



Enterprise Operating System

Version 09.00.00

Release Notes P/N 958-000190-900 Rev A

05/05/06

Copyright © 2006 McDATA Corporation. All rights reserved.

These release notes describe features, code fixes, and other information for enterprise operating system (E/OS) version 09.00.00.

NOTE: To improve readability, the remainder of this document refers to E/OS 09.00.00 as E/OS 9.0

Section	Page
<i>Applicable Products</i>	2
<i>What's New in this Release</i>	3
<i>Upgrade and Downgrade Considerations</i>	3
<i>Prerequisites for Installing and Using E/OS 9.0</i>	5
<i>Minor Code Enhancements & Fixes in E/OS 9.0</i>	6

Section	Page
<i>Outstanding Known Issues in E/OS 9.0.</i>	8
<i>Standards Compliance</i>	9
<i>Using EFCM Basic</i>	10
<i>Supported Configurations</i>	10
<i>Related Documentation</i>	11
<i>Previous E/OS Releases</i>	12

Applicable Products

McDATA E/OS firmware version 9.0, part number 515-000010-900, is supported on the following products:

- Intrepid™ 6140 (ED-6140)
- Intrepid 6064 (ED-6064)
- Sphereon™ 3016 (Model 001 and 002)
- Sphereon 3032 (Model 001 and 002)
- Sphereon 3216
- Sphereon 3232
- Sphereon 4300 (first and second-generation)
- Sphereon 4400
- Sphereon 4500 (first and second-generation)
- Sphereon 4700

What's New in this Release

QPM Card for 6140 Director

E/OS 9.0 supports 4G via the QPM (Quad Port Module) card in the McDATA Intrepid 6140 only.

With this feature, McDATA now supports 4G Fibre Channel speeds for directors with storage network management software and hardware.

PFE Feature Bundling and Trial PFE Key Support

E/OS 9.0 has PFE key support for PFE feature bundling as well as trial PFE key support. Trial PFE keys allow a customer to try features for a pre-determined amount of time after which the features are disabled.

Code Fixes and Enhancements

E/OS 9.0 provides code fixes for problem reports (PRs) listed under [Minor Code Enhancements & Fixes in E/OS 9.0](#), page 6.

Upgrade and Downgrade Considerations

- Because of the extremely large combinations of fabrics, switches and firmware releases, interoperability of all possible firmware combinations are not tested. Running different versions of firmware within the fabric is allowed during the upgrade process.
- You cannot downgrade Sphereon 4700 or 4400 switches below E/OS 8.x.
- All products must be running E/OS 8.x or higher before upgrading to 9.0. If a product is operating with a firmware level below 7.1, you must upgrade to version 8.x or later version before installing version 9.0.

Upgrades and downgrades are only supported within a functional release, such as 08.xx.xx to/from 08.xx.xx, or from a maximum of one functional release to the next, such as 07.x1.xx to/from 08.xx.xx.

- To downgrade to a release previous to 8.0, you must first downgrade to 08.xx.xx. Downgrading directly from release 9.0 to a release previous to 8.0 is not allowed.
- If you are managing Sphereon 4500 switches with EFCM versions previous to 8.7.1, the firmware upgrade may fail. In such cases, upgrade to EFCM 8.7.1 and then carry out the E/OS 9.0 upgrade.
- For procedures to download firmware to a switch or director using the EFCM Element Manager interface, refer to the following:
 - The switch or director 's *Installation and Service Manual*. Refer to Chapter 4 under "Managing Firmware Versions." See [Related Documentation](#), page 11 for a list of manuals and part numbers.
 - The switch or director's Element Manager *Online Help* and *User Manual*. See [Related Documentation](#), page 11, for a list of manuals and part numbers.
- For procedures to download firmware to a switch or director using the EFCM Basic interface, refer to the following:
 - EFCM Basic User Manual. See [Related Documentation](#), page 11, for a list of manuals and part numbers.
 - EFCM Basic online help.
- Upgrading to E/OS 9.0 is non-disruptive for attached devices. Limitations to upgrades or downgrades are clearly identified to the user if there are any limitations in performing the operation.
- The switch or director is not required to be offline before performing an upgrade or downgrade operation.
- Some customer environments use application or host software that is affected by the restart of the director CTP during a HotCAT download operation. Applications that rely on inband management servers are especially prone to problems caused by processor restart.

As a solution, shut down those applications driving inband requests before a firmware upgrade, and then restart the applications after the upgrade is complete.

For example, an environment that uses Resource Measurement Facility (RMF) for Fibre connection (FICON) may be configured to poll the director or switch at regular intervals. The polling

process could occur during a restart period, causing the application software (for example, RMF) to react adversely. If a restart occurs while an inband request is pending, host programming may change the status of the director or switch control unit port (CUP) to inaccessible or boxed.

- **Before upgrading or downgrading firmware, it is highly recommended that you back up the switch or director configuration in case of a failure.**

EFCM provides an automated backup and restore process. Refer to Chapter 1 in your switch or director Element Manager User Manual under *Backing Up and Restoring Product Manager Data* for more details.

For configuration backup and restore procedures using EFCM Basic, refer to Chapter 7, *Maintenance Tasks*. Note that a standalone Configuration Backup and Restore (CBR) utility is also available for these operations.

- If an Intrepid 10000 Director is in a fabric, all Sphereon switches, Intrepid 6064 directors, and Intrepid 6140 directors in the fabric must be upgraded to E/OS 7.1 or later.

NOTE: Refer to caution under *Using EFCM Basic*, page 10, about upgrading firmware using the EFCM Basic interface.

Prerequisites for Installing and Using E/OS 9.0

Other McDATA products in the same fabric as E/OS version 9.0. must be at a minimum revision level for proper fabric operation. The minimum firmware levels are listed below, but it is recommended that you upgrade to the latest shipping versions of each release (check with McDATA Customer Support for latest version).

- All E/OS-based products: Minimum version should be 8.x.
- Intrepid 10000 Director: Minimum version should be E/OSn 6.1

Although products may co-exist in a fabric running different levels of E/OS firmware, all products *must* be at the same major functional release level for optimum fabric stability and robustness.

E/OS 9.0 is compatible with EFCM 8.9. For additional E/OS compatibility information, refer to the EFCM 8.9 Software Release Notes.

Minor Code Enhancements & Fixes in E/OS 9.0

E/OS 9.0, based on the previous version 8.2. and contains all fixes included in that version and prior releases. In addition, the problem reports (PRs) in [Table 1](#) have been fixed in 9.0.

Enhancements and fixes are organized by their Problem Category, then their problem report number (PR Number).

Each is assigned a Problem Category, based on whether it relates to Simple network management protocol (SNMP), Telnet command line interface (CLI), FICON management server, Embedded Management etc.

Table 1 Minor Code Fixes and Enhancements in E/OS 9.0

PR Number	Description	Problem Category	Affected Model
69454	After upgrading a Sphereon 3232, yellow triangles are shown on EFCM for all ports that are inactive but have optics in them.		ES-3232
67461	Trace route port IDs have incorrect fill byte. Zeros fill byte should be LSB not MSB according to GS-5 and SW-4	Advanced Fabric Diags	E/OS Family
46183	Event 507 after hot insert of multiple UPM cards. This has only been encountered when cards are inserted on one-minute intervals.	FPM	Intrepid 6064
57178	Firmware fault 5720 causing servers to go offline.	FPM	ED 6140
59027	ES-4500 and ES-4300 do not send R_RDY for frames with invalid D_DID of 0 during IPL. This caused ports to log out and log back in during IPL after upgrading code from 7.1 to 8.1.	FPM	ES 4500
64905	Loss-of-Signal or Loss-of-Synchronization counters always show "0".	FPM	ES 4500 ES-4700
66752	516 events logged after upgrading to 8.0.1.	FPM	
67631	Equipment check when threshold exceeded on the unused ports.	FPM	ES-4400
70293	Logging anomalies resulted in a failure on port 2F.	FPM	E/OS Family
70467	Frames not routed to ISL when ITWs are being detected on another F-port, causing ABTS.	FPM	ES-4700

PR Number	Description	Problem Category	Affected Model
55274	Hard Zoning and re-route programming delay due to large number of devices and DID's in fabric. The delay is seen when taking the core director offline/online.	Hard Zoning	E/OS Family
64414	Trace route will not work with a standard compliant switch (Qlogic) when using port IDs, though WWN's will work. Trace route port IDs have incorrect fill byte. Zeros fill byte should be LSB not MSB according to GS-5 and SW-4 standards.	Fabric Services	E/OS Family
59089	In a VTC/VTS environment, multiple directors become inoperable - requires power on reset.	FICON Mgmt Server	ES-3232
64128	With FCZ disabled and a CHPID WWN already in the exempt host list when a user enables FCZ, only the first logical path for that CHPID is set as a control host path. All other logical paths for that CHPID remain set as partitioned host paths. These paths will not be set correctly unless the host CHPID is forced to login into the switch again.	FICON Mgmt Server	E/OS Family
65661	SDC interface physical identifier for neighbor node (mainframe channel) is being returned incorrectly to MVS host in-band request.	FICON Mgmt Server	ED-6064 ES-3016 ES-3032 ES-3216 ES-3232
68947	Boxed CUP after firmware upgrade	FICON Mgmt Server	E/OS Family
63116	Intermittent 17020 fault when migrating from 7x firmware.	Firmware Migration	ED 6140
56936	CTP Fails with 411 01 53 22 continuously until unit was IML'ed.	OS Mgmt Server	ED 6064
63624	Fault 01A029	OS Mgmt Server	ED 6064
70391	Flow assigned internally to a backend port on a QPM is rerouted to newly configured preferred exit port without waiting for re-routing delay. This has potential to cause out of order frames and the impact/recovery is dependent on the end node.	QPM	ED-6140
57031	Preferdomain ID is not updated automatically when EFM or fabric binding are enabled and switch is in online state.	SANtegrity	E/OS Family

PR Number	Description	Problem Category	Affected Model
19972	warmStart and coldStart traps are not always received across ethernet switches	SNMP	ED-6064 ES-3016 ES-3032 ES-3216 ES-3232
67773	Audit log time sync shows incorrect date: (example 01/04/46)	System Services	E/OS Family
55514	Restore configuration is not completed successfully when the backup swconfig contains 2047 zones.	Web Server	Sphereon 4500
55887	Not able to set RADIUS server properties in Security>RADIUS Server page using Netscape as browser.	Web Server	E/OS Family
58966	Port state information is not updated in EFCM Basic when an unresponsive node becomes active. Port still reports "Invalid Attachment" even though port is active and traffic is flowing across the link.	Web Server	EOS Family

Outstanding Known Issues in E/OS 9.0.

Table 2, page 8 lists the problem reports (PRs) for issues that are known, but not fixed in E/OS 9.0. Workarounds for fixes, if any, are provided. Outstanding known issues are organized by their Problem Category and then, their PR number. Each is assigned a Problem Category, based on whether it relates to Simple Network Management Protocol (SNMP), the Telnet Command Line Interface (CLI), FICON management server, embedded management, Open Systems Management Server (OSMS), EFCM Basic, systems services, maintenance port, hard zoning, or other issues.

Table 2 Outstanding Known Issues

PR Number	Description	Problem Category	Affected Model
58354	Zoneset activation did not complete and a "Could not complete, one or more nodes busy" message was displayed.		ED-6064
71467	RADIUS key is allowed to be blank (zero characters)	Embedded Mgmt	EOS Family

Table 2 Outstanding Known Issues (*continued*)

PR Number	Description	Problem Category	Affected Model
57257	Failure to activate large zone set via OSMS when CT authentication is enabled.	Open Systems Mgmt Server	EOS Family
71232	Link utilization is not displayed correctly in EWS/CLI when traffic is flowing.	Web Server	EOS Family

Standards Compliance

- E/OS 9.0. is compliant with the following Fibre Channel protocols:
 - FC-GS-3
 - FC-GS-4
 - FC-PH Rev 4.3
 - FC-PH-2
 - FC-PH-3
 - FC-GS-2
 - FC-FLA
 - FC-FG
 - FC-SW-2
 - FC-SW-3
 - FC-MI
- E/OS 9.0. is compliant with the Fibre Channel Element MIB (FE-MIB).
- E/OS 9.0. is compliant with the following MIB-II groups:
 - System
 - Interface
 - Address Translation
 - IP

- ICMP
- TCP
- UDP
- SNMP
- E/OS 9.0. is compliant with the following FC classes of service:
 - Class 2
 - Class 3
 - Class F

Using EFCM Basic

EFCM Basic requires Internet Explorer 6 or Netscape 7 to run properly.

When you use Internet Explorer version 5.00.3315.1000x, the download operation may not complete and may eventually time-out leaving the switch with the previous version of E/OS.

Supported Configurations

The *Supported Fabrics Configuration* document provides information on supported fabric configurations containing McDATA directors and switches. This document is located on www.mcddata.com under Support-->Technical Documents-->Compatibility Matrix.

Information contained in this publication includes:

- Guidelines for configuring maximum end ports, unique zone members, ISLs per switch, members per zone, zones, devices supported, and switch types per fabric.
- Supported fabrics containing one to eight switches.
- Supported fabrics containing nine to twenty four switches.
- Fabric topology examples.

Related Documentation

The following documents provide additional support and information pertaining to E/OS release 9.0:

- Element Manager User Manual for your switch or director product:
 - Intrepid 6064 and 6140 Director (620-000172)
 - Sphereon 3032 and 3232 Switch (620-000173)
 - Sphereon 3016 and 3216 Switch (620-000174)
 - Sphereon 4500 Switch (620-000175)
 - Sphereon 4400 Switch (620-000241)
 - Sphereon 4700 Switch (620-000242)
- Installation and Service Manual for your switch or director product:
 - Sphereon 3016 and 3216 Switch (620-000154)
 - Sphereon 3032 and 3232 Switch (620-000155)
 - Sphereon 4300 Switch (620-000171)
 - Sphereon 4400 Switch (620-000238)
 - Sphereon 4700 Switch (620-000239)
 - Sphereon 4500 Switch (620-000159)
 - Intrepid 6064 Director (620-000108)
 - Intrepid 6140 Director (620-000157)
- McDATA EFC Manager Software User Manual (620-000170)
- McDATA Enterprise Operating System Command Line Interface User Manual (620-000134)
- McDATA EFCM Basic User Manual (620-000240)
- McDATA Configuration Backup and Restore Utility CBR Installation and User Guide (958-000370)

Previous E/OS Releases

This section provides a summary of new features, fixes, and enhancements from previous releases. For details, refer to the E/OS software release notes (SRN) for the specific release.

E/OS 8.2

E/OS 8.2 provides code fixes for problems included in E/OS 8.0, E/OS 8.0.1, E/OS 8.0.2, E/OS 8.1 and E/OS 8.1.1. The problem reports (PRs) that were resolved specifically for the E/OS 8.2 release are listed in [Table 4](#).

Table 3 Minor Code Fixes and Enhancements in E/OS 8.2

PR Number	Description	Problem Category	Affected Model
68869	Rerouting delay feature needs to be turned off by default.	Embedded Mgmt	E/OS Family
68629	SDC interface physical identifier for neighbor node (mainframe channel) is being returned incorrectly to MVS host in-band request.	FICON Mgmt Server	E/OS Family
70408	Label file downloads to SPs for FICON Director	FICON Mgmt Server	E/OS Family
68449	Boxed CUP after firmware upgrade	FICON Mgmt Server.	E/OS Family
69846	Reporting optic digital diagnostic 516 events after upgrading to 8.0.1.	FPM	E/OS Family
70833	Invalid Transmission Words (ITW) erroneously incrementing on unused ports.	FPM	E/OS Family
67604	516 events every 24 hours.	FPM	E/OS Family
68554	Divide by 0 fault while calculating Tx buffer credit during initialization.	FPM	E/OS Family
71182	Frames not routed to ISL when ITWs are being detected on another F-port, causing ABTS. When a single Spheroon 4700 is installed in a fabric with 2 or more switches, it must be configured with the highest Domain ID. Two Spheroon 4700s installed in the same fabric require E/OS release 08.02.00 or above.	FPM	E/OS Family
71202	Incorrect response to GPN_ID command.	FPM	E/OS Family

PR Number	Description	Problem Category	Affected Model
70216	Memory leak in OSMS buffer string pool when fabric build occurs during DRLIR distribution. This could cause OSMS to run out of resources.	OS Mgmt Server	E/OS Family
70349	Intermittent power UP failures on XPM cards.	Other	E/OS Family
67983	Audit log time sync shows incorrect date: (example 01/04/46)	System Service	E/OS Family
64753	Intermittent 17020 fault when migrating from 7x firmware.	System Services	E/OS Family
72328	Unable to activate zoneset with default zone enabled.	Zoning	E/OS Family

E/OS 8.1.1

E/OS 8.1.1 provides code fixes for problems included in E/OS 8.0, E/OS 8.0.1 and E/OS 8.1. The problem reports (PRs) that were resolved specifically for the E/OS 8.1.1 release are listed in [Table 4](#).

Table 4 Minor Code Fixes and Enhancements

PR Number	Description	Problem Category	Affected Model
63163	EFCM 8.6.1 lost connection to some switches in the fabric for up to five minutes during an upgrade from 7.1.2 to 8.0.	System Services	Intrepid 6140
63630	Clariion non-disruptive upgrade intermittently ends in invalid attach due to an ELP timeout.	FPM	ES-4700 ES-4500 ES-4400
64397	Sphereon 4700 switch incorrectly negotiating FL-port - Not attempting F-port after being in loop by itself after reboot of Linux host with Emulex HBA.	FPM	E/OS Family
64818	Ports go offline during firmware upgrade.		ES-4700 ES-4500 ES-4400 ES-4300
64819	Linux fabric - Constant topology view updates, continuous ESS complete messages in fabric log in a fabric containing McDATA (Qlogic) and Brocade Blade Server switches.		ES-4700

E/OS 8.1

E/OS 8.1 provides code fixes for problems included in E/OS 8.0 and E/OS 8.0.1. The problem reports (PRs) that were resolved specifically for the E/OS 8.1. release are listed in [Table 5](#).

Table 5 Minor Code Fixes and Enhancements in E/OS 8.1

PR Number	Description	Problem Category	Affected Model
58695	SNMP improvements in polling and query processing. SNMP response is sluggish when being queried by 10 to 30 different SNMP servers.	SNMP	Sphereon 4500
61315	SCSI transport errors after upgrade to E/OS 7.1.0 - FLOGI rejects seen in engineering log.	Fabric Services	Sphereon 4500
59872	Incorrect reading of port technology data returned causes optics speed mismatch with Stratos optics. This causes the port to become unusable.	Fabric Services	E/OS Family
61035	CUP reporting IFCCs to MixPlex hosts.	FICON Mgmt Server	Intrepid 6140
62545	Online external loopback test fails on ports 24-31 of Sphereon 4700.	FPM	Sphereon 4500
62639	Ethernet traffic hangs access to Ethernet management on Sphereon 4500 Switch and Intrepid 6140 Director. Problem requires an IML to recover.	System Services	Sphereon 4500
57396	Taking a core 4700 offline/online causes CRC errors on the edge ISLs to this core.	None	Sphereon 4700

E/OS 8.0.2

E/OS 8.0.1 provides code fixes for problems reported in the earlier releases. The problem reports (PRs) that were resolved for this release are listed in [Table 7](#).

Table 6 Minor Code Fixes and Enhancements in E/OS 8.0.2

PR Number	Description	Problem Category	Affected Model
70913	Intermittent Power Up Failures on XPM cards.	Online/PUP Diagnostics	Intrepid 6064 / 6140 with XPM support

E/OS 8.0.1

E/OS 8.0.1 provides code fixes for problems reported in the earlier releases. The problem reports (PRs) that were resolved for this release are listed in [Table 7](#).

Table 7 Minor Code Fixes and Enhancements in E/OS 8.0.1

PR Number	Description	Problem Category	Affected Model
61550	The compact flash memory access drivers require an update to support new compact flash parts cutting into manufacturing. This change is required to source new compact flash vendors due to the unavailability of parts from our current vendor. The driver changes are needed to improve the stability of the compact flash read and write accesses to work with multiple vendors.	NA	Sphereon 4400 and 4700
61923	Due to a revision of the ASIC on the XPM card, a firmware change was required to recognize the new XPM card. The firmware will still recognize all XPMs with the lower revision ASIC. The ASIC revision was a very minor change to the ASIC core to address a miniscule window where a power cycle could potentially put the ASIC in a degraded state.	XPM Support	Intrepid 6140

E/OS 8.0

E/OS 8.0 was a major release that added the following features, additions and enhancements:

- CLI, SNMP, and EFCM Basic support for Sphereon 4400 and 4700 Switches.
- Advanced fabric diagnostics enhancements.
- Enhancements to EFCM Basic (formerly called SANpilot).

- Predictive optics monitoring features in EFCM Basic and CLI.
- General enhancements to EFCM Basic and CLI.
- Interswitch Link (ISL) cost configuration.
- Open Trunking load balancing capability qualified in FICON environments where FICON flows.
- New safe zoning mode feature support in CLI and EFCM Basic.
- Standards-based support for second revision of query security attributes (QSA) and new remote fabric change notifications (RFCN).
- N_Port ID Virtualization (NPIV) feature.
- Nameserver response in large fabric configurations.

E/OS 8.0 provides code fixes for problems reported in this version and the earlier releases. The problem reports (PRs) that were resolved for this release are listed under [Table 5](#).

Table 8 Minor Code Fixes and Enhancements

PR Number	Description	Problem Category	Affected Model
56874	One-hundred twenty (120) events call home when they are informational. They should not call home	Console Server	E/OS Family
56497	Management server can occasionally hang in high traffic environments.	Console Server	E/OS Family
55730	Fixes a problem where ITW statistics post on unused ports, causing third-party management applications to report false errors	FPM Server	Sphereon 3016, 3032, 3216, 3232, and 4500, Intrepid 6064 and 6140
53986	Ethernet communications intermittently hang on 6140 and 4500	Ethernet Driver	Eclipse 6140, Sphereon 4500, and 4300
19972	warmStart and coldStart traps aren't always received across Ethernet switches.	SNMP	Sphereon 3016, 3032, 3216, 3232, Intrepid 6064
45850	Ethernet port speed not reported by NWSHOW command. Also, SNMP MIB ifspeed is not updated when the speed changes.	SNMP	Sphereon 4500
18371	Repeated loss of signal (LOS) should auto-block a port.	Port Fencing	Intrepid 6064

Table 8 Minor Code Fixes and Enhancements (continued)

PR Number	Description	Problem Category	Affected Model
17852	Port binding offenders degrade switch performance.	Port Fencing	Sphereon 4500
54855	Urgent change to segment fabric when Default Zone enabled states do not agree - in all cases.	Zoning	Intrepid 6140
16013	Sphereon 3216 Switch doesn't respond to ping requests of packet size less than 20 bytes.	System Services	Sphereon 3216
50511	Intrepid 6064 running EOS 6.1. Discrepancy between Port List and Node List for port 43.	Fabric Services	Intrepid 6064
21513	Merging two fabrics that each contain more than 300 zones causes constant fabric rebuilds.	Fabric Services	E/OS Family
49398	EWS (EFCM Basic): Enhancement to add the ability to detect browser/version and provide warning if not supported.	Embedded Mgmt	E/OS Family
52366	Update the CLI show.switch command to identify the EFCM server managing the switch.	CLI	E/OS Family
54801	Four interswitch links (ISLs) segmented after installing universal port modules (UPMs).	None	E/OS Family
17953	During power supply testing, cooling fan propeller errors were logged.	None	E/OS Family
57294	Fault 40005269 may occur due to a backup CTP problem under certain conditions. In this situation, the code will fail over to the backup CTP at which time a 4000510E fault may occur since the backup (now primary) CTP has problems.	None	E/OS Family

