Veeam Backup & Replication
What's New in v9?

Veeam® Backup & Replication™ v9, part of Veeam Availability Suite™, provides a number of new cutting-edge capabilities that help deliver *Availability for the Always-On Enterprise*™ by providing recovery time and point objectives (RTPO™) of <15 minutes for ALL applications and data. The following is a list of the major new features and functionalities added as part of v9.

New Innovations

Scale-out Backup Repository

Managing backup storage is an enormous and expensive effort for enterprises. This is largely due to the fact that the exponential rate of data growth is outpacing the ability of legacy solutions to manage it in efficient, cost-effective ways.

Veeam's new **Scale-out Backup Repository™** addresses this challenge by lowering backup storage hardware spending and significantly simplifying backup storage management in the enterprise. With this new capability, enterprises will be able to:

- **Dramatically simplify backup storage and backup job management** through a single, software-defined backup repository encompassing multiple heterogeneous storage devices
- **Reduce storage hardware spending** by allowing existing backup storage investments to be fully leveraged, eliminating the problem of underutilized storage devices
- **Improve backup performance**, allowing for lower RPOs and reduced risk of data loss in daily operations

BitLooker

BitLooker™ is Veeam's unique, patent-pending, advanced data-reduction technology designed to further reduce backup file size and replication bandwidth usage by 20% or more. It allows customers to remove useless chunks of data congesting their backup storage and network resources by providing the following three capabilities:

- Excluding deleted file blocks
- Excluding swap and hibernation files
- Excluding user-specified files and folders

Note for users upgrading from previous versions: By default, BitLooker will be enabled for newly created jobs upon upgrade. However, it will not be automatically enabled on existing jobs to ensure the jobs do not change existing behaviors. BitLooker can be enabled manually in the advanced job settings or by using a PowerShell script.

Veeam product suites designed for every business

Veeam Backup & Replication and Veeam ONE™ are better together. Veeam combines its two marquee solutions to help businesses maintain a high Availability data center through five key capabilities, including High-Speed Recovery, Data Loss Avoidance, Verified Recoverability, Leveraged Data and Complete Visibility.

Veeam Availability Suite combines the industry-leading backup, restore and replication capabilities of Veeam Backup & Replication with the advanced monitoring, reporting and capacity planning functionality of Veeam ONE™ to deliver the Availability your business needs to remain Always-On™.

Veeam Backup Essentials™ is a powerful, easy-to-use and affordable backup and Availability solution designed for small businesses with less than 250 employees and virtual environments of up to 6 CPU sockets. Veeam Backup Essentials delivers the exact same functionality as Veeam Availability Suite with a savings of up to 60% or more.

Primary storage integrations

Integration with EMC snapshots

With Veeam and EMC, you can now get lower recovery point objectives (RPOs) and lower recovery time objectives (RTOs) with Veeam Backup from Storage Snapshots and Veeam Explorer™ for Storage Snapshots for EMC VNX, VNX2 and VNXe hybrid storage arrays. This integration provides the following benefits:

- Minimize impact on production virtual machines (VMs)
- Rapidly create backups from EMC VNX, VNX2 or VNXe storage snapshots up to 20x faster than the competition
- Easily recover individual items in two minutes or less, without staging or intermediate steps

EMC integration supports Fibre Channel (FC), iSCSI and NFS connectivity, as it is applicable in a particular storage device model.

Backup from NetApp SnapMirror and SnapVault

Completely eliminate the additional impact from backup activities on your production storage by retrieving VM data from SnapMirror or SnapVault secondary storage systems, instead of from the primary storage system.

On-Demand Sandbox for Storage Snapshots

Use On-Demand Sandbox™ for Storage Snapshots to create complete isolated copies of your production environment in just a few clicks, for fast and easy testing and troubleshooting — available with VMware vSphere and EMC, Hewlett Packard Enterprise (HPE) and NetApp storage (including support for NetApp SnapMirror and SnapVault secondary).

Direct NFS Access

Perform vSphere backups, replication and restores faster and with reduced impact on your virtual environment by backing up directly from file-based (NFS) primary storage using Veeam's proprietary NFS client, supporting both the traditional NFS v3 and the new NFS 4.1 (available in vSphere 6) protocol versions.

Backup storage integrations

HPE StoreOnce Catalyst

HPE StoreOnce Catalyst integration provides superior source-side data deduplication to enhance backup performance, reduce backup costs and simplify backup environments by yielding faster, more efficient backups that enable lower RPOs and lower exposure to data loss. The benefits include:

- Up to 50% faster backup performance over low bandwidth links with advanced source-side deduplication by HPE StoreOnce Catalyst
- 10x faster in-place synthetic full-backup file creation and transformation for dramatically shorter backup windows
- FC connectivity enables LAN-free backup to HPE StoreOnce
- Built-in file management for HPE StoreOnce Catalyst stores enables managing and storing Veeam backups and regular files manually

HPE StoreOnce 3.13.1 or later and Catalyst license from HPE is required.

Supported Environments

VMware infrastructure*

Platforms
- vSphere 6.0
- vSphere 5.x
- vSphere 4.1

Hosts
- ESXi 6.0
- ESXi 5.x
- ESX(i) 4.1

Software
- vCenter Server 6.0 (optional)
- vCenter Server 5.x (optional)
- vCenter Server 4.1 (optional)
- vCloud Director 5.1, 5.5, 5.6, 8.0 (optional)

*Only English version of VMware infrastructure is supported

Microsoft infrastructure

Platforms
- Windows Server 2012 R2
- Windows Server 2012
- Windows Server 2008 R2 SP1

Hosts
- Windows Server Hyper-V 2012 R2
- Microsoft Hyper-V Server 2012 R2 (free)
- Windows Server Hyper-V 2012
- Microsoft Hyper-V Server 2012 (free)
- Windows Server Hyper-V 2008 R2 SP1
- Microsoft Hyper-V Server 2008 R2 SP1 (free)

Software
- Microsoft System Center Virtual Machine Manager 2012 R2 (optional)
- Microsoft System Center Virtual Machine Manager 2012 SP1 (optional)
- Microsoft System Center Virtual Machine Manager 2008 R2 SP1 (optional)

Updated EMC Data Domain support

Updated EMC Data Domain Boost 3.0 SDK support is included in v9, enabling DD OS 5.6 support, as well as support for source-side deduplication and data in-flight encryption over the WAN (wide area network) for faster, more secure backups to off-site EMC Data Domain appliances.

Additionally, the functionality of the Files tabs in the management tree has been expanded to include the ability to manage files directly on Data Domain storage units, without first needing to publish them as a file share.

Enhanced support for any deduplication appliance

Whether you are using EMC Data Domain, HPE StoreOnce — or any other deduplicating storage appliances such as ExaGrid, Quantum or Windows Server deduplication — the following new features provide improvements while interfacing with any deduplication system.

Per-VM backup file chains. The Per-VM backup file chains provide a new backup repository option that makes any backup job, that is writing to a repository, store each VM's restore point in a dedicated backup file. This results in delivering up to 10x faster backup performance with multiple write streams by leveraging parallel VM processing for backup storage with limited ingest rate per stream — as is the case with most deduplicating storage appliances.

Recovery performance optimizations. A number of low-level optimizations were added with v9 to help improve performance of all recovery types involving random I/O, including Instant VM Recovery™, and file-level and application-item recovery performance. Certain parts of the new storage integration logic will be used only for backup repositories with a Decompress backup data blocks before storing option enabled and when backup files are unencrypted, which is the recommended settings for most deduplicating storage.

Active full backups with backup copy jobs. This added feature will help improve local (on-site) backup copy performance and reduce the load on deduplication appliances by eliminating the data rehydration required to process the backup copy job retention policy, or to create a new GFS (Grandfather-Father-Son) restore point. Enabling this option will disable a full backup transformation (oldest incremental backups will no longer be merged into the full backup file for retention processing). Instead, GFS full backup files will be created by copying the most recent VM state data from the primary backup storage in its entirety.

Enterprise enhancements

Standalone console

Veeam's standalone console provides every user convenience, flexibility and ease-of-use by separating the Veeam Backup & Replication console from the backup server for installation on laptops and desktops, forever eliminating RDP sessions to a backup server. With v9, it's even possible to run multiple consoles at once on the same workstation — each connected to a separate backup server — therefore enabling the management of multiple Veeam Backup & Replication installations at once.

Remote Office/Branch Office enhancements

The following new features have been added to help growing enterprises improve backup and recovery times in remote office/branch office (ROBO) environments while reducing WAN bandwidth consumption by keeping backup and restore activities at remote sites.

- **A guest interaction proxy** helps significantly reduce WAN bandwidth usage, and increase performance of application-aware processing and guest file system indexing, when backing up or replicating VMs located at remote sites. It accomplishes this by offloading processing to a Windows computer (such as a backup proxy) located at a remote site. This feature also helps improve the backup server scalability in very large data center environments by enabling the ability to offload guest processing tasks from the backup server to other servers, including servers managing other Veeam roles

- The new **mount server,** available for every backup repository, dramatically reduces WAN bandwidth usage and increases the performance of file-level recovery (FLR) from Veeam backups stored at a remote site, back to a VM located in that remote site. In previous versions, all backups had to be mounted to a backup server for recovery. With v9, each backup repository can be set to use any local Windows computer (including itself) as an FLR mount point, therefore preventing restored files from crossing the WAN twice

Tape enhancements

- **Global media pool**. Media pools have been enhanced to allow for more efficient management of tape media by enabling them to span multiple tape libraries, instead of being tied to a specific library. Global media pools can be configured to make jobs automatically failover between libraries on certain events — for example, when there are no free tapes, when all tape drives are occupied, or when a tape library is offline — dramatically enhancing tape backup reliability and reducing the backup window
- **GFS media pool.** This new type of media pool leverages the existing synthesized full backup to tape logic to simplify setting up Grandfather-Father-Son (GFS) tape rotation schema by providing built-in media sets with separate overwrite protection periods to easily configure a long-term data retention policy
- **Parallel processing**. Parallel backups no longer require the creation of multiple media pools. Backup to Tape and File to Tape jobs can now process separate files in parallel even when pointed to the same media pool. Backup to Tape jobs will process multiple backup chains (either from different source backup jobs, or created with a per-VM backup file chain option) concurrently, spanning them across tape drives automatically to significantly reduce your tape backup window
- **Native SCSI commands.** We are now able to optionally use native SCSI commands for interaction with tape devices, as opposed to requiring the presence of a vendor-supplied Microsoft Windows driver. This functionality enables support for previously unsupported tape devices using the default Windows driver, and therefore appearing in the Device Manager as an Unknown Medium Changer
- **Last backup file chain — backup only.** By popular demand, it is now possible to configure Backup to Tape jobs to always pick the latest backup chain only, starting from the youngest full backup file
- **Waiting for tape email notification.** In addition to showing the notification in the Veeam Backup & Replication console, Backup to Tape and File to Tape jobs can now be configured to send an email notification when the next tape must be inserted into a tape drive
- **Block size adjustments.** Tape drive block size can now be changed in a tape drive's properties to increase the performance, or to enable recovery of data from tape media that was written with another block size
- **Scheduler improvements.** The "Wait for linked backup jobs" scheduling option has been reworked for better reliability, and is now the default setting for Backup to Tape jobs. Additionally, monthly Backup to Tape and File to Tape jobs can now be scheduled to run on a particular day of the month, in addition to a particular day of the week
- **Performance enhancements.** Multiple under-the-hood v9 enhancements have been introduced to further increase the performance of Backup to Tape and File to Tape jobs, especially when processing large files
- **Enhanced Linux backup repository suppor**t. This feature increases the performance and stability for Backup to Tape jobs when using a Linux backup repository as a source
- **Media set name variables**. Now you can use variables in the media set names — for example %id% for the sequential media set, number in the media pool, %job% for the tape job name creating the corresponding media set and multiple variables representing media set, creation time (such as %dayofweek%)

- **Tape drives and slots naming**. Drives and slots will now be displayed with the correct names, as opposed to hardware identifier
- **LTO-7 readiness.** v9 has been tested with pre-production LTO-7 hardware and tape media from market-leading tape vendors, and fully supports this upcoming new standard

Veeam Explorers

Veeam Explorer *for Oracle*

Veeam Explorer *for Oracle* enables users to achieve low RTOs and RPOs with Oracle database protection with the following new functionality:

- 1-click individual database recovery for the lowest RTO; no more searching for database files or spending time reattaching them to an Oracle server using native management tools
- Agentless transaction-log backup and replay for no-impact, low RPO protection of your Oracle databases. Now, you can back up databases as often as every five minutes!
- Point-in-time database recovery down to individual transactions with the unique transaction logs viewer enabling transaction-level recovery to ensure the lowest possible RPOs

This new feature supports Oracle versions 11 and 12, running on both Microsoft Windows and Linux, including support for Oracle Automatic Storage Management (ASM).

Veeam Explorer *for Microsoft Active Directory*

Veeam Explorer *for Microsoft Active Directory* brings new functionality inspired by customer feedback, enabling you to granularly recover even more Active Directory object types.

New features include support for recovery of:

- **Group Policy Objects** (GPOs)
- Active Directory integrated **DNS records**
- Individual **configuration partition** records

Veeam Explorer *for Microsoft Exchange*

In addition to **Microsoft Exchange 2016 support**, Veeam Explorer *for Microsoft Exchange* adds eDiscovery enhancements useful for complying with legal or government investigations:

- **Export report** specifies what data was exported, from where, and what search criteria was used within Veeam Explorer *for Microsoft Exchange*. This report is included in the PST files that are exported, and is also emailed to backup administrators
- **Export size estimation** for search queries enables users to predict the size of a search query result if it were to be exported, and refine search criteria (or search scope) to ensure the results will fit the destination storage

Veeam Explorer *for Microsoft SQL Server*

Veeam Explorer for *Microsoft SQL Server* enables better granularity when recovering SQL Server databases with the following new functionalities:

- **Table-level recovery** of database tables with no external dependencies will result in dramatic reductions in recovery times for very large SQL Server databases
- **Database object-level recovery** allows SQL developers to easily restore individual stored procedures, functions, views and other system objects back to the production database
- **Remote staging SQL Server** support for transaction-level recoveries, eliminating the need to license a copy of SQL Server installed on the Veeam Backup & Replication server with the highest edition of SQL Server used in your environment

Veeam Explorer *for Microsoft SharePoint*

Veeam Explorer for Microsoft SharePoint delivers additional functionality that was highly requested by our users, making SharePoint recoveries easier and more efficient than ever. New features include:

- **Full site** restores to dramatically reduce recovery times for large-scale SharePoint disasters, including when an entire site is accidentally deleted
- **List** and **item permissions restore** when restoring SharePoint content back to the original or a different SharePoint server
- Support for **remote staging SQL Server** eliminates the need to license a copy of SQL Server installed on the Veeam Backup & Replication server with the highest edition of SQL Server for your SharePoint environment

Veeam Cloud Connect

Veeam Cloud Connect Replication

Ensure Availability of your mission-critical applications without the cost and complexity of building and maintaining a disaster recovery (DR) site. **Veeam Cloud Connect Replicatio**n provides fully integrated, fast and secure cloud-based DR through a service provider.

Advanced image-based VM replication through Veeam Cloud Connect is simple to set-up and easy-to-use. It includes:

- **A cloud host** for DR with CPU, RAM, storage and networking resource allocation from a service provider to dramatically simplify setting up replication jobs to the cloud
- **Full site failover** to a remote DR site from anywhere with just a few clicks through a secure web portal, and partial site failover to instantly switch over to selected VM replicas only
- Built-in **network extension appliances** to simplify networking complexity and preserve communication with, and between, running VMs regardless of physical location
- **Failback** to an existing or new infrastructure to restore normal business operations
- **1-click failover orchestration** for quick failover execution, and **site failover testing** for failover simulation without disrupting production workloads
- Support for **file level recovery** from cloud replicas in case there are issues with local backups
- Multiple **traffic reduction technologies** including built-in WAN acceleration, BitLooker
- Single port connectivity via a **secure, reliable SSL/TLS connection** to a service provider with **traffic encryption**

And for service providers, Veeam Cloud Connect reduces the cost and complexity of delivering disaster recovery-as-a-service (DRaaS).
https://www.veeam.com/cloud-connect-replication-service-providers.html

Additional enhancements

As a result of ongoing research and development efforts and in response to customer feedback, Veeam Backup & Replication v9 also includes an extensive range of additional features and enhancements, including the most significant listed below.

Engine

- **Improved scalability.** Multiple engine optimizations, smarter configuration database interaction, new reduced logging mode and per-VM backup file chains now enable users to utilize a single job to back up their entire environment. Version 9 has been tested with 5,000 VMs per job with per-VM backup file chains enabled, allowing even the largest customers to move from job-based to policy-based protection paradigm.

- **Increased job concurrency.** Version 9 provides improved backup server stability when running over 100 jobs concurrently. It's important to keep per-job memory requirements in mind when opting to start this many multiple jobs at once
- **Transform performance improvements.** Multiple optimizations have been included in v9 to increase the speed of full backup file transformation (incremental backup file merge and synthetic full creation), by caching a portion of the metadata in memory, as well as removing delays caused by metadata processing. Additionally, with per-VM backup file chains enabled, transform will now be performed on multiple VMs in parallel, if repository task slots will allow
- **vPower cache.** vPower® engine will now cache recently accessed backup file blocks in RAM, which will help speed up all functionality that relies on Instant VM Recovery
- **Built-in WAN acceleration enhancements**. Improved reliability of algorithms handling a temporary loss of network connectivity. Reduced source WAN accelerator RAM consumption up to 20x for certain operations, such as transfer resume
- **Backup copy enhancements.** Improved VM configuration files processing performance, which should significantly reduce incremental backup copy window. Improved backup re-compression performance (when backup copy job is configured to change original backup's compression level), and added support for re-compressing encrypted backups
- **Backup import performance.** Improved performance of importing the backup files chain with missing VBM file up to 50x
- **Configuration database maintenance job.** A system job has been added that will periodically optimize configuration databases, including updating its statistics and defragmenting indices
- **Local 16TB+**. The storage optimization settings have been changed to utilize 4MB block size (from 8MB) to improve performance of all recovery types involving random I/O

General

- **Storage-level corruption guard.** Backup files produced by primary backup jobs can now be periodically scanned to identify storage issues, such as a bit rot. Corrupt data blocks are auto-healed by retrieving correct data from the production storage, increasing the reliability of forever-incremental backups and removing the need for periodic full backups
- **Full backup file defragmentation and compaction**. Decrease the size and fragmentation of full backup files produced by forever-incremental primary backup jobs by recreating backup files periodically based on the actual data, while moving obsolete data into the dedicated files which can be manually deleted or archived as necessary. This functionality lets you remove the data associated with deleted VMs, virtual disks or applications from full backup file without having to perform an active full backup
- **Backup copy parallel processing**. With v9, backup copy jobs will now process multiple VMs in parallel, just like primary backup jobs. This improves the backup copy and retention processing performance due to removing "dead time" between each VM, and will further speed up processing when per-VM backup file chains are enabled on the target backup repository
- **Ability to stop jobs gracefully.** Users now have the choice to stop the job gracefully (as soon as it is done processing all VMs already being processed), in addition to killing them immediately and leaving unusable restore points for such VMs (existing behavior)
- **Ability to manually trigger Active Full in backup copy jobs.** This added feature can be useful when changing backup storage settings (encryption or block size), as well as for troubleshooting
- **Per-VM licensing.** Service providers will now be provided per-VM license files, as opposed to per-socket license files, making it easier to track and report actual consumption

Veeam Cloud Connect

- **Built-in WAN acceleration.** In addition to being included in the Enterprise Plus edition, this feature is now also included in the Enterprise edition for backup copy and replication jobs to Veeam Cloud Connect service providers
- **Tenant bandwidth throttling**. Added the ability for users to limit the maximum bandwidth consumption by each tenant on the service provider site to help protect all tenants using the same Cloud Gateway from a "noisy neighbor" problem
- **Self-signed certificate improvements.** Added the ability to generate self-signed certificates for service providers with company names that include special characters
- **Logging enhancements.** Switching the logging level for cloud service no longer requires the service to be restarted, to ensure troubleshooting can be performed without impacting tenant jobs

Primary storage integration

- **Limit processed VM count.** The ability to limit processed VM count per storage snapshot was added to enable users to reduce the amount of time each VM runs off snapshots when there are a large number of VMs that need processed from the same storage snapshot with application-aware processing enabled
- **Single snapshot clone**. Multi-VM restores from the same storage snapshot will now leverage a single snapshot clone, as opposed to creating a separate clone per VM. This reduces recovery times and adds support for environments lacking multiple snapshot clones capability, or the corresponding storage license
- **Increased NFS client performance.** Backup performance from NetApp NFS volumes has been vastly improved by introducing multi-threading and CBT read-ahead into the proprietary NFS client.
- To **reduce the primary storage load and time VMs run off snapshots**, the NetApp SnapMirror/SnapVault relationship will now be triggered only after VM snapshots have been removed, instead of immediately
- **Cascaded NFS policies support**. Required entries are now set automatically on all NetApp storage policies.
- **The number of snapshot copies to retain**. You can now set the number of snapshot copies to retain to zero, so that all storage snapshots, except the base one, are removed from NetApp SnapVault immediately after a backup from storage snapshots has been performed on secondary storage. To avoid confusion, this setting has also been removed from the NetApp SnapMirror Retention dialog

VMware vSphere

- **vCloud Director 8.0.** Added support for vCloud Director 8.0 in all related functionality
- **VM tags backup and restore**. VM tags are now backed up along with all of the other VM properties, and the full VM restore wizard provides a new option to restore them
- **Improved Direct SAN restore performance**. Based on user feedback, the Direct SAN restore process will now create eager zeroed disks (as opposed to lazy zeroed), since this was found to improve full VM restore performance in most cases. To reverse this change, create the **EagerZeroedDiskRestore** (DWORD) = 0 registry value under **HKLM\SOFTWARE\Veeam\ Veeam Backup and Replication key**

Microsoft Hyper-V

- **Performance optimizations**. Building VM list job stage have been accelerated up to 10x for the initial job run, and up to 25x for the retry job run in large environments. Cluster rescan performance has been improved proportionally to the amount of hosts in the cluster

- **SCVMM tags support.** Added the ability to configure jobs by adding Microsoft System Center Virtual Machine Manager (SCVMM) tags as a container object
- **Disk space monitor.** To prevent production VMs from stopping due to a volume overfilling with snapshot data, jobs will now detect the lack of free disk space on a VM volume, and fail immediately. The default threshold of 2 GB of free disk space can be changed by creating the **BlockSnapshotThreshold** (DWORD) registry value under **HKLM\SOFTWARE\Veeam\Veeam Backup and Replication** key
- **Enhanced SMB3 storage support**. Replicating to a target SMB3 storage no longer requires customizing Constrained Delegation policy on the domain controller

Application-aware processing

- **SQL Server database labeling**. Per Microsoft recommendations, a backup job now registers a SQL Server database backup by putting the corresponding record in the system.db system table of each SQL Server database

Linux

- **SSH client update**. Added support for modern key exchange (KEX) protocols and ciphers into the SSH client. Legacy SSH client has been left for compatibility with storage devices based on older Linux versions, and jobs will automatically failover to a legacy client failing to connect when using a modern protocol and/or cipher

File-Level Recovery

- **Engine optimization**s. Multiple under-the-hood improvements are designed to significantly speed up both Windows and Linux FLR initialization and actual recovery performance
- **Session improvements**. FLR session statistics now include status icons reflecting restore result, as well as the target path information on the Statistics tab
- **SNMP traps improvements.** SNMP traps now contain information about files and folders that failed to be restored

Enterprise Manager

- **Single sign-on.** Added the ability to use native Windows Authentication in Active Directory environments. As a result, users logging on to the Enterprise Manager web UI using a supported browser should no longer be asked to supply unique credentials, as their Windows session credentials will be used. If it is necessary to logon as a different user, simply click Log off and enter the required credentials
- **1-Click FLR without indexing.** You can now perform 1-Click FLR on restore points without the guest file system index present by selecting the required restore point and browsing the guest file system directly in the Enterprise Manager web UI
- **Restrict in-place SQL Server database restore.** In v9, a new restore scope option has been added that restricts restoring databases back to the original location to protect SQL developers from accidentally restoring a database over a healthy production database. Restoring databases to any other SQL Server, such as in a dev environment, is still possible when this option is selected

SureBackup

- **Script credentials**. Added the ability to customize credentials to run the SureBackup® application test script under

UI

- **Multi-user support**. Backup administrators will now be warned of conflicting edits when attempting to save changes after editing the same job concurrently
- **Missing backup files pruning.** By popular demand, the backup properties dialog now shows missing backup files and with only a few clicks allows users to easily remove these files, as well as backup files that are dependent on missing files
- **Backup copies** are now shown in a separate node under Backups > Disk (copy) node to help easily distinguish between primary backups, and their copies
- **VeeamZIP™ backups** are now registered in the configuration database and shown under **Backups** > **Disk (VeeamZIP**) node to more easily track them
- **Location** column has been added to the **Backup** node's grid, showing the corresponding backup's location, such as local path, backup repository, replica host or storage snapshot
- **Real-time** job statistics window is now **resizable**
- **Filter displayed events by status**. Real-time statistics window for database log backup job now allows to easily see only events with a certain status (for example, only errors).
- **Infrastructure cache.** To remove the wait time for virtual infrastructure objects to be loaded, the user interface now uses an infrastructure cache in certain places, such as in the Backup Job wizards and in the Virtual Machines tab. The default cache expiration time of 15 minutes can be changed by creating the **InfrastructureCacheExpirationSec** (DWORD) registry value under **HKLM\SOFTWARE\Veeam\Veeam Backup and Replication** key
- **Modern UI.** The Veeam Backup & Replication console UI has been refreshed to a more modern look (We hope you like it!)

PowerShell

- **Remote PowerShell.** Standalone console allows you to use PowerShell against backup server remotely, without relying on PowerShell Remoting.
- **SQL Server restore**. Cmdlets to script SQL Server database restores have been added.

RESTful API

- **RESTful API for Service Providers**. By popular demand, RESTful API is now available in all product editions when per-VM license is installed

Setup

- **Support for non-English locales**. Added support for some non-English locales which caused setup to previously fail

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