

RELEASE NOTES

EMC[®] Unisphere[™] for VMAX[™]

Version 8.0.1

Release Notes

REV 03

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These release notes contain supplemental information about EMC Unisphere for VMAX V8.0.1. Topics include:

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Product description

Unisphere for VMAX is a web-based application that allows you to configure and manage VMAX storage systems. You can use Unisphere to:

- ◆ Manage user accounts and roles
- ◆ Perform configuration operations (create thin volumes, mask volumes, set storage attributes, set volume attributes, and set port flags)
- ◆ Manage volumes (change volume configuration, set volume status, and create/dissolve meta volumes)
- ◆ Perform and monitor replication and backup operations:
 - TimeFinder® SnapVX
 - TimeFinder/Snap
 - TimeFinder VP Snap
 - TimeFinder/Clone
 - TimeFinder/Mirror
 - Symmetrix Remote Data Facility (SRDF®)
 - Open Replicator for Symmetrix (ORS)
 - ProtectPoint™
- ◆ Manage advanced storage features, such as:
 - Fully Automated Storage Tiering (FAST)™
 - Fully Automated Storage Tiering for virtual pools (FAST VP)
 - Service Level Objective provisioning
 - Workload planning
 - FAST Array Advisor
 - Enhanced Virtual LUN Technology
 - Auto-provisioning Groups
 - Virtual Provisioning
 - Federated Live Migration (FLM)

- Federated Tiered Storage (FTS)
- Embedded NAS (eNAS)
- ◆ Monitor alerts, including the ability to configure external alert notifications
- ◆ Monitor storage system performance data:
 - Monitor performance and capacity over time
 - Drill-down through data to investigate issues
 - View graphs detailing system performance
 - Set performance thresholds and alerts
 - View high frequency metrics in real time
 - Perform root cause analysis
 - View storage system heatmaps
 - Execute scheduled and ongoing reports (queries), and export that data to a file
 - Utilize predefined dashboards for many of the system components
 - Customize your own dashboard templates
 - Execute scheduled export of performance dashboards
- ◆ Monitor and troubleshoot database performance issues using Database Storage Analyzer

New features and changes

For information on previously released Unisphere for VMAX features, refer to the corresponding release notes located on EMC Online Support at:

<https://support.EMC.com>

For detailed interoperability information, refer to E-Lab Interoperability Navigator at:

<https://elabnavigator.EMC.com>

Support announcements

EMC lists the Service Life dates for the versions of Unisphere for VMAX on EMC Online Support:

https://support.emc.com/products/27045_Unisphere-for-VMAX

On the EMC Online Support site, click **Support › Support By Product** in the main navigation bar. In the **Find a Product** box, type Unisphere for VMAX and click the arrow. The Unisphere for VMAX page will appear and the Service Life details are available on the left-hand side of the page.

New features

[Table 1](#) describes the new features available exclusively with Unisphere for VMAX V8.0.1. For information on the new features available with both Solutions Enabler and Unisphere for VMAX, refer to the *Solutions Enabler V8.0.1 Release Notes*.

Table 1 New features

Component	Feature name	Feature description
General	Improved design	The Unisphere for VMAX console GUI has been updated with a more modern look and feel: - Icons use flat design - Common tasks have been removed from the views and are now only available in their corresponding menus.
	Navigation	When selecting storage systems from the system selector, the default view displayed now depends on the type of system you select: - For storage systems running HYPERVMAX OS 5977, the default view is the Storage Groups Dashboard. - For storage systems running Enginuity 5671 - 5876, the default view is the Storage Group list view.
	Config change feedback	The generic progress bar displayed during configuration changes has been enhanced to display details on operations as they execute. In addition, the Job Details view has also been enhanced to show the same information.
Install	Consolidation	Performance Analyzer is no longer an optional component. The features for analyzing performance are installed by default.
	CST lockbox	During install, a Unisphere lockbox password must be configured. This password is used to secure the CST lockbox, a RSA-secured vault containing user and password information.
	PostgreSQL Upgrades	Unisphere for VMAX now uses a PostgreSQL database for storing performance data.
	IPv6	IPv6 address are now supported.
Home	Alerts	The Alerts list view now includes a filter tool for narrowing the listed alerts by specific criteria. The default limit on the number of supported alerts per storage system has increase from 3,000 to 10,000.
	Authorization	Two new roles have been added to support the new Database Storage Analyzer application, DSA Admin and DSA read only.

Table 1 New features

Component	Feature name	Feature description
Storage	Service Level Objective provisioning	With the release of HYPERMAX OS 5977 and the next-generation VMAX Family systems, Unisphere for VMAX introduces support for Service Level Objective provisioning. Service Level Objective provisioning eliminates the need for storage administrators to manually assign physical resources to their applications. Instead, storage administrators specify the storage performance and capacity required for the application and let the system provision the workload appropriately.
	Workload Planner	Workload Planner is a FAST component used to display performance metrics for applications. These metrics are used to compute Service Level Objective compliance for the application.
	Array Advisor	Array Advisor is a FAST component used to determine the performance impact of migrating the workload from one storage system (source) to another storage system (target). If the target storage system can absorb the added workload, Array Advisor will automatically create all the necessary auto-provisioning groups to duplicate the source workload on the target storage system.
	ProtectPoint	For storage systems running HYPERMAX OS 5977 or higher, ProtectPoint integrates your primary storage (VMAX3 system) with your protection storage (Data Domain system), thereby eliminating application servers from the data path. This integration reduces the cost and complexity associated with traditional backup applications while still providing the benefits of native backups.
	Volumes/Storage Groups	You can now create a storage group from a set of volumes in the Volumes view.
	New Volumes View	For storage systems running HYPERMAX OS 5977 or higher, Unisphere for VMAX includes a new Volumes view from which you can view and manage all the volume types on the storage system.
	New Storage Groups Dashboard	For storage systems running HYPERMAX OS 5977 or higher, Unisphere for VMAX includes a Storage Groups Dashboard from which you can monitor how storage groups on a system are performing against the applied Service Level Objectives.
	Storage Group views	Storage group views now include tree tables, with parent storage groups as parent rows, child storage groups as child rows, and standalone storage groups as standalone rows.
Hosts	New Hosts view	The Initiator Groups view from previous versions has been replaced with a new Hosts view. The new view includes tree tables, where parents are host groups, and children/standalone initiator groups are hosts.

Table 1 New features

Component	Feature name	Feature description
Data protection	TimeFinder SnapVX	TimeFinder SnapVX is a new local replication solution designed to non-disruptively create point-in-time copies (snapshots) of critical data. TimeFinder SnapVX creates snapshots by storing changed tracks (deltas) directly in the Storage Resource Pool of the source volume. With TimeFinder SnapVX, you do not need to specify a target volume and source/target pairs when you create a snapshot. If there is ever a need for the application to use the point-in-time data, you can create links from the snapshot to one or more target volumes. If there are multiple snapshots and the application needs to find a particular point-in-time copy for host access, you can link and relink until the correct snapshot is located.
	Protect Storage Group wizard	The new Protect Storage Group wizard guides you through the process of protecting storage groups.
	Protection Dashboard	The new Protection Dashboard provides you with a single place from which to monitor the replication features on or associated with local storage systems.
Performance	Analyze/Monitor views	The Performance section has significantly changed. The Monitor, Analyze, and Charts sections display as different tabs within a single view and changes are persisted when switching between different tabs. Analyze data is now displayed in the following time-dependent ways: • Real-Time Analysis information uses real-time data. • Root Cause Analysis information uses diagnostic data. • Trending and planning information uses historical data.
	Dashboards	Performance dashboards, both pre-defined and custom, have been updated for V8.0.1. The updated Monitor tab lists custom dashboards and templates along with pre-defined EMC dashboards, performance summary dashboards, and heatmaps. Dashboards can now be configured to display an overview of all storage systems or specific component information for individual storage systems.
	Threshold and alerts	A new Performance Thresholds and Alerts Settings view has been added to help you manage performance metrics, thresholds, and alerts. Groups of metrics are listed in the selection pane according to category, and when selected, the list of individual metrics in the group are displayed in the main table. From the metrics table, you can manage global and custom thresholds and alerts for individual metrics.

Table 1 New features

Component	Feature name	Feature description
Database	Database view	A new Database view displays database instance information provided by Database Storage Analyzer. This view allows Storage Administrators and Database Administrators to collaborate while troubleshooting database issues.
	Database Storage Analyzer	Unisphere for VMAX now includes a standalone database troubleshooting application, Database Storage Analyzer. Launched from the new Database view, Database Storage Analyzer will help you troubleshoot Oracle database issues.
System	Reservations	The Reservations list view has been moved from Storage › Reservations to the System Dashboard (System › Dashboard).
	Embedded NAS	Embedded NAS (eNAS) integrates the file-based storage capabilities of VNX arrays into VMAX storage systems running HYPERMAX OS 5977 or higher. To support this new functionality, Unisphere for VMAX provides a new File Storage dashboard, from which you can: • Monitor and manage integrated VNX file services, such as: - File Systems - File storage groups - File Masking views - File storage pools - File alerts • Provision VMAX storage for VNX hosts • Launch Unisphere for VNX Note the following: • eNAS functionality is not supported when the Unisphere for VMAX console is running in a Chrome instance. • Java Runtime Environment (JRE) V1.7 is required on the host and it must match the JRE for the browser (that is, 32-bit/32 bit, 64-bit /64-bit).
RESTAPI	Port metrics	The front-end port metrics, <code>port_0_xxx</code> and <code>port_1_xxx</code> , are no longer supported. Front-end ports now have their own categories and metrics.

Table 1 New features

Component	Feature name	Feature description
Virtual Appliance	Persistent data	The Export Persistent Files and Import Persistent Files buttons have been replaced with a single Download Persistent Files button.
	LDAP group authorization	The vApp Manager now allows for authorizing users in an LDAP group with an admin role. Prior to this release an LDAP admin user could only be of type USER. Now LDAP admin users can be either a USER or GROUP type. All users belonging to an LDAP group can perform all vApp operations.
	Virus protection	The vApp Manager is now packaged with ClamAV which is an open source (GPL) anti-virus package designed to detect viruses, trojans, malware, and other malicious threats on the appliance virtual machine. ClamAV allows for on-demand scanning, anti-virus updates, access to scan log files, and editing the ClamAV configuration file.
	Disk usage	Disk usage is graphically displayed. When usage exceeds 80% of the disk partition size, the graph displays as “Critical” and a warning message displays.

Fixed problems

Table lists problems fixed in Unisphere for VMAX V8.0.1.

Table 2 Fixed problems

Found in version	Description
1.6.0	Fix for Shellshock vulnerability (CVE-2014-6271)
1.6.1	Cylinder translation not displaying when typing the volume size in GB.
1.6.2	Hostname changes during ISO upgrade, which requires symauth entries to be updated to the new hostname.
1.6.1	The Root Cause Analysis view for thin pools displays an incorrect value for BE MBs Transferred/sec .
1.6.2	When viewing performance monitor charts for thin pools, the following metrics display as zero: • Total Tracks • Compressed Tracks % • Compressed Tracks
1.6.2	EDS director Random Read Misses Mbytes are always reported as zero.
1.6.1.6	SMAS using all memory when REST API scripts run every 15 minutes

Environment and system requirements

Refer to the *Unisphere for VMAX Installation Guide* for environment and system requirements.

Database Storage Analyzer requirements

Database Storage Analyzer monitors the performance of Oracle databases (version 10g or higher).

The following operating systems are supported:

- ◆ AIX 64-bit version 5.2 and higher
- ◆ Sun Solaris 10 64-Bit and higher (SPARC only)
- ◆ Linux 64-bits Red Hat 5 and higher
- ◆ Linux SUSE 10 and higher
- ◆ Oracle Linux Server release 5 and higher
- ◆ HP UX Itanium, version 11.23 and higher

Note: VMware RDM is the only supported virtual environment. All other virtual environments (for example, VMware VMDK, SUN container, AIX VIO, VPLEX, etc.) are not supported.

Solutions Enabler

Solutions Enabler V8.0.1 64-bit is the minimum supported version, in local or client/server mode. In client/server mode, the Solutions Enabler version running on the server must be greater than or equal to the version running on the client. In addition, the storsrvd daemon must be running on the server.

EMC ControlCenter

Unisphere cannot be installed on the same host as EMC ControlCenter agents because Unisphere requires a 64-bit version of Solutions Enabler and ControlCenter agents require a 32-bit version of Solutions Enabler.

Symmetrix Management Console

Unisphere cannot be installed on the same host as SMC because Unisphere for VMAX and SMC/SPA are not qualified to run on the same machine together due to system resource requirements. However, they can be can run on separate virtual machines (VMs) on the same server, provided that each VM meets the system and memory requirements.

Supported HYPERMAX/Enginuity versions

Unisphere for VMAX V8.0.1 supports:

- ◆ VMAX Family systems running HYPERMAX OS 5977 or higher
EMC recommends running 5977.497.471 or higher.
- ◆ Symmetrix VMAX 10K/20K Series systems running Enginuity 5874 - 5876
- ◆ Symmetrix VMAX 40K Series systems running Enginuity 5875 - 5876
- ◆ Symmetrix DMX systems running Enginuity 5671 or higher

Host systems and storage operating environment support

Unisphere for VMAX runs on a wide range of operating systems and works with certain HYPERMAX OS and Symmetrix Enginuity™ versions. For detailed interoperability information, refer to the E-Lab™ Interoperability Navigator at:

<https://support.EMC.com>

Known problems and limitations

This section identifies limitations to the functionality of this release, and known performance limits under certain conditions.

The known limitations and restrictions have been organized into the following functional sections:

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Table 3 Known problems and limitations (page 1 of 6)

Feature	Description
Installation	
Uninstall from the command line	When uninstalling Unisphere from the command line, the <code>-uninstall</code> option is not supported. For instructions on uninstalling Unisphere for VMAX, refer to the <i>EMC Unisphere for VMAX Installation Guide</i> .
Linux systems	Before opening Unisphere for VMAX from a Linux system, clear the DISPLAY variable to avoid the system hanging or stopping.
Upgrade from SMC	While direct upgrade from 64-bit is supported, direct upgrade from 32-bit SMC is not. To upgrade in a 32-bit environment, upgrade to Unisphere for VMAX 1.0.0 first, and then to Unisphere for VMAX V1.6 or higher.
Upgrade to Unisphere for VMAX with Performance option	Upgrade to Unisphere for VMAX with Performance V8.0.1 requires that the system have as much free disk space as the size of the performance database. For example, if the database is 50 GB, the system must have at least 50 GB of free disk space.
Upgrade to Unisphere for VMAX	After upgrading to Unisphere for VMAX V8.0.1, if the old Unisphere version number still displays, clear the browser history. If this does not fix the problem, clear the browser cache and restart the browser. For instructions on clearing the browser's history/cache, refer to the browser's online help.
Browser displays status error	After installation or server restart, the browser displays an HTTP Status 404 message. If you get this message, wait a few minutes and try again.

Table 3 Known problems and limitations (page 2 of 6)

Feature	Description
Installation (Continued)	
SUSE install	The following issues apply to SUSE installations: - After installing on a SUSE host, you can ignore the following erroneous message: The installation of EMC Unisphere for VMAX is finished, but some errors occurred during the install. Please see the log for details. - After rebooting a SUSE host, the SMAS service does not auto-start. To work around this issue, manually start the service using the following command: <pre>cd /etc/init.d ./smas start</pre>
Delay required before starting Unisphere for VMAX	After installing Unisphere for VMAX or restarting the Unisphere for VMAX server, you must wait a few minutes before attempting to launch a client. Attempting to launch too soon will produce an error indicating a failure to locate the server.
Virtual Appliance upgrade	Note the following restrictions before upgrading to the Unisphere for VMAX Virtual Appliance: - Direct upgrade of the SPA Virtual Appliance is only supported from V7.3.3. To upgrade from an earlier version of the virtual appliance, upgrade to V7.3.3 first, and then to the Unisphere for VMAX Virtual Appliance. - When upgrading the SMC V7.3.3 Virtual Appliance to the Unisphere for VMAX Virtual Appliance from a zip file, you must use the same hostname and IP address; otherwise, the persistent data will not transfer with the upgrade. - Unisphere for VMAX local users will not be visible in vApp Manager.
Global languages	Before installing Unisphere for VMAX on Windows, make sure the language for the system location is correct. (Control Panel > Region and Language > Administrative tab, Language for non-Unicode programs) This avoids undecipherable characters on the install screens.
Red Hat Linux	Before installing Unisphere for VMAX on a host running Red Hat Linux 5.9 or later, ensure that the maximum number of open file descriptors allowed is at least 4096. The <i>Unisphere for VMAX Installation Guide</i> contains instructions on performing this operation. If you do not perform this procedure prior to starting the installation, you run the risk of having the installation fail with the following error: Please insert Disk1 or type its location If you encounter this error, do the following: - Delete the SMAS directory. - Delete the <code>emc_SMAS_installed</code> file located in <code>/opt/emc</code> - Increase the maximum number of file descriptions allowed to at least 4096, as described in the <i>Unisphere for VMAX Installation Guide</i>. - Run the installer again.

Table 3 Known problems and limitations (page 3 of 6)

Feature	Description
Usability	
Unlicensed systems on the Home Dashboard	Licensing a storage system will not clear the unlicensed condition (indicated with a key icon) on the Home Dashboard . To clear this condition, log out, and log back in.
Navigation	If a Unisphere link or control does not work after a breadcrumb navigation, return to the original window using the menu buttons.
Home Dashboard	The Home Dashboard may sometimes fail to load when you launch the console for the first time. If this happens, simply navigate to another view, and then back to the dashboard; or log out and back in to the console.
Online help issue when displayed in Internet Explorer 10	When viewing the Unisphere for VMAX online help in Internet Explorer - compatibility view, topics will display in the help contents panel. To fix this issue, you must turn off compatibility view by doing one of the following • To turn it off for a single browser instance, click Compatibility View (blue, broken page icon) in the browser address bar. When disabled, this icon will turn gray. • To disable it permanently: a. Click Start > Run. b. Type gpedit.msc and click OK. c. Navigate to Computer Configuration\Administrative Templates\Windows Components\Internet Explorer and in the right pane, select Turn Off Compatibility View.
Discovering storage systems	To discover new storage systems, you must first run the Solutions Enabler (SYMCLI) command, symcfg discover, and then perform the discover operation in Unisphere. Once the operation completes, it may take some time before you can manage the new storage systems.
Administration	
Alerts	The alert numbers reported in the Home section only include Array and Performance alerts; System alerts (for example, not enough gatekeepers, an aborted connection to the SYMAPI server, etc.) are not included. System alerts are, however, reported in the Alerts New section of the status bar and visible in each system's Alert view.
Storage	
Storage group modification	Once you have associated a storage group with a Service Level Objective of NONE, you cannot change the group's Service Level Objective.
Creating cascaded storage groups from the Symmetrix service processor	From the service processor, you cannot use the Provisioning Storage wizard to create cascaded storage groups, as the page for selecting the child storage groups will be empty. You can, however, use the Create Storage Group wizard to create cascaded storage groups.

Table 3 Known problems and limitations (page 4 of 6)

Feature	Description
Storage (Continued)	
DATA volumes in FTS	DATA volumes are not allowed in external pools containing encapsulated volumes. However, when attempting to create DATA volumes and assign them to such a pool, Unisphere will create the DATA volumes before failing to add them to the pool, leaving the new volumes behind. As a result, you can either delete the DATA volumes or assign them to another pool.
Adding AS/400 volumes to storage groups	The Create Storage Group and Expand Storage Group wizards do not support adding AS/400 volumes. To create a storage group of AS/400 volumes, you must create an empty storage group, and then add the volumes to it using the Add feature of the storage group's volume list view (Storage > Storage Groups > View Details > Related Objects > Volumes). Similarly, to add additional AS/400 volumes to an existing storage group, you must also use the Add feature of the storage group's volume list view.
Hosts	
Masking views	An informational prompt displays when adding and removing ports from a masking view to inform users if there are RecoverPoint-enabled volumes. However, the informational prompt does not display when deleting a masking view.
Data Protection	
FLM control ports	When creating an FLM session, the directors/ports selected in the Replicator SAN View will be the only directors/ports available in the Create FLM Session wizard. To avoid this, you must select the All folder in the Control Ports filter, or multi-select all of the ports required to create the session.
Detaching preferred pairs	The Detach button will not work when attempting to perform the operation from a single pair session level.
Open Replicator cold push	Unisphere will fail when activating a COLD PUSH session with one control volume and multiple remote volumes. Instead, you must perform the operation on all the pairs at once.
Open Replicator SAN View	In the Open Replicator SAN View, the following columns display incorrect data for AS/400 volumes: Remote Volume WWN, Volume, LUN, Emulation, Thin, and In Session.
Creating SRDF pairs	When creating SRDF pairs, the Include Smaller R1 option does not work properly (that is, volumes of equal and larger size are included).
Performance	
Real Time charts	Monitoring Real Time charts may trigger memory overuse on a client, especially when running in a Chrome browser.
FE emulation metrics	FE emulation metrics cdi_time is always zero, regardless of actual FE emulation activity. This could reduce the accuracy of the FE emulation statistics.

Table 3 Known problems and limitations (page 5 of 6)

Feature	Description
Performance (Continued)	
Performance charts	The chart of Average Queue Depth for a disk (reached from Disk Group) may show inaccurate data. The related metric Avg Queue Depth in the Disk tab may show the same inaccuracy.
Database restore	Storage system database restores should only be performed one at a time.
Performance thresholds and alerts	Unisphere for VMAX does not display performance alerts for the Core category. In addition, alerts generated for Boards, FE Emulations, and IM Emulations will not display a value in the Object column of the System Alerts view.
BE director Optimized Write Counts	BE director Optimized Write counts for RAID-protected disks do not include parity write counts.
Monitor - Summary view	The Monitor - Summary view appears blank in the console. However, an exported PDF of the view includes data.
REST API	
Iterator	If you create a REST API iterator and set from to before the gap and to to after, you will get back more records than expected. This is caused by the server creating “empty” data points for the missing timestamps. This shows as a gap in the Performance charts.
Volume filter	The RESTAPI cannot filter volumes by storage group. .
System	
Dynamic Cache Partitions	Unisphere for VMAX currently supports assigning thin pools to dynamic cache partitions. Future versions of Unisphere for VMAX will support assigning snap and DSE pools.
Virtual Appliance	
Erroneous messages	Please ignore failed messages reported in: virtual machine communication interface, virtual machine communication interface socket family, and guest memory manager (during boot up).
Broken help link	The vApp Manager functional overview link under Navigating the vApp manager in the vApp manager help section does not work
Logging in after an ISO upgrade	After an ISO upgrade, users logging in for the first time should change the password for seconfig/seconfig (just like in a regular deployment), even if they are trying to login with a non default account. Once the seconfig password is changed, users can then login with their old credentials, as they did before.

Table 3 Known problems and limitations (page 6 of 6)

Feature	Description
Virtual Appliance (Continued)	
Changing passwords	After deploying for the first time, or immediately after an upgrade, do NOT click Change Password prior to logging in. Instead, login with the default password seconfig/seconfig, after which you will be prompted to change your password. Not following this process, may prevent you from changing the password.

Technical Notes

This section provides technical notes for advanced configuration of Unisphere for VMAX V8.0.1.

Managing thin pools

It is recommended that thin pools contain DATA volumes of the roughly the same size.

SYMAPI server

If you want to change the SYMAPI server that Unisphere is pointing to, you must uninstall Unisphere, and then reinstall it.

During the install, you will supply the new SYMAPI host name and network port number. The *Unisphere for VMAX Installation Guide* provides more information on these requirements.

Local replication management

Unisphere manages replication operations (TimeFinder family) through device groups. If the SMAS server does not have visibility to the device groups used to manage replication, then you will not be able to perform any replication actions in Unisphere. Similarly, replication sessions managed exclusively by device files cannot be managed by Unisphere.

Advanced configuration settings

Unisphere provides a dialog box for setting storage system preferences, including debug settings. The debug settings are restricted to Unisphere administrators.



Use the debug settings only at the direction of EMC Customer Service.

Resetting the host system stable values

This section describes the steps to reset the host system SSVs using the CLI utility.

To reset the lockbox used by Unisphere for VMAX:

1. Start the SMAS service.

The steps to start and stop the server are described in EMC Unisphere for VMAX Installation Guide.

2. Find the `<lockbox_password>` used on install. For more information on the lockbox password, refer to *Unisphere for VMAX Installation Guide*.

3. Change directory location to:

Windows: `install_location\jboss\bin`

Linux: `install_location/jboss/bin`

4. Type the following command:

Windows: `service.bat updatesv <lockbox_password>`

Linux: `./initcst.sh updatesv <lockbox_password>`

5. Restart SMAS service.

Configuring idle user timeout

By default, the client's browser will initiate an automatic logout after 480 minutes (8 hours). To change this value, set the parameter value of the **sageldleUserTimeoutInMinutes** context parameter (found in `install_dir\jboss\domain\deploy\smc.ear\smc.war\WEB-INF\web.xml` file) to any positive integer and reboot the server.

Alerts

By default, most Unisphere status alerts are disabled. *Managing alert policies* in the Unisphere for VMAX help includes instructions on enabling them.

Configuring virus-scanning software

To ensure that virus-scanning software does not affect the operation of the Unisphere for VMAX software installed on the host, you might need to carry out some additional configuration.

Excluding individual directories from virus scans

Exclude the following directories and all subdirectories from any virus scan:

- ◆ `install_dir\SMAS\jboss\standalone\data\pgsql\data`
- ◆ `install_dir\SYMAPI\stp\spa`

Not following this advice may lead to data corruption in the Performance database or problems with data collection.

Configuring virus-scanning software to allow email notifications

In a Windows environment you must configure the anti-virus software to allow email notifications.

To confirm that the configured email port is being obstructed by the anti-virus software, from the command line, enter the following command:

```
telnet server_fqdn port_number
```

For example:

```
telnet example.com 25
```

If a connection cannot be established, contact EMC support and request that the anti-virus settings be configured to allow the appropriate port be opened.

Protecting against POODLE SSLv3 vulnerability

To protect your system from the Padding Oracle On Downgraded Legacy Encryption vulnerability, ensure that following is set in your browser:

- ◆ SSL v3 protocol is disabled
- ◆ TLS protocol is enabled

Note: For instructions, refer to the documentation for your browser.

Virtual Appliance Technical notes

The following technical notes are specific to the Unisphere for VMAX Virtual Appliance (vApp) Manager.

Setting the LDAP user

When LDAP is already configured from Unisphere for VMAX, LDAP users need to be added to vApp Manager as an admin. This process requires logging into vApp Manager before disabling the local directory from Unisphere for VMAX.

Note: Unisphere for VMAX local users will not be visible in vApp Manager.

Gatekeeper volumes

For ESX V4.0 and earlier, vApp Manager will not allow more than 14 gatekeeper volumes to be added to the Virtual Appliance. Attempting to add more than 14 gatekeepers returns an error message.

Host ESX Server configuration

Host ESX Server authentication is validated each time you select the **Gatekeeper Config** tab. If the authentication fails, the host ESX Server login credentials and hostname information will be removed from the virtual appliance records and must be added again.

Unisphere daemon service

When you shutdown the SMAS daemon service from vApp Manager, you will be prompted to terminate the browser session. You must then start a new web session after a few minutes.

Server hostname requirement

For the virtual appliance to resolve a hostname, only use the fully qualified hostname (as entered in DNS server) while configuring nethosts and ESX Servers (for adding gatekeeper volumes).

SSL certificate generation

The virtual appliance generates an SSL certificate (storsrvd - client/server setup) during the initial boot after the IP address is provided, and during every IP change or reboot.

Changing the IP address

Stop all daemons with vApp Manager before changing the IP address of the appliance.

SYMCLI commands executed/submitted as root

When using vApp Manager with the seconfig account, SYMCLI commands are executed/submitted as root.

Least privileged permission requirements

Consult the appropriate VMware documentation for guidance on the least privileged permissions required to deploy a virtual appliance.

Adding gatekeeper volumes

After adding gatekeeper volumes to the virtual appliance, you must restart the SMAS daemon from vApp Manager; otherwise, the Unisphere for VMAX GUI will not be able to see the attached volumes.

Documentation

Additional information can be found in:

- ◆ *Unisphere for VMAX Installation Guide*
- ◆ *Unisphere for VMAX online help*

Related documentation

In addition, conceptual information about storage system management and SYMCLI can be found in the following Solutions Enabler documents:

- ◆ *EMC VMAX3 Family with HYPERMAX OS Product Guide*
- ◆ *EMC Solutions Enabler Release Notes*
- ◆ *EMC Solutions Enabler Array Management CLI Product Guide*
- ◆ *EMC Solutions Enabler CLI Command Reference*
- ◆ *EMC Solutions Enabler Installation Guide*
- ◆ *EMC Solutions Enabler SRM CLI Product Guide*
- ◆ *EMC Solutions Enabler TimeFinder Family CLI Product Guide*
- ◆ *EMC Solutions Enabler SRDF Family CLI Product Guide*
- ◆ *EMC Security Configuration Guide*

The Solutions Enabler manuals listed above are available on EMC Online Support at:

<https://support.EMC.com>

Your comments

Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Send your opinions of this document to:

VMAXContentFeedback@emc.com

Software media, organization, and files

The Unisphere for VMAX V8.0.1 software and documentation is available on EMC Online Support at:

<https://support.EMC.com>

It consists of the following:

- ◆ For Windows 64-bit: **UNIVMAX_V8.0.1.x_WINDOWS_X86_64.exe**
- ◆ For Linux 64-bit: **UNIVMAX_V8.0.1.x_LINUX_X86_64.bin**
- ◆ For Virtual Appliance:
univmaxpa801_x_suse11__x86_64_vapp_OVF10.ova
- ◆ *Unisphere for VMAX Installation Guide*
- ◆ *Unisphere for VMAX Online Help*
- ◆ These release notes

Installation

Detailed installation and upgrade procedures are provided in the *Unisphere for VMAX Installation Guide*.

To upgrade to Unisphere for VMAX V8.0.1, you must be running V1.6.2 or higher.

Online help is available when installing from the command line by entering `-?`.

Note: The host system must have connectivity to one or more storage systems to add users and set permissions in Unisphere.

Before you begin

Before installing Unisphere on a local Linux 64-bit host, you must do the following:

1. Set the event and statistics daemons to autostart using the following commands:

```
stordaeomon install storevntd -autostart
stordaeomon install storstopd -autostart
```

2. Start the same daemons using the following commands:

```
stordaeomon start storstopd
stordaeomon start storevntd
```

General installation procedure

The general installation strategy follows:

1. Before installing, read these release notes and verify your operating system is supported by Unisphere. For detailed interoperability information, refer to the E-Lab Interoperability Navigator at <https://support.EMC.com>.
2. Download and install the software from the Online Support website. For a first install, use the procedures detailed in the *EMC Unisphere for VMAX Installation Guide*.

Note: Before launching a Unisphere client, you must enter the name of the SMAS server (`https://ServerName:PortNum`) in your browser pop-up blocker. Or disable pop-up blockers on your client browser.

3. Once you have installed the software on your host system, your access will be confined to the base component functionality and any other functionality that you may have licensed with a previous installation. To gain access to other component task areas you have purchased, you must register (enable) licenses. For more information on licensing, refer to the online help.

Troubleshooting and getting help

When experiencing difficulties with your host and connected storage environment, review “[Known problems and limitations](#)” on [page 13](#) and “[Technical Notes](#)” on [page 19](#) to see if your difficulty is a known problem recognized by EMC.

Some functions described in these release notes and/or in the Unisphere for VMAX documentation set may not be supported by all versions of Enginuity or Unisphere for VMAX.

To ensure your host operating system is supported, check all specifications and limitations defined in E-Lab Interoperability Navigator at:

<https://elabnavigator.EMC.com>

Examine the storage system you are managing, noting its version of HYPERMAX OS the Symmetrix Enginuity operating environment. Correlate HYPERMAX OS and Enginuity feature behaviors and problems while referencing parameters and limitations. If a Unisphere for VMAX feature does not function properly, or does not function as described in the Unisphere for VMAX documentation, contact the EMC Customer Support Center for assistance.

Where to get help

EMC support, product, and licensing information can be obtained on EMC Online Support.

Note: To open a service request through EMC Online Support, you must have a valid support agreement. Contact your EMC sales representative for details about obtaining a valid support agreement or to answer any questions about your account.

Product information

For documentation, release notes, software updates, or for information about EMC products, licensing, and service, go to EMC Online Support (registration required) at:

<https://support.EMC.com>

Technical support

EMC offers a variety of support options.

Support by Product — EMC offers consolidated, product-specific information on the Web at:

<https://support.EMC.com>

The Support by Product web pages offer quick links to Documentation, White Papers, Advisories (such as frequently use Knowledgebase articles), and Downloads, as well as more dynamic content, such as presentations, discussions, relevant Customer Support Forum entries, and a link to EMC Live Chat.

EMC Live Chat — Open a Chat or instant message session with an EMC Support Engineer.

eLicensing support

To activate your entitlements and obtain your license files, visit the Service Center on <https://support.EMC.com>, as directed on your License Authorization Code (LAC) letter emailed to you.

For help with missing or incorrect entitlements after activation (that is, expected functionality remains unavailable because it is not licensed), contact your EMC Account Representative or Authorized Reseller.

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- ◆ North America, Latin America, APJK, Australia, New Zealand: SVC4EMC (800-782-4362) and follow the voice prompts.
- ◆ EMEA: +353 (0) 21 4879862 and follow the voice prompts.

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For the most up-to-date regulatory document for your product line, go to the technical documentation and advisories section on the EMC online support website.