What Are the Challenges?

- Managing Vmware-centric environments requires a new way of thinking

- Attempting to manage virtual environments with traditional backups

- Reducing backup storage utilization

- Lowering the cost and complexity of storage

- Finding a cohesive data protection and storage strategy for virtual environments

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The Ideal Solution

- Restarts a VM within minutes using existing backups and storage

- Obtains reliable backups every time

- Recovers virtualized application items/objects without added complexities or cost

- Tests VMs before pushing them live (patches, troubleshooting, etc.)

- Reduces backup storage requirements

- Stores backup images on a lower-cost tier of storage

- Grows at the lowest possible cost with backup data

- Automates backup storage infrastructure (no config)

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Veeam Backup & Replication

Existing tools aren't doing the job

- ## Traditional backup

  - Agent in each VM
  - Full VM recovery is complex
  - Expensive
  - Does not guarantee recoverability

- ## Typical VMware backup

  - Backup code runs on ESX/i hosts
  - Significant storage requirements
  - Limited recovery options
  - Does not guarantee recoverability

*"A major reason that organizations still hit these bumps on the backup and recovery road: They use the same products for both physical and virtual server backup, when we all know that **virtualization requires a fundamentally different approach.**"*

– SearchServerVirtualization.com

Drobo

- Drobo BeyondRAID™ innovative storage technology provides:

  - **Thin Provisioning** – up to 255 x 16TB Smart Volumes use a common pool of storage

  - **Virtual Hot Spare** – the free space in the storage pool is the hot spare for recovery

  - **Instant Expansion** – add a drive, it automatically adds to the storage pool

  - **Infinite Expansion** – replace a smaller drive with a larger drive without touching the GUI

  - **Mixed Drive Utilization** – use all of the storage vs. being limited to the lowest common size

  - **Dual Disk Redundancy** – change on the fly with a checkbox in the GUI

  - **Data Aware** – proportional rebuilds for faster recovery, enables intelligent tiering of data

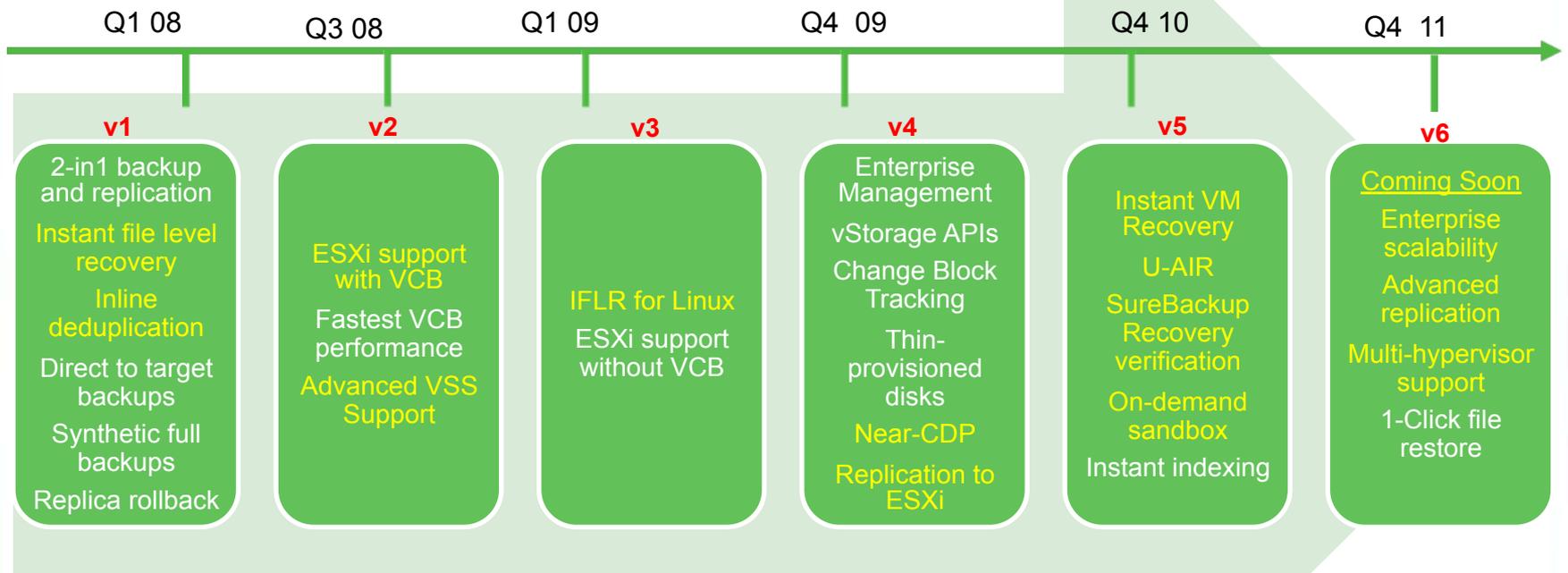 - **Drive Re-ordering** – move disk packs to another Drobo in any order

BeyondRAID Stack

Data	Data	Data
Volume	Volume	Volume
NTFS	HFS+	VMFS

BeyondRAID Virtualization

- Mirror
- Stripe + Parity
- Stripe + Double Parity

Disk Pack

Drives

RAID Redefined

" It's the way I've always wanted 'RAID-like' arrays to work. "

Source & Director
TechValidate

Veeam and Drobo

- Veeam + Drobo provide and optimized, end-to-end storage & data protection solution for virtual environments

  - **Instantly Scale Backup Environment -** Drobo's BeyondRAID technology allows you to add or upsize drives on-the-fly, automatically expanding the common storage pool

  - **Advanced Thin Provisioning -** Veeam can leverage thinly provisioned volumes, and Drobo Smart Volume technology automatically allocates physical storage as required to ensure individual volumes never run out

  - **Affordable Protection Onsite & Offsite -** Veeam offers backup and replication in a single solution, at one price. Combined with cost-effective iSCSI SAN solutions from Drobo, you now have the flexibility to replicate VMs onsite for high availability, offsite for DR, or both.

  - **Built-in Deduplication -** Leverage Veeam's built-in deduplication capabilities to shrink your backups, increase efficiency of your Drobo storage, and further reduce your overall costs.

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Innovation

- Veeam "firsts" to market

| Q1 08 | Q3 08 | Q1 09 | Q4 09 | Q4 10 | Q4 11 |

v1
- 2-in1 backup and replication
- Instant file level recovery
- Inline deduplication
- Direct to target backups
- Synthetic full backups
- Replica rollback

v2
- ESXi support with VCB
- Fastest VCB performance
- Advanced VSS Support

v3
- IFLR for Linux
- ESXi support without VCB

v4
- Enterprise Management
- vStorage APIs
- Change Block Tracking
- Thin-provisioned disks
- Near-CDP
- Replication to ESXi

v5
- Instant VM Recovery
- U-AIR
- SureBackup Recovery verification
- On-demand sandbox
- Instant indexing

v6
Coming Soon
- Enterprise scalability
- Advanced replication
- Multi-hypervisor support
- 1-Click file restore

Reinventing Data Protection

- Innovation with **vPower**
  - Run a VM directly from a compressed and deduplicated backup file
  - Eliminates need to provision storage, extract and copy the backup

- Taking data protection to the next level

  1. **Instant VM Recovery** - recover an entire VM in less than 2 minutes

  2. **U-AIR** - recover individual emails, database records, etc. from a regular image-level backup—without agents, special indexes or extra backups

  3. **Sure Backup** - verify the recoverability of every backup

  4. **On-Demand Sandbox** - create VMs on the fly for testing or troubleshooting

  5. Instant File-Level Recovery for *any guest OS and file system*

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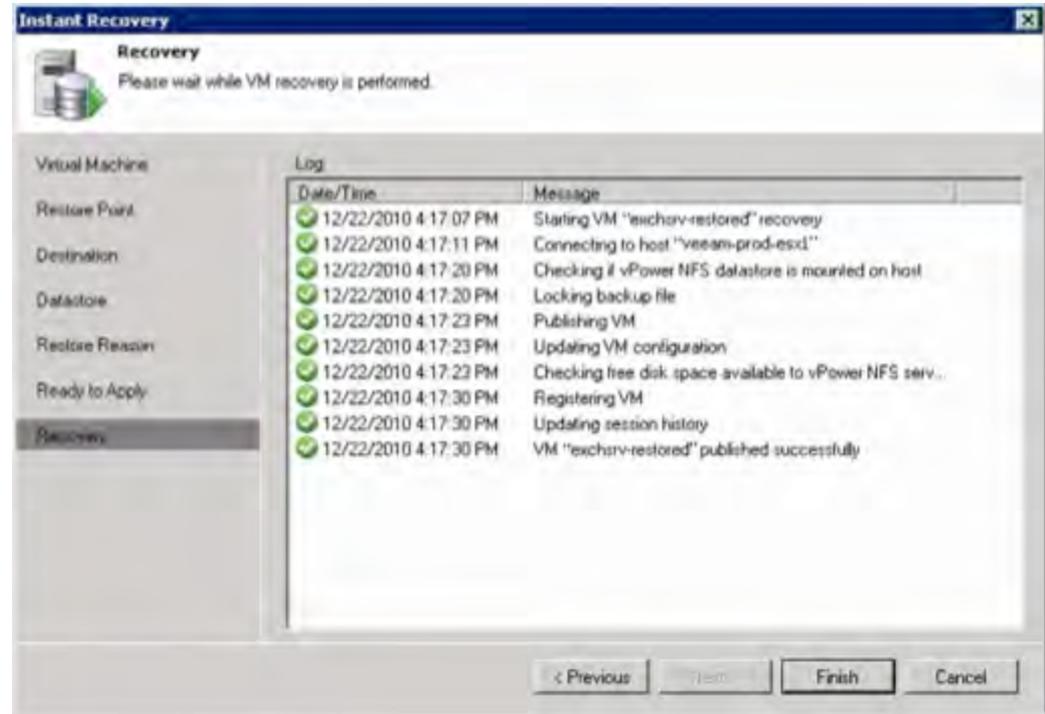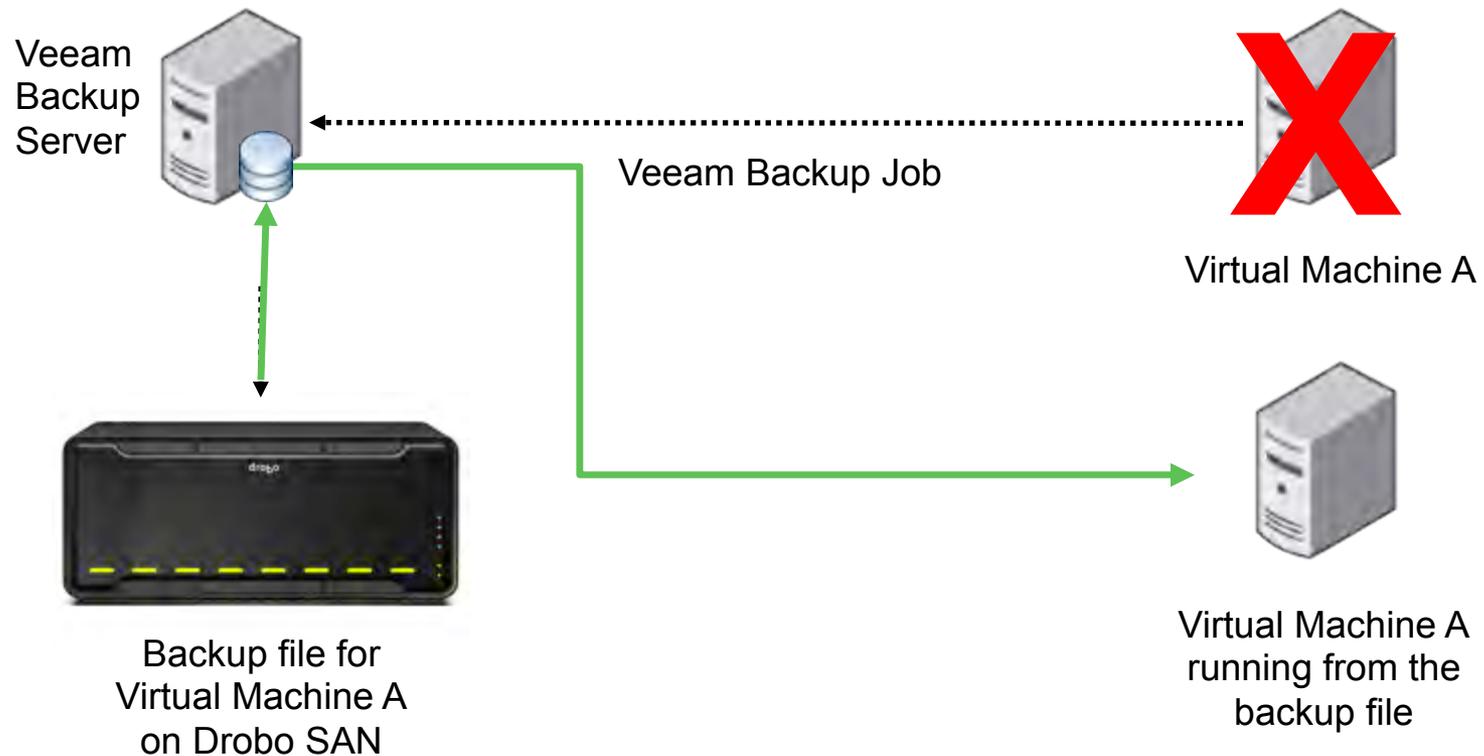vmware PARTNER TECHNOLOGY ALLIANCE

How vPower Works
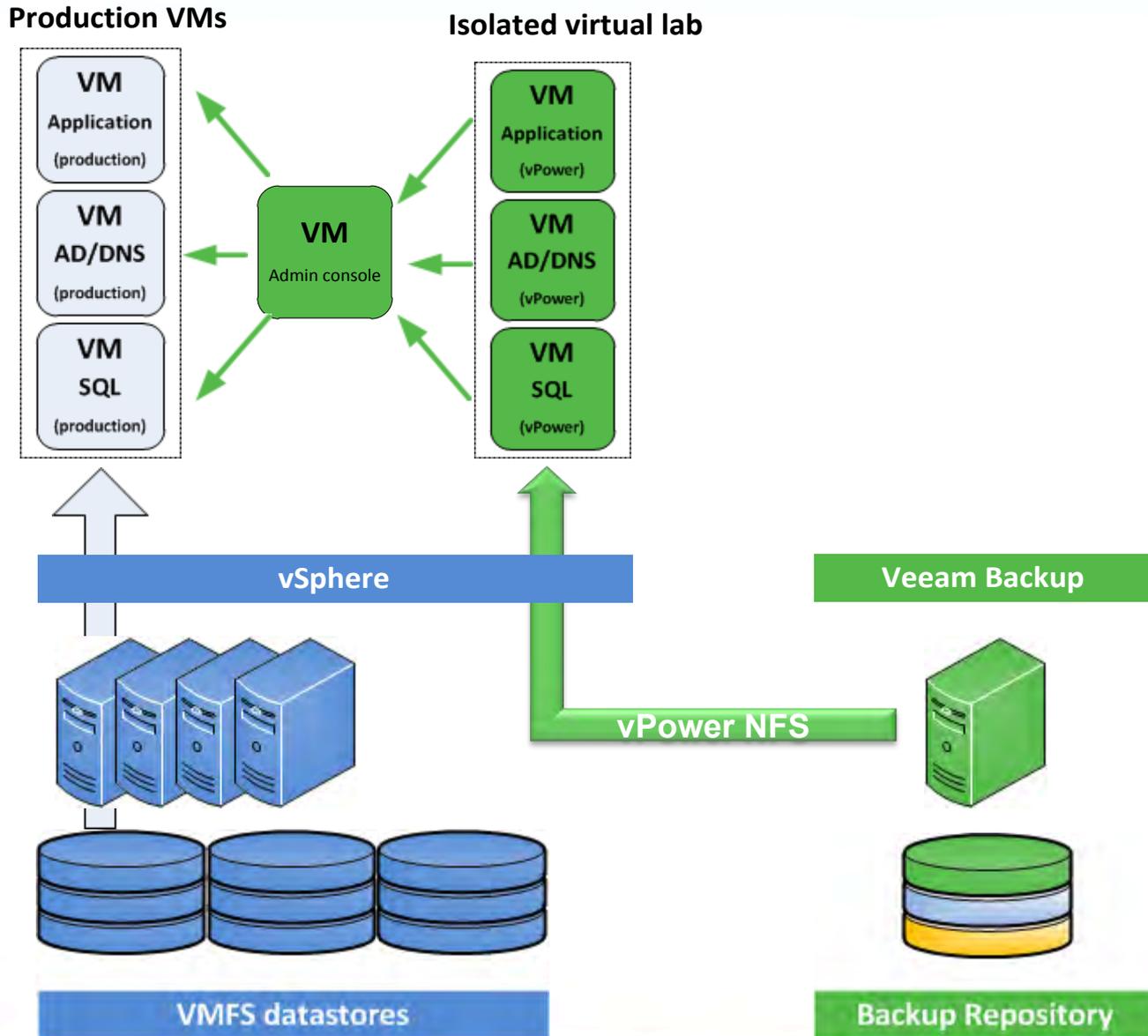
Instant VM Recovery

- **Fast** - start VM directly from backup file

- **Readily available** - uses existing backups and backup storage

- **Buys you time** - users keep working while you troubleshoot the problem

- **Easy** - backups online and ready for recovery, just click and go

How Instant VM Recovery Works

Veeam
Backup
Server

Veeam Backup Job

Virtual Machine A

Backup file for
Virtual Machine A
on Drobo SAN

Virtual Machine A
running from the
backup file

U-AIR

- Performs item-level recovery from any virtualized application without:

  - ✖ application-specific agents to license
  - ✖ additional products to buy
  - ✖ special backups to create

- Supports administrator- and user-directed recovery
  - Wizards for administrator-directed item recovery from Microsoft Exchange, Active Directory and SQL Server
  - User-directed item recovery from **ANY** application or database

- Easy and efficient Backup Appliance solution by centralizing all backup onto an affordable, high-capacity storage system

SureBackup

- Verify the *recoverability of every backup*

- Does not affect backup windows or require additional hardware and staff

Check all

Check some

Checksum

- Reduce storage requirements without sacrificing tape support or creating a single point of failure

- Additional level of assurance provided by Drobo BeyondRAID with Data Scrubbing

  - If a bad block is found it is immediately marked bad and the data is moved and protected

  - Data scrubbing helps avoid soft sector errors in data sets that are rarely accessed
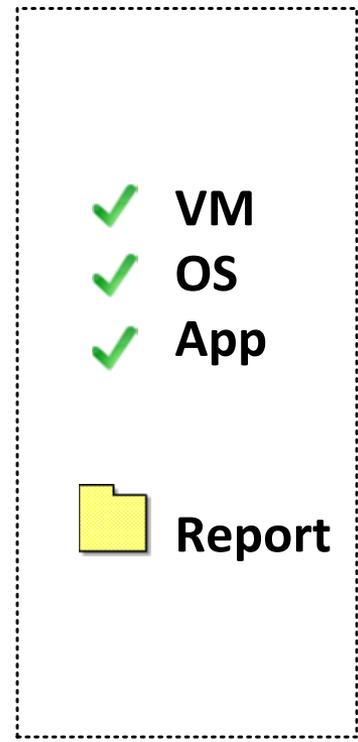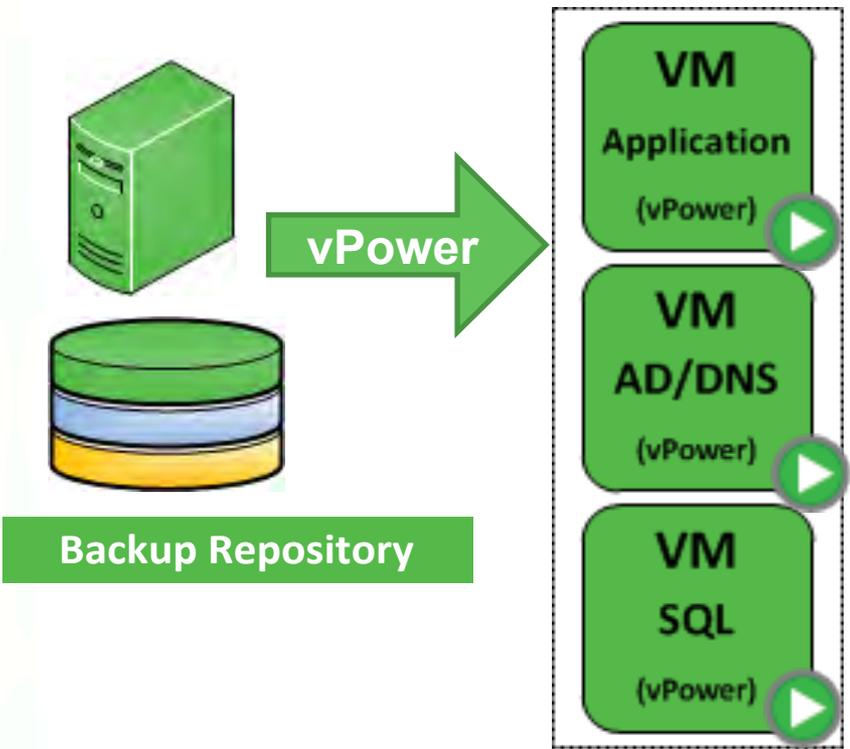
How SureBackup Works

① Publish   ② Start   ③ Verify   ④ Protect

Isolated virtual lab   **Verification job**   Data Scrubbing

vPower

Backup Repository

VM Application (vPower)

VM AD/DNS (vPower)
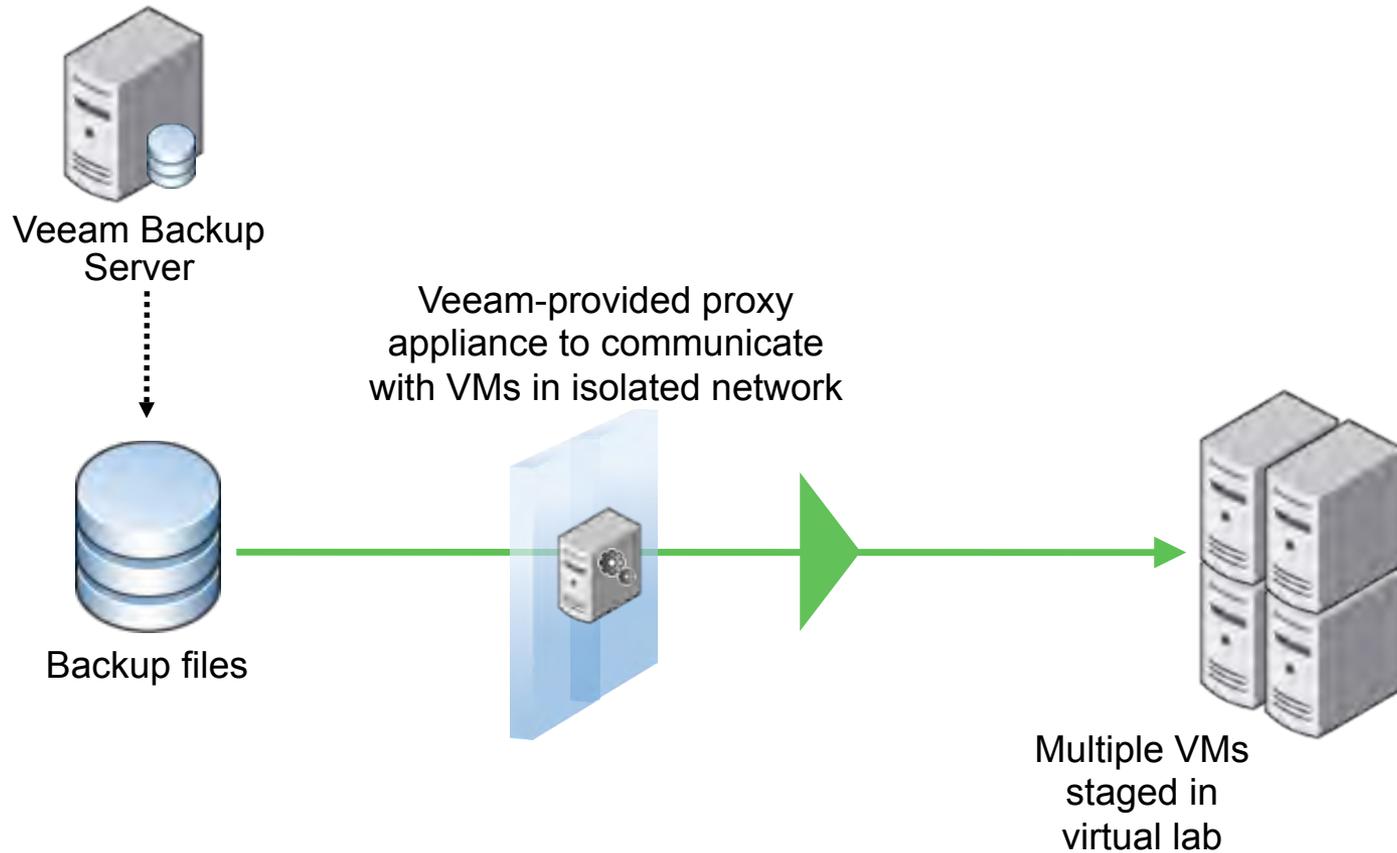
VM SQL (vPower)

✔ **VM**
✔ **OS**
✔ **App**

📁 **Report**

On-demand Sandbox

- Instantly start a group of production VMs in sandbox

- Restore from any point (full or incremental backup)

- Run directly from the backup file, with backup file remaining untouched

- Lower the cost of storage in test and development environments with iSCSI SAN that is a different tier than Tier 1 primary

How On-demand Sandbox Works

Veeam Backup
Server

Veeam-provided proxy
appliance to communicate
with VMs in isolated network

Backup files

Multiple VMs
staged in
virtual lab

Value of a Joint Solution

Veeam Backup & Replication Drobo

- 2-in-1: backup and replication

- No extra charge for
  - Deduplication
  - Enterprise Manager
  - Multi-hypervisor support

- Licensing by CPU socket
  - No per-server, per-agent or per-mailbox fees

- Quick ROI and low TCO

- Compelling Economics
  - Simplicity & automation of drives down operating expense
  - BeyondRAID provides big storage with a small capital expense

Benefits

- **Instant VM Recovery** - Run a virtual machine (VM) directly from the backup file stored on Drobo without having to first restore the backup to primary storage
  - Drobo's data-aware tiering technology recognizes "hot" data on the now live VM and automatically promote to the transactional tier to ensure optimal performance until primary storage can be brought back online
- **Instant File & Object Recovery** - Unlike tape, using Drobo's disk-based solutions in conjunction with Veeam enables recovery of individual files or objects for any virtualized application directly from your backups in seconds
  - Veeam's patent-pending U-AIR technology does this without agents on any application using native permissions
- **Affordable Protection Onsite & Offsite** - Veeam offers backup and replication in a single solution, at one price
  - Combined with cost-effective iSCSI SAN solutions Drobo, replicate VMs onsite for high availability, offsite for disaster recovery purposes, or both
- **Built-in Deduplication** - built-in deduplication capabilities in Veeam shrink your backups, increase efficiency of your Drobo storage for better overall cost
 - Source-side dedupe allows publishing deduped backups as regular VMDK files

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Technical Details

- **Configuration**
  - Drobo SAN Storage for Business
    - Drobo B800i for backup price/capacity
    - Drobo B1200i for backup and Tier 2 primary
  - Drobo Dashboard management software (most recent version)
  - Enterprise-grade 7200RPM SAS or SATA disk drives (recommended)
  - Windows Server 2008 R2 (dedicated server recommended)

- **Supported Versions**
  - Veeam Backup and Replication v5
  - B800i firmware version 2.0.2 or higher
  - B1200i firmware version 1.0.1 or higher
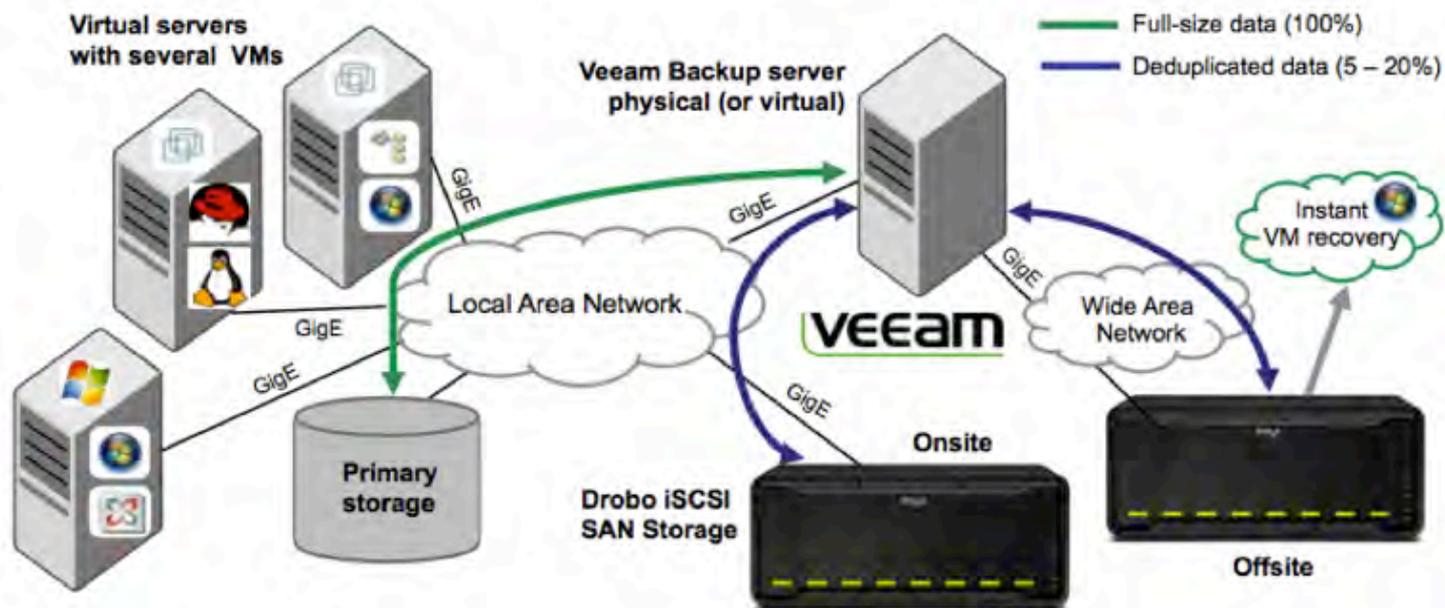
Best Practices

- Direct SAN Access mode is recommended
  - While Virtual Appliance or Network modes for Veeam Backup work with Drobo, Direct SAN Access is the most efficient method, leverages VMware storage APIs

- A physical host for Veeam is recommended
  - While a VM host can be the backup server, having dedicated resources serves better for compression and deduplication

- A minimum of 6 x 7200 RPM disks is recommended
  - While a Drobo can provide a great deal of storage with few very large drives, 6 drives will offer a better level of service

- More information on best practices for the combined solution documented @http://info.drobo.com/veeam/how_to_guide

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Additional Considerations

- Great fit - sizing
  - 1 Veeam server = model B800i, multiple Veeam servers = model B1200i

- Not as great a fit
  - Drobo as primary storage for applications with > 250 users
  - Running high IOPS VMs from instant restore on Drobo for a long duration
  - Primary storage with HyperV clustering
    - SCSI-3 persistent reservations not currently supported

- Considerations
  - Drobo delivers improved performance when storing on NTFS vs. a VMFS datastore
  - When using the Microsoft iSCSI Initiator to connect to datastores on which the VMs reside or to where VMs are backed up, DO NOT mount them
    - Potential risk that VMFS volumes are re-signatured by Windows
    - Veeam recommends that the diskpart automount be disabled
      - Version 5 automatically disables automount

More Information

- Go to http://www.drobo.com/veeam for valuable assets

  - Expert Webcast replay featuring Rick Vanover

  - Risk-free trial offer for this Veeam + Drobo solution

  - Detailed How-To Guide

  - Solution Brief document

    and more… [Attend the Webinar] [Read the How-To Guide] [Risk-Free Drobo + Veeam Trial]

- Contact Drobo sales to get connected with a reseller who can assist you with this joint Veeam + Drobo solution

  - 1.888.97DROBO (1.888.973.7626)

  - Email sales@drobo.com

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Product Pictures: Front & Back

- Drobo SAN Storage for Business

Drobo model B800i

Drobo model B1200i

V6: Coming Soon

- Enterprise scalability - Scales for larger deployments

- Advanced replication - Provides 10x faster replication

- Multi-Hypervisor support - Supports Microsoft Hyper-V

Additional enhancements including

- 1-click file restore

- VM migration for VMware

… and many more

Useful Links

- Veeam Backup and Replication v5
  vee.am/backupreplication

- Veeam Monitor
  vee.am/vmwmntr

- Veeam Reporter
  vee.am/vmwrprtr

- Veeam Business View
  vee.am/bview

- nworks Management Pack for VMware for MS System Center
  vee.am/nworksMP

- nworks Smart Plug-in for VMware for HP Operations Mgr
  vee.am/nworksSPI

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Thank You

- Questions?

- Additional resources
  - http://www.veeam.com
  - Veeam on Twitter: @Veeam
  - Veeam Blog: http://www.veeam.com/blog/
  - Veeam Community Podcast (iTunes, RSS) - www.veeam.com/podcast