

Veritas InfoScale What's New Guide

Windows

7.1

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Veritas Services and Operations Readiness Tools (SORT)

Veritas Services and Operations Readiness Tools (SORT) is a website that provides information and tools to automate and simplify certain time-consuming administrative tasks. Depending on the product, SORT helps you prepare for installations and upgrades, identify risks in your datacenters, and improve operational efficiency. To see what services and tools SORT provides for your product, see the data sheet:

https://sort.veritas.com/data/support/SORT_Data_Sheet.pdf

What's new in this release of Veritas InfoScale

This document includes the following topics:

- [About this document](#)
- [New features and changes in this release](#)

About this document

The Veritas InfoScale products are used for enterprise data management and protection, high availability, and disaster recovery. This document describes the new features, enhancements, and changes that are introduced in the 7.1 release of the Veritas InfoScale products.

The following documents provide further information that is common to all the InfoScale products:

- *Veritas InfoScale Getting Started Guide*
- *Veritas InfoScale Release Notes*
- *Veritas InfoScale Installation and Upgrade Guide*

For information about the InfoScale product components and their capabilities, refer to the corresponding administrator's guides and agent guides.

For information about configuring and administering your applications with the InfoScale products, refer to the application-specific implementation guides and solutions guides.

New features and changes in this release

This section describes the new features and changes that are introduced in this release.

LDAP and Active Directory user groups can perform cross-cluster operations

The LDAP and Active Directory users with Administrator or Operator privileges on both the clusters in a GCO setup can perform cross-cluster operations. You can therefore add user groups instead of individual users to both the clusters for switching a service group from one cluster to another.

Priority-based failover

Priority-based failover can be used to ensure that the load requirement of the high priority service group is met before the group is failed over. If the load requirement of the high priority service group is not met, VCS takes some of the low priority service groups offline till the load requirement is met. VCS chooses the system with least disruption by performing a priority-based failover of a high priority service group. Even though priority-based failover is configured for all the service groups in a cluster, you must enable the feature at the cluster level.

You can enable a service group for priority-based failover using the following command:

```
# haclus -modify EnablePBF 1
```

The default value of EnablePBF attribute is 0 (zero). For priority-based evaluation and failover to succeed at the cluster level, the Priority and the Load attributes need to be set at the Group level.

VCS attributes introduced in this release

The following VCS attributes are added to support the various features and enhancements that are introduced in this release.

Cluster-level attribute

Name: EnablePBF (User defined)	Enables or disables priority-based failover. When set to 1 (one), VCS gives priority to bringing the high-priority service group online, by ensuring that its load requirement is met on the system.
Type: Boolean	Default value: 0 (zero)
Dimension: Scalar	

Service group-level attributes

Name: EvacList	Contains a list of pairs of low-priority service groups and the systems on which they will be evacuated.
(System use only)	
Type: String	For example:
Dimension:	<code>Grp1 EvacList grp2 Sys0 grp3 Sys0 grp4 Sys4</code>
Association	Default value: Not applicable
Name:	Displays the name of the high-priority service group for which evacuation is in progress. The name is no longer visible after the evacuation is complete.
EvacuatingForGroup	
(System use only)	Default value: Not applicable
Type: String	
Dimension: Scalar	

Support for multi-controller Asymmetric Logical Unit Access (ALUA) arrays

Dynamic Multi-Pathing for Windows supports ALUA arrays that have up to two controllers.

This support is now extended to ALUA arrays that have more than two controllers.

For information about the multi-controller ALUA arrays supported, see:

<Place holder for Peregrine HCL link>

Support for UNMAP reclamation command

SFW supports array-level reclamation commands such as `WRITE_SAME` and `TRIM`.

With this release, SFW introduces support for the `UNMAP` reclamation command.

`UNMAP` is the default reclamation interface for devices that support thin provisioning and reclamation, except for SSDs. For SSDs that support `TRIM`, the default reclamation interface is `TRIM`.

Ability to take a latest backup before restoring the configuration

The `VxCBR` utility provides the ability to take a backup and to restore the SFW configuration. With this release, during a restore operation, the `VxCBR` utility now takes a backup of the current configuration before restoring it to a previous

configuration. Additionally, the VxCBR utility also creates a text file providing the configuration details.

A folder `RestoreTimeStamp\DynamicDiskGroupName` is created at the specified backup path to save the latest backup and the text file providing the configuration details is saved in the SFW installation directory (normally `C:\ProgramData\Veritas\VXCBR`) or to a directory indicated in the `-pPath` parameter (that is mentioned in the VxCBR command).

Feature usage data collection

When you perform storage management operations, the feature usage data is recorded in a binary file.

When you run Windows Data Collector, the utility collects this file along with the typical log files.

The feature usage data helps Veritas identify how you use the storage management features in the InfoScale Foundation, InfoScale Storage, and the InfoScale Enterprise products.

SmartIO support for VMware vMotion

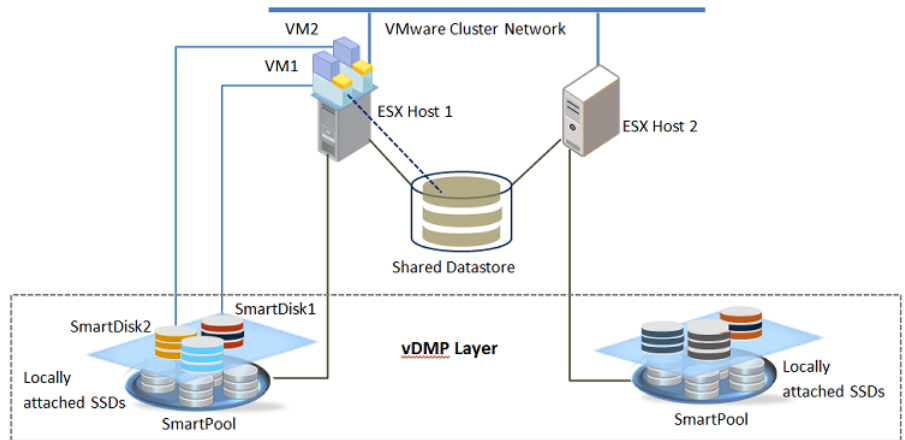
SmartIO, a data caching solution helped to improve I/O performance of applications by providing a read-only/write-through I/O cache on a locally attached Solid State drives (SSDs). However, the locally attached SSDs caused a limitation for VMware vMotion, because they could not be made available if the virtual machine failed over to another ESX host.

To overcome this limitation, SFW now integrates with Dynamic Multi-Pathing for VMware (VxDMP). VxDMP provides SmartPool, a functionality that provisions caching storage for virtual machines that have SmartIO configured.

Note: SFW supports VxDMP version 7.1 and later.

SmartPool is an aggregation of high performance, low-latency storage devices that are locally attached to an ESX host. VxDMP divides this pool in to several SmartDisks that can be shared between the virtual machines that are created on the ESX host. Additionally, in an ESX host cluster, the SmartDisks are visible to all the ESX hosts in that cluster. Because the SmartDisks are visible to all the ESX hosts in an ESX cluster, the VMware vMotion if triggered is successfully completed.

The following diagram represents the in-guest SFW installation with SmartIO configured, in a VxDMP environment. This configuration supports VMware vMotion:



After vMotion, the first I/O to the cache area fails and the request is forwarded to the back-end storage (data disks). SFW considers the I/O failure as a vMotion event and informs the VxDMP layer to allocate a SmartDisk of the required capacity. After the VxDMP layer allocates a SmartDisk, SFW retrieves the cache area details from the registry and creates a similar cache area on the SmartDisk that is assigned to the virtual machine after vMotion.

Note: If the cache area is offline during vMotion, SFW does not recreate the cache area on the SmartDisk attached to the target host. Admin intervention is required to bring the cache area online. After the cache is brought online the subsequent I/O fails. This I/O failure is considered as a vMotion case and SFW accordingly initiates the further process.

Ability to manually pause and resume tasks

SFW provides command line support to manually pause or resume the tasks running. This ability helps to provide additional bandwidth and CPU resources for the priority tasks.

The existing `vxtask` utility is updated to perform the pause and resume operations.

The `vxtask list` command now provides the new `[-x]` and `[-p]` attributes.

The `[-x]` attribute displays the extended information such as, Task Name, Source, Target, TaskComplete(%), TaskID, and the State. Each task has a unique task ID. The State displays if the task is Paused or is Running.

The `[-p]` attribute displays the tasks paused and the ones that can be paused, along with the extended information.

You can pause or resume a task on a node where the task is running.

To know the tasks that can be paused, use the command `vxtask pause /?`. This command provides unique TaskIDs for the tasks that can be paused. You can use these IDs while pausing a task.

To know the tasks that can be resumed, use the command `vxtask resume /?`. This command provides unique TaskIDs for the tasks that can be resumed. You can use these IDs while resuming a task.

Notes:

- In case of a CVM cluster, if a command is executed from a slave and a task begins on a master node, then the task can be paused only from the master node.
- You can resume only the tasks that are in Paused state.
When you resume an operation, it resumes from the point where it was paused. However, if the system reboots or the resource fails over when the task is paused, the task is reinitialized.
- If the task includes certain subtasks, you cannot pause them individually. The entire set of task (parent task) is paused.
- The details of tasks paused or resumed are shown in the Alerts.
- You cannot pause or resume the following tasks:
 - Volume shrink and volume format
 - RAID operations
 - DRL Resync
 - Resync operations when volume is in read-write back mode
 - Reclaim operations
 - Refresh and rescan operations

Support for Resilient File System (ReFS)

With this release, InfoScale products provide support for ReFS. While creating a new volume or formatting an existing volume using SFW, ReFS is now listed as an option on the respective wizards.

Note: ReFS support is available on Windows Server 2012 and 2012 R2 operating systems only.

For more information, see the Storage Foundation Administrator's Guide and the Volume Replicator Administrator's Guide.

Support for VCS agent for MSMQ on Windows Server 2012 R2

In the InfoScale Availability 7.1 and InfoScale Enterprise 7.1 releases, the VCS agent for Microsoft Message Queuing (MSMQ) is supported on Windows Server 2012 R2. You can now configure the MSMQ service for high availability on Windows Server 2012 R2 systems. Consequently, you can also configure Enterprise Vault for high availability on such systems.

InfoScale Availability 7.1 and InfoScale Enterprise 7.1 employ a new mechanism to configure an MSMQ instance for high availability. This mechanism is applicable to all the supported Windows Server versions. If you have any existing MSMQ service groups configured on Windows Server 2008 R2 or 2012 systems, they will continue to function after upgrading to the 7.1 release. The upgrade process seamlessly switches the service groups over to use the mechanism.

Stronger security with 2048-bit key and SHA-256 signature certificates

The Cluster Server components of InfoScale Availability 7.1 and InfoScale Enterprise 7.1 use 2048-bit key and SHA-256 signature certificates. The VCS Authentication Service, which provides secure communication between cluster nodes, generates certificates with a 2048-bit key and an SHA-256 signature. This enhancement provides stronger security to VCS users.

The 2048-bit key and SHA-256 signature certificates are deployed during a fresh installation of InfoScale Availability 7.1 and InfoScale Enterprise 7.1. When you configure a cluster using these products, these certificates are used by default.

If you upgrade to InfoScale 7.1 and if you have not already installed the InfoScale 7.0.1 patch, you need to upgrade any existing secure clusters. For more information, see the *Veritas InfoScale Installation and Upgrade Guide*.

Note: If some of the clusters in a global cluster setup run on 6.x or earlier versions of the Cluster Server components, the inter-cluster communication fails.

VCS can start or stop an application or a resource and continue to monitor it

VCS can now start or stop an application or a resource, even as it continues to monitoring it. Thus, VCS does not initiate a failover or call the Clean function whenever a resource faults in a single node cluster. To compliment this change, the scope of the `ManageFaults` attribute is raised to the resource level. The value

of `ManageFaults` at the resource level supersedes its value at the group level. The resource-level attribute is defined as `Resource::MangeFaults` and the group-level attribute is defined as `Group::MangeFaults`. To use the older behavior with the `Group::ManageFaults` attribute, leave the `Resource::ManageFaults` attribute empty.

A faulted service group automatically clears its Faulted state when necessary

A faulted service group now clears its Faulted state on the cluster nodes and restarts itself when there is no target node available for failover. This ability removes the dependency on the database administrators to manually clear the Faulted state. A new attribute, `AutoclearLimit`, enables this feature and controls the attempts to clear the Faulted state.

Volume Replicator I/O throughput improvements using batched writes

Batched writing of multiple application writes to the SRL increases application I/O throughput. This is achieved by allocating a log location for a set of application writes, and then batching the writes together to form a single write to the SRL, and therefore replacing the multiple writes to the SRL at the primary RVG.

Support for Windows Server 2008 R2 and VMware ESX 5.5 about to end

InfoScale 7.1 is the last release that supports the Windows Server 2008 R2 operating system and VMware ESX 5.5. This support will be deprecated in the next InfoScale release.

The `vxboot` driver is about to be deprecated

InfoScale 7.1 is the last release that includes the `vxboot` driver. The functionality that `vxboot` provides has been deprecated since the for Windows 6.0 release. This driver will be deprecated in the next InfoScale release. The automatic importing of dynamic disk groups will then be managed by the Veritas DG Delayed Import Service (`VxDgDI`).