

# Veritas InfoScale 8.0 Update 1 Release Notes - Linux

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# Release notes

This chapter includes the following topics:

- [About this document](#)
- [Support for RHEL 9](#)
- [Executive Order \(EO\)](#)

## About this document

This document provides information that is specific to version of the Veritas InfoScale products.

Review this entire document before using the following products:

- Veritas InfoScale Foundation
- Veritas InfoScale Storage
- Veritas InfoScale Availability
- Veritas InfoScale Enterprise

## Support for RHEL 9

InfoScale 8.0 Update 1 includes support for Red Hat Enterprise Linux (RHEL) 9.

Executive Order enhancements are applicable to all the platforms on which 8.0 Update 1 is released.

# Executive Order (EO)

Executive Order (EO) 14028 - (issued on May 12, 2021) is intended to improve the Federal Government's investigative and remediation capabilities related to cybersecurity incidents.

Executive Order helps in improving the nation's cybersecurity and also enhance any organization's cybersecurity and software supply chain integrity.

FIPS compliant protocol; Executive Order requires all the communication protocol between different hosts in the system to be encrypted. The algorithms for the communication protocol encryption need to be FIPS 140-2 compliant. All the InfoScale communication protocols can be encrypted using third party encryption tool, for example; Libreswan.

## Executive Order log forwarding

Log locations of InfoScale are compliant with Executive Order. The InfoScale components mentioned in the table can be used for EO log forwarding.

You can also use third party tools which support log forwarding in real time, for example: rsyslog.

**Table 1-1** List of files supporting log forwarding

Component	File list
Generic	/var/log/messages
VxFS	var/log/vx/vxfs_cmd.log* /var/log/vx/reclaim_log* /var/log/vx/dedup_cmd.log* /var/log/fsmigbgcp_* /var/log/Analyze_* /var/log/stat_* /var/log/analyse_* /var/log/vxdplugind.log /var/log/dedup_stats_* log /var/log/dedup_sp_stats_*. log /var/VRTS/fsadv/dedupd.* /var/VRTS/fsadv/fsdedup.* /var/VRTS/fsadv/dedupverifychksunlog.*

**Table 1-1** List of files supporting log forwarding (*continued*)

Component	File list
VxVM	/var/log/vx/* /var/log/vx/vras/*
VCS	/var/VRTSvcs/log/*
REST	/opt/VRTSrest/log/* /etc/vx/log/vxrest-audit.log
DBED	/var/vx/vxdba/logs/*
VIOM	/var/opt/VRTSsfmh/logs/* /var/opt/VRTSsfmh/PERF/log/* /var/opt/VRTSsfmh/HOST/log/* /var/opt/VRTSsfmh/STORE/log/* /var/opt/VRTSsfmh/SF/log/* /var/opt/VRTSsfmh/VVRBW/log/* /var/opt/VRTSsfmh/NATIVE/log/* /var/opt/VRTSsfmh/DB/log/* /var/opt/VRTSsfmh/VCS/log/* /var/opt/VRTSsfmh/PCV_NOTIFY/log/* /var/opt/VRTSsfmh/NR/log/* /var/opt/VRTSsfmh/LDR/log/* /var/opt/VRTSsfmh/DOCKER/log/* /var/opt/VRTSsfmh/APP/log/* /var/opt/VRTSsfmh/APP/GenApp/log/* /var/opt/VRTSsfmh/APP/Oracle/log/* /var/opt/VRTSsfmh/KVM/log/* /var/opt/VRTSsfmcs/logs/* /var/vx/dcli/log/*
InfoScale for Containers	/var/log/containers/infoscale*.log
Licensing	/var/VRTSvlic/tele/log/licensing-service.log

# Changes introduced in InfoScale 8.0 Update 1

This chapter includes the following topics:

- [Changes related to installation](#)
- [Changes related to log forwarding](#)
- [Changes related to VxFS](#)
- [Changes related to VxVM](#)
- [Changes related to VCS](#)
- [Changes related to VIOM](#)

## Changes related to installation

Following new changes are introduced in this release.

The following changes are introduced to the installation and upgrade of Veritas InfoScale 8.0. InfoScale EO compliant logging option helps to configure InfoScale components to provide logging as per standard security requirements and also to stop the InfoScale Enterprise processes.

In case of interactive deployment, CPI prompts for the EO compliant logging consent to enable logging of all the components. You can also configure the stop process by answering stop process question.

If the option to enable the logging is not selected at the time of deployment, CPI provides options such as `-eocompliantlogging`, which can be used to enable or disable the logging with the following commands:

- `# /opt/VRTS/install/installer -eocompliantlogging on`

- # /opt/VRTS/install/installer -eocompliantlogging off

## Non-root user deployment support on RHEL 9

The non-root user deployment is supported on RHEL 9 using response file and CPI installer.

For installation by using non-root user and menu-driven program, you can be a '-sudouser'.

For example, `/installer -sudouser <<username>>`

The responsefile deployment prerequisite for non-root user is as follows:

- 1 Required additional parameter: `$CFG{opt}{sudouser} = "<<username>>"`
- 2 You need to create `/etc/sudoers.d/<<username>>` manually on all the nodes to enable `sudo` commands from driver node via CPI installer.

Use the following command:

```
# echo "$USER ALL=(ALL:ALL) NOPASSWD: ALL" | sudo tee  
/etc/sudoers.d/$USER
```

## Changes related to log forwarding

Log locations of InfoScale are compliant with Executive Order. The InfoScale components mentioned in the table below can be used for EO log forwarding.

To forward the logs, you can also use the third party tools, which support log forwarding in real time, for example: `rsyslog`.

Refer to the table in the Executive Order log forwarding section to get the list of files that support log forwarding.

See [“Executive Order log forwarding”](#) on page 5.

## Changes related to VxFS

Following new changes are introduced to VxFS.

### Enabling Executive Order compliant logs for VxFS

The logs mentioned in Table 1-1 for VxFS are compliant with the Executive Order.

The tunable can be enabled or disabled using `vxtunefs` command to log some events related to the 2021 Executive Order on improving the cybersecurity, which include WORM (write once read many) and permission-denied events.



For VFR (Veritas File Replicator), IP addresses are logged when this option is enabled.

You can specify the following tunable values to enable logging:

- 0 - Disables Executive Order event logging. It is the default value.
- 1 - Enables Executive Order event logging.

## Command logging

As part of command logging, all the commands executed with the arguments are logged and also the errors are logged.

The log format contains the log files followed by the timestamp YYYY-MM-DDTHH:MM:SS.mmm+hhmm format, then the hostname in FQDN format, and then the host name.

An example of command logging:

- <DDTHH:MM:SS.mmm> <FQDN\_HOSTNAME> /opt/VRTS/bin/fsadm -o softworm /mnt2
- <DDTHH:MM:SS.mmm> <FQDN\_HOSTNAME> /log by Ux:vxfs fsadm

## Changes related to VxVM

Following new changes are introduced to VxVM.

All the logs in `/var/log/vx` folder are generated by VxVM processes. The tunable can be enabled or disabled using "vxtune" command. The default value is disabled. If it is enabled, VxVM process writes logs with extra information which is time stamped in YYYY-MM-DDTHH:MM:SS.mmm+hhmm format followed by the hostname in FQDN format, and then followed by the log statement.

## Changes related to VCS

Following new changes are introduced to VCS.

### Enabling Veritas Cluster Server logs

This variable holds all the logs in `/var/VRTSvcs/log` folder generated by VCS processes. The default value is disabled. If it is enabled, the VCS process writes logs with extra information which is timestamped in YYYY-MM-DDTHH:MM:SS.mmm+hhmm format, followed by the hostname in FQDN format, and then followed by the log statement. In addition to this, it also logs any read-only command executed by HAD process.

This environment variable is set across different files for different components as follows:

**Table 2-1** List of Veritas Cluster Server logs

Component	Description
VCS	<p>This tunable is for enabling extended logging and is placed at the following location,  <code>/opt/VRTSvcs/bin/vcsenv</code>.</p> <p>The value can be enabled or disabled by editing the file.</p>
CmdServer	<p>This tunable is for enabling extended logging at the following location,  <code>/usr/lib/systemd/system/CmdServer.service</code>.</p> <p>The environment variable <code>VCS_ENABLE_PUBSEC_LOG</code> is added in <code>CmdServer</code> service file under service section. The service can be restarted using <code>systemctl</code>.</p>
CPS	<p>This tunable enables extended logging for CPS server log at the following location, <code>/etc/vxcps.conf</code>. The environmental variable <code>VCS_ENABLE_PUBSEC_LOG</code>, can be exported in client-side CPS logs.</p>
Fencing	<p>This tunable for enabling extended logging for CPS server logs is placed at the following location,  <code>/etc/sysconfig/vxfen</code>.</p>
DBED	<p>This tunable is for enabling extended logging for CPS server logs at the following location, file <code>/usr/lib/systemd/system/vxdbdctrl.service</code>. The environment variable can be added in <code>vxdbdctrl</code> service file, under Service section. The service can be restarted using <code>systemctl</code>.</p> <p>To enable extended logging for client logs for each user, for example in <code>/var/vx/vxdba/logs/{UserName}/vxsgaed_client.log</code> file, the user must manually export the environment variable in the "UserName" environment.</p> <p>For example, if <code>UserName</code> is "oracle."</p> <p>The file in <code>/var/vx/vxdba/logs/oracle/vxsgaed_client.log</code> will have EO-based formatting, if the Oracle user exports the environment variable as follows: <code>"{*}export VCS_ENABLE_PUBSEC_LOG=1{*}"</code>.</p>

# Changes related to VIOM

Following new changes are introduced to VIOM.

To implement EO compliance in web server logs, complete the following steps:

**1** Access the Windows or Linux server .xml file from the following path:

- **Windows:**

`C:\ProgramFiles\Veritas\VRTSsfmcs\webgui\tomcat\conf\server.xml`

- **Linux:** `/opt/VRTSsfmcs/webgui/tomcat/conf/server.xml`

**2** In the server.xml file, in `Valve`

`className="org.apache.catalina.valves.AccessLogValve`, make changes to the `directory`, `maxDays`, and `pattern` tags as mentioned below:

- Change the `directory` tag to: `directory=${web.log.dir}`

- Change the maximum days tag to: `maxDays=30`

- Change the `pattern` tag to:

```
pattern="%{yyyy-MM-dd}tT{%H:mm:ss.SSSXXX}t ${hostName}
SourceIP=%a DestinationIP=%A "%r" %b StatusCode=%s
ResponseTime=%F milliseconds SessionID=%S
IncomingHeaders="%{User-Agent}i %{Content-Type}i %{Accept}i
%{Accept-Encoding}i %{Accept-Language}i %{Accept-Charset}i"
OutgoingHeaders="%{Content-Type}o %{Content-Length}o
%{Server}o"
```

**3** Restart the web server using the following command:

```
# /opt/VRTSsfmcs/bin/vomsc --restart web
```

After you restart the web server, the logs can be located at `/var/opt/VRTSsfmcs/logs` directory.

# Known issues

This chapter includes the following topics:

- [Cluster Server known issues](#)
- [VxFS known issues](#)
- [Volume Manager known issues](#)

## Cluster Server known issues

This section describes the Cluster Server known issues.

### LVMVolumeGroup faces issue while performing actions such as going online, offline, and clean entry point on RHEL 9 [4085655]

The LVMVolumeGroup fails to perform actions such as going online, offline, and clean entry points on RHEL 9 if the `use_devicesfile` tunable is set to 1. It gives the following errors in the logs:

- VCS Thread(140169894405696) System call read failed with errno (11)
- VCS Thread(140169894405696) System call read failed with errno(11)

**Workaround:** Disable the new tunable (`use_devicesfile`) that is introduced in RHEL 9 by setting its value to 0.

To disable the `use_devicesfile` tunable on RHEL 9 for LVMVolumeGroup agent, change the setting as follows:

```
# cat /etc/lvm/lvm.conf | grep use_devicesfile
# Configuration option devices/use_devicesfile
use_devicesfile = 0
```

## Oracle virtual fire drill fails due to location change in Oracle 21c database [4088791]

Oracle virtual fire drill fails due to Oracle location change in Oracle 21c. When the following fire drill command is sent, then the following error message is received:

Fire drill command:

```
# hares -action oracle home.vfd -sys dl580g9-02-vm17
```

Error message:

VCS WARNING V-16-20002-13325 Resource (oracle) - action (home.vfd) failed with return value (1). Output is:

```
UUID=209faf08-e4d7-42d9-a019-677ab0737267 / btrfs defaults 0 0
UUID=209faf08-e4d7-42d9-a019-677ab0737267 /var btrfs subvol=/@/var
0 0
UUID=209faf08-e4d7-42d9-a019-677ab0737267 /usr/local btrfs
subvol=/@/usr/local 0 0
UUID=209faf08-e4d7-42d9-a019-677ab0737267 /tmp btrfs subvol=/@/tmp
0 0
UUID=209faf08-e4d7-42d9-a019-677ab0737267 /srv btrfs subvol=/@/srv
0 0
UUID=209faf08-e4d7-42d9-a019-677ab0737267 /root btrfs subvol=/@/root
0 0
UUID=209faf08-e4d7-42d9-a019-677ab0737267 /opt btrfs subvol=/@/opt
0 0
UUID=209faf08-e4d7-42d9-a019-677ab0737267 /home btrfs subvol=/@/home
0 0
UUID=33aa4f2f-1a0b-42a7-9629-4c0db16aa8cb /boot btrfs defaults 0 0
UUID=209faf08-e4d7-42d9-a019-677ab0737267 /.snapshots btrfs
subvol=/@/.snapshots 0 0
```

/oracle/21c/app/dbbase/dbhome/dbs/orapworacontdb is missing on local file system.

**Workaround:** In Oracle 21c, move the Oracle password file to different location at \$ORACLE\_BASE/dbs.

## VxFS known issues

This section describes the VxFS known issues.

## CFS stress L1 hits assert "Kernel panic - not syncing: GLM assert GLM\_SPIN\_LOCK:1" [4087258]

In GLM (Group lock manager), while upgrading GLM protocol version from 90 to 135 (latest), the system may panic with the following stack trace:

```
schedule()
vxg_svar_sleep_unlock()
vxg_create_kthread()
vxg_startthread()
vxg_thread_create()
vxg_leave_local_scopes()
vxg_rcv_restart_reply()
vxg_recovery_helper()
vxg_kthread_init()
kthread()
```

GLM needs to process structures for local scope functionality. GLM creates child threads to do this processing. The child threads are created while holding spin lock, which causes this issue.

**Workaround:** None

## Hang seen while running CFS Conformance -> mount "parallel\_nested\_mount" test [4085140]

While performing two or more mount (of vxfs file system) operations in parallel, underneath an already existing vxfs mount point, if a force unmount is attempted on the parent vxfs mount point, then sometimes the forced unmount operation hangs permanently.

Here are the steps when the issue may occur.

- 1 Create the following file systems:
  - fs1 on dev1
  - fs2 on dev2
  - fs3 on dev3
- 2 Mounts fs1 from dev1 on mnt1
- 3 Creates two subdir /mnt1/dir1 and /mnt1/dir2

**4** Then initiate mounts of fs2 and fs3 in parallel and in background under /mnt1:

```
# mount -t vxfs /dev/vx/dsk/tdg/vol2 /mnt1/dir1 > /dev/null 2>&1
&

# mount -t vxfs /dev/vx/dsk/tdg/vol3 /mnt1/dir2 > /dev/null 2>&1
&
```

**5** Initiate a force unmount of fs1 (ie unmount -f /mnt1 >).

**6** It is expected that all FS gets unmounted. As part of parent forced unmount, the child FS must also get unmounted. All FS do get unmounted as expected, but in some cases, the unmount on parent gets stuck and hang is seen.

Since the parent mount point has mount points underneath, the kernel should internally attempt unmount by calling sb->put\_super of the child FS. In this case, kernel does not call sb->put\_super for one of the child mount point.

Due to this there remains an active reference count on the directory (corresponding to child mount point which was not unmounted) and parent unmount cannot be completed leading to system hang.

**Workaround:** There is no resolution for this issue. If the issue occurs, reboot the system.

## Volume Manager known issues

This section describes the known issues related to Veritas Volume Manager.

### While rolling upgrade after phase 1, cluster is not getting formed (from IS-7.3.1 to IS-8.0) [ 4088900]

Cluster does not form while performing a rolling upgrade from InfoScale 7.3.1 to InfoScale 8.0. The upgraded node fails to join the cluster if HPE disks are present on the setup.

As Infoscale 7.3.1 does not support "libvxhpeapp.so" ASL, the HPE disks are claimed under 'default' ASL where Infoscale 7.3.1 is installed.

While performing the upgrade, one of the nodes get upgraded to 8.0, which supports "libvxhpeapp.so" ASL, so the upgraded node claims HPE disks under "libvxhpeapp.so".

The node which is not upgraded yet that still claims HPE disks under default ASL, which cause the problem of disk-id mismatch and the upgraded node fails to join the cluster.

## Exclude disks with controller operations fails to persist across reboot [4089044]

This is the current default behavior as the product does not store any controller related information apart from the controller ID. An alternative method to exclude disks is to use the dmp exclude commands described below.

Before running a firmware upgrade, you first disable a controller, perform the upgrade, and then enable the controller. Then repeat the same process for the remaining controllers; one controller at a time.

**Workaround:** Exclude disks for controller operations. Use the following dmp exclude commands:

```
# vxdmpadm exclude dmpnodename=<dmpnodename>  
# vxdmpadm exclude product=<vid>:<pid>
```



# Fixed issues

This chapter includes the following topics:

- [Issues fixed in this release](#)

## Issues fixed in this release

This section describes the incidents that are fixed in this release.

**Table 4-1** Fixed issues

Incident	Description
<b>CPI fixed issues</b>	
4086257	VRTSfsadv pkg fails to upgrade from 7.4.2 U4 to 8.0 U1 using yum upgrade.
4086724	The addnode operation fails during symmetry check of a new node with other nodes in the cluster.
4085770	If InfoScale cluster is reconfigured, LLT, GAB, VXFEN services fail to reboot.
4085612	VRTSvxvm fails to uninstall for phased upgrade from 7.4.2U4.
4087907	EO compliant logging support.
4086661	Installer fails to complete the CP server configuration - line 1700.
4088743	CPI installer tries to download a patch whose version is lower than the version specified in media path.