IBM Spectrum Storage

IBM Spectrum Protect

IBM Spectrum CDM

IBM Spectrum Protect Update and Spectrum Copy Data Management

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## IBM Spectrum Storage Family

### Family of Storage Management and Optimization Software

- **Control**: IBM Spectrum Control
- **Protection**: IBM Spectrum Protect
- **Archive**: IBM Spectrum Archive
- **Virtualize**: IBM Spectrum Virtualize
- **Scale**: IBM Spectrum Scale
- **Accelerate**: IBM Spectrum Accelerate
- **CDM**: IBM Spectrum CDM

### IBM Spectrum Control
- Analytics-driven hybrid cloud data management to reduce costs by up to 73%

### IBM Spectrum Protect
- Optimized hybrid cloud data protection to reduce backup costs by up to 53 percent

### IBM Spectrum Archive
- Fast data retention that reduces TCO for active archive data by up to 90%

### IBM Spectrum Virtualize
- Virtualization of mixed block environments stores up to 5x more data

### IBM Spectrum Accelerate
- Enterprise block storage for hybrid cloud deployed in minutes instead of months

### IBM Spectrum Scale
- High-performance, highly scalable hybrid cloud storage for unstructured data driving cognitive applications

### IBM Spectrum CDM
- Manage copies to increase business velocity and efficiency

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*IBM Systems*
IBM Spectrum Storage Family

Family of Storage Management and Optimization Software

- Control
- Protect
- Archive
- Virtualize

- Scale
- Accelerate
- CDM

Any Storage
FlashSystem
Private, Public or Hybrid Cloud

IBM Spectrum Control
- Analytics-driven hybrid cloud data management to reduce costs by up to 73%

IBM Spectrum Protect
- Optimized hybrid cloud data protection to reduce backup costs by up to 53 percent

IBM Spectrum Archive
- Fast data retention that reduces TCO for active archive data by up to 90%

IBM Spectrum Virtualize
- SAN Volume Controller

IBM Spectrum Accelerate
- XIV (All Flash and HDD)

IBM Spectrum Scale
- ESS (Elastic Storage Server, also as All Flash available)

IBM Spectrum CDM
- Software or Vmware Image

IBM Systems
# Introducing IBM Spectrum Storage Suite

**A new licensing model for IBM Spectrum Storage**

Provides unlimited access to IBM’s comprehensive set of software-defined storage tools with convenient per-TB pricing

| IBM Spectrum Control | IBM Spectrum Protect | IBM Spectrum Archive | IBM Spectrum Virtualize | IBM Spectrum Accelerate | IBM Spectrum Scale | IBM Cloud Object Storage |
Agenda

• Spectrum Protect V 7.x news
• Spectrum Protect V 8.1 news
• Spectrum Copy Data Management
Agenda

- Spectrum Protect V 7.x news
- Spectrum Protect V 8.1 news
- Spectrum Copy Data Management
What is a Container Storage Pool?

**Deduplication**
Synchronous server-side deduplication of data...

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**Efficiency ...**
4 PB managed (front-end, varies based savings from data reduction (deduplication & compression)
1 PB data stored
4 - 6 TB database size (DB backup streams increased in 7.1.7 to support > 4 TB size)
Workload: 80% Virtual Machines, 20% Databases & Files

**Scalability ...** (numbers stated front-end)
100 TB / Day ingest via client-side
80 TB / Day ingest via server-side
100 TB / Day server-to-server replication

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**Delivered 7.1.3**
3Q2015...

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**Directory-Based Pools**

**Cloud-Based Pools**
How Do Container Pools Work?

The “Engine” powering container storage pools...

Directory-Based Pools

Cloud-Based Pools

Algorithm (fingerprint & hash)

- Rabin Fingerprint to find chunks
- SHA-1 hash + chunk size to uniquely identify each
- Algorithms shared client & server side
- Chunks are variable block
- End-to-end object checksum
- LZ4 Compression (Server 7.1.5, Client 7.1.6)
- Encrypt data at rest for cloud pools (AES-256, server managed keys)
A Closer look at the cloud accelerator…

What is it?

Data comes in and is deduplicated and compressed
Chunks stored to local disk synchronous to client backup
Chunks moved to cloud, asynchronous from client backup
- Once 1 GB container is full, “PUT” container to the cloud
- If not full 1 GB container, than age based, only a few minutes
- I/O to cloud optimized for cloud and “PUT” behaviors…

Considerations

If accelerate storage becomes full, backups will fail
“Drain Rate” from accelerator storage limited by:
- Network speed
- I/O capability of cloud target
- If cloud geo-dispersed, will be limited by link between sites due to erasure coding distribution dependencies

Available for S3 based support:
- IBM Cloud Object Storage
- Amazon S3
- Other S3 based storage providers and clouds being considered in the future
**Backup Performance**
- Up to 8 TB/hour

**Restore Performance**
- **Structured workloads** (30 sessions) - up to 1500 GB/hour
- **VM workloads** (20 sessions) - up to 1200 GB/hour
- **Unstructured workloads** (30 sessions) - up to 500 GB/hour

*Depends on workload type, number of sessions, server performance, line speed*
What else to consider when storing data to cloud

Writes/PUTs calculation for 1 TB Data stored into the cloud

- **Spectrum Protect V 7.1.7**
  - 1 GB containers and 5 MB part size
    - 204 parts per container + 1 initiate multi-part request = 205 PUTs per 1 GB
    - 205 PUTs * 1000 containers = **205,000 PUTs per 1 TB stored data**

- **Spectrum Protect V 8.1**
  - 1 GB containers and 100 MB part size
    - 10 parts per container + 1 initiate multi-part request = 11 PUTs per 1 GB
    - 11 PUTs * 1000 containers = **11,000 PUTs per 1 TB stored data**
Read/Get calculation for 1 TB Data stored into the cloud

It is very hard to give a good estimate here without knowing the specific data and the restore pattern.

Assumption: the size of an average de-duplicated extent will be about 200 KB

1 TB Backend Data
1 TB / 200 KB

⇒ ~ 5 Million Get Requests
Both IBM COS configurations may be deployed in public, private or hybrid cloud models.
CONVERT for Container Pools

Field Experiences & Observations...
- Convert In-Place (reuse existing FILE device class directories for container storage pool)
  - Policies updated to reference new container pool as destination
  - Initial backups to container pool will write more data and may exhaust working space needed for CONVERT
  - Nightly backup of 1 TB only writes 250 GB using 4:1 data reduction (deduplication & compression)
  - Initial backups of the same workload to an empty container pool will write 1 TB as chunks are “seeded” to the pool

The default is to run continuously but the advice is to use schedules

Minimum run time
- If source pool is a FILE pool: 2 hours
- If source pool is a VTL or Tape pool: 4 hours
Using Tape with Container Storage Pools

#1: Replication and Tape

- Replication Provides
  - Active-Active DR position (Immediate client restore from target)
  - REPAIR from peer (Using PROTECT)

- Tape provides
  - Alternate REPAIR source for storage issues
  - Tertiary copy (air gapped)

Optional PROTECT to tape (tertiary copy)

#2: Tape-based Disaster Recovery

- Benefits
  - Tape based off-side rotation for disaster recovery
  - Protect single-server environments
  - Align environments to existing procedures or business practices

Disaster Recovery Site (Offline. Recovery Actions Needed)
How Do Tape Copies for Container Pools Work?

**What?**
Copy deduplicated chunks from directory container storage pools to tape

Repair Scenarios, protection for:
- Disk or subsystem failure not handled by device (local protection)
- Offsite tape rotation, disaster recovery where capability aligns to recovery time objectives (RTO)
- Tertiary copy to satisfy regulatory or other compliance requirements (not DR, not RTO sensitive data access)

**How?**

PROTECT STGPOOL command using “TYPE=LOCAL” to create copies to one or both designated tape copy pools

REPAIR STGPOOL command using “TYPE=LOCAL” to use tape copies for a repair operation (recover damaged chunks for pool)

Incremental, only new and changes chunks are copied to tape on a given day

Up to TWO tape copy pools can be assigned to a given directory container pool

Reclamation built into PROTECT process, data re-harvested from container pool and re-seeded to tape (offsite-style)
Disaster Recovery Capabilities using Tape Copies

PROTECT/REPAIR For Container Storage Pools, 7.1.7

- Restore

<table>
<thead>
<tr>
<th>Copy Storage Pool</th>
<th>Tape Protected Container Pool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Storage Pool Available at DR Site</td>
<td>+ (After RESTORE STGPOOL)</td>
</tr>
<tr>
<td>Client restore direct from tape copies</td>
<td>+</td>
</tr>
<tr>
<td>Storage pool disk space required at DR Site</td>
<td>+ (No disk required)</td>
</tr>
<tr>
<td>Deduplication optimized client backup &amp; restore</td>
<td>-</td>
</tr>
<tr>
<td>Deduplication optimized tape copies</td>
<td>+</td>
</tr>
<tr>
<td>Time needed for daily copies to tape</td>
<td>-</td>
</tr>
<tr>
<td>Required actions before 1st byte restored</td>
<td>+</td>
</tr>
</tbody>
</table>

Restore DB, Server Up

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# Disaster Recovery for Container Pools Using Tape

## Example 48 Hour Disaster Recovery Scenario

<table>
<thead>
<tr>
<th>Step</th>
<th>Goal</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stand-up Server at DR Site</td>
<td>Restore server from backup</td>
<td>Use SSD for server database</td>
</tr>
<tr>
<td></td>
<td>Start Server</td>
<td>&gt;= 100 MB/sec average combined R/W throughput</td>
</tr>
<tr>
<td></td>
<td>Update storage and device configurations</td>
<td>&gt;= 12862 average IOPS</td>
</tr>
<tr>
<td></td>
<td>Server Restored and running: 6 hours</td>
<td></td>
</tr>
<tr>
<td>Prepare and Repair Storage Pool</td>
<td>Repair container storage pool from tape</td>
<td>Use NL-SAS such as Medium Blueprint server pool configuration</td>
</tr>
<tr>
<td></td>
<td>Repair up to 50 TB (back-end)</td>
<td>&gt;= 700 MB/sec write to storage pool disk</td>
</tr>
<tr>
<td></td>
<td>Time to Audit Pool: 2 hours</td>
<td>New generation tape technology such as LTO-7 or better</td>
</tr>
<tr>
<td></td>
<td>Repair (tape read): 28 hours</td>
<td>&gt;= 6 drives to allow concurrent read from tapes</td>
</tr>
<tr>
<td></td>
<td>Data Available in Pool: ~200 TB (Total Managed)</td>
<td></td>
</tr>
<tr>
<td>Pool Ready, Clients Restore Data</td>
<td>Perform client restores</td>
<td>Use NL-SAS such as Medium Blueprint server pool configuration</td>
</tr>
<tr>
<td></td>
<td>Restore up to 37 TB (front-end)</td>
<td>&gt;= 10 restore sessions achieving 3102 GB/hr</td>
</tr>
<tr>
<td></td>
<td>Time for client restores: 12 hours</td>
<td></td>
</tr>
</tbody>
</table>

- Achievable rates highly dependent upon workload and configured environment
- Proof of Concept along with regular DR tests recommended in order to validate suitability for existing workload and environment
Agenda

- Spectrum Protect V 7.x news
- Spectrum Protect V 8.1 news
- Spectrum Copy Data Management
Renaming everything from Tivoli Storage Manager to Spectrum Protect (v8.1.0)
Product Renaming

These products will be ‘IBM Spectrum Protect’:
- Sever, Operations Center, Storage Agent & CMS
- Backup-Archive client and Space Management (UNIX/Linux)
- TSM for VE (VMware/Hyper-V) / Recovery Agent UI
- TSM for Mail (Domino/Exchange)
- TSM for Databases (Oracle/SQL)
- TSM for ERP (SAP)
- FlashCopy Manager
- FastBack for Workstations

The following products will not change:
- Fastback
- Sysback

Software and Documentation prior to 8.1 will continue to be known as ‘Tivoli Storage Manager’

Tivoli Storage Manager or TSM replaced with IBM Spectrum Protect in:
- Knowledge Center
- Technotes and Internet pages
- Info, Warning and error messages
- GUI and command line interface
- Graphic logos
- Name as it appers in SW management tools (e.g. Windows uninstall)
- Name as it appears in the installers (GUI and Command Line)
- Name in Windows Start Menu and file properties
- Messages and Query License output
Product Renaming – What’s NOT Changing

• Client Installation file, image, and component names
  – 8.1.0.0–20160801A–TIV–TSMBAC–WinX64.exe
  – 8.1.0.0–TIV–TSMBAC–Mac.dmg

• Client Installation paths
  – “C:\Program Files\Tivoli\TSM\baclient”

• Executable names
  – dsmc.exe
  – dsm.exe

• API function calls
  – dsmGetData
  – dsmInit

• Registry entries
  – HKEY_LOCAL_MACHINE\SOFTWARE\IBM\ADSM\CurrentVersion

• Any file created by the product (e.g., error logs, option files, etc.)
  – dsmerror.log
  – dsm.opt
  – tsmbbdi.ini

• Commands or options with TSM
  – vmcli –f backup –t TSM_INCR
  – VE_TSMCLI_NODE_NAME<VMCLI node>
  – VE_TSM_MODE VCLOUD I VSPHERE

• Message number prefix
  – ANS
  – FMV

• Powershell cmdlet names

<table>
<thead>
<tr>
<th>CommandType</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add</td>
<td>FcmFsPolicy</td>
</tr>
<tr>
<td>Add</td>
<td>FcmFsVssPolicy</td>
</tr>
<tr>
<td>Clear</td>
<td>FcmMmcManagedCapacityHistory</td>
</tr>
<tr>
<td>Clear</td>
<td>FcmMmcScheduledActivityHistory</td>
</tr>
</tbody>
</table>

• Windows ‘services’ names
  – “TSM Central Scheduler Service”
  – “TSM Client Acceptor”
  – “TSM Remote Client Agent”
  – “TSM Journal Service”

• White papers / red books / tech notes for previous versions

• License certificate names (TSMBASIC.LIC, TSMEE.LIC)
Currency – Platforms (v8.1.0)

**Server**

- Platform dropped, since DB2 11.1 does not support:
  - HP
  - Solaris
  - pLinux Big Endian

- Minimum supported OS levels on remaining platforms:
  - AIX: 7.1 TL4 SP2, 7.2 TL0 SP2
  - Linux x86_64
    - Red Hat Enterprise Linux 6.7
    - Red Hat Enterprise Linux 7.1
    - SUSE Linux Enterprise Server 11, Service Pack 4 or later
      - SUSE Linux Enterprise Server 12
  - Linux on zSeries
    - Red Hat Enterprise Linux 7.1
    - SUSE Linux Enterprise Server 12
  - Windows Server
    - Microsoft Windows Server 2012: Standard, Enterprise, or Datacenter
    - Microsoft Windows Server 2012 R2
  - Storage Agent
    - Microsoft Windows Storage Server 2012 all x64 editions
    - Microsoft Windows Storage Server 2012 R2 all x64 editions

**Client**

- Added support
  - Ubuntu 16.04 and 14.04 (on x86, pLinux LE)
  - Windows Server 2016

- Dropped support
  - HP/UX Itanium – Note: still shipping the API
  - Solaris SPARC - Note: still shipping the API
  - Older Mac Releases
  - Windows GPFS Support
  - pLinux BE BA client package – still shipping API for pLinux BE
  - Windows 32 bit, Windows 2008 & 2008R2, Windows 7 and Windows 8
  - MS SQL 2012
Convert from Tape Storage Pool to Container/Cloud

- Migrate from tape and VTL to container pools
  - Move previously ingested data from any FILE/TAPE/VTL storage pool to a directory or cloud container pool
  - Fully automated

CONVERT utility to harvest data from existing device-class based pools
Update environment to leverage container storage pools
From FILE, VTL, or Tape to either Directory Container Pool or Cloud (any to any)
Exploit VM Tagging

Data protection information stored with VM’s
Backup servers use assigned tag
Simplifies management and configuration

vStorage Backup Server

vm_sql01  vm_sql02  vm_exch01  vm_exch02

vm_fs01  vm_fs02  vm_dev01  vm_dev02

vm_test01  vm_test02  vm_orc_p1  vm_orc_p11

To Backup Target

= Backup daily @ 11:00 PM  = Backup daily @ 8:00 PM  = Excluded from backup
Schedule for Protection

Inherited retention settings
Configuration of Tagging Support in Data Protection for VMware

- **Step 1** - Turning on tag support TAGDATAMOVER=YES
- **Step 2** - (Optional) If tags are set using PowerCLI in the next steps, pre-populate IBM categories and tags:
  - Run "dsmc set vmtags"
- **Step 3** - Excluding VMs from being backed up
  - From the vSphere Web Client GUI, assign “Excluded” tag to VMs
    - The backup still honors “Domain.full” client option, but the tag setting overrides the option setting.
    - Optionally, the “Excluded” tag can be set using the VMware PowerCLI command line.
- **Step 4** - Configuring retention policy for VM backup
  - From the vSphere Web Client GUI, assign Management Class Name tag to VMs
    - VM backup still honors “Include.vm”, “VMMC”, “VAPPMC” client options and the default management class defined for the VMware datacenter node, but the tag setting overrides the other settings.
    - Optionally, the Management Class Name tag can be set using the VMware PowerCLI command line.
- **Step 5** – Preview backup configuration:
  - Run “dsmc backup vm -preview”
## 8.1 Tag Categories and Values

<table>
<thead>
<tr>
<th>Category</th>
<th>Tag</th>
<th>Tag Description</th>
<th>Applicable Inventory Objects (valid object assignments)</th>
<th>Client Options to Override</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backup Management (IBM Spectrum Protect)</td>
<td>Excluded</td>
<td>The object is excluded from scheduled backups by IBM Spectrum Protect</td>
<td>Datacenter, Folder, Host, Host Cluster, Resource Pool, and Virtual Machine</td>
<td>domain.vmfull</td>
</tr>
<tr>
<td>Backup Management (IBM Spectrum Protect)</td>
<td>Included</td>
<td>The object is included in scheduled backups by IBM Spectrum Protect</td>
<td>Datacenter, Folder, Host, Host Cluster, Resource Pool, and Virtual Machine</td>
<td>domain.vmfull</td>
</tr>
<tr>
<td>Data Mover (IBM Spectrum Protect)</td>
<td>Data_mover_name</td>
<td>The data mover used for backups in IBM Spectrum Protect</td>
<td>Datacenter, Folder, Host, Host Cluster, Resource Pool, and Virtual Machine</td>
<td>nodelist</td>
</tr>
<tr>
<td>Disk Backup List (IBM Spectrum Protect)</td>
<td>Include/Excluded</td>
<td>The list of virtual disks to be included in a backup in IBM Spectrum Protect</td>
<td>Datacenter, Folder, Host, Host Cluster, Resource Pool, and Virtual Machine</td>
<td>include.vmdisk, exclude.vmdisk</td>
</tr>
<tr>
<td>Management Class (IBM Spectrum Protect)</td>
<td>Mgmt_class_name</td>
<td>The policy used for retention settings in IBM Spectrum Protect</td>
<td>Datacenter, Folder, Host, Host Cluster, Resource Pool, and Virtual Machine</td>
<td>include.vm.mgmtclass_name, VMMC (VMCTLMC)</td>
</tr>
<tr>
<td>Snapshot Attempts (IBM Spectrum Protect)</td>
<td>Quiesce, Nonquiesce</td>
<td>The number of snapshots to attempt before a backups fails</td>
<td>Datacenter, Folder, Host, Host Cluster, Resource Pool, and Virtual Machine</td>
<td>include.vmsnapshotattemps vmname quiesce nonquiesce, VMSNAPSHOTATTEMPTS x,y</td>
</tr>
<tr>
<td>Application Protection (IBM Spectrum Protect)</td>
<td>Enabled</td>
<td>Application protection is provided by IBM Spectrum Protect</td>
<td>Virtual Machine</td>
<td>include.vmtsmvs vname</td>
</tr>
<tr>
<td>Application Protection (IBM Spectrum Protect)</td>
<td>Enabled &amp; KeepSqlLog</td>
<td>Protect Microsoft SQL Server and keep log files for in-guest log file management</td>
<td>Virtual Machine</td>
<td>include.vmtsmvs vname -OPT=KEEPSqlLog</td>
</tr>
<tr>
<td>Schedule (IBM Spectrum Protect)</td>
<td>Schedule_name</td>
<td>The schedule to use for backups by IBM Spectrum Protect</td>
<td>Datacenter, Folder, Host, Host Cluster, and Resource Pool</td>
<td>n/a</td>
</tr>
</tbody>
</table>
Use “VMTAGDEFAULTDATAMOVER <default_datamover_node>” option to specify the default data mover.

Place this option in options file of the default data mover and optionally in all data movers.

Default data mover backs up new VMs in a datacenter without a data mover tag.

If default data mover is not configured then new VMs added to vCenter after the schedule is assigned will not be backed up and will show 'At Risk' on the IBM Spectrum Protect Monitor table.
Load balancing across multiple data movers

- Sort the list VMs by storage usage (largest VM first)
- Round-robin load balancing: Going down the sorted list, the round-robin load balancer assigns a VM to each selected data mover in turn.
- If Full rebalance is unchecked, we only balance VMs without a valid data mover tag. Otherwise, the load balancer overrides any existing data mover tags set in VMs.
At-Risk per VM

Operation, Data Moved, etc

History of recent operations for a selected VM
Daily backup where many vms need to be processed simultaneously
Disaster recovery (or test) where many vms need to be restored simultaneously

- **Multiple VMs in parallel (per data mover)**
  - Backup – v6.4
  - Restore – future

Backup or recovery of large file/SQL server that has several larger VMDK files

- **Single VM, Multiple VMDKs in parallel**
  - Backup – v8.1
  - Restore – future

Backup or recovery of vm that has single large VMDK (potentially in addition to small system VMDK) e.g., vm hosting large SQL database

- **Single VM, Single (large) VMDK in parallel**
  - Backup – v8.1
  - Restore – v8.1
8.1 VMware Performance Options

- **VMMAXPARALLEL**
  - Defines the maximum number of VMs backed up in parallel

- **VMLIMITPERHOST** and **VMLIMITPERDATASTORE**
  - Defines the maximum number of simultaneous VMs or Disks backed up per host or per data store

- **VMMAXBACKUPSESSIONS**
  - Defines the number of total backup sessions across all VMs (Default = VMMAXPARALLEL)

- **VMMAXRESTORESESSIONS**
  - Defines the number of total restore sessions across all VMs (DEFAULT=1)
1) **VMMAXBACKUPSESSIONS 35**  
**VMMAXPARALLEL 20**

Meaning: Up to 20 VMs will be backed up in parallel using up to 35 sessions.

2) **VMMAXPARALLEL 10**

Meaning: Up to 10 VMs will be backed up in parallel using up to 10 sessions. If less than 10 VMs remain to backup, then up to 10 sessions can be used on the remaining VMs.

3) **VMMAXBACKUPSESSIONS 20**  
**VMMAXPARALLEL 20**

Meaning: Same as setting VMMAXPARALLEL 20.
• IO Monitor
  – Distributes resources to disks
    • Sessions and VMDK Handles
  – Each Virtual Machine is Guaranteed the Following
    • 1 Session and 1 VMDK Handle
  – The more data remaining, the more sessions
    • Sessions are reallocated to other disks as remaining data goes down
The CDF changes

- Only apply to virtual disks that are greater than the threshold of 2 TB
  - Virtual disks that are below the threshold will use the current 16 KB record size and 128 MB mega-block size
  - Virtual disks that exceed the threshold will use the 64 KB record size, and 1 GB mega-block size
- The exception is the name change which will be used for virtual disks of all sizes.
- The following table, represents the changes:

<table>
<thead>
<tr>
<th></th>
<th>&lt;= Threshold</th>
<th>&gt; Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Record Size</td>
<td>16KB</td>
<td>64KB</td>
</tr>
<tr>
<td>MBLK Size</td>
<td>128MB</td>
<td>1GB</td>
</tr>
<tr>
<td>.CTL/.DAT file name</td>
<td>8 hex digits</td>
<td>8 hex digits</td>
</tr>
</tbody>
</table>
Agenda

• Spectrum Protect V 7.x news
• Spectrum Protect V 8.1 news
• Spectrum Copy Data Management
At a glance

- OEM-IN from Catalogic (ECX product)
- Copy Data Management solution
- Sold and supported as an IBM Product: IBM Spectrum Copy Data Management v2.2.5
- Deployed as Virtual Machine (OVA file)
- Extremely easy to use: Installs in less than 15 minutes, configures in less than 45 minutes
- Announcement date: October 25th 2016
- General Availability date: October 28th 2016
IT Modernization through “In Place” Copy Data Management

Your Infrastructure

IBM FlashSystem A9000
IBM FlashSystem A9000R
IBM FlashSystem V9000
IBM Storwize V7000F
IBM Storwize V5000F
Also supports:
- Storwize HDD systems
- SAN Volume Controller
- Spectrum Virtualize
- Spectrum Accelerate
- XIV Storage Arrays
- VersaStack
- EMC VNX and Unity
- NetAPP

IBM Spectrum Copy Data Management

Software-Defined Copy Data Management Platform

Catalog
- Discover
- Search

Automate
- SLA compliance
- Policy-based

Transform
- Cloud integrated
- DevOps enabled

Use Cases

Protection and Disaster Recovery
DevOps, Test/Dev
Automated Copy Management
Hybrid Cloud

Applications

LEVERAGE
Copy Data Management actionable catalog provides:

- Catalog all snaps, replicas, files and VMware objects agentlessly via APIs
- Detailed visibility and context of your current environment
- Copy Lineage and location
- VMware / Storage correlation
- Compliance / Audit reporting
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- Catalog all snaps, replicas, files and VMware objects agentlessly via APIs
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Copy Data Management

Automated DR / DevOps / Analytics:

- Workflows leverage actionable catalog
- Bring up applications in a fenced network
- Bring up applications in order, leveraging existing application consistent snapshots
- Test DR every day
- Enable DevOps agility; faster time to market
- Fresh data for analytics; greater accuracy
Automated DR / DevOps / Analytics:
- Workflows leverage actionable catalog
- Bring up applications in a fenced network
- Bring up applications in order, leveraging existing application consistent snapshots
- Test DR every day
- Enable DevOps agility; faster time to market
- Fresh data for analytics; greater accuracy
- Environments can be cleaned up, promoted to production or moved to permanent storage depending on the use case
- The key is automation to bring environments up and bring environments down
Thank You