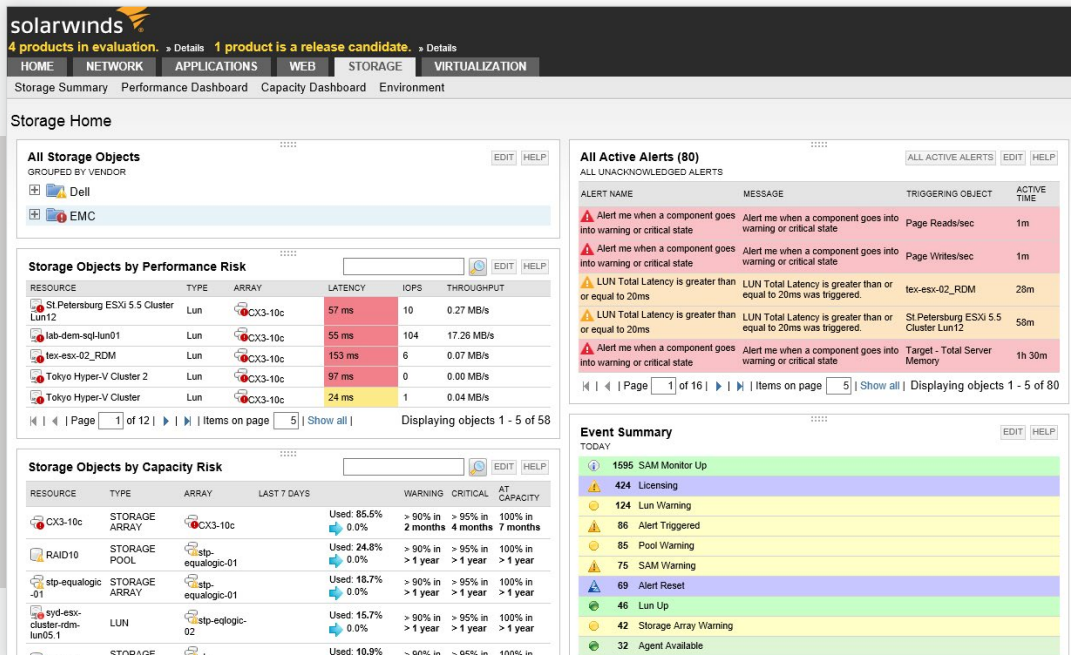




STORAGE RESOURCE MONITOR

Proactively manage your multi-vendor storage network



The screenshot displays the SolarWinds Storage Resource Monitor interface. At the top, there are navigation tabs for HOME, NETWORK, APPLICATIONS, WEB, STORAGE, and VIRTUALIZATION. Below these are sub-tabs for Storage Summary, Performance Dashboard, Capacity Dashboard, and Environment. The main content area is divided into several sections:

- All Storage Objects:** A list of storage objects grouped by vendor (Dell, EMC).
- Storage Objects by Performance Risk:** A table showing performance metrics for various storage objects.

RESOURCE	TYPE	ARRAY	LATENCY	IOPS	THROUGHPUT
St.Petersburg ESXI 5.5 Cluster Lun12	Lun	CX3-10c	57 ms	10	0.27 MB/s
lab-dem-sql-lun01	Lun	CX3-10c	55 ms	104	17.26 MB/s
tex-esx-02_RDM	Lun	CX3-10c	153 ms	6	0.07 MB/s
Tokyo Hyper-V Cluster 2	Lun	CX3-10c	97 ms	0	0.00 MB/s
Tokyo Hyper-V Cluster	Lun	CX3-10c	24 ms	1	0.04 MB/s
- All Active Alerts (80):** A table listing active alerts with columns for Alert Name, Message, Triggering Object, and Active Time.

ALERT NAME	MESSAGE	TRIGGERING OBJECT	ACTIVE TIME
Alert me when a component goes into warning or critical state	Alert me when a component goes into warning or critical state	Page Reads/sec	1m
Alert me when a component goes into warning or critical state	Alert me when a component goes into warning or critical state	Page Writes/sec	1m
LUN Total Latency is greater than or equal to 20ms	LUN Total Latency is greater than or equal to 20ms was triggered.	tex-esx-02_RDM	28m
LUN Total Latency is greater than or equal to 20ms	LUN Total Latency is greater than or equal to 20ms was triggered.	St.Petersburg ESXI 5.5 Cluster Lun12	58m
Alert me when a component goes into warning or critical state	Alert me when a component goes into warning or critical state	Target - Total Server Memory	1h 30m
- Storage Objects by Capacity Risk:** A table showing capacity usage and risk levels for various storage objects.

RESOURCE	TYPE	ARRAY	LAST 7 DAYS	WARNING	CRITICAL	AT CAPACITY
CX3-10c	STORAGE ARRAY	CX3-10c	Used: 85.5% 0.0%	> 90% in 2 months	> 95% in 4 months	100% in 7 months
RAID10	STORAGE POOL	stp-equalogic-01	Used: 24.8% 0.0%	> 90% in > 1 year	> 95% in > 1 year	100% in > 1 year
stp-equalogic-01	STORAGE ARRAY	stp-equalogic-01	Used: 15.7% 0.0%	> 90% in > 1 year	> 95% in > 1 year	100% in > 1 year
syd-esx-cluster-rdm-lun05.1	LUN	stp-equalogic-02	Used: 15.7% 0.0%	> 90% in > 1 year	> 95% in > 1 year	100% in > 1 year
esx-02	STORAGE	stp-equalogic-01	Used: 10.9%	> 90% in > 1 year	> 95% in > 1 year	100% in > 1 year
- Event Summary:** A list of recent events, including SAM Monitor Up, Licensing, Lun Warning, Alert Triggered, Pool Warning, SAM Warning, Alert Reset, Lun Up, Storage Array Warning, and Agent Available.

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Fully Functional for 30 Days

Download a free product trial and start monitoring your storage environment in minutes.

The storage monitoring and capacity management software from SolarWinds® gives you deep visibility into the performance of your multi-vendor storage arrays and helps you closely watch the application stack for storage issues that affect app performance.

STORAGE RESOURCE MONITOR AT A GLANCE

- » Monitor storage resource performance & isolate hotspots in your multi-vendor storage environment
- » Get end-to-end visibility into the application stack and troubleshoot performance from application to storage with Server & Application Monitor and Virtualization Manager
- » Automate the collection and presentation of storage capacity planning & reporting
- » Reclaim storage space and simplify analysis of storage usage
- » Start monitoring your storage infrastructure in less than an hour

SOLARWINDS STORAGE RESOURCE MONITOR FEATURES

Storage Performance Monitoring

Get a unified view into the performance and status of your storage environment. Use Storage Resource Monitor (SRM) for real-time, agentless NAS and SAN performance monitoring, as well as monitoring data on volumes, RAID groups, storage pools, disks, etc. This helps prevent downtime and ensure that your storage network is always running at peak performance. Quickly and easily configure a full range of custom and pre-defined alerts.

Automated Storage Capacity Planning

Storage capacity planning is an arduous task, especially in a virtualized infrastructure. It typically involves manually creating complex spreadsheets. Storage Resource Monitor automates the collection of forecasting data so you can easily see growth rates, forecast costs and budgetary requirements, and project when capacity will be reached. In addition to simplifying storage capacity planning, SRM provides the information you need to avoid outages due to full disk errors. The centralized monitoring feature tracks performance over time to identify hot spots, peak hours, and potential outages.

Storage LUN Views

Storage LUN views give you a single-pane-of-glass look at LUN and all related infrastructure components (both physical and virtual), allowing you to diagnose performance issues. You can quickly determine if storage is truly the reason for poor VM performance. If you determine that the culprit is another VM or LUN, you can drill down and continue to diagnose the issue within the tool. The new storage LUN views are an ideal integration point between SolarWinds Virtualization Manager and Storage Resource Monitor (SRM). Virtualization Manager links to the LUN view from the cluster, ESX®, VM, or datastore view. This enables you to see the storage under your VM infrastructure, putting you just a click away from total visibility. In addition, SRM offers more information related to your LUN groups using the user-defined LUN grouping where you can create new LUN groups, view LUN group information in the console, and leverage the groups for reporting.

Storage I/O Hotspot Detection

Storage I/O hotspot detection capabilities in Storage Resource Monitor scans your multi-vendor storage environment, identifies potential issues, and enables you to quickly access detailed information about the physical and virtual resources causing the problems.

Targeted Storage Discovery

SolarWinds' storage management and monitoring software simplifies storage monitoring setup by providing targeted recommendations for adding your specific device type to the system.



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END-TO-END VISIBILITY OF THE APPLICATION STACK

Use Storage Resource Monitor (SRM) to access the application stack dashboard for end-to-end visibility into the applications and infrastructure resources, including the storage arrays built in the SolarWinds SRM module.

The application stack environment in SRM is designed to deliver a powerful layer of troubleshooting visibility by showing you application performance issues that are usually caused by the server, virtual, or storage infrastructure. Quickly assess the health of your environment, as well as troubleshoot specific, inter-related problems—all from one console.

This level of visibility is achieved as a result of the native integration between Storage Resource Monitor, Server & Application Monitor, and Virtualization Manager. The integration of the application stack dashboard allows you to better predict, prioritize, and resolve issues before end-users and the business is affected. Get end-to-end visibility into application performance problems all the way down to the storage level.

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SYSTEM REQUIREMENTS

HARDWARE	MINIMUM REQUIREMENTS
CPU	2.0GHz dual-processor and dual-core is recommended
Memory	8GB
Hard Drive	50GB
SOFTWARE	MINIMUM REQUIREMENTS
Operating System	Windows Server® 2003 SP2, 2003 R2 SP2, (32-bit & 64-bit) Windows® 2008, 2008 SP2, 2008 R2, 2008 R2 SP1 Windows Server 2012, 2012 R2 with IIS in 32-bit mode
Database	SQL Server® 2005 SP4 SQL 2008, 2008 SP1, 2008 SP2, 2008 SP3 SQL 2008 R2, 2008 R2 SP1, 2008 R2 SP2 SQL 2012, SQL 2012 SP1
.NET Framework	Version 3.5 .NET Framework, 4.0 is recommended
Web Server	Microsoft® IIS, version 6.0 and higher, in 32-bit mode
Web Browser	Internet Explorer 8, 9, 10, and 11 Mozilla® Firefox® 3 or later Google® Chrome™ 10.0 or later

NOTE: The minimum server requirements listed assume default configuration. Significantly increasing the poll rate or statistic collection rate could result in additional load on the server, which may require a larger CPU or additional memory.

SUPPORTED STORAGE DEVICES

Storage Resource Monitor (SRM) is vendor- and platform-neutral, and supports a wide variety of array manufacturers, including:

NetApp:

- » NetApp® E-series
- » NetApp Filers (OnTAP 7-mode)
- » NetApp Filers (Clustered Data OnTAP (CDOT))

EMC:

- » EMC® CLARiiON®
- » EMC VNX®
- » EMC Celerra®
- » EMC Isilon®
- » EMC Symmetrix® VMAX®, VMAXe®, DMX®

Dell:

- » Dell® PowerVault® MD3xxx
- » Dell EqualLogic®
- » Dell Compellent®

IBM:

- » IBM® N Series
- » IBM DS3xxx, 4xxx, 5xxx
- » IBM 6xxx, 8xxx
- » IBM Spectrum™ Virtualize (Vxxx and SVC)
- » IBM Spectrum Accelerate (XIV)
- » IBM (ESS) Enterprise Storage Server®

Hitachi:

- » Hitachi Data Systems® AMS
- » Hitachi Data Systems USP, USPV, VSP
- » Hitachi Data Systems HUS 100 Block-side, HUS VM Block-side



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HP:

- » HP® StoreServ® 3PAR
- » HP StoreVirtual®/LeftHand® P4xxx
- » HP StorageWorks® EVA
- » HP StorageWorks XP
- » HP MSA/P2xxx

Other Vendors:

- » **Oracle®/SUN®:** StorageTek® 2xxx & 6xxx, Virtual Storage Manager 99xx Series, Flex
- » **Oracle/Pillar®**
- » **Xiotech®:** Emprise 7000, Magnitude 3D 3xxx and 4xxxr
- » **ONStor®**
- » **Dot Hill:** AssuredSAN 4xxx/5xxx



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Don't just take our word for it. At SolarWinds, we believe you should try our software before you buy. That's why we offer free trials that deliver full product functionality.



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ABOUT SOLARWINDS

SolarWinds (NYSE: SWI) provides powerful and affordable IT management software to customers worldwide. Focused exclusively on IT Pros, we strive to eliminate the complexity in IT management software that many have been forced to accept from traditional enterprise software vendors. SolarWinds delivers on this commitment with unexpected simplicity through products that are easy to find, buy, use, and maintain, while providing the power to address any IT management problem on any scale. Our solutions are rooted in our deep connection to our user base, which interacts in our online community, **thwack**[®], to solve problems, share technology and best practices, and directly participate in our product development process.

LEARN MORE

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