elevated privileges previously neglected to revert to normal privileges. Now the elevated privileges and impersonation are correctly reverted.

Cloud Manager 2.5.1 Patch 7 contains changes only for the Application Server. If you have already installed previous patches, you need to apply only the Application Server RPM file. See Section 12, “Applying the Application Server Patch,” on page 7.

3 Resolved Issues for Patch 6

Cloud Manager 2.5.1 Patch 7 resolves the following issues that were previously provided as Cloud Manager 2.5.1 Patch 6:

- **Logging Unexpected User Access for an Initiator Address:** You can configure the Cloud Manager Audit Logger to log information in the `/opt/netiq/cloudmanager/logs/cloudmanager_server.log` file about access attempts for a specified initiator address if the user does not match a specified expected initiator user. You can inspect the logged information to help identify unexpected user access from the initiator address and determine its validity.

  See Logging Unexpected User Access for an Initiator Address in Section 14, “Supplemental Documentation,” on page 8.

- **Logging List Sizes:** The Cloud Manager Audit Logger logs information in the `/opt/netiq/cloudmanager/logs/cloudmanager_server.log` file about list sizes. You can inspect the logged information over a period of time to help identify whether certain sessions or users are given lists of unexpected size and determine their validity.

  See Logging List Size in Section 14, “Supplemental Documentation,” on page 8.

Cloud Manager 2.5.1 Patch 6 contains changes only for the Application Server. If you have already installed previous patches, you need to apply only the Application Server RPM file. See Section 12, “Applying the Application Server Patch,” on page 7.

4 Resolved Issues for Patch 5

Cloud Manager 2.5.1 Patch 7 resolves the following issues that were previously provided as Cloud Manager 2.5.1 Patch 5:

- **SR 101025364054:** Visibility of Business Service information.

  Patch 5 contains a change for the Application Server. You can prevent Non-UI users from accessing and viewing the Business Services information in the UI by adding the `cloudmanager.nonuiusers` parameter in the Cloud Manager Properties (`cloudManager.properties`) file. See “Preventing Unauthorized Visibility of Business Services Information to Non-UI Users” in “Supplemental Documentation” on page 8.

Cloud Manager 2.5.1 Patch 5 contains changes only for the Application Server. If you have already installed previous patches, you need to apply only the Application Server RPM file. See Section 12, “Applying the Application Server Patch,” on page 7.

5 Resolved Issues for Patch 4

Cloud Manager 2.5.1 Patch 7 resolves the following issues that were previously provided as Cloud Manager 2.5.1 Patch 4:

- **SR 101025364054:** Visibility of Business Service information.

  Patch 4 contains a change to the caching methodology for user information, intended to fix this SR. It also contains user logging features intended to capture user-associated organization information when displaying Business Services.

6 Resolved Issues for Patch 3

Cloud Manager 2.5.1 Patch 7 resolves the following issues that were previously provided as Cloud Manager 2.5.1 Patch 3:

- **SR 101113387411 and SR 10111338741:** Workloads get into a state of disk inconsistency. CDROM disks get mapped to hard disks, and hard disks to CDROM disks. This in turn mixes up the costing per disk so customers are being charged incorrectly for disk usage.

  Patch 3 addresses the disk inconsistency by preventing the most likely causes in the CMAS server. In addition, the patch includes SQL scripts to help you locate VMs that have inconsistent disks and to correct the disk information stored in the database for each VM by swapping the disk information reported for its CDROM and its no-size disk. See Using SQL Scripts to Fix Workloads in a State of Disk Inconsistency in the Supplemental Documentation section in this document.

7 Resolved Issues for Patch 2

Cloud Manager 2.5.1 Patch 7 resolves the following issues that were previously provided as Cloud Manager 2.5.1 Patch 2:

- **SR 101054777911:** Timed out waiting for Customizer VM to shut down. (High)
- **SR 101113012241:** Limit maximum number of VMs per Business Service. You can configure a system-level limit for the number of VMs allowed per Business Service. For more information, see “Configuring Maximum Number of VMs for a Business Service” in the Supplemental Documentation section in this document.

8 Resolved Issues for Patch 1

Cloud Manager 2.5.1 Patch 7 resolves the following issues that were previously provided as Cloud Manager 2.5.1 Patch 1.

- Section 8.1, “Deployed Server Has Different Values of CPU and RAM,” on page 3
- Section 8.2, “Timed Out Waiting for Customizer VM to Shut Down,” on page 3
- Section 8.3, “CMOS Is Busy After vSphere Boot and Every 24 Hours Later,” on page 4
- Section 8.4, “Reports Are Not Working If Clusters Use Windows Server 2016,” on page 4

8.1 Deployed Server Has Different Values of CPU and RAM

Issue: A timing issue results in CPU and RAM values being overwritten before the Save Configuration job runs during provisioning. (SR 101030383971)

Fix: Cloud Manager does not attempt to set CPU and RAM values if there is an ongoing action in CMOS. This approach should honor the intended settings in the Save Configuration job and avoid the previous timing issues.

8.2 Timed Out Waiting for Customizer VM to Shut Down

Issue: A provisioning job fails if the job times out while waiting for the customizer VM to shut down gracefully. (SR 101054777911)

Fix: If a provisioning job times out, Cloud Manager first attempts to force a shutdown of the customizer VM. The provisioning job fails only if the forced shutdown task fails.

8.3 CMOS Is Busy After vSphere Boot and Every 24 Hours Later

Issue: Disks were not properly discovered from VMware because the classes for `VirtualDeviceRemoteDeviceBackingInfo` were not included in the discovery. When vSphereUpdater compared disks against the information in CMOS, it incorrectly identified the disks as having changes and triggered resynchronization operations for them. The number of concurrent resynchronizations can overwhelm the server, such that CMOS was busy after a vSphere boot and every 24 hours later. (SR 101099332941)

Fix: Cloud Manager correctly identifies the disks that have changed and triggers resynchronization only for the ones that have actually changed.

8.4 Reports Are Not Working If Clusters Use Windows Server 2016

Issue: Reports did not include information for Windows Server 2016 Clusters. (SR 101076042841)

Fix: Cloud Manager adds support for Windows Server 2016 Clusters in reports.

9 Requirements

Apply the Cloud Manager 2.5.1 Patch 7 files to your existing Cloud Manager 2.5.1 Application Server and Cloud Manager 3.5.1 Orchestration Server.

10 Files Included in This Patch

Cloud Manager 2.5.1 Patch 7 is available on the Micro Focus Patch Finder website (https://download.microfocus.com/patch/finder/). Specify `Cloud Manager` as the product, then search for patches for Cloud Manager 2.5.

Cloud Manager 2.5.1 Patch 7 provides the `NCM_2.5.1_PatchUpdate7.zip` file that contains the updates. The patch update consists of a ZIP file with the Cloud Manager Orchestration Server update files, and an RPM file for the Cloud Manager Application Server updates.

- `cmos.zip` (for the Orchestration Server), which includes these files:

  ```
  customizeconstants.py
  customizer.jdl
  customizer.job
  libcustomize.pylib
  vi-client.jar
  vsphere_interface.py
  ```

- `CMOS_Customizer_LiveCD.i686-2.1.0.iso`
- `netiq-cloudmanager-2.5.1-`*xx*`.noarch.rpm` (for the Application Server), where *xx* is the build number.
- `sql_scripts.zip`, which includes the following SQL scripts:

  ```
  query_01_find_bad_cdroms_with_size.sql
  query_02_find_list_of_disks_for_the_wl_that_a_disk_is_in.sql
  query_03_find_list_of_disks_for_the_wl_template_that_a_disk_is_in.sql
  sr411_fix_swapped_disk_cdrom_with_size_with_disk_with_no_size.sql
  sr411_fix_swapped_disks_cdrom_with_size_with_disk_with_no_size.sql
  ```

11 Applying the Orchestration Server Patch

To apply the Orchestration Server patch to your Orchestration Server, you must install the files in the `cmos.zip` file.

- Section 11.1, “CMOS Patch Installation Prerequisites,” on page 5
- Section 11.2, “Installing the Orchestration Server Patch Files,” on page 5

11.1 CMOS Patch Installation Prerequisites

Ensure that the following prerequisites are met before you install the patch files:

- Cloud Manager Orchestration Server 3.5.1 is installed, and is up and running.
- Extract the files from `cmos.zip` and copy them to an accessible directory on the Cloud Manager Orchestration Server.
- Copy the `CMOS_Customizer_LiveCD.i686-2.1.0.iso` file to an accessible directory on the Cloud Manager Orchestration Server.

11.2 Installing the Orchestration Server Patch Files

Use the following instructions to install the patch files on your Orchestration Server 3.5.1 Server and update it to version 3.5.1 Patch 7.

NOTE: A restart is required after you apply the files to your existing Orchestration Server.

- Section 11.2.1, “Applying the `CMOS_Customizer_LiveCD.i686-2.1.0.iso` Patch File,” on page 5
- Section 11.2.2, “Applying the `customizeconstants.py` Patch File,” on page 6
- Section 11.2.3, “Applying the `vsphere_interface.py` Patch File,” on page 6
- Section 11.2.4, “Applying the `libcustomize.pylib` Patch File,” on page 6
- Section 11.2.5, “Applying the `customizer.job` Patch File,” on page 6
- Section 11.2.6, “Applying the `customizer.jdl` Patch File,” on page 6
- Section 11.2.7, “Applying the `vi-client.jar` Patch File,” on page 6
- Section 11.2.8, “Restart the CMOS Server,” on page 7

NOTE: If you see an incorrect FQDN on a workload after applying the files in this patch, you might need to rediscover the VMs.

11.2.1 Applying the `CMOS_Customizer_LiveCD.i686-2.1.0.iso` Patch File

To apply the `CMOS_Customizer_LiveCD.i686-2.1.0.iso` patch file to the Orchestration Server:

1 Copy the `CMOS_Customizer_LiveCD.i686-2.1.0.iso` file to the following location:

`/opt/novell/zenworks/zos/server/doc/install/`

In a console, enter

```
cp CMOS_Customizer_LiveCD.i686-2.1.0.iso /opt/novell/zenworks/zos/server/doc/
install/
```

11.2.2 Applying the `customizeconstants.py` Patch File

To apply the `customizeconstants.py` patch file to the Orchestration Server:

1. Replace the old `customizeconstants.py` file in the following location with the new `customizeconstants.py` file from the patch:

   `/var/opt/novell/zenworks/zos/server/store/deployed/libcustomize.pylib-64/libcustomize.pylib/libcustomize/`

   In a console, enter

   ```
   cp customizeconstants.py /var/opt/novell/zenworks/zos/server/store/deployed/libcustomize.pylib-64/libcustomize.pylib/libcustomize/
   ```

11.2.3 Applying the `vsphere_interface.py` Patch File

To apply the `vsphere_interface.py` patch file to the Orchestration Server:

1. Replace the old `vsphere_interface.py` file in the following location with the new `vsphere_interface.py` file from the patch:

   `/var/opt/novell/zenworks/zos/server/store/deployed/libcustomize.pylib-<jobid>/libcustomize.pylib/libcustomize/`

11.2.4 Applying the `libcustomize.pylib` Patch File

To apply the `libcustomize.pylib` patch file to the Orchestration Server:

1. Replace the old `libcustomize.pylib` file in the following location with the new `libcustomize.pylib` file from the patch:

   `/var/opt/novell/zenworks/zos/server/snapshot/deployment/core/`

11.2.5 Applying the `customizer.job` Patch File

To apply the `customizer.job` patch file to the Orchestration Server:

1. Replace the old `customizer.job` file in the following location with the new `customizer.job` file from the patch:

   `/var/opt/novell/zenworks/zos/server/snapshot/deployment/core/`

11.2.6 Applying the `customizer.jdl` Patch File

To apply the `customizer.jdl` patch file to the Orchestration Server:

1. Replace the old `customizer.jdl` file in following location with the new `customizer.jdl` file from the patch:

   `/var/opt/novell/zenworks/zos/server/store/deployed/customizer.job-<jobid>/customizer.job/`

11.2.7 Applying the `vi-client.jar` Patch File

To apply the `vi-client.jar` patch file to the Orchestration Server:

1. Copy `vi-client.jar` to the following location:

   `/var/opt/novell/zenworks/zos/server/store/deployed/vsphere.sar-<jobid>/vSphereUpdate.job/`

2 Restart the `vSphereUpdate` scheduled job.

   2a In the Scheduler view of the Orchestration Server console, locate and select the `vSphereUpdate` scheduled job.

   2b On the **Job Arguments** page of the Job details section of the view, locate the **mode** field, deselect its **Lock** check box, and type `stop` in the field.

   2c In the console toolbar, click **Save**, then in the Scheduler view, click **Run Now**. Monitor the job progress.

   2d When the Job status shows **success**, delete the `stop` argument you previously entered in the **mode** field at Step 2b, then repeat Step 2c.

   This step ensures that the new `vi-client.jar` library you applied to the Orchestration Server is transferred to the Orchestration Agent running the `vSphereUpdate` job. The new library fixes the vSphere updater on the agent.

11.2.8 Restart the CMOS Server

To restart the Orchestration Server from the command line, enter the following command:

```
/etc/init.d/novell-zosserver restart
```

12 Applying the Application Server Patch

To apply the Application Server patch to your Application Server, you must install the files in the `netiq-cloudmanager-2.5.1-xx.noarch.rpm` file.

- Section 12.1, “CMAS Patch Installation Prerequisites,” on page 7
- Section 12.2, “Installing the Application Server Patch,” on page 7

12.1 CMAS Patch Installation Prerequisites

Ensure that the following prerequisites are met before you install this patch:

- Cloud Manager Application Server 2.5.1 is installed, and is up and running.
- Extract the `netiq-cloudmanager-2.5.1-xx.noarch.rpm` file from the patch and copy it to an accessible directory on the Cloud Manager Application Server, such as the `/tmp` directory.

12.2 Installing the Application Server Patch

After you have copied the patch file to the server, use the following steps to install the file:

1 From the location where you copied `netiq-cloudmanager-2.5.1-xx.noarch.rpm` file, run the following command:

```
rpm -Uvh --nodeps netiq-cloudmanager-2.5.1-xx.noarch.rpm
```

2 Run the Cloud Manager configuration program from the following location:

```
/opt/netiq/cloudmanager/configurator/config
```

3 Choose to run an upgrade for the Cloud Manager Server.

4 Verify that the `netiq-cloudmanager-2.5.1-xx.noarch.rpm` file is installed.

   4a Log in to the Cloud Manager Web Console.

   4b In the Web Console, click **Help > About**.

4c In the About box, verify the following:

- Server version is `2.5.1` and build number is `81.1.23`
- Web UI version is `2.5.1` dated `12/6/18`

13 Known Issues

NetIQ Corporation strives to ensure our products provide quality solutions for your enterprise software needs. There are no known issues for this patch release.

If you need assistance with specific product issues, please visit Cloud Manager Support.

14 Supplemental Documentation

This section provides documentation and procedures for new features and tools provided in patches for Cloud Manager 2.5.1.

- Section 14.1, “Logging Unexpected User Access for an Initiator Address,” on page 8
- Section 14.2, “Logging List Size,” on page 9
- Section 14.3, “Preventing Unauthorized Visibility of Business Services Information to Non-UI Users,” on page 9
- Section 14.4, “Using SQL Scripts to Fix Workloads in a State of Disk Inconsistency,” on page 10
- Section 14.5, “Configuring Maximum Number of VMs for a Business Service,” on page 12

14.1 Logging Unexpected User Access for an Initiator Address

You can configure the Cloud Manager Audit Logger to log information in the `/opt/netiq/cloudmanager/logs/cloudmanager_server.log` file about access attempts for a specified initiator address if the user does not match a specified expected initiator user. You can inspect the logged information to help identify unexpected user access from the initiator address and determine its validity.

To enable logging for an initiator address:

1 In a text editor, add the following lines in the `cmauditlogger.properties` file, located in the `/opt/netiq/cloudmanager/etc/` directory.

```
com.novell.cm.audit.checkInitiatorAddr=<my_checked_addr>
com.novell.cm.audit.checkInitiatorUser=<my_checked_user>
```

Replace the values with the IP address of the initiator device and the Cloud Manager user name of the expected initiator user for it. For example:

```
com.novell.cm.audit.checkInitiatorAddr=10.10.10.201
com.novell.cm.audit.checkInitiatorUser=john@example.com
```

2 Restart Cloud Manager In a terminal, enter

```
/etc/init.d/netiq-cloudmanager restart
```

If these lines are in the `cmauditlogger.properties` file at startup time, then initiator addresses that match the `checkInitiatorAddr` value must be initiated by the specified initiator user. If any other user logs in at that address, an error and related stack trace are written to the `cloudmanager_server.log` file.

The logging occurs as an error (`ERROR`) in the `cloudmanager_server.log` file in the following format:

```
Initiator Check
java.lang.Exception: Initiator Info failed check for <email-address-of-the-
unexpected-user>:
<stack-trace>
```

For example:

```
[06 Nov 2018 15:07:50] ERROR | tp1044518476-368 | impl                      | 184 | Initiator Check
java.lang.Exception: Initator Info failed check for jim@example.com:
 ...<The full stack trace is intentionally omitted from this example.>...
```

14.2 Logging List Size

The Cloud Manager Audit Logger logs information in the `/opt/netiq/cloudmanager/logs/cloudmanager_server.log` file about list sizes. You can inspect the logged information over a period of time to help identify whether certain sessions or users are given lists of unexpected size and determine their validity.

The logging occurs as a warning (`WARN`) in the `cloudemanager_server.log` file in the following format:

```
Getting listing of type: <list_type>
for session Id: <session_ID> and user: <user_ID> of size: <result_size>
```

For example:

```
[08 Nov 2018 12:02:56] WARN  | tp1149411257-282 | ServerUtil                 | 207 | Getting
listing of type: com.novell.cm.ui.common.model.objects.custom.Currency
ModelData for session Id: 1s5tp7nm02cconvgp6ikcv7mw and user: 838 of size: 67
[08 Nov 2018 12:03:03] WARN  | tp1149411257-289 | ServerUtil                 | 207 | Getting
listing of type: com.novell.cm.ui.common.model.objects.BusinessService
ModelData for session Id: 1s5tp7nm02cconvgp6ikcv7mw and user: 838 of size: 19
[08 Nov 2018 12:03:13] WARN  | tp1149411257-284 | ServerUtil                 | 207 | Getting
listing of type: com.novell.cm.ui.common.model.objects.WorkloadModelDa
ta for session Id: 1s5tp7nm02cconvgp6ikcv7mw and user: 838 of size: 30
[08 Nov 2018 12:03:15] WARN  | tp1149411257-124 | ServerUtil                 | 207 | Getting
listing of type: com.novell.cm.ui.common.model.objects.BusinessGroupMo
delData for session Id: 1s5tp7nm02cconvgp6ikcv7mw and user: 838 of size: 1
[08 Nov 2018 12:03:19] WARN  | tp1149411257-283 | ServerUtil                 | 207 | Getting
listing of type: com.novell.cm.ui.common.model.objects.PermissionSetMo
delData for session Id: 1s5tp7nm02cconvgp6ikcv7mw and user: 838 of size: 3
[08 Nov 2018 12:03:23] WARN  | tp1149411257-284 | ServerUtil                 | 207 | Getting
listing of type: com.novell.cm.ui.common.model.objects.BusinessGroupMo
delData for session Id: 1s5tp7nm02cconvgp6ikcv7mw and user: 838 of size: 1
[08 Nov 2018 12:03:26] WARN  | tp1149411257-124 | ServerUtil                 | 207 | Getting
listing of type: com.novell.cm.ui.common.model.objects.TaskModelData f
or session Id: 1s5tp7nm02cconvgp6ikcv7mw and user: 838 of size: 0
[08 Nov 2018 12:03:33] WARN  | tp1149411257-285 | ServerUtil                 | 207 | Getting
listing of type: com.novell.cm.ui.common.model.objects.BusinessService
ModelData for session Id: 1s5tp7nm02cconvgp6ikcv7mw and user: 838 of size: 19
```

14.3 Preventing Unauthorized Visibility of Business Services Information to Non-UI Users

If you create Cloud Manager users for the purpose of performing only non-UI activities, such as scripting, you can prevent these Non-UI users from using the UI. These users typically have broad permissions and might be able to gain unauthorized visibility of Business Services information.

Cloud Manager 2.5.1 Patch 5 and later enables you to deny access to UI information for non-UI users by adding the `cloudmanager.nonuiusers` parameter to the `cloudManager.properties` file. Set the parameter values to the Cloud Manager user name of each Non-UI user. Separate multiple user names with a vertical bar (`|`) character. The vertical bar is not allowed as a valid character for a user name.

NOTE: There is no need to add the System User `/*?CM:System?*/` to the file. Cloud Manager automatically checks for this Non-UI user.

After you add the `cloudmanager.nonuiusers` parameter to the `cloudManager.properties` file, the setting becomes effective for subsequent session logins. It is not applied to currently active sessions.

You can expect the following behavior for Non-UI users:

- If a user logs in to the UI with user name that matches a Non-UI user name, the user is automatically and immediately logged out without access to the UI.
- If a user's session is changed to masquerade as a Non-UI user, the UI call will fail, no data will be returned, an exception will be thrown, and the user will be logged off on next click in the UI.

  The exception displays the following error message:

  `Internal error encountered. Please log in again. Error code: <`*code*`>`

  When the user dismisses the error message, no data is displayed. The user's session ends on the next click in the UI.

To configure the Non-UI users parameter:

1. Log in to the Cloud Manager Application Server as the `root` user, or a user with `root` privileges.
2. Navigate to the following directory:

   `/var/opt/netiq/smx/.cloudmanager/plugins/cloudManager/properties`
3. In a text editor, open the `cloudManager.properties` file.
4. Add the `cloudmanager.nonuiusers` parameter and specify the Cloud Manager user names of one or multiple Non-UI users. For example:

   `cloudmanager.nonuiusers=tcsroot|tcsroot2`

   Separate user names with a vertical bar (`|`) character.
5. Save the file.

   The changes are automatically applied for subsequent session logins. Current sessions are not affected.

14.4 Using SQL Scripts to Fix Workloads in a State of Disk Inconsistency

Cloud Manager Application Server 2.5.1 Patch 3 and later provide SQL scripts to help you locate VMs that have inconsistent disks and to correct the disk information stored in the database for each VM by swapping the disk information reported for its non-zero-size CDROM and its no-size hard disk.

SQL Script	Description
`query_01_find_bad_cdroms_with_size.sql`	Run the script to get a list of disk IDs for CDROMs that currently have a non-zero disk size. Results are output to the text file you specify in the query, such as `D:\results.txt`.
`query_02_find_list_of_disks_for_the_wl_that_a_disk_is_in.sql`	You set the disk ID of a CDROM with a non-zero disk size as the value for the `disk_data_id` parameter in the script. Run the script to get a list of information about other disks on the CDROM's parent VM.

SQL Script	Description
query_03_find_list_of_disks_for_the_wl_template_that_a_disk_is_in.sql	You set the disk ID of a CDROM with a non-zero disk size as the value for the disk_data_id parameter in the script. Run the script to get a list of information about other disks on the workload template that was used to create the CDROM's parent VM.
sr411_fix_swapped_disk_cdrom_with_size_with_disk_with_no_size.sql	Fixes values for one current problem VM at a time. You set the disk ID of a CDROM with a non-zero disk size as the value for the temp_disk_data_id parameter in the script. Run the script to swap the disk information of the CDROM and a hard disk with no size on the CDROM's parent VM.
sr411_fix_swapped_disks_cdrom_with_size_with_disk_with_no_size.sql	Fixes values for all current problem VMs in a single run. After you output a list of disk IDs for CDROMs with non-zero sizes in a results.txt file, run the script to swap the disk information for the CDROM and the hard disk with no size on each CDROM's parent VM, where each disk entry in the file is processed in turn.

To fix all VMs that currently have swapped information for their CDROMs and hard disks:

1. Run the following SQL query to identify the CDROMs in the database that have a non-zero disk size and return their disk IDs to a file named results.txt.

   query_01_find_bad_cdroms_with_size.sql

   For example, if you extracted the scripts in the D:\sr411\sqlscripts\ directory, enter

   ```
   psql -U postgres -o D:\results.txt tietodb <
   D:\sr411\sqlscripts\query_01_find_bad_cdroms_with_size.sql
   ```

2. Run the following SQL script to fix the CDROM and hard disk that have been swapped on the parent VM of each disk ID entry in the results.txt file.

   sr411_fix_swapped_disks_cdrom_with_size_with_disk_with_no_size.sql

   For example, enter

   ```
   psql -U postgres tietodb <
   D:\sr411\sqlscripts\sr411_fix_swapped_disks_cdrom_with_size_with_disk_with_no_
   size.sql
   ```

To fix a single VM that currently has swapped information for its CDROM and hard disk:

1. Run the following SQL query to identify the CDROMs in the database that have a non-zero disk size and return their disk IDs to a file named results.txt.

   query_01_find_bad_cdroms_with_size.sql

   For example, if you extracted the scripts in the D:\sr411\sqlscripts\ directory, enter

   ```
   psql -U postgres -o D:\results.txt tietodb <
   D:\sr411\sqlscripts\query_01_find_bad_cdroms_with_size.sql
   ```

2. For each disk ID entry in the results.txt file:

   2a Open the following SQL script in a text editor, then set the disk ID as the value for the temp_disk_data_id parameter.

   sr411_fix_swapped_disk_cdrom_with_size_with_disk_with_no_size.sql

2b Run the script to fix the CDROM and hard disk that have been swapped on the parent VM of the specified disk ID.

For example, enter

```
psql -U postgres tietodb <
D:\sr411\sqlscripts\sr411_fix_swapped_disk_cdrom_with_size_with_disk_with_
no_size.sql
```

2c Repeat Step 2a and Step 2b for each disk ID entry in turn.

If you are using the single-VM-at-a-time process only to verify the outcome, remove the disk IDs for the corrected CDROMs from the `results.txt` file, then run the script for fixing all entries in a single run. See Step 2 in the fix-all procedure.

14.5 Configuring Maximum Number of VMs for a Business Service

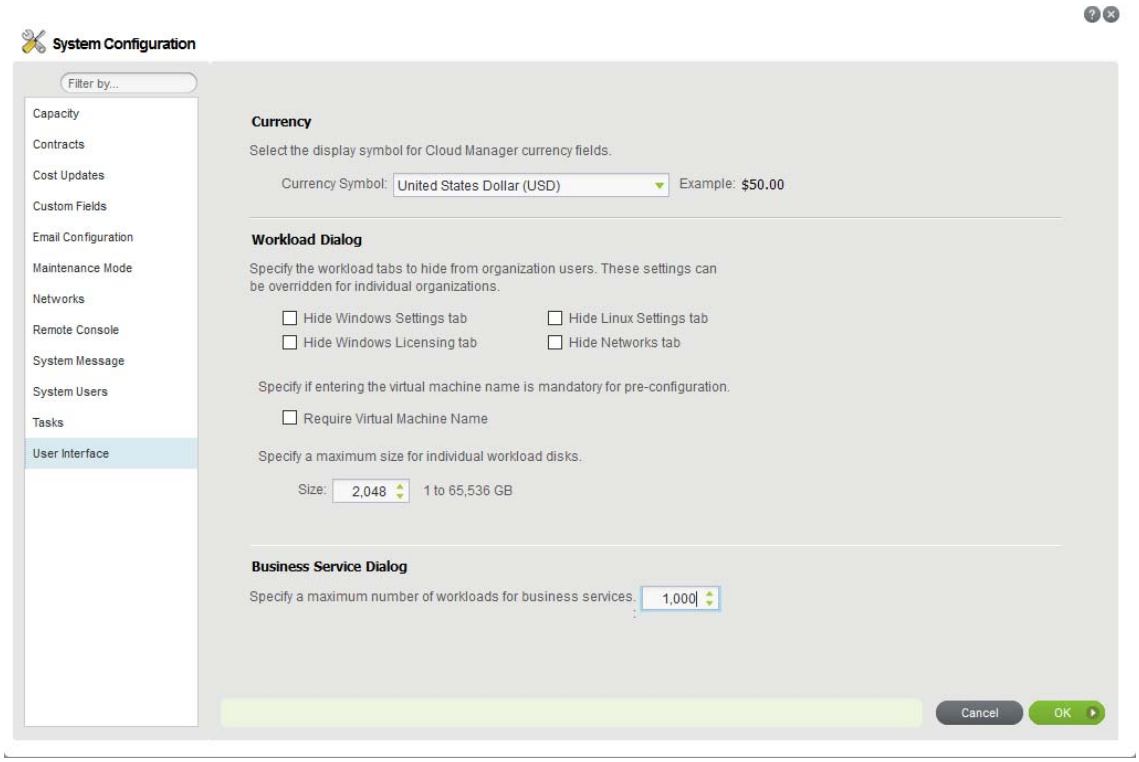
Cloud Manager 2.5.1 Patch 2 and later provides a new option that enables you to configure a global setting for the number of workloads you can assign to a Business Service.

You can limit the number of VMs allowed to be configured for a Business Service by setting a global system setting in the System Configuration dialog. The default value is 1000. This value is intentionally set to a high value to allow any practical number of VMs to be added to a Business Service.

Setting a limit is optional. You can specify a smaller value to enforce consistent maximum values and to improve performance in your environment. Specify a value based on your operational needs and performance characteristics of your deployment.

To specify a maximum number of VMs for a Business Service:

1. In the System Configuration dialog, select **User Interface**.
2. Under Business Service Dialog, specify the maximum number of workloads to allow users to configure for each Business Service.



3 Click **OK** to apply the setting.

15 Previous Releases

For documentation that accompanied earlier releases, visit the Cloud Manager Documentation website (https://www.netiq.com/documentation/cloud-manager-2-5) and scroll to *Previous Releases*.

16 Contacting Micro Focus

We want to hear your comments and suggestions about this document and the other documentation included with this product. You can use the **comment on this topic** link at the bottom of any page of the online documentation.

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- Product page: https://www.microfocus.com/products/cloud-manager/
- Knowledge Base articles, and videos: https://www.microfocus.com/support-and-services/
- The Micro Focus Community pages: https://www.microfocus.com/communities/

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