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Preface

Welcome to the VERITAS Cluster Server™ (VCS) agents for Web Edition 2.0. VCS agents monitor specific resources within an application, determine the status of these resources, and start or stop them according to external events. These processes are common to all agents, but how they are performed depends on the resource being monitored. The VCS agents for Web Edition 2.0 monitor Apache 1.3, QuickLog (QLog) 1.0.6, and SuiteSpot 3.5. For more information on VCS, refer to the VERITAS Cluster Server User’s Guide.

Note  If this document is dated more than six months prior to the date you are installing your agents, contact VERITAS Customer Support to confirm the latest supported versions of the application and operating system.

Sales Assistance

For information on purchasing VCS agents or other VERITAS products, contact your VERITAS sales representative:

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- Phone: 1-650-526-2549
- Email: swupdate@veritas.com

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## Conventions

<table>
<thead>
<tr>
<th>Typeface</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>courier</td>
<td>Computer output, files, attribute names, device names, and directories</td>
</tr>
<tr>
<td><strong>courier</strong></td>
<td>User input and commands, keywords in grammar syntax</td>
</tr>
<tr>
<td>italic</td>
<td>New terms, titles, emphasis, variables replaced with a name or value</td>
</tr>
<tr>
<td><strong>italic</strong></td>
<td>Variables within a command</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>C shell prompt</td>
</tr>
<tr>
<td>$</td>
<td>Bourne/Korn shell prompt</td>
</tr>
<tr>
<td>#</td>
<td>Superuser prompt (for all shells)</td>
</tr>
<tr>
<td>\</td>
<td>Command- and code-line continuation if last character in line. Not to be confused with an escape character.</td>
</tr>
</tbody>
</table>
VCS Agent 1.1 for Apache

The VCS enterprise agent for Apache monitors the Apache Web Server and communicates its state to the VCS engine.

This agent includes type declarations and executables for the agent.

If the agent detects that the Apache software has failed or is not responding to HTTP requests, it directs VCS to migrate the Apache Server process (httpd) to another system in the cluster, enabling Web services to remain highly available.

Instructions for installing the agent begin on page 5.

Version Numbers and Operating Systems

The Apache agent monitors Apache 1.3 running on Solaris 2.6 and 7.
Apache Agent

The VCS agent processes for the Apache agent are summarized below.

<table>
<thead>
<tr>
<th>Description</th>
<th>Brings an Apache Web Server online, monitors the server-related process, and shuts down the Apache Server process.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations</td>
<td>Online—Starts the Apache Web Server process (httpd). Offline—Stops the Apache Web Server process (httpd). Clean—Stops all Apache daemons after an unexpected offline detection or an ineffective online timeout. Monitor—Monitors the state of the Apache Web Server. The Apache Web server is functioning if the server process (httpd) is functioning and sending valid responses to HTTP requests.</td>
</tr>
</tbody>
</table>
| Detecting Failure | The agent monitor script uses a two-step process to detect failure:  
1. The PidFile process ID is compared to the process ID obtained from the UNIX ps command. If the IDs match, then the Apache Server process (httpd) is running.  
2. The agent monitor script verifies that Apache is responding to HTTP requests. It then sends an HTTP GET request to the server at the address $IPAddr and port ($Port) for $TestFile. If the server responds with GET, then the Apache process is functioning (return code 110). Otherwise, the process is declared failed (return code 100). |
Prerequisites

✔ Install and configure VCS. (If necessary, review the VERITAS Cluster Server Installation Guide.)

✔ Install and configure the Apache software. You must install and configure the Apache software before installing the Apache agent. (If necessary, refer to the Apache documentation.)

Installing and Configuring the Apache Software

Before Installing the Software

1. Download the Apache software from the Apache Web site. There is no charge for the software. Apache files are stored in the following directories:
   - Binaries: $ServerRoot/bin
   - Configuration files: $ServerRoot/conf
   - Log files: $ServerRoot/logs

   **Note** Do not modify these directories.

2. Change the document location pointed to by the `<Directory>` and `<DocumentRoot>` directives from the default value $ServerRoot/htdocs.

3. Store documents served on your Web page (HTML pages, images, cgi-scripts, data files) on a disk partition shared by different cluster systems. When the first system is started, it mounts one or more disk partitions where these files are stored. If the Apache Web Server fails, this partition is mounted on another system in the cluster.

4. By default, Apache serves documents from the directory $ServerRoot/htdocs. Change this directory to a mountable partition or a volume if you are using VERITAS Volume Manager™.
Installing and Configuring the Apache Software

Installing the Software

1. If you have not already installed and configured VCS, install it now. If necessary, refer to the VERITAS Cluster Server Installation Guide.

2. Install Apache from the binary distribution or source distribution, depending on your needs. Choose a directory in which to install the software (for example, /opt/apache/). For more information, refer to the Apache documentation.

3. (Optional) Add support for external modules (for example, PHP and mod_perl).

4. Configure Apache by modifying the configuration files in the /opt/apache/conf directory.

5. Copy the binaries, configuration files, log files, and directory structure to the cluster systems to which Apache will migrate during a failover. To tar the current installation and copy it on each node:

   a. Type the following commands on the first node:

      # cd /opt
      # tar -cvf apache.tar ./apache_1.3.x/*

   b. Copy the directory /opt/apache.tar to all other systems.

   c. Type the following on each node:

      # cd /opt
      # tar -xvf apache.tar

Configuring the Software

The Apache process starts by reading configuration files stored in the directory $ServerRoot/conf/. Refer to the Apache Web site for details on customizing the configuration files in this directory to meet your requirements. Before you configure the Apache agent for VCS, configure the Apache software. After installing the software, type the following commands to verify that the configuration is correct:

# cd
# ./apachectl configtest
Installing and Configuring the Apache Agent

Installing the Agent Software

1. Log in as root.

2. Insert the CD into a drive connected to your system.
   - If you are running Solaris volume-management software, the software automatically mounts the CD as /cdrom/cdrom0.
   - If you are not running Solaris volume-management software, you must mount the CD manually. For example:

     ```
     # mount -F hsfs -o ro /dev/dsk/c0t6d0s2/cdrom/cdrom0
     ```

     Note that /dev/dsk/c0t6d0s2 is the default for the CD drive.

3. Type the following command to install the agent:

   ```
   # pkgadd -d /cdrom/cdrom0 VRTSvcsAp
   ```

4. Copy the generic script agent binary to the $VCS_HOME/bin/Apache directory:

   ```
   # cd $VCS_HOME/bin
   # cp ScriptAgent Apache/ApacheAgent
   ```

5. Repeat steps 1-4 on each system Apache will migrate to in case of failure.
Configuring the Agent

The VCS agent for Apache comes with a sample configuration that can be modified to fit your configuration. Before configuring the agent, review the following VCS attributes for the Apache resource type.

Apache Agent Resource Type

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Type and Dimension</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ServerRoot</td>
<td>string</td>
<td>Specifies the base directory for Apache installation. The agent looks for Apache binaries and configuration directories relative to ServerRoot.</td>
</tr>
<tr>
<td>PidFile</td>
<td>string</td>
<td>The name of the Apache server process ID (Pid) file. The value of PidFile should be relative to ServerRoot. Typically, it is set to logs/httpd.pid so that the agent can open the Pid file as $ServerRoot/$PidFile.</td>
</tr>
<tr>
<td>IPAddr</td>
<td>string</td>
<td>Base directory for Apache installation. The agent looks for Apache binaries and configuration directories related to ServerRoot.</td>
</tr>
<tr>
<td>Port</td>
<td>integer</td>
<td>The port on which Apache listens.</td>
</tr>
<tr>
<td>TestFile</td>
<td>string</td>
<td>This attribute is set to “/” which refers to the directory that contains the files “served” by the server.</td>
</tr>
</tbody>
</table>

Note that the `ps` command truncates a field value in its output if it is longer than 80 characters. The online script starts Apache with the following command:

```
ServerRoot/bin/httpd -d ServerRoot
```

If the length of this string is longer than 80 characters, the `ps` command returns only the first 80 characters. The monitor script uses the value returned from the `ps` command to distinguish between different Apache installations currently running on the system. If truncated, the monitor script behaves incorrectly. There are two workarounds to fix this limitation:

- Use a shorter name for `ServerRoot` (maximum 33 characters) so that the string `ServerRoot/bin/httpd -d ServerRoot` is less than 80 characters long.
- If you must use a long character value for `ServerRoot`, create a symbolic link using less than 33 characters in the `main.cf` file. Refer to the `ps` man pages for more information.
A Sample Apache Configuration

In the following example, VCS is configured on a two-system cluster (sysa and sysb).

```
Type Definition (vcsApacheTypes.cf)

type Apache {
    static int RestartLimit = 1
    str ServerRoot
    str PidFile
    str IPAddr
    int Port
    str TestFile
    static str ArgList[] = { ServerRoot, PidFile, IPAddr, Port, TestFile }
}
```
Sample Configuration: vcsApacheMain.cf

include "vcsApacheTypes.cf"
cluster vcswebcluster
system fwadm3
system fwadm4
system fwadm5

group vcsApache_grp_testvcs (  
  systemList = { fwadm3, fwadm3, fwadm5 }  
  AutoStartList = { fwadm3 }  
)

NIC vcsApache_nic_hme0 (  
  Device = hme0  
  NetworkType = ether  
)

IP vcsApache_ip_192.170.2.1 (  
  Device = hme0  
  Address = "192.170.2.1"  
)

IP vcsApache_ip_207.25.71.6 (  
  Device = hme0  
  Address = "207.25.71.6"  
)

DiskGroup vcsApache_dg_dg1 (  
  DiskGroup = dg1  
)

Volume vcsApache_vol_vol1 (  
  Volume = vol1  
  DiskGroup = dg1  
)
Mount vcsApache_mnt_web {
    Mointpoint = "/web"
    BlockDevice = "/dev/vx/dsk/dg1/vol1"
    FSType = "vxfs"
    MountOpt = rw
}

Apache testVCS {
    ServerRoot = "/opt/apache"
    PidFile = "logs/httpd.pid"
    IPAddr = "192.170.2.1"
    Port = 80
    TestFile = "/"
}

testVCS requires vcsApache_ip_192_170_2_1

testVCS requires vcsApache_ip_207_25_21_6

testVCS requires vcsApache_mnt_web

vcsApache_ip_192_170_2_1 requires vcsApache_nic_hme0
vcsApache_ip_207_25_21_6 requires vcsApache_nic_hme0

vcsApache_vol_vol1 requires vcsApache_dg_hme0
vcsApache_mnt_web requires vcsApache_vol_vol1
Configuring the Apache Agent

The figure below illustrates the configuration's dependency graph:

This configuration has a single disk group containing three volumes. Two of the volumes contain file systems, and the third is an Apache volume used by the file systems. After the volumes are online and cached data in the Apache volume is written to the appropriate file system, the Mount agent can mount the file systems.

Configuring the Apache Agent

To configure the agent according to the sample configuration:

1. Log in to sysa as root.
2. To configure the Apache agent, do the following:
   a. On the first cluster system, type:
      ```
      # cd $VCS_HOME/bin/Apache
      ./vcsApacheWiz /opt/apache/conf/httpd.conf
      /opt/apache/conf/srm.conf
      ```
      (Specify a list of configuration files. The vcsApacheWiz tool will parse these files and the files included in them through the <Include> directive).
   b. If vcsApacheWiz prompted you to make changes to your Apache configuration files, do so now.
3. For the specified files:
   a. Copy the file
      
      
      ./vcsApacheTypes.cf
      
      to
      
      /etc/VRTSvcs/conf/config/

   b. Edit the file /etc/VRTSvcs/conf/config/main.cf and add the contents of the vcsApacheMain.cf file.

4. Verify the syntax of the file $VCS_CONF/config/main.cf:
   
   # hacf -verify config

5. Start VCS on sysa:
   
   # hastart

6. Verify that all Apache service group resources are brought online:
   
   # hagrp -display

7. Take the service group offline and verify that all resources are stopped:
   
   # hagrp -offline service_group -sys system_name
   
   # hagrp -display

8. Bring the service group online again and verify that all resources are available:
   
   # hagrp -online service_group -sys system_name
   
   # hagrp -display

9. Start VCS on sysb:
   
   # hastart

10. Switch the Apache service group to sysb:
    
    # hagrp -switch service_group -to sysb
Disabling the Agent

11. Verify that all Apache service group resources are brought online on sysb:
   
   ```
   # hagrp -display
   ```

12. Online the Apache group on this system:
   
   ```
   # cd $VCS_HOME/bin
   # ./hagrp -online group_name -sys system_name
   ```

   You now have a highly available Apache Web Server.

Disabling the Agent

To disable the agent, you must first switch the Apache service group to an OFFLINE state. This stops the application completely or switches the agent to another system.

1. To remove a system from the service group’s SystemList, check if the service group is online:
   
   ```
   # hagrp -state service_group -sys system_name
   ```

2. If the service group is online, take it offline by entering one of the following commands:
   
   ```
   # hagrp -switch service_group -to system_name
   ```
   or:
   
   ```
   # hagrp -offline service_group -sys system_name
   ```

   You can now remove the system, service group, or resource type from the VCS configuration. (See the chapter on reconfiguring VCS from the command line in the VERITAS Cluster Server User’s Guide for more information.)

Removing the Agent

Type the following command on each system to remove the agent. Answer prompts accordingly:

```
# pkgrm VRTSvcsAp
```
VCS Agent 1.1 for QuickLog 1.0.6

The QuickLog high availability package contains the QuickLog agent, which brings QuickLog volumes online, takes them offline, and monitors them to verify that at least one remains attached to its associated QuickLog device.

This package includes type declarations and executables for the agent.

Instructions for installing the agent begin on page 15.

Version Numbers and Operating Systems

The QuickLog agent monitors QuickLog 1.0.6 running on Solaris 2.5.1, 2.6, and 7 (32-bit and 64-bit).
QuickLog Agent

The VCS agent processes for the QuickLog agent are summarized below.

<table>
<thead>
<tr>
<th>Description</th>
<th>Brings a disk group’s QuickLog volumes online, takes them offline, and monitors them to determine their online and offline state.</th>
</tr>
</thead>
</table>
| **Operations** | Online—Executes `vxld_cfgrec`, which writes cached log data to the appropriate file system. Mounts QuickLog volumes on a disk group’s QuickLog device.  
Offline—Unmounts a disk group’s QuickLog volumes from the disk group’s QuickLog device.  
Monitor—Scans output from the `vxld_print` command to determine if a disk group’s QuickLog volumes are attached to the disk group’s QuickLog device. |
| **Detecting Failover** | If no disk group’s QuickLog volumes are attached to a QuickLog device, QuickLog is taken offline and the QuickLog resource’s service group switches to the next available system listed in the service group’s `SystemList` attribute. |
Prerequisites

✔ Install and configure VCS. (If necessary, review the VERITAS Cluster Server Installation Guide.)


Installing the Agent Software

1. Log in as root.
2. Insert the CD into a drive connected to your system.
   - If you are running Solaris volume-management software, the software automatically mounts the CD as /cdrom/cdrom0.
   - If you are not running Solaris volume-management software, you must mount the CD manually. For example:

     ```
     # mount -F hsfs -o ro /dev/dsk/c0t6d0s2/cdrom/cdrom0
     ```

     Note that /dev/dsk/c0t6d0s2 is the default for the CD drive.

3. Type the following command to install the agent:

   ```
   # pkgadd -d /cdrom/cdrom0 VRTSvcsql
   ```

4. Repeat steps 1-3 on each system that will become part of the QuickLog service group.
Configuring the Agent

The VCS agent for QuickLog comes with a sample configuration that can be modified to fit your configuration. Before configuring the agent, review the following VCS attribute for the QuickLog resource type. Instructions for configuring the agent begin on page 18.

QuickLog Resource Type

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Type and Dimension</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>DiskGroup</td>
<td>string-scalar</td>
<td>The disk group name containing the QuickLog volumes managed by the agent.</td>
</tr>
</tbody>
</table>

Type Definition

type QuickLog {
    str DiskGroup
    NameRule = quicklog_ + resource.DiskGroup
    static str ArgList[] = { DiskGroup }
}

Sample Configuration

QuickLog random_quicklog {
    DiskGroup = randomdg
}

A Sample QuickLog Configuration

In the following example, VCS is configured on a two-system cluster (sysa and sysb).

![Configuration Diagram]

The figure below illustrates the configuration’s dependency graph:

![Dependency Graph]

This configuration has a single disk group containing three volumes. Two of the volumes contain file systems, and the third is a QuickLog volume used by the file systems. After the volumes are online and cached data in the QuickLog volume is written to the appropriate file system, the Mount agent can mount the file systems.
To configure the agent according to the sample configuration:

1. Log in to sysa as root.
2. To edit the default QuickLog configuration file, perform steps a and b. Otherwise, proceed to step 3:
   
a. Before copying files, save the original main.cf file in another location. Copy the sample QuickLog configuration file:

   $VCS\_CONF/sample\_quicklog/main.cf

   to:

   $VCS\_CONF/config/main.cf

   This overwrites the main.cf files in this directory. We recommend that you save the files in another location.

   b. If you have created a resource tree with your own configuration and you want to configure only the QuickLog resource, edit the main.cf file to contain the following line:

   include QuickLogTypes.cf

   c. Create the QuickLog resource in the main.cf file, using the example on page 16.

   d. Assign dependencies to the newly created resource. Refer to the VCS User’s Guide for information on assigning dependencies.

3. Edit the default attributes in the file $VCS\_CONF/config/main.cf to match the parameters in your configuration.
4. Copy the QuickLog type configuration file:

   $VCS\_CONF/sample\_quicklog/QuickLogTypes.cf

   to:

   $VCS\_CONF/config/QuickLogTypes.cf
5. Verify the syntax of the file $VCS_CONF/config/main.cf:
   
   ```
   # hacf -verify config
   ```

6. Start VCS on sysa:
   
   ```
   # hastart
   ```

7. Verify that all QuickLog service group resources are brought online:
   
   ```
   # hagrp -display
   ```

8. Take the service group offline and verify that all resources are stopped:
   
   ```
   # hagrp -offline service_group -sys system_name
   # hagrp -display
   ```

9. Bring the service group online again and verify that all resources are available:
   
   ```
   # hagrp -online service_group -sys system_name
   # hagrp -display
   ```

10. Start VCS on sysb:
    
    ```
    # hastart
    ```

11. Switch the QuickLog service group to sysb:
    
    ```
    # hagrp -switch service_group -to sysb
    ```

12. Verify that all QuickLog service group resources are brought online on sysb:
    
    ```
    # hagrp -display
    ```

13. Save the configuration to the disk:
    
    ```
    # haconf -dump [-makero]
    ```
Disabling the Agent

To disable the agent, you must first switch the QuickLog service group to an OFFLINE state. This stops the application completely or switches the agent to another system.

1. To remove a system from the service group’s SystemList, check if the service group is online:

   ```
   # hagrp -state service_group -sys system_name
   ```

2. If the service group is online, take it offline by entering one of the following commands:

   ```
   # hagrp -switch service_group -to system_name
   ```
   or:
   ```
   # hagrp -offline service_group -sys system_name
   ```

   You can now remove the system, service group, or resource type from the VCS configuration. (See the chapter on reconfiguring VCS from the command line in the VERITAS Cluster Server User’s Guide for more information.)

Removing the Agent

Type the following command on each system to remove the agent. Answer prompts accordingly:

   ```
   # pkgrm VRTSvcsql
   ```

Known Limitations

<table>
<thead>
<tr>
<th>Incident</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>32886</td>
<td>The QuickLog agent does not report errors in the QuickLog resource. This can prevent access to file systems that are dependent on the resource. If a QuickLog resource faults, it is possible that the resource and any dependent service groups cannot be taken offline or failed over to another machine. <strong>Workaround:</strong> You must reboot the server.</td>
</tr>
<tr>
<td>38499</td>
<td></td>
</tr>
</tbody>
</table>
This VCS agent monitors Netscape SuiteSpot services. Summaries of the VCS agent processes for Netscape begin on page 22.

**Supported Servers and Operating Systems**

The VCS enterprise agent for Netscape SuiteSpot 3.5 supports the following Netscape Servers running on Solaris 2.5.1 or 2.6:

- Netscape Enterprise and Secure Enterprise Server 3.62
- Netscape Proxy and Socket5 Server 3.5
- Netscape Directory Server 4.1
- Netscape Admin Server 3.5
- Netscape Messaging Server 3.6
**Netscape Process Agent: Netscape**

The VCS agent processes for the Netscape agent are summarized below.

<table>
<thead>
<tr>
<th>Description</th>
<th>Brings a Netscape SuiteSpot Server online, monitors the Netscape server-related processes, and shuts down Netscape server processes.</th>
</tr>
</thead>
</table>
| **Operations** | Online—Executes the Netscape `/start` command.  
Offline—Executes the Netscape `/stop` command.  
Monitor—Uses the Netscape PidLog entry to check for a server-specific process name, as defined in `SuiteTypes.pl`. Optional: To retrieve a document header, execute a `http HEAD` command by setting the `ConnectTest` variable in the `SuiteTypes.pl` file to `full`. For the Messaging Server, use the SMTP `HELO` command for the `ConnectTest`.  
Clean—Executes the Netscape `stop` command if the agent offlines unexpectedly. |
| **Detecting Failover** | If the monitor does not detect the server-associated Netscape process or fails to communicate with the server, the agent attempts to restart the resource twice. If the restart attempts are unsuccessful, the resource fails. If the resource is marked critical, the service group switches to the next available system listed in the service group’s `SystemList` attribute. |

**Prerequisites**

✔ Install and configure VCS. (If necessary, review the VERITAS Cluster Server Installation Guide.)

✔ Install and configure the Netscape SuiteSpot Server for Solaris. (If necessary, review the Netscape documentation).

✔ If you want to install the Messaging Server, refer to the section on “Installing the Messaging Server” on page 36 before installing the server.
Supported Netscape SuiteSpot Servers

The file $VCS_HOME/bin/SuiteType.pl defines the supported Netscape SuiteSpot Server process types. This file contains a data structure listing the accepted value for the SuiteType resource attribute, the variable assignments for the start/stop/restart script, the process name to monitor, and the type of ConnectTest.

This agent supports the Netscape SuiteSpot Servers described below.

**Enterprise Server (EP)**

This is the standard server that distributes Web pages. The agent monitors the uxwdog process by default, and uses the Netscape pid-log file entry to verify with the ps -p pidlog value that the process still exists. By default, the ConnectTest variable is set to full, so the monitor must retrieve the Document header information. To monitor this server, specify SuiteSpotType = Enterprise.

**Secure Enterprise Server (SS)**

SS functions are similar to those of EP, except for the online function. To online the server process, a password string is piped into the Netscape startup script standard input. (Piping the password is similar to typing in a password at the Netscape startup script prompt.) The password string can contain multiple lines. The password string is stored, crypted, and uuencoded as the SecurePwd attribute, and then distributed across all VCS cluster members. To monitor this server, specify SuiteSpotType = Secure.

The crypt command crypts and decrypts the password. The Keyfile for the crypt algorithm defaults to $VCS_HOME/bin/Netscape/DESKeyFile. This file can be modified, but you must apply any changes to all VCS Netscape cluster nodes.

Use the $VCS_HOME/bin/Netscape/SecurePwdSetup.pl utility to set up or modify an initial password. This program updates the SecurePwd attribute, so you must have VCS running and an SS resource defined for the update to occur. When the crypt command is executed by SecurePwdSetup.pl or SecurePwdSetup.pl, the password is visible in the process table for a short time (see the crypt command manual pages).

By default, all files associated with secure startup have readonly permissions for root. If you want to use different security, change the secure_online and SecurePwd.pl files.
Supported Netscape SuiteSpot Servers

**Messaging Server (MS)**

The MS provides SMTP/POP/IMAP mail services. The agent starts, stops, and monitors the MS process NscpMail. The MS does not create a pid-log file entry similar to the other SuiteSpot components, but does use the ps command to check for the NscpMail process. By default, the ConnectTest variable is set to SMTP, so the monitor exchanges SMTP HELO information with the MS. To monitor this server, specify **SuiteSpotType = Mail**.

**Proxy Server (PS) and Socket5 Daemon (SD)**

This agent provides a high-availability solution for the Netscape Proxy and Socket5 Servers when they are used as a gateway from an intranet to the internet. The agent starts, stops, and monitors the associated processes ns-proxy and ns-sockd. Before using the server as a gateway, install the Netscape Proxy Server Package (available from Netscape). To monitor the Proxy Server, specify **SuiteSpotType = Proxy**. To monitor the Socket5 Server, specify **SuiteSpotType = Socket5**.

**Directory Server (DS)**

The agent for this **SuiteSpotType** attribute starts, stops, and monitors the Netscape Directory Server ns-slapd. By default, ConnectTest is disabled. To monitor this server, specify **SuiteSpotType = Directory**.

**Admin Server (AS)**

The administrative server for Netscape products can be controlled by VCS if you use a resource with **SuiteSpotType** AS. In this case, VCS can start and stop the administrative interface for Netscape. The monitor checks for the ns-admin process. To monitor this server, specify **SuiteSpotType = Admin**.

*Note* VCS monitors resources even if they are not started or stopped by VCS. If you use the Netscape Admin Server or the Netscape script to externally start or stop a VCS-monitored resource, the resource faults and attempts to restart or failover the resource group, depending on the VCS critical resource attributes.
Storing Binaries and Web Pages on Shared Disks

Load the binaries for the Netscape enterprise agent and the distributed http documents on a file system residing on disks accessible to all systems in the cluster. If you load the binaries on a local file system accessible to one node only, any configuration changes you make must be applied to each cluster system that runs the Netscape Server.

To enhance server performance, multiple server systems can distribute Web pages. However, we recommend that you use a file system replication product (for example, VERITAS Storage Replicator for File System™) if you choose this distribution method.

Note A Netscape Service group that runs on several systems is defined as “parallel.” This VCS enterprise agent for Netscape supports failover service groups only. For information on parallel setups, contact VERITAS Consulting Services.

Installing the Agent Software

1. Log in as root.

2. Insert the CD into a drive connected to your system.
   - If you are running Solaris volume-management software, the software automatically mounts the CD as /cdrom/cdrom0.
   - If you are not running Solaris volume-management software, you must mount the CD manually. For example:

     ```
     # mount -F hsfs -o ro /dev/dsk/c0t6d0s2 /cdrom/cdrom0
     ```

     Note that /dev/dsk/c0t6d0s2 is the default for the CD drive.

3. Type the following command to install the agent:

   ```
   # pkgadd -d /cdrom/cdrom0 VRTSvcsns
   ```

4. Repeat steps 1-3 on each system that you want in the Netscape Server resource group.

Configuring the Agent

The VCS enterprise agent for Netscape SuiteSpot comes with a sample configuration that can be modified to fit your configuration. Before configuring the agent, review the VCS resource attributes for the Netscape SuiteSpot resource types.
## Netscape Resource Type

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Type and Dimension</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>SuiteSpotType</td>
<td>string-scalar</td>
<td>The type of Netscape SuiteSpot Server controlled by VCS. See page 23 for a list of supported servers. This attribute must match a value in the following file: $VCS_HOME/bin/Netscape/SuiteType.pl. Default: Enterprise.</td>
</tr>
<tr>
<td>ServerName</td>
<td>string-scalar</td>
<td>The domain name under which the Netscape SuiteSpot Server is accessible. This name must match one of the IP resources that are part of the resource group. The ServerName can be reused for the SvrSubDir definition.</td>
</tr>
<tr>
<td>Port</td>
<td>string-scalar</td>
<td>The IP port used to retrieve a document from the Netscape SuiteSpot Server. Default: 80.</td>
</tr>
<tr>
<td>Document</td>
<td>string-scalar</td>
<td>The document retrieved by the http HEAD command during a monitor cycle. Default: /.</td>
</tr>
<tr>
<td>SecPwd</td>
<td>string-scalar</td>
<td>The crypted password information used to start a Secure Netscape Enterprise Server. The $VCS_HOME/bin/Netscape/SecurePwdSetup.pl utility updates this attribute when VCS is running.</td>
</tr>
<tr>
<td>SvrSubDir</td>
<td>string-scalar</td>
<td>The subdirectory inside the Netscape SuiteSpot Server tree that contains the start, stop, and restart scripts. Default: /opt/netscape/SuiteSpot/\https-$ServerName.</td>
</tr>
<tr>
<td>PidLog</td>
<td>string-scalar</td>
<td>The file name containing the process ID of the Netscape SuiteSpot Server process. The server process updates this file; VCS does not update it. Default: $SrvSubDir/logs/pid.</td>
</tr>
</tbody>
</table>
Netscape Resource Type

**Note** To verify the **ServerName**, **Port**, and **Document** attribute values, execute

```
$VCS_HOME/bin/Netscape/SockTest.pl[ServerName][Port][Document].
```

**Type Definition**

type Netscape {
    static int OnlineRetryLimit = 1
    static int OnlineWaitLimit = 1
    static int RestartLimit = 2
    str SuiteSpotType = Enterprise
    str ServerName
    str Port = 80
    str Document = "/"
    str SecPwd
    str SrvSubDir = "/opt/netscape/SuiteSpot/https-$ServerName"
    str PidLog = "$SrvSubDir/logs/pid"
    NameRule = resource.SuiteSpotType + "_" + resource.ServerName
    static str ArgList[] = { SuiteSpotType, ServerName, Port, Document, SecPwd, SrvSubDir, PidLog }
}
Sample Configuration

include "types.cf"
    include "NetscapeTypes.cf"
cluster vcs
system sysa
system sysb


group nsgrp {
    SystemList = { sysa, sysb }
    AutoStartList = { sysa }
}

DiskGroup nsdg {
    DiskGroup = nsdg
}

IP nsIP {
    Device = le0
    Address = "192.2.40.21"
}

Mount ns_mount{
    MountPoint = "/shared/SuiteSpot"
    BlockDevice = "/dev/vx/dsk/nsdg/nsvol"
    FSType = vxfs
    MountOpt = rw
}

NIC nsgrp_le0 {
    Device = le0
    NetworkType = ether
}
Netscape Resource Type

Netscape AS_nssrv {
    Critical = 0
    SuiteSpotType = Admin
    ServerName = SuiteSpot.mycompany.com
    Port = 12345
    SrvSubDir = "/shared/SuiteSpot"
    PidLog = "$/SrvSubDir/admin-serv/logs/pid"
}

Netscape MS_nssrv {
    SuiteSpotType = Mail
    ServerName = SuiteSpot.mycompany.com
    Port = 25
    SrvSubDir = "/shared/SuiteSpot/mail-$ServerName"
}

Netscape DS_nssrv {
    SuiteSpotType = Directory
    ServerName = SuiteSpot.mycompany.com
    Document = "/"
    SrvSubDir = "/shared/SuiteSpot/https-$ServerName"
    PidLog = "$SrvSubDir/logs/pid"
}

Netscape EP_nssrv {
    ServerName = SuiteSpot.mycompany.com
    SrvSubDir = "/shared/SuiteSpot/https-$ServerName"
    PidLog = "$SrvSubDir/logs/pid"
}
Netscape Resource Type

Netscape PS_nssrv {
    SuiteSpotType = Proxy
    ServerName = SuiteSpot.mycompany.com
    Port = 8080
    Document = "/"
    SrvSubDir = "/shared/SuiteSpot/proxy-$ServerName-proxy"
    PidLog = "$SrvSubDir/logs/pid"
}

Netscape SD_nssrv {
    Critical = 0
    SuiteSpotType = Socket5
    ServerName = SuiteSpot.mycompany.com
    Port = 1080
    SrvSubDir = "/shared/SuiteSpot/proxy-$ServerName-proxy"
    PidLog = "$SrvSubDir/logs/pid-sockd"
}

Netscape SS_nssrv {
    SuiteSpotType = Secure
    ServerName = SuiteSpot.mycompany.com
    Document = "/"
    SecPwd = "M-1!^XKE!#1GPY<7HV/G#K\n"
    SrvSubDir = "/shared/SuiteSpot/dsec-vcsas"
    PidLog = "$SrvSubDir/logs/pid"
}


Volume nsdg_nsvol {
  Volume = nsvol
  DiskGroup = nsdg
}
AS_nssrv requires nsIP
AS_nssrv requires nsmount
DS_nssrv requires nsIP
DS_nssrv requires nsmount
EP_nssrv requires nsIP
EP_nssrv requires nsmount
PS_nssrv requires nsIP
PS_nssrv requires nsmount
SD_nssrv requires nsIP
SD_nssrv requires nsmount
SS_nssrv requires nsIP
SS_nssrv requires nsmount
MS_nssrv requires nsIP
MS_nssrv requires nsmount
nsdg_nsvol requires nsdg
nsIP requires nsgrp_le0
nsmount requires nsdg_nsvol
Sample SuiteSpot Configuration

In the following example, VCS is configured on a two-system cluster (sysa and sysb), and Netscape SuiteSpot Server is installed on shared disks.
The figure below illustrates the sample configuration’s dependency graph.

This configuration has one disk group (\texttt{nsdg}). This disk group stores the file systems related to Netscape SuiteSpot. All Netscape SuiteSpot Servers in the Netscape service group use the same file systems and IP resources. A complete VCS configuration typically contains separate disk groups with multiple servers and IP resources.
Netscape Resource Type

To configure the agent according to the sample configuration:

1. Log in to sysa as root.

2. To edit the default Netscape configuration file, perform steps a-d below. Otherwise, proceed to step 3:
   a. Before copying files, save the original *main.cf* file in another location. Copy the sample Netscape configuration file:
      
      ```
      $VCS_CONF/sample_netscape/main.cf
      ```
      
      to:
      
      ```
      $VCS_CONF/config/main.cf
      ```
      
      This overwrites the *main.cf* files in this directory. We recommend that you save the files in another location.
   b. If you created a resource tree with your own configuration and you want to configure only the Netscape resource, edit the *main.cf* file and add the following line:
      
      ```
      include NetscapeTypes.cf
      ```
      
   c. Create the Netscape resources in the *main.cf* file, using the examples beginning on page 28.
   d. Assign dependencies to the newly created resources.

3. Copy the *NetscapeTypes* configuration file:

      ```
      $VCS_CONF/sample_netscape/NetscapeTypes.cf
      ```

      to:

      ```
      $VCS_CONF/config/NetscapeTypes.cf
      ```

4. Edit the default attributes in the file `$VCS_CONF/config/main.cf` to match the parameters in your configuration.
5. Verify the syntax of $VCS_CONF/config/main.cf:
   # hacf -verify config

6. Start the VCS engine (had) on sysa:
   # hastart

7. Verify that all Netscape service group resources are brought online:
   # hagrp -display

8. Take the service group offline and verify that all resources are stopped:
   # hagrp -offline service_group -sys system_name
   # hagrp -display

9. Bring the service group online again and verify that all resources are available:
   # hagrp -online service_group -sys system_name
   # hagrp -display

10. Start had on sysb:
    # hastart

11. Switch the Netscape service group to sysb:
    # hagrp -switch service_group -to sysb

12. Verify that all Netscape service group resources are brought online on sysb:
    # hagrp -display
Modifying the Agent Configuration

To dynamically configure the VCS enterprise agent for Netscape SuiteSpot, see the chapter on reconfiguring VCS from the command line in the VERITAS Cluster Server User’s Guide.

Installing the Messaging Server

If you are installing the Messaging Server for the first time, follow the directions below. If you have already installed the Messaging server and want to configure it for high availability usage, follow the directions in “Installing an Existing Messaging Server” on page 38.

Installing for the First Time

Before installing the Netscape Messaging Server, verify that both a service group with a failover IP address and a shared disk file system exist for the Messaging Server. You can use an existing service group that is used for other SuiteSpot components.

1. Verify that the Netscape mail server user exists on all systems.
2. Perform the steps below to run the ns-setup for the Messaging Server on each system (running ns-setup modifies Solaris system files):
   a. Move the service group (Virtual IP/shared disk) to “system A” before starting ns-setup. Note your answers to the ns-setup questions, because you will need to answer the questions the same way when you install other nodes in the cluster.
   b. Name a directory on the shared disk partition as the Server root. For example, if the shared file system for this service group is mounted on /shared:
      
      Server root [/usr/netscape/suitespot]:/shared/suitespot
   c. Use the name associated with the failover IP address as the “Machine’s name.” For example:
      
      *Machine’s name* [frodo.mycompany.com]: suitespot.mycompany.com
   d. Specify the “Mailbox Directory” location in the file system on the shared disk. For example, if the shared file system for this service group is mounted on /shared:
      
      Mailbox directory [/var/spool/mailbox]:
      /shared/suitespot/mailbox
Installing the Messaging Server

e. Specify the “Post Office Directory” location in the file system on the shared disk. For example, if the shared file system for this service group is mounted on /shared:

   Post Office directory [/var/spool/postoffice]:
   /shared/suitespot/postoffice

f. When you are prompted to “Start the server now?? [yes],” answer no.

g. Using any text editor, edit the /etc/netscape.mail.conf file. Search for the MessageHostName = line. You must change this parameter value (by default, it is the name of your system) to the name that corresponds with the failover IP address. In our example, the original entry is:

   MessageHostName=frodo.mycompany.com

   You must change this line to:
   MessageHostName=suitespot.mycompany.com

   Write the change out to disk, and exit the editor.

h. Type the following command to start the mail server:

   # /etc/NscpMail start

i. When you have verified that the mail server starts, use the following command to stop the server:

   # /etc/NscpMail stop

Setting Up Additional Systems for Messaging Server Failover

Move the service group over to “system B” and run ns-setup using the guidelines in step 2 on page 36. You must answer the questions exactly as you did during the initial installation, except for the following questions:

1. When prompted to reinstall the static part, answer yes.

2. When prompted to reconfigure the Netscape Messaging Server, answer yes.

3. When presented with the information you entered and asked if you want to install Netscape Messaging Server or change any parameters, answer y.

4. When asked if you want to reset the previous mail configuration databases, answer y.

5. When asked if you want to overwrite the server entry file, answer yes.
6. If you want to configure users to use UNIX mail, you must move /var/mail to the shared file system, and create a symbolic link from /var/mail to the shared file system. This is how you do it using our example:

```
# cp -rp /var/mail /shared/varmail
# rm -rf /var/mail
# ln -s /shared/varmail /var/mail
```

7. On all other systems in the cluster to which you want the suitespot/mail server service group to fail over, create a symbolic link:

```
# rm -rf /var/mail
# ln -s /shared/varmail /var/mail
```

### Installing an Existing Messaging Server

1. Prepare the second system and all other systems you want in the cluster with the same operating system and patches as the existing system. Verify the following:
   a. The system meets the requirements for becoming a VERITAS Cluster Server node.
   b. All user accounts for UNIX mail users and mail server user accounts exist.

2. Install the Netscape Messaging Server on the new systems in the same directory in which it is installed on the existing system. For example, if it is currently installed in /usr/netscape/suitespot, then you must install it in /usr/netscape/suitespot on the new systems. The parameters will change later on, so you can use the default responses to the questions asked by ns-setup.

3. Stop the mail server and the admin server on the existing system.

4. Change the current server name. This server’s name is now the virtual mail server name. Select a new name for the system (for example, newname.mycompany.com), then assign it to the system:

```
# uname -S newname.mycompany.com
```

5. Verify that the name resolutions in /etc/hosts, DNS, and NIS (if applicable) are correct for the new name.

   The new name (newname.mycompany.com) must resolve to the appropriate IP address, and the loghost must be associated with this name when you change the system name.

   The virtual mail server name (mail.mycompany.com, in this example) must resolve to the failover IP address for the Netscape service group.

6. Change the /etc/hostname.xxx file (xxx is the interface device) that uses the old name, to the new name.
7. Reboot the system to allow the new name to take effect. Do not start the mail server or the admin server. Verify that you can ping the new system name from other systems.

8. Install VERITAS Cluster Server and the VCS Enterprise Agent on all systems and create a service group for Netscape. Verify that you can switch the shared file system and IP address from system to system.

9. On the existing system, determine where the mail server is installed in the `ServerRoot` entry in `/etc/netscape.mail.conf`.

10. Copy this directory to the shared partition. For example:
    ```
    # cp -rp /usr/netscape/suitespot /shared/suitespot
    ```

11. Remove the old directory:
    ```
    # rm -rf /usr/netscape/suitespot
    ```

12. Create a symbolic link from the old path to the new path:
    ```
    # ln -s /shared/suitespot /usr/netscape/suitespot
    ```

13. On the existing system, determine the path to the `PostOffice` directory in the `PostOffice` entry in `/etc/netscape.mail.conf`. Copy this directory to the shared partition. For example:
    ```
    # cp -rp /var/spool/postoffice /shared/postoffice
    ```

14. Remove the old directory:
    ```
    # rm -rf /var/spool/postoffice
    ```

15. Edit `/etc/netscape.mail.conf`, changing the value of the `PostOffice` entry to the new path `/shared/postoffice`.

16. Determine the path to the mailbox directory by looking at the `MailBoxDir` entry in `/etc/netscape.mail.conf`. Copy this directory to the shared partition. For example:
    ```
    # cp -rp /var/spool/mailbox /shared/mailbox
    ```

17. Remove the old directory:
    ```
    # rm -rf /var/spool/mailbox
    ```

18. Edit `/etc/netscape.mail.conf` and change the value of the `MailBoxDir` entry to the new path `/shared/mailbox`.

---

Chapter 3, VCS Agent 1.2 for Netscape SuiteSpot 3.5
19. If configuring users to use UNIX mail, you must move `/var/mail` to the shared file system and create a symbolic link from `/var/mail` to the shared file system:

```
# cp -rp /var/mail /shared/varmail
# rm -rf /var/mail
# ln -s /shared/varmail /var/mail
```

On all other systems in the cluster to which the suitespot/mail server service group fails over, create a symbolic link:

```
# rm -rf /var/mail
# ln -s /shared/varmail /var/mail
```

20. Start the mail server and verify the following:
   a. The server has no errors.
   b. Clients can access their mailbox.
   c. Mail is delivered properly (send test mail).

21. Copy the mail server config file to the other systems:

```
# rcp -p /etc/netscape.mail.conf sysb:/etc/netscape.mail.conf
```

22. Examine `MailUserName` in the `/etc/netscape.mail.conf` file. On each of the other nodes in the cluster, create a mail user exactly as it exists on the original system.

23. On each of the other nodes in the cluster, remove the SuiteSpot directory, then create a symbolic link to the shared partition. For example:
   a. Remove the old directory:
```
# rm -rf /usr/netscape/suitespot
```

   b. Create a symbolic link from the old path to the new path:
```
# ln -s /shared/suitespot /usr/netscape/suitespot
```
Disabling the Agent

To disable the agent, you must first switch the Netscape service group to an OFFLINE state. This stops the application completely or switches the agent to another system.

1. To remove a system from the service group’s SystemList, check if the service group is online:

   # hagrp -state service_group -sys system_name

2. If the service group is online, take it offline by entering one of the following commands:

   # hagrp -switch service_group -to system_name

   or

   # hagrp -offline service_group -sys system_name

You can now remove the system, service group, or resource type from the VCS configuration. (See the chapter on reconfiguring VCS from the command line in the VERITAS Cluster Server User’s Guide.)

Removing the Agent

Type the following command on each system to remove the agent. Answer prompts accordingly:

   # pkgrm VRTSvcsns