



RELEASE NOTES

Symmetrix DMX Model 800/1000/2000/3000

EMC Enginuity
Release Level 5671.65.69

Release Notes
P/N 300-004-963
Rev A03

June 25, 2007

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This A03 version adds some missing fix descriptions that were attached to duplicate Issue Numbers.

The A02 version contained new drive code information in the Technical Notes section on page 155.

These release notes contain supplemental information about EMC *Enginuity*, Release Level 5671.65.69. Topics include:

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Product description

This is a new release of Symmetrix® Enginuity™. The 5671 platform supports Symmetrix DMX™ models 800, 1000, 2000, and 3000 at emulation level 65 and Service Processor level 69.

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

Engenuity 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 Engenuity platform release that begins with a two-digit sequence of **57** indicates that this platform supports the Symmetrix DMX-3.
- ◆ An Engenuity 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 Engenuity 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 Engenuity 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 Engenuity 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 Engenuity platform release that begins with a two-digit sequence of **37** indicates that this platform supports the Symmetrix 4200, 4400, and 4800.

Engenuity 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, 5671.65.69 indicates the:

- ◆ 5671 platform, which is the Symmetrix DMX 800, 1000, 2000, and 3000 series
- ◆ Emulation level is 65
- ◆ Service Processor level is 69

New features and changes

The modular design of Enginuity permits EMC to build upon previous serviceability and feature enhancements which 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 in 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—EMC Knowledgebase solution describing the issue.
- ◆ Host OS—Operating system version for the host type.
- ◆ Host Type—Host Type for the problem that is being reported.
- ◆ Problem Summary—High-level description of the problem.
- ◆ 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.
- ◆ Severity—Severity and impact of the issue.
- ◆ Impact Statement—Description of how the issue might affect the customers environment.

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Base Functionality

Issue Number	15434559
Fix Number	32524
Host OS	Any OS
Host Type	Any Host

Problem Summary	A rebuild from a corrupted parity does not generate errors. A check is needed to verify the data generated from parity if incorrect will post an error.
Symptom	The customer is reporting data corruption due to a drive replacement.
Special Conditions	None
Workaround or Fix Summary	This fix will add a check of the Parity on Raid CKD devices that will verify the data before a rebuild, and if it is incorrect an error will be posted.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Data Corruption

Issue Number	15760336
Fix Number	32383
Host OS	Any OS
Host Type	Any Host
Problem Summary	A Symmetrix DMX powered up with invalid format pendings and write pendings. The lost writes mask shows format pendings and write pendings on SRDF devices only, but some are on the remote mirror.
Symptom	The customer had the Symmetrix DMX power up with device dropped not ready due to lost writes errors when powering up following a clean shutdown.
Special Conditions	None
Workaround or Fix Summary	This fix adds debug information to help detect and recover from any illegal attempt to set FP to RDF mirrors before and during any powerdown event.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	15846316
Fix Number	31873
Host OS	Any OS
Host Type	Any Host
Problem Summary	During a RAID 5 drive replacement while copying from the hot spare the drive dropped to a write disabled state causing the max write pending limit to be reached on multiple devices.
Symptom	A RAID 5 drive drops to write disabled during copy from hot spare.
Special Conditions	None
Workaround or Fix Summary	With this fix the write pending limit should not be reached.
Found In Version	5671.32.36
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	16016774
Fix Number	32583
Knowledgebase ID	emc145460
Host OS	Any OS
Host Type	Any Host
Problem Summary	The remote adapters on the R2 side are holding jobs because the remote adapter is not allowed to end an I/O and release a slot lock until the abort has been accepted by the CDI. While the routine waits for the CDI abort to complete, the slot lock is held.
Symptom	The customer took the SRDF link down, then added devices into the SRDF group on the R1 side, and then brought the link back up and started a sync to the R2 side. The remote adapter on the R1 side began logging 1322 errors (a job has been allocated for more than 60 seconds), this led to slot lock time out errors causing the customer down time.
Special Conditions	None

Workaround or Fix Summary	This fix changes the way that the routine handles the abort in order to have it processed quicker.
Found In Version	5671.58.64
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	15924887
Fix Number	32786
Knowledgebase ID	emc146183
Host OS	Any OS
Host Type	Any Host
Problem Summary	A mismatch occurred between NVD and Global Memory on many directors after a broadcast "FF" command to all DA's cleared GM. Because the Host Directors did not participate in the IML they dropped to IMPL monitor.
Symptom	After a Symmetrix DMX power up the customer noted cache related errors logging. A broadcast "FF" command was used to correct the cache problem, however the IML timed out.
Special Conditions	None
Workaround or Fix Summary	The solution is to allow FF only if all "active" directors are included in the execution mask.
Found In Version	5671.31.35
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	16762296
Fix Number	33327
Host OS	Any OS
Host Type	Any Host

Problem Summary	There is a timing issue where both DA directors will incorrectly determine the availability of their dual-initiator directors and both end up dropping to IMPL monitor state.
Symptom	Loss of all power to an DAE may cause the associated directors to drop into impl monitor.
Special Conditions	None
Workaround or Fix Summary	This fix closes the timing gap to keep at least one of the dual-initiator pair DA's online in this case to help cleanly drop all affected devices not-ready.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	16779512
Fix Number	33157
Host OS	Any OS
Host Type	Any Host
Problem Summary	Many RAID 5 devices were prevented from being accessed after a power cycle. That was caused by inaccurate lost write tables for the not ready drives. The tables were inaccurate because the HAs did not have enough time to update the lost write tables.
Symptom	The customer was unable to access many RAID 5 volumes that were not ready after a normal power cycle.
Special Conditions	None
Workaround or Fix Summary	This fix will restore the previous delay time of four seconds between the time when all shutdown preparations have successfully completed and before actual shutoff.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	17086878
Fix Number	34324
Host OS	Any OS
Host Type	Any Host
Problem Summary	In rare cases, unaligned consecutive partial track writes to RAID 5 FBA devices that are interrupted by backend Fibre loop or drive errors during backend reads to fill in full sectors in cache could remove the WP indication and result in DL.
Symptom	Possible data loss on FBA devices which had previously experienced backend Fibre loop problems.
Special Conditions	None
Workaround or Fix Summary	This fix corrects the RMW handling with blocking I/O to avoid clearing the WP's for any of the tracks in the read operation.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Potential Data Loss

Issue Number	16988978
Fix Number	33484
Host OS	Any OS
Host Type	Any Host
Problem Summary	There is a problem with the routine check_and_free_cache_slot, it does not abort when it sees write pending flags.
Symptom	The customer had a write pending error post followed by data loss to the host and uncorrectable write errors in the host log.
Special Conditions	None

Workaround or Fix Summary	This fix updates the routine check_and_free_cache_slot to add more safeguards.
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Found In Version	5671.45.52
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Severity	1 - Critical
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Impact Statement	Data Loss
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Issue Number	17395006
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Fix Number	33960
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	A disk adapter had loop errors and dropped to a dead director state. When the disk adapter failed over, it took a long time for the failover to complete which caused the loop failure.
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Symptom	The customer was unable to access data on the Symmetrix DMX due to a loop failure.
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Special Conditions	None
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Workaround or Fix Summary	This fix will: 1-Speed up loop init attempts. 2-If a SCSI reset is triggered by 0322.0a, do not the delay link init. 3-Decrease link init time out value. 4-In power cycle, all drives before the last attempt to init link, will quit immediately after the 1st DAE command fails.
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Found In Version	5671.60.65
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Severity	1 - Critical
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Impact Statement	Data Unavailability
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Issue Number	17500118
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Fix Number	31180
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	Lost writes for the parity mirror occurred on one or more RAID 5 volumes.
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Symptom	In rare cases, disk background scrubbing could fail to properly correct suspect tracks. This might happen during a combination of the scrubbing and recoverable drive error occurrences.
Special Conditions	None
Workaround or Fix Summary	This fixes the background scrubbing problem.
Found In Version	5671.59.64
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	17355660
Fix Number	31180
Host OS	Any OS
Host Type	Any Host
Problem Summary	Lost writes for the parity mirror occurred on one or more RAID 5 volumes.
Symptom	In rare cases, disk background scrubbing could fail to properly correct suspect tracks. This might happen during a combination of the scrubbing and recoverable drive error occurrences.
Special Conditions	None
Workaround or Fix Summary	This fixes the background scrubbing problem.
Found In Version	5671.59.64
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	17380164
Fix Number	31180
Host OS	Any OS
Host Type	Any Host

Problem Summary	Lost writes for the parity mirror occurred on one or more RAID 5 volumes.
Symptom	In rare cases, disk background scrubbing could fail to properly correct suspect tracks. This might happen during a combination of the scrubbing and recoverable drive error occurrences.
Special Conditions	None
Workaround or Fix Summary	This fixes the background scrubbing problem.
Found In Version	5671.59.64
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	17438386
Fix Number	33885
Host OS	Any OS
Host Type	Any Host
Problem Summary	Multi bit memory errors occurred in the ID table area that the current A3 utilities could not recover from. The recovery tool does not work well with tracks that are marked IN_CACHE and point to physically disabled banks.
Symptom	The customer experienced problems recovering tracks after receiving memory errors due to physically disabled memory.
Special Conditions	None
Workaround or Fix Summary	This fix makes a number of changes geared around improving the Symmetrix DMX behavior with cache pointers that reference memory that is physically disabled.
Found In Version	5671.55.60
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	17411760
Fix Number	33845
Host OS	Any OS
Host Type	Any Host
Problem Summary	SYMAPI needs to have event B5.0D0B.00 added to syscall 18a for a device going write disabled.
Symptom	The customer reported that drive failures do not record errors.
Special Conditions	None
Workaround or Fix Summary	This fix will add the event to the syscall.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Potential Data Loss/Data Unavailability

Issue Number	17397820
Fix Number	34268
Host OS	Any OS
Host Type	Any Host
Problem Summary	During ECA SPLIT - EDPs to host writes are not waiting before the routine responds resulting in host permanent error after 255 retries and 5.5 seconds.
Symptom	Customer performs a remote consistence split across 7 DMXs and 3500 devices. The ECA window is opened 16 secs which retry limit is being reached by IOS.
Special Conditions	None
Workaround or Fix Summary	Fixed the EDP routine.
Found In Version	5671.45.52
Severity	1 - Critical
Impact Statement	Potential Data Corruption

Issue Number	12275249
Fix Number	30810
Host OS	Any OS
Host Type	Any Host
Problem Summary	In some cases, mirrored devices which had a not-ready mirror and an invoked hot spare attached could go unavailable during a system IML due to inconsistent disk tables between the previously not ready mirror and the other ready mirrors.
Symptom	The customer was unable to access some devices during full system IMLs.
Special Conditions	None
Workaround or Fix Summary	This fix avoids getting into the inconsistent disk table state which was causing the device to go not-ready during the full IML by properly recognizing that the disk tables on the previously not-ready mirror are stale.
Found In Version	5671.58.64
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	14672362
Fix Number	31195
Host OS	Any OS
Host Type	Any Host
Problem Summary	The host aborts on the SAF's occurred when the step in the configuration change was changing the max write pending count and the step failed and retried the step causing the time outs on the host.
Symptom	Time outs caused by the online device add and memory remove procedures are causing the customer to experience host failures.
Special Conditions	None

Workaround or Fix Summary	This fixes the device VETO mode which throttles the host I/O during the online device add and memory remove procedure.
Found In Version	5671.45.52
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	14997924
Fix Number	32924
Host OS	Any Open Systems OS
Host Type	Any Open Systems Host
Problem Summary	In rare cases a disk drive could unexpectedly request bypass off the backend Fibre loop across a DA director failover, and would be immediately dropped not ready.
Symptom	Possible performance degradation or DU due to a disk drive going not ready across a DA director failover.
Special Conditions	None
Workaround or Fix Summary	This fix changes the behavior of the failover to give the bypass requesting drive time to recover on its own before making it not ready, similar to a non-failover scenario.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	15313963
Fix Number	31444
Host OS	Any Open Systems OS
Host Type	Any Open Systems Host
Problem Summary	An unassigned director holds a device lock due to leaving old locks behind.
Symptom	The customer could not access a BCV after it was split. The device was locked to a SAF that had no access to the device.

Special Conditions	None
Workaround or Fix Summary	The fix introduces a scrubber to detect when an unassigned director holds a device lock. The scrubber frees the lock.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	15363782
Fix Number	32913
Host OS	Any OS
Host Type	Any Host
Problem Summary	An 03.1B3E.FC error means the drive unexpectedly requested to be bypassed from the FC Loop. The drive then has to be spun up manually.
Symptom	The customer had drives dropping not ready after receiving 03.1B3E.FC errors.
Special Conditions	None
Workaround or Fix Summary	The fix will power cycle the drives when they get a bypass request instead of dropping them.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Potential Data Loss

Issue Number	16503840
Fix Number	32780
Host OS	Any OS
Host Type	Any Host
Problem Summary	There was a Mask Compare Mask Swap (MCMS) operation that failed while trying to get a lock, the lock was either corrupted or not held. DSA special operations are not tested during online_tests.

Symptom	The customer experienced cache slot lock errors logging on the directors.
Special Conditions	None
Workaround or Fix Summary	This fix will run test 5C in a cache slot.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Potential Data Loss/Data Unavailability

Issue Number	17151608
Fix Number	33409
Host OS	Any OS
Host Type	Any Host
Problem Summary	A previous fix addressed other tests that were causing a similar problem by staggering the online tests. The tests that are causing the problem need to be staggered as well.
Symptom	The customer is experiencing long I/O responses twelve hours after a configuration change. An online tests appears to be the cause.
Special Conditions	None
Workaround or Fix Summary	This fixes the problem with the additional online tests.
Found In Version	5671.59.64
Severity	1 - Critical
Impact Statement	Performance

Issue Number	17163338
Fix Number	30848
Host OS	Any OS
Host Type	Any Host

Problem Summary	During a disk adapter replacement, xx10 and 282C errors logged on RAID 5 devices. After the new disk adapter was full IML'd, more errors logged because the disk adapter and the dual initiator are not synchronized
Symptom	In rare cases, backend director replacements on a Symmetrix DMX could result in host I/O timeouts.
Special Conditions	None
Workaround or Fix Summary	This fixes improves the dual-initiator failback synchronization to ensure a proper handoff of the active RAID operations.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	17493196
Fix Number	34126
Host OS	Any OS
Host Type	Any Host
Problem Summary	The online meta expansion script left the session non-active which would not allow access to the meta from the host.
Symptom	After performing an online meta expansion script the customer cannot access the new meta.
Special Conditions	None
Workaround or Fix Summary	Fix 34126 will add a new inline that will check to see if a device is in the global table, and the Meta expansion routine will be updated to add a new step that will call this inline
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	17697054
Fix Number	34174
Host OS	Any OS
Host Type	Any Host
Problem Summary	It is necessary to disable the automatic reprogramming mechanism during Copy-and-Swap operations because in the case where the director takes an exception error, it creates a situation where only half of the director has the new programming.
Symptom	The customer reported that mapping mismatch errors occurred on a director that took an exception error during a memory remove or replace script, due to the software performing a Copy-and-Swap operation which reprograms the memory mapping.
Special Conditions	None
Workaround or Fix Summary	This fix will disable the automatic reprogramming mechanism during Copy-and-Swap operations.
Found In Version	5671.48.56
Severity	1 - Critical
Impact Statement	Potential Data Loss/Data Unavailability

Issue Number	17742714
Fix Number	34545
Host OS	Any OS
Host Type	Any Host
Problem Summary	The routine is not properly checking for stuck write pendings to RAID 5 parity volumes and drive scrubbing continues to run throughout the power down sequence which is preventing the devices from coming ready because lost writes are detected.
Symptom	Devices are prevented from becoming ready during a power up.
Special Conditions	Symmetrix DMX 800

Workaround or Fix Summary	With this fix the Symmetrix DMX will not power down with stuck write pendings. Also, the routine will do a better job checking for the stuck write pendings.
Found In Version	5671.59.64
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	18569196
Fix Number	34839
Host OS	Any OS
Host Type	Any Host
Problem Summary	The problem arises from an incorrect rounding up of the TOD seconds to the nearest minute. If the alarm/error happens between 23:59:30 and 23:59:59.99 then the TOD itself it is rounded to 00:00:00 without incrementing the day.
Symptom	The customer experiences application failures and performance issues if they occur during the midnight transition from one day to the next.
Special Conditions	None
Workaround or Fix Summary	The solution is to not update the TOD upon receiving the alarm.
Found In Version	5671.32.36
Severity	1 - Critical
Impact Statement	Performance

Issue Number	16662216
Fix Number	33153
Host OS	Any OS
Host Type	Any Host
Problem Summary	The disk adapter is taking more than 800ms to respond which leads to slot lock time out errors in cache.

Symptom	The customer reported that the disk adapter logged a CE3E event (Time between time slice execution was > 800 ms) followed by CRC errors on RAID 5 devices with tracks striped to the disk adapter that posts the CE3E event.
Special Conditions	None
Workaround or Fix Summary	Introduced a new structure in the cache slot header that records what the DA is doing with a slot lock when the HA asks for it to be freed.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Potential Data Loss/Data Unavailability

Issue Number	16728594
Fix Number	33153
Host OS	Any OS
Host Type	Any Host
Problem Summary	The disk adapter is taking more than 800ms to respond which leads to slot lock time out errors in cache.
Symptom	The customer reported that the disk adapter logged a CE3E event (Time between time slice execution was > 800 ms) followed by CRC errors on RAID 5 devices with tracks striped to the disk adapter that posts the CE3E event.
Special Conditions	None
Workaround or Fix Summary	Introduced a new structure in the cache slot header that records what the DA is doing with a slot lock when the HA asks for it to be freed.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Potential Data Loss/Data Unavailability

Issue Number	256341SYM
Fix Number	34430
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	When the host fills a full track with write pendings using update writes but skipping record zero, the R2 side RAID suffers performance degradation since it cannot perform optimized writes.
Symptom	The customer may experience SRDF performance degradation on the R2 side with RAID 5.
Special Conditions	None
Workaround or Fix Summary	The solution is to format record zero in cache when performing an update write to an R1 if the flag 'regular record zero' is set and the device is a R1 device.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Performance

Issue Number	255135SYM
Fix Number	34753
Host OS	Any OS
Host Type	Any Host
Problem Summary	An uninvoked RAID 5 hot spare could not be spun down with a D0 command.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	With this fix the uninvoked RAID 5 hot spare will spin down when using the D0 command.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Maintenance Issue

Issue Number	253720SYM
Fix Number	34437
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	During a CKD rebuild the routine does not correctly preserve the error information of the 282C.8C error which it posted.
Symptom	No customer reported symptom.
Special Conditions	None
Workaround or Fix Summary	The error tracing was corrected to hold the current and rebuilt track id tables to aid in debugging the rebuild miscompare error.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Maintenance Issue

Issue Number	252391SYM
Fix Number	34717
Host OS	Any OS
Host Type	Any Host
Problem Summary	The routine <code>da_fc_check_if_need_to_drop_dd_for_nr_interface</code> that makes the decision whether to drop the direct or not, needs additional checks for DA_INTERNAL_DVS and RAID.
Symptom	The customer may experience a disk director dropping to a dead director state during a loop issue where all volumes are mirrored in the configuration.
Special Conditions	None

Workaround or Fix Summary	This fix will update the routine da_fc_check_if_need_to_drop_dd_for_nr_interface to better handle this situation.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	250737SYM
Fix Number	33153
Host OS	Any Open Systems OS
Host Type	Any Open Systems Host
Problem Summary	It is necessary to improve handling of the slot lock time out errors on open system host adapters and disk adapters so that slot locks are only taken away if it becomes clear that disk adapters are not really working on the slot.
Symptom	The customer may experience cache slot lock time outs that could lead to data mismatch conditions on RAID devices.
Special Conditions	None
Workaround or Fix Summary	This fix introduces a new structure in the cache slot header that records what the disk adapter is doing with a slot lock when the host adapter asks for it to be freed.
Found In Version	5671.55.60
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	254296SYM
Fix Number	34596
Host OS	Any OS
Host Type	Any Host
Problem Summary	After an unmap operation, the write-disable status for a device that was unmapped from that director port stayed behind. If the same device was subsequently mapped to the same director port, it retains it's write disabled status.

Symptom	The meta volume expansion script may result in meta devices being write disabled which could cause data being unavailable to the host.
Special Conditions	None
Workaround or Fix Summary	With this fix the routine will write enable devices when they are removed from a director.
Found In Version	5671.58.64
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	251020SYM
Fix Number	33917
Host OS	Any OS
Host Type	Any Host
Problem Summary	The routine designed to recover from this situation skips SYMM and special cylinders, and the format pending is on a special cylinder.
Symptom	A stuck format pending occurs on a RAID parity mirror causing errors on a power down.
Special Conditions	None
Workaround or Fix Summary	This fixes the routine to clear the stuck format pending from all cylinders.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	245041SYM
Fix Number	32684
Host OS	Any OS
Host Type	Any Host

Problem Summary	Format pending needs to be set after setting the protection bits.
Symptom	After a power cycle when running a full device Clone, mirror information not up to date errors were logged, which then resulted in indirect pointer errors logging as well.
Special Conditions	None
Workaround or Fix Summary	This fix will have the routine set format pending after setting the protection bits.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Performance

Issue Number	239913SYM
Fix Number	31776
Host OS	Any OS
Host Type	Any Host
Problem Summary	In some cases, TimeFinder restore operations that were in progress during a powerdown event were being prematurely halted before track metadata manipulations had completed. This resulted in possible inconsistent track data on the restore device pair
Symptom	Possible inconsistent data states on devices involved in TimeFinder restore operations during a powerdown event.
Special Conditions	None
Workaround or Fix Summary	This fix allows the restore operation to continue during the powerdown to help maintain consistent track metadata once the system is IML'ed again.
Found In Version	5671.58.64
Severity	1 - Critical
Impact Statement	Potential Data Loss

Issue Number	238058SYM
Fix Number	31612
Host OS	Any OS
Host Type	Any Host
Problem Summary	Host I/O in the form of syscalls to SFS devices is allowed to be processed during the power down sequence. This slows down the destaging process considerably.
Symptom	Data that is write pending in cache may be lost because the Symmetrix is unable to destage all the data from cache to disk in the allotted time.
Special Conditions	None
Workaround or Fix Summary	This fix will add a function to classify jobs as related to power-down save, and only allow matching jobs when powering down.
Found In Version	5671.55.60
Severity	1 - Critical
Impact Statement	Potential Data Loss/Data Unavailability

Issue Number	235358SYM
Fix Number	31424
Host OS	Any OS
Host Type	Any Host
Problem Summary	The AS400 Log devices do not have the extra log device block at the end of each track. Recent changes now allow sequential IO to Log devices, this opened another path to the writing of the extra log block.
Symptom	AS400 RAID Log devices will generate 2A2C errors when a SNAP session is activated.
Special Conditions	None

Workaround or Fix Summary This fix updates the routine to properly handle the extra block.

Found In Version 5671.54.59

Severity 1 - Critical

Impact Statement None

Issue Number 232270SYM

Fix Number 31754

Host OS Any OS

Host Type Any Host

Problem Summary The problem is with dv_mirror_mask being incorrectly changed for a RAID 5 mirror during the SCSI reset at step 12 which leads to multiple read ID table timeouts.

Symptom The customer may experience the IML getting stuck at step12/13 for hours if the I/O fails due to a loop or drive problem at step 12 read_id_table_from_disks.

Special Conditions None

Workaround or Fix Summary With this fix the routine will not treat dv_mirror_mask as a constant field for a RAID 5 mirror since it is dynamically changing.

Found In Version 5671.48.56

Severity 1 - Critical

Impact Statement Data Unavailability

Issue Number 214244SYM

Fix Number 28830

Host OS Any OS

Host Type Any Host

Problem Summary When running Concurrent copy jobs against RAID 5 devices the routine modify_invalid_cyl, returned RAID CRC, parity track not equal to xor of data tracks, and physical address errors.

Symptom The customer may receive mutiple errors when the routine modify_invalid_cyl fails.

Special Conditions	None
Workaround or Fix Summary	With this fix the errors will not occur.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Application Failure

Issue Number	252993SYM
Fix Number	34257
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	The recovery routine fails on CKD write pending tracks when first the 8 bytes in the record are zeros because the recovery routine thinks that those bytes marks end-of-track.
Symptom	The customer may experience a A735.89 error (No Records in CKD track) for a CKD write pending track with the first 8 bytes in the record zeroed out.
Special Conditions	None
Workaround or Fix Summary	With this fix the recovery routine will ignore the zero count area when record is write pending.
Found In Version	5671.45.52
Severity	1 - Critical
Impact Statement	Application Failure

Issue Number	243775SYM
Fix Number	32483
Host OS	Any OS
Host Type	Any Host

Problem Summary	The error is due to the increased size of a track which affects the behavior of striped meta devices. The problem comes from a meta information mis-match between two CE cylinders of the different Symmetrix DMX's.
Symptom	The customer is receiving meta data inconsistency errors after migrating data from a Symmetrix DMX-2 to a Symmetrix DMX-3.
Special Conditions	None
Workaround or Fix Summary	For the purpose of backward compatibility, the data migration process will refer to the meta information of the older Symmetrix.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	242802SYM
Fix Number	32877
Host OS	Any OS
Host Type	Any Host
Problem Summary	The 32 bit random number generator used by the HAs contains a 32 bit seed that may end up colliding with another HA. Even though there are unused entries, the HA will try to pick exactly the same entries as another HA and this may cause the I/O to fail.
Symptom	The customer may experience slow I/O times or failed I/Os.
Special Conditions	None
Workaround or Fix Summary	This fix will have the routine reseed the random number generator after a number of failures.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	238842SYM
Fix Number	31700
Host OS	Any OS
Host Type	Any Host
Problem Summary	If the M1 of a virtual device with an invoked hot spare fails before step 12 IML, the M2 mirror may not replace the default disk tables with its own and result in the device going unavailable to the host.
Symptom	The customer may experience disk adapters incorrectly dropping virtual devices, with invoked hot spares, to not ready during a full IML, if the M1 mirror fails before step 12 IML.
Special Conditions	None
Workaround or Fix Summary	This fix improves the handling of this scenario by having the M2 recognize this case and ensure that it loads its own tables instead of leaving the default tables in GM.
Found In Version	5671.55.60
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	238237SYM
Fix Number	31740
Host OS	Any OS
Host Type	Any Host
Problem Summary	In some cases, the DA check to see if it still had the cache slot lock was incorrect and would not detect when the slot lock had in fact changed.
Symptom	In some cases, stolen cache slot locks could go undetected by a DA during I/O, impacting debug of potential DU/DL issues related to the stolen slot lock.
Special Conditions	None

Workaround or Fix Summary	This fix corrects the slot lock check test on the DA so that slot locks that have been changed will be detected so I/O recovery can be attempted.
Found In Version	5671.31.35
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	232671SYM
Fix Number	31168
Host OS	Any OS
Host Type	Any Host
Problem Summary	Simulating a drive failure during Step 11 of the IML caused command timeouts on the first drive on the loop. The step usually takes a few seconds and it took about over minute with the error injections.
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	The fix is that at the beginning of step 12 read_id_talbes_from_disk, the routine will mark both data and parity mirror of a not ready RAID 5 drive as STP12_DROPPED_MIRROR in GM.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Maintenance Issue

Issue Number	232005SYM
Fix Number	31070
Host OS	Any OS
Host Type	Any Host
Problem Summary	Internal SFS path buffers are leaking on all SFS_FSTAT operations which causes the SFS syscalls to run out of pathbuffers.
Symptom	No customer reported symptoms.

Special Conditions	None
Workaround or Fix Summary	This fix will stop the leak on all SFS_STAT operations.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	237328SYM
Fix Number	31534
Host OS	Any OS
Host Type	Any Host
Problem Summary	When the R1 side is running a DD and needs to create local invalids, it needs to perform a snap intercept first. This can take a long time, and the RA creates up to 8 pending work entries at a time.
Symptom	The customer had SRDF mirrors fail to become ready after a failover/failback. However retrying the command succeeds.
Special Conditions	None
Workaround or Fix Summary	This fix limits the number of pending work entries to try and prevents too many being active at the same time.
Found In Version	5671.54.59
Severity	2 - Medium
Impact Statement	Performance

Issue Number	15872601
Fix Number	32025
Host OS	Any OS
Host Type	Any Host
Problem Summary	Engineering has agree to implement a blocking mechanism in the Enginuity for this.

Symptom	Current Engenuity will allow a VTOC of a single RAID 5 member even when the other members are ready and in use.
Special Conditions	None
Workaround or Fix Summary	This fix will implement the blocking mechanism to prevent a VTOC of a single RAID 5 member.
Found In Version	5671.48.56
Severity	2 - Medium
Impact Statement	Potential Data Loss

Issue Number	243781SYM
Fix Number	32518
Knowledgebase ID	emc150137
Host OS	Any OS
Host Type	Any Host
Problem Summary	The Symmetrix 800 logs 39A4.06 errors in recovery following an unscheduled power outage and restore, and then several devices are never spun up and remain not ready.
Symptom	The customer had devices come up not ready following an AC power outage and restore.
Special Conditions	Symmetrix DMX 800 and 801
Workaround or Fix Summary	This fixes the problem with the devices not spinning up.
Found In Version	5671.59.64
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	17378496
Fix Number	34642
Host OS	Any OS
Host Type	Any Host
Problem Summary	For TID errors the scan looks at the invalid track count of all mirrors, if it can't find a valid mirror it sets the mirror flag in the TID invalid for all mirrors. The recovery routine does not take into account that the scan generates invalid tracks.
Symptom	The customer experienced data unavailability when all mirrors were marked invalid.
Special Conditions	None
Workaround or Fix Summary	With this fix the routine will run the recovery only on the M1 mirror unless it is Not Ready/Invalid and then run it on M2 mirror.
Found In Version	5671.59.64
Severity	2 - Medium
Impact Statement	Data Unavailability

Issue Number	17932598
Fix Number	34549
Knowledgebase ID	emc157067
Host OS	Any OS
Host Type	Any Host
Problem Summary	The problem arises if the TOD it is read while hour/minute/seconds registers moved to 00:00:00 (next day) and the day register did not move yet. In such a case the new time will be moved 24 hours back.
Symptom	The customer reported SCSI errors and LVM I/O failures with possible host application degradation when 2D3E error (TOD alarm).
Special Conditions	None

Workaround or Fix Summary	The solution is to wait a few tenths of milliseconds for the TOD to stabilize all its registers (especially the day).
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Data Unavailability

Issue Number	12367106
Fix Number	26718
Knowledgebase ID	emc99881
Host OS	Any OS
Host Type	Any Host
Problem Summary	Some particular routine flows related to moving commands from meta tail devices back into meta heads can result in lost device lock requests (and response time spikes) in group reservation environments.
Symptom	The customer experienced poor performance on meta devices shared across several host adapter ports in a group reservation environment.
Special Conditions	None
Workaround or Fix Summary	The fix changes how host flags are handled by the routine when calling the device locks.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Performance

Issue Number	14379395
Fix Number	20004145
Host OS	Any OS
Host Type	Any Host

Problem Summary	On power up the disk adapters post cache CRC errors and cache cylinder address errors on multiple devices against the Symm cylinders.
Symptom	The customer reported the disk adapters logging cache errors on power up.
Special Conditions	None
Workaround or Fix Summary	The d0,fe,,f630 command will have an additional parameter called SKVT.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Potential Data Corruption

Issue Number	256280SYM
Fix Number	34963
Host OS	Any Open Systems OS
Host Type	Any Open Systems Host
Problem Summary	After an unmap operation, the write-disable status for a device that was unmapped from that director port stayed behind. If the same device was subsequently mapped to the same director port, it retains it's write disabled status.
Symptom	The meta volume expansion script may result in meta devices being write disabled which could cause data being unavailable to the host.
Special Conditions	None
Workaround or Fix Summary	With this fix the routine will write enable devices when they are removed from a fibre director.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Potential Data Unavailability

Issue Number	255557SYM
Fix Number	34835
Host OS	Any OS
Host Type	Any Host
Problem Summary	There is a need to supplement the scan that uses the pipe machine for the sector CRC calculation, currently it does not handle the log devices.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	This fixes the scan problem.
Found In Version	5671.48.56
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	255128SYM
Fix Number	34752
Host OS	Any OS
Host Type	Any Host
Problem Summary	A disk adapter slice under test logs 01.0322.0A (error on interface) followed by the director dropping to a dead director state. The error occurs because the CDI does not finish initializing the link in 2 seconds
Symptom	No customer reported symptom.
Special Conditions	None
Workaround or Fix Summary	This fix will change time out back to 3 seconds.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	254398SYM
Fix Number	34614
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	The DTR track recovery for RAID write pending and invalid tracks should be done before merging the write pending data.
Symptom	After a full Symmetrix DMX R2 synchronization to a Symmetrix DMX-3 R1, the customer had all the local tracks on the R1 volumes invalid, and the invalid ID was set.
Special Conditions	None
Workaround or Fix Summary	The fix will build tables for CKD DTR tracks before merging them., The solution is that in the case of full track writes, the Invalid ID mechanism should not check for invalid tracks on the local mirror.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Potential Data Unavailability

Issue Number	254105SYM
Fix Number	34535
Host OS	Any OS
Host Type	Any Host
Problem Summary	A disk adapter job used same lock holder value as A3,ECBD used, making the routine think it already had a lock on the track.
Symptom	The A3, ECBD utility may cause errors when run on certain devices with I/O active.
Special Conditions	None

Workaround or Fix Summary	With this fix the routine will have the the A3,ECBD utility use a slot lock value that should never be used by a disk adapter job.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Potential Data Unavailability

Issue Number	251726SYM
Fix Number	33950
Host OS	Any OS
Host Type	Any Host
Problem Summary	When validating a data track on RAID device from a scan running with the FORC option the routine will leave a bad parity.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	With this fix the routine will mark the parity invalid even if the track is not the last ready member on the slice, and validate the local mirror/member.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Potential Data Corruption

Issue Number	255168SYM
Fix Number	34756
Host OS	Any OS
Host Type	Any Host
Problem Summary	CRC errors were logged against a RAID 5 device during a sequential copy to a hot spare when adding tracks to a direct-copy-task the routine does not check that the TID is legal.
Symptom	No customer reported erroros.

Special Conditions	None
Workaround or Fix Summary	With this fix the routine will not add tracks to the job if TID is DTR.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Potential Data Corruption

Issue Number	253671SYM
Fix Number	34462
Host OS	Any OS
Host Type	Any Host
Problem Summary	A routine had locked a slot to generate a write task from a lost write, however another device had already locked the slot to destage the track.
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	With this fix these errors should not log during a power down.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Potential Data Loss

Issue Number	250813SYM
Fix Number	33803
Host OS	Any OS
Host Type	Any Host
Problem Summary	The D0,F4 utility expects a TID_OK from the function read_track_id_table_from_dv_table. However, a track that has an INVALID_TID set results in a return code of TID_INVALID_ID_FOUND which is interpreted as an error.

Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	The solution is to accept the return code of TID_INVALID_ID_FOUND as a non-error return code.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	247075SYM
Fix Number	33005
Host OS	Any OS
Host Type	Any Host
Problem Summary	The routine should always clear the COPY_SLOT flag at end of read task.
Symptom	The customer may receive virtual task errors at the end of a prefetch task when the disk adapter attempts to copy a slot without protection.
Special Conditions	None
Workaround or Fix Summary	This fix will have the routine clear the COPY_SLOT flag at end of read task.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Performance

Issue Number	232504SYM
Fix Number	31115
Host OS	Any OS
Host Type	Any Host

Problem Summary	An incorrect parameter was being passed to the online selective VTOC functionality which was resulting in incorrect task management on the DA for this operation.
Symptom	Online selective VTOC failure on the DA.
Special Conditions	None
Workaround or Fix Summary	This fix corrects the selective VTOC operation parameters so that proper task management is maintained.
Found In Version	5671.48.56
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	252390SYM
Fix Number	34125
Host OS	Any OS
Host Type	Any Host
Problem Summary	During recovery, the Recovery code bypass the CA_rebuild test and request code.
Symptom	For RAID 5 and RAID 6, track rebuild errors were logged when reading from an INVALID_ID track with a data-member invalid and a good parity.
Special Conditions	None
Workaround or Fix Summary	This fix will have the routine send the CA-Rebuild request from the recovery code.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Potential Data Corruption

Issue Number	251665SYM
Fix Number	33985
Host OS	Any OS
Host Type	Any Host
Problem Summary	The CA rebuild validates the track with an Invalid and lvalid_ID even if the data member is not ready or write disabled, or when only doing a CA rebuild.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	With this fix the routine will not validate the data member if running a CA rebuild or the memeber is not ready or write disabled.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Potential Data Unavailability

Issue Number	249407SYM
Fix Number	32245
Host OS	Any OS
Host Type	Any Host
Problem Summary	There an issue with Invalid_ID and invalid RAID 5 member. When setting invalid_ID and Invalid then trying to read the data it triggers a rebuild of the data which invalidates the parity, causing parity to be rebuilt more than once.
Symptom	The customer may experience RAID 5 recovery running very slow.
Special Conditions	None
Workaround or Fix Summary	With this fix the routine will invalidate parity only once per-slice.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Performance

Issue Number	247172SYM
Fix Number	33278
Host OS	Any OS
Host Type	Any Host
Problem Summary	The DA check to determine if it still has the slot lock was being performed after the disk I/O had been sent, which was too late to abort if it detected that the DA no longer had the cache slot lock.
Symptom	The customer may experience cache time out errors logging on the Fibre adapter in cases of stolen cache slot locks between directors, where the disk adapter could destage incorrect data to disk without validating first that the slot locks have not changed.
Special Conditions	None
Workaround or Fix Summary	This fix moves the slot lock check to just before the I/O dispatching to the drive, so that if the slot lock has changed, the I/O can be cleanly canceled and retried without modifying the state of the current disk data.
Found In Version	5671.59.64
Severity	2 - Medium
Impact Statement	Potential Data Corruption

Issue Number	243056SYM
Fix Number	32154
Host OS	Any OS
Host Type	Any Host
Problem Summary	The low priority task chk_dv_tasks_queue, on the disk adapter is time consuming, causing 40ms delays on the disk adapter every half second.
Symptom	The customer performance may be impacted by a low priority disk adapter task taking too long.
Special Conditions	None

Workaround or Fix Summary	This fix will change frequency of the task to every five minutes instead of every half second.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Performance

Issue Number	242865SYM
Fix Number	32139
Host OS	Any OS
Host Type	Any Host
Problem Summary	The routine checks if the slot is in cache without a lock and then at a later time, locks the slot and assumes it is still in the same state as before. In this case, the track is not write pending anymore but the routine does not check it again.
Symptom	The customer may receive cache errors 9510.03 (while returning a slot to the LRU, Slot does not point to itself) when running clone jobs.
Special Conditions	None
Workaround or Fix Summary	This fix will have the routine verify that the IN_CACHE bit is still set.
Found In Version	5671.32.36
Severity	2 - Medium
Impact Statement	Potential Data Unavailability

Issue Number	241118SYM
Fix Number	31842
Host OS	Any OS
Host Type	Any Host
Problem Summary	There is an issue with the A3,ECBD utility when it scans a TID with an illegal cache starting address.

Symptom	Many A3,ECBD errors (failed mask-compare-swaps on out-of-cache tracks) when scanning devices with stale cache_track_pointer entries.
Special Conditions	None
Workaround or Fix Summary	The A3,ECBD code has been updated so it uses the TID_DO_NOT_HIDE_STALE_ADDRESSES option while it reads the TID entries of the tracks it works on.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	234381SYM
Fix Number	31221
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	The routine was looking for time-stamps at a location were it used to store different information for virtual sessions. After the error is posted it removed the session thinking that there was a timeout.
Symptom	No customer problem was reported.
Special Conditions	None
Workaround or Fix Summary	The fix will skip this check and not remove the session.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Application Failure

Issue Number	227718SYM
Fix Number	30430
Host OS	Any OS
Host Type	Any Host
Problem Summary	For a split-port configuration, the E7 inline displays incorrect information.
Symptom	No customer problem was reported.
Special Conditions	None
Workaround or Fix Summary	With the fix, E7 inline displays correct information for a split-port configuration.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	249005SYM
Fix Number	33950
Host OS	Any OS
Host Type	Any Host
Problem Summary	A special option for an inline tool that forces recovering tracks from disk was not ignoring in-cache data as expected, and the same tool was unable to revalidate the track if it was currently marked invalid in the id tables.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	The inline was corrected for these two problems.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Potential Data Corruption

Issue Number	249005SYM
Fix Number	32245
Host OS	Any OS
Host Type	Any Host
Problem Summary	A special option for an inline tool that forces recovering tracks from disk was not ignoring in-cache data as expected, and the same tool was unable to revalidate the track if it was currently marked invalid in the id tables.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	The inline was corrected for these two problems.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Potential Data Corruption

Issue Number	256523SYM
Fix Number	35056
Host OS	Any OS
Host Type	Any Host
Problem Summary	Running Test 5C during memory scripts can cause GigE and FICON directors to drop DD with hardware errors.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	The fix changes the test to remove unnecessary hardware register accesses.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	1459118
Fix Number	33060
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	When ECA is scanning CKD devices for various reasons, scan 88 errors, "format change while checking" are found because the format does the destage to the disk tables but the ID flag never gets cleared properly..
Symptom	There are no customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix has the routine clear TID FP: On FBA when splitting (all cases). On CKD when slot is not set write pending on the target.
Found In Version	5671.32.36
Severity	3 - Low
Impact Statement	None

Issue Number	15165025
Fix Number	31766
Host OS	Any OS
Host Type	Any Host
Problem Summary	The NECS scan failed with an EC6B sanity check error 6b because there is a mis-match found between the ID_FG2 on the E8 and when reading the ID table with the 8d command.
Symptom	The customer experienced a Lost Writes, IML error against RAID 5 devices during power up and the devices dropped not ready due to lost writes.
Special Conditions	None

Workaround or Fix Summary	Fixed the routine that clears the B_COUNTS_IN and B_FULL_TRACK_WP_FOR_RAID5 indications when the track is not IN_CACHE.
Found In Version	5671.xx.xx
Severity	3 - Low
Impact Statement	Potential Data Loss/Data Unavailability

Issue Number	255797SYM
Fix Number	34866
Host OS	Any OS
Host Type	Any Host
Problem Summary	The F3A utility will skip INV_ID tracks
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	With this fix the routine will not check sector-crc when the INV_ID bit is set.
Found In Version	5671.60.65
Severity	3 - Low
Impact Statement	Maintenance Issue

Issue Number	255720SYM
Fix Number	34865
Host OS	Any OS
Host Type	Any Host
Problem Summary	There is a need to modify a previous fix.
Symptom	No customer reported symptoms.
Special Conditions	None

Workaround or Fix Summary	This fix will modify previous fix 34549.
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Found In Version	5671.58.64
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Severity	3 - Low
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Impact Statement	Maintenance Issue
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Issue Number	255045SYM
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Fix Number	34733
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	After a successful power down, 290B.DD errors (non prime mirror info is not up to date) are still logging on power up. More information is needed when this error is logged.
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Symptom	No customer reported symptoms.
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Special Conditions	None
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Workaround or Fix Summary	This fix will enhance the information collected when the 290B.DD error is logged.
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Found In Version	5671.60.65
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Severity	3 - Low
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Impact Statement	Maintenance Issue
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Issue Number	248900SYM
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Fix Number	33402
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	The syscall Query Syren Fixes needs the ability to return only TEMP fixes.
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Symptom	No customer symptoms.
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Special Conditions	None
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Workaround or Fix Summary	This fix will give the syscall Query Syren Fixes the ability to return only TEMP fixes.
Found In Version	5671.60.65
Severity	3 - Low
Impact Statement	Maintenance Issue

Issue Number	245856SYM
Fix Number	32811
Host OS	Any OS
Host Type	Any Host
Problem Summary	The SPC2 flag does not show as a heterogenous connectivity flag option in the 8F display.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix will add the SPC2 into the 8F heterogenous connectivity options., This fix will add the SPC2 into the 8F heterogenous connectivity options.
Found In Version	5671.55.60
Severity	3 - Low
Impact Statement	Maintenance Issue

Issue Number	244654SYM
Fix Number	32532
Host OS	Any OS
Host Type	Any Host
Problem Summary	The director drops without enabling the ports on the local message bus and the first director to try to init the local switch enables the serial ports but fails to see good status for the links and believes that no links are good even though they are.
Symptom	Once slice of a director drops to a dead director state when a director was installed but not configured. When reconfiguring to include this director or directors one slice drops.

Special Conditions	None
Workaround or Fix Summary	The solution is to fix the retry to try all the links again.
Found In Version	5671.60.65
Severity	3 - Low
Impact Statement	Maintenance Issue

Issue Number	243386SYM
Fix Number	32342
Host OS	Any OS
Host Type	Any Host
Problem Summary	A symevent returns no output for a CACA.64 error.
Symptom	No customer reported errors.
Special Conditions	None
Workaround or Fix Summary	This fix will add all CACA errors to table to return ra_group from error_dependant_1 field.
Found In Version	5671.58.64
Severity	3 - Low
Impact Statement	Maintenance Issue

Issue Number	17273766
Fix Number	33562
Host OS	Any OS
Host Type	Any Host
Problem Summary	This is a request for enhancements to the RMIR command.
Symptom	During a fast add script it appears that the Raid 5 Stripe Ready State gets corrupted.
Special Conditions	None

Workaround or Fix Summary	This fix will make the requested enhancements to improve the RMIR utility.
Found In Version	5671.60.65
Severity	4 - Enhancement
Impact Statement	Potential Data Unavailability

Issue Number	17110438
Fix Number	33786
Knowledgebase ID	emc153491
Host OS	Any OS
Host Type	Any Host
Problem Summary	When the cable was pulled, all the drives in that loop dropped Not Ready.
Symptom	The customer pulled a LCC cable in a drive loop during on site testing of the Symmetrix DMX-3.
Special Conditions	None
Workaround or Fix Summary	With this fix, the disk adapter that has the cable problem will be dropped in order to invoke failover.
Found In Version	5671.60.65
Severity	4 - Enhancement
Impact Statement	Potential Data Unavailability

Issue Number	17424436
Fix Number	33903
Host OS	Any OS
Host Type	Any Host
Problem Summary	New scans to repair the device header portion of the ID table are needed.

Symptom	The device header portion of the cache ID table for a device(s) can become overwritten or corrupt. The available scan utilities do not cover all possible areas that could require fixing in the device header in the cache ID table.
Special Conditions	None
Workaround or Fix Summary	This fix will create a new scan to address problems in the device header.
Found In Version	5671.60.65
Severity	4 - Enhancement
Impact Statement	Potential Data Corruption

Issue Number	12482494
Fix Number	20004258
Host OS	Any OS
Host Type	Any Host
Problem Summary	The automated Health Check script used by PSE,"s, CE,"s and RTS,"s does not detect the 04F4 error which indicates a failing SPS. If the person running the script does not manually check for errors, the failed SPS can go undetected.
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix adds a check for this as part of HC_DMX_Power_Checks.
Found In Version	5671.31.35
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	13203454
Fix Number	20004327
Host OS	Any OS
Host Type	Any Host
Problem Summary	When the Symmetrix DMX IML's after a VTOC volume errors are posted because the VTOC process does not actually check if the drive is ready until after a full IML of the system.
Symptom	There were no symptoms reported by the customer.
Special Conditions	None
Workaround or Fix Summary	The fix adds the ready_all_vols_ready routine into the VTOC scripts.
Found In Version	5671.xx.xx
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	14745749
Fix Number	30999
Host OS	Any OS
Host Type	Any Host
Problem Summary	The problem comes from the method used to program the memory board. There is a race condition between programing the director and the waiting directors..
Symptom	The box was powered down for site work, on IML DAF1 was blank and unattachable. Cache was not programmed.
Special Conditions	None

Workaround or Fix Summary	The fix changes memory programming to reverse order. It makes the waiting directors check the lower four segments programing status and consider that all memory boards are initialized if the four lower segments are correctly programmed.
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Found In Version	5671.xx.xx
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Severity	4 - Enhancement
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Impact Statement	Maintenance Issue
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Issue Number	14950675
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Fix Number	32676
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	In an SEU issue, the CRC calculation had a bit stuck which resulted in false XOR errors. This occurred on 7 physical drives on the DA, dropping them all with 110B errors. In addition, AD2C errors logged on parity tracks for the affected data drives.
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Symptom	The disk adapter does not double-check the CRC of in-cache data after a CRC error writing to disk.
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Special Conditions	None
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Workaround or Fix Summary	This fix will provide a hardware double-check of the bad CRC indication on the disk adapter.
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Found In Version	5671.xx.xx
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Severity	4 - Enhancement
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Impact Statement	Potential Data Corruption
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Issue Number	15710666
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Fix Number	32474
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	Currently, when certain drive loop failures occur, the routine will automatically invoke all available spares in the Symmetrix DMX.
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Symptom	The customer had all available hot spares in the Symmetrix DMX invoke on a drive loop failure.
Special Conditions	None
Workaround or Fix Summary	The fix here is to not invoke a hot spare if the link is down.
Found In Version	5671.60.65
Severity	4 - Enhancement
Impact Statement	Performance

Issue Number	18246480
Fix Number	34683
Host OS	Any OS
Host Type	Any Host
Problem Summary	In a case of full track writes, the Invalid ID mechanism should not check for an invalid track or access the disk.
Symptom	After a full R2 to R1 resynchronization, all the local tracks on the R1 volumes were invalid and the invalid ID was set. Write pending tracks which were invalid for the local mirrors were locked in cache.
Special Conditions	None
Workaround or Fix Summary	With this fix in the case of a full track write pending, the routine will rebuild the table ID from cache and the tracks will destage.
Found In Version	5671.60.65
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	251559SYM
Fix Number	32676
Host OS	Any OS
Host Type	Any Host

Problem Summary	This enhancement improves the existing sector CRC error detection logic on the backend to better contain failures due to corruption of individual FBA sectors in read-modify-write scenarios.
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix will add sector CRC checking on full sector reads during read-before_write operations.
Found In Version	5671.60.65
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	251492SYM
Fix Number	34002
Host OS	Any OS
Host Type	Any Host
Problem Summary	A3,ECBD only fixes the TID leaving the cyl-header corrupted
Symptom	No customer problem
Special Conditions	None
Workaround or Fix Summary	Fixed error reporting in the A3,ECBD so something is seen when a bad cylinder header is found/fixed.
Found In Version	5671.xx.xx
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	242264SYM
Fix Number	32607
Host OS	Any OS
Host Type	Any Host

Problem Summary	The check_n_fix_track routine does not clean the RAID queue.
Symptom	The E8F command does not fix the RAID Queue.
Special Conditions	None
Workaround or Fix Summary	This fix will have E8F call the delete_queue RAID record routine.
Found In Version	5671.59.64
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	253246SYM
Fix Number	34603
Host OS	Any OS
Host Type	Any Host
Problem Summary	Add support for the Hitachi Viper-B Drives.
Symptom	Support is needed for Hitachi Viper-B Drives.
Special Conditions	None
Workaround or Fix Summary	This fix adds support for the Hitachi Viper-B Drives.
Found In Version	5671.58.64
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	251478SYM
Fix Number	33939
Host OS	Any OS
Host Type	Any Host

Problem Summary	A Symmwin request for new fields for older syscall for invalid mirror and remote SRDF device masks
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix will add a new syscall that will include the older syscall as well as the new options to work in the token and multirange modes.
Found In Version	5671.60.65
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	253055SYM
Fix Number	34377
Host OS	Any OS
Host Type	Any Host
Problem Summary	This is a request to add drive firmware for Seagate Timberland family of drives.
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix will add the drive firmware for Seagate Timberland family of drives.
Found In Version	5671.60.65
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	243592SYM
Fix Number	32185
Host OS	Any OS
Host Type	Any Host

Problem Summary	The Scan needs to leverage the pipe machine hardware to calculate the sector CRC, this could potentially help with performance issues during recovery.
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix adds the changes to the Scan path to program the SGL to calculate sector CRC for FBA device, full track read.
Found In Version	5671.xx.xx
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	242780SYM
Fix Number	32117
Host OS	Any OS
Host Type	Any Host
Problem Summary	This is a request to add new SRDF/A errors to the error table.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix will add the new SRDF/A errors to the error table.
Found In Version	5671.55.60
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	242536SYM
Fix Number	32540
Host OS	Any OS
Host Type	Any Host

Problem Summary	An enhancement that creates an A7 command to display only devices which have write and format pendings is needed.
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix adds a new inline A7,WPFP to show only devices with Write and Format Pending.
Found In Version	5671.48.56
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	242504SYM
Fix Number	32082
Host OS	Any OS
Host Type	Any Host
Problem Summary	An enhancement is needed to create a scan utility that would scan TID for indirect tracks and set them to invalid.
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix creates the scan utility that will scan TID for indirect tracks and set them to invalid.
Found In Version	5671.59.64
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	242503SYM
Fix Number	32742
Host OS	Any OS
Host Type	Any Host
Problem Summary	An enhancement is needed to change the D0 command for a RAID 5 spare copy direction to work with FE.
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix will add the enhancement to the DO command.
Found In Version	5671.59.64
Severity	4 - Enhancement
Impact Statement	None

Issue Number	242498SYM
Fix Number	32436
Host OS	Any OS
Host Type	Any Host
Problem Summary	The D0 commands need to be changed so that it is possible to broadcast all of them to a single device without the routine complaining that it does not have the correct member and mirror number.
Symptom	No customer symptom.
Special Conditions	None
Workaround or Fix Summary	This fix creates p_inl_params to skip this check., This fix creates p_inl_params to skip this check.
Found In Version	5671.58.64
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	242260SYM
Fix Number	32969
Host OS	Any OS
Host Type	Any Host
Problem Summary	The D8C command should exclude the track issued on and display an E8C type display of the rebuilt information.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix will have the D8C command exclude the track issued on and display an E8C type display of the rebuilt information.
Found In Version	5671.58.64
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	246468SYM
Fix Number	33035
Host OS	Any OS
Host Type	Any Host
Problem Summary	A fibre adapter logged fatal memory errors but the routine did not increment the fatal error counter, and the fibre adapter did not drop to a dead director state.
Symptom	The customer may experience data corruption due to a failed fibre adapter not dropping to a dead director state with fatal errors.
Special Conditions	None
Workaround or Fix Summary	This fixes the problem with the dir_fatal_error increment routine.
Found In Version	5671.45.52
Severity	4 - Enhancement
Impact Statement	Potential Data Corruption

ESCON Channel

Issue Number	15483779
Fix Number	32882
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	When running data-chaining Write Count, Key, and Data (WCKD) Next Track CCWs, a disconnect status may be issued twice due to a problem in the routine.
Symptom	While running data-chaining channel programs containing 9D and 1D channel commands against the local mirror in a synchronous SRDF environment the customer received an interface control check that caused a sort abend.
Special Conditions	None
Workaround or Fix Summary	This fixes the routine so that the disconnect status is not issued twice.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	16019166
Fix Number	32331
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	In the cleanup for the interface error, when there is a local DPR task and the path being removed is not the last path of the group, it should put the DPR task back to DPR instead of just getting rid of it.
Symptom	A ongoing CCW chain is missing device end after an interface error on an ESCON port.
Special Conditions	None

Workaround or Fix Summary This fixes the DPR task issue.

Found In Version 5671.58.64

Severity 1 - Critical

Impact Statement Potential Data Unavailability

Issue Number 240497SYM

Fix Number 32390

Host OS Any Mainframe OS

Host Type Any Mainframe Host

Problem Summary The error occurs when the host adapter is creating a work entry to an SRDF device, and remote adapter attempts to create a work entry to the same device. The ESCON director sends the device end before the end of chain cleaning is complete.

Symptom The customer recived A0.D210.00 (SRDF Work Entry Creation to the same device) errors on the ESCON adapter and the remote adapter.

Special Conditions None

Workaround or Fix Summary In a race condition, this fix will add a delay in this case and check if the extent is cleared.

Found In Version 5671.58.64

Severity 1 - Critical

Impact Statement Potential Data Loss/Data Unavailability

Issue Number 240013SYM

Fix Number 31768

Host OS Any Mainframe OS

Host Type Any Mainframe Host

Problem Summary A race condition is encountered on cancel FIX_HIO_WT_CH_INF_0_RACE_2ND.

Symptom	The customer may encounter an UD occurred when a Halt I/O is received on status presentation, and while running Halt I/O tests overrun errors may be logged.
Special Conditions	None
Workaround or Fix Summary	This fixes the race condition.
Found In Version	5671.58.64
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Fibre Channel

Issue Number	15877315
Fix Number	31841
Knowledgebase ID	emc143423
Host OS	Any Open Systems OS
Host Type	Any Open Systems Host
Problem Summary	There was a problem introduced by a previous fix in which VMS_BASE_OFFSET was ignored.
Symptom	The customer reported that Symm Device 000 is not accessible after an Open VMS Node Reboot.
Special Conditions	None
Workaround or Fix Summary	This fix will update the routine so that VMS_BASE_OFFSET is not ignored.
Found In Version	5671.55.60
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	256187SYM
Fix Number	34945
Host OS	IBM - OS/400
Host Type	iSeries(AS/400)
Problem Summary	The problem is that the routine reports that a device is not ready for a read command that is sent to a write disabled R2 device.
Symptom	The customer received errors when trying to read a write disabled R2 device.
Special Conditions	None
Workaround or Fix Summary	This fixes the problem in the routine with sending a read command to a write disabled R2 device..
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	15702430
Fix Number	34627
Host OS	Any Open Systems OS
Host Type	Any Open Systems Host
Problem Summary	Lower machine errors occur on five fibre adapters at the same time, this is caused by the not ready BCV device read/write handling for AS400 not properly rejecting the non-syscall read/write and causing the pipe to corrupt and the directors drop.
Symptom	The customer had five fibre adapters drop to a dead director state.
Special Conditions	None

Workaround or Fix Summary	This fix will have the routine properly reject the non-syscall read/write to not ready BCV devices for the AS400 environment.
Found In Version	5671.45.52
Severity	2 - Medium
Impact Statement	Potential Data Unavailability

Issue Number	15963245
Fix Number	32062
Host OS	Any Open Systems OS
Host Type	Any Open Systems Host
Problem Summary	Stuck fibre adapter device locks are not being cleared after logging a device scrubbing error, or issuing of F0,RCVR inlines utility.
Symptom	The customer may receive device lock scrubbing errors when a fibre adapter device becomes stuck.
Special Conditions	None
Workaround or Fix Summary	This fix resolves issues with the F0,RCVR utility.
Found In Version	5671.60.65
Severity	3 - Low
Impact Statement	Performance

Issue Number	243997SYM
Fix Number	32213
Host OS	Any Open Systems OS
Host Type	Any Open Systems Host
Problem Summary	For full track front end writes, the routine should be able to ignore the INVALID_ID state.
Symptom	The customer may experience slow performance of host restore operations when box is full of INVALID_ID tracks

Special Conditions	None
Workaround or Fix Summary	With this fix if there is a full track write to an INVALID_ID track, and there is write space available, the routine will treat it like a regular write command.
Found In Version	5671.xx.xx
Severity	4 - Enhancement
Impact Statement	Performance

Issue Number	239326SYM
Fix Number	31670
Host OS	Any Open Systems OS
Host Type	Any Open Systems Host
Problem Summary	Add in the ability to validate the operation of the hardware in the presence of unexplained errors on the open systems front end.
Symptom	No customer symptom.
Special Conditions	None
Workaround or Fix Summary	This fix will add readback verification of writes after detection of a possible SEU.
Found In Version	5671.59.64
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

FICON Channel

Issue Number	16969776
Fix Number	33195
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host

Problem Summary	The issue is that the memory test toggles the SINGLE_BIT reporting bit in the Middle Machine configuration register.
Symptom	The customer loses paths when FICON directors drop to a dead director state.
Special Conditions	None
Workaround or Fix Summary	The fix will be to change the routine so that the Middle Machine configuration register is not modified during the memory tests.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	17045098
Fix Number	33941
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	The cause is that the FICON entered a loop which delayed SRDF/A. The loop was a mismanagement of the tracking of data owed by the host. The emulation processor requested a value which the link processor already had and the process repeated until timeout.
Symptom	The customer experienced SRDF/A cycles not propagate accross the FICON links in the expected time and then time out errors logged on the emulation processor.
Special Conditions	None
Workaround or Fix Summary	This fixes the data tracking error.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Performance

Issue Number	247809SYM
Fix Number	33162
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	The error detects a corrupted IOCB being sent to the channel and it appears that the IOCB being sent was already processed (converted to IDATA).
Symptom	The customer may receive FICON link processor errors during heavy I/O.
Special Conditions	None
Workaround or Fix Summary	This fix will prevent reentering the issue_iocb_cmd routine and will log a new error F2.2B17.F0.
Found In Version	5671.32.36
Severity	1 - Critical
Impact Statement	Performance

Issue Number	245947SYM
Fix Number	32834
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	The laser remains on even when the FICON director drops to a dead director state.
Symptom	The link processor continues to log errors even after the FICON director drops to a dead director state. This ties up the attached chipids and hangs the CPU.
Special Conditions	None
Workaround or Fix Summary	With this fix the laser will turn off when the FICON director drops to a dead director state.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	245583SYM
Fix Number	32707
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	This is because this entry is missing from print_ieee_company_id.
Symptom	Some CISCO and BROCADE switches show up as UNKNOWN in EF,7D,,,NPRT
Special Conditions	None
Workaround or Fix Summary	The solution is to add entries for the missing switches., The solution is to add entries for the missing switches.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	238384SYM
Fix Number	31659
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	The routine is supposed to disconnect for SRDF before preparing sense and reporting UC to the host. The problem is that the routine clears the SRDF write pending flags before checking to see if there is something pending for SRDF.
Symptom	The customer may experience a selective reset on CCW 95 short DMA and SRDF.
Special Conditions	None
Workaround or Fix Summary	The solution will be to add a parameter skip_rdf to the routine.
Found In Version	5671.55.60
Severity	2 - Medium
Impact Statement	Potential Data Unavailability

Issue Number	244041SYM
Fix Number	32452
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	The Protocol Display field on a McData switch on the Node descriptor page is not consistent with that reported by IBM The protocol for IBM is FC-SB2 and the EMC machines report as Other FC-4
Symptom	The protocol type is reported as 'Other' vs. SB-2 (FICON) in the McData Node Descriptor page.
Special Conditions	None
Workaround or Fix Summary	This fix changes the model_node_descriptor in ficon_init.c so that Word 0, Byte 1 is correct.
Found In Version	5671.60.65
Severity	3 - Low
Impact Statement	Compatibility Issue

iSeries (AS/400)

Issue Number	225271SYM
Fix Number	30262
Host OS	IBM - OS/400
Host Type	iSeries(AS/400)
Problem Summary	During the IPL of an AS/400 host on a Snap image, cache errors are posted for already removed tracks because the routine check_and_remove_wp_cache_slot twice for the same track with the B_CACHE_FLAGS_VALID option set and the flags set to '0x00' each time.
Symptom	There are no customer reported symptoms.
Special Conditions	None

Workaround or Fix Summary	With this fix the the write pending routines will be forced to re-read the flags instead of relying on saved flags.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	223389SYM
Fix Number	29966
Host OS	OS/400
Host Type	iSeries(AS/400)
Problem Summary	Add support for NXA/MACC to improve write performance.
Symptom	No customer problem
Special Conditions	None
Workaround or Fix Summary	The fix enables NXA or MACC functionality.
Found In Version	5671.xx.xx
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	229495SYM
Fix Number	30828
Host OS	OS/400
Host Type	iSeries(AS/400)
Problem Summary	Support for the re-label of SNAP devices needs to be added.
Symptom	No customer symptoms.
Special Conditions	None

Workaround or Fix Summary This fix adds the re-label of SNAP devices.

Found In Version 5671.59.64

Severity 4 - Enhancement

Impact Statement Maintenance Issue

Mainframe

Issue Number 16162796

Fix Number 33071

Knowledgebase ID emc150694

Host OS Any Mainframe OS

Host Type Any Mainframe Host

Problem Summary The Symmetrix DMX gives 0A status on disconnect and 06 status on reconnect. Having the UC on both status causes a subchannel problem at the host which leads to failure of the congroup to trip.

Symptom The customer reported that the Consistency Group fails to trip when a device goes not ready on the link.

Special Conditions None

Workaround or Fix Summary With this fix the routine will verify that it has not already given UC and is in CC already.

Found In Version 5671.59.64

Severity 1 - Critical

Impact Statement Potential Data Loss/Data Unavailability

Issue Number	242948SYM
Fix Number	32159
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	Sending an RSCN in response to the FLOGI_INCOMPLETE overloads a shared global list resulting in the errors.
Symptom	Directors drop to a dead director state after logging Emulex command errors.
Special Conditions	None
Workaround or Fix Summary	The solution is to remove sending of RSCN. Channels now retry PLOGIs that fail.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Performance

Issue Number	251765SYM
Fix Number	34001
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	A 0x54 error is returned on syscall 814E.
Symptom	The customer may experience Syscall 814E failing in LCGPTST and ECATST1 jobs.
Special Conditions	None
Workaround or Fix Summary	This fixes the syscall error., This fixes the syscall error.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Application Failure

Issue Number	17281586
Fix Number	34057
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	Lost CE/DE(Channel End/Device End) status when the Symmetrix DMX receives a Halt subchannel(Cancel frame) while executing RLP(Remove Logical Path) or ELP(Establish Logical Path) processing on the other port.
Symptom	The customer received a selective reset error on a two port ESCON adapter after a RLP and a halt-IO.
Special Conditions	None
Workaround or Fix Summary	This fixes the routine to handle the situation where multiple interrupts are pending.
Found In Version	5671.59.64
Severity	2 - Medium
Impact Statement	Data Unavailability

Issue Number	10870138
Fix Number	23621
Knowledgebase ID	emc83927
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	A unit check on a control command looped waiting for a GM DMA to complete. The loop takes a long time before timing out. For control commands, the routine should be waiting on a CS DMA to complete.
Symptom	The customer sees a delayed response time after a unit check.
Special Conditions	None

Workaround or Fix Summary	With this fix the routine will wait on a CS DMA to complete.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Performance

Mainframe-PPRC

Issue Number	236733SYM
Fix Number	31501
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	RAID 5 write optimization is not working with SRDF/PPRC enabled on CKD devices.
Symptom	No customer problem was reported.
Special Conditions	None
Workaround or Fix Summary	After a MF HA set full track wp, if the RA clears the WP before the DA, the full track wp bit may also be cleared so that DA does not get to do optimized writes. This is due to a bug checking end of track record when any director clears WP for non-raid mirrors and also clears full track WP bit. This fix will remove the end of track checking.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Performance

Mainframe-TPF_MPLF

Issue Number	234100SYM
Fix Number	31193
Host OS	IBM - TPF
Host Type	Any Mainframe Host
Problem Summary	The TPF Command 27 Purge lock sub-order 31 routine fails if zero is in either half of the name. It should fail only if all of the lock name is zero.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	The fix will update the routine to reject with an 08 error only if all of the name is zero.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Application Failure

Issue Number	15854525
Fix Number	31828
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	TPF under VM returns a command reject. It fails with busy device when FA CCW is followed by a 03 CCW. This is an undocumented new IBM feature, so the routine needs to be changed to allow an FA,03 to go through even if the device is busy.
Symptom	The customer is experiencing command rejects on privileged FA commands followed by a 03 NOP command when the device is busy.
Special Conditions	None

Workaround or Fix Summary	The solution is to allow 03 CCW to be accepted if the chain is already started with a privileged command that is running while the device lock belongs to another host.
Found In Version	5671.58.64
Severity	2 - Medium
Impact Statement	Application Failure

Issue Number	231500SYM
Fix Number	30848
Host OS	IBM - TPF
Host Type	Any Mainframe Host
Problem Summary	In rare cases, backend director replacements on a Symmetrix DMX-3 connected to a TPF system could result in host I/O timeouts.
Symptom	No customer problem was reported.
Special Conditions	None
Workaround or Fix Summary	Fixed timing problems in the DI fallback routines.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Potential Data Unavailability

Online Configuration Change

Issue Number	14907320
Fix Number	20004101
Host OS	Any OS
Host Type	Any Host
Problem Summary	When running an online configuration change to remove hot spare volume, the routine uses f2,dvup instead of f2,dvrn. Script will be fixed by changing the subscript to be the correct one.

Symptom	The customer may encounter problems when running an online configuration change to remove a hot spare volume.
Special Conditions	None
Workaround or Fix Summary	Fixed the routine to use f2,dvup instead of f2,dvrm.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Application Failure

Online Maintenance Procedure

Issue Number	231500SYM
Fix Number	30848
Host OS	IBM - TPF
Host Type	Any Mainframe Host
Problem Summary	In rare cases, backend director replacements on a Symmetrix DMX-3 connected to a TPF system could result in host I/O timeouts.
Symptom	No customer problem was reported.
Special Conditions	None
Workaround or Fix Summary	Fixed timing problems in the DI failback routines.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Potential Data Unavailability

Online Upgrade (NDU)

Issue Number	249674SYM
Fix Number	33810
Host OS	Any OS
Host Type	Any Host
Problem Summary	The problem is an uninitialized static variable in the msgbus routine that is used as an index to an array. This variable is uninitialized because the msgbus routine uses it's own BSS area which is not cleared on IMLs.
Symptom	During an online upgrade from Enginuity 5671 to Enginuity 5772, exception errors (03FF) happen around IMLs, and in the msgbus multi driver.
Special Conditions	None
Workaround or Fix Summary	The solution is to initialize this variable to 0 in the msgbus routine during IMLs.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Data Unavailability

Open Replicator

Issue Number	17490980
Fix Number	33915
Knowledgebase ID	emc154062
Host OS	Any OS
Host Type	Any Host
Problem Summary	If the DA returns an 8c status on a HA read request the FA attempts to get the device lock before proceeding with the command. If there are group reservations on the device and the command is a background ORS command the device lock will not be available.

Symptom	The customer reported that Open Replicator sessions are stuck in remove request, and host I/O is impacted by a stuck Open Replicator command.
Special Conditions	This issue only applies to a combination of all of the following being present:(1) Open Replicator (2) Meta volumes (3) RDF and (4) Group Reservations.
Workaround or Fix Summary	This fixes the Open Replicator command issue.
Found In Version	5671.59.64
Severity	1 - Critical
Impact Statement	Application Failure

Issue Number	SR 17923060
Fix Number	34375
Host OS	Any Open Systems OS
Host Type	Any Open Systems Host
Problem Summary	Fibre directors stop responding after entering an infinite loop during an Open Replicator session on multiple meta volumes.
Symptom	The customer may experience fibre directors dropping to a dead director state during an Open Replicator session after starting rediscovery.
Special Conditions	None
Workaround or Fix Summary	With this fix the errors will still log, but the directors will not drop to a dead director state.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Application Failure

Issue Number	251674SYM
Fix Number	33987
Host OS	Any OS
Host Type	Any Host
Problem Summary	During ORS re-discoveries in an attempt to accelerate re-discoveries, active ORS background operations are killed to free the queue record of the ORS command starting a loop of check_and_set_lun_active_io and terminate_sancopy_command calling each other.
Symptom	The customer may receive D80B errors during an Open Replicator rediscovery.
Special Conditions	None
Workaround or Fix Summary	With this fix the routine will not call check_and_set_lun_active_io from terminate_sancopy_command if a rediscovery is in progress.
Found In Version	5671.55.60
Severity	1 - Critical
Impact Statement	Application Failure

Issue Number	238252SYM
Fix Number	32060
Host OS	Any Open Systems OS
Host Type	Any Open Systems Host
Problem Summary	When a target fails during a pull with donor update, the routine continues to try to update the target after the session failed.
Symptom	No customer problem was reported.
Special Conditions	None
Workaround or Fix Summary	The fix will fail the host IO during donor update if target link is down.
Found In Version	5671.55.60
Severity	1 - Critical
Impact Statement	Application Failure

Issue Number	236141SYM
Fix Number	31460
Host OS	Any OS
Host Type	Any Host
Problem Summary	The periodic 03FF errors indicate that the routine is stuck in check_and_set_lun_active_io. The loop that searches queue records can run endlessly if given an invalid pointer.
Symptom	The customer may experience a fibre director hanging after receiving a 2a.03ff.00 (illegal access) error.
Special Conditions	None
Workaround or Fix Summary	This fixes the stuck routine.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	255947SYM
Fix Number	20005410
Host OS	Any OS
Host Type	Any Host
Problem Summary	A configuration change script fails to detect an active Open Replicator session against a device being unmapped online.
Symptom	The customer may experience data unavailability if the online configuration change script does not detect a device that has an Open Replicator session running against it, being unmapped.
Special Conditions	None

Workaround or Fix Summary	With this fix the script will stop if a device with an active Open Replicator session is unmapped.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	255777SYM
Fix Number	34874
Host OS	Any Open Systems OS
Host Type	Any Open Systems Host
Problem Summary	Remove fix 32119 from the field. This fix blocked the ORS session starts on the STD devices.
Symptom	No customer problem reported.
Special Conditions	None
Workaround or Fix Summary	This fix NEUTRALIZES permanent fix 32119.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Application Failure

Open Systems

Issue Number	15789855
Fix Number	31838
Knowledgebase ID	emc142445
Host OS	AIX
Host Type	Any Open Systems Host

Problem Summary	When the configuration is changed from fabric to AL_LOOP without bouncing the link with the host connected then there is a possibility that PLOGI_PROGRESS_FLAG will be remain set.
Symptom	The customer reported that an IBM AIX HBA can not log into a Fibre Adapter on a direct attached Symmetrix DMX.
Special Conditions	None
Workaround or Fix Summary	The fix will make sure that when the link is bounced the routine will initialize the PLOGI_PROGRESS_FLAG.
Found In Version	5671.58.64
Severity	1 - Critical
Impact Statement	Compatibility Issue

RAID 5

Issue Number	236733SYM
Fix Number	31501
Host OS	Any Mainframe OS
Host Type	Any Mainframe Host
Problem Summary	RAID 5 write optimization is not working with SRDF/PPRC enabled on CKD devices.
Symptom	No customer problem was reported.
Special Conditions	None
Workaround or Fix Summary	After a MF HA set full track wp, if the RA clears the WP before the DA, the full track wp bit may also be cleared so that DA does not get to do optimized writes. This is due to a bug checking end of track record when any director clears WP for non-raid mirrors and also clears full track WP bit. This fix will remove the end of track checking.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Performance

Issue Number	174675SYM
Fix Number	23166
Host OS	Any OS
Host Type	Any Host
Problem Summary	A R2 to R1 rebuild does not set records behind the first ID out as write pending for the data mirror because the counts in bit is clear. This causes the write pending to stay stuck.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix will have the routine set the record as WP even if the count is not set as "in".
Found In Version	5671.31.35
Severity	2 - Medium
Impact Statement	Potential Data Loss

SRDF Family

Issue Number	16776128
Fix Number	33383
Knowledgebase ID	emc151140
Host OS	Any OS
Host Type	Any Host
Problem Summary	Upon detecting a suspended chain, error code 903E is logged on the channel. The write pending count for the drive is above 16 but no error code 0454 is logged on the Symmetrix DMX. The device does not switch to Adaptive Copy Write Pending Mode.
Symptom	The customer is running with page devices Not Ready on the link because the devices do not switch to Adaptive Copy Write Pending Mode, when a suspended chain is detected.
Special Conditions	None

Workaround or Fix Summary	This fixes the problem with function count_dv_mirr_wp_tracks_core that was incorrectly counting the write pending tracks.
Found In Version	5671.59.64
Severity	1 - Critical
Impact Statement	Performance

Issue Number	254479SYM
Fix Number	34621
Host OS	Any OS
Host Type	Any Host
Problem Summary	A previous fix removed a check for IOBC_CMD_DATA_OUT when the routine is deciding whether or not to check for resource shortages.
Symptom	The customer may experience the SRDF links not coming back up after a link bounce when using Fiber RDF flow control.
Special Conditions	None
Workaround or Fix Summary	With this fix the links will come back after the link bounce.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Performance

Issue Number	230771SYM
Fix Number	30774
Host OS	Any Open Systems OS
Host Type	Any Host
Problem Summary	The RA calls try_to_clear_partially_written_track(), and although this clears the in-cache data, it does not write the records flags back to GM. As a result, the corrupted sector stays in cache and vault finds the problem later on with the slot

Symptom	No customer problem was reported.
Special Conditions	None
Workaround or Fix Summary	Fixed the RA to write the records flags back to Global Memory.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	231886SYM
Fix Number	30938
Host OS	Any OS
Host Type	Any Host
Problem Summary	During disk drive replacement on a SRDF device, in specific configurations, and under certain scenario, Symm cylinders cannot be recovered.
Symptom	No customer problem was reported.
Special Conditions	None
Workaround or Fix Summary	The fix will provide another option for the f630 command to only format invalid tracks.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	15958714
Fix Number	32458
Host OS	Any OS
Host Type	Any Host

Problem Summary	The special task is A5 is causing performance impact on systems with very complex SRDF configurations because it runs too frequently and also uses a IMPL look up routine that takes a long time when there are several runs on the RA which causes time outs.
Symptom	The customer is experiencing performance problems due to a very large number of runs on the remote adapters.
Special Conditions	None
Workaround or Fix Summary	This fix will have the routine use device constants in place of the IMPL look up because the remote adapter owns all the devices in question.
Found In Version	5671.55.60
Severity	2 - Medium
Impact Statement	Performance

Issue Number	16634764
Fix Number	33774
Host OS	Any OS
Host Type	Any Host
Problem Summary	After the first track of a multi write I/O is completed, the start of the next track cancels the previous track write due the the routine not processing SRDF Journal 0 and SRDF Adaptive Disk copy I/O properly.
Symptom	The customer reported stuck write pendings when switching from SRDF/A to Journal 0 on one SRDF mirror and the other SRDF mirror is in Adaptive Disk Copy.
Special Conditions	None
Workaround or Fix Summary	This fix will modify the way that the routine processes SRDF Journal 0 and SRDF Adaptive Disk copy I/O.
Found In Version	5671.55.60
Severity	2 - Medium
Impact Statement	Potential Data Unavailability

Issue Number	17693268
Fix Number	34592
Host OS	Any OS
Host Type	Any Host
Problem Summary	The reason for the unrequested data is that whenever the data length is more than 0x8000 bytes, the R2 side puts nothing into the scratch slot, but the R1 side reads the scratch slot.
Symptom	When using the DF utility, in certain rare conditions, when the output on the screen is larger than 0x8000 bytes, garbage is displayed on the screen in the form of exclamation marks.
Special Conditions	None
Workaround or Fix Summary	This fixes the problem in an internal inline utility (DF utility) used by PSEs. This patch has no critical impact on the Symmetrix behavior and corrects the display issue with this internal utility.
Found In Version	5671.48.56
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	174675SYM
Fix Number	23166
Host OS	Any OS
Host Type	Any Host
Problem Summary	A R2 to R1 rebuild does not set records behind the first ID out as write pending for the data mirror because the counts in bit is clear. This causes the write pending to stay stuck.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix will have the routine set the record as WP even if the count is not set as "in".
Found In Version	5671.31.35
Severity	2 - Medium
Impact Statement	Potential Data Loss

Issue Number	16740758
Fix Number	33011
Host OS	Any OS
Host Type	Any Host
Problem Summary	The checks in the routine do not verify that the SRDF group being used is for a valid mirror.
Symptom	The A7,RDFF,,,LOOK command cannot be used to sort out SRDF Group 0 displays.
Special Conditions	None
Workaround or Fix Summary	This fix adds in a recovery flow for concurrent SRDF devices.
Found In Version	5671.54.59
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	16740758
Fix Number	33011
Host OS	Any OS
Host Type	Any Host
Problem Summary	SRDF/A does not allow a write to be transferred until the Journal 0 mirror has no write pendings. If the Journal 0 write pending gets stuck, this can cause SRDF/A to get stuck and fill up cache.
Symptom	The customer had SRDF/A drop after filling up cache on a concurrent SRDF device.
Special Conditions	None
Workaround or Fix Summary	This fix adds in a recovery flow for concurrent SRDF devices.
Found In Version	5671.54.59
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

SRDF-Concurrent

Issue Number	16740758
Fix Number	33011
Host OS	Any OS
Host Type	Any Host
Problem Summary	SRDF/A does not allow a write to be transferred until the Journal 0 mirror has no write pendings. If the Journal 0 write pending gets stuck, this can cause SRDF/A to get stuck and fill up cache.
Symptom	The customer had SRDF/A drop after filling up cache on a concurrent SRDF device.
Special Conditions	None
Workaround or Fix Summary	This fix adds in a recovery flow for concurrent SRDF devices.
Found In Version	5671.54.59
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

SRDF-Dynamic

Issue Number	16074716
Fix Number	32313
Knowledgebase ID	emc145516
Host OS	Any OS
Host Type	Any Host
Problem Summary	When the DA's are busy on the R1 side they try to service reads across the link which may cause a situation where the track is valid on the R1 link, but still invalid on the R2 local mirrors. The RA brings over tracks that are overwriting the WP tracks.
Symptom	The customer experienced performance issues on the hosts attached to the R1 Symmetrix during a Symmetrix DMX-2 to Symmetrix DMX-3 migration. The R1 is logging 062F errors that a disk error was transferred from the disk adapter.

Special Conditions	None
Workaround or Fix Summary	With this fix the RA's will not attempt to service reads across the link.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Performance

SRDF-ESCON

Issue Number	17858408
Fix Number	34500
Host OS	Any OS
Host Type	Any Host
Problem Summary	If a host read request is transferred to the remote director and the read I/O transfer is interrupted by a link bounce or serious link errors the routine may end up writing zero on the track ID table sectors CRC of the R1 volume.
Symptom	An excessive number of link problems on an ESCON remote director can cause global memory errors and CRC errors on a R1 volume.
Special Conditions	None
Workaround or Fix Summary	With this fix, the remote director link errors should continue, but there will be no data corruption on the R1 side.
Found In Version	5671.31.35
Severity	2 - Medium
Impact Statement	Potential Data Corruption

SRDF-GigE

Issue Number	16845940
Fix Number	33436
Host OS	Any OS
Host Type	Any Host
Problem Summary	There is a mechanism for GigE SRDF to avoid resource shortages for special tasks, but due to a problem in the routine, it was not fully applied.
Symptom	The customer is receiving A0.1813.18 errors (Timeout waiting for CDI completion) on the SRDF GigE links during syscall processing.
Special Conditions	None
Workaround or Fix Summary	This fix fully applies the GigE SRDF mechanism.
Found In Version	5671.59.64
Severity	1 - Critical
Impact Statement	Performance

Issue Number	13277612
Fix Number	29134
Host OS	Any OS
Host Type	Any Host
Problem Summary	Because of the speed limit being set too low, timeouts and GigE link instability cause devices to go not ready on the GigE links, and SRDF/A drops.
Symptom	The customer may experience SRDF/A dropping unexpectedly.
Special Conditions	None

Workaround or Fix Summary	This fix ensures that the speed limit is set to the proper value.
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Found In Version	5671.32.36
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Severity	1 - Critical
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Impact Statement	Potential Data Unavailability
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Issue Number	18141288
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Fix Number	34575
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	During some configuration changes a FD is not run. On GigE RAs, the IP address is a pointer that points into the IMPL. If the IMPL changes without an FD, those pointers will be incorrect and the link will fail to come up after the next link bounce.
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Symptom	The customer experienced SRDF links failing to come back when a link bounce occurred after a configuration change.
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Special Conditions	None
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Workaround or Fix Summary	This fixes the pointer problem.
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Found In Version	5671.59.64
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Severity	1 - Critical
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Impact Statement	Potential Data Unavailability
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Issue Number	249225SYM
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Fix Number	33470
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	The GigE remote adapters are dropping to a dead director state due to slot lock contention.
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Symptom	The customer lost SRDF connectivity when the GigE remote adapters dropped to a dead director state.
Special Conditions	None
Workaround or Fix Summary	The fix resolves the slot lock contention.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	233166SYM
Fix Number	31081
Host OS	Any OS
Host Type	Any Host
Problem Summary	A write to a CKD track was in progress during the exception IML and this track was write pending before the I/O had started. The remote adapter aborted the I/O and the CDI did not have any indication that the abort failed.
Symptom	During an exception IML, the CDI does not get properly initialized and the SRDF links do not recover following the exception IML.
Special Conditions	None
Workaround or Fix Summary	This fixes the way that the routine handles the exceptions.
Found In Version	5671.48.56
Severity	2 - Medium
Impact Statement	Potential Data Loss/Data Unavailability

SRDF/A

Issue Number	15708487
Fix Number	32178
Knowledgebase ID	emc145757
Host OS	Any OS
Host Type	Any Host
Problem Summary	Elongated restore cycle errors on an SRDF/A group.
Symptom	SCF1563i Restore delay messages, then eventually SRDF/A will drop.
Special Conditions	None
Workaround or Fix Summary	The fix will add the sequential restore for all device types.
Found In Version	5671.48.56
Severity	1 - Critical
Impact Statement	Application Failure

Issue Number	16958008
Fix Number	33754
Knowledgebase ID	emc151523
Host OS	Any OS
Host Type	Any Host
Problem Summary	If an IO requires multiple link transfers and the first link transfer takes a long time, the second or third transfer might take longer then the remaining task time which will cause the fatal error counter to increment until a timeout and abort occurs.
Symptom	The customer may experience consistency groups tripping or SRDF/A dropping during a temporary link disruption.
Special Conditions	None

Workaround or Fix Summary	This fix adds the time the R2 side spent processing an IO to the response buffer. When the R1 side gets the bad response it can determine from the time spent whether it's a legitimate device error or should be treated as a link error.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	15710182
Fix Number	31742
Host OS	Any OS
Host Type	Any Host
Problem Summary	The buffer errors are the result of a race condition between two directors. One RA fails to send a Restore request and the other director tries to deallocate the buffer based on the information from the request for the previous cycle.
Symptom	The customer reported SRDF/A request buffer errors and that SRDF/A cycles are elongated because of long restore times.
Special Conditions	None
Workaround or Fix Summary	This fix will prevent the race condition.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Performance

Issue Number	246055SYM
Fix Number	32835
Host OS	Any OS
Host Type	Any Host

Problem Summary	If the remote adapter performs the SRDF/A read into a scratch slot, this resets the records flags to zero. If the read fails the remote adapter will try to recover the read so there is good data, however it calls the data with the zeroed record flags.
Symptom	The customer may experience data loss on the R2 side of a SRDF/A group if the remote adapter clears the write pending information for the tracks on a link bounce.
Special Conditions	None
Workaround or Fix Summary	With this fix the routine will not reset the record flags to zero.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Potential Data Loss

Issue Number	245185SYM
Fix Number	32694
Host OS	Any OS
Host Type	Any Host
Problem Summary	The remote adapter issues a special task to run the configuration compare as part of bringing up a SRDF link. The remote adapter does not check to see if all of the data was received and if it is not received, the RA should not treat the IO as a success.
Symptom	The customer had link bounces brought on by error injection during set up, and the SRDF groups continued to stay down because of a failed configuration compare.
Special Conditions	None
Workaround or Fix Summary	With this fix the remote adapter will not treat the IO as a success if all the data is not received.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	15708487
Fix Number	32437
Host OS	Any OS
Host Type	Any Host
Problem Summary	Record 0 is being updated on the R1 side allowing the devices to do multiple 2A writes in the same CDB. Record 0 is not set WP to the SRDF link, so the slower EA skip mask writes are being done on the R2 side. This results in restore delays.
Symptom	When running SRDF/A with sequential workloads, such as reorganizations, the customer may experience a restore delay.
Special Conditions	None
Workaround or Fix Summary	This fix optimizes the writes on the R2 side.
Found In Version	5671.59.64
Severity	2 - Medium
Impact Statement	Performance

Issue Number	16794354
Fix Number	33122
Host OS	Any OS
Host Type	Any Host
Problem Summary	The hash table that is used to keep track of slots in a particular SRDF/A cycle per device became corrupted.
Symptom	The customer was unable to perform SRDF/A operations when remote adapters dropped to a not ready state.
Special Conditions	None

Workaround or Fix Summary	This fix adds some sanity checks and posts an error to indicate a corrupted hash table.
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Found In Version	5671.54.59
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Severity	2 - Medium
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Impact Statement	Potential Data Unavailability
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Issue Number	16136662
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Fix Number	32461
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	The special task that goes through and invalidates the rdf mirror on the R1 side skips invalidating the write pending tracks. If the customer workload constantly writes to one track, the inverted copy will never reach that track.
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Symptom	The customer's SRDF/A session remains inconsistent after recovery.
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Special Conditions	None
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Workaround or Fix Summary	This fix will have the routine only skip marking invalids if the whole track is write pending.
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Found In Version	5671.59.64
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Severity	2 - Medium
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Impact Statement	Potential Data Unavailability
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Issue Number	15734438
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Fix Number	32227
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	Some new diagnostics are needed to help identify the root cause of SRDF/A cycle elongation.
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Symptom	No customer symptom.
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Special Conditions	None
Workaround or Fix Summary	With this fix two enhancements were added: 1-There is more information added to the 4BCA error post, for when SRDF/A times out on restore. 2-A set of stack counters have been added,28-0 to 28-13, they indicate about how long the SRDF/A cycle was if it was more then 30s.
Found In Version	5671.54.59
Severity	4 - Enhancement
Impact Statement	Performance

Issue Number	15728966
Fix Number	31759
Host OS	Any OS
Host Type	Any Host
Problem Summary	Need a way to determine the different types of a 4DCA error. Currently, the error uses the SRDF/A group number in the modifier as well as in the ED register.
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix changes the modifier of 4DCA.XX error to depend on the type and not the SRDF group.
Found In Version	5671.54.59
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	240543SYM
Fix Number	31801
Host OS	Any OS
Host Type	Any Host

Problem Summary	It is necessary to allow a link loss feature for SRDF/A (SRDF/A limbo) to avoid dropping on a link bounce.
Symptom	If all of the links bounce for a minute or two, the customer may experience SRDF/A dropping.
Special Conditions	None
Workaround or Fix Summary	This fix will add the SRDF/A limbo feature.
Found In Version	5671.55.60
Severity	4 - Enhancement
Impact Statement	Potential Data Unavailability

Issue Number	16740758
Fix Number	33011
Host OS	Any OS
Host Type	Any Host
Problem Summary	The checks in the routine do not verify that the SRDF group being used is for a valid mirror.
Symptom	The A7,RDFF,,,LOOK command cannot be used to sort out SRDF Group 0 displays.
Special Conditions	None
Workaround or Fix Summary	This fix adds in a recovery flow for concurrent SRDF devices.
Found In Version	5671.54.59
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	16740758
Fix Number	33011
Host OS	Any OS
Host Type	Any Host

Problem Summary	SRDF/A does not allow a write to be transferred until the Journal 0 mirror has no write pendings. If the Journal 0 write pending gets stuck, this can cause SRDF/A to get stuck and fill up cache.
Symptom	The customer had SRDF/A drop after filling up cache on a concurrent SRDF device.
Special Conditions	None
Workaround or Fix Summary	This fix adds in a recovery flow for concurrent SRDF devices.
Found In Version	5671.54.59
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

SymmWin

Issue Number	17493196
Fix Number	20005205
Host OS	Any OS
Host Type	Any Host
Problem Summary	The online meta expansion script left the session non-active which would not allow access to the meta from the host.
Symptom	After performing an online meta expansion script the customer cannot access the new meta.
Special Conditions	None
Workaround or Fix Summary	Fix 20005205-A step MetaExp_Check_BCV was added to Meta Expansion script and to MexpSil to use the utility introduced by Fix 34126 and verify that the operation can be executed successfully.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Data Unavailability

Issue Number	255054SYM
Fix Number	20005368
Host OS	Any OS
Host Type	Any Host
Problem Summary	The dynamic trace buffer for the link code is in different location for Enginuity 5670 and Enginuity 5671. If the trace is active during the NDU IML, the link CPU gets into exception as a result of this mismatch.
Symptom	During an Enginuity 5670 to Enginuity 5671 upgrade, all FICON directors dropped to a dead director state.
Special Conditions	None
Workaround or Fix Summary	The solution is to disable traces on the link code prior to performing the NDU.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Potential Data Loss/Data Unavailability

Issue Number	15900411
Fix Number	20004377
Knowledgebase ID	emc143921
Host OS	Any OS
Host Type	Any Host
Problem Summary	The script seemed to be on the step meta_find_changes for a number of hours due to a Sympl problem.
Symptom	The customer was performing a number of online meta changes via ECC and opened a customer call due to the length of time it is taking to complete.
Special Conditions	None

Workaround or Fix Summary This fixes the Sympl problem.

Found In Version 5671.xx.xx

Severity 1 - Critical

Impact Statement Performance

Issue Number 246615SYM

Fix Number 20005314

Host OS Any OS

Host Type Any Host

Problem Summary If one or more data members of a RAID 3+1 and/or 7+1 group are marked for VTOC, the script spins down all members of the group, VTOC's them, and rebuilds Parity. The user is not informed that the volumes that were not selected will also be formatted.

Symptom The customer may receive an incorrect message regarding an online selective VTOC of RAID drives that could result in data loss/data unavailability.

Special Conditions None

Workaround or Fix Summary With this fix the script will fully invalidate Parity devices of partially Vtoc'ed RAID groups. It also adds the SelVTOC_Plan_RaidP_Invalidate and SelVTOC_Invalidate_RaidP steps to the routine.

Found In Version 5671.59.64

Severity 1 - Critical

Impact Statement Potential Data Loss/Data Unavailability

Issue Number 16847742

Fix Number 20005136

Host OS Any OS

Host Type Any Host

Problem Summary When the D0 command to format the CE cylinder of the new meta is issued the DA takes too long to respond, and the CE cylinders do not get formatted. The script then retries the command and this sends the DA into an endless loop of "not done D".

Symptom	The customer may experience configuration change script failure.
Special Conditions	None
Workaround or Fix Summary	The solution is that since it is expected that the new meta devices will be fully invalidated, when the routine encounters this situation it will continue to format the CE cylinders.
Found In Version	5671.59.64
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	18205530
Fix Number	20005136
Host OS	Any OS
Host Type	Any Host
Problem Summary	When the D0 command to format the CE cylinder of the new meta is issued the DA takes too long to respond, and the CE cylinders do not get formatted. The script then retries the command and this sends the DA into an endless loop of "not done D".
Symptom	The customer may experience configuration change script failure.
Special Conditions	None
Workaround or Fix Summary	The solution is that since it is expected that the new meta devices will be fully invalidated, when the routine encounters this situation it will continue to format the CE cylinders.
Found In Version	5671.59.64
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	17319792
Fix Number	20005094
Knowledgebase ID	emc153760
Host OS	Any Open Systems OS

Host Type	Any Open Systems Host
Problem Summary	The command F2,OMPA took a long time to process a configuration change of 4000 volumes and the life sign mechanism killed the directors.
Symptom	During an online change assignments the customer may experience many channel directors dropping to a dead director state.
Special Conditions	None
Workaround or Fix Summary	This fix adds a new step to the procedure that will enforce the limit to change no more than 2000(decimal) volumes per director.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	249490SYM
Fix Number	20004982
Host OS	Any OS
Host Type	Any Host
Problem Summary	The routine did not use the correct option when trying to suspend periodic tests execution.
Symptom	The customer reported long response times as a result of multiple periodic tests running at the same time.
Special Conditions	None
Workaround or Fix Summary	This fix will have the routine use the correct option to suspend periodic tests execution.
Found In Version	5671.59.64
Severity	1 - Critical
Impact Statement	Maintenance Issue

Issue Number	254004SYM
Fix Number	20005304
Host OS	Any OS
Host Type	Any Host
Problem Summary	The routine volume_is_bcv(current_configutaion, vol_mir.vol) should return "true" in a case where a device is a BCV and a DRV. The current implementation is incorrect.
Symptom	A disk replacement of an established DR fails.
Special Conditions	None
Workaround or Fix Summary	With this fix the disk replacement will complete properly.
Found In Version	5671.48.56
Severity	1 - Critical
Impact Statement	Maintenance Issue

Issue Number	245305SYM
Fix Number	20004762
Host OS	Any OS
Host Type	Any Host
Problem Summary	After the step F4,SMTA is issued and then the disk adapter was recovered with an FE,CE. The script was allowed to continue but when the fast IML is issued the disk adapter becomes non-communicative during the BCV split.
Symptom	During an online striped meta expansion, the disk adapter where the BCV head sits dropped to a DD director state.
Special Conditions	None

Workaround or Fix Summary This fixes the problem with the F4,SMTA step.

Found In Version 5671.xx.xx

Severity 1 - Critical

Impact Statement Potential Data Unavailability

Issue Number 238728SYM

Fix Number 20005072

Host OS Any OS

Host Type Any Host

Problem Summary When a change is done to add members to already assigned non-striped meta device, if one of the new members is write-disable, the head goes write-disbale also.

Symptom A Meta device went write-disabled when the customer committed a configuration change to add one member to that device.

Special Conditions None

Workaround or Fix Summary This fix updates the routine to handle the write enabling of new members to an already assigned non-striped meta device.

Found In Version 5671.48.56

Severity 1 - Critical

Impact Statement Potential Data Unavailability

Issue Number 235847SYM

Fix Number 20004679

Host OS Any OS

Host Type Any Host

Problem Summary The SPCM DLL sometimes prevents ConnectEMC from calling home.

Symptom	The SPCM DLL loaded by the error notifier sometimes fails to send the service request buffer to the SPCM server over the TCPIP socket. This failure will cause the notifier thread to hang and ConnectEMC will not be able to close it and call home.
Special Conditions	None
Workaround or Fix Summary	In the SPCM client .dll, when initializing the connection to the spcm server, added an echo check step.
Found In Version	5671.54.59
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	254968SYM
Fix Number	20005361
Host OS	Any OS
Host Type	Any Host
Problem Summary	The problem occurred in the online configuration change script. After a justified failure, the script jumped on its own to one of the previous sub steps and then resumes normal operation as if nothing happened.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix deletes functionality of the step engine that was never intended for use.
Found In Version	5671.59.64
Severity	1 - Critical
Impact Statement	Maintenance Issue

Issue Number	255947SYM
Fix Number	20005410
Host OS	Any OS
Host Type	Any Host
Problem Summary	A configuration change script fails to detect an active Open Replicator session against a device being unmapped online.
Symptom	The customer may experience data unavailability if the online configuration change script does not detect a device that has an Open Replicator session running against it, being unmapped.
Special Conditions	None
Workaround or Fix Summary	With this fix the script will stop if a device with an active Open Replicator session is unmapped.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	14339557
Fix Number	20004233
Host OS	Any OS
Host Type	Any Host
Problem Summary	Removing the SRDF Group by this change type does not detect if there are active dynamic SRDF pairings for the group being removed. The script will complete successfully, with no error messages.
Symptom	Using the Change to Remove SRDF Groups by Changing the Director Configuration Does Not Detect Established Dynamic SRDF Pairings.
Special Conditions	None

Workaround or Fix Summary This fix adds a routine Avoid_Dyn_Vol_Corruption.

Found In Version 5671.45.52

Severity 2 - Medium

Impact Statement Potential Data Unavailability

Issue Number 13695904

Fix Number 20003794

Host OS Any OS

Host Type Any Host

Problem Summary It is possible to assign an SRDF attribute to a VCMDB with resultant data loss.

Symptom The customer was able to make the VCMDB a R2 device, and SymmWin did not show any problems.

Special Conditions None

Workaround or Fix Summary This fix adds a check where SymmWin will complain if the VCMDB is configured with SRDF attributes, and not permit the illegal upgrade to continue.

Found In Version 5671.xx.xx

Severity 2 - Medium

Impact Statement Potential Data Unavailability

Issue Number 14651891

Fix Number 20005360

Host OS Any OS

Host Type Any Host

Problem Summary During a drive replacement, an established BCV that is part of the failed drive is split from its standard, and the script will then later issue a CC3A to the device causing errors. There is no mirror available to CC from.

Symptom The customer reported that a drive replacment script failed leaving behind not ready devices.

Special Conditions	None
Workaround or Fix Summary	The solutions is that the script will identify this situation and will spin up the device using EC1 and BBC. It will then inform the PSE that such incident took place. The PSE will have to coordinate recovery with the customer.
Found In Version	5671.45.52
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	16164459
Fix Number	20004233
Host OS	Any OS
Host Type	Any Host
Problem Summary	The Script to change from RAF to SAF did not check for supported SRDF groups with Dynamic device with entries in the GDAT.
Symptom	The customer experienced the configuration change script failing due to entries in the GDAT.
Special Conditions	None
Workaround or Fix Summary	The fix will add the routine Avoid_Dyn_Vol_Corruption.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	16829076
Fix Number	20005315
Host OS	Any OS
Host Type	Any Host

Problem Summary	In the case where a Symmetrix DMX running Enginuity 5671 is SRDFed to a remote Symmetrix 8000 with Enginuity 5568, the minimum requirement was changed from 5568.67.xx to 5568.68.xx. The message needs to be more clear in order to avoid any confusion.
Symptom	The customer receives: Red Box: Warning: Message 0x00001A20.0x2033: The remote Symmetrix is running at code level 67. The minimum code level required is 68. The script will not continue. This message is confusing.
Special Conditions	None
Workaround or Fix Summary	The solution is to change the red box message so that it clearly references 5568.68.xx rather than just 68, and also 5568.67.xx rather than just 67.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	232938SYM
Fix Number	20004238
Host OS	Any OS
Host Type	Any Host
Problem Summary	Add a message that warns that the consistency group will be tripped.
Symptom	When configured consistency group configure Parity RAID devices in this group make one device not ready or invalid from this Parity RAID group run the disk replacement script on other device from this Parity RAID group. There is no message that warns that the consistency group will be tripped.
Special Conditions	None
Workaround or Fix Summary	Fixed the DskPrI_IsThere_Local_Copy routine in case of Parity RAID.
Found In Version	5671.48.56
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	229456SYM
Fix Number	20005386
Host OS	Any OS
Host Type	Any Host
Problem Summary	The Optimizer script failure occurred when attempting to swap two RAID devices while there is small number of DRV's, because the Protect List is not cleaned before the pass.
Symptom	The Optimizer swap script failed with message "Can not find DRV's".
Special Conditions	None
Workaround or Fix Summary	This fix will have the routine clean the Protect List before the pass.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Application Failure

Issue Number	252007SYM
Fix Number	20005147
Host OS	Any OS
Host Type	Any Host
Problem Summary	When more than one disk error is detected during a single error polling event it is necessary to verify that the autopsy_disk task is deleted. If the autopsy_disk task is not deleted, when autopsy_disk is invoked an exception will occur
Symptom	No customer reported symptom.
Special Conditions	None
Workaround or Fix Summary	With this fix the autopsy_disk task will be deleted.
Found In Version	5671.59.64
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	249888SYM
Fix Number	20005306
Host OS	Any OS
Host Type	Any Host
Problem Summary	The ECBD script doesn't warn a user that any applications running on the selected volumes should be disabled, enhancements to the script are needed.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix will add the requested enhancements to the ECBD script.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	244662SYM
Fix Number	20004657
Host OS	Any OS
Host Type	Any Host
Problem Summary	The problem occurs when the bad director is a non-communicating disk adapter. In this case the routine fails to run a syscall on that disk adapter and ends up with an error.
Symptom	During a director replacement, the customer reported that the script fails at the Verify_All_Vols_Ready step.
Special Conditions	None
Workaround or Fix Summary	The solution is that the routine should ignore any disk adapters that are in a dead director state.
Found In Version	5671.59.64
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	248762SYM
Fix Number	20004925
Host OS	Any OS
Host Type	Any Host
Problem Summary	An exception occurred when running the RMA from Inlines.
Symptom	No customer symptom.
Special Conditions	None
Workaround or Fix Summary	This fixes the exception.
Found In Version	5671.48.56
Severity	2 - Medium
Impact Statement	None

Issue Number	247487SYM
Fix Number	20005345
Host OS	Any OS
Host Type	Any Host
Problem Summary	This step in the Online selective VTOC needs to be modified.
Symptom	An Online Selective VTOC requires an online fibre adapter. In a Mainframe environment, there may not be an fibre adapter configured.
Special Conditions	None
Workaround or Fix Summary	This fix will modify this step in the Online Selective VTOC to add another option and clarify the message.
Found In Version	5671.31.35
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	245314SYM
Fix Number	20004689
Host OS	Any OS
Host Type	Any Host
Problem Summary	The LCC Code is not being extracted from the firmware6.zip during Offline LCC Code Load.
Symptom	The Offline LCC code load routine fails at step Send_File_ToGmem.
Special Conditions	None
Workaround or Fix Summary	This fix will add the missing step to the routine.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	244961SYM
Fix Number	20004665
Host OS	Any OS
Host Type	Any Host
Problem Summary	The cabling validation step of the FEBE replacement script will fail if backend directors are in a dead state.
Symptom	No customer reported symptoms.
Special Conditions	None
Workaround or Fix Summary	With this fix, any disk directors that are in a dead director state when starting the script will be skipped.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	254521SYM
Fix Number	20005327
Host OS	Any OS
Host Type	Any Host
Problem Summary	The exception occurs because the file path appears empty when a backup of the file is created. The backup procedure renames existing files, and uses a windows function to set the current directory to the directory where the file being renamed resides.
Symptom	While trying to run the configure and install a new Symmetrix DMX, the script red boxes stating that Cnfg_save_NoValidate could not save the configuration file.
Special Conditions	None
Workaround or Fix Summary	This fix does the following when saving the configuration file from the system: 1. The file name now has a path. 2. The call to change the directory while renaming a file is skipped if the file's path is empty. 3. The exception message is now passed to the program to obtain a more meaningful error description.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	253052SYM
Fix Number	20005308
Host OS	Any OS
Host Type	Any Host
Problem Summary	The ability to block scheduler scripts with the regulator is needed.
Symptom	No customer symptoms.
Special Conditions	None

Workaround or Fix Summary	This fix will add the ability to block scheduler scripts with the regulator.
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Found In Version	5671.48.56
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Severity	2 - Medium
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Impact Statement	Maintenance Issue
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Issue Number	244145SYM
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Fix Number	20004598
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	A routine that collects the abandoned disk scan result needs to be added.
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Symptom	No customer symptoms.
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Special Conditions	None
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Workaround or Fix Summary	This fix will a routine that collects the abandoned disk scan result.
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Found In Version	5671.60.65
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Severity	2 - Medium
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Impact Statement	Maintenance Issue
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Issue Number	243840SYM
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Fix Number	20004570
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	Write to the logall the parameters of any syscall sent by symmwin/SWBD
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Symptom	No customer symptoms.
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Special Conditions	None
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Workaround or Fix Summary	The fix will have the routine write this information from TBinSysc just before syscall is executed.
Found In Version	5671.48.56
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	241483SYM
Fix Number	20004598
Host OS	Any OS
Host Type	Any Host
Problem Summary	Current scan scripts do not offer the ability to include meta members if only a meta head device is selected. The script should prompt the user “ would you like to include meta members in the current scan?”
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix will add a script that collects abandoned disk scan results.
Found In Version	5671.58.64
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	229289SYM
Fix Number	20003947
Host OS	Any OS
Host Type	Any Host
Problem Summary	The user is unable to select spares of a specific size SymmWin automatically selects the spares with the biggest capacity. For global sparing, a user should be able to choose spares of any capacity.

Symptom	There are no customer symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix will update the routine to find out how many free disks of each disk type are available, and offer those as options.
Found In Version	5671.xx.xx
Severity	2 - Medium
Impact Statement	Maintenance Issue

Issue Number	17562490
Fix Number	20005194
Host OS	Any OS
Host Type	Any Host
Problem Summary	The failure in this step of the routine is rare and not the specific problem. The problem occurs when resuming the from the failed step. The routine fails with an exception due to a problem with the auto-recovery.
Symptom	A red box occurred during a memory board removal routine during the copy and swap step.
Special Conditions	None
Workaround or Fix Summary	The solution is to have the failing step issue the redbox rather than the current way the routine does it.
Found In Version	5671.54.59
Severity	3 - Low
Impact Statement	Maintenance Issue

Issue Number	18039196
Fix Number	20005338
Host OS	Any OS
Host Type	Any Host

Problem Summary	The global sparing and disk replacement scripts have inline commands in place to clear the residual invalids on the mirror on the R2 site. In the case of striped metas, the commands only clear the invalid tracks on the meta head, not the entire meta.
Symptom	The customer may experience invalid tracks being owed to the R1 devices after a drive replacement of a meta device.
Special Conditions	None
Workaround or Fix Summary	This fix adds a meta option for the inline command to clear the invalid tracks from the entire meta.
Found In Version	5671.60.65
Severity	3 - Low
Impact Statement	Maintenance Issue

Issue Number	251138SYM
Fix Number	20005206
Host OS	Any OS
Host Type	Any Host
Problem Summary	If a dynamic SRDF device is not ready on the link with invalids on the link, it will be reported as having local invalid tracks.
Symptom	The health check script does not identify dynamic SRDF mirrors and views them as local mirrors.
Special Conditions	None
Workaround or Fix Summary	This fix will have the routine use the new syscall.
Found In Version	5671.60.65
Severity	3 - Low
Impact Statement	Maintenance Issue

Issue Number	15493867
Fix Number	20004547
Host OS	Any OS
Host Type	Any Host
Problem Summary	The simm and sync messages that report to the host must be disabled prior to a drive replacement in order to prevent an environmental test from running on the host directors which will cause device mirror errors to log resulting in continuous call homes.
Symptom	No customer symptoms
Special Conditions	None
Workaround or Fix Summary	This fix will disable the simm and sync messages to host as part of action_adr.
Found In Version	5671.48.56
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	14230311
Fix Number	20004325
Host OS	Any OS
Host Type	Any Host
Problem Summary	The current director replacement scripts do not check for not ready volumes at the beginning or end of the script.
Symptom	After a director replacement, volumes are not ready that were ready prior to the replacement, and there is no indication to the user that not ready volumes exist.
Special Conditions	None

Workaround or Fix Summary This fix will add the step verify_all_vols_ready to the routine.

Found In Version 5671.32.36

Severity 4 - Enhancement

Impact Statement Potential Data Unavailability

Issue Number 15788957

Fix Number 20004581

Host OS Any OS

Host Type Any Host

Problem Summary In this situation, there were two members in a 7:1 RAID 5 configuration that needed to be replaced. Member 5 was NR and had a hot spare invoked and fully copied. Member 2 was ready and this was the member being replaced.

Symptom During a disk replacement for a 7:1 RAID 5 device, the step DskRpl_Data_lose_Approval presents data loss incorrectly.

Special Conditions None

Workaround or Fix Summary The fix will eliminate the step DskRpl_Calc_DataLose_Vols.

Found In Version 5671.xx.xx

Severity 4 - Enhancement

Impact Statement Maintenance Issue

Issue Number 15805645

Fix Number 20004547

Host OS Any OS

Host Type Any Host

Problem Summary The SIM messages need to be disabled during a drive replacement.

Symptom The AutoPSE does not disable SIM messages.

Special Conditions	None
Workaround or Fix Summary	This fix will have the routine verify that AutoPSE disables the SIM messages.
Found In Version	5671.54.59
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	254568SYM
Fix Number	20005354
Host OS	Any OS
Host Type	Any Host
Problem Summary	The new flex filter needs to be added.
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix adds the new flex filter.
Found In Version	5671.60.65
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	245971SYM
Fix Number	20004727
Host OS	Any OS
Host Type	Any Host
Problem Summary	The drive part numbers are now maintained in the customer service parts database and are no longer needed in the SymmWin partsfile.
Symptom	No customer symptom.

Special Conditions	None
Workaround or Fix Summary	This fix is to update the parts file.
Found In Version	5671.45.52
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	244956SYM
Fix Number	20004669
Host OS	Any OS
Host Type	Any Host
Problem Summary	This is a request to remove the restriction to allow iSCSI on SRDF.
Symptom	No customer symptoms.
Special Conditions	None
Workaround or Fix Summary	This fix will remove the restriction to allow iSCSI on SRDF.
Found In Version	5671.31.35
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	244030SYM
Fix Number	20004568
Host OS	Any OS
Host Type	Any Host
Problem Summary	This enhancement is a Delphi implementation for the internal error polling mechanism that is needed by the script developers.
Symptom	No customer symptoms.

Special Conditions	None
Workaround or Fix Summary	This fix will add the Delphi implementation for the internal error polling mechanism., This fix will add the Delphi implementation for the internal error polling mechanism.
Found In Version	5671.48.56
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	209292SYM
Fix Number	20003414
Host OS	Any OS
Host Type	Any Host
Problem Summary	There are SymmWin Procedure Wizard menu items that need to be deleted.
Symptom	No customer symptom.
Special Conditions	None
Workaround or Fix Summary	This fix will remove the zip files from the menu.
Found In Version	5671.55.60
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	253071SYM
Fix Number	20005240
Host OS	Any OS
Host Type	Any Host
Problem Summary	SymmWin support for the Hitachi Viper-AP, Fujitsu AL9+ drives and Seagate Timberland drives needs to be added.
Symptom	No customer reported symptoms.

Special Conditions	None
Workaround or Fix Summary	This fix adds SymmWin support for the Hitachi Viper-AP, Fujitsu AL9+ drives and Seagate Timberland drives.
Found In Version	5671.60.65
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	236574SYM
Fix Number	20004216
Host OS	IBM - OS/400
Host Type	iSeries(AS/400)
Problem Summary	Remove the SYMMWIN restriction for not allowing NXA (non-exclusive access) on AS400 device on the Volume Edits screen on SymmWin.
Symptom	No customer problem
Special Conditions	None
Workaround or Fix Summary	The fix removes the SYMMWIN restriction for not allowing NXA (non-exclusive access) on AS400 device on the Volume Edits screen on SymmWin.
Found In Version	5671.xx.xx
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	249176SYM
Fix Number	20005034
Host OS	Any OS
Host Type	Any Host
Problem Summary	The inlines command 'E7,SYRN,,,T;' is being replaced by a syscall. The file syrinlin.e7s will no longer be generated.

Symptom	No customer reported symptom.
Special Conditions	None
Workaround or Fix Summary	This fix replaces the Inlines command with a syscall that produces an xml output of the file.
Found In Version	5671.32.36
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

Issue Number	229695SYM
Fix Number	20004368
Host OS	Any OS
Host Type	Any Host
Problem Summary	Currently if you make a request from the API and define disk_group=0 it indicates to SymmWin to put the newly created disks placed on any drive in any disk group. With the introduction of the 500GB (LCFC) drives, they can be specifically defined.
Symptom	A request for an enhancement to make the following SymApi Configuration changes: 1-enable setting physical group ID 0 when adding new volumes. 2-add a new service that enables changing the physical group ID of disks.
Special Conditions	None
Workaround or Fix Summary	This fix adds the SymAPI enhancements.
Found In Version	5671.45.52
Severity	4 - Enhancement
Impact Statement	Maintenance Issue

TimeFinder Family

Issue Number	242522SYM
Fix Number	32101
Host OS	Any OS
Host Type	Any Host
Problem Summary	There is a check to see if the device is already in a different pool, but there is no check to see if it is in the same pool.
Symptom	Adding a device to a pool that it already belongs to causes the pool chain to break.
Special Conditions	None
Workaround or Fix Summary	This fix will add a check to the routine to see if a device belongs to the same pool to which it is being added.
Found In Version	5671.xx.xx
Severity	1 - Critical
Impact Statement	Potential Data Unavailability

Issue Number	212544SYM
Fix Number	28335
Host OS	Any OS
Host Type	Any Host
Problem Summary	Remove redundant TimeFinder recovery/renew code
Symptom	No customer symptoms.
Special Conditions	None

Workaround or Fix Summary	This fix will remove the GST synchronization code and add events that will indicate that the recovery took place.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Maintenance Issue

TimeFinder-BCV

Issue Number	16054224
Fix Number	32207
Knowledgebase ID	emc145865
Host OS	Any OS
Host Type	Any Host
Problem Summary	There is a problem in the routine where tracks owed to SRDF are not skipped by the disk adapter copy while the device is BCV sync in progress.
Symptom	The customer experienced a lengthy incremental TimeFinder-BCV establish while the standard is also copying to a SRDF R1.
Special Conditions	None
Workaround or Fix Summary	With this fix the routine will have the disk adapter skip the tracks owed to SRDF while the device is BCV sync in progress.
Found In Version	5671.58.64
Severity	1 - Critical
Impact Statement	Performance

Issue Number	18049038
Fix Number	29603
Host OS	Any OS
Host Type	Any Host

Problem Summary	R2 to R1 I/O may fail to update the SDDF session used for keeping track of device changes by incremental BCV operations.
Symptom	The customer may receive an SRDF CRC mismatch on TimeFinder pairs on the R1 side after an SRDF restore.
Special Conditions	None
Workaround or Fix Summary	This fix will have R2 to R1 I/O update the SDDF session accurately. Additionally, the fix provides protection against rogue R2 to R1 I/Os on R1 Clone/Snap sources.
Found In Version	5671.59.64
Severity	2 - Medium
Impact Statement	Potential Data Corruption

TimeFinder-Clones

Issue Number	15922788
Fix Number	31953
Host OS	Any OS
Host Type	Any Host
Problem Summary	Rebuilding from extinfo in this case actually overwrites the valid session status.
Symptom	After a power cycle the customer could not issue any software commands to the source device it is showing in an INVALID state. The -force and -symforce to clear the Invalid state did not work either.
Special Conditions	None
Workaround or Fix Summary	This fix will not rebuild the session status from extended info.
Found In Version	5671.45.52
Severity	1 - Critical
Impact Statement	Application Failure

Issue Number	244098SYM
Fix Number	32404
Host OS	Any OS
Host Type	Any Host
Problem Summary	During the initial TimeFinder-Clone establish setup, the proper operation code needs to be set up in the session status.
Symptom	During a TimeFinder-Clone restore, there is a state when the restore session momentarily shows the operation as TimeFinder-Clone establish instead of restore.
Special Conditions	None
Workaround or Fix Summary	This fix will ensure that during the TimeFinder-Clone establish set up, the proper operation code is set up in the session status.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Application Failure

Issue Number	16596154
Fix Number	30349
Host OS	Any OS
Host Type	Any Host
Problem Summary	In the case of a target of an inactive TimeFinder-Clone session, the routine should skip reporting these errors, since the the track changes on every write to the source or target device.
Symptom	The customer is receiving a write pending flag error on a Target device of an Inactive TimeFinder-Clone session.
Special Conditions	None

Workaround or Fix Summary	This fix will have the routine skip reporting these errors for the target of an inactive TimeFinder-Clone session.
Found In Version	5671.55.60
Severity	2 - Medium
Impact Statement	Performance

Issue Number	241825SYM
Fix Number	31900
Host OS	Any OS
Host Type	Any Host
Problem Summary	Remove the check for FAST_RESPONSE in case of error.
Symptom	An Extent Level Establish fails with error Rc= 1700.
Special Conditions	None
Workaround or Fix Summary	This fix removes the check for FAST_RESPONSE in case of error.
Found In Version	5671.55.60
Severity	2 - Medium
Impact Statement	Potential Data Unavailability

Issue Number	254212SYM
Fix Number	34563
Host OS	Any OS
Host Type	Any Host
Problem Summary	This is a request to add a syscall to check devices for an active session.
Symptom	No customer symptoms.
Special Conditions	None

Workaround or Fix Summary	This fix will add the syscall to check devices for an active session.
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Found In Version	5671.32.36
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Severity	2 - Medium
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Impact Statement	Maintenance Issue
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Issue Number	250626SYM
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Fix Number	33791
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	When checking the target device's file_smmf_device_flag, if the flag is reset the routine does not allow the terminate to proceed.
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Symptom	The customer was unable to terminate TimeFinder-Clone sessions after the target device had been VTOCed.
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Special Conditions	None
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Workaround or Fix Summary	With this fix instead of blocking the terminate, the routine will post a 5F10.XX error and proceed with the terminate.
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Found In Version	5671.60.65
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Severity	2 - Medium
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Impact Statement	Performance
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TimeFinder-SNAP

Issue Number	246646SYM
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Fix Number	32929
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Host OS	Any OS
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Host Type	Any Host
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Problem Summary	After running virtual persistent restore jobs and then performing an IML the mirrored drive error occurs due to the routine setting format pending to destination when terminating the persistent restore session.
Symptom	During the IML an error was logged that two mirrored drives were not the same.
Special Conditions	None
Workaround or Fix Summary	With this fix the routine will not set format pending to destination when terminating the persistent restore session.
Found In Version	5671.60.65
Severity	1 - Critical
Impact Statement	Potential Data Corruption

Issue Number	244792SYM
Fix Number	32551
Host OS	Any OS
Host Type	Any Host
Problem Summary	For log pool manipulation syscalls that take in a list of parameters, if any other than the last one fails, we will not return a bad return code.
Symptom	An error on log pool syscalls may not be reported to the host.
Special Conditions	None
Workaround or Fix Summary	With this fix the routine will return the last bad result of the syscall record list to the host.
Found In Version	5671.60.65
Severity	2 - Medium
Impact Statement	Application Failure

Fixed problems:

Issue Number	242370SYM
Fix Number	32020
Host OS	Any OS
Host Type	Any Host
Problem Summary	When checking to see if the requested session_id exists, the routine needs to ignore the "inactive" bit.
Symptom	While running Virtual Adios testing a virtual device error, (trying to terminate or to activate virtual device that was not established), was received.
Special Conditions	None
Workaround or Fix Summary	With this fix the routine will ignore the "inactive" bit when checking to see if the requested session_id exists.
Found In Version	5671.59.64
Severity	3 - Low
Impact Statement	Maintenance Issue

Environment and system requirements

Enginuity 5671.65.69 provides enhancements to Mainframe and Open Systems environments. For detailed information on environment and system requirements after Enginuity is released for general availability (GA), review the *EMC Support Matrix* under Interoperability at:

<http://www.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	500.03	During an emergency power down using the red (EPO) switch, all data may not destage in cache and data loss may occur.
	N	500.05	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.
	Y	500.06	Offline loop back tests passes on port A but fails on port B. This is only true on DMX800.
	Y	500.07	Devices may be Not Ready after a power cycle due to a timeout on the device spin-up during recovery.
	N	500.10	When the SRDF, BCV, or SNAP access rights are granted for non-pooled (!INPOOLS) devices, some control operations (SRDF: Failover, Failback, Restore, BCV: Cancel, SNAP: Create) cannot be performed on the non-pooled (!INPOOLS) devices. Access will be denied.
BS2000	N	1200.01	For a 2105 controller type, MOD-27 devices can only be configured for attached MVS systems. Since BS2000 mainframes do not support MOD-27 devices, CKD devices with more than 32,000 cylinders cannot be configured for BS2000 in this case.
	N	1200.03	Minimum version V4.0A07 of BS2000/OSD software, SHC-OSD is required to manage the TimeFinder and SRDF features from the host.

Product	Updated	Number	Limitation
	N	1200.04	BS2000/OSD only supports up to 7 aliases per device, but tolerates 15. If 15 aliases are configured on the Symmetrix, the following corrections on BS2000 are required: A0521999 for VM2000 V7.0 and A0522283 for SM2 as of V14.0B02. The 15 aliases only have been tested with OSD V5.0C and OSD V6.0.
	N	1200.05	Minimum version V4.0A07 of BS2000/OSD software SHC-OSD is required to manage TimeFinder with RAID 5 BCVs from the host.
	N	1200.06	Online code upgrades must be performed with minimum I/O load. This applies to upgrades from 5670 and within the 5671 code family.
Infomover	N	2525.01	IFS needs patch 30559 and 31765 installed to edit or create a file on the mainframe from an open host. without the patch the FA director will go DD
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.
	Y	100.02	The new 2107 emulations are not supported.
iSeries (AS/400) software	N	2000.01	SRDF/TimeFinder Manager 5.1 is not supported with 5671. Subsequent releases, SRDF/TimeFinder Manager 5.2.01 and 5.3 are supported
	N	2000.02	CopyPoint 4.1.01 is not supported with 5671. EMC CopyPoint 4.2.01 IS supported. CopyPoint 4.3 goes GA Dec 06
	N	2000.3	SRDF TimeFinder/Manager 5.3 GA available as of July 06. RAID5 BCVs and SNAP are not supported.
Mainframe	N	620.01	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	620.02	For MF ESCON Connectivity with 64 LPARS, connecting both ESCON ports, A and B on the same processor is not supported. The support is limited to single port per processor (A port only).
	N	620.03	FDR Compaktor jobs may intermittently fail. Enginuity incorrectly rejects some extents.
	N	620.04	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.
Offline Code Upgrades	N	1300.01	The Symmetrix DMX must be running Enginuity 5670.83.78 (or higher) prior to upgrading to 5671 Enginuity using the offline code load procedure.

Product	Updated	Number	Limitation
Online Configuration Change	N	210.02	The maximum number of CKD addresses (including aliases) which can be mapped or unmapped from an ESCON and/or FICON adapter in a single upgrade cannot exceed 2,580 (assuming each base address has the maximum allowable 16 alias addresses).
	N	210.03	At this time Raid 5 BCV is not an option to be used as part of the expansion process.
	N	210.04	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.
Online Maintenance Procedures	N	810.02	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	810.03	In SRDF Family environments, the SymmWin procedure to replace a director may require manual intervention when replacing a Remote Adapter. The SRDF link may not find a valid system attached because the validity information was cleared.
	N	810.04	If the SymmWin procedure to set the time or date is run immediately after updating the time or date on the service processor, the SymmWin procedure will fail. Re-boot the service processor after changing the time and date to prevent the failure.
	N	810.06	Drive code load maintenance procedures must be done with I/O limited to 100 I/O per second per Disk Adapter CPU.
	N	810.09	The amount of time needed to complete the SymmWin procedure to Remove a Dynamic Spare is directly impacted by the number of invalid tracks remaining to copy to the spare and the I/O for the disk being removed from the spare device.
	N	810.10	Host adapter timeouts can occur during ECM replacements.
Online Non-Disruptive Upgrades (NDU)	N	700.01	Please refer to the "Technical notes" on page 153 for any additional limitations or requirements.
	N	700.03	Re-SNAP transactions must not run during an online upgrade. This causes file TimeFinder errors as re-SNAP cannot close the SDDF session on the source.
Open Replicator	N	400.01	No more than 512 active Open Replicator sessions are supported at any stage.
	N	400.02	Online configuration changes to Open Replicator devices is restricted. A maximum of 512 active sessions is allowed. After a fast IML, director ceiling values are reset.

Product	Updated	Number	Limitation
	N	400.03	Open Replicator sessions may not resume automatically after a power loss and may fail during a power cycle recovery.
	N	400.04	An online upgrade or online code load has the potential to cause the SET PROTECTION BIT step to fail during the fast IML. The SET PROTECTION BIT step 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.
Optimizer	N	1800.01	Optimizer is not supported on a Symmetrix running Enginuity 5568 or 5670 when there is an SRDF link to a remote Symmetrix running Enginuity 5671 with more than 8,000 logical volumes.
Persistent Group Reservation (PGR)	N	610.01	PGR devices are not supported for more than 8,000 of the 16,000 possible devices in the entire Symmetrix. I/O is limited to no more than 70,000 I/Os per second.
SRDF Family	N	300.01	SRDF Family deployments over extended distance using IP are required to follow the Site Qualification (SQ) process. The Solutions Validation Center - Business Continuance (SVC BC) group manages this process.
	N	300.02	Please refer to "Technical notes" on page 153 for a complete list of limitations and requirements when performing Online Non-Disruptive Upgrades with the SRDF Family.
	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.
	N	300.05	Recovery from failure of two or more members of a RAID 5 R1 device may result in XOR errors and RAID devices on the same physical disk becoming not ready.
	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 8,000 devices of the Symmetrix 5671 to the Symmetrix 5670 can be linked. This is true for both Static and Dynamic SRDF.

Product	Updated	Number	Limitation
	N	300.10	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	300.11	A minimum release level of Enginuity 5568.67.26 is required on the Symmetrix 5 to connect to a Symmetrix DMX running Enginuity 5671.
	N	300.12	Symmetrix systems running Enginuity 5267 or 5567 require patch 23600 for SRDF connections to a Symmetrix DMX running Enginuity 5671.
SRDF/A	N	360.01	Transition to Journal 0 mode of operation with ESCON FarPoint™ of distances greater than 100 miles may cause timeouts.
	N	360.02	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.
	N	360.03	Please refer to the EMC Solutions Enabler V6.2 Release Notes (P/N 300-003-325 Rev A01) 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	360.09	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 Symmetrix Control Facility version is scf540 with the sf540a3 maintenance patch applied. The minimum SRDF version is srdf530 with the sr53002 maintenance patch applied.
	N	360.12	A Gatekeeper device is required and cannot be an SRDF, 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 Remote Adapter.
	N	360.14	Consistent Deactivate for a MSC group is not supported for Mainframe.
	N	360.15	Consistent Deactivate for a MSC group is not supported for open systems hosts.
	N	360.16	TimeFinder/Clones or TimeFinder/Snaps of R2 volumes are not supported in Mainframe environments.
SRDF/Star	N	370.01	Automated procedures for SRDF/Star are not currently available.

Product	Updated	Number	Limitation
	N	370.02	Please refer to <i>SRDF/Star for z/OS - An Implementation and Usage Primer, Version 1.0, Rev A01</i> (P/N 300-002-264) for more information.
	N	370.03	Any SRDF/Star configuration which links more than five Symmetrix systems requires an RPQ.
	N	370.04	SRDF over ESCON is not supported with SRDF/Star
Symmetrix Data Migration Service (SDMS™)	N	350.01	Symmetrix Data Migration Service is limited to the first 8,000 volumes with a range of 0 – 7,999 devices.
Symmetrix Data Mobility Manager (SDMM)	N	340.01	Symmetrix Data Mobility Manager (SDMM) is not supported.
Symmetrix DMX 800	N	510.01	Engenuity 5671 can not be installed on a Symmetrix DMX 800 if more than one Symmetrix is being controlled by a single service processor.
SymmErase	N	1300.01	Cannot erase devices larger than 31Gb. Cannot erase concatenated meta devices. Cannot re-establish a split BCV with its erased STD.
TimeFinder/Clone	N	1010.06	Solutions Enabler does not allow the use of striped CKD Meta devices in TimeFinder/Clone.
TimeFinder/BCV	N	1020.01	If AC power is lost while a TimeFinder establish is in progress a mirror device may become not ready on a subsequent IML.
TimeFinder/Snap	N	1030.02	Solutions Enabler does not allow the use of Striped CKD Meta devices in TimeFinder/Snap.
	N	1030.04	Some virtual restores and persistent restores may not complete.
	N	1030.05	A sanity check error may appear indicating a mismatch between the pyramid and the write_request bitmaps. The errors are recoverable and they must be investigated and addressed. These errors only occur on Meta devices.
	N	1030.06	Data with a non-standard R0 is not copied to the target correctly.
	N	1030.07	Inline commands (E8) on a virtual device with a virtual restore session that is not completing may log a CKD format error.
	N	1030.08	If more than one VDEV and BCV are in the split state, the restore from the second VDEV to the STD will fail.
	N	1030.09	VSNAP from a SRDF/A R2 device is not currently supported.
	N	1030.10	When the target BCV devices were not set to held while it is in RestInProg, therefore, the BCV devices can be used for other operations.

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

Engenuity media is coordinated through EMC Global Services or your local EMC office.

Installation

Engenuity software installation is coordinated through EMC Global Services or 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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