Troubleshooting Reference

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About This Reference

This *PlateSpin Orchestrate Troubleshooting Reference* provides information that can help you troubleshoot some persistent issues in the PlateSpin Orchestrate portion of Novell Cloud Manager. The reference is organized as follows:

- Chapter 1, "Troubleshooting," on page 7
- Appendix A, "Documentation Updates," on page 19

Audience

This book is intended for data center managers and IT or Operations administrators. The zos command line interface is intended for the use of Job Managers. The book assumes that users of the product have the following background:

- General understanding of network operating environments and systems architecture.
- Knowledge of basic UNIX shell commands and text editors.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation, or go to www.novell.com/documentation/feedback.html) and enter your comments there.

Additional Documentation

In addition to this *Virtual Machine Management Guide*, PlateSpin Orchestrate 2.6 includes the following additional guides that contain valuable information about the product:

- PlateSpin Orchestrate 2.6 Getting Started Reference
- PlateSpin Orchestrate 2.6 Installation and Configuration Guide
- PlateSpin Orchestrate 2.6 Upgrade Guide
- PlateSpin Orchestrate 2.6 VM Client Guide and Reference
- PlateSpin Orchestrate 2.6 Development Client Reference
- PlateSpin Orchestrate 2.6 Administrator Reference
- PlateSpin Orchestrate 2.6 High Availability Configuration Guide
- PlateSpin Orchestrate 2.6 Virtual Machine Management Guide
- PlateSpin Orchestrate 2.6 Server Portal Reference
- PlateSpin Orchestrate 2.6 Developer Guide and Reference
- PlateSpin Orchestrate 2.6 Command Line Reference

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Troubleshooting

1

This section provides information that identifies some ongoing known issues in PlateSpin Orchestrate and the methods that you can use to address those issues.

- Section 1.1, "Troubleshooting Installation Issues," on page 7
- Section 1.2, "Troubleshooting Upgrade Issues," on page 7
- Section 1.3, "Troubleshooting Orchestrate Server Issues," on page 8
- Section 1.4, "Troubleshooting Orchestrate Development Client Issues," on page 9
- Section 1.5, "Troubleshooting General VM Management Issues," on page 10
- Section 1.6, "Troubleshooting Xen VM Provisioning Actions," on page 13
- Section 1.7, "Troubleshooting vSphere VM Provisioning Actions," on page 16
- Section 1.8, "Troubleshooting Hyper-V VM Provisioning Actions," on page 17

1.1 Troubleshooting Installation Issues

The following sections provide solution to the problems you might encounter while performing the installation or configuration of the product:

• "Configuration Programs Do Not Include a Way to Edit the Agent Configuration" on page 7

Configuration Programs Do Not Include a Way to Edit the Agent Configuration

Source: PlateSpin Orchestrate Installation and Configuration Programs.

Explanation: Although the scenario is not supported in a production environment, it is

common in demonstration or evaluation situations to install the PlateSpin Orchestrate Agent and the PlateSpin Orchestrate Server on the same machine.

An error might occur if you install the agent after the initial server installation or if you attempt to use the configuration programs (config, guiconfig) to change the agent configuration after it is installed. Because of port checking routine in the configuration program, the error alerts you that port 8100 is

already in use.

Action: To correct the problem for a demonstration setup, stop the Orchestrate Server,

configure the agent with one of the configuration programs, then restart the

server.

1.2 Troubleshooting Upgrade Issues

The following sections provide solution to the problems you might encounter while performing an upgrade from an earlier version of the product:

• "Currently Defined Job Schedule Deployment States Are Overwritten on Upgrade" on page 7

Currently Defined Job Schedule Deployment States Are Overwritten on Upgrade

Source: Product upgrade process.

Explanation: The currently defined deployment state (that is, enabled or disabled) for a job

schedule is overwritten by the default job deployment state when you upgrade

from PlateSpin Orchestrate 2.5 to PlateSpin Orchestrate 2.6.

Action: If you want to re-enable or disable a job after the upgrade, you need to open

the Job Scheduler in the PlateSpin Orchestrate Development Client and

manually change the deployment state.

For more information, see "Creating or Modifying a Job Schedule" in the

PlateSpin Orchestrate 2.6 Development Client Reference.

1.3 Troubleshooting Orchestrate Server Issues

The following sections provide solution to the problems you might encounter while using the PlateSpin Orchestrate Server:

- "Orchestrate Server Might Appear to Be Deadlocked When Provisioning Large Numbers of Jobs with Subjobs" on page 8
- "Orchestrate Server Might Hang if the System Clock Is Changed Abruptly" on page 8
- "Authentication to an Active Directory Server Might Fail" on page 8
- "The Orchestrate Server Must Have Sufficient RAM" on page 9

Orchestrate Server Might Appear to Be Deadlocked When Provisioning Large Numbers of Jobs with Subjobs

Source: PlateSpin Orchestrate Server.

Explanation: In some deployments where a large number of running jobs spawn subjobs, the

running jobs might appear to stop, leaving jobs in the queue.

Possible Cause: This occurs because of job limits set in the Orchestrate Server to avoid

overload or "runaway" conditions.

Action: If this deadlock occurs, you can slowly adjust the job limits to tune them

according to your deployment. For more information, see "The Job Limits Panel" in the *PlateSpin Orchestrate 2.6 Development Client Reference*.

Orchestrate Server Might Hang if the System Clock Is Changed Abruptly

Source: PlateSpin Orchestrate Server

Explanation: As with many applications, you should avoid abrupt changes in the system

clock on the machine where the PlateSpin Orchestrate Server is installed; otherwise, the agent might appear to hang, waiting for the clock to catch up.

This issue is not affected by changes in clock time occurring from daylight

saving adjustments.

Action: We recommend that you use proper clock synchronization tools such as a

Network Time Protocol (NTP) server in your network to avoid large stepping

of the system clock.

Authentication to an Active Directory Server Might Fail

Source: PlateSpin Orchestrate Server

Explanation: A simplified Active Directory Server (ADS) setup might be insufficient

because of a customized ADS install (for example, namingContexts entries

that generate referrals when they are looked up)..

Possible Cause: The checking logic in the current AuthLDAP auth provider assumes that if any

namingContext entry is returned, it has found the domain and it stops

searching.

Action: If you encounter this issue, you need to manually configure LDAP as a generic

LDAP server, which offers many more configuration options.

The Orchestrate Server Must Have Sufficient RAM

Source: PlateSpin Orchestrate Server.

Explanation: If the PlateSpin Orchestrate Server fails to start after installation and

configuration, sufficient RAM might not be installed on your hardware or

assigned to the VM you are attempting to use.

Possible Cause: The PlateSpin Orchestrate Server requires 3 GB of RAM to function with the

preset defaults.

Action: If the server does not start, increase your physical RAM size (or, for a VM,

increase the setting for virtual RAM size). Alternatively, you can reduce the JVM heap size, as explained in Step 10 of the "Installation and Configuration Steps" in the *PlateSpin Orchestrate 2.6 Installation and Configuration Guide*.

1.4 Troubleshooting Orchestrate Development Client Issues

The following sections provide solution to the problems you might encounter while using the PlateSpin Orchestrate Development Client:

 "The Development Client Displays Incorrect CPU Speed for SLES 11 SP1 Resources" on page 9

• "After Installing the Orchestrate Agent on VM, the VM is Not Displayed as a Resource in the Orchestrate Development Client" on page 10

The Development Client Displays Incorrect CPU Speed for SLES 11 SP1 Resources

Source: PlateSpin Orchestrate Development Client

Explanation: The CPU speed displayed in the Orchestrate Development Client (see the

resource.cpu.mhz and resource.metrics.cpu_speed facts) for SLES 11 SP1 resources is incorrect. The invalid display results from powersave settings on the CPU. Until the CPU has been run at full speed, /proc/cpuinfo displays this incorrect value for CPU MHz, and the value in the PlateSpin

Orchestrate Server is also incorrect.

Possible Cause: The issue results from the CPU starting in powersave mode. This slows down

the CPU until it is needed, so /proc/cpuinfo does not show the maximum potential speed of the CPU. Instead, it shows the maximum speed that the CPU

has shown since boot time.

Action: To work around this issue, run the powersave --performance-speed

command at the server command line.

This command forces the CPU to reach its maximum speed, so you should see the correct value displayed in /proc/cpuinfo and the Development Client should also display the correct speed. After you run this command, you can set the powersave mode to a normal state with either of the following commands:

```
powersave --powersave-speed
```

or

powersave --dynamic-speed

When the powersave mode is set to a normal state, /proc/cpuinfo retains the accurate value for the current CPU speed.

TIP: To see the contents of /proc/cpuinfo, run the cat /proc/cpuinfo command at the bash prompt of your SLES server.

After Installing the Orchestrate Agent on VM, the VM is Not Displayed as a Resource in the Orchestrate Development Client

Source: The PlateSpin Orchestrate Development Client.

Action: Do the following:

- Ensure that the Orchestrate Agent is running on the VM.
- Ensure that no errors have been logged into the agent .log file.

The log file is located in the

<Orchestrate_Agent_installation_directory>\novell\zos\age
nt\node.default directory on Windows and in the /opt/novell/
zos/agent/node.default directory on Linux.

• Ensure that the Orchestrate Server is registered to the DNS server.

1.5 Troubleshooting General VM Management Issues

The following sections provide solutions to the problems you might encounter while working with general VM management operations:

- "Volume Tools Hang While Scanning a Suspended Device" on page 10
- "SUSE Linux VMs Might Attempt To Partition a Read-only Device" on page 11
- "RHEL 5 VMs Running the Kudzu Service Do Not Retain Network Interface Changes" on page 11
- "Policies Applied to VM Resources Are Deleted" on page 12
- "VMs Provisioned from a VM Template Are Not Restarted When a VM Host Crashes" on page 13

Volume Tools Hang While Scanning a Suspended Device

Source: Scanned device.

Explanation: When a mapped device is in a suspended state, volume tools such as vgscan,

lvscan, and pvscan hang. If the vmprep job is run on such a device, it throws an

error such as the following to alert you to the condition:

vmquery: /var/adm/mount/

vmprep.df8fd49401e44b64867f1d83767f62f5: Failed to

mount vm image "/mnt/nfs_share/vms/rhel4tmpl2/disk0": Mapped

device

/dev/mapper/loop7p2 appears to be suspended. This might cause

scanning for

volume groups (e.g. vgscan) to hang.

WARNING! You may need to manually resume or remove this mapped

device (e.g.

dmsetup remove /dev/mapper/loop7p2)!

Action: Because of this behavior, we recommend against using LVM and similar

volume tools on a virtual machine managed by PlateSpin Orchestrate.

SUSE Linux VMs Might Attempt To Partition a Read-only Device

Source: YaST Partitioner.

Explanation: When you build a SUSE Linux VM and specify a read-only virtual device for

that VM, in some instances the YaST partitioner might propose a re-

partitioning of the read-only virtual device.

Possible Cause: Although Xen normally attempts to notify the guest OS kernel about the mode

(ro or rw) of the virtual device, under certain circumstances the YaST partitioner proposes a re-partitioning of the virtual device that has the most available disk space without considering the other device attributes. For example, if a specified CD-ROM device happens to be larger than the specified hard disk device, YaST attempts to partition the CD-ROM device,

which causes the VM installation to fail.

Action: To work around this issue, connect a VNC console to the VM being built

during the first stage of the VM install, then verify the partition proposal before you continue with the installation. If the partition proposal has selected an incorrect device, manually change the selected device before you continue

with the installation of the VM.

RHEL 5 VMs Running the Kudzu Service Do Not Retain Network Interface Changes

Source: Kudzu service.

Explanation: Anytime you modify the hardware configuration (for example, changing the

MAC address or adding a network interface card) of a RHEL 5 VM that is running the Kudzu hardware probing library, the VM does not retain the

existing network interface configuration.

Possible Cause: When you start a RHEL 5 VM, the Kudzu service recognizes the hardware

changes at boot time and moves the existing configuration for that network interface to a backup file. The service then rewrites the network interface

configuration to use DHCP instead.

Action: To work around this problem, disable the Kudzu service within the RHEL VM

by using the chkconfig --del kudzu command.

Policies Applied to VM Resources Are Deleted

Source: VM clones awaiting provisioning.

Explanation: Provisioning code requires that VMs and VM clones be standalone (that is,

they are removed from a template dependency and are no longer considered to

be "linked clones").

Possible Cause: VMs in PlateSpin Orchestrate 2.5 and later must be made standalone to receive

and retain associated policies.

Action: Apply a conditional policy to the parent template that can be applied to the clones while they are running. Depending upon the facts set on the clone, the

inherited VM host constraint can be conditionally applied to the clone.

The following is an example of a conditional policy that you could apply to the VM template to restrict vmhost based on resource attributes (group membership, etc.).

```
<policy>
    <constraint type="vmhost">
             <contains fact="resource.groups"</pre>
value="exclude_me"
                    reason="Only apply this vmhost constraint
to resources NOT in exclude_me resource group" >
            </contains>
            <else>
                   <defined fact="resource.some_boolean_fact"</pre>
/>
                    <eq fact="some_boolean_fact" value="true"</pre>
/>
                     <then>
                      <contains fact="vmhost.resource.groups"</pre>
value="first_vmhost_group"
                                reason="When a resource is not
in the exclude_me group, when some_ boolean_fact is true,
                                         provision to a vmhost
in the first_vmhost_group"/>
                     </then>
                     <else>
                         <if>
                              <defined
fact="resource.some_other_boolean_fact" />
                            <eq fact="some_other_boolean_fact"</pre>
value="true" />
                              <not>
                                  <and>
                                     <eq fact="resource.id"</pre>
value="never_use_this_resource"
                                        reason="Specifically
exclude this resource from consideration." />
                                      <0r>>
                                       <eq fact="vmhost.cluster"</pre>
factvalue="resource.provision.vmhost.cluster" />
                                       <eq fact="vmhost.cluster"</pre>
```

```
factvalue="resource.provision.vmhost" />
                                    </or>
                                </and>
                            </not>
                            <then>
                                <contains
fact="vmhost.resource.groups" value="another_vmhost_group"
                                     reason="When a resource
is not in the exclude me group, when some boolean fact is
false,
some_other_boolean_fact is true, (but also not some other
things),
                                               provision to a
vmhost in another_vmhost_group"/>
                            </then>
                        </if>
                    </else>
                </if>
            </else>
        </if>
    </constraint>
</policy>
```

VMs Provisioned from a VM Template Are Not Restarted When a VM Host Crashes

Source: VM host with VMs provisioned from a template.

Explanation: If a VM host crashes, VMs that were provisioned from a template on that host

are not restarted on another active VM host. Instead, PlateSpin Orchestrate provisions another VM cloned from the original template, on the next available host. The disk files of the original clone are not destroyed (that is, "cleaned up") after the crash, but the original VM template files are destroyed.

If a Discover Repository action is issued before the cloned VM is deleted from the crashed host, Orchestrate creates a new VM object with the ${\tt zombie_string}$

prepended to the VM object name.

Possible Cause: While hosting a provisioned clone, the VM host crashed or the Orchestrate

Agent on that host went offline.

Action: To work around this issue, you can either remove the VM from the file system

before Orchestrate rediscovers it, or you can issue a Destroy action on the

discovered "zombie" VM.

1.6 Troubleshooting Xen VM Provisioning Actions

The following sections provide solution to the problems you might encounter while performing provisioning actions on VMs created in SUSE Xen and managed by PlateSpin Orchestrate:

- "Provisioning a Xen VM Does Not Work on the Host Server" on page 14
- "Multiple Instances of the Same Xen VM Running when Located on Shared Storage" on page 14
- "Running xm Commands on an Old Xen VM Host Causes Server to Hang" on page 15

Provisioning a Xen VM Does Not Work on the Host Server

Source: The PlateSpin Orchestrate Development Client.

Explanation: When you try to provision a Xen VM, the job might fail with the following

error message in the job log:

[c121] RuntimeError: vmprep: Autoprep of /var/lib/xen/images/

min-tmpl-1-2/disk0

failed with return code 1: vmprep: autoprep:

/var/adm/mount/vmprep.3f96f60206a2439386d1d80436262d5e:

Failed to mount vm

image "/var/lib/xen/images/min-tmpl-1-2/disk0": vmmount: No

root device found

Job 'zosSystem.vmprep.76' terminated because of failure.

Reason: Job failed

A VM host cannot provision a VM that has a different file system than the VM host. The currently supported file systems are ext2, ext3, reiserfs, jfs, xfs, vfat, and ntfs.

Action: To work around the issue, load the VM's file system Linux module on the VM host, or add it to the Linux kernel if a custom kernel is being used.

Typically, Linux kernels autoload the appropriate module to do the work.

You must manually load the proper kernel module on the VM host to support the VM's file system.

For example, if the VM host uses ext3 and the VM image uses reiserfs, load the proper kernel module onto the VM host to support the VM image's reiserfs file system. Then, on the VM host, run:

modprobe reiserfs

Next, provision the VM.

NOTE: Cloning with prep is limited to what the Virtual Center of VMware Server supports.

Multiple Instances of the Same Xen VM Running when Located on Shared Storage

Source: Shared storage for Xen VMs.

Explanation: The xendConfig job runs when a VM host is added to the PlateSpin

Orchestrate Server. This job automates some of the configurations possible on

a Xen VM host. With the default Xen configuration, it is possible to

incorrectly start a running VM a second time from storage that is shared by and

accessible to another Xen VM host.

Possible Cause: A running Xen VM can only be locked to a specific Xen VM host when the

xend service is configured to share a VM domain lock file on a shared file system. By default, the xend service places these VM domain lock files in the /var/lib/xend/domains directory, which is usually not located on shared

storage.

Action: You can configure Xen VM locks in PlateSpin Orchestrate by uncommenting

certain facts in the policy file (search for xend.xend-domain-lock).

Uncomment these facts in xendConfig.policy:

To uncomment a section of code, remove the "<!--" (comment open) tag and the "-->" (comment close) tag. Edit the xend-domain-lock-path fact to set an alternate location on shared storage that is available to all VM hosts.

When you make the changes and save the file, the facts become active and the VM locking parameters of each newly joining VM host are adjusted accordingly.

You can also schedule an immediate run of the xendConfig job to adjust all configuration files of the Xen VM hosts that are already connected to the PlateSpin Orchestrate Server.

NOTE: Setting the lock path by using PlateSpin Orchestrate only supports the scenario where all VM hosts have the domain lock path connected to the same shared repository. For more complex setups, you need to use alternative methods to adjust the VM host lock configurations.

Running xm Commands on an Old Xen VM Host Causes Server to Hang

Source: The source of the message.

Explanation: The Xen provisioning adapter uses xm commands to perform basic VM life cycle operations such as building a VM, starting a VM, stopping a VM, pausing a VM, and suspending a VM. These commands can cause the server to hang if it has not been updated with the latest Xen tools.

Action: Make sure the Xen VM host has the latest Xen tools available by running the rpm -qa | grep xen-tools command.

You should have the SLES 11 Xen maintenance release #1 (or later) of the tools:

Xen 3.3.1_18546_14

1.7 Troubleshooting vSphere VM Provisioning Actions

The following sections provide solution to the problems you might encounter while performing provisioning actions on VMs managed by the VMware vCenter hypervisor:

- "Unable to perform any provisioning adapter action after the Save Config action on the vSphere managed VM" on page 16
- "(503) Service Unavailable Errors Might Occur While Cloning vSphere VMs" on page 16
- "Invalid Datastore Path Error" on page 16

Unable to perform any provisioning adapter action after the Save Config action on the vSphere managed VM

Source: The PlateSpin Orchestrate Development Client.

Possible Cause: The VM UUID value of the vSphere managed VM is not a 128-bit

hexadecimal value. Even though the Save Config action is successful and the VM is provisioned, the hypervisor automatically assigns a different UUID value. Subsequently, any provisioning adapter action performed on the VM

fails.

Action: Specify a 128-bit hexadecimal value for the VM UUID.

1 In the Orchestrate Development Client, click *Resources* > the vSphere managed VM.

The *Info/Groups* tab is displayed by default.

- **2** In the Virtual Machine Configuration panel, set the value of *VM UUID* to a 128-bit hexadecimal value.
- **3** Right-click the vSphere managed VM, then click *Save Config*.

(503) Service Unavailable Errors Might Occur While Cloning vSphere VMs

Source: The PlateSpin Orchestrate Development Client..

Explanation: Running the *Clone* action repeatedly on vSphere VM templates might result in

the following error:

Clone : (503)Service Unavailable

Possible Cause: This error indicates that the server is currently unable to handle the request due

to a temporary overloading or maintenance of the server. Testing has shown that this error is most likely to occur when vSphere and the PlateSpin Orchestrate Agent are both installed on the same Windows Server 2003

computer.

Action: If you encounter this error, we recommend that you download and apply the

appropriate Microsoft hotfix (http://support.microsoft.com/kb/979230) to the

vCenter server.

Invalid Datastore Path Error

Source: The source of the message.

Explanation: When attempting to Save Config a vSphere VM with an ISO-backed vDisk

(for example, a vDisk that specifies a location in the /vmmimages folder and does not have its repository fact set), the job fails with a message similar to the

following:

```
VMSaveConfig : Invalid datastore path '/vmimages/tools-
isoimages/linux.iso'
```

To work around this issue, associate a policy with the ISO-backed vdisk object that prepends an empty datastore string ([]) to the beginning of the

vdisk.location fact. For example:

```
<policy>
 <vdisk>
    <fact name="location"
         type="String"
         value="[] /vmimages/tools-isoimages/linux.iso" />
  </vdisk>
</policy>
```

1.8 Troubleshooting Hyper-V VM Provisioning **Actions**

The following sections provide solution to the problems you might encounter while performing provisioning actions on VMs managed by the Hyper-V hypervisor:

 "The VM is Suspended When you Try to Revert the Snapshot of a Powered-on VM Running on a Hyper-V host" on page 17

The VM is Suspended When you Try to Revert the Snapshot of a Powered-on VM Running on a Hyper-V host

Source: The PlateSpin Orchestrate Development Client.

Explanation: If you try to revert the snapshot of a powered-on VM running on a Hyper-V

host, the VM is suspended. This is a known behavior of VMs running on a

Hyper-V host.

Action: Provision the suspended VM:

1 In the Orchestrate Development Client, right-click the suspended VM, then click Provision.

The Provision VM dialog box is displayed.

- **2** In the *Plan (Host/Repository)* drop-down list, select the appropriate Hyper-V host.
- 3 Click OK.

Documentation Updates



This section contains information about documentation content changes that were made in this *PlateSpin Orchestrate Troubleshooting Reference* after the initial release of Novell Cloud Manager 1.1 with PlateSpin Orchestrate 2.6. The changes are listed according to the date they were published.

The documentation for this product is provided on the Web in two formats: HTML and PDF. The HTML and PDF documentation are both kept up-to-date with the changes listed in this section.

If you need to know whether a copy of the PDF documentation that you are using is the most recent, the PDF document includes a publication date on the title page.

The documentation was updated on the following dates:

• Section A.1, "March 29, 2011," on page 19

A.1 March 29, 2011

Updates were made to the following sections:

Location	Update Description
"Policies Applied to VM Resources Are Deleted" on page 12	New content.
"VMs Provisioned from a VM Template Are Not Restarted When a VM Host Crashes" on page 13	New content.