VEEAMON 2023

A-Z Automation Journey with Veeam's Automation Desk

Maurice Kevenaar

System Engineer

Twitter: @mkevenaar

Joe Houghes

Senior Solutions Architect

Twitter: @jhoughes

VEEAMON 2023

A = Automation:
the subject for today

What is automation?

> Automation describes a wide range of technologies that reduce human intervention in processes, namely by predetermining decision criteria, subprocess relationships, and related actions, as well as embodying those predeterminations in machines.
>
> Wikipedia

B = backup: what you need to create before testing it in a sandbox

Why automation?

1 Remove repetitive jobs/tasks.

- When installing multiple devices, why would you manually install software A, B, C and D?
- When creating a backup job, why do you need to make the same changes for all the jobs?

2 Reduce the risk of making mistakes.

- That backup job you created - you forgot a critical step.
- That software installation - you forgot a dependency that it needed on one device.

3 Make your life easier!

C = Code: that is what you write

How to do automation?

Define your goal.

- Set “Perform backup files health check” to the first Friday of the month.

Define the tasks you need to take to achieve your goal in your own language.

- Connect to the Veeam® Backup & Replication™ Server.
- Get all jobs.
- Iterate through all the jobs and make changes, if required.

D = Documentation: because documentation is key

How to do automation?

- Search in the product's documentation/ the internet to do said tasks .

Veeam PowerShell Reference:

- Connect-VBRServer.
- Get-VBRJob.
- New-VBRJobOptions.
- Set-VBRJobOptions.

https://helpcenter.veeam.com/docs/backup/powershell/getting_started.html?ver=120

E = Exception: something to catch in case of an error

How to do automation?

Write your code

- Use an IDE you are comfortable with.

  Visual Studio Code (free) is a good start.

Test your code

- **Do not test in production!**
- Restore to the previous (known) state if you need to run it again.
- Go back to the search step if things are not as expected and repeat.

https://code.visualstudio.com/

F = Failure: what will happen if you don't test

VEEAMON 2023

G = Git:

a method to store your code

Git vs. GitHub

Git is:

- A distributed version control system.
- Free and open source.
- Git is used for calculating the difference between the committed files and your new files.
- Git could be seen as forever incremental backups.

Other version control systems are:

- Mercurial.
- SVN or SubVersioN.
- CVS or concurrent versions system.

H = Help: something you will probably search

Git vs. GitHub

GitHub is:

- A company, owned by Microsoft.
- Web interface for Git repositories.
- Collaboration tool.
- GitHub Actions (build pipelines).
- GitHub Pages (documentation).
- Gist (code/text snippets).

Octocat, GitHub's mascotte
© GitHub

Alternatives:

- Bitbucket.
- GitLab.

I = Information: that is what you'll find on the Internet

Git and GitHub are easy

Learn it for free, online, directly on GitHub.

https://skills.github.com/

J = Journey: that is what you are about to start

VEEAMON 2023

K = Knowledge base:
a resource you could use for information

Helpcenter

Finding the right documentation/ syntax speeds up your progress.

- Use your favorite search engine.
- Veeam’s Help Center.
- Veeam’s Community Hub - Automation Desk.
- VeeamHub at GitHub

https://community.veeam.com/groups/automation-desk-103

L = Learning: something you should never stop doing

VeeamHub

Great resource for existing automation scripts

https://github.com/VeeamHub

M = Module: the Veeam PowerShell module or any other module

Notes? Who needs notes?

```
if ( -not(Get-Module -ListAvailable -Name Microsoft.Graph)){

    Install-Module -Name Microsoft.Graph -SkipPublisherCheck -Force -ErrorAction
Stop

    Write-Host "Microsoft.Graph module installed successfully" -ForegroundColor
Green

} else {

    Write-Host "Microsoft.Graph module already present" -ForegroundColor Green

}
```

- Code snippet from a script by Chris Arceneaux. Found at VeeamHub

N = Notes: this helps with readability

Notes? Who needs notes?

```
#Determine if Microsoft.Graph module is already present
if ( -not(Get-Module -ListAvailable -Name Microsoft.Graph)){
    Install-Module -Name Microsoft.Graph -SkipPublisherCheck -Force -ErrorAction Stop
    Write-Host "Microsoft.Graph module installed successfully" -ForegroundColor Green
} else {
    Write-Host "Microsoft.Graph module already present" -ForegroundColor Green
}
```

- Code snippet from a script by Chris Arceneaux. Found at VeeamHub

O = Overwhelmed: what you could become if not careful

VEEAMON 2023

P = PowerShell:

the most used language for automation and Veeam

PowerShell?

PowerShell is:

1. Command line scripting language.
2. Available on Windows, macOS, and Linux (PowerShell Core).
3. Commands (Commandlets/cmdlets) are prefixed:
   - Get-
   - Set-
   - New-
   - Add-
   - Find-
   - Install-
   - Etc.

https://lazyadmin.nl/powershell/powershell-script/

Q = Questions: better to ask than fail

PowerShell?

PowerShell is:

- Powerful.
- Open source.
- Advanced, but easy to learn.
- Development started in 2002 under the name Monad.
  - Also known as Microsoft Shell.
- First public release 16 years ago.
- Currently, build on .NET framework.

R = Readability: that is what your code needs to be for future generations

VEEAMON 2023

S = Sandbox:
what you need to test your code

Testing?

You'll need to test your code/scripts.

- **Do not test on production!**
- Test in a sandbox/test environment.

Larger modules could benefit from automated testing.

- Psake – Build automation.
- Pester – PowerShell Test framework.
- PSScriptAnalyzer – Code checker.

T = Testing: something you NEED to do before using it in production

Learning PowerShell?

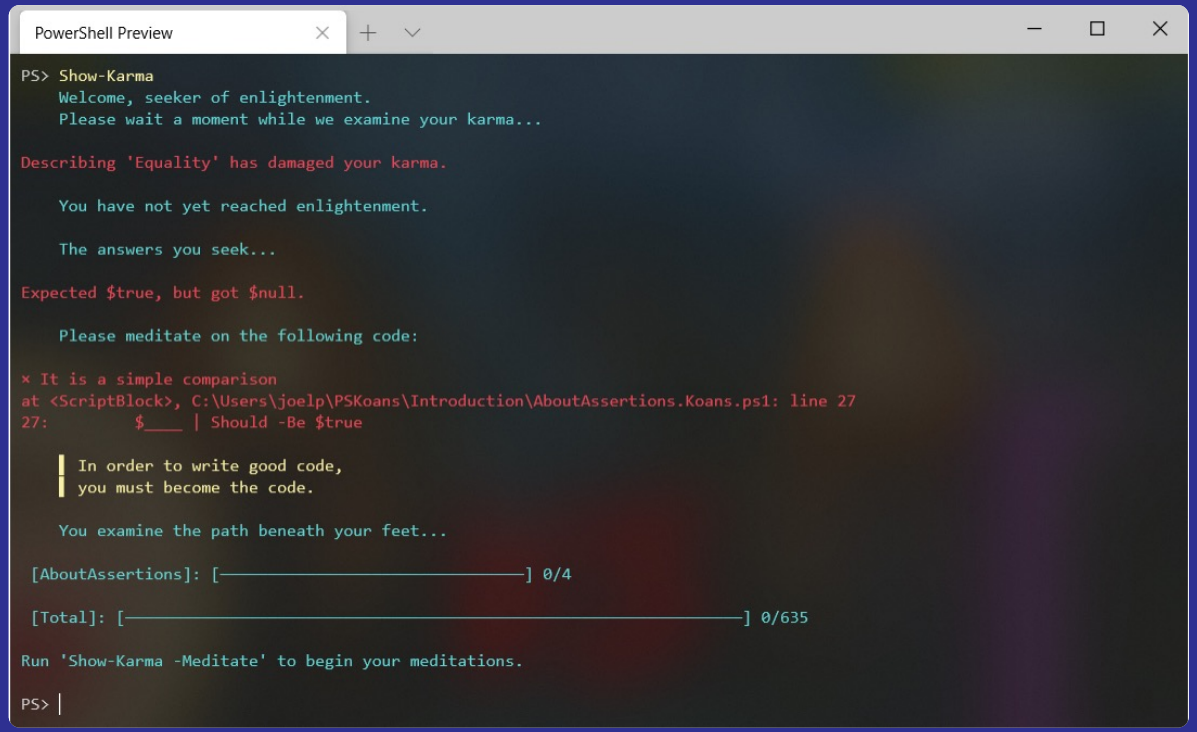
PSKoans.

- Koan is the Japanese word for story, dialogue or question.
- Each question needs to be solved using Pester tests.

https://github.com/vexx32/PSKoans

U = Updates: you need to check the release notes for updates on your scripts

Learning PowerShell?



V = Versioning: make sure you have the correct versioning

Learning PowerShell?

Discord

https://discord.gg/powershell

Reddit

https://www.reddit.com/r/PowerShell/

W = Web: a great resource to start

Does it need to be PowerShell?

- Veeam applications have a REST API.
- Swagger is available for all the APIs.
- A recent virtual event with Jorge De La Cruz on APIs and Grafana.

https://youtu.be/TJeA3e2G4Uw

X = XML: a language sometimes used to communicate with an API

VEEAMON 2023

VEEAM AUTOMATION DESK

Special Department News

Y = Yes! What you will shout when you (finally) have something working

VEEAMON 2023

1st Annual Veeam Community Hackathon

Sept. 28, 15:00 CEST – Sept. 29, 15:00 CEST

Z = ZIP-file: a method to ship your scripts


Questions?
VEEAMON2023


Thank you!
VEEAMON2023

A = Automation: the subject of today

B = Backup: what you need to create before testing it in a sandbox

C = Code: that is what you write

D = Documentation: because documentation is key

E = Exception: something to catch in case of an error

F = Failure: what will happen if you don't test

G = Git: a method to store your code

H = Help: something you will probably search

I = Information: that is what you'll find on the Internet

J = Journey: that is what you are about to start

K = Knowledge base: a resource you could use for information

L = Learning: something you should never stop doing

M = Module: the Veeam PowerShell module or any other module

N = Notes: this helps with readability

O = Overwhelmed: what you could become if not careful

P = PowerShell: the most used language for Automation and Veeam

Q = Questions: better to ask than fail

R = Readability: that is what your code needs to be for future generations

S = Sandbox: what you need to test your code

T = Testing: something you NEED to do before using it in production

U = Updates: you need to check the release notes for updates on your scripts

V = Versioning: make sure you have the correct versioning. Preferred Semantic Versioning (SemVer)

W = Web: a great resource to start

X = XML: A language sometimes used to communicate with an API

Y = Yes! What you will shout when you (finally) have something working

Z = ZIP-file: a method to ship your scripts