EMC Storage Resource Management Suite

Optimizing storage today and in the software defined datacenter of tomorrow

EMC Advanced Software Division
OUR WORLD IS CHANGING FAST
DATACENTERS FALLING BEHIND INNOVATION

Digital Universe: 40ZB by 2020
Infrastructure Management Challenges

**DATA GROWTH**
Unconstrained growth, stranded investments driving up fixed costs

**OVERHEAD**
Siloed management for physical, virtual and cloud creating complexity

**OPERATIONS**
Service level, configuration and fault management increasing variable costs
DRIVING TRANSFORMATION

1. AUTOMATE MANAGEMENT
   Lower Opex: Remove manual steps

2. EXTENSIBLE AND OPEN
   Protect and extend existing investments

3. CROSS DOMAIN VISIBILITY
   Faster time for diagnosis

“I Want Simple, Scalable Storage Management”
The Power of Three
Simplifying storage management

EMC ViPR
Service Assurance Suite
Storage Resource Management Suite

Isilon  VNX  VMAX  3RD PARTY
Impact to Infrastructure Managers
Key issues when managing data center infrastructure

Meeting SLAs
- Relationship mapping
- Configuration & compliance

Controlling Costs
- Utilization
- Capacity planning

Business Agility
- New apps and services
- Impact analysis

Visualize
Analyze
Optimize
Visualize, Analyze, & Optimize
To Address Common Management Problems
Performance

Visualize Storage Dependencies & Performance

• See relationships & topology
  – Storage & Fabric
  – Virtual Machine & Datastore
  – App & Database

• Drill down to analyze trends
  – Performance
  – Availability
Storage Dependencies & Performance

Common Use Cases

- Troubleshooting performance
- Identifying hosts competing for resources
- Analyzing the impact of upgrades
- Identifying the impact of RAID rebuilds

“Before, it took me over an hour each day to determine if any bottlenecks had popped up over night. Now it takes just a few minutes.

Whenever a problem occurred, it would take me days to find it. Now I can do it in a fraction of the time.”

—System Designer
See Storage Related, Application Issues

- Overview of Oracle application and infrastructure uptime
  - Drill into application for details and status

- Additional application report packs available:
  - Microsoft SQL Server
  - MySQL
View End-to-End Performance

Analyze performance from the host, switch or array perspective
Compliance

**Analyze** Changes & Configuration Compliance

- **Monitors** compliance with best practices and the EMC Support Matrix
- **Identifies** configuration issues—proactively
- **Ensures** your SAN is configured right to meet service levels

“Over half of SAN problems are due to configuration issues.”

—Bob Laliberte, Enterprise Strategy Group
Configuration Compliance

Common Use Cases

- Planning infrastructure upgrades
- Ensuring multi-pathing
- Validating changes align with design best practices & EMC Support Matrix

“My favorite feature is the attributes and path details. It makes troubleshooting much easier. It now takes me half the time to solve problems.”

—Storage Administrator
Identify Configuration Compliance Issues

SLA issue is due to a path problem. Defined policy calls for 2 paths.
Capacity Planning

*Analyze* Capacity Growth

- **Reports** capacity use across heterogeneous environments
- **Analyzes** capacity by service level or FAST policy
- **Identifies** the true cost of storage for any application
Identify the True Storage Cost of Apps

Who do I charge for this copy?

Array #1
- Primary volume
- Local copy
- Local copy
- Snapshots

Array #2
- Remote copy
- DR Copy. May or may not be mapped to a DR server

I can’t charge this to the backup administrator!

Backup Server

Dev/Test Server

Copy for testing new version of application Mapped to Dev server

Mapped/masked to backup server
Capacity Planning

Common use cases

• Who is using the capacity and when more will be required
• Identifying available capacity by service level
• Monitoring consumption of thin pools

“Before, it took me hours to correlate all the storage capacity in my environment, now I can see it all in real-time on one screen. It saves me 4 to 8 hours a week”
—Technical Specialist
Identify Capacity Issues

Identify when to order more storage
Analyze Capacity Consumption
Across heterogeneous storage environments
SLA Management

*Optimize* to meet performance, availability & cost SLAs

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### Multi-Tenancy / DashBoard By Class of Storage (Tabular)

**Platinum Storage Profile**
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**Gold Storage Profile**
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**Silver Storage Profile**
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**Bronze Storage Profile**
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Optimizing To Meet SLAs

Common Use Cases

- Moving applications to lower-cost storage without violating SLAs
- Multi-tenant SLA Reporting
- Chargeback

“Before, it took me over a 1/2 a day to create a report that lists storage allocated to each server. Now I can see this with just a few mouse clicks. It’s made my life easier by providing better visibility into my SAN environment.”

—Senior Systems Admin
Optimize FAST Policy Decisions

Move to lower-cost storage without violating SLAs

Analyze host performance to assess policy impact
Multitenant, SLA Reporting

Custom reports provide different views for different roles
Chargeback Storage
To align costs with business requirements
From Storage to the Enterprise
All from a common presentation layer

EMC ViPR
Service Assurance Suite
Storage Resource Management Suite

Isilon, VNX, VMAX, 3RD PARTY

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The Software-Defined Data Center

ABSTRACT. POOL. AUTOMATE.
Software-Defined Storage

EMC ViPR Platform

ViPR Data Services

ViPR Controller

Provisioning
Self-Service
Reporting
Automation

VMAX
VNX
Isilon
3rd Party
Commodity
Centralize Management
A Simple Way to Manage Heterogeneous Storage

• ViPR Monitoring and Reporting
  – Included with ViPR
  – Offers capacity and chargeback reporting for ViPR virtual resources
  – Discovers physical arrays and available capacity to support provisioning capacity to ViPR

• SRM Suite
  – Enables storage team to manage the physical infrastructure under ViPR control
  – Tracks use of capacity on physical arrays to support purchasing processes
  – Enables SLA management for physical and ViPR virtual storage
Storage Resource Management Suite

- **Visualize** applications to storage dependencies & performance
- **Analyze** configurations and capacity growth
- **Optimize** your environment to improve return on investment while meeting SLAs