Veritas™ High Availability Agent for Informatica PowerCenter Service Manager Installation and Configuration Guide

AIX, HP-UX, Linux, Solaris

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symantec™

Veritas High Availability Agent for Informatica PowerCenter Service Manager Installation and Configuration Guide

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Chapter 1

Introducing the Veritas High Availability Agent for Informatica PowerCenter Service Manager

This chapter includes the following topics:

About the Veritas agent for Informatica PowerCenter Service Manager

The Veritas High Availability agents monitor specific resources within an enterprise application. They determine the status of resources and start or stop them according to external events.

The Veritas agent for Informatica PowerCenter Service Manager provides high availability for all PowerCenter Service Manager servers in a cluster.

See the following Technical Support TechNote for the latest updates or software issues for this agent:

http://seer.entsupport.symantec.com/docs/282004.htm

Features of the Veritas agent for Informatica PowerCenter Service Manager

The following are the features of the Veritas agent for Informatica PowerCenter Service Manager:

- Support for validation of attributes that are based on agent functions.
  The agent can validate attributes in each agent function before the actual data processing starts.
- Support for First Failure Data Capture (FFDC)
  In case of a fault, the agent generates a huge volume of the debug logs that enable troubleshooting of the fault.
- Support for Fast First Level Monitor (FFLM)
  The agent maintains PID files based on search patterns to expedite the monitoring process.
- Support for external user-supplied monitor utilities
  The agent enables user-specified monitor utilities to be plugged in, in addition to the built-in monitoring logic. This enables administrators to completely customize the monitoring of the application.
- Delayed agent function
  The agent manages the first monitor after online for slow initializing applications.

Supported software

The Veritas agent for Informatica PowerCenter Service Manager supports the following software versions:

Veritas Cluster Server	VCS 4.0, 4.1, 5.0
ACC Library	5.1.3.0 and later
Operating Systems	AIX 5.3 on pSeries
	HP-UX 11i v2 on PA-RISC
	Red Hat Enterprise Linux 4.0, 5.0
	Solaris 8, 9, 10 on SPARC
Informatica PowerCenter	8.5, 8.5.1, 8.6

About PowerCenter

Informatica PowerCenter, is a single and unified enterprise data intergration platform, that enables you to access and intergrate data from a business system.

Key features of Informatica PowerCenter include the following:

- Data migration
- Data synchronization
- Enterprise data warehousing
- Master data management
- Cross-enterprise data integration
- Data governance
- Service-oriented architectures
- Integration competency centers
- Universal data access
- Mission-critical and Enterprise-wide data integration

PowerCenter is available in the following editions:

- PowerCenter Standard Edition
- PowerCenter Real Time Edition
- PowerCenter Advance Edition

Informatica PowerCenter Service Manager agent functions

The agent consists of resource type declarations and agent executables. The agent executables implement the online, offline, monitor and clean operations.

Online

The online operation performs the following tasks:

- Verifies that the required attributes are set correctly.
- Verifies whether the PowerCenter Service Manager Server instance is not ready online. If the instance is online, the online operation exits immediately.
- Kills the PowerCenter Service Manager processes that remain online using the login associated with the specific resource.

- Executes the following command, in context of InfaUser to start the PowerCenter Service Manager instance:

  ```
  $ InfaHome/Server/tomcat/bin/infaservice.sh startup
  ```

- Verifies whether the PowerCenter Service Manager Server is completely functional.
- Returns the control to HAD.

Offline

The offline operation performs the following tasks:

- Verifies that the required attributes are set correctly.
- Verifies whether the PowerCenter Service Manager Server instance is not offline. If found, the operation kills any existing processes that belong to this instance of PowerCenter Service Manager being clustered, and exits.
- Executes the following command, in context of InfaUser to stop the PowerCenter Service Manager Server instance.

  ```
  $ InfaHome/Server/tomcat/bin/infaservice.sh shutdown
  ```

- Kills any existing processes that belong to this instance of PowerCenter Service Manager Server after the offline script is executed.
- Returns the control to HAD.

Monitor

The monitor operation performs the states of the PowerCenter Service Manager Servers on all nodes within the cluster.

The operation performs the following tasks:

- Conducts a first level check to determine that the PowerCenter Service Manager Server processes that the user specified in the PowerCenterSvcMgr agent attribute, are running on the system in the cluster. If the first level check does not find these processes running on the node, the check exits immediately, and reports the instance as offline.
- Conducts a second level check if the SecondLevelMonitor attribute is set to a value greater than 0.
- Uses a connect (3c) method to check for the PowerCenter Service Manager Server to listen to the port defined by the Port attribute. The host name needed to perform this check is derived from the InfaHome agent attribute.
- Depending upon the MonitorProgram attribute, the monitor operation performs a customized check using a user-supplied monitoring utility.

See "Executing a customized monitoring program" on page 26.

Clean

The clean operation performs the following tasks in the event of a failure or an unsuccessful attempt to bring a PowerCenter Service Manager Server instance online or take it offline:

- Attempts to gracefully shut down the PowerCenter Service Manager Server instance, using the following command in context of InfaUser.

  ```
  $ InfaHome/Server/tomcat/bin/infaservice.sh shutdown
  ```

- Kills the remaining processes pertaining to this PowerCenter Service Manager Server if the instance does not shut down normally.
- Returns the control to HAD.

Note: By default the agent attempts to restart a faulted resource 1000 times before the resource is marked as faulted.

See "Changing the default restart behaviour " on page 23.

Chapter 2

Installing, upgrading, and removing the agent for Informatica PowerCenter Service Manager

This chapter includes the following topics:

Before you install the Veritas agent for Informatica PowerCenter Service Manager

You must install the Veritas agent for Informatica PowerCenter Service Manager on all the systems that will host a PowerCenter Service Manager service group.

Ensure that you meet the following prerequisites to install the agent for Informatica PowerCenter Service Manager.

For VCS, do the following:

- Install and configure Veritas Cluster Server.
  For more information on installing and configuring Veritas Cluster Server refer to, `Veritas Cluster Server Installation Guide`
- Remove any previous version of this agent.
  To remove the agent,
  See "Removing the agent in a VCS environment" on page 18.
- Install the latest version of ACC Library.
  To install or update the ACC Library package, locate the library and related documentation on the agentpack disc.
  See "Installing the ACC library" on page 16.

About ACC Library

The operations for the Veritas agent for Informatica PowerCenter Service Manager depend on a set of Perl modules known as the ACC library. The library must be installed on each system in the cluster that will run the agent for Informatica PowerCenter Service Manager. The ACC library contains common, reusable functions that perform tasks, such as process identification, logging, and system calls.

Installing the ACC library

Install the ACC library on each system in the cluster that runs an agent that depends on the ACC library.

To install the ACC library

1. Log in as superuser.
2. Navigate to the pkgs directory (the pkgs directory on the CD).

AIX	*cd_mount*/aix/application/acc_library/vcs/*version*_library/pkgs
HP-UX	*cd_mount*/hpux/generic/application/acc_library/vcs/*version*_library/pkgs
Linux	*cd_mount*/linux/generic/application/acc_library/vcs/*version*_library/rpms
Solaris	*cd_mount*/solaris/*dist_arch*/application/acc_library/vcs/*version*_library/pkgs where *dist_arch* is sparc or sol_x64.

3 Install the package. Enter **Yes** if asked to confirm overwriting of files in the existing package.

AIX	`# installp -ac -d VRTSacclib.rte.bff VRTSacclib.rte`
HP-UX	`# swinstall -s 'pwd' VRTSacclib`
Linux	`# rpm -i \` `VRTSacclib-`*`VersionNumber`*`-GA_GENERIC.noarch.rpm`
Solaris	`# pkgadd -d . VRTSacclib`

4 For HP-UX, install the HP-UX patch PHCO_29042 if it is not already installed.

Installing the agent in a VCS environment

Install the agent for Informatica PowerCenter Service Manager on each node in the cluster.

To install the agent

1 Log in as superuser.

2 Navigate to the directory containing the package for the platform running in your environment.

AIX	*cd_mount*`/aix/application/powercentersvcmgr_agent/` `vcs_`*version*`/`*version*`_agent/pkgs`
HP-UX	*cd_mount*`/hpux/generic/application/powercentersvcmgr_agent/` `vcs_`*version*`/`*version*`_agent/pkgs`
Linux	*cd_mount*`/linux/generic/` `application/powercentersvcmgr_agent/vcs_`*version*`/` *version*`_agent/rpms`
Solaris	*cd_mount*`/solaris/`*dist_arch*`/application/` `powercentersvcmgr_agent/vcs_`*version*`/`*version*`_agent/pkgs` Where *dist* is the Solaris distribution and *arch* is the Solaris processor architecture.

3 Install the package.

AIX
```
# installp -ac -d VRTSpcsvcmgr.rte.bff VRTSpcsvcmgr.rte
```

HP-UX
```
# swinstall -s 'pwd' VRTSpcsvcmgr
```

Linux
```
# rpm -ihv \
VRTSpcsvcmgr-AgentVersion-GA_GENERIC.noarch.rpm
```

Solaris
```
# pkgadd -d . VRTSpcsvcmgr
```

Removing the agent in a VCS environment

You must uninstall the agent for Informatica PowerCenter Service Manager from a cluster while the cluster is active.

To uninstall the agent in a VCS environment

1 Log in as a superuser.

2 Set the cluster configuration mode to read/write by typing the following command from any node in the cluster:

```
# haconf -makerw
```

3 Remove all PowerCenter Service Manager resources from the cluster. Use the following command to verify that all resources have been removed:

```
# hares -list Type=PowerCenterSvcMgr
```

4 Remove the agent type from the cluster configuration by typing the following command from any node in the cluster:

```
# hatype -delete PowerCenterSvcMgr
```

Removing the agent's type file from the cluster removes the include statement for the agent from the main.cf file, but the agent's type file is not removed from the cluster configuration directory. You can remove the agent's type file later from the cluster configuration directory.

5 Save these changes. Then set the cluster configuration mode to read-only by typing the following command from any node in the cluster:

```
# haconf -dump -makero
```

6 Use the platform's native software management program to remove the agent for Informatica PowerCenter Service Manager from each node in the cluster.

Execute the following command to uninstall the agent:

AIX	`# installp -u VRTSpcsvcmgr.rte`
HP-UX	`# swremove VRTSpcsvcmgr`
Linux	`# rpm -e VRTSpcsvcmgr`
Solaris	`# pkgrm VRTSpcsvcmgr`

Removing the ACC library

Perform the following steps to remove the ACC library.

To remove the ACC library

1 Ensure that all agents that use ACC library are removed.

2 Run the following command to remove the ACC library package.

AIX	`# installp -u VRTSacclib.rte`
HP-UX	`# swremove VRTSacclib`
Linux	`# rpm -e VRTSacclib`
Solaris	`# pkgrm VRTSacclib`

Upgrading the agent in a VCS environment

Perform the following steps to upgrade the agent with minimal disruption, in a VCS environment

1. Persistently freeze the service groups that host the application.

   # `hagrp -freeze group -persistent`

2. Stop the cluster services forcibly.

   # `hastop -all -force`

3. Ensure that the agent operations are stopped on all the nodes.

   `# ps -ef |grep PowerCenterSvcMgr`

4. Uninstall the agent package from all the nodes.

   See "Removing the agent in a VCS environment" on page 18.

5. Install the new agent on all the nodes.

   See "Installing the agent in a VCS environment" on page 17.

6. Copy the new PowerCenterSvcMgrTypes.cf file from the agent's sample conf directory,

VCS 4.x	/etc/VRTSagents/ha/bin/PowerCenterSvcMgr
VCS 5.0	/etc/VRTSvcs/conf/sample_PowerCenterSvcMgr

   to the VCS conf directory /etc/VRTSvcs/conf/config.

7. Check for the changes in the resource values required, if any, due to the new agent types file.

   Note: To note the list of changed attributes, compare the new type definition file with the old type definition file.

8. Start the cluster services.

   # `hastart`

9. Start the agent on all nodes, if not started.

   `# haagent -start PowerCenterSvcMgr -sys System`

10. Unfreeze the service groups once all the resources come to an online steady state.

    # `hagrp -unfreeze group -persistent`

Chapter 3

Preparing to configure the agent for Informatica PowerCenter Service Manager

This chapter includes the following topics:

About configuring the Veritas agent for Informatica PowerCenter Service Manager

After installing the Veritas agent for Informatica PowerCenter Service Manager, you must import the agent type configuration file. After importing this file, you can create and configure a PowerCenter Service Manager resource. Before you configure a resource, review the attributes table that describes the resource type and its attributes.

To view the sample agent type definition and service groups configuration.

See "About sample configurations for the agent for Informatica PowerCenter Service Manager" on page 37.

Importing the agent types files in a VCS environment

To use the agent for Informatica PowerCenter Service Manager, you must import the agent types file into the cluster.

To import the agent types file using the Veritas Cluster Server graphical user interface

1. Start the Veritas Cluster Manager and connect to the cluster on which the agent is installed.
2. Click **File > Import Types**.
3. In the Import Types dialog box, select the following file:

VCS 4.x	/etc/VRTSvcs/conf/sample_PowerCenterSvcMgr/PowerCenterSvcMgrTypes.cf
VCS 5.0	/etc/VRTSagents/ha/conf/PowerCenterSvcMgr/PowerCenterSvcMgrTypes.cf

4. Click **Import**.
5. Save the VCS configuration.

   The PowerCenter Service Manager agent type is now imported to the VCS engine.

   You can now create PowerCenter Service Manager resources. For additional information about using the VCS GUI, refer to the *Veritas Cluster Server User's Guide*.

To import the agent types file using the Veritas Cluster Server command line interface (CLI), perform the following steps.

1. Log on to any one of the systems in the cluster as the superuser.
2. Create a temporary directory.

   ```
   # mkdir ./temp

   # cd ./temp
   ```

3 Copy the sample file Types.cf from the following location:

VCS 4.x	/etc/VRTSvcs/conf/sample_PowerCenterSvcMgr/PowerCenterSvcMgrTypes.cf
VCS 5.0	/etc/VRTSagents/ha/conf/PowerCenterSvcMgr/PowerCenterSvcMgrTypes.cf

The following example assumes VCS 5.0 is installed:

```
# cp \
/etc/VRTSagents/ha/conf/PowerCenterSvcMgr/PowerCenterSvcMgrTypes.cf .
```

4 Create a dummy main.cf file:

```
# echo 'include "PowerCenterSvcMgrTypes.cf"' > main.cf
```

5 Create the PowerCenterSvcMgr resource type as follows:

```
# hacf -verify .

# haconf -makerw

# sh main.cmd

# haconf -dump
```

The PowerCenter Service Manager agent type is now imported to the VCS engine.

You can now create PowerCenter Service Manager resources. For additional information about using the VCS CLI, refer to the *Veritas Cluster Server User's Guide*.

Changing the default restart behaviour

The agent by default attempts to restart a faulted PowerCenter Service Manager resource 1000 times before it faults.

To change this default behaviour, execute the following commands:

```
# haconf -makerw
# hatype -modify PowerCenterSvcMgr RestartLimit RestartLimit
# haconf -dump
```

where, *RestartLimit* represents the value for the number of times VCS must restart the faulted PowerCenter Service Manager resource, before executing the clean function.

Informatica PowerCenter Service Manager agent attributes

Refer to the required and optional attributes while configuring the agent for Informatica PowerCenter Service Manager.

Table 3-1 lists the required attributes for the Informatica PowerCenter Service Manager agent.

Table 3-1 Required attributes

Required attributes	Description
ResLogLevel	Specifies the logging detail performed by the agent for the resource. The valid values are as follows: ■ ERROR: Only logs error messages. ■ WARN: Logs above plus warning messages. ■ INFO: Logs above plus informational messages. ■ TRACE: Logs above plus trace messages. TRACE is very verbose and should only be used during initial configuration or for troubleshooting and diagnostic operations. Default: INFO Example: INFO
InfaUser	Specifies the account name under which the agent executes programs to manage the Service Manager. Default: "" Example: infaPC
EnvFile	Specifies the full path to the file that the agent sources use to set the environment before executing any Service Manager programs. This atrribute should be set as a local attribute and should point to a unique environment file on each configured node. Symantec recommends to create this file preferably in the InfaHome directory. The supported shell environments are: Bourne, Korn, and C shell. Default: "" Example, On nodeA: /u01/app/infa_bin/PowerCenter/nodeA/envfile On nodeB: /u01/app/infa_bin/PowerCenter/nodeB/envfile

Table 3-1 Required attributes *(continued)*

Required attributes	Description
Port	Represents the port number dedicated for the PowerCenter Administration Console. The monitor agent function uses this value to determine if the console responds to HTTP requests. This is a required attribute only if SecondLevelMonitor is enabled. Default: 6001 Example: 6001
InfaHome	Represents the Service Manager installation directory. Default: "" Examples: On nodeA: /u01/app/infa_bin/PowerCenter/nodeA On nodeB: /u01/app/infa_bin/PowerCenter/nodeB
HostName	Specifies the IPv4 address or host name of the virtual host which is configured for the Informatica PowerCenter instance. This attribute should be set as a local attribute on each configured node. Default: "" Examples: On nodeA: pwrsvcmgr-01 On nodeB: pwrsvcmgr-02 Where, pwrsvcmgr-01 and pwrsvcmgr-02 are the virtual hosts configured for hosting the PowerCenter Service Manager resources on nodeA and nodeB respectively.

Table 3-2 lists the optional attributes for the PowerCenterSvcMgr agent.

Table 3-2 Optional attributes

Optional attributes	Description
MonitorProgram	Absolute path name of an external, user-supplied monitor executable. If specified, the monitor function executes this file to perform an additional state check of the server. There are no restrictions for what actions the external monitor program performs to determine the state of the server. For information about setting this attribute: See "Executing a customized monitoring program" on page 26. Default: "" Example 1: /u01/app/infa_bin/PowerCenter/nodeA/bin/monitor.sh Example 2: /u01/app/infa_bin/PowerCenter/nodeB/bin/monitor.pl *arg1 arg2*
SecondLevelMonitor	Used to enable second-level monitoring. Second-level monitoring is a deeper, more thorough state check of the Service Manager. The numeric value specifies how often the monitoring routines must run. 0 means never run the second-level monitoring routines, 1 means run routines every monitor interval, 2 means run routines every second monitor interval. This interpretation may be extended to other values. **Note:** Exercise caution while setting SecondLevelMonitor to large numbers. For example, if the MonitorInterval is set to 60 seconds and the SecondLevelMonitor is set to 100, then the second level check is executed every 100 minutes, which may not be as often as intended. For maximum flexibility, no upper limit is defined for SecondLevelMonitor. Default: 0 Example: 1

Executing a customized monitoring program

You can configure the monitor function to execute a custom monitor utility to perform a user-defined Service Manager Server state check. The utility is executed in the context of the UNIX user that is defined in the InfaUser attribute. The environment is set by sourcing the file specified in the EnvFile attribute.

The monitor function executes the utility specified in the MonitorProgram attribute if the following conditions are satisfied:

- The MonitorProgram attribute value is set to a valid executable utility.

- The first level process check indicates that the PowerCenter Service Manager instance is online.
- The SecondLevelMonitor attribute is set to 1 and the second level check returns the server state as "online" or the SecondLevelMonitor attribute is set to a value greater than 1, but the second level check is deferred for this monitoring cycle.

The monitor function interprets the program exit code as follows:

110 or 0	Service Manager Server instance is online
100 or 1	Service Manager Server instance is offline
Any other value	Service Manager Server instance is unknown

To ensure that the custom monitor utility is always available to the agent, Symantec recommends storing the file in the directory where the Service Manager Server is installed.

Chapter 4

Clustering Informatica PowerCenter Service Manager

This chapter includes the following topics:

Basic resources to cluster a PowerCenter Service Manager Server

A cluster setup for PowerCenter Service Manager, is split into the following three service groups:

- Veritas Cluster Filesystem (CFS)
- Cluster Volume Manager (CVM)
- PowerCenter Service Manager

The PowerCenter Service Manager resources depend on the resources of CFS and CVM service groups, for the prerequisite disk groups, volumes and mount points.

The recommended resources and its setup for each of the above service groups are described in the following subsections.

For information on the service group dependencies,

See "Sample service group configurations" on page 43.

Service Group for CFS

The CFS service group has the following resources:

- CVM Volume Diskgroup
  The CVM disk groups provide an active/active clustered set of volumes that are used to create the CFS, that is mounted in parallel on all configured nodes.
  Use the CVMVolDg resource type to create this resource.
- CFS Mount
  This resource is used to provide the CFS active/active shared file system to PowerCenter infa_shared objects from $PMROOTDir directory. Such directories include Cache, Storage, SrcFiles, TgtFiles etc.
  You can also use this resource to place the Informatica PowerCenter binaries on the shared CFS.
  Use the CFSMount resource type to create this resource.

Service Group for CVM

The CVM service group has the following resources.

- CFSfsckd
  The CFSfscd resource is used to start the cluster file system check (using the `fsck` command), daemon, and vxfsckd that runs for a cluster mount to succeed.
  Use the CFSfsckd resource type to create this resource.
- CVMCluster
  The CVMCluster resource controls the overall operation of CVM. The agents of CVMCluster bring up the CVM cluster.
  Use the CVMCluster resource type to create this resource.
- CVMVxconfigd
  The vxconfigd daemon maintains disk and disk group configurations, communicates configuration changes to the kernel, and modifies configuration information stored on the disks. CVMVxconfigd is required in the Cluster Volume Manager service group to start and monitor the vxconfigd daemon.
  Use the CVMVxconfigd resource type to create this resource.

Service Group for PowerCenter Service Manager

The PowerCenter Service Manager service group contains the Informatica PowerCenter Service Manager resource. This resource starts, stops and monitors the Informatica PowerCenter Service Manager instance. Once the Service Manager is either stopped or started, this resource manages all the subordinate Informatica PowerCenter processes and services within its service framework.

Use the PowerCenterSvcMgr resource type to create this resource.

Virtualizing PowerCenter Service Manager

To ensure that your Service Manager Server can function properly on any node of the cluster, you need to virtualize all the parameters that could be dependent on a particular node.

Review the following basic notes for virtualization:

Host names	When installing and configuring the Service Manager Server, ensure that you enter the virtual host name associated with the IP address used to configure the IP resource. This ensures that if the application needs to be migrated, you are not tied down by the physical IP address given to the Service Manager Server.
Path names	Ensure that your application gets installed on a shared disk so that it is not constrained by anything that is local to the node. If this is not possible every time, make sure that the local data is available on each configured node.

Chapter 5

Troubleshooting the agent for Informatica PowerCenter Service Manager

This chapter includes the following topics:

Using correct software and operating system versions

Ensure that no issues arise due to incorrect software and operating system versions. For the correct versions of operating system and software to be installed on the resource systems:

See "Supported software" on page 10.

Meeting prerequisites

Before installing the agent for Informatica PowerCenter Service Manager, double check that you meet the prerequisites.

For example, you must install the ACC library on VCS before installing the agent for Informatica PowerCenter Service Manager.

See "Before you install the Veritas agent for Informatica PowerCenter Service Manager" on page 15.

Configuring PowerCenter Service Manager resources

Before using a PowerCenter Service Manager resource, ensure that you configure the resource properly. For a list of attributes used to configure all PowerCenter Service Manager resources, refer to the agent attributes.

Verifying virtualization

Verify that your application does not use anything that ties it down to a particular node of the cluster.

See "Virtualizing PowerCenter Service Manager " on page 31.

Starting the PowerCenter Service Manager instance outside a cluster

If you face problems while working with a resource, you must disable the resource within the cluster framework. A disabled resource is not under the control of the cluster framework, and so you can test the PowerCenter Service Manager instance independent of the cluster framework. Refer to the cluster documentation for information about disabling a resource.

You can then restart the PowerCenter Service Manager instance outside the cluster framework.

Note: Use the same parameters that the resource attributes define within the cluster framework while restarting the resource outside the cluster framework.

Execute the following commands to start, stop or monitor the Service Manager Server outside the cluster framework.

To start	`$ InfaHome/server/tomcat/bin/infaservice.sh startup`
To stop	`$ InfaHome/server/tomcat/bin/infaservice.sh shutdown`
To monitor	Verify whether the PowerCenter Service Manager processes are running as InfaUser by executing the following command. `$ telnet HostName Port` **Note:** The agent uses the connect(3c) method to check whether Administration Console of the PowerCenter Service Manager is listening to the port defined by the *Port* agent attribute on the host defined by the *HostName* agent attribute.

Reviewing error log files

If you face problems while using PowerCenter Service Manager or the agent for Informatica PowerCenter Service Manager, refer to your product documentation to locate the log files, to investigate the problems.

The common reasons for issues are as follows:

Insufficient privileges	Files that need to be created, written to, would be created as InfaUser. Check if necessary privileges have been set.
Incorrect port, environment or parameter settings	Verify that ports have been properly configured and declared. Typically, ports from 1 through 1024 are reserved for the superuser. Also ensure that parameters to the agent are correctly defined.
Expired licenses	Check the application log files for any error messages related to expired licenses. Ensure the license keys/files have been placed at the appropriate location, as needed by the application.
Broken symlinks, missing files, and libraries	Verify your installation. Make sure nothing is broken, and all dependencies for the executables are met.
Insufficient disk space or system parameters	Ensure that the file-system has sufficient space for creation of temporary files that the application might need. Verify that the kernel has been tuned for sufficient IPC resources, file descriptors and meets the hardware requirement. Consult your product documentation for these details.

Consult your application expert if needed.

Reviewing cluster log files

In case of problems while using the agent for Informatica PowerCenter Service Manager, you can access the engine log file for more information about a particular resource. The engine log file is located at /var/VRTSvcs/log/engine_A.log.

Using trace level logging

The ResLogLevel attribute controls the level of logging that is written in a cluster log file for each PowerCenter Service Manager resource. You can set this attribute to TRACE, which enables very detailed and verbose logging.

If you set ResLogLevel to TRACE, a very high volume of messages are produced. Symantec recommends that you localize the ResLogLevel attribute for a particular resource.

Note: Starting with version 5.1.1.0 of the ACC library, the TRACE level logs for any ACCLib based agent are generated locally at the location /var/VRTSvcs/log/*Agent*_A.log.

To localize ResLogLevel attribute for a resource

1. Identify the resource for which you want to enable detailed logging.
2. Localize the ResLogLevel attribute for the identified resource:

   ```
   # hares -local Resource_Name ResLogLevel
   ```

3. Set the ResLogLevel attribute to TRACE for the identified resource:

   ```
   # hares -modify Resource_Name ResLogLevel TRACE -sys SysA
   ```

4. Test the identified resource. The function reproduces the problem that you are attempting to diagnose.
5. Set the ResLogLevel attribute back to INFO for the identified resource:

   ```
   # hares -modify Resource_Name ResLogLevel INFO -sys SysA
   ```

6. Review the contents of the log file. Use the time noted in Step 4 and Step 6 to diagnose the problem.

   You can also contact Symantec support for more help.

Appendix A

Sample Configurations

This appendix includes the following topics:

About sample configurations for the agent for Informatica PowerCenter Service Manager

The sample configuration graphically depicts the resource types, resources, and resource dependencies within the service group. Review these dependencies carefully before configuring the agent for Informatica PowerCenter Service Manager. For more information about these resource types, see the *Veritas Cluster Server Bundled Agents Reference Guide*.

Sample agent type definition

The sample agent type definition for Informatica PowerCenter Service Manager are as follows:

For VCS 4.x

```
type PowerCenterSvcMgr (
        static int RestartLimit = 1000
        static str ArgList[] = { ResLogLevel, State, IState,
        InfaUser, EnvFile, HostName, Port, InfaHome,
        SecondLevelMonitor, MonitorProgram }
```

```
        str ResLogLevel = INFO
        str InfaUser
        str EnvFile
        str HostName
        int Port = 6001
        str InfaHome
        int SecondLevelMonitor = 0
        str MonitorProgram
)
```

For VCS 5.0

```
type PowerCenterSvcMgr (
        static int RestartLimit = 1000
        static str AgentFile = "/opt/VRTSvcs/bin/Script50Agent"
        static str AgentDirectory = "/opt/VRTSagents/ha/bin/
        PowerCenterSvcMgr"
        static str ArgList[] = { ResLogLevel, State, IState,
        InfaUser, EnvFile, HostName, Port, InfaHome,
        SecondLevelMonitor, MonitorProgram }
        str ResLogLevel = INFO
        str InfaUser
        str EnvFile
        str HostName
        int Port = 6001
        str InfaHome
        int SecondLevelMonitor = 0
        str MonitorProgram
)
```

Sample configuration files

The sample agent type definition for Informatica PowerCenter Service Manager is as follows:

```
include "types.cf"
include "CFSTypes.cf"
include "CVMTypes.cf"
include "PowerCenterSvcMgr.cf"

cluster PowerCenter (
 UserNames = { admin = eHIaHChEIdIIgQIcHF }
 ClusterAddress = "10.182.4.208"
```

```
 Administrators = { admin }
 UseFence = SCSI3
 HacliUserLevel = COMMANDROOT
 )

system nodeA(
 )

system nodeB (
 )

group ClusterService (
 SystemList = { nodeA= 0, nodeB = 1 }
 UserStrGlobal = "LocalCluster@https://10.182.4.208:8443;"
 AutoStartList = { nodeA, nodeB }
 OnlineRetryLimit = 3
 OnlineRetryInterval = 120
 )

 IP webip (
  Device = eth0
  Address = "10.182.4.208"
  NetMask = "255.255.224.0"
  )

 NIC csgnic (
  Device = eth0
  )

 VRTSWebApp VCSweb (
  Critical = 0
  AppName = vcs
  InstallDir = "/opt/VRTSweb/VERITAS"
  TimeForOnline = 5
  RestartLimit = 3
  )

 VCSweb requires webip
 webip requires csgnic


 // resource dependency tree
 //
```

```
 // group ClusterService
 // {
 // VRTSWebApp VCSweb
 //     {
 //     IP webip
 //         {
 //         NIC csgnic
 //         }
 //     }
 // }


group Informatica_cfs (
 SystemList = { nodeA= 0, nodeB = 1 }
 AutoFailOver = 0
 Parallel = 1
 AutoStartList = { nodeA, nodeB }
 )

 CFSMount infabin_mnt (
  MountPoint = "/u01/app/infa_bin"
  BlockDevice = "/dev/vx/dsk/infa_bindg/infa_binvol"
  MountOpt = largefiles
  )

 CFSMount infashared_mnt (
  MountPoint = "/u01/app/infa_shared"
  BlockDevice = "/dev/vx/dsk/infa_shareddg/infa_sharedvol"
  MountOpt = largefiles
  )

 CVMVolDg infabin_voldg (
  CVMDiskGroup = infa_bindg
  CVMActivation = sw
  )

 CVMVolDg infashared_voldg (
  CVMDiskGroup = infa_shareddg
  CVMActivation = sw
  )

 requires group cvm online local firm
 infabin_mnt requires infabin_voldg
```

```
 infashared_mnt requires infashared_voldg


 // resource dependency tree
 //
 // group Informatica_cfs
 // {
 // CFSMount infabin_mnt
 //     {
 //     CVMVolDg infabin_voldg
 //     }
 // CFSMount infashared_mnt
 //     {
 //     CVMVolDg infashared_voldg
 //     }
 // }


group PowerCenterServiceManager (
 SystemList = { nodeB = 0, nodeA= 1 }
 AutoFailOver = 0
 Parallel = 1
 AutoStartList = { nodeB, nodeA}
 )

 PowerCenterSvcMgr Informatica (
  InfaUser = infaPC
  EnvFile @nodeB = "/u01/app/infa_bin/PowerCenter/nodeB/envfile"
  EnvFile @nodeA= "/u01/app/infa_bin/PowerCenter/nodeA/envfile"
  InfaHome @nodeB = "/u01/app/infa_bin/PowerCenter/nodeB"
  InfaHome @nodeA= "/u01/app/infa_bin/PowerCenter/nodeA"
  )

 requires group Informatica_cfs online local firm


 // resource dependency tree
 //
 // group PowerCenterServiceManager
 // {
 // PowerCenterSvcMgr Informatica
 // }
```

```
group cvm (
 SystemList = { nodeA= 0, nodeB = 1 }
 AutoFailOver = 0
 Parallel = 1
 AutoStartList = { nodeA, nodeB }
 )

 CFSfsckd vxfsckd (
  )

 CVMCluster cvm_clus (
  CVMClustName = PowerCenter
  CVMNodeId = { nodeA= 0, nodeB = 1 }
  CVMTransport = gab
  CVMTimeout = 200
  )

 CVMVxconfigd cvm_vxconfigd (
  CVMVxconfigdArgs = { syslog }
  )

 cvm_clus requires cvm_vxconfigd
 vxfsckd requires cvm_clus


 // resource dependency tree
 //
 // group cvm
 // {
 // CFSfsckd vxfsckd
 //     {
 //     CVMCluster cvm_clus
 //         {
 //         CVMVxconfigd cvm_vxconfigd
 //         }
 //     }
 // }
```

Sample service group configurations

This section includes the sample service group configurations in a VCS environment.

Figure A-1 shows the service group dependency between CVM, CFS and PowerCenter service groups.

Figure A-1 Group dependency of service groups for CVM, CFS and PowerCenter Service Manager

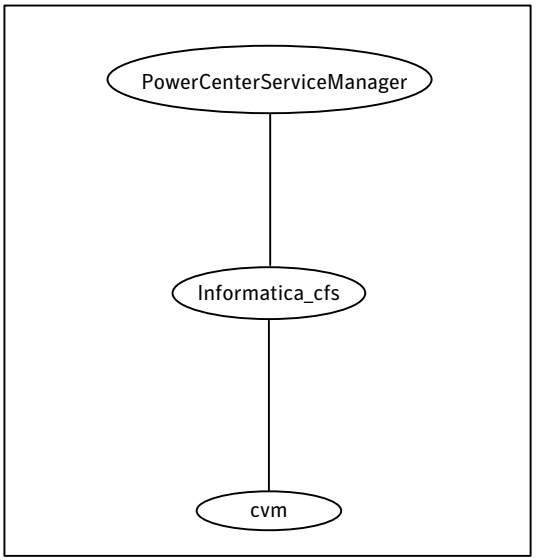


Figure A-2 shows a service group for Cluster File System.

Figure A-2 Sample service group for Cluster File System

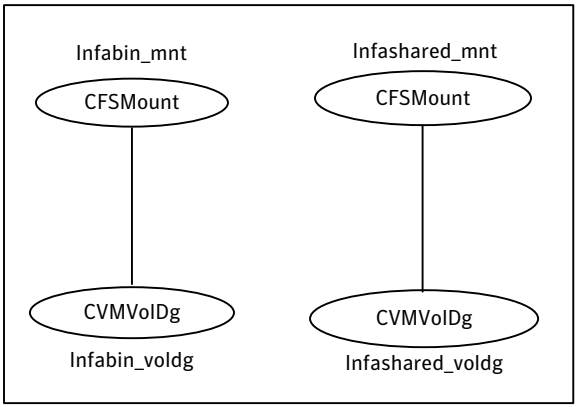


Figure A-3 shows a service group for Cluster Volume Manager.

Figure A-3 Sample service group for Cluster Volume Manager

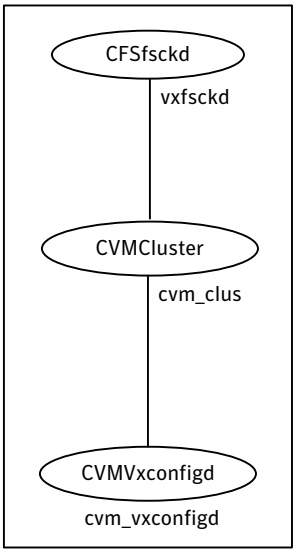
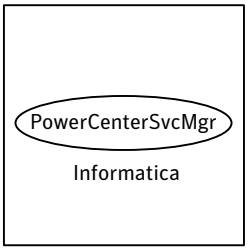


Figure A-4 shows the resource view of PowerCenter Service Manager on all systems.

Figure A-4 Resource view of PowerCenter Service Manager on all systems



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