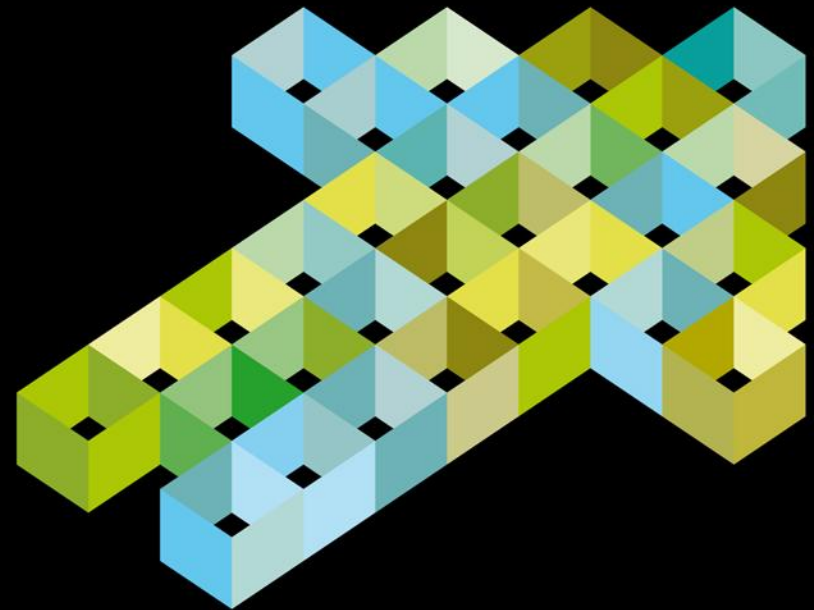


zur Ankündigung ...

Tivoli Storage Productivity Center Version 5.1

Hartmut Bohnacker
Markus Standau
Volkmar Priess

05.06.2012



Agenda

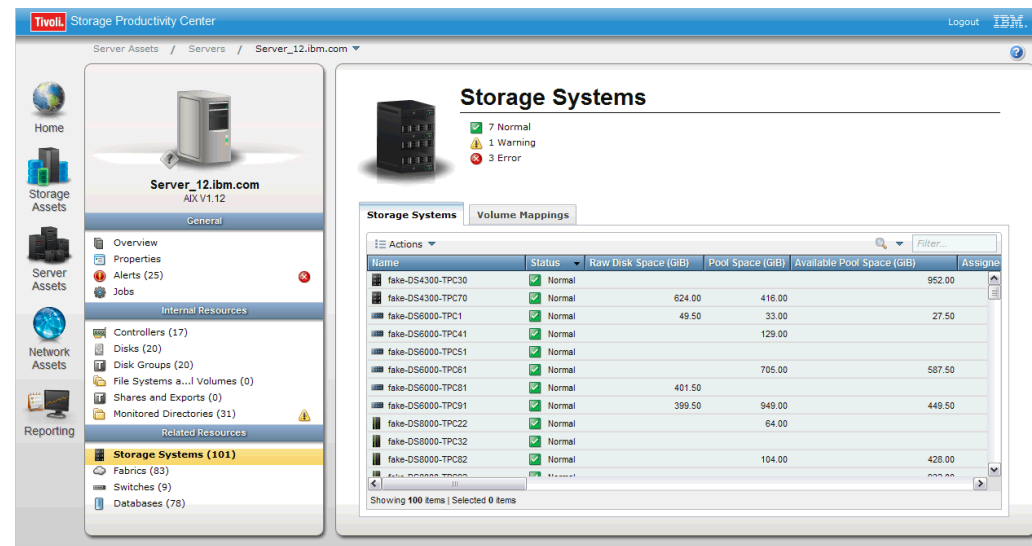
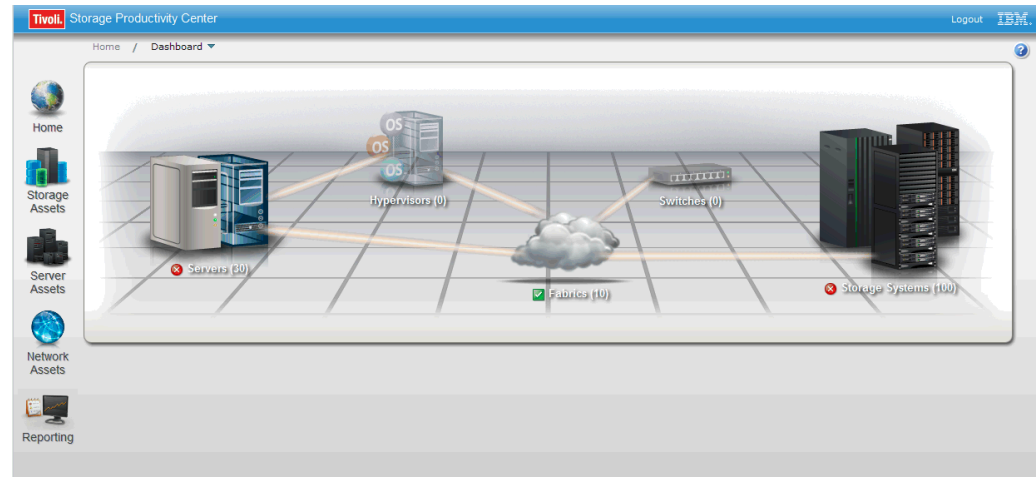
- TPC 5.1 “What’s new” – Überblick Hartmut Bohnacker
- TPC 5.1 Erweiterungen im Einzelnen
- TPC 5.1 Neues TPC Web-GUI

- TPC 5.1 Reporting Markus Standau

- TPC 5.1 Packaging und Lizenzierung Volkmar Priess

TPC 5.1 Highlights - Announcement: June 4th, eGA: June 15th

- Fully integrated & Web-based GUI
 - Based on Storwize/XIV success
- TCR/Cognos-based Reporting & Analytics
- Enhanced management for virtual environments
- Tiered Storage Optimization (first step)
- Integrated Installer
- Simplified packaging



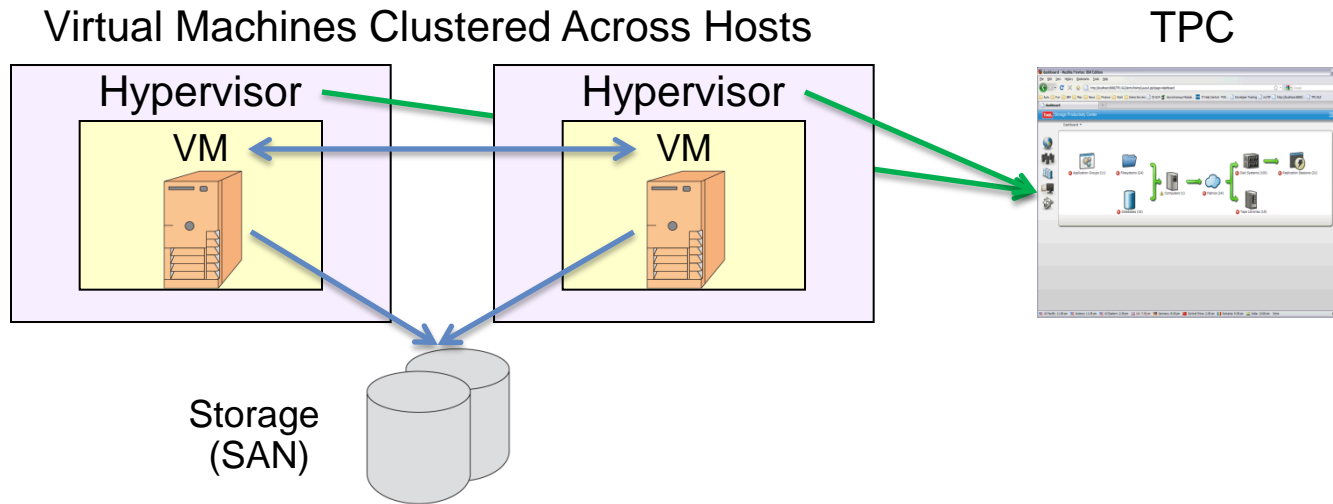
Web Based User Interface

- Redesigned Web-based interface based on customer feedback
- Navigation built around the tasks needed for the environment
- Rapid access via simplified navigation
- Core functions are assets, topology, status information
- Legacy GUI still available with full functions

Benefit to you...



Virtual Server Management Enhancements



What this is:

- Correlates shared storage attached to multiple hosts in a cluster
- Improved accurate reporting for ESX server / VM guests on total, free, and used capacity
- Datapath Explorer (ESX-to-Storage) supported

Benefit to you:

- Avoid double counting storage capacity in TPC reporting on VMware
- Associates storage not only with individual VMs, Hypervisors but also the cluster
- VMotion awareness

Tiered Storage Optimization

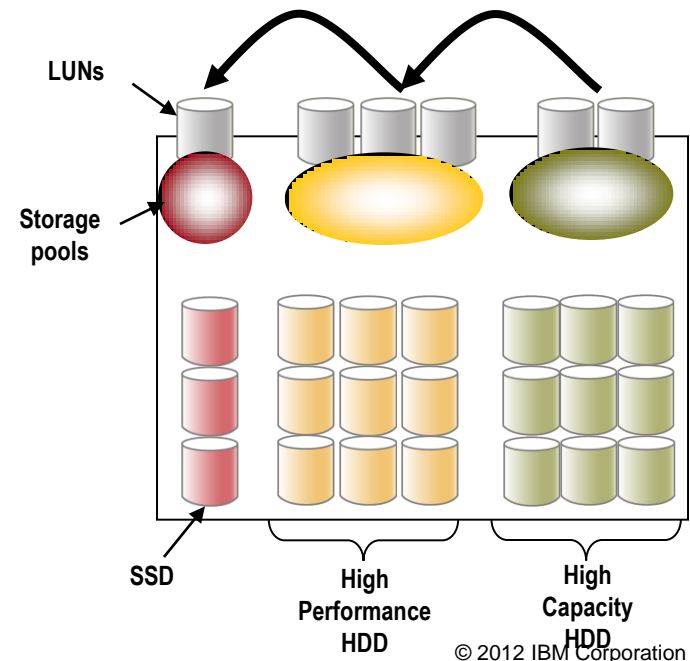
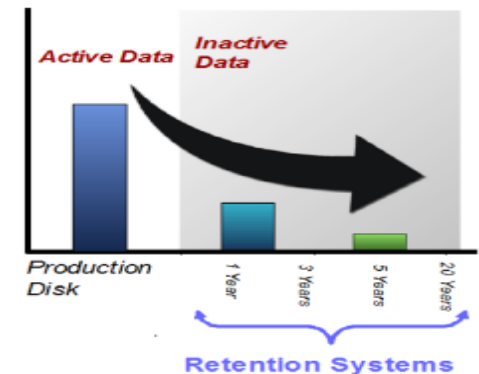
What this is:

- Integration with existing storage optimizer and storage tiering reporting; policy-driven ILM leveraging virtualization technology to provide recommendations for storage re-location
- Developed by IBM Research and has been deployed in IBM GTS to manage storage assets

Benefit to you:

- Provides recommendations for workload migration based on user defined policy based on file system level data, performance and capacity utilization
- Ensures only highest performing workloads are allocated to most expensive storage
- Enterprise wide datacenter storage tiering solution complementary to Easy Tier technology

Information Lifecycle Management



TPC V5.1 – Server Operating Systems

AIX

AIX V 6.1 and 7.1

Linux

Red Hat Advanced 5 and 6

Windows

Windows 2008 and 2008 R2

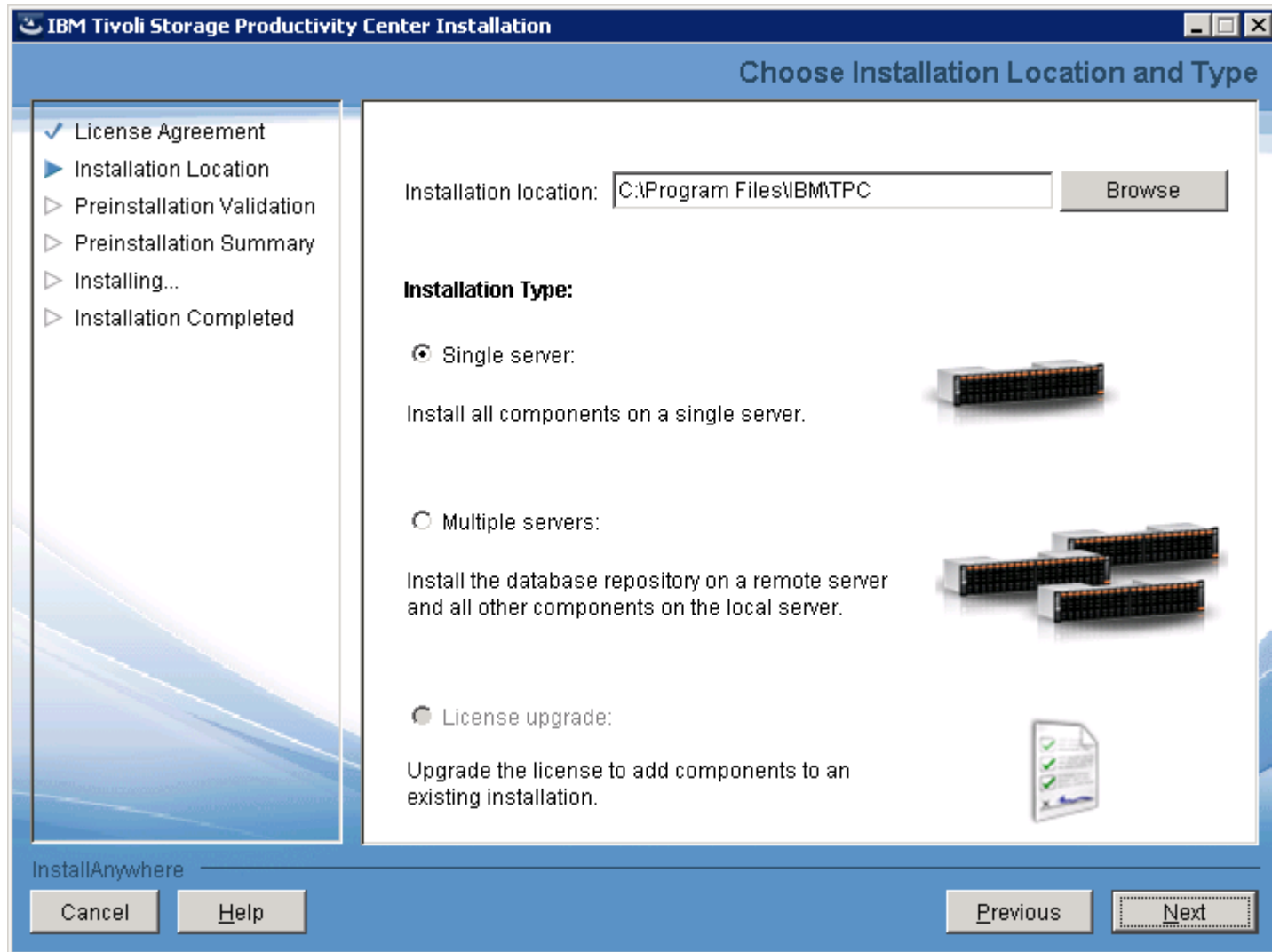
VMware ESX ESXi 3.0.x, 3.5.x, 4.0.x, and 4.1.x

Red Hat Advanced 5 and 6

Windows 2008

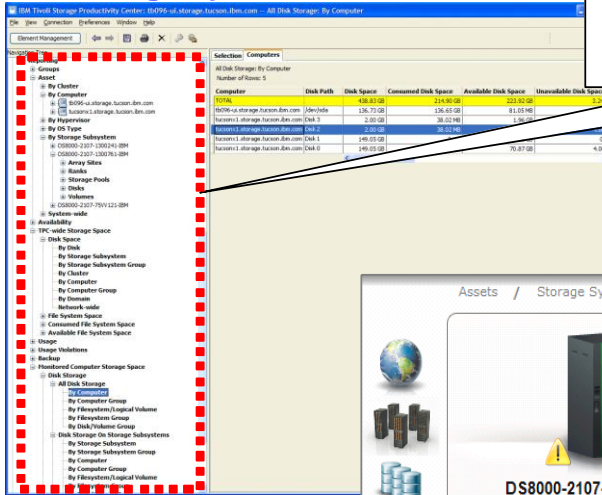
Windows 2008 R2

Tivoli Storage Productivity Center 5.1 – Installation



GUI Before & After Example: Servers for IBM DS8000

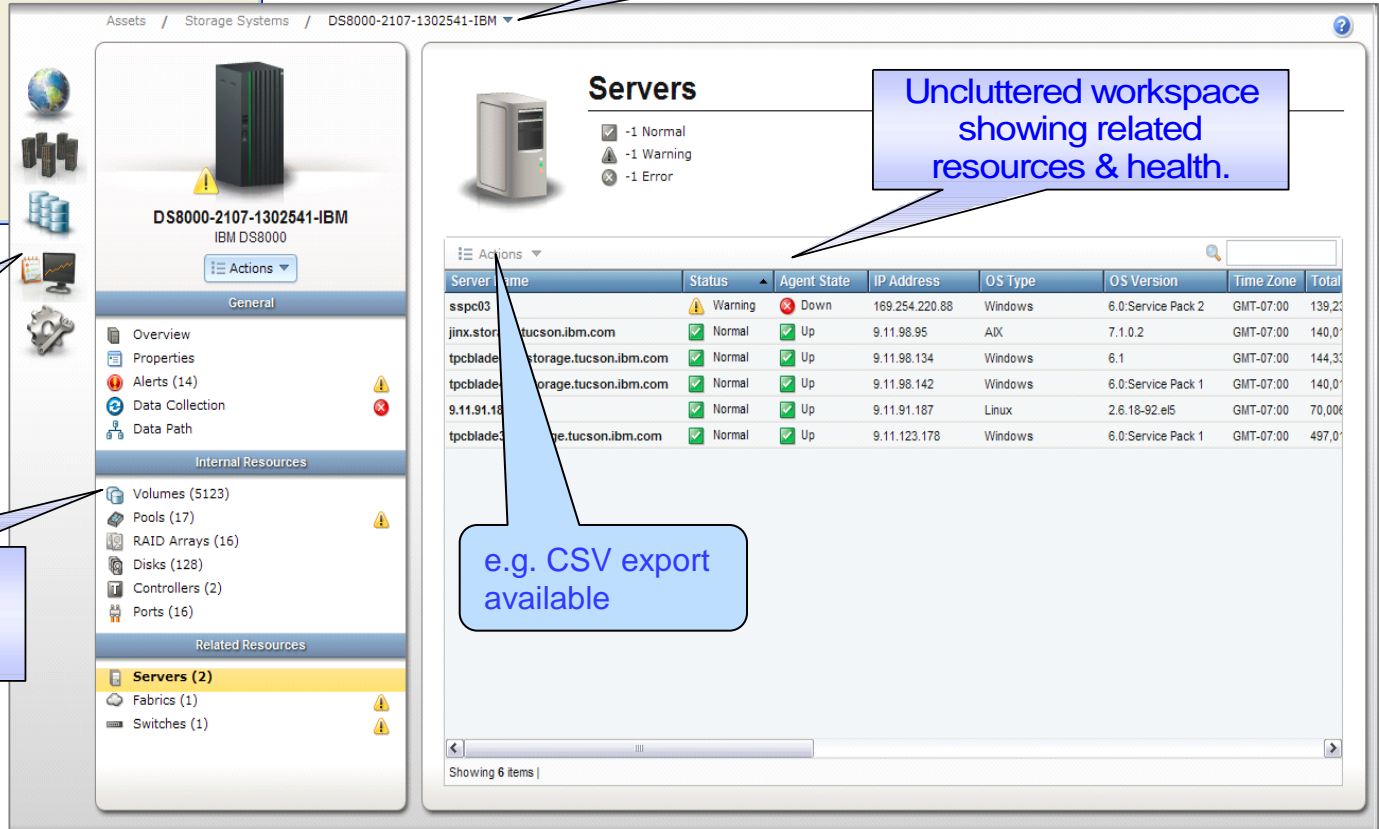
Legacy GUI...



Complex text-based navigation. User needs to hunt through multiple pages to find internal and external resources.

TPC GUI will have same look and feel as other IBM storage offerings such as XIV and Storwize V7000

New GUI...



Breadcrumb trail for location awareness

Uncluttered workspace showing related resources & health.

Simplified icon-based navigation

Internal and external resources available from one place

e.g. CSV export available

Server Name	Status	Agent State	IP Address	OS Type	OS Version	Time Zone	Total
sspc03	Warning	Down	169.254.220.88	Windows	6.0.Service Pack 2	GMT-07:00	139,25
jinx.stor	Normal	Up	9.11.98.95	AIX	7.1.0.2	GMT-07:00	140,01
tpcblade	Normal	Up	9.11.98.134	Windows	6.1	GMT-07:00	144,35
tpcblade	Normal	Up	9.11.98.142	Windows	6.0.Service Pack 1	GMT-07:00	140,01
9.11.91.18	Normal	Up	9.11.91.187	Linux	2.6.18-92.el5	GMT-07:00	70,006
tpcblade	Normal	Up	9.11.123.178	Windows	6.0.Service Pack 1	GMT-07:00	497,01

Web-based GUI - Dashboard

Tivoli Storage Productivity Center
Logout SSPC331tpeadmin ?
IBM

Home / Dashboard ▾

Home
 Storage Resources
 Server Resources
 Network Resources
 Reporting

Capacity

Storage Systems

Pool Space: 280.05 TiB

104.96 TiB	Available: 175.23 TiB
------------	-----------------------

File System Capacity: 114.94 TiB

Exported FS: 69.09 TiB	45.84 TiB
68.34 TiB	44.6 TiB

Recent Jobs

Last Day

- ➔ 1 Running
- ✖ 13 Failed
- ⚠ 4 Warning
- ✔ 7 Successful

[View all jobs](#)
[View performance jobs](#)

Unacknowledged Alerts

Last Day

- ✖ 0 Critical
- ⚠ 41 Warning
- i 0 Informational

[View all alerts](#)

Web-based GUI - Storage Resource level selection

Tivoli Storage Productivity Center
Logout SSPC331tpeadmin
IBM

Home / Dashboard ▾

- Home
- Storage Resources
- Server Resources
- Network Resources
- Reporting

Capacity

Storage Systems

Pool Space: 280.05 TiB

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------------	-----------------------

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Recent Jobs

Last Day

- 1 Running
- 13 Failed
- 4 Warning
- 7 Successful

[View all jobs](#)
[View performance jobs](#)

Unacknowledged Alerts

Last Day

- 0 Critical
- 41 Warning
- 0 Informational

[View all alerts](#)

Web-based GUI - Storage Systems view

Tivoli Storage Productivity Center
Logout SSPC331tpcadmin
IBM

Storage Resources / Storage Systems
Loading...

Storage Systems

- ✔ 5 Normal
- ! 0 Warning
- ⊗ 3 Unreachable
- ✖ 2 Error

Block Storage

File Storage

Alerts

Jobs


Actions
Filter...

Name	Status	Raw Disk Capacity (GiB)	Pool Capacity (GiB)	Available Pool Space (GiB)	Assigned Volume Space (GiB)	Unassigne
Storwize V7000-2076-V7000 U...	✖ Error	6,693.52	5,575.00	3,945.00	0.00	0.00
Storwize V7000-2076-v7000-ct...	✖ Error	19,550.65	0.00	0.00	0.00	0.00
Storwize V7000-2076-ctr-22-IBM	⊗ Unreachable	12,276.39	6,132.75	32.75	6,100.00	
Storwize V7000-2076-V7000 U...	⊗ Unreachable	6,693.52	5,573.75	3,733.75	0.00	
SVC-2145	⊗ Unreachable	2,401.00	2,399.00	1,598.00	410.00	
DS8000-2107-75AAFC1-IBM	✔ Normal	106,170.77	77,589.74	40,746.74	23,584.00	
DS8000-2107-75TV181-IBM	✔ Normal	111,401.08	69,967.63	50,291.55	23,519.00	
LOH_3	✔ Normal	42,158.03	3,346.50	2,771.00	350.98	
XIV-2810-1310114-IBM	✔ Normal	330,228.46	116,191.16	76,317.56	78,048.41	

Showing 9 items | Selected 0 items
Refreshed a few moments ago

Web-based GUI - Storage System Overview

Storage Resources / Storage Systems / DS8000-2107-75AAFC1-IBM



DS8000-2107-75AAFC1-IBM
IBM DS8000

General

Overview

Properties

Alerts (0)

Jobs (2)

Internal Resources

Volumes (116)

Pools (16)

RAID Arrays (48)

Disks (380)

Controllers (2)

Ports (64)

Host Connections (96)

Related Resources

Fabrics (2)

Switches (1)

Overview

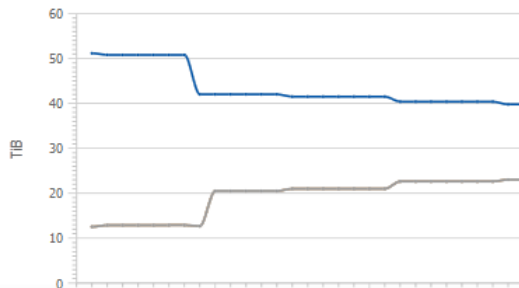
Pool Space: 75.77 TiB

Volumes: 34.56 TiB
Available: 39.79 TiB

Assigned: 23.03 TiB
11.53 TiB

Capacity

Last 30 days

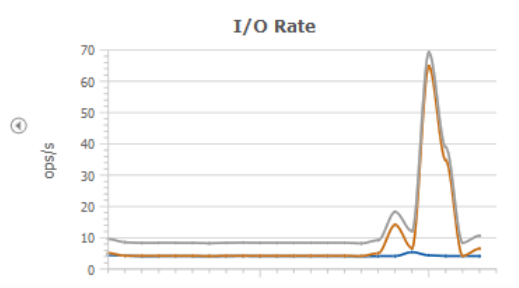


TiB

Overall System Activity

Last 24 hours

I/O Rate

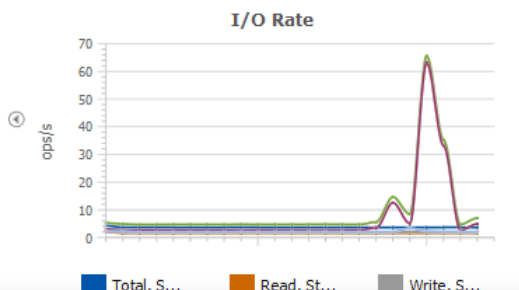


ops/s

Most Active Controllers

Last 24 hours

I/O Rate

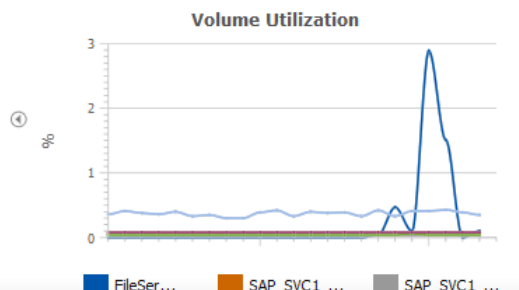


ops/s

Most Active Volumes

Last 24 hours

Volume Utilization



%

© 2012 IBM Corporation

Web-based GUI - Storage System Properties

Storage Resources / Storage Systems / DS8000-2107-75AAFC1-IBM ▾

Home

Storage Resources

Server Resources

Network Resources

Reporting

DS8000-2107-75AAFC1-IBM
IBM DS8000

General

Overview

Properties

Alerts (0)

Jobs (2)

Internal Resources

Volumes (116)

Pools (16)

RAID Arrays (48)

Disks (380)

Controllers (2)

Ports (64)

Host Connections (96)

Related Resources

Fabrics (2)

Switches (1)

Properties

Last data collection: Apr 26, 2012 6:49:24 AM CEST

General

Configuration

Capacity

Performance

Name	DS8000-2107-75AAFC1-IBM
Status	<input checked="" type="checkbox"/> Normal
Acknowledged	No
Vendor	IBM
Type	DS8000
Model	932
Serial Number	75AAFC1
Firmware	5.4.36.91
IP Address	9.155.62.13
Time Zone	Unavailable
Custom Tag 1	—
Custom Tag 2	—
Custom Tag 3	—

Web-based GUI - Server Resource selection

Tivoli Storage Productivity Center Logout SSPC331tpcadmin

Home / Dashboard ▾

Home

Storage Resources

Server Resources

Network Resources

Reporting

Servers

Hypervisors

Capacity

Storage Systems

Pool Space: 280.05 TiB

104.96 TiB
Available: 175.23 TiB

File System Capacity: 114.94 TiB

Exported FS: 69.09 TiB
45.84 TiB

68.34 TiB
44.6 TiB

Recent Jobs

Last Day

1 Running

13 Failed

4 Warning

7 Successful

[View all jobs](#)
[View performance jobs](#)

Unacknowledged Alerts

Last Day

0 Critical

41 Warning

0 Informational

[View all alerts](#)

Web-based GUI - Hypervisor related Storage

Tivoli Storage Productivity Center

Server Resources / Hypervisors / x3850-lab-6rsa.mainz.de.ibm.com

Home

Storage Resources

Server Resources

Network Resources

Reporting

x3850-lab-6rsa.mainz.de.ibm.com
VMware ESX 4.0.0

General

- Overview
- Properties
- Alerts (0)
- Jobs (1)

Internal Resources

- Virtual Machines (2)
- Controllers (7)
- Disks (6)
- File Systems and Logical Vo... (1)

Related Resources

- Storage Systems (2)**
- Fabrics (2)
- Switches (1)

Storage Systems

- 0 Normal
- 0 Warning
- 1 Unreachable
- 0 Error
- 1 Unknown

Block Storage | **Volume Mappings**

Actions ▾

Storage System	Pool	Volume	Disk	Paths
60050768018e8019f8		0000000000000c	naa.60050768018e8019f80000000000...	2
60050768018e8019f8		0000000000000d	naa.60050768018e8019f80000000000...	2
SVC-2145-IBM	DS8000_A	Mirror_5	naa.600507680181853d380000000000...	2
SVC-2145-IBM	DS8000_A	Mirror_6	naa.600507680181853d380000000000...	2

Tivoli Storage Productivity Center 5.1 – Reporting

Cognos based Reporting

Markus Standau

Enhanced TPC V5.1 Reporting

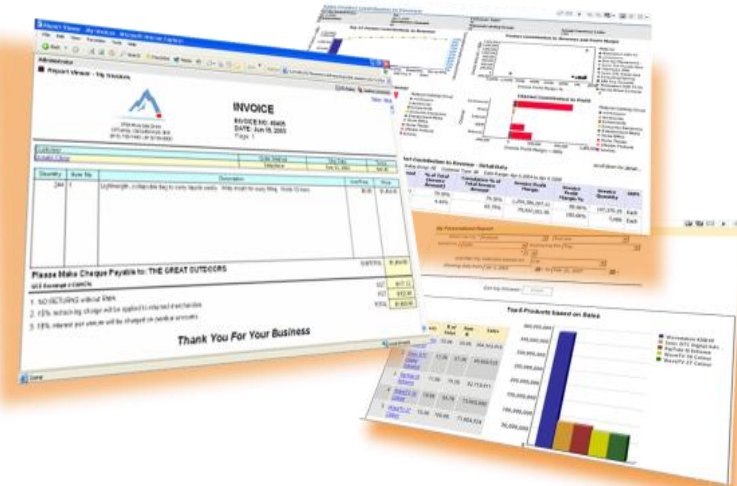
What this is

- Better reporting and analytics with no additional cost via integration with Cognos reporting & modeling
- Data abstraction and Ad-Hoc reporting makes it easy for customers to create high quality reports and charts
- Focus on data modeling and provide some out-of-the-box reporting



Benefit to you:

- Makes report creation and customization simple
- Quicker time to value with out-of-the-box reports
- Novice users can rapidly create reports with intuitive drag & drop function
- Easy drill up/drill down for both reporting and charting
- Reports can be generated on schedule or on demand in multiple distribution formats (email, etc.)



Web-based GUI - navigate to Reporting

Tivoli Storage Productivity Center

Logout SSPC331tpcadmin

Home / Dashboard

Home

Storage Resources

Server Resources

Network Resources

Reporting

View predefined reports

Create a basic report

Design a report

Capacity

File System Capacity: 114,94 TiB

Exported FS: 69,09 TiB 45,84 TiB

68,34 TiB 44,6 TiB

Recent Jobs

Last Day

1 Running

13 Failed

4 Warning

7 Successful

[View all jobs](#)

[View performance jobs](#)

Unacknowledged Alerts

Last Day

0 Critical

41 Warning

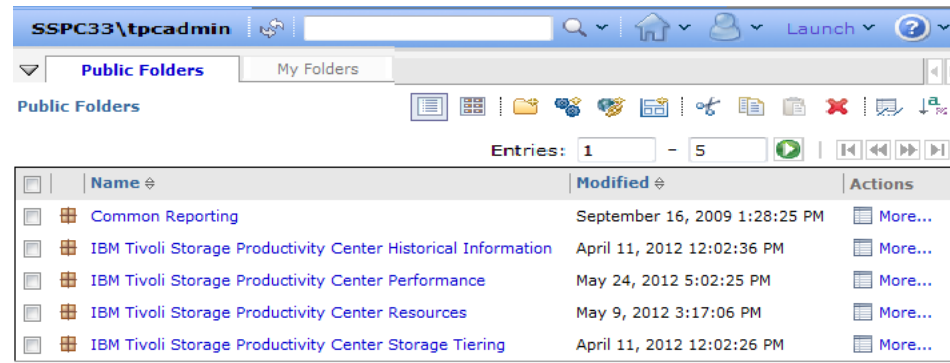
0 Informational

[View all alerts](#)

Cognos Reporting

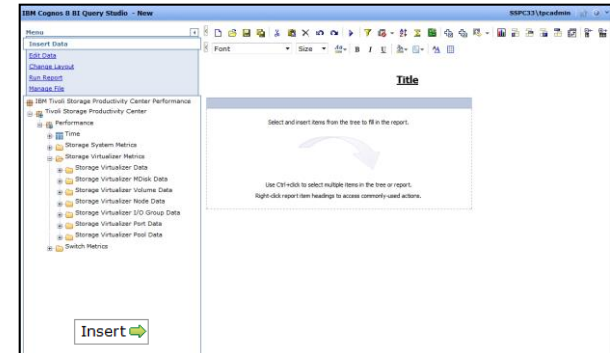
View predefined reports

- Opens Cognos in view mode
- The list shows the reporting package or data model



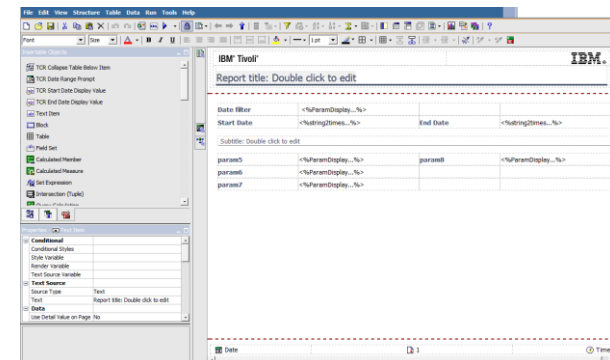
Create a basic report

- Opens Cognos in Query Studio
- Ad Hoc reporting with drag and drop
- Note: FF does not support drag and drop, use instead

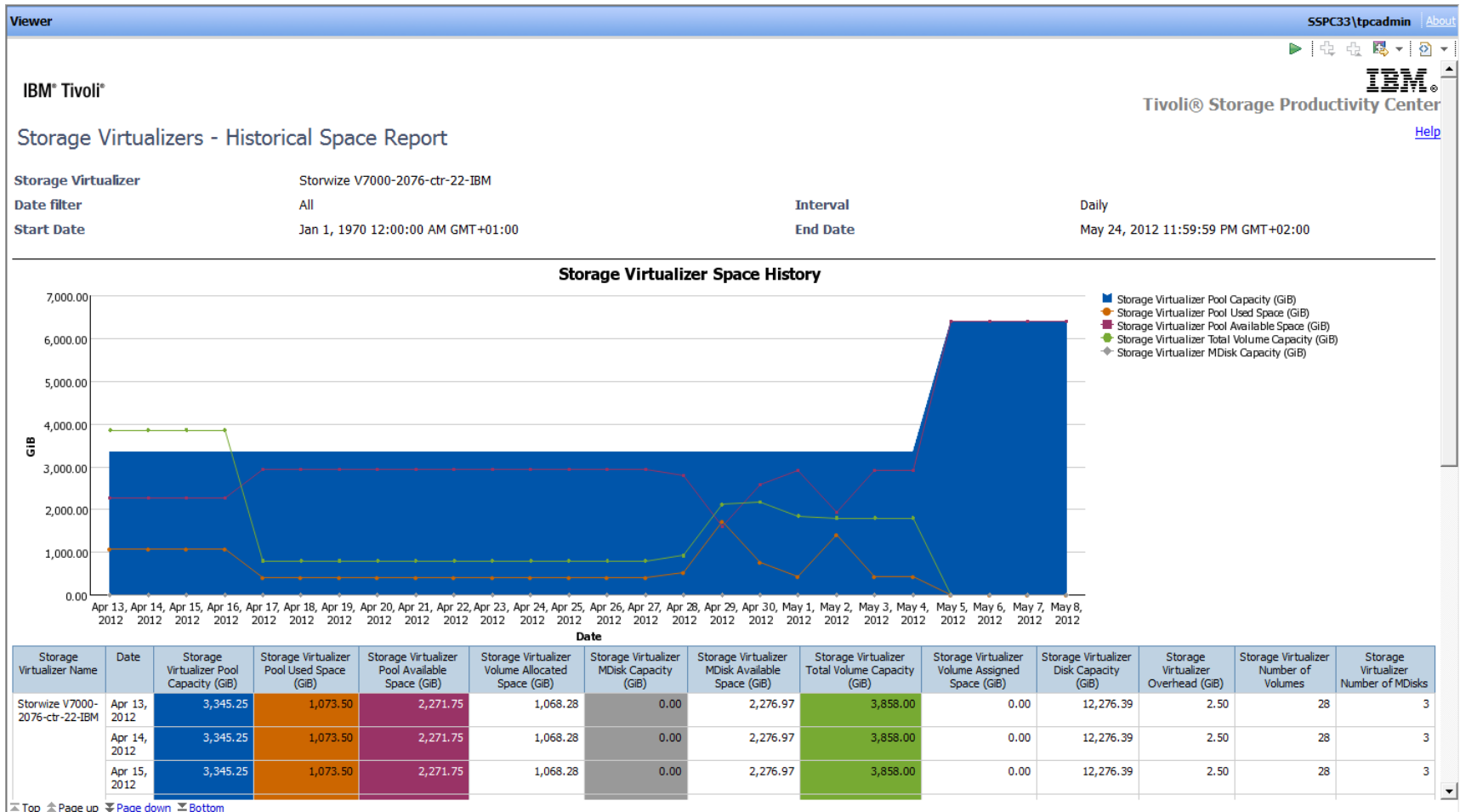


Design a report

- Opens Cognos Report Studio
- Modify or design new reports with more options

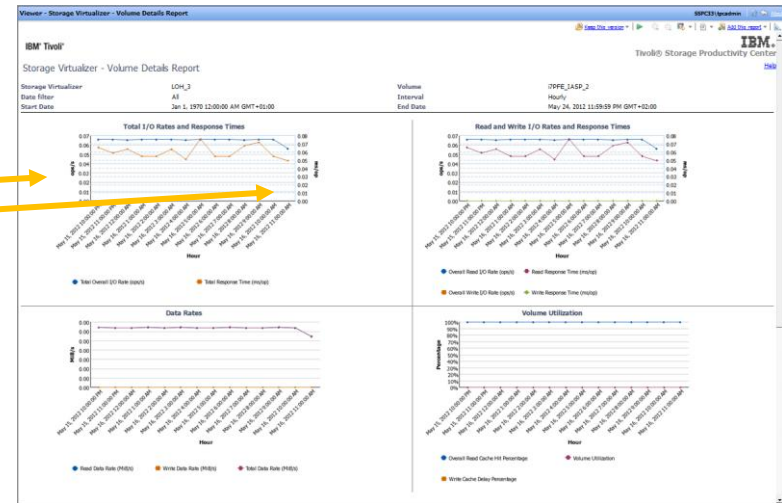


Example of a modified report



Predefined Groups of Reports

- Center Historical Information
 - Pools Historical Space Report
 - Volumes Historical Space Report
 - Storage Systems Historical Space Report
- Performance
 - Lots of detailed reports
 - Reports with two Y-Axis
- Resources
 - Server, File System
 - Pools, Volumes, Mdisks, ...
- Tiering
 - Updates to the TPC 4.2.2 reports
 - Volume Migration Recommendation Report



Predefined Report - Storage Virtualizer Details

Viewer - Storage Virtualizer - Details Report

SSPC33\tpcadm51

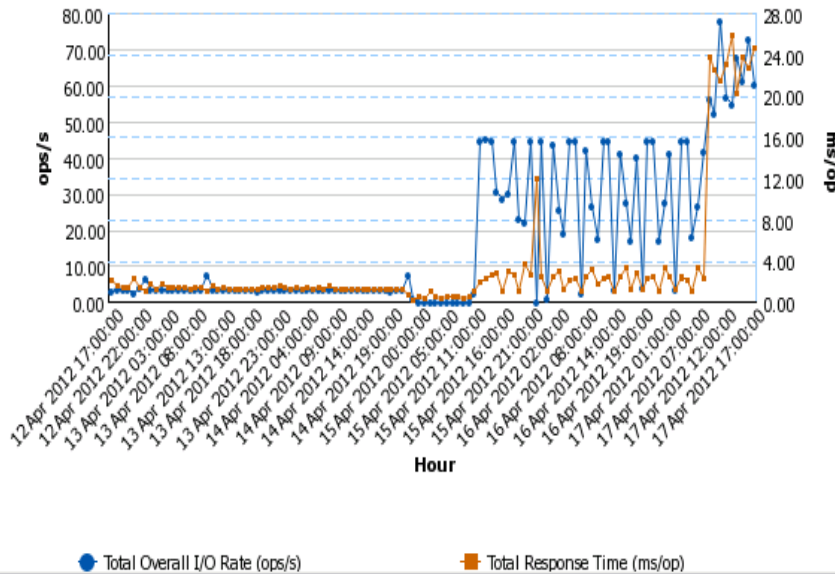
Keep this version | Add this report

Storage Virtualizer - Details Report

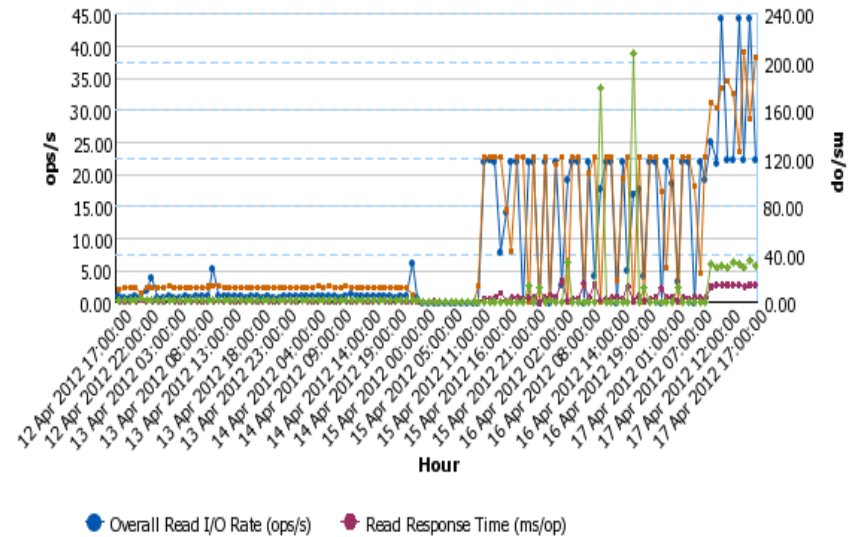
Storage Virtualizer: Storwize V7000-2076-V7000 Unified 1-IBM
 Date filter: All
 Start Date: 1 Jan 1970 00:00:00 GMT+01:00

Interval: Hourly
 End Date: 17 Apr 2012 23:59:59 GMT+02:00

Total I/O Rates and Response Times



Read and Write I/O Rates and Response Times



Cognos Query Studio - Create Basic Report (1)

IBM Cognos 8 BI Query Studio - New SSPC33\tpcadm51

Menu: [Insert Data](#), [Edit Data](#), [Change Layout](#), [Run Report](#), [Manage File](#)

IBM Tivoli Storage Productivity Center Performance

- Tivoli Storage Productivity Center
 - Performance
 - Time
 - Storage System Metrics
 - Storage Systems
 - Storage System
 - DS6000 and DS8000 Series
 - Block Server Performance
 - XIV Systems
 - Storage Volumes
 - Storage Ports
 - Storage Arrays
 - Storage Controllers
 - Storage Modules
 - Storage Virtualizer Metrics
 - Switch Metrics

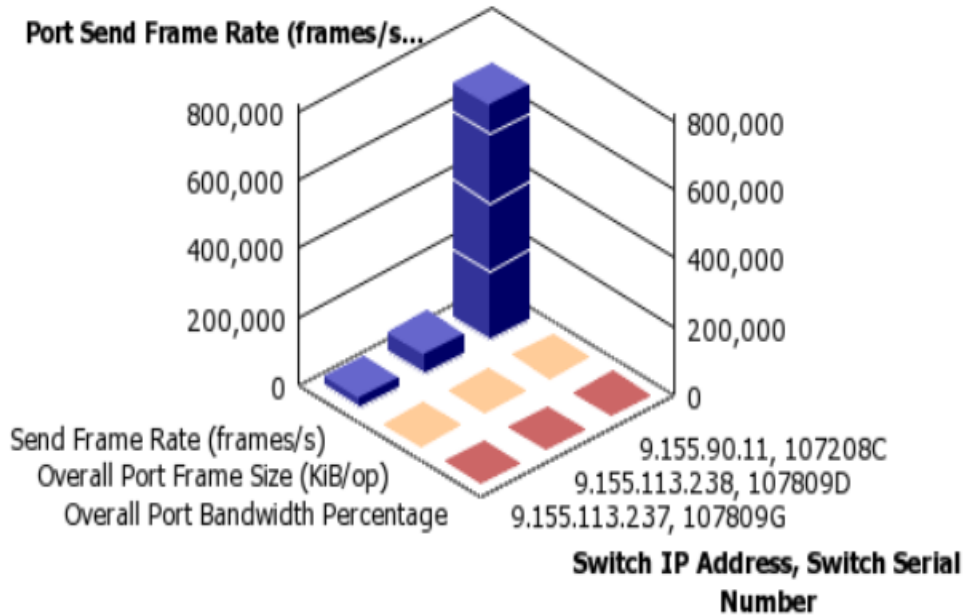
Title

Storage System Name	Normal Read I/O Rate (ops/s)	Total Overall I/O Rate (ops/s)	Total Response Time (ms/op)	Cache to Disk Transfer Rate (ops/s)
DS8000-2107-75AAF1-IBM	0.42	1.35	0.16	0.20
DS8000-2107-75TV181-IBM	161.39	225.30	0.63	62.00
Summary	61.12	86.88	0.34	23.51

Cognos Query Studio - Create Basic Report (2)

Performance

- Time
- Storage System Metrics
- Storage Virtualizer Metrics
- Switch Metrics
 - Switch Data
 - Switch
 - Switch Logical Name
 - Component Properties
 - Status Information
 - Vendor, Model and Device
 - Switch Sample Data
 - Time
 - Switch Metrics
 - Port Send Frame Rate
 - Port Receive Frame Rate
 - Total Port Frame Rate
 - Port Send Data Rate (
 - Port Receive Data Rate
 - Total Port Data Rate (

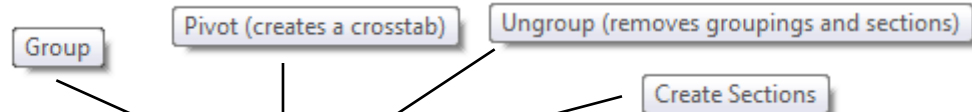


Switch IP Address	Switch Serial Number	Port Send Frame Rate (frames/s)	Overall Port Frame Size (KiB/op)	Overall Port Bandwidth Percentage
9.155.113.237	107809G	29,086.83	0.15	0.08%
9.155.113.238	107809D	58,161.03	0.16	0.07%
9.155.90.11	107208C	683,357.42	0.14	0.17%
Summary		234,656.53	0.15	0.10%

What the beta customers liked the most

- Improved Graphs
 - Multiple Y-Axis
- Adhoc reporting function without writing SQL
 - Drag and Drop Data
 - Interactive Filtering
 - Interactive Grouping
 - Pivot Tables
- Advanced Delivery Methods
 - Email reports
 - As Links
 - As Attachments

Example of some of the loved functions



Volume Utilization Heat Map

Hour: Ascending order; Date: Ascending order

Storage Virtualizer Volume Name: i7PFE2_SYSBAS_0

Volume Utilization	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
May 19, 2012	0.03%	0.03%	0.02%	0.05%	0.02%	0.06%	0.05%	0.06%	0.02%	0.04%	0.04%	0.05%	0.05%	0.03%	0.05%	0.05%	0.02%	0.01%	0.05%	0.10%
May 20, 2012	0.02%	0.02%	0.02%	0.02%	0.03%	0.03%	0.04%	0.04%	0.05%	0.07%	0.04%	0.03%	0.05%	0.03%	0.03%	0.06%	0.05%	0.04%	0.02%	0.10%
May 21, 2012	0.02%	0.04%	0.03%	0.04%	0.08%	0.03%	0.03%	0.05%	0.03%	0.04%	0.05%	0.04%	0.05%	0.05%	0.05%	0.06%	0.04%	0.07%	0.03%	0.16%
May 22, 2012	0.03%	0.03%	0.02%	0.01%	0.03%	0.03%	0.03%	0.03%	0.04%	0.05%	0.08%	24.67%	28.77%	28.94%	30.55%	27.44%	29.32%	29.22%	29.16%	29.02%
May 23, 2012	29.82%	29.82%	29.91%	28.77%	29.35%	29.92%	28.93%	28.13%	29.56%	25.79%	12.79%	29.24%	35.55%	26.80%		0.25%	0.00%	1.72%	0.07%	0.26%
May 24, 2012	0.06%	0.02%	0.04%	0.04%	0.04%	0.02%	0.05%	0.05%	0.05%	0.06%	0.08%	0.08%	0.64%	0.00%	0.00%	0.00%				

Storage Virtualizer Volume Name: i7PFE2_SYSBAS_1

Volume Utilization	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
May 15, 2012																				
May 16, 2012	0.07%	0.10%	0.05%	0.10%	0.09%	0.06%	0.06%	0.07%	0.10%	0.11%	0.11%	0.06%	0.07%	0.12%	0.12%	0.04%	0.05%	0.19%	0.12%	0.16%
May 17, 2012	0.09%	0.09%	0.05%	0.07%	0.09%	0.07%	0.04%	0.07%	0.09%	0.14%	0.05%	0.07%	0.05%	0.04%	0.06%	0.06%	0.05%	0.04%	0.06%	0.19%
May 18, 2012	0.06%	0.08%	0.09%	0.08%	0.04%	0.07%	0.10%	0.05%	0.06%	0.12%	0.06%	0.10%	0.49%	11.28%	0.06%	0.02%	0.02%	0.02%	0.03%	0.29%
May 19, 2012	0.03%	0.05%	0.05%	0.02%	0.03%	0.01%	0.04%	0.01%	0.01%	0.02%	0.02%	0.01%	0.03%	0.04%	0.01%	0.03%	0.02%	0.02%	0.03%	0.10%
May 20, 2012	0.02%	0.02%	0.01%	0.03%	0.02%	0.01%	0.01%	0.03%	0.02%	0.02%	0.01%	0.02%	0.02%	0.04%	0.03%	0.02%	0.05%	0.05%	0.06%	0.15%
May 21, 2012	0.08%	0.07%	0.04%	0.07%	0.05%	0.06%	0.06%	0.05%	0.06%	0.07%	0.03%	0.08%	0.08%	0.06%	0.04%	0.02%	0.04%	0.05%	0.03%	0.12%
May 22, 2012	0.02%	0.03%	0.04%	0.05%	0.03%	0.04%	0.03%	0.05%	0.05%	0.04%	0.08%	29.58%	33.36%	33.39%	35.00%	32.53%	33.31%	33.47%	33.80%	34.00%
May 23, 2012	34.68%	34.19%	34.34%	35.08%	33.58%	34.03%	33.49%	33.95%	34.22%	30.41%	14.53%	33.00%	40.05%	31.93%		0.20%	0.00%	1.51%	0.06%	0.34%
May 24, 2012	0.08%	0.11%	0.01%	0.05%	0.07%	0.02%	0.04%	0.03%	0.04%	0.01%	0.03%	0.02%	0.21%	0.00%	0.00%	0.00%				

Storage Virtualizer Volume Name: i7PFE2_SYSBAS_2

Volume Utilization	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
May 15, 2012																						0		
May 16, 2012	0.14%	0.12%	0.06%	0.12%	0.14%	0.17%	0.08%	0.11%	0.14%	0.17%	0.13%	0.12%	0.13%	0.18%	0.21%	0.14%	0.13%	0.21%	0.19%	0.09%	0.19%	0.26%	0.27%	0.12%
May 17, 2012	0.22%	0.25%	0.16%	0.30%	0.29%	0.24%	0.14%	0.15%	0.26%	0.23%	0.21%	0.23%	0.18%	0.17%	0.27%	0.16%	0.16%	0.05%	0.27%	0.24%	0.18%	0.19%	0.11%	0.09%
May 18, 2012	0.10%	0.11%	0.12%	0.09%	0.03%	0.14%	0.12%	0.11%	0.08%	0.11%	0.12%	0.10%	0.67%	13.63%	0.08%	0.07%	0.07%	0.03%	0.03%	0.32%	0.26%	0.18%	0.03%	0.03%

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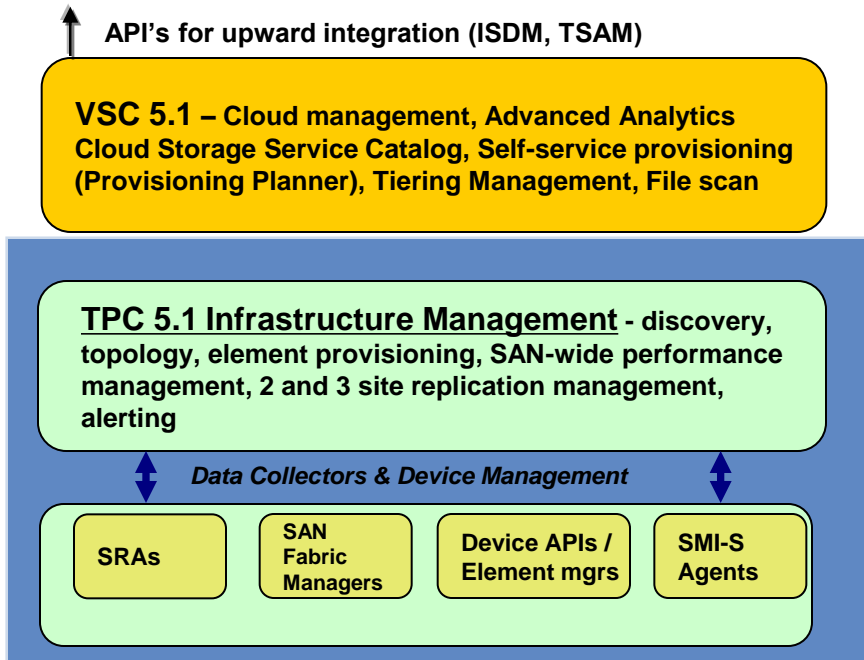
- [Glossary](#)

Tivoli Storage Productivity Center 5.1

Packaging und Lizenzierung

Volkmar Priess

Simplified Packaging ...



What this is:

- New packaging to dramatically simplify the offering
- Two-tiered model: Base tier for storage infrastructure management, higher tier for automated storage cloud and advanced analytics
- Current TPC Basic Edition, TPC for Disk, TPC for Replication, and TPC for Disk Select map to TPC 5.1; Advanced analytics and automation in VSC 5.1

Benefit to you:

- Create a new TPC offering that includes end-to-end storage management capabilities with configuration, performance and availability all in one
- Create a new offering for premium analytics and virtualization functions for storage cloud management
- Streamlined business benefits with simplified entitlement and pricing

Tivoli Storage Productivity Center – Summary of Offerings

What You Need to Manage

TPC Can Help

Servers

- ESX servers
- Apps, DB's, file systems
- Volume managers
- Host bus adaptors
- Virtual HBAs
- Multi-path drivers

Storage Networks

- Switches & Directors
- Virtual devices

Storage

- Multi-vendor storage
- Storage array provisioning
- Virtualization / Vol. mapping
- Block + NAS, VMFS
- Tape libraries

Replication

- FlashCopy
- Metro Mirror
- Metro Global Mirror

Start Here



TPC 5.1

- ✓ Single management console
- ✓ Heterogeneous storage
- ✓ Health monitoring
- ✓ Capacity mgmt.
- ✓ Provisioning
- ✓ Fabric management
- ✓ FlashCopy support
- ✓ Storage System Performance Management
- ✓ SAN Fabric Performance management
- ✓ Trend Analysis
- ✓ DR & Business Continuity
- ✓ Applications & Storage
- ✓ Hypervisor (ESX, VIO)
- ✓ Hyperswap Mgmt.

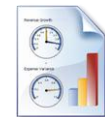


... and Mature

IBM SmartCloud Virtual Storage Center

All this and more...

- ✓ Advanced SAN Planning and provisioning based on best practices
- ✓ Proactive configuration change management
- ✓ Performance optimization
- ✓ Tiering Optimization
- ✓ Complete SAN fabric performance mgmt.
- ✓ Storage Virtualization
- ✓ Application Aware flashcopy management



When TPC V5.1 announces...

Lizenzpakete TPC V5

TPC Select Edition V5
(5725-G33)

identischer Funktionsumfang

TPC V5
(5725-F93)

Virtual Storage Center
(5725-F98)

w/ TPC V5 *advanced* functions +
SVC + FlashCopy Mgr

Lizenzierungs-Modell

pro Storage-Einschub im Rack (incl. Controller)

pro Terabyte Managed Storage Kapazität (netto)

TB Modell mit folgenden Tier-Stufen:

Description
Per Terabyte (1-100)
Per Terabyte (101-250)
Per Terabyte (251-500)
Per Terabyte (501-750)
Per Terabyte (751-1.250)
Per Terabyte (1.251-2.000)
Per Terabyte (2.001+)

Simplify from five licensing packages to two: TPC and Virtual Storage Center

		TPC 4.2					Joint Business	
Features		Basic Edition	Disk	Data	Repl	Standard Edition	TPC 5.1	VSC
Basic	Discovery, topology, monitoring, capacity management, alerting	•	•	•		•	•	•
Disk	Device Performance Management		•			•	•	•
Repl	2-site Replication Management				•		•	•
	3-site Replication Management				•		•	•
Data	Basic Capacity Reporting, NAS Discovery			•		•	•	•
	File System, DB Scans, Analytics, Data placement, quotas, TSM int.			•		•		✓
Standard Edition	Fabric Performance Management					✓	•	•
	Storage Optimizer					✓		✓
	Configuration Change Management and best practices					✓		✓
	SAN Storage Planners & Policy based management					✓		✓
	Storage Tier Reports					✓		✓
New	Tiered Storage Optimization (Sage)							✓
	Cloud Service API						•	•
A-la-carte	FlashCopy Manager Software							•
	SAN Volume Controller Software							•

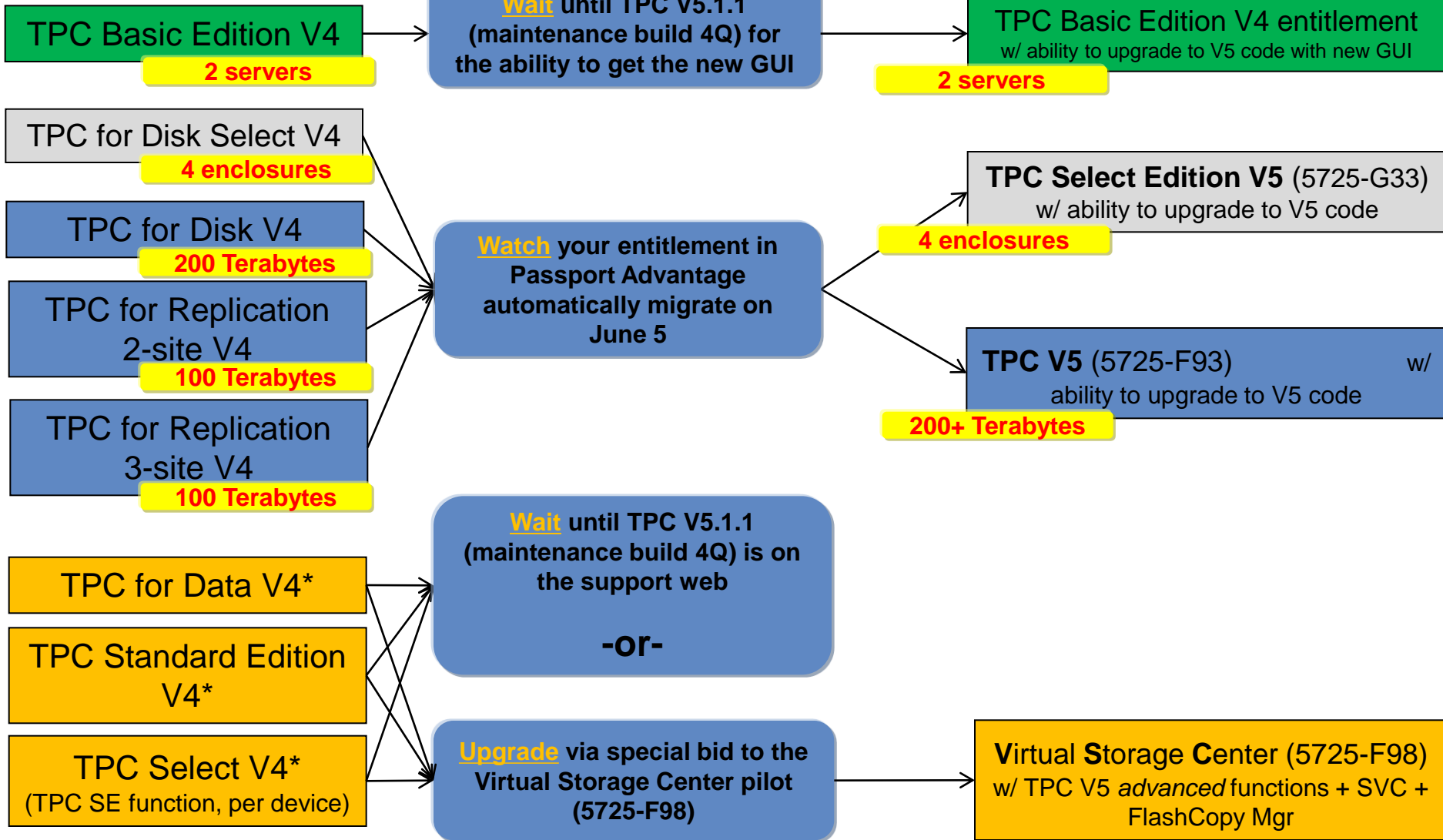
} functionality from SVC and FlashCopy Manager

✓ Unique licensed functionality – “Advanced SRM”

If today I have...

What do I do?

Then I'll end up with...



* These offerings will continue to be sold in all ordering systems until further notice

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Tivoli Storage Productivity Center V5.1

Fragen ?

धन्यवाद
Hindi

谢谢

תודה רבה
Hebrew

Спасибо
Russian

Simplified
Chinese

Gracias

Spanish

شكراً
Arabic

Thank You

English

Obrigado
Brazilian Portuguese

Grazie
Italian

감사합니다

Korean

Danke
German

Merci
French

நன்றி
Tamil

謝謝

Traditional Chinese

ขอบคุณ
Thai