

Disaster Recovery in the Modern Enterprise

Who I Am

- ▶ RIT Alumni, BS in Information Technology
- ▶ Cloud Engineer at OffsiteDataSync
- ▶ Background in Systems and Database Administration



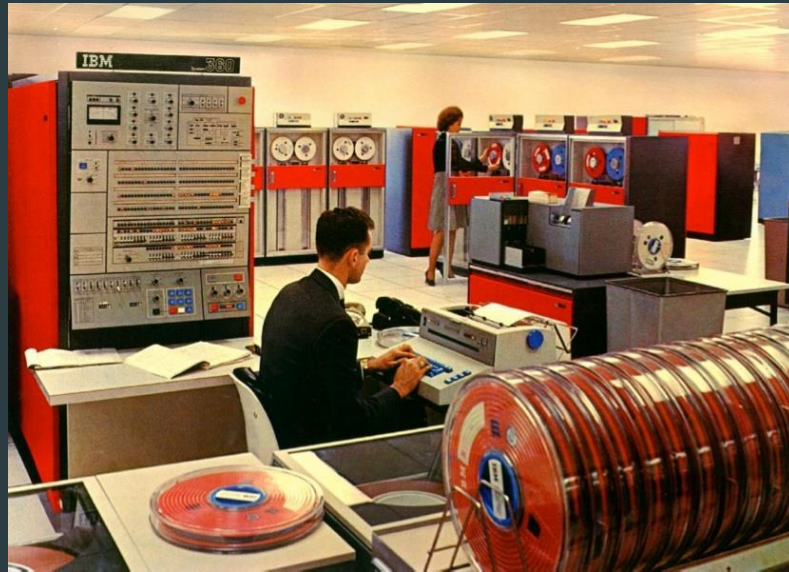
- ▶ Veeam Platinum Partner
- ▶ Veeam Cloud and Service Provider
- ▶ DRaaS
- ▶ IaaS
- ▶ Private Cloud



2014, 2015, & 2016

What Exactly is Disaster Recovery?

- ▶ Subset of Business Continuity
- ▶ Focuses on the IT or technological systems that support a business in time of duress



What is a Disaster?

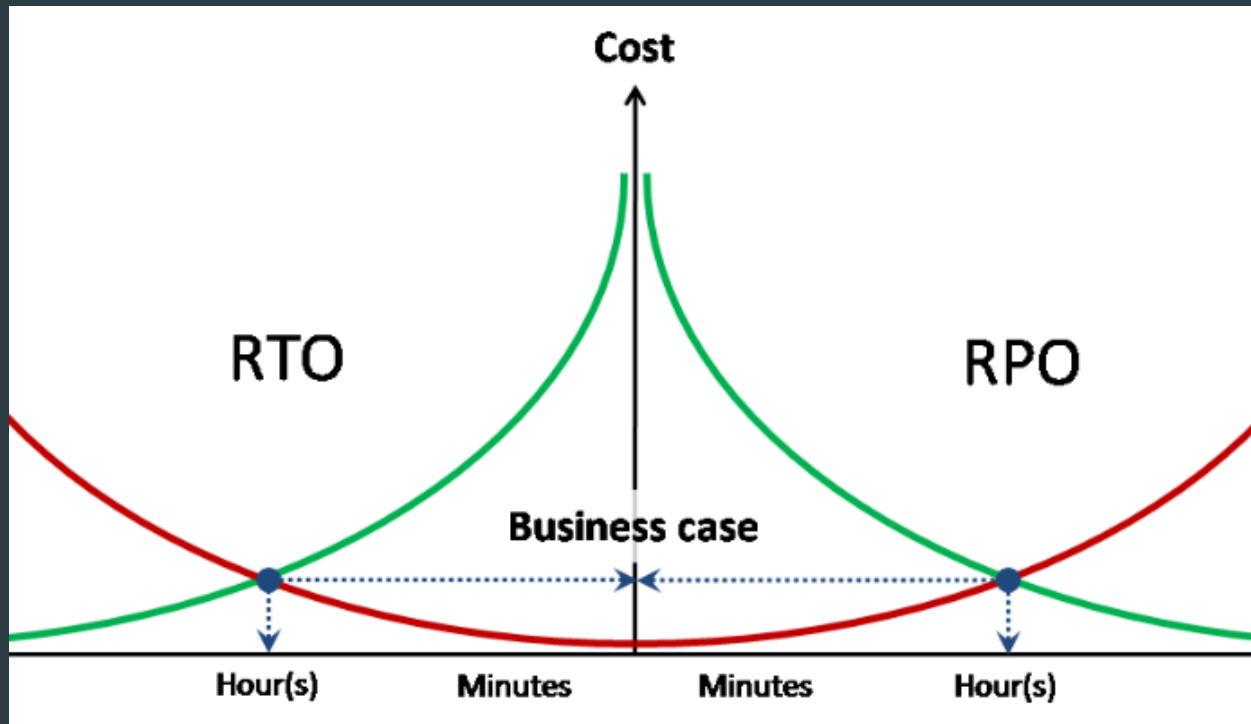
- ▶ Man Made
- ▶ Natural



Hurricane Matthew; 2016

RPOs and RTOs

- ▶ RPO - Recovery Point Objective
- ▶ RTO - Recovery Time Objective



Control Measures

- ▶ Preventative
- ▶ Detective
- ▶ Corrective



Strategies

- ▶ Backup to Tape
- ▶ Backup to Disk On-Site with Off-Site copies
- ▶ Replication of data to a co-location
- ▶ Private Cloud Solutions with Data Replication
- ▶ Hybrid Cloud Solutions with On-Site and Off-site Data Replication
- ▶ The use of High Availability Systems

vmware®



Microsoft
Hyper-V

VEEAM

Modern Data Protection

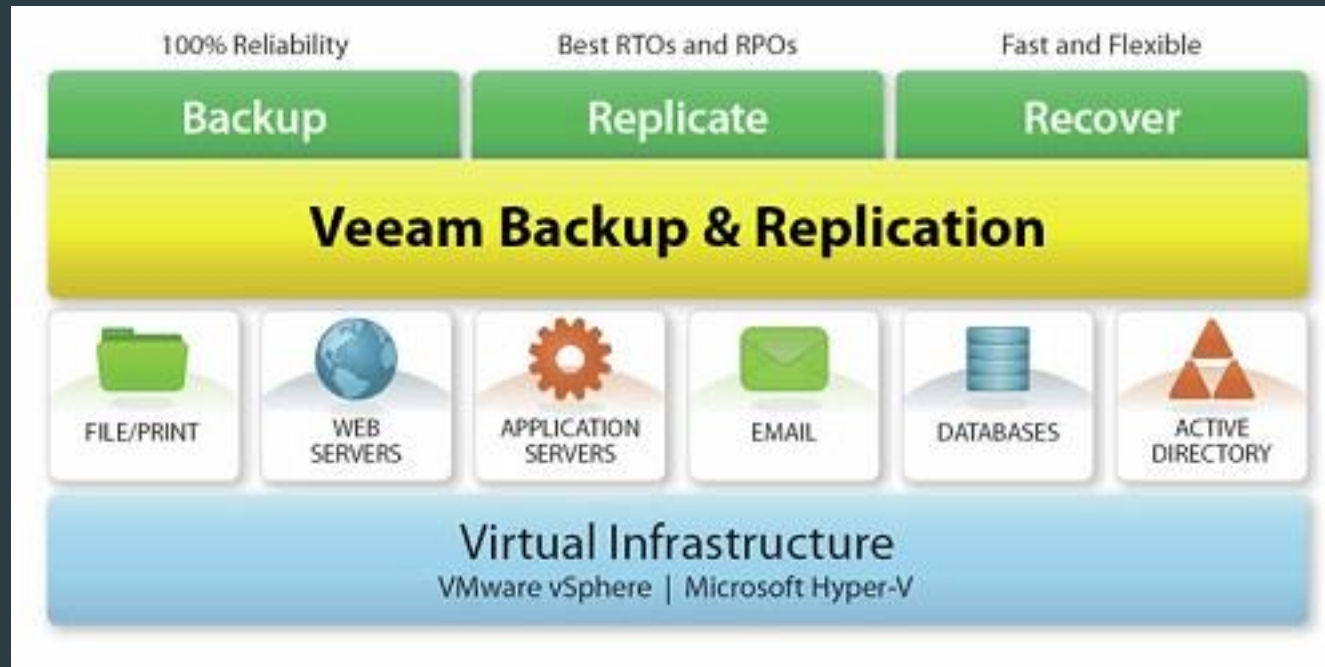
Why is DR Important?

- ▶ Cost of Downtime
- ▶ Cost of Labor to restore services
- ▶ [DR InfoGraphic](#)

Save yourself the headache and
have a plan!

Veeam Availability Suite

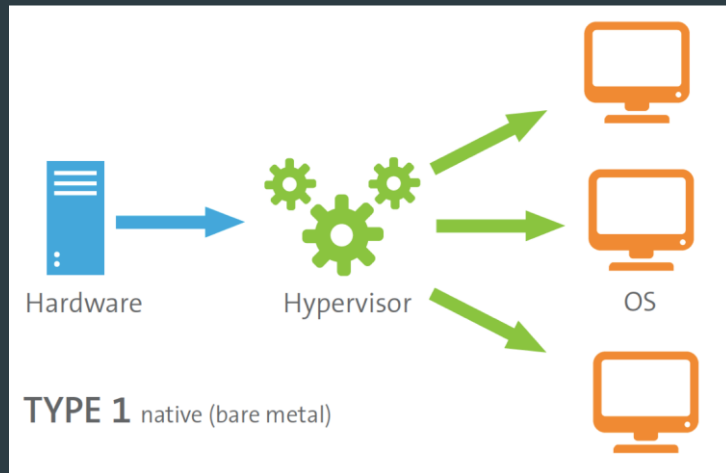
- ▶ Data Protection Software
- ▶ Can achieve RPO and RTO of <15 minutes
- ▶ Has the ability to recover entire VM's, individual files, and application items
- ▶ Has tie-ins with major vendors such as
 - ▶ EMC
 - ▶ NetApp
 - ▶ HPE



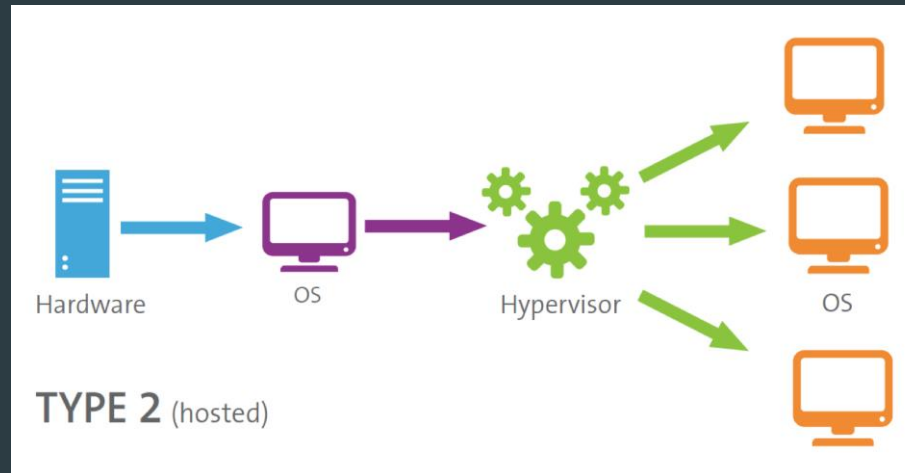
Veeam Backup

- ▶ Operates at the Virtualization Layer
- ▶ Uses image/snapshot based backups
- ▶ Agentless
- ▶ Hardware Agnostic

VMWare ESX(i)



Microsoft HyperV



Veeam Backup Methods

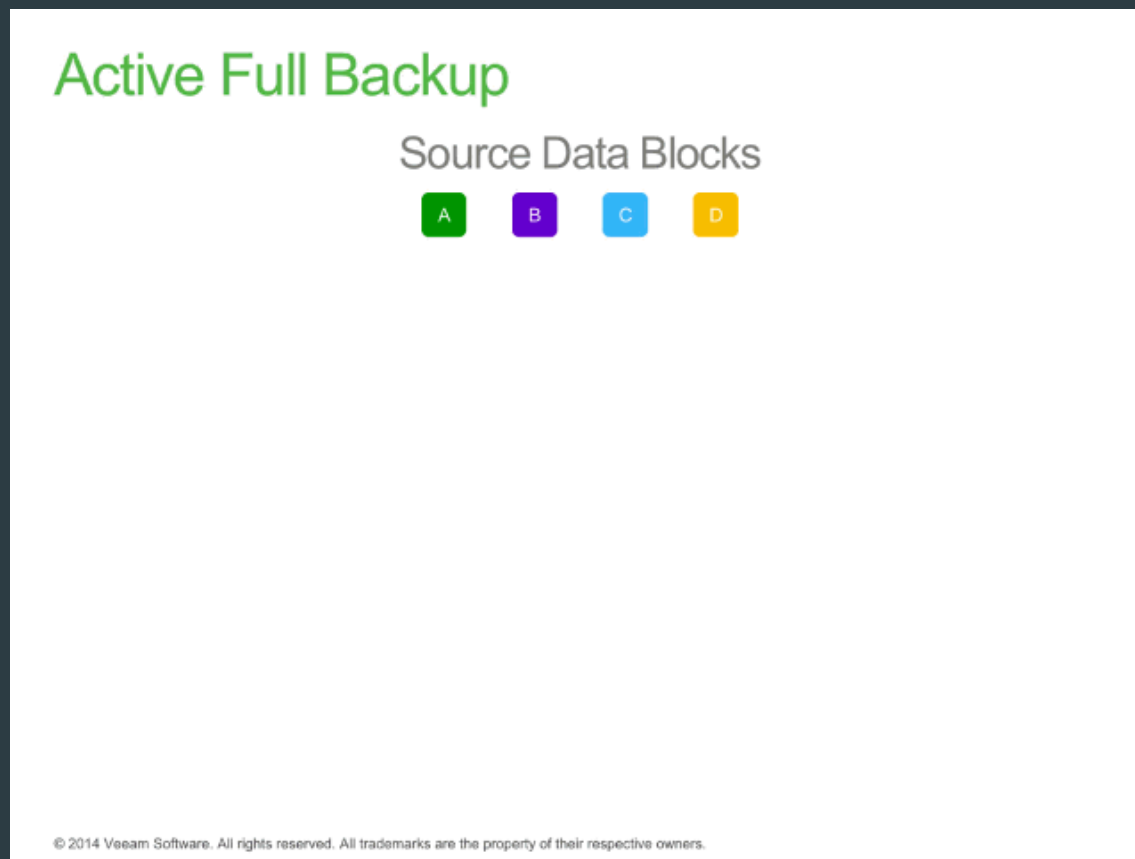
► Forward Incremental

Retention Policy: Forward Incremental

Example: 3 restore points.

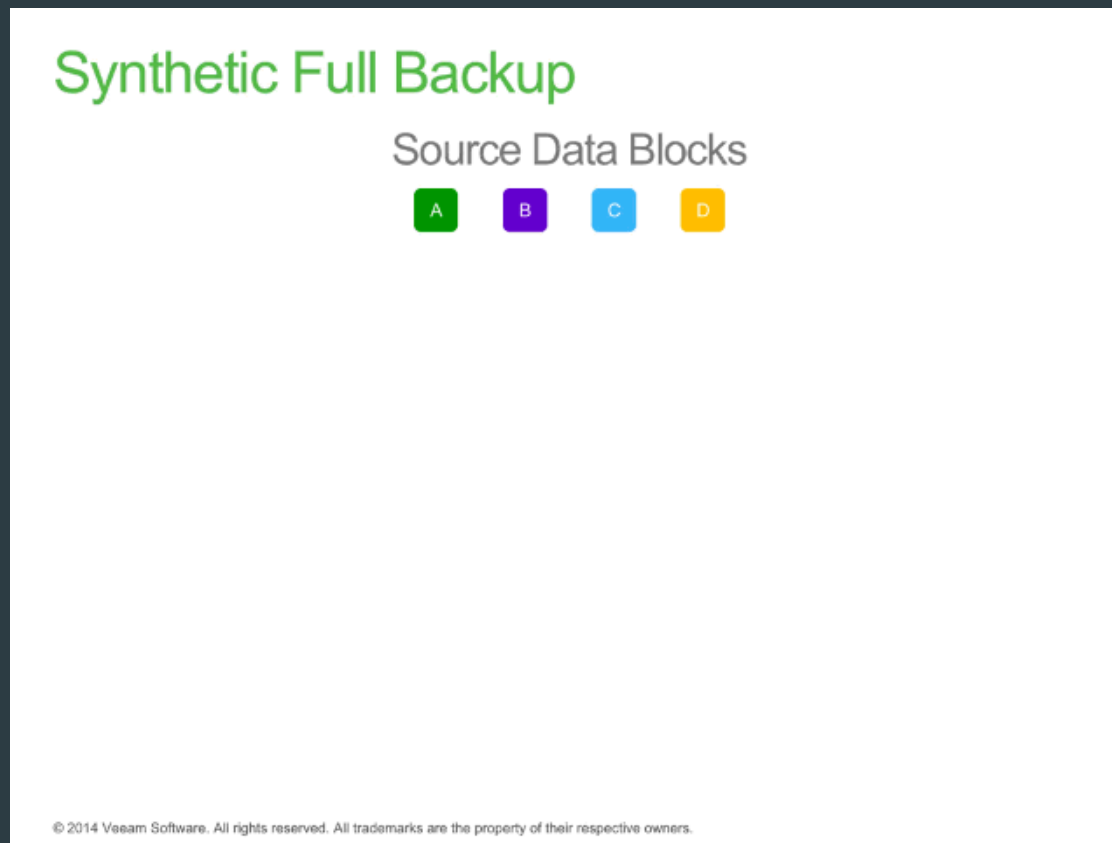
Veeam Backup Methods - cont'd

► Active Full Backup



Veeam Backup Methods - cont'd

► Synthetic Full Backup



Veeam Backup Methods - cont'd

► Forever Forward Incremental

Forward Incremental-Forever

Example: 3 restore points.

THU



VBK

Veeam Backup Methods - cont'd

► Reverse Incremental

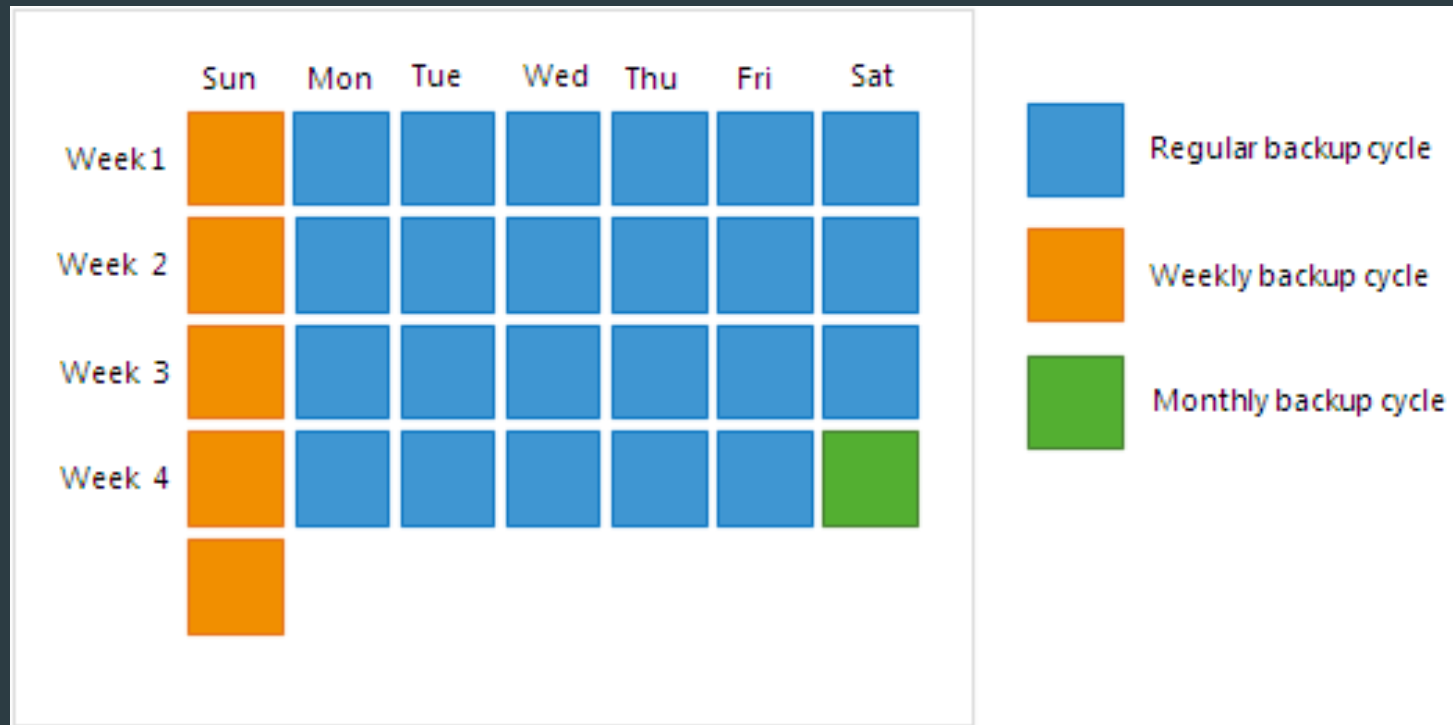
Reverse Incremental Backup

Source Data Blocks



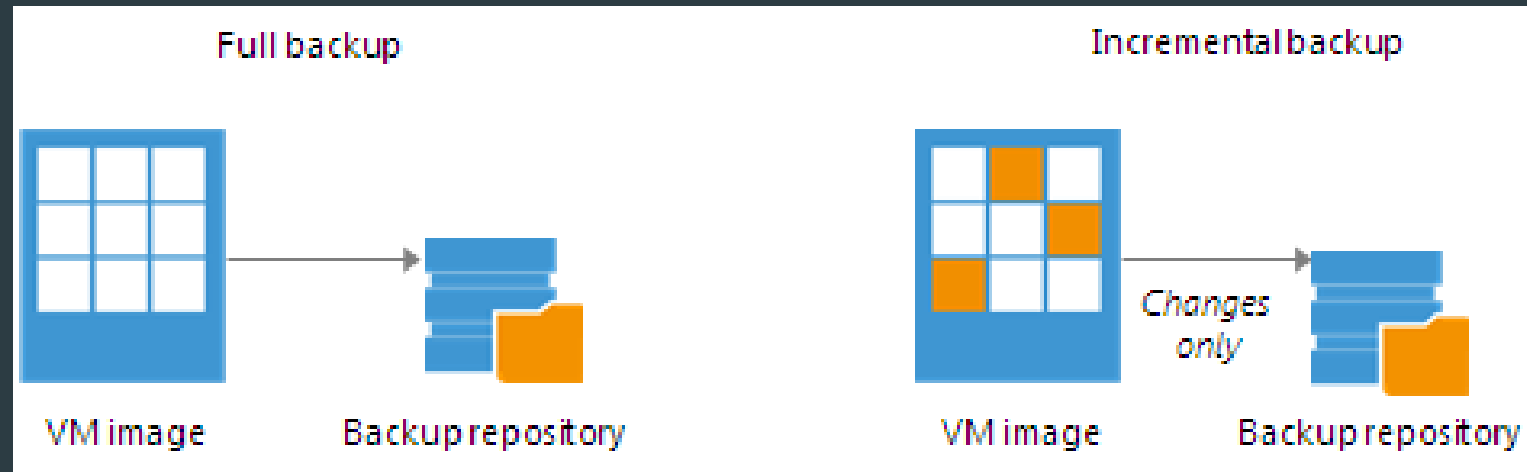
Veeam Backup Methods - cont'd

- ▶ Backup Copy
- ▶ GFS



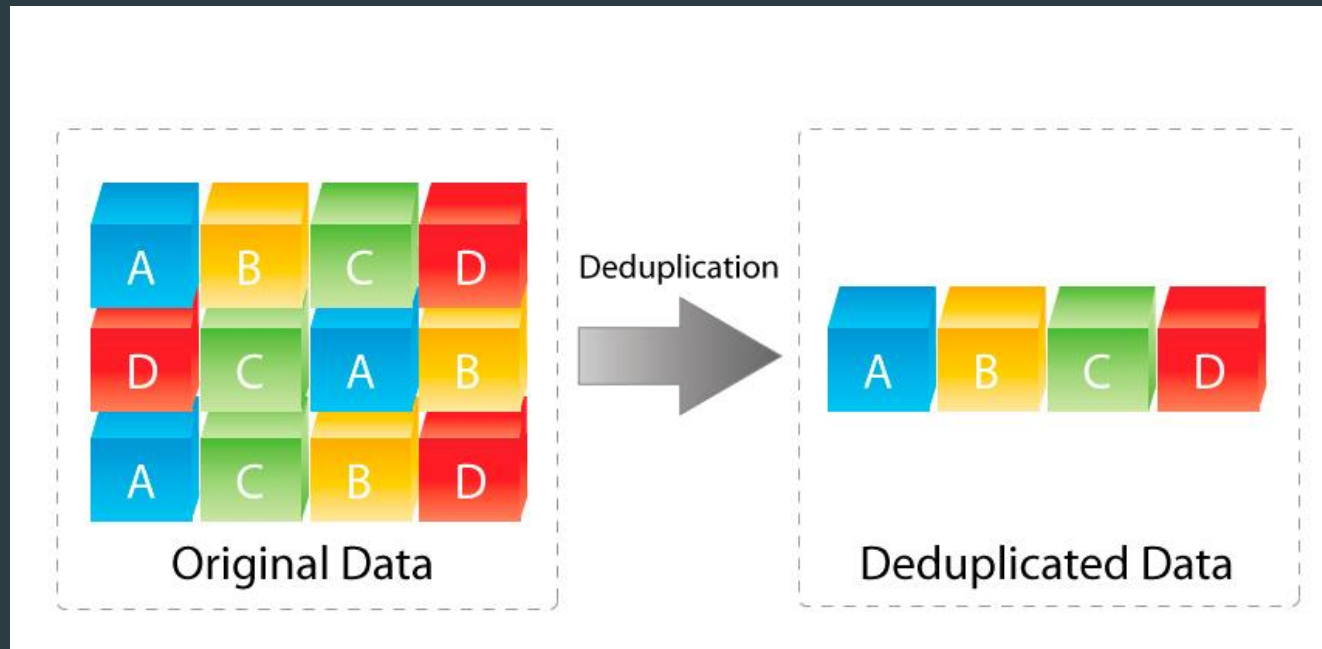
Differences between Full and Incremental Backups

- ▶ Full backup - .vbk
- ▶ Incremental Backup - .vib
- ▶ Rollback Increment - .vrb



Veeam Data Storage

- ▶ Deduplication
- ▶ Compression



3-2-1-0 Rule for High Availability

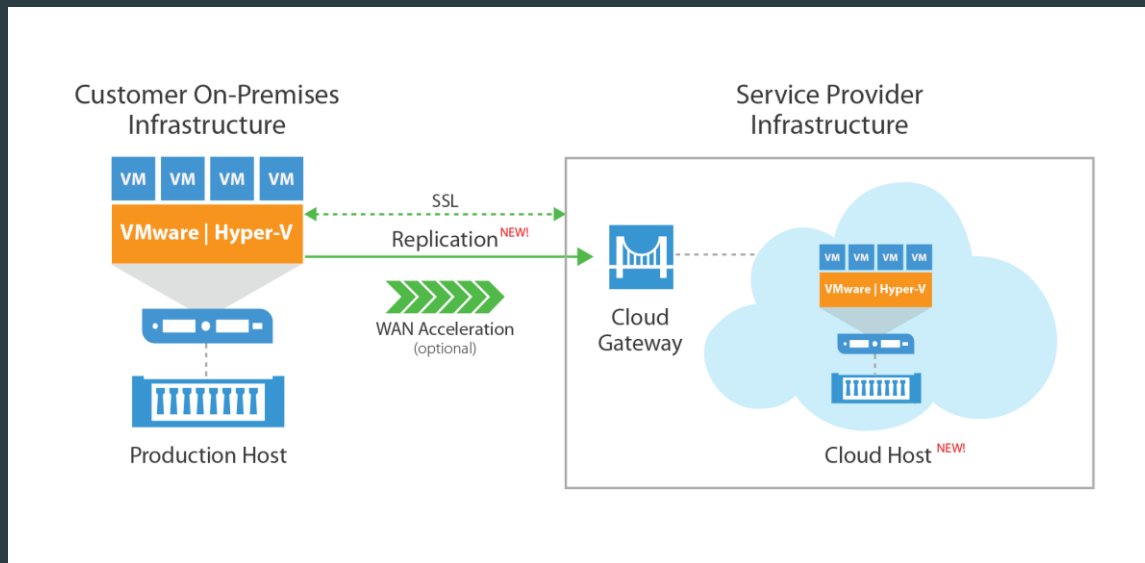
- ▶ 3 - Backups
- ▶ 2 - Types of Media
- ▶ 1 - Offsite Backup
- ▶ 0 - Verify your recovery plan does not have errors

Veeam Recovery

- ▶ Instant VM Recovery
- ▶ Full VM Recovery
- ▶ VM File Recovery
- ▶ Virtual Drive Recovery
- ▶ Guest OS File Recovery
- ▶ Quick Rollback

Other Features of Veeam

- ▶ Veeam Replication
- ▶ Veeam Cloud Connect
- ▶ Veeam Reporter and Monitor



In Closing

- ▶ Full backup Suite with multiple features
- ▶ Integrates directly with Modern Virtualization technologies
- ▶ Will be able to fully support Physical Infrastructure in coming months
- ▶ Built for the Modern Data Center and 24/7 Availability

