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VMAX Management: Mainframe Tasks Simplified with Unisphere for VMAX and EzSM

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August 14, 2013
Session Number 13983

SHARE in Boston

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Objectives

- Simplify management of your VMAX arrays with Unisphere and EzSM
- Use Unisphere for monitoring and reporting on VMAX array performance
- Describe latest enhancements to Unisphere and EzSM

Challenges of Managing Storage in Today's Mainframe Environments

- Operational complexity
- More requirements to provide replication to ensure security
- Increasing pressure to do more with fewer staff

Unisphere for VMAX

Powerful. Smart. Trusted.

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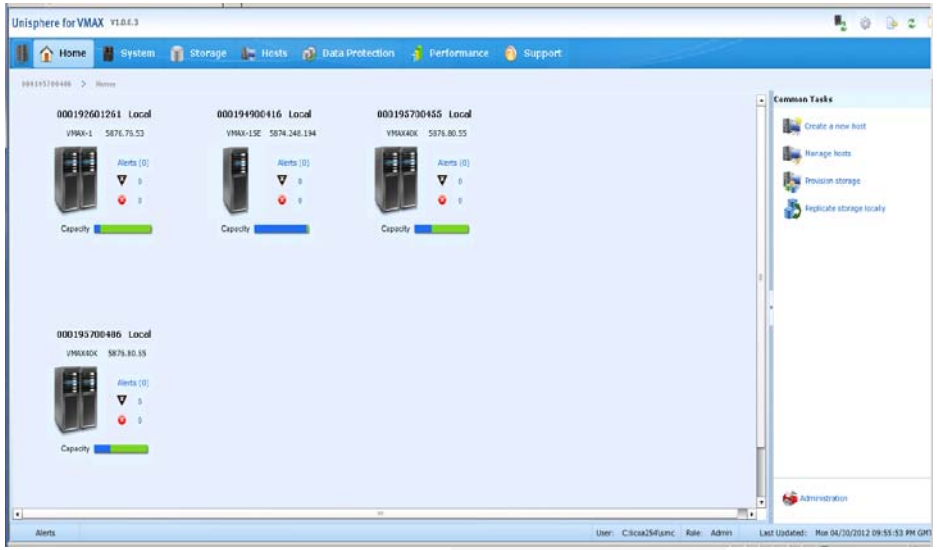
Unisphere for VMAX Overview

Feature	Description
Single pane of glass	Configuration, Performance, Alerting …
Single eLicense entitlement	Array-based license for managing and monitoring
Big button design	Common tasks throughout all functions
Common Tasks	Configuration Wizards and dialogs simplify configuration changes and updates

- Unisphere for VMAX supports:
  - Symmetrix VMAX 20K/VMAX Series systems
    - Enginuity 5874 or higher
  - Symmetrix VMAX 40K Series systems
    - Enginuity 5876 or higher
  - Symmetrix VMAX 10K/VMAXe Series systems
    - Enginuity 5875 or higher

Flexible Management Options and Tools

Unisphere for VMAX

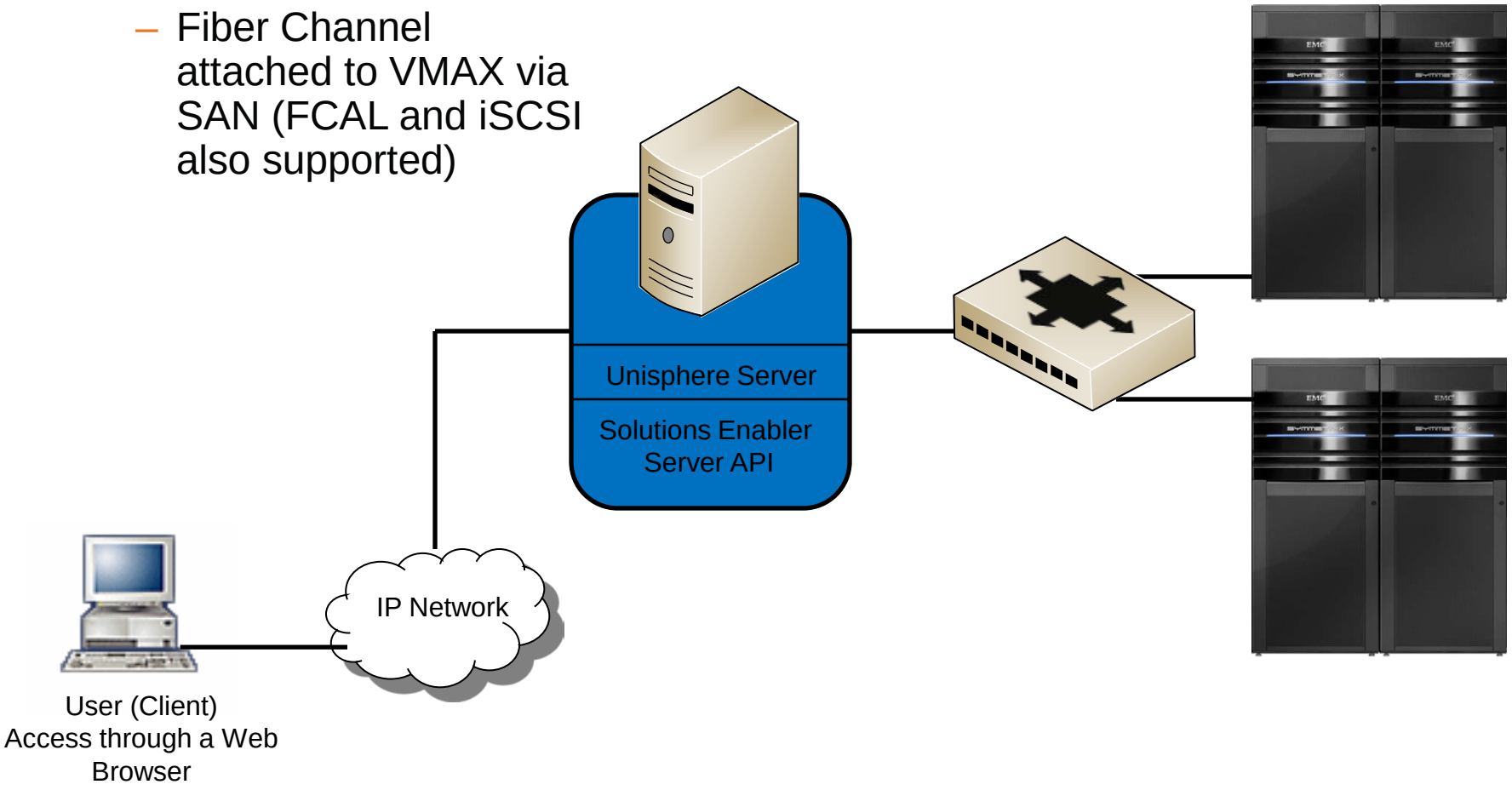


Unisphere for VMAX

- Array-based configuration and monitoring
- Accelerates Symmetrix setup and configuration
- Tiered storage management
- Replication management and monitoring
- Monitor key Symmetrix performance indicators
- Heat map functionality

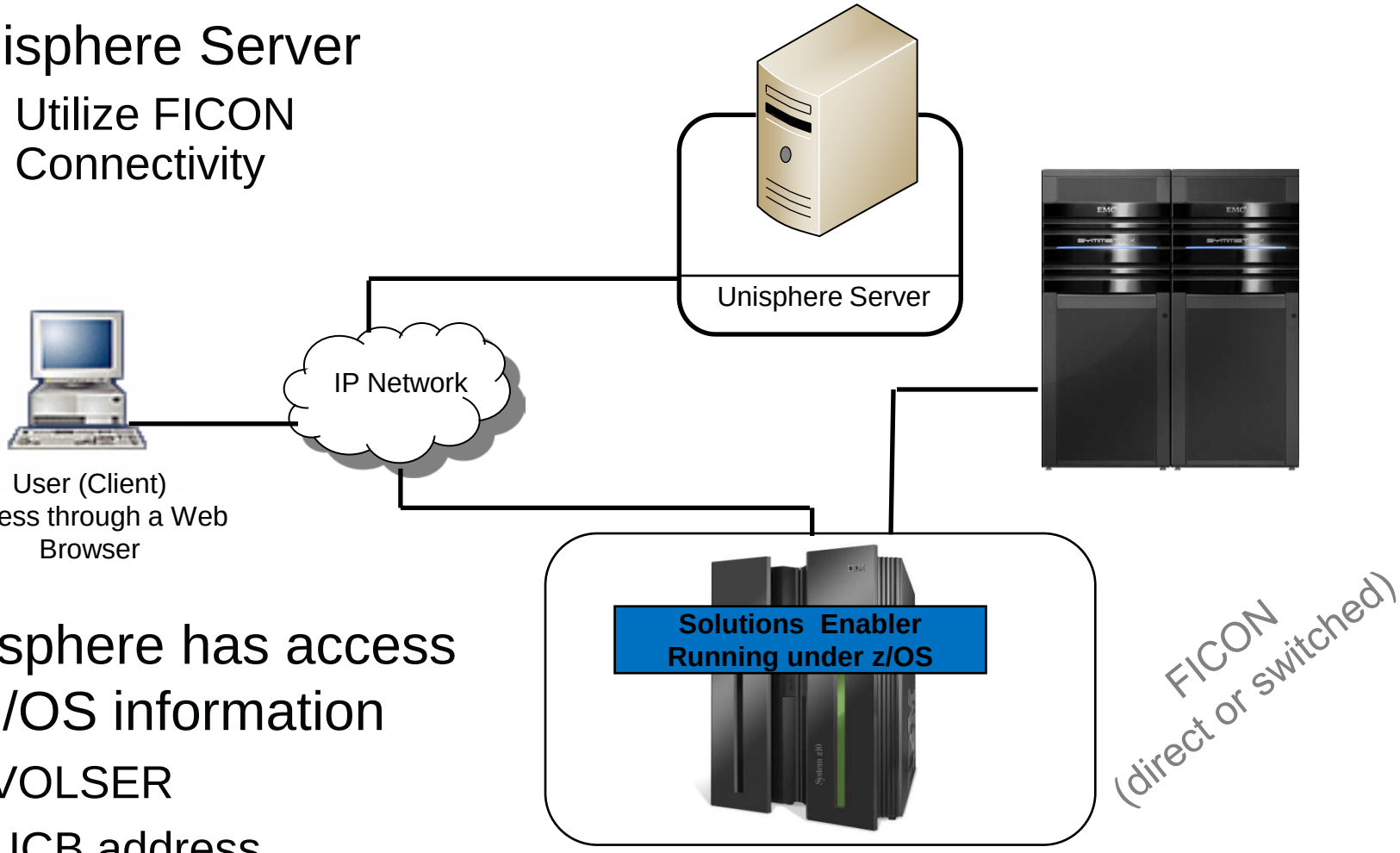
Flexible Deployment Options (recommended)

- Unisphere Server
  - Fiber Channel attached to VMAX via SAN (FCAL and iSCSI also supported)



Flexible Deployment Options

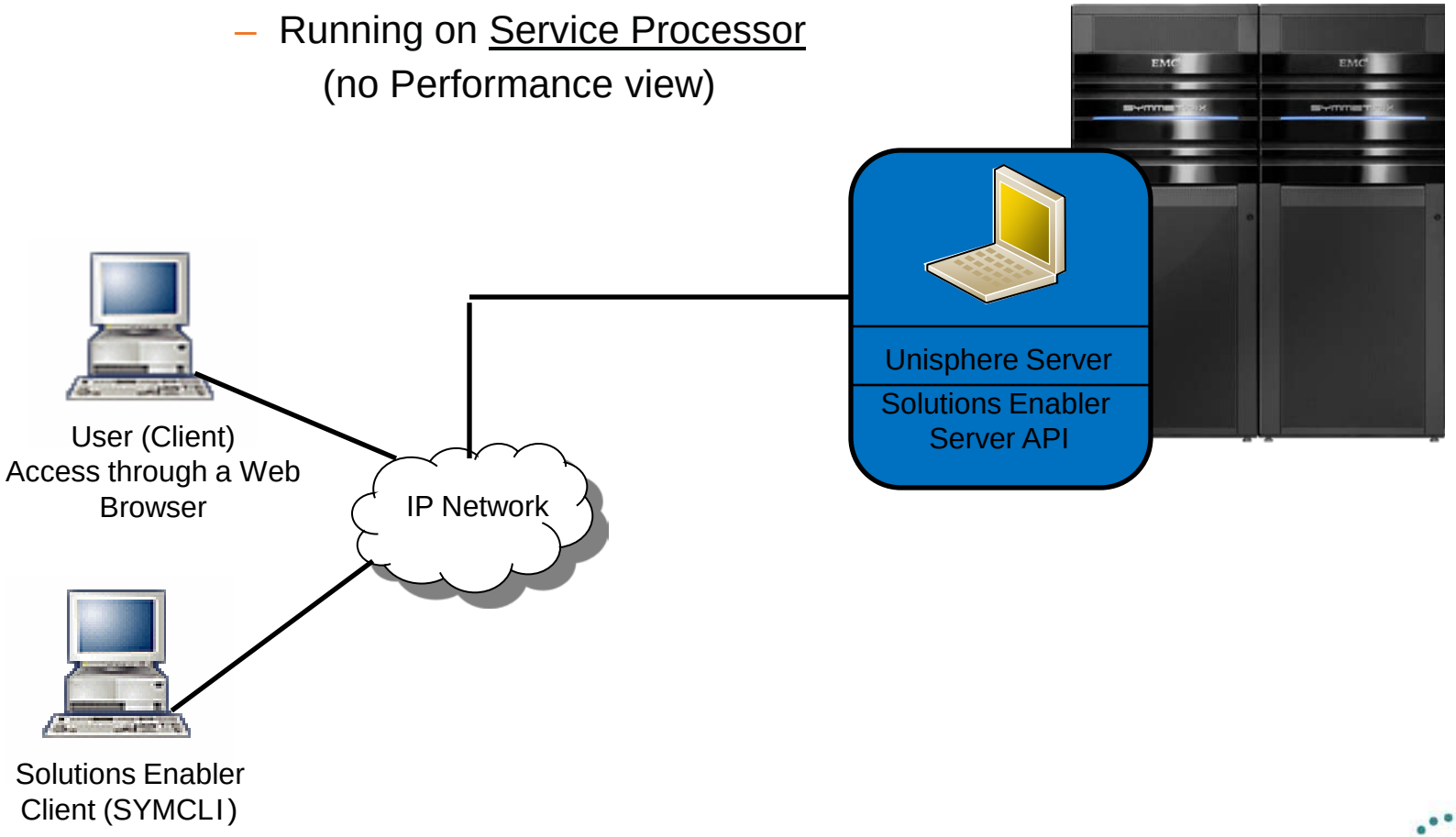
- Unisphere Server
  - Utilize FICON Connectivity



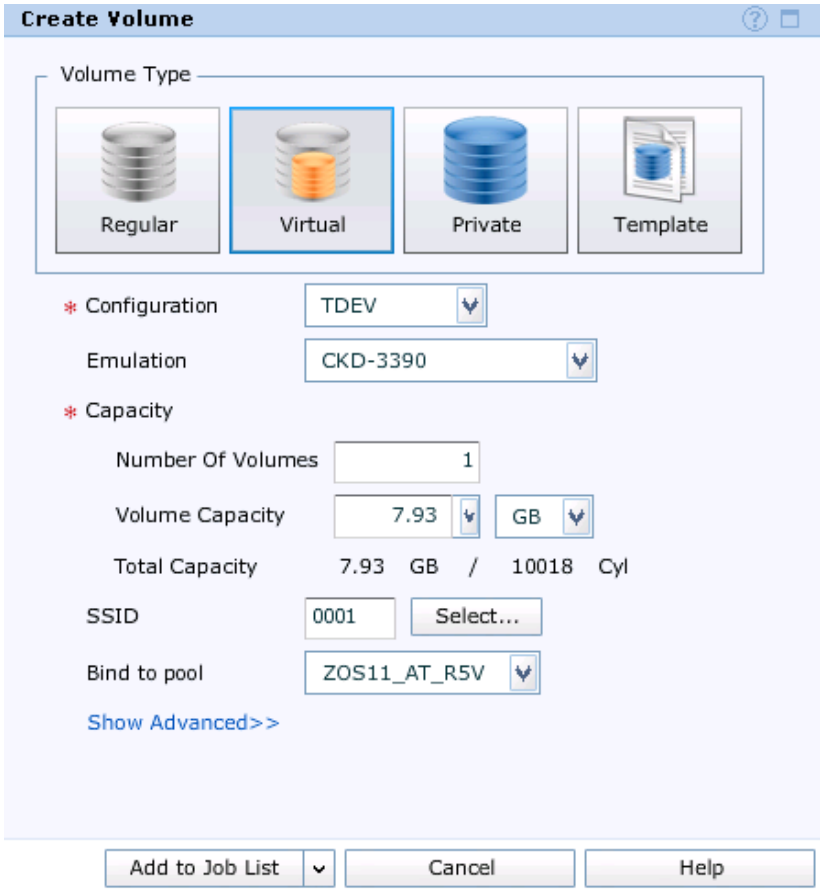
- Unisphere has access to z/OS information
  - VOLSER
  - UCB address

Flexible Deployment Options (not recommended)

- Unisphere Server
  - Running on Service Processor
    (no Performance view)

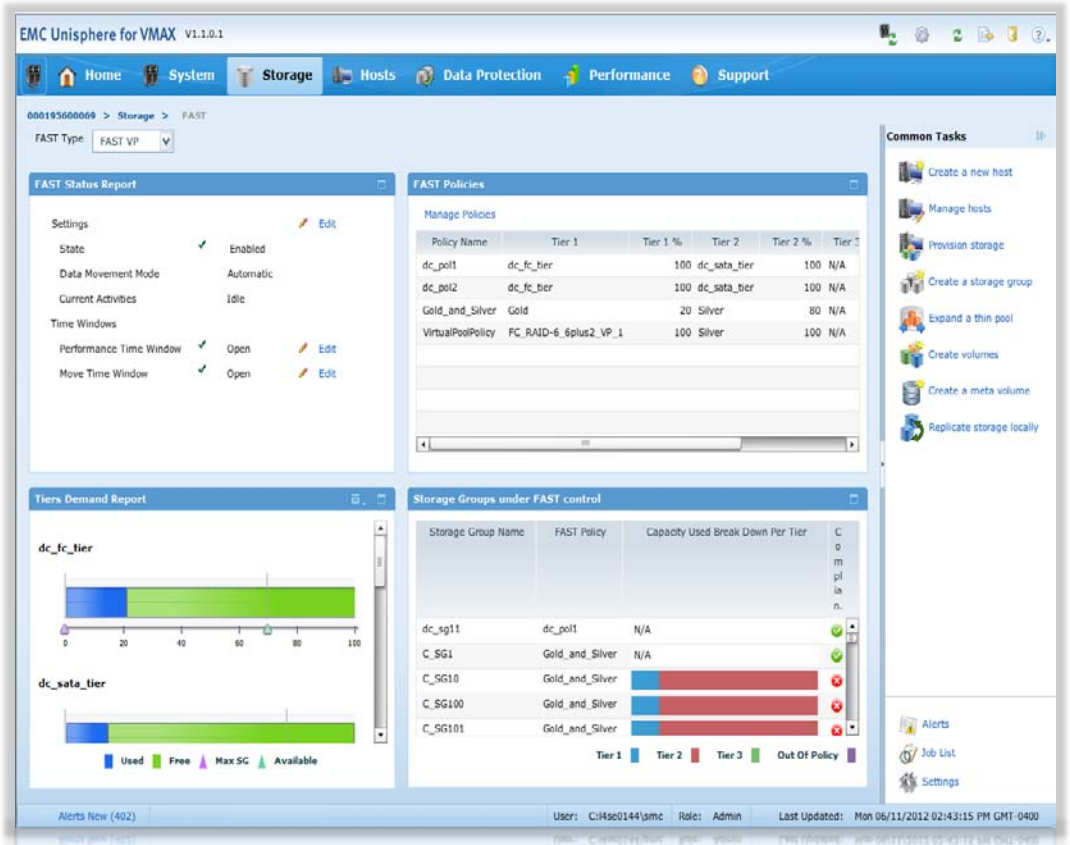


Simplify Resource Provisioning



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

Simplified FAST Management Dashboard



Quick Access to

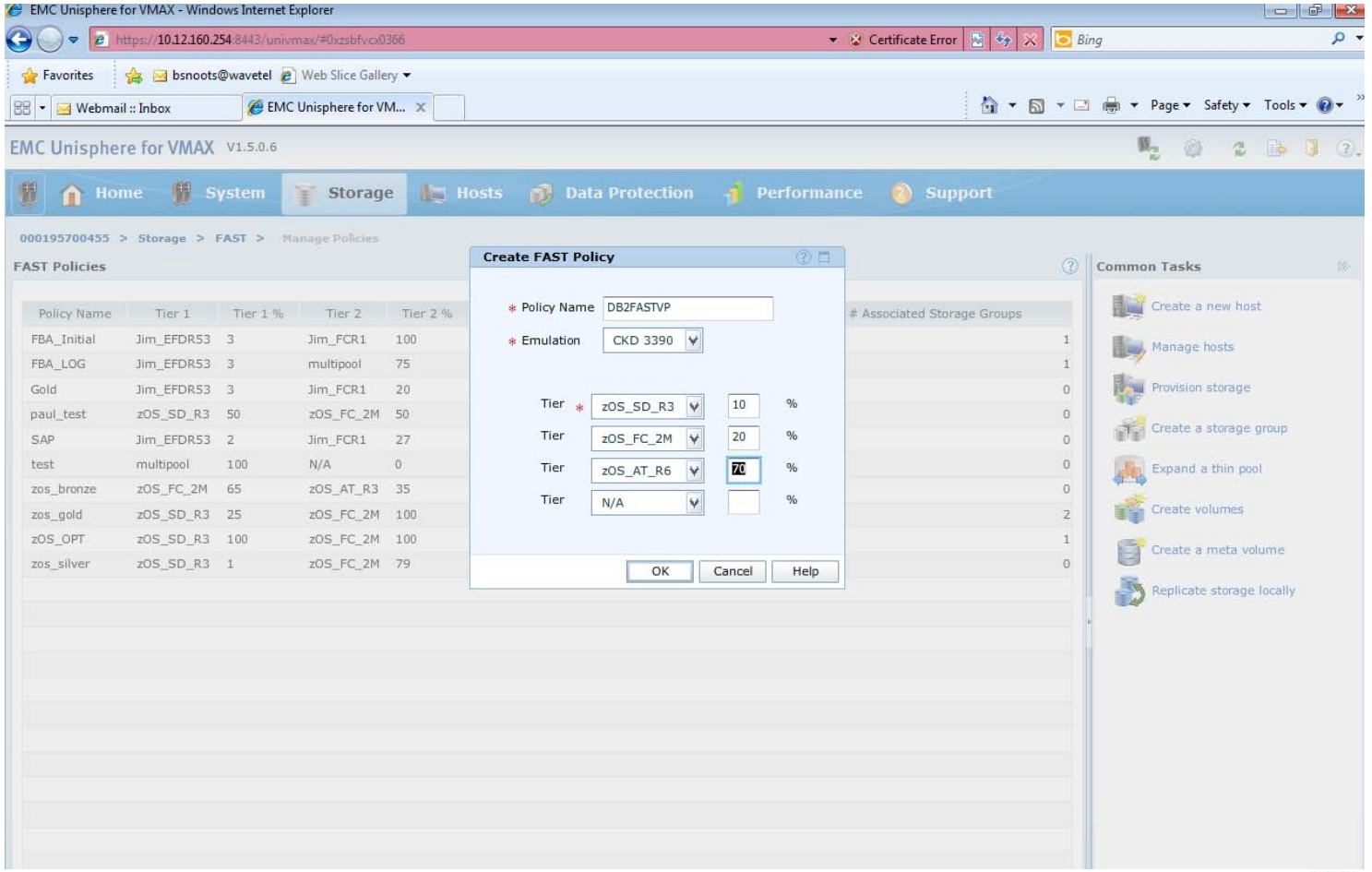
FAST Status

View and Manage Policies

Virtual Pool (Tiers) Demand

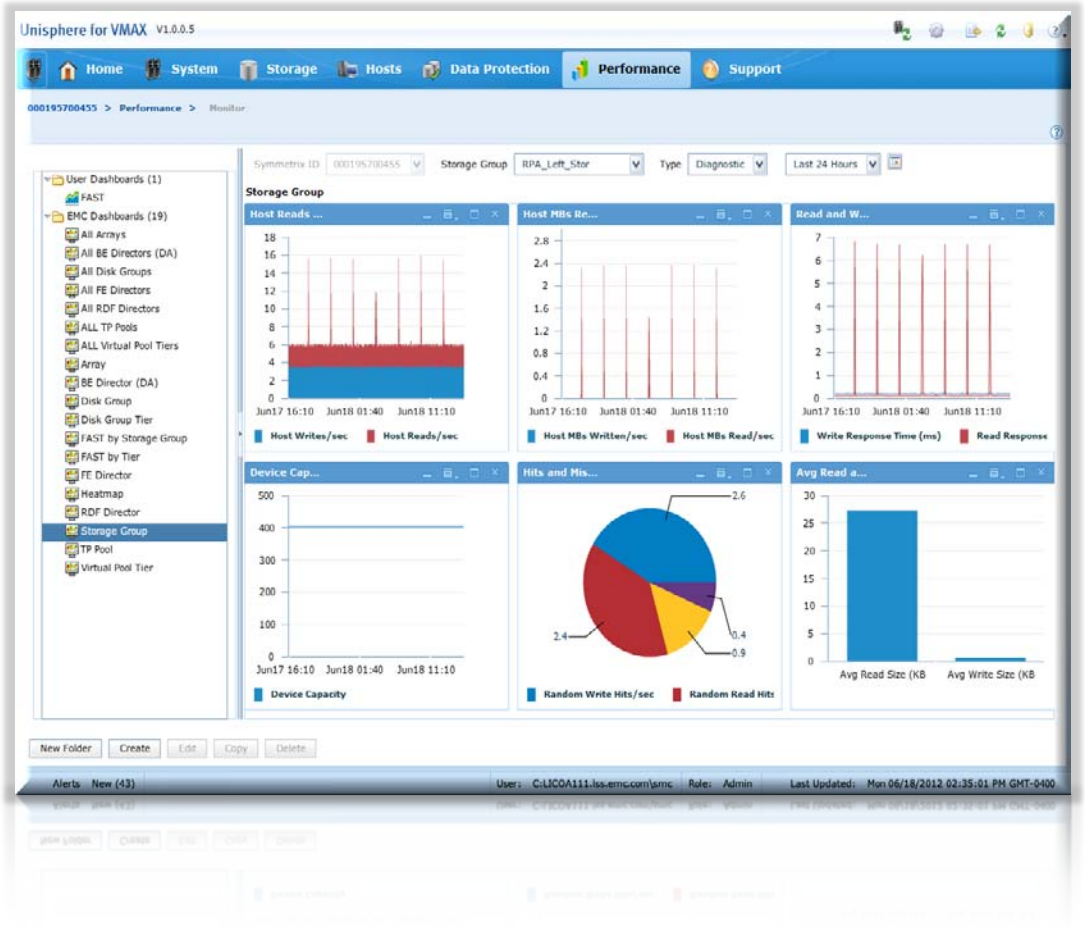
Tier Usage by Storage Group

FAST Management – Create Policy



VMAX Performance Dashboards

Customizable Dashboard Views



Dashboards

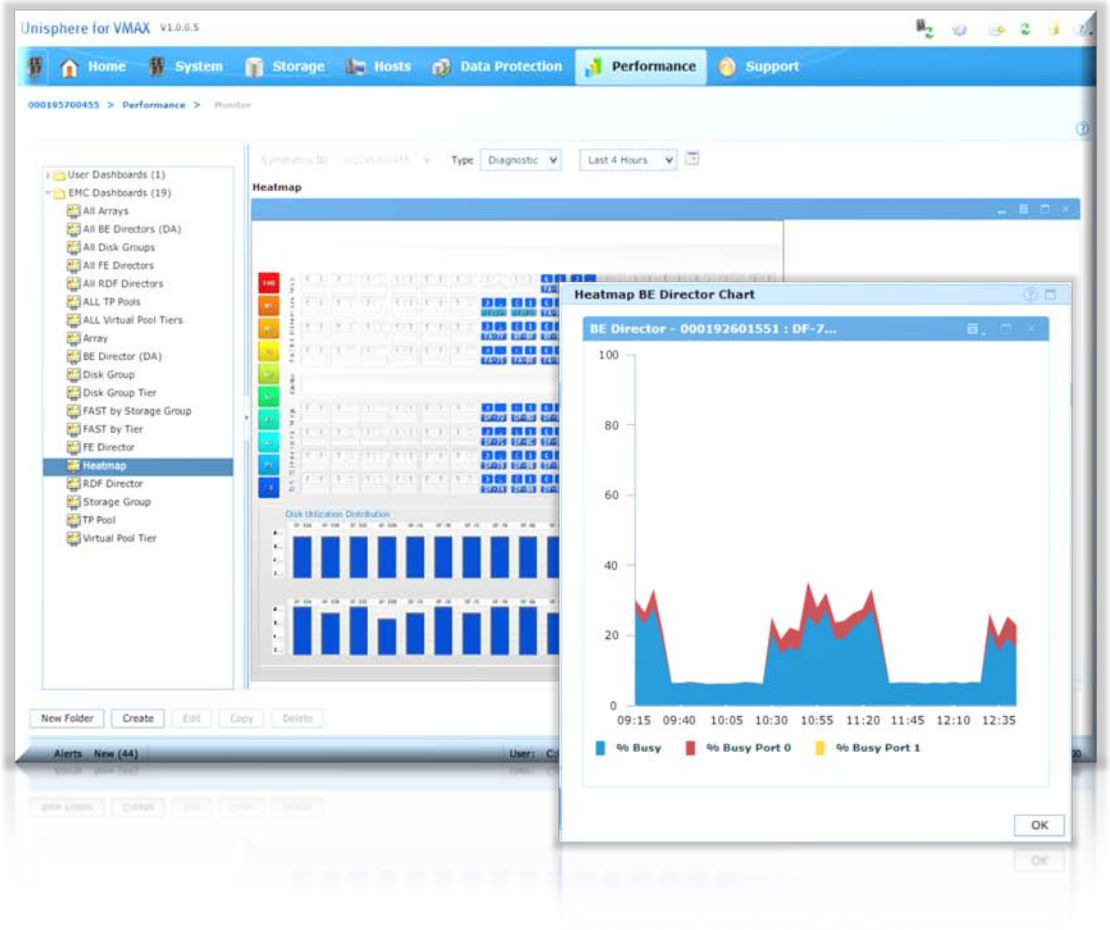
Standard, Pre-defined

Customizable User-defined

- FAST Environment, SRDF, FE

Performance Capabilities

Quick Summary of Array Performance with Drill Down Capability



Heatmaps

Diagnostic, Historical, or Real Time

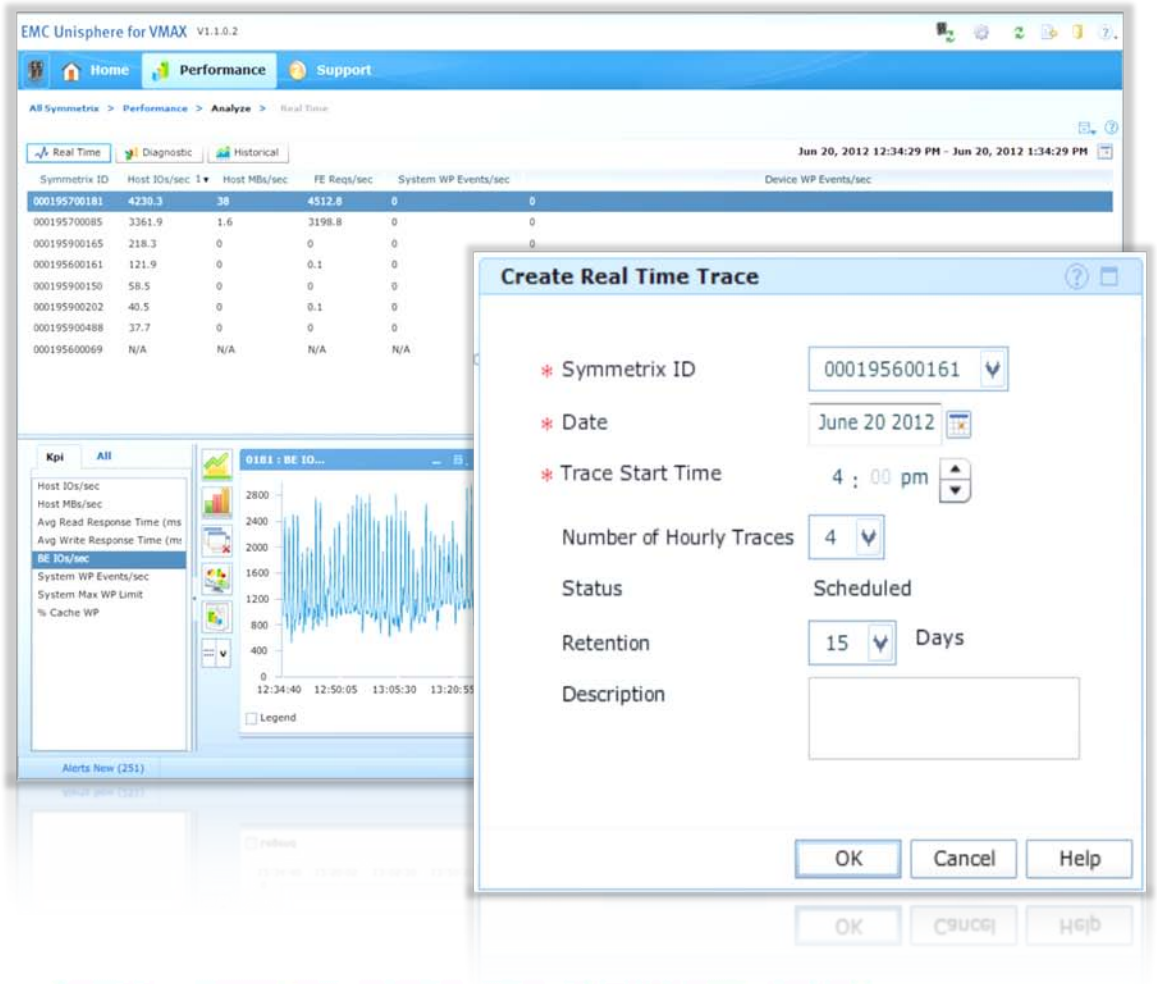
Categorized by:

- Front-end
- Cache
- Back-end
- Drives

Drill down to component level

Real-Time Monitoring

Schedule and Analyze Real-Time Performance Traces



- Capture real-time trace
  - Capture a period of 1 hour
  - Schedule up to 7 days into the future
  - Retention period up to 30 days
- Components monitored
  - Symmetrix
  - Front-end directors
  - Back-end directors
  - Remote Data Facility (RDF) directors

Enhanced Alert Notification

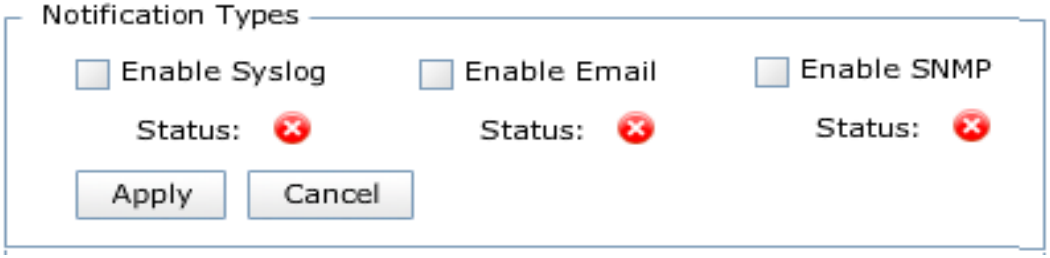
Component	Alerts
Array	✓
FE Director	✓
BE Director	✓
Cache Partition	✓
SRDF Groups	✓
Device Groups	✓
Storage Groups	✓
Virtual Pools	✓

Rich Set of Alerts

Monitor Key Performance Indicators (KPIs)

Establish Threshold Levels
- Informational, Warning, Critical

Method of Notification



Syslog **Email** **SNMP**

What's New in Unisphere 1.5

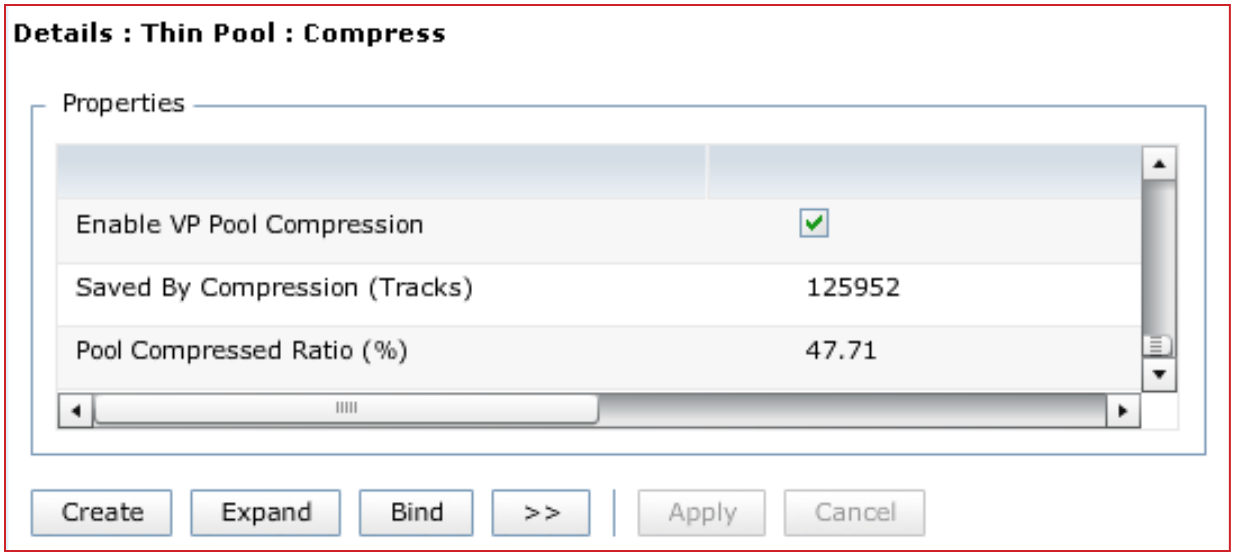
- Includes almost all SMC legacy functionality
- Supports new Enginuity features
- Adds more ease-of-use and Unisphere-specific enhancements

SMC (Symmetrix Management Console) Legacy Support

- Optimizer Management
- TF Mirror View and Management
- Health Check
- Duplicate Volume

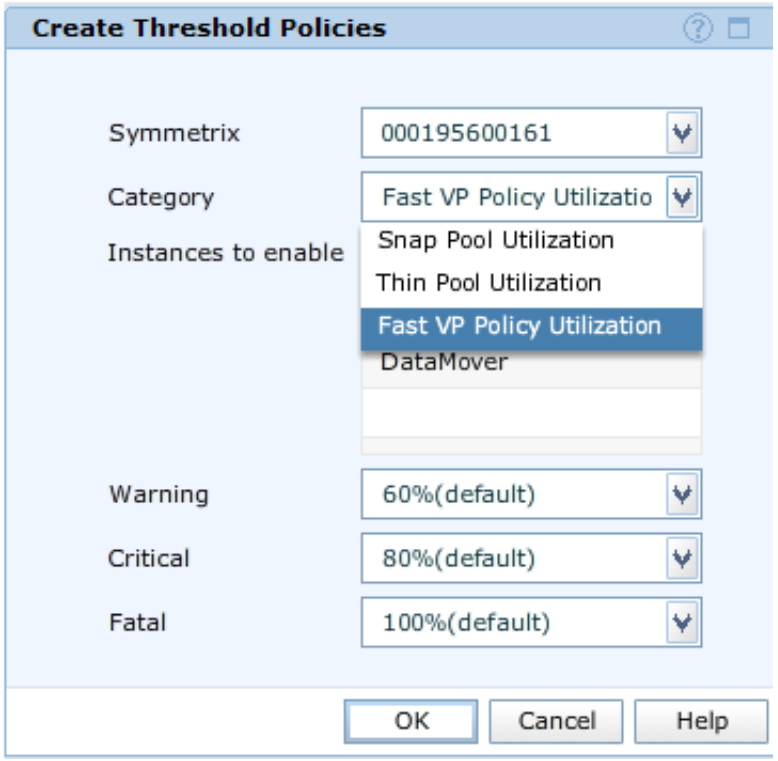
New Enginuity Support

- FAST VP Compression



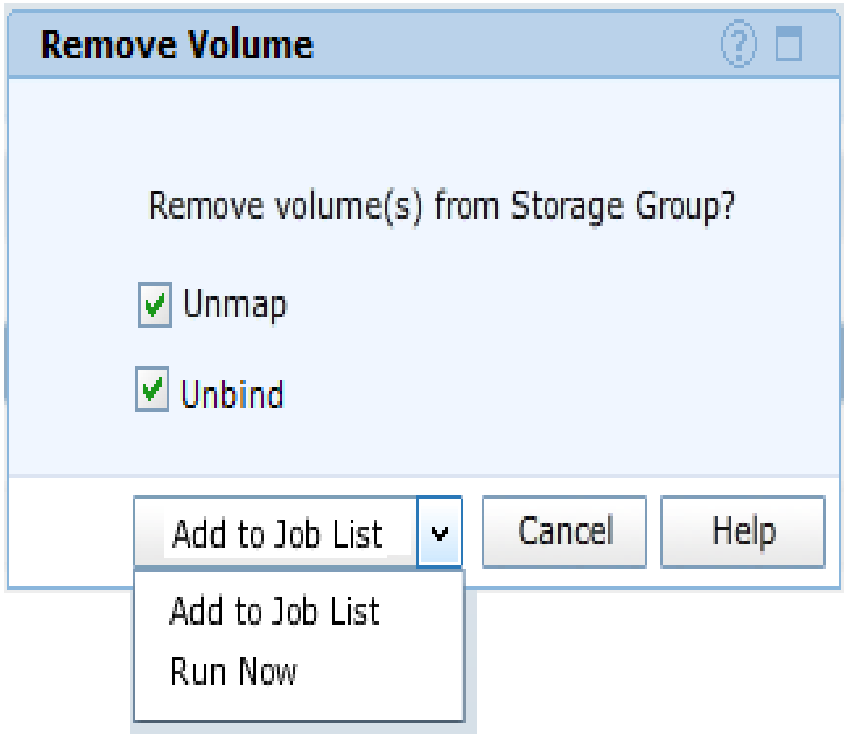
New Enginuity Support

- Utilization Thresholds for FAST VP policies



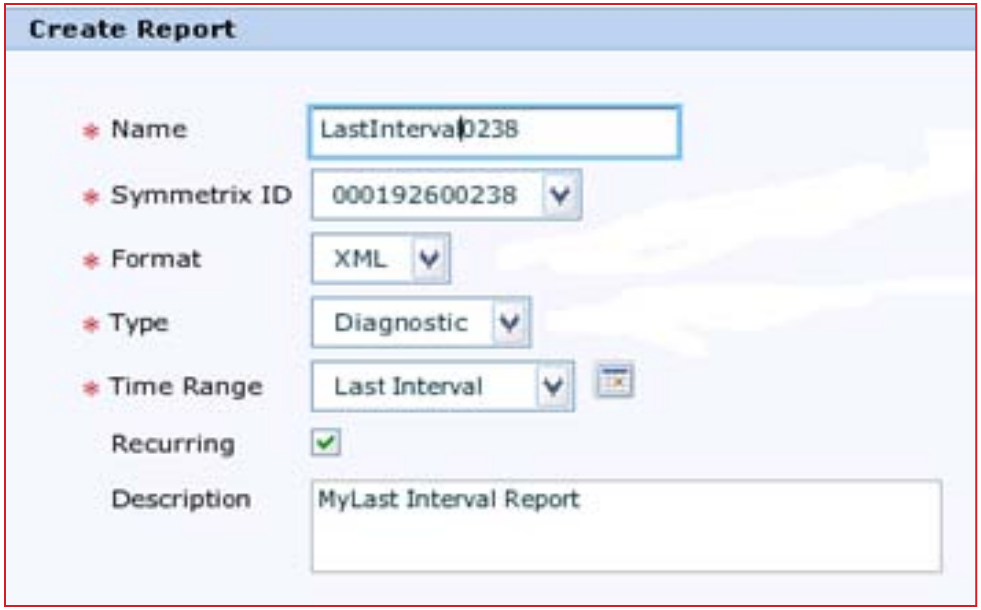
Unisphere Management Enhancements

- Add Unbind and scheduling to Remove Volume



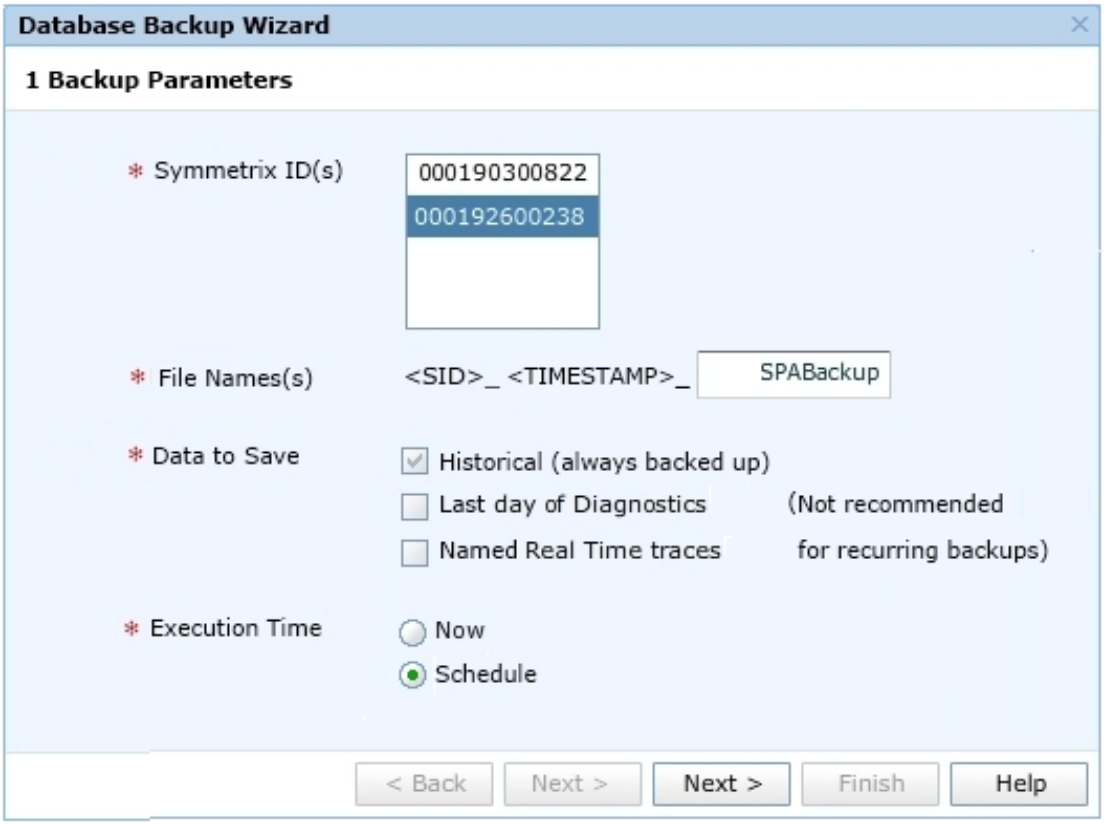
Unisphere Performance Enhancements

- Exporting of last interval for array & director metrics
  - Only Diagnostic data



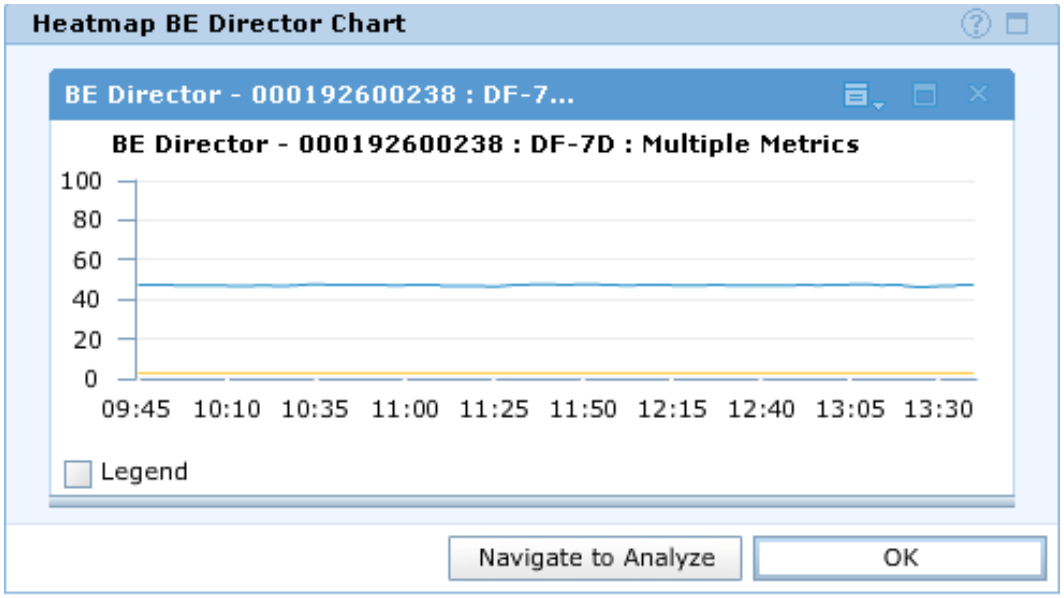
Unisphere Performance Enhancements

- Recurring backups of Performance Database

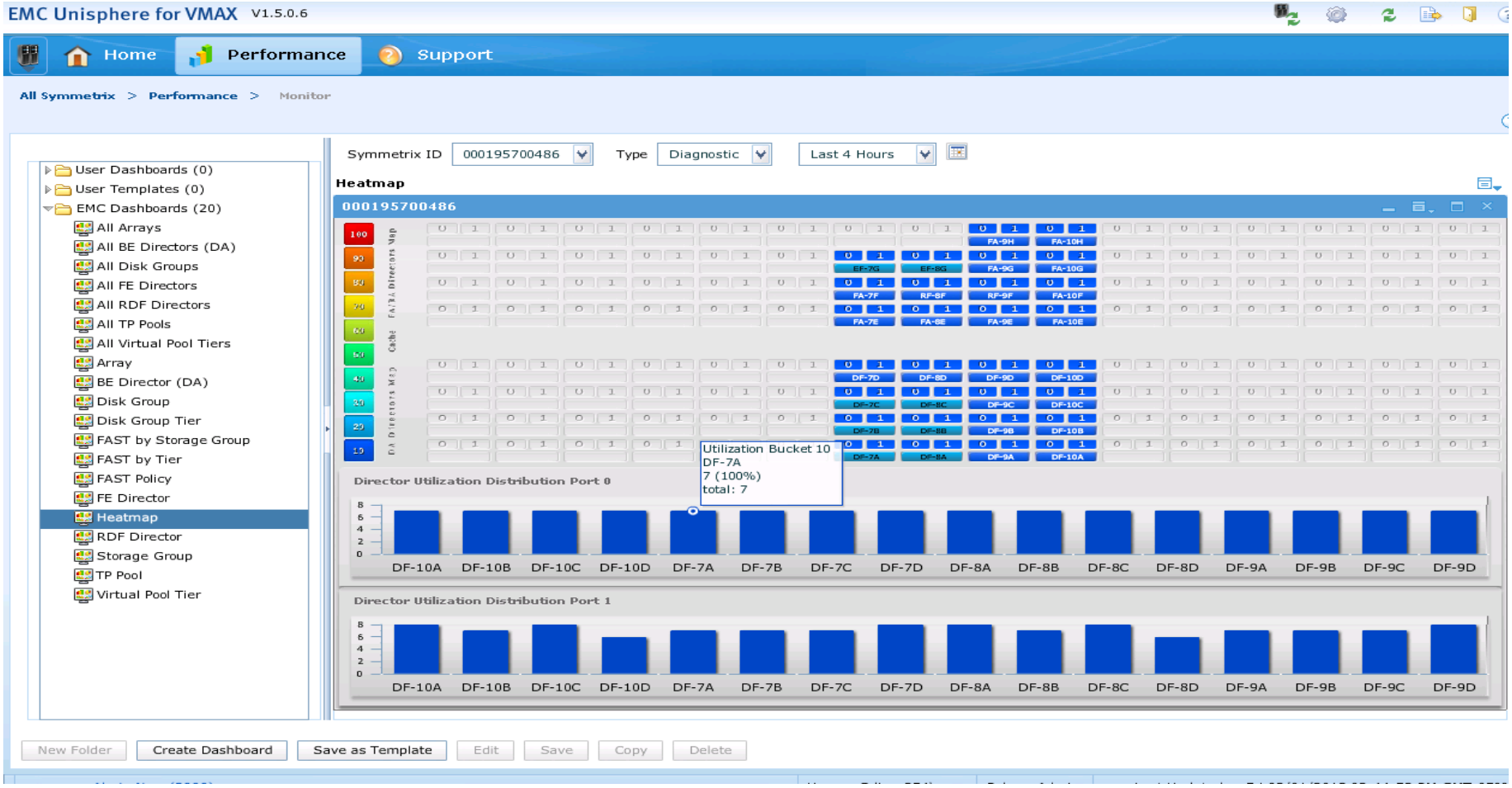


Unisphere Performance Enhancements

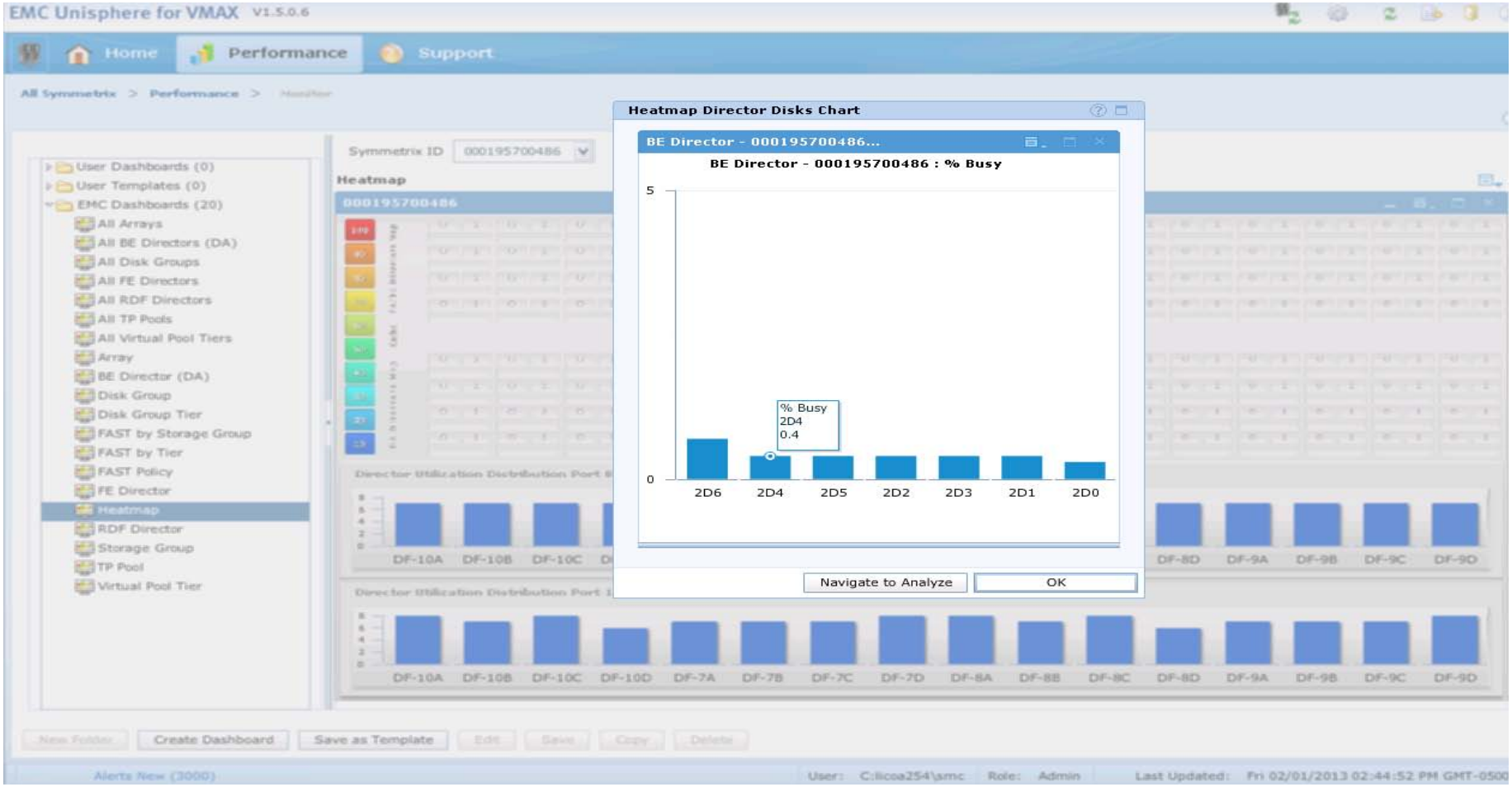
- Import/Export of settings
  - Non-instance metric thresholds
  - User-defined template dashboards
- Navigate from Heatmap drilldown charts to Analyze



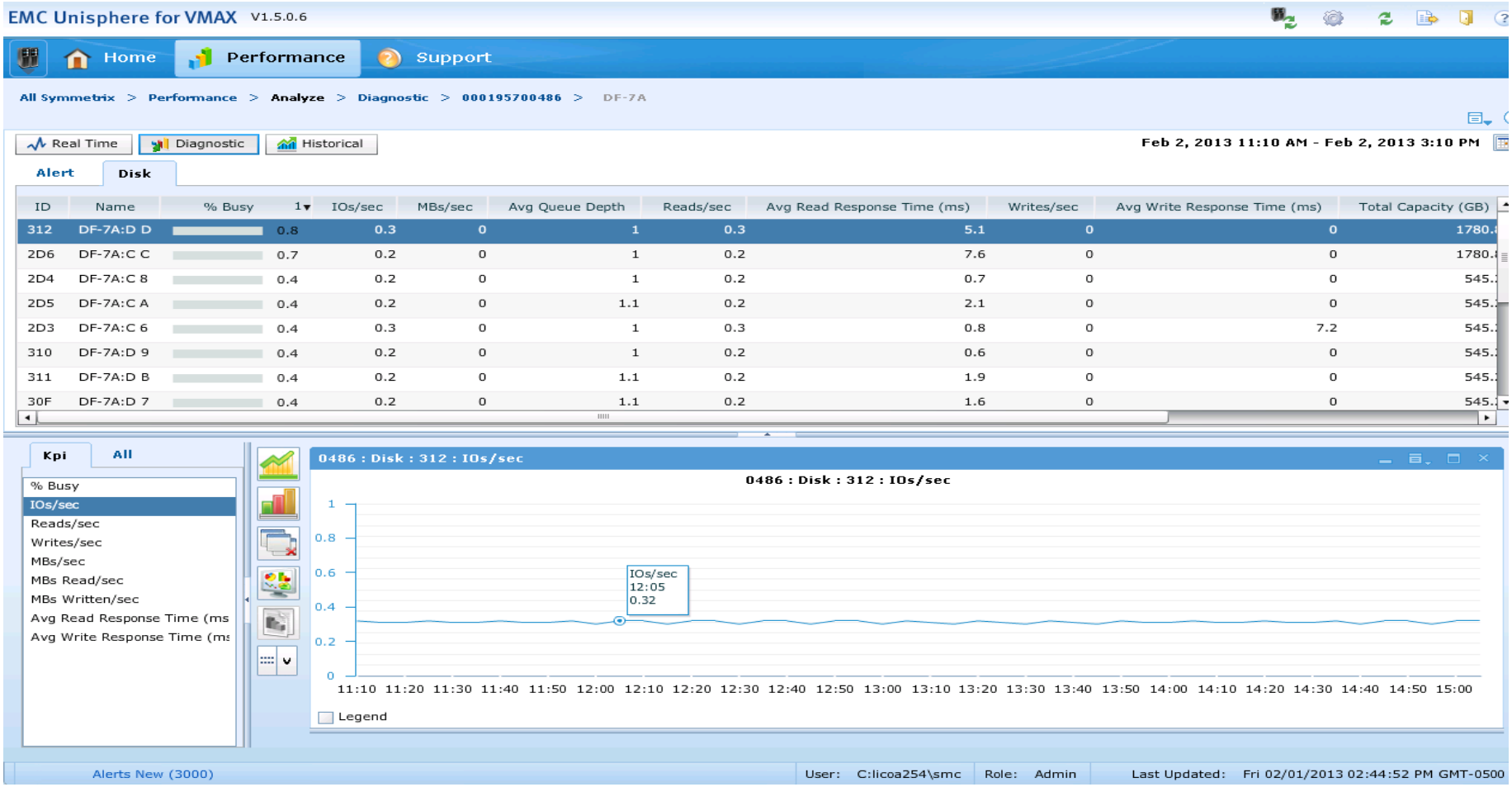
Performance Heatmap – Dashboard



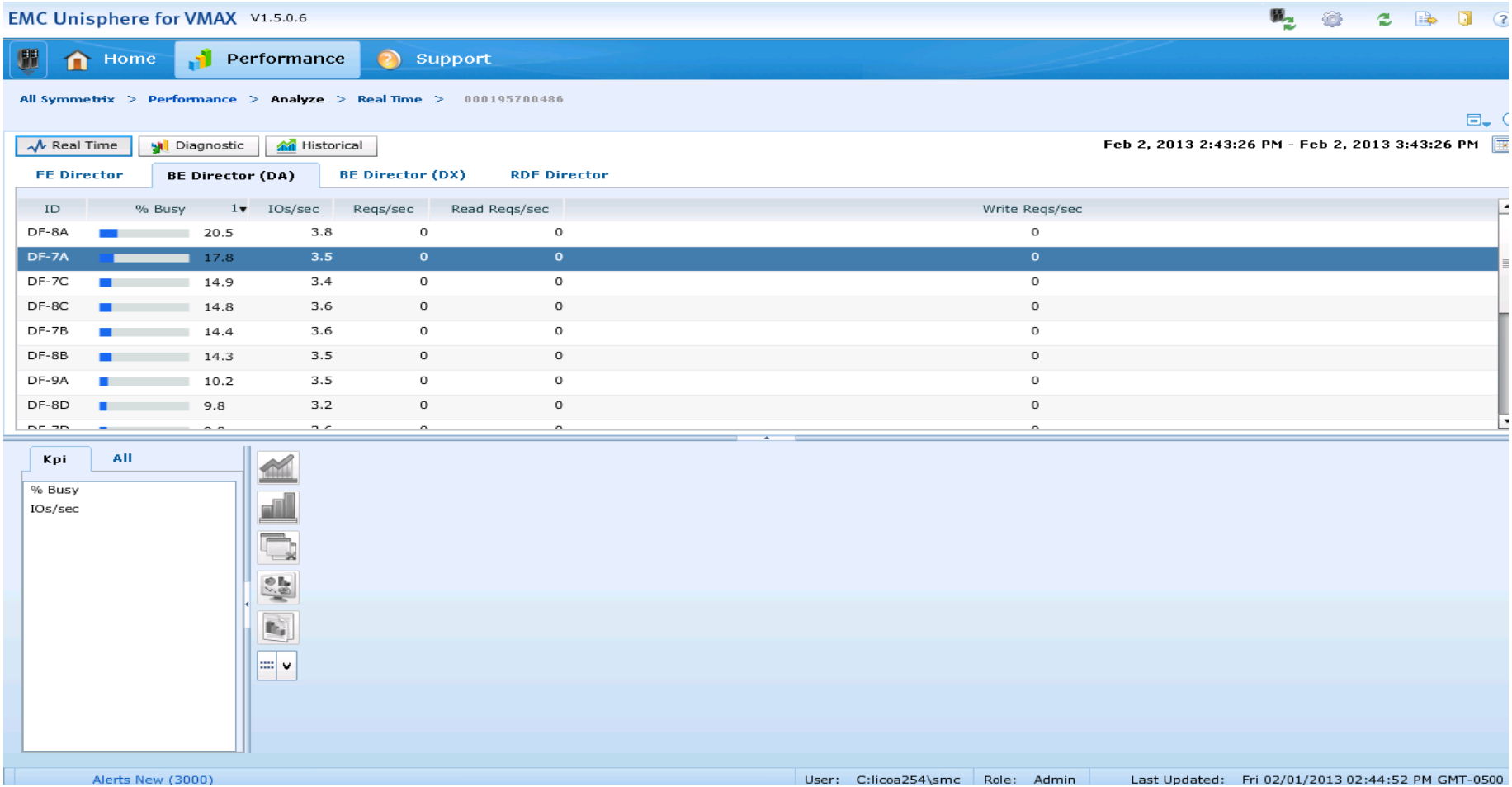
Performance Heatmap – BE Director



Unisphere – Analyze



Unisphere – Real Time



What's New in Unisphere 1.6

- Usability enhancements for Storage Provisioning
- Support for Clone Ease of Use
- Support Audit Log
- Offline support with Performance Viewer

EzSM (EMC z/OS Storage Manager)

Overview and What's New

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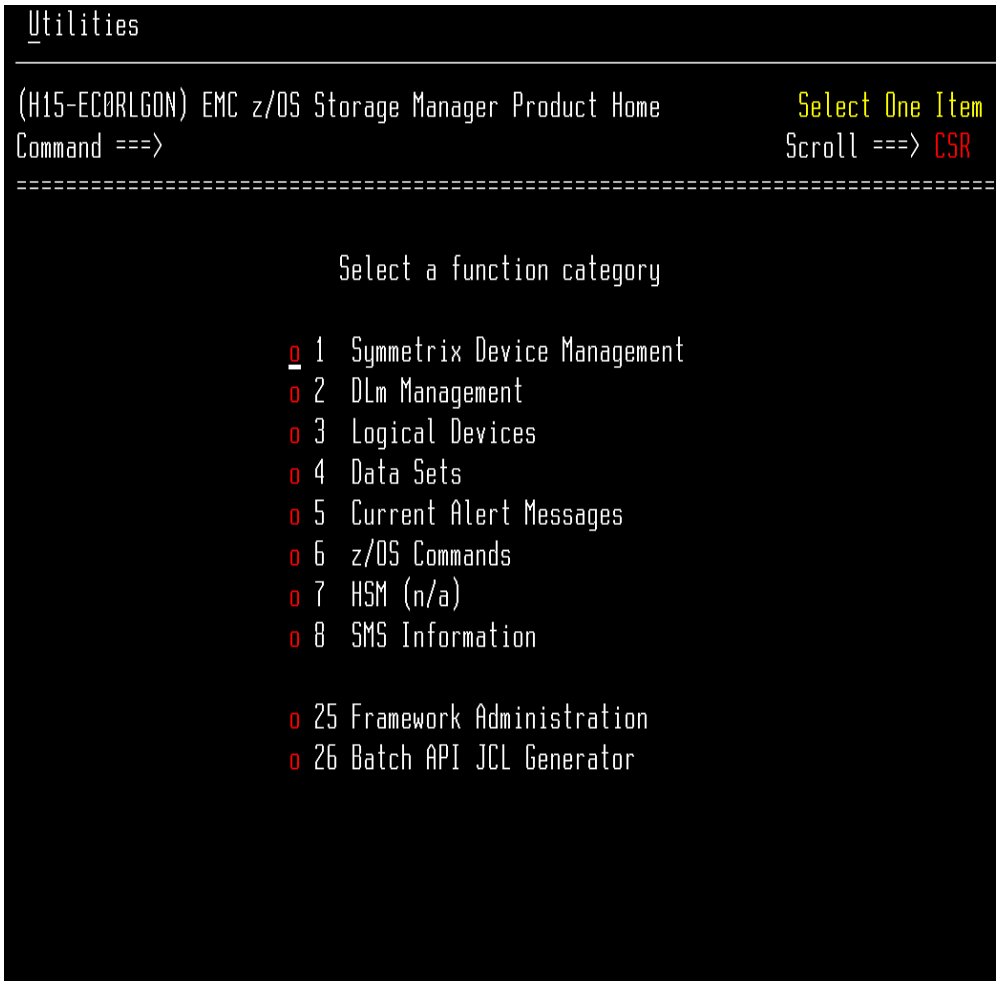
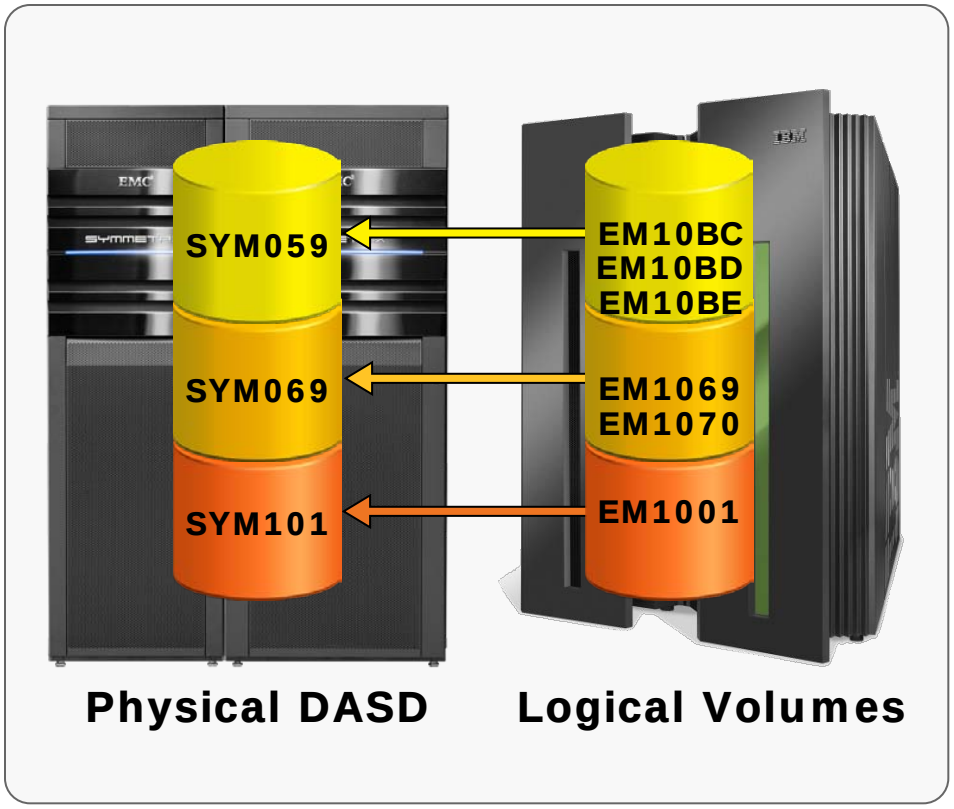
Flexible Management Options and Tools



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

Logical Device Management

Ability to display a list of logical volumes that reside on same physical device



View logical to physical representation

Ability to query by –

- VOLSER
- z/OS device address
- SYMM Device Number
- Data Set Name

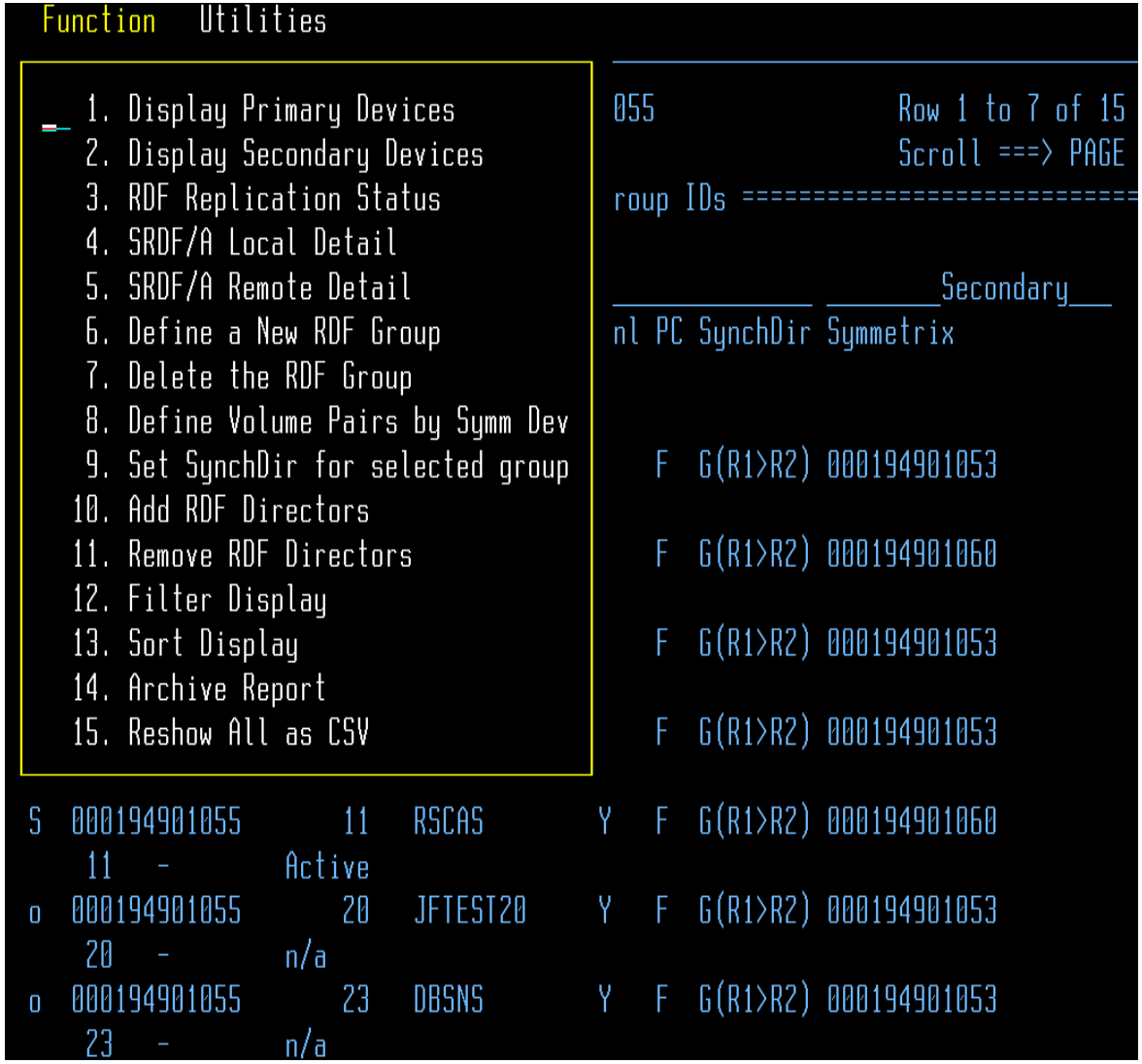
SRDF Management

Perform SRDF Tasks

List SRDF Groups

Create Volume Pairs by CUU or Symdev

SRDF Management



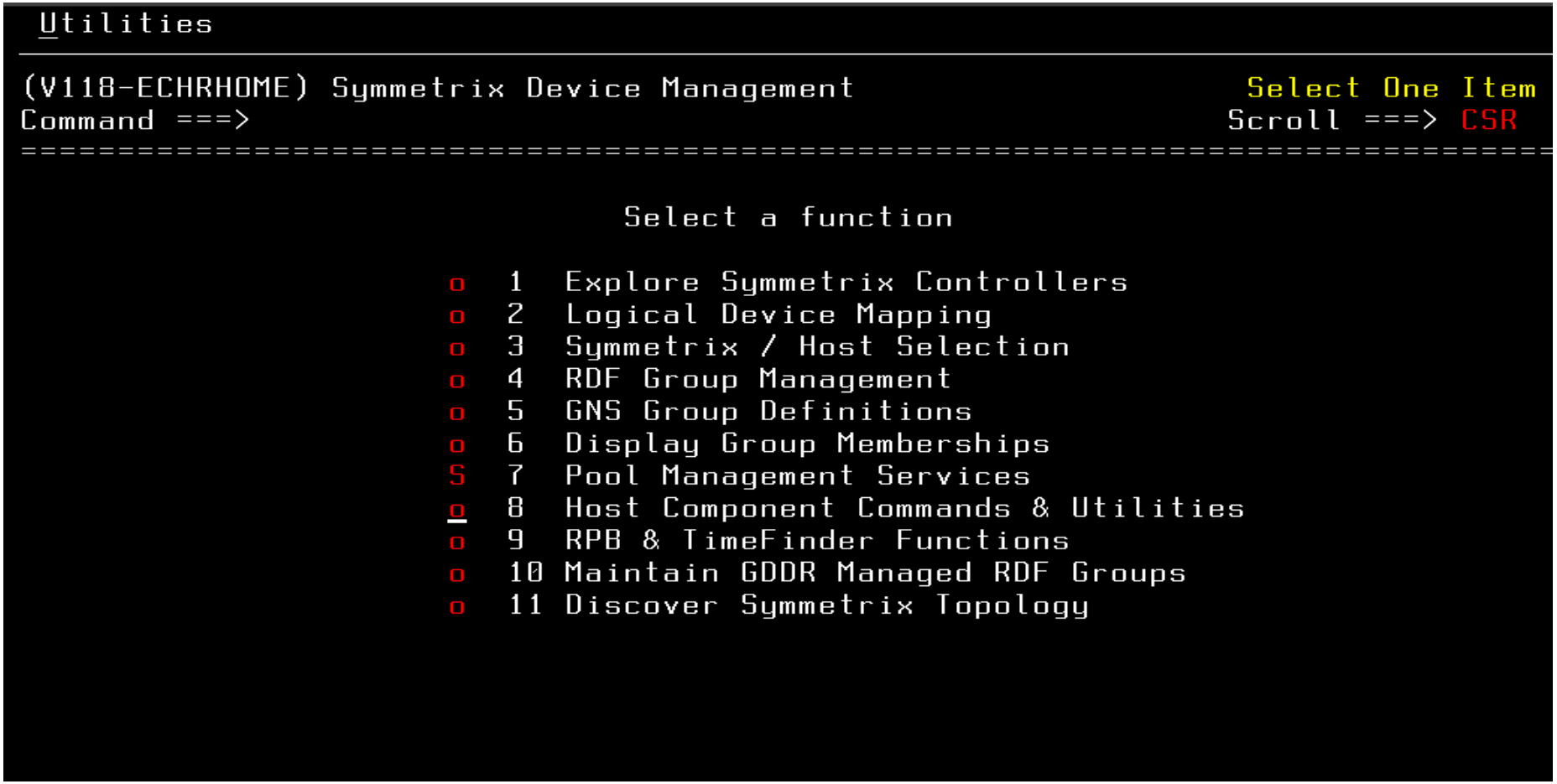
Display local and remote devices

SRDF Replication Status

Set attributes

Add or Remove Directors

Pool Management Services



Pools supported by Enginuity code levels

- SNAPPOOLs are available with Enginuity level 5x71 and higher.
- DSEPOOLs are available with Enginuity level 5772 and higher.
- CKD THINPOOLs are available with Enginuity level 5876 and higher.

Pool Management Services

- Add Devices to a Pool
- Display Pools
- Rebalance Pools
- Bind Devices to a Pool
- Query Devices
- Drain Pools

CREATE Pool Panel

```
 Utilities
-------------------------------------------------------------------------------
(V118-ECHRTSCP) Pool Management Services Parameters
Command ===>                                                 Scroll ===> PAGE
===============================================================================

          Specify the parameters to be used for the CREATE Command


          1  Command Action:  1 Build Command 2 Edit 3 Execute 4 Save

                          Local or Remote (L|R): _
                    Unit: ____  -OR-  Volser: ______
               Path: __ . __ . __ . __ . __ . __ . __ . __
                     Controller: ____________

                          Pool: ____________
                  _ PoolType: 1 SnapPool 2 DSEPool 3 THINPOOL
                            MaxOSub: ____
```

DLm Management

- Display DLm Devices
- Export and Import Tapes
- Initialize Tape Volumes
- Display & Set Configuration Options

What's new in EzSM 4.2

- Federated Tiered Storage Externally Provisioned volumes
- VP Compression for Thin Pools
- Discover Symmetrix Topology in the background
- SRDF/A MSC can now monitor SRDF/A
- SRDF/AR Monitor accessible via TimeFinder panels
- TimeFinder BASE Commands panel has been redesigned

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

Complete your sessions evaluation online at SHARE.org/BostonEval

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.

Complete your sessions evaluation online at SHARE.org/BostonEval

Discovering Symmetrix Topology

- Now you can choose to discover Symmetrix topology in the background without locking your active EzSM session until the process completes.
- When finished, you receive a e-mail containing the discovery result.

Complete your sessions evaluation online at SHARE.org/BostonEval

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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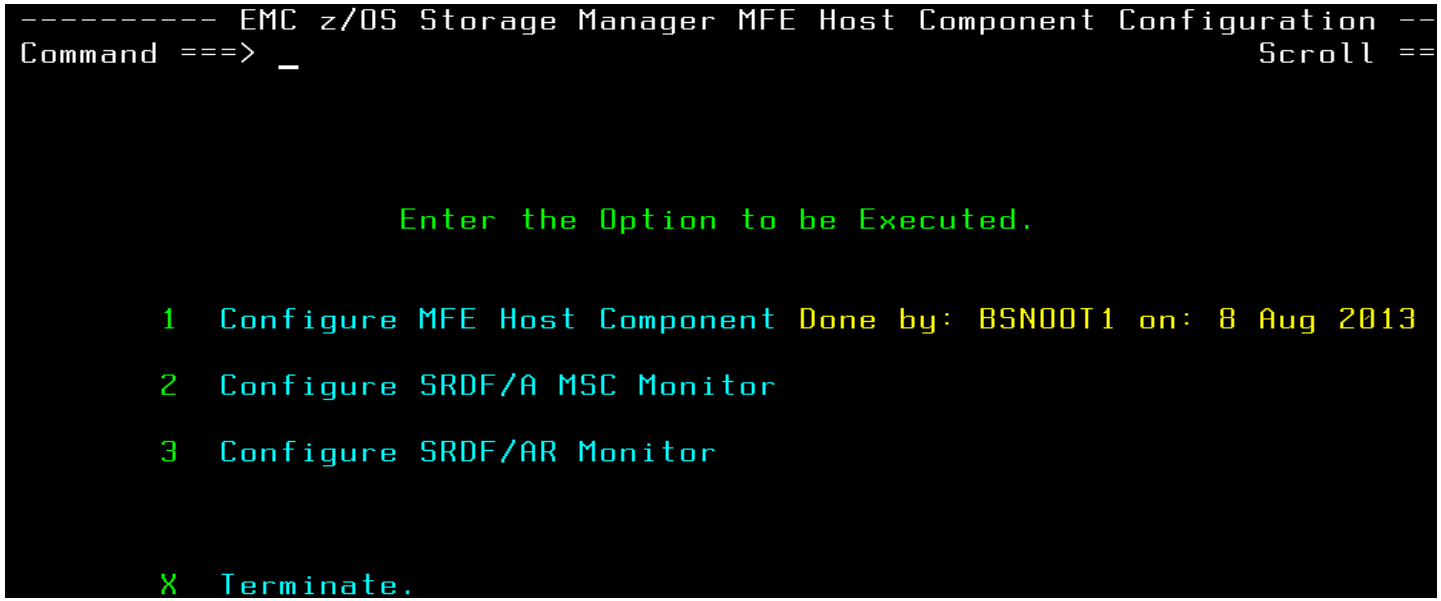
SRDF/A MSC Monitor

- The SRDF/A MSC (Multi-Session Consistency) Monitor feature from the Host is now available on the Component Commands and Utilities panel of EzSM.
- You can now monitor the current status of your SRDF/A (Asynchronous) configuration, including SRDF group and link status, and invalid track synchronization.

Complete your sessions evaluation online at SHARE.org/BostonEval

EzSM Configuration Utility

- The SRDF Host Component plug-in configuration panels of the EzSM Configuration Utility have been enhanced to accommodate SRDF/AR Monitor and SRDF/A MSC Monitor configuration parameters.



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Summary

- EzSM and Unisphere both demonstrate Ease of Use
  - VP MANAGEMENT – EzSM AND UNISPHERE
  - FAST Management – UNISPHERE
  - Local and Remote Replication – EzSM AND UNISPHERE
  - DLm MANAGEMENT - EzSM
- Benefits
  - All Management and Control contained in two, easy to use products.

Additional Resources

- http://support.emc.com
- Unisphere White Paper: Using Unisphere for VMAX to Manage Symmetrix CKD Devices in a z/OS Environment.

  http://www.emc.com/collateral/white-papers/h11631-using-unisphere-vmax-manage-symmetrix-ckd-devices-os-environment-wp.pdf

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