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The webinar will begin shortly

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Automating Windows tasks using Ansible Automation with Red Hat Training

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Solutions Architect

AGENDA

- What is Ansible?
  - Ansible Engine
  - Ansible Tower
- Wait.. I can use Ansible on Windows?
  - Use cases
- Demo - Automating Windows administration tasks
- Red Hat Training
  - DO417 - Microsoft Windows Automation with Red Hat Ansible
- Q&A

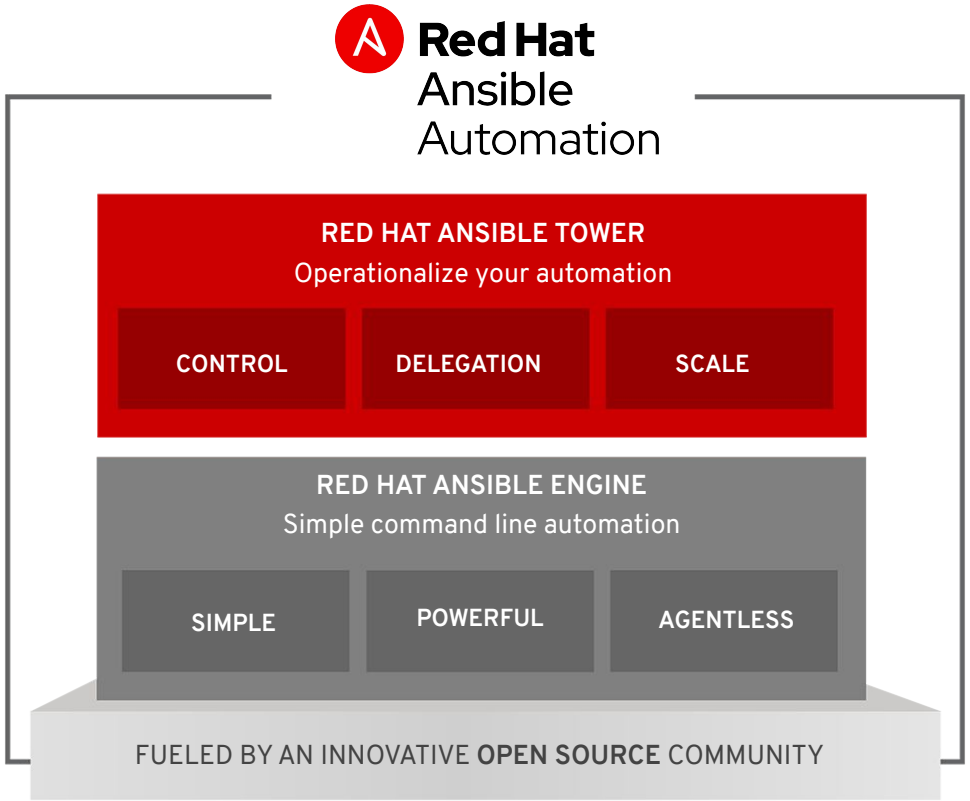
What is Ansible?

What is Ansible Automation?

Ansible Automation is the enterprise **framework** for automating across IT operations.

Ansible Engine runs Ansible Playbooks, the automation **language** that can perfectly describe an IT application infrastructure.

Ansible Tower allows you **scale** IT automation, manage complex deployments and speed productivity.



Why Ansible?

Simple

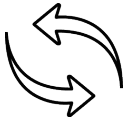
Human readable automation

No special coding skills needed

Tasks executed in order

Usable by every team

Get productive quickly



Powerful

App deployment

Configuration management

Workflow orchestration

Network automation

Orchestrate the app lifecycle

Agentless

Agentless architecture

Uses OpenSSH & WinRM

No agents to exploit or update

Get started immediately

More efficient & more secure

What can I do using Ansible?

Automate the deployment and management of your entire IT footprint.

Do this...

- Orchestration
- Configuration Management
- Application Deployment
- Provisioning
- Continuous Delivery
- Security and Compliance

On these...

- Firewalls
- Load Balancers
- Applications
- Containers
- Clouds
- Servers
- Infrastructure
- Storage
- Network Devices
- And more...

Ansible Automates Technologies You Use

CLOUD

AWS
Azure
Digital Ocean
Google
OpenStack
Rackspace
+more

OPERATING SYSTEMS

RHEL and Linux
UNIX
Windows
+more

VIRT & CONTAINER

Docker
VMware
RHV
OpenStack
OpenShift
+more

STORAGE

NetApp
Red Hat Storage
Infinidat
+more

WINDOWS

ACLs
Files
Packages
IIS
Regedits
Shares
Services
Configs
Users
Domains
+more

NETWORK

Arista
A10
Cumulus
Bigswitch
Cisco
Cumulus
Dell
F5
Juniper
Palo Alto
OpenSwitch
+more

DEVOPS

Jira
GitHub
Vagrant
Jenkins
Bamboo
Atlassian
Subversion
Slack
Hipchat
+more

MONITORING

Dynatrace
Airbrake
BigPanda
Datadog
LogicMonitor
Nagios
New Relic
PagerDuty
Sensu
StackDriver
Zabbix
+more

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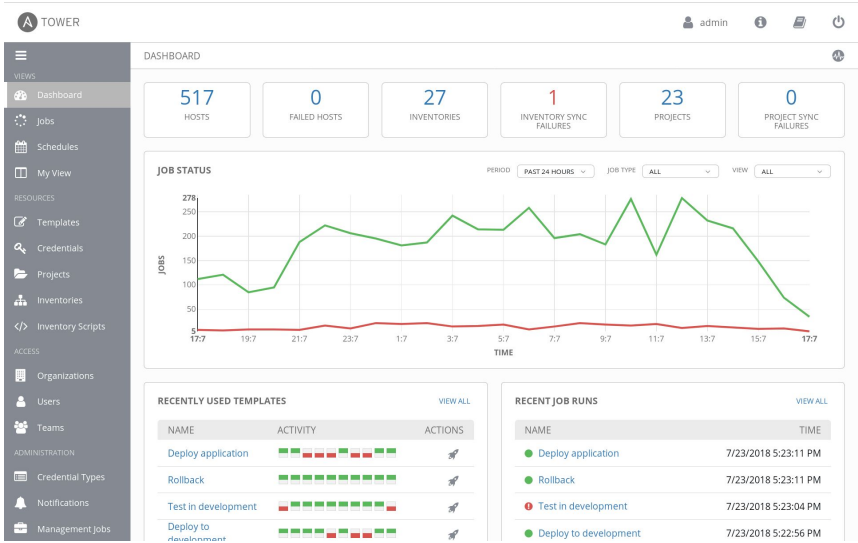
Ansible Tower

Ansible Tower is an enterprise framework for controlling, securing and managing your Ansible automation – with a UI and RESTful API.

- Role-based access control
- Deploy entire applications with push-button deployment access
- All automations are centrally logged
- Works with Linux nodes, networking devices - and of course Windows nodes



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Ansible Windows Automation

Use Ansible to deploy and manage Windows systems and applications.

70+

Windows Modules

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Ansible on Windows

Playbook Example: Windows

```
- hosts: new_servers

  tasks:
  - name: ensure IIS is running
    win_service:
      name: W3Svc
      state: running

    - name: add a domain user
      win_domain_user:
        name: somebody
        upn: somebody@mydomain.local
        groups:
          - Domain Admins
```

How does it work?

- Not SSH
  - WinRM (HTTP-based remote shell protocol)
  - Non-interactive logon
  - Different connection plugin
  - Requires pywinrm
- Powershell
  - Unlike Python - it's just there on modern Windows
  - Can utilize .NET
- What about inventories?
  - Windows has its own connection type
  - Variable in inventory must be set
  - Similar to other target platforms

Inventory Example: Windows

```
[windows]
mssqlserver.example.com
iisserver.example.com

[windows:vars]
ansible_connection=winrm
OR
ansible_connection=psrp
```

Commands and Scripts

Windows Command

Simply executes a command

Not run through shell → no shell variables, no shell specific commands

Quite secure

No real idempotency

Windows Command

```
- name: run a cmd command
  win_command: cmd.exe /c mkdir C:\temp

- name: run a vbs script
  win_command: cscript.exe script.vbs

- name: run from specific folder, skip when condition already met
  win_command: wbadmin -backupTarget:C:\backup\
  args:
    chdir: C:\somedir\
    creates: C:\backup\
```

Windows Shell

Executes within a PowerShell

Use PowerShell commands, variables, etc.

Even multi-line scripts possible

Less secure!

No real idempotency

Windows Shell

```
- name: run command through the shell
  win_shell: Write-Host Hello world

- name: run multi-lined shell commands
  win_shell: |
    $value = Test-Path -Path C:\temp
    if ($value) {
        Remove-Item -Path C:\temp -Force
    }
    New-Item -Path C:\temp -ItemType Directory
```

Scripts

Works on Linux and Windows

Transfers and executes a script

Local copy can still be templated!

Only use in cases where the other modules don’t work

No real idempotency

Scripts

```
- name: run a script
  script: /tmp/myscript.bat
```

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Software Management

Application Installation

Ways To Install Software	
win_package	The default module to install MSI or EXE
win_chocolatey	If possible, use Chocolatey! A package management framework for Windows - like the app stores on mobile phones, homebrew or the repositories on Linux distributions. Community driven.
win_feature	Installs or uninstalls Windows Roles or Features on Windows Server using the Add/Remove-WindowsFeature Cmdlets on Windows 2008 R2 and Install/Uninstall-WindowsFeature Cmdlets on Windows 2012.
win_update	Manage updates: install KBs, install all updates from a certain category and blacklist what does not fit your current setup.
win_hotfix	Install or remove windows hotfixes.

Application Installation With win_package

```
- name: Install Visual C thingy
  win_package:
    path: http://download.microsoft.com/.../vcredist_x64.exe
    product_id: '{CF2BEA3C-26EA-32F8-AA9B-331F7E34BA97}'
    arguments:
    - /install
    - /passive
    - /norestart
```

Application Installation With win_chocolatey

```
- name: Install multiple packages
  win_chocolatey:
    name:
    - procexp
    - putty
    - windirstat
    state: present
```

Windows Feature

```
- name: Install IIS
  win_feature:
    name: Web-Server
    state: present

- name: Install IIS with sub features and management tools
  win_feature:
    name: Web-Server
    state: present
    include_sub_features: yes
    include_management_tools: yes
```

Windows Updates

Basic, synchronous updates - win_updates

Uses configured source (Windows Update/WSUS)

(New in 2.5): transparent SYSTEM + auto reboot

Windows Updates

```
- name: install critical updates except blacklisted
  win_updates:
   category_names: CriticalUpdates
   reboot: yes # <--- new in 2.5!
   blacklist: # <--- new in 2.5!
   - KB4056892
```

Reboots

win_reboot action makes managed reboots trivial

wait_for_connection is just the second half

Reboots

```
# Apply updates and reboot if necessary
- win_updates:
  register: update_result
- win_reboot:
  when: update_result.reboot_required

# Reboot a slow machine that might have lots of updates to
apply
- win_reboot:
    shutdown_timeout: 3600
    reboot_timeout: 3600
```

Configuration Management

Registry

Manage individual key/value (win_regedit)

Manage idempotent bulk import (win_regmerge)

Registry

```
- name: ensure registry value
  win_regedit:
    path: HKLM\Software\Microsoft\Windows
    name: SomeValueName
    value: 0x12345

- name: merge registry data
  win_regmerge:
    path: ComplexRegData.reg
```

ACLs

More granular than Linux permissions

SDDL?!

More like SELinux ACLs

ACLs

```
- name: ensure owner recursively
  win_owner:
    path: C:\Program Files\SomeApp
    user: Administrator
    recurse: true

- name: ensure complex ACLs
  win_acl:
    path: C:\Temp
    user: Users
    rights: ReadAndExecute,Write,Delete
    inherit: ContainerInherit,ObjectInherit
```

Services

win_service looks/acts like Linux service module

Provides fine control over complex service behavior config in Windows SCM (who/what/when/how)

Services

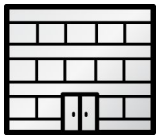
```
- name: ensure IIS is running
  win_service:
    name: W3Svc
    state: running

- name: ensure firewall service is stopped/disabled
  win_service:
    name: MpsSvc
    state: stopped
    start_mode: disabled
```

Demo

Training at Red Hat

WAYS TO TRAIN



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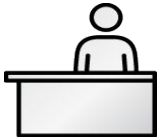
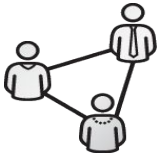
Private On-site training and exams delivered at your location or at one of our training centers



Classroom Training

Training and test in a professional classroom environment led by Red Hat Certified Instructors



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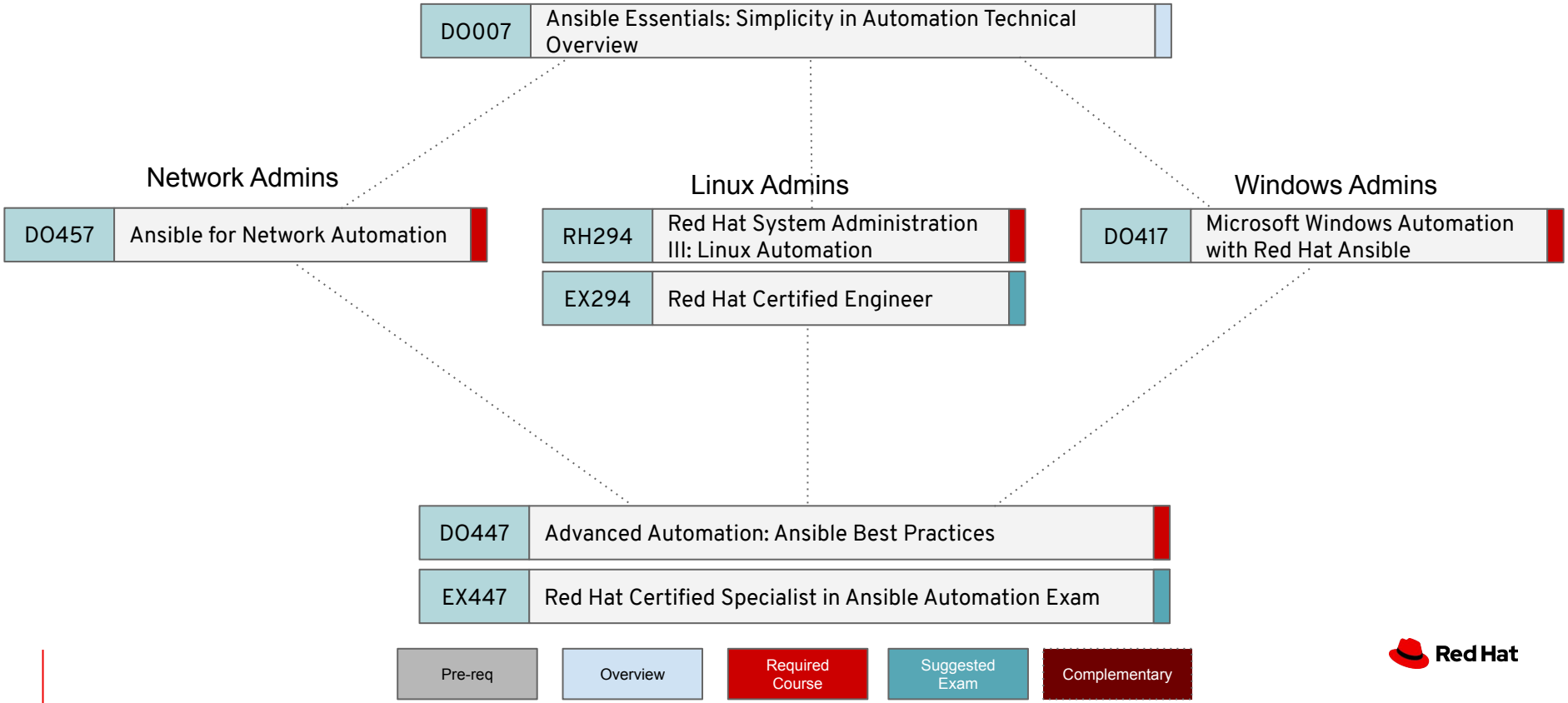

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Microsoft Windows Automation with Red Hat Ansible (DO417)

Learn how to automate administration on Windows Server to enable your DevOps workflow
Microsoft Windows Automation with Red Hat Ansible (DO417) is designed for Windows Server professionals without previous Ansible® experience. You will use Ansible to write automation playbooks for Microsoft Windows systems to perform common system administration tasks reproducibly at scale. You will also learn to use Red Hat® Ansible Tower to securely manage and run your Ansible playbooks from a central web-based user interface.

Topics covered include configuring Microsoft Windows systems to be managed with Ansible, creating and updating inventories of managed hosts, using Red Hat Ansible Tower to simplify playbook operation and manage credentials, leveraging existing PowerShell DSC code to extend the power of Ansible automation, and automating common Windows Server system administration tasks using Ansible.

Prerequisites: You are expected to have experience as Windows Server administrators, but no previous experience with Red Hat Ansible Automation or Linux® is required.

Next steps: Advanced Automation: Ansible Best Practices (DO447)

Q&A

Thank you

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