

README
maxView Storage Manager and ARCCONF Command
Line Utility

Released
January 2017





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The technology discussed in this document may be protected by one or more patent grants.

Revision History

Issue	Issue Date	Details of Change
1	November 2015	Updated maxView readme from P/N DOC-01768-05-A Rev A.e
2	April 2016	Updated readme for latest Series 6, 7, 8, and Smart-family product maintenance releases.
3	September 2016	Updated for latest Series 6, 7, 8, and Smart-family product maintenance release.
4	January 2017	Updated for latest Series 6, 7, 8, and Smart-based HBA 1000 and SmartIOC 2000 product maintenance release.

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1 **Important**

Please check the product website for the newer versions of this file to ensure you are reviewing the latest information.

This file contains important information about issues and errata that were discovered after completion of the standard product documentation.

In the case of conflict between various parts of the documentation set, this file contains the most current information.

1 New Features in this Release

- Added new features:
 - Added ability to enable configuration of WebServer timeout.
 - Added support for Modes 0Eh (Microcode with Offsets and Defer Activation) and 0Fh (Activate Deferred Microcode) for expander upgrade in ARCCONF and maxView GUI.
 - Misc UI changes/enhancements:
 - Removed additional space from set properties string.
- Bugfixes (see the *Release Notes* for a complete list)

2 Software Versions and Documentation

2.1 Utility Software

- Microsemi Adaptec® maxView Storage Manager Version 2.03.00 (B22476)
- Microsemi Adaptec® ARCCONF Command Line Interface Utility Version 2.03.00 (B22476)

2.2 Documentation

2.2.1 Series 6, 7, 8 Product Documentation

PDF Format

- maxView Storage Manager User's Guide for Microsemi Adaptec ARC-Family Controllers
- Microsemi Adaptec RAID Controller Command Line Utility User's Guide

HTML and Text Format

- maxView Storage Manager Online Help
- maxView Storage Manager/ARCCONF README.TXT file

2.2.2 HBA 1000 Series Product Documentation

PDF:

- maxView Storage Manager User's Guide for Microsemi Smart-Family Controllers
- Microsemi Adaptec HBA 1000 Series Command Line Utility User's Guide

HTML and Text Format:

- maxView Storage Manager for Smart-Family Controllers Online Help
- maxView Storage Manager/ARCCONF README.TXT file

2.2.3 SmartIOC Product Documentation

PDF:

- maxView Storage Manager User's Guide for Microsemi Smart-Family Controllers
- Microsemi SmartIOC 2000 Command Line Utility User's Guide

HTML and Text Format:

- maxView Storage Manager for Microsemi Smart-Family Controllers Online Help
- maxView Storage Manager/ARCCONF README.TXT file

3 Installation Notes

3.1 Installation and Setup

Refer to your product documentation for the installation and setup details:

- Your product Installation and User's Guide contains complete installation information for your product's drivers.
- The maxView Storage Manager User's Guide for your product contains installation information for the maxView Storage Manager software.
- The Command Line Utility User's Guide for your product contains complete installation information for ARCCONF.

3.2 Supported Operating Systems

Note:

1. maxView Storage Manager and ARCCONF Command Line Utility are supported on 64-bit operating systems only.
2. The Boot USB (offline or pre-boot) for ARCCONF and maxView Storage Manager is supported on Linux.

3.2.1 Series 6, 7, 8 Controllers

Microsoft Windows

- Microsoft® Windows® Server 2016 (64-bit)
- Microsoft® Windows® Server 2012 (64-bit)
- Microsoft® Windows® Server 2012 R2 (64-bit)
- Microsoft® Windows® Server 2008 R2 SP1 (64-bit)
- Microsoft® Windows® SBS 2011 (Standard and Essential, 64-bit)
- Microsoft® Windows® 10 (64-bit)
- Microsoft® Windows® 8.1 (64-bit)
- Microsoft® Windows® 7 (64-bit)
- Microsoft® WinPE 5.x (64-bit)

Linux for x64

- Red Hat® Enterprise Linux/CentOS 7.2, 7.1 (64-bit)
- Red Hat® Enterprise Linux/CentOS 6.8, 6.7 (64-bit)
- Red Hat® Enterprise Linux/CentOS 5.11, 5.10 (64-bit)
- SuSE Linux Enterprise Server 12 SP1 (64-bit)
- SuSE Linux Enterprise Server 12 (64-bit)
- SuSE Linux Enterprise Server 11 SP4 and SP3 (64-bit)
- Debian Linux 8.1 (64-bit)
- Ubuntu Linux 16.04, 14.04.4 (64-bit)
- Fedora Linux 22 (64-bit)

Linux for PowerPC

- Red Hat® Enterprise Linux 7.2 (64-bit)
- SuSE Linux Enterprise Server 12 SP1 (64-bit)
- Ubuntu Linux 16.04, 14.04.4 (64-bit)
- PowerKVM 3.1.0.1 (64-bit)

FreeBSD

- FreeBSD® 10.3, 10.2 (64-bit)
- FreeBSD® 9.3 (64-bit)

Solaris

- Solaris 11 (64-bit)
- Solaris 10 U9 (64-bit)

Virtual OS Environments

- VMware vSphere 6.0 U2 (64-bit)
- VMware ESXi 6.0, 5.5 U3 and U2 (64-bit)
- Citrix XenServer 6.5.1 (64-bit)
- Microsoft Hyper-V (64-bit)

3.2.2 Smart Family Controllers

Microsoft Windows

- Microsoft® Windows® Server 2016 (64-bit)
- Microsoft® Windows® Server 2012 (64-bit)
- Microsoft® Windows® Server 2012 R2 (64-bit)
- Microsoft® Windows® Server 2008 R2 SP1 (64-bit)
- Microsoft® Windows® SBS 2011 (Standard and Essential, 64-bit)
- Microsoft® Windows® 10 (64-bit)
- Microsoft® Windows® 8.1 (64-bit)
- Microsoft® Windows® 7 (64-bit)

Linux for x86/x64

- Red Hat® Enterprise Linux/CentOS 7.2, 7.1 (64-bit)
- Red Hat® Enterprise Linux/CentOS 6.8, 6.7 (64-bit)
- Red Hat® Enterprise Linux/CentOS 5.11, 5.10 (64-bit)
- SuSE Linux Enterprise Server 12 SP1 (64-bit)
- SuSE Linux Enterprise Server 12 (64-bit)
- SuSE Linux Enterprise Server 11 SP4 and SP3 (64-bit)
- Ubuntu Linux 16.04, 14.04.4 (64-bit)

Virtual OS Environments

- VMware vSphere 6.0 U1, 6.0 (64-bit)
- VMware ESXi 6.0, 5.5 U3 and U2 (64-bit)
- Citrix XenServer 6.5.1 (64-bit)
- Microsoft Hyper-V (64-bit)

3.3 General Setup Notes

- maxView Storage Manager is not backwards-compatible with Series 5 and older Adaptec controller models.
- maxView Storage Manager and legacy Adaptec Storage Manager (ASM) cannot coexist on the same system.
- For Series 6, 7, 8 controllers:
 - maxView Storage Manager is not supported on FreeBSD. Use ARCCONF to create and manage arrays.

3.4 Remote Access

maxView Storage Manager requires the following range of ports to be open for remote access:

- 34570-34580 (TCP)
- 34570 (UDP)
- 34577-34580 (UDP)

See also [Remote System Access on Linux and Windows](#) on page 13 for OS-specific issues and workarounds.

3.5 Windows 8 Setup

To log in and use maxView Storage Manager on a Windows 8 system, you must create a local user account; you cannot use your MS Live account. To create a local user account, perform the following steps:

1. Log into your MS Live account.
2. Select Settings→Change PC Settings→Users→Switch to Local user.
3. Provide account details.
4. Start maxView Storage Manager and log in with your local user account credentials.

3.6 SLES Setup

To avoid a problem with launching maxView Storage Manager on SLES 11 or SLES 12 x64 systems with DHCP enabled, ensure that the /etc/hosts file maps the server IP address to a valid host name; it is not sufficient to map the IP address to "localhost".

3.7 Ubuntu Setup

- To avoid a maxView login failure on Ubuntu systems, you must ensure that the root user account is enabled. (It is disabled by default on Ubuntu 14.04 and later because no password is set.)
For example: `sudo bash; sudo passwd root`
- When upgrading maxView Storage Manager on an existing Ubuntu Linux x64 installation, you must enable the upgrade switch before installing the maxView .deb package:

```
export maxView_Upgrade=true  
dpkg -i StorMan-*.deb
```

To uninstall maxView after the upgrade:

```
export maxView_Upgrade=false  
dpkg -r storman
```

3.8 XenServer Guest OS Setup

To avoid an operating problem with maxView Storage Manager or ARCCONF on a XenServer Guest OS, you must disable all LAN adapters in the Guest OS which are not connected to the network before installing the maxView or ARCCONF software.

3.9 Bootable USB Image Security Warnings

When running maxView Storage Manager from the bootable USB image, you may be prompted with one or more with security warnings before maxView launches. In each case, acknowledge the warning and continue.

3.10 RAW Device Setup (Series 6, 7, 8 Only)

On Adaptec Series 7 and Adaptec Series 8 controllers, a RAW Pass Through device is analogous to a JBOD, supported by Adaptec Series 6 controllers and older. Any drive without Adaptec RAID metadata is exposed to the OS as a RAW Pass Through device. To remove the Adaptec metadata and convert the drive to a RAW device, use the Uninitialize command in maxView Storage Manager; any existing data on the drive is destroyed. (You can also run `uninit` from the BIOS or ARCCONF.) For more information about working with RAW devices, see "Controller Modes" in the CLI User's Guide, and BIOS "General Settings" in the RAID Controller Installation and User's Guide.

3.11 maxView Plugin for VMware vSphere Web Client

The maxView Plugin for VMware vSphere Web Client is supported on VMware 5.5 and 6.0.

4 Known Limitations

4.1 Global Limitations

4.1.1 Dual-Controller Systems

In dual-controller systems, the controller order in maxView Storage Manager and the BIOS differs. Example: with an Adaptec 72405 and 7805 installed, the BIOS reports the 72405 as controller 1 and the 7805 as controller 2; in the GUI, the controller order is reversed.

4.1.2 Email Notifications

On Linux systems, we recommend adding the SMTP host name and the system IP address, to the /etc/hosts file. Doing so ensures that email notifications will succeed if you specify the email server in maxView Storage Manager by host name. Otherwise, email notifications (including test messages) may fail if the DNS is unable to resolve the host name.

WORKAROUND: Specify the email server in maxView Storage Manager by IP address.

4.1.3 SGPIO Enclosures

In this release, maxView Storage Manager does not show connector information for SGPIO enclosures.

4.1.4 Non-RAID Mode Controllers

maxView Storage Manager can "see" RAID controllers operating in HBA mode, Auto-Volume mode, and Simple Volume mode (Adaptec Series 7, Adaptec Series 8, Smart Family controllers only). However, to change the controller mode on Adaptec Series 7/8 controllers, you must use ARCCONF or the BIOS. With Adaptec Smart-Family controllers, you can also change the controller mode with maxView Storage Manager.

4.1.5 Browser Issues

- To run maxView Storage Manager on the supported browsers, Javascript must be enabled.
- With Ubuntu Linux, Firefox 46/47 has alignment problems in some parts of the maxView GUI.
WORKAROUND: Upgrade to Firefox 48.
- Due to a certificate bug in Firefox 31.x, maxView login may fail on RHEL systems with a "Secure Connection" error. (Firefox 31.1 is the default browser on RHEL 6.6; on RHEL 7.1, it is 31.4.)
WORKAROUND: Upgrade to the latest Firefox version.
- With the default Security setting in Microsoft Internet Explorer 10 and 11, you may be unable to login to maxView Storage Manager or experience certain GUI display issues in the maxView online Help system.
WORKAROUND: Change the default Security setting from High (or Medium-High) to Medium.
Alternative: add the GUI IP address to the trusted sites list.
- With Google Chrome, the scrollbar resets itself to the top after selecting a drive in the Logical Drive wizard. To select another drive, you must scroll back down to the drive location.
- With Microsoft Internet Explorer 10, the controller firmware update wizard does not show the f/w update file name when the upload completes. To refresh the display, click Next then Back.
- We do not recommend using multiple browsers simultaneously on the same maxView instance. Doing so may cause display issues or freezes; to restore maxView, refresh the display by pressing F5.

4.1.6 Remote System Access on Linux and Windows

To avoid remote system access failures from Linux and Windows clients running maxView Storage Manager, check and update one or all of the following system and network settings:

Windows:

- Ensure that the DNS server information is properly configured

RHEL/Linux:

- Set server.properties file permissions to at least read-only at all levels
 1. Stop all maxView services.
 2. Set the Permissions of server.properties file to read and write or read-only at all levels (Owner, Group and Others). Apply and close.
 3. Restart all services in the given order - cim, agent, tomcat
 4. Now try to remote login to this system from any other system

4.1.7 RAID 10 Segment Order

maxView Storage Manager and the Ctrl-A BIOS report the wrong segment order for RAID 10s, regardless of the order in which the drives are selected.

Example 1: Create RAID 10 with 2 SDDs and 2 HDDs in maxView Storage Manager:

(1a) ARCCONF and maxView Storage Manager see the following RAID segment order:

```
Device 2 (S1)
Device 1 (H2)
Device 3 (S2)
Device 0 (H1)
```

(1b) the BIOS/CTRL-A sees the following RAID segment order:

```
Device 2 (S1)
Device 1 (H2)
Device 0 (H1)
Device 3 (S2)
```

(1c) the correct and expected RAID segment order is:

```
Device 2 (S1)
Device 0 (H1)
Device 3 (S2)
Device 1 (H2)
```

Example 2: Create RAID 10 with 2 SDDs and 2 HDDs with ARCCONF:

(2a) the BIOS/CTRL-A sees the following RAID segment order:

```
Device 0 (H1)
Device 2 (S1)
Device 1 (H2)
Device 3 (S2)
```

(2b) ARCCONF and maxView Storage Manager see the correct RAID segment order:

```
Device 2 (S1)
Device 0 (H1)
Device 3 (S2)
Device 1 (H2)
```

4.1.8 RAID 10 Rebuild Order

With a degraded RAID 10 logical drive, the drive is rebuilt one leg at a time, not in parallel.

4.1.9 Locate Logical Drive Blink LED

In maxView Storage Manager, Locate Logical Drive continues to blink the LED for a pulled physical drive in the array after the locate action is stopped. (For unpulled drives, the blinking stops.) This issue is not seen with ARCCONF.

4.1.10 ARCCONF Backward Compatibility

ARCCONF is backward compatible with older Adaptec controller models. As a result, the ARCCONF user's guide and online help show command options that are not supported by newer Adaptec controllers, like the Adaptec Series 7 and Adaptec Series 8 or later products.

Example: With ARCCONF SETMAXCACHE, Adaptec Series 7 and Series 8 controllers do not support ADDTOPOOL or REMOVEFROMPOOL

4.1.11 Updating Hard Disk Firmware on VMware Guest OS

Updating the firmware for a SAS hard disk drive with ARCCONF/maxView can crash (PSOD) the VMware Guest OS. This issue is seen with SAS hard drives only; with SATA drives, the firmware update completes successfully.

4.1.12 Hot Swap Issues on VMware CentOS Guest OS

Due to a limitation with the VMware CentOS Guest OS network configuration, maxView Storage Manager does not show newly added or removed hot swap drives. (ARCCONF sees the configuration change but maxView does not.)

WORKAROUND: (1) reboot the system or restart maxView services; (2) adjust the network configuration; contact Adaptec Support for more information.

4.1.13 Enclosure Status Reporting

Enclosure status, in maxView Storage Manager, is event-driven. As a result, enclosures can have a "Degraded" status even if related resources (fan, temperature, power) are performing normally (Optimal status). For instance, the Enclosure status changes to "Degraded" if the system reports an "Enclosure device not responding ..." event, even if other sensor values are normal.

4.1.14 PHY Status on Enclosure Backplanes

In the Controller Properties window, maxView Storage Manager shows the Connector Info as "unknown" for all PHYs on an enclosure-based backplane (for instance, a backplane attached to connector 1).

4.1.15 Special Characters in Logical Device Names

Special characters are permitted in logical device names in maxView Storage Manager, the BIOS, and ARCCONF. However, with Linux ARCCONF (create, setname), special characters must be "escaped" to ensure proper interpretation. For example:

```
ARCCONF SETNAME 1 LOGICALDRIVE 1 arc_ldrive%\$12\&
```

4.1.16 Speaker Status on SuperMicro SAS2X28 Enclosures

SuperMicro SAS2X28 enclosures do not propagate the speaker status to maxView Storage Manager. As a result, maxView always displays the speaker status as Off.

4.1.17 Broadcasting Alerts About Status and Activity

This feature is not supported by the maxView Storage Manager or ARCCONF and has been removed from the product documentation.

4.1.18 User-Specified Archive Path

While executing the `savesupportarchive` command where a user-specified path exists, ARCCONF will instead place the logs under the `/var/log/` directory.

4.1.19 Clear Configuration Status After Re-Insertion

After removing a RAID member and then clearing the controller configuration, maxView Storage Manager recovers the configuration for all RAID volumes and physical drives when the offline drive is re-inserted and the OS restarted. By design, RAID members store metadata about all other virtual devices. This allows the controller to recover the configuration from the re-inserted drive, even though the configuration was previously cleared.

4.1.20 Configuration Changes in Device Manager

After disabling/enabling the Microsemi Adaptec controller in the Device Manager, it can take up to 10 minutes for maxView Storage Manager to detect the configuration change.

WORKAROUND: Use the Refresh link in the maxView GUI to update the configuration.

4.1.21 Online Help Issues

- Help from the Express Configuration wizard opens the Custom Configuration help panel.
WORKAROUND: Open the Express Configuration Help panel from the Help System TOC pane.
- Contrary to the online help topics, SMR drives are not supported for RAID volumes or hot spares on Smart-Family controllers.
- When opening the maxView Storage Manager help from a remote Linux system (eg, over a VPN), the help window may fail to open with a 'can't establish connection to server' message.
WORKAROUND: Replace 127.0.0.1:8443 in the URL with <system_ip_address>:8443
- In IE11, topics in the help may display with a 'Topics Not Found' message when their corresponding links are clicked in the navigation pane of the help.
WORKAROUND: Click on the "Add" browser prompt to add certification to view the content.

4.2 Limitations for Series 6, 7, 8 Controllers

4.2.1 RAID-Level Migrations

- The following RAID-level migrations (RLM) are supported in this release:
 - RAID 0 to RAID 5
 - RAID 0 to RAID 10
 - RAID 5 to RAID 6
 - RAID 6 to RAID 5
 - RAID 10 to RAID 5
 - RAID 5 to RAID 10
 - RAID 1 to RAID 5
 - SIMPLE VOLUME to RAID 1
 - RAID 1 to SIMPLE VOLUME
- When migrating a Simple Volume to RAID 1, maxView Storage Manager reports the logical drive state as Impacted (rather than Reconfiguring); this is normal.
- We do not recommend performing a RAID-level migration or Online Capacity Expansion (OCE) on a logical drive with maxCache SSD caching enabled.
NOTE: maxView Storage Manager grays out the options for logical drives with maxCache enabled. ARCCONF terminates the task.
- Always allow a RAID-level migration to complete before creating a support archive file. Otherwise, the support archive will include incorrect partition information. Once the migration is complete, the partition information will be reported correctly.

4.2.2 maxCache Device Migration

Only one maxCache Device is supported per controller. Moving the maxCache Device (all underlying SSDs) from one controller to another (assuming both controllers support maxCache) is supported only if (1) the new controller does not have a maxCache Device or any other maxCache Device with a conflicting device number and (2) only after a clean shutdown on the old controller.

4.2.3 ARCCONF maxCache Device Size Issue

ARCCONF supports >2 TB maxCache Devices if you create the device with the "max" parameter. However, the functional limit for the maxCache Device is 2 TB, which is also the limit in maxView Storage Manager.

4.2.4 Power Management Issues

- Power management is not supported on FreeBSD.
- Capturing support logs from maxView or ARCCONF will spin up drives when power management is active. This behavior is by design.
- The Logical Drive Creation wizard no longer includes the option to enable power management settings.
WORKAROUND: Enable power management for the logical drive from the Set Properties window.

4.2.5 Verify/Verify with Fix

- Incremental progress percentage information in SNMP is not updated for the Verify/Verify_Fix operations. Task progress shows 0% until complete, then 100%.
- In maxView Storage Manager and ARCCONF, the Verify_Fix operation is NOT available when:
 1. The logical drive has a non-redundant RAID level.
 2. Other tasks are in progress on the logical drive.
 3. The logical drive is in a non-optimal or impacted state.

4.2.6 ATA Secure Erase

In ARCCONF, the ATA Secure Erase operation cannot be aborted. Once started, it continues to completion.

In maxView Storage Manager, the drive is locked during ATA Secure Erase. To recover, use the ARCCONF ATAPASSWORD CLEAR <passwd> command; the default password is 'pmc-sierra'.

NOTE: ATA Secure Erase is also available in the Ctrl-A BIOS.

4.2.7 Series 6 Controller Issues

The following issues are seen only with Microsemi Adaptec Series 6 RAID controllers:

- In maxView Storage Manager, the Preserve Cache option on the Set Properties window is not supported on Series 6 RAID controllers. Attempting to set this option for the Series 6 controller fails.
- Renaming a RAID volume disables the write-cache (if enabled). You cannot re-enable the write-cache in maxView Storage Manager.
WORKAROUND: Use ARCCONF to enable the write-cache.
- In a VMware Guest OS under VMware 5.x, maxView Storage Manager and ARCCONF do not detect existing logical drive partitions. As a result, attempting to delete, clear, or erase the logical drive may fail.
- On Series 6 controllers, maxView Storage Manager deletes partitioned JBODs without issuing a warning message.
- Series 6 controllers do not support the ARCCONF GETPERFORM command.

4.2.8 Simple Volume Support

- In this release, you can create a maximum of 128 Simple Volumes in maxView Storage Manager, ARCCONF, or the BIOS.
- When a Simple Volume fails, the status remains unchanged after drive replacement.
WORKAROUND: Manually delete the Simple Volume to remove it.

4.2.9 Auto-Volume Support

- Changing a controller into Auto-Volume mode (ARCCONF/BIOS) is not supported if the configuration includes any logical device type other than Simple Volume, including a maxCache Device. The mode switch from RAID mode to Auto-Volume mode is blocked if any other type of logical volume exists

(including maxCache). After switching to Auto-Volume mode, you can create and delete Simple Volumes only in maxView Storage Manager and ARCCONF.

- In Auto-Volume mode, only the first 128 RAW drives are converted to Simple Volumes; the rest of the RAW drives remain unchanged. If you uninitialize a Ready drive while the controller is in Auto-Volume mode, the firmware converts the drive automatically until the Simple Volume count reaches the maximum.

4.2.10 Hot-Removing Disk Drives on XenServer Guest OS

XenServer does not support "hot-removal" of disk drives from a partitioned logical drive. As a result, if you hot remove a disk from a logical drive, the Guest OS becomes inaccessible because the drive partition remains visible to the OS instead of being cleared.

WORKAROUND: Reboot the XenServer host, detach the failed partition, and then restart the VM.

4.2.11 Viewing Logical Drive Details After Re-Insertion

If you remove/re-insert a RAID member when the controller's "Automatic Failover" property is enabled and there is no hot spare configured/protecting the logical device, you must click on the Refresh link in maxView Storage Manager to view the proper data of the re-inserted drive and RAID volume.

4.3 Limitations for Smart Family Controllers

4.3.1 SES Passthrough Commands to Expanders

SES passthrough commands to expanders fail.

4.3.2 Firmware Upgrade Issues

For systems using Adaptec HBA 1000 with an Adaptec SAS Expander 82885T card, where the ARCCONF utility is used to upgrade the expander firmware, ARCCONF may crash if 64-bit chunk sizes are used.

WORKAROUND: Use 32-bit chunk sizes to upgrade/downgrade the expander firmware.

4.3.3 Mount Point Information with MPIO Support

When Multipath I/O (MPIO) is enabled in Windows, mount point information is not available in maxView or ARCCONF.

4.3.4 Locate Physical Disk LED Behavior

Since the locate commands are executed at the physical device level, the LED that is used to locate physical disks in an array when using ARCCONF/maxView will continue to blink the physical device(s) even after deleting the array.