Backup & Replication v7 – feature preview
Backup Copy Job wth built-in WAN Acceleration

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Agenda

- A history lesson on Veeam B&R
- The economics of multi-tiered data protection
- Veeam deduplication explained
- Why backup copy job is not a backup copy job
- Grandfather Father Son explained

- Webinar is recorded
- Follow-up email to be expected
A little history lesson
# A little history lesson

## Veeam Innovation - Reversed Roadmap

<table>
<thead>
<tr>
<th>Version</th>
<th>Features</th>
</tr>
</thead>
</table>
| v1      | - 2-in-1: backup and replication  
          - Instant File-Level Recovery  
          - Built-in deduplication  
          - Synthetic full backups  
          - Replication multiple restore points |
| v2      | - ESXi support with VCB  
          - Fastest VCB performance  
          - Advanced VSS support |
| v3      | - Instant File-Level Recovery for Linux  
          - ESXi support without VCB |
| v4      | - Centralized management  
          - Support for vStorage APIs  
          - Support for CBT  
          - Support for thin-provisioned disks  
          - Near-CDP  
          - Replication to ESXi |
| v5      | - **vPower**  
          - Instant VM Recovery  
          - SureBackup  
          - U-AIR  
          - On-Demand Sandbox  
          - Instant indexing |
| 6.0     | - Enterprise scalability  
          - Advanced replication  
          - Hyper-V support  
          - 1-Click File Restore |
| 6.1     | - VeeamZIP  
          - vPower for Hyper-V  
          - Veeam Backup Free Edition |
| 6.5     | - Veeam Explorer for Microsoft Exchange  
          - Veeam Explorer for SAN Snapshots  
          - New hypervisor support: vSphere 5.1 and Windows Server 2012 Hyper-V  
          - Long term retention to the cloud |

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The economics of multi-tiered data protection
Data protection location

Production
- VM snapshot
- VM High Availability
- RAID
- Storage Snapshots
  - RPO: 10 min

Disaster Recovery
- VM Replication
- Storage Replication

Granular Recovery

Backup
- JBOD
  - RTO: 10 min
- Deduplication
  - RTO: 1 day
- Tape
  - $\$

Cloud
  - $
## Data protection location

### Advantages versus Trade-Offs

<table>
<thead>
<tr>
<th>Data Protection Method</th>
<th>Advantages</th>
<th>Trade-offs</th>
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| **Tape Backup**               | ✓ Well-established ‘ecosystem’  
                                | ✓ Large installed base  
                                | ✓ Inexpensive off-site archiving                                      | ✓ Not suited for fast recovery  
                                |                                                                          | ✓ Media loss / damage  
                                |                                                                          | ✓ Harder to Manage |
| **Disk 2 Disk Backup – primary arrays** | ✓ Fastest VM recovery                                                | ✓ Higher Cost/GB                                                           |
| **D2D Backup – dedupe appliances** | ✓ Efficient  
                                | ✓ High capacity,  
                                | ✓ Low cost/GB                                                           | ✓ Not suited for fast recovery due to rehydration |
| **SAN Snapshots – volume-level** | ✓ Well-suited for fast volume recovery  
                                | ✓ Minimal VM impact                                                       | ✓ Complex multi-step process  
                                |                                                                          | ✓ Not suited for fast recovery |
| **Replication – volume/SAN-level** | ✓ Off-site DR capability  
                                | ✓ Fast volume recovery                                                   | ✓ Not suited for fast recovery  
                                |                                                                          | ✓ Expensive licensing for recovery software |
| **Replication – VM-level**    | ✓ Off-site DR capability  
                                | ✓ Fast VM recovery                                                       | ✓ Not a total site failover solution  
                                |                                                                          | ✓ Expensive licensing for recovery software |
Veeam Deduplication Explained
What is Change Block Tracking?

64 blocks

64 blocks

23 blocks

11 blocks

TOTAL: 32 blocks for 2 full restore points

We skip empty blocks & SWAP files
What is Deduplication?
With MD5 128bit hashing

Data block: 128k
Hash: 32 x4bits (hex) = 128bits
230q d5f9 0ec4 51fg de1e f95b e8c9 400e
C7c3 0dc6 a84e f7fc d652 5fd8 e22b 83c2

Veeam Block Size options:

**Local +16TB:** 1024k
**Local:** 512k
**LAN:** 265k
**WAN:** 128k

Bigger block size = less deduplication but faster

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Built-In deduplication

What is a Transaction Log (AD/EXCH/SQL)

NETWORK REDUCTION

FOOTPRINT REDUCTION

BackupJob1.vbk

BackupJob2.vbk

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# Built-in Deduplication versus Global Dedupe

## Setup backup job options

### Dedupe Appliance
- Capacity driven
- Hardware based inline deduplication
- Smaller block sizes for more reduction
- Global deduplication
- **To save more data on less capacity**

### Veeam Backup & Replication
- Network Driven
- Software based deduplication
- Large block sizes for faster processing
- Job based deduplication
- **Reduces overhead on the network**
Why *backup copy job* is
Not a *backup copy job*
Backup copy jobs

- **Protect your business:**
  Efficiently copy backups offsite
  forever incremental, specific VMs, specified frequency, WAN acceleration

- **Streamline compliance:**
  Automatically maintain long term retention
  support for GFS (grandfather-father-son) retention

- **Improve RPOs and RTOs:**
  Optimize your backup infrastructure for fast backups and restores
Backup Copy with Built-in WAN acceleration

Problem: need to get backups offsite

- **Tape** can be inconvenient: transport, store, manage, retrieve, etc.
- **Bandwidth** is often limited: cost and/or availability
- A general-purpose **WAN accelerator** is not always the answer: expensive, not workload optimized, may create interoperability issues

Veeam innovation: built-in WAN acceleration

- First backup software vendor to offer built-in WAN acceleration for image-based backups
- Not an OEM – built by Veeam and optimized for Veeam backups
- Agent-free
Bandwidth optimization with Proxies (TODAY!)
Backup Copy with built in WAN Acceleration

1. Production Storage
2. Veeam Backup Server
   - Source Data Mover
   - WAN Accelerator
   - Target Data Mover
3. Backup Storage
4. LUN
5. Veeam Target Proxy
   - WAN Accelerator
   - Target Data Mover
6. Backup Storage over WAN
Per VM copy job?
Per VM copy job?
Grandfather Father Son (GFS)
GFS – Grandfather Father Son

No need to take full backups, we’ll just keep the restore points
GFS – Grandfather Father Son

forever incremental!

- weekly backups – on Sunday
- monthly backups – 1st Sunday of the month
- yearly backup – 1st day of the year
GFS – Grandfather Father Son

Impact on “Compact Full Periodically”
Any questions?

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