

SFD15 - IBM

Steve Kenniston (@skenniston)

“Restore, Reuse, Reinvent”

Introduction - IBM - Next generation Data Protection

“IBM is the #2 storage company in the world”

Data Alchemy - the desire to turn data into knowledge

IBM Spectrum Protect Plus 10.1.1

Supports

- VMware and Hyper-V
- Microsoft SQL and Oracle (physical and virtual)

Primary data reuse use cases

- data protection / recovery
- test / dev, DevOps., Reporting, Analytics

Backup data made useful

Data Management / Operational Recovery

Backup

Why Modernise backup?

- Lower costs
- Improved performance
- Easier management
- Cloud Enablement
- Enhanced Business agility

Use Cases

- fully automated recoveries
- Disaster recovery
- Test / Dev, DevOps
- Reporting/ analytics
- patch management

“Any use case where someone in the organisation needs access to data”

Who cares?

Business leaders

- achieve maximum uptime
- become a revenue enabler
- reduce costs, cloud strategy

LoB, Dev / Test Team

- reduce application development time
- move to agile / DevOps model

IT Infrastructure team

- ensure no downtime
- enable faster data access
- lower infrastructure costs

IT Infrastructure Dilemma

Asked by knowledge workers to restore data fast

- hard to meet SLAs due to multiple back schemas, multiple copies of poorly managed data, causing increased cost

Asked by LoB / Dev for access to fresh data sets

- struggling to provide timely access to fresh, accurate data sets
- uprising of shadow IT in response

Asked by business to ensure uptime SLAs and lower costs

- slow, costly recoveries
- Multiple products mean multiple licenses, more management overhead

New Protection / Reuse Attributes

Agentless and Efficient

- VM APIs for agent less deployment
- incremental forever, compression and deduplication built in

SLA-based Data Protection

- recovery-driven policies, simplify management
- ensures meeting business uptime SLAs

Instant Data Recovery

- data snapshots stored in native format
- instant recovery from multiple recovery points

Data Catalog

- scalable MongoDB
- Google-like search interface
- find data quickly

Modern Data Protection / Management

Knowledge Worker - Recoveries are nearly instant, no more data

LoB / App developer - I have access to fresh data via templates. I can develop faster with fewer bugs. And I have data access - no more calls to IT

CIO / IT Director - Development and IT work together now. The LoB has access to the needed data, while IT has visibility and control. Downtime is no longer an issue.

LoB / App Dev Dilemma

Asked by business to help find new routes to market fast

- develop new applications for customers
- identify trends, adapt business, rapidly deliver code

Asks IT for access to fresh data sets

- lack of access to relevant, fresh data; leads to development delays and buggy code
- legacy DC infrastructure and methods not suited for a DevOps / agile development model

- IT failure to deliver leads to Shadow IT, poor data security / compliance, rise in costs

New Protection / Reuse Attributes

End-user self service

- secure role based access control
- right data, right people, right time, right location

Data delivered as Code

- infrastructure / DB as a service
 - RESTful APIs
 - integration with DevOps tools
- Secure data, no interference
- recover in a fenced environment
 - rename databases and mount points on the fly
 - Network re-mapping
- Cloud-like Agility
- Deliver data / systems on demand or via schedule
 - application, database and VM centric templates

Competitive Advantage

Infrastructure Team

- freed up valuable cycles to focus on infrastructure projects rather than data management tasks

LoB, App Developer

- I can develop new applications faster using a true DevOps and agile development model
- I have self-service access to fresh data for near real-time analytics and decision making

CIO, IT Director

- the organisation was able to develop applications faster and more efficiently, helping to reduce costs and provide new services

CIO Dilemma

Accountable for:

- Ensuring business uptime: downtime costs money
- Modernise IT infrastructure while keeping costs low
- Finding new routes to market fast, to beat the competition
- Increasingly stringent compliance requirements

New Protection / Reuse Attributes

Service Modernisation

- Data-as-a-Service
- Task Automation
- Extend to the Cloud

Rapid data and System Recovery

- Native-format data for instant access
- Application-aware recovery

Data Reuse

- Speed application delivery cycles
- feed reporting and analytics engines

Regulatory Compliance

- integration with Spectrum Protect ensures corporate governance / compliance

Architecture

Spectrum Protect Plus

Run on hypervisor or cloud, VM or bare-metal

Backup admin sets policy-based protection

API calls to hypervisor or physical server

Data sent to vSnap repository

Data can be offloaded to Spectrum Protect (Disk, Tape, Cloud, Object) - optional

vSnap data can also be replicated to another DC

Backup repository can also sit in the cloud

Role-based access

Multi-purpose Data reuse

RE-invent Your Business

Modernise your data protection environment

- lower your data protection costs
- improve your business SLAs
- Elevate your staff
- Exploit your data
- Enable the cloud

*Christian Burns (@christianmburns)

Spectrum Protect Plus Technology Overview

What is Spectrum Protect Plus?

Data Reuse solution for virtual environments and applications supporting multiple use cases

- simple, flexible, lightweight (easy to deploy, configure and manage)
- pre-defined SLA based protection
- self-service (RBAC) administration
- enterprise proven, scalable
- utilise copied data for production workflows
- data recovery and reuse automation
- easily fits your budget

Secret Sauce - Data Catalog

Simplify deployment and data management for multiple use cases including recovery, DevOps, analytics, reporting, etc

Foundation for Spectrum Protect Plus

Modern, scalable - MongoDB

Tracks:

- All environment metadata (hypervisors, application servers, files)
- all data and data copies

Enables:

- robust reporting
- self-service data reuse, including the recovery
- data and infrastructure insight
- template based data reuse

6 Key SPP Attributes

SLA policy-based data copies

- Gold, Silver, Bronze pre-configured
- Custom policy creation as needed

Simple to use, anyone can manage

- VM, database or application admin, helpdesk, etc
- Light weight: installs in less than 15 minutes, configured in under an hour

Global Search and restore

- search across all virtual machine data at once (VMware and Hyper-V)
- restore from search: files, VMs, VMDKs

Instant Data Recovery or Data Access

- support for virtual and physical data bases as well as reuse use cases: Test/Dev, DevOps, reporting, analytics, training, etc.
- Roles-based access, user self-service

Extends the capabilities of Spectrum Protect for virtual environments

- standalone - great for small environments
- integrated with Spectrum Protect for long term data retention

Exploits VM and application APIs

- Agentless
- Creates application consistent or crash consistent data copies

Policy Driven, SLA-based Automation

- Select, click and done simplicity
- Select recovery service level and apply to VMs
- Pre-defined SLAs or create your own
- Dashboard identifies VMs without copies
- Set it and forget it

SPP SLAs

- define frequency of copies, retention and data and target location of data copies for any resources assigned to the SLA
- comes installed with 3 pre-defined policies (Gold, Silver, and Bronze)
- modify or create as many SLAs as necessary to meet business needs
- supports policy-based include / exclude rules
- capability to offload data to IBM Spectrum Protect ensuring corporate governance / compliance with long term retention / archiving
- enable administrators to create customised templates that provide values for desired RPO

Role Based Access Control (RBAC)

- right data, right people, right time, right location
- easily assign resource functionality based on user role
- pre-defined roles
 - SysAdmin
 - VM Administrator
 - Self Service
 - Backup Only
 - Restore Only
- pre-defined resource groups
 - Hypervisor
 - Application server
 - Application
 - Proxy
 - Script

-- Report

Global Search and Recover

- Unified, "Google-like" search across files and objects
- Search across VMware and Hyper-V in a single operation
- Locate files, VMs, datastores
- Multiple file selection
- easy restore from search
- Search filters (Data range, OS type, Folder path)

Instant Data, Application and VM Access

- rapid access from application consistent snapshots
- use for all data reuse use cases
- multiple data access points
- instant access to VMs, files, SQL, and Oracle
- no more waiting for streaming data

Rapid Data and System Access

- instant data access from multiple point-in-time images to roll back data sets as needed
- end-user self-service
- all data reuse cases
- operational recovery, DevOps, DR, Test / Dev, Reporting, Analytics, etc
- APIs to integrate with solutions such as Chef or Puppet
- Track provisioned copies and clean them up when no longer needed
- Ensure data security with the ability to access data in fenced off environments

SPP Application Support

- Application-level support for Microsoft SQL and Oracle databases in physical and virtual environments
- Microsoft SQL - support for failover cluster and AlwaysON Availability Groups
- Oracle - Support for ASM and RAC leveraging RMAN
- Agentless block-level incremental forever
- Log Copies
- Multi-stream data access
- granular restore of individual databases

Application Support - Statement of Direction

Virtual and Physical

- SAP Hana
- DB2
- Exchange
- SharePoint
- PostgreSQL
- MongoDB
- Epic

Data Reuse in the Cloud

- IBM SPP on IBM Cloud
- Available in the IBM Cloud for VMware Solutions portal

- Copy and reuse data in the IBM Cloud
- “Push button” simplicity
- Self-service in the cloud reduces shadow IT
- BYOL (Bring your own license) or in-portal purchase available

*Will support automated deployment of SPP and its associated infrastructure from 19/03

SPP - Cloud Support

Statement of Direction

- copy direct to object storage (S3 API)
- AWS EC2/EBS snapshot support
- VMware on AWS
- Native snapshot for Azure
- Azure blob support
- vRealize Plugin
- vCloud Director support

Long-term Retention Using Spectrum Protect

- automated copy transfer to Spectrum Protect*
- long-term retention / tier to the cloud
- single-step recovery
- meets legal and regulatory compliance needs
- CBT / RCT data movement
- S3 API offload (Statement of direction)

Offload to Spectrum Protect

- helps ensure corporate governance / compliance with regards to long term retention / archiving
- all offload and recovery operations performed using SPP
- VMs configured for offloading have a copy of their data offloaded to Spectrum Protect’s storage or container pool based on the frequency and method specified
- integrated offload enabled utilising SPVE data movers
- Operational (instant) recoveries come from the SPP vSnap repository
- Recoveries from offloaded copies can be executed from either Protect or Protect Plus

SPP - RESTful API

- enables programmatic workflow interaction
- Agentless and efficient
- Based on the RESTful framework in order for applications to query information about objects and to perform basic operations using HTTP protocols
- Designed to work with web-based applications in a simplified way, by using four basic HTTP methods for applications to interact with: GET, POST, PUT and DELETE

SPP Maintenance and HA

SPP Catalog Protection

- Protects underlying SPP databases (configuration settings, recovery points, search data and job information) to a local or remote vSnap server

- recommended to create SLA policies specifically for backing up the catalog
 - search for any catalog backup restore point
- vSnap Storage Replication
- performs asynchronous replication of client copy data from one vSnap server to another by establishing a partnership
 - enabled through SLA policies

SPP Blueprints

What are blueprints?

- prescriptive hardware and build details to handle defined workloads
- detailed build and sizing guidance for virtual and/or physical vSnap storage servers
- physical vSnap using storage dense commodity x86 server

Benefits

- faster server deployments
- systematic design and build that aligns with software defined storage solutions
- reduced risk

SPP - Licensing "Stand Alone"

30 - 90 day free trial

\$2000 per 10-pack VMs or per TB

If offloading to Spectrum Protect, Protect entitlement is needed

Suites (front end or back end)

Demo time

Jim Smith (<https://twitter.com/spikedesmith>)

You use policy-based data protection to meet your SLAs

Chris M. Evans - The Risk of Shared Service Level Agreements - <https://blog.architecting.it/risk-shared-service-level-agreements/>