

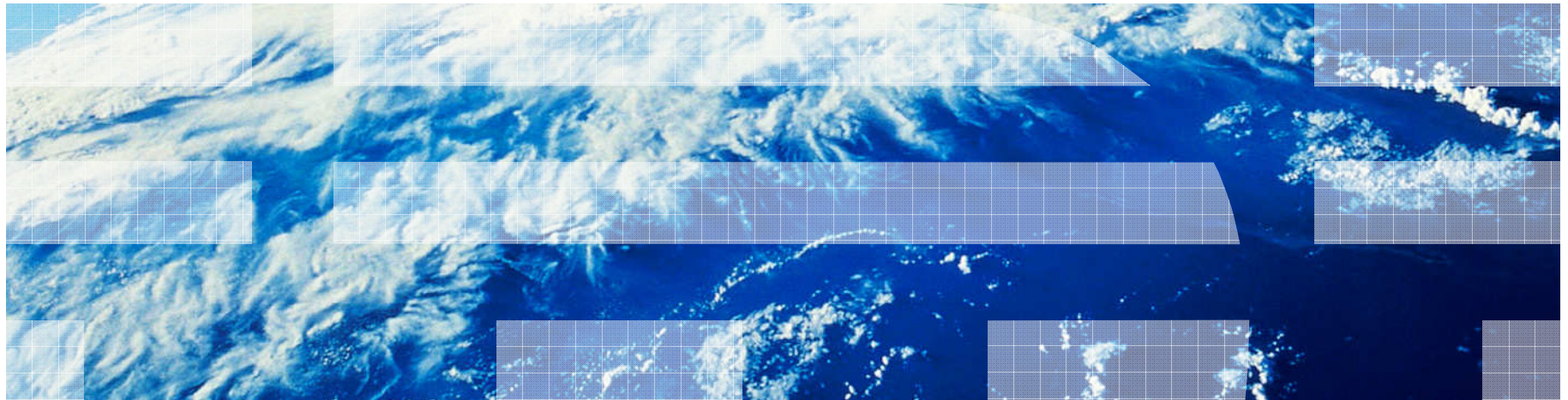


Tivoli Storage Productivity Center v4.2.1 System Storage Productivity Center v1.5

What's New and Seller Education
November, 2010

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Agenda

- Gartner MQ
- TPC v4.2.1
 - eGA – 11/12/10
 - pGA – 11/26/10
- SSPC v1.x
 - Ann – 4Q10
 - GA – 4Q10

TPC Extends its Leader Position

What Gartner says about TPC

Strengths

- “IBM has systematically invested in and improved the features and functions provided by TPC....”
- “TPC is a full holistic SRM tool that can successfully provide all the primary reporting requirements for IT departments, ...”
- “IBM is successfully increasing the number of TPC customers, and growth is outpacing its major competitors....”

Cautions

- “TPC requires agents to manage and report on various target devices, thereby increasing the complexity of installation, implementation and ongoing management. Lightweight agents have improved, but have not resolved this issue.
- “Chargeback functionality requires additional IBM products to provide comprehensive and accurate results.....”
- “Pricing ranges from competitive cost-effective starter packs to relatively high-cost acquisition prices in large environments. But IBM is also willing to offer large discounts. “



Delivering Improved Time to Value with Tivoli Storage Productivity Center v4.2.1



* In lab conditions, actual customer deployment times may vary

- Enhanced Management of IBM Storage
 - Improved performance for IBM Storwize V7000, SVC, XIV and DS8000 via native interface support
 - Automated Device Discovery - simplifies initial configuration task and speeds addition of storage
- Improved Storage Management of IBM PowerVM AIX Servers
- Storage Resource Agents
 - Lightweight native code remotely pushed to servers for data collection and removed at completion
 - Collects asset and capacity data from supported servers without a resident agent
 - Simplifies server data collection and reduces administrator burden of managing/monitoring agents
 - File level and DB scanning and HP-UX and Solaris platforms
- Probe performance improved up to 75% on IBM Storage and up to 3x improvement on supported servers

“Elimination of the agent manager and use of storage resource agents itself should be reason to upgrade. The amount of resource savings you get is going to pay for itself.”
Leading Health Insurance Provider

Improved Storage Management of IBM PowerVM AIX

■ TPC 4.2.1 supports IBM System P micro-partitioning

- Ability to correlate the LUN's as seen in the LPAR with the corresponding storage volume in the case of a 1:1 mapping in the VIOS (Virtual I/O Server)*

■ Benefits

- TPC automatically correlates the LUN as seen inside of the LPAR with the storage volume on the storage subsystem
- TPC Storage Resource Agents now recognize Virtual SCSI Client Adapters and the Virtual SCSI disks on the LPARs
- TPC collects storage subsystem serial number via SCSI inquiries
- TPC displays volume groups, logical volumes, and file systems created with Virtual SCSI disks on the LPARs
- No TPC agent required on the VIO Server
 - Does not matter whether the agent on the VIOS itself is used or not
 - TPC agent installed on the VIO server is not required in order to enable LUN correlation



Improved Storage Management of IBM PowerVM AIX

Solution Details

■ Implementation Considerations

- Addresses the VIOS 1:1 mapping scenario only i.e. virtual target device has a one to one mapping to a storage volume
- It does not address any mapping other than 1:1 mapping on VIOS server e.g. virtual target device mapped to a logical volume
- If there is one or more Virtual SCSI disks present on an LPAR, TPC considers the LPAR as a virtual machine and lists the disks that are assigned directly through the physical Fibre Channel adapter to the LPAR as virtual disks
 - Avoids double counting of Total Disk Space in the reports

■ Supported Configurations

- AIX and p Linux running in LPAR's with storage volumes from IBM DS8000, IBM SVC, IBM Storwize V7000, and IBM DS3000/DS4000/DS5000
- AIX MPIO or SDDPCM multi-path driver used on VIO Server

TPC Capability – Prior to PowerVM Enhancement

Navigation Tree

- TPCUser.Fabric Basic Probe
- TPCUser.Fabric Standard Probe
- TPCUser.Subsystem Advanced Probe
- TPCUser.Subsystem Basic Probe
- TPCUser.Subsystem Standard Probe
- Tape Advanced Probe
- Tape Basic Probe
- Tape Standard Probe
- ator.All Fabrics
- ator.svc
- .VIO5_LPAR
- .VIO_AIX_LPAR
- .VIO_LINUX_LPAR
- .XIV
- Probes
- Source Group Management
- Analytics
- Configuration History
- Storage Optimizer
- Configuration Analysis
- Configuration
- Authentication Configuration Alerts
- Alert Log
- Data Manager
- Monitoring
- Alerting
- Policy Management
- Reporting
- Groups
- Assets
- By Cluster
- By Computer
 - madagaskar.tpcdevmz.mainz.de.ibm.com
 - p6-570-lab-2v210.mainz.de.ibm.com
 - p6-570-lab-2v211.mainz.de.ibm.com
 - Controllers **1**
 - Disks
 - /dev/hdisk0
 - /dev/hdisk1
 - /dev/hdisk2
 - /dev/hdisk3
 - /dev/hdisk4
 - /dev/hdisk5
 - Volume Groups
 - File Systems or Logical Volumes
 - Exports or Shares

No Correlation Tab

LPAR is not recognized as a virtual computer – Blue shaded icons vs. green icon

Asset Probe

Asset Identifier	Logical Unit Number	Number of Access Paths	Manufacturer	Model	Firmware Revision	Serial Number	Manufacture Date	Is Virtual	Is Encryptable	Is Encrypted	Discovered Time	Multiple Ports	Unsupported
p6-570-lab-2v211.mainz.de.ibm.com	N/A	2	AIX	VDASD	0001	Unknown	Unknown	False	False	False	04.11.2010 12:26:36	True	False

No target identifier, LUN, Manufacturer, Model, etc.

Only 5 disks visible instead of 7; disks 6 and 7 are filtered out because disk data not read out correctly

Correlated Storage Subsystem Volume

Volume	Length
/dev/hdisk0	32,00 MB
/dev/hdisk1	64,00 MB
/dev/hdisk2	256,00 MB
/dev/hdisk3	12,28 GB Length 32,00 MB
/dev/hdisk4	12,31 GB Length 32,00 MB
/dev/hdisk5	12,34 GB Length 128,00 MB
/dev/hdisk6	12,47 GB Length 32,00 MB
/dev/hdisk7	16,41 GB Length 992,00 MB

TPC v4.2.1. PowerVM enhancement

[illegible]

TPC v4.2.1 PowerVM Storage Subsystem Correlation

Navigation Tree

- TPCUser.Subsystem Advanced Probe
- TPCUser.Subsystem Basic Probe
- TPCUser.Subsystem Standard Probe
- TPCUser.Tape Advanced Probe
- TPCUser.Tape Basic Probe
- TPCUser.Tape Standard Probe
- administrator.All fabrics
- administrator.svc
- wuensch.VIOS_LPAR
- wuensch.VIO_AIX_LPAR
- wuensch.VIO_LINUX_LPAR
- wuensch.XIV
- TPC Server Probes**
- Storage Resource Group Management**
- Analytics**
 - Configuration History
 - Storage Optimizer
 - SAN Planner
 - Configuration Analysis
- Alerting**
 - Authentication Configuration Alerts
 - Alert Log**
- Data Manager**
 - Monitoring
 - Alerting
 - Policy Management
 - Reporting
 - Groups
 - Asset
 - By Cluster
 - By Computer
 - madagaskar.tpcdevmz.mainz.de.ibm.com
 - p6-570-lab-2v20.mainz.de.ibm.com
 - p6-570-lab-2v21.mainz.de.ibm.com
 - Controllers
 - Disks**
 - /dev/hdisk0**
 - /dev/hdisk1
 - /dev/hdisk2
 - /dev/hdisk3
 - /dev/hdisk4
 - /dev/hdisk5
 - /dev/hdisk6
 - /dev/hdisk7

General | **Paths** | **Latest Probe** | **Probe History** | **Correlated Storage Subsystem Volume**

Volume Name	TPC_VIO(ID:0001)
Volume WWN	IBM.2107-7581981-0001
Storage Subsystem Alias	DS8000-2107-7581981-IBM
Manufacturer	IBM
Model	921
Serial Number	7581981

TPC_VIO(ID:0001) (IBM.2107-7581981-0001)

- RAID_5**
 - Disk - DiskDrive2 on 7
 - Disk Allocation @ 4,29 GB Length 4,29 GB
 - Disk - DiskDrive3 on 7
 - Disk Allocation @ 4,29 GB Length 4,29 GB
 - Disk - DiskDrive4 on 7
 - Disk Allocation @ 4,29 GB Length 4,29 GB
 - Disk - DiskDrive5 on 7
 - Disk Allocation @ 4,29 GB Length 4,29 GB
 - Disk - DiskDrive7 on 7
 - Disk Allocation @ 4,29 GB Length 4,29 GB
 - Disk - DiskDrive8 on 7
 - Disk Allocation @ 4,29 GB Length 4,29 GB
 - Disk - DiskDrive1 on 7
 - Disk Allocation @ 4,29 GB Length 4,29 GB
 - Disk - DiskDrive6 on 7
 - Disk Allocation @ 4,29 GB Length 4,29 GB

TPC now finds the end to end mapping of a Virtual SCSI disk to the storage volume from a storage device, with just one more click!

TPC 4.2.1 IBM Storage Management Enhancements

eGA Nov 12
GA Nov 26

■ Storwize V7000

- Discovery of Storwize V7000 as a new device type in TPC UI
- Complete performance management support for Storwize V7000, including performance monitoring, historic reporting and trending
- Thin Provisioning and Easy tier support via reports and topology
- Storage Optimization and spot management on Storwize V7000
- Performance based recommendations for San planning (including DR planning)
- Flash Copy, Metro/Global Mirror
- Launch In Context and Single Sign-on to SVC/Storwize UI



■ Enhanced support for SVC v6.1

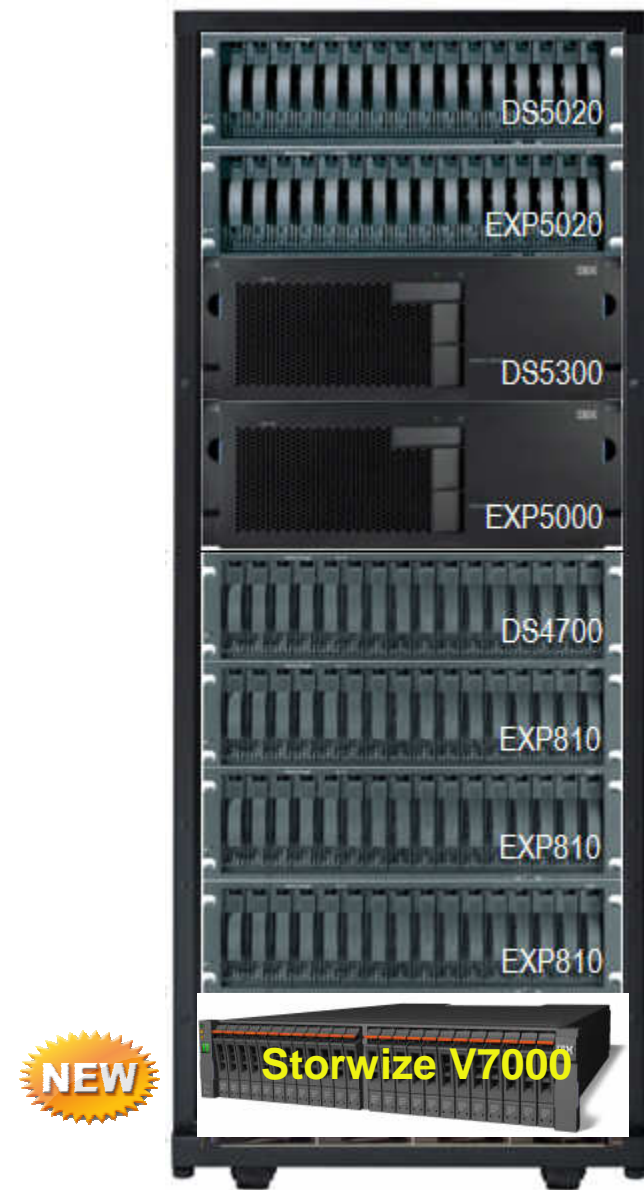
■ DS8800 R6 support

- Launch in context and Single Sign-on to DS8800 GUI
- Additional port error counters and thresholds for better performance management
- Open HyperSwap for IBM AIX environment – high availability volume management for non-disruptive application failover



TPC for Disk Midrange Edition

- Provides the same features and functions as TPC for Disk (enterprise offering)
 - Performance management, monitoring and reporting
- Restricted to managing Storwize V7000, VDS, DS3000, DS4000, DS5000 as stand-alone devices or when attached to an IBM SVC and IBM SVC Entry Edition.
- Offers highly competitive pricing for IBM's midrange offerings
- List price = \$8099 per Storwize V7000, DS3000, DS4000, DS5000 enclosures / storage controllers



Storwize V7000 with TPC 4.2.1

Storwize V7000



- **Control enclosure:** dual controllers and up to twelve 3.5" or twenty-four 2.5" drives in just 2U
- **Eight 8Gb FC ports plus four 1Gb iSCSI ports per controller pair initially** (10Gb iSCSI and FCoE post-GA)
- **Expansion enclosure:** drives only
- **Up to nine expansion enclosures attach to one control enclosure**

Built-in Software inherited from SVC and DS8000 RAID

- **IBM Storwize V7000:**
 - Based on essential technologies from IBM's world class enterprise disk systems and virtualization sw designed for the mid-size customers
 - 2x the performance and 1/2 to 1/3 the size of the competition
 - Only Mid-range disk system to virtualize external storage (IBM and non IBM) providing customers with investment protection
- Tivoli Storage Productivity Center enables enterprise storage management of Storwize V7000
- Storage Control enables integrated management of server and storage resources for small administration teams likely in mid-size environments

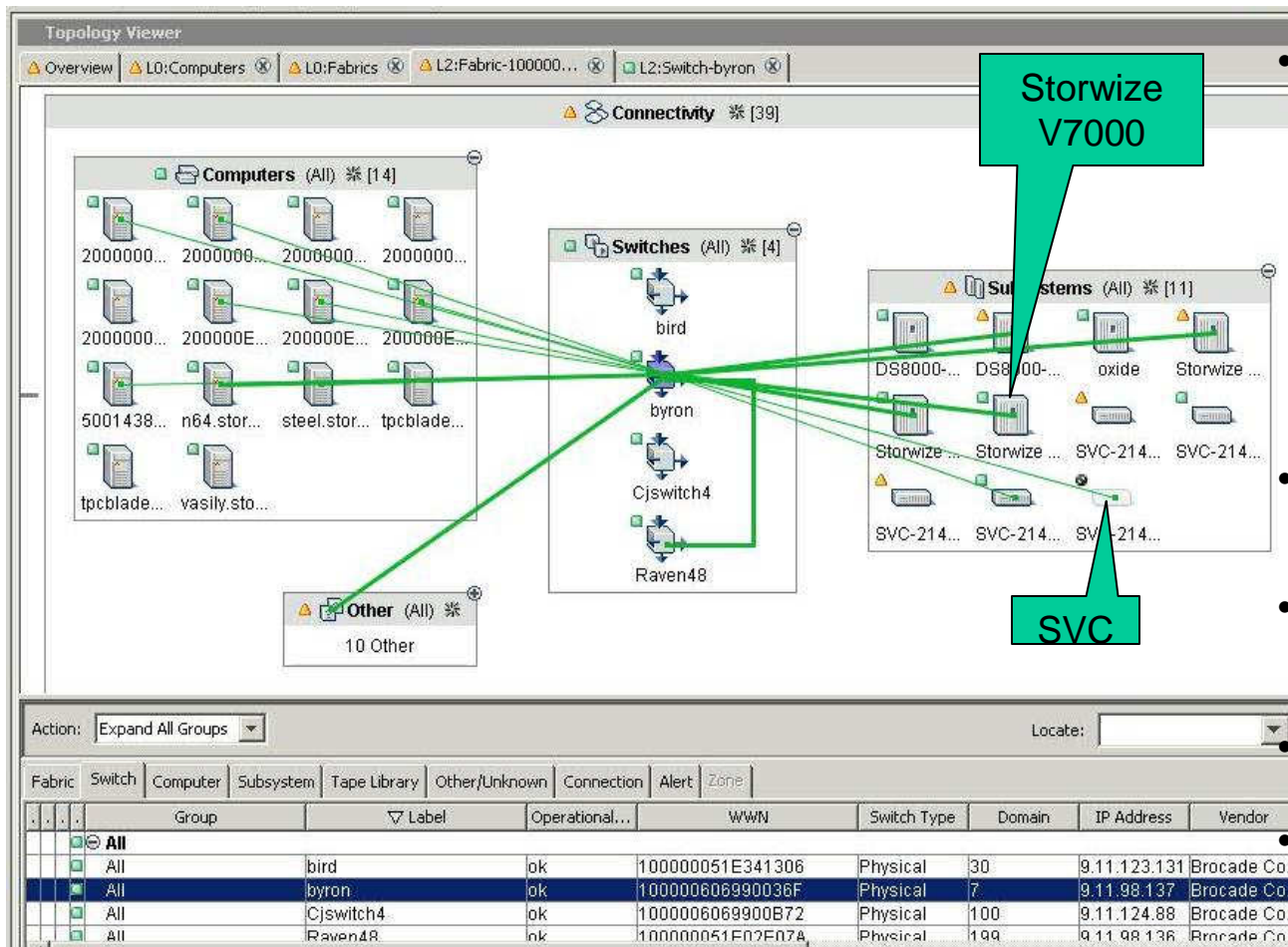
Manageability

- **New User interface** (easy-to-use, web based)
- **Integrated SAN-wide Management** (Tivoli Storage Productivity Center)
- **Integrated IBM server and storage mgmt** (Systems Director Storage Control)

Replication

- **Application integrated** (Oracle, DB2, SAP, Domino, Exchange, SQL Server)
- **Efficient use of space** (thin provisioned, incremental, deduplicated)
- **DR automation** (failover/fail back, site switching)

Storwize V7000 in TPC



Multiple topology views with drill up/down

- Group by Computers, Fabrics and Subsystems
- Only see the details needed at each level
- Drill in for further detail

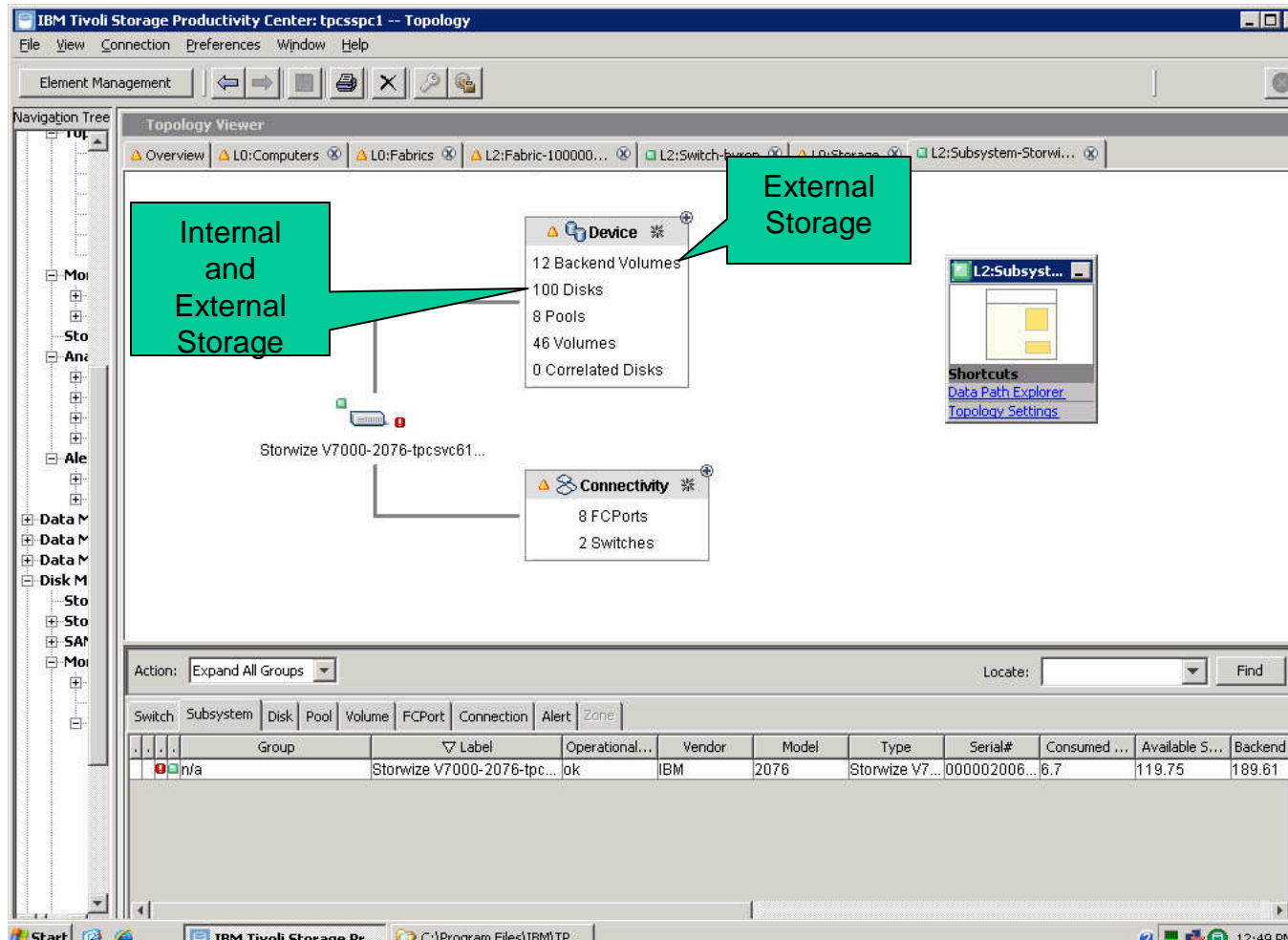
View Connectivity for physical and logical devices

Synchronized Graphical and Tabular views

Minimap for overall context

Overlay Health, Zoning and Performance information

Storwize V7000 Devices and Connectivity



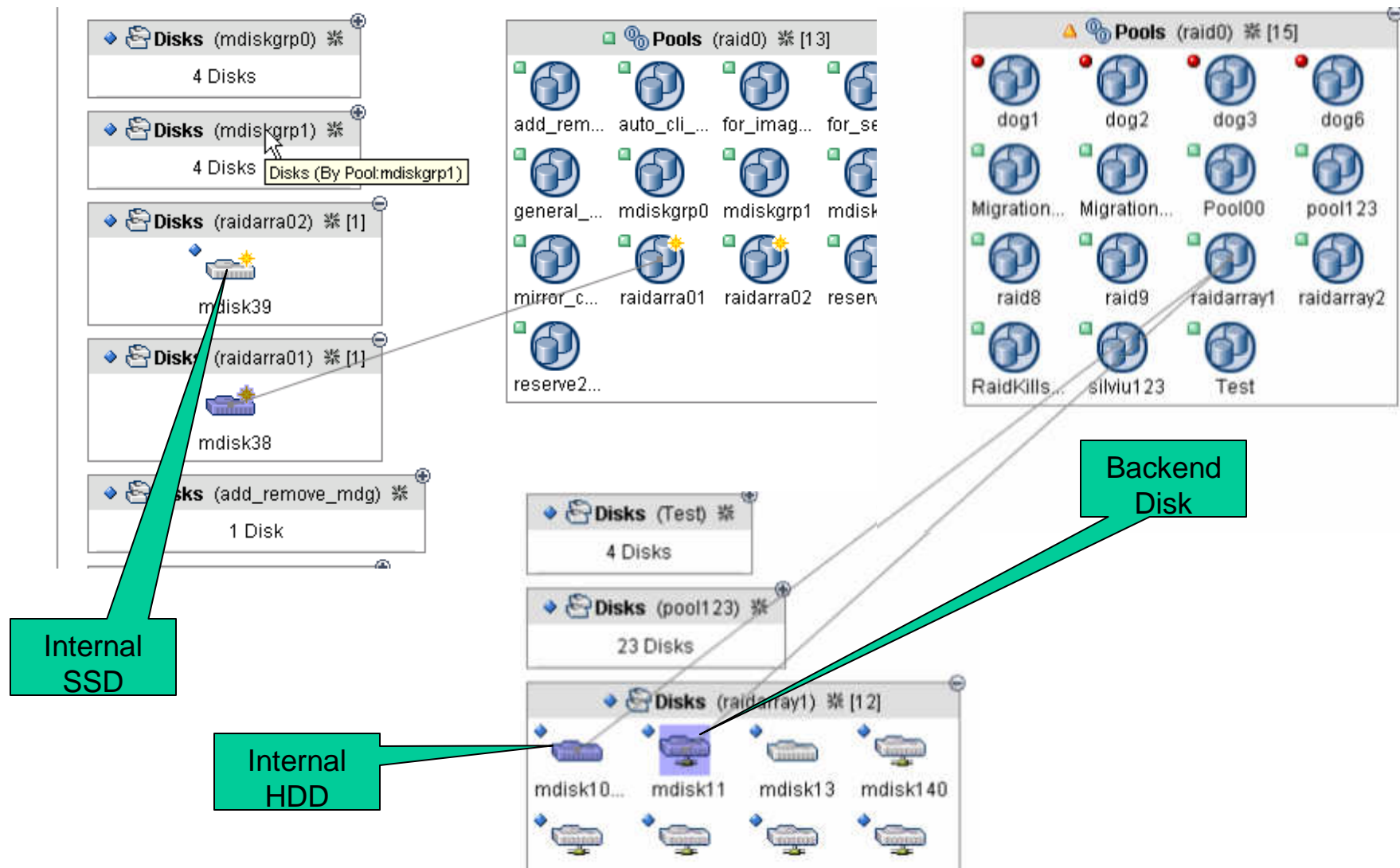
TPC shows:

- Disks, Pools, Volumes, LUNs
- Fabric Connectivity

For SVC and Storwize V7000 also shows Backend Volumes

- ## - Mapping from VDisks to MDisks to Backend Volumes

Different Icons for SSDs, HDDs or Backend Disks



[illegible]

17	Storage Subsystem Performance	<table border="1"> <tbody> <tr> <td>Storwize V7000-2076-tbird1</td><td>Storwize V7000</td><td>on</td><td>inactive</td><td>generic_ssd; generic_hdd</td><td>0; 256.00 MB</td><td>256.00 MB</td><td>E</td></tr> <tr> <td>Storwize V7000-2076-tbird1</td><td>Storwize V7000</td><td>on</td><td>inactive</td><td>generic_ssd; generic_hdd</td><td>0; 256.00 MB</td><td>256.00 MB</td><td>eration</td></tr> </tbody> </table>	Storwize V7000-2076-tbird1	Storwize V7000	on	inactive	generic_ssd; generic_hdd	0; 256.00 MB	256.00 MB	E	Storwize V7000-2076-tbird1	Storwize V7000	on	inactive	generic_ssd; generic_hdd	0; 256.00 MB	256.00 MB	eration
Storwize V7000-2076-tbird1	Storwize V7000	on	inactive	generic_ssd; generic_hdd	0; 256.00 MB	256.00 MB	E											
Storwize V7000-2076-tbird1	Storwize V7000	on	inactive	generic_ssd; generic_hdd	0; 256.00 MB	256.00 MB	eration											

Thin Provisioning – Creation and Reporting

IBM Tivoli Storage Productivity Center: bumblesspc.storage.tucson.ibm.com -- Volume HBA Assignment: By Volume Space

File View Connection Preferences Window Help

Element Management

Navigation Tree

- Administrative Services
- IBM Tivoli Storage Productivity Center
- Data Manager
- Data Manager for Databases
- Data Manager for Chargeback
- Disk Manager
 - Storage Subsystems
 - Storage Optimizer
 - SAN Planner
 - Monitoring
 - Alerting
 - Profile Management
 - Reporting
 - Groups
 - Storage Subsystem
 - Disks
 - Volumes
 - Storage Pools
 - Array Sites
 - Disk Groups
 - Ranks
 - Computer Views
 - Storage Subsystem
 - Volume to HBA /
 - By Storage S
 - By Volume S
 - Not On Monit
 - Not Visible to

Selection Storage Subsystems

Volume HBA Assignment: By Volume Space

Number of Rows: 183

Storage Subsystem	Volume Name	Volume Space	Volume Real Space	Volume WWN
TOTAL		637.55 GB	606.53 GB	
Storwize V7000-2076-tbird1_0	*cata.lina_1234567	512.00 MB	128.00 MB	6005076801810283F8000000000000DA
Storwize V7000-2076-tbird1_0	*cata.lina_1234567	512.00 MB	128.00 MB	6005076801810283F8000000000000DB
Storwize V7000-2076-tbird1_0	*New Test	30.00 GB	630.77 MB	6005076801810283F800000000000086
Storwize V7000-2076-tbird1_0	*vdisk9	1.00 GB	116.38 MB	6005076801810283F8000000000000EA
Storwize V7000-2076-tbird1_0	*vdisk9	1.00 GB	116.38 MB	6005076801810283F8000000000000EA

Create Virtual Disk Wizard (Storwize V7000-2076-tbird1_0.0-23456789 ABCDEFGHI 123456789 abcdefghi XYZWQKMLP 123-IBM)

Define the virtual disks

Select attributes for the virtual disks:

Type: Striped

Number of virtual disks: 1

Virtual-disk size: 1,000 Units: MB

Name: space_efficient (or name prefix)

I/O group: io_grp0_0.0-3456789 ABCDEFGHI 123456789 abcdefghi XYZWQKMLP 123

Space Efficient Properties

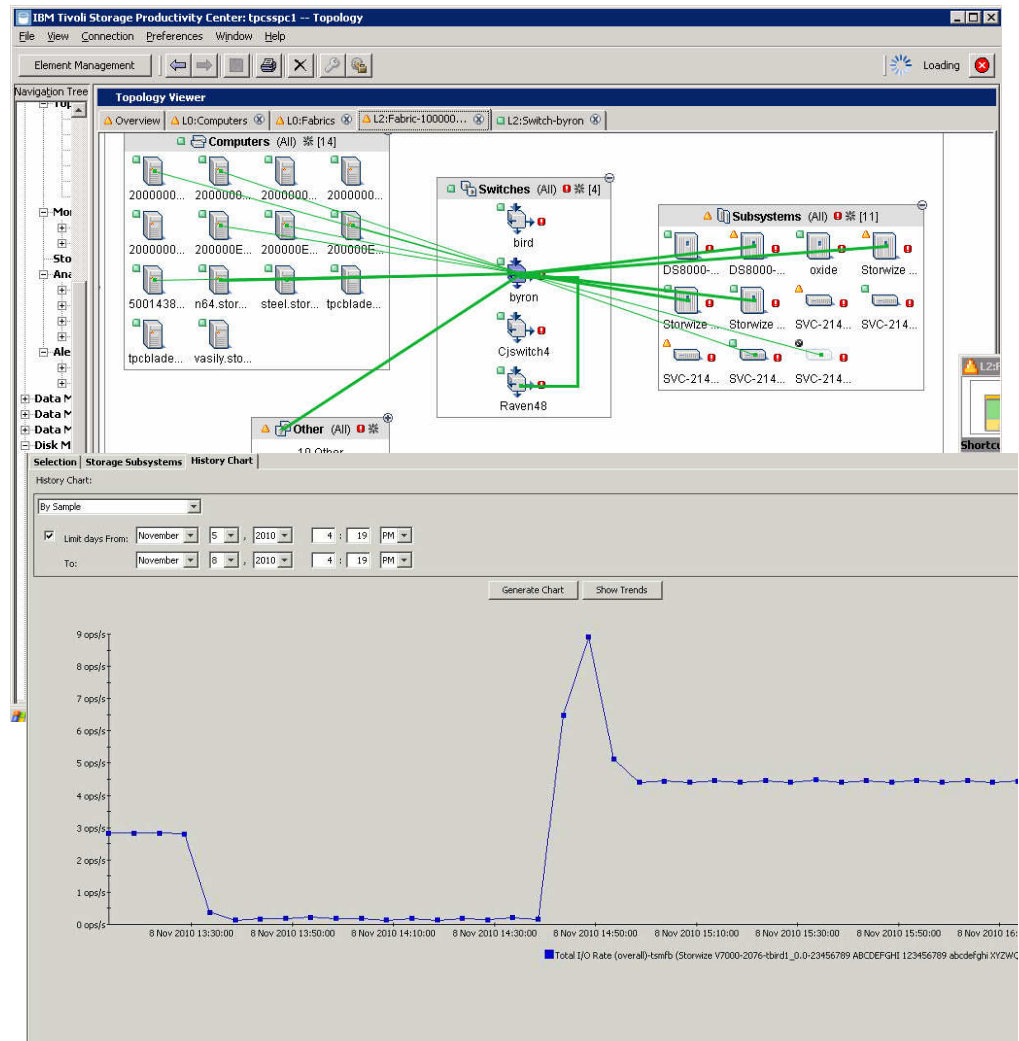
☒ Real Size: 512 MB Summary: Grain Size=32KB, Autoexpand=False Define...

☐ Show solid state based Managed Disk Groups only

Managed-disk group: internal_mdg_0.0-89 ABCDEFGHI 123456789 abcdefghi XYZWQKMLP 123 (2768.63 GB)

Storwize V7000 Performance Management

- **Capture critical performance** data about your storage arrays, such as cache and I/O reads and writes
- **Establish performance thresholds** in storage systems and SAN fabrics in order to improve performance and service levels
- **View SAN connectivity and performance** on the SAN ports from the Fabric switch to the Disk Arrays
- **Track historical performance** of storage systems and view trend information to proactively address performance issues



Comprehensive Set of Reports

Basic Edition Features Included

1. Device Discovery & Configuration support
2. Topology Viewer and Storage Health Management
3. Launch of Device Element Managers
4. Basic Asset & Capacity Reporting
5. Storage System Event Management
6. Consolidated view of storage infrastructure
7. Storage subsystem alerts (capacity change, volume change, online/offline, etc)
8. Switch zoning
9. SAN asset reporting
10. Provisioning of storage
11. Host Capacity Utilization
12. Host Asset Information
13. Unallocated space reporting
14. LUN capacity reporting
15. HBA / Fabric connectivity
16. Fabric configuration support
17. Fabric Event management
18. Fabric Discovery
19. Switch Port Error Reporting
20. Storage capacity forecasting

Predefined System Reports

21. Subsystem Performance
22. Port Performance
23. Controller Performance *
24. Controller Cache Performance *
25. I/O Group Performance **
26. Managed Disk Group Performance **
27. Node Cache Performance **
28. Top Active Volumes Cache Hit Performance *
29. Top Volumes Data Rate Performance
30. Top Volumes Disk Performance **
31. Top Volumes I/O Rate Performance
32. Top Volumes Response Performance

User-Defined Reports

33. By Storage Subsystem
34. By Controller *
35. By I/O Group **
36. By Node **
37. By Managed Disk Group **
38. By Volume
39. By Managed Disk **
40. By Port
41. Constraint Violation Report

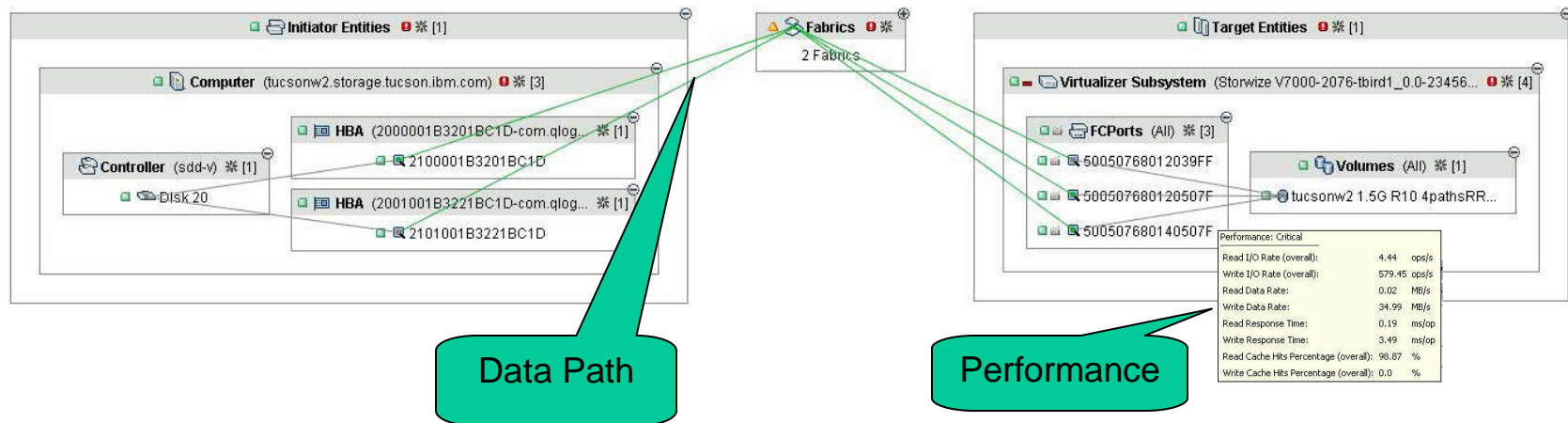
*Support provided for DS3000, DS4000, and DS5000 only

Support provided for **Storwize V7000, SVC only

Data Path Explorer and Performance Impact Analysis

DataPathExplorer

Shortcuts
[Data Path Explorer](#)
[Topology Settings](#)



- **Quickly assess** the performance state of your storage infrastructure
- **End-to-end view** of identifies the impact of a performance issue and any potential affected components
- **Reduces time** to problem isolation and resolution by pinpointing the root cause of performance problems

Single Sign-On & Launch-in-Context to Storwize UI

- **Basic (OS) and enterprise level (LDAP) authentication**
for element managers and other applications that plug in to TPC and SSPC
- **Enables single sign-on**
for element managers and other applications that plug in to TPC and SSPC
- **Credentials**
are automatically passed between applications via LTPA tokens and validated by ESS Server
- **Enables launch-in-context**
to and from other applications

Launch In Context to Storwize V7000 GUI

The diagram illustrates the process of launching the Storwize V7000 GUI in context. It shows a context menu for the Storwize V7000 icon, which includes options like 'Launch Detail Panel', 'Management GUI', 'Replication Storage Systems Overview', and 'Element Manager'. A green arrow points from the 'Management GUI' option to the resulting GUI interface. The GUI interface displays a summary of the storage system, including 7 Backend volumes, 39 Disks, 11 Pools, 143 Volumes, and 35 Correlated Disks. The GUI also shows a list of storage systems, including 12 Internal Drives, 13 External Storage Systems, 39 MDisks, 10 Pools, 143 Volumes, 26 Fibre-Channel Hosts, and 0 iSCSI Hosts. The GUI is titled 'ghy XYZWQKMLP 123 - Home - IBM Storwize V7000 - Windows Internet Explorer' and includes a 'Getting Started' link.

7 Backend volumes
39 Disks
11 Pools
143 Volumes
35 Correlated Disks

Storwize V7000-

Launch Detail Panel
Management GUI
Replication Storage Systems Overview
Element Manager
Show Monitoring Status
Open DataPath View
Launch Planner...
Launch Optimizer...
Add to new Storage Resource Group...

System Summary
Manage Pools
Manage RAID's
Manage SAN Disks
View Hosts
View Disks
Troubleshoot
Configure Device

ghy XYZWQKMLP 123 - Home - IBM Storwize V7000 - Windows Internet Explorer

home#start

Library

I 123456789 abcdefghi XYZWQKMLP 123 > Home > **Getting Started**

12 Internal Drives
13 External Storage Systems
39 MDisks
10 Pools
143 Volumes
26 Fibre-Channel Hosts
0 iSCSI Hosts

Overview

Advanced San Planning for Storwize V7000

■ New wizard-based experience for full provisioning tasks

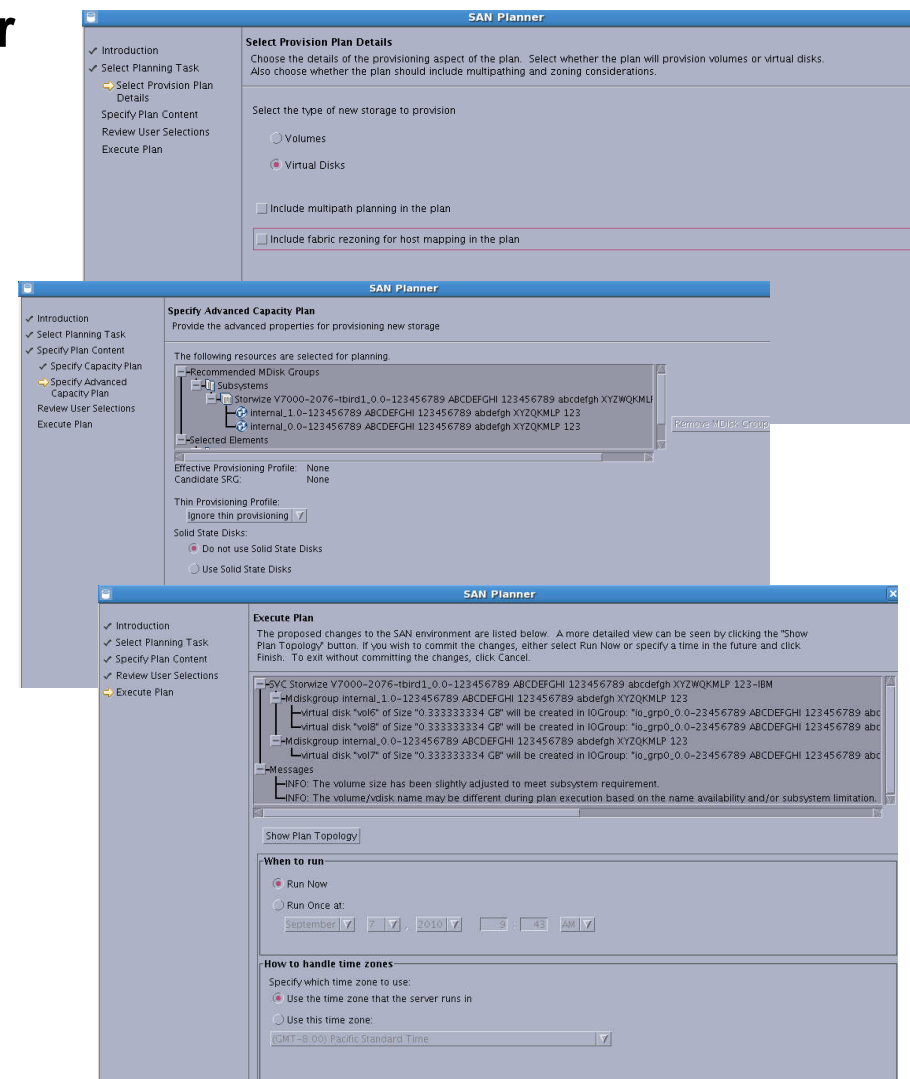
- Support for the new Storwize V7000
- Performance based recommendations
- Operator control over which steps to include

■ Includes copy services configuration capabilities

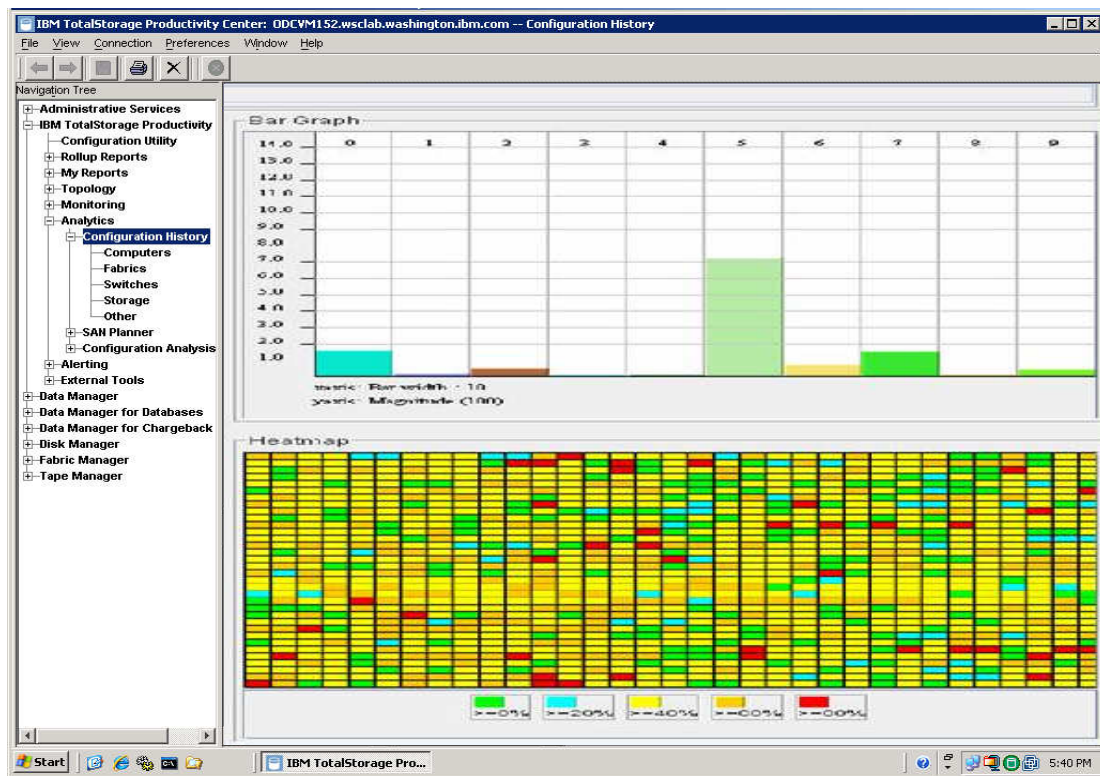
- Configure FlashCopy or Mirroring for additional volume protection

■ Ad-hoc or scheduled execution of plan

- Approve all steps in configuration prior to execution
- Schedule provisioning jobs to be completed during change control windows



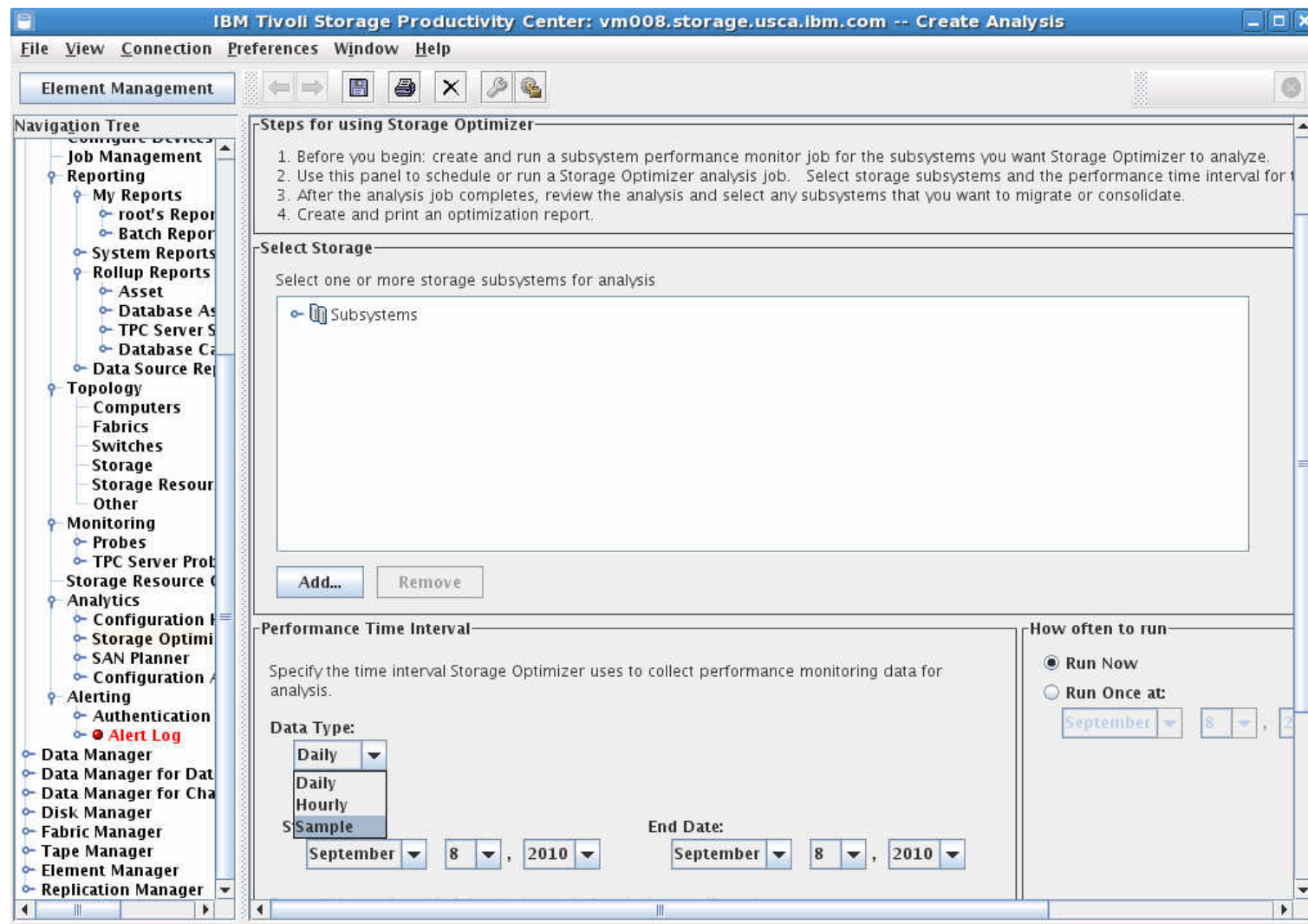
Storage Optimization on Storwize V7000



Identifies hot spots on the disk controller using *sample data* & provides more accurate recommendations to improve disk efficiency

Integrates with IBM hardware to enable migration of data

Improved Optimization using sample, hourly or daily performance data



Disaster Recovery Management

with Tivoli Storage Productivity Center for Replication



- **TPC for Replication is software running on a server that manages IBM disk based replication functions, i.e.:**

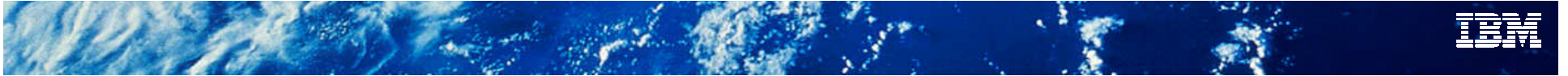
- FlashCopy, Metro Mirror, Global Mirror, Metro Global Mirror

- **Benefits**

- Provides central control of your replication environment
- Helps simplify and automate complex replication tasks
- Provides end to end management and tracking of the copy services
- Enhances the efficiency of your copy services tasks by reducing the time it takes to execute replication jobs



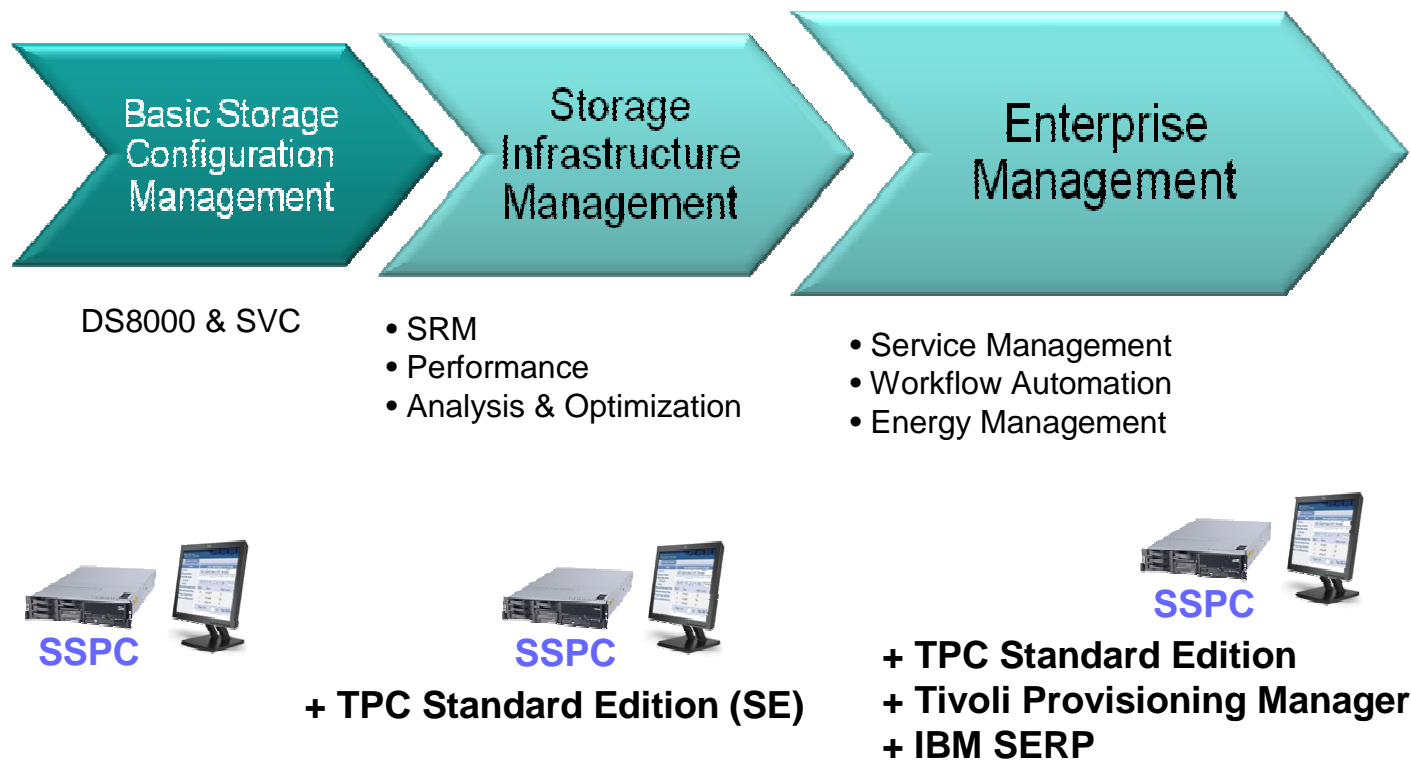
***Create, Manage, Monitor, Automate,
Practice Simplify***



SSPC 1.x

SSPC and TPC Value Chain

Easy upgrade path to advanced management



SSPC 1.x Features

GA 4Q10

- **Tivoli Storage Productivity Center 4.2.1**
 - To support Storwize V7000 and DS8800 R6
 - TPC-R entitled function in BE (Flash copy)
- SSPC not required but recommended to manage SVC 6.1/Storwize V7000
- Server update with M/T **2805-MC5**
 - The new server is System x3550 M3 Type 7944
- SSPC on Microsoft Windows Standard Edition 2008 R2
- Pre-install and default to Firefox as the browser to improve performance of the GUIs used on SSPC

SSPC Features (Continued)

- Optional Dual Port Host Bus Adaptor (HBA) Card
 - This will include instructions on configuration and how to move the TPC database to an external disk through the HBA
- Optional second Hard Disk Drive
- Orderable feature containing an SSPC Recovery media
- System Storage DS® Storage Manager
 - Version 10.70 of the IBM System Storage DS Storage Manager user interface is pre-installed on SSPC. The DS Storage Manager can manage the DS3000, DS4000™, and DS5000
- Pre-load DS8k R6.0 DSCIMCLI

SSPC – Summary

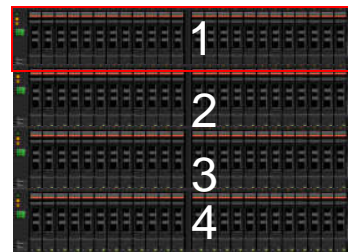
1. IBM's **strategic console** for storage
2. **Easy of deployment** without installation and improved configuration through auto discovery of storage
3. Improved **interoperability and stability**
4. **Centralized management** for the storage infrastructure



Selling TPC

Order TPC for Disk Midrange Edition w/Storwize V7000

- Purchase controller (2076-1xx) + expansion encl. (2076-2xx)



Example:
One 12-bay control enclosure +
Three 12-bay expansion enclosures

- TPC for Disk Midrange Edition Pricing Example

List price = \$8099 per Storwize V7000 enclosures / storage controllers
TPC for Disk MRE Price = \$8099 x 4 enclosures*

- External Storage is charged per enclosure (of external storage) for the storage virtualized by Storwize V7000

External Enclosure count to TPC for Disk MRE
= External Enclosures by Storwize V7000

TPC MRE Enclosures = Storwize Enclosures + Enclosures virtualized by Storwize



External Enclosure Examples



= Apply enclosure count to these units



DS3500

Consists of:



1 x Controller Unit – houses disk drives (12 or 24)



Up to 7 (or 3, limited by 96 drive max.) x Expansion Units

Note: Each unit holds 12 or 24 drives for a max configuration of 96 drives



DS5100/5300

Consists of:



1 x Controller Unit – no disk drives



Up to 28 Exp. Units **or:**



Up to 8 Hi-Density Exp. Units

Note: Exp. holds 16 drives, Hi-Density Exp. holds 60 drives (5 trays each with 12 drive bays)



EMC Clariion CX4-120

Consists of:



1 x Storage Processor Enclosure (SPE) – no disk drives



Up to 8 Disk Array Enclosures (DAE)



1 x Standby Power Supplies (SPS)

Note: Models 240, 480, and 960 all have the same structure with one SPE, multiple DAEs (15 drives each)



XIV

Consists of:



3 to 6 I/O Modules – houses disk drives



3 to 9 Data Modules

Note: Each Module holds 12 x 1TB (or 2TB) SATA drives; I/O modules scale with capacity.

Standard XIV is 15 mod. Permutations of 7 and 8 modules not allowed



DS8700

Consists of:



1 x Controller Unit – no disk drives



Up to 8 “Megapacks” in base (16 drives/Megapack)



Up to 4 Expansion Units providing up to 1028 drives

Note: Controller Unit includes processor enclosures (processor complexes); I/O and adapter enclosures (device adapters and host adapters); and power components (power supplies, power control cards, and backup battery assemblies)

Other External Enclosures

By applying the enclosure definition and using these examples, you should be able to determine the number of external enclosures to license.

If, and only if, for some reason the external storage does not resemble the definition or examples here, you may apply the following equivalency: 15 drives = 1 enclosure

IBM Value Pack Service Offerings

Foundation Services for TPC

New Pilot!



Designed for those customers who need help with:

- Obtaining greater value from TPC without over utilizing existing staff
- Controlling escalating storage costs
- Planning for capacity upgrades
- Minimizing outages and keeping up with SAN changes
- Simplifying management of multi-vendor storage devices

*For up to 3 customer
professionals*

*Duration: 5 days delivered
remotely or on site*

Benefits

- Train staff on product features quickly to get immediate value from the product
- Centralize storage management and improve Storage Administrative efficiency
- Accurately inventory storage assets
- Manage storage usage and provide capacity planning information
- Reduce complexity of storage infrastructure analysis with end to end path information
- Correlate disk storage to host usage

Deliverables

- Configure reporting for detailed storage assets and storage capacity
- Create key storage infrastructure alerts and verify notification
- Demonstrate E2E disk to host volume correlation and reporting
- Demonstrate storage provisioning and command line tools for provisioning or reporting
- Provide documentation for daily storage and product maintenance

IBM Value Pack Service Offerings

Performance and Reporting Services for TPC

New Pilot!



Designed for those customers who need help with:

- Obtaining greater value from TPC without over utilizing existing staff
- Control escalating storage costs
- Minimizing performance bottlenecks
- Minimizing outages & keeping up with changes in the SAN

For up to 3 customer professionals to gain experience in advanced TPC configuration and analysis

Duration: 5 days delivered remotely or on site

Benefits

- Train staff on product features to get immediate value from the product
- Improve storage utilization and service levels
- Correlate disk storage to host usage
- Track historical performance of storage systems and view trend information to proactively address performance issues
- Change configuration management
- Performance analysis with root cause identification

Deliverables

- Configure reporting for detailed file and DB level usage
- Demonstrate use of perf. reporting to baseline storage usage and snapshots to identify changes
- Create key storage infrastructure performance alerts and verify notification
- Provide analysis of disk subsystem performance bottlenecks using native product tools
- Demonstrate use of storage optimizing feature to help make informed data placement decisions

Upgrade your Customer's TPC environments

- **Trade-ups are available for customers wanting to upgrade from *TPC for Data V3* and *TPC for Data V4* to *TPC Standard Edition V4.x*. The trade-up part numbers are tier based as follows:**
 - Per Terabyte (1-12) License and SW S&S 12 Months D0921LL
 - Per Terabyte (13-32) License and SW S&S 12 Months D092BLL
 - Per Terabyte (33-64) License and SW S&S 12 Months D0927LL
 - Per Terabyte (65-100) License and SW S&S 12 Months D092ILL
 - Per Terabyte (101-250) License and SW S&S 12 Months D092MLL
 - Per Terabyte (251+) License and SW S&S 12 Months D092PLL
- **Trade-ups are available for customers wanting to upgrade from *TPC for Disk V3* and *TPC for Disk V4* to *TPC Standard Edition V4.x*. The trade-up part numbers are tier based as follows:**
 - Per Terabyte (1-12) License and SW S&S 12 Months D091ZLL
 - Per Terabyte (13-32) License and SW S&S 12 Months D092ALL
 - Per Terabyte (33-64) License and SW S&S 12 Months D0926LL
 - Per Terabyte (65-100) License and SW S&S 12 Months D092HLL
 - Per Terabyte (101-250) License and SW S&S 12 Months D092LLL
 - Per Terabyte (251+) License and SW S&S 12 Months D092NLL

Manageability Features Summary

Systems Director Storage Control and TPC



	User Interface	Enterprise Storage Management Tivoli Storage Productivity Center	Server / Storage Management Systems Director Storage Control
Perspective			
Device	✓	✓	✓
Device + surrounding SAN		✓	✓
Servers + Storage			✓
Capabilities			
Health	✓	✓	✓
Capacity	✓	✓	✓
File System Utilization Analytics		✓	
Provisioning	✓	✓	✓
Performance Analytics		✓	
Replication Management	✓	✓	
Recovery Automation		✓	

For more info

- [External Website](#)
- **Gartner MQ**
 - <http://imagesrv.gartner.com/media-products/pdf/reprints/ibm/external/volume5/article20.pdf>
- **Sales Kits:**
 - IBM'ers
 - <https://w3.ibm.com/software/xl/portal/content?synKey=L934824B97776P66#overview>
 - BP's
 - <https://www.ibm.com/usrsrv/account/userservices/jsp/login.jsp?persistPage=true&page=/partnerworld/wps/servlet/mem/ContentHandler/L934824B97776P66&PD-REFERER=none&error>
 - Product Management Wiki (IBM only)
 - <http://w3.tap.ibm.com/w3ki07/display/IBMSM/IBM+Tivoli+Storage+Productivity+Center>
- [Resource Library](#)
- [Interoperability Matrix](#)
- **Business Value Analyst Tool**
 - IBM Sellers
 - <http://w3.ibm.com/software/xl/portal/content?synKey=V684337Z99308Q32#overview>
 - IBM Business Partners
 - <https://www.ibm.com/partnerworld/wps/servlet/mem/ContentHandler?cmsId=V684337Z99308Q32>

New!

Sales Contacts

- **WW Sales**
 - Omeed Kroll, shahabi@us.ibm.com
- **Americas**
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- **Latin America**
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- **AP**
 - Aldrin D'souza, daldrin@in.ibm.com
- **Japan**
 - Shoko Takase, STAKASE@jp.ibm.com
- **NE IOT**
 - Thomas Kovsted, KOVSTED@dk.ibm.com
- **SW IOT**
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- **CEEMEA**
 - Jean-Michel Doudot, Jean-Michel_Doudot@ch.ibm.com

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- **Samples of what is acceptable:**

- New Gartner research positions XCORP in leaders quadrant for data integration tools
- Gartner ranks XCORP #1 for worldwide security market share in 2009; overall market totaled \$13.5 billion in revenue
- XCORP Rated 'Positive' in the Gartner MarkeScope Report for NA Data Center Outsourcing in 2010 [optional URL to press release or reprint of report here]

- **Samples of what is unacceptable:**

- Gartner ranks XCORP leader in CRM Magic Quadrant and says XCORP continues to demonstrate strong vision in the market.
- Gartner says to add XCORP to your shortlist for XYZ products.
- XCORP receives stronger evaluation by Gartner than YCORP

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 - No retrospective wording permitted, for example, "fifth consecutive year" or "again".
 - No comparative wording permitted, for example, "only", "highest" or "sole".
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- **Example of what Gartner will not allow:**
 - “XCORP has jumped into the leadership position in Application Integration according to Gartner, Inc.” or “XCORP is the recognized leader in the Application Integration market according to Gartner, Inc.”

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