



# Use your PowerShell skills to extend Ansible workflows Create your own Ansible module for Windows platform



Wojciech Sciesinski  
email: [wojciech@sciesinski.net](mailto:wojciech@sciesinski.net)





2018

Use your PowerShell skills to extend Ansible workflows  
Create your own Ansible module for  
Windows platform



Wojciech Sciesinski

# Agenda

- Quick introduction to Ansible
  - How to start in 10 minutes
  - Requirements for managed Windows hosts
- Modules – overall
- Modules for Windows
- PSSImgr and win\_pssImgr\_rearm
- Documentation and resources
- Summary

# Ansible – quick introduction



- Ansible is owned/sponsored by



- “Ansible is a radically simple IT automation platform that makes your applications and systems easier to deploy.”<sup>1</sup>
- “Simple, agentless and powerful open source IT automation”<sup>2</sup>
- Ansible – most of the code is Python
- Ansible = Ansible Core

1. The quote from the Ansible project description on GitHub <https://github.com/ansible/ansible>

2. The quote from Ansible Documentation starting page - <https://docs.ansible.com>

# Ansible – installation

- Ansible management host has to be installed on Linux
  - You can run Ansible on Windows Subsystem for Linux (WSL) but it's not supported
- Install Ansible using a distribution-specific package manager (dnf, yum, apt, ...) or Python pip
- Run Ansible using a Docker container
  - The Ansible Silo project <http://bit.ly/2hbaLS4>

# Ansible and Windows – preparation

- Communication between management host and managed hosts
  - Ansible communicates Windows hosts using WinRM (pywinrm <http://bit.ly/2qdH2Jy>)
- Managed hosts preparation
  - for tests/lab purposes you can use the configuration script provided by the Ansible project as an example <http://bit.ly/2IAoI8G>
- An inventory file
- A project folders structure on managing node

# Demo – 1

- Simple Ansible playbook
- an inventory file <http://bit.ly/2qFQDZV>
- ansible.cfg

# Ansible modules in general

- “Modules are the workhorse of Ansible.”<sup>1</sup>
- All module code is transported and executed on target
- JSON in, JSON out
- All module code is contained in a single file
- Code reusing between modules possible by using `module_utils` (for Python/PowerShell)
- Modules are searched in several places but a subfolder library is probably the best place (at the beginning) <http://bit.ly/2EvfHr3>
- A custom module can be built-in in a role



# Ansible modules for Windows – I

- A code in ps1 script, documentation in .py a dictionary formatted file
- Avoid
  - Write-Host, Write-Error, Write-Debug, etc.
  - Throw
  - Try/Catch at large block of code
- Use: Set-StrictMode -Version 2.0 under a development
- Make it compatible (if possible) with Windows PowerShell >= 3.0 and Windows Server 2008/Windows Vista or newer – or state exact limitation in a documentation

## Ansible modules for Windows – II

- Use common functions from module\_utils modules

<http://bit.ly/2K08SSI>

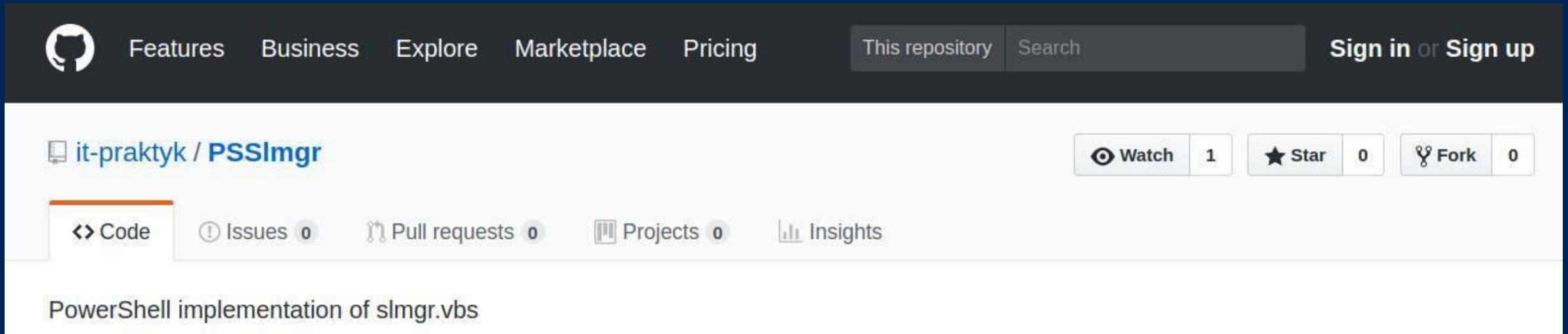
- most important you will find in the module `Ansible.ModuleUtils.Legacy.ps1`

# Demo – 2

- Ansible.ModuleUtils.Legacy.psm1  
<http://bit.ly/2uVOmyQ>

# Introduction to Demo - I

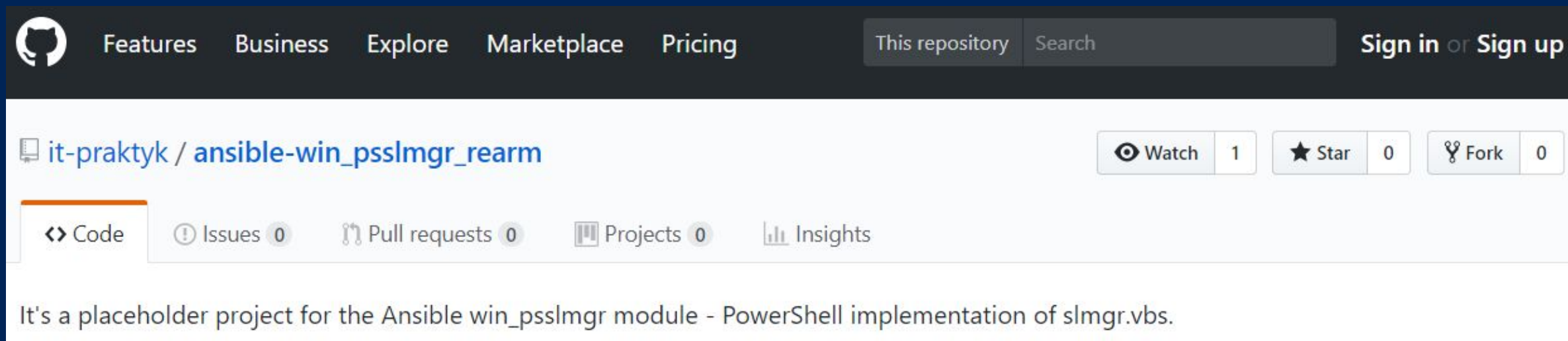
- PSSImgr – PowerShell implementation of the pssmgr.vbs tool



- <http://bit.ly/2uS8VMF>
- Current development status: proof of concept
- MIT licensed

# Introduction to Demo - II

- ansible-win\_psslmgr - PowerShell implementation of the slmgr.vbs tool



The screenshot shows the GitHub interface for the repository 'it-praktyk / ansible-win\_psslmgr\_rearm'. The top navigation bar includes links for Features, Business, Explore, Marketplace, and Pricing, along with a search bar and 'Sign in' or 'Sign up' buttons. The repository name is displayed with icons for Watch (1), Star (0), and Fork (0). Below the repository name, there are tabs for Code, Issues (0), Pull requests (0), Projects (0), and Insights. The description of the repository reads: 'It's a placeholder project for the Ansible win\_psslmgr module - PowerShell implementation of slmgr.vbs.'

- <http://bit.ly/2qNBvt8>
- Requires the PowerShell PSSlmgr module on managed hosts
- Current development status: proof of concept
- GPL 3.0 licensed

# Demo – 3

- slmgr.vbs
- PSSImgr – quick introduction and explanation
- ansible-win\_psslmgr\_rearm

## Documentation and resources – I

- Documentation page of the Ansible project <https://docs.ansible.com/>
  - Windows Guides <http://bit.ly/2pZVFQt>
  - Using Ansible and Windows <http://bit.ly/2JeS3mk>
  - Windows Ansible Module Development Walkthrough  
<http://bit.ly/2q1tscE>
- Ansible Community – Windows Working Group  
<http://bit.ly/2pW8jRq>
- awesome-ansible <http://bit.ly/2ESUhp9>

## Documentation and resources – II

- Videos

- Ansible Module Development 101 – Matt Daviss <http://bit.ly/2JrG7hl>
- Writing Modules Deep Dive – James Cammarata <http://bit.ly/2HgB8z7>
- Ten Things I Hate About You: Manage Windows Like Linux with Ansible – Jordan Borean <http://bit.ly/2GLOouU>

- Books

- Mastering Ansible – Second Edition, Jesse Keating – chapter 8th “Extending Ansible”



## Documentation and resources – III

- IRC channels on freenode <https://freenode.net/>
  - #ansible-devel
  - #ansible-windows

IRC sounds scary? Please try RIOT <https://riot.im>



CREATE, SHARE, COMMUNICATE  
CHAT AND CALL SECURELY, AND BRIDGE TO OTHER APPS!

[GROUP CHAT](#)[VOIP & VIDEO CALLING](#)[FILE TRANSFER](#)[BRIDGE NETWORKS](#)[INTEGRATIONS](#)[END-TO-END CRYPTO](#)[SECURITY  
NEED HELP?](#)[RIOT ON GITHUB  
MADE ON MATRIX](#)[ABOUT US  
CAREERS](#)[Privacy](#)[Terms of use](#)[Copyright Policy](#)[© 2017 New Vector Ltd](#)

Filter room names

FAVORITES

Drop here to favourite

PEOPLE 2

Riot-bot

Riot-bot

ROOMS 1

#ansible-windows

LOW PRIORITY

Drop here to demote

HISTORICAL

A

#ansible-windows

Windows Working Group <https://github.com/ansible/community/tree/master/group-windows>

Jump to first unread message.

D

dag (IRC)

only if people are willing to spend the effort

chopraaa: that could be \*you\* :)

we're always interested in contributions from the very best and brightest

that could be \*you\* :p

C

chopraaa (IRC)

I had this in mind right now [http://docs.ansible.com/ansible/devel/modules/win\\_disk\\_facts\\_module.html](http://docs.ansible.com/ansible/devel/modules/win_disk_facts_module.html)

D

dag (IRC)

jhawkesworth\_: I hope some day we'll have something like Mattermost though

C

chopraaa (IRC)

that page's scrollers haven

D

dag (IRC)

Well, it's a lot of information, so not much we can do to that

but that page has some issues I agree

too many columns

type should probably go underneath the name

in a color

one column saved

but description and sample can be long strings, and even "Returned " could be a long line

so it's hard to have a table with 3 columns with potentially a lot of text ;-/

C

chopraaa (IRC)

agreed

Send a message (unencrypted)...

Aa

36

Filter room members

D

dharmabumstead (IRC)

A

awestin1 (IRC)

N

No1\_ (IRC)

M

MichaelBaydoun (IRC)

P

pablodav

it-praktyk

W

willthames (IRC)

T

thaumos (IRC)

D

dvb\_ (IRC)

K

karstensrage (IRC)

Z

Z3r0\_ (IRC)

S

square1 (IRC)

B

book` (IRC)

D

dvb (IRC)

N

nitzmahone (IRC)

P

privatelp (IRC)

O

orc\_fedo\_ (IRC)

I

|tanner (IRC)

Invite to this room

Ansible + PowerShell = ?



+



=



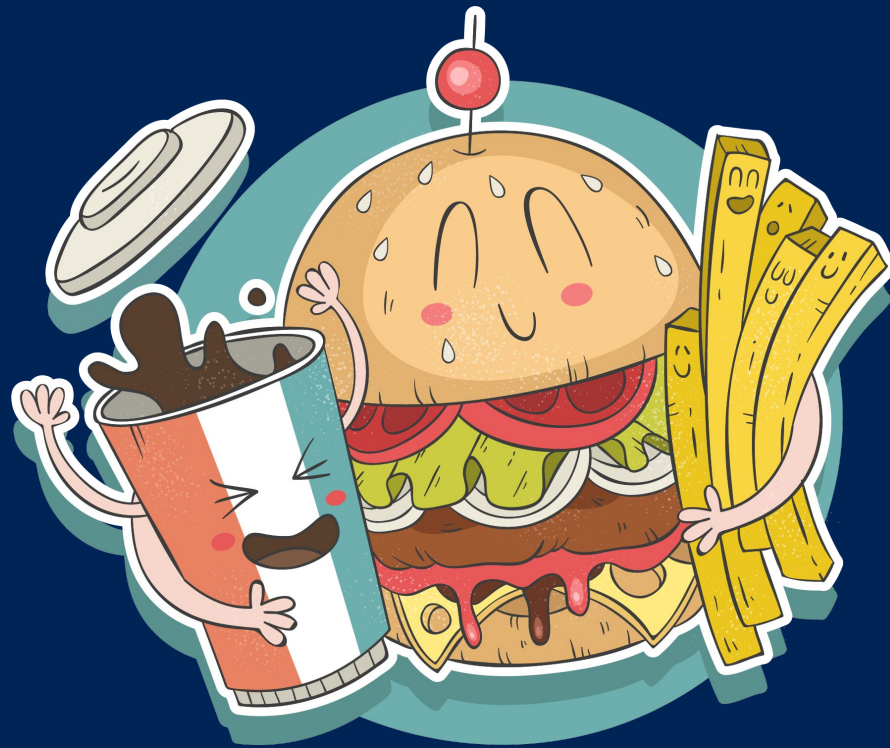
# Summary

- Ansible is a simple but a powerful tool
- Managing of Windows hosts is made via WinRM
- Ansible modules for Windows are PowerShell scripts
- You can module\_utils
- PSSImgr and ansible-win\_pssImgr\_rearm – please be invited to collaboration

Questions?

## Next Steps – I

- Now: 50 min break and lunch :-)



## Next Steps – I

- Lunch Special Sessions
    - PowerShell Usergroups meet & greet – Track 2
    - VMware validation using PowerShell, Docker and Vester – Track 3
- Claus Nielsen



## about\_Author

- <https://www.linkedin.com/in/sciesinskiwojciech>
- Twitter: @ITpraktyk
- GitHub <https://github.com/it-praktyk>



# Building software for tomorrow's world

Many of our solutions are used in everyday life, from smartphones and TVs to cars and intelligent buildings.



Automotive



Mobile



Semiconductor



FinTech



Marine,  
Aviation  
and Defence



TV &  
Digital  
Broadcasting



Medical



Space

# MOBICA IN NUMBERS



**12** locations worldwide

**Over 1000 employees**  
and still growing



In 14 years  
**over 400+ customers**

**Over 1000 projects**  
completed



**Over 70%**  
projects in R&D

**Over 150 QA Testing Engineers**  
experience in over 200 projects



**Over 120**  
staff bonding events per year

**Over 800 engineers**  
and more to come!



Is there something else you would like to know?



[mobica.com](http://mobica.com)



[facebook.com/MobicaLimited](https://facebook.com/MobicaLimited)



[linkedin.com/company/mobica](https://linkedin.com/company/mobica)