



RELEASE NOTES

Symmetrix DMX-3

EMC Enginuity

Release Level 5771.100.108

Release Notes

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These release notes contain supplemental information about EMC *Enginuity*, Release Level 5771.100.108. Topics include:

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Product description

This is a new release of Symmetrix® Enginuity™. The 5771 platform supports the Symmetrix DMX-3™ emulation level 100 and Service Processor level 108. Details of the new features are provided in [“New features and changes” on page 4](#).

Symmetrix Enginuity is the operating environment for the Symmetrix DMX series. Enginuity manages and ensures the optimal flow and integrity of information through the different hardware components of the Symmetrix system.

Enginuity manages all Symmetrix operations, including monitoring and optimizing internal data flow, ensuring the fastest response to the user's requests for information, and protecting and replicating data.

Enginuity provides the following services for the Symmetrix DMX series:

- ◆ Manages system resources to intelligently optimize performance across a wide range of I/O requirements.
- ◆ Ensures system availability through advanced fault monitoring, detection, and correction capabilities. Enginuity also provides concurrent maintenance and serviceability features.
- ◆ Interrupts and prioritizes tasks from microprocessors and, for example, ensures that fencing off failed areas takes precedence over other operations.
- ◆ Offers the foundation for specific software features available through EMC's disaster recovery, business continuance, and storage management software.
- ◆ Provides functional services for both its host Symmetrix series and for a large suite of EMC storage application software.
- ◆ Defines the priority of each task, including basic system maintenance, I/O processing, application processing (for example, EMC ControlCenter® SRDF®, TimeFinder®, and EMC® ControlCenter Symmetrix Optimizer).
- ◆ Provides uniform access through APIs for internal calls and provides an external interface to allow integration with other software providers and independent software vendors.

Naming conventions

Enginuity platform releases are denoted by a four-digit sequence. The first two digits indicate the product supported and the second two digits indicate sequential changes to the platform.

- ◆ An Enginuity platform release that begins with a two-digit sequence of **57** indicates that this platform supports the Symmetrix DMX-3.
- ◆ An Enginuity platform release that begins with a two-digit sequence of **56** indicates that this platform supports the Symmetrix DMX 800, 1000, 2000, and 3000.
- ◆ An Enginuity platform release that begins with a two-digit sequence of **55** indicates that this platform supports the Symmetrix 8430, 8730, 8230, 8530, and 8830.
- ◆ An Enginuity platform release that begins with a two-digit sequence of **52** indicates that this platform supports the Symmetrix 3300/5300, 3400/5400, and 3700/5700.
- ◆ An Enginuity platform release that begins with a two-digit sequence of **50** indicates that this platform supports the Symmetrix 3100/5100, 3200/5200, and 3500/5500.
- ◆ An Enginuity platform release that begins with a two-digit sequence of **37** indicates that this platform supports the Symmetrix 4200, 4400, and 4800.

Enginuity release level names follow a naming convention of **XXXX.EE.SS**, where:

- ◆ **XXXX** is the four-digit platform number (as described above)
- ◆ **EE** is the two-digit emulation number
- ◆ **SS** is the two-digit Service Processor number

For example, 5771.100.108 indicates the:

- ◆ 5771 platform, which is the Symmetrix DMX-3 series
- ◆ Emulation level is 100
- ◆ Service Processor level is 108

New features and changes

The modular design of Enginuity permits EMC to build upon previous serviceability and feature enhancements and allows the release of new and enhanced Enginuity revisions quickly and easily. EMC thereby extends the functionality of Enginuity and improves its reliability with each platform release.

EMC's policy is to provide Symmetrix Enginuity enhancements, features, and fixes to the customer as quickly as possible by following an ISO 9001-approved process. New Enginuity releases provide continuous improvement in performance, reliability, and availability and are used as tools to manage hardware, software, and Enginuity more effectively. In this way, customers can keep pace with new features and enhancements and participate in the continuous improvement process.

There are no new features and changes implemented by this Enginuity release.

Fixed problems

This section identifies problems fixed in the product software release also detailed online in EMC Issue Tracker. EMC Issue Tracker offers online access for up-to-date product issue information. Product issues can be searched online in EMC Issue Tracker using a keyword, issue number, product feature, or product version.

Issue Tracker can be accessed on the EMC Powerlink™ website at:

<http://Powerlink.EMC.com>

Product issue details

Product issues are sorted alphabetically by product feature and by issue number within each product feature. Product issue details include descriptions for each product issue:

- ◆ Issue Number—Unique case number assigned to track the problem. If the problem was found during product testing by EMC, the case number contains the abbreviated product name.
- ◆ Fix Number—Number of the patch or fix for the problem.
- ◆ Knowledgebase ID—Number of a relevant EMC Knowledgebase solution.
- ◆ Host OS—Operating system version for the host type.
- ◆ Host Type—Host Type for the problem that is being reported.
- ◆ Problem Summary—High-level summary of the problem being reported.
- ◆ Symptom—Observable behavior of the problem.
- ◆ Special Conditions—Brief description of the unique scenarios that may need to occur in order to reproduce the issue.
- ◆ Workaround or Fix Summary—Detailed description of what was fixed and any known workarounds.
- ◆ Found In Version—EMC product version where the problem was found.
- ◆ Impact Level—Severity and impact of the issue.
- ◆ Impact Statement—Description of how the issue might affect the customers environment.

- ◆ Additional Feature—Additional categorization of problems within an EMC product feature set.

Fixed problems by product feature

- ◆ [Base Functionality.....](#) 6
- ◆

Base Functionality

Issue Number	259286SYM
Fix Number	34752
Knowledgebase ID	emc165533
Host OS	Any OS
Host Type	Any Host
Problem Summary	The disk director fails due to timeout during loop initialization because the CDI cannot finish initializing the link in the 2 second time-out limit.
Symptom	In a Symmetrix DMX-3 with three or more drive bays in daisy chain, the customer may experience disk directors dropping to a dead director state during any online configuration change.
Special Conditions	None
Workaround or Fix Summary	This fix will change the time-out to 3 seconds.
Found In Version	5771.99.108
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Environment and system requirements

Enginuity 5771.100.108 provides new features and enhancements to mainframe and open systems environments. For detailed information on environment and system requirements, when the Enginuity is released for general availability (GA), review the *EMC Support Matrix* at:

<http://Powerlink.EMC.com>

Known problems and limitations

This section identifies:

- ◆ Limitations to the functionality of this release
- ◆ Other issues, such as known performance limits under certain conditions

Product	Updated	Number	Limitation
Base Functionality	N	1000.01	Virtual Devices and SAV are no longer options in the SymmWin volumes map under Special Types. New virtual or SAV devices must be added or existing volumes must be deleted and re-added as virtual or SAV volumes.
BS2000	N	1200.01	When a 2105 CU is enabled on a Symmetrix DMX-3, the BS2000 correction A0542055 for VOLIN is required.
	N	1200.02	To support 32k Logical devices, BS2000 correction A0534043 for OSD V5 and SHC-OSD V5.0A02 will be required to discover the Symmetrix.
	N	1200.03	Minimum version V5.0 of BS2000/OSD software SHC-OSD is required to manage the TimeFinder and SRDF features from the host.
	N	1200.04	To support 64k Logical devices, BS2000 correction A0534043 for OSD V5 and SHC-OSD V5.0A02 is required to discover the Symmetrix.
	N	1200.06	For a 2105 controller type, MOD-27 devices can only be configured for attached MVS systems. The BS2000 does not support MOD-27 devices, so CKD devices with more than 32,000 cylinders cannot be configured on the BS2000.
	N	1200.08	For FBA devices, BS2000 correction A0527500 for VOLIN is required.
	N	1200.09	BS2000/OSD only supports up to 7 aliases per device, but tolerates 15. In case 15 aliases are configured on the box, the following corrections on BS2000 are required: A0521999 for VM2000 V7.0 and A0522283 for SM2 as of V14.0B02. The 15 aliases only has been tested with OSD V5.0C and OSD V6.0.

Product	Updated	Number	Limitation
	N	1200.10	ESCON RDF for FBA devices connected to the host over ESCON can cause issues on the Symmetrix.
iSCSI Channel	N	3300.01	The maximum number of Originators is limited in iSCSI to 192 originators.
iSeries (AS/400)	N	100.01	When moving AS/400 devices from one Auxiliary Storage Pool (ASP) to another, the mirror resynchronization of the devices must complete before moving the same devices again.
iSeries (AS/400) Software	N	2000.01	SRDF TimeFinder/Manager 5.3 GA available. RAID 5 BCV's and SNAP are not supported. STM 5.3.01 supported via RPQ only
	N	2000.02	CopyPoint™ 4.1.01 is not supported with 5771 code.
	N	2000.03	CopyPoint 4.3 latest supported version
	N	2000.4	2107 - Ax6's and Ax7's are supported. Direct connect only. NO STM support at this time.
Mainframe	N	600.01	An Amdahl host cannot run SynchSort on a Symmetrix DMX over FICON channels unless the Amdahl CPU IU pacing fix is included in channel code FNM, level L41387.
	N	600.02	Limited to 120 LPARs
	N	600.03	InfoMover IFS causes FA director to go DD when editing or creating files on the Mainframe from an Open System Host.
	N	600.04	For non-standard sized CKD device sizes, such as mod 2-, FDR jobs may issue commands with an invalid cylinder number. The command is rejected, but the job retries successfully.
Mainframe: TPF_MPLF	N	680.01	A RAID 5 VTOC with TPF special format fails -the user must do a host based format.
	N	680.02	Running the maximum defined locks per SSID results in the mishandling of attention messages and the Symmetrix DMX-3 dropping into a recovery which then causes a timeout condition.
Online Configuration Change	N	210.03	Static SRDF devices cannot be added or removed in an RDF group that contains more than 0x800 (2048) devices. This restriction applies to all ESCON, Fibre, and GigE link connections
	N	210.04	Map and Unmap devices are supported up to 2000 devices in one configuration change session.
Online Maintenance Procedures	N	810.06	Can only downgrade online to the 5771.68 Base e-pack
	N	810.07	Host adapter timeouts can occur during ECM replacements.

Product	Updated	Number	Limitation
	N	810.08	If a Front End/Back End (FEBE) director is missing from the DMX-800, or a FEBE in the DMX-800 is disabled for an extended period of time, the Symmetrix may log a power-loss notification, the Symmetrix will continue to function with no power loss.
	N	810.09	If a director is not set to IMPL monitor at step 32, the director will drop when the user manually disables the board.
Online Maintenance Procedures: Online Upgrade Disk SCSI Microcode	N	800.06	Drive code load maintenance procedures must be done with I/O limited to 100 I/O per second per Disk Adapter CPU.
Online Upgrade: Add DAs/DAEs	N	470.01	An Upgrade is limited to adding one DI pair and one direct connect *pod* (1/2 mohawk, up to 8 DAE's), <u>or</u> one daisy chained *pod* (1/2 Mohawk, up to 8 DAE's).
Open Replicator	N	400.04	An online upgrade or online code load has the potential to cause Syscalls to fail during the fast IML. The Open Replicator session will need to be restarted.
	N	400.05	Open Replicator sessions should not be defined, suspended or re-created when the Write Pending count is over 50 percent.
	N	400.06	During a Hot Open Replicator Pull session, newly written data to the active Symmetrix Open Replicator device can be lost in the event of an adverse failure. The gold copy on the source storage device is unaffected and the session can be restarted.
	N	400.07	An online code load has the potential to clear protection bits during the fast IML. ORS will not support online code loads with active sessions.
	N	400.08	A maximum of 512 active sessions is allowed.
Oracle Checksum	N	660.01	For HP-UX, SPC2 needs to be set to off
Persistent Group Reservation (PGR)	N	640.01	PGR devices are not supported for more than 8,000 of the 32,000 possible devices in the entire Symmetrix. I/O is limited to no more than 70,000 I/O's per second.
PowerPath®	N	770.01	The Leadville HBA is not supported fully with Solaris PP.
SRDF Family (SRDF/S)	N	300.00	Semi-Sync (Journal 1) Mode support is discontinued with 5771 Enginuity. This affects only DMX-3 systems.
	N	300.03	Online Enginuity upgrades are not recommended while running PPRC commands as the commands may time out.
	N	300.04	If a non-protected R2 device enters a not ready state, the R1 device on the remote Symmetrix link may become not ready before a hot spare can be fully invoked against the R2 device. The minimum version and maintenance for 5771 is V 6.2.0.

Product	Updated	Number	Limitation
	N	300.06	Support up to 16K devices per RDF group. We are in progress to qualify 32K Dynamic RDF.
	N	300.07	Concurrent SRDF, Parity RAID, and R1 to larger R2 are not supported with PPRC operations.
	N	300.09	SRDF pairings are limited to the highest Symmetrix serial number that the oldest code supports. Only the first 16,000 devices of the Symmetrix 5771 to the Symmetrix 5671 can be linked. This is true for both Static and Dynamic SRDF.
	N	300.11	With this release of 5771, SRDF links that are connecting a Symmetrix with 5X67 or 5568 Engenuity to a Symmetrix DMX-3 require fix 30513 to have been intalled in the 5X67 or 5568 system.
	N	300.12	With the feature Support Data Migration (RDF Copy Only). We do not recommend running SRDF with other activities, such as BCV, SNAP, etc.
SRDF/A	N	360.03	Please refer to the <i>EMC Solutions Enabler V6.2.0 Release Notes</i> for limitations and restrictions related to creating TimeFinder/Clones or TimeFinder/Snaps of R2 volumes while running SRDF/A.
	N	360.04	Only one Concurrent SRDF mirror can be in SRDF/A mode.
	N	360.05	Solutions Enabler does not allow Concurrent SRDF and BCV devices in the same Composite Group.
	N	360.09	The Open Systems and Mainframe Multi-Session Consistency (MSC) will not work together to control the same sessions.
	N	360.10	The Open Systems and Mainframe software will not work together to control the same sessions.
	N	360.11	The minimum software levels for 5771 are: ResPak-Base (EMCSCF) V5.4.0 with SF540D0 or V5.5.0 with SF55013, SRDF-HC V5.3.0 with SR53013, ConGroup V6.1.0 with SC61012 or V6.2.0, TimeFinder/Mirror V5.4.0 with ST54013 (RAID5 BCV Clone Emulation needs microcode patch 26469), TimeFinder/Clone (SNAP) V5.4.0 with SN54099 or V5.5.0 with SN55012.
	N	360.12	A gatekeeper device is required and cannot be an SRDF, TimeFinder/Mirror, BCV, FBA, SRDF/A, Virtual or Dynamic SRDF device.
	N	360.13	The maximum number of sessions is 64 sessions per Symmetrix and eight sessions per SRDF link.
	N	360.14	A maximum of five Symmetrix on the primary and five Symmetrix on the secondary with up to eight sessions under one MSC are supported.
	N	360.15	Consistent Deactivate for a MSC group is not supported for open systems hosts.
SRDF - Concurrent	N	210.03	Adding and Removing Concurrent RDF mirrors is supported on Fibre Channel SRDF links only.

Product	Updated	Number	Limitation
SRDF/Star	N	370.00	SRDF/Star is NOW supported in Mainframe and Open Systems.
	N	370.03	Please refer to the SRDF/Star for z/OS - An Implementation and Usage Primer, Version 1.0, Rev A02 (P/N 300-002-264) for more information. Escon RA's are not currently supporting STAR.
	N	370.04	Any SRDF/Star configuration which links more than five Symmetrix systems requires an RPQ.
SRDF: Dynamic	N	390.03	When a single device VTOC is done either through inlines or the selective VTOC script the Dynamic SRDF information structure is being zeroed out.
Sun Cluster Support	N	390.01	We only support Sun Cluster with first 8K devices.
Symmetrix Data Migration Service (SDMS)	N	350.01	Symmetrix Data Migration Service (SDMS) is limited to the first 8,000 volumes with a range of 0 – 7,999 devices.
	N	350.02	When migrating from a Symmetrix DMX (Symm 6) to a Symmetrix DMX-3 (Symm 7) with SDMS, the Link Busy feature on the ESCON directors on the Symmetrix 6 donor must be turned off.
Symmetrix Data Mobility Manager (SDMM)	N	380.01	Symmetrix Data Mobility Manager (SDMM) is not supported.
TimeFinder/Clone	N	1010.05	RAID 5 BCV Clone Emulation for Mainframe is supported, Clone emulation is only valid for RAID 5 BCVs.
	N	1010.06	Solutions Enabler does not allow the use of striped CKD meta devices in TimeFinder/Clone.
	N	1010.07	Solutions Enabler does not allow the use of CKD meta devices in TimeFinder/Clone emulation mode.
	N	1010.09	If a customer tries to switch off pre-copy to run with regular Clone copy after a Clone incremental establish/recreate the pre-copy will not switch off.
	N	1010.10	Clone from a SRDF/A R2 device is not currently supported unless the Clone pair is in the precopy, restored, copied, or split state.
TimeFinder/SNAP	N	1030.02	Solutions Enabler does not allow the use of striped CKD meta devices in TimeFinder/Snap.
	N	1030.05	TimeFinder/Snap of active SRDF R2 volumes are allowed with the following limitations: • Snaps off of SRDF/A R2 volumes are not supported • Performance may be very poor for certain applications or workloads

Technical notes

Hardware-related files

For 5771, the changes are as follows (for the next 7 drives, they all have the same change list, just different revision numbers):

C73LDD rev D61B

C146LD rev D51B

C300LF rev D41B

CX146LD rev D717

CX73DF rev D817

B400LF rev DA04

B500LF rev DA04

CHANGES FOR ABOVE DRIVE FIRMWARE FILES

- Added servo calibration on powerup
- Fix for drive resetting continuously after powerup
- Add capability to dump failure info when corrupt format exists
- Fix for falsely logging 0311 on LBA's past useable area
- Modified SMART parameters so as to not falsely report high seek counts
- Improved performance on low priority tasks
- Fixes to improve low level format
- Fix for assert failure during spinup after unrecoverable errors

The next 3 drives are new releases with this being the initial release of code in 5771

T300155 - rev 5505 - Initial release of this drive and drive firmware

T146155 - rev 5505 - Initial release of this drive and drive firmware

T073155 - rev 5505 - Initial release of this drive and drive firmware

Software-related files

There are no technical notes on software-related files for this release.

Documentation

Documentation support

Refer to the Support section of the EMC Powerlink website at <http://Powerlink.EMC.com> for the most recent general availability (GA) documentation updates.

Comments

Any suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Please send a message to mailto:techpub_comments@EMC.com with comments and requests for enhancements.

Software media, organization, and files

For information on related software environment and system requirements, refer to the *EMC Support Matrix* on the EMC Powerlink website at:
<http://Powerlink.EMC.com>

Installation

Enginuity software installation is coordinated through EMC Global Services or through your local EMC office.

Troubleshooting and getting help

EMC support, product, and licensing information can be obtained as follows.

Product information — For documentation, release notes, software updates, or for information about EMC products, licensing, and service, go to the EMC Powerlink website (registration required) at:

<http://Powerlink.EMC.com>

Technical support — For technical support, go to EMC Customer Service on Powerlink. To open a service request through Powerlink, you must have a valid support agreement. Please contact your EMC sales representative for details about obtaining a valid support agreement or to answer any questions about your account.

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