



NetBackup Deployment Template User Guide for Chef

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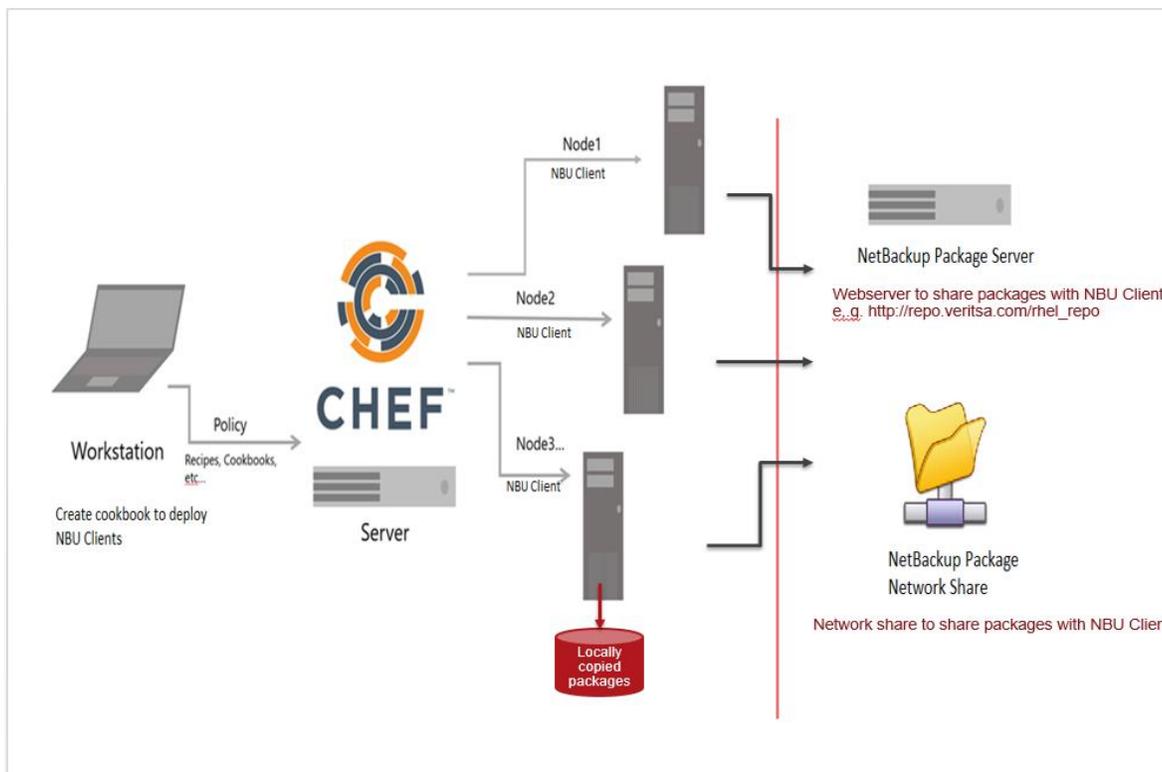
Third-party mass-deployment tools such as Chef and System Center Configuration Manager (SCCM) make deploying software on different platforms much easier. These tools help to configure systems, to deploy software, and to orchestrate more advanced IT tasks such as continuous deployments and performance of custom actions before and after deployments.

NetBackup clients are available for platforms such as Linux, Solaris, AIX, HP-UX, and Windows that have different deployment methods. Chef and similar tools let customers use remote webservers, network shares, or local drives to deploy NetBackup clients. The tools also perform some custom actions to obtain NetBackup environment details and to update the exclude list and the include list details.

Chef supports most NetBackup platforms. Veritas has developed deployment templates for Chef that you can use to deploy NetBackup clients.

Setup and Prerequisites

The following architecture diagram shows how the Chef environment can deploy NetBackup clients.



Hardware requirements

The machines required in the architecture are as follows:

- The Chef workstation, where you create NetBackup deployment cookbooks for different platform
- The Chef server, which maintains cookbooks and performs operations on the NetBackup clients
- The nodes or NetBackup clients
- The NetBackup package server, a web server that provides the NetBackup packages to the NetBackup clients
- The NetBackup package network share, a network share that provides NetBackup packages to the NetBackup clients

Software requirements

Ensure that the Chef client is installed on all the NetBackup clients.

Ensure that Curl is available on all NetBackup clients that communicate to the NetBackup Package Server

Chef must be Chef 12.0 or later

Linux, Solaris x86 and SPARC, and AIX platforms are supported. See the NetBackup Software Compatibility list for specific versions that NetBackup supports:

<https://netbackup.com/compatibility>

Deploying NetBackup clients using Chef deployment templates

Chef cookbooks, or deployment templates, contain recipes, metadata, attributes, resources, templates, and libraries that assists in creating a functioning system. The cookbook's attributes recipes, and templates are the core of NetBackup client deployment.

Note: The Chef cookbook name for the NetBackup client deployment is `nbu_client`.

Creating the Chef cookbook

Chef must be running to set up the cookbook.

To set up the Chef cookbook

1. On the Chef workstation, create the cookbook:

```
chef cookbook generate nbu_client
```

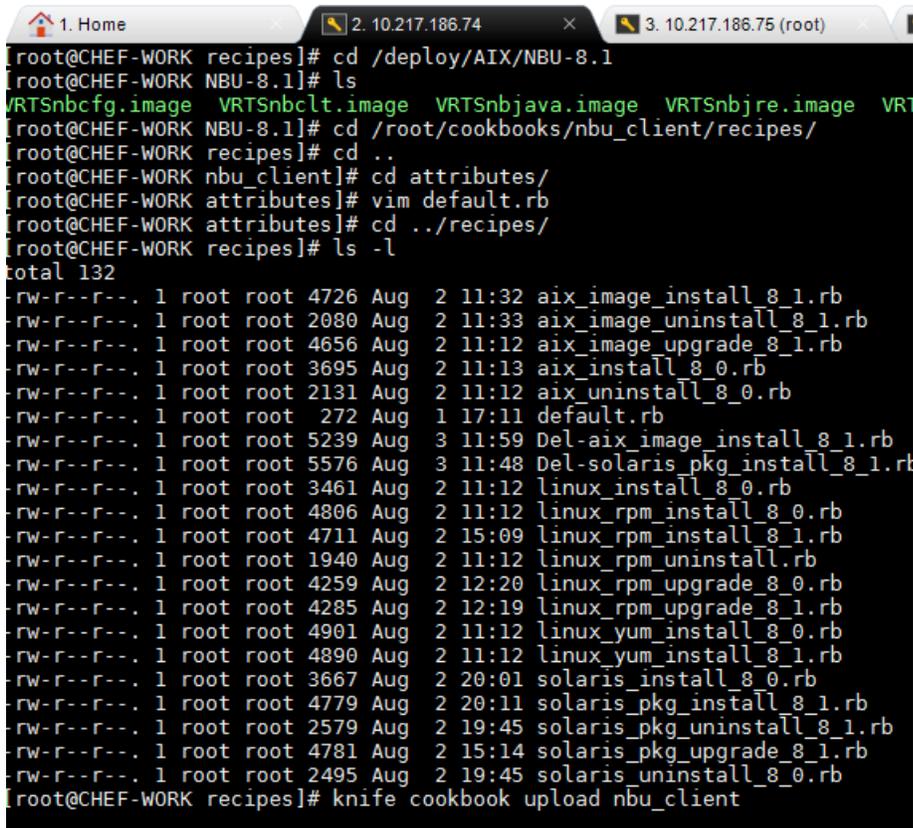
2. Download the `nbu_client` cookbook `.tar` file from SORT, as follows:

<https://sort.veritas.com/utility/netbackup/deployment>

3. Extract the `nbu_client` cookbook `.tar` file to a temporary location.

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4. Replace the attributes, recipe, and templates directory from the extracted folder with the `nbu_client` cookbook created on the Chef workstation, as shown in the following example:



```
root@CHEF-WORK recipes]# cd /deploy/AIX/NBU-8.1
root@CHEF-WORK NBU-8.1]# ls
VRTSnbcfg.image VRTSnbclt.image VRTSnbjava.image VRTSnbjre.image VRT
root@CHEF-WORK NBU-8.1]# cd /root/cookbooks/nbu_client/recipes/
root@CHEF-WORK recipes]# cd ..
root@CHEF-WORK nbu_client]# cd attributes/
root@CHEF-WORK attributes]# vim default.rb
root@CHEF-WORK attributes]# cd ../recipes/
root@CHEF-WORK recipes]# ls -l
total 132
-rw-r--r-- 1 root root 4726 Aug  2 11:32 aix_image_install_8_1.rb
-rw-r--r-- 1 root root 2080 Aug  2 11:33 aix_image_uninstall_8_1.rb
-rw-r--r-- 1 root root 4656 Aug  2 11:12 aix_image_upgrade_8_1.rb
-rw-r--r-- 1 root root 3695 Aug  2 11:13 aix_install_8_0.rb
-rw-r--r-- 1 root root 2131 Aug  2 11:12 aix_uninstall_8_0.rb
-rw-r--r-- 1 root root 272 Aug  1 17:11 default.rb
-rw-r--r-- 1 root root 5239 Aug  3 11:59 Del-aix_image_install_8_1.rb
-rw-r--r-- 1 root root 5576 Aug  3 11:48 Del-solaris_pkg_install_8_1.rb
-rw-r--r-- 1 root root 3461 Aug  2 11:12 linux_install_8_0.rb
-rw-r--r-- 1 root root 4806 Aug  2 11:12 linux_rpm_install_8_0.rb
-rw-r--r-- 1 root root 4711 Aug  2 15:09 linux_rpm_install_8_1.rb
-rw-r--r-- 1 root root 1940 Aug  2 11:12 linux_rpm_uninstall.rb
-rw-r--r-- 1 root root 4259 Aug  2 12:20 linux_rpm_upgrade_8_0.rb
-rw-r--r-- 1 root root 4285 Aug  2 12:19 linux_rpm_upgrade_8_1.rb
-rw-r--r-- 1 root root 4901 Aug  2 11:12 linux_yum_install_8_0.rb
-rw-r--r-- 1 root root 4890 Aug  2 11:12 linux_yum_install_8_1.rb
-rw-r--r-- 1 root root 3667 Aug  2 20:01 solaris_install_8_0.rb
-rw-r--r-- 1 root root 4779 Aug  2 20:11 solaris_pkg_install_8_1.rb
-rw-r--r-- 1 root root 2579 Aug  2 19:45 solaris_pkg_uninstall_8_1.rb
-rw-r--r-- 1 root root 4781 Aug  2 15:14 solaris_pkg_upgrade_8_1.rb
-rw-r--r-- 1 root root 2495 Aug  2 19:45 solaris_uninstall_8_0.rb
root@CHEF-WORK recipes]# knife cookbook upload nbu_client
```

5. In the `recipes` directory, upload the `nbu_client` cookbook to the Chef server, as follows:

```
knife cookbook upload nbu_client
```

Setting up the NetBackup configuration files

The next step in the deployment is to ensure that the NetBackup configuration files are properly set up. You must create the configuration files for each platform and keep them in a temporary directory.

To update the NetBackup configuration files

1. For each platform you use, create a `client_config.conf` file that contains the list of clients. Provide the name of the NetBackup master server to which the clients will connect, the client names, and whether to start services. Following is an example:

```
Client, Master server, Services
nbuclient1.deploy.nbu, nbumaster.deploy.nbu, yes
nbuclient2.deploy.nbu, nbumaster.deploy.nbu, no
```

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2. For each platform you use, create a `client_config.conf` file that contains the list of NetBackup master servers. Provide the master server names; for NetBackup 8.1, also provide their certificate fingerprints and their authorization tokens as required by the NetBackup version. Following is an example:

```
Master server, CA_CERTIFICATE_FINGERPRINT, AUTHORIZATION_TOKEN
nbumaster1.deploy.nbu,AAAAA,BBBBBB
nbuclient2.deploy.nbu,xxxxxxx,yyyyyyy
```

3. For each platform you use, create `exclude_list` and `include_list` files, if you want to set default entries. These parameters are set for your NetBackup clients after installation is complete.

Setting up the NetBackup client package for Linux

The next step in the deployment is to set up the client package. Instructions that follow in this section are for RPM, Yum repositories, network share, and local client on Linux.

To set up Linux installation from the NetBackup package web server using RPM

1. On the NetBackup package web server, create a directory for each NetBackup version. Following is a RedHat Linux example:

```
cp
NetBackup_8.0_CLIENTS2/NBclients/anb/Clients/usr/opensv/netbackup/client/Linux/RedH
at2.6.18 <web_server_location>/deploy/RedHat/NBU-8.0
```

2. Ensure that you can access the packages from the HTTP URL of the NetBackup package web server:

<http://installvm.company.com/deploy/RedHat/NBU-8.0>

3. Update the attributes in the `attributes/default.rb` file for the `nbu_client` cookbook. For example, edit `Linux Package Details` and set the following attributes:

```
default['package_server'] = 'http://installvm.company.com'
default['nbu_linux_client']['use_webserver_version'] = true
default['nbu_linux_client']['rhel_remote_path_XX'] = 'deploy/RHEL'
default['nbu_linux_client']['suse_remote_path_XX'] = 'deploy/SUSE'
default['nbu_linux_client']['zrhel_remote_path_XX'] = 'deploy/RHEL/s390x'
default['nbu_linux_client']['zsuse_remote_path_XX'] = 'deploy/SUSE/s390x'
```

4. Copy the NetBackup configuration files to the package directories you created.
5. After you have modified the attributes, upload the cookbook to the Chef server:

```
knife cookbook upload nbu_client
```

To set up Linux installation from the NetBackup package web server using Yum repositories

1. On the NetBackup package web server, create a directory for each NetBackup version. Following is a RedHat Linux example:

```
cp
NetBackup_8.0_CLIENTS2/NBclients/anb/Clients/usr/opensv/netbackup/client/Linux/RedH
at2.6.18 <web_server_location>/deploy/RedHat/NBU-8.0
```

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2. Create the Yum repository and share it on the NetBackup client nodes. Refer to the `linux_yum_install_XX.rb` recipe for instructions on how to create the repository.
3. Ensure that you can access the packages from the HTTP URL of the NetBackup package web server:
<http://installvm.company.com/deploy/RedHat/NBU-8.0>
4. Update the attributes in the `attributes/default.rb` file for the `nbu_client` cookbook. For example, edit `Linux Package Details` and set the following attributes:

```
default['package_server'] = 'http://installvm.company.com'  
default['nbu_linux_client']['use_webserver_version'] = true  
default['nbu_linux_client']['rhel_yum_repo'] = 'repo_name'  
default['nbu_linux_client']['suse_yum_repo'] = 'repo_name'
```

5. Copy the NetBackup configuration files to the package directories you created.
6. After you have modified the attributes, upload the cookbook to the Chef server:

```
knife cookbook upload nbu_client
```

To set up Linux installation from a network (NFS) share

1. Create a directory on the share for each NetBackup for each Linux platform. Following is a RedHat Linux example:

```
cp  
NetBackup_8.0_CLIENTS2/NBclients/anb/Clients/usr/opensv/netbackup/client/Linux/RedH  
at2.6.18 <web_server_location>/deploy/RedHat/NBU-8.0
```

2. Ensure that you can mount the package directory on the NetBackup client node, as in the following example:

```
Mount installvm.company.com:/deploy/RedHat /mnt
```

3. Update the attributes in the `attributes/default.rb` file for the `nbu_client` cookbook. For example, edit `Linux Package Details` and set the following attributes:

```
default['package_server'] = 'http://installvm.company.com'  
default['nbu_linux_client']['use_webserver_version'] = true  
default['nbu_linux_client']['rhel_mount_path_XX'] = '/deploy/RHEL'  
default['nbu_linux_client']['suse_mount_path_XX'] = '/deploy/SUSE'  
default['nbu_linux_client']['zrhel_mount_path_XX'] = '/deploy/RHEL'  
default['nbu_linux_client']['zsuse_mount_path_XX'] = '/deploy/SUSE'
```

4. Copy the NetBackup configuration files to the package directories you created.
5. After you have modified the attributes, upload the cookbook to the Chef server:

```
knife cookbook upload nbu_client
```

To set up Linux installation from a local path

1. Create a directory on the NetBackup client and copy the packages there. Following is a RedHat Linux example:

```
cp  
NetBackup_8.0_CLIENTS2/NBclients/anb/Clients/usr/opensv/netbackup/client/Linux/RedH  
at2.6.18 /tmp/ RHEL_PACKAGE
```

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2. Ensure that you can mount the package directory on the NetBackup client node, as in the following example:

```
mount installvm.company.com:/deploy/RedHat /mnt
```

3. Update the attributes in the `attributes/default.rb` file for the `nbu_client` cookbook. For example, edit `Linux Package Details` and set the following attributes:

```
# For 8.0 and 8.1 set Master server name, start service flag
default['masterserver'] = 'nbumaster.deploy.nbu'
default['startservices'] = 'yes'

# For 8.1 set CA_CERTIFICATE_FINGERPRINT and AUTHORIZATION_TOKEN
default['CA_CERTIFICATE_FINGERPRINT'] = ''
default['AUTHORIZATION_TOKEN'] = ''

default['nbu_linux_client']['use_local_version'] = false
default['nbu_linux_client']['rhel_local_path'] = '/tmp/RHEL_PACKAGE'
default['nbu_linux_client']['debian_local_path'] = '/tmp/DEBIAN_PACKAGE'
default['nbu_linux_client']['suse_local_path'] = '/tmp/SuSE_PACKAGE'
```

4. After you have modified the attributes, upload the cookbook to the Chef server:

```
knife cookbook upload nbu_client
```

Setting up the NetBackup client package for Solaris

The instructions that follow in this section are for setting up and a network share or local client on Solaris.

To set up Solaris installation from a network (NFS) share

1. Create a directory on the network share and copy the packages from the NetBackup installation CD into the directory, as in the following example:

```
#NetBackup 8.0 - copy the packages from CD
cp NetBackup_8.0_CLIENTS1 <mount_path>/Deploy/Solaris/x86/NBU-8.0

#NetBackup 8.1 - copy the packages from CD
cp
NetBackup_8.1_CLIENTS1/NBclients/anb/Clients/usr/opensv/netbackup/client/Solaris/Solaris_x86_10_64 <mount_path>/Deploy/Solaris/x86/NBU-8.1
```

2. For NetBackup 8.1, extract the packages using the following command:

```
gunzip <package_name>.pkg.gz
```

Create a directory on the network share and copy the packages to that directory.

3. Ensure that you can mount the package directory on the NetBackup client node, as in the following example:

```
mount installvm.company.com:/deploy/Solaris/x86/NBU-8.0 /mnt
```

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4. Update the attributes in the `attributes/default.rb` file for the `nbu_client` cookbook. For example, edit `Solaris Package Details` and set the following attributes:

```
node['nbu_solaris_client']['use_mount_path_version'] = true
node['nbu_solaris_client']['x86_mount_path_XX'] = 'installvm.company.com:/deploy/XXXX'
node['nbu_solaris_client']['sparc_mount_path_XX'] = 'installvm.company.com:/deploy/XXXX'
```

5. Copy the NetBackup configuration files to the package directories you created.
6. After you have modified the attributes, upload the cookbook to the Chef server:

```
knife cookbook upload nbu_client
```

To set up Solaris installation from a local path

1. Create a directory on the NetBackup client and copy the packages from the NetBackup installation CD into the directory, as in the following example:

```
#NetBackup 8.0 - copy the packages from CD
cp NetBackup_8.0_CLIENTS1 /tmp/Solaris

#NetBackup 8.1 - copy the packages from CD
cp
NetBackup_8.1_CLIENTS1/NBclients/anb/Clients/usr/openv/netbackup/client/Solaris/Solaris_x86_10_64 /tmp/Solaris
```

2. For NetBackup 8.1, extract the packages using the following command:

```
gunzip <package_name>.pkg.gz
```

Create a directory on the client and copy the packages to that directory.

3. Update the attributes in the `attributes/default.rb` file for the `nbu_client` cookbook. For example, edit `Solaris Package Details` and set the following attributes:

```
# For 8.0 and 8.1 set Master server name, start service flag
default['masterserver'] = 'nbumaster.deploy.nbu'
default['startservices'] = 'yes'

# For 8.1 set CA_CERTIFICATE_FINGERPRINT and AUTHORIZATION_TOKEN
default['CA_CERTIFICATE_FINGERPRINT'] = ''
default['AUTHORIZATION_TOKEN'] = ''

node['nbu_solaris_client']['use_local_version'] = true
node['nbu_solaris_client']['pkg_local_path'] = '/tmp/Solaris'
```

4. After you have modified the attributes, upload the cookbook to the Chef server:

```
knife cookbook upload nbu_client
```

Setting up the NetBackup client package for AIX

The instructions that follow in this section are for setting up and a network share or local client on AIX.

To set up AIX installation from a network (NFS) share

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1. Create a directory on the network share and copy the packages from the NetBackup installation CD into the directory, as in the following example:

```
#NetBackup 8.0 - copy the packages from CD
cp NetBackup_8.0_CLIENTS1 <mount_path>/deploy/AIX/NBU-8.0

#NetBackup 8.1 - copy the packages from CD
cp NetBackup_8.1_CLIENTS1/NBclients/anb/Clients/usr/opensv/netbackup/client/RS6000/
AIX <mount_path>/deploy/AIX/NBU-8.1
```

2. For NetBackup 8.1, extract the packages using the following command:

```
gunzip <package_name>.image.gz
```

Create a directory on the network share and copy the packages to that directory.

3. Ensure that you can mount the package directory on the NetBackup client node, as in the following example:

```
mount installvm.company.com:/deploy/AIX /mnt
```

4. Update the attributes in the `attributes/default.rb` file for the `nbu_client` cookbook. For example, edit `AIX Package Details` and set the following attributes:

```
default['nbu_aix_client']['use_mount_path_version'] = true
default['nbu_aix_client']['aix_mount_path_XX'] = 'installvm.company.com:/deploy/XXXX'
```

5. Copy the NetBackup configuration files to the package directories you created.
6. After you have modified the attributes, upload the cookbook to the Chef server:

```
knife cookbook upload nbu_client
```

To set up AIX installation from a local path

1. Create a directory on the NetBackup client and copy the packages from the NetBackup installation CD into the directory, as in the following example:

```
#NetBackup 8.0 - copy the packages from CD
cp NetBackup_8.0_CLIENTS1 /tmp/AIX

#NetBackup 8.1 - copy the packages from CD
cp NetBackup_8.1_CLIENTS1/NBclients/anb/Clients/usr/opensv/netbackup/client/RS6000/
AIX /tmp/AIX
```

2. For NetBackup 8.1, extract the packages using the following command:

```
gunzip <package_name>.image.gz
```

Create a directory on the client and copy the packages to that directory.

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3. Update the attributes in the `attributes/default.rb` file for the `nbu_client` cookbook. For example, edit AIX Package Details and set the following attributes:

```
# For 8.0 and 8.1 set Master server name, start service flag
default['masterserver'] = 'nbumaster.deploy.nbu'
default['startservices'] = 'yes'

# For 8.1 set CA_CERTIFICATE_FINGERPRINT and AUTHORIZATION_TOKEN
default['CA_CERTIFICATE_FINGERPRINT'] = ''
default['AUTHORIZATION_TOKEN'] = ''

node['nbu_aix_client']['use_local_version'] = true
node['nbu_aix_client']['aix_local_path'] = '/tmp/aix'
```

4. After you have modified the attributes, upload the cookbook to the Chef server:

```
knife cookbook upload nbu_client
```

Deploying the NetBackup Clients

The `nbu_client` cookbook uses the following recipes for client installations, uninstalls and upgrades.

Chef recipes contain information about the process of deploying the NetBackup client. The recipes are specific to a platform and a NetBackup version to perform operations like install, uninstall, and upgrade. Following is the default recipe:

Recipe Name	Description
<code>default.rb</code>	Default recipe to check version of machine platform
<code>aix_install_8_0.rb</code>	AIX 8.0 client installation using install script
<code>aix_uninstall_8_0.rb</code>	AIX 8.0 client uninstallation
<code>aix_image_install_8_1.rb</code>	AIX 8.1 client installation using native package
<code>aix_image_uninstall_8_1.rb</code>	AIX 8.1 client uninstallation
<code>aix_image_upgrade_8_1.rb</code>	AIX 8.1 client upgrade using native package
<code>linux_debian_or_ubuntu_8_0_install.rb</code>	Linux DEBIAN, UBUNTU 8.0 client installation using install script
<code>linux_debian_or_ubuntu_8_1_install.rb</code>	Linux DEBIAN, UBUNTU 8.1 client installation using install script
<code>linux_rpm_install_8_0.rb</code>	Linux RHEL, SUSE, CENTOS 8.0 client installation using native package
<code>linux_rpm_install_8_1.rb</code>	Linux RHEL, SUSE, CENTOS 8.1 client installation using native package
<code>linux_rpm_upgrade_8_0.rb</code>	Linux RHEL, SUSE, CENTOS 8.0 client upgrade using native package
<code>linux_rpm_upgrade_8_1.rb</code>	Linux RHEL, SUSE, CENTOS 8.1 client upgrade using native package
<code>linux_yum_install_8_0.rb</code>	Linux RHEL, SUSE, CENTOS 8.0 client installation using yum package
<code>linux_yum_install_8_1.rb</code>	Linux RHEL, SUSE, CENTOS 8.1 client installation using yum package
<code>linux_yum_upgrade_8_1.rb</code>	Linux RHEL, SUSE, CENTOS 8.0 client upgrade using yum package
<code>linux_uninstall.rb</code>	Linux RHEL, SUSE, CENTOS, DEBIAN, UBUNTU 8.0/8.1 client uninstallation
<code>solaris_install_8_0.rb</code>	Solaris 8.0 client installation using install script
<code>solaris_uninstall_8_0.rb</code>	Solaris 8.0 client uninstallation
<code>solaris_pkg_install_8_1.rb</code>	Solaris 8.1 client installation using native package
<code>solaris_pkg_uninstall_8_1.rb</code>	Solaris 8.1 client uninstallation

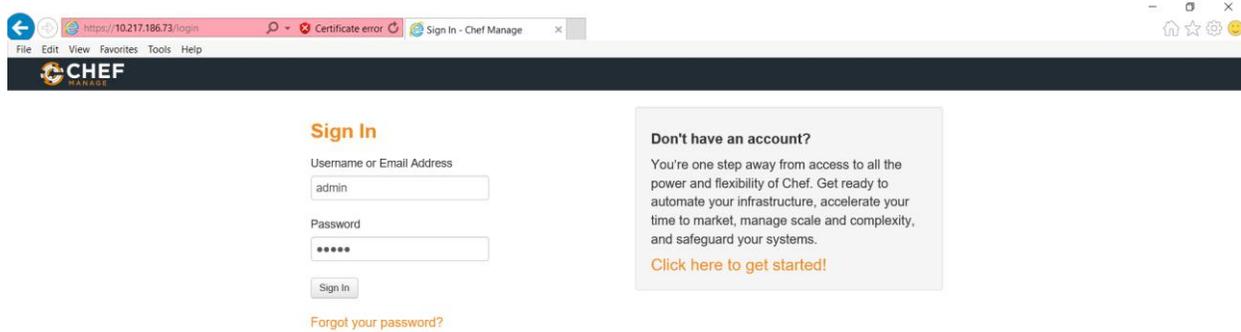
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<code>solaris_pkg_upgrade_8_1.rb</code>	Solaris 8.1 client upgrade using native package
<code>eeb_install.rb</code>	Install EEB on NetBackup client

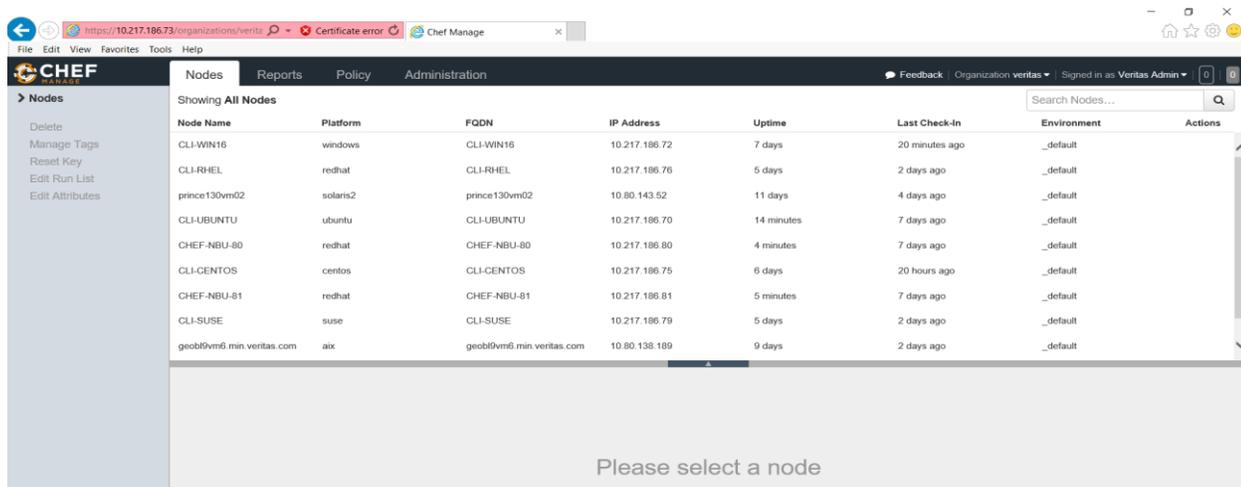
To Deploy NetBackup Clients

1. Open the Chef server in your browser and login:

`https://chef-server`

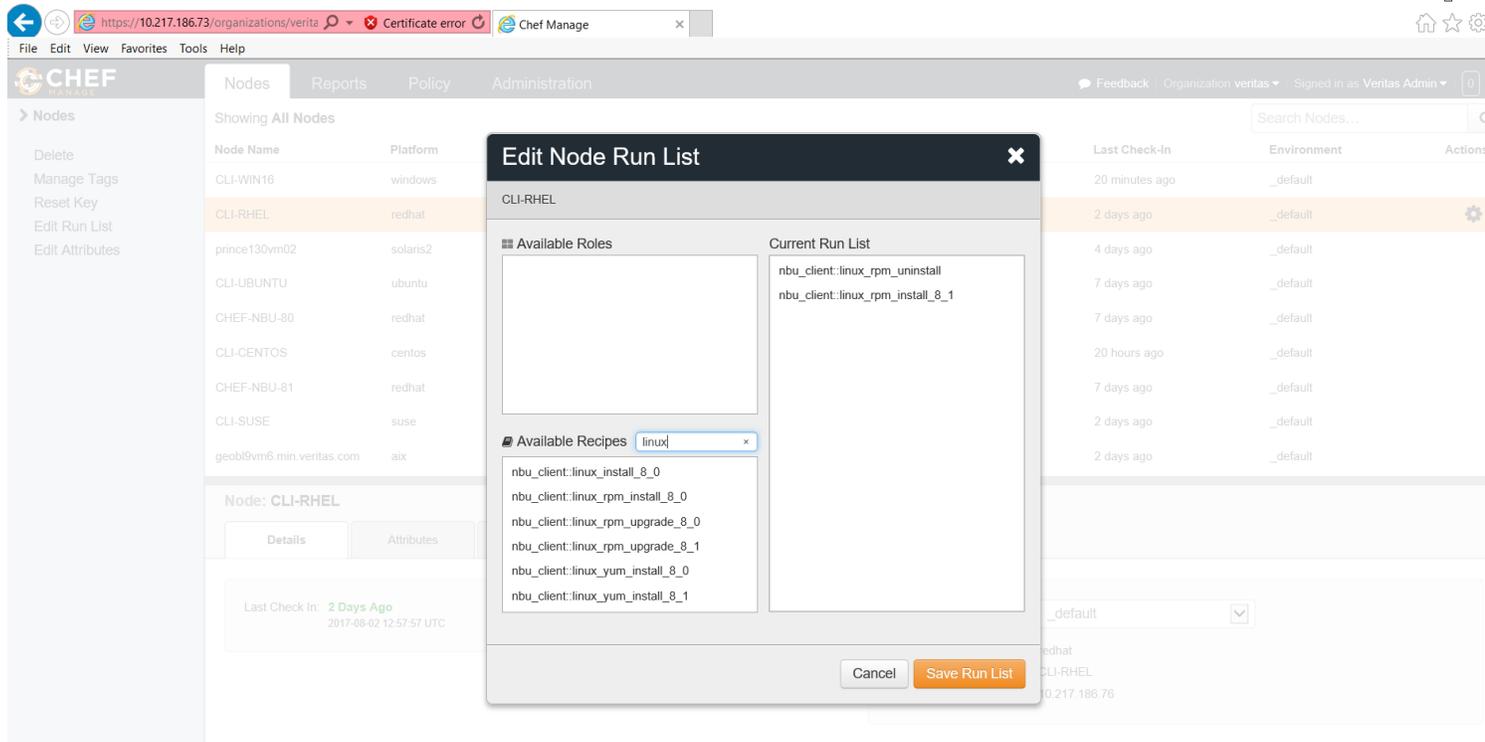


2. Select the **Nodes** tab on the Chef server website:

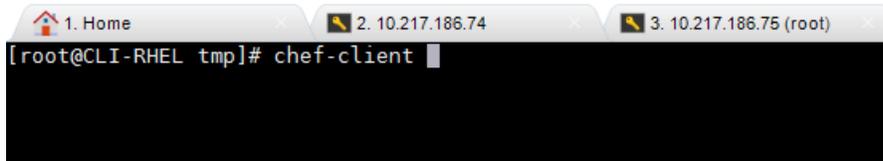


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3. Select the node to deploy and click **Edit Run List**. Type the platform name in the **Available Recipes** to search the recipes.



4. Select recipe from drag and drop to the **Current Run List**. Click **Save Run List**.
5. Go to the NetBackup client and run the `chef-client` command to deploy the node.



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Each recipe performs the following actions:

1. Validation
 - Check for a valid platform
 - Check whether a previous version of NetBackup is installed. If a master or media server exists, exit the installation
2. Per-install customer actions
 - Create the `NBInstallAnswer.conf` file
 - If this is a NetBackup Package Server installation, get the client details and security information
3. Installation
 - Performs the installation per the selected platform and installation method
4. Post installation customer actions
 - Start NetBackup services if they are not started
 - Display the deployed packages information
 - Cleanup the created files or scripts