

# Hidden Features in Veeam Backup & Replication v12



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# Core components

# Postgres config DB tuning



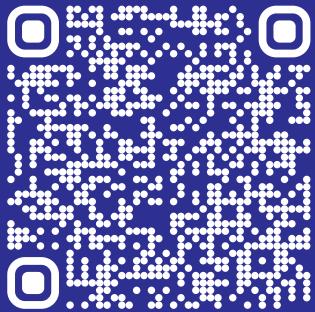
After migration from MSSQL to PostgreSQL as a configuration database, do I have to run any tuning steps for the PostgreSQL server?



# Postgres config DB tuning

Note: backup server and Enterprise Manager must use same database type

Use optimization commands if server was not optimized.



[Set-VBRPSQLDatabaseServerLimits](#)



# Simpler updates

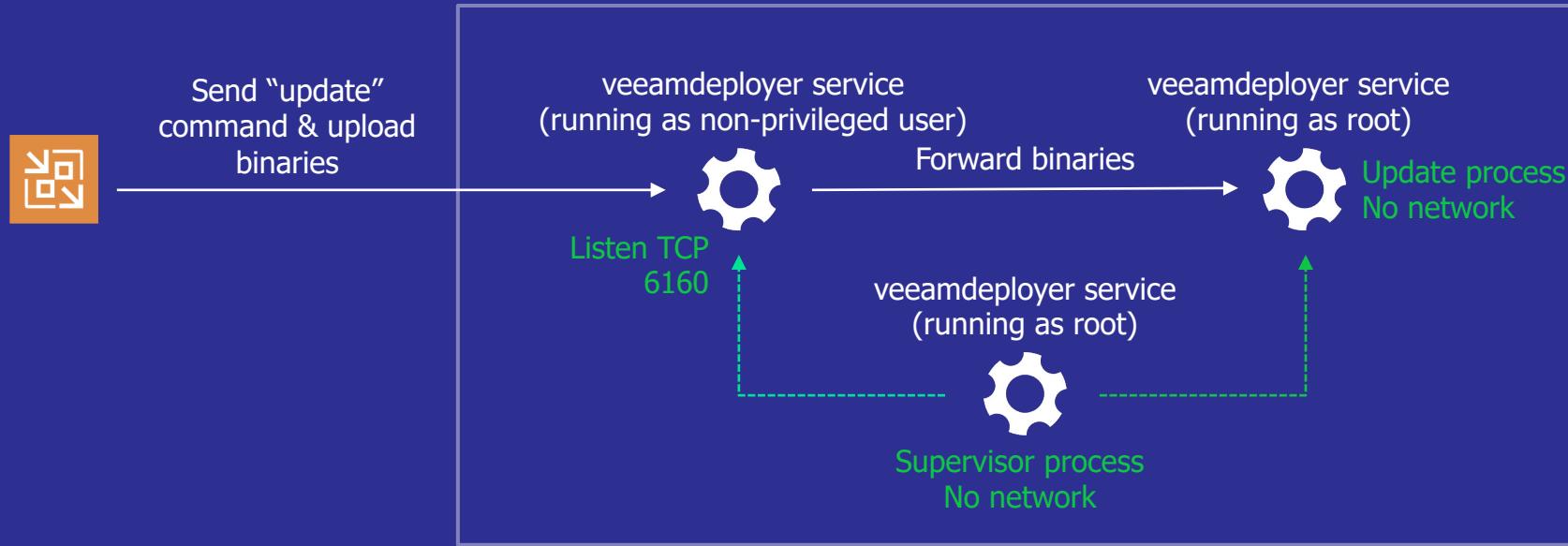


SSH was always required to upgrade my hardened repository. Any changes here?

Hardened repository updater.



# Hardened repository updater



# Use hardened repository hardware – more efficient



I have implemented hardened repositories in my environment. Can I use them for more than just storing my backups?

# Use hardened repository hardware – more efficient

Edit VMware Proxy

Server

Choose a server for VMware backup proxy. You can choose between any Microsoft Windows or Linux servers added to the Managed Servers which are not assigned a VMware backup proxy role already.

Server

Traffic Rules

Apply

Summary

Choose server: 172.21.239.60 (Created by LAB\administrator at 5/31/2022 11:15 AM.) Add New...

Proxy description: Created by LAB\administrator at 5/31/2022 1:17 PM.

Transport mode: Network Choose...

Connected datastores: Automatic detection (recommended) Choose...

Max concurrent tasks: 4 + ✓

Veeam Backup and Replication

Network processing mode is required because the server is registered with single-use credentials.  
Change transport mode to network?

Yes No

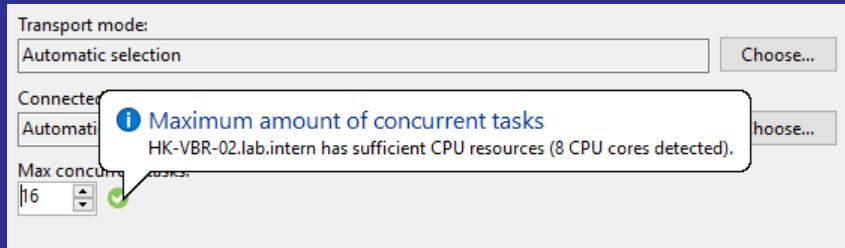
You can use them as an NBD proxy server. This works because NBD doesn't require root access.



# Proxy resources



I need to design a new backup infrastructure. Has any recommendation changed for the proxy hardware?



Our recommendation changed from one task per core (1:1) to two tasks per core (2:1).



# Repository performance



Performance in my repository is not as expected.  
Veeam® customer support provided me with a  
registry key for V11. Is the key still valid?



# Repository performance

## Pre-V12:

HKLM\SOFTWARE\Veeam\Veeam Backup and Replication

- UseUnbufferedAccess and DisableHtAsynclo.

 UseUnbufferedAccess	REG_DWORD	0x00000000 (0)
 DisableHtAsynclo	REG_DWORD	0x00000000 (0)

Registry keys were replaced in V12 by a single key.



## V12 (test without key before):

HKLM\SOFTWARE\Veeam\Veeam Backup and Replication

 DataMoverLegacyIMode	REG_DWORD	0x00000001 (1)
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# Gateway server redundancy



My single gateway server for deduplication appliances and object storage is a bottleneck for all jobs. How can V12 help me solve it?



# Gateway server redundancy

Gateway Server

Choose gateway servers to use.

Automatic selection  
Backup server will automatically choose the most suitable gateway server from all available managed servers.

Use the following gateway servers only  
Backup server will automatically choose the most suitable gateway server between the selected managed servers.

Name
<input type="checkbox"/> HK-CDP-proxy01.lab.intern
<input type="checkbox"/> HK-CDP-proxy02.lab.intern
<input checked="" type="checkbox"/> HK-VBR-02.lab.intern
<input type="checkbox"/> HyperV-2016.lab.intern
<input checked="" type="checkbox"/> REPO-DR.lab.intern
<input checked="" type="checkbox"/> fileserver-01

Connection Type

Choose a connection mode for this object storage repository. For the Direct mode, ensure backup proxies and backup agents have direct network access to object storage. For the Gateway mode, we recommend having at least two gateway servers for redundancy.

Direct  
Backup proxies and agents will connect directly to object storage.

Through a gateway server  
Backup server will automatically determine the most suitable gateway server from the following list:

Name
<input type="checkbox"/> 172.21.237.30
<input type="checkbox"/> 172.21.237.55
<input checked="" type="checkbox"/> 172.21.239.172
<input type="checkbox"/> 172.21.239.44
<input type="checkbox"/> HK-CDP-proxy01.lab.intern
<input type="checkbox"/> HK-CDP-proxy02.lab.intern
<input checked="" type="checkbox"/> HK-VBR-02.lab.intern
<input type="checkbox"/> HyperV-2016.lab.intern
<input checked="" type="checkbox"/> REPO-DR.lab.intern
<input type="checkbox"/> fileserver-01
<input type="checkbox"/> linuxproxv.lab.intern

V12 allows you to use multiple gateway servers.



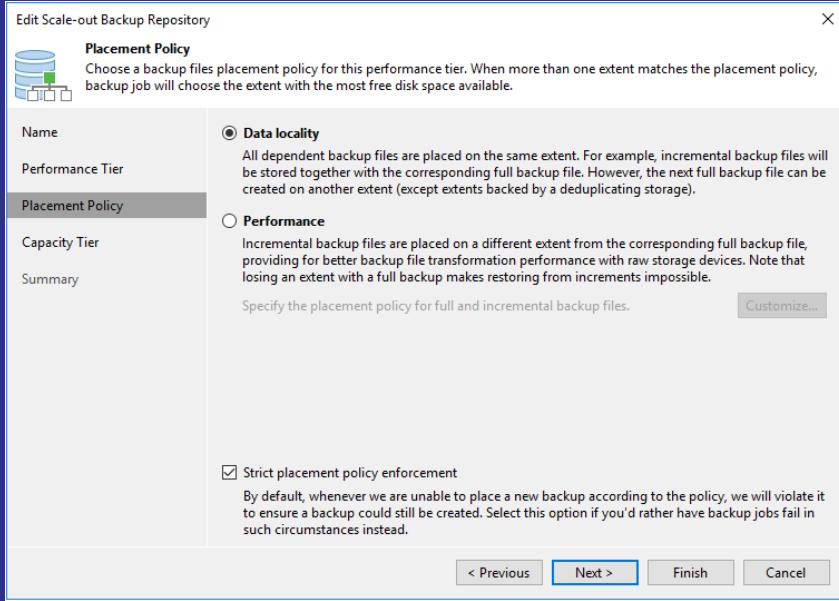
# Enforce placement policy



Data locality violations in my Scale-out Backup Repository may break fast clone on XFS/ReFS. I would prefer a failed backup job before losing disk space.

- ✓ Copy interval has expired
- ✓ Synthetic full backup created successfully [partial fast clone]
- ✓ Required backup infrastructure resources have been assigned

# Enforce placement policy



Enable “strict placement policy enforcement” in the placement policy setting!



# Backup move



I need to move all my backups from a Windows repository server to a new hardened repository server.



# Backup move

Home

Jobs

- Backup
- Backup Copy

Backups

- Disk
- Disk (Copy)
- Disk (Orphaned)
- Disk (Imported)
- Disk (Exported)
- Object Storage (Imported)
- Cloud

Last 24 Hours

- Success
- Failed

Type in an object name to search for

Job Name ↑	Creation Time
BJ	4/1/2023 10:00 PM
BJ	4/12/2023 10:00 PM
N	3/14/2023 2:35 PM
	4/3/2023 6:03 PM

Move backup...

Copy backup...

Detach from job

Delete from disk

Properties...

Move backups to a new repository with a few clicks.



Move Backup to Another Location

Specify a target repository to move backups to. This operation will temporarily disable the respective backup jobs, move backups to the target repository and update the job settings.

Destination repository:

Immutable (Created by LAB\fkessler at 4/3/2023 5:50 PM.)

Show backups

OK Cancel

# Backup copy



My supervisor asked me to provide him with a copy of all backups of a particular computer.



# Backup copy

Home

Type in an object name to search for

Jobs

- Backup
- Backup Copy

Backups

- Disk
- Disk (Copy)
- Disk (Orphaned)
- Disk (Imported)
- Disk (Exported)
- Object Storage (Imported)
- Cloud

Last 24 Hours

- Running (1)
- Success
- Failed

Job Name ↑

Job Name ↑	Creation Time
BJ-M...	4/1/2023 10:00 PM
BJ-M...	4/12/2023 10:00 PM
NAI...	3/14/2023 2:35 PM
NAI...	4/3/2023 6:03 PM

Move backup...

**Copy backup...**

Detach from job

Delete from disk

Properties...

Copy Backup to Another Location

Specify a destination to copy backups to. Copied backups can be found in the Disk (Exported) node.

Destination:

Backup repository:  
RotatedDisk (Created by LAB\fkessler at 3/14/2023 1:37 PM.)

Local or shared folder:  
 Browse...

Delete this backup automatically in: 1 year

Show backups      OK      Cancel

Copy all backups of  
a machine or entire  
Job to a new  
location.





# Backup job enhancements

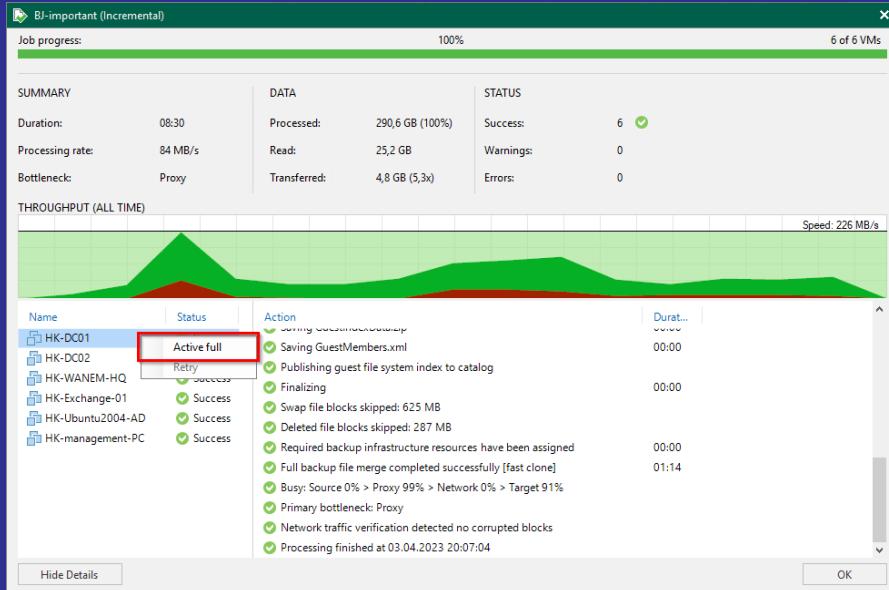
# Active full for a single machine



I need to run an active full backup for a single machine. Do I still have to exclude all other machines from my job to run it?



# Active full for a single machine



Veeam Backup & Replication™  
v12 allows you to start an  
active full backup for a single  
machine!



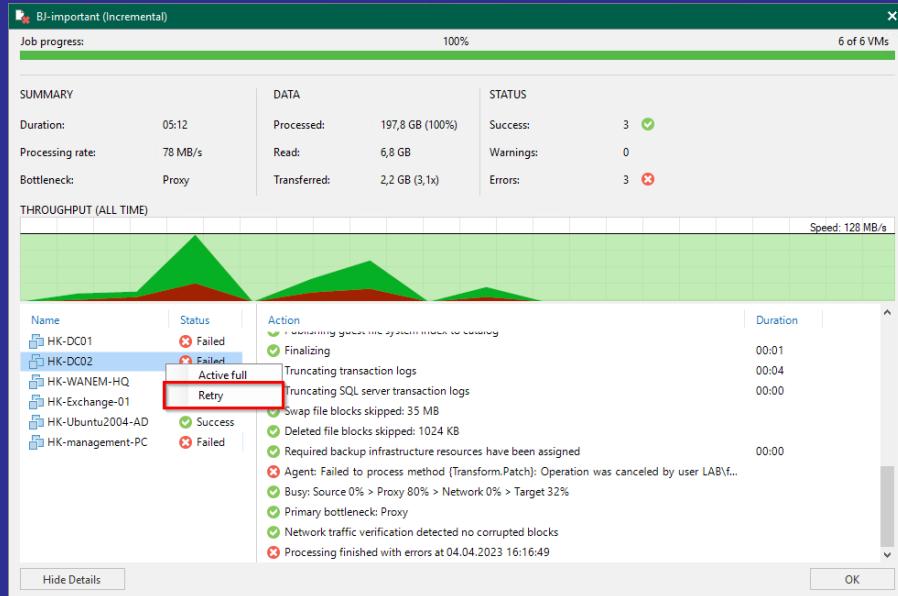
# Retry individual machines



I have multiple failed machines, but I need to run a retry only for one machine.  
Is there a way to do it in V12?



# Retry individual machines



A failed machine? No worries.  
Just retry this single machine.



# Change target repository for a job



I have deployed a new repository. Is there an easy way to switch my backup jobs to the new target?



# Change target repository for a job

Edit Backup Job BJ-Nano

**Storage**  
Specify processing proxy server to be used for source data retrieval, backup repository to store the backup files produced by this job and customize advanced job settings if required.

Name: **Virtual Machines**

Backup proxy: Automatic selection

Backup repository: AWS-S3-FK-DirectToOBS (Created by LAB\fkessler at 28.02.2023.09:12.)

**Storage**

Veeam Backup and Replication

General: Do you want to move your existing backups to the new repository and continue them, or just perform a new full backup?

Move Existing Create New Cancel

Summary:  Configure secondary destinations for this job  
Copy backups produced by this job to another backup repository, or tape. We recommend to make at least one copy of your backups to a different storage device that is located off-site.

Advanced job settings include backup mode, compression and deduplication, block size, notification settings, automated post-job activity and other settings.

< Previous Next > Finish Cancel

Just select the new repository and decide if you want to move your backups or start with a new backup chain.



# Backup chain upgrade



I want to use all those new features related to the new backup format. Any hints for the upgrade to the new format?



# Backup job chain upgrade

The screenshot shows the Veeam Backup and Replication software interface. The top navigation bar includes 'Home', 'Backup Tools', 'Backup', 'Properties', and 'Delete from'. Below the navigation bar is a toolbar with icons for Move, Copy, Backup, and Delete. A red box highlights the 'Upgrade Backup Chain Format' button, which has a green upward arrow icon. The main pane displays a list of backup jobs. On the left, a sidebar lists categories: Jobs, Backups, Snapshots, Disk, Disk (Copy), Object Storage, Capacity Tier, Capacity Tier (Orphaned), Archive Tier, Cloud, Tape, and External Repository. Under 'Backups', 'Disk' is selected. The main list shows backup jobs with their names, creation dates, and a context menu. One item in the context menu, 'Upgrade backup chain format', is highlighted with a red box and a green upward arrow icon.

Job Name	Creation T
BJ-SQL-AOAG2016	01.04.202
BJ-SQL-AOAG-without-cluster	01.03.202
BJ-SQL-hardened-AAIP	18.03.202
BJ-SQL-localhost	30.03.202
BJ- <span style="color: #0072bc;">↑</span>	19.04.202
BJ- <span style="color: #0072bc;">↑</span> Move backup...	19.02.202
BJ- <span style="color: #0072bc;">↑</span> Copy backup...	25.03.202
BJ- <span style="color: #0072bc;">↑</span> Detach from job	25.03.202
BJ- <span style="color: #0072bc;">↑</span> Delete from disk	28.03.202
BJ- <span style="color: #0072bc;">↑</span> Properties...	18.07.202
File	04.11.202
HK-nano-FFI-GFS-tape	28.03.202

Backup job chains must be upgraded first to the new format.



```
$Backups = Get-VbrBackup -Name BackupJobName
```

```
Upgrade-VBRBackup -Backup $backup
```

# Script to upgrade legacy backup copy jobs

Script for migrating legacy periodic backup copy jobs

<https://www.veeam.com/kb4387>



Additional information in our user guide:

[Upgrading Backup Chain Formats - User Guide \(veeam.com\)](https://www.veeam.com/docs/backup-chain-formats/upgrading-backup-chain-formats-user-guide.html)

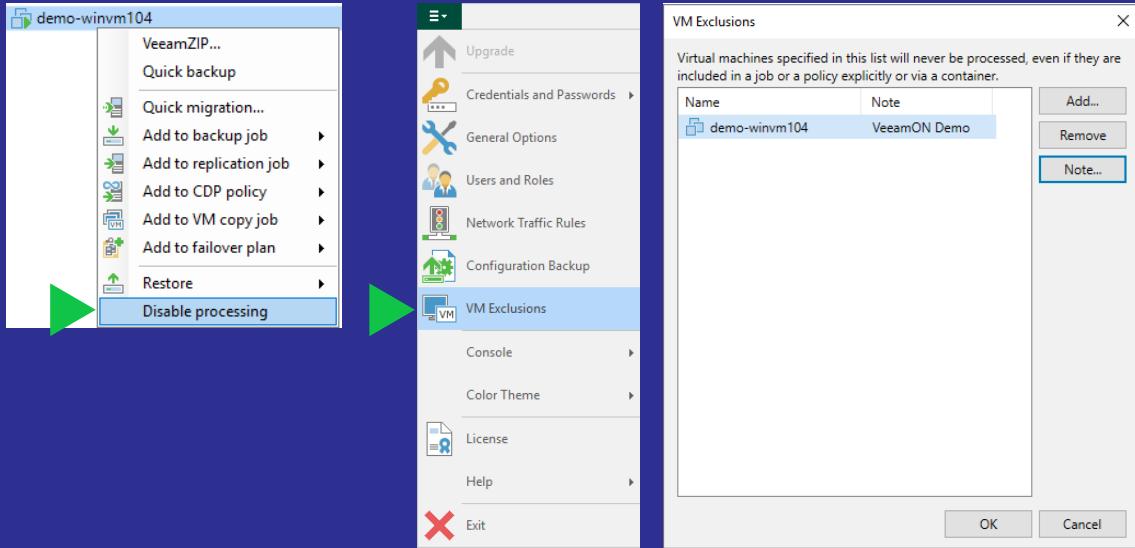
# Global VM exclusions



Some applications are not allowed for image-level backup by the vendor. Can I ensure that these VMs will not be part of a backup job by accident?



# Global VM exclusions



Use global VM  
exclusions!



# Background retention job



The new backup retention job at 0:30 am interferes with our backup window. Can I move the start time?



# Background retention job

HKLM\SOFTWARE\Veeam\Veeam Backup and Replication

- RetentionJobStartTimeHours (DWORD).
- RetentionJobStartTimeMins (DWORD).

 RetentionJobStartTimeHours	REG_DWORD	0x00000003 (3)
 RetentionJobStartTimeMins	REG_DWORD	0x0000001e (30)

You can control the start time with a registry key.



# Enterprise plugins

## Reduce load on DB server



I see a high CPU load from the Enterprise  
plugins on my DB server. What can I do?



# Enterprise plugins

Reduce load on DB server

Move hash calculations to the repository server

- calculateDigestsOnRepository="true".
- use together with NoCompression to reduce even more load.

Configuration XML (Example for Veeam plug-in for Oracle RMAN):

- C:\Program Files\Veeam\Plugins\VeeamPluginforOracleRMAN\veeam\_config.xml.
- /opt/veeam/VeeamPluginforOracleRMAN/veeam\_config.xml.

Veeam V12 allows you to offload hash calculations to the repository server.



```
<AgentParams compression="NoCompression" calculateDigestsOnRepository="true" />
```

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Restore

# Easily restore changed files



I should restore only the missing files in a folder. But there are hundreds of files to be compared.



# Easily restore changed files

HK-DC01 as of 3 days ago (11:45 AM Friday 5/27/2022) - Backup Browser

File Tools

Home File

Restore Changes to Copy to Compare with Production Show Changed Objects Only Compare Object Attributes Compare

Action

HK-DC01

C:\

E:\

- SRECYCLE.BIN
- backupdata with testvirus
- dir1
- dir2
- dir3
- FSRM-testdata
  - credit card
  - Excel
  - negative
  - OpenOffice Presentation
  - OpenOffice Spreadsheet
  - OpenOffice Text
  - Powerpoint
  - Word
- System Volume Information

Type in an object name to search for

Name	Type	Size	Creation Date	Modified Date	Item State
testdoc-positive_files	Folder		8/5/2020 1:08 PM	8/5/2020 1:08 PM	Identical
testdoc-positive.doc	DOC File	26.0 KB	8/5/2020 1:08 PM	8/5/2020 10:10 AM	Identical
testdoc-positive.docm	DOCM File	11.8 KB	8/5/2020 1:08 PM	8/5/2020 10:10 AM	Identical
testdoc-positive.docx	DOCX File	11.6 KB	8/5/2020 1:08 PM	8/4/2020 9:42 AM	Identical
testdoc-positive.dotm	DOTM File	11.8 KB	8/5/2020 1:08 PM	8/5/2020 10:10 AM	Identical
testdoc-positive.dotx	DOTX File	11.8 KB	8/5/2020 1:08 PM	8/5/2020 10:10 AM	Identical
testdoc-positive.htm	HTM File	38.4 KB	8/5/2020 1:08 PM	8/5/2020 10:11 AM	Identical
testdoc-positive.mht	MHT File	48.1 KB	8/5/2020 1:08 PM	8/5/2020 10:11 AM	Identical
testdoc-positive.odt	ODT File	4.4 KB	8/5/2020 1:08 PM	8/5/2020 10:12 AM	Identical
testdoc-positive.pdf	PDF File	30.9 KB	8/5/2020 1:08 PM	8/4/2020 11:48 AM	Identical
testdoc-positive.rtf	RTF File	41.8 KB	8/5/2020 1:08 PM	8/5/2020 10:11 AM	Identical
testdoc-positive.xml	XML File	49.0 KB	8/5/2020 1:08 PM	8/5/2020 10:11 AM	Identical
testdoc-positive.xps	XPS File	185.2 KB	8/5/2020 1:08 PM	8/5/2020 10:10 AM	Identical
testdoc-positive-strict-open-x...	DOCX File	11.7 KB	8/5/2020 1:08 PM	8/5/2020 10:12 AM	Identical
testdoc-positive-word-2003.x...	XML File	22.1 KB	8/5/2020 1:08 PM	8/5/2020 10:11 AM	Changed

15 objects

V12 offers various options when restoring files and folders.

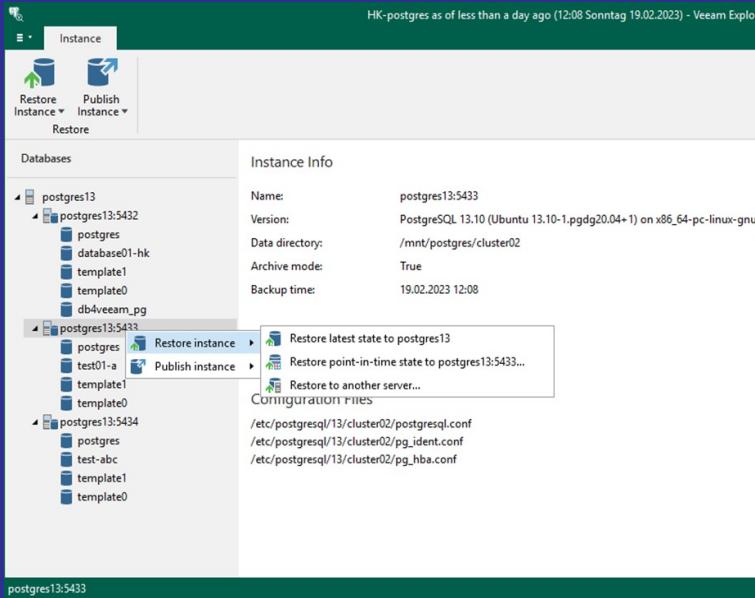


# Backup & restore options for Postgres

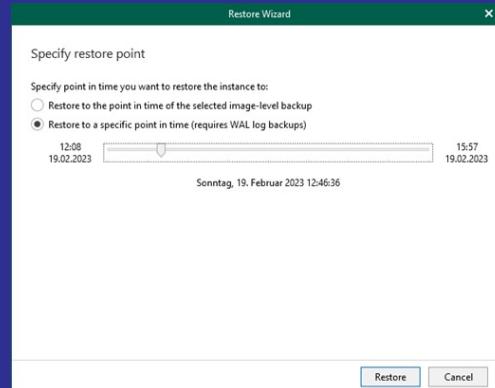


Is there a support to backup & restore Postgres?

# Backup & restore options for Postgres



With V12 you can backup Postgres on Linux. For easy restore, a new Explorer is available with various options, e.g. publish instance!



# Enterprise manager enhancements



Enterprise Manager Self Service Portal is great, but we miss some options.



# Enterprise Manager Enhancements

- Instant VM Recovery for VMware, Hyper-V and VMware Cloud Director VMs (to same hypervisor).
- New entire VM recovery options.
- VM template restore.
- Download Enterprise Manager logs.

Yes, with V12 new features were added to the Veeam Enterprise Manager.



# SureBackup



SureBackup® is important for us to prove our backups. Any enhancements here?



# SureBackup

Edit Application Group

**Machines**  
Application group defines machines hosting core infrastructure services which all other workloads are dependent upon. Typically, any application group will include at least a domain controller, a DNS and DHCP servers.

Name	Role	Memory	Source
HK-DC01	Domain Controller...	100%	Backup
FK-Win-02.lab.intern	Mail Server	100%	Backup
HK-Nano	Web Server	100%	Replica
proxy-win	DNS Server	100%	Storage snapshot

Add... Edit... Remove

Verification Options

Role Startup Options Test Scripts Credentials

Memory  
Amount of memory to allocate to VM: 100 percent

Startup time  
Maximum allowed boot time: 1800 sec  
Application initialization timeout: 120 sec

Boot verification  
Consider VM to have successfully booted when:  
 VM heartbeat is present  
 VM responds to ping on any network interface

Windows Firewall  
 Automatically disable Windows Firewall

OK Cancel

V12 introduces universal application groups and will take care of the firewall to avoid network check fails.





# Agent improvements

# Recovery tokens



My device is broken, and I need a bare metal restore. Can you provide me the credentials for the backup repository?



# Recovery tokens

The screenshot shows three windows from the Veeam Backup & Replication software:

- Job List:** A sidebar menu with various options like Instant recovery..., Volume restore..., and Create recovery token... highlighted.
- Volume Level Restore:** A configuration dialog for restoring a volume. It shows a backup server at 172.21.239.48 on port 10005. The "Recovery token" radio button is selected, and a token value is displayed.
- Create Recovery Token:** A modal dialog where a recovery token (78e0-034e-eA80-7E53) has been generated and copied to the clipboard. It also displays the expiration date: 4/12/2023 4:39:52 PM.

I have something better...



# Overrule ownership of agents



I installed a new VBR server as the old one died.  
Adding existing Veeam Agents to the new one  
doesn't work now.



# Overrule ownership of agents

HKLM\SOFTWARE\Veeam\Veeam Backup and Replication

- ProtectionGroupIgnoreOwnership DWORD = 1



Use this secret registry key  
to take over ownership.

## Important:

- Power-off the old Veeam Backup & Replication server (and leave it off)!
- Remove key immediately when ownership is confirmed.



# Linux file backup jobs



Anything to check when doing file level backups with Veeam Agent *for Linux* and mounted file systems?



# Linux file backup jobs

- Mounted file systems are excluded per default if backup source is root folder.
- Configuration parameter available to enable automatic inclusion of mounted file systems.
- Parameter works for all mounted block devices.

Note: Parameter does not work for mounted NAS

To include mounted file systems, rootRecursion must be set to enabled.



Configuration file:

/etc/veeam/veeam.ini

```
[filelevel]
#Enable recursive traversal of root directory and its nested mountpoints (excluding remote FS) for file-level
backup.
rootRecursion = true
```

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Network

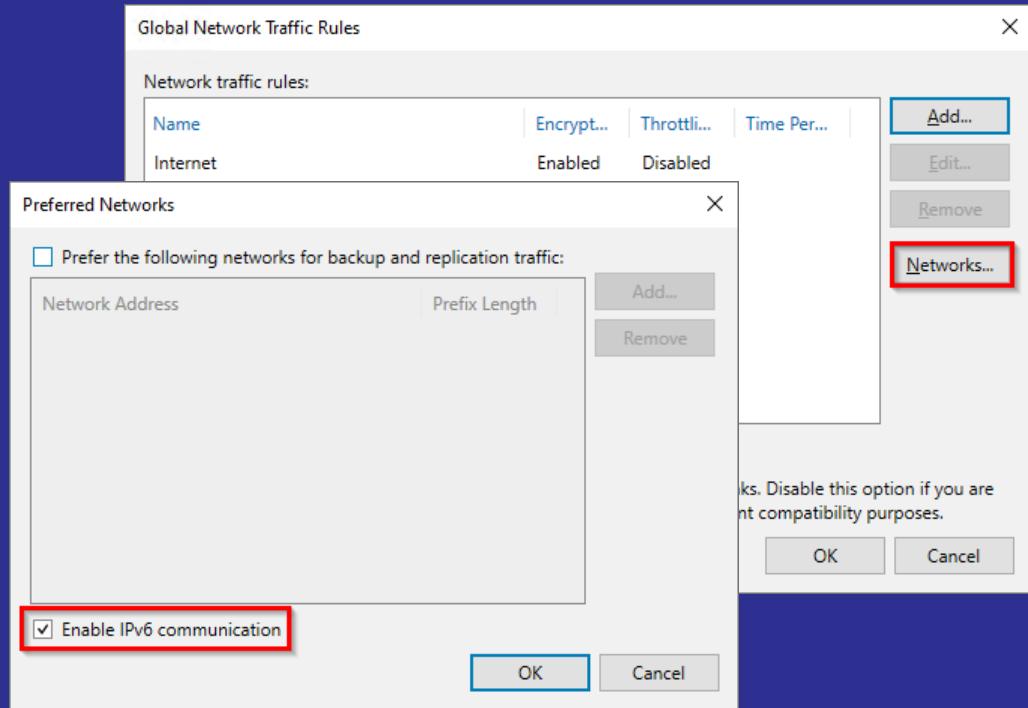
# IPv6



My organization is using IPv6.  
Does Veeam Backup & Replication support IPv6?



# IPv6



Enable IPv6!



# Network enhancements

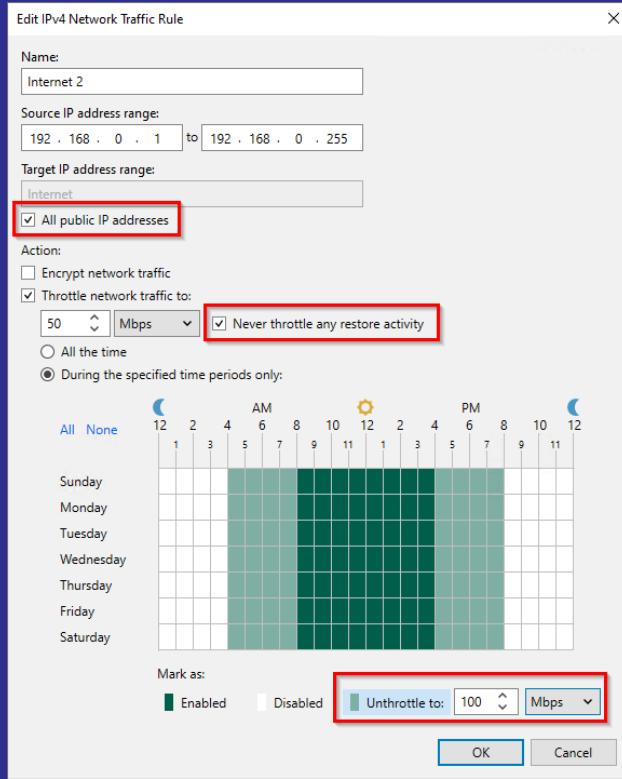


Does version 12 provide me with any other network enhancements?



# Network enhancements

Having multiple locations with different internet bandwidth?



Require full speed for your recovery?

Need to un-throttle “a bit”, but not disable?

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Console

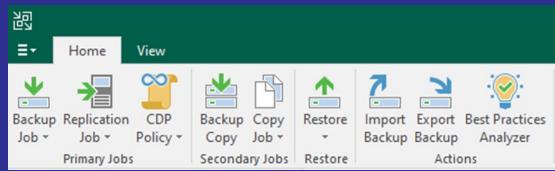
# Check configuration best practices



I am aware of the Veeam Best Practices hardening guide. Can V12 help me to check these settings?



# Check configuration best practices



Best Practices Analyzer

The following best practices are guidelines from data protection and security experts. Not following them exposes your Veeam deployment to unnecessary security risks, reduced chances of successful recovery following a cyber attack, affects backup infrastructure reliability etc.

Best Practice	Status
Backup infrastructure security	
Remote Registry service (RemoteRegistry) should be disabled	✗ Not implemented
Windows Firewall should be enabled	✗ Not implemented
Product configuration	
MFA for the backup console should be enabled	✗ Not implemented
Immutable or offline (air gapped) media should be used	✓ Passed
Password loss protection should be enabled	✓ Passed
Configuration backup should be enabled	✓ Passed
Configuration backup should be encrypted	✓ Passed
Backup server should not be a part of the production domain	⚠️ Unable to detect
Suppressed	
Remote Desktop Service (TermService) should be disabled	⌚ Suppressed by LAB\hannes on 16.02.2023

**Copy to Clipboard** **Reset All** **Close**

V12 offers a Best Practices Analyzer for a brief overview.



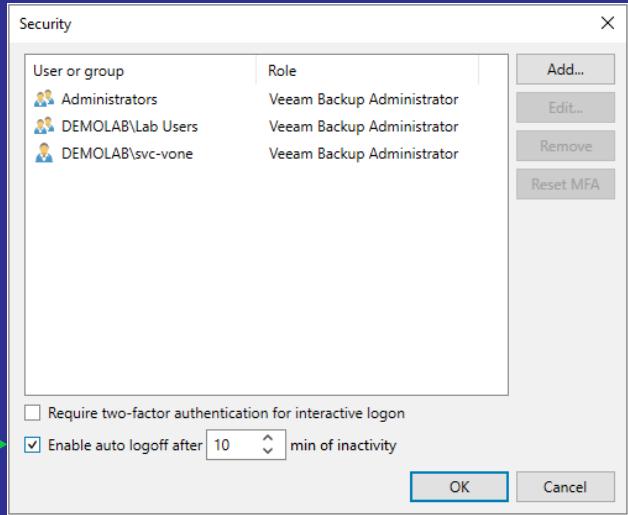
# Auto log-off console



Sometimes I miss closing the RDP session  
to my jump server...



# Auto log-off console



With V12, auto logoff can be enabled in “Users and roles”.



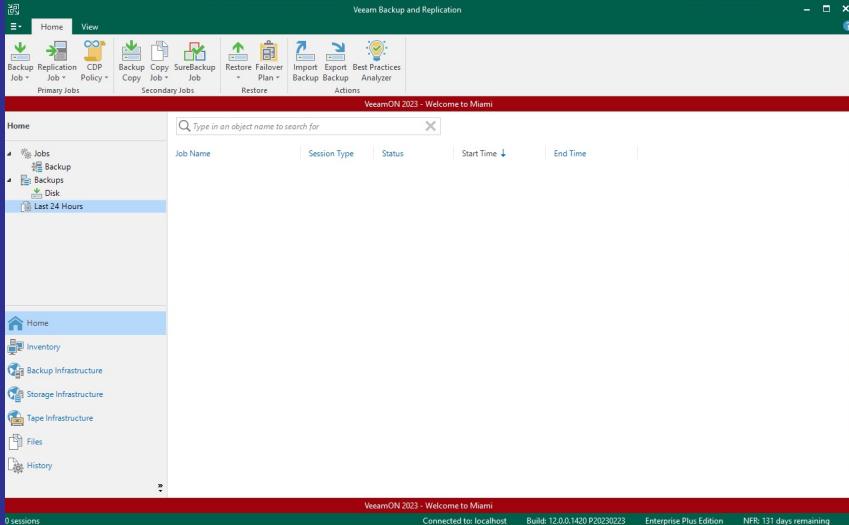
# Classified data marking



Can I display a disclaimer in the console to differentiate between production and test environment?



# Classified data marking



Use these registry keys to display a banner with individual information.



HKLM\SOFTWARE\Veeam\Veeam Backup and Replication

- **UIClassifiedMode** (DWORD) = 1.
- **UIClassifiedStripeBackgroundColor** (String).
- **UIClassifiedStripeText** (String).

UIClassifiedMode	REG_DWORD	0x00000001 (1)
UIClassifiedStripeBackgroundColor	REG_SZ	9DA70
UIClassifiedStripeText	REG_SZ	VeeamON 2023 - Welcome to Miami

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# Notifications

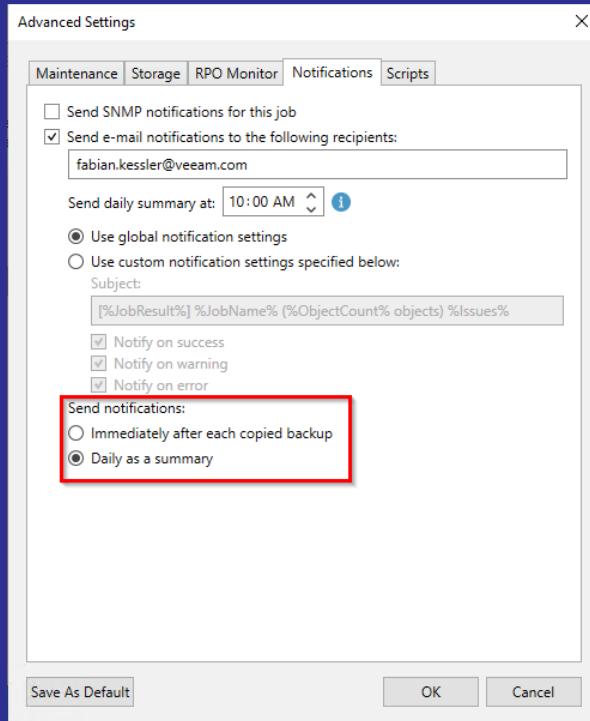
# Backup copy job daily summary



My mailbox is flooded with immediate backup copy job notifications throughout the day.  
Can I reduce them to a single mail?



# Backup copy job daily summary



To get them once a day, open the Advanced Settings of the backup copy job (Notifications).



# Running instant recovery notifications



A running Instant VM Recovery® process can fill up disks. How can Veeam help me not to forget my running sessions?

# Running instant recovery notifications

FK-VBR-01.lab.intern  
Consider finalizing the following sessions

Wednesday, April 19, 2023 10:19:28 AM

Name	Type	Duration
FK-Nano_IR	Instant VM Recovery	144:26:43

Veeam Backup & Replication 12.0.0.1420 P20230223

Yes, the daily report will keep you up-to-date.



Registry key to disable mail notification:

HKLM\SOFTWARE\Veeam\Veeam Backup and Replication

- IPSuppressDailyReport (DWORD) = 1.

 IRSuppressDailyReport REG\_DWORD 0x00000001 (1)

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RestAPI

# Configuration import and export



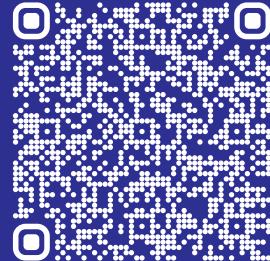
I need to migrate some configuration but not all from one backup server to another backup server.



# Configuration import and export

- Backup jobs
- Credentials/cloud credentials
- Encryption passwords
- Managed server
- Proxies
- Repositories

Veeam Backup & Replication RestAPI provides endpoints for configuration export and import.



[Veeam Backup & Replication  
REST API Reference](#)



