

Relativity Dev VM Chef Script Documentation

[Monday, August 21, 2017]

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1 Requirements

- CPU cores: 4 cores
- RAM: 8GB
- Storage: 120GB
- Licenses
 - Windows Server 2012 R2
 - Relativity

2 Setup your Workstation

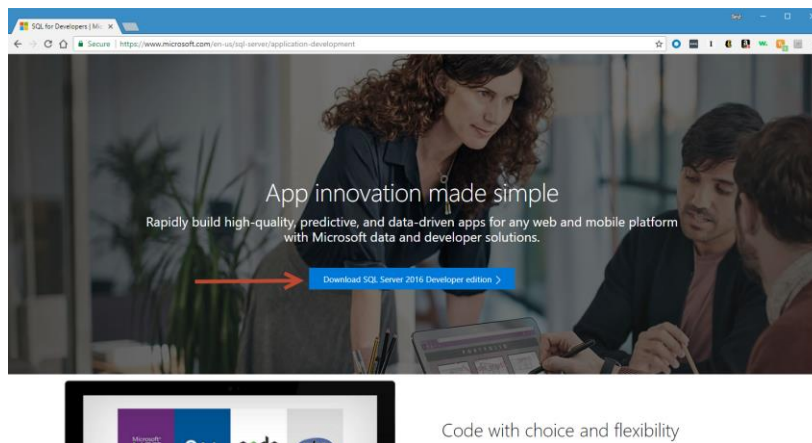
2.1 Login

- Use a Windows Administrator account to login into your workstation

2.2 Downloads

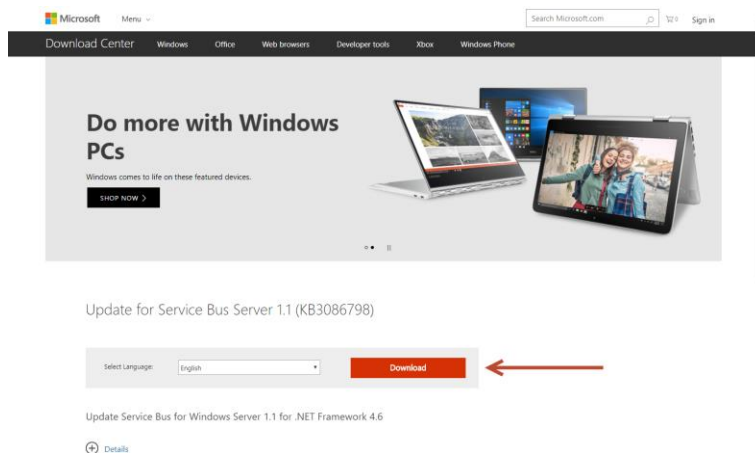
2.2.1 SQL Server 2016 Developer Edition

- You can download it at this link - <https://www.microsoft.com/en-us/sql-server/application-development>



2.2.2 Service Bus 1.1 Defect Windows Update

- You can download it at this link - <https://www.microsoft.com/en-us/download/details.aspx?id=49496>



2.2.3 Relativity Installer

- You can download the specific Relativity version from Salesforce.

2.2.4 Invariant Installer

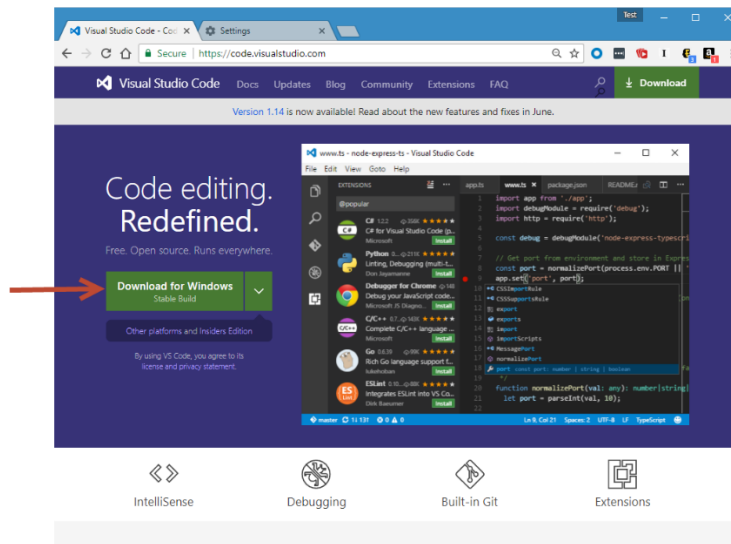
- You can download the corresponding Invariant version for the specific Relativity version from Salesforce.

2.2.5 [Fix] Windows Base Machine for Chef Test Kitchen

- Instructions will be provided later

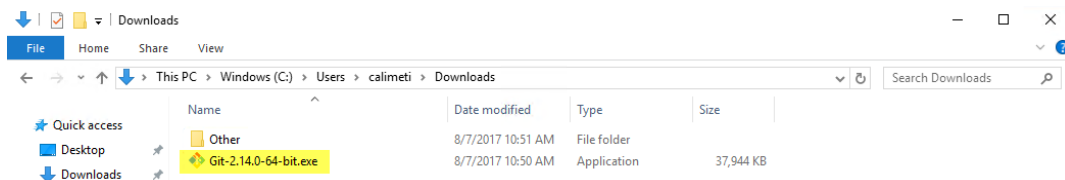
2.3 Install Visual Studio Code text editor

- Download and Install Visual Studio Code from this link [Visual Studio Code](#)

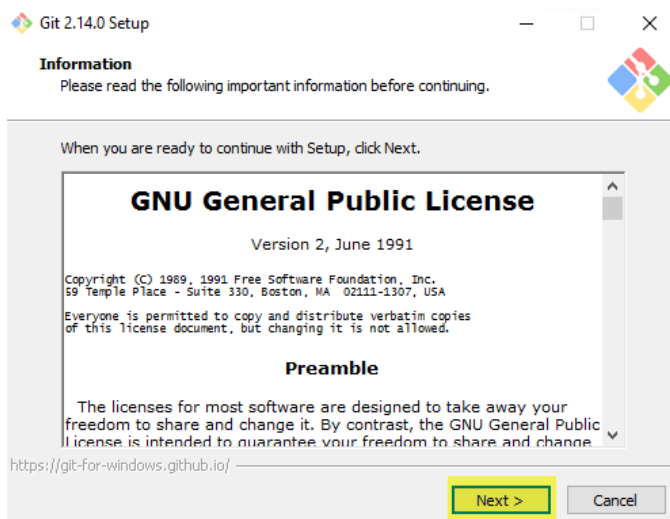


2.4 Install GIT

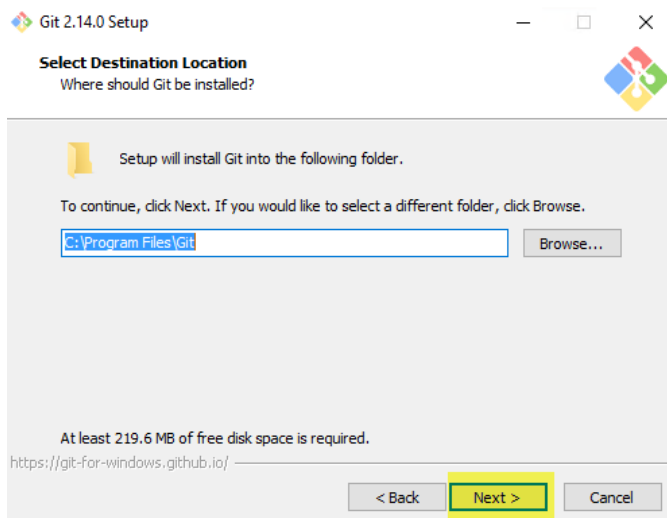
- Download Git from this link - <https://git-scm.com/download/win>
- Once downloaded double click on the Git installer file.



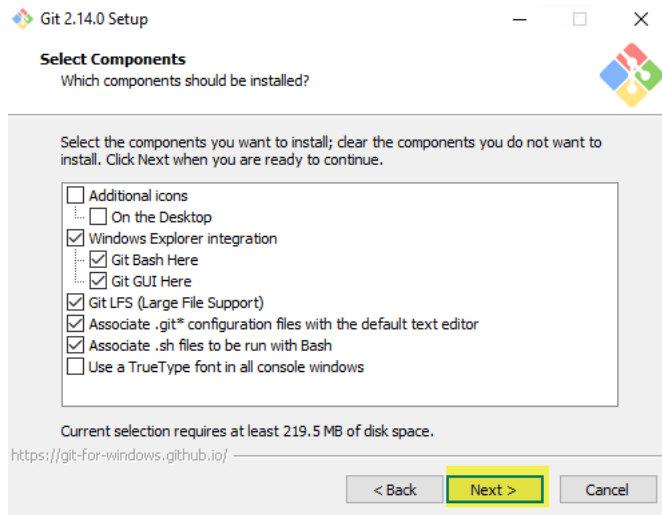
- Click **Next**



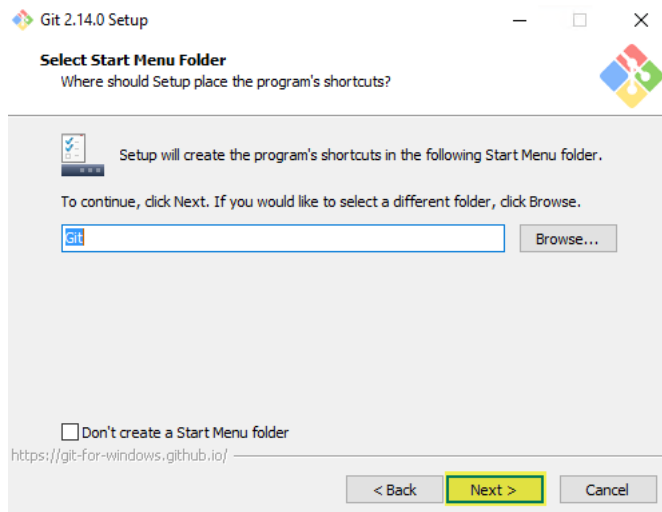
- Choose **default values** and click **Next**.



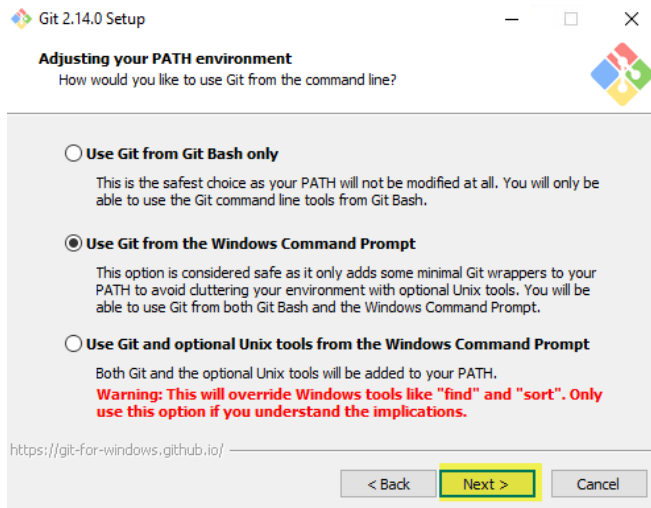
- Choose **default values** and click **Next**.



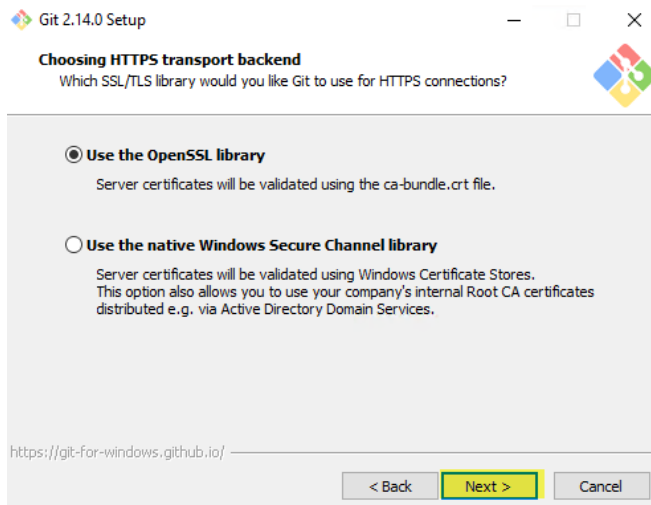
- Choose **default values** and click **Next**.



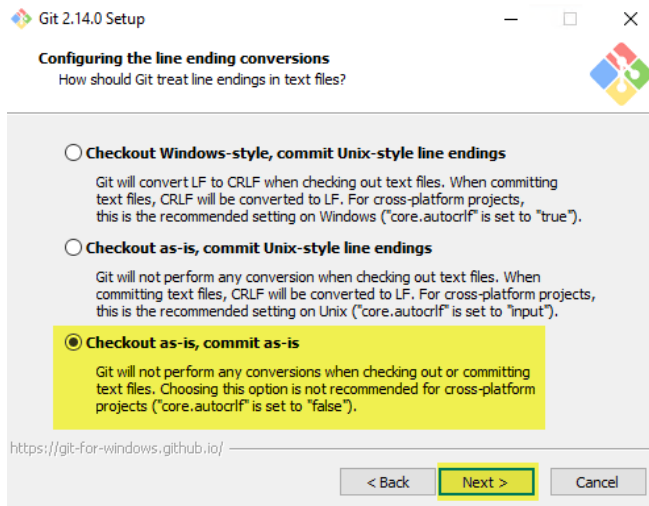
- Choose **default values** and click **Next**.



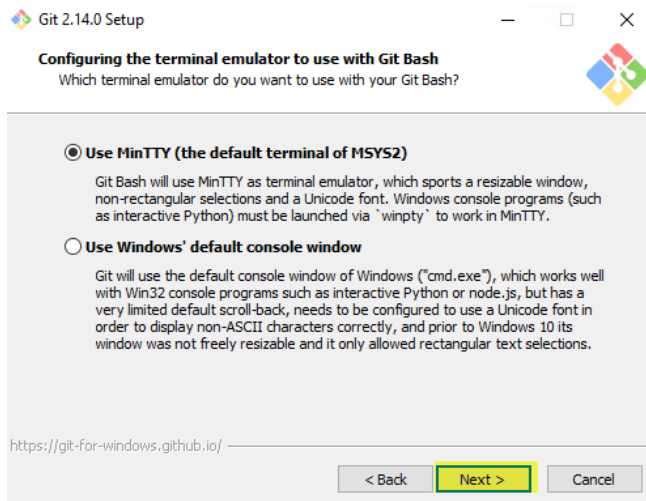
- Choose **default values** and click **Next**.



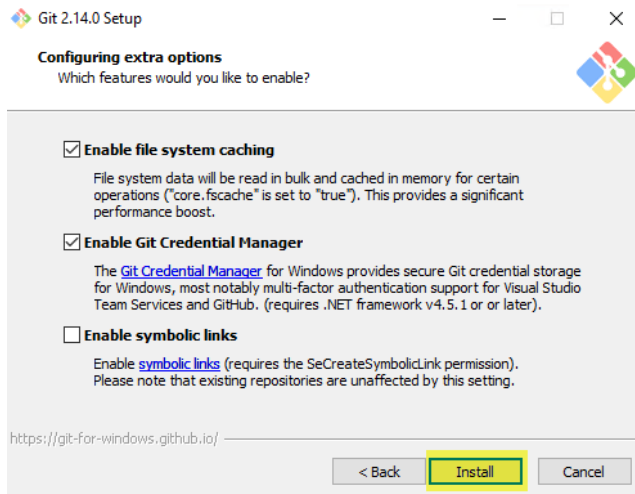
- Change to **checkout as-is, commit as-is** and click Next.



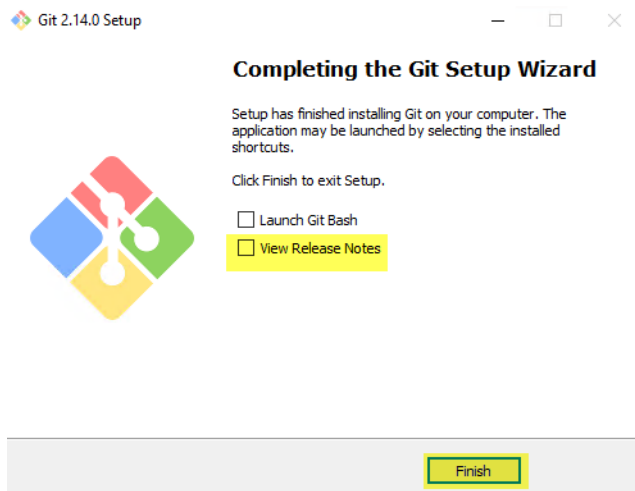
- Choose **default values** and click Next.



- Choose **default values** and click **Install**.



- Uncheck **View Release Notes** and click **Finish**.



2.5 Install Chef Development Kit

- Run the following command in PowerShell to install Chef DK.

```
. { iwr -useb https://omnitruck.chef.io/install.ps1 } | iex; install -project chefdk -channel stable
```

```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\WINDOWS\system32> . { iwr -useb https://omnitruck.chef.io/install.ps1 } | iex; install -project chefdk -channel stable

ModuleType Version      Name                               ExportedCommands
-----
Script      0.0           Omnitruck                         {Get-ProjectMetadata, Install-Project, install}
Installing chefdk from C:\Users\calimeti\AppData\Local\Temp\chefdk-2.0.28-1-x86.msi

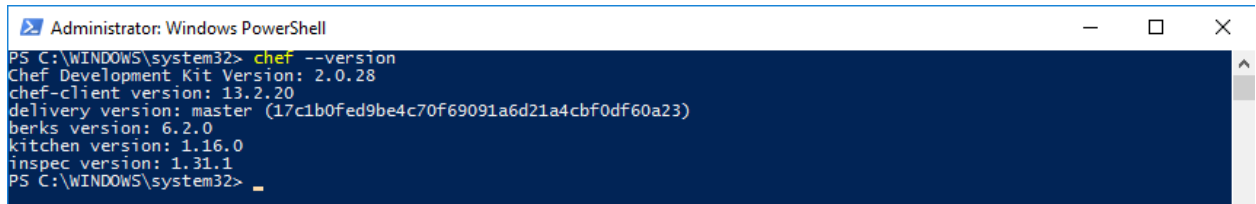
PS C:\WINDOWS\system32>
```

- Once installed, a **Chef Development Kit** icon will be created on your desktop. Double click to open it.



- You can verify Chef DK installation by running the following command in PowerShell

`chef --version`

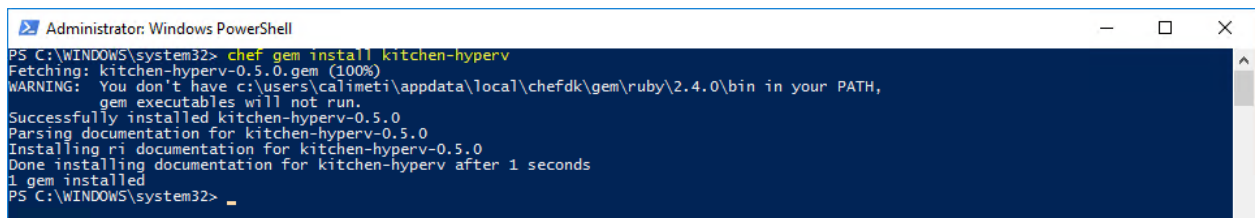


```
Administrator: Windows PowerShell
PS C:\WINDOWS\system32> chef --version
Chef Development Kit Version: 2.0.28
chef-client version: 13.2.20
delivery version: master (17c1b0fed9be4c70f69091a6d21a4cbf0df60a23)
berks version: 6.2.0
kitchen version: 1.16.0
inspec version: 1.31.1
PS C:\WINDOWS\system32>
```

2.6 Install Chef Kitchen Hyper-V driver

- Run the following command in PowerShell window.

`chef gem install kitchen-hyperv`

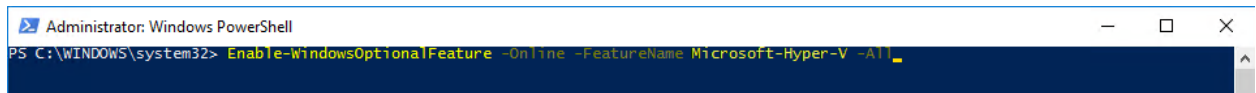


```
Administrator: Windows PowerShell
PS C:\WINDOWS\system32> chef gem install kitchen-hyperv
Fetching: kitchen-hyperv-0.5.0.gem (100%)
WARNING: You don't have c:\users\calimeti\appdata\local\chefdk\gem\ruby\2.4.0\bin in your PATH,
gem executables will not run.
Successfully installed kitchen-hyperv-0.5.0
Parsing documentation for kitchen-hyperv-0.5.0
Installing ri documentation for kitchen-hyperv-0.5.0
Done installing documentation for kitchen-hyperv after 1 seconds
1 gem installed
PS C:\WINDOWS\system32>
```

2.7 Enable Windows Hyper-V feature

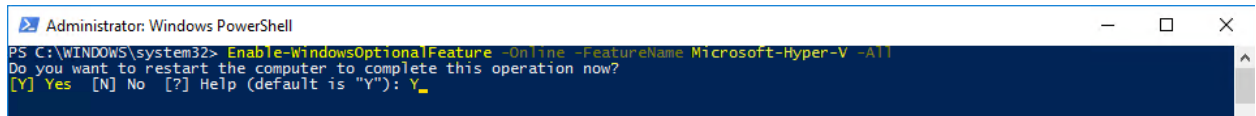
- Run the following command in PowerShell window.

`Enable-WindowsOptionalFeature -Online -FeatureName Microsoft-Hyper-V -All`



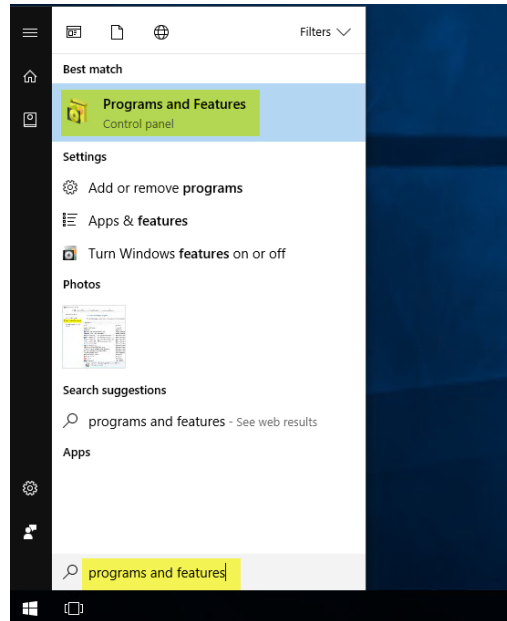
```
Administrator: Windows PowerShell
PS C:\WINDOWS\system32> Enable-WindowsOptionalFeature -Online -FeatureName Microsoft-Hyper-V -All
```

- If you get the following warning, select Y

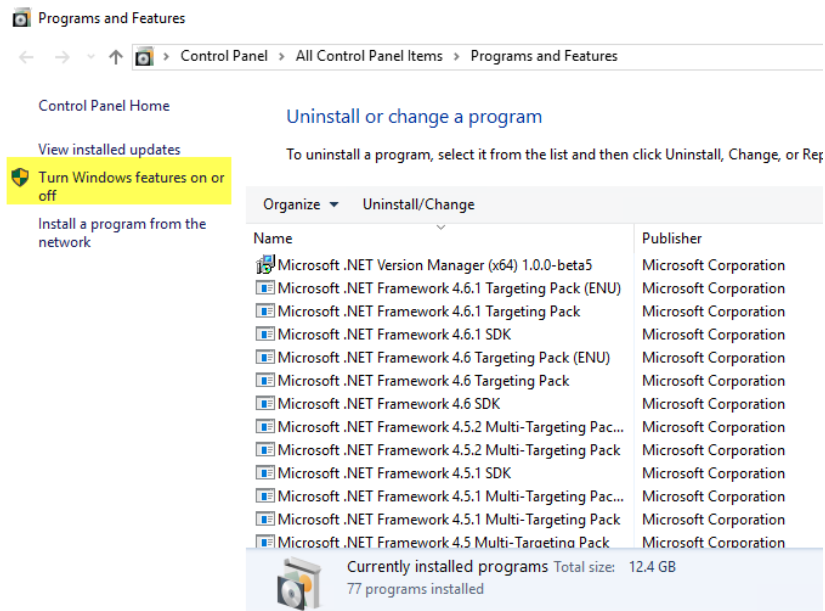


```
Administrator: Windows PowerShell
PS C:\WINDOWS\system32> Enable-WindowsOptionalFeature -Online -FeatureName Microsoft-Hyper-V -All
Do you want to restart the computer to complete this operation now?
[Y] Yes [N] No [?] Help (default is "Y"): Y
```

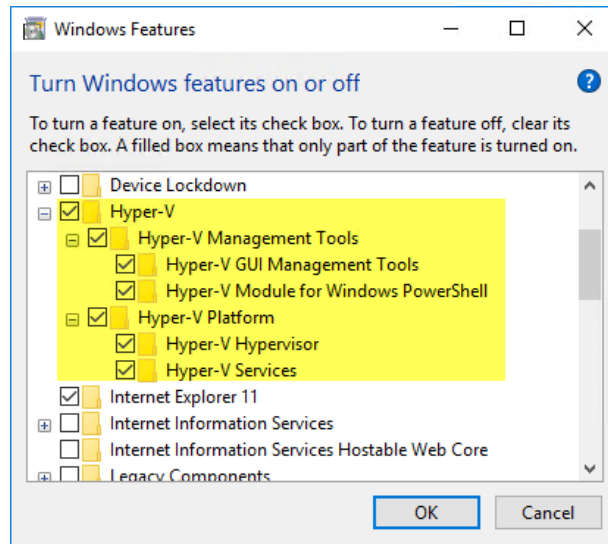
- Verify Windows Hyper-V feature installation
 - During the process of installation, the computer will restart. Once restarted, Go to **Programs and Features**



- Click on **Turn Windows features on or off**

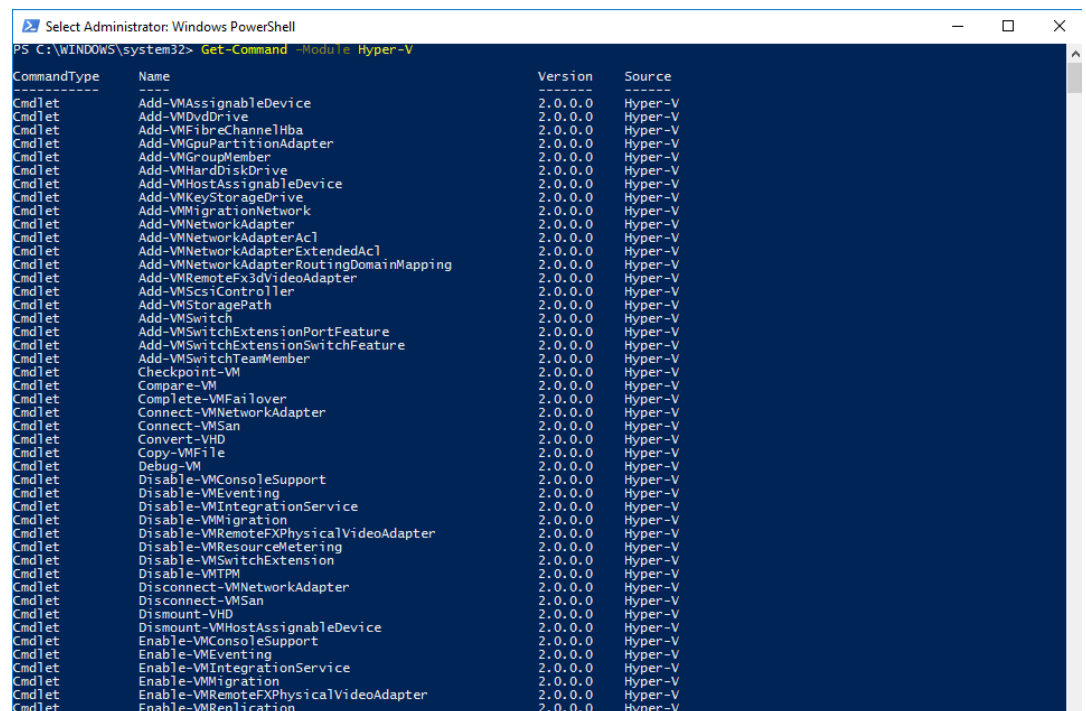


- Verify if Hyper-V is checked as shown in the below screenshot



- You can also verify Hyper-V installation via PowerShell
 - Run the following command in PowerShell window. You should see results as shown in the below screenshot.

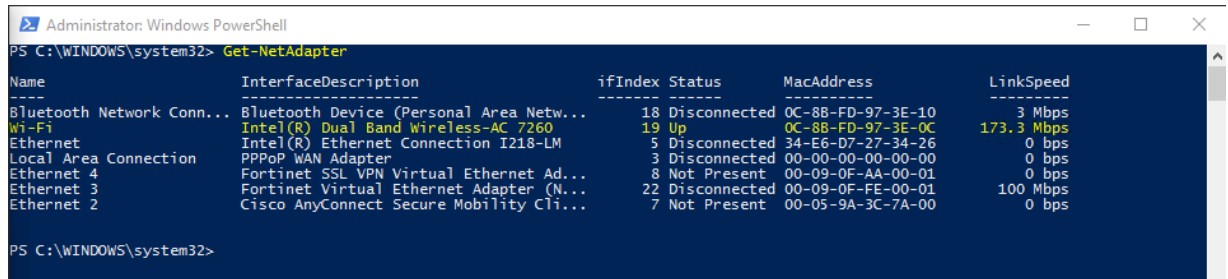
Get-Command -Module Hyper-V



2.8 Create Virtual Switch for Internet Access

- Identify the current network adapter with status **Up**. Run the following command in PowerShell.

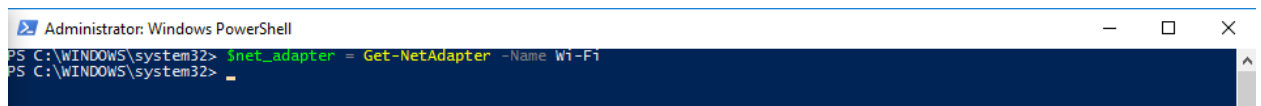
`Get-NetAdapter`



Name	InterfaceDescription	ifIndex	Status	MacAddress	LinkSpeed
Bluetooth Network Conn...	Bluetooth Device (Personal Area Netw...	18	Disconnected	0C-8B-FD-97-3E-10	3 Mbps
Wi-Fi	Intel(R) Dual Band Wireless-AC 7260	19	Up	0C-8B-FD-97-3E-0C	173.3 Mbps
Ethernet	Intel(R) Ethernet Connection I218-LM	5	Disconnected	34-E6-D7-27-34-26	0 bps
Local Area Connection	PPPoP WAN Adapter	3	Disconnected	00-00-00-00-00-00	0 bps
Ethernet 4	Fortinet SSL VPN Virtual Ethernet Ad...	8	Not Present	00-09-0F-AA-00-01	0 bps
Ethernet 3	Fortinet Virtual Ethernet Adapter (N...	22	Disconnected	00-09-0F-FE-00-01	100 Mbps
Ethernet 2	Cisco AnyConnect Secure Mobility Cli...	7	Not Present	00-05-9A-3C-7A-00	0 bps

- In the above screenshot, the **Wi-Fi** network has the status **Up**.
- Next create a variable that refers to your public network adapter. Run the following command in PowerShell.

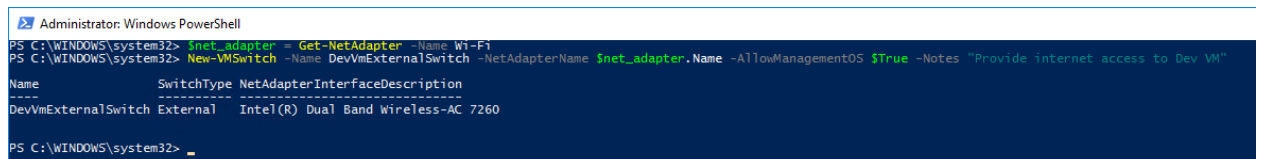
`$net_adapter = Get-NetAdapter -Name Wi-Fi`



```
PS C:\WINDOWS\system32> $net_adapter = Get-NetAdapter -Name Wi-Fi
PS C:\WINDOWS\system32>
```

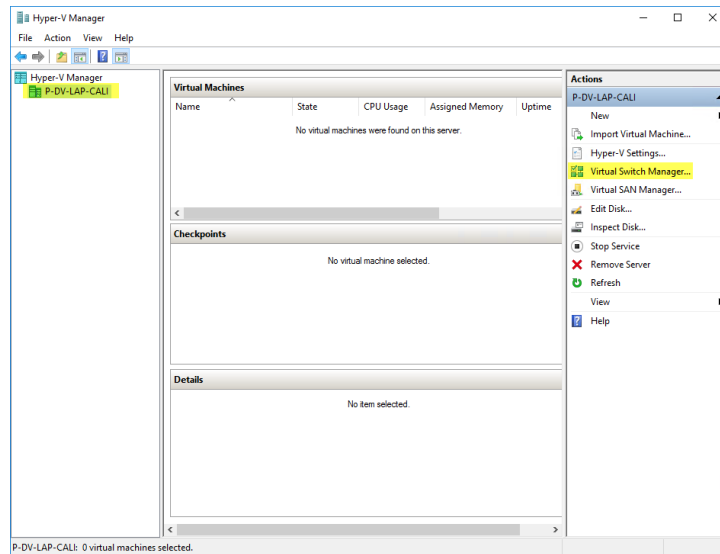
- Now run **New-VMSwitch** command to create the virtual switch. Run the following command in PowerShell window.

`New-VMSwitch -Name DevVmExternalSwitch -NetAdapterName $net_adapter.Name -AllowManagementOS $True -Notes "Provide internet access to Dev VM"`

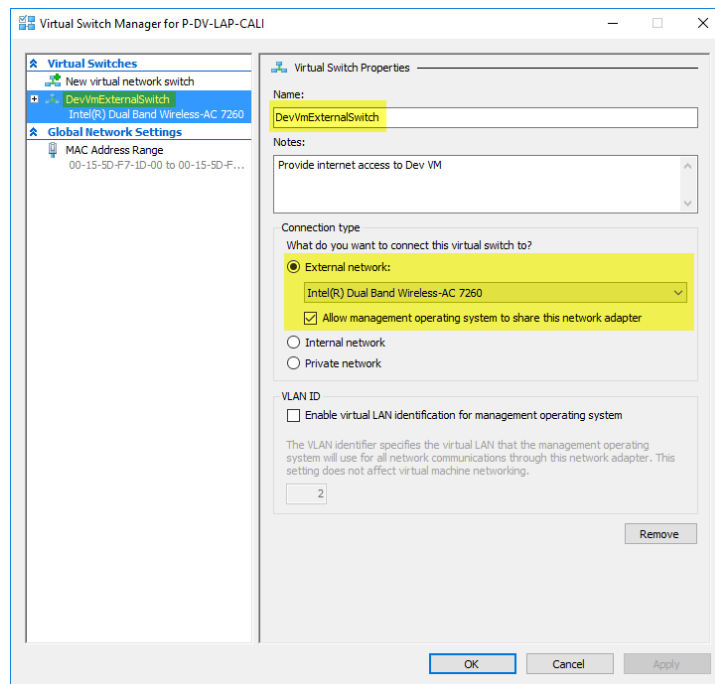


```
PS C:\WINDOWS\system32> $net_adapter = Get-NetAdapter -Name Wi-Fi
PS C:\WINDOWS\system32> New-VMSwitch -Name DevVmExternalSwitch -NetAdapterName $net_adapter.Name -AllowManagementOS $True -Notes "Provide internet access to Dev VM"
Name                SwitchType NetAdapterInterfaceDescription
-----
DevVmExternalSwitch External    Intel(R) Dual Band Wireless-AC 7260
PS C:\WINDOWS\system32>
```

- Verify the Virtual Switch is created
 - Open **Hyper-V Manager** and go to **Virtual Switch Manager**.



- Verify your Virtual Switch **DevVmExternalSwitch** exists as shown in in the below screenshot.



2.9 Clone Relativity Dev VM repository from Github

- You can find the source for Relativity Dev VM open source project at this link - <https://github.com/RelativityDev/relativity-dev-vm>
- Switch to C drive. Run the following command in PowerShell window.

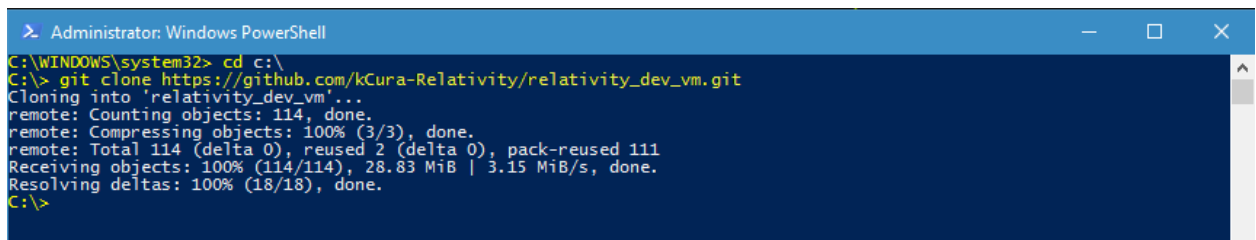
```
cd c:\
```



```
Administrator: Windows PowerShell
C:\WINDOWS\system32> cd c:\
C:\>
```

- Clone the Relativity Dev VM GIT repository to your workstation. Run the following command in PowerShell window.

```
git clone https://github.com/RelativityDev/relativity-dev-vm.git
```

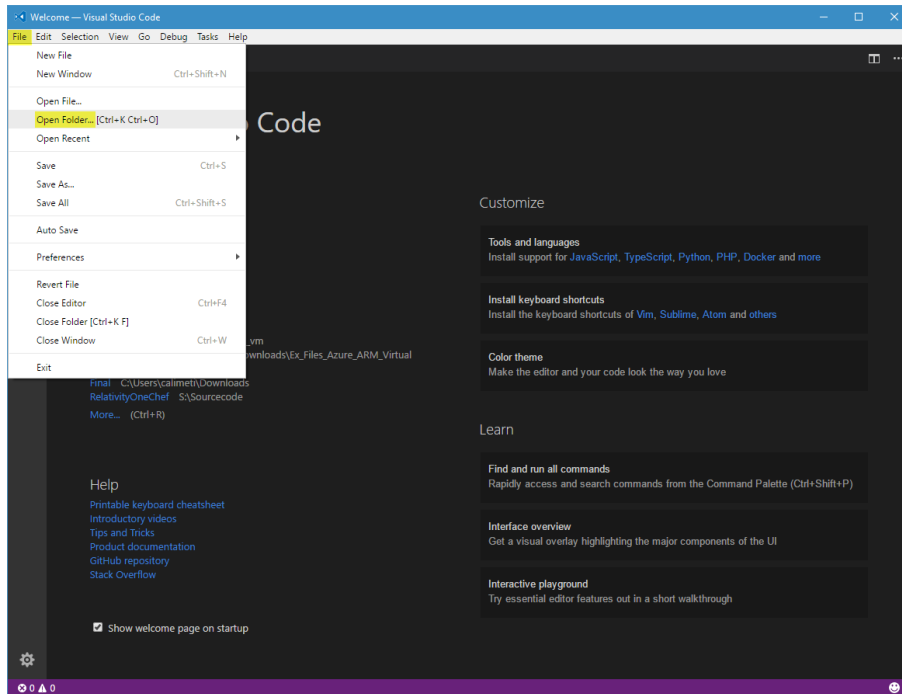


```
Administrator: Windows PowerShell
C:\WINDOWS\system32> cd c:\
C:\> git clone https://github.com/kCura-Relativity/relativity_dev_vm.git
Cloning into 'relativity_dev_vm'...
remote: Counting objects: 114, done.
remote: Compressing objects: 100% (3/3), done.
remote: Total 114 (delta 0), reused 2 (delta 0), pack-reused 111
Receiving objects: 100% (114/114), 28.83 MiB | 3.15 MiB/s, done.
Resolving deltas: 100% (18/18), done.
C:\>
```

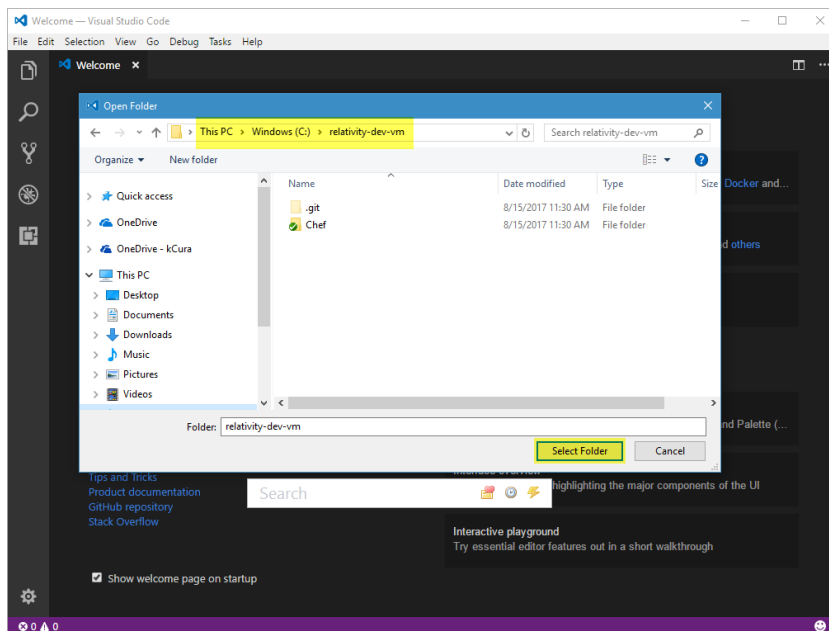
3 Run Test Kitchen commands to create Relativity Dev VM

3.1 Open relativity-dev-vm repository in Visual Studio Code.

- Open **Visual Studio Code** application, click on **File** option and select **Open Folder**.

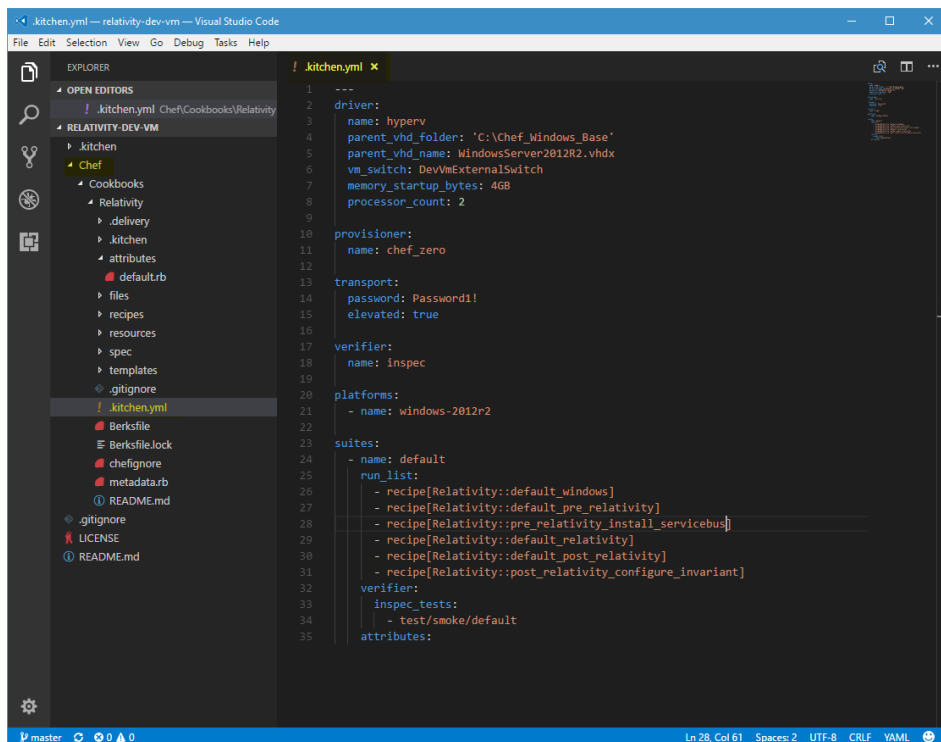


- Select **relativity-dev-vm** folder you previously cloned in your C drive and click **Select Folder**.



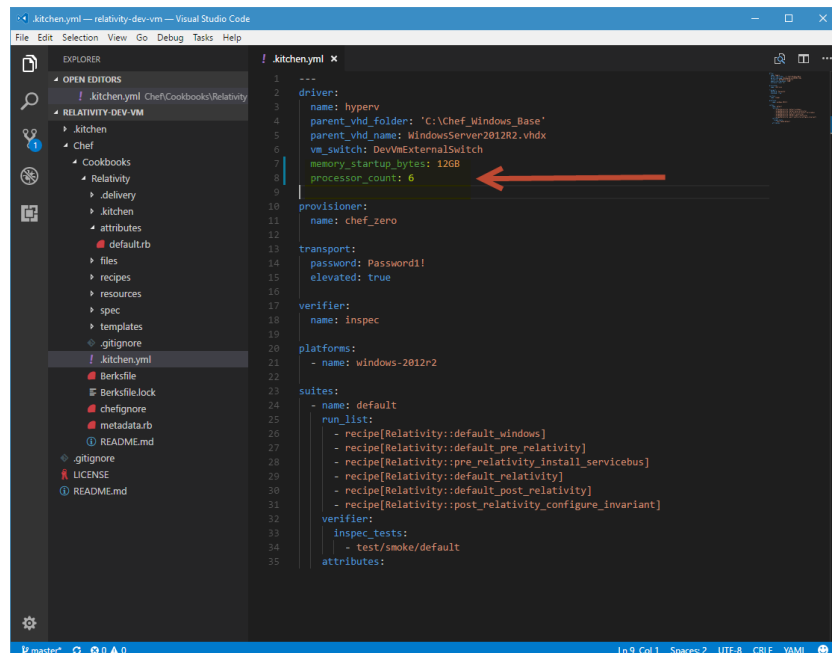
3.2 Update kitchen.yml file for any resource changes

- Open kitchen.yml file in relativity-dev-vm/Chef/Cookbooks/Relativity folder.



```
1 ---
2 driver:
3   name: hyperv
4   parent_vhd_folder: 'C:\Chef_Windows_Base'
5   parent_vhd_name: WindowsServer2012R2.vhdx
6   vm_switch: DevVmExternalSwitch
7   memory_startup_bytes: 4GB
8   processor_count: 2
9
10 provisioner:
11   name: chef_zero
12
13 transport:
14   password: Password!
15   elevated: true
16
17 verifier:
18   name: inspec
19
20 platforms:
21   - name: windows-2012r2
22
23 suites:
24   - name: default
25     run_list:
26       - recipe[Relativity::default_windows]
27       - recipe[Relativity::default_pre_relativity]
28       - recipe[Relativity::pre_relativity_install_servicebus]
29       - recipe[Relativity::default_relativity]
30       - recipe[Relativity::default_post_relativity]
31       - recipe[Relativity::post_relativity_configure_invariant]
32
33 verifier:
34   inspec_tests:
35     - test/smoke/default
36   attributes:
```

- If you have additional resources on your workstation, you can update the processor core and RAM values in the kitchen.yml file.
 - You can change the value of **processor_count** to set the number of processor cores the VM should have.
 - You can change the value of **memory_startup_bytes** to set the amount of RAM the VM should have.



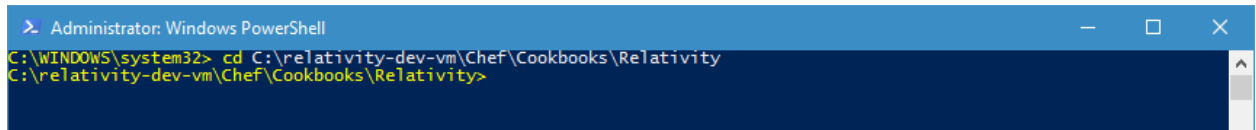
```
1 ---
2 driver:
3   name: hyperv
4   parent_vhd_folder: 'C:\Chef_Windows_Base'
5   parent_vhd_name: WindowsServer2012R2.vhdx
6   vm_switch: DevVmExternalSwitch
7   memory_startup_bytes: 12GB
8   processor_count: 6
9
10 provisioner:
11   name: chef_zero
12
13 transport:
14   password: Password!
15   elevated: true
16
17 verifier:
18   name: inspec
19
20 platforms:
21   - name: windows-2012r2
22
23 suites:
24   - name: default
25     run_list:
26       - recipe[Relativity::default_windows]
27       - recipe[Relativity::default_pre_relativity]
28       - recipe[Relativity::pre_relativity_install_servicebus]
29       - recipe[Relativity::default_relativity]
30       - recipe[Relativity::default_post_relativity]
31       - recipe[Relativity::post_relativity_configure_invariant]
32
33 verifier:
34   inspec_tests:
35     - test/smoke/default
36   attributes:
```

3.3 Create a Hyper-V with Relativity installed

3.3.1 Create Hyper-V VM

- Move to the repository directory. Run the following command in PowerShell window.

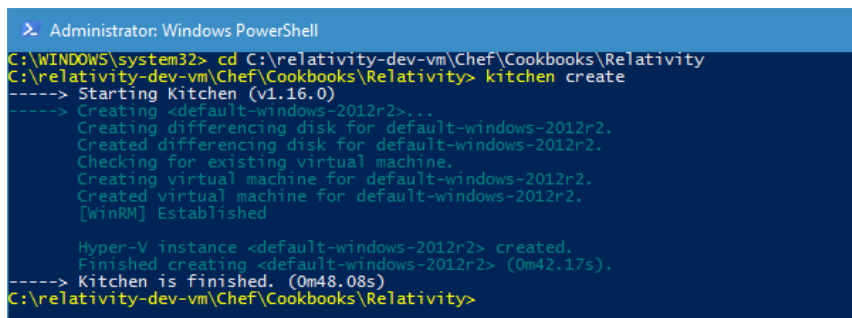
```
cd C:\relativity-dev-vm\Chef\Cookbooks\Relativity
```



```
Administrator: Windows PowerShell
C:\WINDOWS\system32> cd C:\relativity-dev-vm\Chef\Cookbooks\Relativity
C:\relativity-dev-vm\Chef\Cookbooks\Relativity>
```

- Create a Hyper-V VM using test kitchen. Run the following command in PowerShell window.

```
kitchen create
```

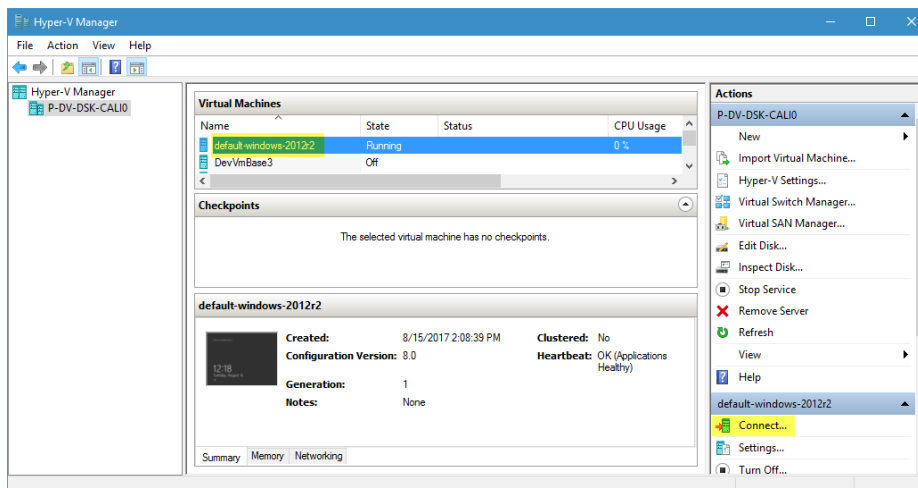


```
Administrator: Windows PowerShell
C:\WINDOWS\system32> cd C:\relativity-dev-vm\Chef\Cookbooks\Relativity
C:\relativity-dev-vm\Chef\Cookbooks\Relativity> kitchen create
-----> Starting Kitchen (v1.16.0)
-----> Creating <default-windows-2012r2>...
Creating differencing disk for default-windows-2012r2.
Created differencing disk for default-windows-2012r2.
Checking for existing virtual machine.
Creating virtual machine for default-windows-2012r2.
Created virtual machine for default-windows-2012r2.
[WinRM] Established

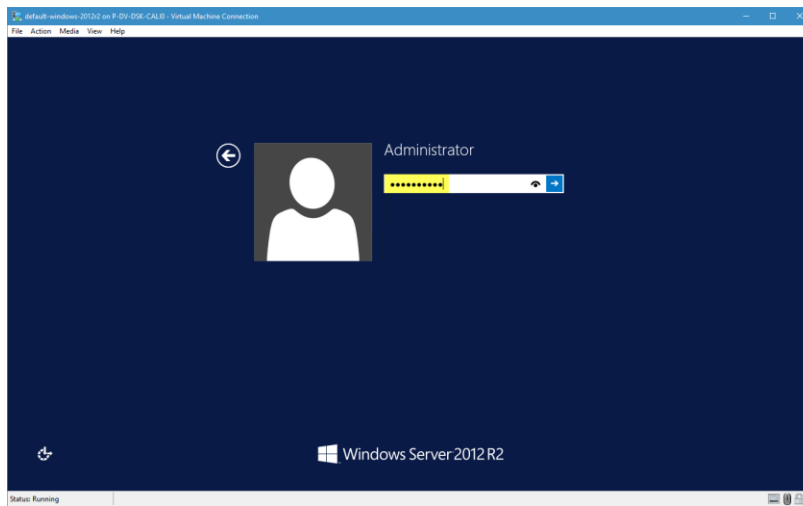
Hyper-V instance <default-windows-2012r2> created.
Finished creating <default-windows-2012r2> (0m42.17s).
-----> Kitchen is finished. (0m48.08s)
C:\relativity-dev-vm\Chef\Cookbooks\Relativity>
```

3.3.2 Copy installation files to Hyper-V VM

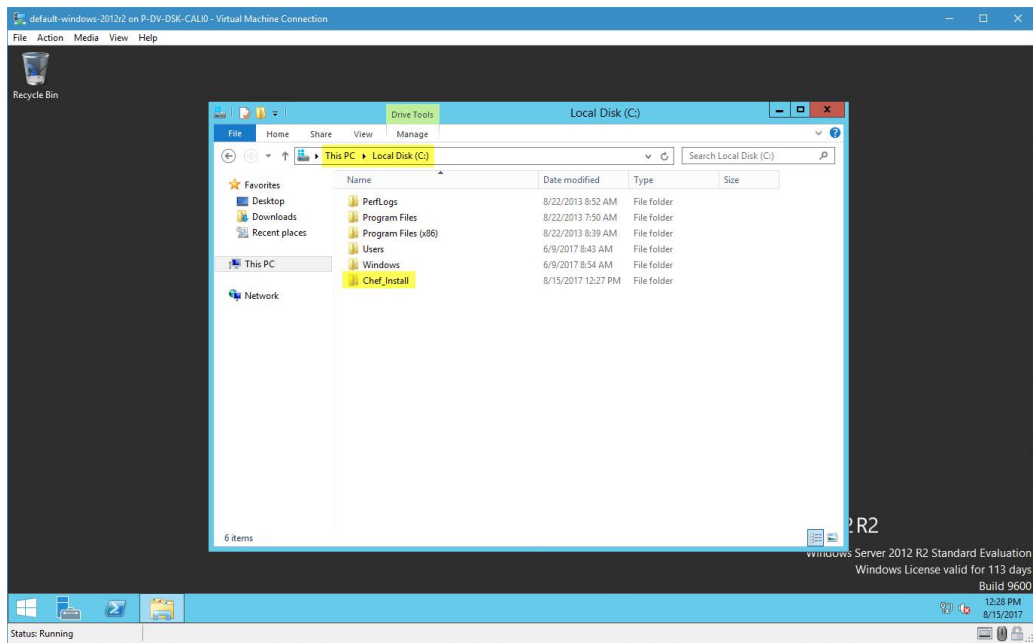
- Connect to your Hyper-V VM from Hyper-V Manager



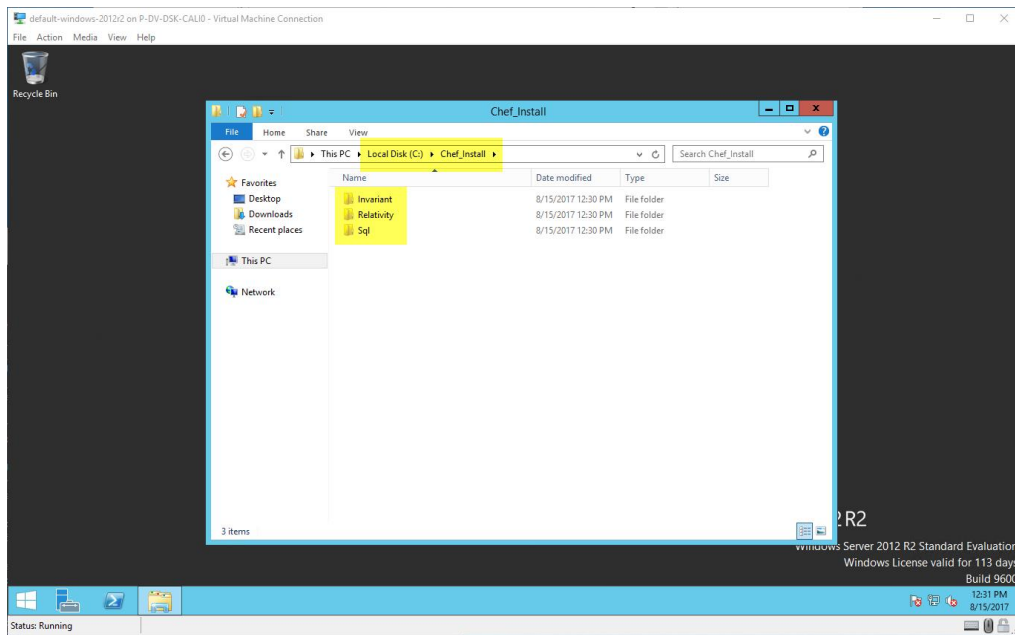
- Enter the password(**Password1!**) for the **Administrator** account and press **Enter**.



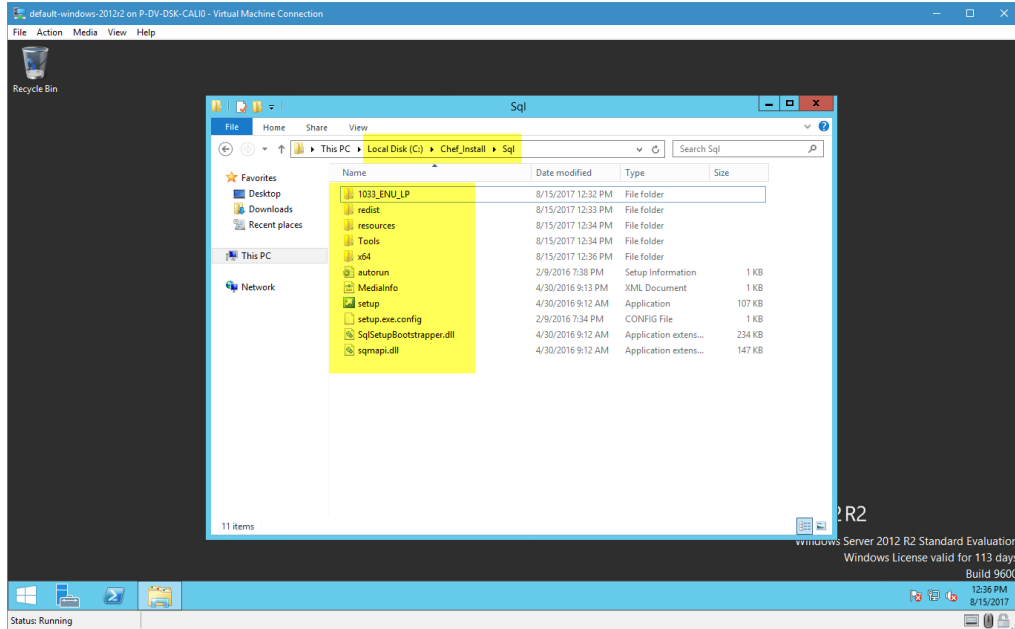
- On your VM, go to C drive and create a folder named **Chef_Install**



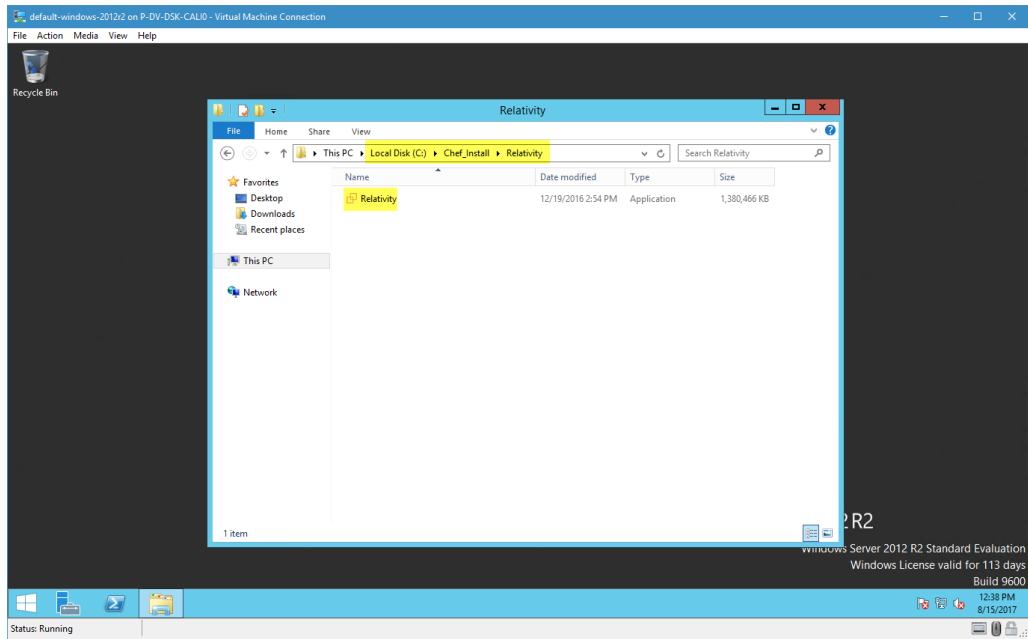
- Create folders named **Sql**, **Relativity** and **Invariant** inside the **Chef_install** folder.



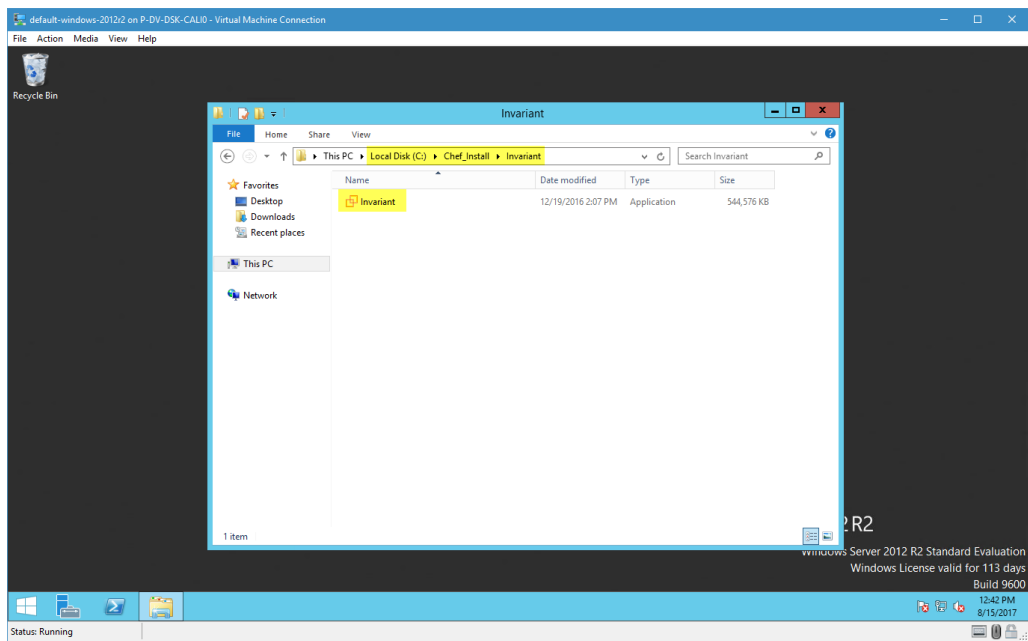
- Extract the **SQL Server 2016 Developer Edition ISO** file previously downloaded and copy its contents to the **Sql** folder on the Hyper-V VM.



- Copy Relativity installer file to **Relativity** folder on the Hyper-V VM.

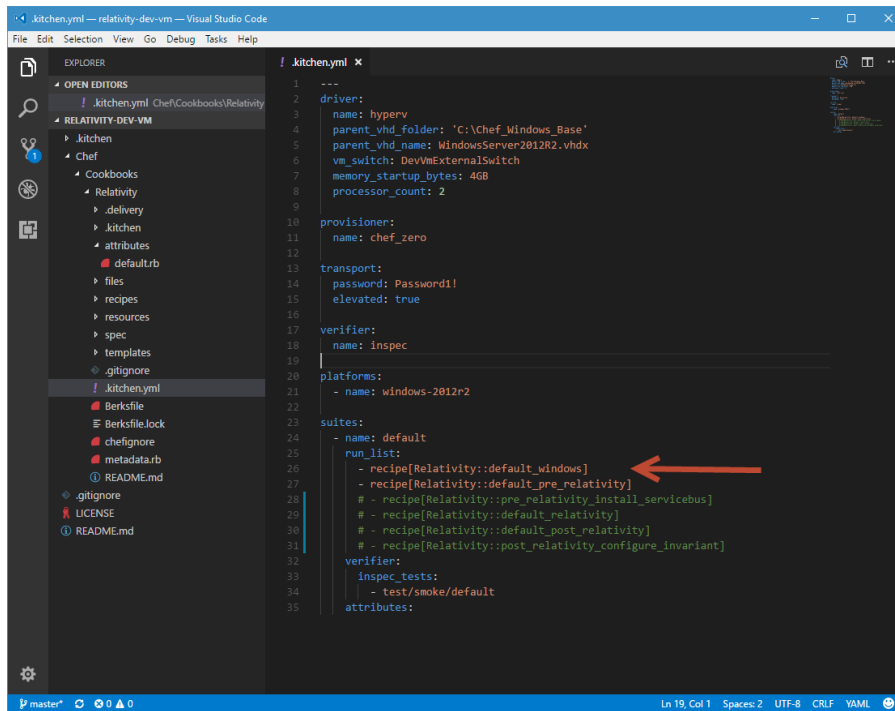


- Copy Invariant installer file to **Invariant** folder on the Hyper-V VM.



3.3.3 Run pre-relativity install chef script

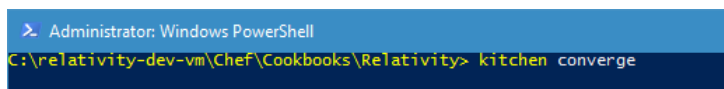
- In kitchen.yml file, comment the recipes except for pre-relativity install chef recipes as shown in the following screenshot.



```
1 ---
2 driver:
3   name: hyperv
4   parent_vhd_folder: 'C:\Chef_Windows_Base'
5   parent_vhd_name: WindowsServer2012R2.vhdx
6   vm_switch: DevVmExternalSwitch
7   memory_startup_bytes: 4GB
8   processor_count: 2
9
10  provisioner:
11    name: chef_zero
12
13  transport:
14    password: Password1!
15    elevated: true
16
17  verifier:
18    name: inspec
19
20  platforms:
21    - name: windows-2012r2
22
23  suites:
24    - name: default
25      run_list:
26        - recipe[Relativity::default_windows]
27        - recipe[Relativity::default_pre_relativity]
28        # - recipe[Relativity::pre_relativity_install_servicebus]
29        # - recipe[Relativity::default_relativity]
30        # - recipe[Relativity::default_post_relativity]
31        # - recipe[Relativity::post_relativity_configure_invariant]
32
33  verifier:
34    inspec_tests:
35      - test/smoke/default
36
37  attributes:
```

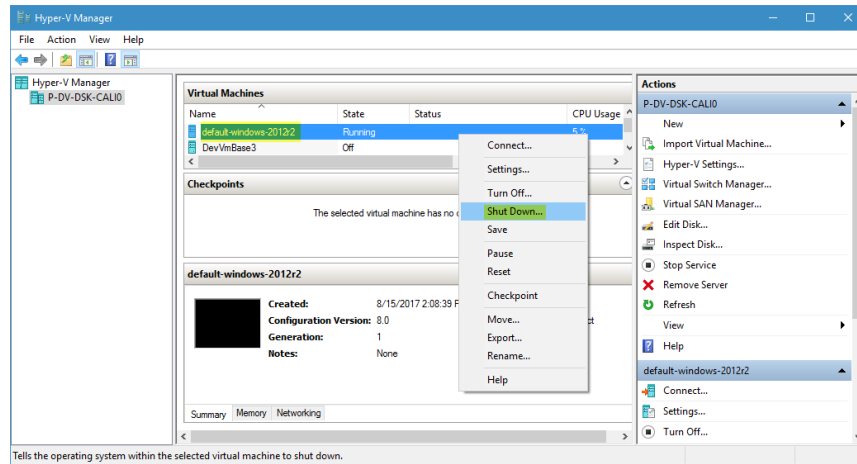
- Run the pre-relativity install chef scripts. Run the following command in PowerShell window.

kitchen converge

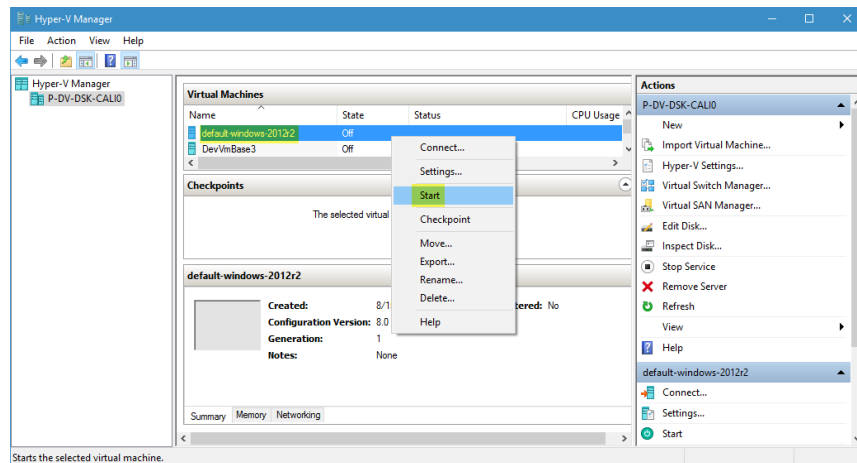


```
> Administrator: Windows PowerShell
C:\relativity-dev-vm\Chef\Cookbooks\Relativity> kitchen converge
```


- Go to **Hyper-V manager** and restart (**Shut Down** and **Start**) your VM once the script finishes execution.
 - Shut Down

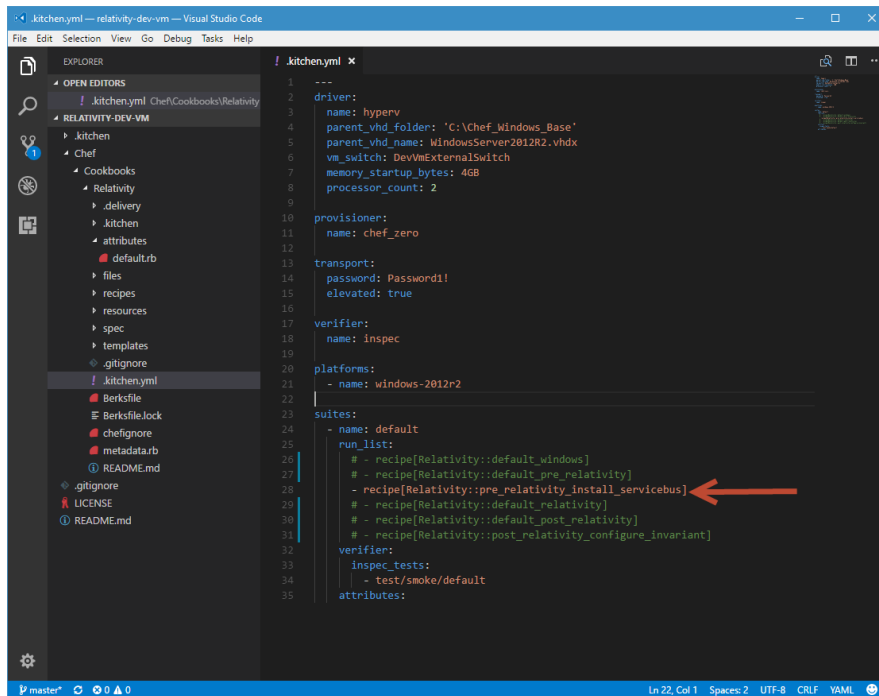


- Start



3.3.4 Run pre-relativity service bus install chef script

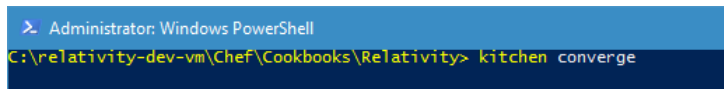
- In kitchen.yml file, comment the recipes except for pre-relativity service bus install chef recipe as shown in the following screenshot.



```
1 ---
2 driver:
3   name: hyperv
4   parent_vhd_folder: 'C:\Chef_Windows_Base'
5   parent_vhd_name: WindowsServer2012R2.vhdx
6   vm_switch: DevVMExternalSwitch
7   memory_startup_bytes: 4GB
8   processor_count: 2
9
10  provisioner:
11    name: chef_zero
12
13  transport:
14    password: Password1!
15    elevated: true
16
17  verifier:
18    name: inspec
19
20  platforms:
21    - name: windows-2012r2
22
23  suites:
24    - name: default
25      run_list:
26        # - recipe[Relativity::default_windows]
27        # - recipe[Relativity::default_pre_relativity]
28        - recipe[Relativity::pre_relativity_install_servicebus]
29        # - recipe[Relativity::default_relativity]
30        # - recipe[Relativity::default_post_relativity]
31        # - recipe[Relativity::post_relativity_configure_invariant]
32
33      verifier:
34        inspec_tests:
35          - test/smoke/default
36        attributes:
```

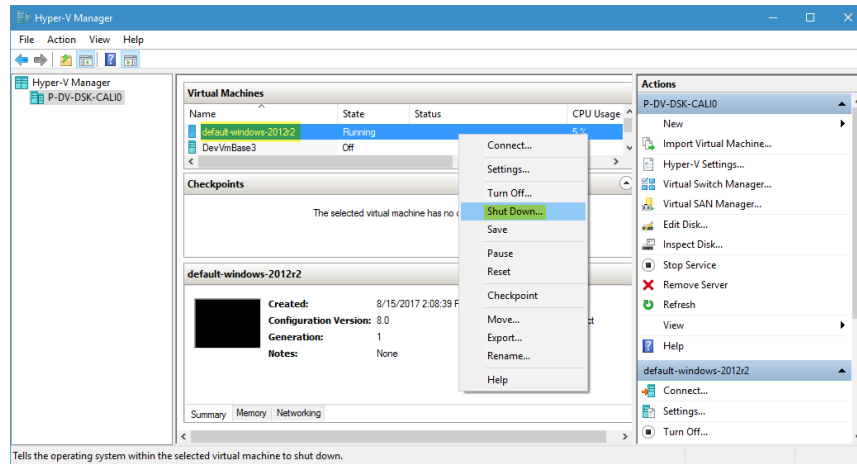
- Run the pre-relativity install chef scripts. Run the following command in PowerShell window.

kitchen converge

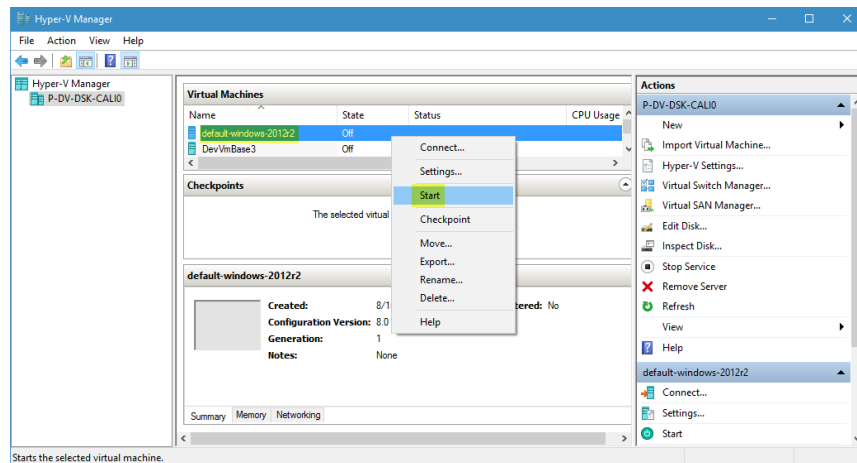


```
Administrator: Windows PowerShell
C:\relativity-dev-vm\Chef\Cookbooks\Relativity> kitchen converge
```

- Go to **Hyper-V manager** and restart (**Shut Down** and **Start**) your VM once the script finishes execution.
 - Shut Down

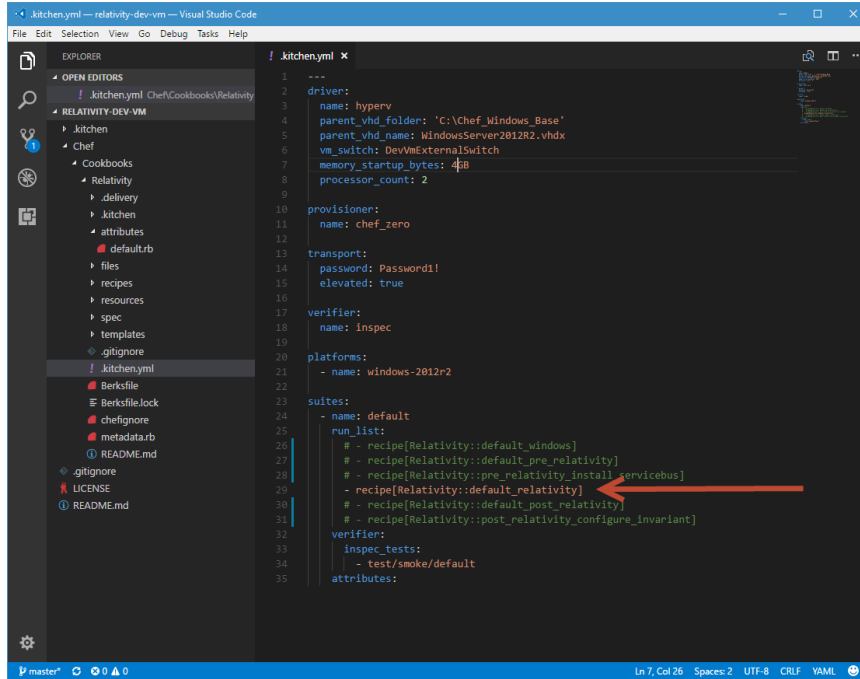


- Start



3.3.5 Run relativity install chef script

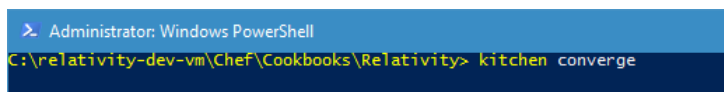
- In kitchen.yml file, comment the recipes except for relativity install chef recipes as shown in the following screenshot.



```
1 ---
2 driver:
3   name: hyperv
4   parent_vhd_folder: 'C:\Chef_Windows_Base'
5   parent_vhd_name: WindowsServer2012R2.vhdx
6   vm_switch: DevVMEExternalSwitch
7   memory_startup_bytes: 4GB
8   processor_count: 2
9
10  provisioner:
11    name: chef_zero
12
13  transport:
14    password: Password1
15    elevated: true
16
17  verifier:
18    name: inspec
19
20  platforms:
21    - name: windows-2012r2
22
23  suites:
24    - name: default
25      run_list:
26        # - recipe[Relativity::default_windows]
27        # - recipe[Relativity::default_pre_relativity]
28        # - recipe[Relativity::pre_relativity_install_servicebus]
29        - recipe[Relativity::default_relativity]
30        # - recipe[Relativity::default_post_relativity]
31        # - recipe[Relativity::post_relativity_configure_invariant]
32
33  verifier:
34    inspec_tests:
35      - test/smoke/default
36
37  attributes:
```

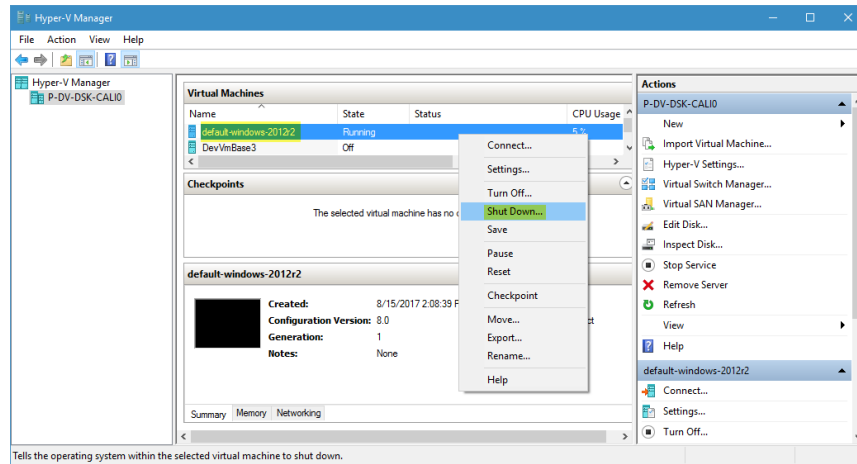
- Run the relativity install chef scripts. Run the following command in PowerShell window.

kitchen converge

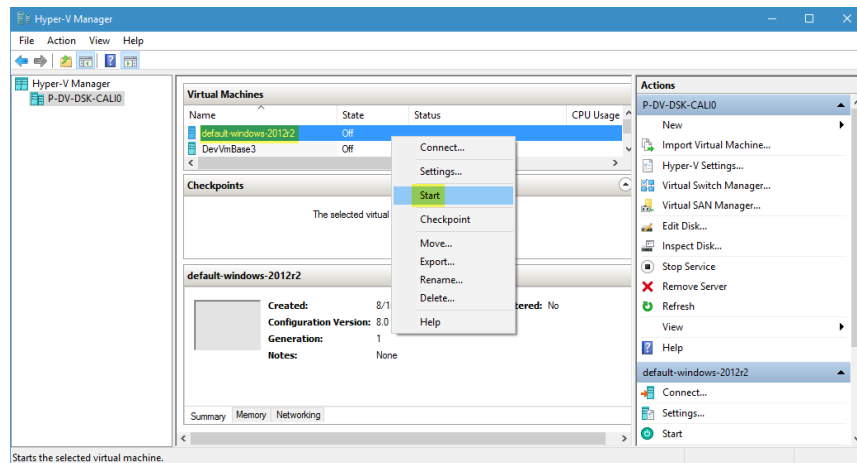


```
Administrator: Windows PowerShell
C:\relativity-dev-vm\Chef\Cookbooks\Relativity> kitchen converge
```

- Go to **Hyper-V manager** and restart (**Shut Down** and **Start**) your VM once the script finishes execution.
 - Shut Down

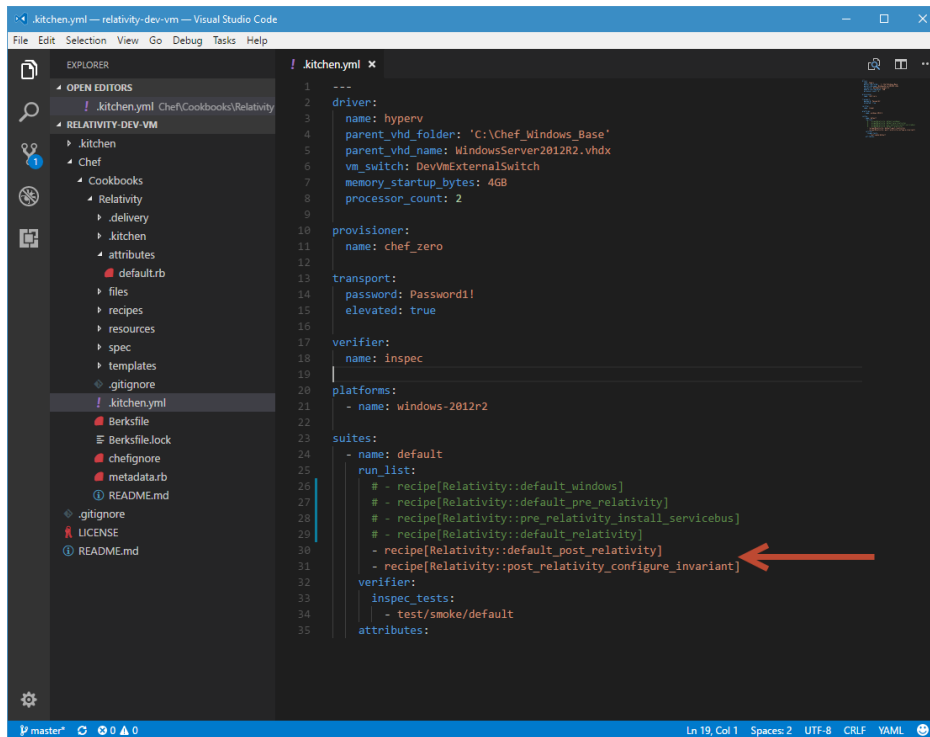


- Start



3.3.6 Run post-relativity install chef script

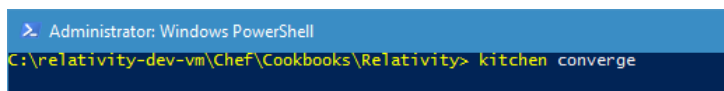
- In kitchen.yml file, comment the recipes except for post-relativity install chef recipes as shown in the following screenshot.



```
1 ---
2 driver:
3   name: hyperv
4   parent_vhd_folder: 'C:\Chef_Windows_Base'
5   parent_vhd_name: WindowsServer2012R2.vhdx
6   vm_switch: DevVmExternalSwitch
7   memory_startup_bytes: 4Gb
8   processor_count: 2
9
10  provisioner:
11    name: chef_zero
12
13  transport:
14    password: Password!
15    elevated: true
16
17  verifier:
18    name: inspec
19
20  platforms:
21    - name: windows-2012r2
22
23  suites:
24    - name: default
25      run_list:
26        # - recipe[Relativity::default_windows]
27        # - recipe[Relativity::default_pre_relativity]
28        # - recipe[Relativity::pre_relativity_install_servicebus]
29        # - recipe[Relativity::default_relativity]
30        - recipe[Relativity::default_post_relativity]
31        - recipe[Relativity::post_relativity_configure_invariant]
32
33  verifier:
34    inspec_tests:
35      - test/smoke/default
36
37  attributes:
```

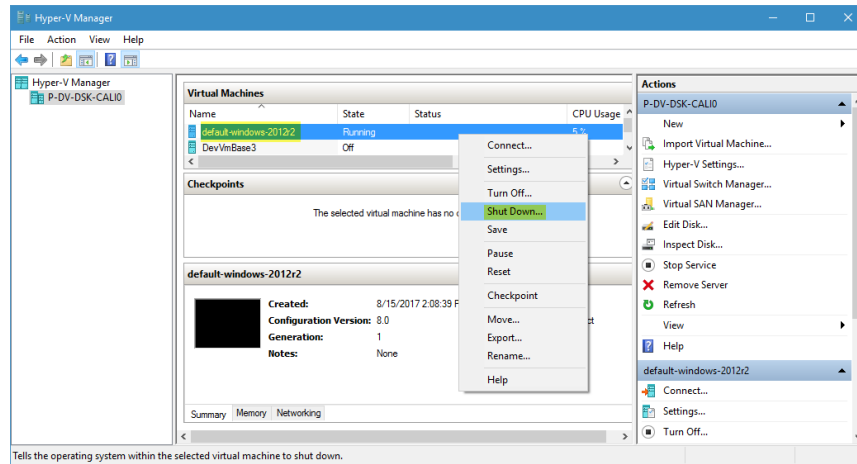
- Run the post-relativity install chef scripts. Run the following command in PowerShell window.

kitchen converge



```
Administrator: Windows PowerShell
C:\relativity-dev-vm\Chef\Cookbooks\Relativity> kitchen converge
```

- Go to **Hyper-V manager** and restart (**Shut Down** and **Start**) your VM once the script finishes execution.
 - Shut Down



- Start

