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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

SHARE in Anaheim

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

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VMAX 2013 Release Summary

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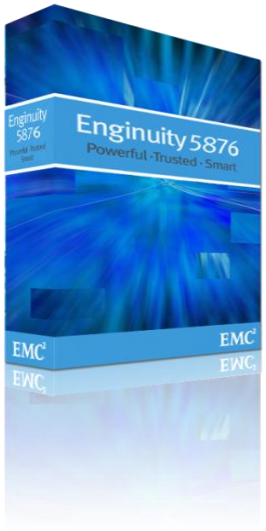
Enginuity Releases 5876-251-161

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



5XYY.MMM.SSS

Symmetrix Hardware Supported: 56 = DMX/DMX2 57=DMX3-4 58 = VMAX	Microcode 'Family' (Major Release Level)	Field Release Level of Symmetrix Microcode (Minor Release Level)	Field Release Level of Service Processor Code (Minor Release Level)

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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**
  - Target-Revisions-and-Adoption-Rates
  - EMC Service Recommendation (ESR) Advisory
  - EMC Symmetrix Uptime Bulletin

Code Level	% of Reporting Systems
5876.268.174	2%
5876.251.161	39%
5876.229.145	27%
5876.163.105	6%
5876.159.102	8%
5876.85.59	< 1%
5876.82.57	1%

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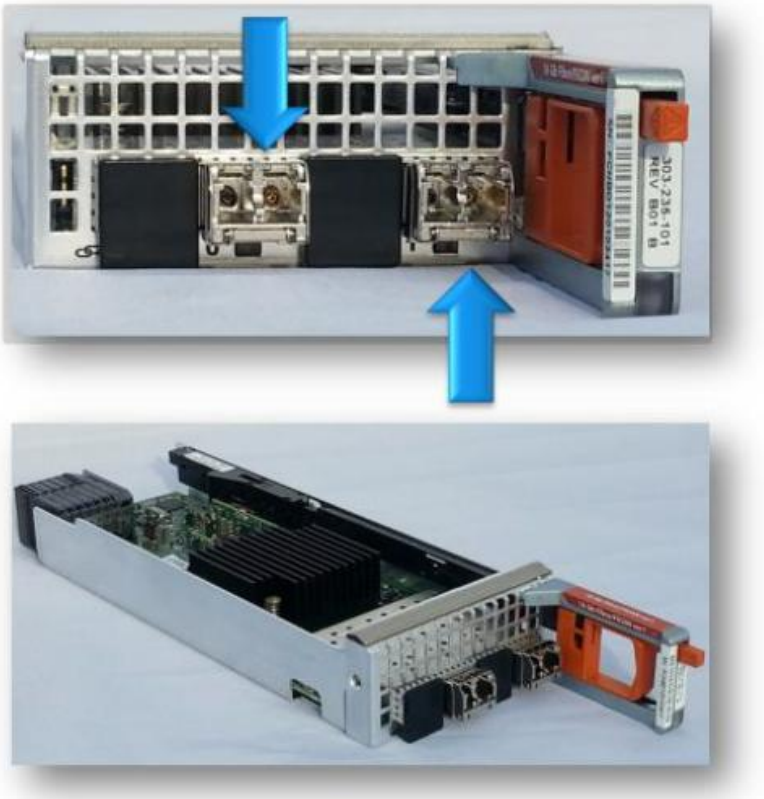
16Gb FC I/O Module

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

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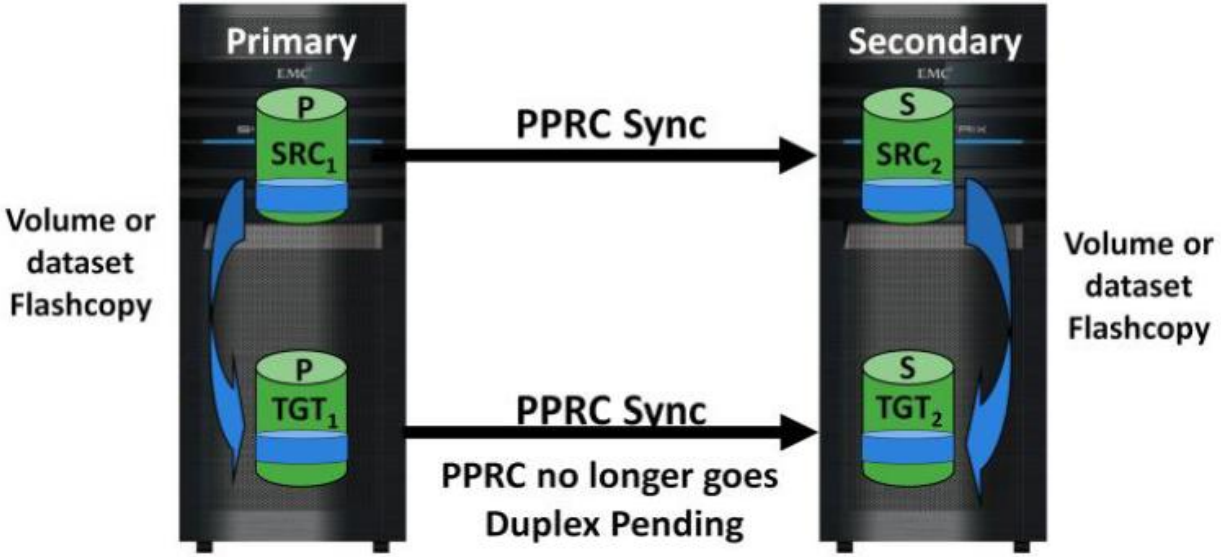
Support for Remote Pair FlashCopy

- 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

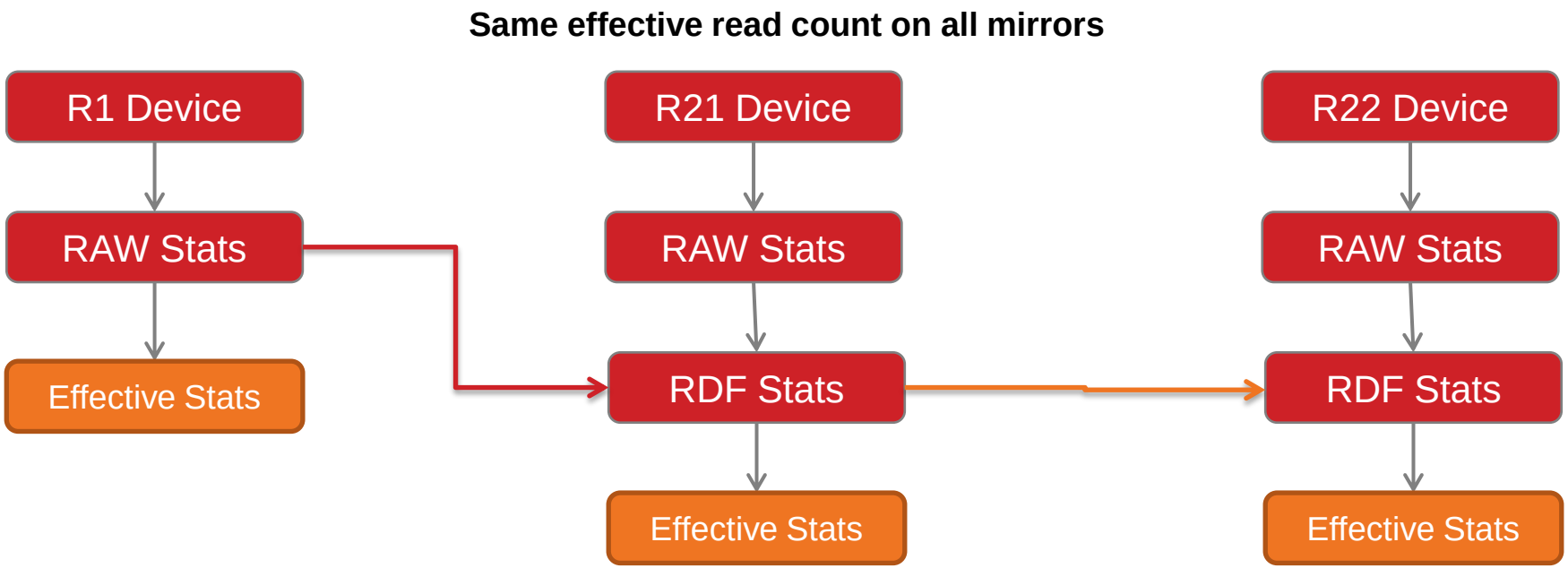
Description	FAST VP will propagate the statistical information to all sites associated with SRDF 3 and 4 site solutions
Feature Type	Enhancement to existing
Justification	Customers with 3 and 4 site DR solutions need similar performance at R2 sites after a failover
Customer Value/Benefit	Provides the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

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

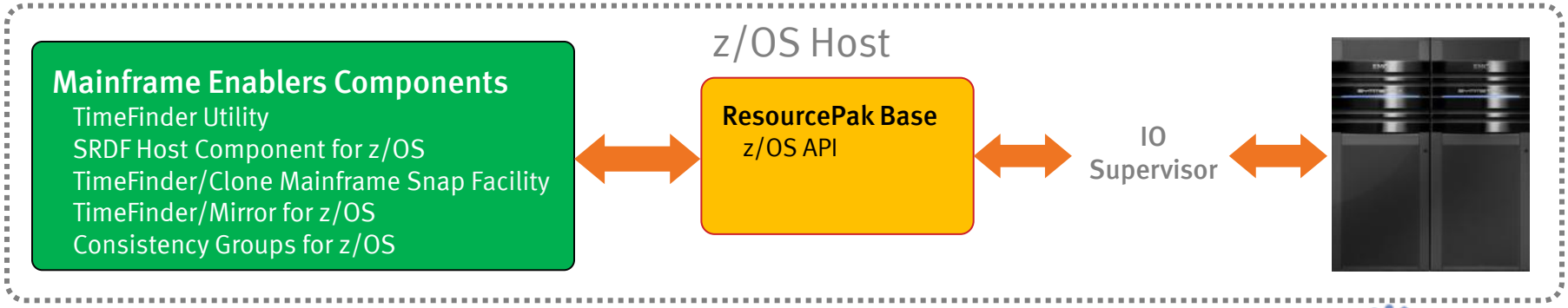
FAST SRDF Multisite Enhancement

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



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



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MFE Lifecycle Information

MFE Version	General Available (GA) Date	Level Set
7.6	May 13, 2013	EMC7601
7.5	Oct. 17, 2012	EMC7501
7.4	May 9, 2012	EMC7401

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

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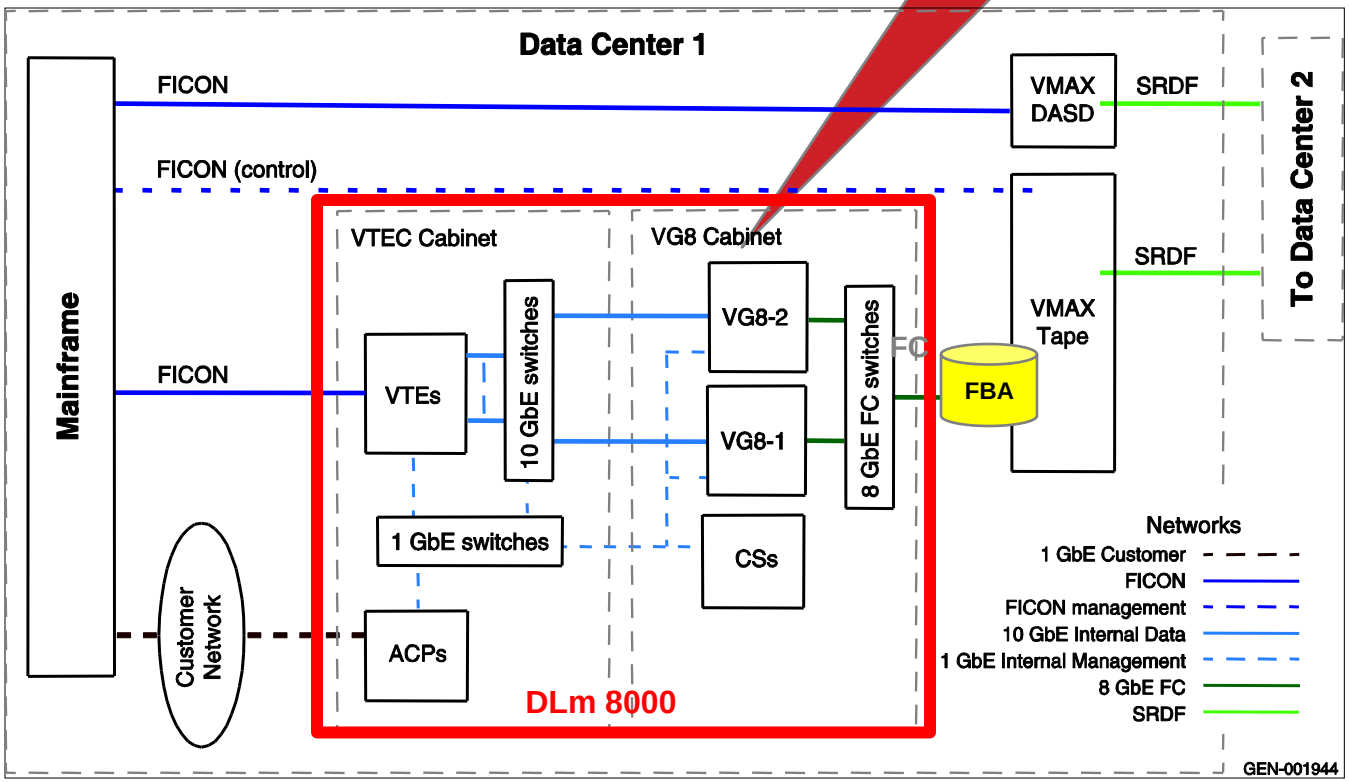
SRDF HC - FA Device State Control: Background

DLm 8000: FICON attached system that stores MF tape data on FBA devices in the Symmetrix

Symmetrix sees the NAS VG8 component within the DLm that is running DART as the host



- 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

```
Utilities
(H15-ECORLGON) EMC z/OS Storage Manager Product Home          Select One Item
Command ===>                                                 Scroll ===> CSR
================================================================================

                      Select a function category

                  o 1  Symmetrix Device Management
                  o 2  DLm Management
                  o 3  Logical Devices
                  o 4  Data Sets
                  o 5  Current Alert Messages
                  o 6  z/OS Commands
                  o 7  HSM (n/a)
                  o 8  SMS Information

                  o 25 Framework Administration
                  o 26 Batch API JCL Generator
```

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

EzSM Lifecycle Information

EzSM Version	General Available (GA) Date	End of Service Life (EOSL) Date
4.2	Jul. 31, 2013	
4.1	May 29, 2012	Aug. 31, 2015
4.0	June 15, 2011	Aug. 31, 2014

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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

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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.

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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.

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Unisphere for VMAX

Brief Overview and What's New

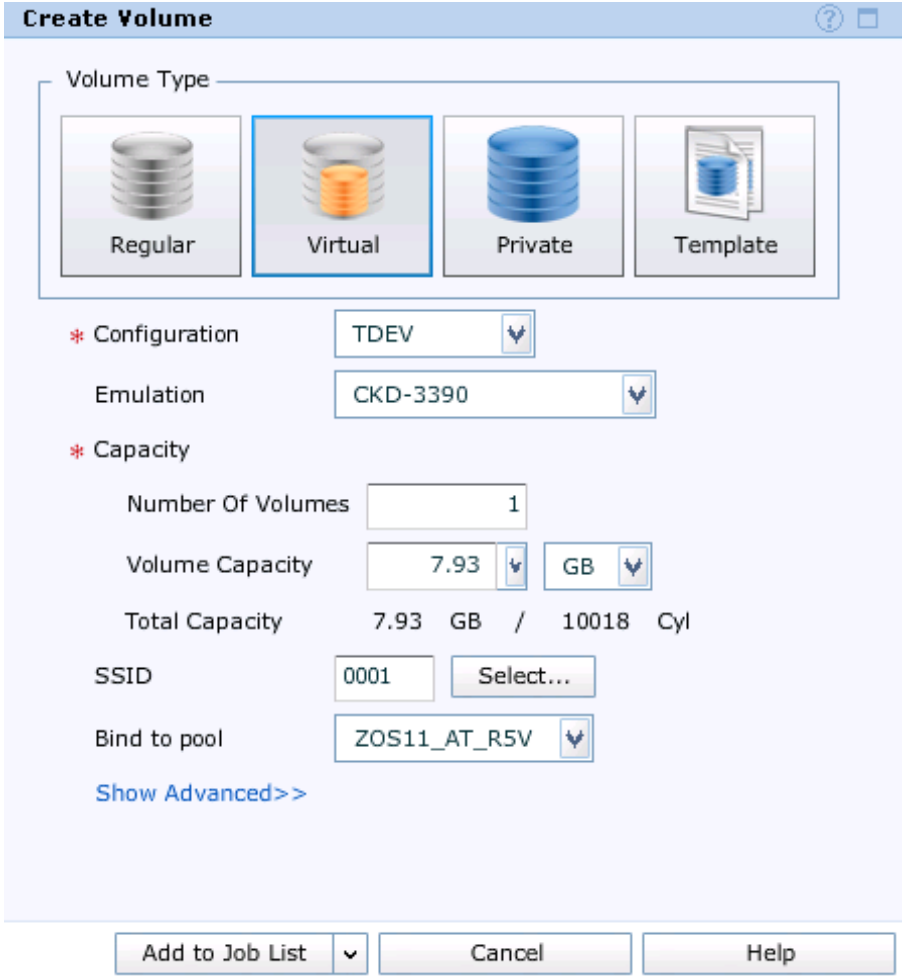
Unisphere for VMAX – Overview

EMC standard look and feel

Contextual, simple to navigate

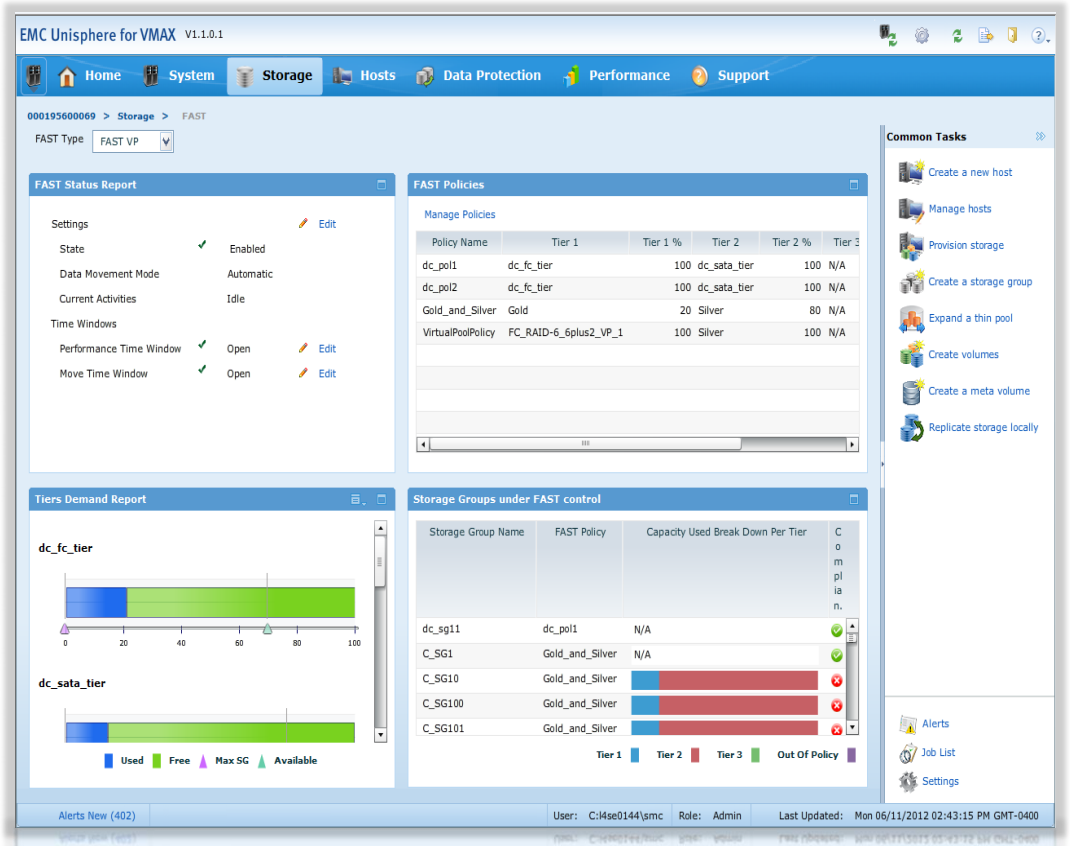
Easily provision, manage and monitor

Simplify Resource Provisioning



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

Simplified FAST Management Dashboard



Quick Access to

FAST Status

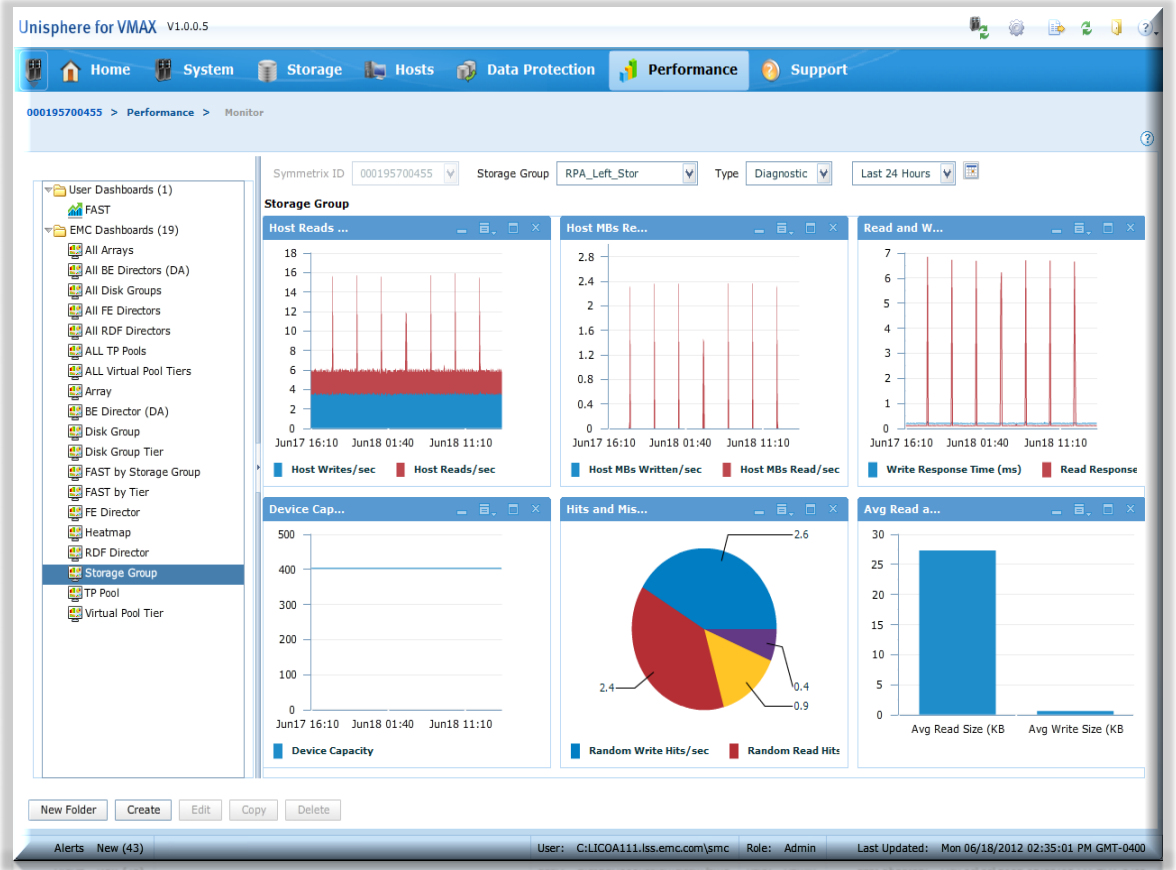
View and Manage Policies

Virtual Pool (Tiers) Demand

Tier Usage by Storage Group

VMAX Performance Dashboards

Customizable Dashboard Views



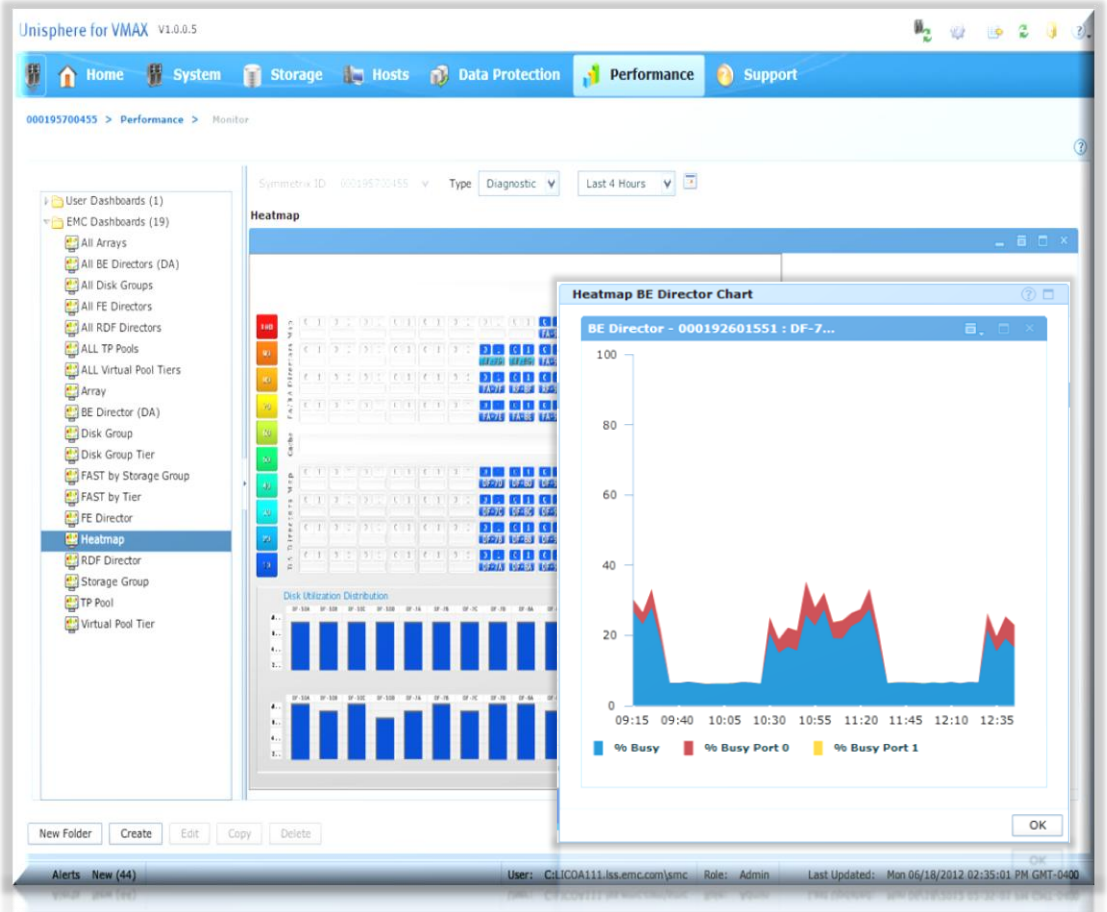
Dashboards

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

Unisphere Version	General Available (GA) Date	End of Service Life (EOSL) Date
1.6.1.8	Dec. 4, 2013	May 31, 2016
1.6.1.6	Oct. 25, 2013	May 31, 2016
1.6.1	Aug. 23, 2013	May 31, 2016
1.6	May 13, 2013	May 31, 2016
1.5.1	Mar. 1, 2013	Oct 31, 2015

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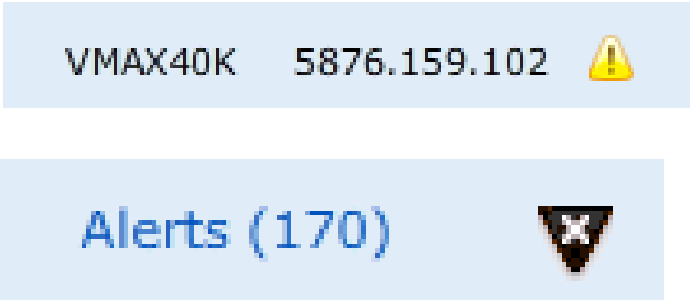
Enhanced System Dashboard

The user logs into Unisphere and is presented the enhanced Home screen.

Homepage Indicators

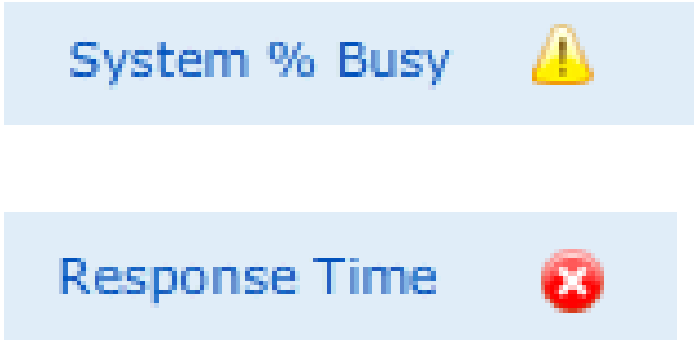
<u>Alert indicators:</u>
Alert notifications provide users with status messages based on severity levels.



Enginity version is below minimum.

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

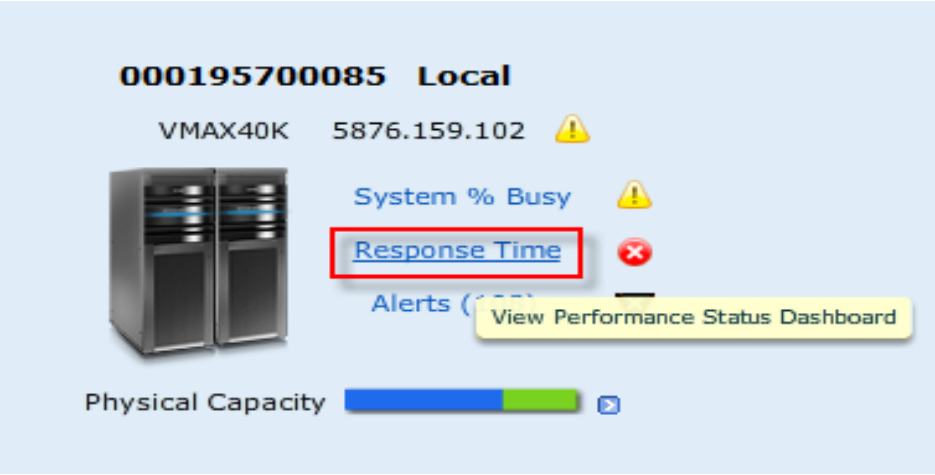
<u>Threshold indicators:</u>
Thresholds determine whether an alert is delivered and, if so, with what severity (as defined by a user).



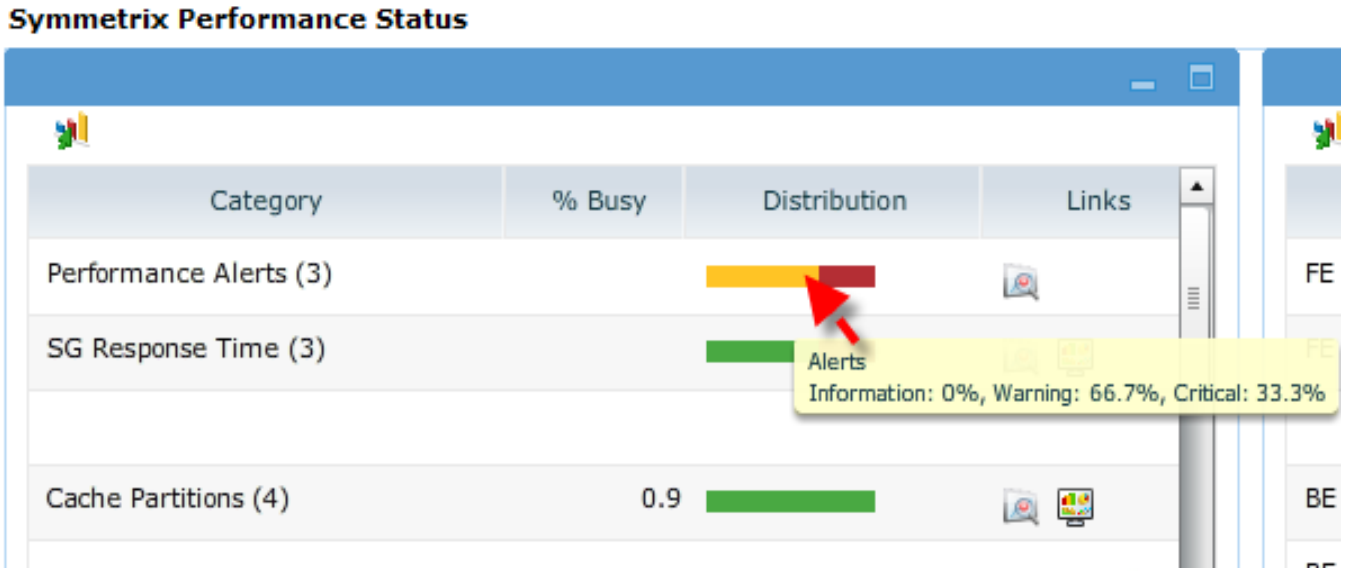
The below, between and above thresholds are represented for System utilization and Storage Group response time.

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.



EMC Summary Dashboards

Arrays Summary Dashboard

Arrays Summary

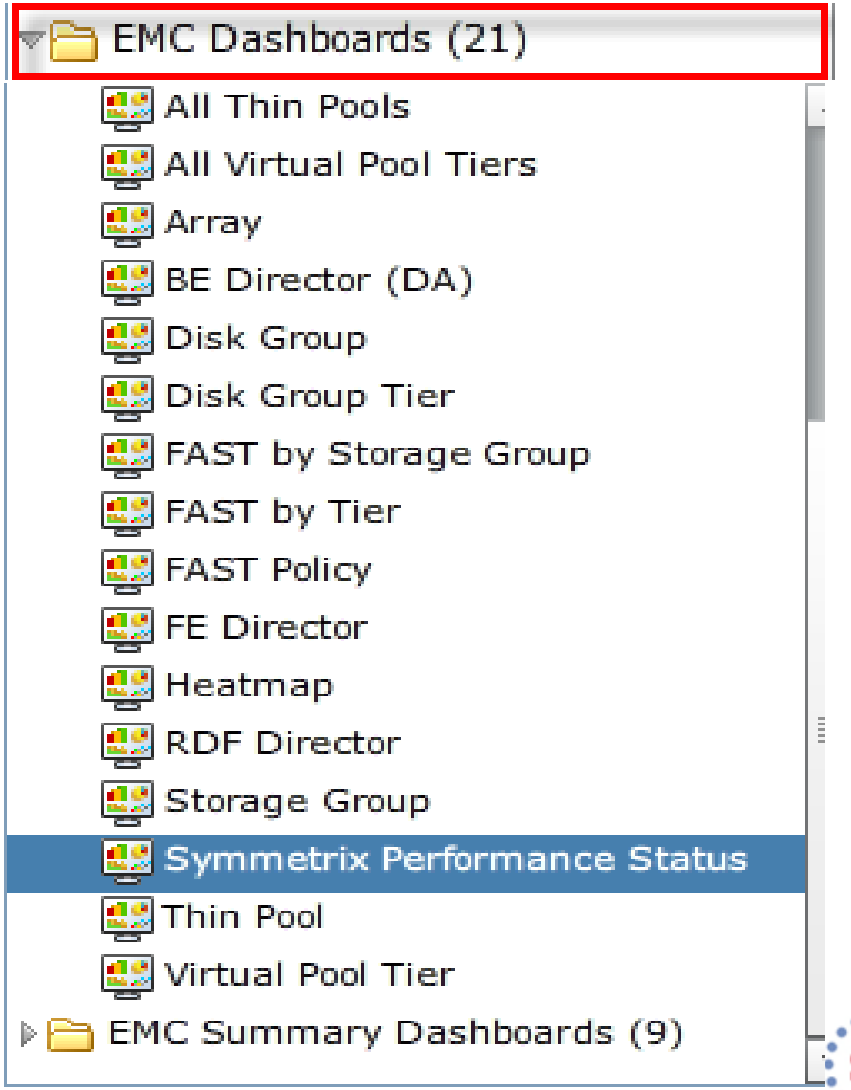
Arrays: Summary KPIs

Arrays: Summary KPIs

Symmetrix ID	Host IOs/sec 1 ▾	Host MBs/sec	BE Reqs/sec	Avg Fall Thru Time	WP Count	% Cache WP
000190101979	51179.6	328.4	4074.1	1007.1	38224.3	7.5
000195700181	9453.3	165.9	11347.9	245.3	25673	0.4
000195700085	4079.1	430.8	6424	0	23738.1	3.8
000198700090	22.8	0	0.2	229.2	0	0

Symmetrix Performance Dashboards

Expand <u>EMC Dashboards</u> 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

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What's new with EMC Symmetrix VMAX and Enginuity?

Thank You

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