Veritas Storage Foundation Sybase ASE CE Release Notes

Solaris

symantec™

Veritas Storage Foundation for Sybase ASE CE Release Notes

Documentation version

PN:

Legal Notice

Symantec Corporation
350 Ellis Street

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http://www.symantec.com

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Technical Support

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- Available memory, disk space, and NIC information
- Operating system

- Version and patch level
- Network topology
- Router, gateway, and IP address information
- Problem description:
  - Error messages and log files
  - Troubleshooting that was performed before contacting Symantec
  - Recent software configuration changes and network changes

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To access more information about Enterprise services, please visit our Web site at the following URL:

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About this release

This document includes the following topics:

About Veritas Storage Foundation for Sybase ASE CE

Veritas Storage Foundation™ for Sybase® Adaptive Server Enterprise Cluster Edition (SF Sybase CE) by Symantec leverages proprietary storage management and high availability technologies to enable robust, manageable, and scalable deployment of Sybase ASE CE on UNIX platforms. The solution uses cluster file system technology that provides the dual advantage of easy file system management as well as the use of familiar operating system tools and utilities in managing databases.

SF Sybase CE integrates existing Symantec storage management and clustering technologies into a flexible solution which administrators can use to:

- Create a standard toward application and database management in data centers. SF Sybase CE provides flexible support for many types of applications and Sybase databases.

- Set up an infrastructure for Sybase ASE CE that simplifies database management while fully integrating with Sybase clustering solution.
- Apply existing expertise of Symantec technologies toward this product.

The solution stack comprises the Veritas Cluster Server (VCS), Veritas Cluster Volume Manager (CVM), Veritas Cluster File System (CFS), and Veritas Storage Foundation, which includes the base Veritas Volume Manager (VxVM) and Veritas File System (VxFS).

Benefits of SF Sybase CE

SF Sybase CE provides the following benefits:

- Support for file system-based management. SF Sybase CE provides a generic clustered file system technology for storing and managing Sybase data files as well as other application data.
- Use of SFCFS for the Sybase CE quorum device.
- Support for a standardized approach toward application and database management. A single-vendor solution for the complete SF Sybase CE software stack lets you devise a standardized approach toward application and database management. Further, administrators can apply existing expertise of Veritas technologies toward SF Sybase CE.
- Easy administration and monitoring of SF Sybase CE clusters from a single web console.
- Enhanced scalability and availability with access to multiple Sybase ASE CE instances per database in a cluster.
- Prevention of data corruption in split-brain scenarios with robust SCSI-3 Persistent Reservation based I/O fencing.
- Support for sharing all types of files, in addition to Sybase database files, across nodes.
- Increased availability and performance using dynamic multi-pathing (DMP). DMP provides wide storage array support for protection from failures and performance bottlenecks in the HBAs and SAN switches.
- Fast disaster recovery with minimal downtime and interruption to users. Users can transition from a local high availability site to a wide-area disaster recovery environment with primary and secondary sites. If a node fails, clients that are attached to the failed node can reconnect to a surviving node and resume access to the shared database. Recovery after failure in the SF Sybase CE environment is far quicker than recovery for a failover database.
- Support for block-level replication using VVR.

For more information on the SF Sybase CE components, see the following documents:

Veritas Storage Foundation for Sybase ASE CE Installation and Configuration Guide

Veritas Storage Foundation for Sybase ASE CE Administrator's Guide

About SF Sybase CE Release Notes

This document provides important information regarding SF Sybase CE 5.0. Review this document before you install SF Sybase CE.

For the latest information on updates, patches, and software issues of this release, see the TechNote on the Symantec Enterprise Support website:

http://entsupport.symantec.com/docs/325604

The document also covers important, though not comprehensive, information about issues pertaining to component products of SF Sybase CE. For comprehensive information about the component products, refer to the appropriate product documentation.

For information regarding software limitations, fixed issues, and known issues of Veritas Cluster Server:

See *Veritas Cluster Server Release Notes*.

For information regarding software limitations, fixed issues, and known issues of Storage Foundation:

See *Veritas Storage Foundation Release Notes*.

Features supported in this release

This section describes the features supported for SF Sybase CE 5.0. For more information on the features, see *Veritas Storage Foundation for Sybase ASE CE Administrator's Guide*.

The following features are supported for SF Sybase CE 5.0:

- Fencing with DMP disks
- Compliance with Solaris JumpStart technology
- Support for up to 4 nodes.

For the latest information on support for Sybase database versions, see the Veritas Technical Support TechNote:

http://entsupport.symantec.com/docs/325604

Not supported

This section lists software versions and features that are not supported. Symantec advises customers not to use these features.

SF Sybase CE does not support the following:

- Sybase versions other than Sybase 15.0.3 ASE CE

Installation requirements

Make sure that each node on which you want to install SF Sybase CE meets the following installation requirements:

- Hardware requirements
- Supported software
- Supported operating systems
- Supported SF Sybase CE configurations

Hardware requirements

Make sure that you have the correct equipment to install SF Sybase CE:

- Review the current compatibility list to confirm compatibility of your hardware: http://entsupport.symantec.com/docs/283161
- Review Sybase documentation for additional requirements pertaining to your version of Sybase.

Table 1-1 Hardware requirements

Item	Description
SF Sybase CE systems	Two to four systems with two or more CPUs at 1 GHz or higher.
DVD drive	One drive that is accessible to all nodes in the cluster is needed to install this product.
Disks	SF Sybase CE requires that all disks support SCSI-3 Persistent Reservations (PR). The minimum LUN size should be 1GB. **Note:** The coordinator disk does not store data, so configure the disk as the smallest possible LUN on a disk array to avoid wasting space.

Table 1-1 Hardware requirements *(continued)*

Item	Description
Disk space	You can evaluate your systems for available disk space by running the following command: # **./installsfsybasece -precheck *node_name*** For details on the additional space that is required for Sybase, see the Sybase documentation.
RAM	Each SF Sybase CE system requires at least 2 GB.
Network links	Two private links and one public link. Links must be 100BaseT or gigabit Ethernet directly linking each node to the other node to form a private network that handles direct inter-system communication. These links must be of the same type; you cannot mix 100BaseT and gigabit. Symantec recommends gigabit Ethernet using enterprise-class switches for the private links. You can also configure aggregated interfaces.
Fibre Channel or SCSI host bus adapters	At least one built-in SCSI adapter per system to access the operating system disks. At least one additional SCSI or Fibre Channel Host Bus Adapter per system for shared data disks.

Supported software

Caution: SF Sybase CE and all component software must be at the same version across all nodes in an SF Sybase CE cluster, in this case 5.0.

Patches supported

Symantec strongly recommends installing Veritas Storage Foundation 5.0 Maintenance Pack 3 (5.0 MP3) Rolling Patch 2 (RP2) or the latest patch available after verifying SF Sybase CE is installed and configured successfully.

See the Technical Support TechNote for late-breaking and new information on updates, patches, and software issues:

http://entsupport.symantec.com/325604

See Patch Central for current patch information:

https://vias.symantec.com/labs/vpcs/vpcs

Sybase ASE CE support

SF Sybase CE supports Sybase ASE CE 15.0.3 only at time of publication. For updated information, see the Technical Support TechNote for late-breaking and new information on Sybase ASE CE issues regarding this release:

http://entsupport.symantec.com/325604

Replication support

SF Sybase CE supports host-based replication using Veritas Volume Replicator (VVR). VVR replicates data to remote sites over any standard IP network. The host at the source location on which the application is running is known as the primary host. The host at the target location is known as the secondary host.

Hardware-based replication technologies are not supported at the time of publication. For updated information, see the Technical Support TechNote for late-breaking and new information on replication technology issues regarding this release:

http://entsupport.symantec.com/325604

Supported operating systems

Within a cluster, all nodes must use the same operating system version and patch level. Run SF Sybase CE 5.0 on Solaris 9/10 (SPARC).

Some required operating system patches may already be present on the system. Use the `showrev -p` command to display the patches on the system.

If the following Solaris patches are not already installed on the system, install them before installing SF Sybase CE:

Solaris 10	Solaris SPARC
	119042-02, 119254-50, 120011-14, 127111-06
Solaris 9	114477-04

Supported SF Sybase CE configurations

The following Sybase configuration options are required in an SF Sybase CE environment:

- Set SF Sybase CE fencing to "sybase" mode.

- Configure Sybase private networks on LLT links
- Set Sybase cluster membership to "vcs" mode.
- Configure Sybase instances under VCS control.

Known issues

SF Sybase CE has the following known issues.

Sybase Agent Monitor times out

Problem: The Sybase Agent Monitor has issues with timing out, in cases where qrmutil reports delay. [1592996]

The Sybase Agent monitor times out, if qrmutil fails to report the status to the agent within the defined MonitorTimeout for the agent.

Solution: If any of the following configuration parameters for Sybase Database is increased, it will require a change in its MonitorTimeout value:

- quorum heartbeat interval (in seconds)
- Number of retries

If the above two parameters are changed, Symantec recommends that the MonitorTimeout be set to a greater value than the following: ((number of retries + 1) * (quorum heartbeat interval)) + 5.

Dependency between Sybase resource and vxfend resource should be maintained

If the resource for Sybase instance is brought offline manually using "`hares -offline` *`syb_resource`*", then the vxfend resource must also be immediately brought offline manually using "`hares -offline` *`vxfend_resource`*".

Installer may not discover all the aggregated interfaces

Problem: During the product configuration you must choose the NICs or the aggregated interfaces that the installer discovers for private heartbeats. However, the product installer may not discover all the aggregated interfaces. [1286021]

Workaround: If you want to choose aggregated interfaces that the installer did not discover for private heartbeats, then you must manually edit the /etc/llttab file to replace name of NICs with that of aggregated interfaces before you start.

See Veritas Storage Foundation for Sybase ASE CE Installation and Configuration Guide.

Installer warning

Problem: During configuration of Sybase instance under VCS control, if the quorum device is on CFS and is not mounted, the following warning message appears on the installer screen:

```
Error: CPI WARNING V-9-0-0 The quorum file /quorum/quorum.dat
cannot be accessed now, may be due to file system is not mounted.
```

The above warning may be safely ignored. [1515503]

Sybase instance not starting

Problem: If a Sybase instance does not start and is stuck with the message: "VCMP is waiting for vxfend message," the resolution is to restart vxfend.

Resolution: Restart vxfend

1. Stop vxfend:

   ```
   # hares -offline vxfend -sys system1
   ```

   Confirm with the 'ps' command.

2. Restart vxfend:

```
# hares -online vxfend -sys system1
```

Confirm with the 'ps' command.

Unexpected node reboot

Problem: A node may reboot unexpectedly if the Sybase resource is probed while the resource is still in transition from an online to offline state.

Normally the monitor entry point for Sybase agent completes with 5-10 seconds. The monitor script for the Sybase agent uses the qrmutil binary provided by Sybase. During a monitor, if this utility takes longer time to respond, the monitor entry point will also execute for longer duration before returning status.

Resolution: During the transition time interval between online and offline, do not issue a probe for the Sybase resource, otherwise the node may reboot.

CFSMountAgent shows ioctl errors in CFSMount log and CFS mount resources offline

On starting VCS in all the nodes, the CFSMount agent:

- Temporarily shows ioctl errors
- Shows the relevant CFS mount points as OFFLINE

To work around this issue

1. On all nodes in the CFS cluster, perform one of the following:

   Stop VCS:

   ```
   # hastop -local
   ```

   Or

   Stop the CFSMountAgent:

   ```
   # haagent -stop CFSMount -sys system1
   ```

2. Change directory to CFSMount and remove the CFSMountAgent:

   ```
   # cd /opt/VRTSvcs/bin/CFSMount
   # rm -f CFSMountAgent
   ```

3. Link the CFSMountAgent to the ScriptAgent.

   ```
   # ln -s /opt/VRTSvcs/bin/ScriptAgent CFSMountAgent
   ```

4. Perform one of the following for each node in the CFS cluster:

   - Restart VCS:

     ```
     # hastart
     ```

   - Start the CFSMountAgent using `haagent`:

     ```
     # haagent -start CFSMount -sys system1
     ```

Note: This issue has been fixed in the Veritas Storage Foundation 5.0 Maintenance Pack 3 (5.0 MP3) Rolling Patch 2 (RP2).

See Patch Central for current patch information:

https://vias.symantec.com/labs/vpcs/vpcs

Warning messages displayed on adding VVR resource definitions to the VCS configuration

When you run the script "addVVRTypes.sh" for adding VVR resource definitions to the VCS configuration, the following warning messages are displayed:

```
VCS WARNING V-16-1-10421 Non static attribute does not exist 'Primary' (RVG)
VCS WARNING V-16-1-10421 Non static attribute does not exist 'SRL' (RVG)
VCS WARNING V-16-1-10421 Non static attribute does not exist 'RLinks' (RVG)
```

These warnings may be ignored. [1314205]

Deporting issues with shared disk groups

If you manually deport a shared disk group, the CVMVolDg agent does not automatically reimport it as a shared disk group. You must manually reimport it as a shared disk group.

Stopping cluster nodes configured with I/O fencing

The I/O fencing feature protects against data corruption resulting from a failed cluster interconnect or “split brain.”

For more information, see *Veritas Cluster Server User’s Guide*.

I/O fencing uses SCSI-3 Persistent Reservation keys to implement data protection. The software places keys on I/O fencing coordinator and data disks. The administrator must be aware of several operational changes needed when working with clusters protected by I/O fencing. Specific shutdown procedures ensure keys are removed from coordinator disks and data disks to prevent possible difficulties with subsequent cluster startup. Using the reboot command rather than the shutdown command bypasses shutdown scripts and can leave keys on the coordinator and data disks. Depending on the order of reboot and subsequent startup events, the cluster might warn of a possible split brain condition and fail to start up.

Workaround: Use the shutdown command instead of the reboot command to perform a graceful reboot for systems.

```
# /usr/sbin/shutdown -g0 -y -i6
```

Software limitations

The following limitations apply to this release.

Sybase instance fails to rejoin cluster and cluster shutdown occurs

If a Sybase instance on a restarted node fails to join the existing cluster, a complete cluster shutdown occurs. When an instance is in the process of joining and not fully up, the cluster will shut down if one instance in the existing cluster fails.

When one instance is under load, the other instance is not able to join within a reasonable amount of time. This happens with a single engine of dataserver. It can be caused in case of a CPU intensive operation in the Sybase instance. This can cause the Sybase agent to time out during online operation, causing the clean script to kill the dataserver. [1531463]

Infiniband not supported

SF Sybase CE is not supported on infiniband.

Limited global clustering capabilities in Veritas Cluster Server Management Console

The Veritas Cluster Server Management Console (VCS MC) management server currently includes limited capabilities for global clustering.

Non-global zones not supported

SF Sybase CE is not supported on non-global zones.

Cluster File System (CFS) limitations

The following are the limitations of CFS:

- CFS supports only disk layout version 6 and 7.
- CFS does not support HSM/DMAPI.
- VxFS does not distribute its own versions of file utilities such as `cpio` or `mv`.

Volume Manager does not support RAID 5 in a cluster environment

Volume Manager does not support software RAID 5 in a shared disk environment.

LLT low priority heartbeat links not recommended

Symantec does not recommend using the public network as LLT low priority links for SF Sybase CE. Low priority links reduce network overhead by reducing the frequency of heartbeats, but they are not suited for the typical volume of SF Sybase CE data.

Veritas Volume Replicator (VVR) limitations

The following limitations currently apply for VVR.

Disk Group Split and Join

VVR does not support Disk Group Split and Join. This means that you cannot use Disk Group Split and Join on data volumes in an RVG. However, you can take snapshots of data volumes and use DGSJ on the snapshots.

Importing a disk group with VVR objects

If a private disk group containing VVR objects is imported on two nodes, as well as the problems documented for VxVM objects, the SRL is corrupted and a full resynchronization of the Secondary is required.

Volumes in boot disk group

Symantec does not recommended having replicated volumes in the boot disk group (`bootdg`).

Selecting records using search expressions

Selecting RVG and RLINK records using search expressions with the `vxprint -e pattern` command is not supported.

Adding a Secondary

When adding a Secondary to the RDS, the `vradmin addsec` command cannot be entered from the host being added. If the RDS contains the Primary only, the command must be entered on the Primary.

Issues related to replication in a shared environment

The following issues relate to replication in a shared environment:

Creating a Primary RVG when the data volumes and SRL are on a shared disk

When creating a Primary whose data volumes and SRL are located on a shared disk group, the `vradmin createpri` command must be issued on the master node of the cluster.

Creating a Secondary RVG when the data volumes and SRL are on a shared disk

When adding a Secondary whose data volumes and SRL are located on a shared disk group to a RDS, the `vradmin addsec` command requires the Secondary host name must be resolvable and up on the master node of the Secondary cluster.

VCS Agents for VVR limitations

The following VCS Agents for VVR limitations exist.

Onlining and offlining the RVG resources

Currently a problem with Veritas Volume Manager affects the RVG resources. When many RVGs are defined, the number of requests to the Volume Manager to online or offline can overload the `vxconfigd` process of VxVM, preventing some RVGs from going online or offline.

Workaround

The RVG resources have been set to allow only a single instance of an RVG resource to be brought online or offline. This slows down the onlining and offlining of service groups containing RVGs.

Documentation

Product guides are available on the documentation disc in PDF and HTML formats. Symantec recommends copying pertinent information, such as installation guides and release notes, from the disc to your system directory /opt/VRTS/docs for reference.

Table 1-2 lists the documentation for SF Sybase CE.

Table 1-2 SF Sybase CE documentation

Document title	File name
Veritas Storage Foundation for Sybase ASE CE Installation and Configuration Guide	sfsybasece_install.pdf

Table 1-2 SF Sybase CE documentation *(continued)*

Document title	File name
Veritas Storage Foundation for Sybase ASE CE Administrator's Guide	sfsybasece_admin.pdf
Veritas Storage Foundation for Sybase ASE CE Release Notes	sfsybasece_notes.pdf

Table 1-3 lists the documentation for Veritas Cluster Server.

Table 1-3 Veritas Cluster Server documentation

Document title	File name
Veritas Cluster Server Release Notes	vcs_notes.pdf
Veritas Cluster Server User's Guide	vcs_users.pdf

Table 1-4 lists the documentation for Symantec Product Authentication Service.

Table 1-4 Veritas Volume Replicator documentation

Document title	File name
Veritas Volume Replicator Administrator's Guide	vvr_admin.pdf
Veritas™ Cluster Server Agents for Veritas™ Volume Replicator Configuration Guide	vvr_agents_config.pdf

Table 1-5 lists the documentation for Symantec Product Authentication Service.

Table 1-5 Symantec Product Authentication Service documentation

Document title	File name
Symantec Product Authentication Release Notes	at_notes.pdf
Symantec Product Authentication Service Installation Guide	at_install.pdf
Symantec Product Authentication Service Administrator's Guide	at_admin.pdf