What’s new with EMC Symmetrix VMAX and Enginuity?

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Session Number 14734

http://www.linkedin.com/pub/tony-negro/1/b35/581
Agenda

• Enginuity Release Level 5876 Q3 2013SR (service release)
  • New Features in Base Hardware
  • Enhancements in Base Software
• Mainframe Enablers 7.6 Level Set 01
• Symmetrix Management
  • EMC z/OS Storage Manager (EzSM)
  • Unisphere for VMAX
VMAX 2013 Release Summary

- ENGINUITY 5876 Q2 2013 SR + SW ECOSYSTEM
- UNISPHERE for VMAX V1.6.1
- ENGINUITY 5876 Q3 2013 SR + SW ECOSYSTEM
- VMAX 10K FILE

Q2 2013  Q3 2013  Q4 2013
Enginuity Releases 5876-251-161
5876 Q3 2013SR (Service Release) Target on 11/14/13

• Operating Environment for Symmetrix
  • Each processor in each director is loaded with Enginuity
  • Enginuity allows the independent director processors to act as one Integrated Cached Disk Array
Enginuity Target Code

- Recommend by EMC to ensure stable and reliable environments as well as the best Enginuity version in order to facilitate upgrade planning activities

- For the latest information, go to [https://support.emc.com](https://support.emc.com)
  - Target-Revisions-and-Adoption-Rates
  - EMC Service Recommendation (ESR) Advisory
  - EMC Symmetrix Uptime Bulletin

<table>
<thead>
<tr>
<th>Code Level</th>
<th>% of Reporting Systems</th>
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<td>&lt; 1%</td>
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<tr>
<td>5876.82.57</td>
<td>1%</td>
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</table>
16Gb FC I/O Module

Environment

- Enginuity 5876 Q3 2013 SR
- Two host ports
- Fibre Channel
- EMC Solutions Enabler 7.6
- Unisphere for VMAX 1.6.1

Part No. 303-235-101
Support for Remote Pair FlashCopy

- Remote Pair FlashCopy
  - Peer to Peer Remote Copy Primary
  - Peer to Peer Remote Copy Secondary
- Reduces bandwidth requirements and data movement
- Improves performance and resiliency
- Maintains Hyperswap
**FAST VP Integration with SRDF 3 and 4 site DR solution**

<table>
<thead>
<tr>
<th>Description</th>
<th>FAST VP will propagate the statistical information to all sites associated with SRDF 3 and 4 site solutions</th>
</tr>
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<tbody>
<tr>
<td>Feature Type</td>
<td>Enhancement to existing</td>
</tr>
<tr>
<td>Justification</td>
<td>Customers with 3 and 4 site DR solutions need similar performance at R2 sites after a failover</td>
</tr>
<tr>
<td>Customer Value/Benefit</td>
<td>Provides the customer with similar R1 performance at all R2 sites when a failover is executed</td>
</tr>
<tr>
<td>Usage Scenario</td>
<td>FAST VP statistics are copied to all R2 sites to configure the customer’s data as close as possible to the R1 configuration</td>
</tr>
</tbody>
</table>
FAST SRDF Overview

- FAST RDF support will propagate the sub volume statistics from an R1 to an R2
- Writes are excluded since they are sent over the link already
- Allows remote site to make tiering decisions that better reflect the potential workload should a failover occur
- Stats sent every 10 minutes
FAST SRDF Multisite Enhancement

- In 5876-251 we added the ability for the R21 to relay the stats from the R11 to the R22

Same effective read count on all mirrors
EMC Mainframe Enablers

• Mainframe Enablers components
  • EMC ResourcePak Base for z/OS provides API interface
  • EMC TimeFinder Utility
  • SRDF Host Component for z/OS
  • EMC TimeFinder/Clone Mainframe Snap Facility
  • EMC TimeFinder/Mirror for z/OS
  • EMC Consistency Groups for z/OS

• Combined, tested, shipped, and installed in a single package
MFE Lifecycle Information

<table>
<thead>
<tr>
<th>MFE Version</th>
<th>General Available (GA) Date</th>
<th>Level Set</th>
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<tbody>
<tr>
<td>7.6</td>
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<td>EMC7601</td>
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<tr>
<td>7.5</td>
<td>Oct. 17, 2012</td>
<td>EMC7501</td>
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<td>7.4</td>
<td>May 9, 2012</td>
<td>EMC7401</td>
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</table>

All levels below 7.4 are EOSL (End of Service Life).

The EMC Service Recommendation (ESR) for SRDF/A, MSC, and STAR solution implementation (formerly emc138978) now has a new number: 172209

https://support.emc.com/kb/172209
DLm 8000: FICON attached system that stores MF tape data on FBA devices in the Symmetrix

- MFE SRDF Host Component controls SRDF, not DLM / DART
- Enhancement to allow SRDF HC control of FBA device state on the FA
SRDF HC - FA Device State Control

• Allows User To Manipulate / Display Device Status On The FA
  – Display / Alter Write Prohibited State

• New Commands / Parameters
  – SQ FAVOL,loc,start|ALL,count
    ▪ Displays individual devices in a range that has at least 1 port write prohibited.
  – SC FAVOL,loc,WriteEnable,rng1-rng2|ALL
    ▪ Turns off the Write Prohibit bit on all ports on all FAs for this device
  – SC VOL,...,SWAP(FAWE),...
    ▪ New FAWE option on SWAP turns OFF Write Prohibit bit on all FAs for the R2 devices prior to swap
SCF Support For Dynamic IODF

- Notifies registered applications of configuration changes
  - Application subtasks “listen” for notifications
  - Minimizes need to recycle MFE components
  - Invoked only for addition/deletion of devices (not state changes)

- Required SCF INI parameters:
  - SCF.SRV.GSM.ACTIVE=YES Enable GSM (Global State Management)
  - SCF.SRV.GSM.INTERVAL=nn nn = # of seconds between appl notifications
MSC Dynamic Add/Delete for Groups

- Prior To MFE 7.6, MSC Group Must Be Disabled Before Add/Delete Of SRDF/A Group
  - Causes Exposure While MSC Not Controlling The Cycle Switch

- MFE 7.6 Provides Ability To Add/Delete A SRDF/A Group To An Active MSC Group
  - Normal Validation Occurs During ADD Process
  - Error Msg Issued If Error Occurs Prior To Task For The Group Being Started
  - Errors During Task Initiation For New Group Results In Back Out
EzSM (EMC z/OS Storage Manager)

Brief Overview and What’s New
Flexible Management Options and Tools

- EMC z/OS Storage Manager
  - 3270 interface
  - Replication management and monitoring
  - Mainframe constructs—security, messages, SMP/E install
  - DLm Management
## EzSM Lifecycle Information

<table>
<thead>
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<th>EzSM Version</th>
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<th>End of Service Life (EOSL) Date</th>
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<td>4.1</td>
<td>May 29, 2012</td>
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<tr>
<td>4.0</td>
<td>June 15, 2011</td>
<td>Aug. 31, 2014</td>
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Federated Tiered Storage Externally Provisioned volumes

- Support for FTS Externally Provisioned (EP) volumes has been added through a new EzSM function that retrieves FTS EP volumes with Mainframe Enablers V7.5 and higher.
- Information on FTS EP volumes is now available on the following displays
  - Devices in primary and secondary RDF groups.
  - Symmetrix Summary Report
  - Symmetrix Summary by Type
  - EPVOL (FTS) Configuration Information
VP Compression

- With Enginuity 5876 and higher, you can compress thin device data to save space and decompress when desired.
- EzSM now supports the VP compression functionality available in Mainframe Enablers 7.5 and higher.
- Options for VP compression and decompression commands have been added to the EzSM Pool Management Services menu.
- Allows configuration, management and reporting on the VP compression state for thin devices.
SRDF/AR Monitor

• The EzSM RPB & TimeFinder Functions panel now provides access to the SRDF/AR (SAR) Monitor.
• The SAR Monitor functionality allows you to monitor and manage SRDF/AR (Automated Replication) processes.
• To take advantage of SRDF/AR Monitor, Mainframe Enablers 7.6 is required.
Unisphere for VMAX

Brief Overview and What’s New
Unisphere for VMAX – Overview

EMC standard look and feel

Contextual, simple to navigate

Easily provision, manage and monitor

Complete your session evaluations online at www.SHARE.org/AнаheimEval
Simplify Resource Provisioning

- Intuitive Wizards
- Create Volumes
- FAST VP Environment
- Replication
- Performance
- Expand Pools

Complete your session evaluations online at www.SHARE.org/AvalheimEval
Simplified FAST Management Dashboard

Quick Access to
FAST Status
View and Manage Policies
Virtual Pool (Tiers) Demand
Tier Usage by Storage Group

Complete your session evaluations online at www.SHARE.org/AnaheimEval
VMAX Performance Dashboards

Customizable Dashboard Views

Dashboards

Standard, Pre-defined

Customizable User-defined
Performance Capabilities

Quick Summary of Array Performance with Drill Down Capability

Heatmaps
Diagnostic, Historical, or Real Time

Categorized by:
- Front-end
- Cache
- Back-end
- Drives
Drill down to component level
## Unisphere Lifecycle Information

<table>
<thead>
<tr>
<th>Unisphere Version</th>
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<th>End of Service Life (EOSL) Date</th>
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<tr>
<td>1.5.1</td>
<td>Mar. 1, 2013</td>
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The user logs into Unisphere and is presented the enhanced Home screen.
Homepage Indicators

Alert indicators:
Alert notifications provide users with status messages based on severity levels.

Enginity version is below minimum.

Threshold indicators:
Thresholds determine whether an alert is delivered and, if so, with what severity (as defined by a user).

Represents the total number alerts reported on the array. The icon represents the highest severity of any single alert.

The below, between and above thresholds are represented for System utilization and Storage Group response time.

Complete your session evaluations online at www.SHARE.org/AnaheimEval
Homepage Indicators

Select either **System % Busy** or **Response Time** to view the Performance dashboard.

Move the cursor over the Distribution bar. A brief overview explaining the alert information is displayed.

Complete your session evaluations online at www.SHARE.org/AnaheimEval
## Arrays Summary

### Arrays Summary KPIs

<table>
<thead>
<tr>
<th>Symmetrix ID</th>
<th>Host IOs/sec</th>
<th>Host MBs/sec</th>
<th>BE Reqs/sec</th>
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<td>0</td>
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</table>

Complete your session evaluations online at [www.SHARE.org/AnhemEval](http://www.SHARE.org/AnhemEval)
Symmetrix Performance Dashboards

Expand EMC Dashboards to find the new Symmetrix Performance Status Dashboard.
Summary

• Enginuity Release Level 5876 Q3 2013SR
  • 16Gb FC; Remote Pair FlashCopy
  • FAST VP SDRF integration for 3 & 4 site configurations
• Mainframe Enablers 7.6 Level Set 01
  • FA device control; Dynamic IODF support
• Symmetrix Management
  • EMC z/OS Storage Manager (EzSM)
    • FTS; VP Compression; SRDF/AR monitor
  • Unisphere for VMAX
    • Enhanced System Dashboard with Alerts, % Busy, and Response Time indicators
What’s new with EMC Symmetrix VMAX and Enginuity?

Thank You