MICRO FOCUS

Technical Insight Series
Introduction to Data Protector

Marc Fisseler Data Protector Sales Engineer

Insight Empowered

Brief History of Data Protector

DP DATA PROTECTOR

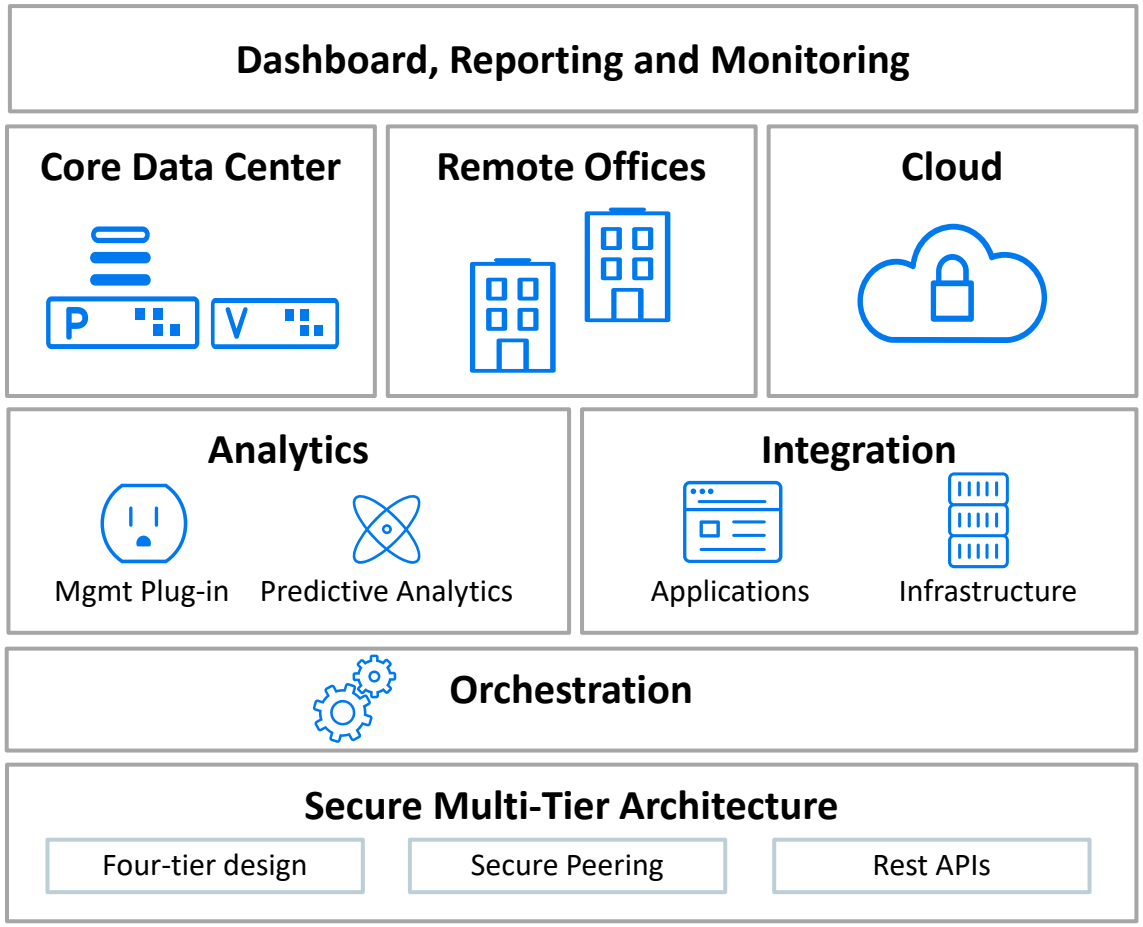
- 1980 • Omniback got introduced alongside Apollo Computers
- 1987 • Introduce Omniback Network Backup System
- 1989 • Acquistion of Apollo Computers by Hewlett-Packard
- 1996 • Omniback II 2.0 introduced
- 2003 • Rebrand Omniback II and Release Data Protector 5.0
- 2013 • Data Protector 8.0 – new scalable Internal Database
- 2017 • Data Protector 10.0 – new Web UI and security modell – move to Micro Focus
- 2021 • Data Protector 11.0 – new Data Protector Deduplication
- 2022 • *Data Protector for Cloud Workloads* introduced with release of Data Protector 11.01

MICRO FOCUS

Micro Focus Data Protector

DP DATA PROTECTOR

Backup and disaster recovery for diverse, dynamic and distributed enterprises



Application-consistent backup for fast recovery of mission-critical applications

Advanced virtual environment protection for comprehensive support of virtual machines

Data security and enterprise class scalability for standardized protection across complex environments

Best-in class platform and cloud integrations for better infrastructure utilization and higher performance

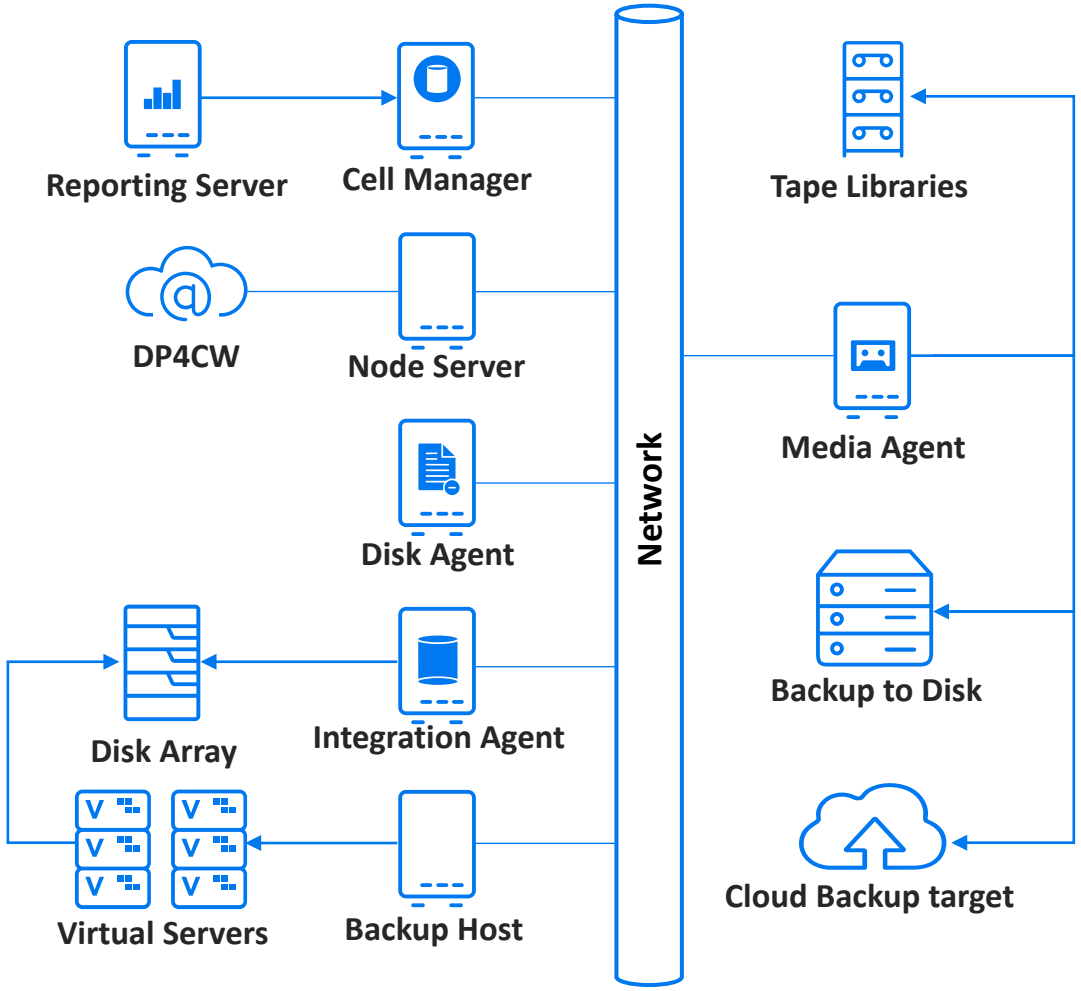
Integrated disaster recovery for a flexible, built-in centralized bare metal recovery

Analytics, automation and orchestration for reducing manual tasks and improving insight into backup

MICRO FOCUS

Data Protector - Architecture

- The **Data Protector Cell** consists of a **Cell Manager** and configured **Clients**
- **Disk Agent** to backup/restore data from disk
- Backup devices managed by a **Media Agent**
- Application specific operations and replica management using an **Integration Agent**
- A **Backup Host** is used to perform backup and restore of virtualized environments
- Configuration and catalog data stored in the **Internal Database (IDB)** on the **Cell Manager**
- One or multiple Cell Managers may be registered with a **Reporting Server**

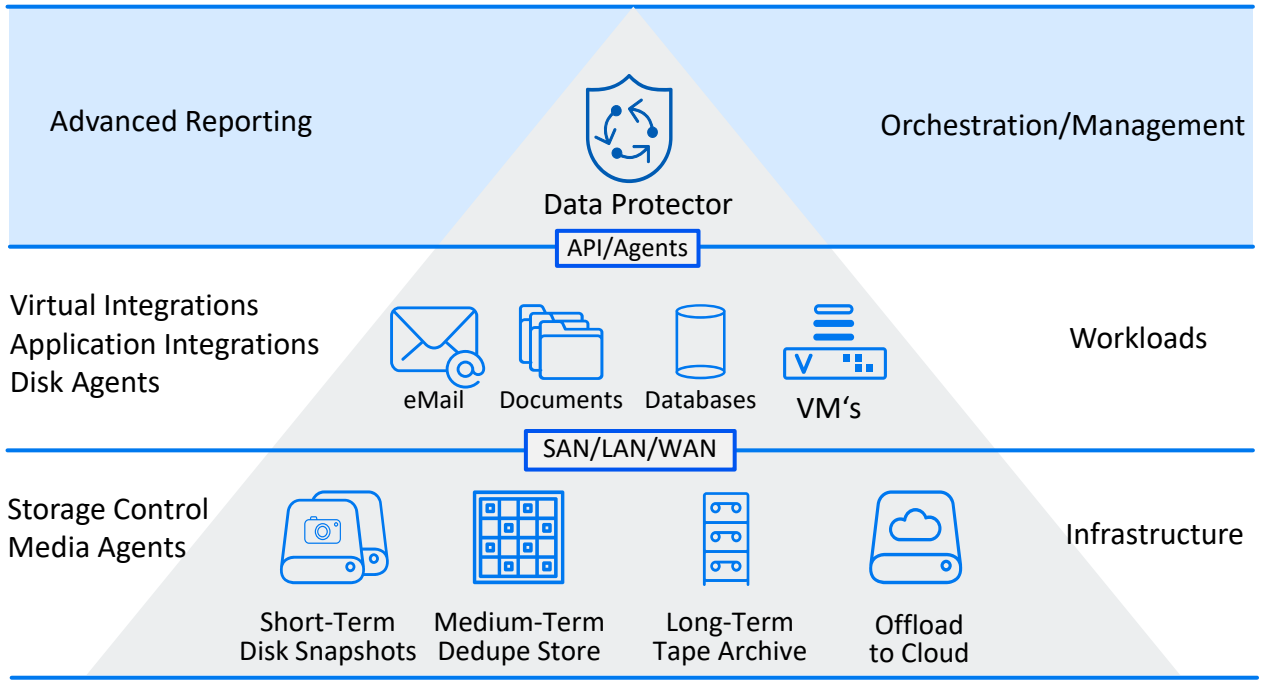


Data Protector

Scalability

Internal Database

- **5,000 clients**
- 100 million sessions
- **1 trillion file names**
- 1,000 concurrent sessions
- 10,000 backup sessions per day



Infrastructure

- 32 streams per drive (multiplexing)
- 500 concurrent physical drives
- 1,000 concurrent virtual drives
- **128 drives per session**
- Physical, virtual and container systems

Data Protector Manager of Managers (MoM)

- Up to **50 Cell Managers** per MoM
- 50,000 clients
- 2.5 million backup media
- **50,000 concurrent sessions**

Standard Backup and Restore

DP DATA PROTECTOR

Deduplication May Be Enabled Virtually Anywhere

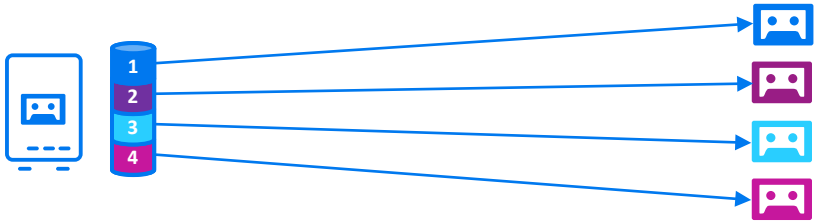
File System

- Full, Incremental and Differential backup
- Change Log Provider and Enhanced Incremental for Synthetic backup
- Block Based and Raw Disk backup
- VSS File System and Component backup

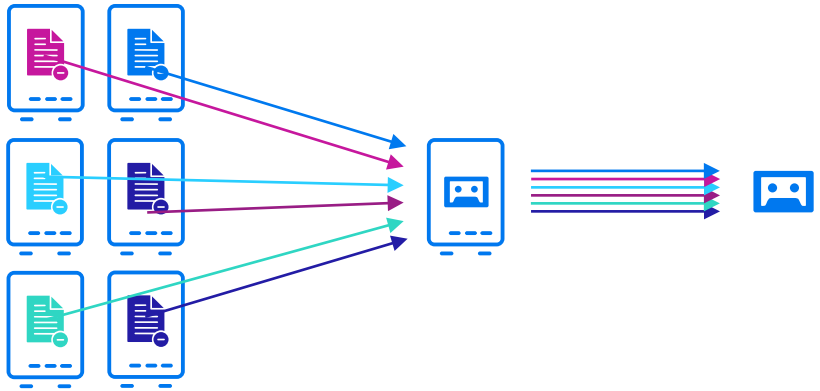
Applications

- Full, Incremental, Differential and Log or Trans backup depending on application
- Online and Offline backup
- Point-in-time Recovery

Multistreaming to multiple devices



Multiplexing of multiple clients to one device

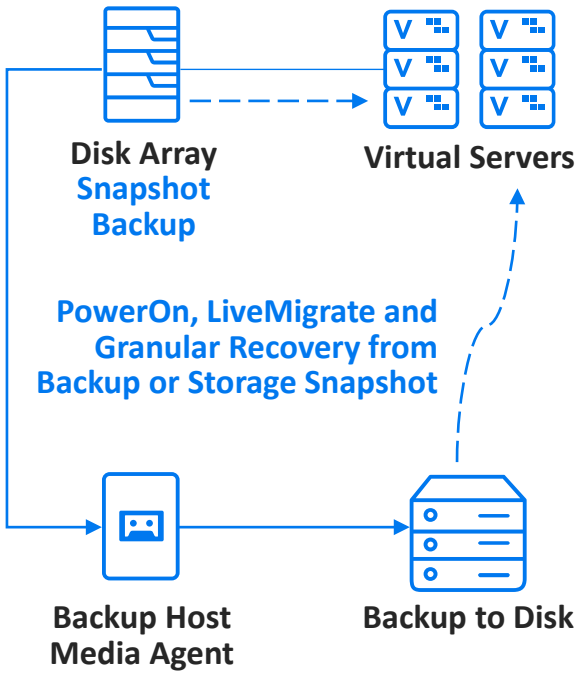


MICRO FOCUS

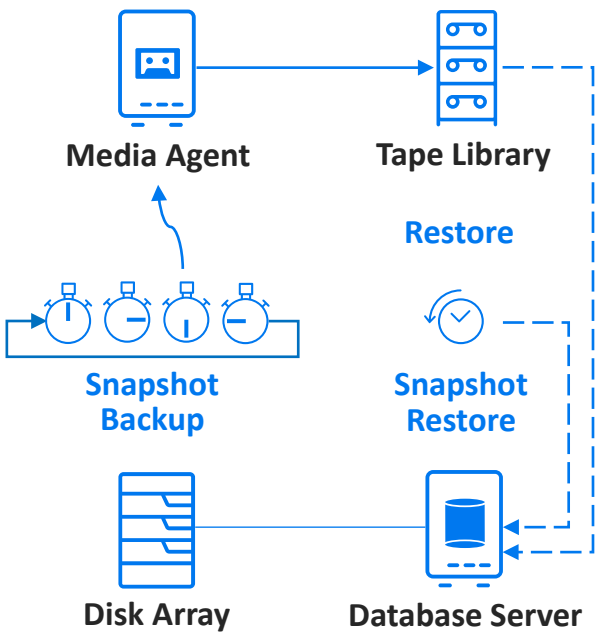
Advanced Backup and Restore

Deduplication May Be Enabled Virtually Anywhere

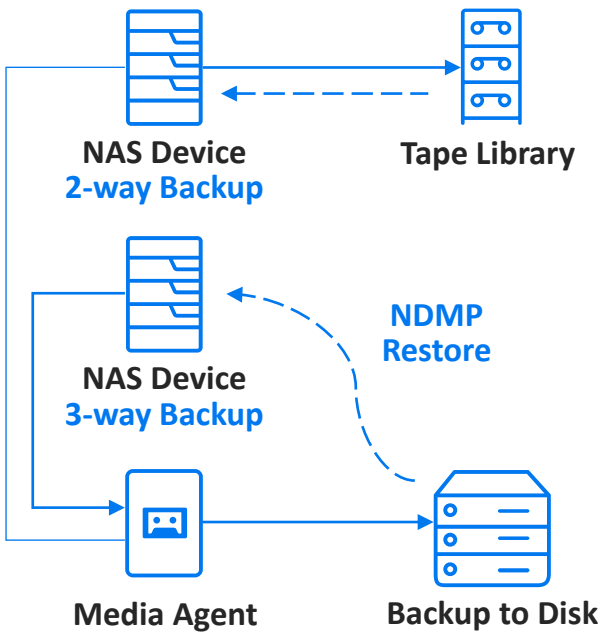
Hypervisor Integration



Array-based Snapshot



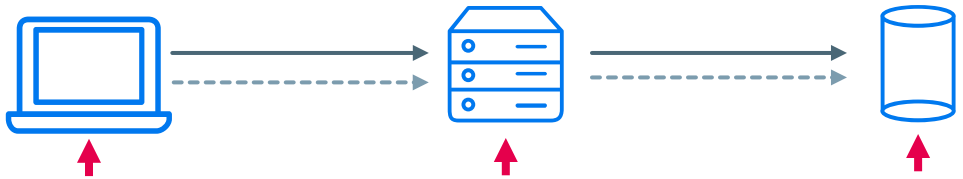
NDMP



Backup target integrations

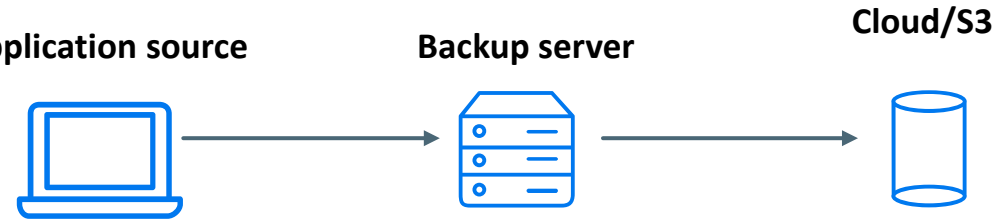
Data Protector provides flexible and HW independent options

Deduplication devices



- Deduplication everywhere
- Dell EMC DD Boost and HPE StoreOnce Catalyst
- Data Protector Deduplication

Native cloud targets

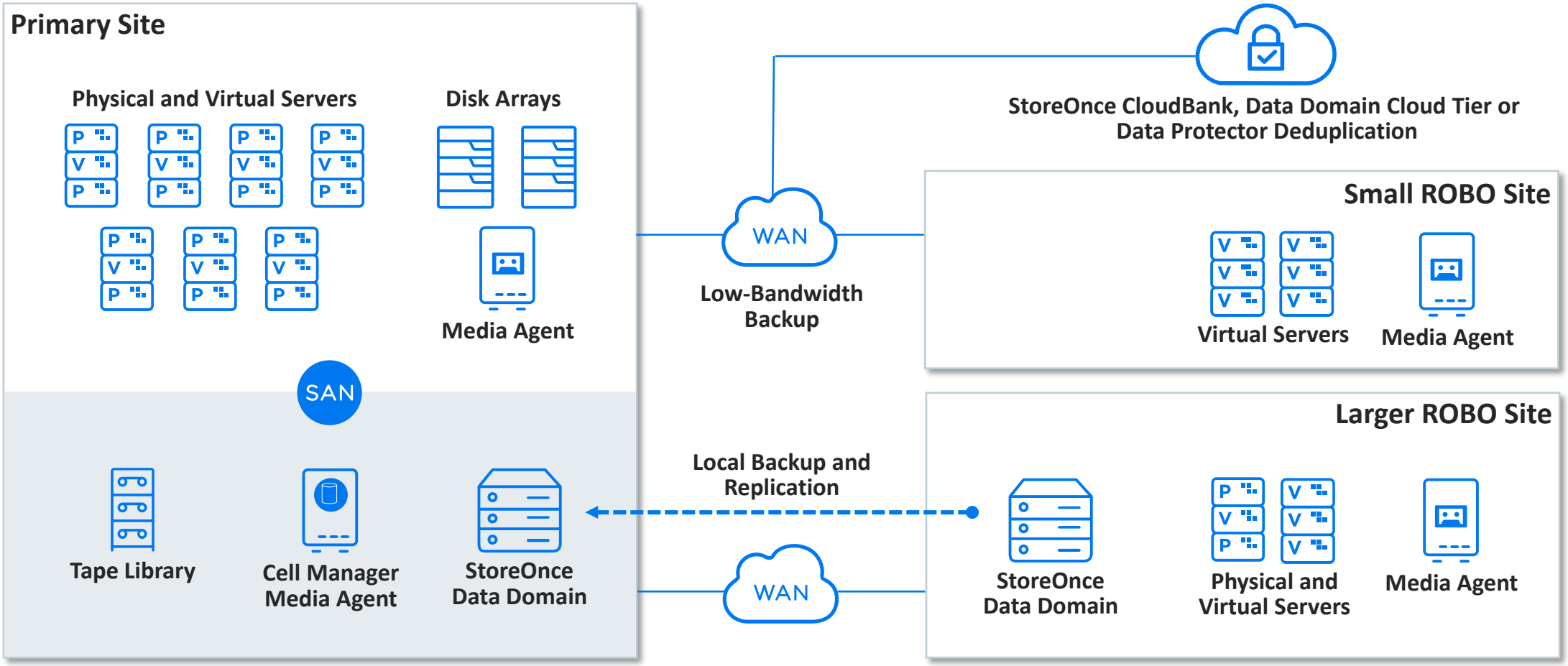


- S3 targets
- Cloud targets
- Data Protector Deduplication

Backup from the Edge to the Datacenter

DP DATA PROTECTOR

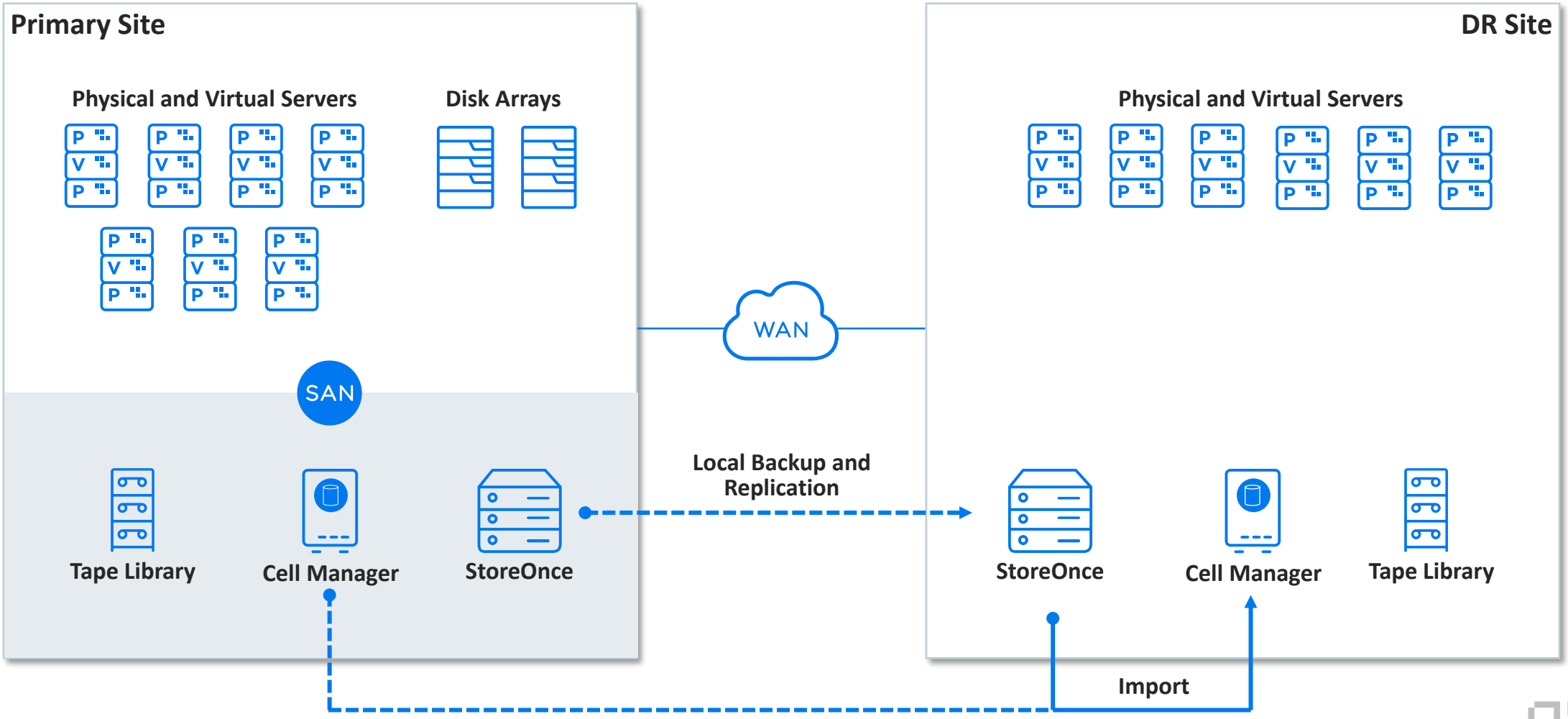
Deduplication May Be Enabled Virtually Anywhere



MICRO FOCUS

Automatic Replication Synchronization

DP DATA PROTECTOR



MICRO FOCUS

Application-consistent Recovery

Application state and transactional data backed-up for faster recovery

DP DATA PROTECTOR

SAP® Certified Integration with SAP HANA®

Microsoft SQL Server
- Native SQL API support
- Always on availability groups
- Full, incremental backup, logs

Microsoft Exchange
- Dynamic recovery
- Single item, mailbox recovery
- Database restore options

Microsoft SharePoint
- Backup entire or specific site
- Single item recovery

MySQL
- Supports mysqlbackup API
- Full, transaction logs
- Staged or in-place restores

Oracle Database
- Integrated RMAN
- Complete/incomplete recovery
- Automated or scheduled backup

SAP and SAP HANA
- HANA appliance integrated
- Point-in-time recoveries
- Online database backup

IBM DB2
- Online full and archive log
- Point-in-time recovery
- Vendor or user exit mode

PostgreSQL
- Full, transaction logs
- Redirected restores
- Point-in-time restores

Application versus crash consistent:

Crash consistent backs up data on the disc only

Application consistent quieses the application so all data in memory and in pending operations is made consistent and then backed up.

Advantage:

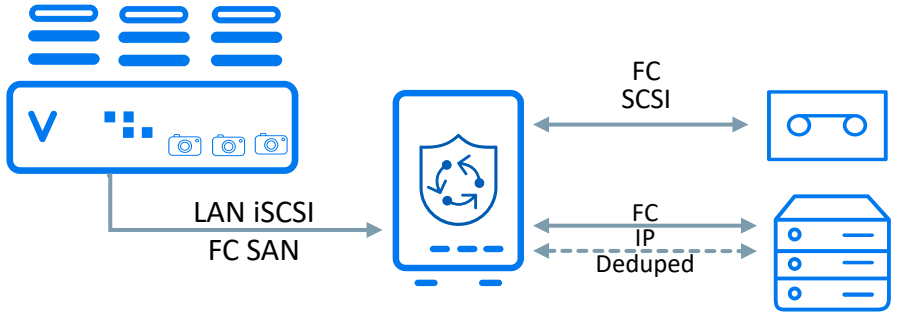
Enables the application to be **recovered faster** as already in a consistent state.

Crash consistent needs significant work to get applications back up to a consistent state.

Hypervisor Integrations

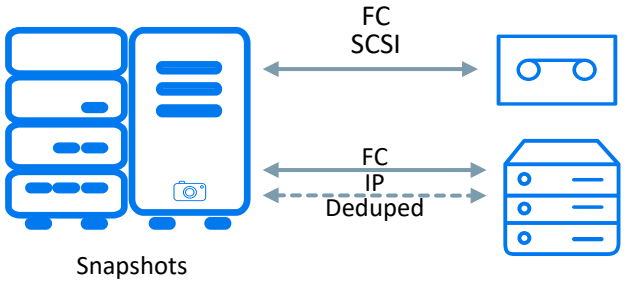
vmware®

- VM Power On and Live Migration
- Granular File Recovery
- Smart Cache
- FC SAN/LAN Snapshot Backup
- Change Block Tracking (CBT)
- Parallel vDisk backup
- Restore VM with diff. Name
- Redirected restores
- Storage System Snapshots (ZDB)



Microsoft
Hyper-V

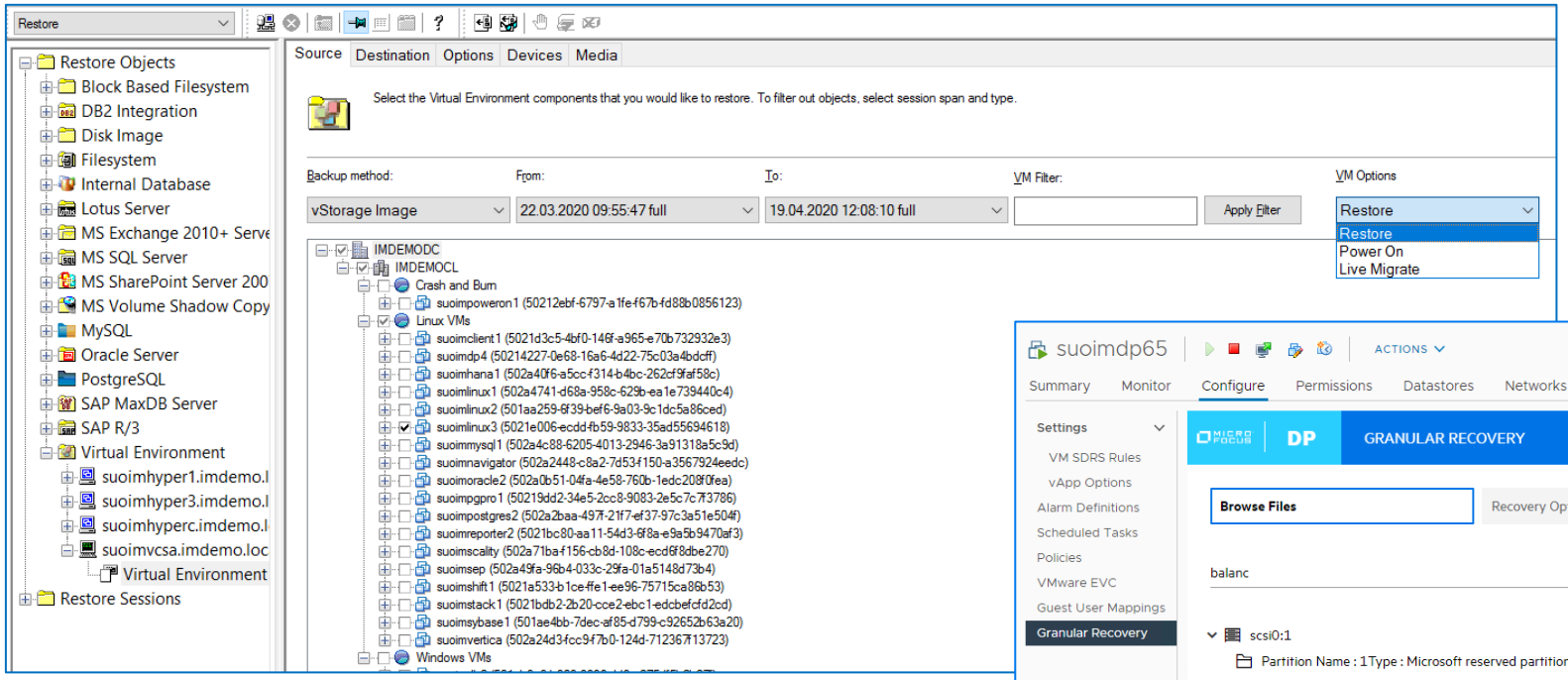
- Cluster Shared Volumes (CSV)
- Direct FC/SAN Backup with Snapshots
- VM Replica Backup
- Full/Incremental VM Backup
- VSS Transportable Backup (ZDB)
- RCT aware backups

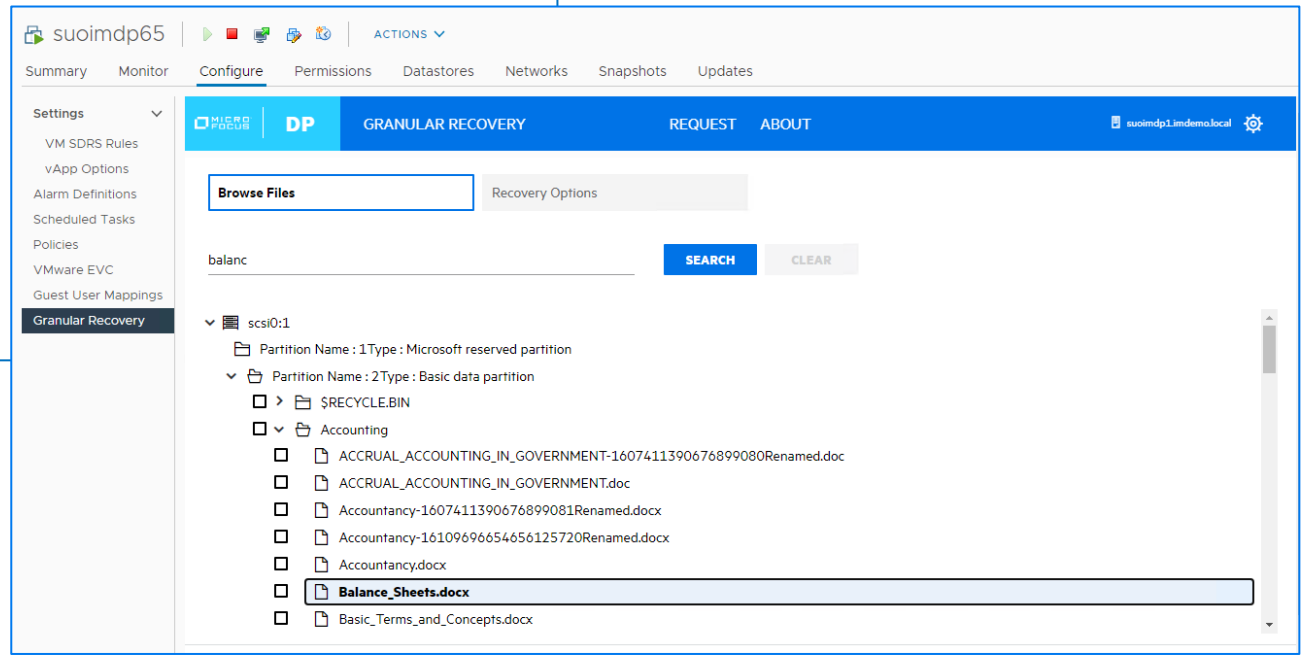


MICRO FOCUS

VMware Enhanced Options

Restore, Power-On, Live-Migration, Granular Recovery





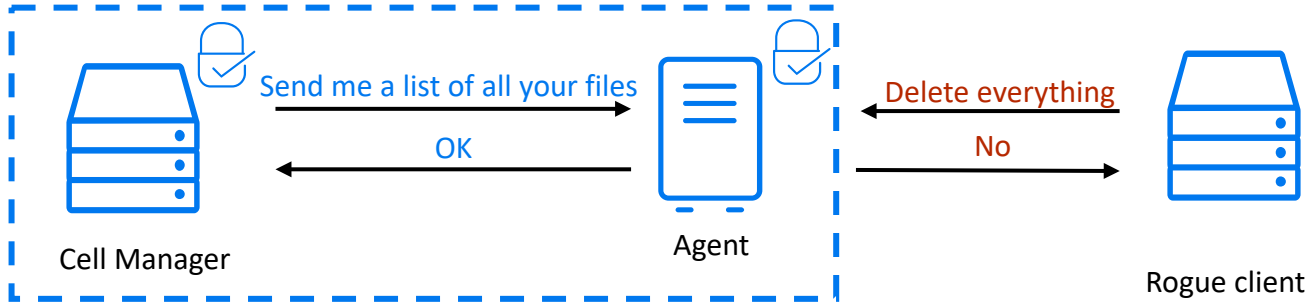
Built-in Security to defend from cyber-attacks

Data Protector Security Model

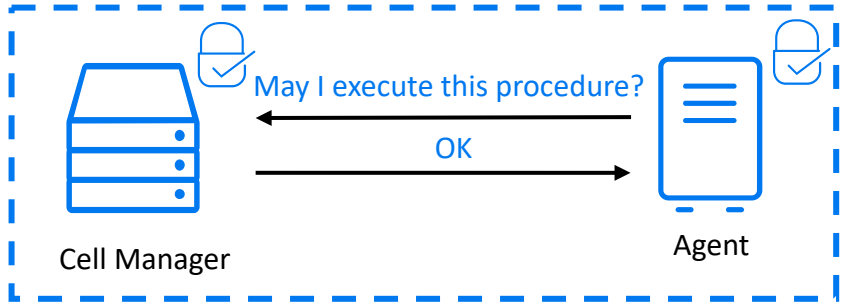
- Secure communication over TLS 1.2
- AES-256 bit encryption
- User authentication and LDAP integration
- Network Port Consolidation - from hundreds to three
- Centralized command and control

Common Criteria Certification - June 2020

Secure communication between members



Centrallized command execution



Protect Your Backup Data From Ransomware

Type of Backup	Data Protector
Offline Backup	✓
Air Gap Backup	✓
Immutable Backup	✓
WORM Media	✓

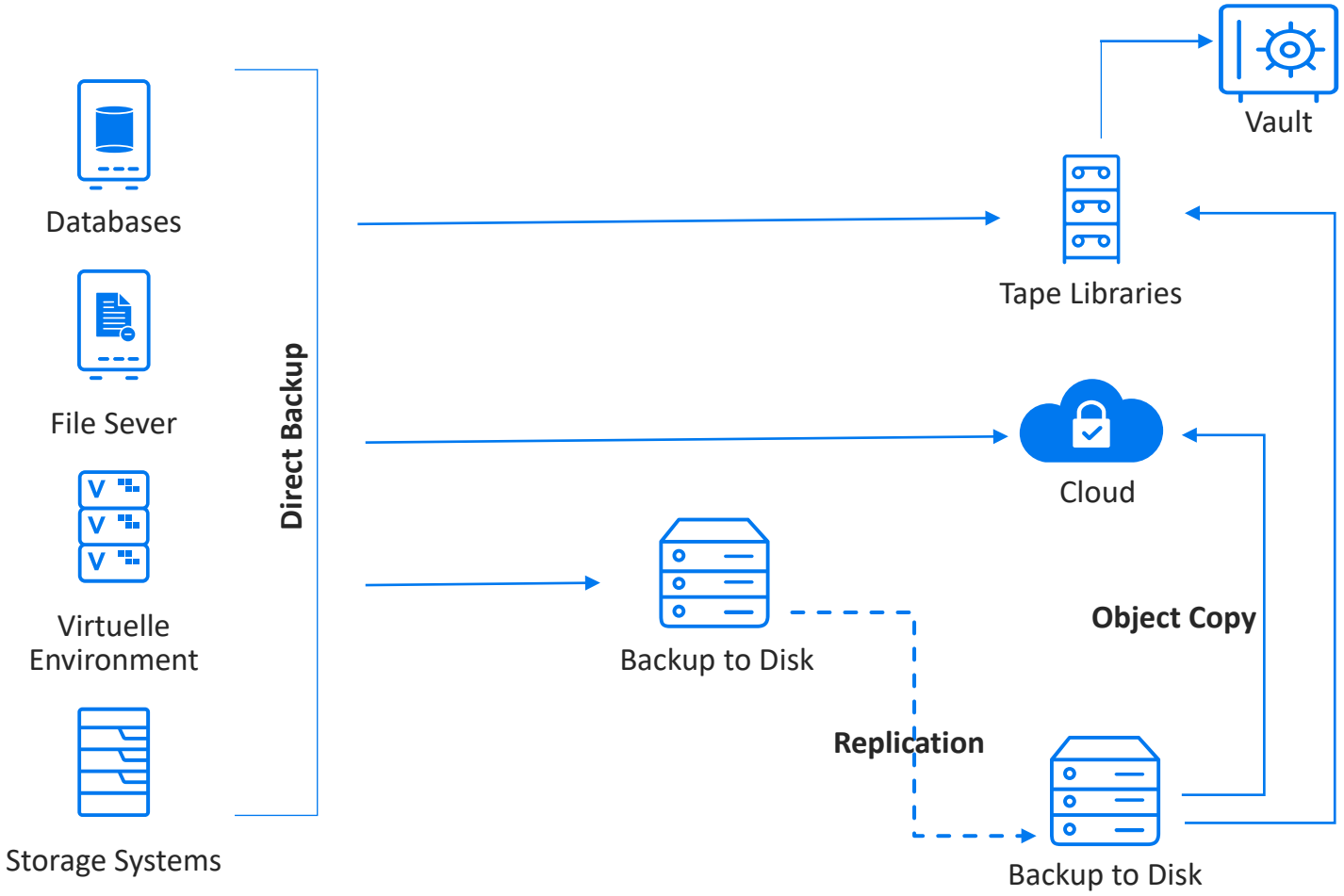
3-2-1 Backup Rule

These types of backup ensure Ransomware is not able to access backup data sets.

Backup Method	Data Protector
Backup to Cloud	Data Protector supports private and public cloud as backup target.
Backup to Tape	Data Protector supports an exhausting list of Tape Drives and Tape Libraries
Backup to Disk	Data Protector makes use of deduplication Appliance Features. Data-at-Rest Encryption, Data Immutability, Data Replication, Cloud Upload
Backup Replication	Data Protector provides the option to configure a second cell in remote (DR) location.
Secure Backup Transport	Data Protector provides encrypted command and data communication

MICRO FOCUS

Multi level (offline) backups with Data Protector



Example Setup

- Direct Backup in any backup target
- Different media in first backup step
- No staging into conventional file system needed
- Object Copy to Cloud or to Tape (Tape Offload) (different media)
- Store Tape in a vault

Best-in Class Storage Integrations

DP DATA PROTECTOR

NetApp

Dell EMC

HPE

Tape libraries and drives

Snapshot backup, instant recovery and replication
HPE, NetApp, Dell EMC

Federated deduplication
HPE StoreOnce (Catalyst)
EMC Data Domain (DDBoost)

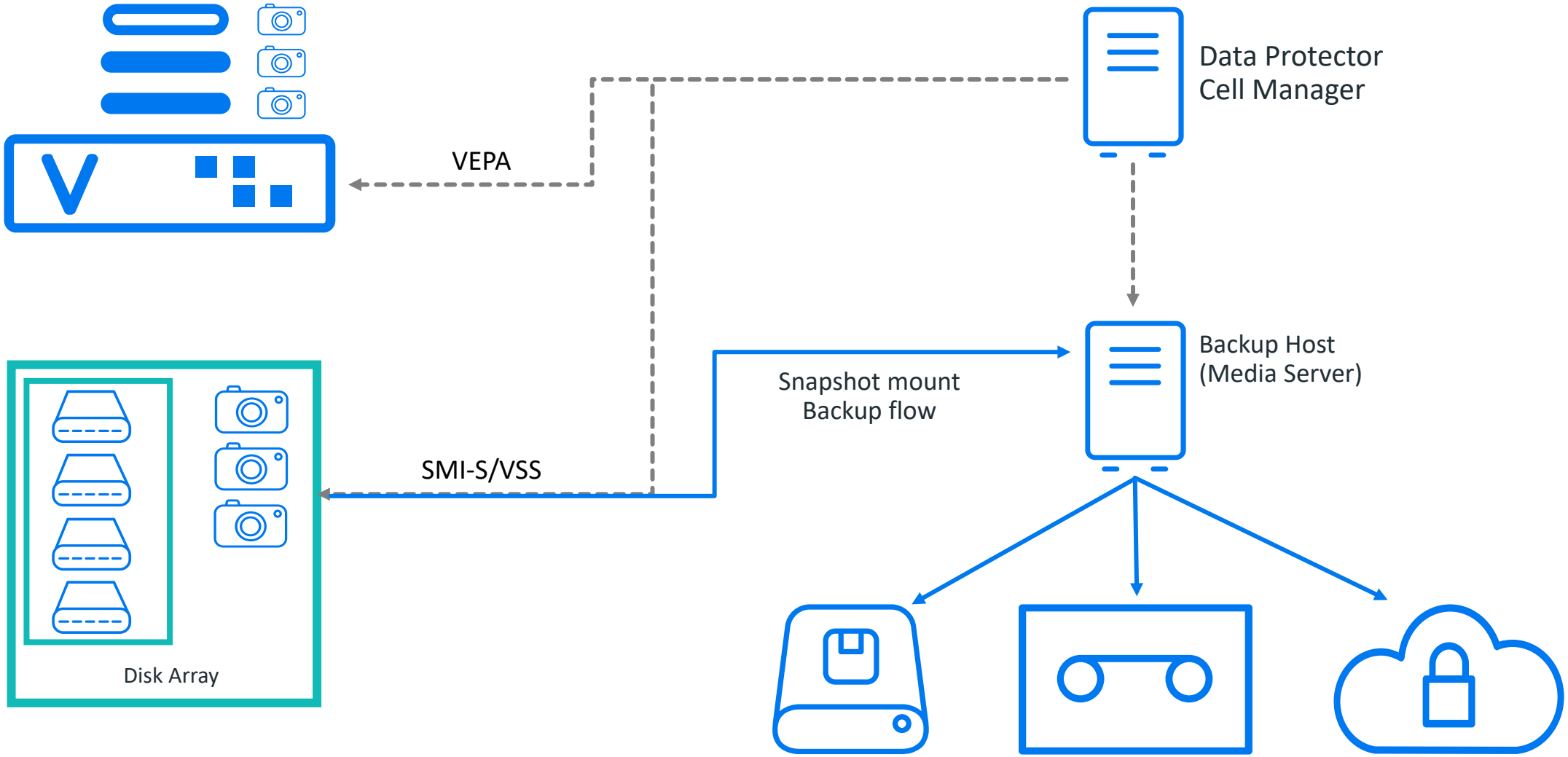
Automated replication and synchronization

Long term retention with tape libraries and drives

Many more online/nearline/offline Storage Systems listed on the support matrix.

CROCUS

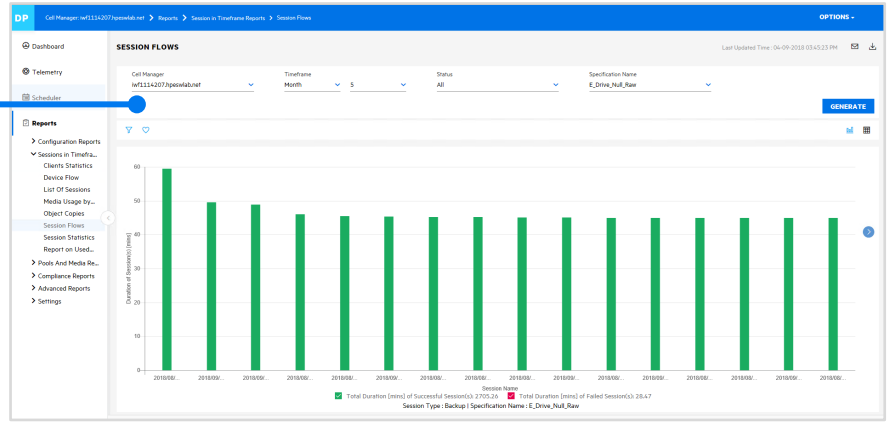
Virtualized Environments – Hardware Assisted Backup



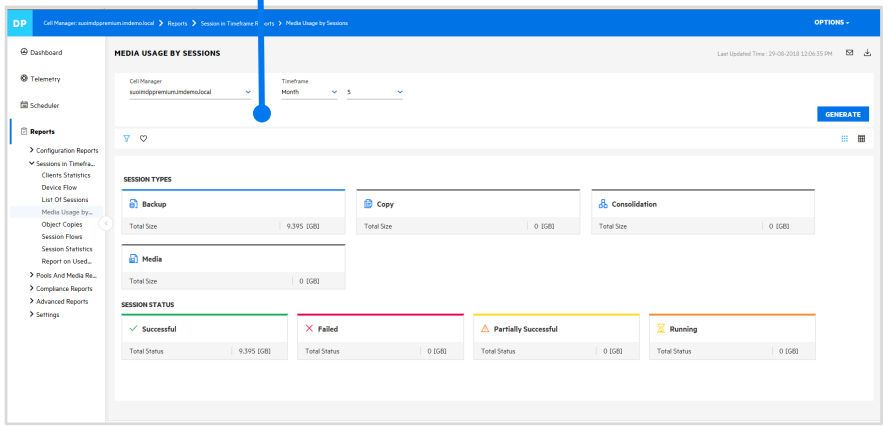
Integrated Advanced Reporting

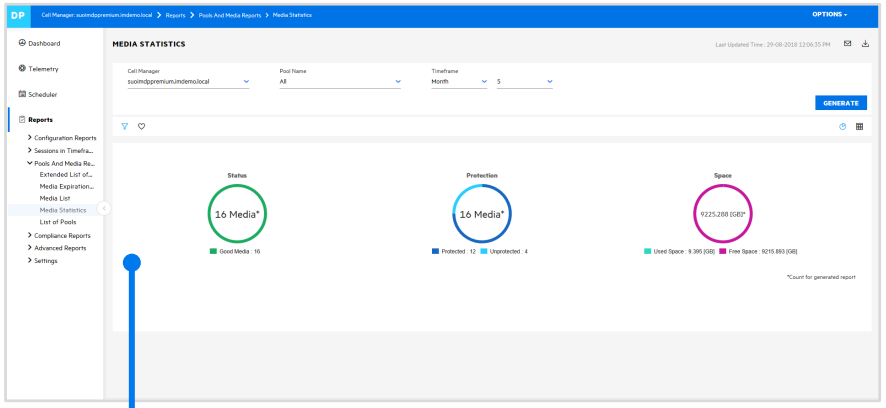
DP DATA PROTECTOR

Session Flow:
Shows backup window and status for backup schedule planning and success.



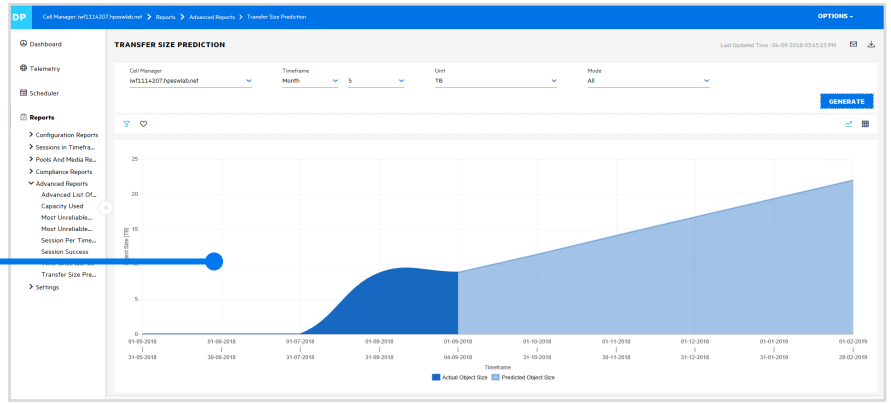
Media Usage by Sessions:
Distribution of data within backup, copy and consolidation sessions, for media management and planning.





Media Statistics:
Health, protection status and space availability for physical or virtual media, snapshots and objects in cloud

Transfer Size Prediction:
Actual and predicted size of data in the environment to enable backup device capacity planning and forecast.



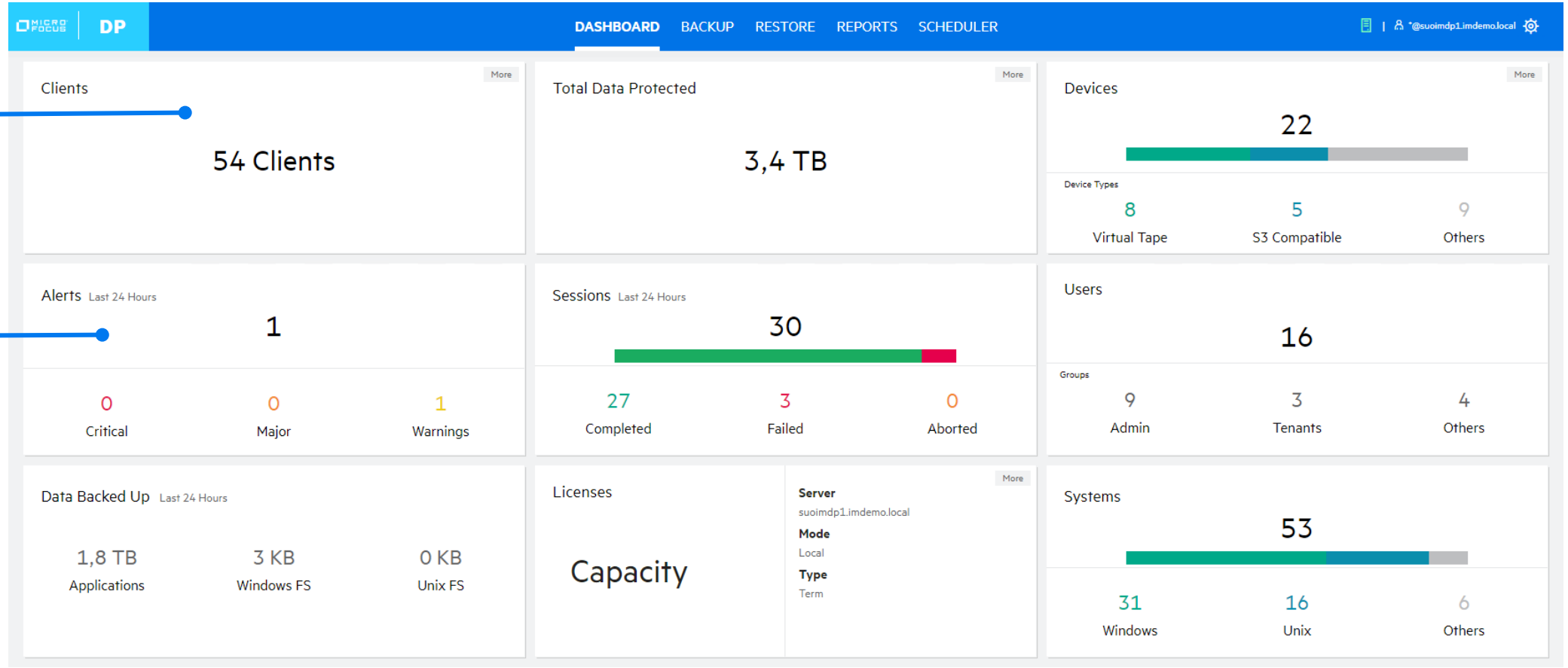
MICRO FOCUS

A Single View of the Heterogeneous Backup Environment

Manage hosts, clients, licenses, backup jobs and all devices from a single dashboard

Manage all clients, licenses and devices from a single dashboard

Get a quick status on the sessions and their success



Best-in Class Platform Integrations

DP DATA PROTECTOR

Unstructured Data

Applications

SAP HANA — SAP® Certified Integration with SAP HANA®
Microsoft IIS
PostgreSQL
SharePoint
IBM DB2
Exchange
ORACLE
SYBASE
MySQL
Microsoft SQL Server

Cloud

amazon web services
Microsoft Azure
ceph
SCALITY
Hewlett Packard Enterprise
Amazon Glacier

Hypervisors

Microsoft Hyper-V
vmware
KVM
NUTANIX

Operating Systems

redhat
HP-UX
Linux
debian
solaris ORACLE
AIX
Novell NetWare
SUSE

Micro Focus Data Protector

Storage Infrastructure

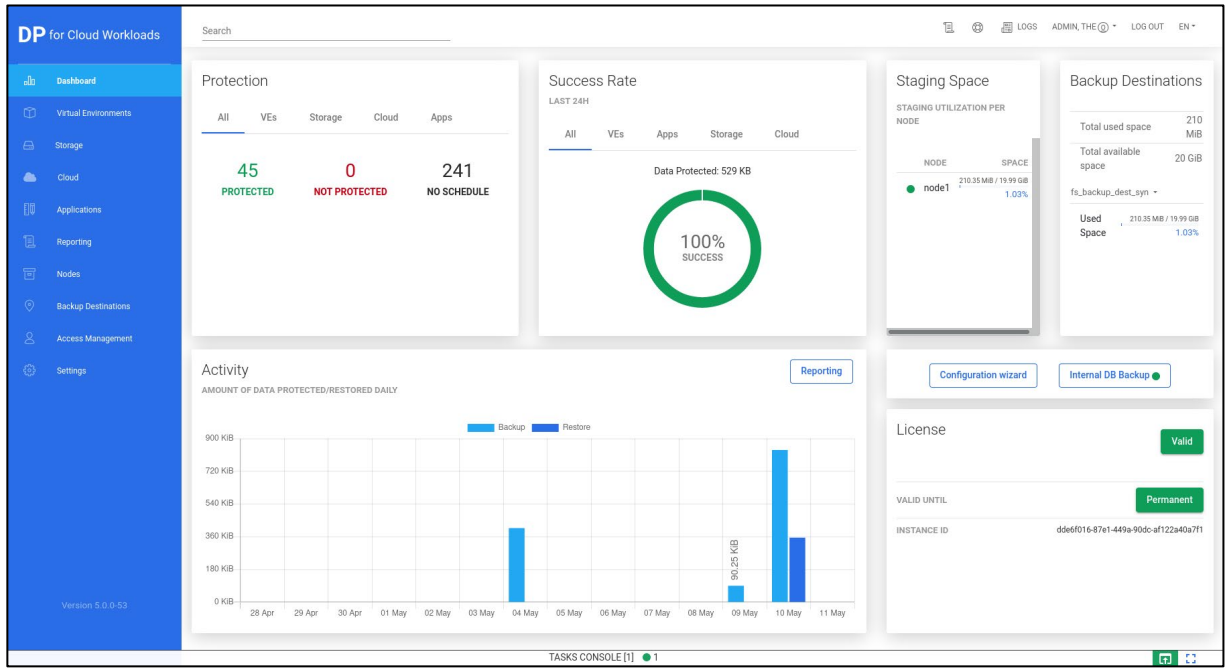
Storage Arrays
Backup to Disk
Physical/Virtual Tape
Cloud Targets
DR

MICRO FOCUS

Data Protector for Cloud Workloads

New Data Protector Family Member

- Micro Focus introduced **Data Protector for Cloud Workloads** (DP4CW) as a new member in the Data Protector family
- DP4CW extends the virtualization support significantly and adds cloud support like Microsoft 365



Data Protector for Cloud Workloads

DP DATA PROTECTOR

SUPPORTED PLATFORMS

NUTANIX, PROXMOX, SCALE COMPUTING, KVM, Red Hat Virtualization, openstack, CITRIX Hypervisor, Xen, oVirt, ORACLE VM, XCP-NG, HUAWEI

ceph, Nutanix Files, SUSE Enterprise Storage, NUTANIX

OPENSHIFT, PROXMOX, kubernetes

Microsoft 365, amazon web services EC2

application data and configuration

git, REAR, other apps

VIRTUAL MACHINES

V1, V2, VN

STORAGE PROVIDERS

CONTAINERS

CNTR 1, CNTR 2, CNTR 3, CNTR N

CLOUD

APPLICATIONS

Data Protector for Cloud Workloads

BACKUP DESTINATION

OBJECT STORAGE

openstack, Google Cloud Storage, ORACLE CLOUD, Alibaba Cloud, S3, IBM Cloud Object Storage, Azure Storage, ceph, SCALITY, CLOUDIAN, SUSE

FILE SYSTEM

File system (local, iSCSI, SMB)

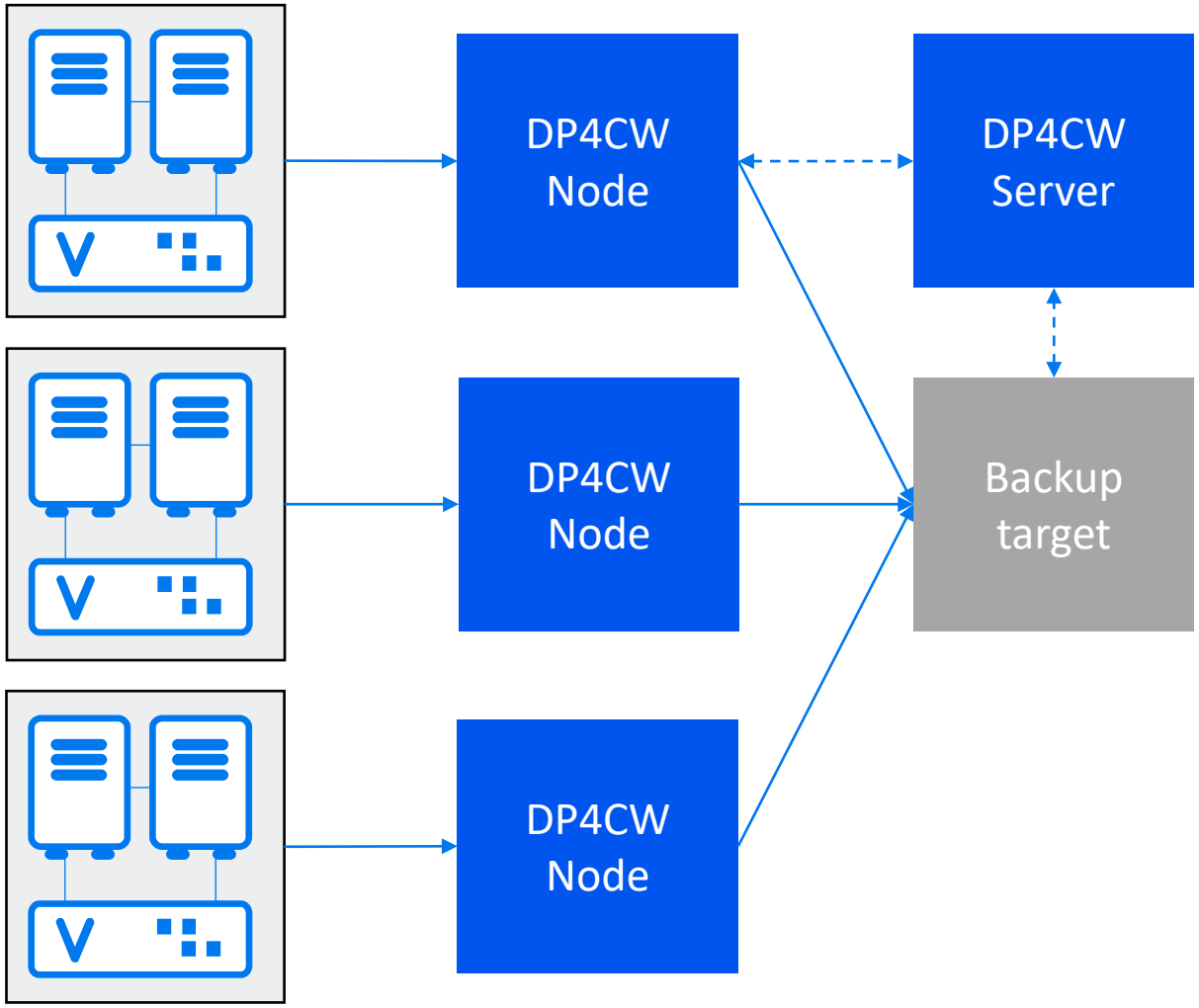
Virtual Data Optimizer (VDO), GlusterFS, CephFS

DATA PROTECTOR PROVIDER

Micro Focus Data Protector

MICRO FOCUS

DP for Cloud Workloads Scalable Architecture



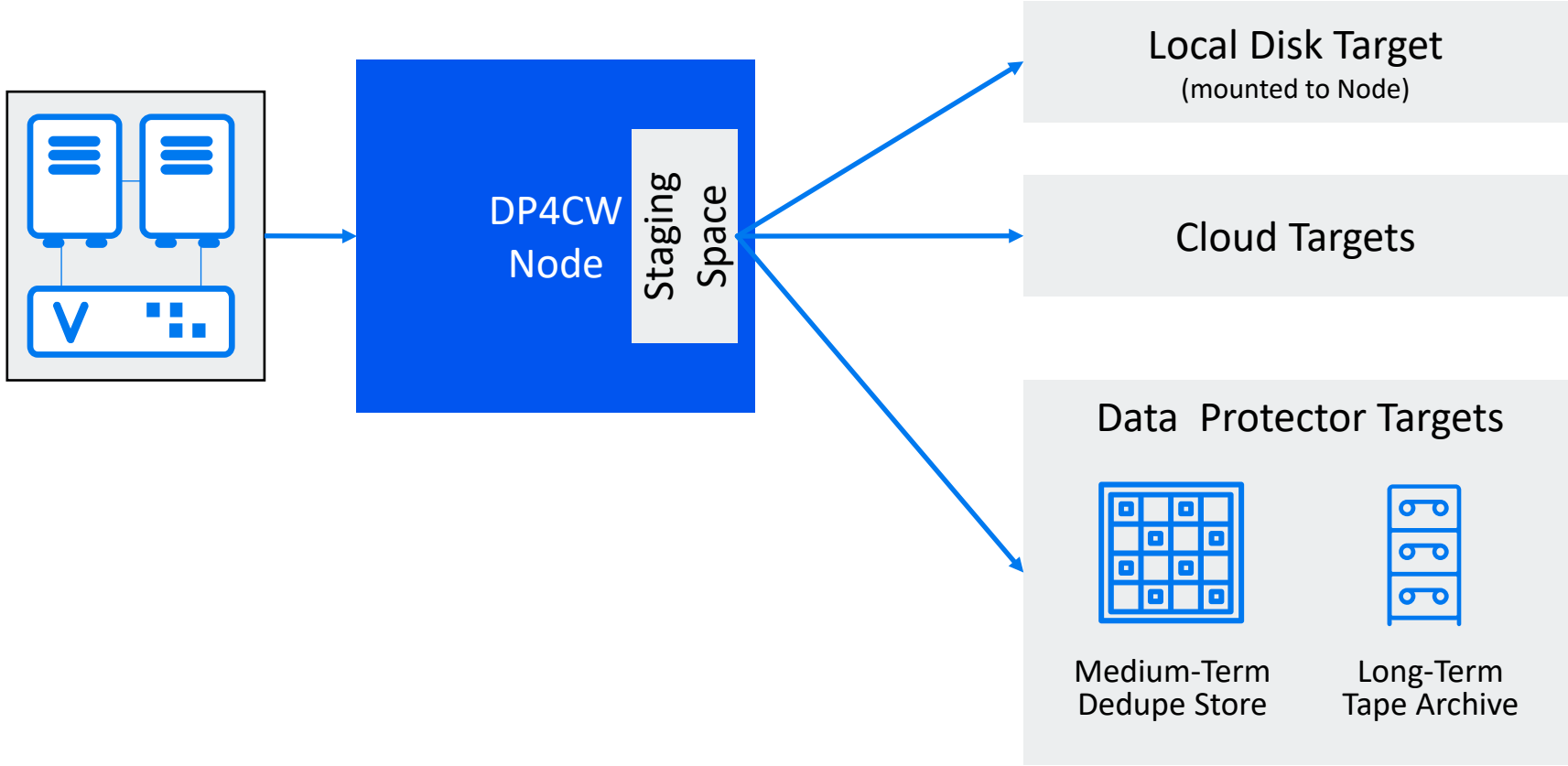
A DP4CW Node is a data mover comparable to a DP Media Server/Agent (MA).

The DP4CW Server is like a Backup Server (CM) managing workflows.

Data Protector can receive backup data from Nodes and moves to DP backup devices using the Micro Focus Data Protector Provider.

DP for Cloud Workloads Scalable Architecture

Backup Workflow And Target Choices



DP for Cloud Workloads and Microsoft 365

DP DATA PROTECTOR

Supported M365 Applications

- Exchange Online
- Sharepoint Online
- OneDrive for Business
- Teams

Supported M365 Features

- Restore to Cloud or local system
- Automatic Synchronization of Users
- Cross-Account migration of files/mails
- Quick search and find
- Scalable Architecture

Microsoft 365

Exchange Online:	emails | contacts | calendar | events
Sharepoint Online:	sites
OneDrive for Business:	files
Teams:	Teams chats | 1on1 chats | Teams document libraries and sites

DP4CW and Other Hypervisors

DP DATA PROTECTOR

KVM

- Full backup of QCOW2 or LVM-based VMs
- VM disk exclusion
- File-level restore with mountable backups
- LVM thin-pool support
- Support for VMs with mixed disk types
- Ceph support

Oracle VM

- Full backups
- Backups exported using external storage repository
- File-level restore with mountable backups

AWS EC2

- Backup instance metadata and data in EBS volumes
- Full backup and file-level restore
- Option to exclude specific volumes

Nutanix

- Full and incremental (CRT) backups
- Disk-attachment backup strategy
- Application consistent snapshots

Citrix XEN

- VM-level backup and protection
- Full backups
- Changed Block Tracking (CBT) Incremental backup APIs
- Option to backup only selected VM disks
- File-level restore
- VM auto-grouping based on regular expressions and tags
- Snapshot consistent technology (quiesced snapshots for Citrix Hypervisor)
- pre/post snapshot remote command execution

DP4CW Protecting Openstack and Openshift

DP DATA PROTECTOR

Openshift

OPENSHIFT

- Backup of metadata and data in persistent volumes
- Automatic pause of running deployments for consistent backup
- Option to exclude specific persistent volumes

Openstack

openstack.

- Backup of instance metadata and data in QCOW2 volumes
- Full and incremental backup
- Option to exclude specific volumes and restore individual files
- Disk attachment backup strategy using Cinder

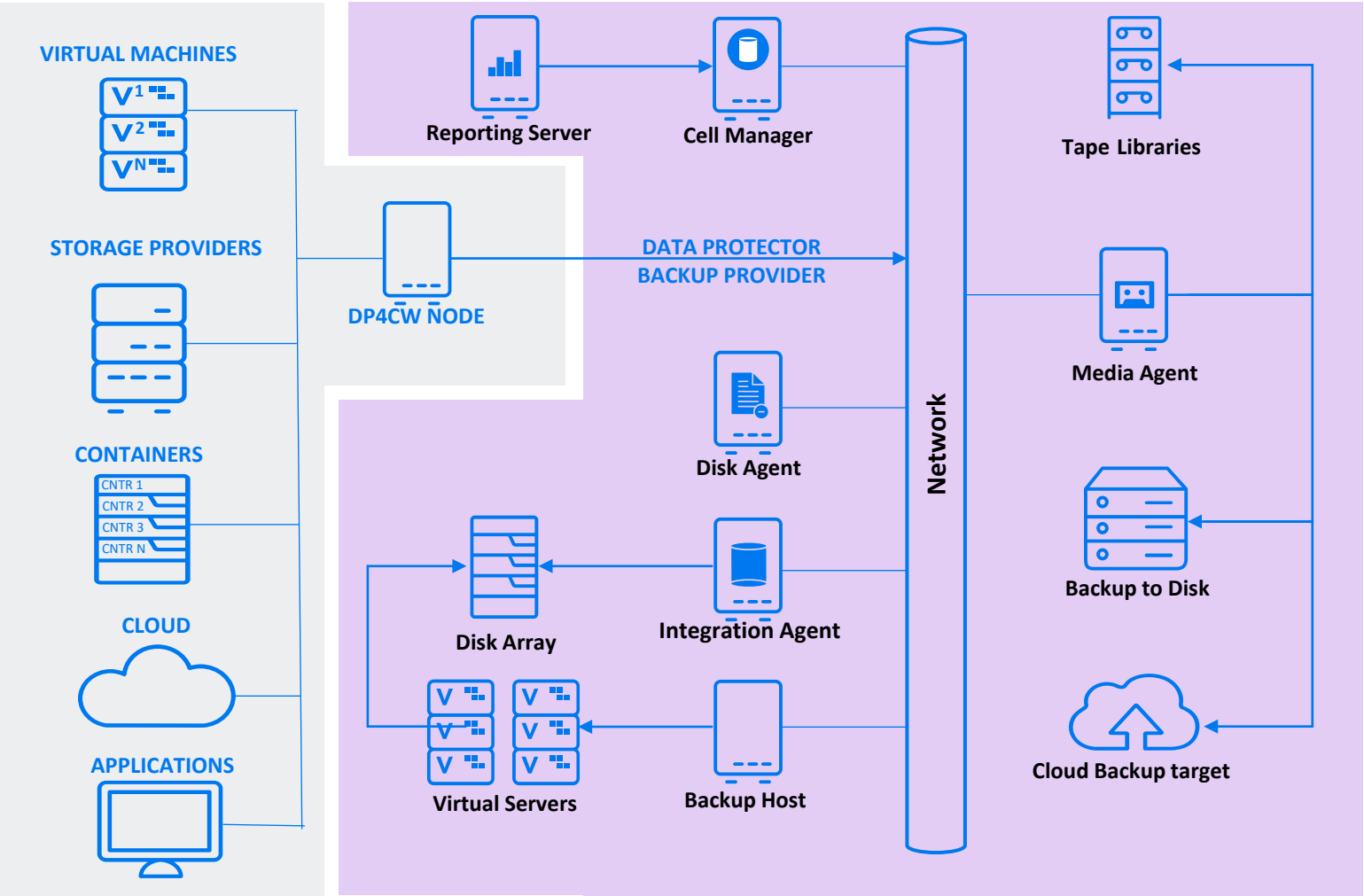
MICRO FOCUS

Data Protector Family - Architecture

Data Protector for Cloud Workloads

- Support additional backup sources
  - Virtual Environments
  - Storage
  - Cloud
- Use Data Protector Backup Provider as backup target

Data Protector



Licensing

One license measurement criteria for everything

- *Data Protector (Premium)* and *Data Protector for Cloud Workloads* licensing based on **Front-End Capacity**
- Depending on the environment different product numbers may be used
- Calculating base is always **TB**

Data Protector licensing

	DP Traditional	DP Premium
Features		**One license SKU**
DP Starter Pack	✓	✓
DP Drive License for SAN, UNIX, NAS	Available Add-on	✓
DP Drive License for Windows, NetWare and Linux	Available Add-on	✓
DP Library 61-250 Slots	Available Add-on	✓
DP Library Unlimited Slots	Available Add-on	✓
DP On-line Backup for Windows or Unix	Available Add-on	✓
DP Manager-of-Managers	Available Add-on	✓
DP Advanced Backup to Disk	Available Add-on	✓
DP Zero Downtime Backup (ZDB)	Available Add-on	✓
DP Instant Recovery	Available Add-on	✓
DP Direct Backup for XP	Available Add-on	✓
DP Direct Backup for NDMP	Available Add-on	✓
DP Encryption Extension	Available Add-on	✓
DP Granular Recovery Extension	Available Add-on	✓
DP Internal Reporting / Reporting Server	Available Add-on	✓
DP Cloud backup targets	Available Add-on	✓

- all features included
- only one license
- easy license management

*unlimited usage as long as primary protected volume is properly licensed!

MICRO FOCUS

Trial Licenses

Free trial license available via the Data Protector web pages

Data Protector Premium

- **1 License key for Customers**
  - Includes all DP Premium features
  - Key license parameters:
    - 90-day term
    - Unlimited backup capacity (front-end data)

Data Protector for Cloud Workloads

- **1 license key for Customers**
  - Includes ALL DP4CW features
  - Key license parameters:
    - 90-day term
    - ~1 TBs backup capacity (front-end data)

Data Protector Premium

Data Protector For Cloud Workloads

MICRO FOCUS

Good to know!

Good to know

Data Protector ressources

- Data Protector Micro Focus webpage
  Generell Data Protector overview and information
- Trial Licenses
  Micro Focus Data Protector trial licenses provides access to Data Protector Premium incl. all features and functionality for 90 days
- Webinare
  Join us for the webinar series and learn more about the latest innovations in Data Protector.
- Data Protector Community
  Information, Discussion, Blogs
- Idea Exchange
  Portal to submit your enhancement requests and ideas how to improve Data Protector
- ITOM practitioner portal
  ITOM practitioner portal provides a single point of knowledge for all the required information around Data Protector solution.
- ITOM market place
  Place This is your source for all apps, add-ons, extensions, and training related to Micro Focus products.
- Software Support Portal (My Support)
  Create your service requests and visit Knowledge Base, Patches, Downloads, Support Forums
- License entitlement and Software download
  Download Data Protector binaries and generate license keys. A valid Support Subscription ID must be associated with their account.

Data Protector for Cloud Workloads

Ressources

- Data Protector for Cloud Workloads (microfocus.com)
  General overview and information
- Data Protector for Cloud Workloads – Trial | Micro Focus
  Micro Focus Data Protector for Cloud Workloads trial licenses provides access to all features and functionality for 90 days
- Modern Protection for the Modern IT Environment: Data Protector for Cloud Workloads | Micro Focus Community
  Blogs and information
- Data Protector Data Sheet (microfocus.com)
  Data Sheet with information overview
- Data Protector for Cloud Workloads documentation

MICRO FOCUS

Thank you