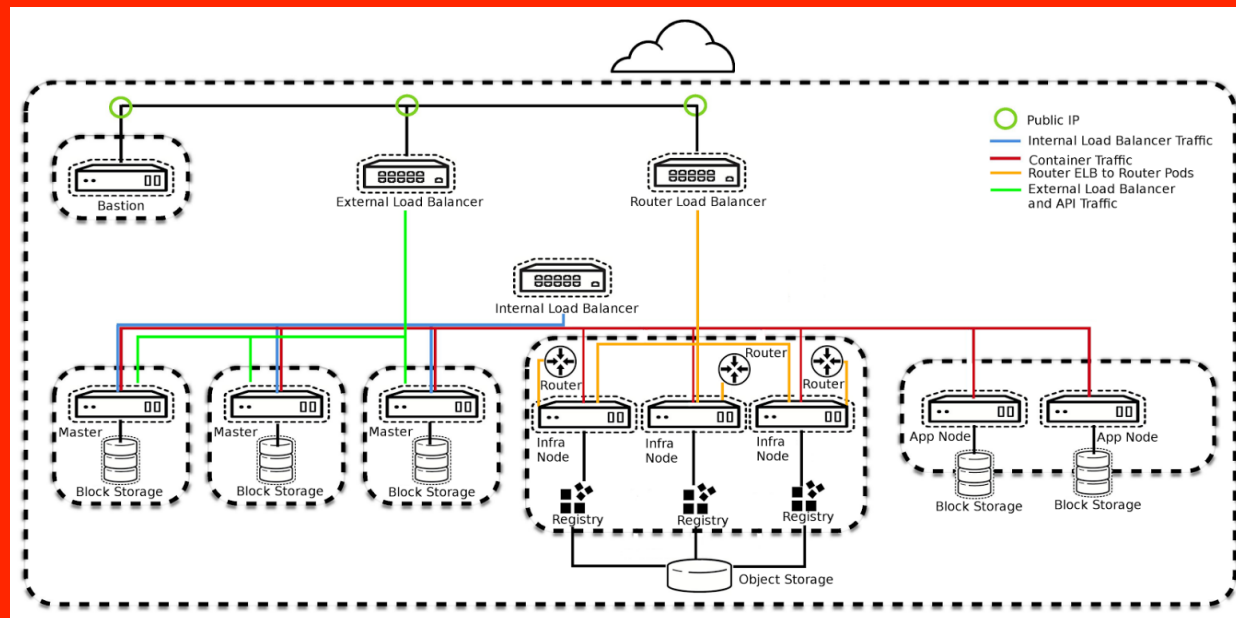


HowTo: Bare Metal OpenShift Windows and Linux



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How-To – July 6, 2018

Overview

- Nodes Needed
- Windows Requirements and Preparation
- OVN Setup
- Windows Setup

Where To Find It

- OVN and Windows Setup
 - <https://github.com/glennswest/hybrid>

Usage – 2 ways to use

- Use the hybrid-openshift-contrib
 - Provides the auto creation of a complete cluster and all the related infrasturure.
 - 3 Masters, 3 Infra, 1 or more compute nodes, and 1 or more windows nodes
 - Requires OpenShift Subscriptions/Rhel and/or Employee Subscription
 - Requires a Azure Subscription
- Hybrid Scripts (Covered in this doc)
 - Self provision bare metal or Any cloud provider, provide a ansible host file, and use the ansible OVN and Windows scripts. Assume you have a bastion host.

Hosts Needed

- All machines running RHEL 7.4 or later
- A Bastion Host (Small machine / VM – Min 2 cores and 8G Memory)
- Qty 1 Infra Nodes (Small Machine / VM – Min 4 cores and 12G)
- Qty 1 Master Nodes (Small Machine / VM – Min 4 cores and 12G)
- Qty 1 or more Compute Nodes (Min 4 cores and 12G)
- Qty 1 Windows Nodes (Min 4 cores and 12 Gig)

Subscriptions

- Scripts are tested with 3.9 GA Openshift – Subscription Required
- RHEL Subscription is Required
- Windows License is required, and must be able to update image

Windows Version

- Windows Datacenter Core 1709 with Containers
 - Disk size must be 120Gig or Greater (Must expand partition to full size)
- Must be updated to latest patches.
- Initial Node Setup is required.

Windows Nodes Preparation – Ansible Setup

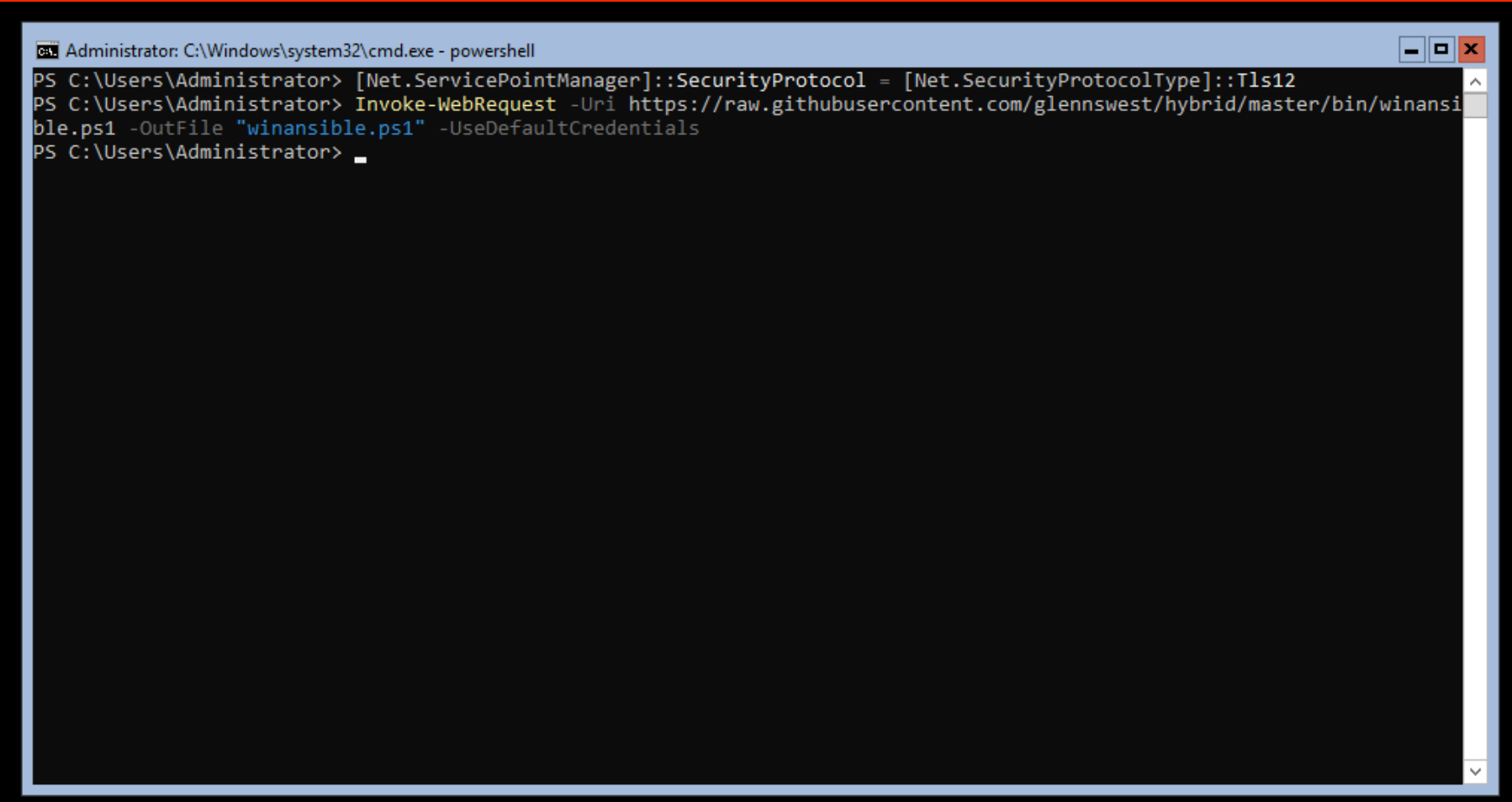
- Login to Each node via RDP or Console
- Do the following commands as Administrator

powershell

```
[Net.ServicePointManager]::SecurityProtocol = [Net.SecurityProtocolType]::Tls12
```

```
Invoke-WebRequest -Uri https://raw.githubusercontent.com/glennswest/hybrid/master/bin/winansible.ps1 -  
OutFile "winansible.ps1" -UseDefaultCredentials
```


Example:

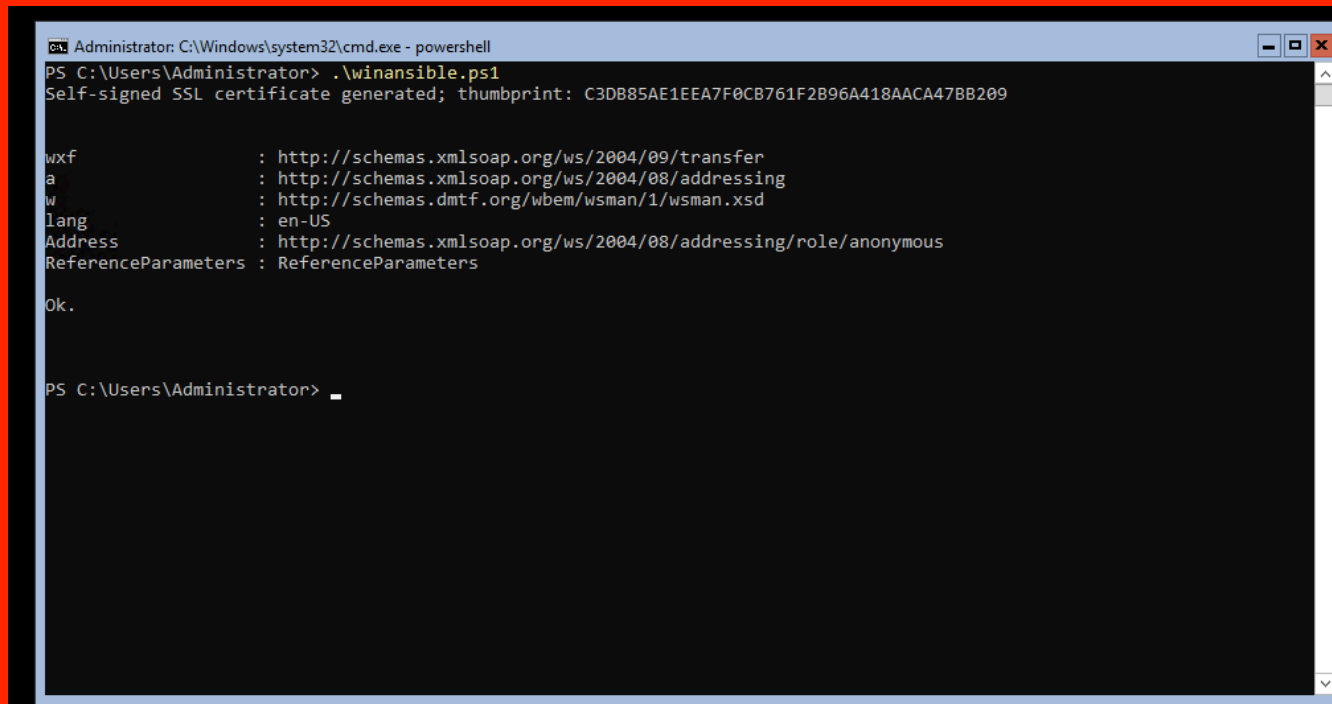


```
Administrator: C:\Windows\system32\cmd.exe - powershell
PS C:\Users\Administrator> [Net.ServicePointManager]::SecurityProtocol = [Net.SecurityProtocolType]::Tls12
PS C:\Users\Administrator> Invoke-WebRequest -Uri https://raw.githubusercontent.com/glennswest/hybrid/master/bin/winansible.ps1 -OutFile "winansible.ps1" -UseDefaultCredentials
PS C:\Users\Administrator> _
```

A screenshot of a Windows PowerShell terminal window. The title bar reads "Administrator: C:\Windows\system32\cmd.exe - powershell". The terminal shows three lines of commands and their execution. The first line sets the security protocol to Tls12. The second line uses Invoke-WebRequest to download a PowerShell script from a GitHub raw file. The third line shows the prompt after the command has completed.

Run the winansible script

- To enable ansible to manage the windows node:



```
Administrator: C:\Windows\system32\cmd.exe - powershell
PS C:\Users\Administrator> .\winansible.ps1
Self-signed SSL certificate generated; thumbprint: C3DB85AE1EEA7F0CB761F2B96A418AACA47BB209

wxf      : http://schemas.xmlsoap.org/ws/2004/09/transfer
a        : http://schemas.xmlsoap.org/ws/2004/08/addressing
w        : http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd
lang     : en-US
Address  : http://schemas.xmlsoap.org/ws/2004/08/addressing/role/anonymous
ReferenceParameters : ReferenceParameters

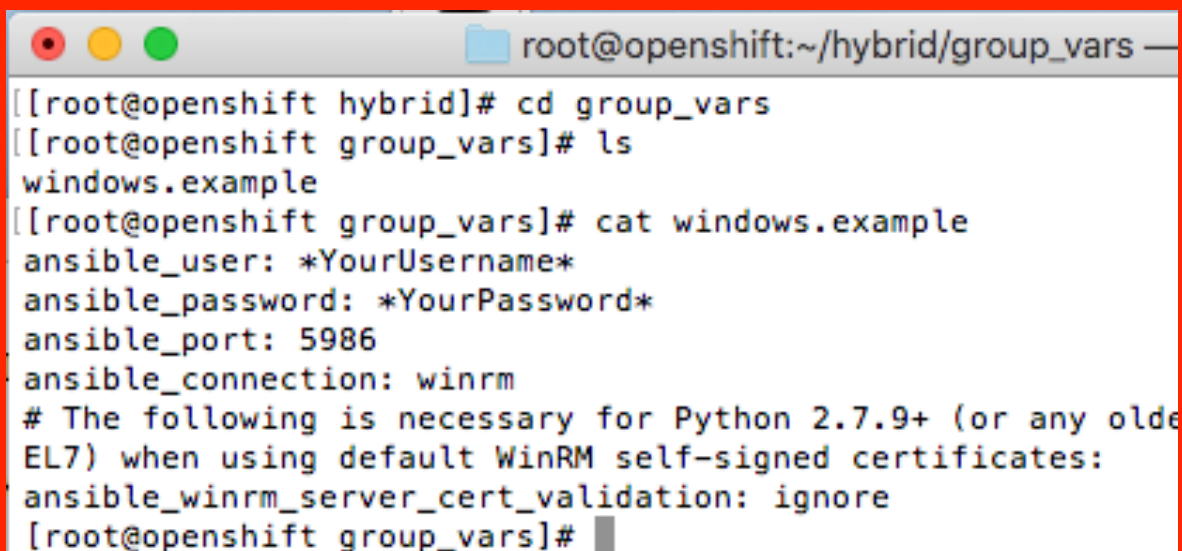
Ok.

PS C:\Users\Administrator> _
```

Next Step: On bastion host

- Login to the bastion host
- As Root:
 - `yum -y install git`
 - `git clone https://github.com/glennswest/hybrid`
 - `yum install -y ansible`
 - `cd hybrid`
 - `cp group_vars/windows.example to group_vars/windows`
 - `vi groupvars/windows`
 - Set you username and password for windows nodes

Group Vars



A terminal window titled "root@openshift:~/hybrid/group_vars" showing the following commands and output:

```
[[root@openshift hybrid]# cd group_vars
[[root@openshift group_vars]# ls
windows.example
[[root@openshift group_vars]# cat windows.example
ansible_user: *YourUsername*
ansible_password: *YourPassword*
ansible_port: 5986
ansible_connection: winrm
# The following is necessary for Python 2.7.9+ (or any older
EL7) when using default WinRM self-signed certificates:
ansible_winrm_server_cert_validation: ignore
[[root@openshift group_vars]#
```

Prepare on bastion to use ansible for Windows

- Uses Ansible on Windows
- Must have a windows group in ansible inventory
- There is a example ansible file
- If using script separately, must do some setup before:

```
echo "Setup for windows nodes"
yum -y install --enablerepo="epel" python-devel krb5-devel krb5-libs krb5-workstation python-kerberos python-setuptools
yum -y install --enablerepo="epel" python-pip
pip install "pywinrm>=0.2.2"
pip install pywinrm[kerberos]
yum install -y python-dns
```

Install OpenShift

- Connect to your bastion host
- Use the OpenShift Advanced Installer and do a new install
- Important variables in the host file:
 - `oreg_url=registry.access.redhat.com/openshift3/ose-${component}:${version}`
 - `openshift_use_openshift_sdn=false`
 - `os_sdn_network_plugin_name=cni`
 - `deployment_type=openshift-enterprise`
 - Example:
 - <https://github.com/glennswest/hybrid/blob/master/examples/ansible.hosts.multi>

Openshift Required Host Names

- Masters
 - master1
 - master2
 - Master3
- Infranodes
 - Infranode1
 - Infranode2
 - Infranode3
- Compute
 - node01
- Windows
 - winnode01
 - winnode02

Next Step (After OpenShift Install)

- Run:
 - As root: `ansible-playbook ovn_presetup.yml`
 - As root: `ansible-playbook ovn_postsetup.yml`
 - As root: `windows.yml`

Setting up Windows group_vars

- Must create a group_vars to setup windows nodes
- The following is done automatically in bastion.sh in the ARM template

```
echo "Setup group_vars for windows machines"
mkdir /home/${AUSERNAME}/group_vars
cat <<EOF > /home/${AUSERNAME}/group_vars/windows
ansible_user: ${AUSERNAME}
ansible_password: ${PASSWORD}
ansible_port: 5986
ansible_connection: winrm
# The following is necessary for Python 2.7.9+ (or any older Python that has backported SSLContext, eg, Python 2.7.5 on RHEL7) when using default WinRM self-signed
ansible_winrm_server_cert_validation: ignore
EOF
```

Hybrid Script – Windows Node Setup

The screenshot shows a web browser displaying the GitHub repository page for 'glennswest / hybrid'. The browser's address bar shows the URL 'https://github.com/glennswest/hybrid'. The repository page includes a dark header with the GitHub logo, a search bar, and navigation links for 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. Below the header, the repository name 'glennswest / hybrid' is displayed, along with statistics: 1 Unwatch, 0 Stars, and 0 Forks. A tab bar shows 'Code' as the active tab, with other tabs for 'Issues', 'Pull requests', 'Projects', 'Wiki', 'Insights', and 'Settings'. The main content area shows the repository title 'Openshift Windows Node Setup Script' with an 'Edit' button. Below the title, it indicates '4 commits', '1 branch', '0 releases', and '1 contributor'. A row of buttons includes 'Branch: master', 'New pull request', 'Create new file', 'Upload files', 'Find file', and a green 'Clone or download' button. A list of files is shown, including a commit by 'rsc7' to 'Remove windows.retry' and files 'group_vars', '.gitignore', and 'windows.yml'. At the bottom, a light blue banner encourages adding a README with an 'Add a README' button.

← → ↻ Secure | https://github.com/glennswest/hybrid

GitHub This repository Search Pull requests Issues Marketplace Explore

glennswest / hybrid Unwatch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

Openshift Windows Node Setup Script Edit

Add topics

4 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

rsc7 Remove windows.retry Latest commit 2750fb7 a day ago

group_vars	Add groupvars example	a day ago
.gitignore	Remove windows.retry	a day ago
windows.yml	Try pushing the full system:node:master1 dir	a day ago

Help people interested in this repository understand your project by adding a README. Add a README

Current Issues

- Need to check the `ovn_kubernetes_node` on each linux node, and restart if having access issues
- For windows containers, `deploy_configs` do not work, must use deployment
- Docker Builds do not work within openshift, must build and push containers online
- Windows Containers must be marked as privileged.

Updates – June 29, 2018

- All windows scripts have been merged together.
- Windows docker setup, disk expansion, and ovm network setup are all done headless and automatically as part of the windows.yml