Akkadian Provisioning Manager Administration Guide

4.50 — Last update: 2020/02/03

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Introduction

Akkadian Provisioning Manager™ brings the “unified” to provisioning in Cisco Unified Communications. No other solution makes it easier or faster to provision across multiple applications, all from a single, secure web interface. This manual will guide you through the process of deploying and configuring Akkadian Provisioning Manager.

1. Requirements and Limitations

The following sections provide information about the requirements that your system must meet, and limitations that apply when you install or upgrade Akkadian Provisioning Manager.

1.1. Virtual Machine Requirements

Akkadian Provisioning Manager 4.50 is a Linux based Virtual Appliance supported on VMware ESXi.

Supported Versions of VMware vSphere ESXi = 5.0 U1, 5.1, 5.5, 6.0, 6.5 & 6.7

The recommended server requirements for Akkadian Provisioning Manager depend on several variables.

- **Applications Severs** – number of integrated UC Servers
- **Devices** – number of devices supported by Cisco Unified Communications Manager
- **Users** – number of concurrent users provisioning via Provisioning Manager

To assist with allocating the proper resources for Provisioning Manager 4.50, use the Table below to determine the appropriate system resources.

Size	Application Servers	Devices	Users	vCPU	vRAM	vDISK	vNIC
Small	10	15000	10	2	8	1 × 120 GB	1
Medium	11+	30,000+	30+	2	12	1 × 120 GB	1
Large	20+	60,000+	60+	4	16	1 × 120 GB	1

- Applications servers are defined as configured applications servers in Provisioning Manager and are not related to the number of servers with a cluster.
- Minimum of 2000 MHz reserved

1.2. Application Support

Provisioning Manager provides support for the following applications:

Application	Versions
Cisco Unified Communications Manager	10.x – 12.x
Cisco Unity Connection	10.x – 12.x
Cisco Unified Contact Center Express	10.x – 11.x
Cisco Packaged Contact Center Enterprise	10.5 – 11.x
Cisco WebEx Meetings	WBS31+
Cisco Meeting Server	2.2.3+

1.3. Browser Support

Provisioning Manager supported browsers:

- Microsoft Internet Explorer 11+
- Microsoft Edge 39+
- Mozilla Firefox 53+
- Chrome 50+

1.4. Network Requirements

Akkadian Provisioning Manager communicates on the following ports:

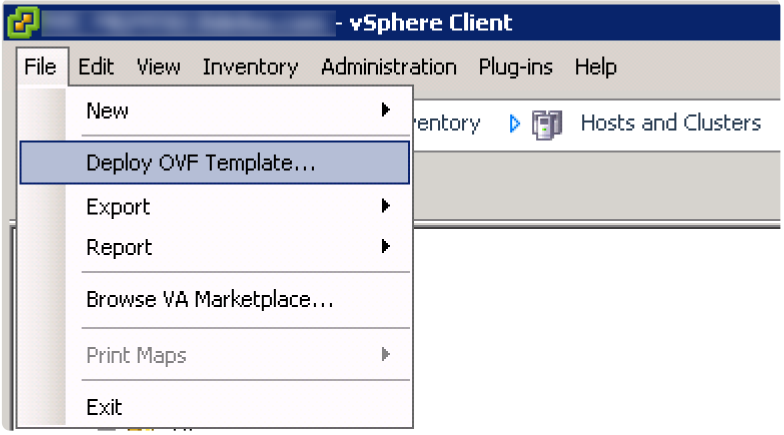
Traffic	Port	Direction
Application Web Access	HTTPS:443	Inbound —> Provisioning Manager
Communication to Cisco Communications Manager	HTTPS:8443	Outbound Provisioning Manager —> CUCM
Communication to Cisco Unity	HTTPS:8443	Outbound Provisioning Manager —> CUC
Communication to WebEx	HTTPS:443	Outbound Provisioning Manager —> WebEx
Communication to Cisco Spark	HTTPS:443	Outbound Provisioning Manager —> Cisco Spark
Communication to UCCE	HTTPS:443 / TCP 1443	Outbound Provisioning Manager —> UCCE
Communication to Cisco Meeting Server	HTTPS:443 by default	Outbound Provisioning Manager —> CMS
FTP between application and backup server	TCP Port 21	Outbound Provisioning Manager —> SFTP Server
Secure FTP between application and backup server	TCP Port 22	Outbound Provisioning Manager —> SFTP Server
SMTP to mail server	TCP Port 25	Outbound Provisioning Manager —> SMTP Server
LDAP	TCP/UDP Ports 389/3268	Outbound Provisioning Manager —> LDAP Server
SSO (SAML)	TCP Port 443	Outbound Provisioning Manager —> SSO Server
Network Time Protocol (NTP)	UDP Port 123	Outbound Provisioning Manager —> NTP Server
HA Replication	TCP Port 2224	Akkadian Node 1 <—> Akkadian Node 2
HA Replication	TCP Port 3306	Akkadian Node 1 <—> Akkadian Node 2
HA Replication	TCP Port 22	Akkadian Node 1 <—> Akkadian Node 2

2. Virtual Server Deployment

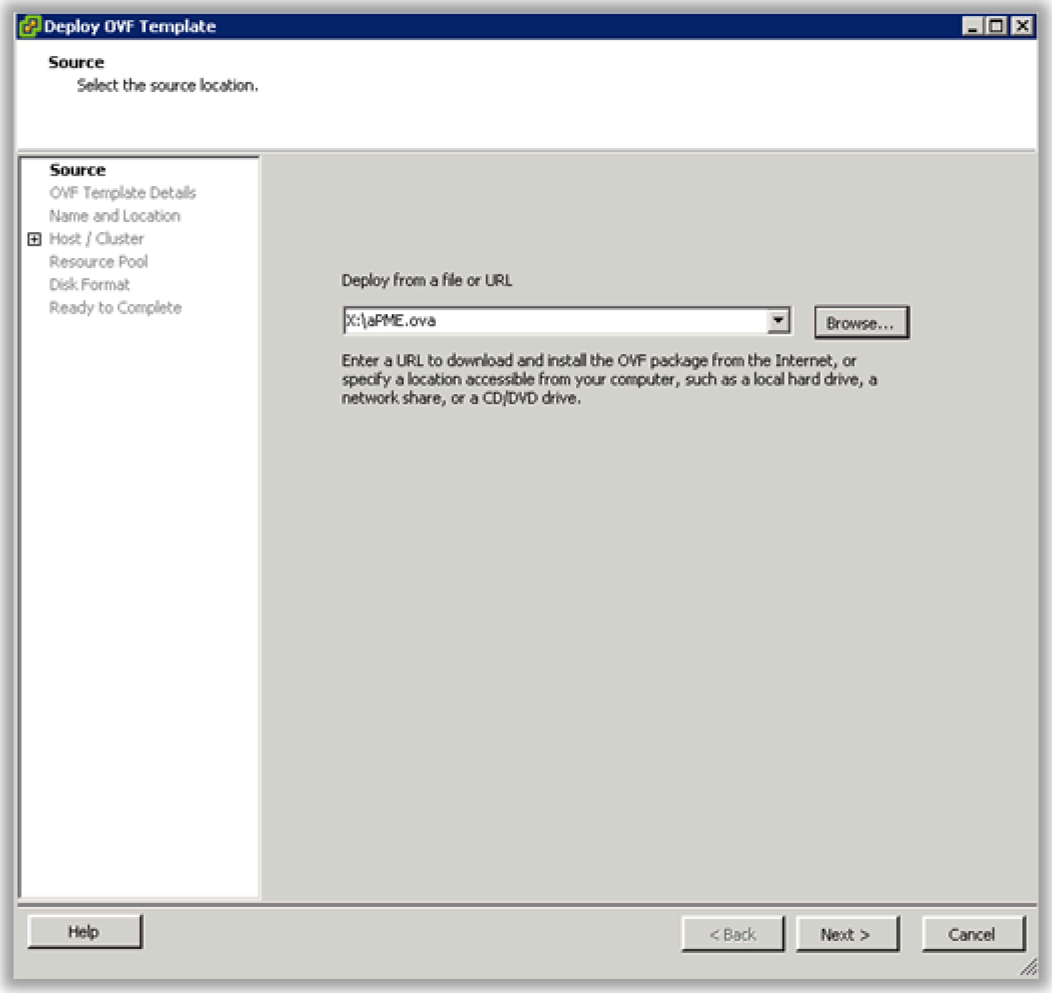
Akkadian Provisioning Manager is deployed as a virtual appliance on VMware ESXi versions 5.x and above. This section will help guide you through the process of deploying the virtual appliance; however, you should understand VMware or contact your VMware administrator for assistance.

2.1 Deploying the OVA

1. Download the latest Akkadian Provisioning Manage OVA to a location accessible by the vSphere client.
2. From the vSphere client select **Deploy OVF Template** from the **File** menu.

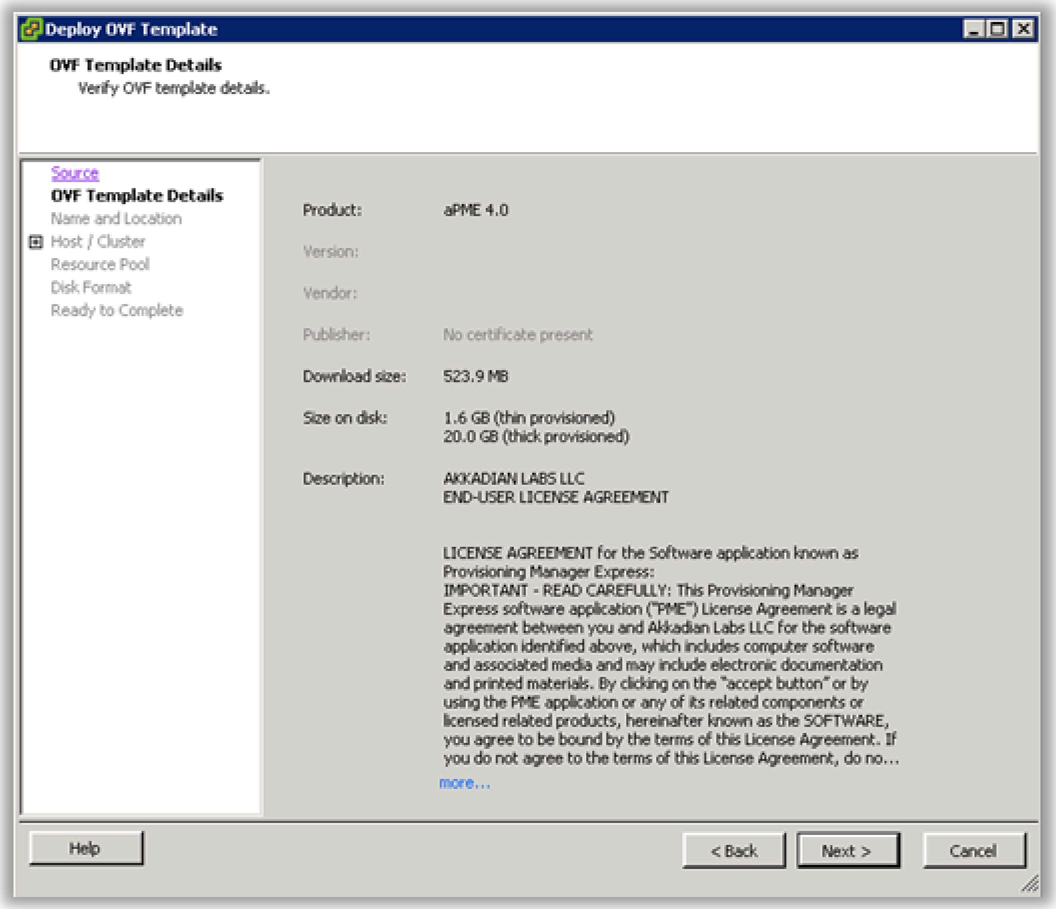


3. Select the OVA from computer or network location and click Next to continue.



Enter a URL to download and install the OVF package from the Internet, or specify a location accessible from your computer, such as a local hard drive, a network share, or a CD/DVD drive.

4. Review the License Agreement and click **Next** to continue.



Product: aPME 4.0

Version:

Vendor:

Publisher: No certificate present

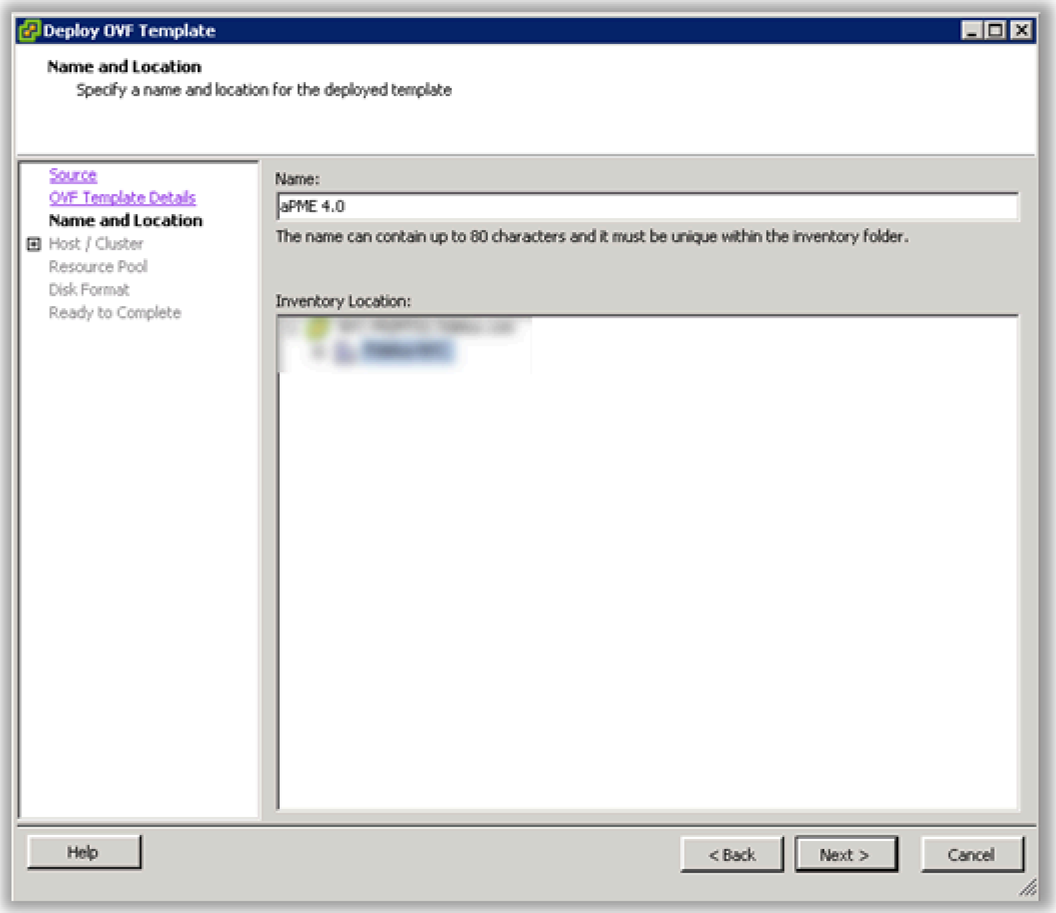
Download size: 523.9 MB

Size on disk: 1.6 GB (thin provisioned)
20.0 GB (thick provisioned)

Description: AKKADIAN LABS LLC
END-USER LICENSE AGREEMENT

LICENSE AGREEMENT for the Software application known as Provisioning Manager Express:
IMPORTANT - READ CAREFULLY: This Provisioning Manager Express software application ("PME") License Agreement is a legal agreement between you and Akkadian Labs LLC for the software application identified above, which includes computer software and associated media and may include electronic documentation and printed materials. By clicking on the "accept button" or by using the PME application or any of its related components or licensed related products, hereinafter known as the SOFTWARE, you agree to be bound by the terms of this License Agreement. If you do not agree to the terms of this License Agreement, do no...

5. Specify the name and location for the VMware machine and click Next to continue.



Deploy OVF Template

Name and Location

Specify a name and location for the deployed template

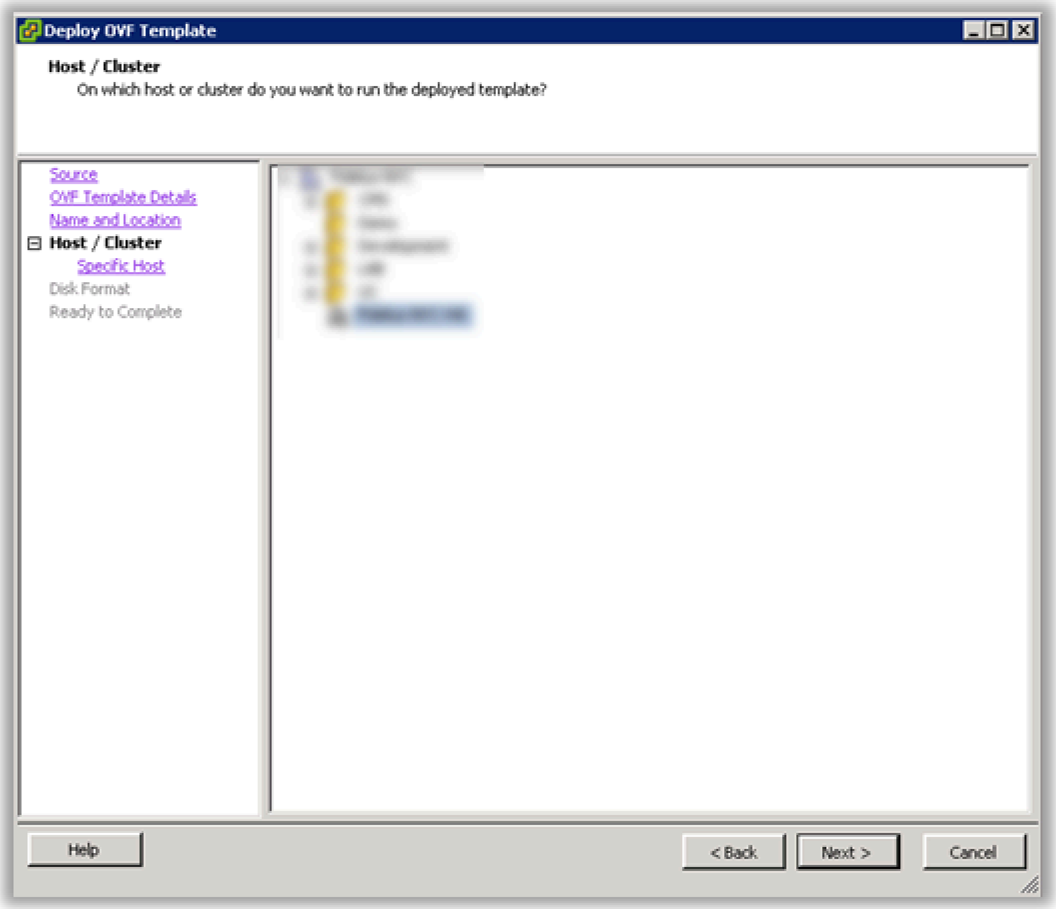
Name:

aPME 4.0

The name can contain up to 80 characters and it must be unique within the inventory folder.

Inventory Location:

6. Specify the VMware Host / Cluster and click **Next** to continue.

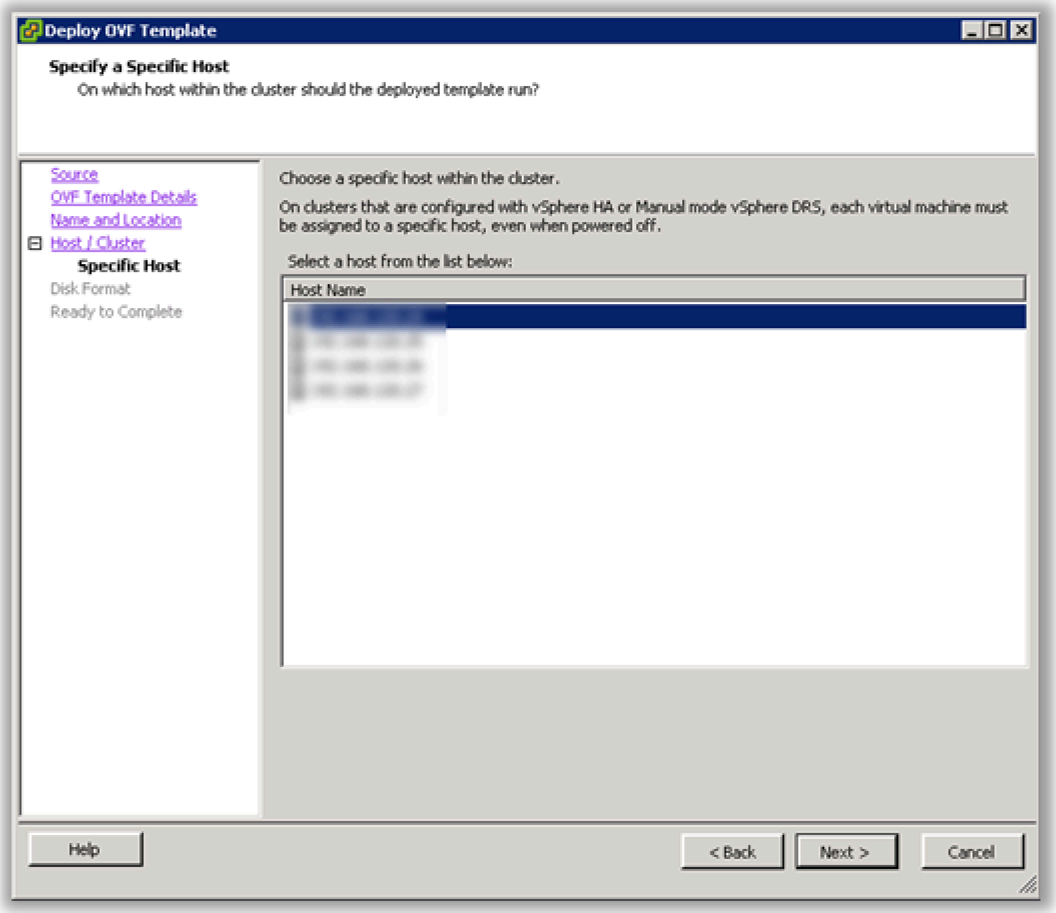


Deploy OVF Template

Host / Cluster

On which host or cluster do you want to run the deployed template?

7. Specify a host within the cluster and click Next to continue.



Specify a Specific Host

On which host within the cluster should the deployed template run?

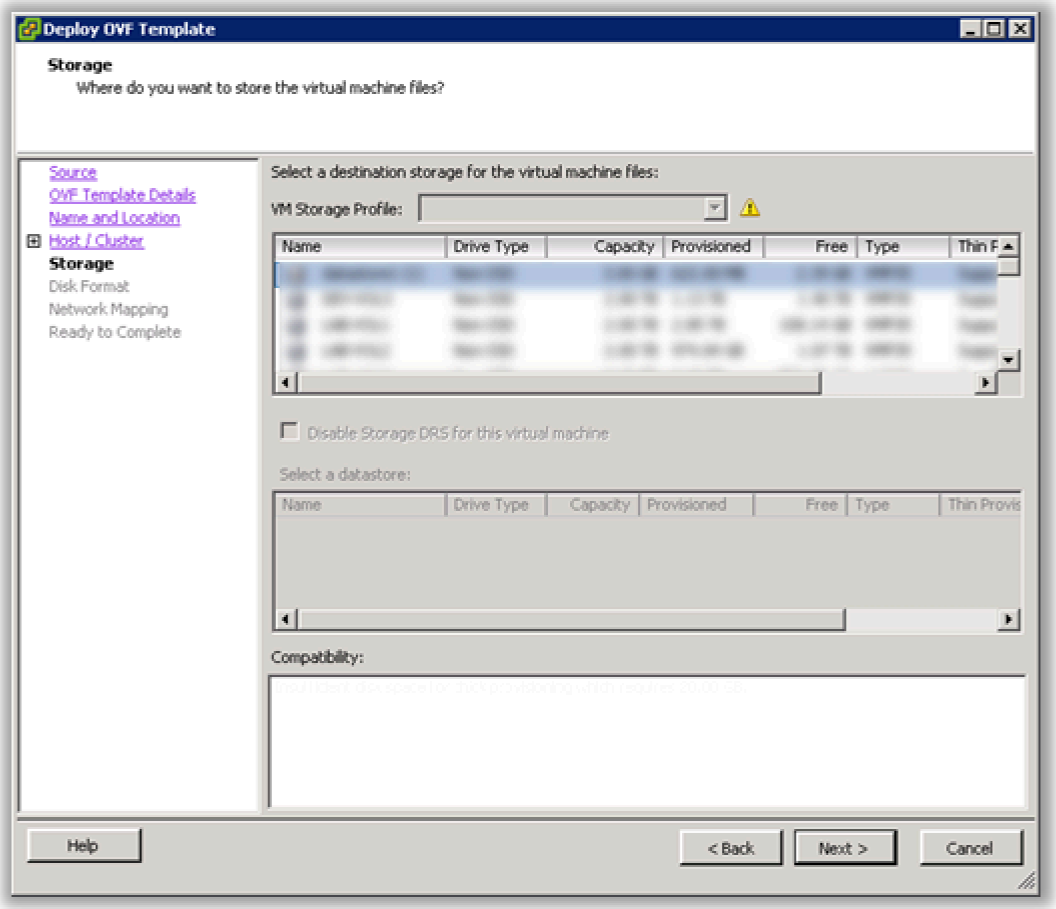
Choose a specific host within the cluster.

On clusters that are configured with vSphere HA or Manual mode vSphere DRS, each virtual machine must be assigned to a specific host, even when powered off.

Select a host from the list below:

Host Name
[redacted]

8. Specify the storage location for the virtual machine and click Next to continue.



Storage

Where do you want to store the virtual machine files?

Select a destination storage for the virtual machine files:

VM Storage Profile:

Name	Drive Type	Capacity	Provisioned	Free	Type	Thin P
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

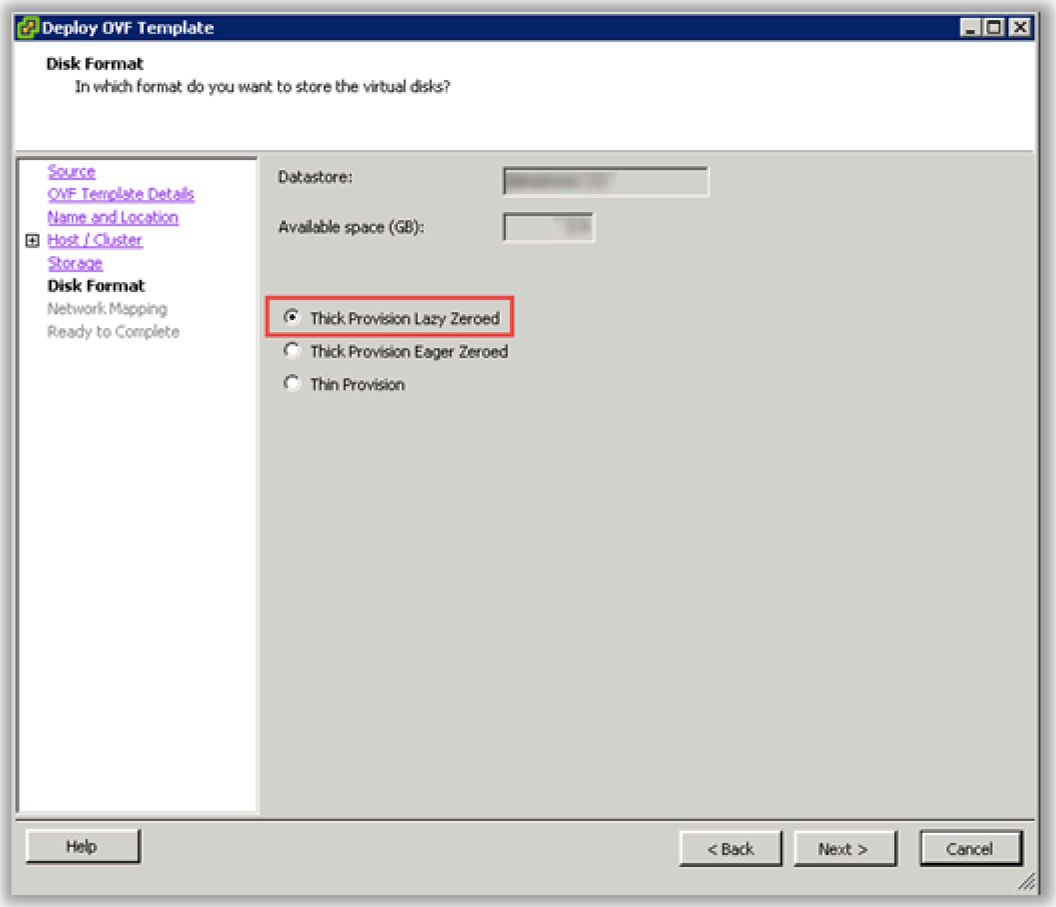
□ Disable Storage DRS for this virtual machine

Select a datastore:

Name	Drive Type	Capacity	Provisioned	Free	Type	Thin Provis

Compatibility:

9. Select Thick Provision Lazy Zeroed and click Next to continue.



Deploy OVF Template

Disk Format

In which format do you want to store the virtual disks?

Datastore: [redacted]

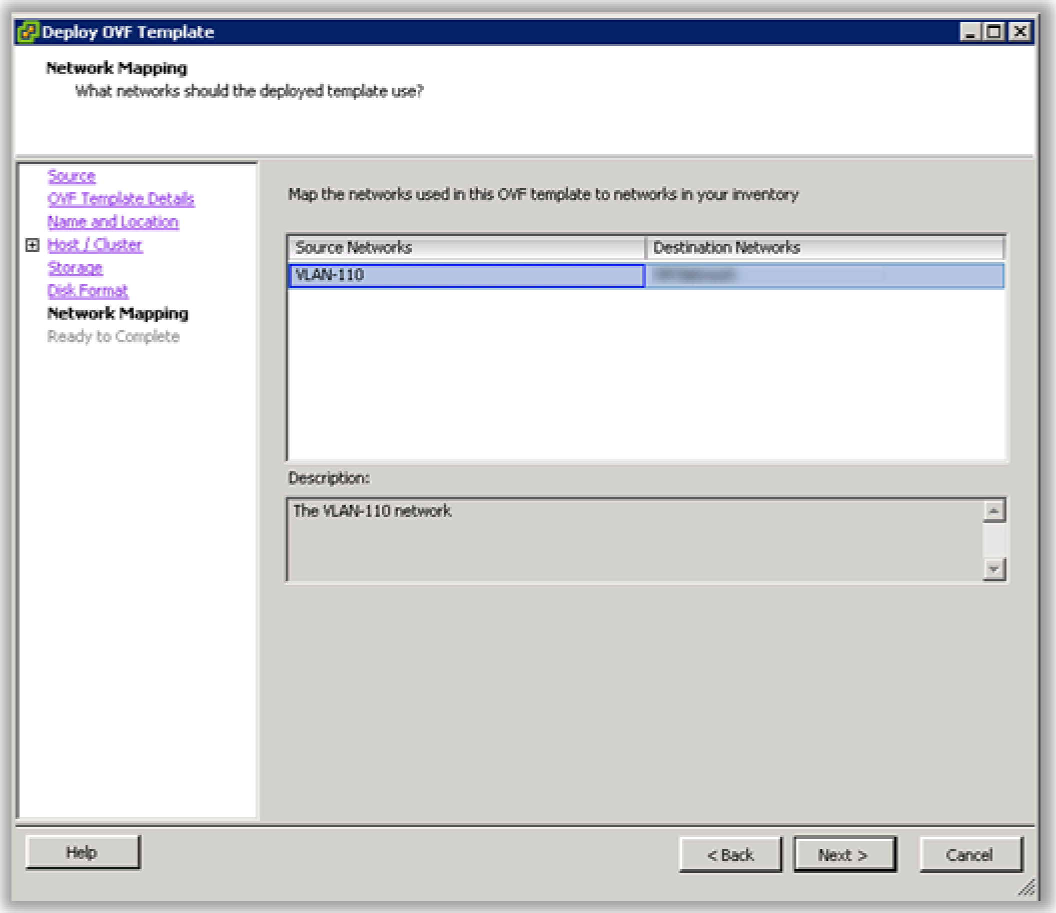
Available space (GB): [redacted]

● Thick Provision Lazy Zeroed

○ Thick Provision Eager Zeroed

○ Thin Provision

10. Select the Destination Network for the virtual machine and click Next to continue.



Deploy OVF Template

Network Mapping

What networks should the deployed template use?

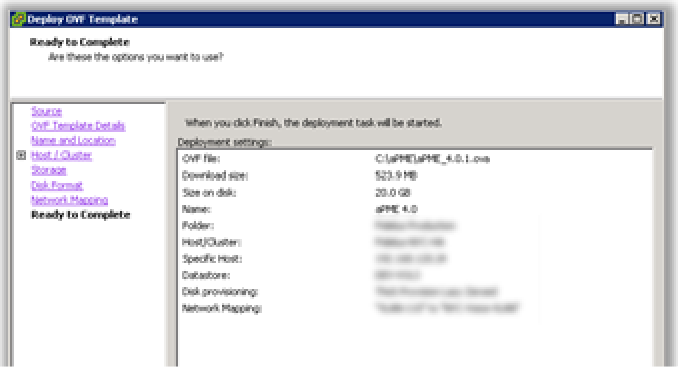
Map the networks used in this OVF template to networks in your inventory

Source Networks	Destination Networks
VLAN-110	[redacted]

Description:

The VLAN-110 network

11. Verify the virtual machine settings. The initial OVA deploys with 2 vCPU and 8GB Memory. Depending on your system requirements, you may need to adjust the virtual CPU and Memory settings. Please refer to the virtual machine requirements to determine the appropriate settings for your environment.



Deploy OVF Template

Ready to Complete

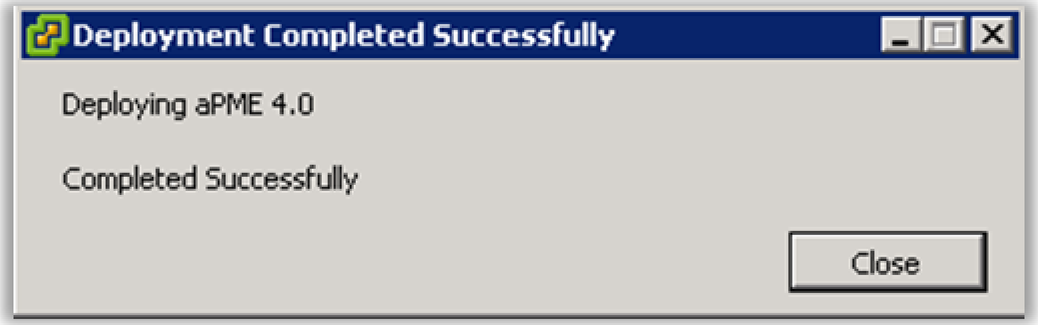
Are these the options you want to use?

When you click Finish, the deployment task will be started.

Deployment settings:

OVF file:	C:\aPME\aPME_4.0.1.ova
Download size:	523.9 MB
Size on disk:	20.0 GB
Name:	aPME 4.0
Folder:	[redacted]
Host/Cluster:	[redacted]
Specific Host:	[redacted]
Datastore:	[redacted]
Disk provisioning:	[redacted]
Network Mapping:	[redacted]

12. Click OK to complete the deployment.

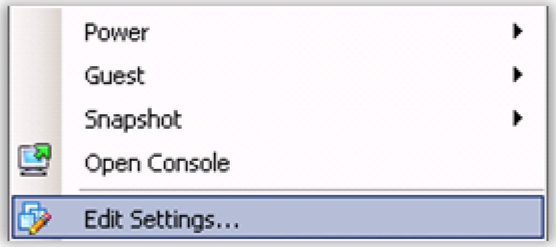


Deployment Completed Successfully

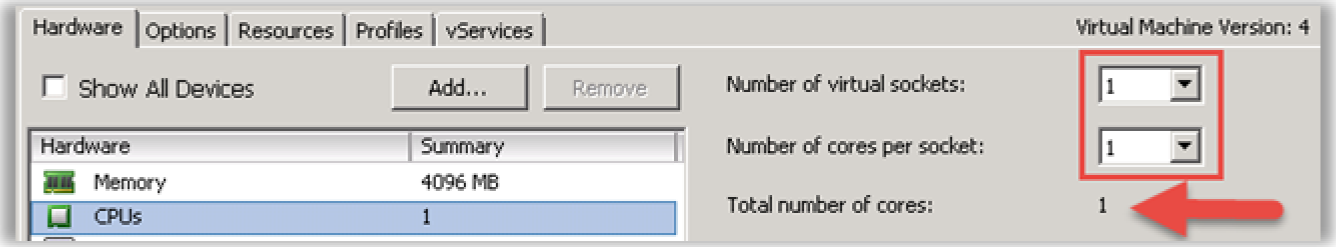
Deploying aPME 4.0

Completed Successfully

13. To adjust the virtual machine CPU and Memory, locate the newly deployed virtual machine in vCenter, right click on the virtual machine and select Edit Settings.



14. On the Hardware tab, select CPU and adjust the setting to provide the required number of cores for your environment.



Virtual Machine Version: 4

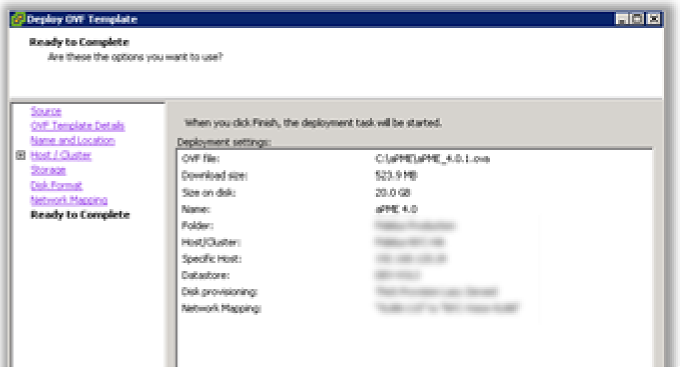
Hardware	Summary
Memory	4096 MB
CPUs	1

Number of virtual sockets: 1

Number of cores per socket: 1

Total number of cores: 1

15. After adjusting the CPU, click on Memory and adjust the settings to provide the required resources for your environment. When completed, click OK to commit the changes.



Ready to Complete

Are these the options you want to use?

When you click Finish, the deployment task will be started.

Deployment settings:

OVF file:	C:\aPME\aPME_4.0.1.ova
Download size:	523.9 MB
Size on disk:	20.0 GB
Name:	aPME 4.0
Folder:	[illegible]
Host/Cluster:	[illegible]
Specific Host:	[illegible]
Datastore:	[illegible]
Disk provisioning:	[illegible]
Network Mapping:	[illegible]

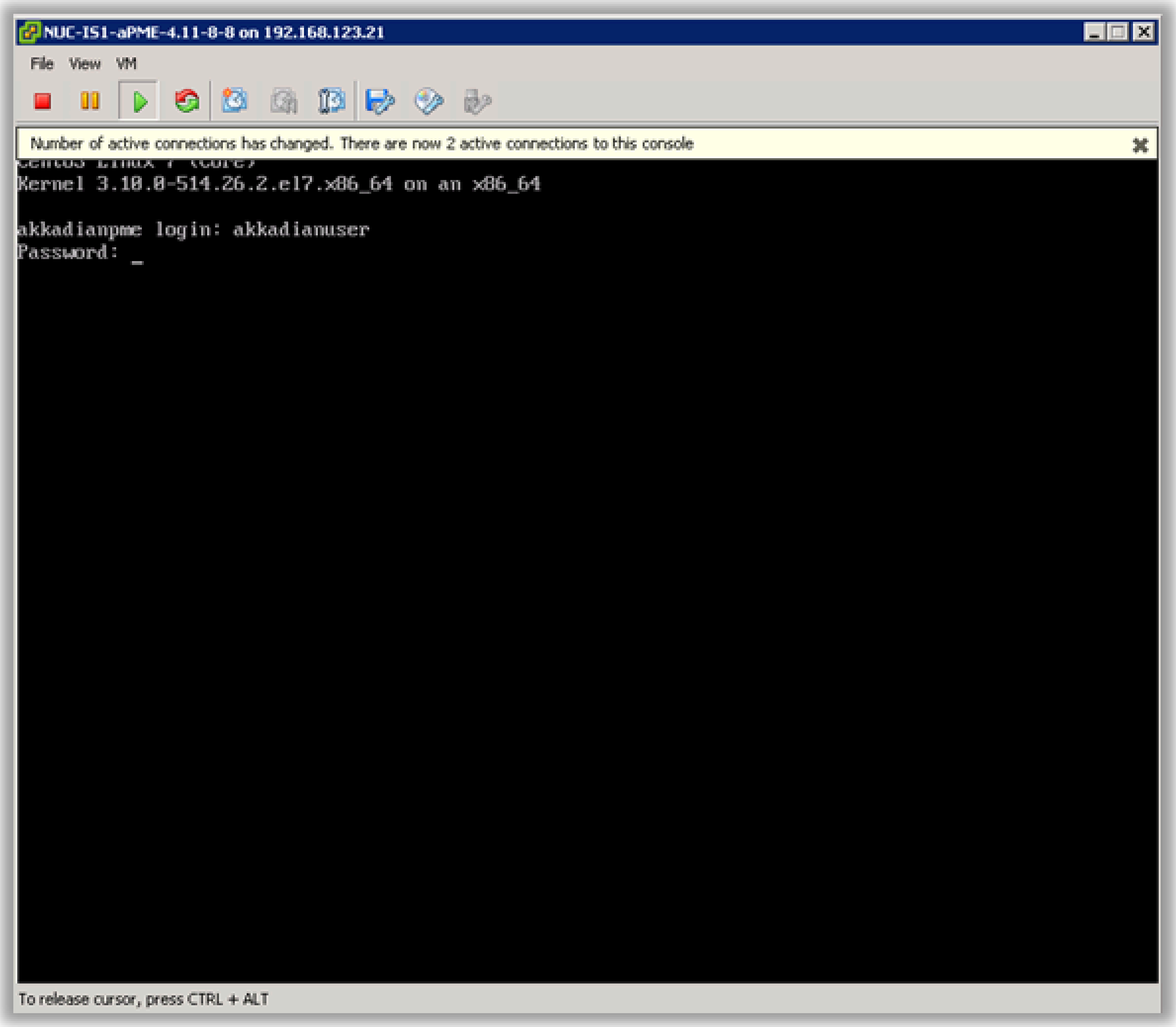
16. Power on the virtual machine.

2.2 Network Configuration

1. Open the virtual machine in the VMWare console.

2. Login using:

Username – **akkadianuser**
Password – **akkadianpassword**

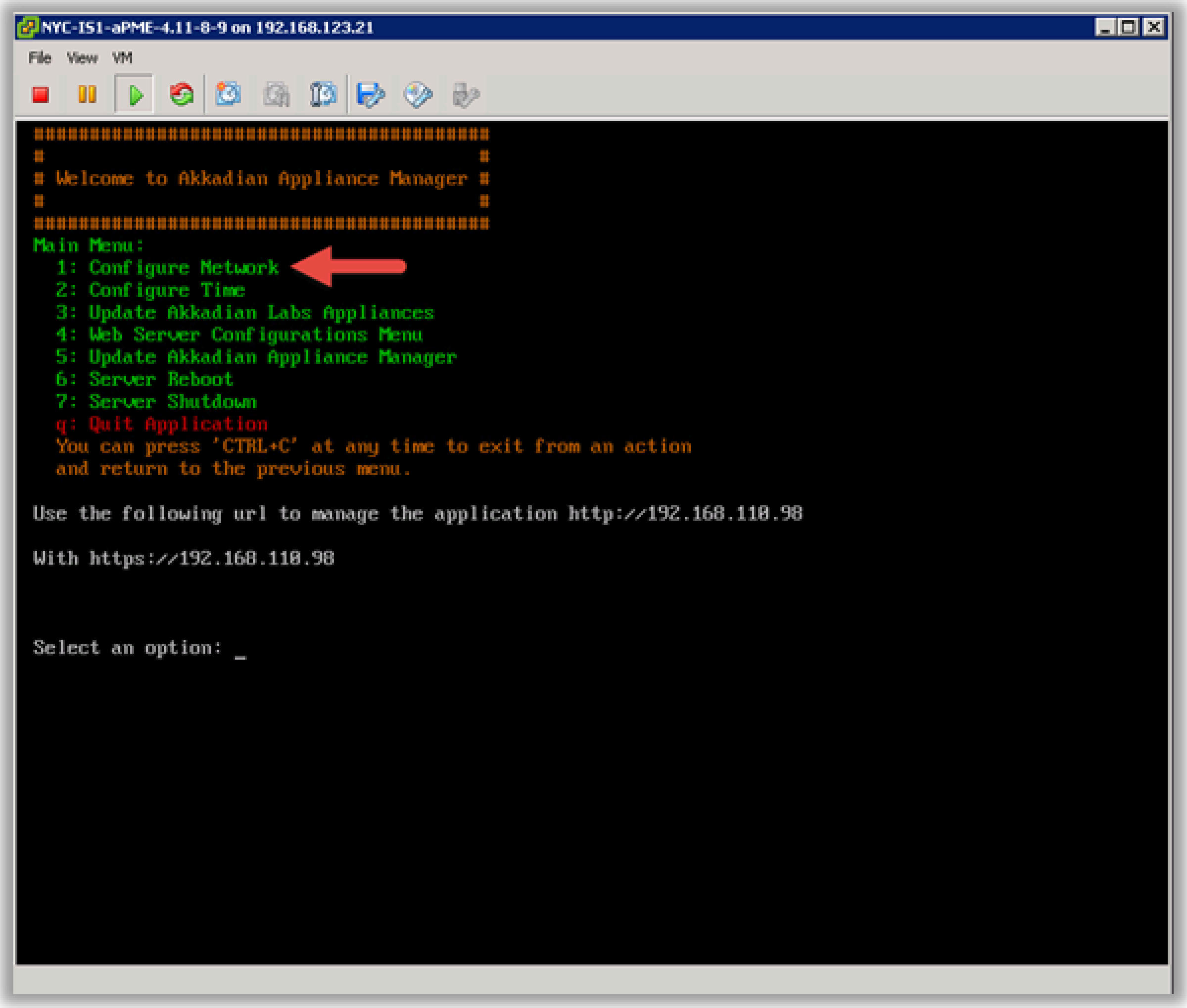


Number of active connections has changed. There are now 2 active connections to this console

```
CentOS Linux 7 (Core)
Kernel 3.10.0-514.26.2.el7.x86_64 on an x86_64

akkadianpme login: akkadianuser
Password: _
```

To release cursor, press CTRL + ALT

3. From the Akkadian Appliance Manager main menu, select option 1 to Configure Network.

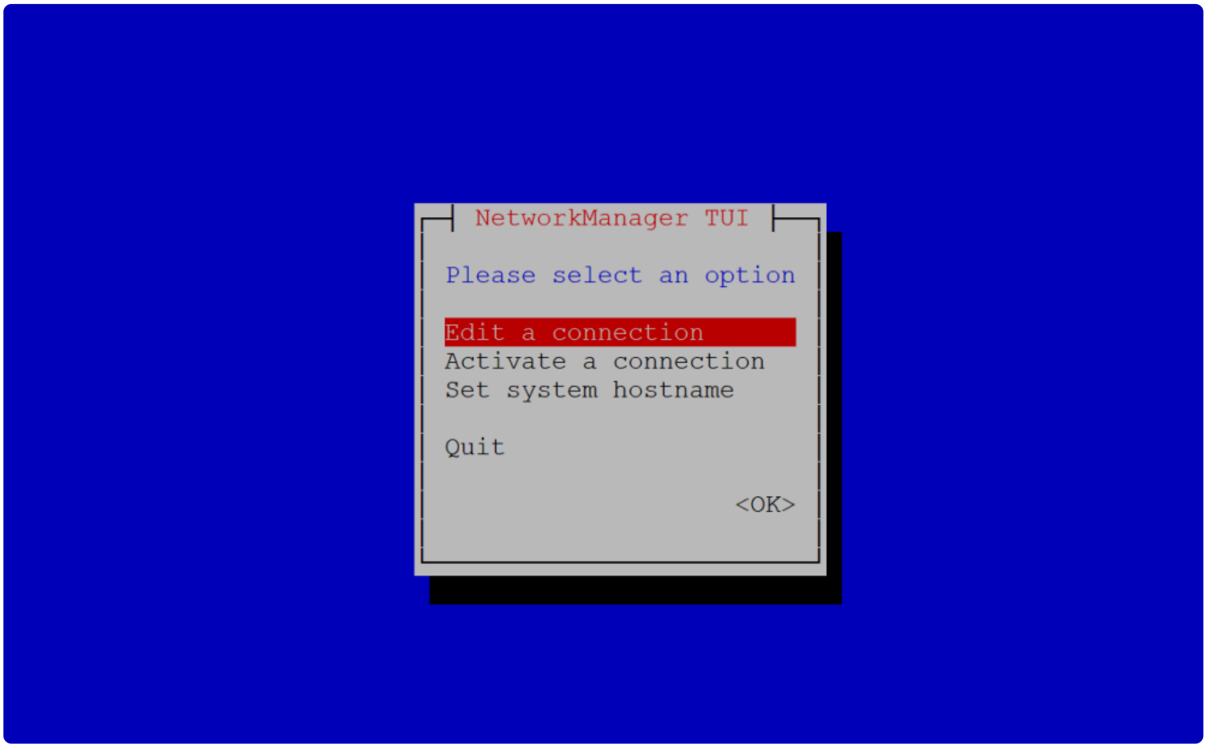


```
###########################################
#                                         #
# Welcome to Akkadian Appliance Manager #
#                                         #
###########################################
Main Menu:
  1: Configure Network
  2: Configure Time
  3: Update Akkadian Labs Appliances
  4: Web Server Configurations Menu
  5: Update Akkadian Appliance Manager
  6: Server Reboot
  7: Server Shutdown
  q: Quit Application
  You can press 'CTRL+C' at any time to exit from an action
  and return to the previous menu.

Use the following url to manage the application http://192.168.110.98

With https://192.168.110.98


Select an option: _
```

4. Select option 0 to select the network interface.

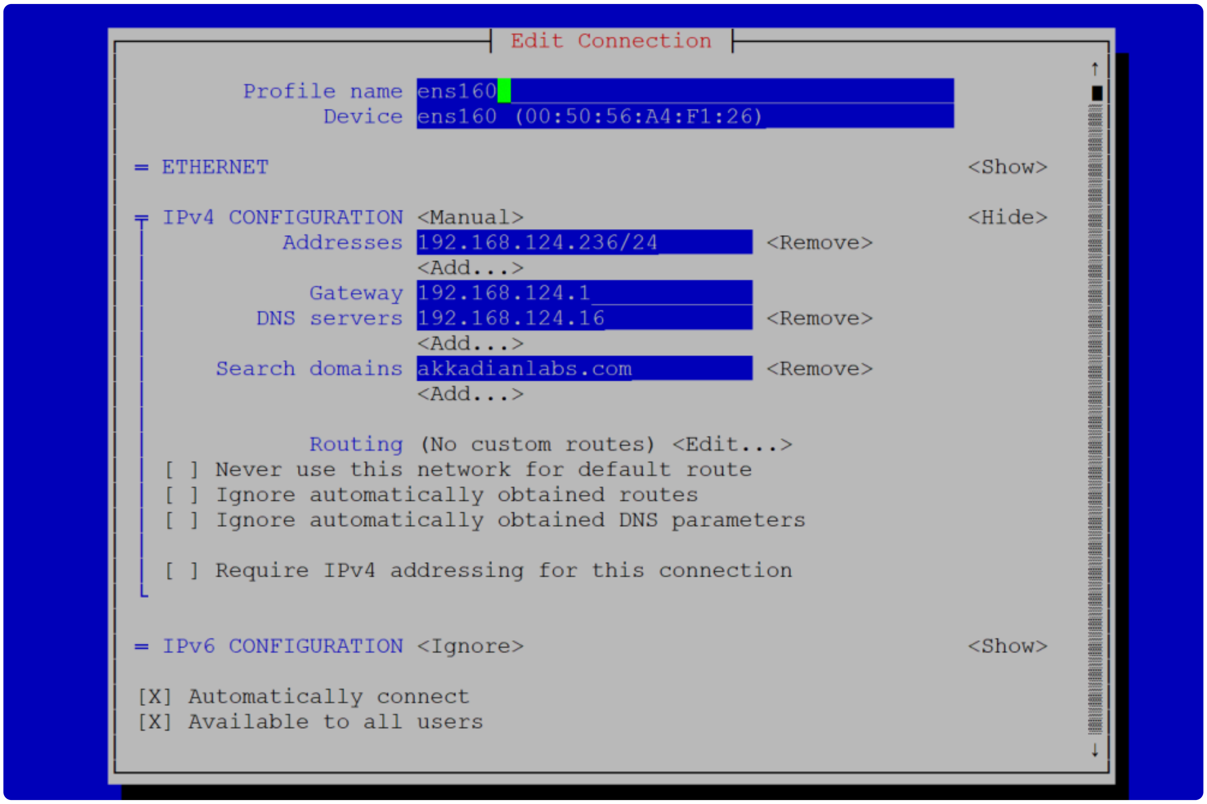
5. Select option 8 to launch the nmtui (Network Manager).

6. Select “Edit a Connection”.



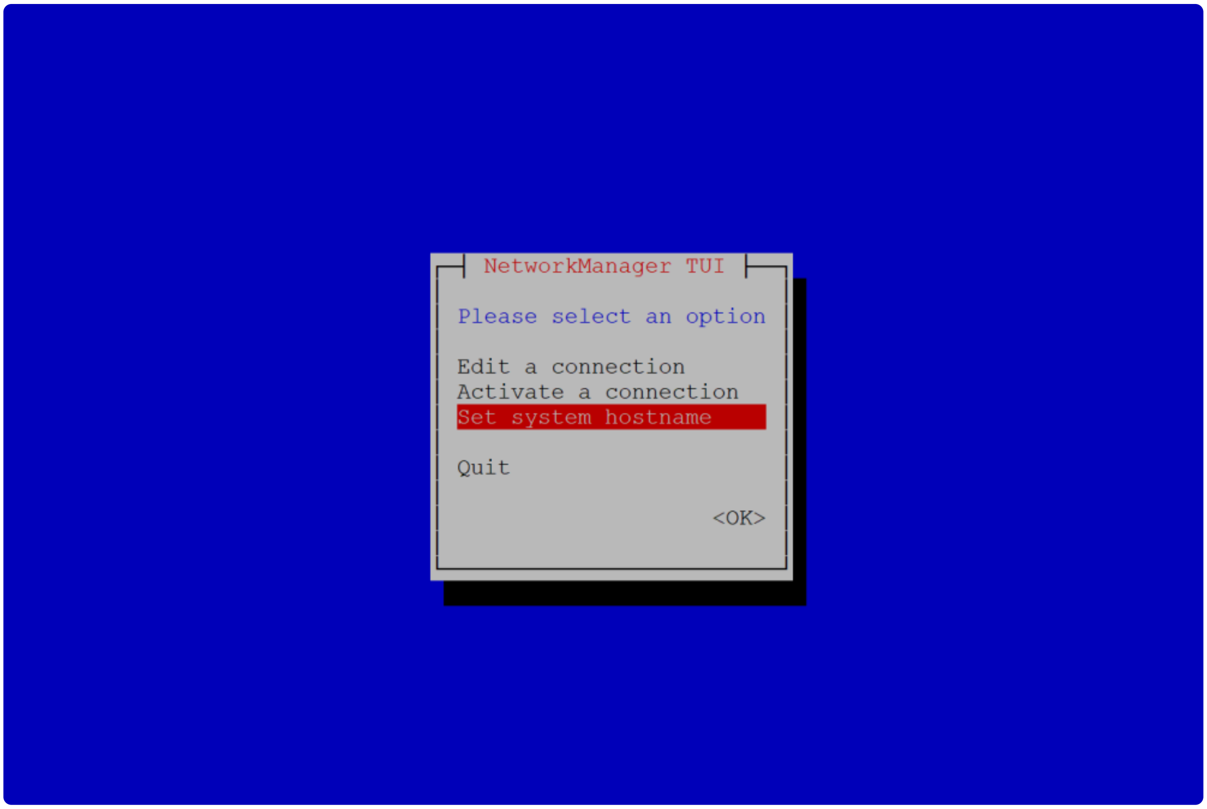
```
NetworkManager TUI

Please select an option

Edit a connection
Activate a connection
Set system hostname

Quit

                    <OK>
```

7. Configure the network settings for your environment and select OK.



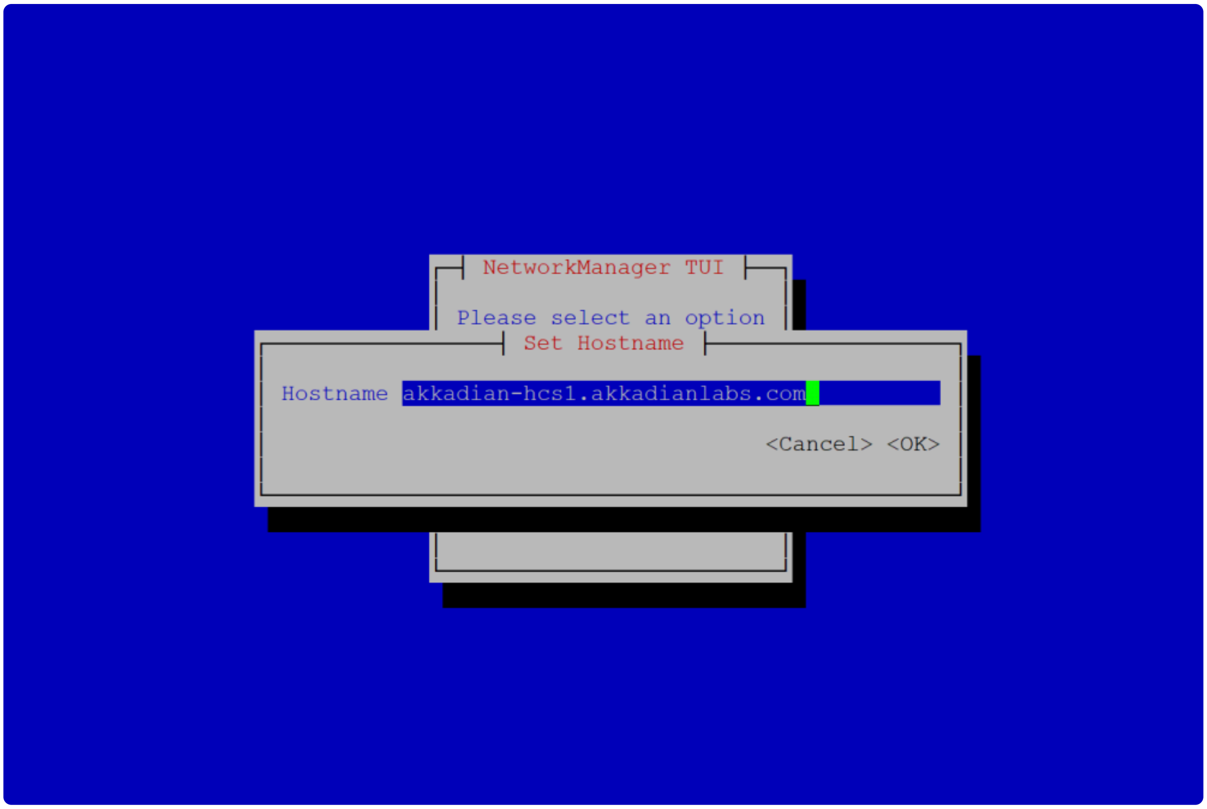
```
                          Edit Connection

        Profile name ens160
              Device ens160 (00:50:56:A4:F1:26)

= ETHERNET                                                      <Show>

╤ IPv4 CONFIGURATION <Manual>                                   <Hide>
│          Addresses 192.168.124.236/24          <Remove>
│                    <Add...>
│            Gateway 192.168.124.1
│        DNS servers 192.168.124.16              <Remove>
│                    <Add...>
│     Search domains akkadianlabs.com            <Remove>
│                    <Add...>
│
│            Routing (No custom routes) <Edit...>
│ [ ] Never use this network for default route
│ [ ] Ignore automatically obtained routes
│ [ ] Ignore automatically obtained DNS parameters
│
│ [ ] Require IPv4 addressing for this connection
└

= IPv6 CONFIGURATION <Ignore>                                   <Show>

[X] Automatically connect
[X] Available to all users
```

8. Navigate back to the menu and select “Set system hostname”



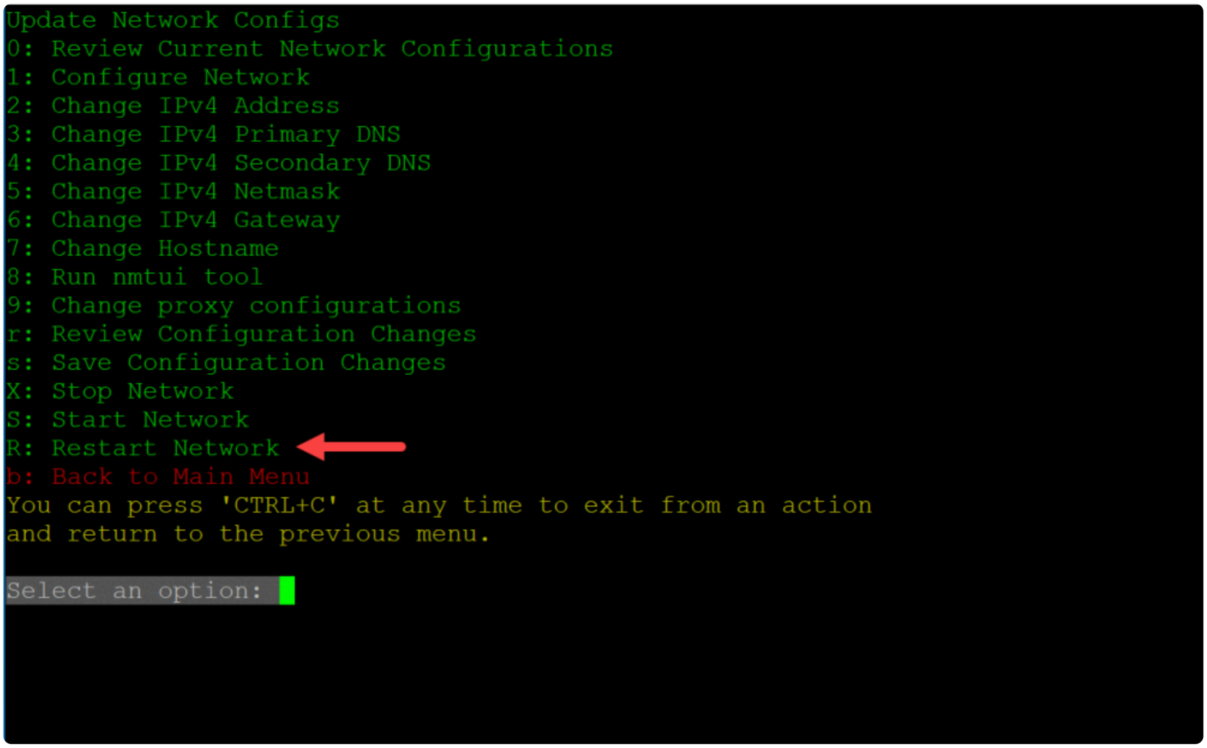
```
NetworkManager TUI

Please select an option

Edit a connection
Activate a connection
Set system hostname

Quit

                 <OK>
```

9. Configure the fully qualified hostname.



```
NetworkManager TUI

Please select an option
Set Hostname

Hostname akkadian-hcs1.akkadianlabs.com

<Cancel> <OK>
```

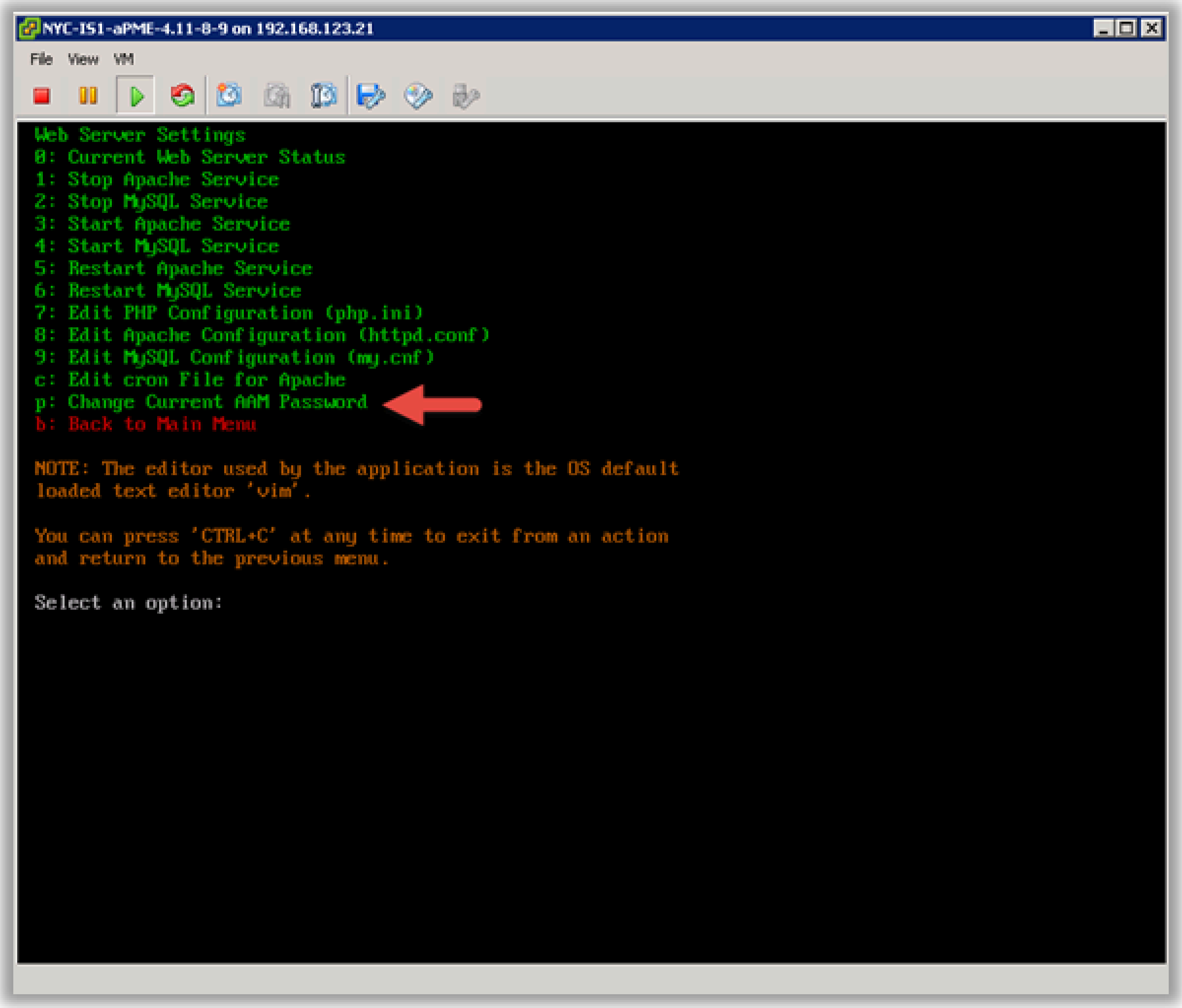
10. Exit the nmtui and select “R” to restart the network.



```
Update Network Configs
0: Review Current Network Configurations
1: Configure Network
2: Change IPv4 Address
3: Change IPv4 Primary DNS
4: Change IPv4 Secondary DNS
5: Change IPv4 Netmask
6: Change IPv4 Gateway
7: Change Hostname
8: Run nmtui tool
9: Change proxy configurations
r: Review Configuration Changes
s: Save Configuration Changes
X: Stop Network
S: Start Network
R: Restart Network
b: Back to Main Menu
You can press 'CTRL+C' at any time to exit from an action
and return to the previous menu.

Select an option:
```

11. Optionally you may configure the server time by selecting option 2 from the configure network menu.

12. It is recommended you change the default Akkadian Appliance Manager password by selecting option 4 (Web Server Configuration Menu) from the main menu and then selecting “p” (Change Current AAM Password”).



```
Web Server Settings
0: Current Web Server Status
1: Stop Apache Service
2: Stop MySQL Service
3: Start Apache Service
4: Start MySQL Service
5: Restart Apache Service
6: Restart MySQL Service
7: Edit PHP Configuration (php.ini)
8: Edit Apache Configuration (httpd.conf)
9: Edit MySQL Configuration (my.cnf)
c: Edit cron File for Apache
p: Change Current AAM Password
b: Back to Main Menu

NOTE: The editor used by the application is the OS default
loaded text editor 'vim'.

You can press 'CTRL+C' at any time to exit from an action
and return to the previous menu.

Select an option:
```

13. From the main menu, select Reboot Server to finalize the configuration.

14. When the system returns to the login prompt, the Akkadian Provisioning Manager virtual appliance deployment is complete and can be accessed by going to https://{Server IP or Name}/pme.

2.3 High Availability

Akkadian Provisioning supports **High Availability** using master-master replication. All nodes in HA cluster are active and can process requests, but only the master node will process scheduled requests to avoid task duplication. When using the built-in virtual IP, HA will always direct users to the primary node. If load balancing is required or you are geographical distributing the nodes, you must utilize and external load balancer.

HA Overview:

- HA can only be enabled via the CLI.
- Minimum of 2 nodes is required for an HA cluster.
- Application will be accessed via Virtual IP.
- Built-in VIP can be used within the same layer 2 network.
- External load balancer is required when nodes are on separate layer 3 networks.

Prerequisites for High Availability:

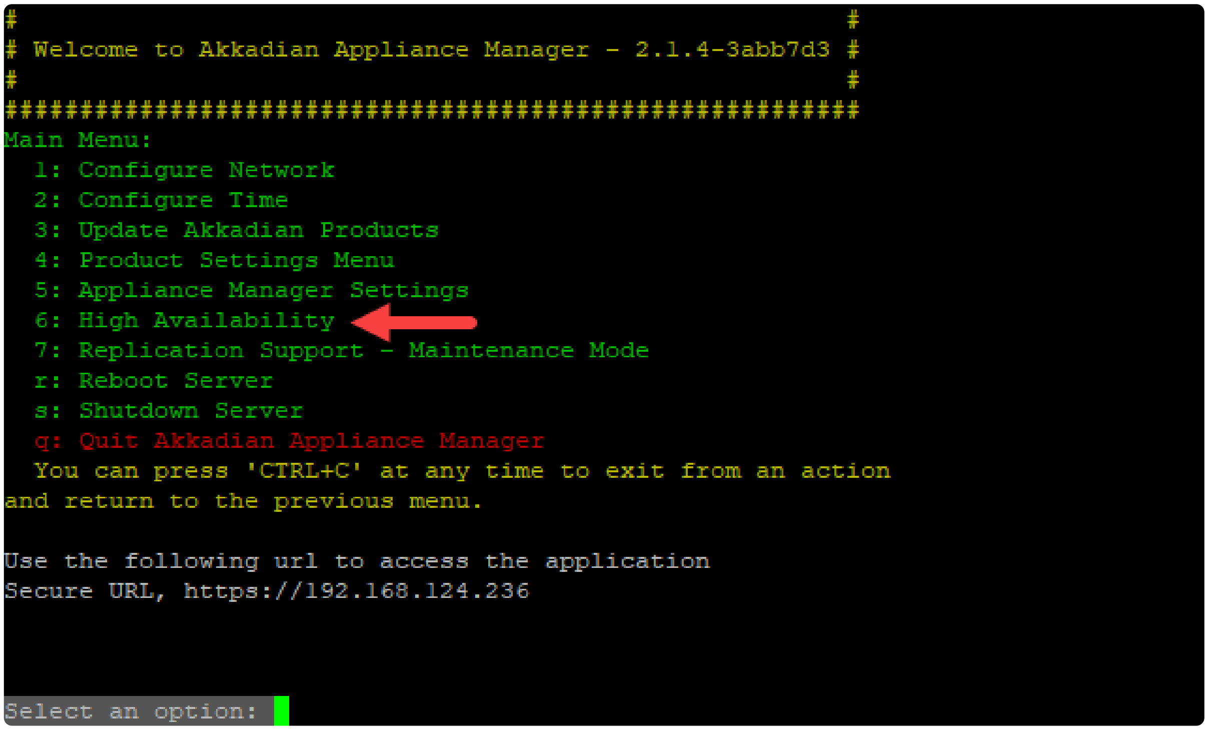
- All nodes have been assigned with a correct IP address.
- All nodes have a FQDN (name.domain.com).
- All nodes should be accessible via DNS.
- All nodes should have DNS configured with the ability to resolve all nodes within the cluster.

2.3.1 Enable High Availability

To enable High Availability:

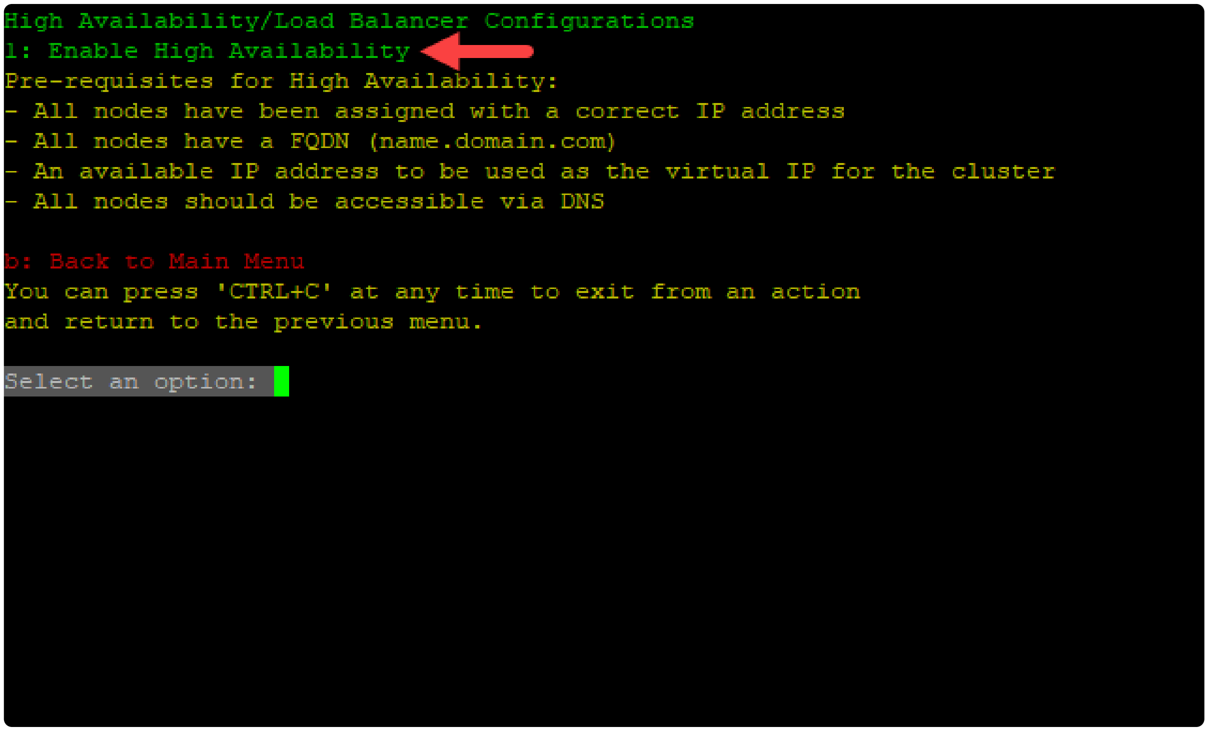
1. Login to the Akkadian Appliance Manager with the akkadianuser account and password (default = akkadianpassword)

2. Select Option 6 **High Availability**.



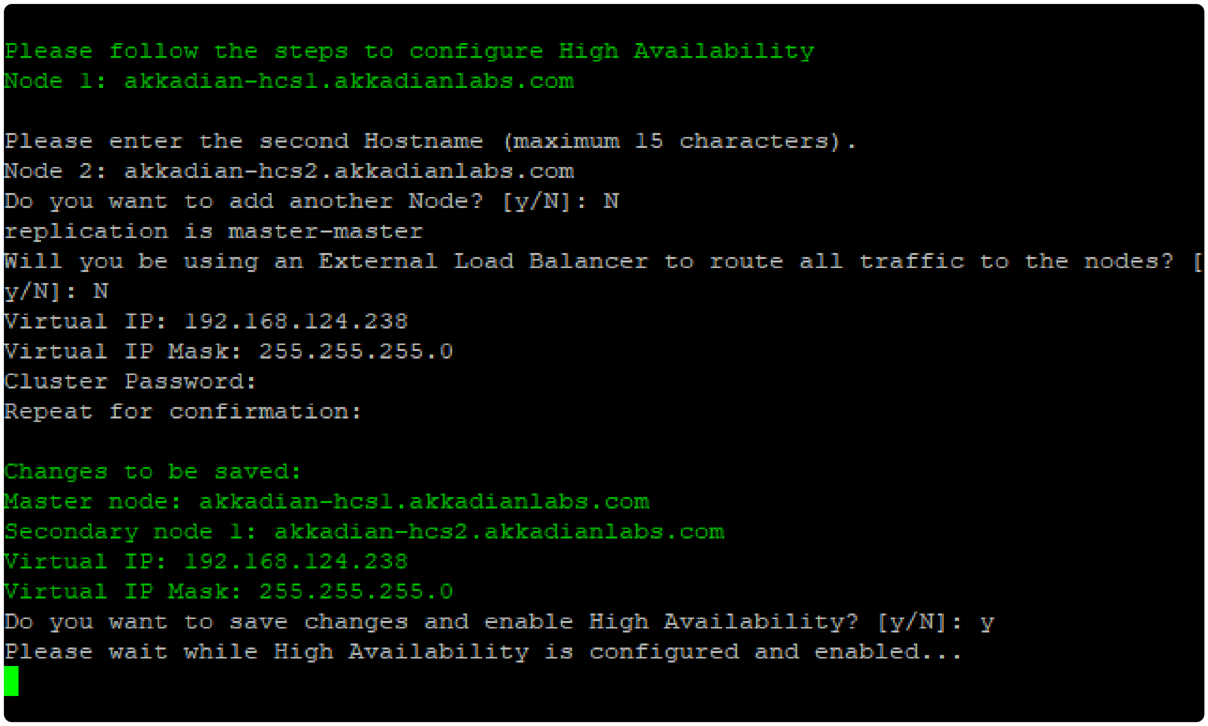
```
#                                                       #
# Welcome to Akkadian Appliance Manager - 2.1.4-3abb7d3 #
#                                                       #
#########################################################
Main Menu:
  1: Configure Network
  2: Configure Time
  3: Update Akkadian Products
  4: Product Settings Menu
  5: Appliance Manager Settings
  6: High Availability
  7: Replication Support - Maintenance Mode
  r: Reboot Server
  s: Shutdown Server
  q: Quit Akkadian Appliance Manager
  You can press 'CTRL+C' at any time to exit from an action
and return to the previous menu.

Use the following url to access the application
Secure URL, https://192.168.124.236



Select an option:
```

3. Select Option 1 – **Enable High Availability**.



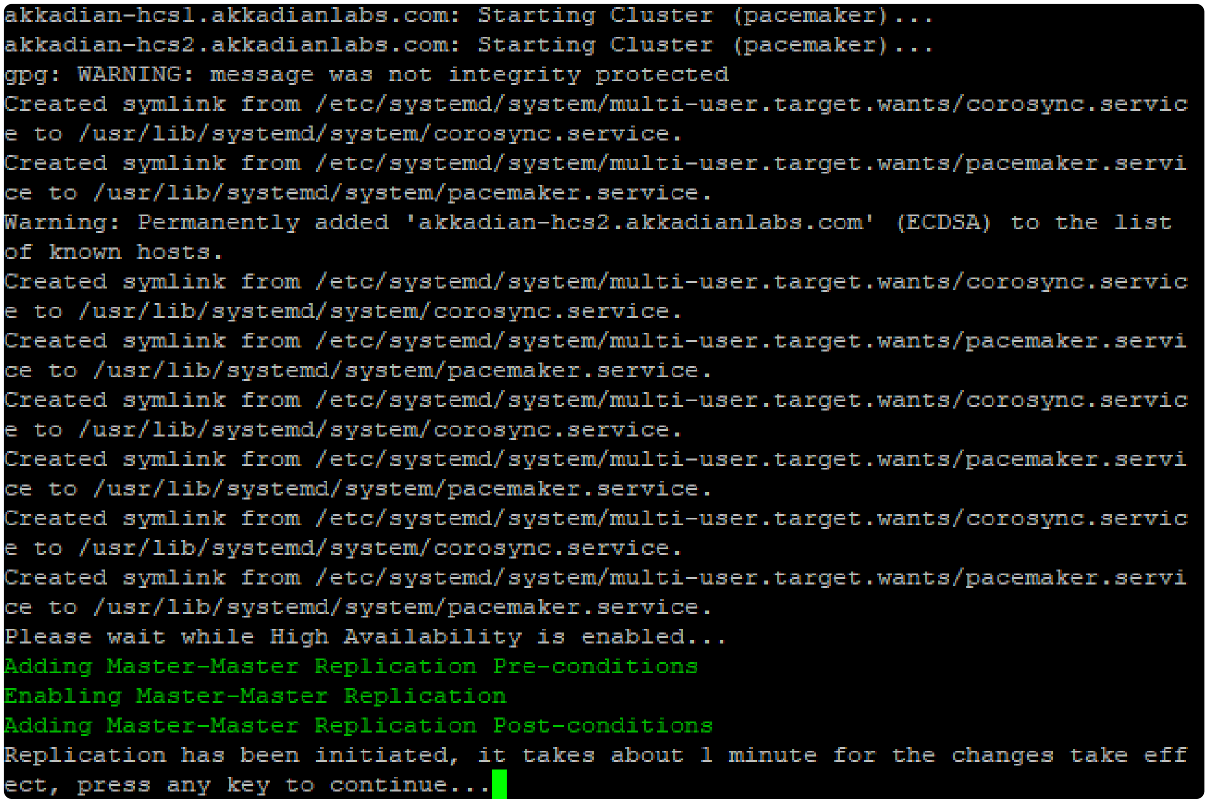
```
High Availability/Load Balancer Configurations
1: Enable High Availability
Pre-requisites for High Availability:
- All nodes have been assigned with a correct IP address
- All nodes have a FQDN (name.domain.com)
- An available IP address to be used as the virtual IP for the cluster
- All nodes should be accessible via DNS

b: Back to Main Menu
You can press 'CTRL+C' at any time to exit from an action
and return to the previous menu.

Select an option:
```

4. Enter the hostname of the secondary node in fully qualified domain format.
5. Add additional nodes if required.
6. Select if you will be using an external load balancer.
7. If you are not using an external load balancer, enter the Virtual IP, and Virtual IP Mask.
8. Enter a **Cluster Password** and Repeat for confirmation.
9. Enter “y” to save changes and Enable High Availability.



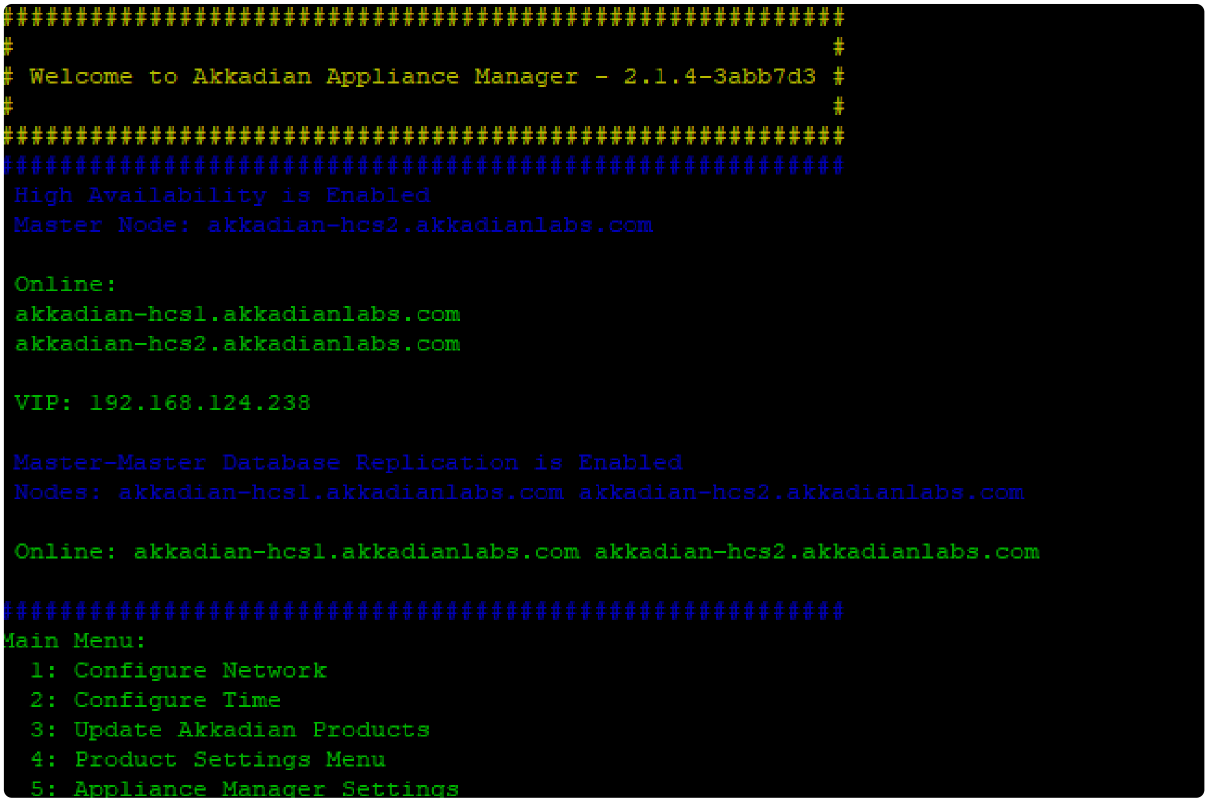
```
Please follow the steps to configure High Availability
Node 1: akkadian-hcs1.akkadianlabs.com

Please enter the second Hostname (maximum 15 characters).
Node 2: akkadian-hcs2.akkadianlabs.com
Do you want to add another Node? [y/N]: N
replication is master-master
Will you be using an External Load Balancer to route all traffic to the nodes? [
y/N]: N
Virtual IP: 192.168.124.238
Virtual IP Mask: 255.255.255.0
Cluster Password:
Repeat for confirmation:

Changes to be saved:
Master node: akkadian-hcs1.akkadianlabs.com
Secondary node 1: akkadian-hcs2.akkadianlabs.com
Virtual IP: 192.168.124.238
Virtual IP Mask: 255.255.255.0
Do you want to save changes and enable High Availability? [y/N]: y
Please wait while High Availability is configured and enabled...
```

If High Availability configure process is successfully, you should see a similar confirmation.



```
akkadian-hcs1.akkadianlabs.com: Starting Cluster (pacemaker)...
akkadian-hcs2.akkadianlabs.com: Starting Cluster (pacemaker)...
gpg: WARNING: message was not integrity protected
Created symlink from /etc/systemd/system/multi-user.target.wants/corosync.servic
e to /usr/lib/systemd/system/corosync.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/pacemaker.servi
ce to /usr/lib/systemd/system/pacemaker.service.
Warning: Permanently added 'akkadian-hcs2.akkadianlabs.com' (ECDSA) to the list
of known hosts.
Created symlink from /etc/systemd/system/multi-user.target.wants/corosync.servic
e to /usr/lib/systemd/system/corosync.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/pacemaker.servi
ce to /usr/lib/systemd/system/pacemaker.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/corosync.servic
e to /usr/lib/systemd/system/corosync.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/pacemaker.servi
ce to /usr/lib/systemd/system/pacemaker.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/corosync.servic
e to /usr/lib/systemd/system/corosync.service.
Created symlink from /etc/systemd/system/multi-user.target.wants/pacemaker.servi
ce to /usr/lib/systemd/system/pacemaker.service.
Please wait while High Availability is enabled...
Adding Master-Master Replication Pre-conditions
Enabling Master-Master Replication
Adding Master-Master Replication Post-conditions
Replication has been initiated, it takes about 1 minute for the changes take eff
ect, press any key to continue...
```

✻ When you go back to the main Appliance Manager menu, you will see High Availability is Enabled.



```
#########################################################
#                                                       #
# Welcome to Akkadian Appliance Manager - 2.1.4-3abb7d3 #
#                                                       #
#########################################################
#########################################################
 High Availability is Enabled
 Master Node: akkadian-hcs2.akkadianlabs.com

 Online:
 akkadian-hcs1.akkadianlabs.com
 akkadian-hcs2.akkadianlabs.com

 VIP: 192.168.124.238

 Master-Master Database Replication is Enabled
 Nodes: akkadian-hcs1.akkadianlabs.com akkadian-hcs2.akkadianlabs.com

 Online: akkadian-hcs1.akkadianlabs.com akkadian-hcs2.akkadianlabs.com

#########################################################
Main Menu:
  1: Configure Network
  2: Configure Time
  3: Update Akkadian Products
  4: Product Settings Menu
  5: Appliance Manager Settings
```

2.4 Appliance Implementation and Updates

Akkadian Labs reviews its Software on a regular basis for potential security vulnerabilities and, if one is found, endeavors to provide an updated version on a timely basis to its Customers who have a Support Agreement. Akkadian Labs Products are downloaded as an appliance with security features that deny operating system root access and blocks incoming requests to all ports to the Software except for HTTPS-443 and SSH-22. Software Updates may at times possibly contain patches to enhance or address potential security or other issues. Customer agrees to promptly install all Updates supplied by Akkadian Labs. Customer acknowledges that failure to do so may render the Software nonconforming to updated Documentation or vulnerable to unauthorized access or other intrusion, and Customer agrees to assume all risks arising such failure. Akkadian Labs will not be liable for inoperability of the Software or unauthorized access to Customer’s systems or data due to failure of Customer to timely install Updates. Akkadian Labs may terminate Support Services if Customer fails to comply with this Section 7.2 of user agreement.

3. Initial Configuration

After completing the installation, Akkadian Provisioning Manager requires some basic configuration before you can begin provisioning. This section will guide you through the configuration process.

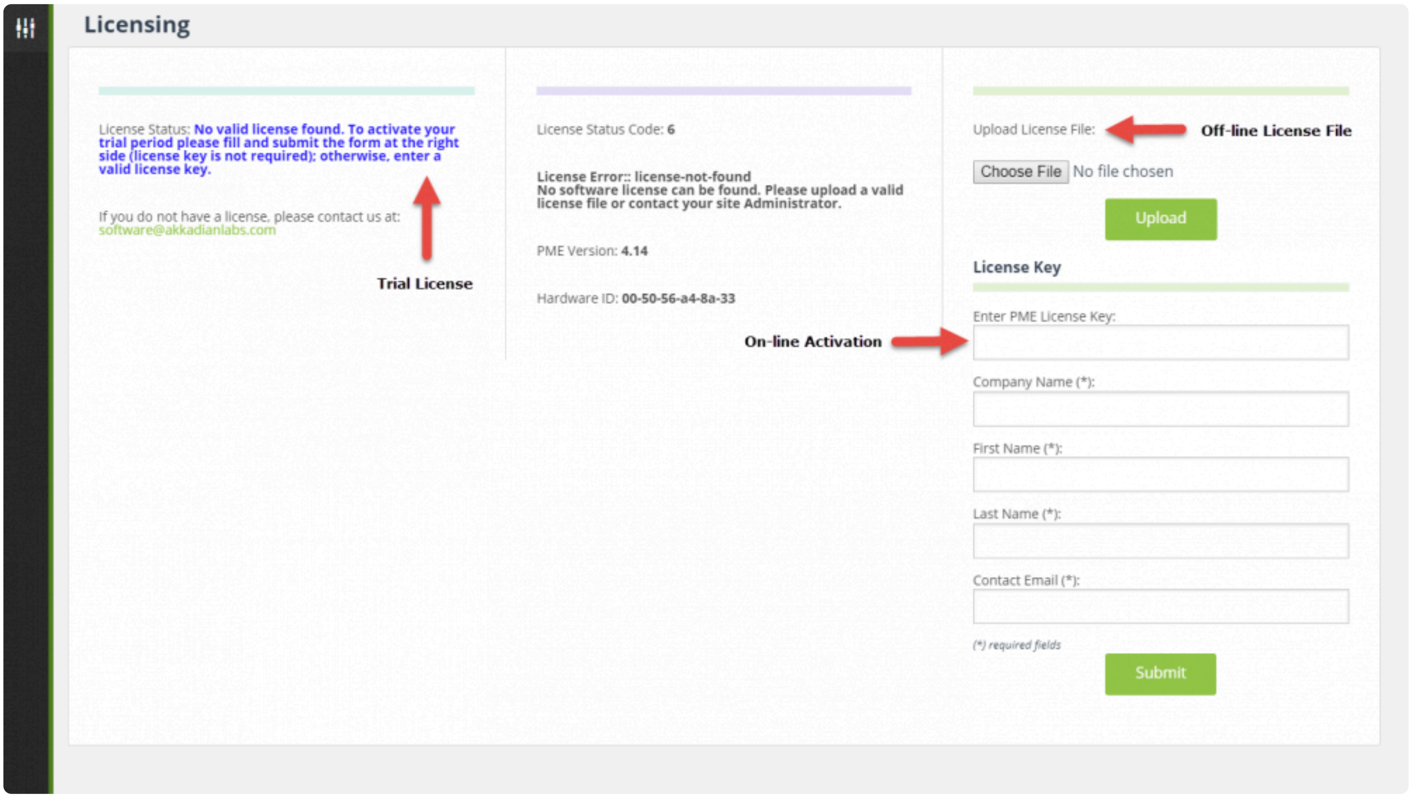
3.1 Logging in for the First Time

1. In a browser, navigate to HTTPS://{Server IP or NAME}/pme

> ✻ During the initial login process, Provisioning Manager will attempt to contact the Akkadian Labs licensing server. If Provisioning Manager does not have Internet access, this process may take 15-30 seconds.

2. Before accessing Provisioning Manager, a license must be applied. There are 3 options to license Provisioning Manager:

- **Trial License** – Apply a 30-day trial license
- **Off-line activation** – Upload a license file
- **On-line activation** – Enter a license key for on-line activation



Licensing

License Status: No valid license found. To activate your trial period please fill and submit the form at the right side (license key is not required); otherwise, enter a valid license key.

If you do not have a license, please contact us at: software@akkadianlabs.com

License Status Code: 6

License Error:: license-not-found
No software license can be found. Please upload a valid license file or contact your site Administrator.

PME Version: 4.14

Hardware ID: 00-50-56-a4-8a-33

Upload License File:

Choose File No file chosen

License Key

Enter PME License Key:

Company Name (*):

First Name (*):

Last Name (*):

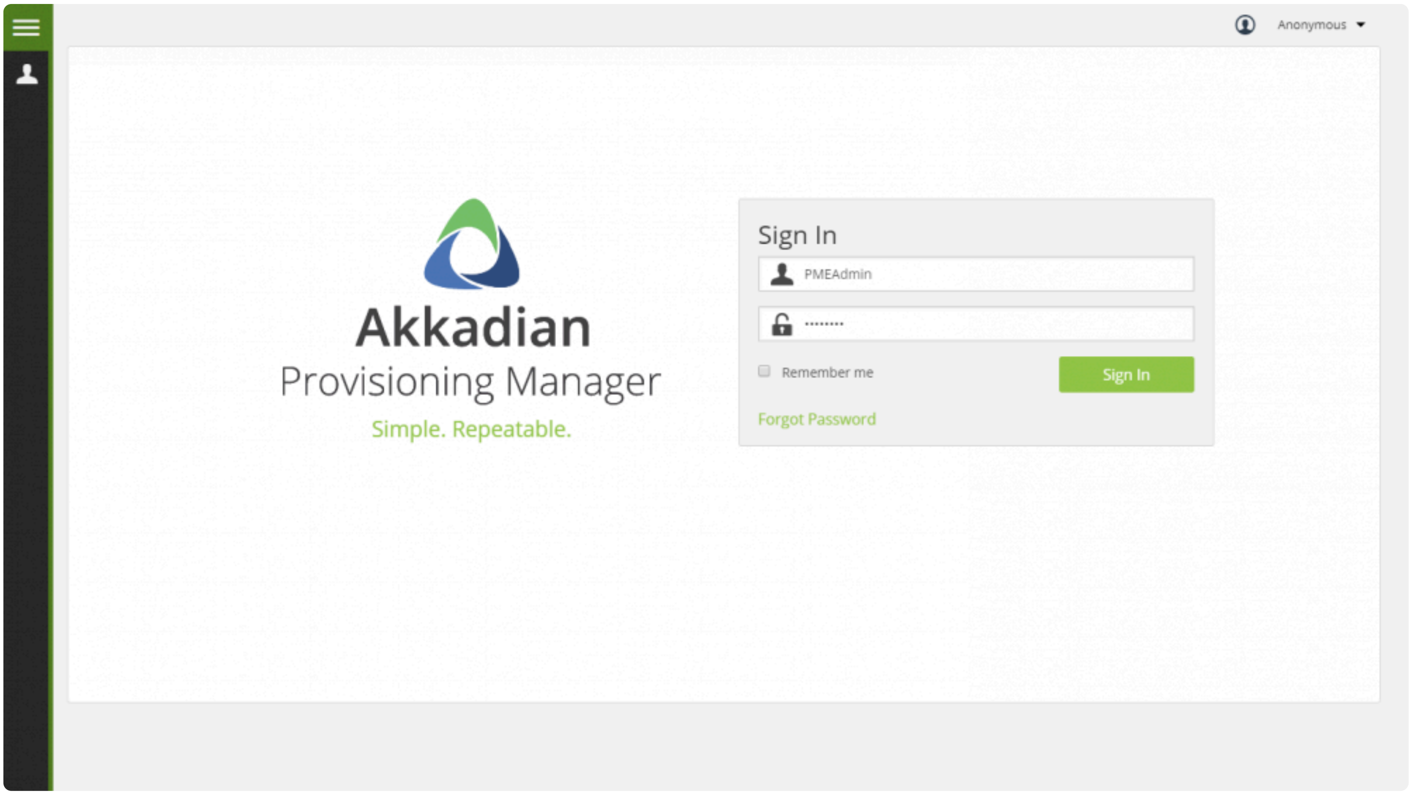
Contact Email (*):

(*) required fields

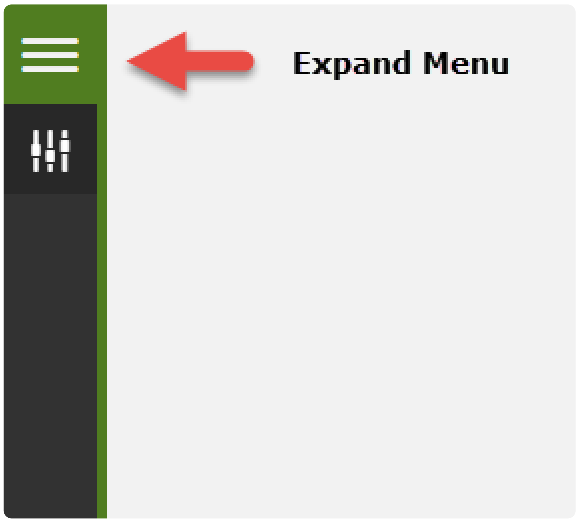
3. Log in using the default credentials:

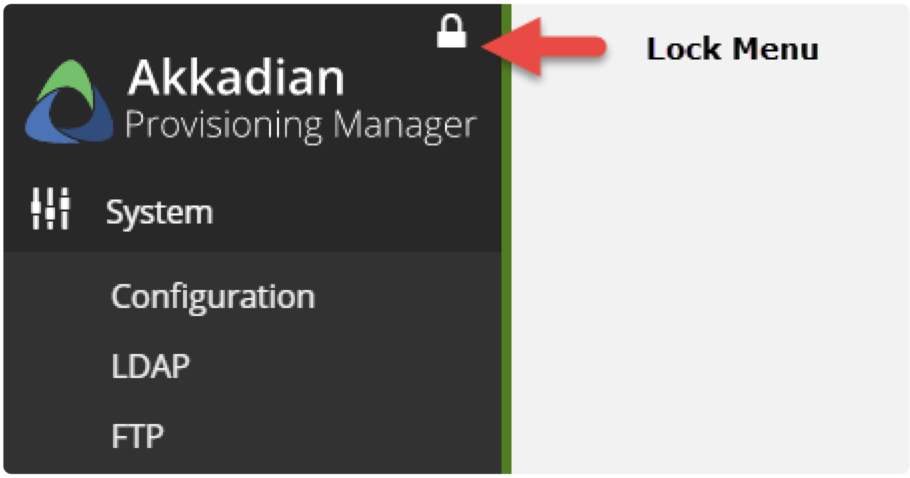
Username – PMEAdmin

Password – PMEAdmin (Case sensitive)



4. By default, the Menu Bar is collapsed. The menu bar may be expanded and locked.

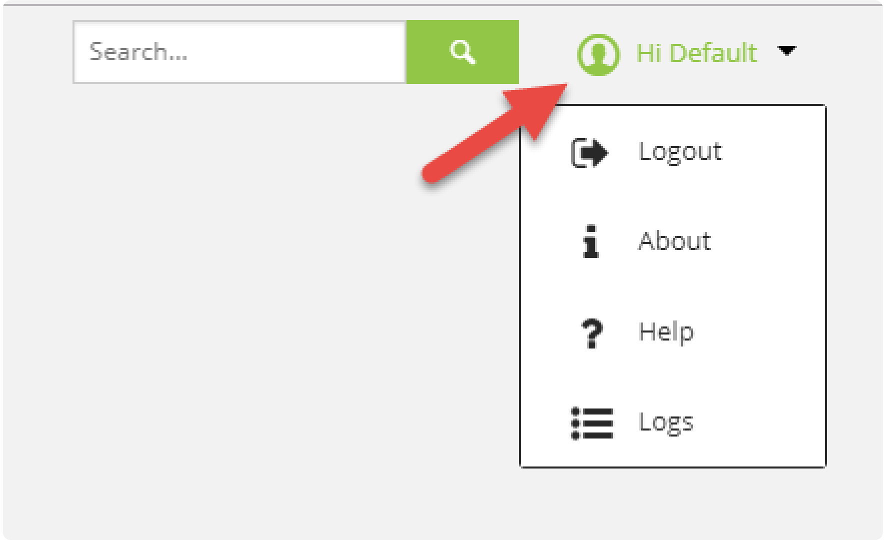



Lock Menu
Akkadian
Provisioning Manager
System
Configuration
LDAP
FTP

3.1.1 Changing the PMEAdmin Password

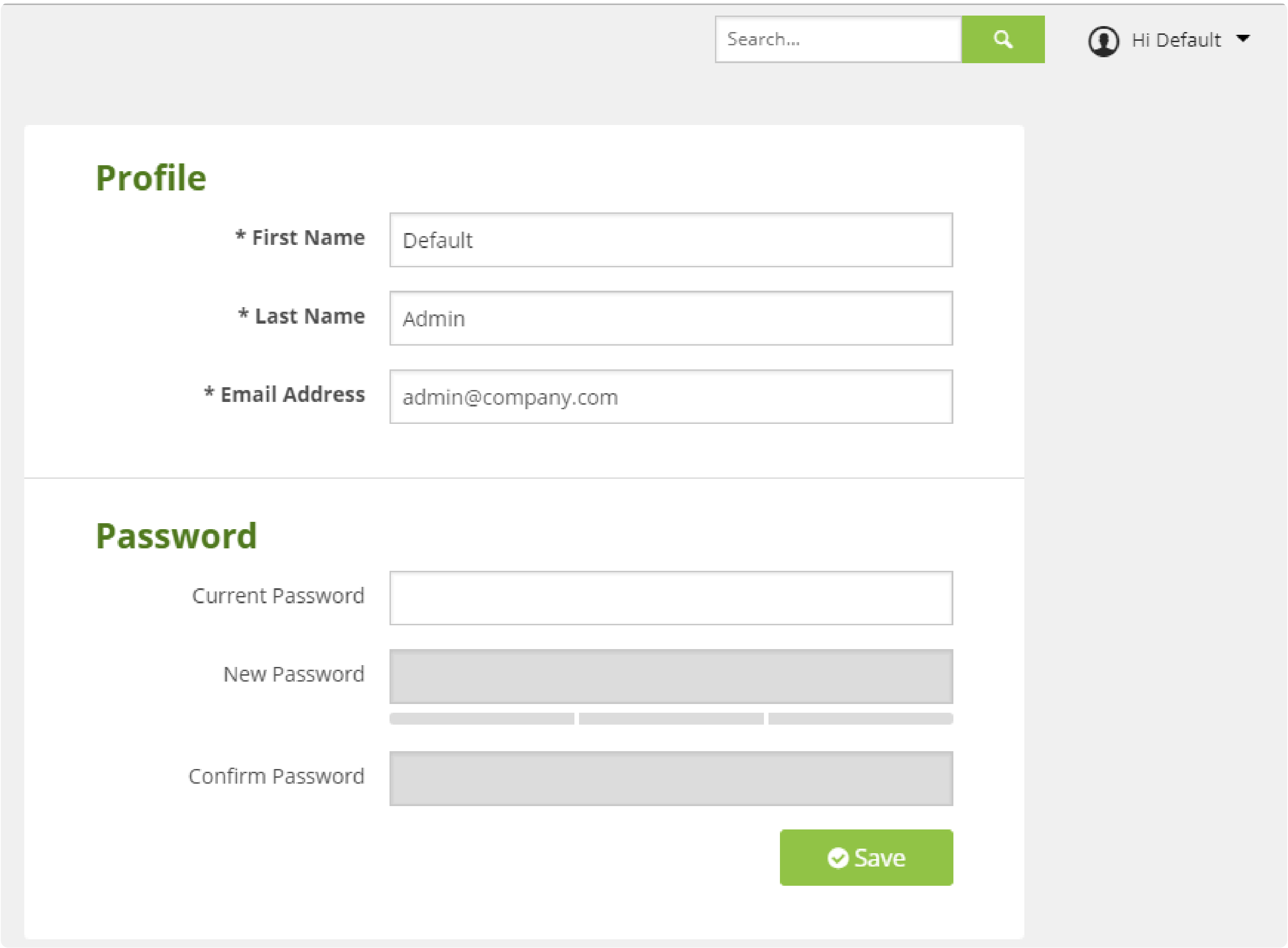
It is highly recommended that you change the default PMEAdmin password and set a valid email address for password recovery.

1. Click on “Hi Default” to open the PMEAdmin profile



2. Update the PMEAdmin users profile with a valid email address and password. You may also update the first and last name.

! Please ensure the PMEAdmin email address is valid for a successful password recovery!



Profile

* First Name: Default

* Last Name: Admin

* Email Address: admin@company.com

Password

Current Password:

New Password:

Confirm Password:

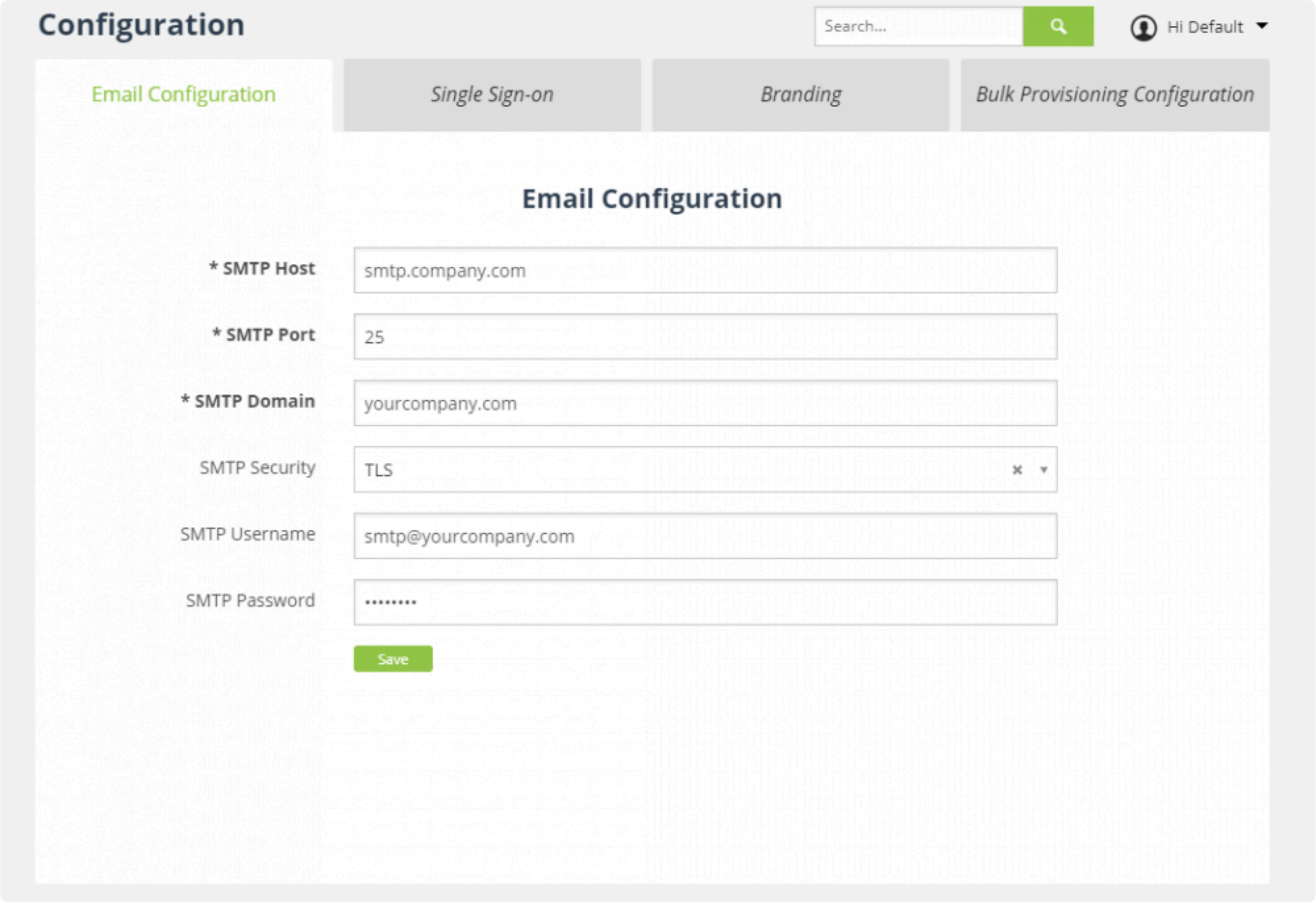
3.2 System Configuration

After licensing Provisioning Manager and successfully logging in, there are few system configuration items which should be completed before setting up provisioning. This System Configuration section will guide you through configuring the necessary items for your environment.

3.2.1 Email Configuration

Email configuration is optional, but is required for several Provisioning Manager features, such as notifications and password recovery.

1. Select **Configuration** from the **System** menu
2. Click the **Email Configuration** Tab
3. Enter the information for your SMTP server
4. When complete, click **Save**

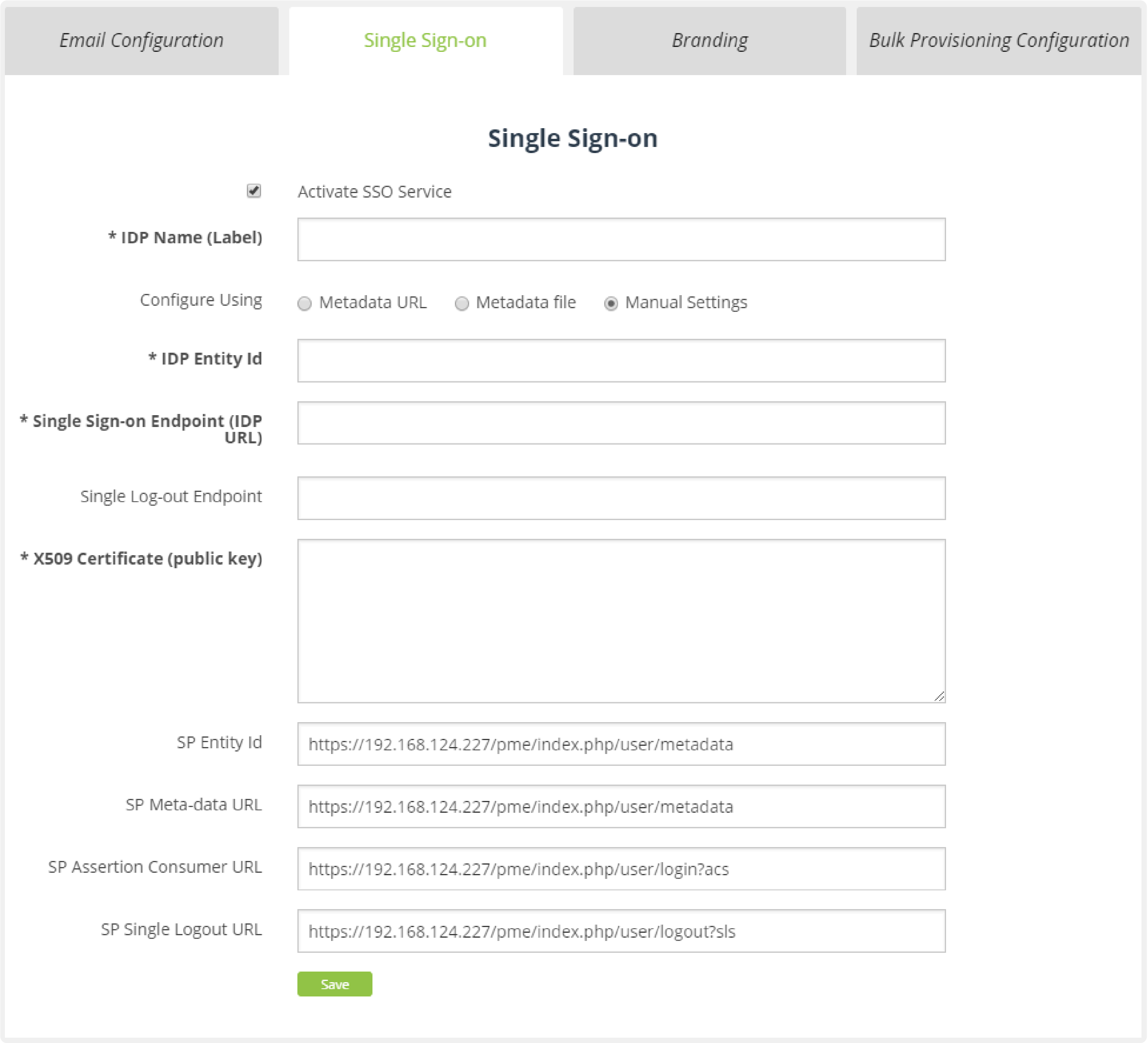


* SMTP Host	smtp.company.com
* SMTP Port	25
* SMTP Domain	yourcompany.com
SMTP Security	TLS
SMTP Username	smtp@yourcompany.com
SMTP Password	••••••••

3.2.2 Single Sign-on

Provisioning Manager supports Single Sign-on (SSO) using Security Assertion Markup Language (SAML). The configuration is optional and only one SSO configuration is supported.

1. Select **Configuration** from the **System** menu
2. Click the **Single Sign-on** Tab
3. Enter the information for your SSO provider
4. When complete, click **Save**



Single Sign-on

☑ Activate SSO Service

*** IDP Name (Label)**

Configure Using ○ Metadata URL ○ Metadata file ● Manual Settings

*** IDP Entity Id**

*** Single Sign-on Endpoint (IDP URL)**

Single Log-out Endpoint

*** X509 Certificate (public key)**

SP Entity Id: https://192.168.124.227/pme/index.php/user/metadata

SP Meta-data URL: https://192.168.124.227/pme/index.php/user/metadata

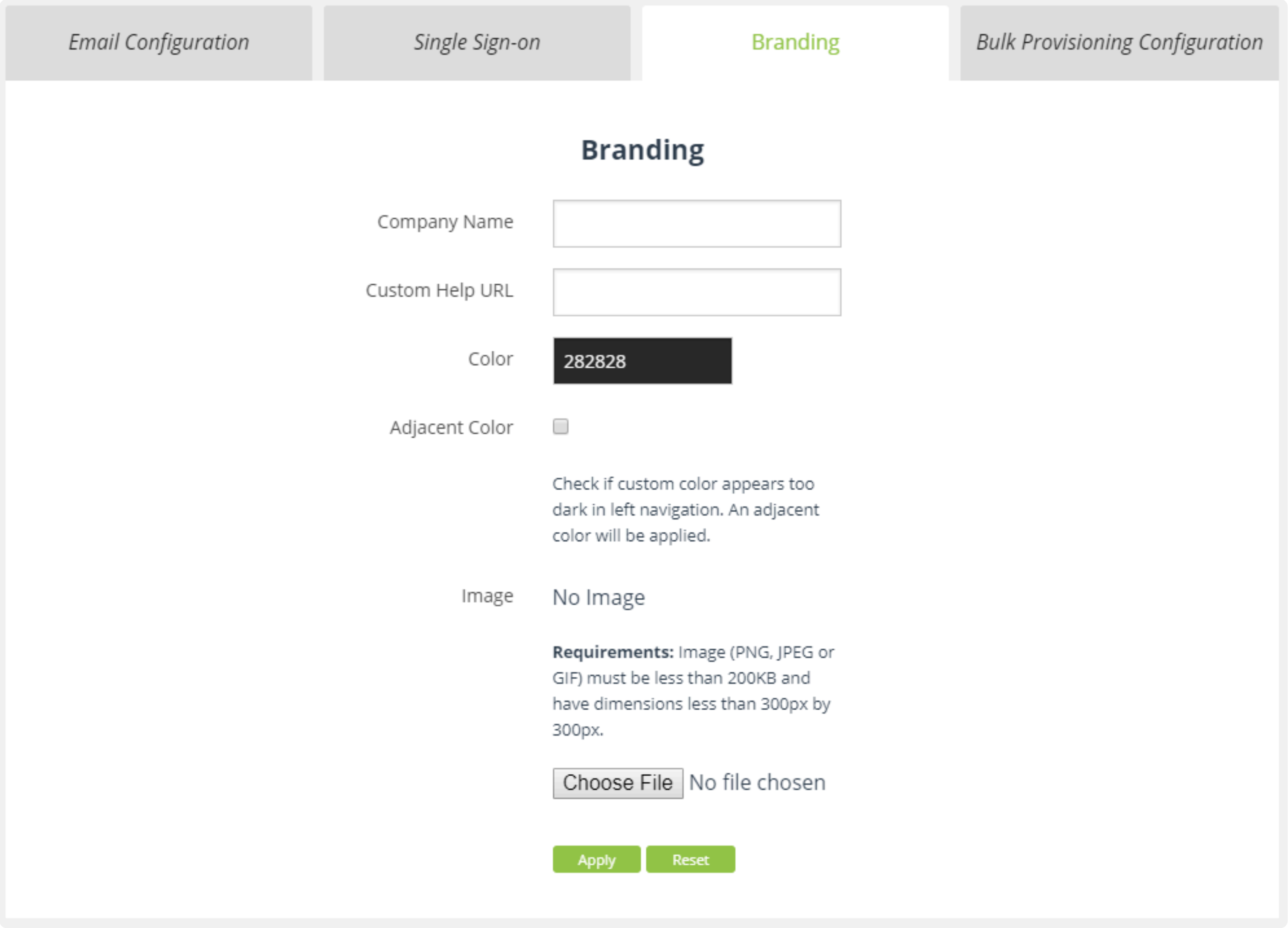
SP Assertion Consumer URL: https://192.168.124.227/pme/index.php/user/login?acs

SP Single Logout URL: https://192.168.124.227/pme/index.php/user/logout?sls

3.2.3 Branding

Optionally, Provisioning Manager can be branded with your organization's name, logo an colors.

1. Select **Configuration** from the **System** menu
2. Click the **Branding** Tab
3. Set desired customer branding attributes
4. Optionally you may specify a custom help URL for the system, which will replace the standard administration guide
5. When complete, click **Apply**



Branding

Company Name	
Custom Help URL	
Color	282828
Adjacent Color	□

Check if custom color appears too dark in left navigation. An adjacent color will be applied.

Image: No Image

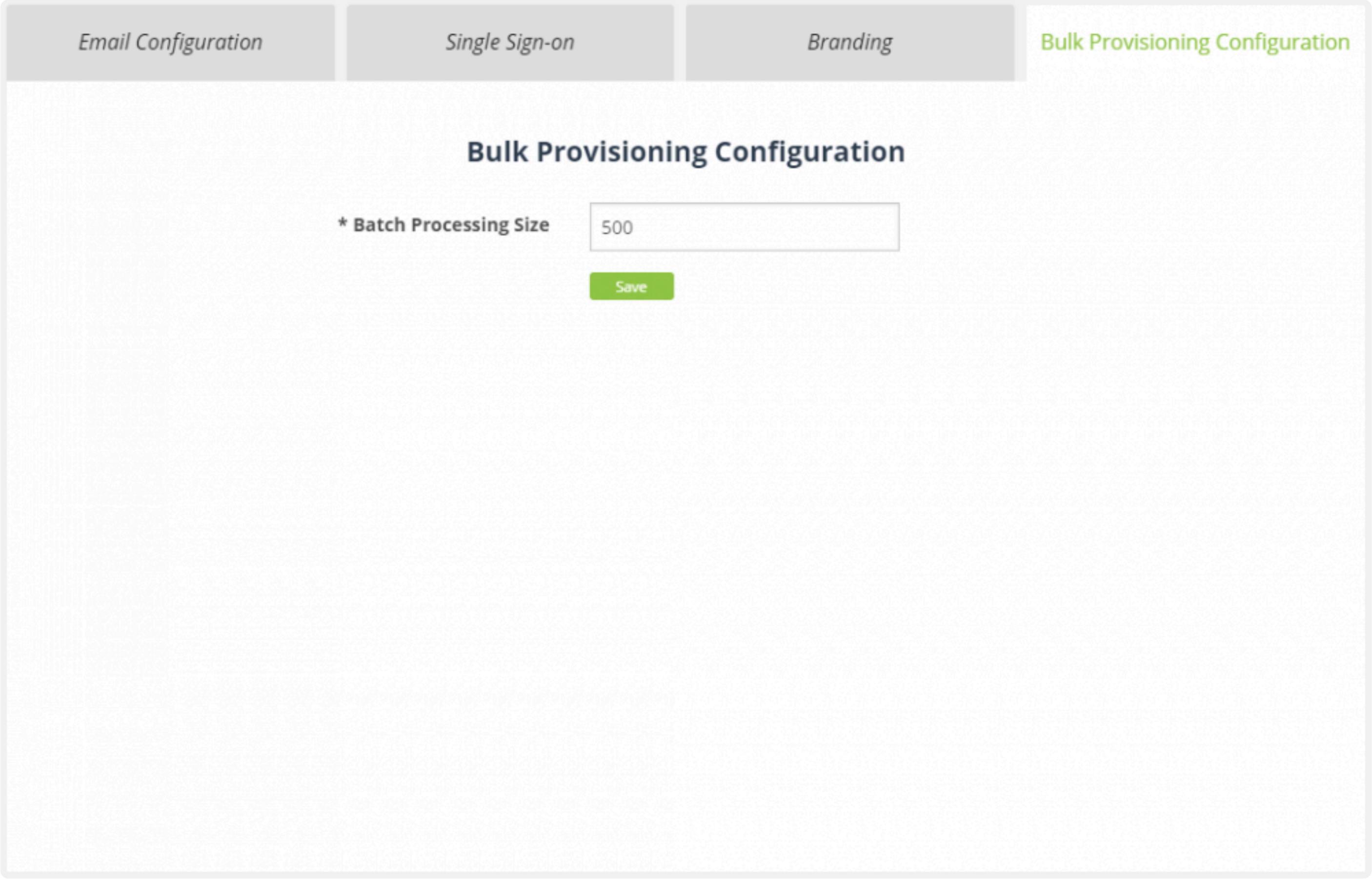
Requirements: Image (PNG, JPEG or GIF) must be less than 200KB and have dimensions less than 300px by 300px.

Choose File No file chosen

3.2.4 Bulk Provisioning Configuration

The Bulk Provisioning Configuration controls the batch processing size for the bulk provisioning process. The default is 500, which means bulk jobs will be divided into batches of 500 items. If bulk jobs are not completing, consider reducing the batch processing size.

1. Select **Configuration** from the **System** menu
2. Click the **Bulk Configuration** Tab
3. Enter the Batch Processing Size value
4. When complete, click **Save**



Bulk Provisioning Configuration

* Batch Processing Size: 500

3.2.5 LDAP

LDAP configuration is optional, but is required for several Provisioning Manager features including LDAP authentication and Active Directory integration.

Provisioning Manager supports creating multiple LDAP agreements in order to support multiple domains as well as configurations for Active Directory updates.

1. Select **LDAP** from the **System** menu
2. Click on **Default** edit the default LDAP agreement or click **Add** to create a new agreement

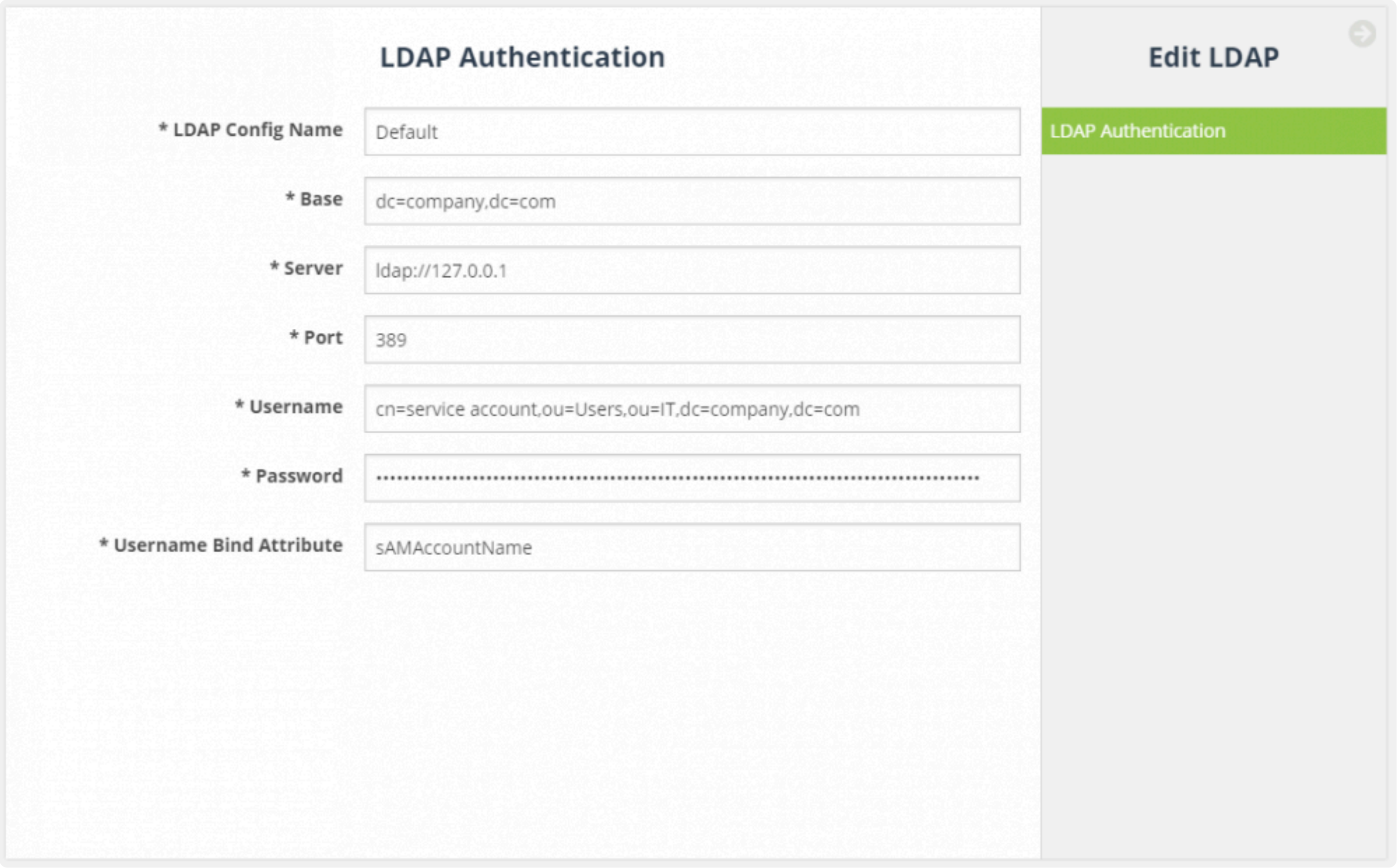
✻ It is recommended to update the default LDAP configuration for the initial LDAP configuration

3. Enter the information for your LDAP configuration

Field	Description
LDAP Config Name	Enter a name to identify this specific LDAP configuration
Base	Enter the LDAP search base
Server	The LDAP server IP address or DNS name
Port*	Enter the LDAP server port number
Username	Enter the LDAP Username used to authenticate to the LDAP server
Password	Enter the LDAP Password used to authenticate to the LDAP server
Username Bind Attribute	Enter LDAP Attribute to bind to Username during authentication

✻ Provisioning Manager support connecting to Active Directory on ports 389 and 3268. Please note that only port 389 is supported for Active Directory LDAP updates as 3268 is read-only.

4. When complete, click **Save**



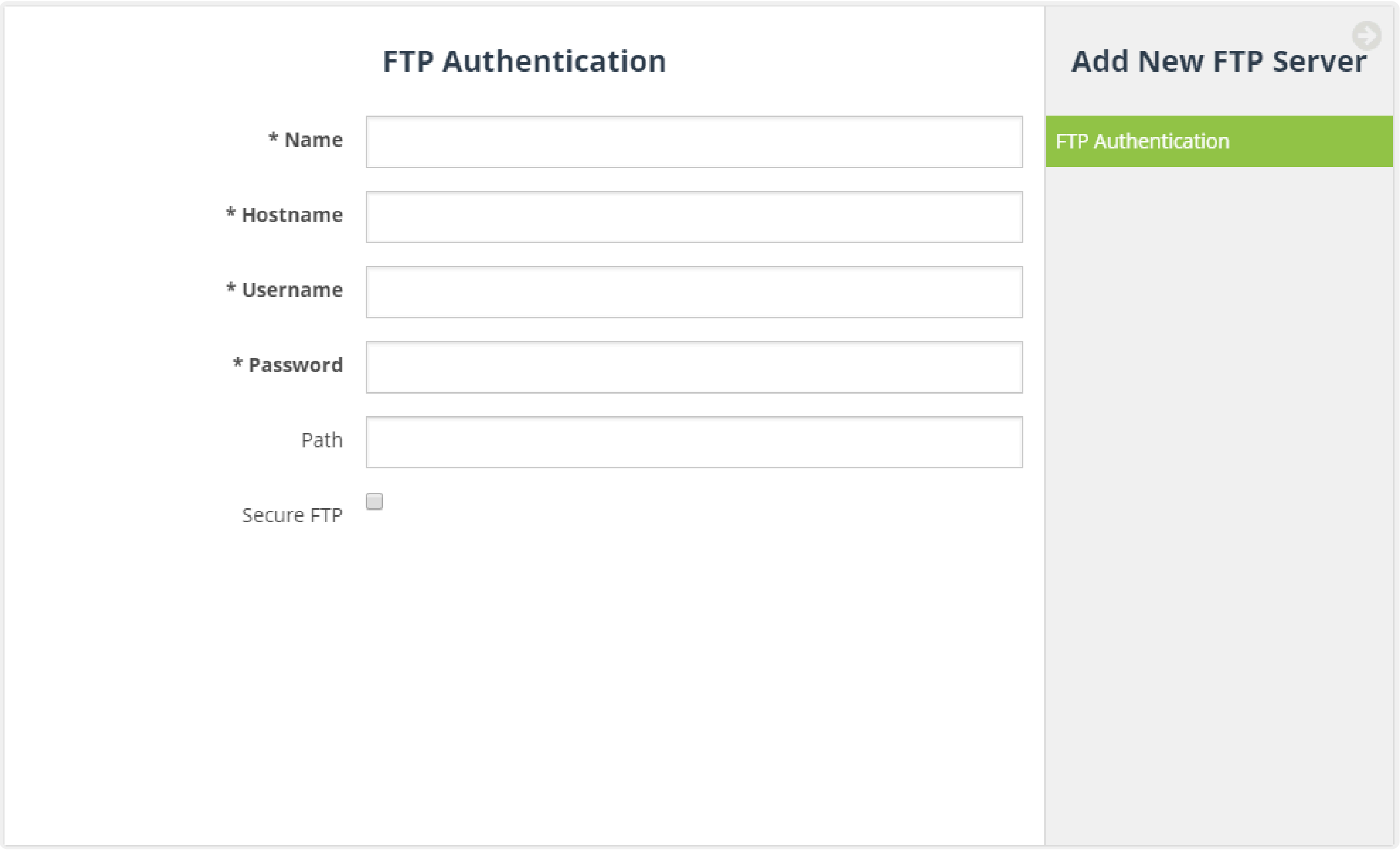
LDAP Authentication

* LDAP Config Name	Default
* Base	dc=company,dc=com
* Server	ldap://127.0.0.1
* Port	389
* Username	cn=service account,ou=Users,ou=IT,dc=company,dc=com
* Password	••
* Username Bind Attribute	sAMAccountName

3.2.6 FTP

Configuring an FTP server is optional, but is highly-recommended and required to support scheduled backups.

1. Select **FTP** from the **System** menu
2. Click *Add *to create a new FTP connection
3. Enter the information for your FTP server
4. When complete, click **Save**



FTP Authentication

* Name

* Hostname

* Username

* Password

Path

Secure FTP □

3.2.7 Certificate

Provisioning Manager is deployed with a self-signed SSL certificate, but optionally can be configured with a certificate from a private or public certificate authority.

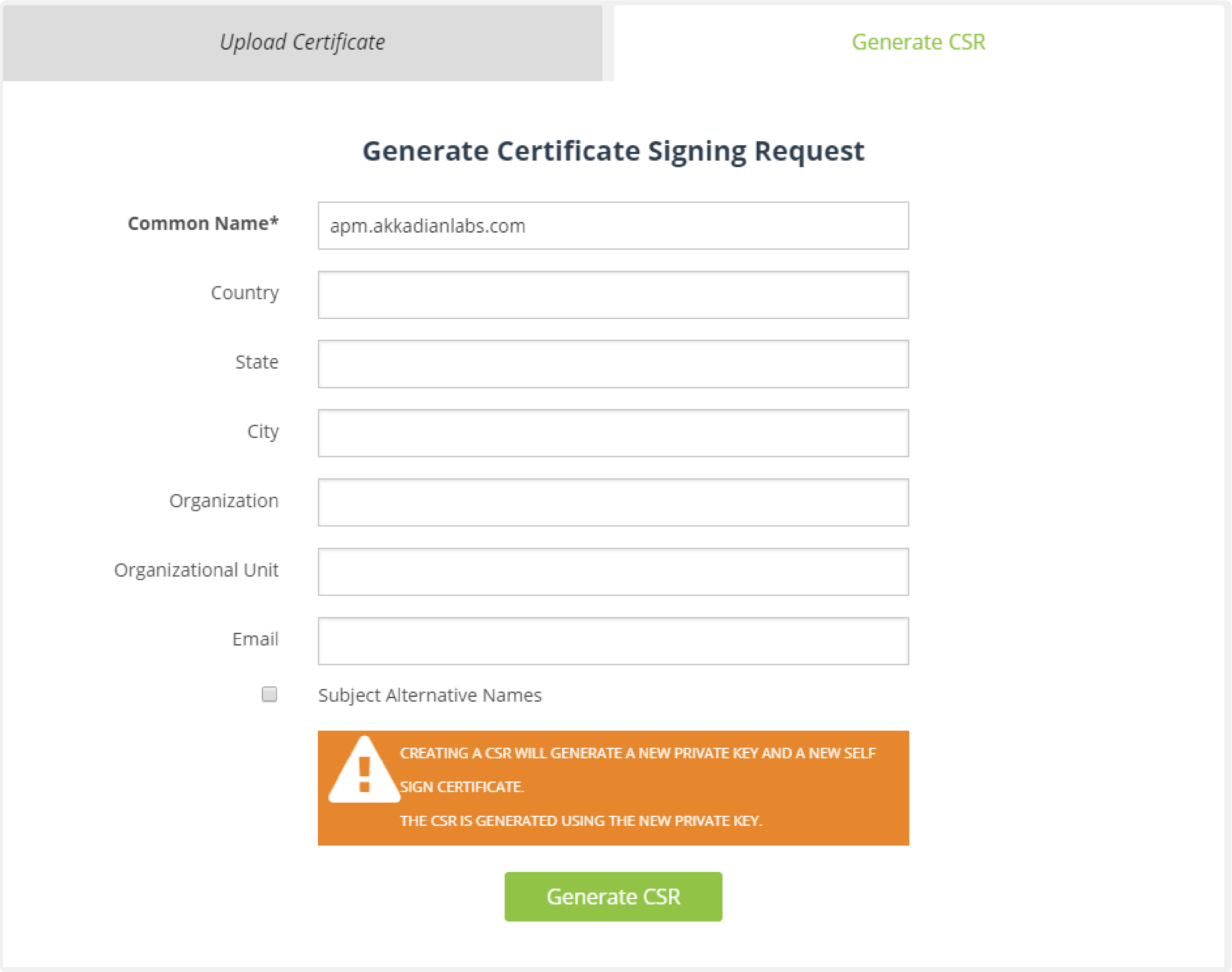
Provisioning Manager supports SSL certificates generated using its own private key or using an external private key.

Method 1 – Use Provisioning Manager's private key

1. Select **Certificate** from the System menu
2. Select the **Generate CSR** tab
3. Complete the Certificate Signing Request

! The common name must match the fully qualified domain name of the server.

1. When complete, click **Generate CSR**
2. Download the CSR file
3. On your Certificate Authority, generate a certificate using the downloaded CSR



Generate Certificate Signing Request

Common Name*	apm.akkadianlabs.com
Country	
State	
City	
Organization	
Organizational Unit	
Email	

□ Subject Alternative Names

CREATING A CSR WILL GENERATE A NEW PRIVATE KEY AND A NEW SELF SIGN CERTIFICATE.

THE CSR IS GENERATED USING THE NEW PRIVATE KEY.

1. Select the **Upload Certificate** tab
2. Click **Choose File** to the right of **Certificate** and upload the certificate generate by your certificate authority

> Uploading a Private Key is not necessary as the certificate was generated using Provisioning Manager's private key

3. If the certificate was generated using a Public Certificate Authority, click **Upload Certificate** to complete the process
4. If the certificate was generated using an Internal Certificate Authority, select the **Use Internal Certificate Authority (CA)** check box
5. Upload the Root Certificate from your Internal CA

6. Click **Upload Certificate** to complete the process

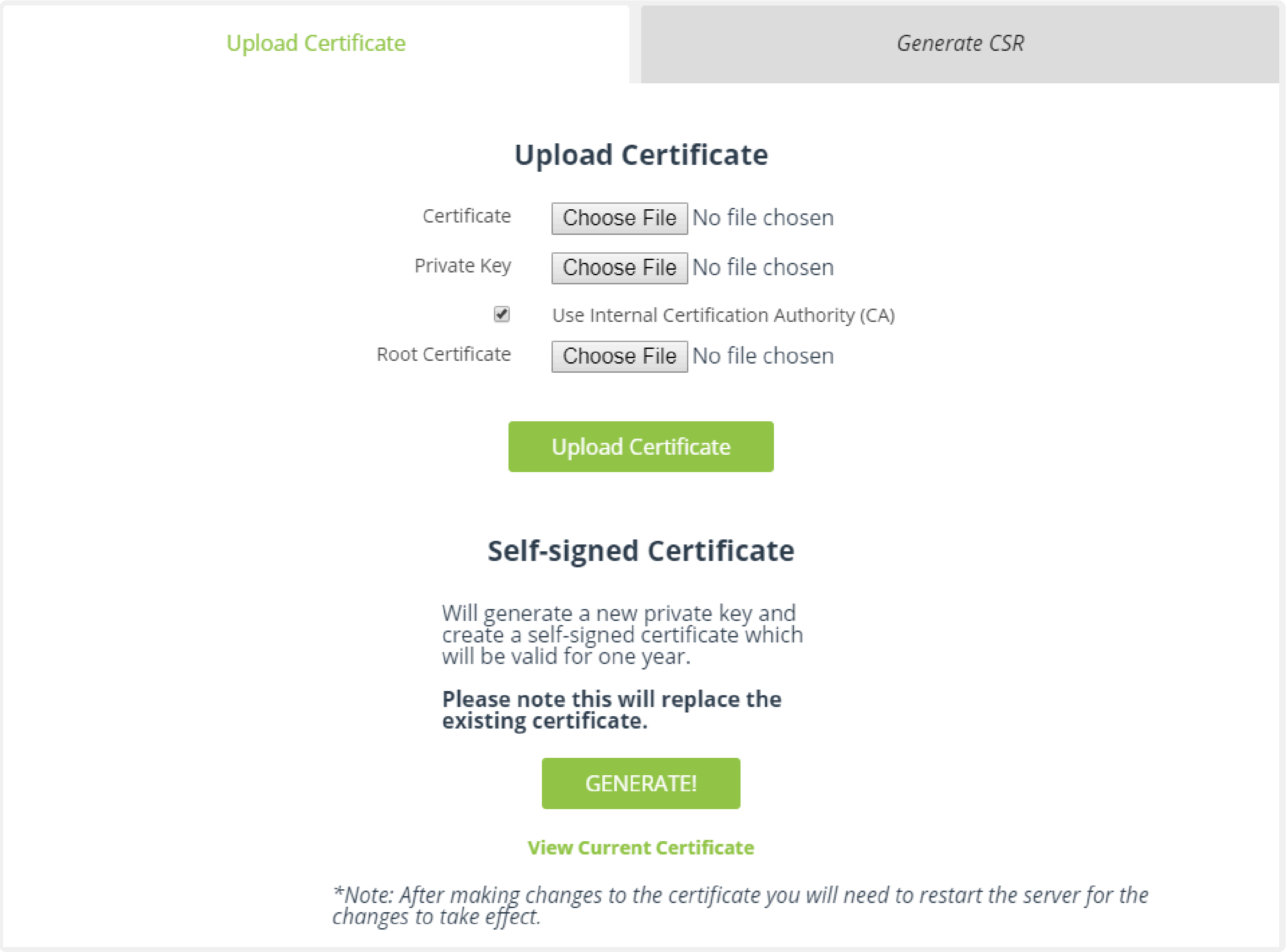
> ✻ Provisioning Manager must be restarted for the changes to take effect. This can be done using the Appliance Manager CLI or using VMWare tools.

Method 2 – Use an external private key

1. Select **Certificate** from the System menu
2. Select the **Generate CSR** tab
3. Complete the Certificate Signing Request

> ! The common name must match the hostname name of the server configured in the CLI. Depending on your deployment, this may be the fully-qualified domain name or just the hostname.

1. When complete, click **Generate CSR**
2. Download the CSR file
3. On your Certificate Authority, generate a certificate using the downloaded CSR
4. Select the **Upload Certificate** tab
5. Click **Choose File** to the right of **Certificate** and upload the certificate generate by your certificate authority
6. Click **Choose File** to the right of **Private Key** and upload the private key from your certificate authority
7. If the certificate was generated using a Public Certificate Authority, click **Upload Certificate** to complete the process
8. If the certificate was generated using an Internal Certificate Authority, select the **Use Internal Certificate Authority (CA)** check box
9. Upload the Root Certificate from your Internal CA
10. Click **Upload Certificate** to complete the process



Upload Certificate

Certificate Choose File No file chosen

Private Key Choose File No file chosen

☑ Use Internal Certification Authority (CA)

Root Certificate Choose File No file chosen

Self-signed Certificate

Will generate a new private key and create a self-signed certificate which will be valid for one year.

Please note this will replace the existing certificate.

**Note: After making changes to the certificate you will need to restart the server for the changes to take effect.*

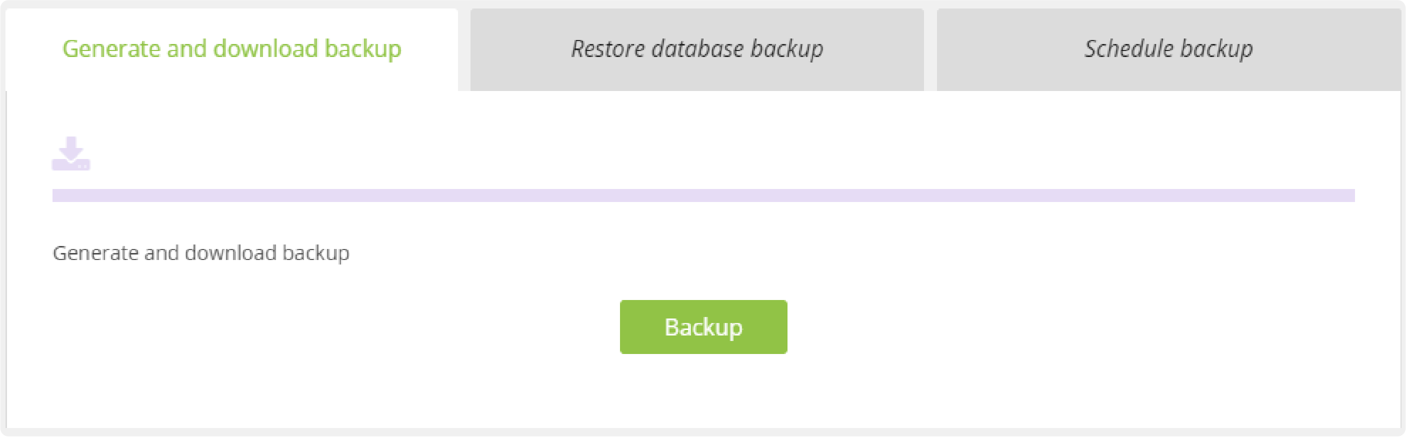
3.2.8 Backup and Restore

The Backup and Restore feature is used to run manual backups, schedule recurring backups and restore backups.

3.2.8.1 Manual Backup

To run a manual backup:

1. Select **Backup and Restore** from the **System** menu
2. Click **Backup**
3. Save the backup file to a safe location



3.2.8.2 Schedule Backup

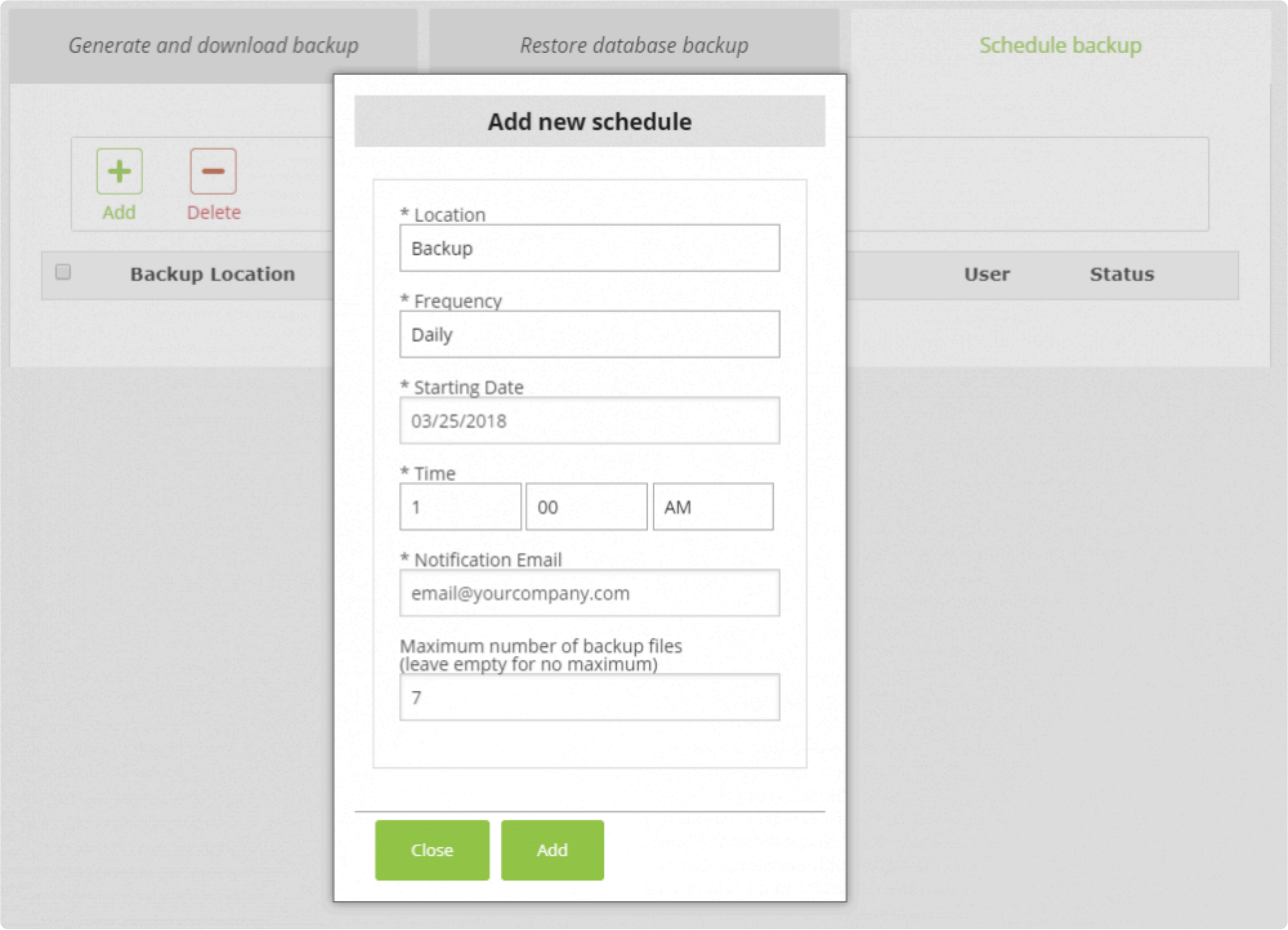
To schedule a backup:

> ! Scheduled backups cannot be configured without an FTP location.

Scheduled backups cannot be configured without an FTP location.

1. Select **Backup and Restore** from the **System** menu
2. Click the **Schedule Backup** tab
3. Click **Add** to configure a scheduled backup
4. Configure the schedule and click **Add**

> ✻ Maximum number of backups files specified the number of backup files that will be maintained before they are removed.



Add new schedule

* Location: Backup

* Frequency: Daily

* Starting Date: 03/25/2018

* Time: 1 | 00 | AM

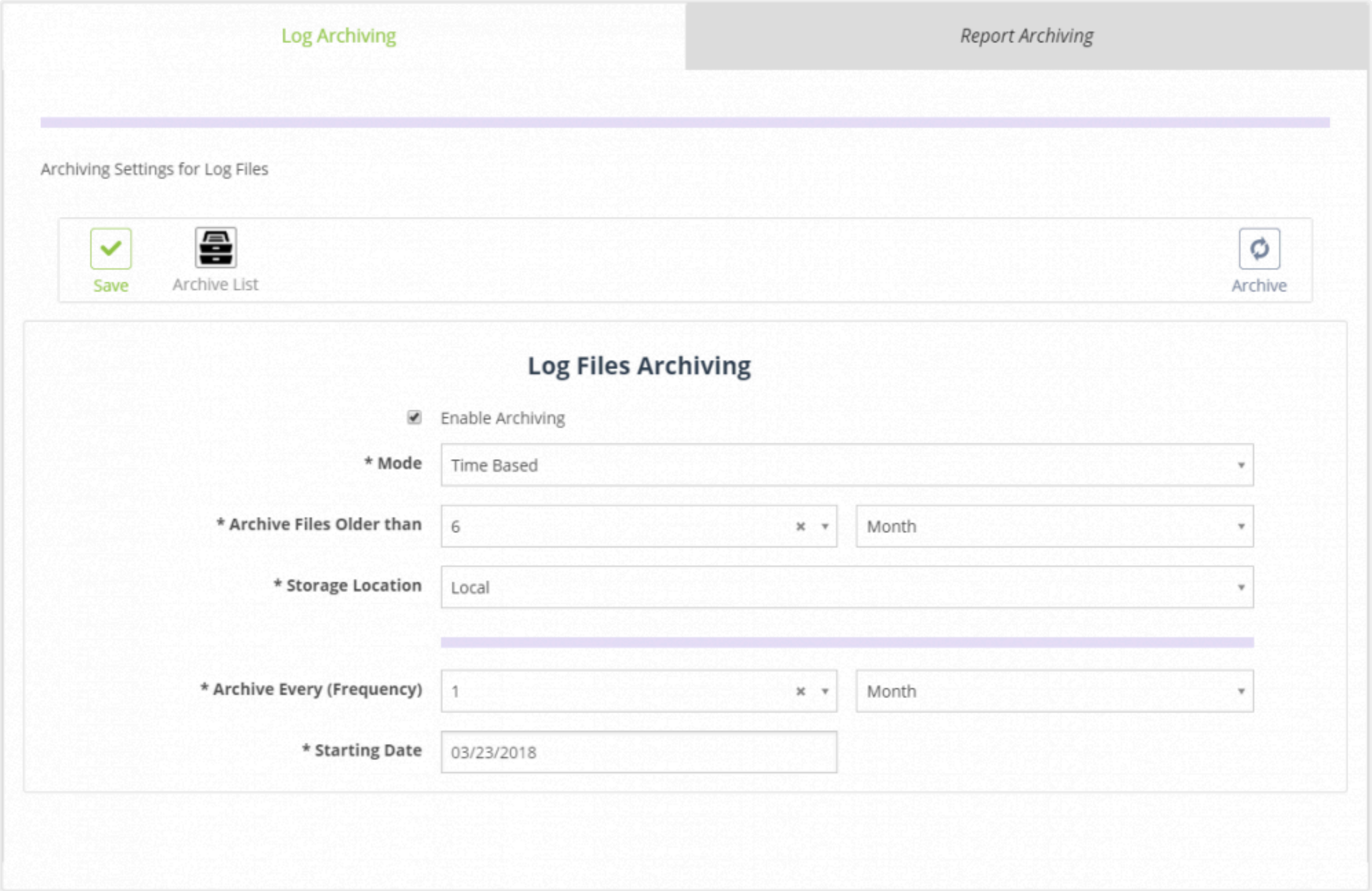
* Notification Email: email@yourcompany.com

Maximum number of backup files (leave empty for no maximum): 7

3.2.9 Log Configuration

By default, Provisioning Manager logging and reporting data is maintained for six month before it is locally archived. Though archiving significantly reduces the storage requirements, it is recommended the data is archived off box.

1. Select Log Configuration from the System menu
2. Update the Log Archiving configuration
3. Click **Save**



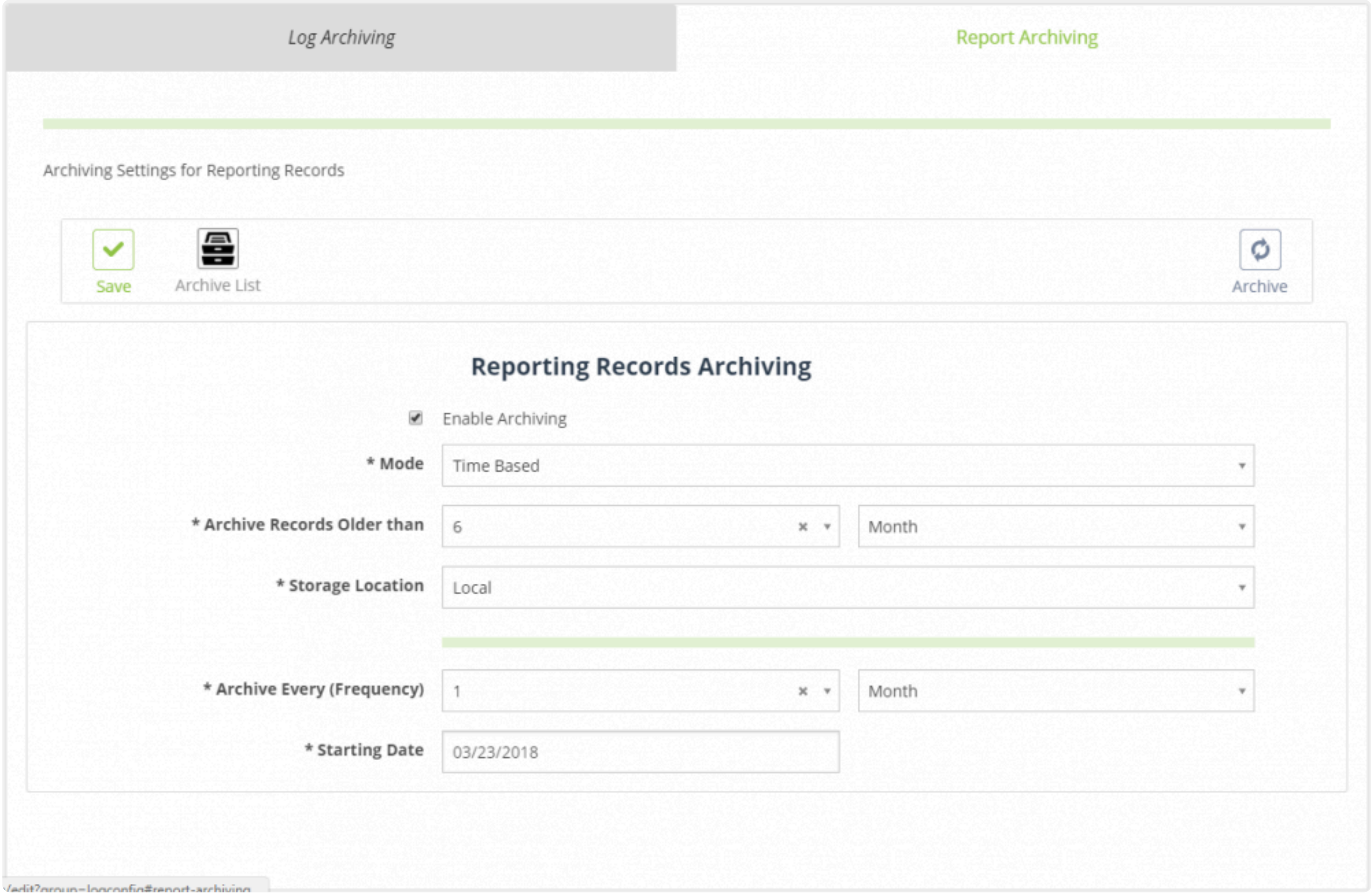
Archiving Settings for Log Files

Log Files Archiving

☑ Enable Archiving

* Mode	Time Based
* Archive Files Older than	6	Month
* Storage Location	Local
* Archive Every (Frequency)	1	Month
* Starting Date	03/23/2018

1. Select the Report Archiving tab
2. Update the Report Archiving configuration
3. Click **Save**



Archiving Settings for Reporting Records

Reporting Records Archiving

☑ Enable Archiving

* Mode	Time Based
* Archive Records Older than	6 Month
* Storage Location	Local
* Archive Every (Frequency)	1 Month
* Starting Date	03/23/2018

/edit?group=logconfig#report-archiving

4. Application Servers

Application Servers provide the necessary configuration for Provisioning Manager to integrate with the Cisco Unified Communication Applications. Currently Provisioning Manager supports the following Cisco UC applications:

- Cisco Unified Communications Manager
- Cisco Unity Connection
- Cisco Contact Center Express
- Cisco Packaged Contact Center Enterprise
- Cisco Meeting Server
- Cisco WebEx
- Cisco Spark

This section will guide you through the process of configuring applications servers in Provisioning Manager.

✻ The first Applications Servers will be added using the PMEAdmin account. Additional Application Servers may be added using another account with Administrator privileges.

4.1 Cisco Unified Communication Manager

Akkadian Provisioning Manager requires integration to at least one Cisco Unified Communications Manager (CUCM), but supports provisioning across multiple CUCM clusters. Integration to a CUCM cluster only requires access to one node running the AXL Web Service, which is typically the publisher, but also be any Subscriber running the service.

This section will guide you through the process of preparing CUCM for integration and configuring CUCM as an Application Server in Provisioning Manager.

4.1.1 Preparing CUCM

Two items are required on Cisco Unified Communications Manager to allow access via the AXL API:

1. The Cisco AXL Web Service must be activated and started
2. An Application user with with required privileges

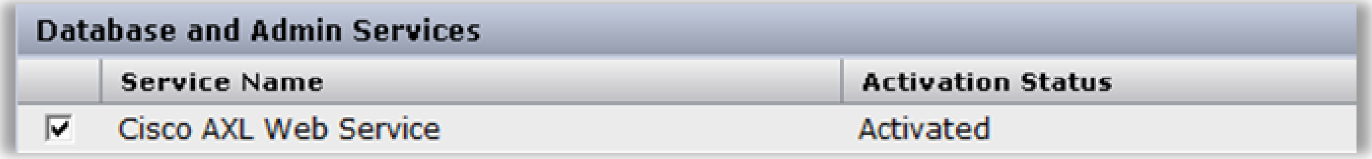
The Cisco AXL Web Service is disabled by default on some versions of Cisco Unified Communications Manager. The service must be activated to enable AXL API access.

*To activate the AXL Web Service: *

1. Browse to the CUCM **Serviceability** page on https:///ccmservice
2. **Tools > Service Activation**
3. Select the Publisher node

> ✻ Provisioning Manager also supports integrating with a CUCM Subscriber running the Cisco AXL Web Service.

1. Scroll down to **Database and Admin Services**
2. Check the box for **Cisco AXL Web Service** and click Save



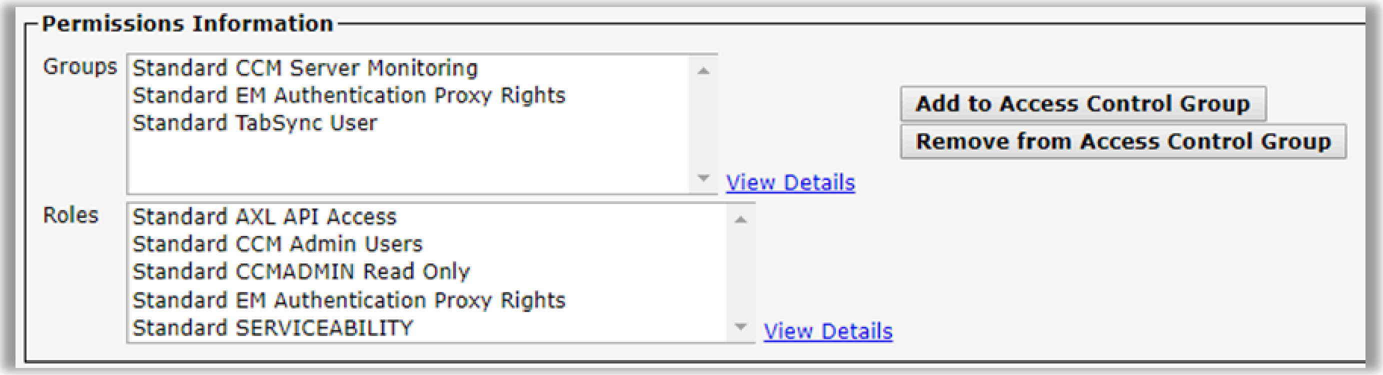
Database and Admin Services

	Service Name	Activation Status
☑	Cisco AXL Web Service	Activated

To create Provisioning Manager CUCM Application User:

1. From the Cisco Unified Communications Manager Administration Web page, select Application User from the User Management menu, and then click Add New.
2. In the User ID field, type PMEAXL.
3. In the Password and Confirm Password fields, type a password for the new user and then click Save.
4. Navigate down the page to Permissions Information.
5. Click Add to Access Control Group and then click Find.
6. Select the following Groups:

- **Standard TabSync User**
- **Standard EM Authentication Proxy Rights**
- **Standard CCM Server Monitoring**
- Click **Add Selected**
- Click **Save**



Permissions Information

Groups
Standard CCM Server Monitoring
Standard EM Authentication Proxy Rights
Standard TabSync User

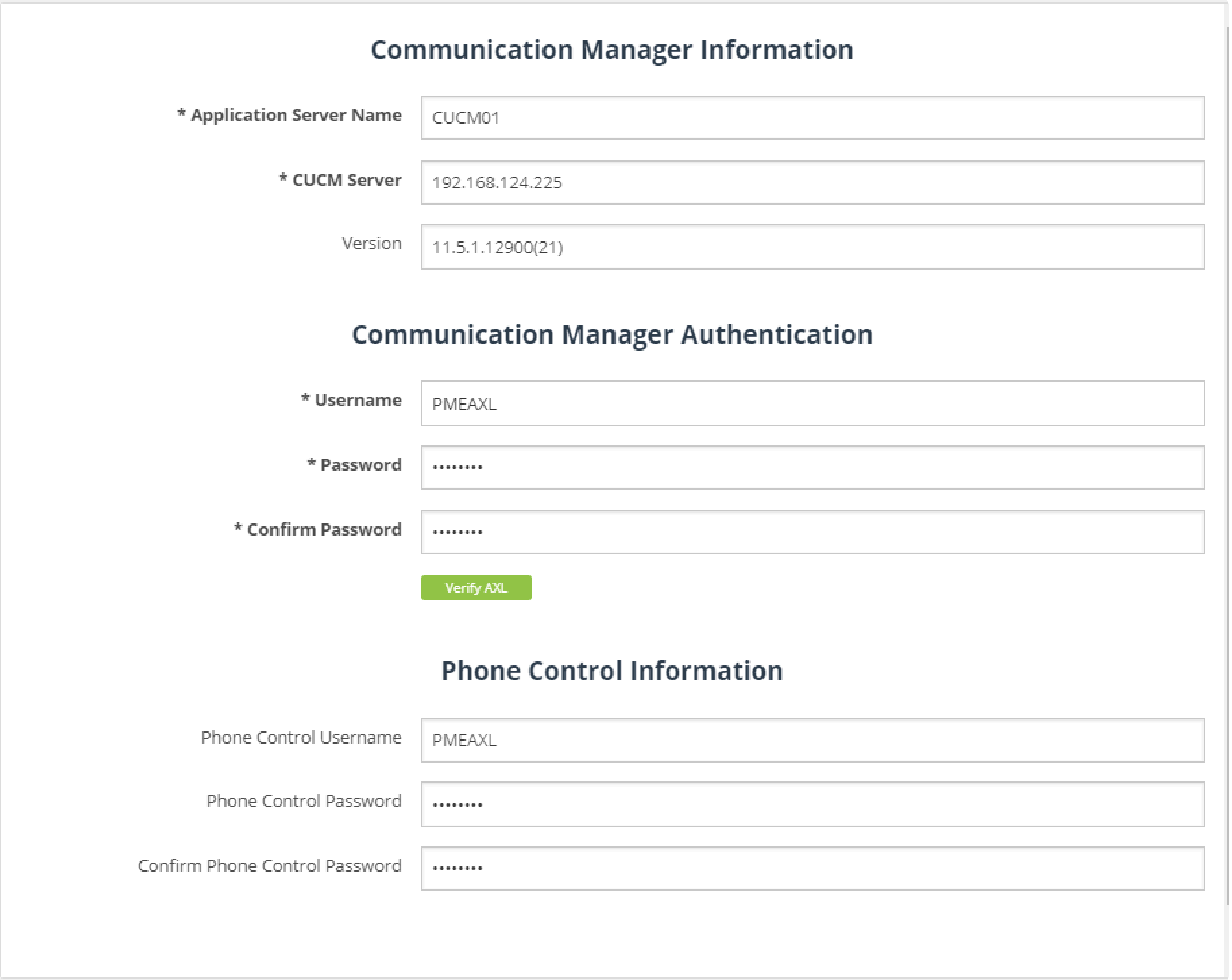
Roles
Standard AXL API Access
Standard CCM Admin Users
Standard CCMADMIN Read Only
Standard EM Authentication Proxy Rights
Standard SERVICEABILITY

4.1.2 CUCM Integration

To add a Cisco Unified Communications Manager Application Server:

1. Select **Application Servers** from the **System** menu
2. Select the **Communications Manager** tab to add a Cisco Communications Manager server
3. On the menu, click **Add**
4. Complete the required fields
5. Click **Verify AXL** to validate the connection
6. Click **Save**
7. Click Back, select the CUCM server and click **Sync**
8. Repeat this process for additional integrations

> ✻ Please note the same credentials may be used for **Phone Control**. You also have the option of using a different CUCM Application user, but the account must have AXL and Server Monitoring privileges.



Communication Manager Information

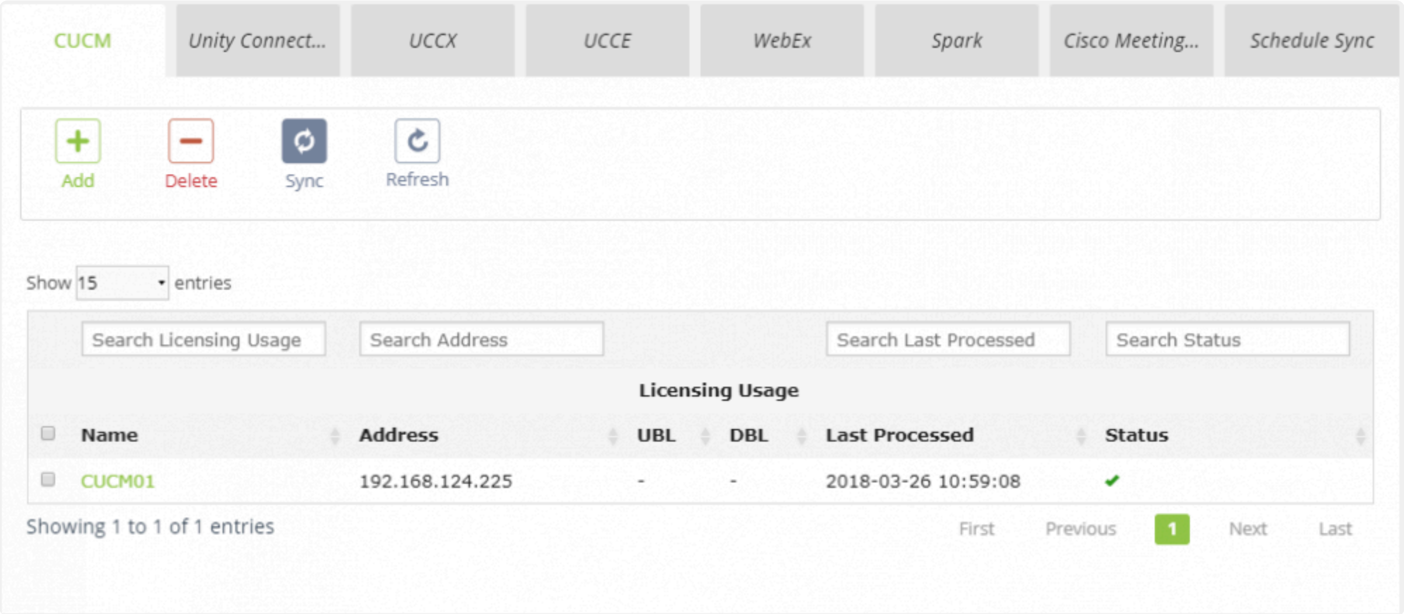
* Application Server Name	CUCM01
* CUCM Server	192.168.124.225
Version	11.5.1.12900(21)

Communication Manager Authentication

* Username	PMEAXL
* Password	••••••••
* Confirm Password	••••••••

Phone Control Information

Phone Control Username	PMEAXL
Phone Control Password	••••••••
Confirm Phone Control Password	••••••••



Licensing Usage

□	Name	Address	UBL	DBL	Last Processed	Status
□	CUCM01	192.168.124.225	-	-	2018-03-26 10:59:08	✓

Showing 1 to 1 of 1 entries

4.2 Cisco Unity Connection

Akkadian Provisioning Manager supports provisioning across multiple Cisco Unity Connection (CUC) clusters. Integration to a CUC cluster only requires access to the Publisher node.

This section will guide you through the process of preparing CUC for integration and configuring CUC as an Application Server in Provisioning Manager.

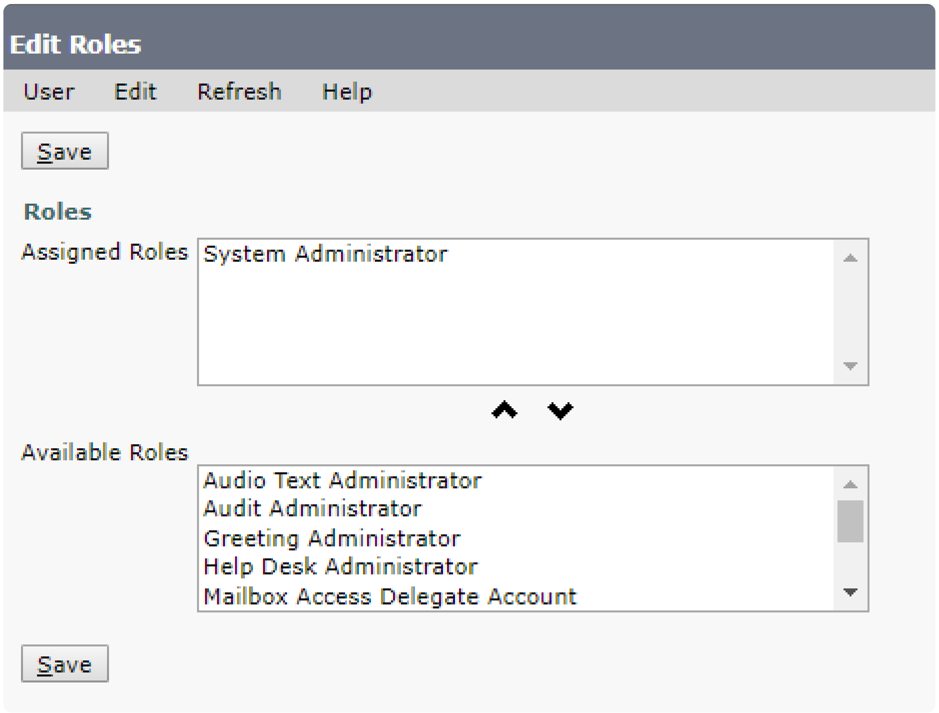
4.2.1 Preparing CUC

Akkadian Provisioning Manager communicates with Cisco Unified Connection using the REST API. The built-in Cisco Unity Connection application administrator account can be used for access, but for security purposes a separate account should be created.

To configure a new user:

1. From the Cisco Unity Connection Web page, select **Users** from the User section, and then click **Add New**
2. In the User Type drop-down menu, select **"User Without Mailbox"**
3. In the Based-on Template drop-down menu, select **"administratortemplate"**
4. In the Alias field, type a username (Example – PMEREST) and click **Save**
5. From the Edit Menu select Password Settings and uncheck **"User Must Change at Next Sign-In"** and click **Save**
6. From the **Edit Menu** select **Change Password**.
7. In the **Password** and **Confirm Password** fields, type a password for the user and click **Save**.
8. From the Edit Menu select Roles.
9. Verify the user has the **"System Administrator"** under **Assigned Roles**

✻ The default CUC authentication rule expires passwords in 120 days. For service accounts, we suggest password are set not to expire.



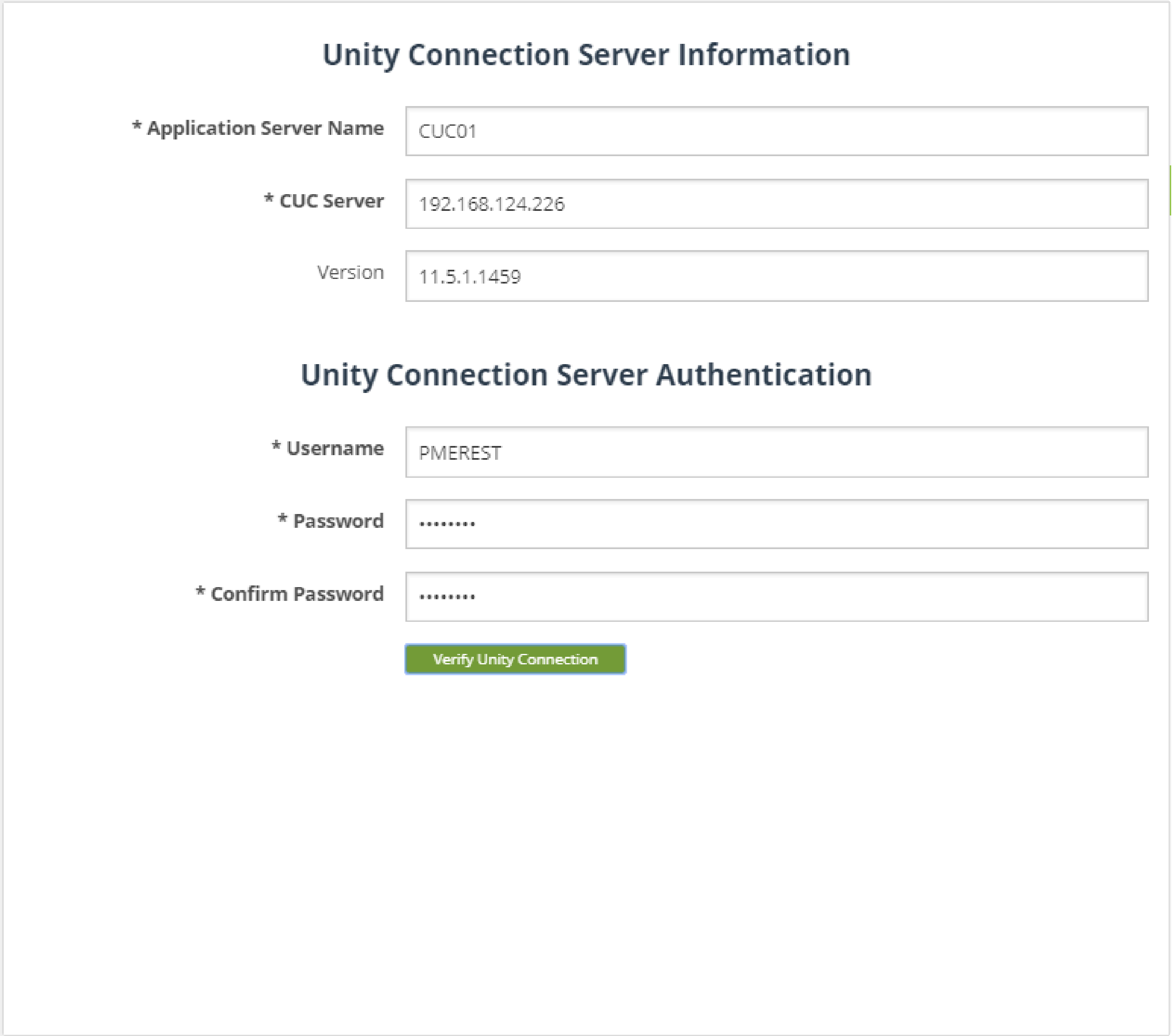
Assigned Roles: System Administrator

Available Roles:
- Audio Text Administrator
- Audit Administrator
- Greeting Administrator
- Help Desk Administrator
- Mailbox Access Delegate Account

4.2.2 CUC Integration

To add a Cisco Unity Connection Application Server:

1. Select **Application Servers** from the **System** menu
2. Select the **Unity Connection** tab
3. On the menu, click **Add**
4. Complete the required fields
5. Click **Verify Unity Connection** to validate the connection
6. Click **Save**
7. Click Back, select the CUC server and click **Sync**
8. Repeat this process for additional integrations

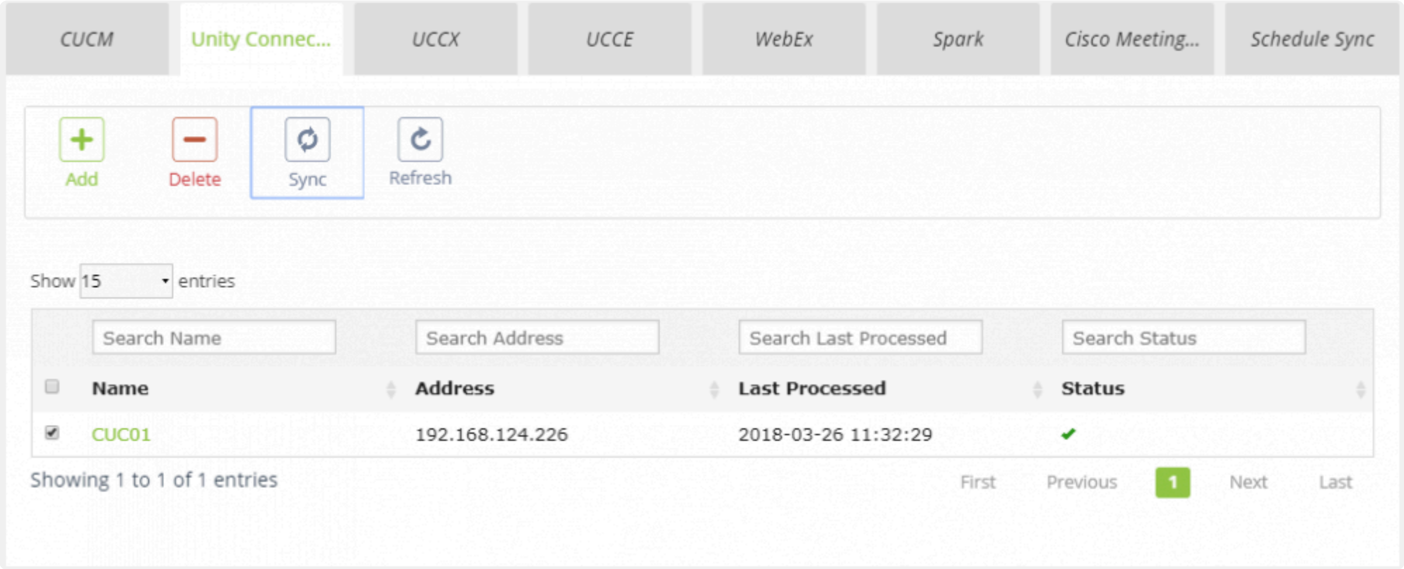


Unity Connection Server Information

* Application Server Name	CUC01
* CUC Server	192.168.124.226
Version	11.5.1.1459

Unity Connection Server Authentication

* Username	PMEREST
* Password	••••••••
* Confirm Password	••••••••



□	Name	Address	Last Processed	Status
☑	CUC01	192.168.124.226	2018-03-26 11:32:29	✓

Showing 1 to 1 of 1 entries

4.3 Cisco Contact Center Express

Akkadian Provisioning Manager supports provisioning across multiple Cisco Unified Contact Center Express Clusterd (UCCX) clusters. Integration to a UCCX cluster only requires access to the primary node.

This section will guide you through the process of preparing UCCX for integration and configuring UCCX as an Application Server in Provisioning Manager.

4.3.1 Preparing UCCX

Akkadian Provisioning Manager communicates with Unified Contact Center Express (UCCX) using the REST API.

Two items are required on UCCX to allow access via the API:

1. The “Cisco Unified CCX Configuration API” service must be activated and started
2. User with Cisco Unified CCX Administrator capability

✻ Before configuring the user account in UCCX, it must be created in CUCM and synchronized.

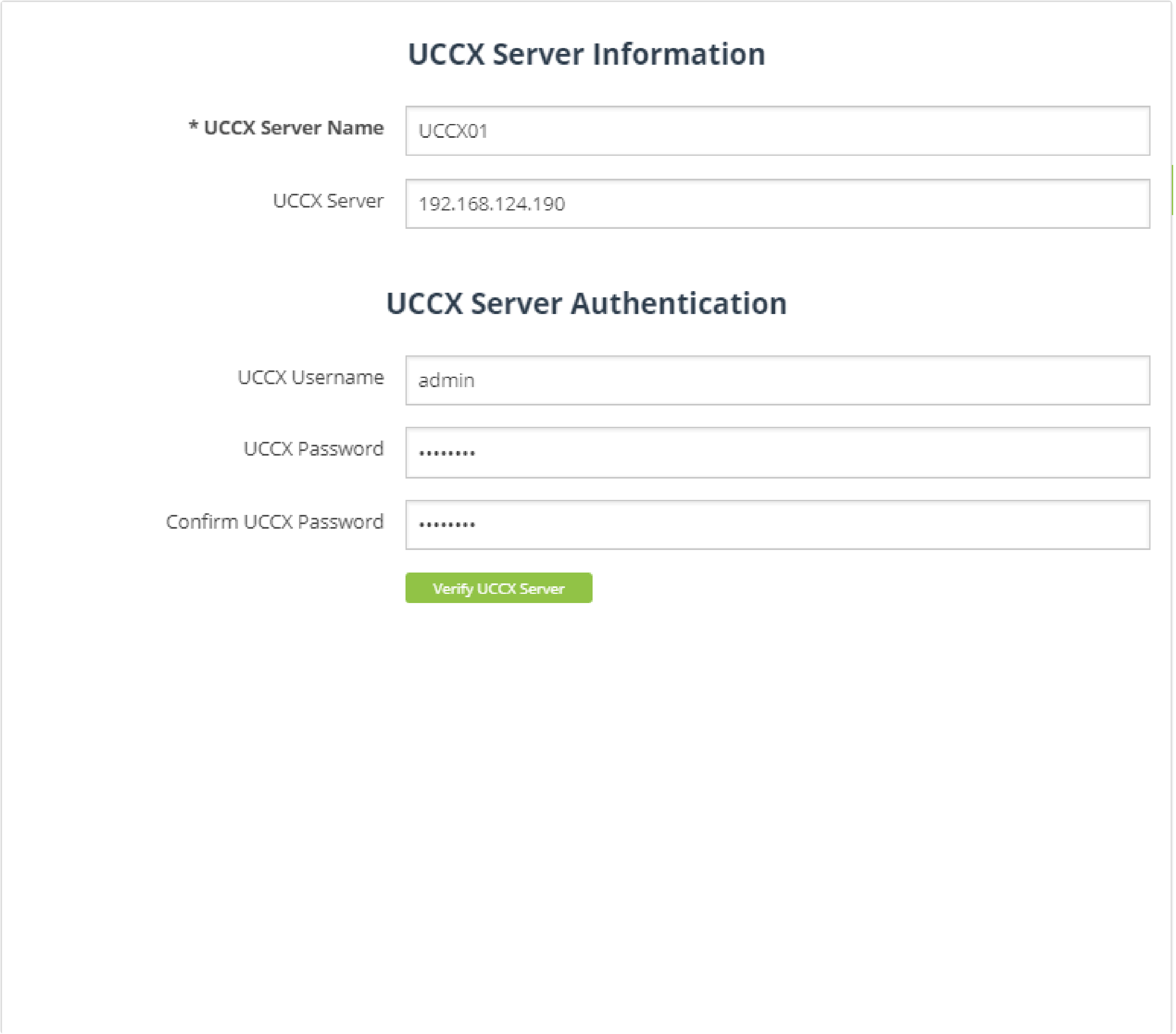
Creating a Cisco Unified CCX integration account:

1. From the Cisco Unified CCX Administration web interface, select **Tools** -> **User Management** -> **Administrator Capability View**
2. Locate the user from the **Available Users** list or using the Search tool
3. Move the user from* Available Users* to **Cisco Unified CCX Administrators**
4. Click **Update** to save the changes

4.3.2 UCCX Integration

To add a Unified Contact Center Express Application Server:

1. Select **Application Servers** from the **System** menu
2. Select the **UCCX** tab
3. On the menu, click **Add**
4. Complete the required fields
5. Click **Verify UCCX Server** to validate the connection
6. Click **Save**
7. Click Back, select the UCCX server and click **Sync**
8. Repeat this process for additional integrations



UCCX Server Information

* UCCX Server Name: UCCX01

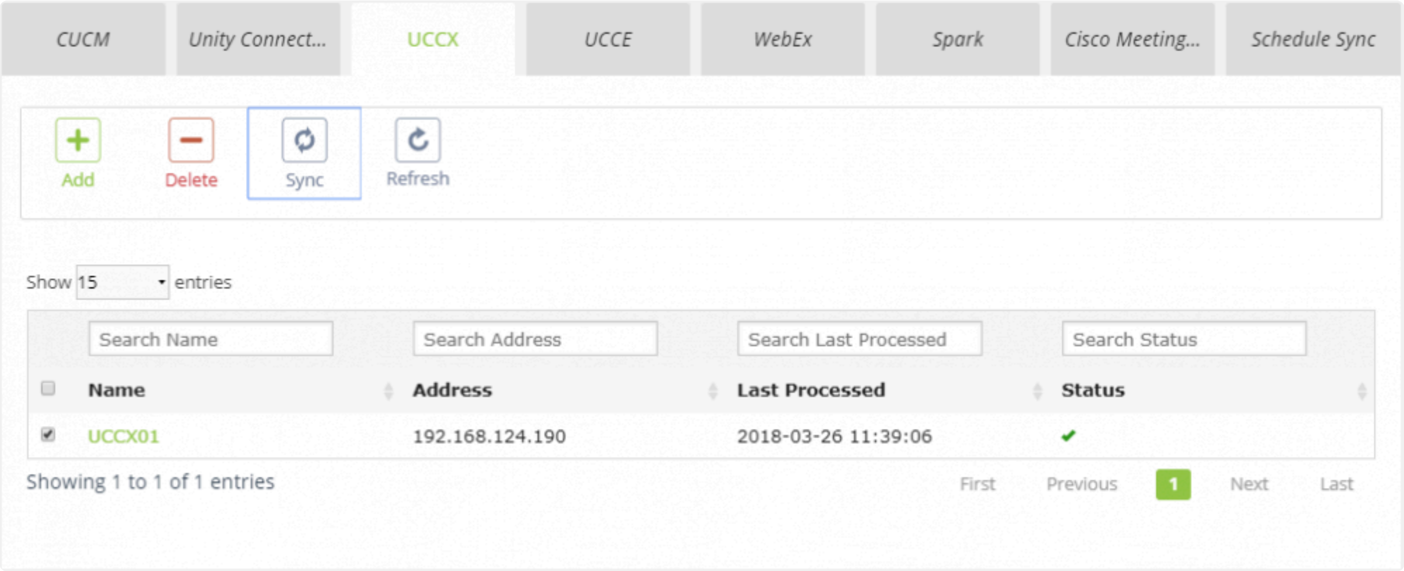
UCCX Server: 192.168.124.190

UCCX Server Authentication

UCCX Username: admin

UCCX Password: ••••••••

Confirm UCCX Password: ••••••••



Show 15 entries

□	Name	Address	Last Processed	Status
☑	UCCX01	192.168.124.190	2018-03-26 11:39:06	✓

Showing 1 to 1 of 1 entries

4.4 Unified Contact Center Enterprise

Akkadian Provisioning Manager supports provisioning across multiple Cisco Packaged Contact Center Enterprise Clusters (PCCE) clusters.

This section will guide you through the process of preparing PCCE for integration and configuring PCCE as an Application Server in Provisioning Manager.

4.4.1 Preparing PCCE

Requirements:

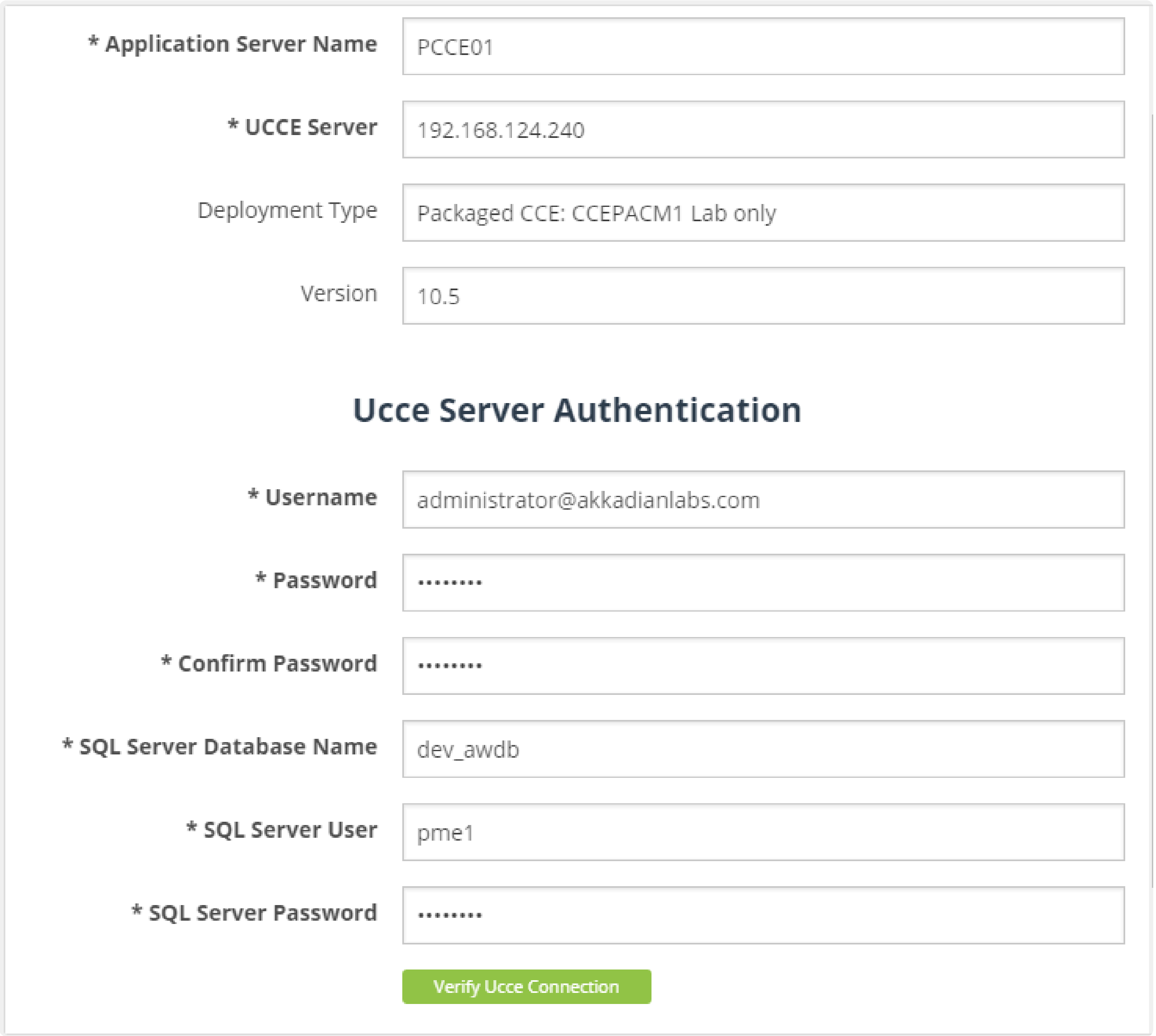
1. Version 10.5+ of Cisco Packaged Contact Center Enterprise (PCCE).
2. PCCE account with the Administrator role.
3. SQL user account with read access to the AWDB database. This account is only used for database reads.

Administrators who are in the Active Directory Config Security Group or Setup Security Group have full access to the Cisco Packaged Contact Center Enterprise APIs, unless that access has been limited by the Feature Control Set List Tool and the User List Tool. These tools are Unified CCE Configuration Manager tools, used together to establish and limit access to the Cisco Packaged Contact Center Enterprise administration tools—both the user interface and APIs—and to Unified CCE Configuration Manager. Note that the Administrator user name should be in the form of a Fully Qualified Domain Name (FQDN).

4.4.2 PCCE Integration

To add a Unified Contact Center Enterprise Application Server:

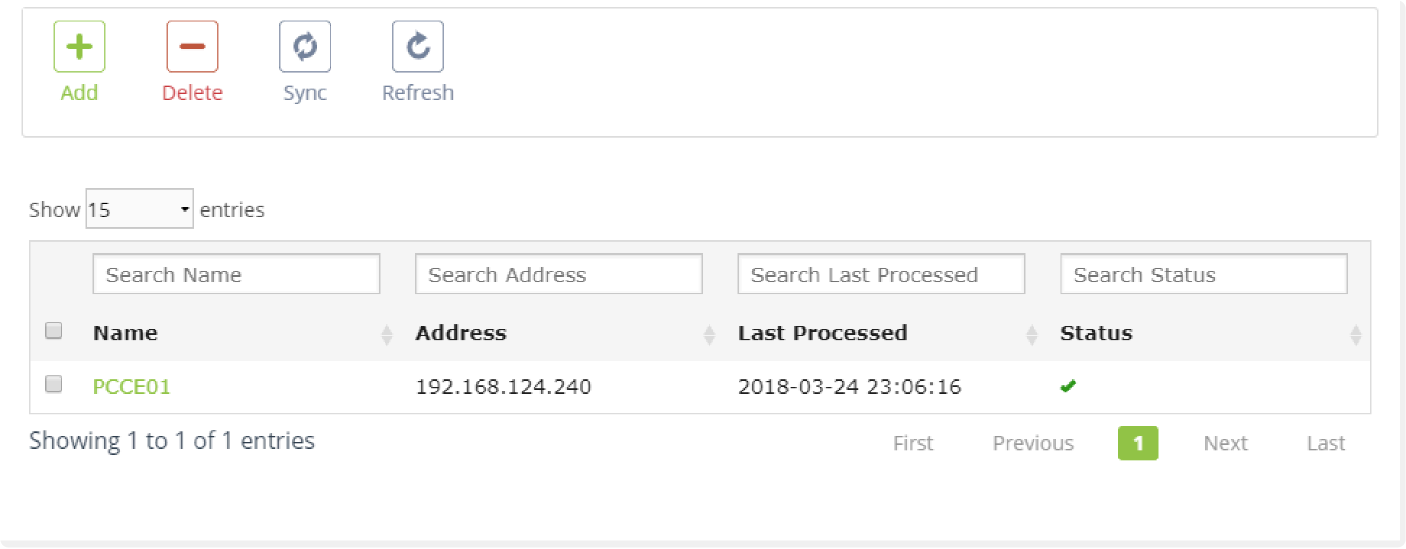
1. Select **Application Servers** from the **System** menu
2. Select the **UCCE** tab
3. On the menu, click **Add**
4. Enter the CCE server name or IP address (AW/Logger Server)
5. Supply the necessary authentication credentials
6. Enter the AW database name as configured in your system
7. Enter the database user credentials (User must have database read access)
8. Click **Verify UCCE Connection** to validate the connection
9. Click **Save**
10. Click Back, select the UCCE server and click **Sync**
11. Repeat this process for additional integrations



* Application Server Name	PCCE01
* UCCE Server	192.168.124.240
Deployment Type	Packaged CCE: CCEPACM1 Lab only
Version	10.5

Ucce Server Authentication

* Username	administrator@akkadianlabs.com
* Password	••••••••
* Confirm Password	••••••••
* SQL Server Database Name	dev_awdb
* SQL Server User	pme1
* SQL Server Password	••••••••



Show 15 entries

□	Name	Address	Last Processed	Status
	Search Name	Search Address	Search Last Processed	Search Status
□	PCCE01	192.168.124.240	2018-03-24 23:06:16	✓

Showing 1 to 1 of 1 entries

4.5 Cisco WebEx

Akkadian Provisioning Manager supports provisioning users in Cisco WebEx.

This section will guide you through the process of preparing WebEx for integration and configuring WebEx as an Application Server in Provisioning Manager.

> ✻ Because WebEx is a cloud service, Provisioning Manager will required outbound access to your WebEx site.

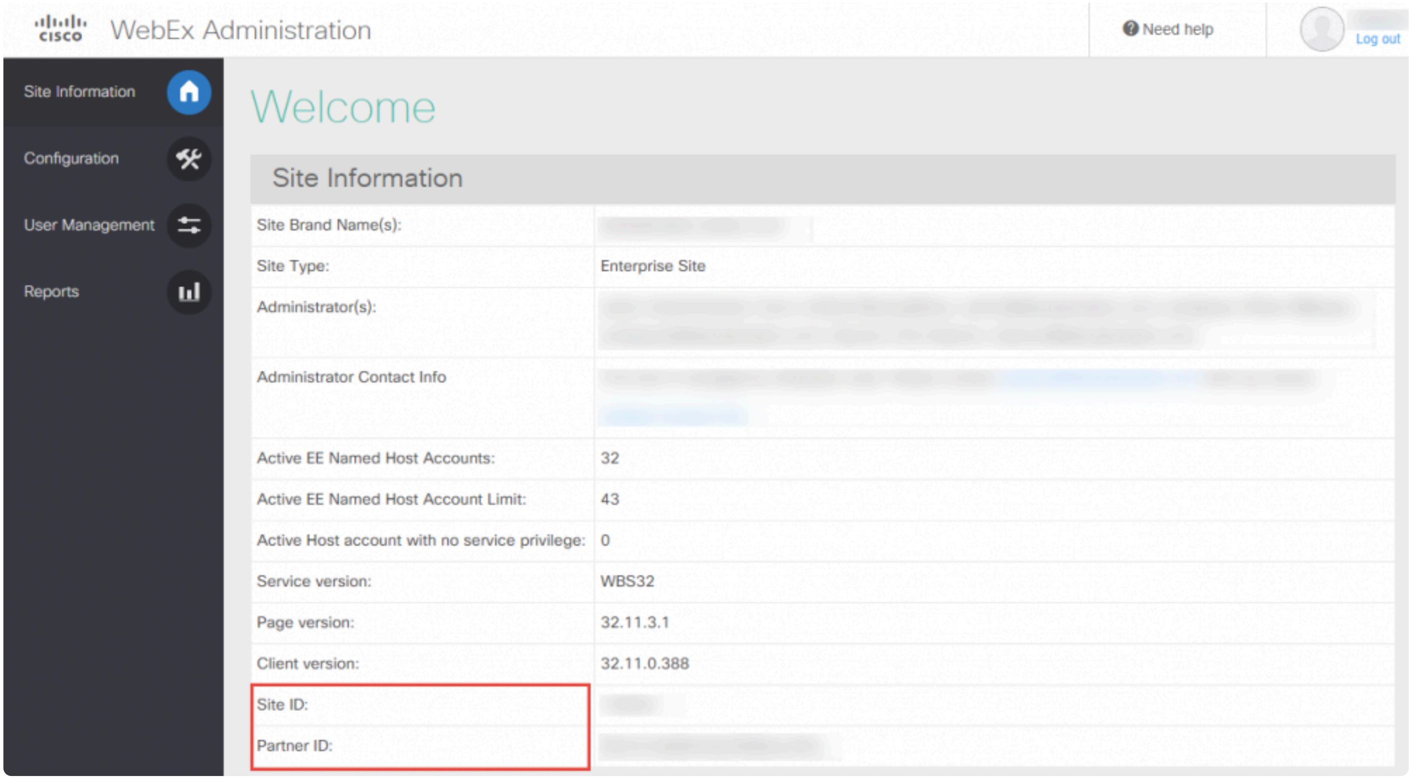
4.5.1 Preparing WebEx

Akkadian Provisioning Manager communicates with Cisco WebEx using the REST API. There are several requirements for Provisioning Manager to integrate with Cisco WebEx.

Requirements:

1. Provisioning Manager must have access to the Cisco WebEx cloud servers, which includes a valid DNS server for name resolution
2. The WebEx site must be enabled for API access and you must have access to the Site ID and Partner ID
3. Must have a WebEx account with Site Administrator privileges

> ✻ If you don’t see the Site ID and Partner ID on your WebEx account settings page, the API is most likely not enabled and you will need to contact your WebEx account manager.



Welcome

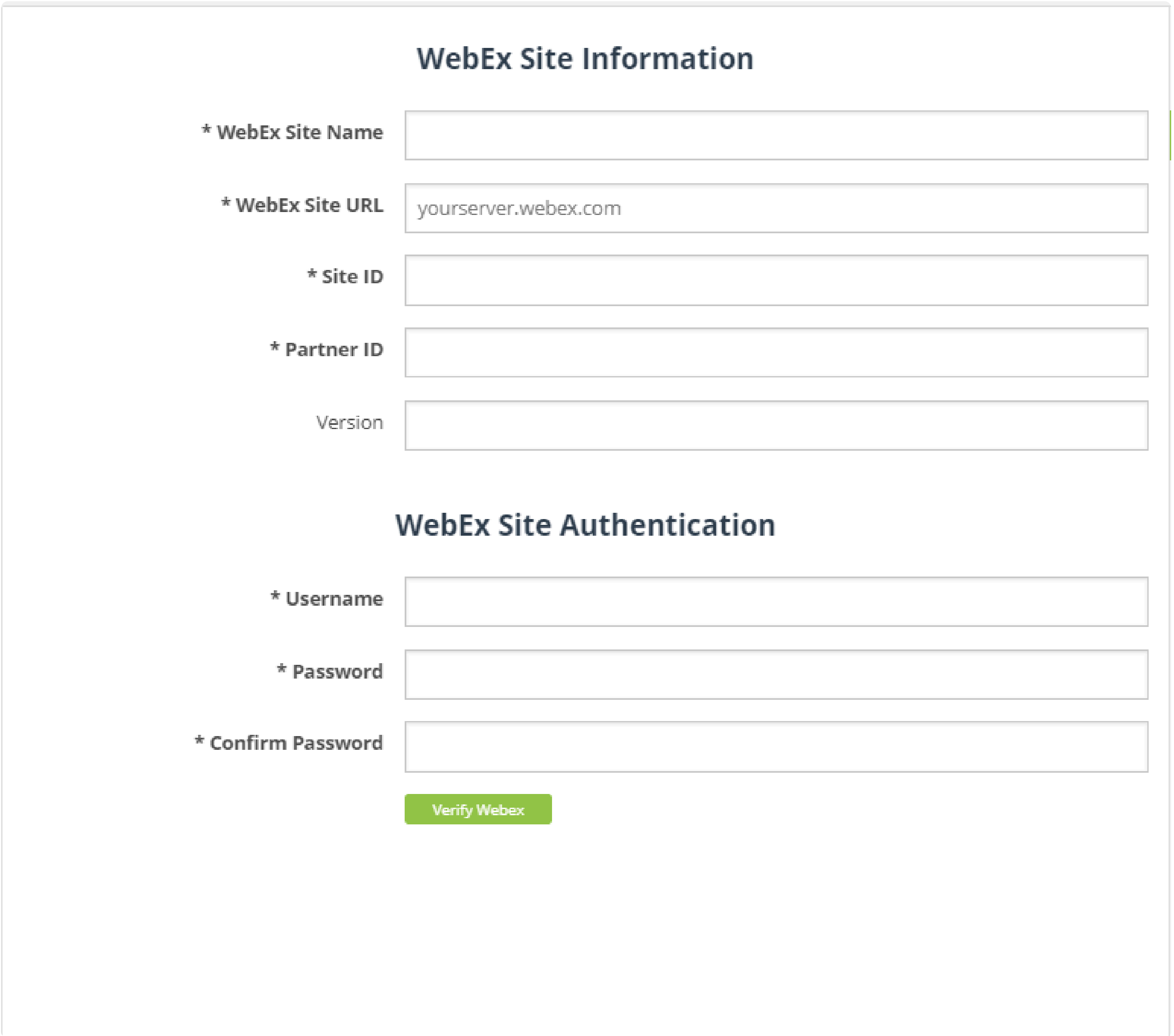
Site Information

Site Brand Name(s):	[redacted]
Site Type:	Enterprise Site
Administrator(s):	[redacted]
Administrator Contact Info	[redacted]
Active EE Named Host Accounts:	32
Active EE Named Host Account Limit:	43
Active Host account with no service privilege:	0
Service version:	WBS32
Page version:	32.11.3.1
Client version:	32.11.0.388
Site ID:	[redacted]
Partner ID:	[redacted]

4.5.2 WebEx Integration

To add a Cisco WebEx Application Server:

1. Select **Application Servers** from the **System** menu
2. Select the **WebEx** tab to add a Cisco WebEx site
3. On the menu, click Add
4. Complete the required information
5. Click **Save**
6. Repeat this process for additional integrations



WebEx Site Information

* WebEx Site Name

* WebEx Site URL: yourserver.webex.com

* Site ID

* Partner ID

Version

WebEx Site Authentication

* Username

* Password

* Confirm Password

4.6 Cisco WebEx Teams

Akkadian Provisioning Manager supports provisioning users in Cisco WebEx Teams.

This section will guide you through the process of preparing Spark for integration and configuring Spark as an Application Server in Provisioning Manager.

> ✻ Because Spark is a cloud service, Provisioning Manager will required outbound access to your Cisco Spark site.

4.6.1 Connecting to WebEx Teams

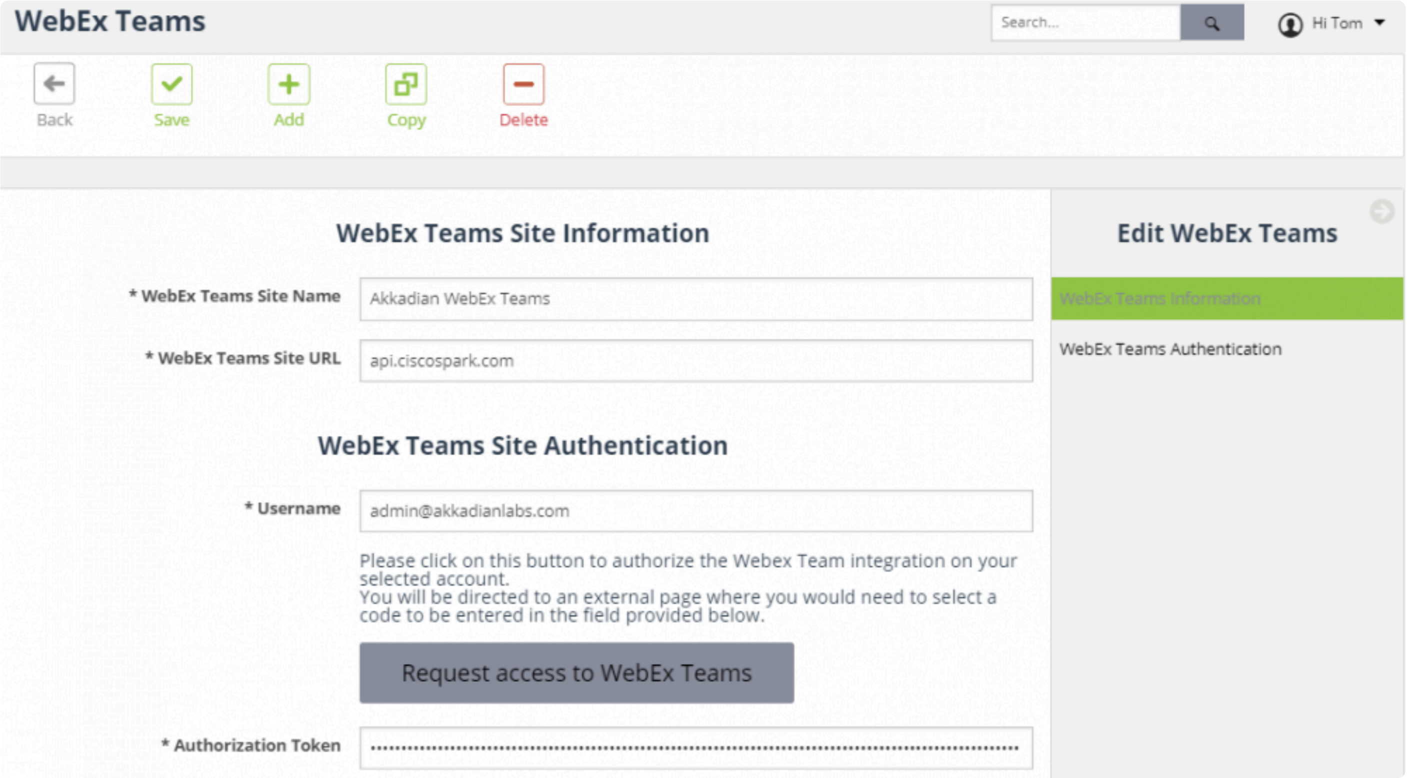
Akkadian Provisioning Manager communicates with Cisco WebEx using the REST API. There are several requirements for Provisioning Manager to integrate with Cisco WebEx Teams.

Requirements:

1. Provisioning Manager must have access to the Cisco WebEx cloud servers, which includes a valid DNS server for name resolution
2. Must have a WebEx Teams account with Administrator privileges

To connect to Cisco WebEx Teams:

1. Select **Application Servers** from the **System** menu
2. Select the **WebEx Teams** tab
3. On the menu, click Add
4. Enter a name for the WebEx Teams site
5. Enter the WebEx Teams URL – api.ciscospark.com
6. Enter the username of the user with administrative privileges
7. Click the **Request access to WebEx Teams** button to obtain a token
8. Follow the prompts to log into WebEx teams
9. Copy the token into the **Authorization Token** field
10. Click **Save**
11. Repeat this process for additional integrations



WebEx Teams Site Information

* WebEx Teams Site Name: Akkadian WebEx Teams

* WebEx Teams Site URL: api.ciscospark.com

WebEx Teams Site Authentication

* Username: admin@akkadianlabs.com

Please click on this button to authorize the Webex Team integration on your selected account.
You will be directed to an external page where you would need to select a code to be entered in the field provided below.

* Authorization Token: ••

4.7 Cisco Meeting Server

Akkadian Provisioning Manager communicates with Cisco Meeting Server using the REST API.

This section will guide you through the process of preparing Cisco Meeting Server for integration and configuring Cisco Meeting Server as an Application Server in Provisioning Manager.

4.7.1 Preparing CMS

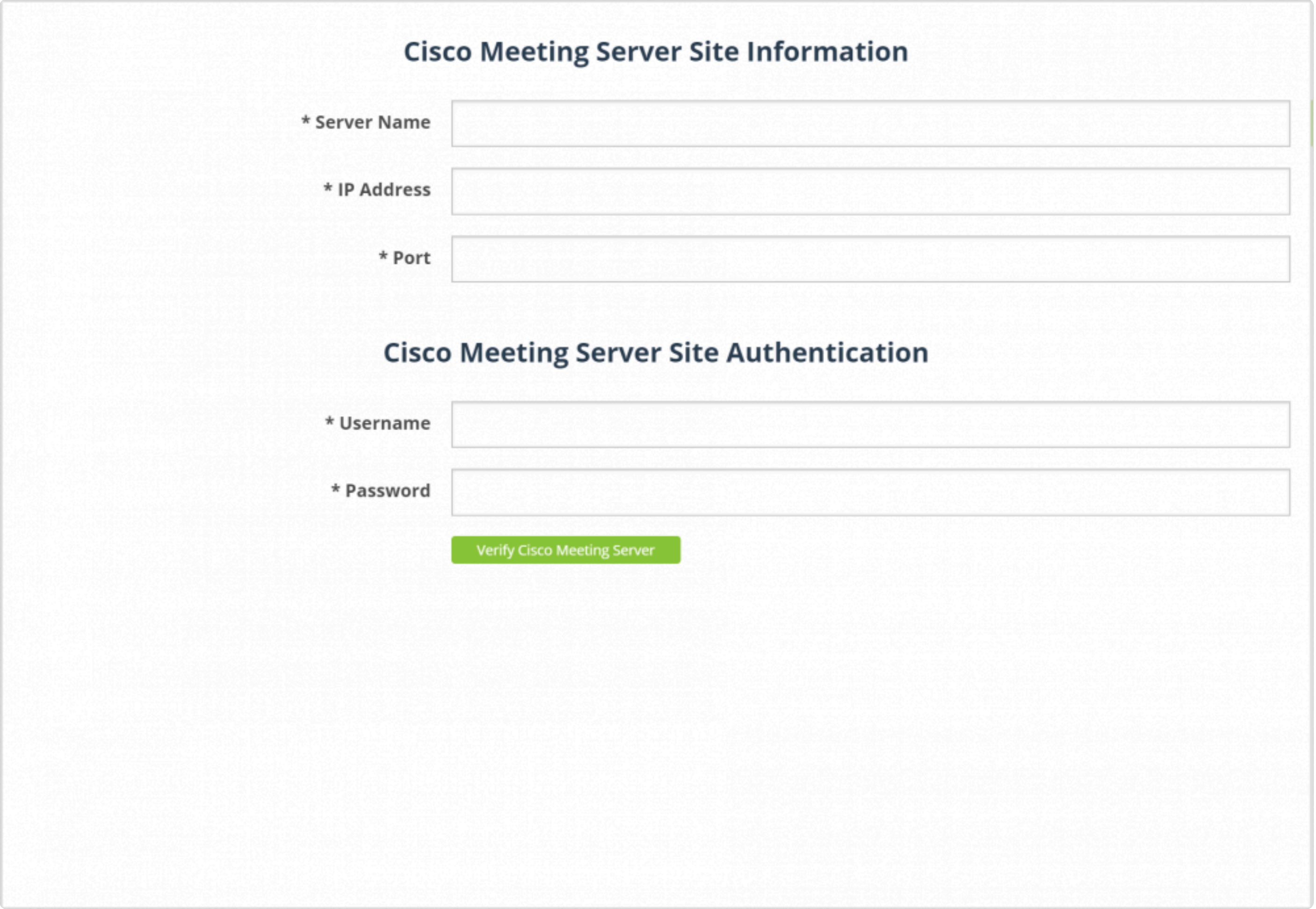
Requirements:

1. HTTPS via the same TCP ports as you would use to access the Web Admin Interface – typically port 443
2. Meeting Server user account with Admin privileges

4.7.2 CMS Integration

To add a Cisco Meeting Server Application Server:

1. Select **Application Servers** from the **System** menu
2. Select the **CMS** tab
3. On the menu, click **Add**
4. Complete the required fields
5. Click **Verify Cisco Meeting Server** to validate the connection
6. Click **Save**
7. Repeat this process for additional integrations



Cisco Meeting Server Site Information

* Server Name
* IP Address
* Port

Cisco Meeting Server Site Authentication

* Username
* Password

5. Service Groups

Provisioning Manager Service Groups provide the following functions

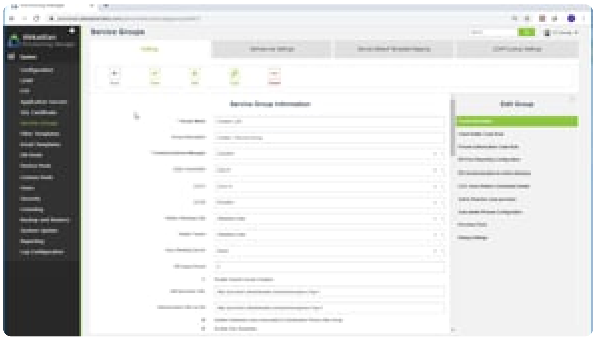
- Assemble Applications Servers into a logical container for provisioning
- Provide configuration settings for Service Group based features

This section will focus on basic settings required to configure a Service Group. Other Service Group based feature configuration will be covered in their respective sections.

It is best practice to configure initial Service Group using the PMEAdmin account.

To add a Service Group:

1. Select **Service Groups** from the **System** menu
2. On the menu, click **Add** to create a new **Service Group**
3. Configure the **Service Group** by selecting the application servers
4. When finished, click **Save**



6. Security

The Provisioning Manager Security section provides the ability to configure and manage:

- Group Permissions
- Service Groups
- Group Membership
- Provisioning Job Access
- Filter Template Assignment
- Site Template Access

This section will cover configuring security within Provisioning Manager.

6.1 Groups

Groups are used to provide a common class of users with permissions and access to items within Akkadian Provisioning Manager.

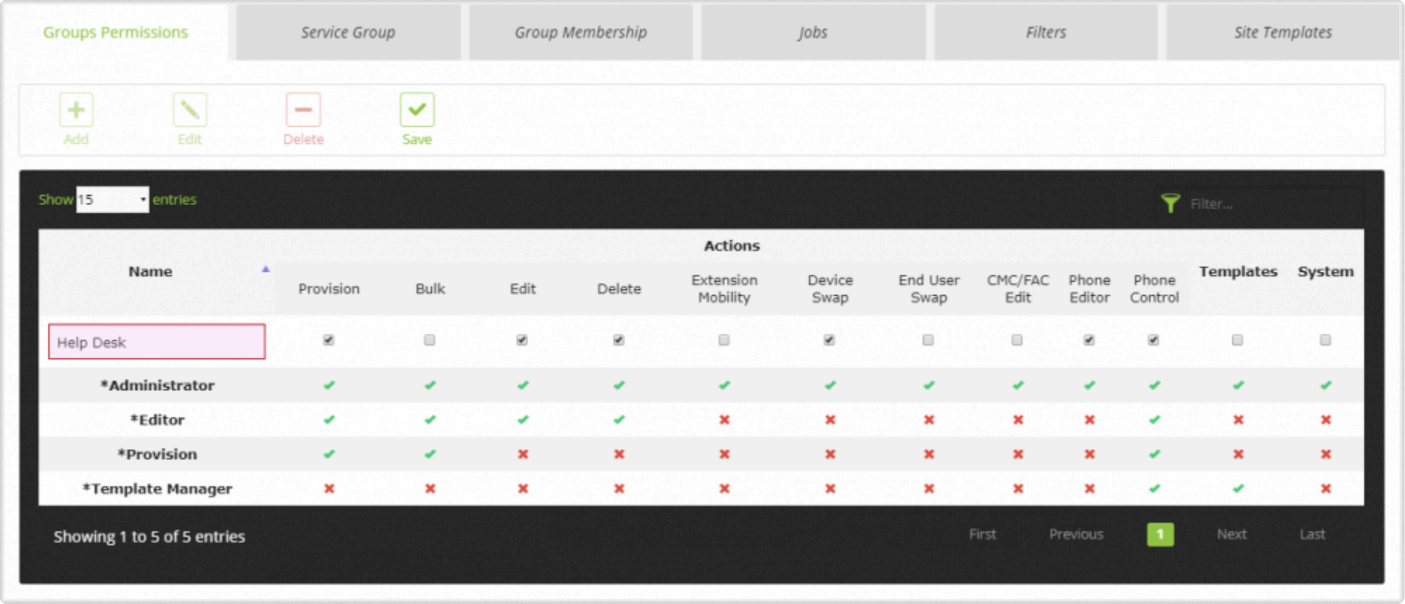
The system is configured with four default groups:

- Administrator
- Editor
- Provision
- Template Manager

> ✻ These built-in groups cannot be modified, but additional groups may be added.

To add a Group:

1. Select **Security** from the **System** menu
2. Select the **Groups Permissions** tab
3. On the menu, click **Add** to create a new Group
4. Enter the Group **Name** and configure the appropriate permissions
5. When finished, click **Save**
6. Repeat the process to create additional Groups



Name	Actions										Templates	System
	Provision	Bulk	Edit	Delete	Extension Mobility	Device Swap	End User Swap	CMC/FAC Edit	Phone Editor	Phone Control		
Help Desk	☑	☐	☑	☑	☐	☑	☐	☐	☑	☑	☐	☐
*Administrator	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
*Editor	✓	✓	✓	✓	✗	✗	✗	✗	✗	✓	✗	✗
*Provision	✓	✓	✗	✗	✗	✗	✗	✗	✗	✓	✗	✗
*Template Manager	✗	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓	✗

Showing 1 to 5 of 5 entries

6.2 Service Groups

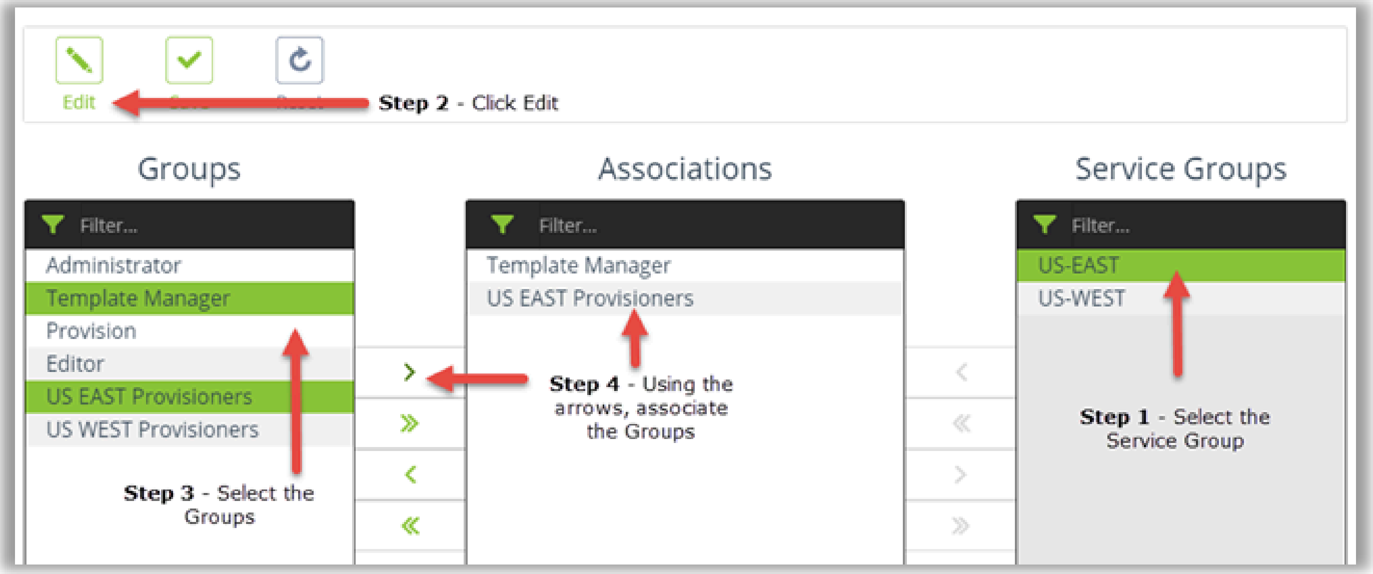
Service Groups provide the ability to assemble Applications Servers into a logical container for provisioning, but to begin using Service Groups, security permissions must be granted.

To assigned access to a Service Groups:

1. Select **Security** from the **System** menu
2. Select the **Service Group** tab

Method 1 – Associating Multiple Groups to a Service Groups

1. Select the **Service Group**
2. Click the **Edit** button
3. Select the **Groups**
4. Associate the **Groups**
5. When finished, click **Save**



Step 2 - Click Edit

Step 3 - Select the Groups

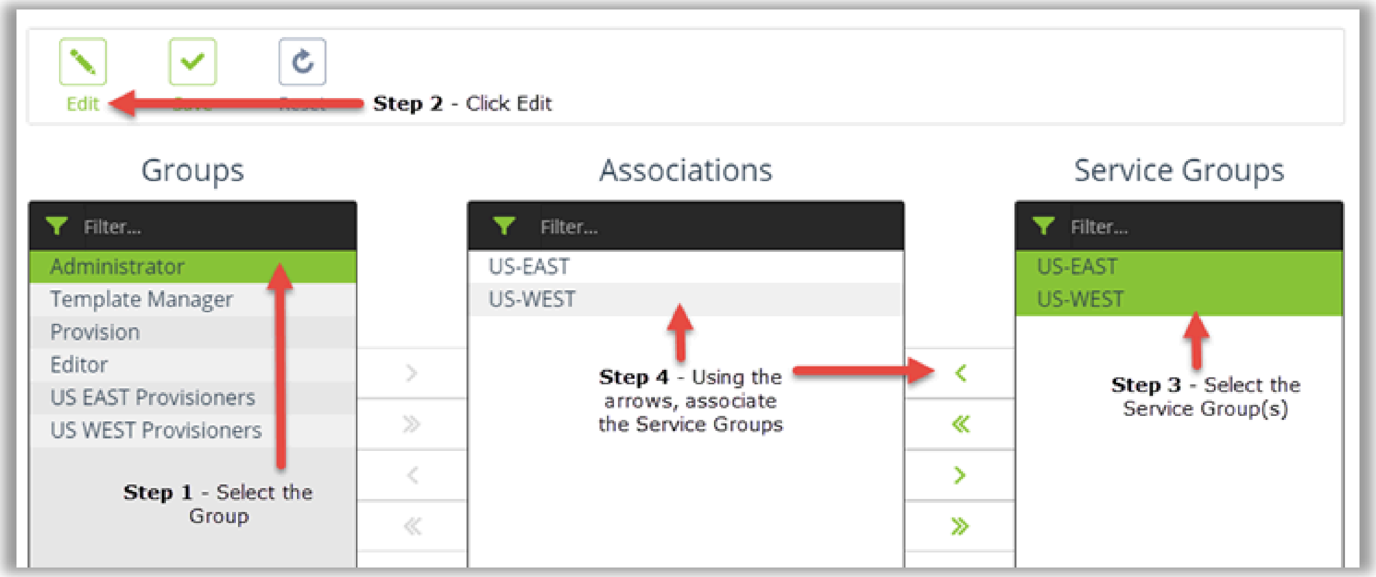
Step 4 - Using the arrows, associate the Groups

Step 1 - Select the Service Group

Method 2 – Associating Multiple Service Groups to Group

1. Select the Group
2. Click the **Edit** button
3. Select one or more **Service Groups**

4. Associate the **Service Groups**
5. When finished, click **Save**



Step 2 - Click Edit

Step 1 - Select the Group

Step 3 - Select the Service Group(s)

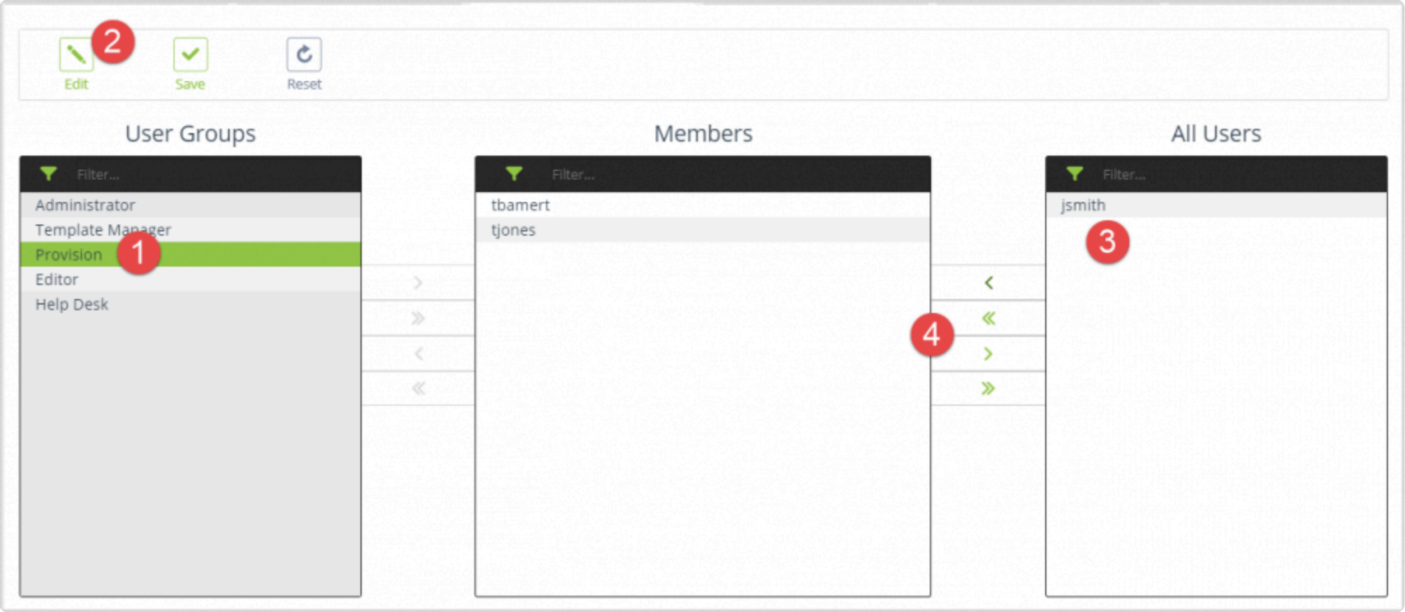
Step 4 - Using the arrows, associate the Service Groups

6.3 Group Membership

The Group Membership section provides the ability to manage users membership to Groups within Provisioning Manager.

To assigned users to a Group:

1. Select **Security** from the **System** menu
2. Select the **Group Membership** tab
3. Select the **Group**
4. Click the **Edit** button
5. Select the **Users**
6. Use the arrow to move the users to the **Members** box
7. When finished, click **Save**



6.4 Jobs

The Jobs sections provides the ability to manage Groups access to provisioning Jobs within Provisioning Manager.

To assigned Groups access to Jobs:

1. Select **Security** from the **System** menu
2. Select the **Jobs** tab
3. Select the **Group**
4. Click the **Edit** button
5. Select the **Jobs**
6. Use the arrow to move the Jobs to the **Associations** box
7. When finished, click **Save**

6.5 Filters

The Filters section provides the ability to apply filters to Groups within Provisioning Manager.

Filter Templates are an optional security component used to restrict user’s access to objects and field data within a Service Group.

To apply a Filter to a Group:

1. Select **Security** from the **System** menu
2. Select the **Filters** tab
3. Select the **Group**
4. Click the **Edit** button
5. Select the **Filter(s)**
6. Use the arrow to move the Filters to the **Associations** box
7. When finished, click **Save**

6.6 Site Templates

The Site Template sections provides the ability to manage Group access to Site Templates within Provisioning Manager.

To apply a Site Template to a Group:

1. Select **Security** from the **System** menu
2. Select the **Site Template** tab
3. Select the **Group**
4. Click the **Edit** button
5. Select the **Site Templates**
6. Use the arrow to move the Site Templates to the **Associations** box
7. When finished, click **Save**

7. Users

The PMEAdmin account is a built-in system administrator account and has no ability to provision. At least one user account must be created with Administrator rights to complete the initial Provisioning Manager configuration.

✻ Before creating LDAP authenticated users, the LDAP authentication configuration must be configured.

✻ It is recommended Groups be configured before adding the users.

To add a User:

1. Select **Users** from the **System** menu
2. On the menu, click **Add** to create a new User
3. Populate the required fields
4. For local authentication, the email address is required
5. For LDAP authentication, set the User Type to LDAP and select the LDAP agreement
6. Add the **Group Association(s)** to assign permissions
7. When finished, click **Save**
8. Repeat the process to create additional users

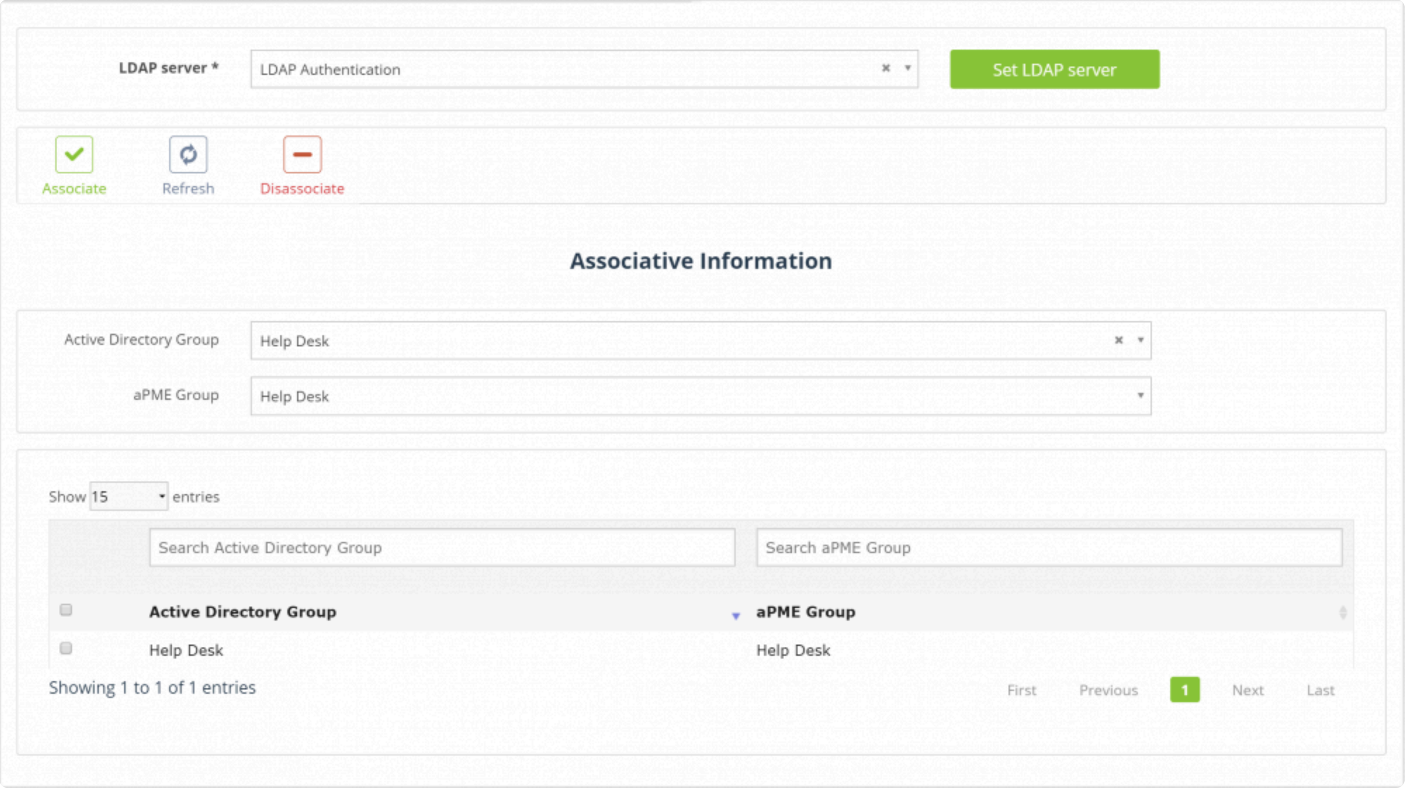
7.1 AD Group Mapping

Provisioning Manager also offers the ability to automatically import users from Active Directory. This feature works by mapping Active Directory Groups to Provisioning Manager Groups. When users in the mapped AD Groups login, there account is created in Provisioning Manager with corresponding security Group.

> ✻ Before configuring AD Group Mapping, an LDAP agreement must be configured with access to AD LDAP users.

To Configure AD Group Mapping:

1. Select **Users** from the **System** menu
2. On the menu, click the **AD Group Mapping** tab
3. Select the appropriate LDAP agreement and click **Set LDAP Server**
4. The screen will refresh and you will need to navigate back to the **AD Group Mapping** tab
5. In the **Associative Information** section, choose the AD Group and the Provisioning Manager Group to which these users should be assigned
6. Click **Associate** to add the association
7. Repeat this process to add additional group mappings



Associative Information

Active Directory Group: Help Desk

aPME Group: Help Desk

Show 15 entries

Search Active Directory Group

Search aPME Group

	Active Directory Group	aPME Group
☐	Help Desk	Help Desk

Showing 1 to 1 of 1 entries

8. Preparing for Provisioning

This section will guide you through the process of preparing Provisioning Manager to provision in your environment. Please ensure the following initial configuration has been completed before proceeding:

1. Initial configuration has been completed as outlined in the Initial Configuration section
2. At least one CUCM application server and Service Group has been created as outline in the Application Servers and Service Groups sections
3. At least one user with the Administrator role has been created and outline in the Users section

If these tasks are complete, login to Provisioning Manager as a user with Administrator role to begin the configuration.

8.1 Global Variables

Global Variables (GVs) are placeholders used to provide key information required to provision. GVs are used to capture data such as used ID, First Name, Last Name etc…
Global Variables can be repeated within templates, but only requires single input at provision. For example, first and last name may be required multiples times when provisioning an end user with multiple devices, lines and voicemail. Global Variables can reduce this input to a single entry.

There are three types of Global Variables:

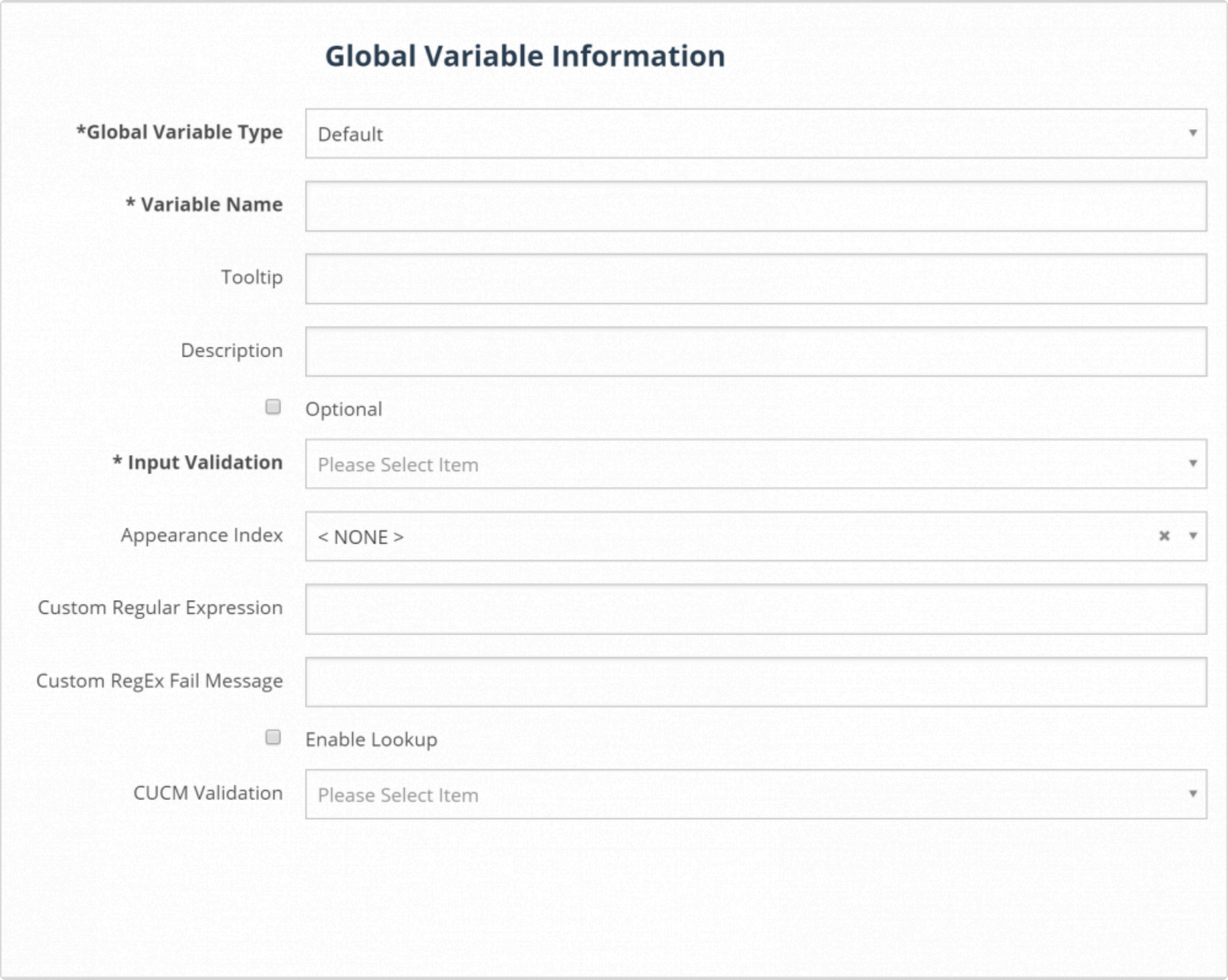
Default – captures provisioning data using a validated input field
List – creates drop-down list for selection at provision
System – Used to capture the provisioned Directory Number and apply it as a Global Variable

To add a Global Variable:

1. Select **Global Variables** from the **System** menu
2. On the menu, click **Add** to create a new **Global Variable**
3. Select the **Global Variable** type
4. Configure the options as described in the table:

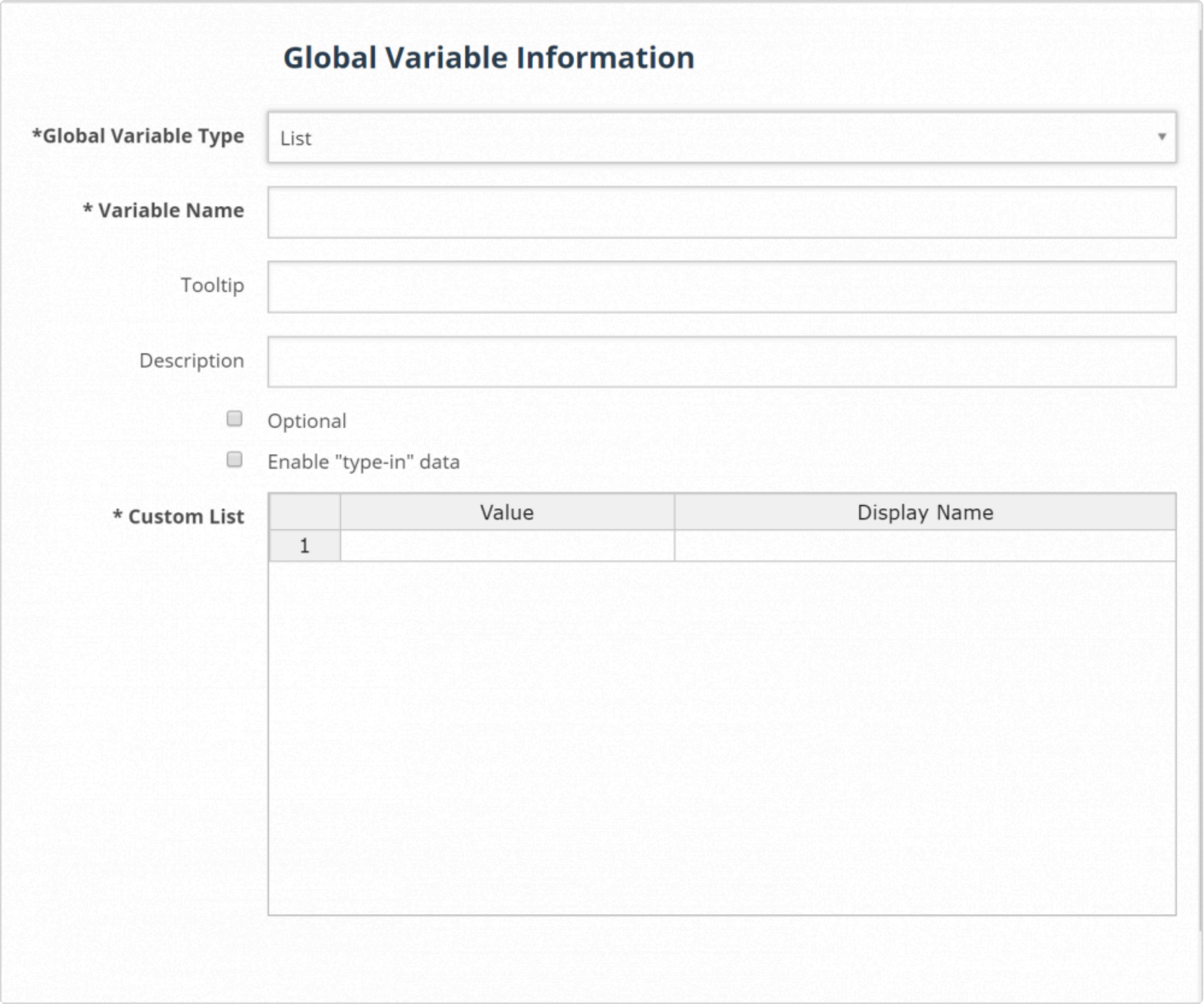
Field Name	**Description**
Global Variable Type	Default, List or System
Variable Name	Enter the variable name
Tooltip	Enter a tool-tip to help users understand the variable
Description	Enter a description
Optional (Checkbox)	By default, Global Variables are required fields. Check Optional to make these optional fields.
Input Validation	Enter a validation method. Example, if you only want users to enter a numeric value, choose “numeric”.
Appearance Index	Set the appearance index value. This will determine in which order the Global Variable will be displayed on the provisioning screen
Use Custom Regular Expression	As an alternative to choosing a validation method, a custom regular expression can be used

Enable Lookup (Checkbox)	Converts the field from input to lookup during provision. This is required when CUCM is LDAP integrated and Global Variable is created for enduser ID.
CUCM Validation	Specifies the target validation field in CUCM
CUCM Field Association	Choose the filed from which Provisioning Manager will automatically pull data. This only applies to LDAP integrated endusers.
Enable Product Type Prefix Mapping (Checkbox)	For edit jobs, this allows Provisioning Manager to automatically apply the appropriate product prefix. For example, if you were running a name change job, Provisioning Manager can automatically apply the proper Device Name prefix.



Global Variable Information

*Global Variable Type	Default
* Variable Name	
Tooltip	
Description	
☐	Optional
* Input Validation	Please Select Item
Appearance Index	< NONE >
Custom Regular Expression	
Custom RegEx Fail Message	
☐	Enable Lookup
CUCM Validation	Please Select Item



Global Variable Information

*Global Variable Type: List

* Variable Name

Tooltip

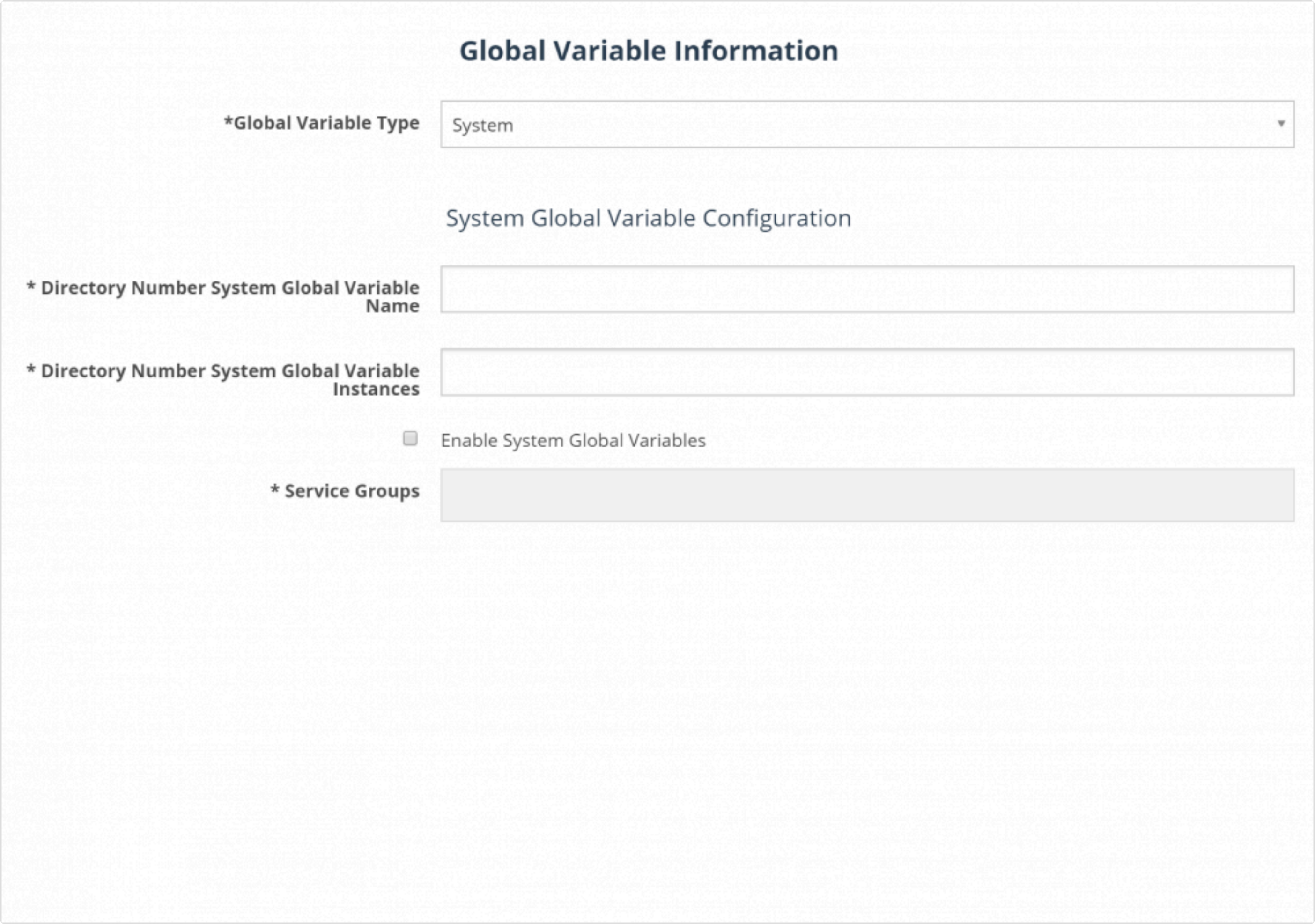
Description

□ Optional

□ Enable "type-in" data

* Custom List

	Value	Display Name
1		



Global Variable Information

*Global Variable Type: System

System Global Variable Configuration

* Directory Number System Global Variable Name

* Directory Number System Global Variable Instances

□ Enable System Global Variables

* Service Groups

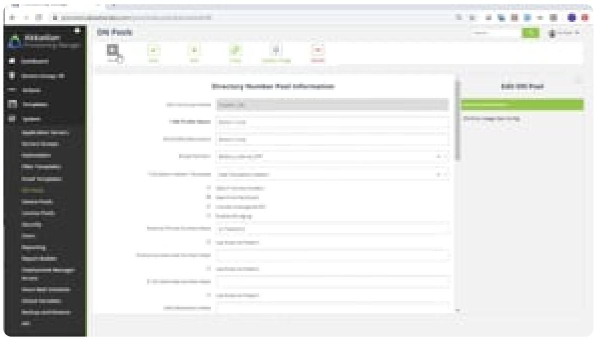
8.2 DN Management

Provisioning Manager provides directory number management using DN Pools, which can help simplify the provisioning process by automating directory number assignment.

There are two types of DN pools:

- Dynamic DN Pools – range based real time lookups
- Local DN Pools – local inventory with real time usage tracking

Please watch this video to learn more about each DN pool type.



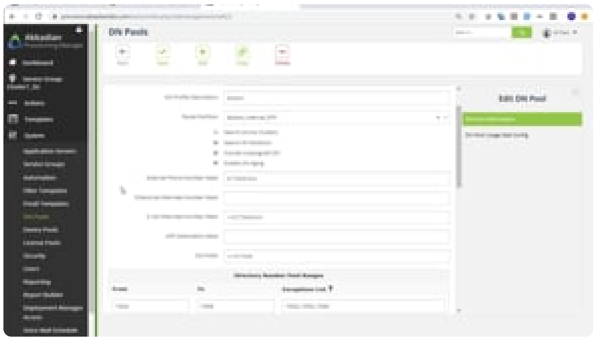
8.2.1 Dynamic DN Pools

To add a Dynamic DN Pool:

1. Select **DN Pool** from the **System** menu
2. On the menu, click **Add** to create a new **DN Pool**
3. Select a **Service Group**
4. Configure the **DN Pool** options as described in the table
5. When finished, click **Save**
6. To add another **DN Pool**, repeat the process

Field Name	Description
Service Group Name	Select the Service Group
DN Profile Name	DN Pool Name
DN Profile Description	DN Pool Description
Route Partition	Select the Route Partition for the DN Range
Search Across Clusters (Checkbox)	Enables DN management to search across multiple CUCM clusters when DNs are disturbed across multiple clusters.
Search All Partition (Checkbox)	Check this box to search all CUCM partitions when performing a DN lookup.
Include Unassigned DNs (Checkbox)	Check this box to include unassigned CUCM DNs in the DN lookup.
Enable DN Aging (Checkbox)	Check this box to enable DN aging on the DN Pool. Deleted DNs will be excluded from reassignment according the DN aging period configured on the Service Group.
External Phone Number Mask	Enter a phone number mask to be applied when allocating a DN from this pool
Enterprise Alternate Number Mask	Enter the Enterprise Alternate Number Mask to be applied when allocating a DN from this pool
E.164 Alternate Number Mask	Enter the E.164 Alternate Number Mask to be applied when allocating a DN from this pool
AAR Destination Mask	Enter a AAR destination mask to be applied when allocating a DN from this pool
DN Prefix	Enter digits common to the range, such as are code and exchange
Directory Number	Enter start and end of the DN Range. The range must be contiguous. The range cannot

Pool Ranges From/ To	start with 0.

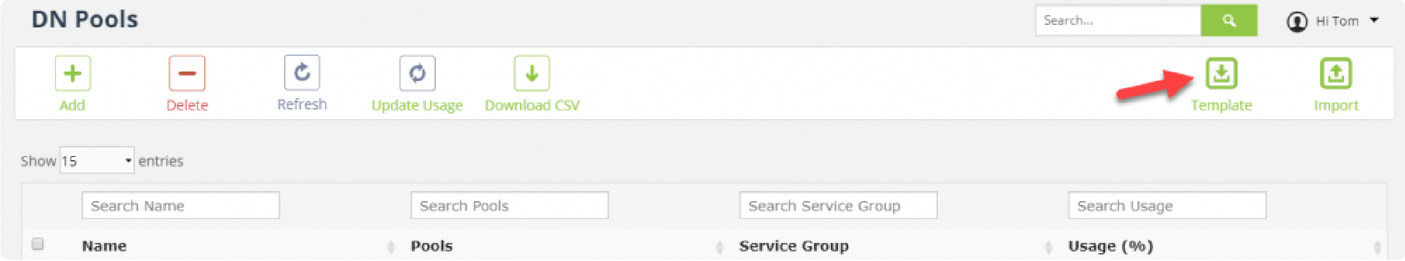


8.2.1 Importing DN Pools

If a large number of DN Pools need to be created, importing the data may be more effective.

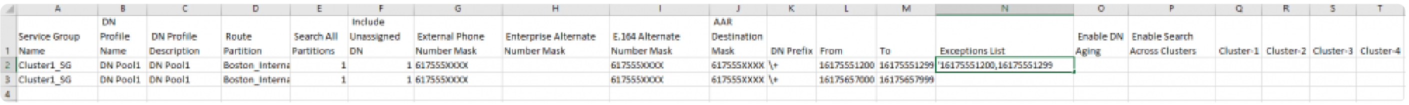
To import a DN Pool:

1. Select **DN Pool** from the **System** menu
2. On the menu, click **Template** to download a sample CSV template.

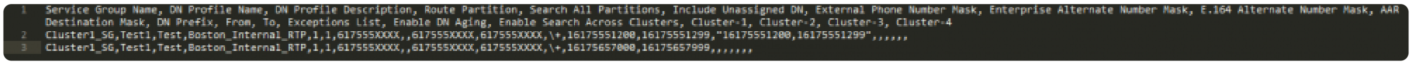


3. Populate the template with the DN Pool information.

> If the DN Pool requires multiple DN ranges per pool, use multiple rows with the same DN Pool name. Multiple exceptions can be included using comma separated values. Examples – “1200,1299” or “1200-1205,1299”. In excel, this string usually begins with a single quote.

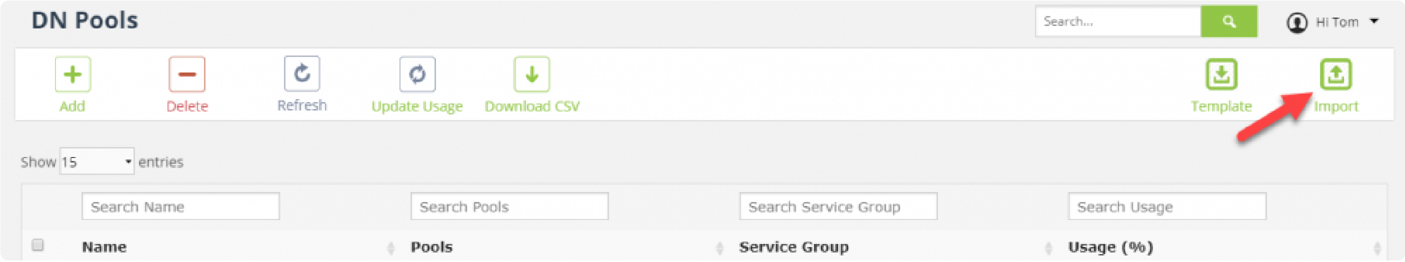


Service Group Name	DN Profile Name	DN Profile Description	Route Partition	Search All Partitions	Include Unassigned DN	External Phone Number Mask	Enterprise Alternate Number Mask	E.164 Alternate Number Mask	AAR Destination Mask	DN Prefix	From	To	Exceptions List	Enable DN Aging	Enable Search Across Clusters	Cluster-1	Cluster-2	Cluster-3	Cluster-4
Cluster1_SG	DN Pool1	DN Pool1	Boston_Interna	1	1	617555XXXX		617555XXXX	617555XXXX	\+	16175551200	16175551299	'16175551200,16175551299						
Cluster1_SG	DN Pool1	DN Pool1	Boston_Interna	1	1	617555XXXX		617555XXXX	617555XXXX	\+	16175657000	16175657999							



```
Service Group Name, DN Profile Name, DN Profile Description, Route Partition, Search All Partitions, Include Unassigned DN, External Phone Number Mask, Enterprise Alternate Number Mask, E.164 Alternate Number Mask, AAR
Destination Mask, DN Prefix, From, To, Exceptions List, Enable DN Aging, Enable Search Across Clusters, Cluster-1, Cluster-2, Cluster-3, Cluster-4
Cluster1_SG,Test1,Test,Boston_Internal_RTP,1,1,617555XXXX,,617555XXXX,617555XXXX,\+,16175551200,16175551299,"16175551200,16175551299",,,,,,
Cluster1_SG,Test1,Test,Boston_Internal_RTP,1,1,617555XXXX,,617555XXXX,617555XXXX,\+,16175657000,16175657999,,,,,,,
```

4. Upload the CSV to import the DN Pools.



8.2.2 Local DN Pools

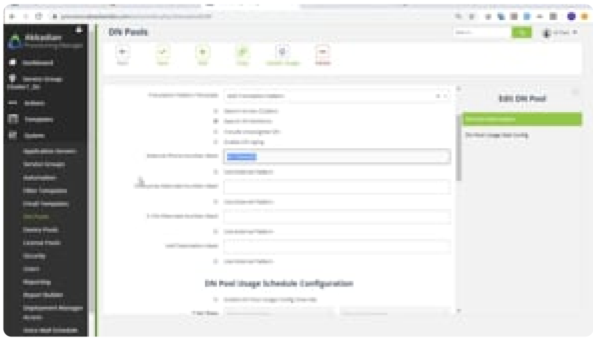
Local DN Pools are similar to dynamic DN Pools, but instead of using dynamic ranges, they require each number to be added to the local inventory. In addition, local DN Pools allow for the automatic provisioning of both an internal Directory Number and correlating external Translation Pattern.

To add a Local DN Pool:

1. Select **DN Pool** from the **System** menu
2. On the menu, click **Add** to create a new **DN Pool**
3. Select a **Service Group**
4. Configure the **DN Pool** options as described in the table
5. When finished, click **Save**
6. To add another **DN Pool**, repeat the process

Field Name	Description
Service Group Name	Select the Service Group
DN Profile Name	DN Pool Name
DN Profile Description	DN Pool Description
Route Partition	Select the Route Partition for the DN Range
Translation Pattern Template	Select a Translation Pattern Template to be applied when new translation patterns are created. If a translation pattern should not be provisioned, do no configure this option.
Search Across Clusters (Checkbox)	Enables DN management to search across multiple CUCM clusters when DNs are disturbed across multiple clusters.
Search All Partition (Checkbox)	Check this box to search all CUCM partitions when performing a DN lookup.
Include Unassigned DNs (Checkbox)	Check this box to include unassigned CUCM DNs in the DN lookup.
Enable DN Aging (Checkbox)	Check this box to enable DN aging on the DN Pool. Deleted DNs will be excluded from reassignment according the DN aging period configured on the Service Group.
External Phone Number Mask	Enter a phone number mask to be applied when allocating a DN from this pool

Enterprise Alternate Number Mask	Enter the Enterprise Alternate Number Mask to be applied when allocating a DN from this pool
E.164 Alternate Number Mask	Enter the E.164 Alternate Number Mask to be applied when allocating a DN from this pool
AAR Destination Mask	Enter a AAR destination mask to be applied when allocating a DN from this pool
DN Prefix	Enter digits common to the range, such as are code and exchange
Internal Directory Number	Enter the number to be provisioned as directory number
External Pattern	Enter the external number to be used when provisioning the translation pattern. This option can be left blank if no Translation Pattern template was selected.



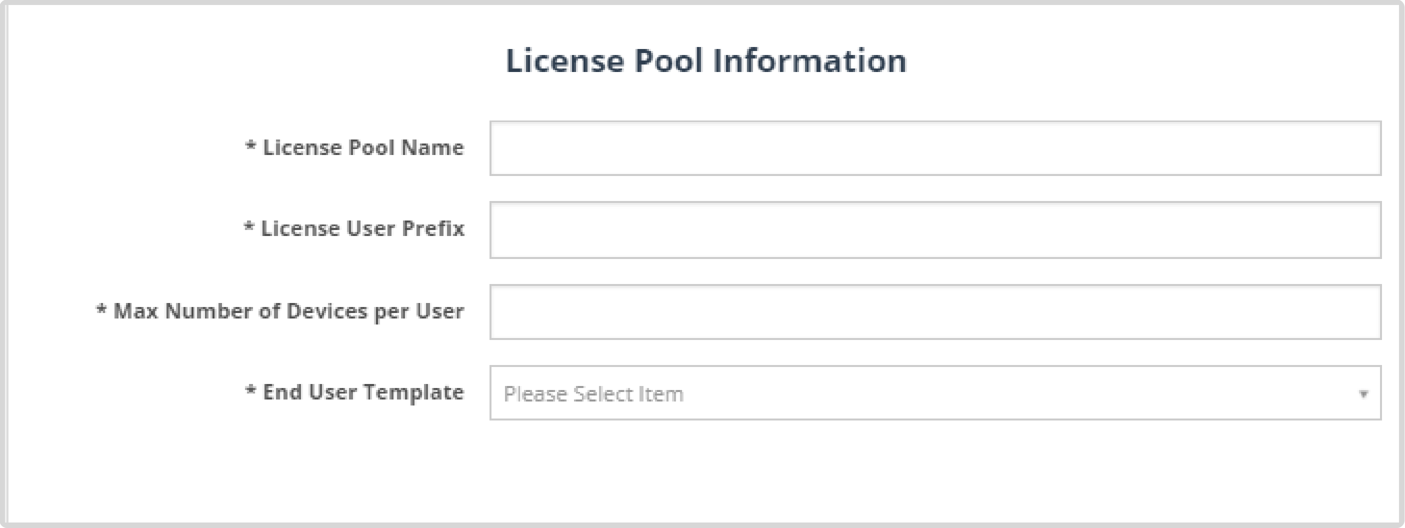
8.3 License Pools

License Pools simplify the provisioning process by helping manage the licensing process. In Cisco CUCM, it may be necessary to assign an Owner User ID to devices in order to effectively leverage Cisco User Workspace Licensing. When devices are not directly associated to user, this process can be challenging. License Pools help alleviate this challenge by automatically creating local end users and associated devices strictly for licensing purposes.

To add a License Pool:

1. Select **License Pool** from the **System** menu
2. On the menu, click **Add** to create a new **License Pool**
3. Select a **Service Group**
4. Configure **License Pool** options as described in the table
5. When finished, click **Save**
6. To add another **License Pool** Template, repeat the process

Field Name	Description
Service Group Name	Select the Service Group
License Pool Name	License Pool Name
License User Prefix	Username prefix for license user. Username format will be Prefix_Licensing_XXXX
Max Number of Devices per User	Maximum number of devices to which the license user will be assigned as the Owner User ID before the next license user will be created. Max = 2000
End User Template	End User Template used to provision the license end user. Template should not contain any global variables and fields requiring unique values, such as Mail ID & Directory URI should not be configured.



License Pool Information

* License Pool Name
* License User Prefix
* Max Number of Devices per User
* End User Template: Please Select Item

8.4 Device Pools

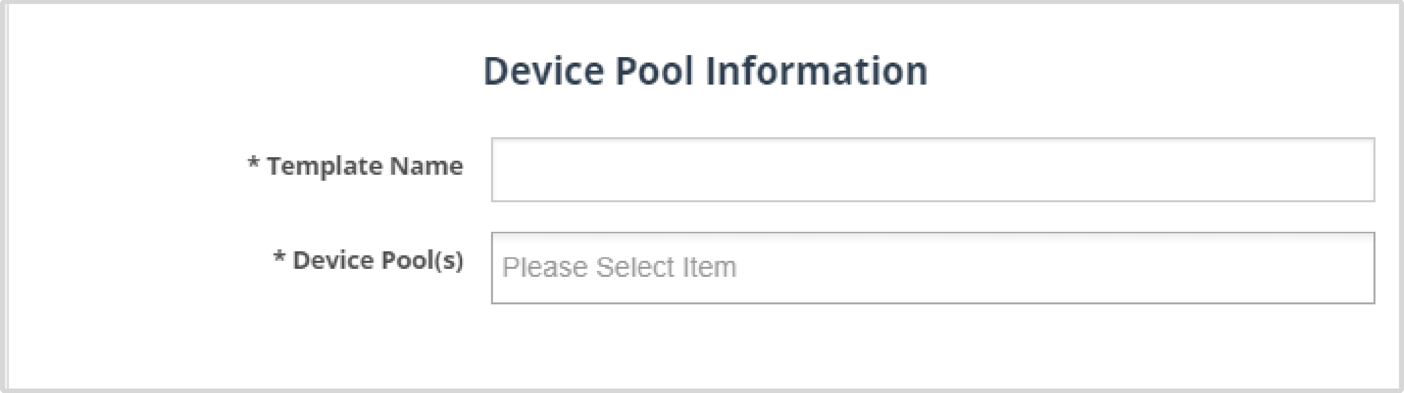
Device Pools provide the ability to create a group of CUCM Device Pools across which Provisioning Manager will load balance devices. When the Device Pool features is used in a provision, Provisioning Manager will look at the number of devices in each CUCM Device Pool assigned to the group and provision the device in the Device Pool with the fewest number of devices and will always attempts the keep the number of devices distributed as evenly as possible across the CUCM Device Pools.

Device Pools will override any Device Pool settings on Device Templates and Site Templates.

To add a Device Pool:

1. Select **Device Pools** from the **System** menu
2. On the menu, click **Add** to create a new Device Pool group
3. Select a Service Group
4. Configure filter options as described in the table
5. When finished, click **Save**
6. To add another **Device Pool**, click **Add**
7. To use the Device Pool, it must be added to the Device Pool(s) section located at the bottom of the Device Template or Site Template.

Field Name	Description
Service Group	Select the Service Group
Template Name	Enter a name for the template
Device Pools(s)	Add 2 or more Device Pools to the group



Device Pool Information

* Template Name

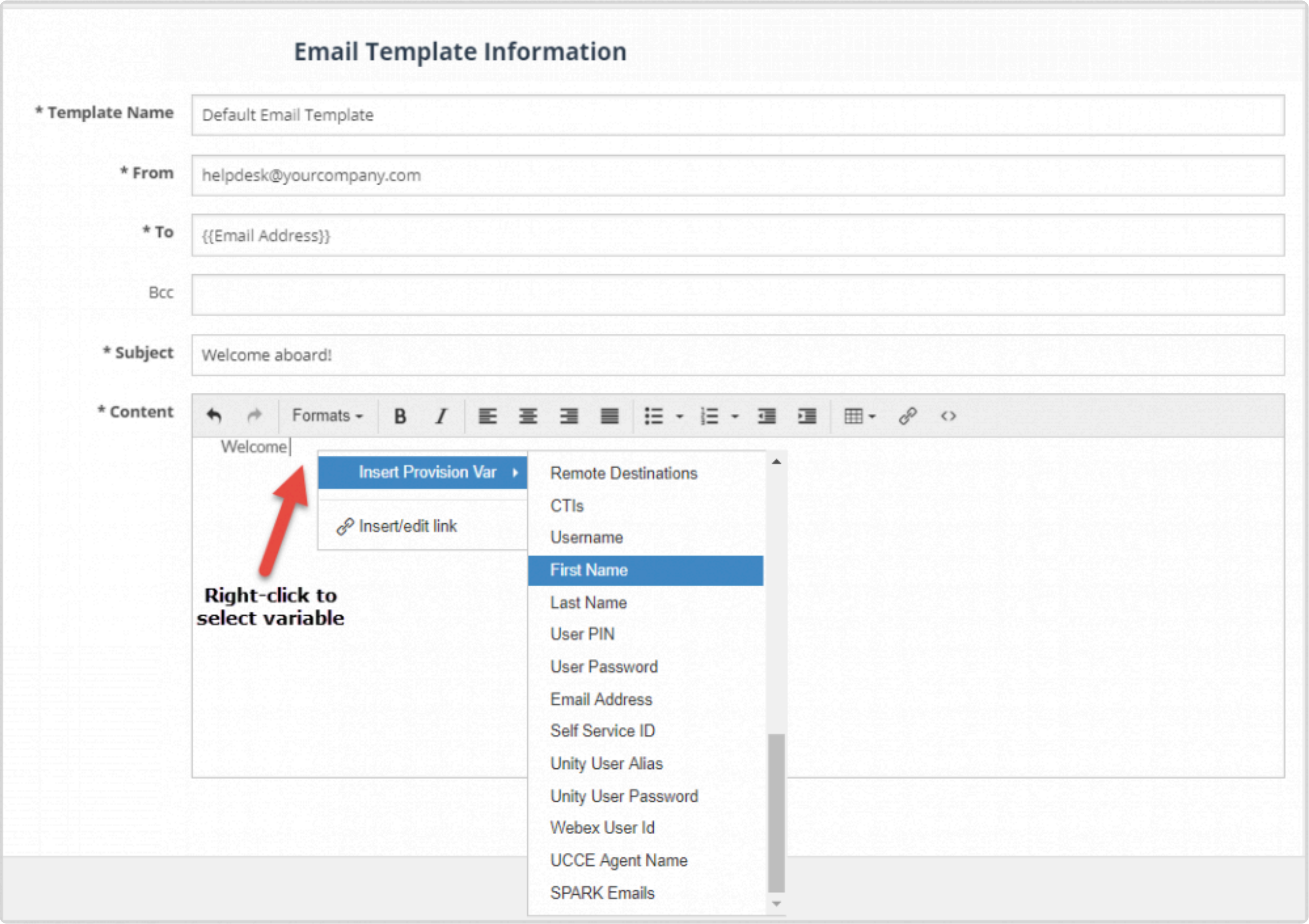
* Device Pool(s) Please Select Item

8.5 Email Templates

Email Templates can be used to send automated notifications to end users upon the completion of a provision. Variables are used to pull data provisioning job and populate the email template. Please note, email templates can only be used in conjunction with Site Templates.

To add an Email Template:

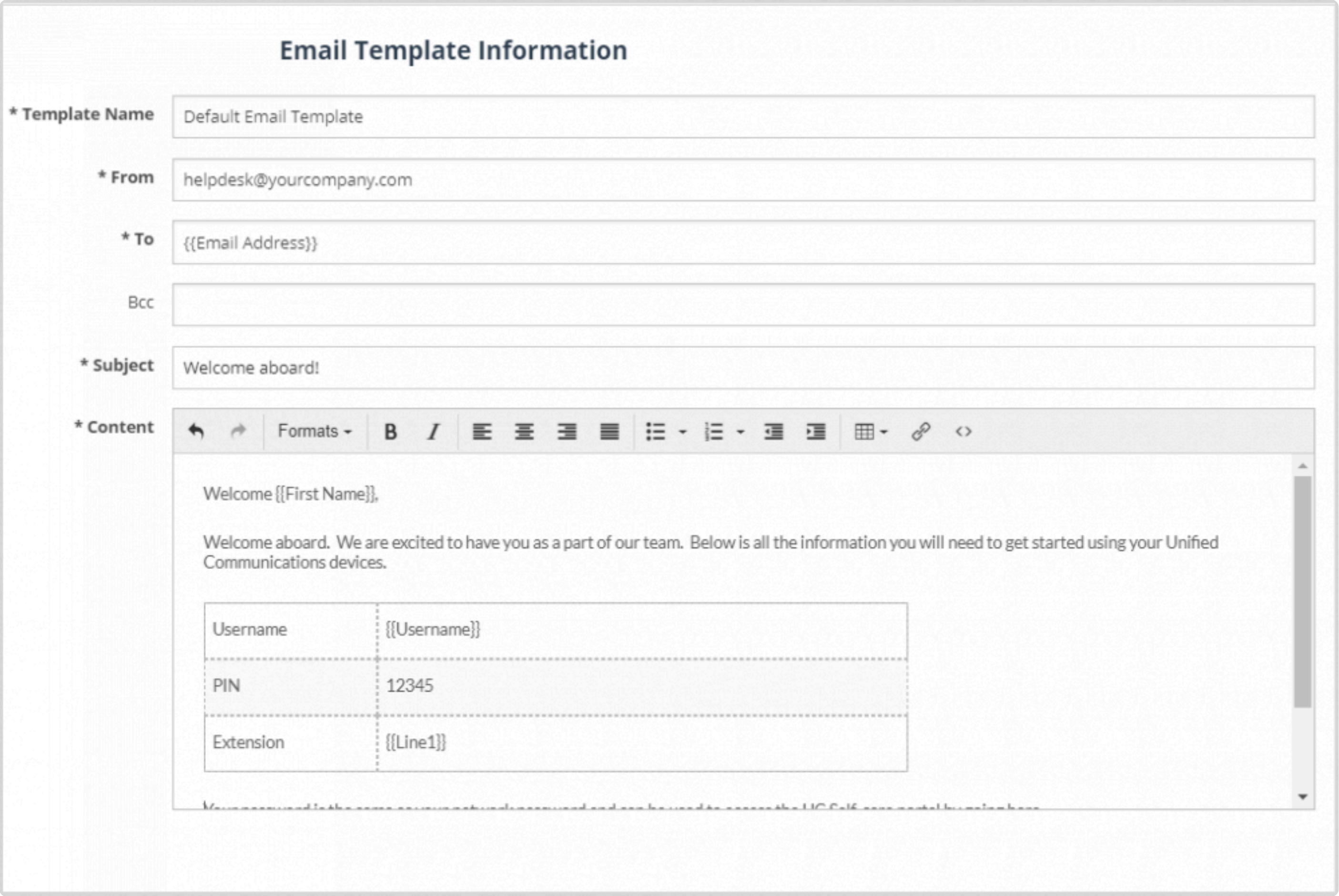
1. Select **Email Templates** from the **System** menu
2. On the menu, click **Add** to create a new **Email Template**
3. Select a Service Group
4. Configure options as described in the table below.
5. When finished. Click **Save**.
6. Repeat the process for additional **Email Templates**
7. Assign the Email Template to the appropriate **Site Template(s)**



Email Template Information

* Template Name	Default Email Template
* From	helpdesk@yourcompany.com
* To	{{Email Address}}
Bcc	
* Subject	Welcome aboard!
* Content	Welcome

Right-click to select variable



Email Template Information

* Template Name	Default Email Template
* From	helpdesk@yourcompany.com
* To	{{Email Address}}
Bcc	
* Subject	Welcome aboard!
* Content	

Welcome {{First Name}},

Welcome aboard. We are excited to have you as a part of our team. Below is all the information you will need to get started using your Unified Communications devices.

Username	{{Username}}
PIN	12345
Extension	{{Line1}}

Your password is the same as your network password and can be used to access the UC Self-care portal by going here

8.6 Filter Templates

Filter Templates are an optional security component used to restrict user’s access to objects and field data within a Service Group.

Scenario: Help desk personnel at Company X are divided into groups: support for the New York and Atlanta offices. The challenge is help desk personnel should only see devices and field data specific to their location, but they share CUCM and CUC clusters. Filter templates overcome this challenge by providing a mechanism to filter views of devices and field data at a Service Group level.

To add a Filter Template:

1. Select **Filter Templates** from the **System** menu
2. On the menu, click **Add** to create a new Filter Template
3. Enter the Filter Template Name and select a Service Group
4. Configure filter options as described in table
5. When finished, click **Save**
6. To add another **Filter Template**, repeat the process

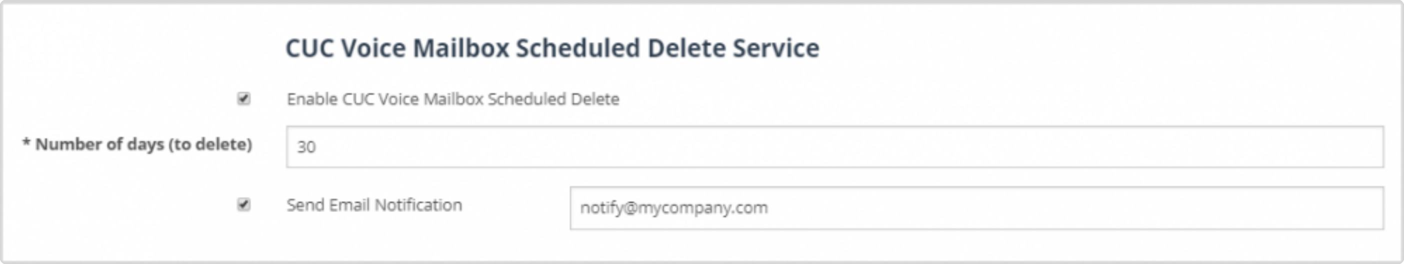
Field Name	Description
Name	Filter Template Name
Service Group Name	Select the Service Group
Device Pools	Select the CUCM Device Poos(s)
Calling Search Space	Select the CUCM Calling Search Space(s)
Route Partitions	Select a CUCM Route Partition(s)
Device Profile Filter	Applies to the Device Profile Description Field. Matches using “contains”.
Telephone Number	Applies to the CUCM End User Telephone number field. Matches using “begins with”.
Department	Applies to the End User Department Field. Matches using “contains”.
Email (mailid)	Applies to the End User Mail ID Field. Matches using “contains”.
Apply CUCM End User filter to Unity Connection	Applies CUCM End User filter to Unity Connection
Filter Field	Select the Unity Connection filter field
Filter Starts With	Specify the filter criteria

8.7 Voice Mail Scheduled Delete

Provisioning Manager has the ability to scheduled Cisco Unity Voice Mail account deletions. By default, the CUC VM delete function in Provisioning Manager complete deletes the user's VM account and all messages in Unity Connection. Alternatively, you may delay the deletion process by enabling the scheduled deletion feature and setting the number of days to retain the VM account before it is deleted.

To enable VM Scheduled Delete Service:

1. Select **Service Group** from the **System** menu
2. From the list, click on a **Service Group**
3. Navigate to the "**CUC Voice Mailbox Scheduled Delete Service**" section
4. Check the box to enable the service
5. Set the number of days to retain the VM account before being deleted
6. Check the box to enable email notifications when VM accounts are deleted
7. Click **Save**
8. Repeat the process for any other **Service Groups** where the feature should be enabled



CUC Voice Mailbox Scheduled Delete Service

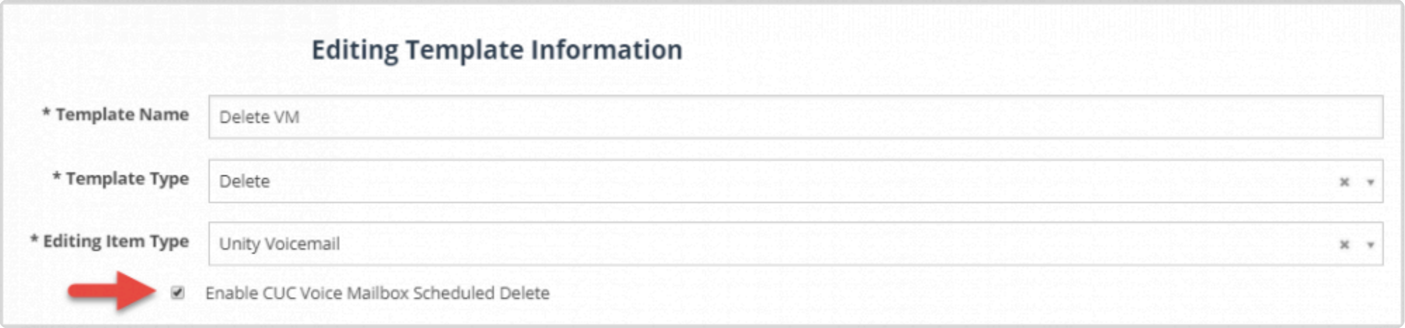
☑ Enable CUC Voice Mailbox Scheduled Delete

* Number of days (to delete) 30

☑ Send Email Notification notify@mycompany.com

To enable VM Scheduled Delete on the Delete Template:

1. Select **Editing Templates** from the **Templates** menu
2. Select an existing Unity Voicemail Delete template or create a new one
3. On the Unity Voicemail Delete template, select the "Enable CUC Voicemail Schedule Delete" checkbox
4. Click **Save**



Editing Template Information

* Template Name	Delete VM
* Template Type	Delete
* Editing Item Type	Unity Voicemail

☑ Enable CUC Voice Mailbox Scheduled Delete

✻ The Voice Mail Scheduled Delete process can be monitored at any time by going to **Voice Mail Schedule** in the **System** menu. You may also cancel a scheduled delete for any job that has not been processed.

8.8 Templates

Templates are the building blocks in Provisioning Manager used to create provisioning jobs.

There two major Template categories in Provisioning Manager:

- Add Templates
- Editing Templates

Add Templates are used to provision new items, where editing templates are used to change existing items.

There are three types of editing templates:

- Edit Templates – edit existing items
- Delete Templates – delete existing items
- Edit/Delete Templates – edit and delete existing items

This section will cover the process of creating each template type in Provisioning Manager.

8.8.1 Add Templates

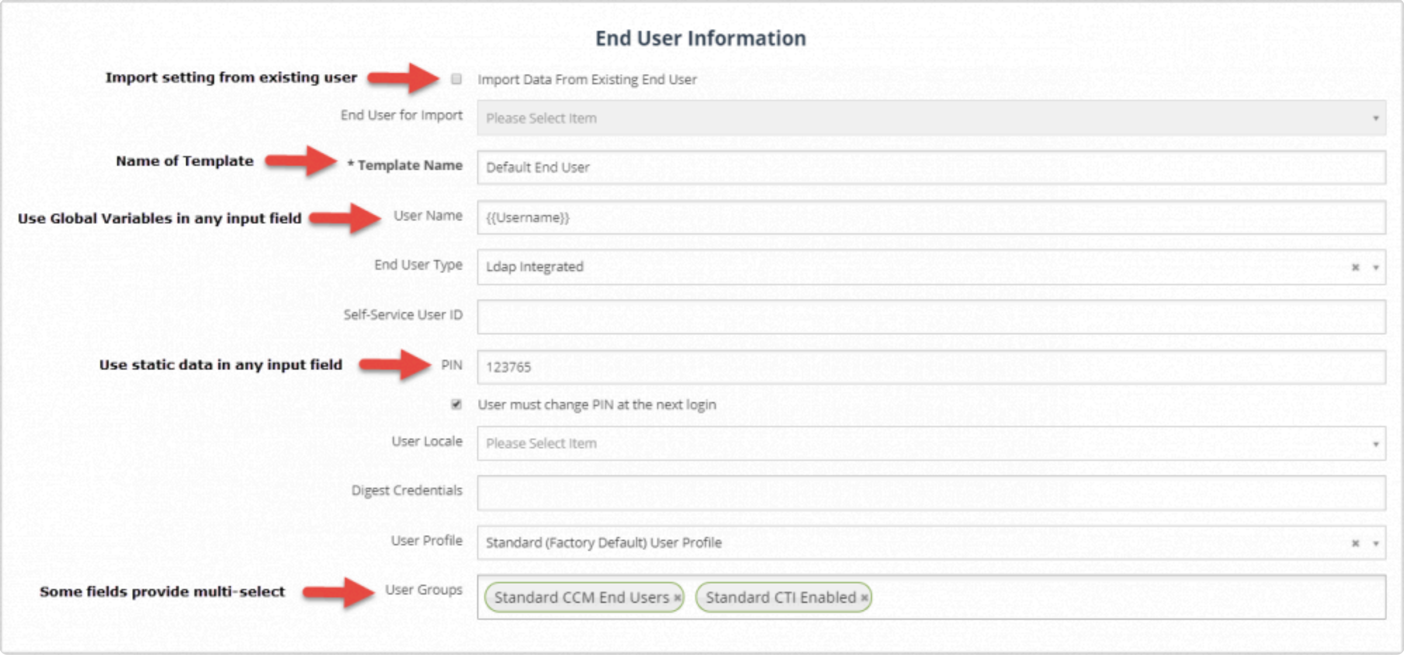
Add Templates are used to provision new items in the Cisco UC applications. This section will cover the process of creating an Add Templates in Provisioning Manager. Because there are numerous types of Add Templates, this section will provide general instructions that can be applied to create any add template.

To add a Template:

1. Expand **Templates** from the left navigation menu
2. On the menu, select the desired Template type

Call Routing & Device menu options contains multiple templates types

3. Click **Add** to create a new template
4. Select a Service Group
5. Configure the template options for your environment
6. When finished, click **Save**
7. To add another Template, click **Add**



End User Information

Import setting from existing user → □ Import Data From Existing End User

End User for Import: Please Select Item

Name of Template → * Template Name: Default End User

Use Global Variables in any input field → User Name: {{Username}}

End User Type: Ldap Integrated

Self-Service User ID:

Use static data in any input field → PIN: 123765

☑ User must change PIN at the next login

User Locale: Please Select Item

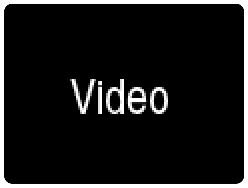
Digest Credentials:

User Profile: Standard (Factory Default) User Profile

Some fields provide multi-select → User Groups: Standard CCM End Users ×, Standard CTI Enabled ×

Video – Planning for Templates

Video – Creating Add Templates



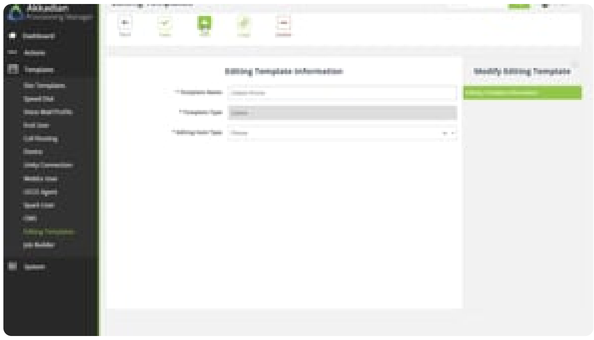
8.8.2 Editing Templates

Editing Templates are used to manipulate existing items in the Cisco UC applications. This section will cover the process of creating an Editing Templates in Provisioning Manager.

To create an Editing Template:

1. Expand **Templates** from the left navigation menu
2. On the menu, select Editing Templates
3. Click **Add** to create a new template
4. Select a Service Group
5. Provide a Template Name
6. Select the Template Type
7. Select the Editing Item Type
8. Configure the template options
9. When finished, click **Save**
10. To add another Template, click **Add**

Video – Creating Editing Templates



8.9 Site Templates

Site Templates are used to apply site based settings to provisioning jobs, drastically reducing the number of required templates and jobs in Provisioning Manager.

To add a Site Template:

1. Select **Site Templates** from the **Templates** menu
2. On the menu, click **Add** to create a new **Template**
3. If required, select a **Service Group**
4. Configure the Template based on your requirements
5. Assign **User Groups**
6. Click **Save**

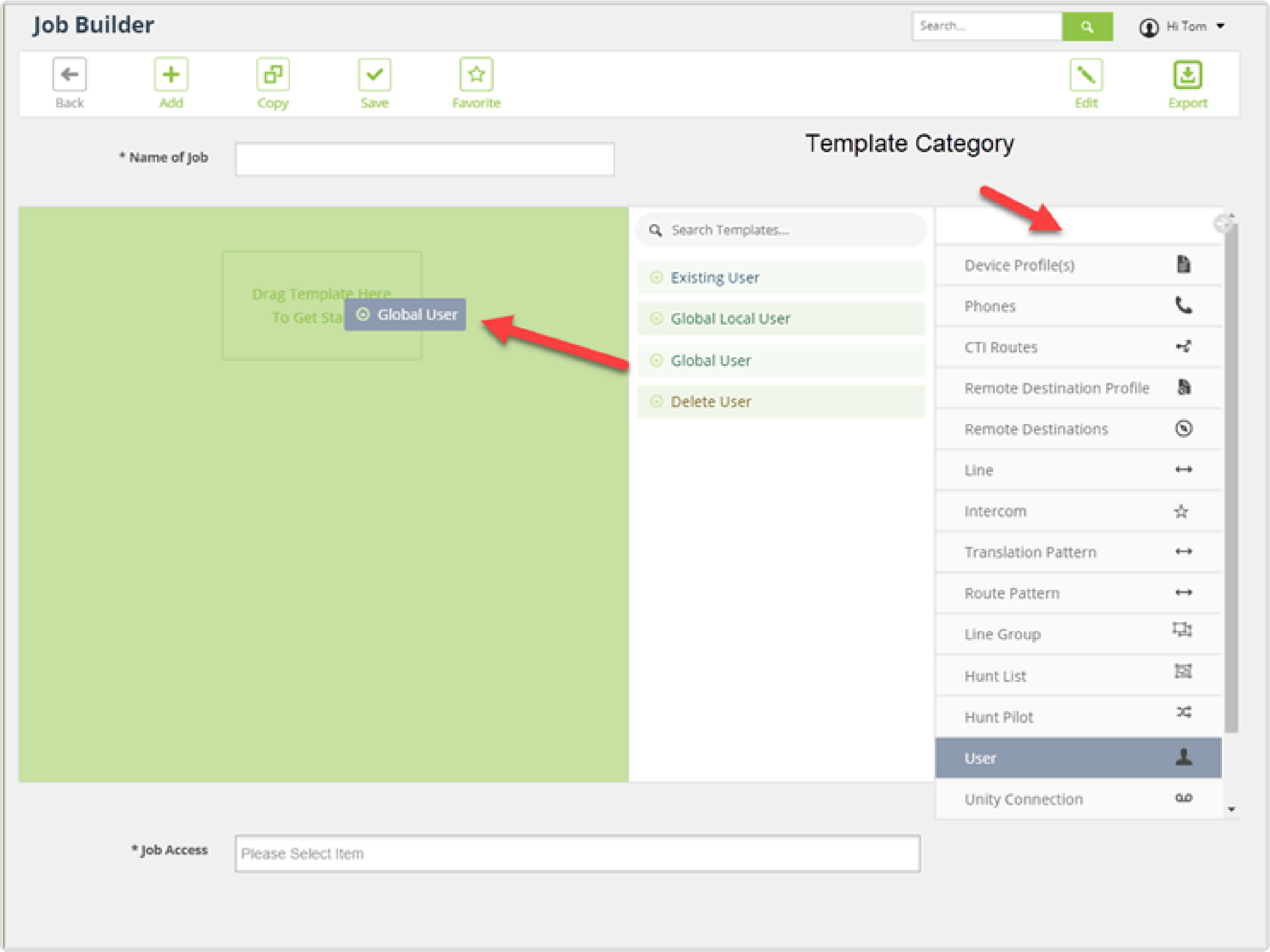
Video – Site Templates

8.10 Jobs

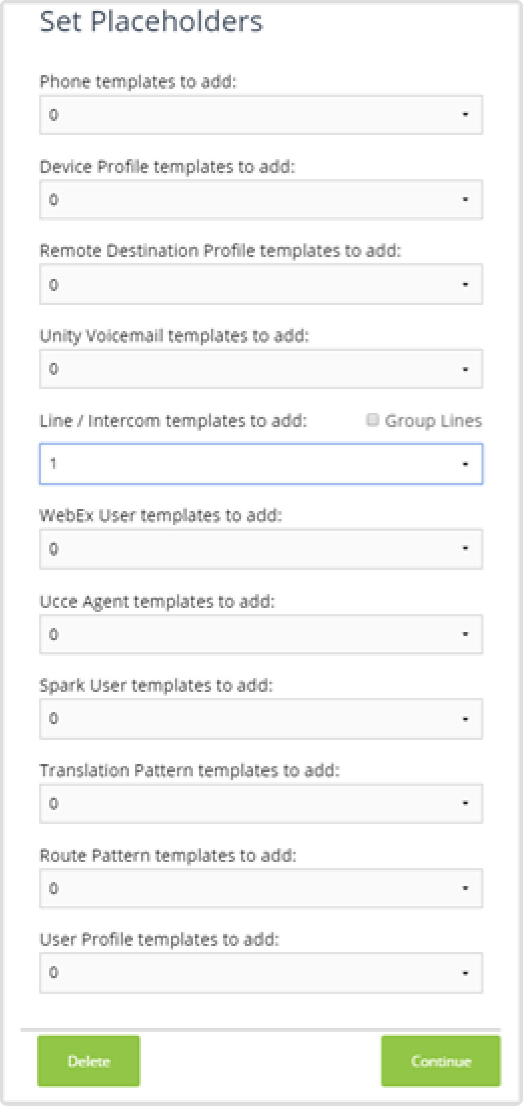
Jobs are responsible for performing the provisioning tasks within Provisioning Manager. Jobs are made up of one or more templates to create a desired provisioning result. Provisioning Manager Jobs are very flexible and will vary depending on an organizations needs. This sections will provide general instructions and examples that can be applied to building Jobs in Provisioning Manager.

To add a Job:

1. Select **Job Builder** from the **Templates** menu
2. On the menu, click **Add** to create a new **Job**
3. If required, select a **Service Group**
4. Provide a Name for the Job
5. Choose a **Template Category**
6. Drag the first **Template** to the Job Builder pane



7. Add the placeholder(s)



Set Placeholders

Phone templates to add: 0

Device Profile templates to add: 0

Remote Destination Profile templates to add: 0

Unity Voicemail templates to add: 0

Line / Intercom templates to add: □ Group Lines 1

WebEx User templates to add: 0

Ucce Agent templates to add: 0

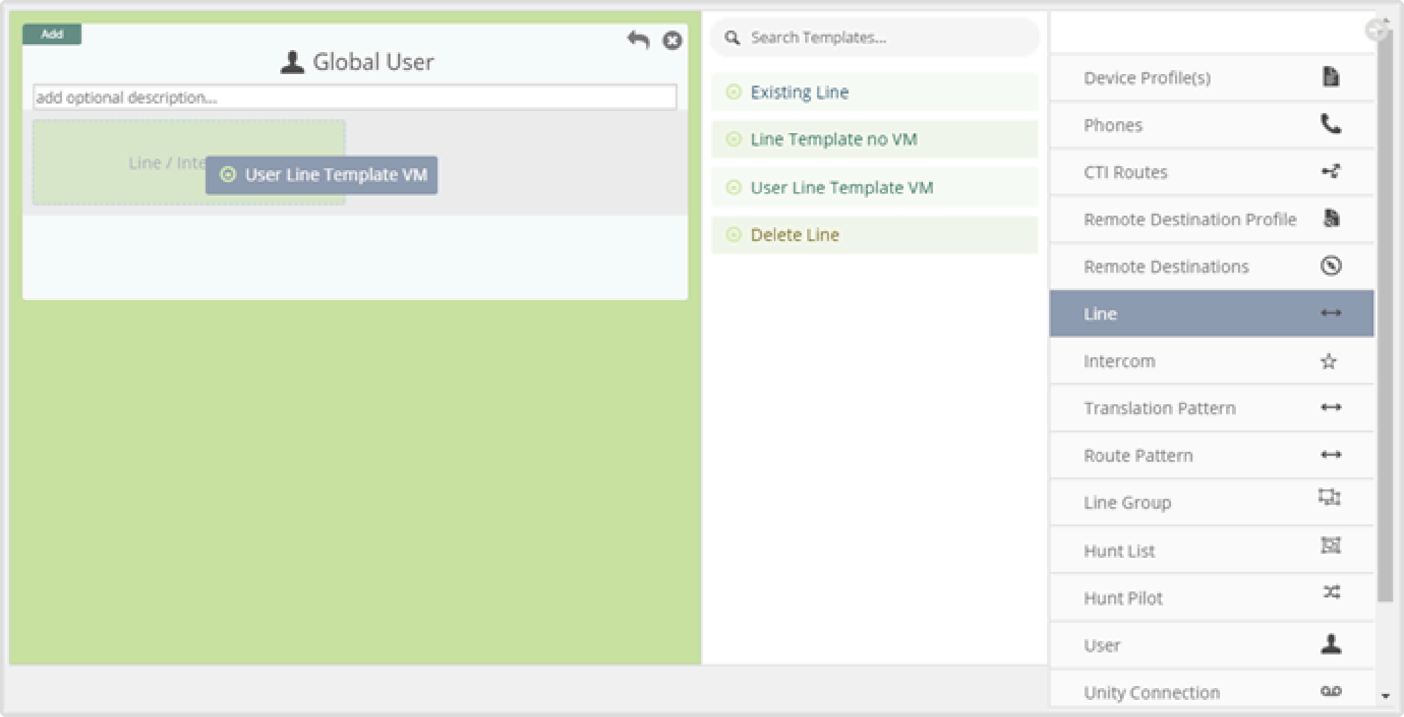
Spark User templates to add: 0

Translation Pattern templates to add: 0

Route Pattern templates to add: 0

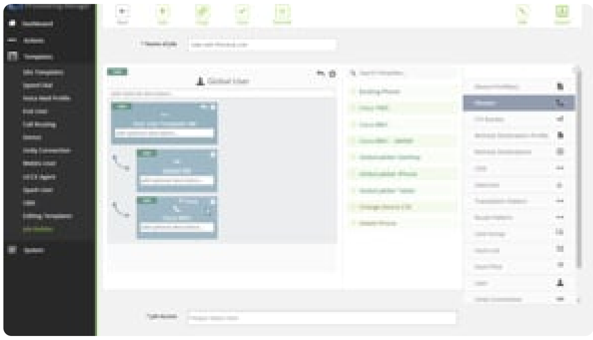
User Profile templates to add: 0

8. Drag the appropriate template(s) into the placeholder(s)



9. If required, set additional placeholder(s) or click Continue to skip adding additional Placeholders
10. Add any additional templates in the open placeholders
11. When complete, assign **User Groups** in the **Job Access** field
12. Click **Save**

Video – Creating Jobs



9. Actions

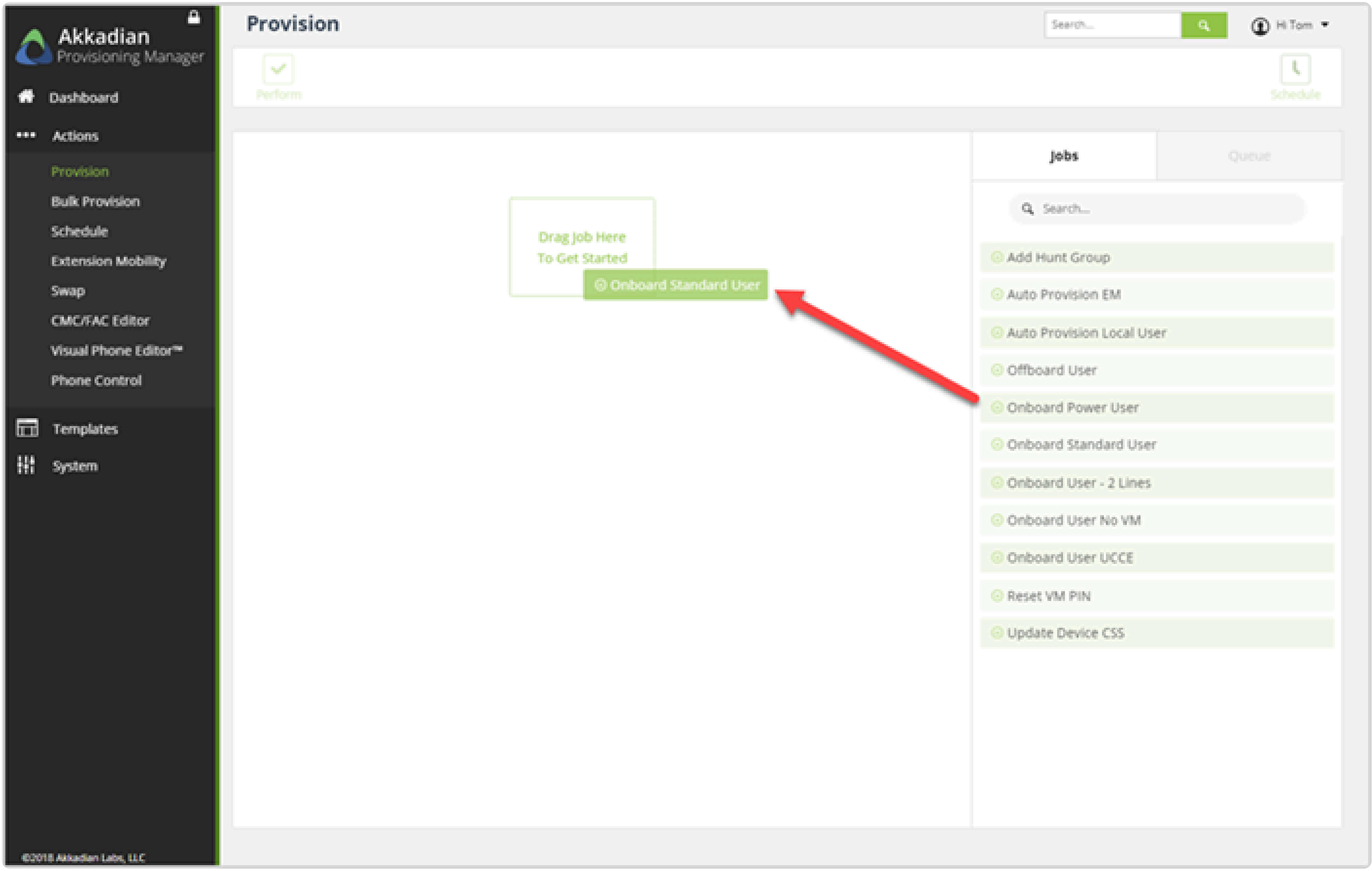
The Actions menu in Provisioning Manager provides access to provisioning as well as many other powerful tools. This section will cover how to use those functions.

9.1 Provisioning

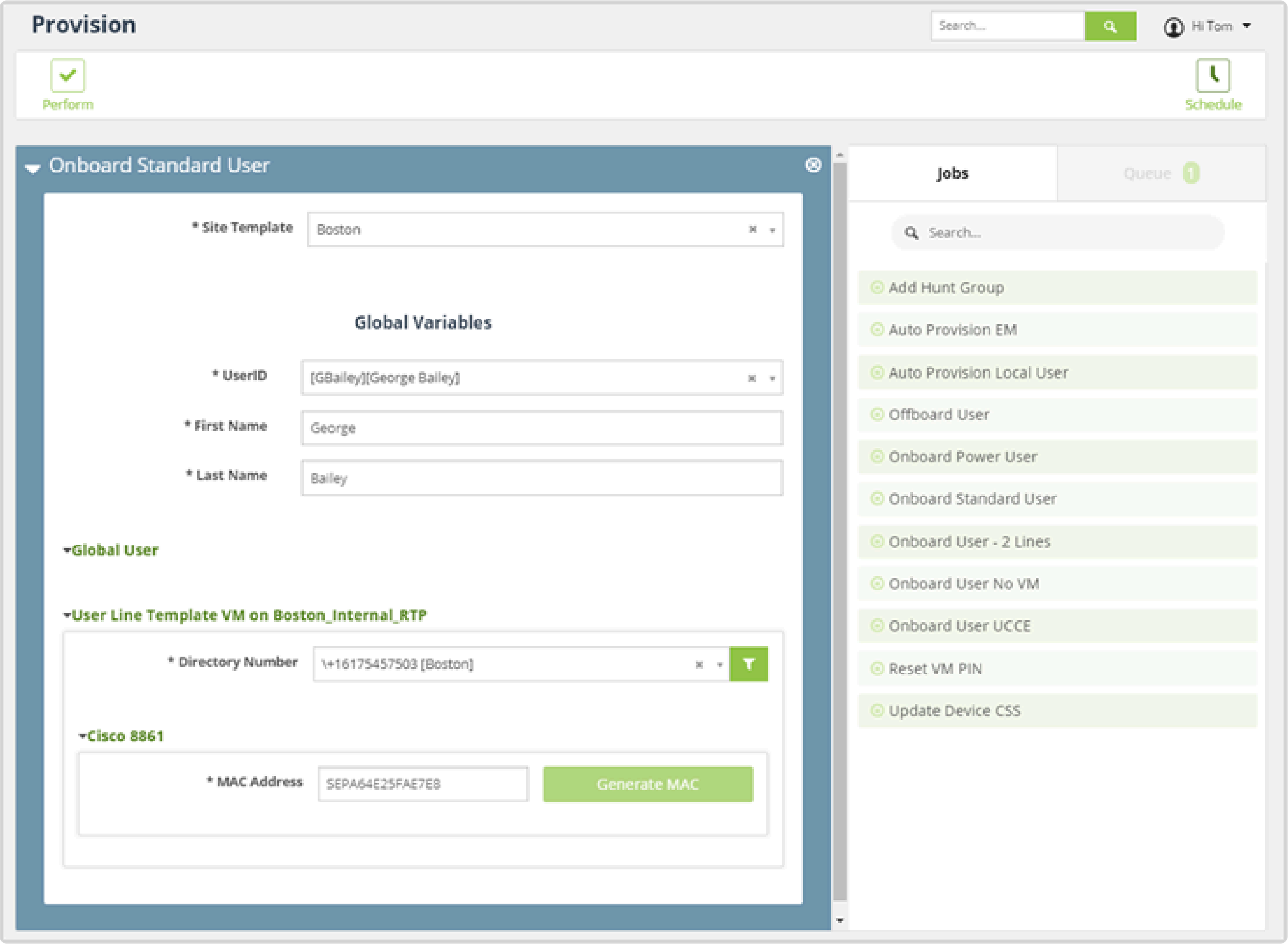
After configuring the Jobs in Provisioning Manager, you are ready to start provisioning! The provisioning experience will vary depending on your Job configurations, so this section will provide general instructions for provisioning.

To begin provisioning:

1. Log into Provisioning Manager
2. From the **Actions** menu, select **Provision**
3. Select the **Job** from the list and drag it into the Provisioning window



4. Complete the provisioning form and click **Provision**



* Site Template: Boston

Global Variables

* UserID: [GBailey][George Bailey]
* First Name: George
* Last Name: Bailey

Global User

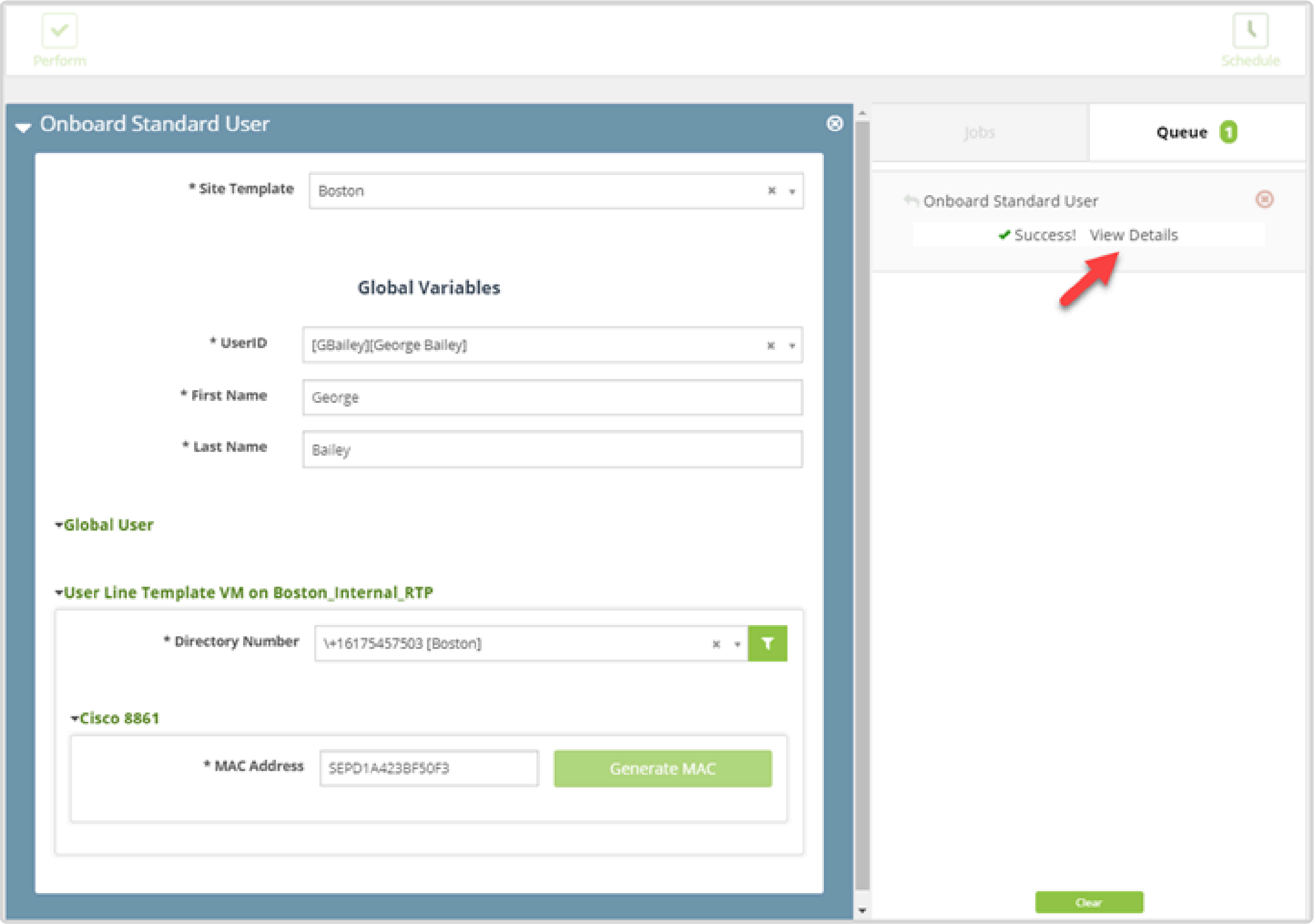
User Line Template VM on Boston_Internal_RTP

* Directory Number: \+16175457503 [Boston]

Cisco 8861

* MAC Address: SEPA64E25FAE7E8

5. When the provision completes, the status will display in the queue
6. Click on **View Details** to see the Job details



Onboard Standard User

* Site Template: Boston

Global Variables

* UserID: [GBailey][George Bailey]

* First Name: George

* Last Name: Bailey

Global User

User Line Template VM on Boston_Internal_RTP

* Directory Number: \+16175457503 [Boston]

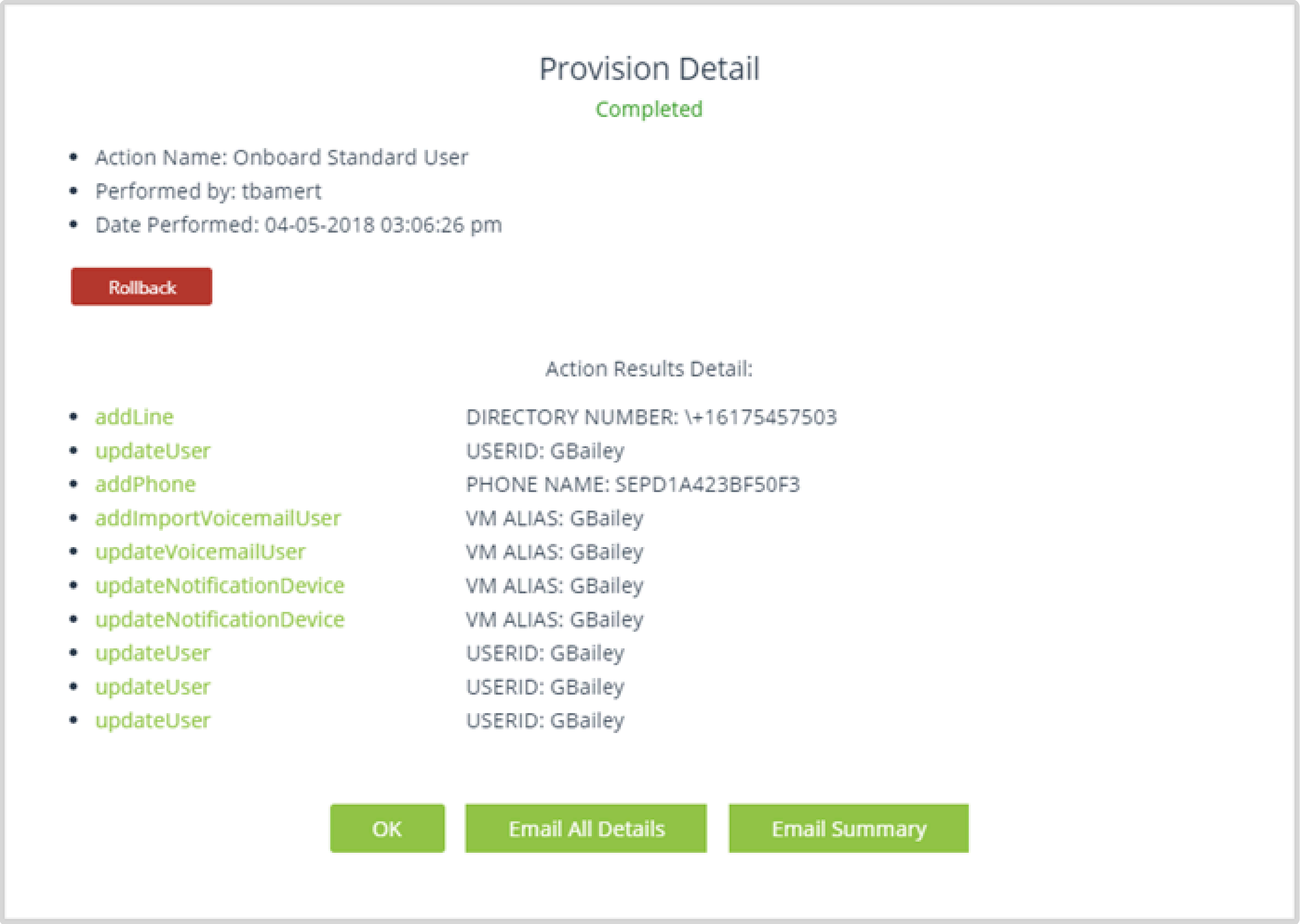
Cisco 8861

* MAC Address: SEPD1A423BF50F3

Onboard Standard User

✔ Success! View Details

7. In the view details pane, you can:
   - Email the Job details or summary
   - Drill-down on any of the Job steps
   - Rollback the Job, depending on the Job configuration



Provision Detail

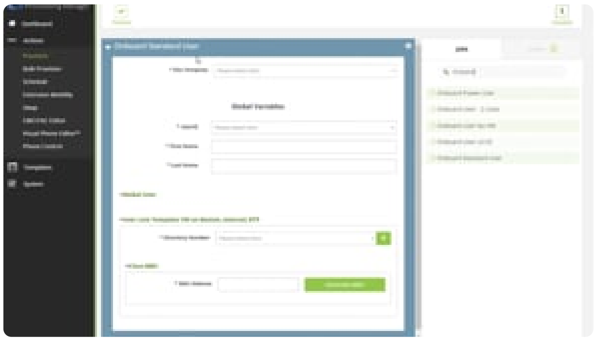
Completed

- Action Name: Onboard Standard User
- Performed by: tbamert
- Date Performed: 04-05-2018 03:06:26 pm

Action Results Detail:

addLine	DIRECTORY NUMBER: \+16175457503
updateUser	USERID: GBailey
addPhone	PHONE NAME: SEPD1A423BF50F3
addImportVoicemailUser	VM ALIAS: GBailey
updateVoicemailUser	VM ALIAS: GBailey
updateNotificationDevice	VM ALIAS: GBailey
updateNotificationDevice	VM ALIAS: GBailey
updateUser	USERID: GBailey
updateUser	USERID: GBailey
updateUser	USERID: GBailey

Video – Provisioning



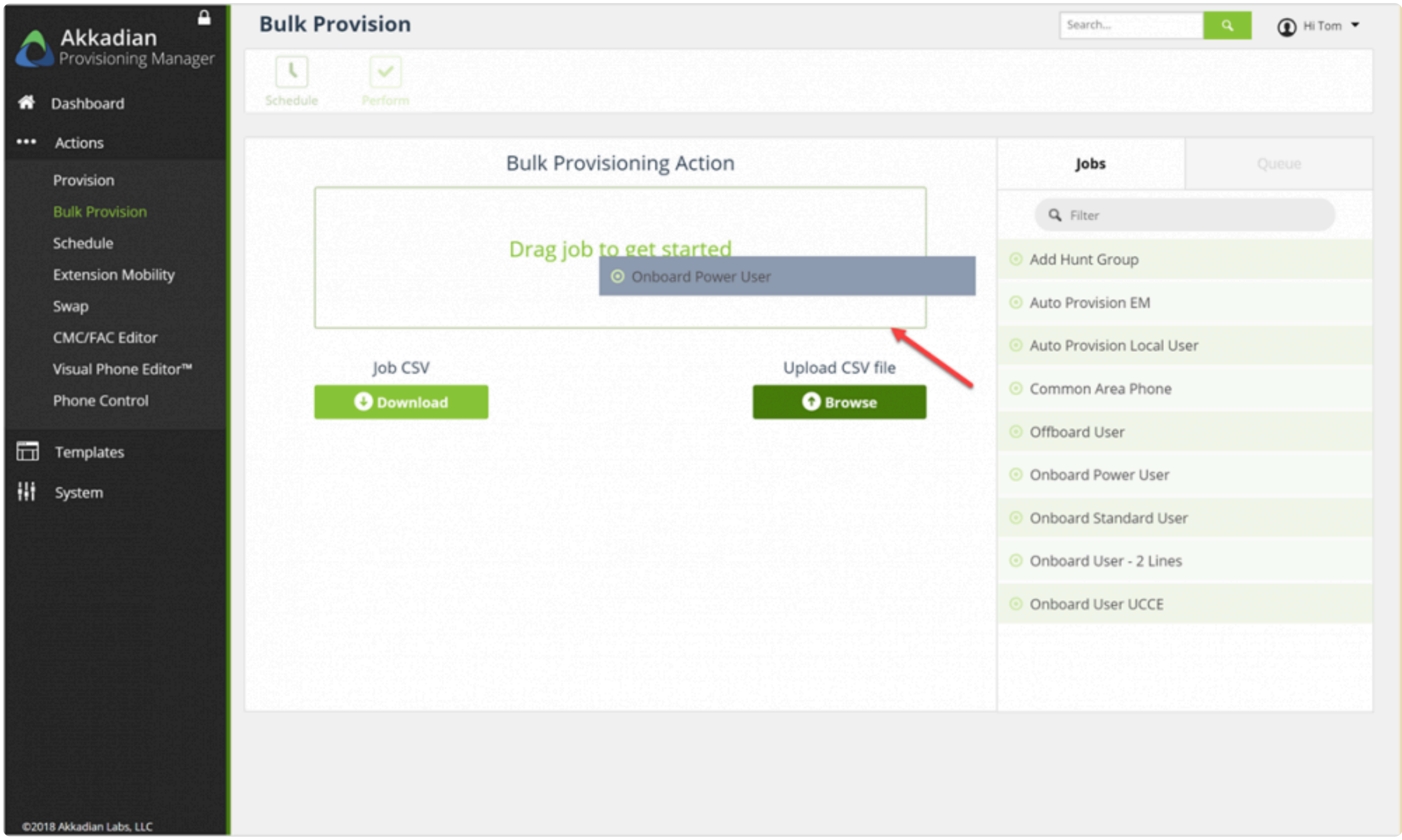
9.2 Bulk Provisioning

Provisioning Manager Jobs can also be used for bulk provisioning. Bulk provisioning can be run in real-time or scheduled.

> ✻ Currently Provisioning Manager only support bulk provisioning for Add and Delete Jobs.

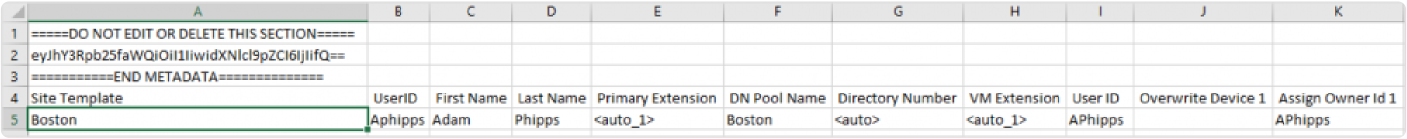
To begin provisioning:

1. Log into Provisioning Manager
2. From the **Actions** menu, select **Bulk Provision**
3. Select the **Job** from the list and drag it into the Bulk Provisioning window



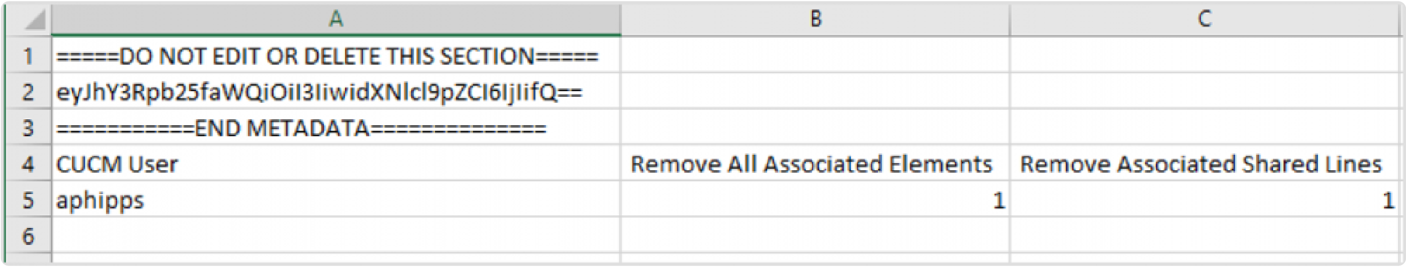
4. Click **Download** the Job CSV
5. Add entries to the CSV

Several fields can be automatically populated using the “auto” parameter. See the examples below.



	A	B	C	D	E	F	G	H	I	J	K
1	=====DO NOT EDIT OR DELETE THIS SECTION=====										
2	eyJhY3Rpb25faWQiOiI1IiwidXNlcl9pZCI6IjIifQ==										
3	===========END METADATA==============										
4	Site Template	UserID	First Name	Last Name	Primary Extension	DN Pool Name	Directory Number	VM Extension	User ID	Overwrite Device 1	Assign Owner Id 1
5	Boston	Aphipps	Adam	Phipps	<auto_1>	Boston	<auto>	<auto_1>	APhipps		APhipps

Bulk Add Example

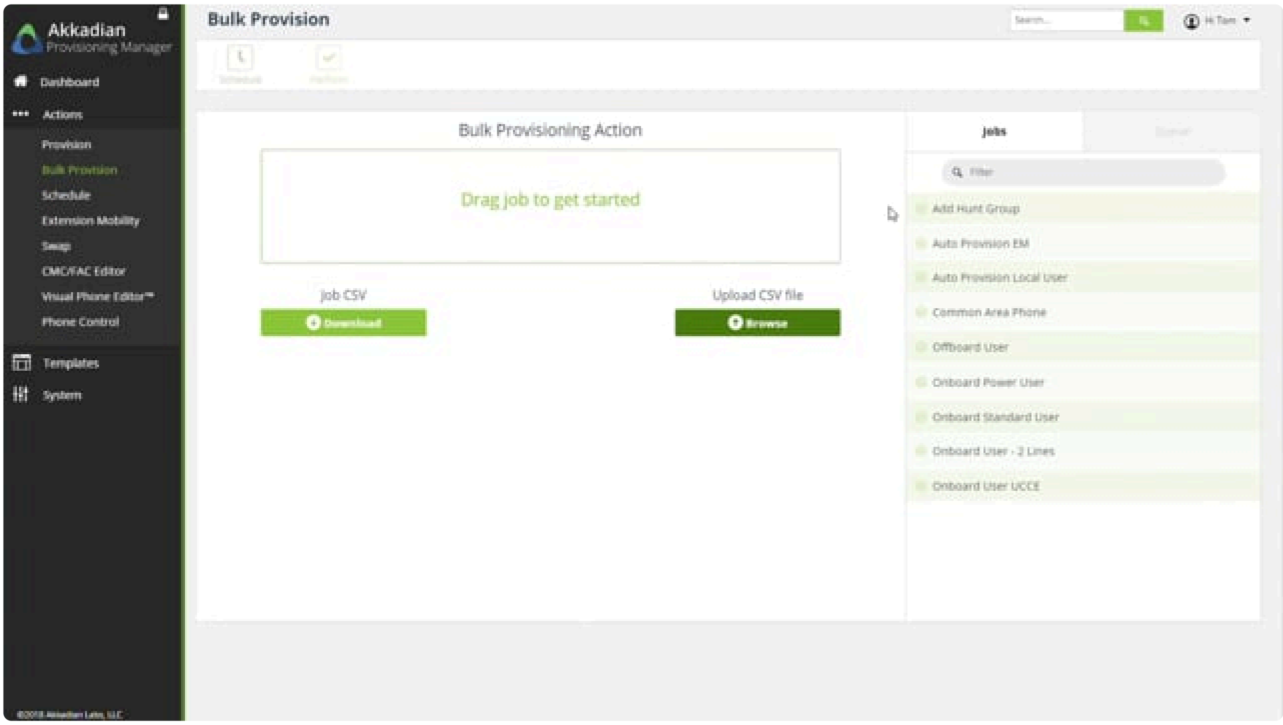


	A	B	C
1	=====DO NOT EDIT OR DELETE THIS SECTION=====		
2	eyJhY3Rpb25faWQiOiI3IiwidXNlcl9pZCI6IjIifQ==		
3	===========END METADATA==============		
4	CUCM User	Remove All Associated Elements	Remove Associated Shared Lines
5	aphipps	1	1
6			

Bulk Delete Example

1. Upload the CSV file
2. Click **Perform** to process the bulk provision or **Schedule** to process the Jobs at a specified date and time

Video – Provisioning



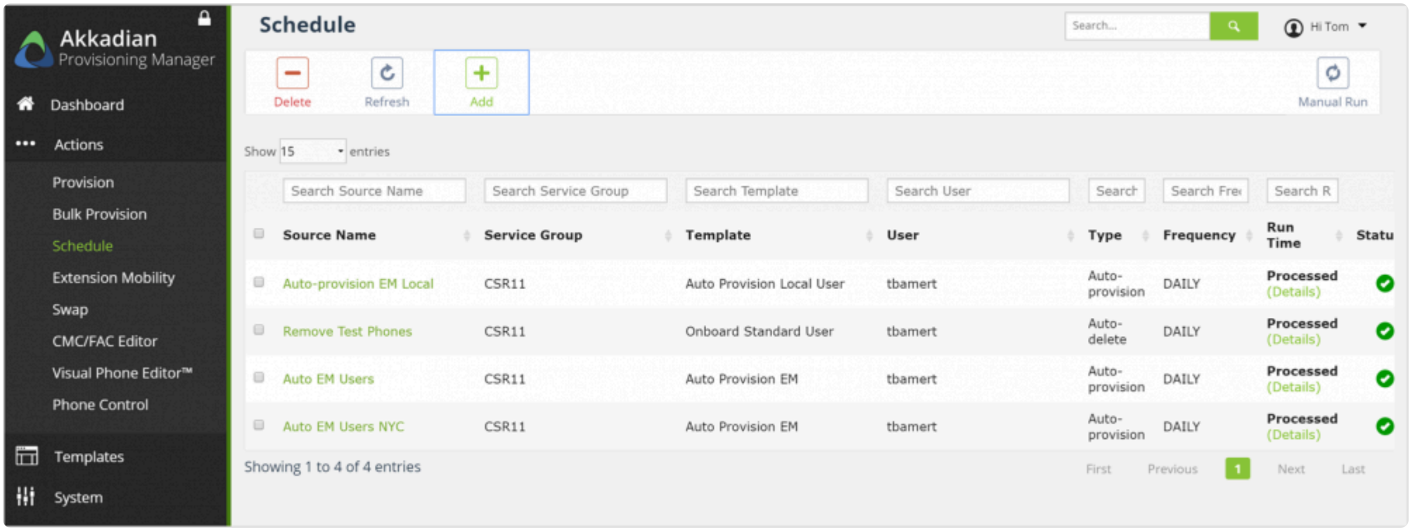
9.3 Schedule

Scheduling provides the ability to view, edit, add and delete scheduled provisioning actions directly from the scheduling window.

To use scheduling:

1. Select **Schedule** from the **Actions** menu
2. On the menu, click **Add** to schedule a job
3. Select the job type
4. For bulk provision select a CSV file from your local computer
5. Set the Date and Time to perform the job
6. Click **Add** to create the job in the queue

The schedule for any Job can be edited by clicking on the **Source Name** or the job can be deleted by checking the box next to the scheduled job you wish to delete and clicking the **Delete** button.



□	Source Name	Service Group	Template	User	Type	Frequency	Run Time	Statu
□	Auto-provision EM Local	CSR11	Auto Provision Local User	tbamert	Auto-provision	DAILY	Processed (Details)	✓
□	Remove Test Phones	CSR11	Onboard Standard User	tbamert	Auto-delete	DAILY	Processed (Details)	✓
□	Auto EM Users	CSR11	Auto Provision EM	tbamert	Auto-provision	DAILY	Processed (Details)	✓
□	Auto EM Users NYC	CSR11	Auto Provision EM	tbamert	Auto-provision	DAILY	Processed (Details)	✓

Showing 1 to 4 of 4 entries

9.4 Extension Mobility

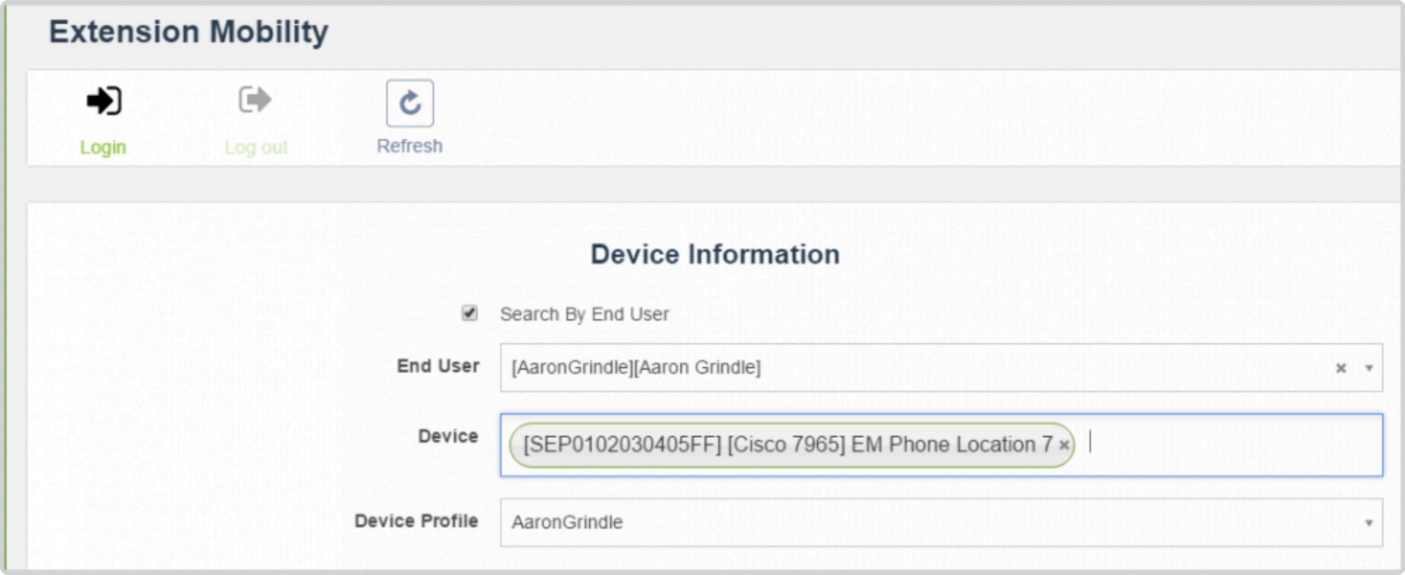
The Extension Mobility tool provides the ability to log users in or out of devices using the Cisco CUCM Extension Mobility service.

Extension Mobility Tool Requirements:

- The Provisioning Manager Application user must have “Authentication by Proxy” rights
- The CUCM Extension Mobility service must be activated and running
- The user and phone must be properly configured to support Extension Mobility

To use the Extension Mobility Tool:

1. Select **Extension Mobility** from the **Actions** menu
2. If prompted select the appropriate **Service Group**
3. If you wish to **“Search by End User”** select the check box
4. If you chose to **“Search by End User”**, locate the end user you wish to log in or out of a device
5. If the user is already logged into a device, the device will appear in the device list. The user can be logged out of the current device by selecting the **Log Out** button
6. If the user is not logged into a device, you can search for a device and log the user in by selecting the **Login** button



Device Information

☑ Search By End User

End User: [AaronGrindle][Aaron Grindle]

Device: [SEP0102030405FF] [Cisco 7965] EM Phone Location 7

Device Profile: AaronGrindle

9.5 Swap

The Swap feature provides the ability copy configurations between various user components in CUCM. This Swap Tool can swap or copy configuration between:

- Devices – swap phones or device profiles of the same or different model
- Users – migrate device associations and ownership to a new user

The Swap feature can help perform common tasks without building a job.

Using the Device Swap Feature

The Device Swap tool provides the ability swap configurations between most phone and device profile models. This tool is very useful when you need to replace a user's phone or profile with the same or different model. Device swap will provision the new device, copy all applicable settings, apply device ownership and associated the new device with the user. The tool also provides the option to delete the old device upon successful completion of the swap. This feature can be equally as useful when adding a new device to a user as it will copy over pertinent settings and perform all proper associations.

✻ Swapping some newer phone models to older phone models may result in errors due to model incompatibility between the Max Call & Busy Trigger.

✻ Phone Swap supports Intercom lines, but the Intercom Line will always be removed from the source phone prior to the swap due to CUCM inability to support hared Intercom Lines.

✻ If the target device does not support the same number of lines or speed dials, they will show up as unassociated.

Using Device Swap:

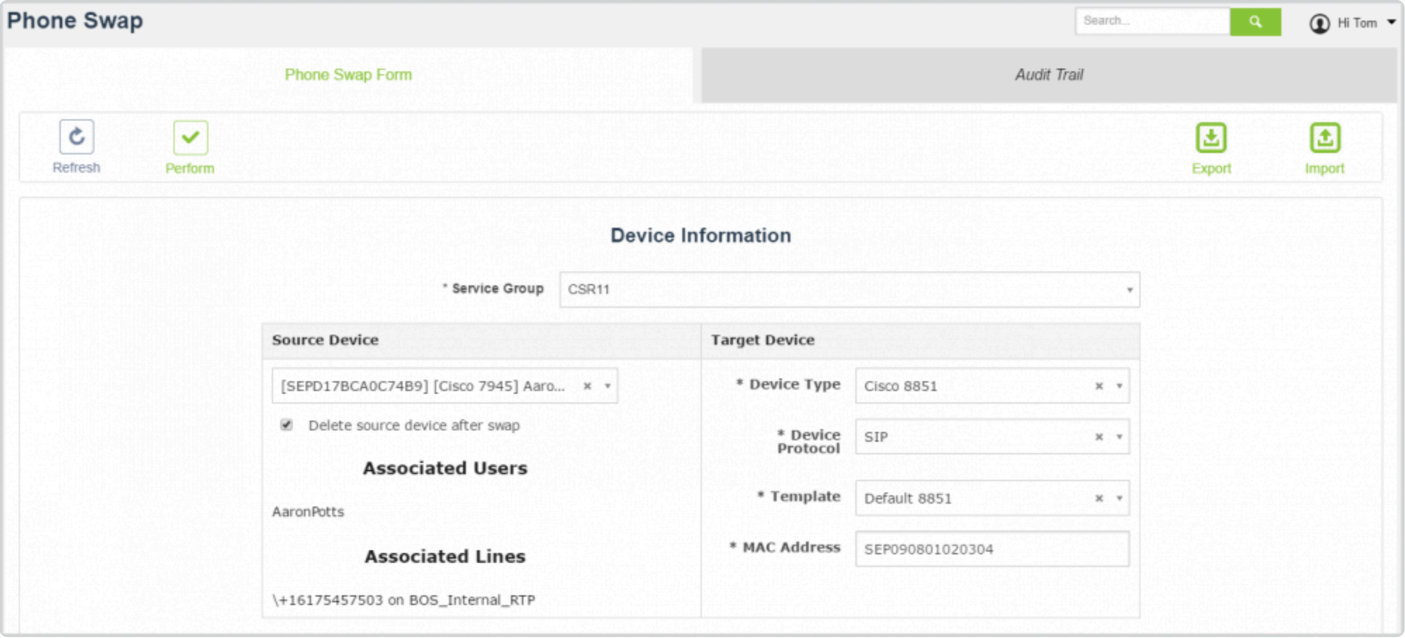
1. Select **Swap** from the **Actions** menu
2. If required, select the appropriate **Service Group**
3. Select the Source Device Type: Phone or Device Profile
4. Locate the Source Device. This is the device you want to copy.

5. If you wish to delete the source device upon successful completion of the swap, select the “Delete source device after swap” checkbox
6. Select the Target Device Type. This is the model of the target device.
7. Select the Target Device Protocol. This may vary depending on the model.
8. Select the Target Device Template. The Template is used to configure required settings which are not available to be copied from the source device. For example, if you are going from a SCCP phone to SIP phone, the SIP profile will be configured using the Template.
9. Click **Perform** to complete the swap

> ✻ Templates used for Swap should not contain GVs.

> ✻ If the device is the same model and protocol, a template is not required.

10. Enter the device name or MAC address
11. Click **Perform** to complete the process



* Service Group: CSR11

Source Device: [SEPD17BCA0C74B9] [Cisco 7945] Aaro...

☑ Delete source device after swap

Associated Users: AaronPotts

Associated Lines: \+16175457503 on BOS_Internal_RTP

* Device Type: Cisco 8851

* Device Protocol: SIP

* Template: Default 8851

* MAC Address: SEP090801020304

The End User Swap tool provides the ability to migrate all line and device associations from one user to another.

Using User Swap:

1. Select **Swap** from the **Actions** menu.
2. Select the End-User Swap Form Tab.
3. Select the appropriate Service Group.
4. Select the Source End User.
5. If you wish to delete the source user upon successful completion of the swap, select the “Delete source end-user after swap” checkbox.
6. Select “New User Account” to create and new user during the process or selecting and existing user as the target. Note – all existing associations will be removed from target user.
7. Click **Perform** to complete the swap.

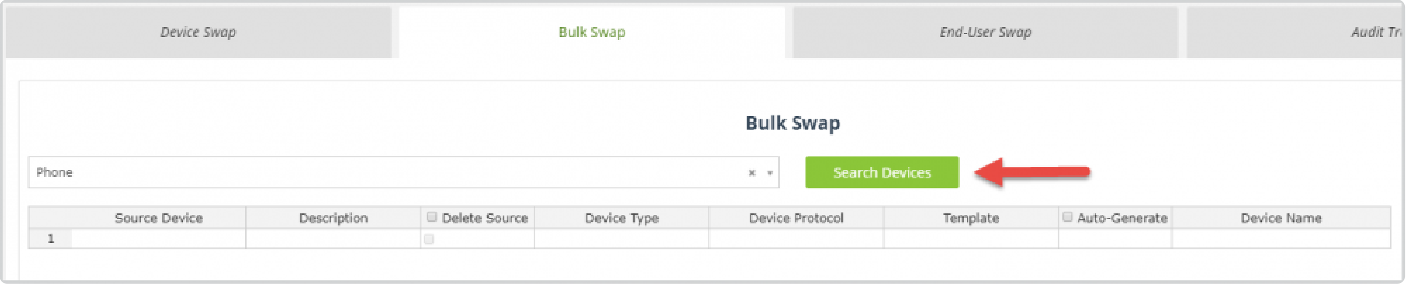
The Swap feature can also be used in bulk to migrate phones or device profiles. There are two methods to perform device swaps in bulk.

Method 1 – Bulk Swap using CSV Template:

1. Select **Swap** from the **Actions** menu
2. If required, select the appropriate **Service Group**
3. Select the Device Swap or End-User Swap tab
4. At this point, you can download the CSV template by clicking Export located at the top right corner of the page. Optionally you can proceed to populate the remaining fields and Export the template with all the settings prepopulated.
5. Populate the Exported CSV Template and when complete, click the Import button to upload the template.
6. Upon uploading the Template, the system will process the swaps. Do no close your browser or navigate away from the page
7. The process will complete and provide a summary of the processed items

Method 2 – Bulk Swap using Advanced Search:

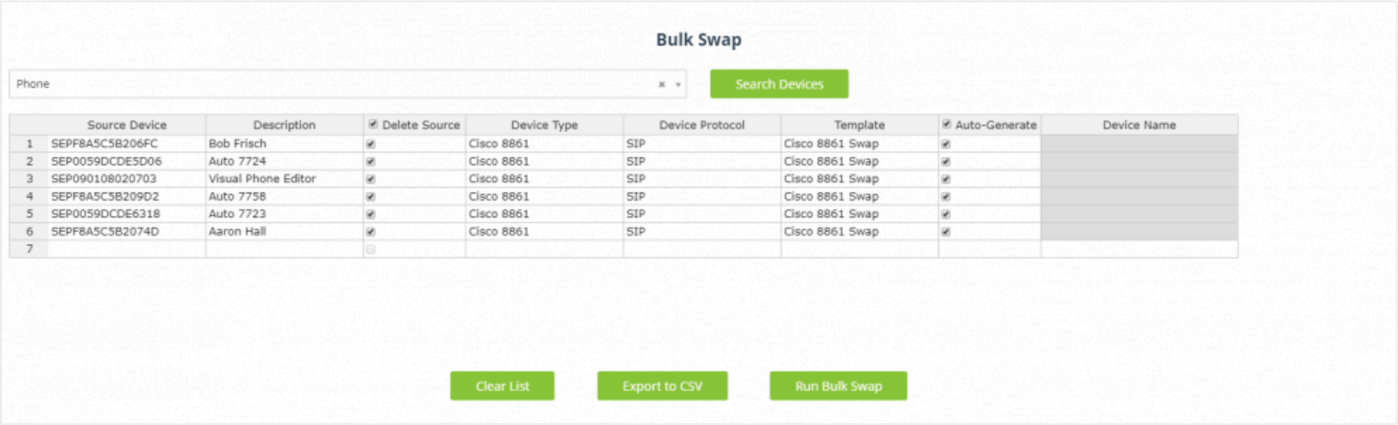
1. Select **Swap** from the **Actions** menu
2. If required, select the appropriate **Service Group**
3. Select the **Bulk Swap** Tab
4. Click the **Search Devices** button



Bulk Swap

	Source Device	Description	□ Delete Source	Device Type	Device Protocol	Template	□ Auto-Generate	Device Name
1			□					

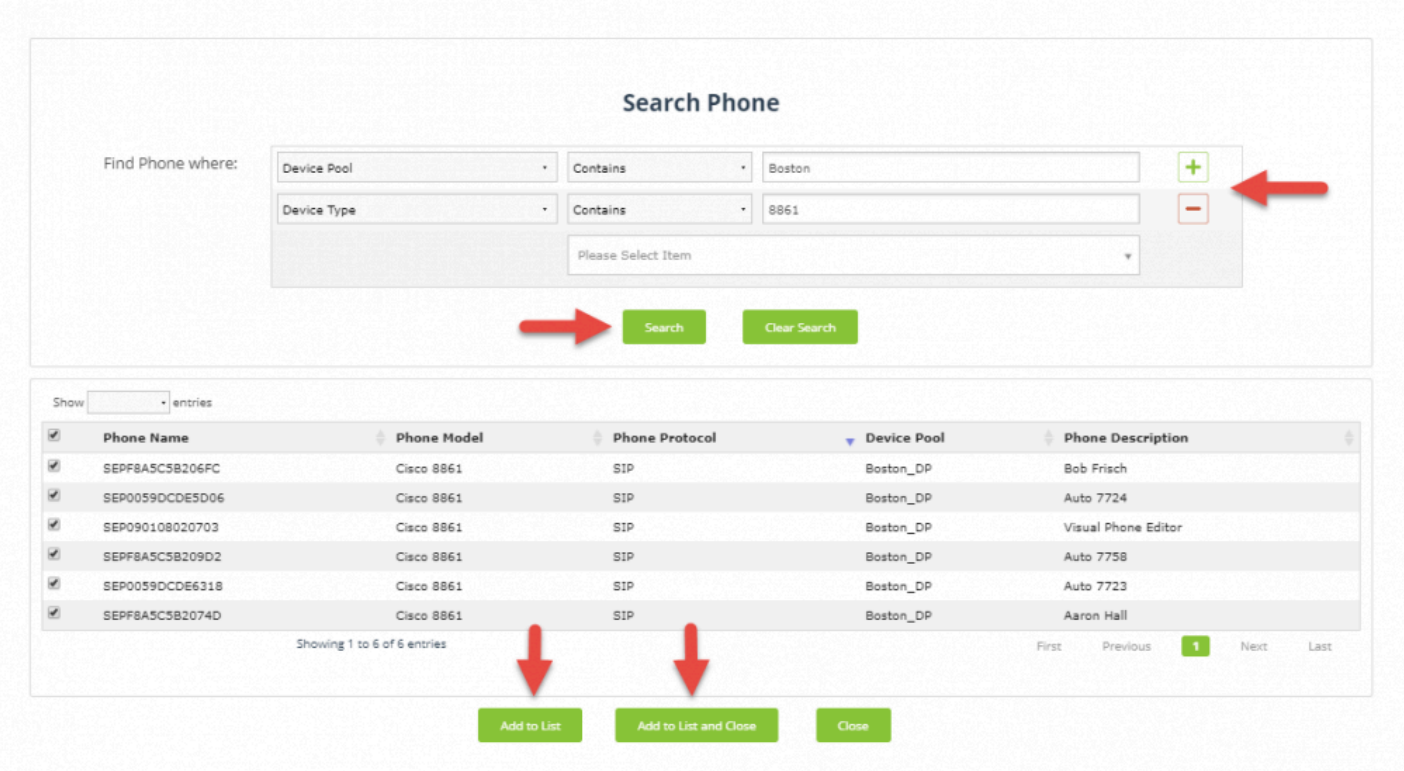
5. Search for the phones to be swapped using the Search Phones section.
6. As devices are located, you may click **“Add to List”** and repeat the search for more devices to be added to the list. Alternatively, click the **“Add to List and Close“** button to complete adding to the list and return to the Bulk Swap page.



Bulk Swap

	Source Device	Description	☑ Delete Source	Device Type	Device Protocol	Template	☑ Auto-Generate	Device Name
1	SEPF8A5C5B206FC	Bob Frisch	☑	Cisco 8861	SIP	Cisco 8861 Swap	☑	
2	SEP0059DCDE5D06	Auto 7724	☑	Cisco 8861	SIP	Cisco 8861 Swap	☑	
3	SEP090108020703	Visual Phone Editor	☑	Cisco 8861	SIP	Cisco 8861 Swap	☑	
4	SEPF8A5C5B209D2	Auto 7758	☑	Cisco 8861	SIP	Cisco 8861 Swap	☑	
5	SEP0059DCDE6318	Auto 7723	☑	Cisco 8861	SIP	Cisco 8861 Swap	☑	
6	SEPF8A5C5B2074D	Aaron Hall	☑	Cisco 8861	SIP	Cisco 8861 Swap	☑	
7			□					

7. On the Bulk Swap page, click “Run Bulk Swap” to process the swap for all devices in the list. Alternatively, you can select “Export to CSV” to process the job later.



Search Phone

Find Phone where:

Device Pool	Contains	Boston
Device Type	Contains	8861
	Please Select Item	

☑	Phone Name	Phone Model	Phone Protocol	Device Pool	Phone Description
☑	SEPF8A5C5B206FC	Cisco 8861	SIP	Boston_DP	Bob Frisch
☑	SEP0059DCDE5D06	Cisco 8861	SIP	Boston_DP	Auto 7724
☑	SEP090108020703	Cisco 8861	SIP	Boston_DP	Visual Phone Editor
☑	SEPF8A5C5B209D2	Cisco 8861	SIP	Boston_DP	Auto 7758
☑	SEP0059DCDE6318	Cisco 8861	SIP	Boston_DP	Auto 7723
☑	SEPF8A5C5B2074D	Cisco 8861	SIP	Boston_DP	Aaron Hall

Showing 1 to 6 of 6 entries

9.6 CMC/FAC Editor

The Provisioning Manager CMC/FAC Editor can be used to edit existing Client Matter and Forced Authorization Codes.

Using the CMC/FAC Editor:

1. Select **CMC/FAC Editor** from the **Actions** menu
2. If required, select the appropriate **Service Group**
3. Select the Code Type
4. Edit the appropriate fields
5. When finished, click **Save**

> If CMC or FAC Rules are enabled, please remember that editing the Description field for CMCs and the Name field for FACs may break the link between the user and the code.

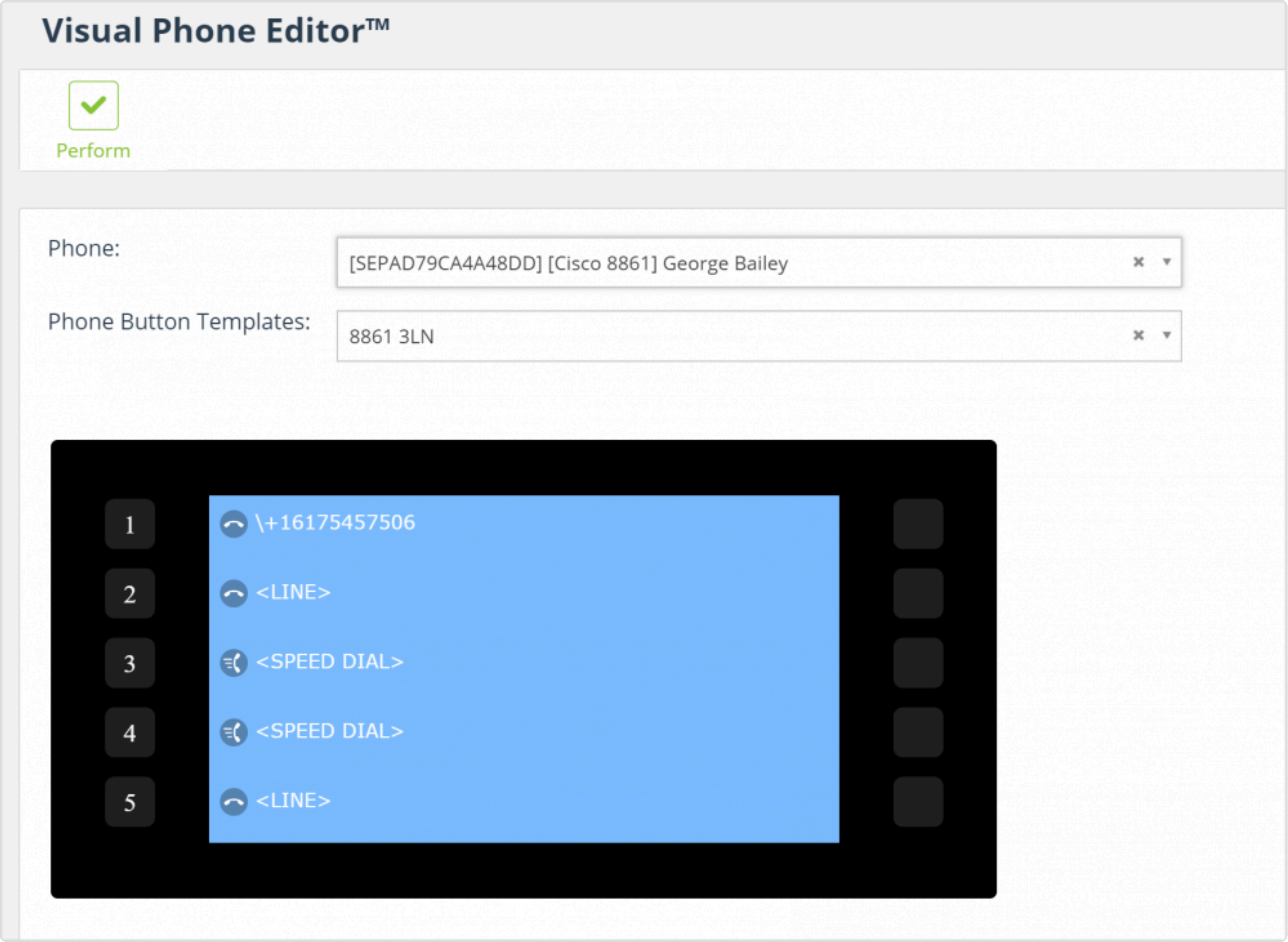
9.7 Visual Phone Editor

Visual Phone Editor provides the ability to visually edit a phone or device profile. Visual Phone Editor support the following functions:

- Change phone button template for device
- Associating existing lines to the device
- Edit Line on Device settings for lines on the device
- Rearrange lines using drag and drop
- Rearrange speed dials using drag and drop

Using Visual Phone Editor:

1. Select **Visual Phone Editor** from the **Actions** menu
2. If required, select the appropriate **Service Group**
3. Search for and select the device to edit
4. Perform the desired edit actions using Visual Phone Editor
5. When finished, click **Perform** to apply the changes



Visual Phone Editor™

Phone: [SEPAD79CA4A48DD] [Cisco 8861] George Bailey

Phone Button Templates: 8861 3LN

1 \+16175457506

2 <LINE>

3 <SPEED DIAL>

4 <SPEED DIAL>

5 <LINE>

9.8 Phone Control

Provisioning Manager Phone Control provides the ability to remotely validate Cisco phone functionality, view remote Cisco phone displays, navigate softkeys or place test calls, without the need for physical presence.

Requirements

- IP connectivity on TCP port 80 to target Cisco IP Phone
- CUCM Application user who is a member of the Standard Server Monitoring and Standard TabSync User groups.
- Web access enabled on the Cisco IP Phone (Provisioning Manager will automatically enable web access if currently disabled)
- Assign Phone Control role to appropriate Provisioning Manager Security Groups
- One of the following phone models:

6921, 6941, 6945, 6961, 7821, 7841, 7861, 7905, 7906, 7911, 7912, 7925, 7926, 7937, 7940, 7941, 7942, 7945, 7960, 7961, 7962, 7965, 7970, 7971, 7975, 8811, 8831, 8841, 8845, 8851, 8861, 8865, 8941, 8945, 8961, 9951, 9971

Configuring Phone Control:

1. Select **Application Servers** from the **System** menu.
2. Select the **Communications Manager** Tab.
3. Select the CUCM application server on which to configure Phone Control.
4. Add the Phone Control username and password in the Phone Control Information section
5. When finished, click **Save**

Using Phone Control:

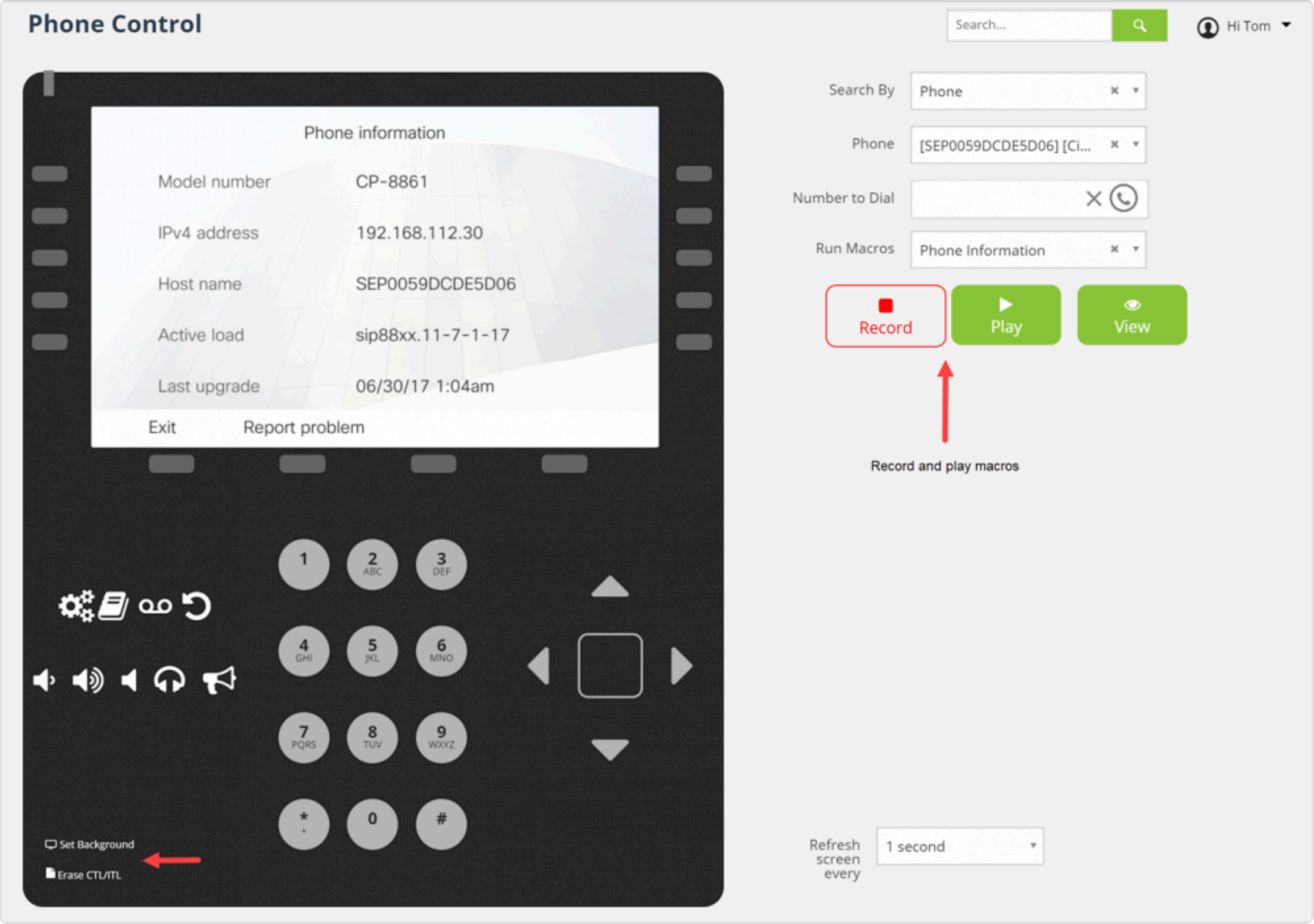
1. Select **Phone Control** from the **Actions** menu
2. Select the appropriate **Service Group** from the list
3. Locate the Phone using search

Provisioning Manager will check if the phone meets the following requirements:

- The phone has Web Access
- The phone is associated to the Phone Control application user

> ✻ If either of these requirements are not met, Provisioning Manager will prompt to automatically enable on or both options.

4. Once the phone is prepared for connection, Phone Control will automatically connect to the device.
5. When connected, use the Phone Control buttons to control the device. Please note the screen refresh is not real-time and by default refreshes every 5 seconds.



Phone Control

Search By: Phone

Phone: [SEP0059DCDE5D06] [Ci...

Number to Dial:

Run Macros: Phone Information

Refresh screen every: 1 second

Phone information

Model number	CP-8861
IPv4 address	192.168.112.30
Host name	SEP0059DCDE5D06
Active load	sip88xx.11-7-1-17
Last upgrade	06/30/17 1:04am

10. Automation

Provisioning Manager offers several out of the box automation solutions which can help fully automate your provisioning process.

Auto-Provisioning with Active Directory – Provisioning Manager can integrate with Active Directory, monitor for new users and automatically provision these users in your UC environment.

Auto-delete Phones – Provisioning Manager can monitor the registration status of devices and based on configurable triggers, can automatically delete devices that have not been registered, reducing license consumption and keeping your system clean.

Auto-deprovisioning – Provisioning Manager can work in conjunction with LDAP integrated users in CUCM and automatically deprovision users and their services.

This section will cover the process of configuring these options in Provisioning Manager.

10.1 Auto-provision

Provisioning Manager provides the ability to integrate with Active Directory and provision accounts based on Active Directory groups. Configuring auto-provisioning with Active Directory requires four steps:

1. **Configure LDAP agreements** – the LDAP agreement is used to access Active Directory. Multiple LDAP agreements may be used with auto provisioning.
2. **Enable Active Directory Auto-provision** – enable the Auto-provisioning service in the Service Group(s) and set the default LDAP agreement.
3. **Configure Auto Provisioning tasks** – Auto Provisioning tasks are used to map Active Directory attributes to Provisioning Manager data. Multiple Auto Provisioning tasks may be configured to provide flexibility.
4. **Schedule Auto Provisioning tasks** – Auto Provisioning tasks must be scheduled to process provisioning tasks.

Step 1 – Configure LDAP Agreements:

Configure an LDAP agreement(s) that will provide Provisioning Manager access to the new users accounts to be auto-provisioned. Reference the LDAP topic in the Initial Configuration section.

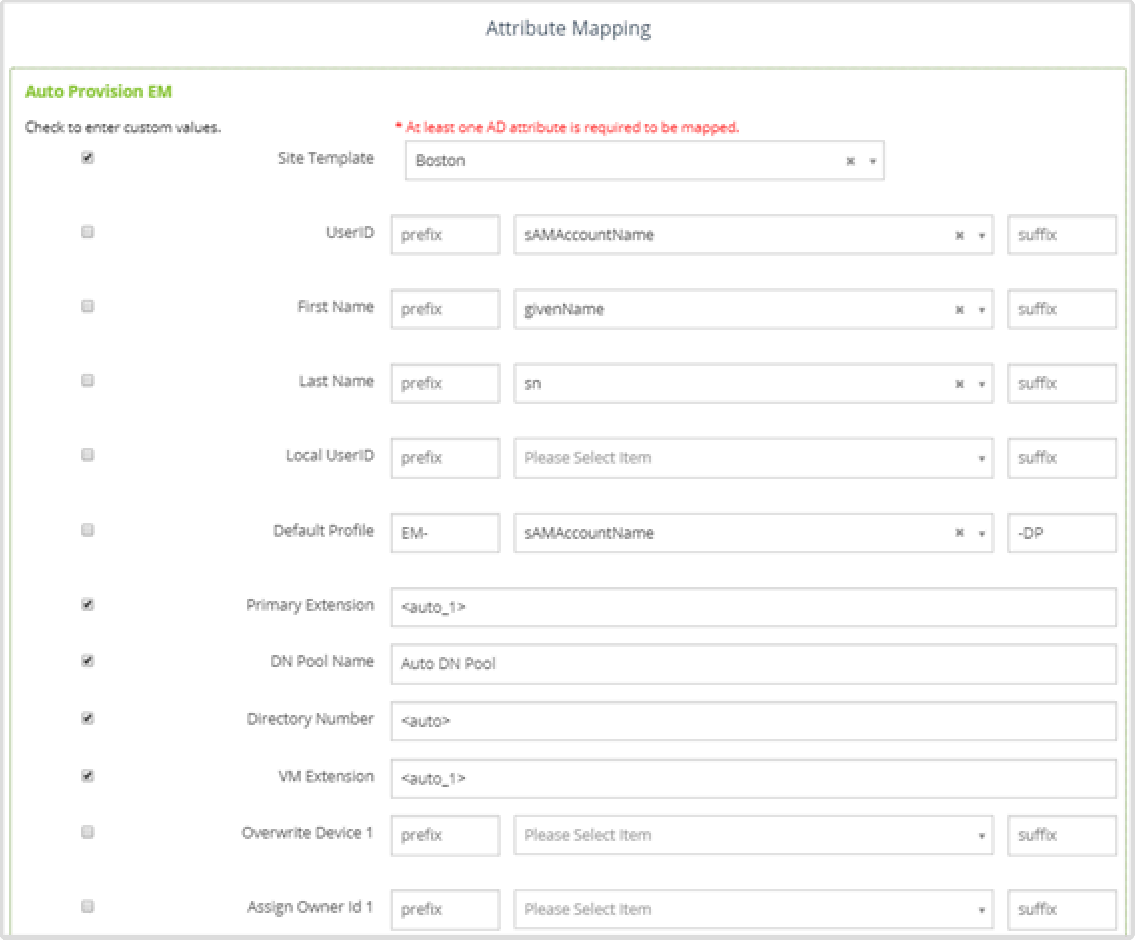
Step 2 – Enable Active Directory Auto-provision

1. Select **Service Groups** from the **System** menu
2. In the list, click Service Group Name to edit the item
3. Navigate to the **Active Directory Auto-provision** section
4. Check the **Enable AD Auto-provision** box
5. Choose the Default LDAP server
6. Configure Default Username Bind Attribute
7. When finished, click **Save**

Step 3 – Configure Auto-provisioning Job:

1. Log into Provisioning Manager with an Administrator account
2. Select **Automation** from the **System** menu
3. Click on *Add *to configure a new Auto-provision Job
4. If required, choose a Service Group
5. Provide a name for the Job
6. Check enable (This will enable the task to run once scheduled)

7. Choose the LDAP agreement for this Job
8. Set the **Username Bind Attribute** (This is the attribute used to locate the user to be provisioned)
9. Select a Job for Auto-provisioning by dragging it into the **Attribute Mapping** section
10. Map the Job fields to an AD Attribute. Check to enter custom local values



Attribute Mapping

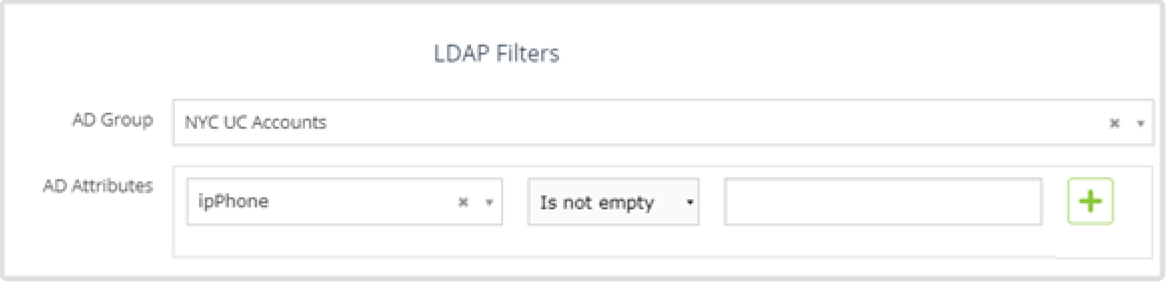
Auto Provision EM

Check to enter custom values.

* At least one AD attribute is required to be mapped.

☑	Site Template	Boston		
□	UserID	prefix	sAMAccountName	suffix
□	First Name	prefix	givenName	suffix
□	Last Name	prefix	sn	suffix
□	Local UserID	prefix	Please Select Item	suffix
□	Default Profile	EM-	sAMAccountName	-DP
☑	Primary Extension	<auto_1>		
☑	DN Pool Name	Auto DN Pool		
☑	Directory Number	<auto>		
☑	VM Extension	<auto_1>		
□	Overwrite Device 1	prefix	Please Select Item	suffix
□	Assign Owner Id 1	prefix	Please Select Item	suffix

11. Optionally, configure AD filters to narrow down the search



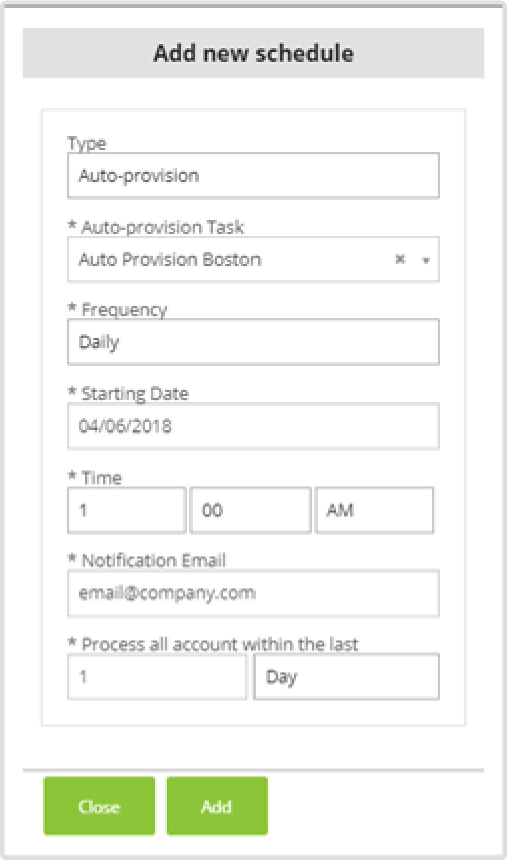
LDAP Filters

AD Group: NYC UC Accounts

AD Attributes: ipPhone | Is not empty

Step 4 – Scheduling the Auto-provision Jobs:

1. Select **Schedule** from the **Actions** menu
2. On the menu, click **Add** to schedule a job
3. Select the Auto-provision type
4. Select the Auto-provision task
5. Choose the frequency to run the task
6. Choose the starting date of the task
7. Set the task run time
8. Set the notification email
9. Set the **Process all accounts within the last** value. (The task will only process accounts with a create date included in this period)
10. Click **Add** to schedule the task



Add new schedule

Type: Auto-provision

* Auto-provision Task: Auto Provision Boston

* Frequency: Daily

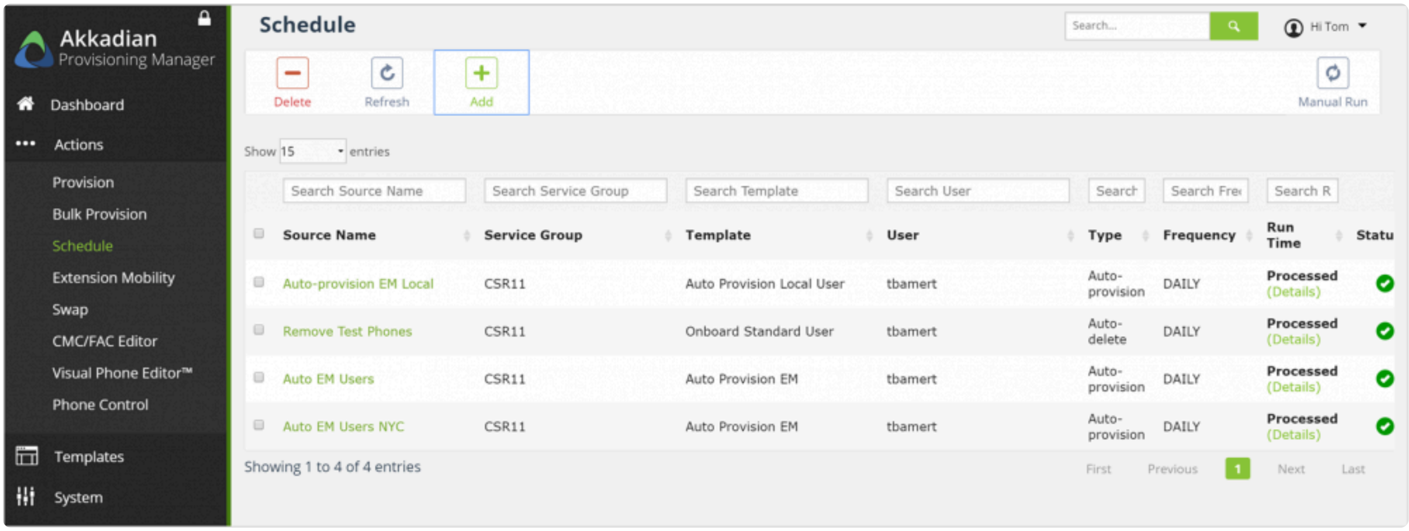
* Starting Date: 04/06/2018

* Time: 1 00 AM

* Notification Email: email@company.com

* Process all account within the last: 1 Day

The schedule for any Job can be edited by clicking on the **Source Name** or the job can be deleted by checking the box next to the scheduled job you wish to delete and clicking the **Delete** button.



Schedule

Show 15 entries

□	Source Name	Service Group	Template	User	Type	Frequency	Run Time	Statu
	Search Source Name	Search Service Group	Search Template	Search User	Search	Search Fre	Search R	
□	Auto-provision EM Local	CSR11	Auto Provision Local User	tbamert	Auto-provision	DAILY	Processed (Details)	✓
□	Remove Test Phones	CSR11	Onboard Standard User	tbamert	Auto-delete	DAILY	Processed (Details)	✓
□	Auto EM Users	CSR11	Auto Provision EM	tbamert	Auto-provision	DAILY	Processed (Details)	✓
□	Auto EM Users NYC	CSR11	Auto Provision EM	tbamert	Auto-provision	DAILY	Processed (Details)	✓

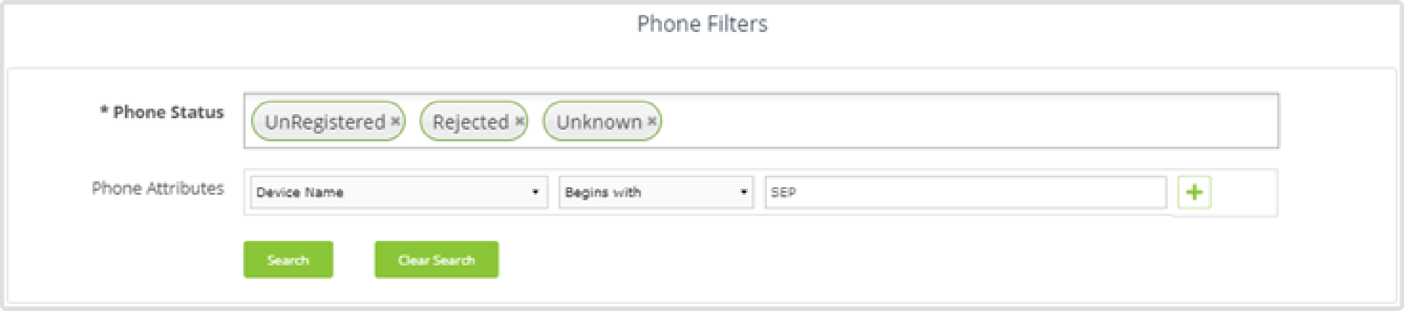
Showing 1 to 4 of 4 entries

10.2 Auto-delete Phone

The Provisioning Manager Auto-delete phone feature can monitor the registration status of phones over a period of time and delete phones that exceed a configured unregistered term.

To Configure Auto-provisioning Job:

1. Log into Provisioning Manager with an Administrator account
2. Select **Automation** from the **System** menu
3. Click on the **Auto-delete Phone** tab
4. Click *Add *to configure a new Auto-delete phone task
5. Configure the Name
6. Check enable (This will enable the task to run once scheduled)
7. Set the **"Not registered in the last"** period
8. Choose the **Action**
9. Choose the **"Update frequency (Hours)"** (This is how often the system will check the device registration status)
10. Configure the **Phone Filters** sections



Phone Filters

* Phone Status: UnRegistered × Rejected × Unknown ×

Phone Attributes: Device Name | Begins with | SEP

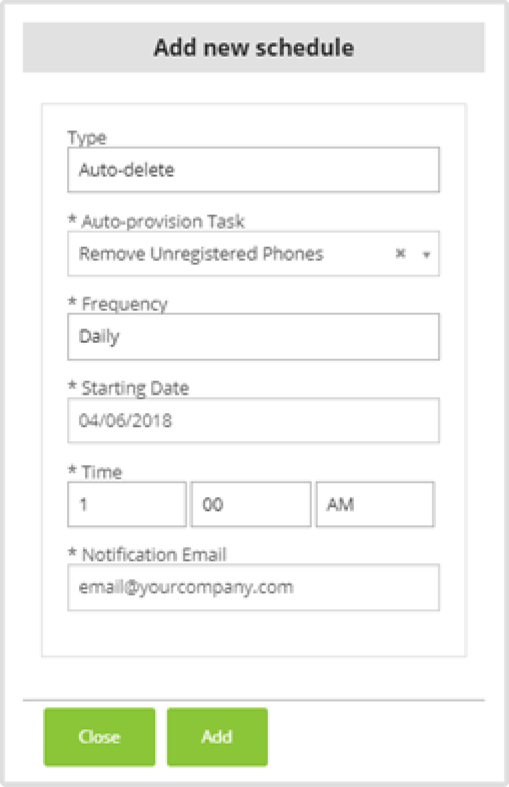
! It is important to configure proper filters so no phones are unintentionally deleted. We recommend setting the Action method to report only for new tasks to verify the outcome.

11. Click **Save** to complete the configuration
12. Repeat the process to create additional tasks

Scheduling the Auto-delete phone Jobs:

1. Select **Schedule** from the **Actions** menu

2. On the menu, click **Add** to schedule a job
3. Select the Auto-delete type
4. Select the Auto-delete task
5. Choose the frequency to run the task
6. Choose the starting date of the task
7. Set the task run time
8. Set the notification email
9. Click **Add** to schedule the task



Add new schedule

Type: Auto-delete

* Auto-provision Task: Remove Unregistered Phones

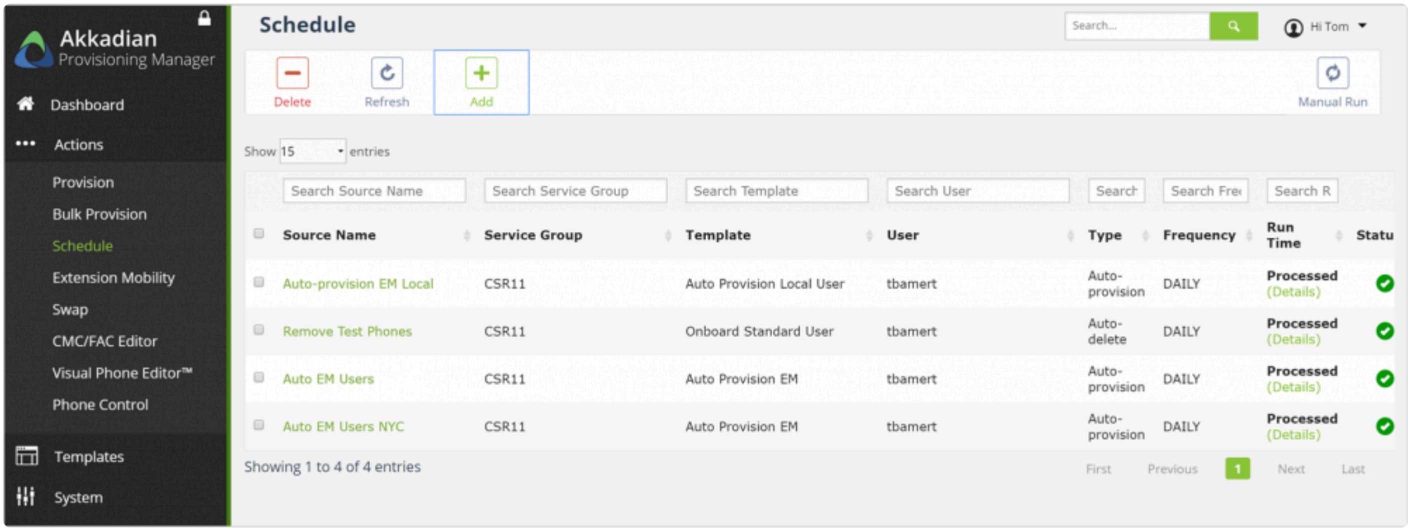
* Frequency: Daily

* Starting Date: 04/06/2018

* Time: 1 00 AM

* Notification Email: email@yourcompany.com

The schedule for any Job can be edited by clicking on the **Source Name** or the job can be deleted by checking the box next to the scheduled job you wish to delete and clicking the **Delete** button.



Schedule

Show 15 entries

	Source Name	Service Group	Template	User	Type	Frequency	Run Time	Statu
□	Auto-provision EM Local	CSR11	Auto Provision Local User	tbamert	Auto-provision	DAILY	Processed (Details)	✓
□	Remove Test Phones	CSR11	Onboard Standard User	tbamert	Auto-delete	DAILY	Processed (Details)	✓
□	Auto EM Users	CSR11	Auto Provision EM	tbamert	Auto-provision	DAILY	Processed (Details)	✓
□	Auto EM Users NYC	CSR11	Auto Provision EM	tbamert	Auto-provision	DAILY	Processed (Details)	✓

Showing 1 to 4 of 4 entries

11. Reporting Manager

Reporting Manager is a powerful custom reporting tool which allow Administrators to use SQL database queries to generate reports from Cisco Communications Manager.

Browsing the Communications Manager Database:

1. Log into Provisioning Manager as an Administrator
2. Select **Report Builder** from the **System** menu
3. Select a **Service Group**
4. Search for a database table or select on from the list
5. Click on the table name to view the table schema
6. Click on either Custom Query or Visual Query to build a report (Visual Query will provide visual guidance constructing an SQL query)

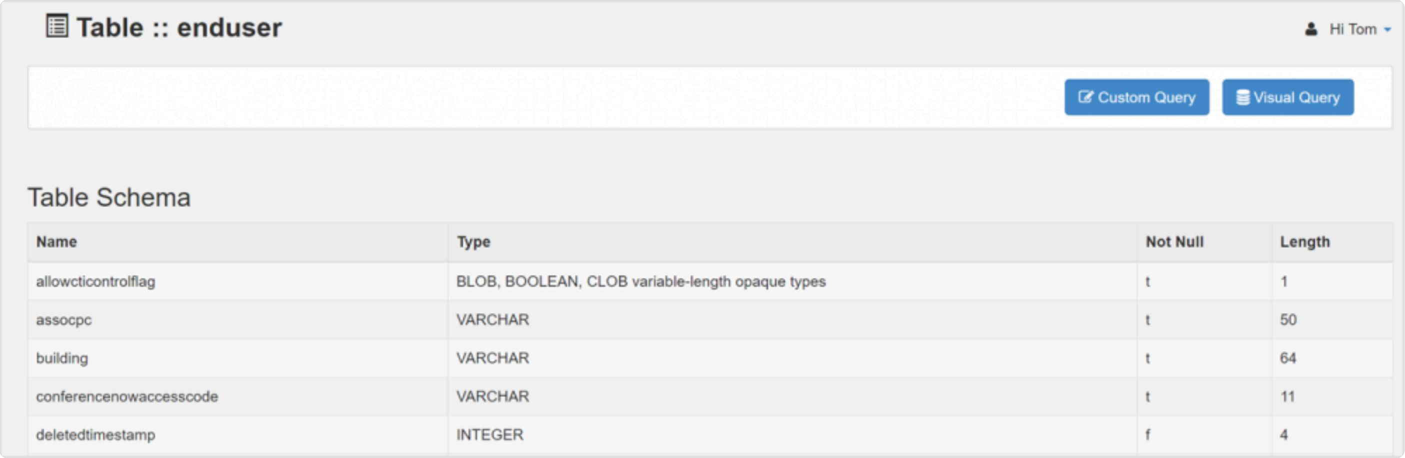
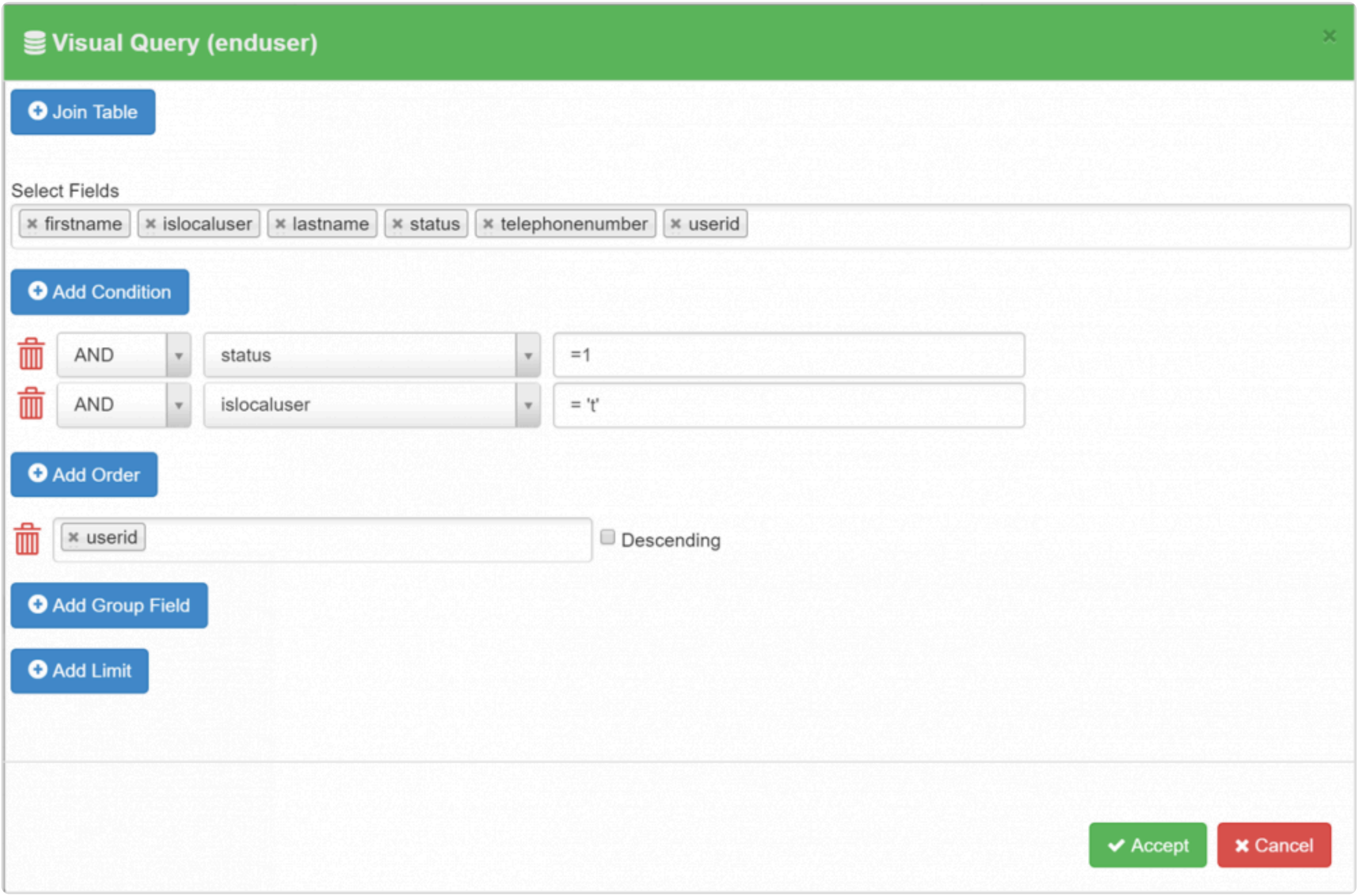


Table Schema

Name	Type	Not Null	Length
allowcticontrolflag	BLOB, BOOLEAN, CLOB variable-length opaque types	t	1
assocpc	VARCHAR	t	50
building	VARCHAR	t	64
conferencenowaccesscode	VARCHAR	t	11
deletedtimestamp	INTEGER	f	4

7. User Visual Query to build the desired query and click **Run Query**



Select Fields: firstname, islocaluser, lastname, status, telephonenumber, userid

AND	status	=1
AND	islocaluser	= 't'

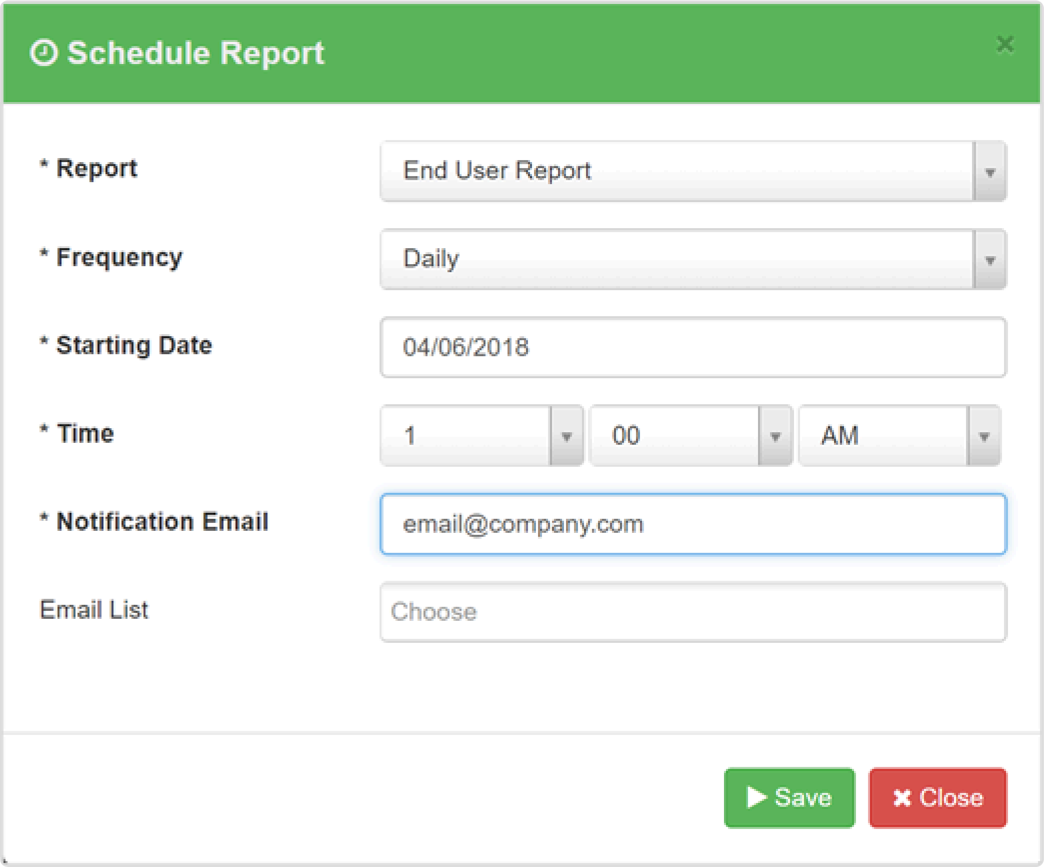
userid □ Descending

8. Provide a report name and title
9. Select the Enable checkbox to enable the report for scheduling
10. Click **Save** to save the report in the Report List
11. Optionally click on **Export CSV** to export the result

Scheduling a Report

Any Report that has been enabled can be scheduled. To schedule a report:

1. In the Reporting Manager menu select Schedule
2. Click **Add**
3. Select the **Report**
4. Select the **Frequency**
5. Set the **Starting Date**
6. Set the run **Time**
7. Set the **Notification Email** where the report will be delivered
8. (Optional) Add an **Email List**



Schedule Report

* Report	End User Report
* Frequency	Daily
* Starting Date	04/06/2018
* Time	1 : 00 : AM
* Notification Email	email@company.com
Email List	Choose