

Cloudpath Enrollment System Multi-Tenant Server Configuration Guide, 5.12R6

Supporting Cloudpath Software Release 5.12R6

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Contacting RUCKUS Customer Services and Support

The Customer Services and Support (CSS) organization is available to provide assistance to customers with active warranties on their RUCKUS products, and customers and partners with active support contracts.

For product support information and details on contacting the Support Team, go directly to the RUCKUS Support Portal using <https://support.ruckuswireless.com>, or go to <https://www.ruckusnetworks.com> and select **Support**.

What Support Do I Need?

Technical issues are usually described in terms of priority (or severity). To determine if you need to call and open a case or access the self-service resources, use the following criteria:

- Priority 1 (P1)—Critical. Network or service is down and business is impacted. No known workaround. Go to the **Open a Case** section.
- Priority 2 (P2)—High. Network or service is impacted, but not down. Business impact may be high. Workaround may be available. Go to the **Open a Case** section.
- Priority 3 (P3)—Medium. Network or service is moderately impacted, but most business remains functional. Go to the **Self-Service Resources** section.
- Priority 4 (P4)—Low. Requests for information, product documentation, or product enhancements. Go to the **Self-Service Resources** section.

Open a Case

When your entire network is down (P1), or severely impacted (P2), call the appropriate telephone number listed below to get help:

- Continental United States: 1-855-782-5871
- Canada: 1-855-782-5871
- Europe, Middle East, Africa, Central and South America, and Asia Pacific, toll-free numbers are available at <https://support.ruckuswireless.com/contact-us> and Live Chat is also available.
- Worldwide toll number for our support organization. Phone charges will apply: +1-650-265-0903

We suggest that you keep a physical note of the appropriate support number in case you have an entire network outage.

Self-Service Resources

The RUCKUS Support Portal at <https://support.ruckuswireless.com> offers a number of tools to help you to research and resolve problems with your RUCKUS products, including:

- Technical Documentation—<https://support.ruckuswireless.com/documents>
- Community Forums—<https://community.ruckuswireless.com>
- Knowledge Base Articles—<https://support.ruckuswireless.com/answers>
- Software Downloads and Release Notes—https://support.ruckuswireless.com/#products_grid
- Security Bulletins—<https://support.ruckuswireless.com/security>

Using these resources will help you to resolve some issues, and will provide TAC with additional data from your troubleshooting analysis if you still require assistance through a support case or RMA. If you still require help, open and manage your case at https://support.ruckuswireless.com/case_management.

Document Feedback

RUCKUS is interested in improving its documentation and welcomes your comments and suggestions.

You can email your comments to RUCKUS at #Ruckus-Docs@commscope.com.

When contacting us, include the following information:

- Document title and release number
- Document part number (on the cover page)
- Page number (if appropriate)

For example:

- RUCKUS SmartZone Upgrade Guide, Release 5.0
- Part number: 800-71850-001 Rev A
- Page 7

RUCKUS Product Documentation Resources

Visit the RUCKUS website to locate related documentation for your product and additional RUCKUS resources.

Release Notes and other user documentation are available at <https://support.ruckuswireless.com/documents>. You can locate the documentation by product or perform a text search. Access to Release Notes requires an active support contract and a RUCKUS Support Portal user account. Other technical documentation content is available without logging in to the RUCKUS Support Portal.

White papers, data sheets, and other product documentation are available at <https://www.ruckusnetworks.com>.

Online Training Resources

To access a variety of online RUCKUS training modules, including free introductory courses to wireless networking essentials, site surveys, and products, visit the RUCKUS Training Portal at <https://commscopeuniversity.myabsorb.com/>. The registration is a two-step process described in this [video](#). You create a CommScope account and then register for, and request access for, CommScope University.

Document Conventions

The following table lists the text conventions that are used throughout this guide.

TABLE 1 Text Conventions

Convention	Description	Example
monospace	Identifies command syntax examples	<code>device(config)# interface ethernet 1/1/6</code>
bold	User interface (UI) components such as screen or page names, keyboard keys, software buttons, and field names	On the Start menu, click All Programs .
<i>italics</i>	Publication titles	Refer to the <i>RUCKUS Small Cell Release Notes</i> for more information.

Notes, Cautions, and Safety Warnings

Notes, cautions, and warning statements may be used in this document. They are listed in the order of increasing severity of potential hazards.

NOTE

A NOTE provides a tip, guidance, or advice, emphasizes important information, or provides a reference to related information.

ATTENTION

An ATTENTION statement indicates some information that you must read before continuing with the current action or task.



CAUTION

A CAUTION statement alerts you to situations that can be potentially hazardous to you or cause damage to hardware, firmware, software, or data.



DANGER

A DANGER statement indicates conditions or situations that can be potentially lethal or extremely hazardous to you. Safety labels are also attached directly to products to warn of these conditions or situations.

Command Syntax Conventions

Bold and italic text identify command syntax components. Delimiters and operators define groupings of parameters and their logical relationships.

Convention	Description
bold text	Identifies command names, keywords, and command options.
<i>italic text</i>	Identifies a variable.
[]	Syntax components displayed within square brackets are optional. Default responses to system prompts are enclosed in square brackets.
{x y z}	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options.
x y	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, for example, passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, <i>member[member...]</i> .
\	Indicates a "soft" line break in command examples. If a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

How to Manage Cloudpath as a Multi-Tenant Server

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Multi-Tenant Overview

Cloudpath supports server configurations in single-tenant and multi-tenant mode. A multi-tenant instance allows you to host multiple customer accounts on your Cloudpath system.

In multi-tenant mode, the server is configured for one root account and up to 128 tenant accounts.

NOTE

Each multi-tenant system is provided with 256 RADIUS ports, which equates to one RADIUS authentication port, and one RADIUS accounting port, per tenant account.

VM Specifications

A Cloudpath multi-tenant virtual appliance can be deployed using a VMware ESXI, with an open virtualization archive (OVA) file, or using Microsoft Hyper-V Manager, with a Hyper-V virtual hard disk (vhdx) disk image file.

When deploying a VM for a multi-tenant server, we recommend using 16-18 GB RAM and a 4 vCPUs x 4 Cores configuration to support up to 128 tenant accounts.

Root Account

The root account is the bind account for the entire multi-tenant system. The root account manages the Cloudpath server, can view and manage all tenant accounts and perform system administration tasks, such as upgrades, certificate management, and license information.

Tenant Accounts

Tenant accounts are individual customer accounts hosted and managed by the Cloudpath multi-tenant server. Tenant administrators can only view and manage their own account.

Multi-Tenant System Setup

Multi-Tenant Activation Code

Before setting up a multi-tenant system, you must obtain a multi-tenant activation code from the Cloudpath license server administrator. Request a multi-tenant activation code by emailing cloudpathtrial@ruckuswireless.com, or ask your Ruckus Wireless sales representative to assist with obtaining a multi-tenant activation code.

NOTE

If you configure your system for single tenant, it cannot be changed to a multi-tenant system.

Activate Account by Activation Code

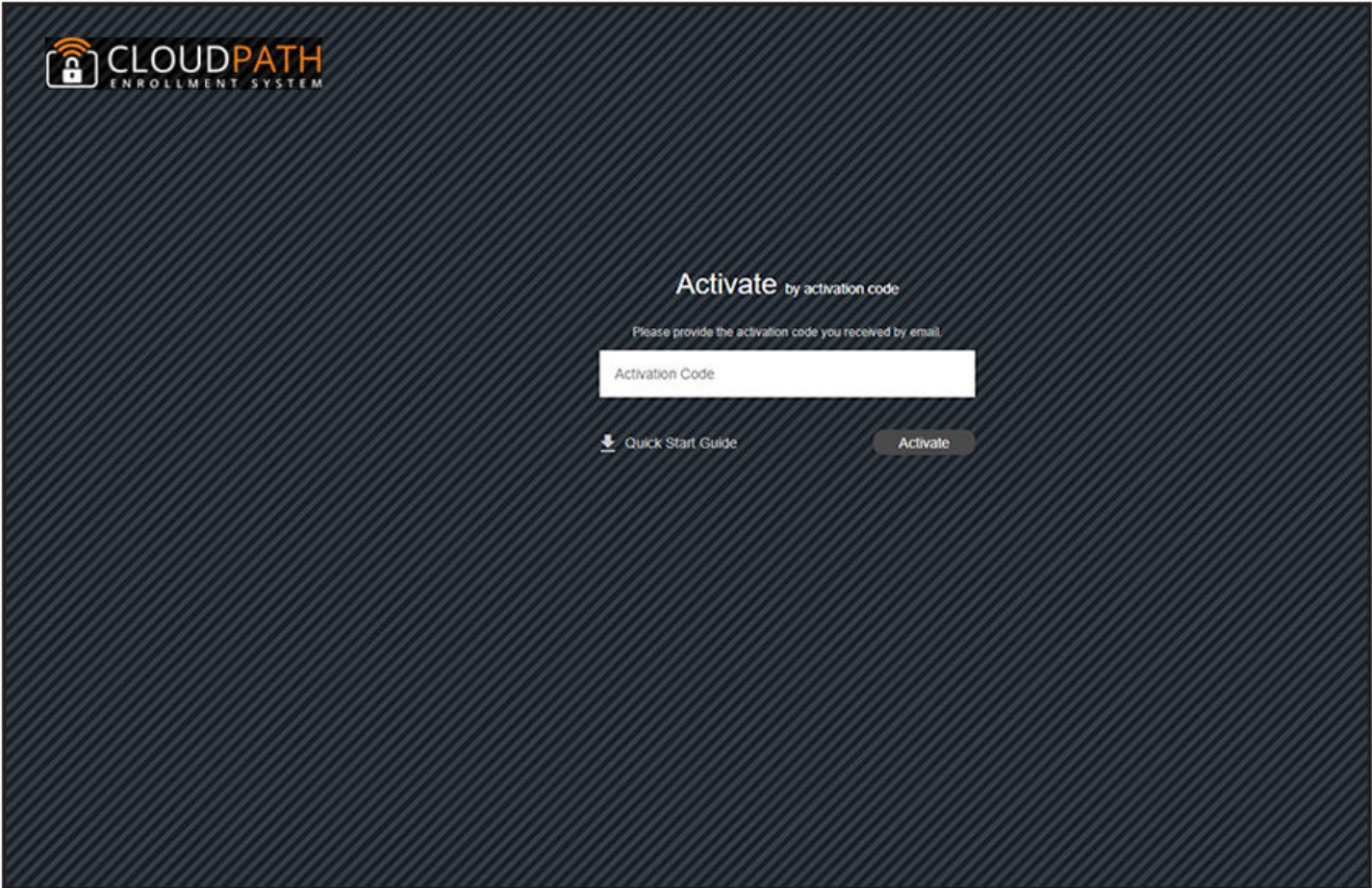
A multi-tenant activation code is sent by the Cloudpath license server administrator. Example email with activation code:

```
An activation code has been generated for an on-premise multi-tenant VM.
```

```
Activation Code: CE4E-E533-906A  
Account: Anna Test BVT  
Administrator: anna@cloudpath.net
```

After the VM is deployed, enter the hostname of your system in a browser to access the Cloudpath login page.

FIGURE 1 Enter Multi-Tenant Activation Code



Enter your multi-tenant activation code.

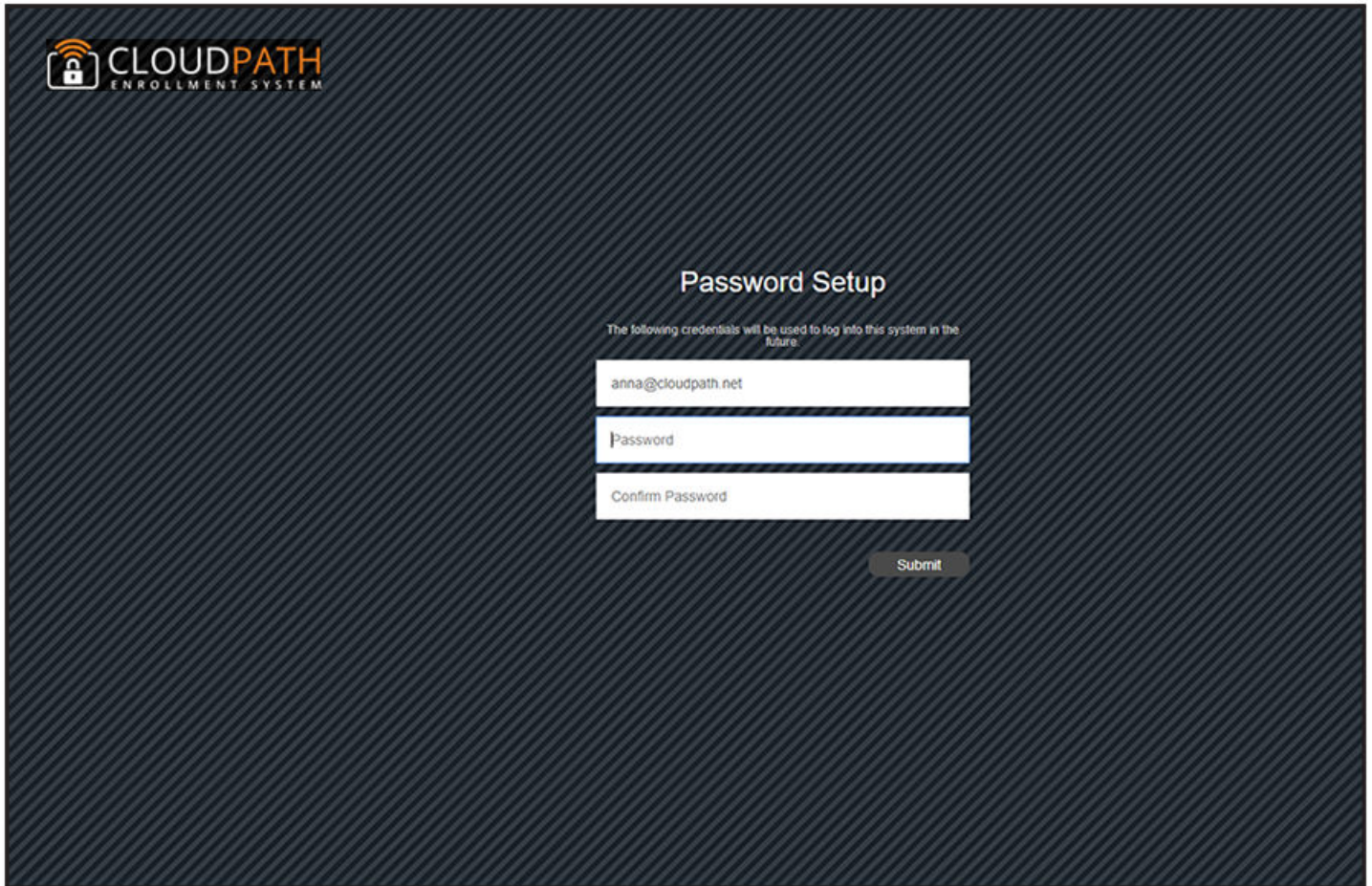
Setting Up the Root Account

The initial username and password will be used to bind the root account. You cannot use this account again on the system. No tenant accounts can use the same email and password as the root account.

After the multi-tenant system is activated, you are prompted to set a password for the root account administrator. Use the same email address from the activation code email.

How to Manage Cloudpath as a Multi-Tenant Server Setting Up the Root Account

FIGURE 2 Create a Password for the Root Account

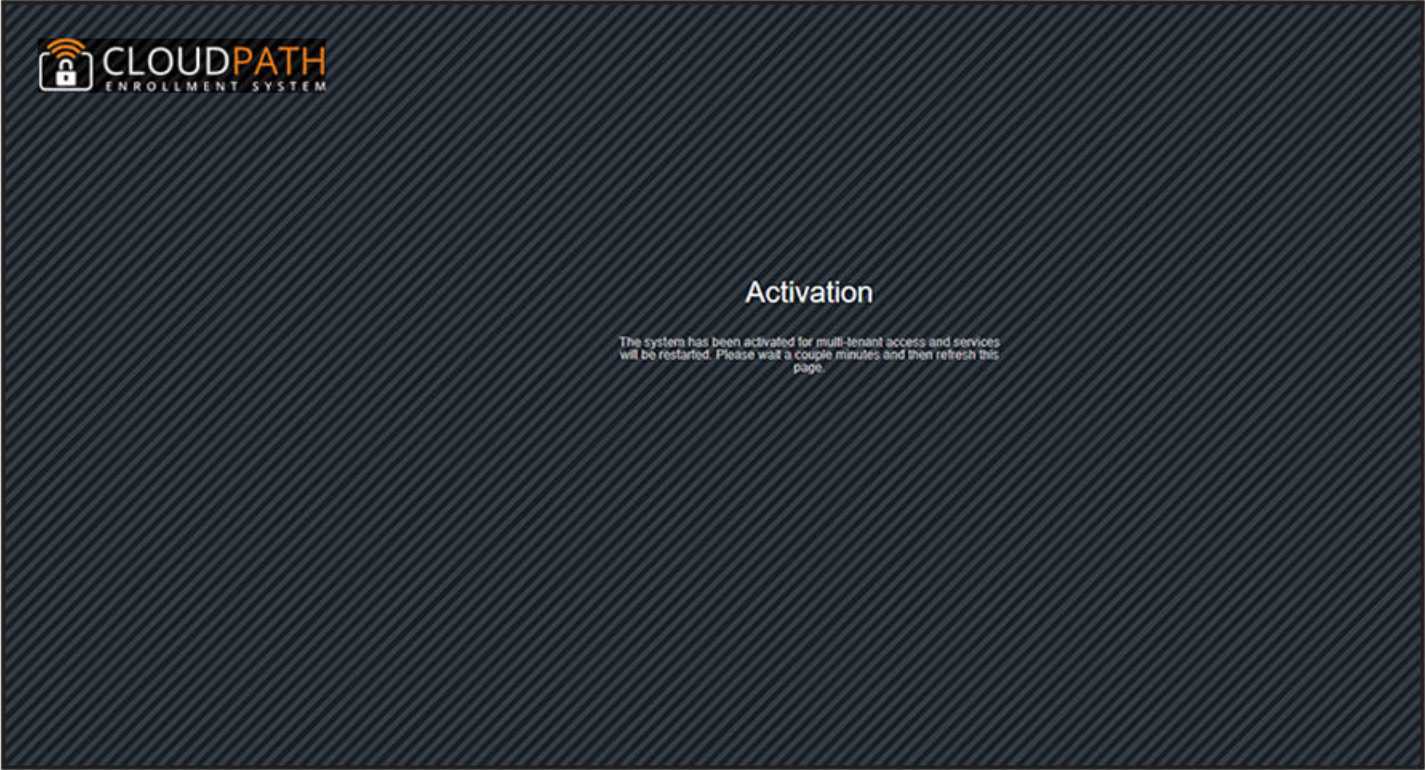


The screenshot shows the 'Password Setup' interface of the Cloudpath Enrollment System. The background is dark blue with a diagonal line pattern. In the top left corner is the logo for 'CLOUDPATH ENROLLMENT SYSTEM', which includes a padlock icon. The main heading is 'Password Setup'. Below the heading, a line of text states: 'The following credentials will be used to log into this system in the future.' There are three input fields: the first contains the email address 'anna@cloudpath.net', the second is labeled 'Password', and the third is labeled 'Confirm Password'. A 'Submit' button is located at the bottom right of the form area.

Create a new password for the root account login.

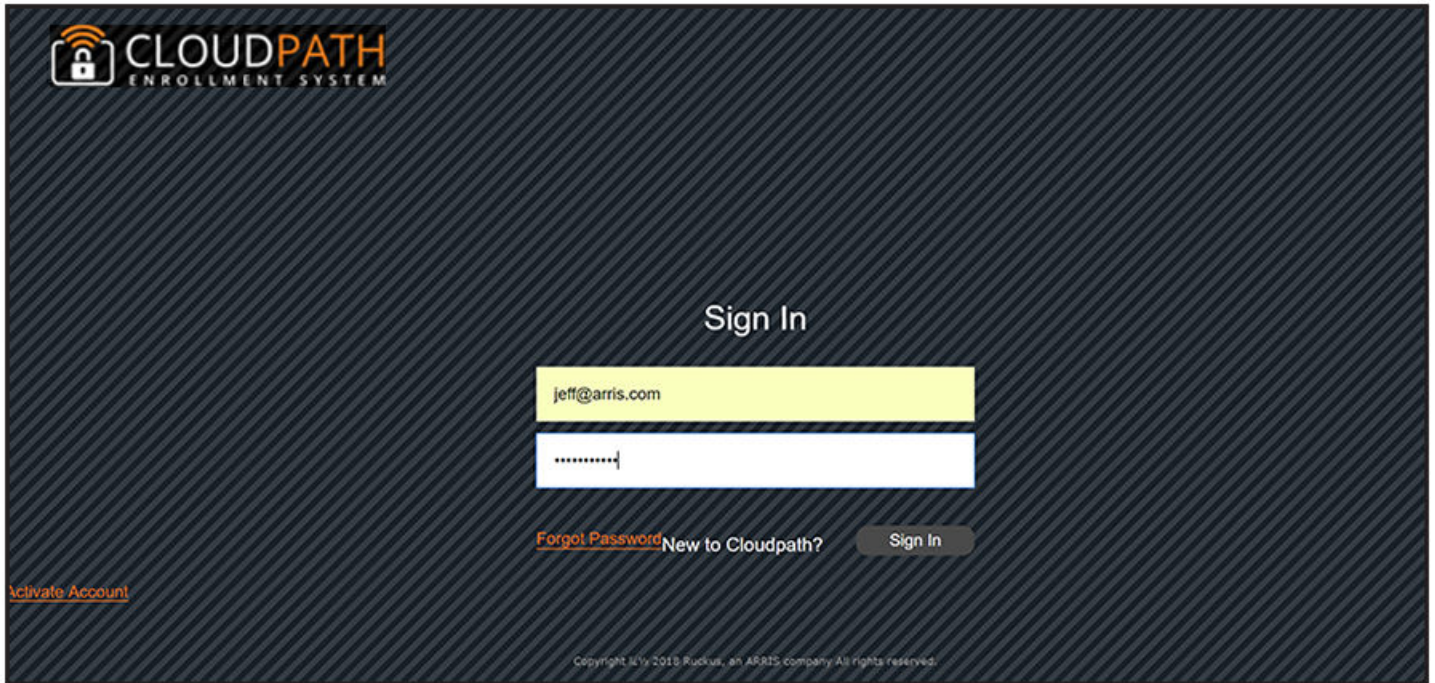
After you enter the multi-tenant activation code, your system is automatically reconfigured as a multitenant system, then restarts.

FIGURE 3 Activating a Multi-Tenant System



Reconfiguring the server to be a multi-tenant system takes a few minutes. When complete, enter the administrator email address and new password to finish setting up the system.

FIGURE 4 Login After Restart



NOTE

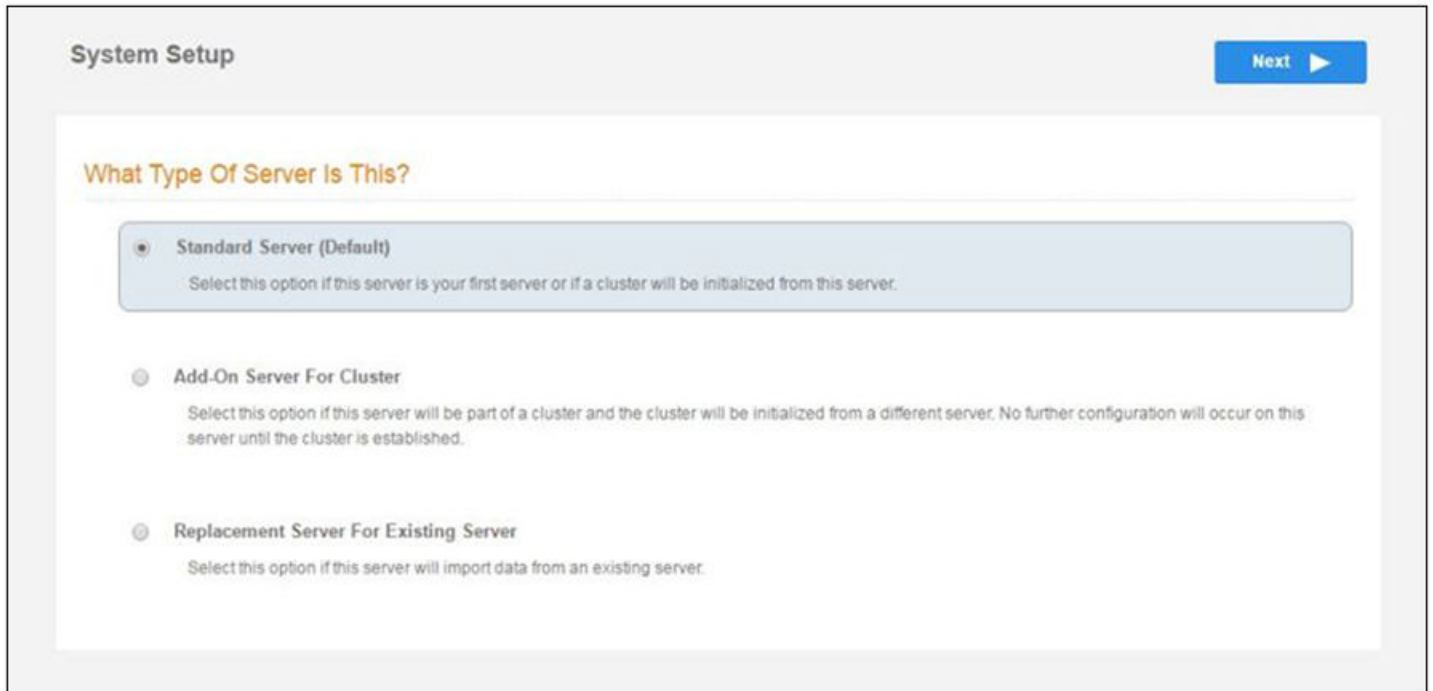
The credentials entered after a multi-tenant configuration are for the Root Account.

System Setup Wizard

After a successful activation (or login), the system setup wizard takes you through a few steps.

Select Server Type

FIGURE 5 System Setup Standard Server



In most cases, select **Standard Server**, the default. This selection takes you through a setup wizard, which prompts you for the basic information required for a Cloudpath server.

If you are setting up this server for replication, you can choose to set the server as an **Add-On** or **Replacement** server. These selections provide an alternate set up process, requiring less information for the initial setup. **Add-On** and **Replacement** servers receive most of their configuration from the primary server in the cluster.

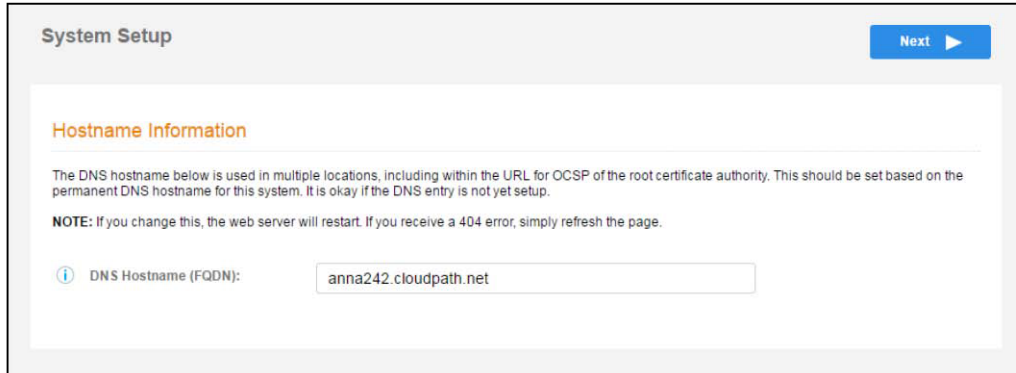
If you are setting up this server to replace an existing server, and you are importing the database from the existing server, select **Replacement Server for Existing Server**

NOTE

For add-on or replacement servers, you are not required to go through the full system setup.

Select System Hostname

FIGURE 6 Enter Hostname



The screenshot shows a 'System Setup' window with a 'Next' button in the top right corner. The main content area is titled 'Hostname Information' and contains the following text: 'The DNS hostname below is used in multiple locations, including within the URL for OCSP of the root certificate authority. This should be set based on the permanent DNS hostname for this system. It is okay if the DNS entry is not yet setup.' Below this is a 'NOTE: If you change this, the web server will restart. If you receive a 404 error, simply refresh the page.' At the bottom, there is a label 'DNS Hostname (FQDN):' followed by a text input field containing the value 'anna242.cloudpath.net'.

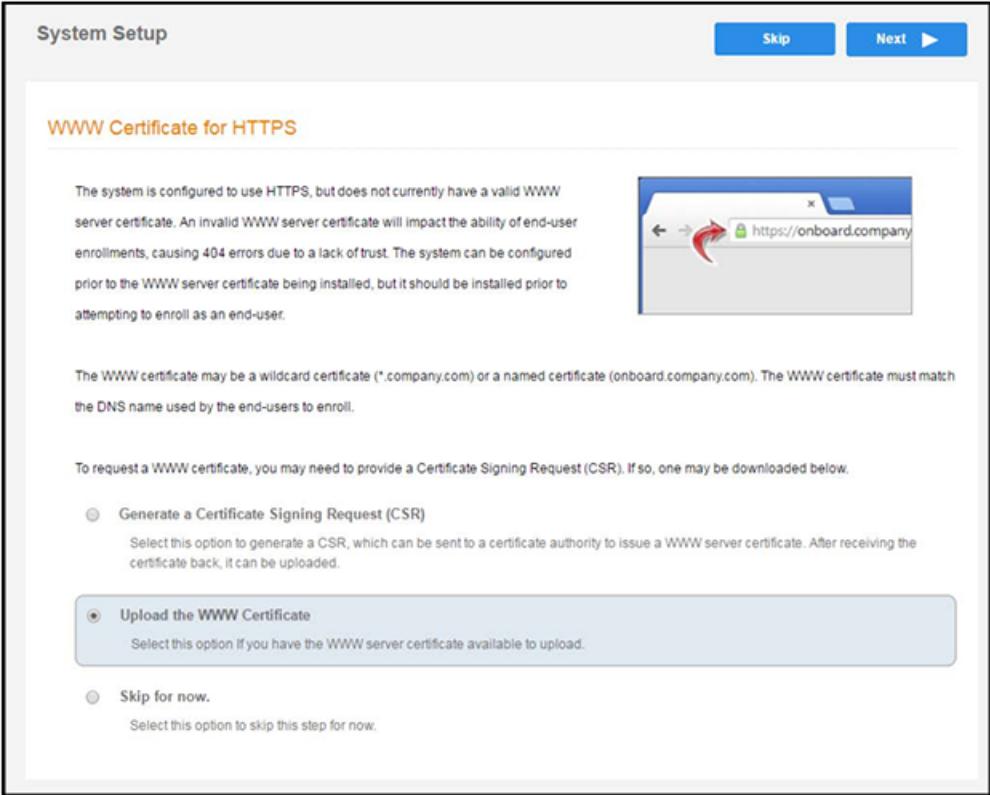
Configure the System WWW Certificate

The system is configured to use HTTPS, but does not currently have a valid WWW server certificate. An invalid WWW server certificate can impact the ability of end-user enrollments, causing 404 errors due to a lack of trust.

NOTE

The root account requires a WWW certificate. Tenant accounts will use the WWW certificate of the root account.

FIGURE 7 WWW Certificate



You can skip this step for the initial configuration. However, it should be installed before adding tenant accounts, or enrolling end-users. You can configure the WWW server certificate from **Administration > System Services > Web Server** service.

Cloudpath supports web server certificates in P12 format, password protected P12, or you can upload the individual certificate components; the public key, chain, and private key or password protected private key.

Upload the WWW Certificate

FIGURE 8 Upload WWW Certificate

The screenshot shows the 'System Setup' wizard with the 'Upload by PEM Files' section expanded. It includes instructions and fields for uploading certificate components: Public Key (PEM), Chain (PEM or P7b), Additional Chain (Optional), Private Key (PEM), and Private Key Password. There are also checkboxes for 'Prompt for Password on Boot' and 'Upload by P12'.

System Setup [Back] [Next]

Upload by PEM Files

If a p12 file is not available, you may upload the individual components of the certificate. All files must be in PEM (Base64) format. If the private key is password-protected, specify the password too. If the private key is not password-protected, leave the password blank.

- Public Key (PEM): [Choose File] No file chosen
- Chain (PEM or P7b): [Choose File] No file chosen
- Additional Chain (Optional): [Choose File] No file chosen
- Additional Chain (Optional): [Choose File] No file chosen
- Private Key (PEM): [Choose File] No file chosen
- Private Key Password:
- Prompt for Password on Boot:

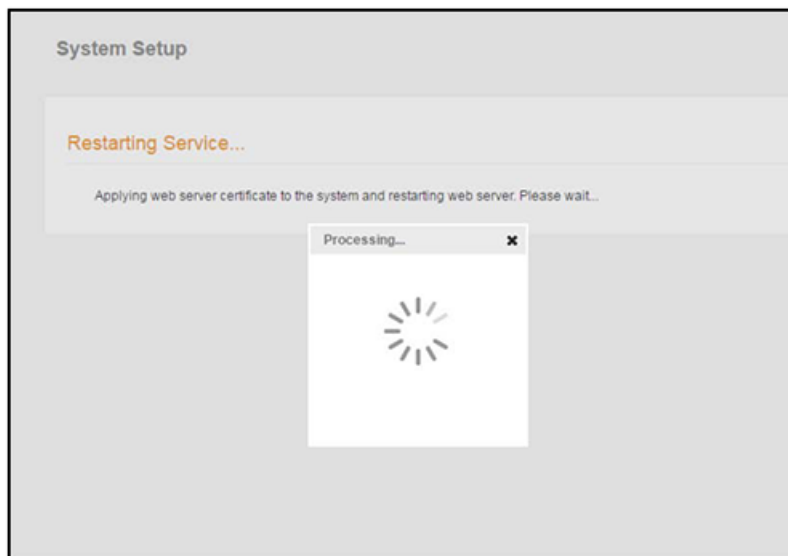
Upload by P12

You may upload a server certificate in p12 format. To do so, you must also specify the password if the p12 is password protected.

- P12 File: [Choose File] No file chosen
- P12 Password:

Browse to locate and upload the web server certificate and click **Next** to continue with the system setup.

FIGURE 9 System Restarting After WWW Certificate Upload



After restarting the web service, the system setup is complete.
The server displays a setup complete page, and a confirmation email is sent to the administrator.

FIGURE 10 Setup Complete for Multi-Tenant System

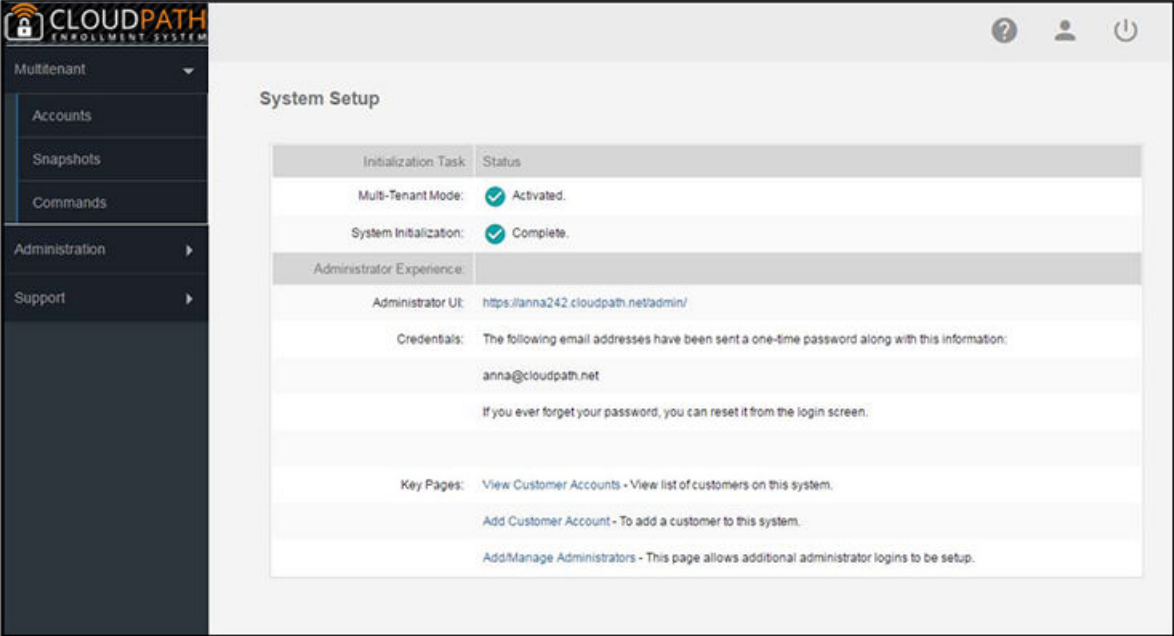
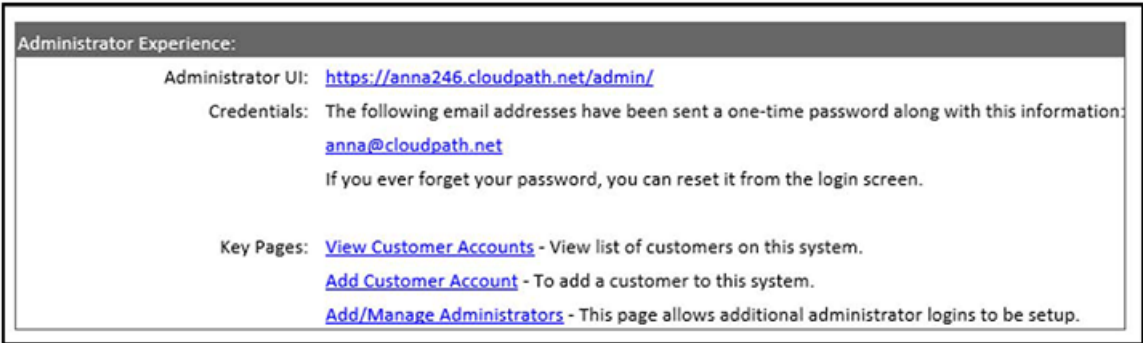


FIGURE 11 System Setup Confirmation Email



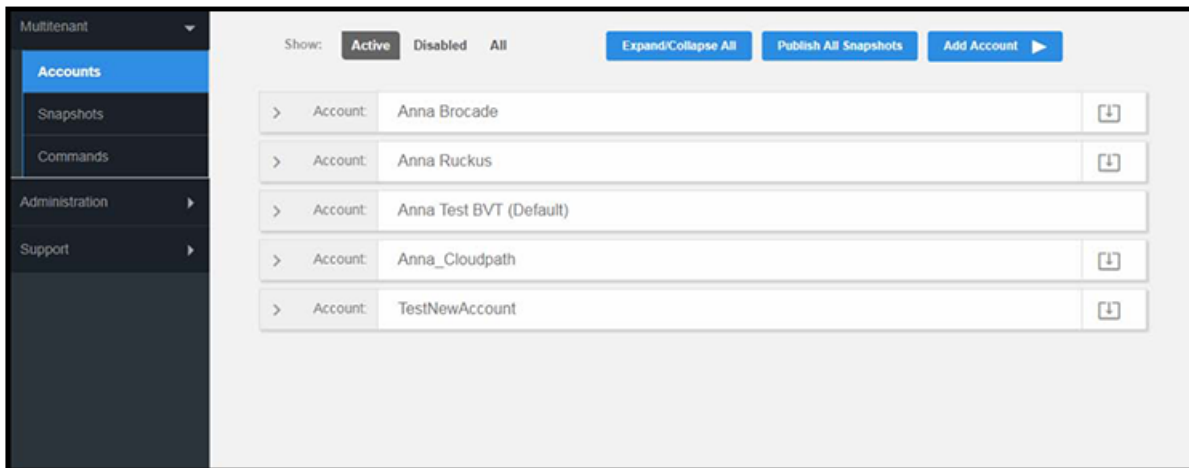
Navigating the Root Account

The root account can view and manage all tenant accounts and perform system administration tasks, such as upgrades, certificate management, and license information.

Accounts

In the **Accounts** tab view, tenant accounts are displayed according to the **Active**, **Disabled**, or **All** tabs at the top of the page. Click the arrow to the left of the account name to view account details, or click **Expand/Collapse All** button at the top of the page.

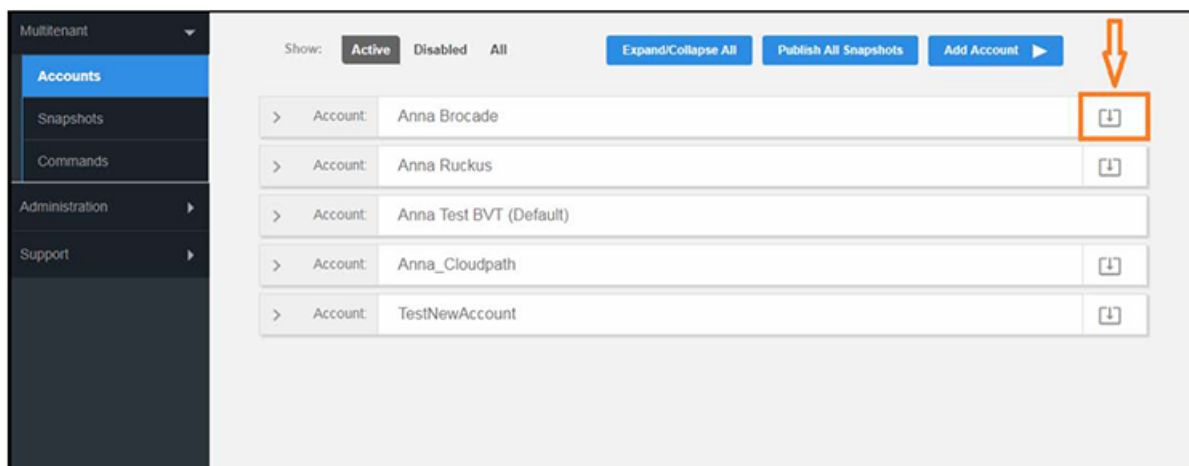
FIGURE 12 Accounts View



Changing Into a Tenant Account From the Root Account

From the root account, use the down arrow to the right of the tenant account change into the account as an administrator for the tenant account.

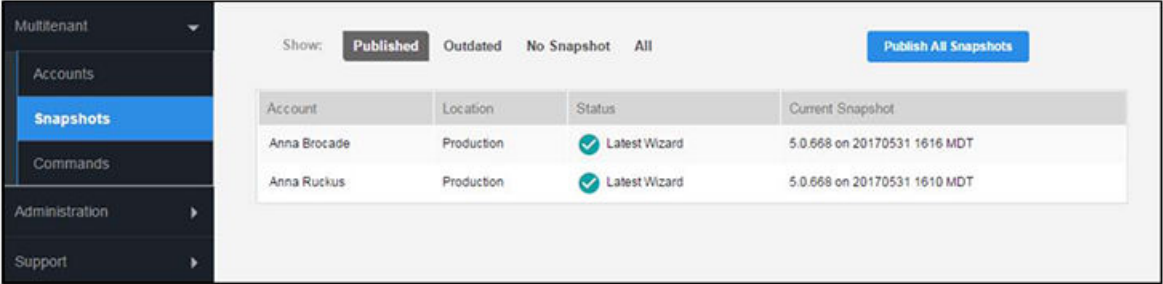
FIGURE 13 Change Into Account from Root Account



Snapshots

This summary view provides a glimpse into successful snapshots and the latest client version for each tenant account.

FIGURE 14 Snapshots View

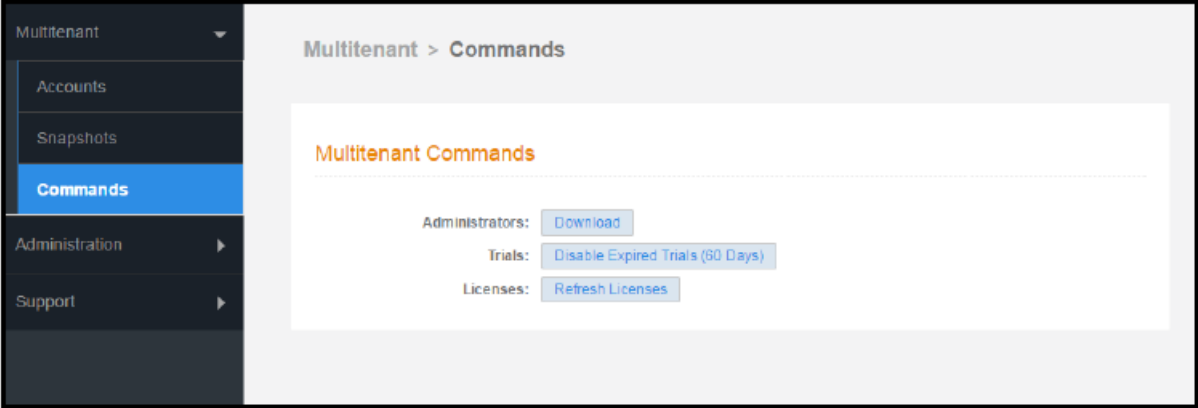


Commands

The multi-tenant commands are shortcuts for root account administration.

- Click **Download** to obtain the email address of all administrators, as needed for system communications, such as upgrade notices.
- If your system is set up for trial accounts, click **Disable Expired Trials** when you want to disable expired accounts and free up RADIUS ports.
- Click **Refresh Licenses** to refresh license information between the multi-tenant system and the Cloudpath license server.

FIGURE 15 Commands View



Administration - Administrators

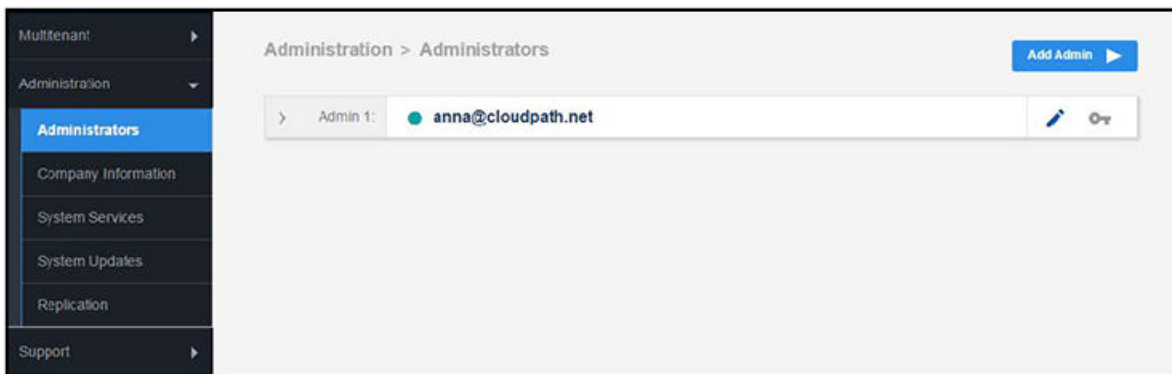
During the initial system setup, Cloudpath sets up an administrator for the root account.

Additional administrators for the root account can be added from the left menu **Administration** tab, or you can enable Administrator logins from your authentication servers.

How to Manage Cloudpath as a Multi-Tenant Server

Navigating the Root Account

FIGURE 16 Administrators for Root Account



Administrator Roles

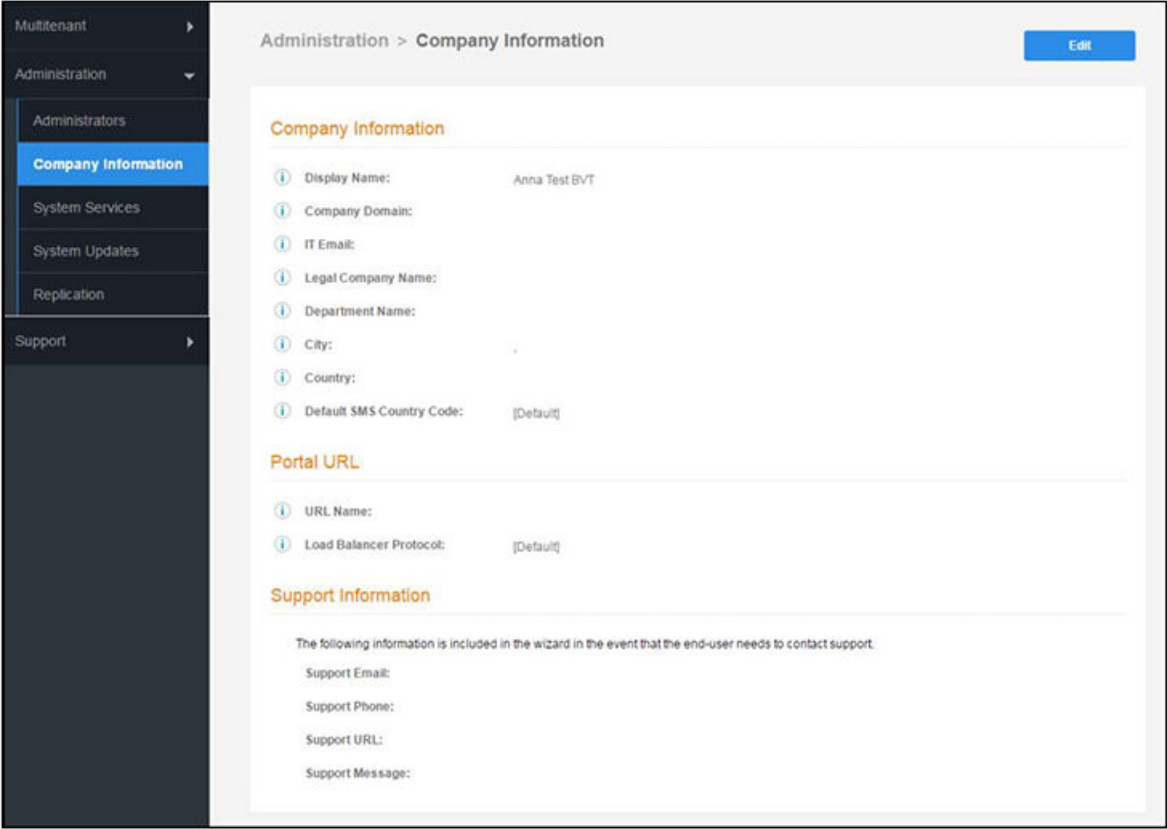
Cloudpath supports the following Administrator Roles for the root account:

- **CA Administrator**—Allows full configuration access to the Administrative UI. This administrator role can manage all administrative users.
- **Administrator**—Allows full configuration access to the Administrative UI, except for Certificate Authorities. This administrator can manage Administrator and Viewer administrative users.
- **Viewer**—Allows view-only access to Enrollment, User, and Certificate records on the Dashboard, the enrollment Workflow, and the Documentation and Licensing pages. This administrator cannot manage other administrative users.

Administration - Company Information

Company Information is typically entered during the initial system setup but can be managed from the **Administration > Company Information** screen. The data from this page is used within the URL for enrollments and sponsorships, and included in the onboard CAs.

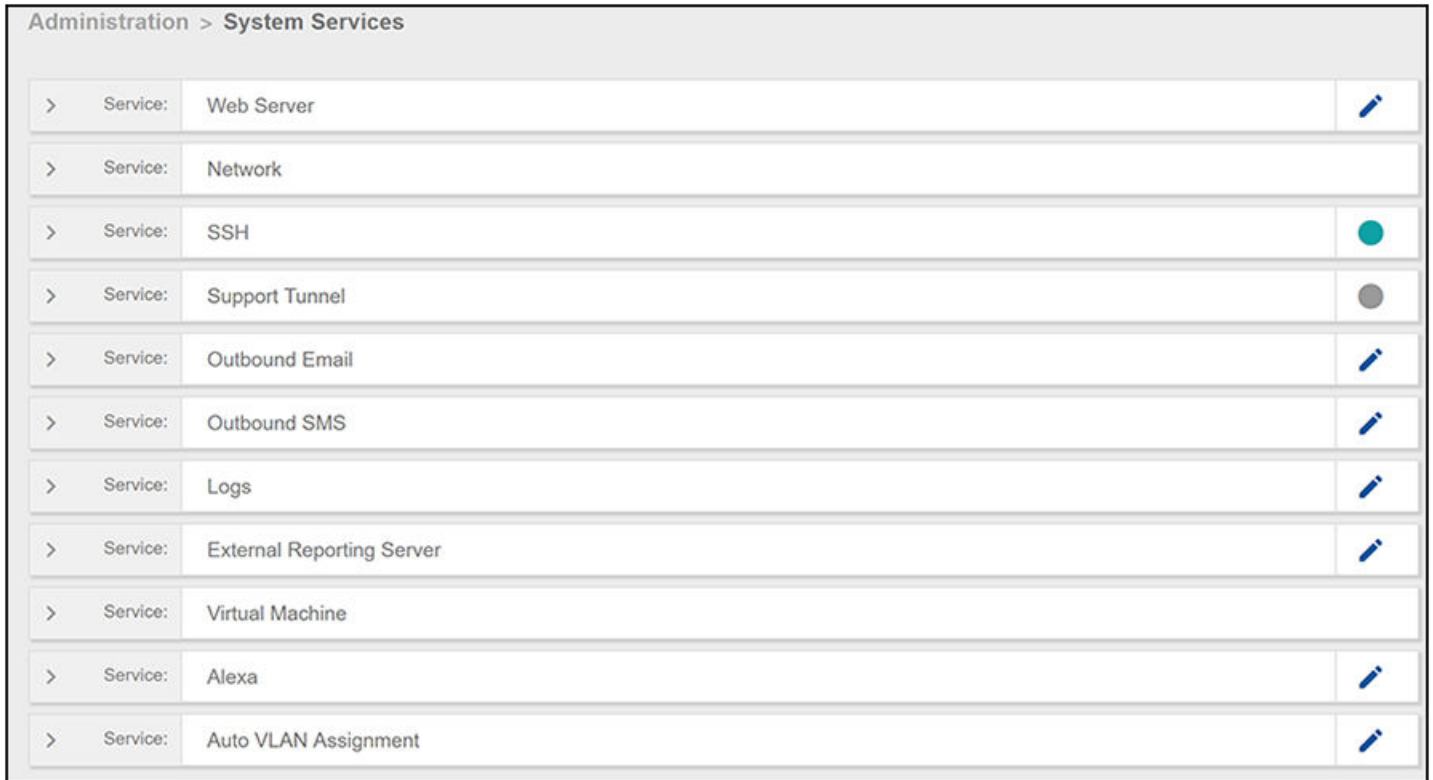
FIGURE 17 Company Information for Root Account












Administration - System Services

Navigate to **Administration > System Services** to restart or view logs for the application server, web server, configure email or SMS servers, or start up a support tunnel.

FIGURE 18 System Services for Root Account



Administration > System Services		
>	Service: Web Server	
>	Service: Network	
>	Service: SSH	
>	Service: Support Tunnel	
>	Service: Outbound Email	
>	Service: Outbound SMS	
>	Service: Logs	
>	Service: External Reporting Server	
>	Service: Virtual Machine	
>	Service: Alexa	
>	Service: Auto VLAN Assignment	

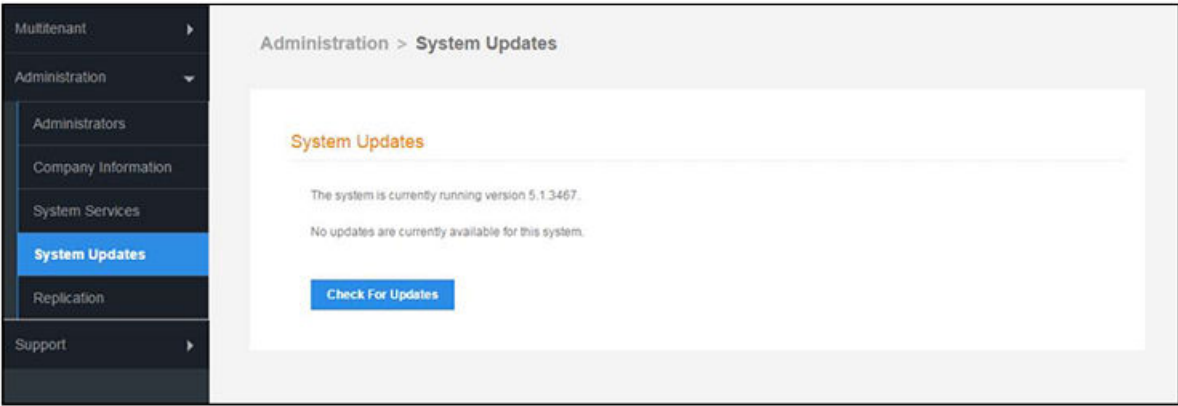
System services for the root account include:

- Web Server—Download the Apache Server access and error logs from the Web Server component. You can also Restart the web server, generate a CSR, edit administrative access restrictions, and download or upload the web server certificate, or if needed, upload a code certificate.
- Network—The Network service displays network properties for Cloudpath, and provides access to view or download the diagnostic logs.
- SSH—Use the SSH service to enable, disable or change the access port. SSH runs on ports 22 and 8022. You can set the port number using the command line or from the user interface. Even if you disable SSH access for both ports, SSH can continue to run.
- Support Tunnel—The Support Tunnel service allows you to open a support tunnel to help you in diagnosing issues with your application or configuration.
- Outbound Email—Use the onboard email provider or configure a local email server.
- Outbound SMS—Use the onboard SMS provider, enter a CDYNE account or route SMS message through a customer-owned account.
- Logs—Configure where syslog messages are sent. You can enable the syslog, select the protocol over which the syslog messages are sent, and enter a host and port number.
- External Reporting Server—Allows you to integrate Cloudpath enrollment data with a reporting server, such as the ELK stack (Elasticsearch, Logstash, and Kibana).
- Virtual Machine - Displays the system clock and system information about the virtual machine. You can also reboot or shut down the virtual machine from this page.
- Alexa - Allows you to bind or unbind Alexa, remove old binding data, or get Alexa log files.
- Auto VLAN Assignment - Allows you assign available VLAN IDs from a configured range of VLANs to users during their enrollment.

Administration - System Updates

From the **System Updates** page, view and manage your existing build version, scan check for updates, and apply support patches.

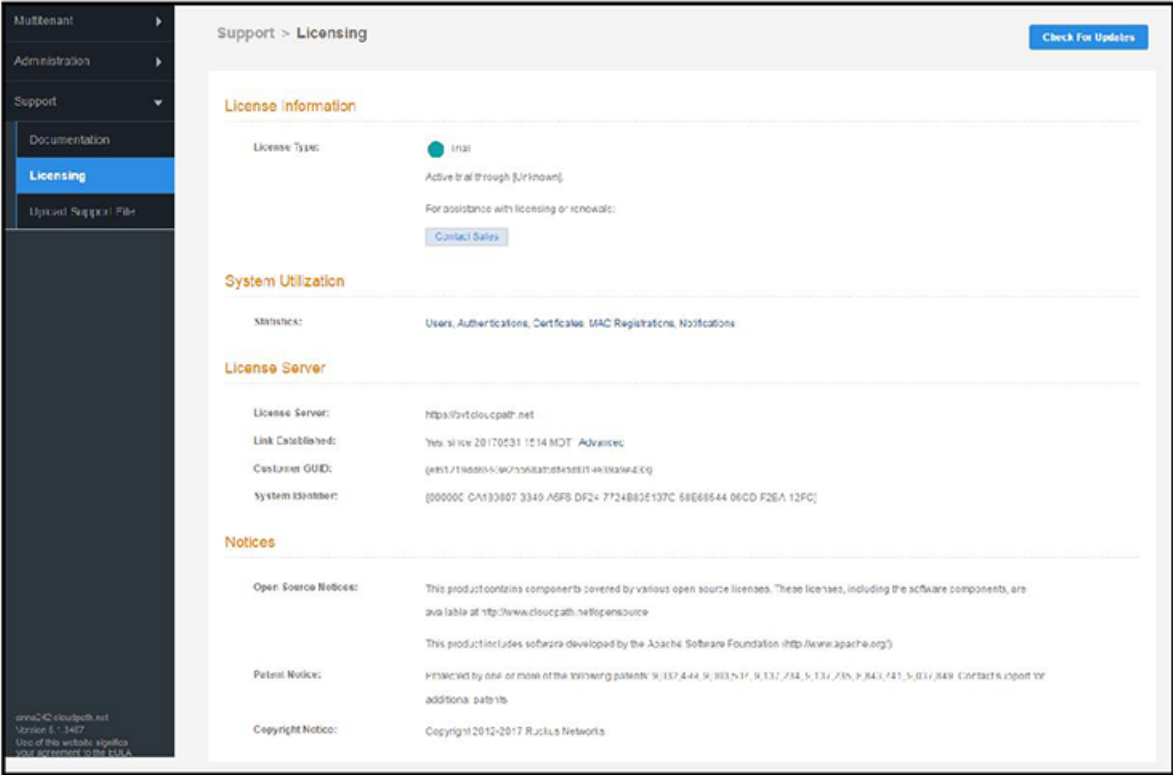
FIGURE 19 System Updates for Root Account



Support - Licensing

The Licensing page displays information about system licenses, active certificates, usage statistics, and copyright notices.

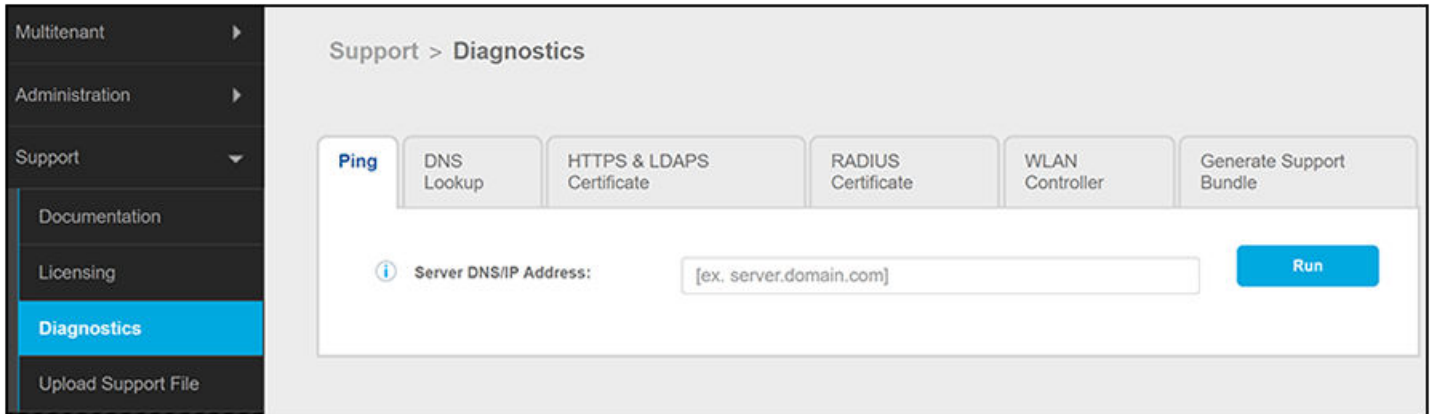
FIGURE 20 Licensing View Root Account



Support - Diagnostics

The **Diagnostics** page provides useful tools for system troubleshooting connectivity issues, and verifying certificate information.

FIGURE 21 Cloudpath Connectivity Diagnostics



The diagnostics includes:

- Ping—Ping an IP address or hostname.
- DNS Lookup—Provide server information and IP address for a given hostname.
- HTTPS & LDAPS Certificate—Query the server certificate used by a secured server (HTTPS, LDAPS, etc.) to verify the certificate currently in use by a server.
- RADIUS Certificate—Query the RADIUS server certificate and the chain presented by the RADIUS server. This is useful to verify the certificate currently in use by a RADIUS server. For this test to work, the Cloudpath ES must be able to reach the IP and port, the shared secret must be correct, and the Cloudpath ES must be an approved client for the RADIUS server.
- WLAN Controller—Query the WLAN controller to check if required ports are accessible.
- Generate Support Bundle: Click **Run** from this tab to generate a zip file that contains log files and metrics information to provide to your Ruckus support representative.

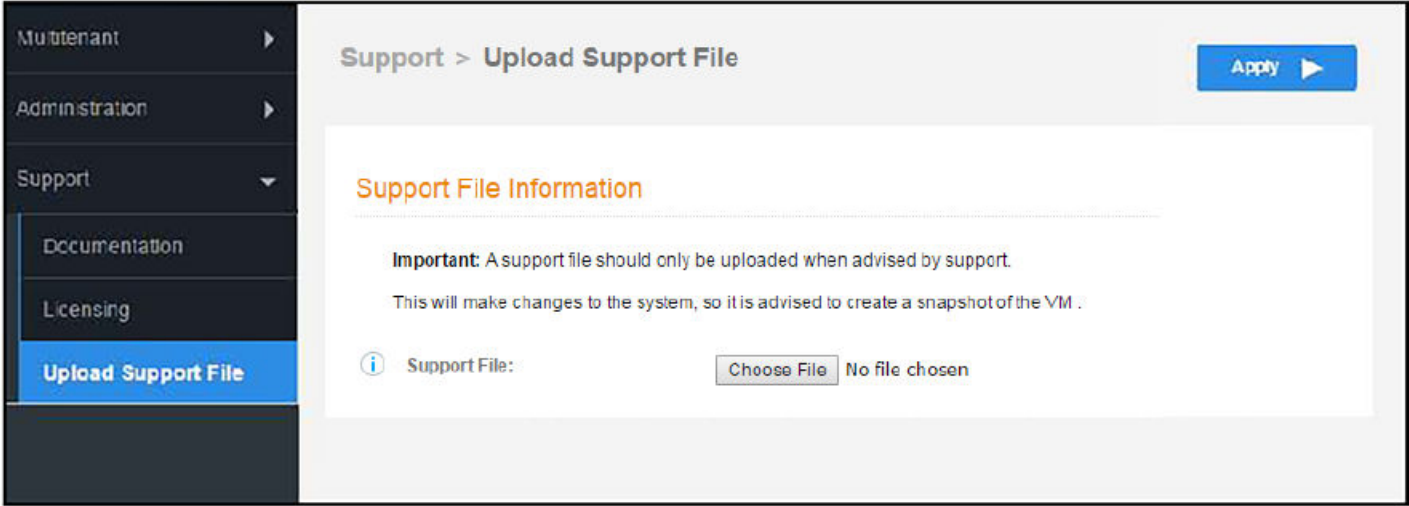
Support - Upload Support File

If Cloudpath Support has provided a support file, you can upload it on this page. This will make changes to the system, so we recommend that you create a VMware snapshot first.

NOTE

Only use a support file with the assistance of the Cloudpath Support team.

FIGURE 22 Upload Support File for Root Account



Adding Tenant Accounts

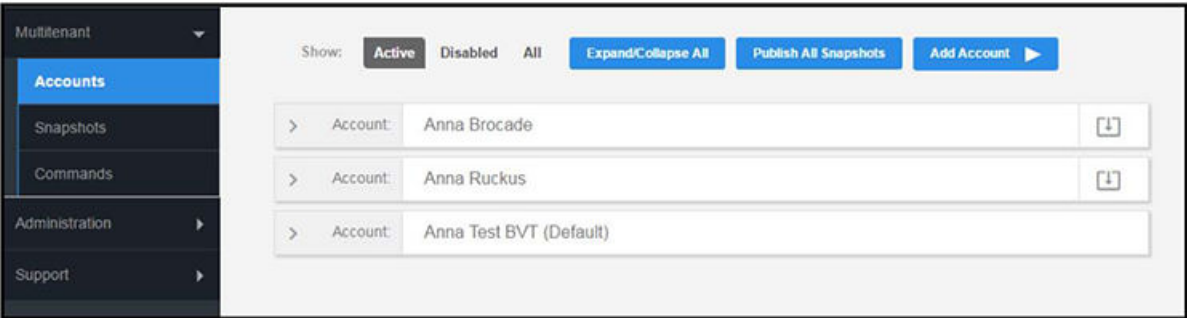
This section describes how to add a tenant account.

Adding a Tenant Account From the Root Account

A root account administrator adds tenant accounts from the root account **Accounts** tab.

From the multi-tenant root account **Accounts** page, click the **Add Account** button.

FIGURE 23 Add Tenant Account



Create Tenant Account

Enter tenant account information:

- Company Name
- Company URL Name

How to Manage Cloudpath as a Multi-Tenant Server

Adding Tenant Accounts

- Create Account Administrator
- Admin Display Name
- Admin User Name

FIGURE 24 Create Tenant Account Information

The screenshot shows a web interface for creating a tenant account. On the left is a navigation menu with 'Accounts' selected. The main area is titled 'Accounts > Create' and contains a form with the following fields and options:

- Company Name: Anna Brocade
- Company URL Name: AnnaBrocade
- Create Account Administrator:
- Admin Display Name: Anna Brocade
- Admin Username: aekhel@brocade.com
- Specify Password:
- Password: [masked]
- Confirm Password: [masked]

A note below the password fields reads: "The password specified below will be used. The administrator will not be emailed." Buttons for "Cancel" and "Save" are located at the top right of the form.

Tenant Account Admin Password

Different methods for creating tenant administrator accounts:

- Create an admin account without specifying a password. A system generated password is emailed to the admin.
- Create an admin account with a defined password. The system does not send an email notification for defined passwords.
- Create no account admin. The account is created without an admin. The only way to access the account is by changing into the tenant account from the root account. For details, see the "Changing Into a Tenant Account From the Root Account" section of the [Navigating the Root Account](#) on page 20 topic.

Setting Up the Tenant Account

After the tenant administrator account has been created, use the tenant administrator credentials from the new administrator account email to access and log in for the initial system setup.

Account Administrator Login

Use the temporary password from the administrator email.

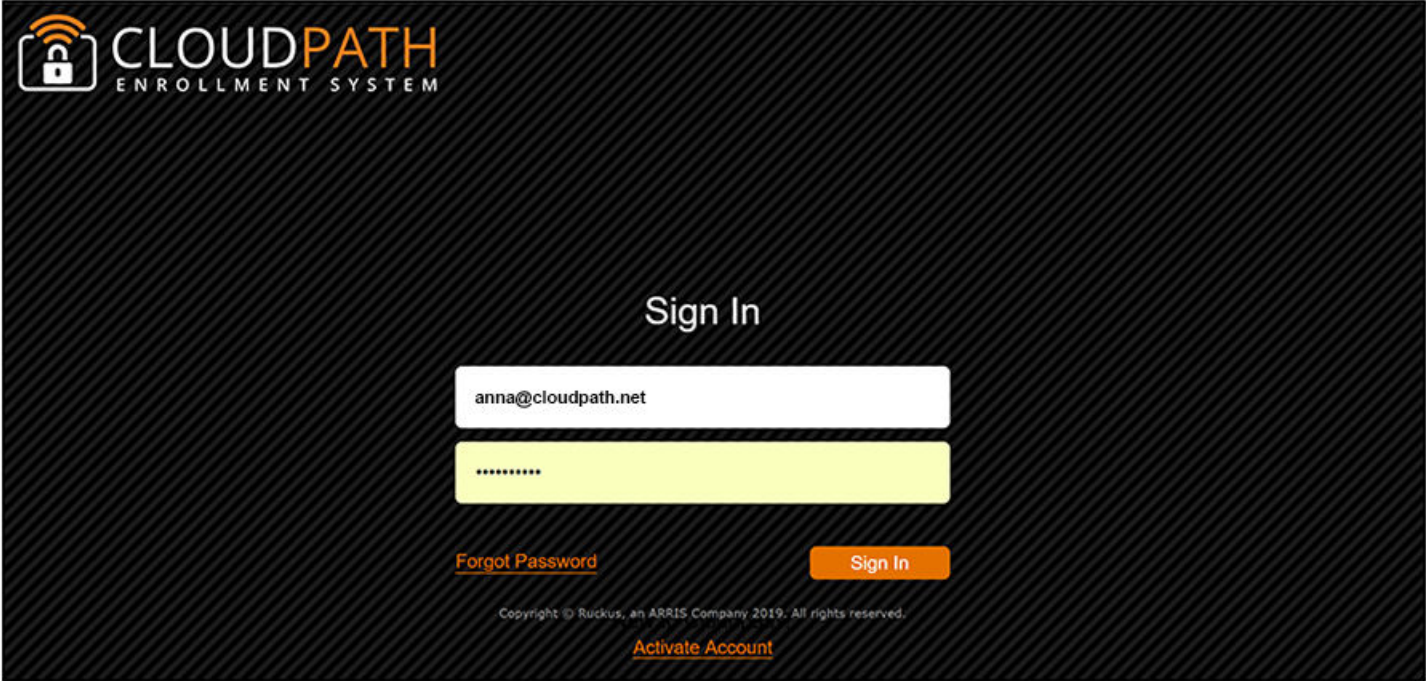
Example email with login credentials:

```
You have been added as an administrator.  
  
URL: https://test245.cloudpath.net/admin/  
Username: test_user@cloudpath.net  
Temporary Password: Uw6hYcE9vS
```

NOTE

If no tenant account admin was specified, the root account user can change into the account for system setup.

FIGURE 25 Log In With a Temporary Password

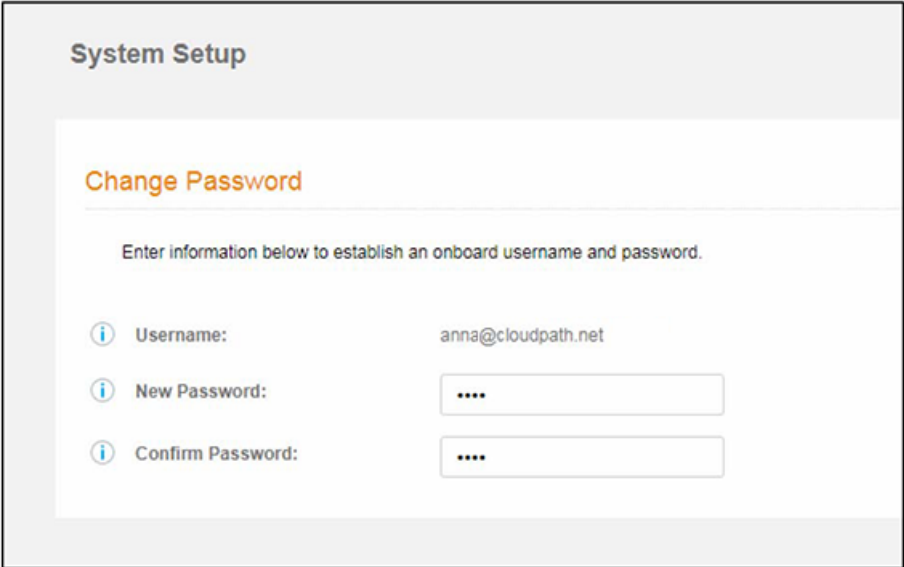


Account Admin Setup Credentials

NOTE

If you were assigned a specific password when the tenant account was set up, you will not be prompted to change your password.

FIGURE 26 Set up new credentials



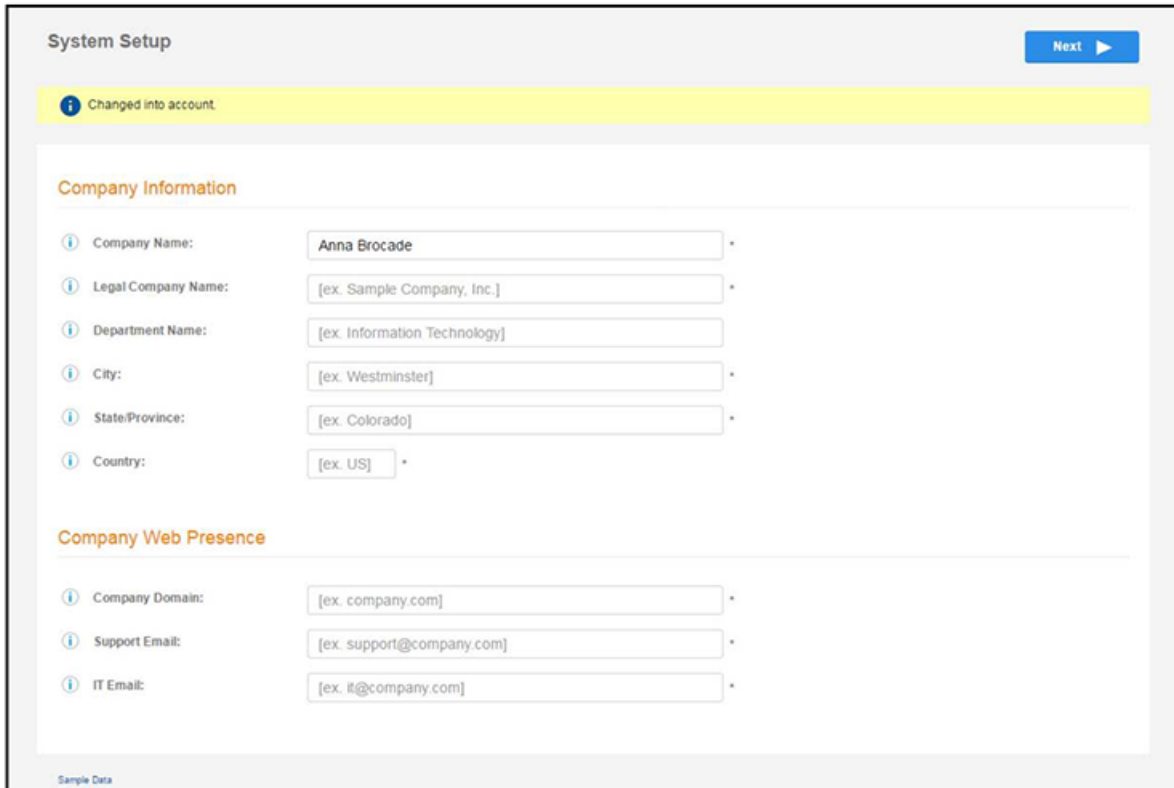
Tenant Account Setup Wizard

After the first login to a tenant account (by logging in, or by changing into the account), the system setup wizard guides you through a few basic steps.

Company Information

Enter **Company Information**. This information is embedded in the onboard root CA certificate.

FIGURE 27 Company Information

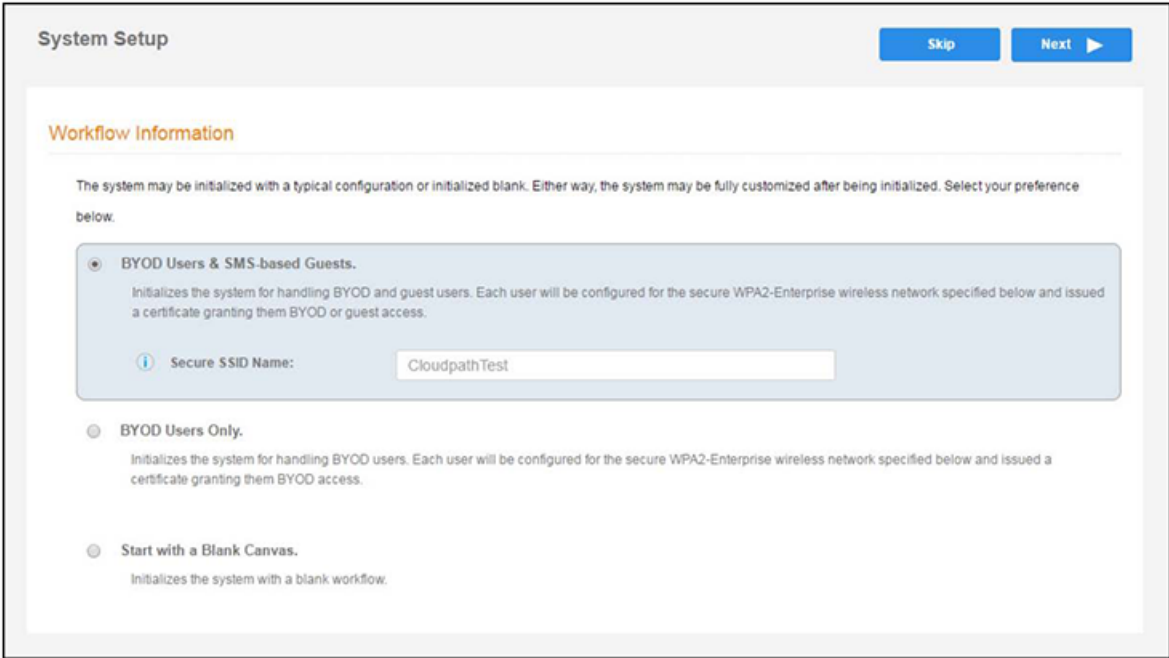


The screenshot shows the 'System Setup' wizard interface. At the top right is a blue 'Next' button with a right-pointing arrow. Below the title bar is a yellow notification banner with an information icon and the text 'Changed into account.' The main content area is divided into two sections: 'Company Information' and 'Company Web Presence'. Each section contains several input fields with information icons and asterisks indicating required fields. The 'Company Information' section includes: Company Name (filled with 'Anna Brocade'), Legal Company Name (placeholder '[ex. Sample Company, Inc.]'), Department Name (placeholder '[ex. Information Technology]'), City (placeholder '[ex. Westminster]'), State/Province (placeholder '[ex. Colorado]'), and Country (placeholder '[ex. US]'). The 'Company Web Presence' section includes: Company Domain (placeholder '[ex. company.com]'), Support Email (placeholder '[ex. support@company.com]'), and IT Email (placeholder '[ex. it@company.com]'). A small 'Sample Data' label is visible at the bottom left of the form area.

Select Workflow Template

To initialize the system with a sample configuration, select **BYOD Users & SMS Guests**, or **BYOD Users Only**. This creates an initial workflow for BYOD users and sponsored guests (or BYOD users only) that you can use as a template, or simply add a device configuration and use immediately.

To create your own workflow, select **Start with Blank Canvas**.



Authentication Server

NOTE

If you selected a **Blank Canvas** for the default workflow, you are not prompted to set up an authentication server during the initial system setup.

If you plan to use an authentication server to authenticate end-users or sponsors, we recommend populating the authentication server information page.

If using multiple authentication servers, additional authentication servers may be added through the workflow or from the **Configuration > Authentication Servers** page.

FIGURE 28 Set Up Tenant Authentication Server

Authentication Server Configuration

Connect to Active Directory
Select this option to enable end-users to authenticate via Active Directory.

Default AD Domain:

AD Host:

AD DN:

AD Username Attribute:

Verify Account Status On Each Authentication

Perform Status Check:

Additional Logins

Use For Admin Logins:

Use For Sponsor Logins:

Test Authentication

Run Authentication Test?:

Test Username:

Test Password:

Connect to LDAP
Select this option to enable end-users to authenticate via LDAP (or LDAPs).

Connect to RADIUS
Select this option to enable end-users to authenticate via RADIUS using PAP.

Connect to SAML
Select this option to enable end-users to authenticate via a SAML 2.0 IdP.

Use Onboard Database
Select this option to enable end-users to authenticate to accounts defined within this system.

To setup the initial configuration of the authentication server, select and enter the required fields.

Consider these optional settings for the authentication server:

- **Verify Account Status on Each Authentication**—If selected, Active Directory is queried during subsequent uses of the certificate to verify the user account is still enabled. You must provide the bind username and password for an authentication server administrator account.
- **Additional Logins** - Authentication Server definitions of types **Connect to Active Directory** and **Connect to LDAP** offer additional options.

If **Use for Admin Logins** is selected, administrators can log into the Cloudpath Admin UI using credentials associated with this authentication server. Additionally, three related options become available to define which authentication server defined user groups are allowed as Cloudpath administrators. They are:

- CA Administrator Group Regex
- Administrator Group Regex
- Viewer Group Regex

Group Regex options are used to map Authentication Server defined groups to Cloudpath administrator Roles. User groups returned by the authentication server must match at least one of the Group Regex fields for the Admin login to be allowed.

NOTE

Similar to the AD and LDAP servers, SAML authentication server definitions can now be used to authenticate administrators of Cloudpath through the **Use For Admin Logins** option.

Important Information for SAML Administrator UI Configuration

- After configuring a SAML authentication server definition on Cloudpath, the *SP Metadata* that is required for configuring the SAML IdP side is available. The authentication servers are listed in **Configuration > Authentication Servers**, and you can get the *SP Metadata* of the SAML definitions by clicking the download icon on the right side of the listing header.
- For SAML authentication server definitions, it is important that the **Username** and **Distinguished Name** attributes are correctly mapped in the **SAML Attribute to Enrollment Mappings** section. The **Username** will map to Cloudpath administrator Username on first login. **Distinguished Name** is used to lookup existing reference to externally authenticate the Cloudpath administrator account if one exists. Otherwise, a new externally authenticated account is created.

NOTE

The **Username** and **Distinguished Name** values must not overlap with locally defined Cloudpath administrator accounts.

- Only one SAML type authentication server definition can have the **Use For Admin Logins** option enabled.
- Similar to other authentication server definitions, the **Group Attribute** provided by the SAML IdP assertion can be used to determine which external user accounts are allowed to access Cloudpath.

Important Information for SAML Administrator UI Log In

- After the SAML authentication server is configured by enabling the **Use For Admin Logins** option, the Cloudpath login page displays a new button **Sign in via SSO**. Clicking the button initiates the SAML IdP login flow. If the IdP login is successful and if the IdP provided **Group Attribute** matches at least one configured **Group Regex**, then the administrator is allowed to login.
- In cloud or hosted Cloudpath versions, for a Cloudpath administrator to authenticate through an externally authenticated account such as SAML, a specific administrator login page URL is needed. The URL for the administrator login page is displayed when expanding the SAML authentication server definition listing of authentication servers in **Configuration > Authentication Servers**.

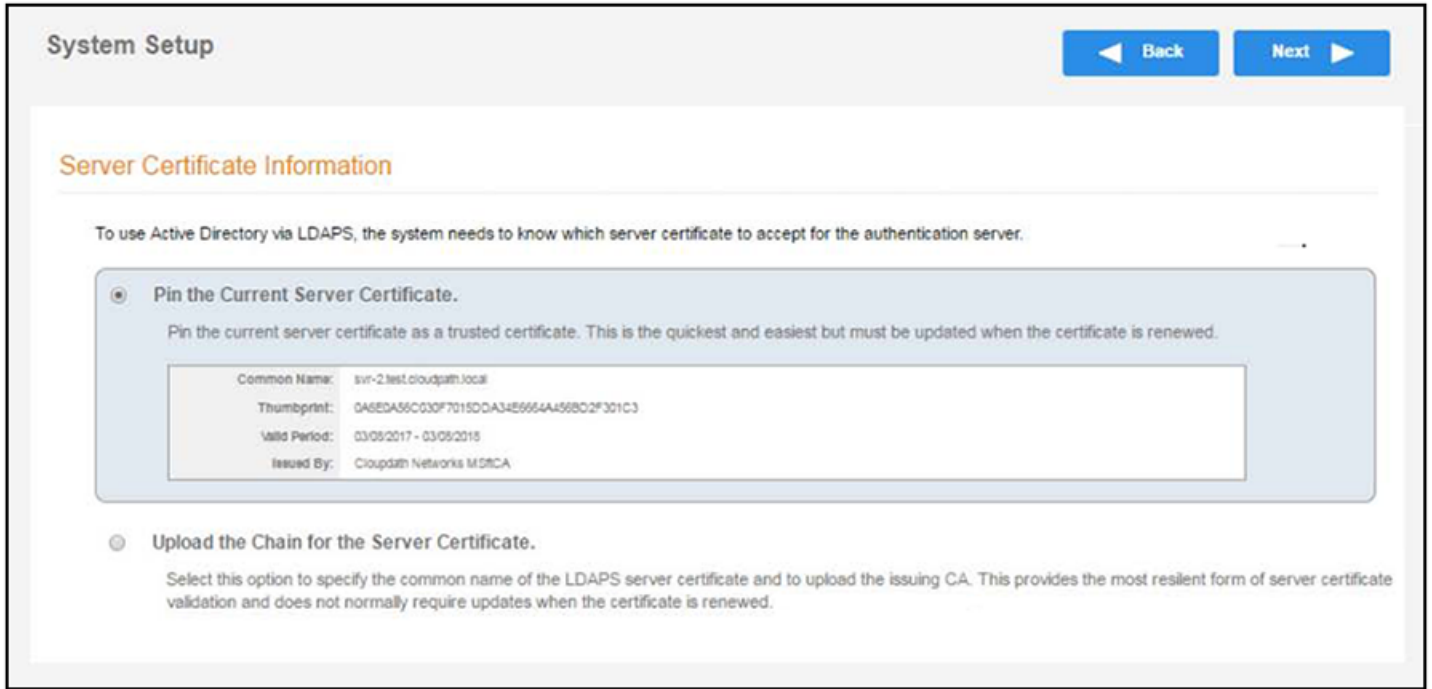
While authenticating the admin user, if multiple regexes match, the role with the highest privilege takes precedence. If none of the three regexes match, authentication is denied to the user.

If **Use for Sponsor Logins** is selected, sponsors can log into the Cloudpath Sponsorship Portal using credentials associated with this authentication server.

- To authenticate as an administrator to an external authentication server, each tenant account must go to an admin login page specific to their account. This URL is of the form: `https://<cloudpath-host>/admin/login/<AccountUrlName>/`
 - The URL Name for an account can be found or edited under **Administrators > Company Information**. For example, if an account's URL Name is "TenantAccount1", the account-specific login URL is found at: `https://<cloudpath-host>/admin/login/TenantAccount1/`
 - The standard login page at `/admin/` is still available, and accepts logins from any admin account that is being tracked by Cloudpath.
- **Test Authentication**—If selected, an authentication will be attempted using the username and password provided to test connectivity to the authentication server. This test can also be run from the workflow.

Authentication Server Certificate

FIGURE 29 Authentication Server Certificate



Select **Upload the Chain for the Server Certificate** to upload a certificate chain from an issuing CA. You must specify the common name for the LDAPS server certificate. This certificate does not need to be updated when the certificate is renewed.

Select **Pin the Current Server Certificate** to use the current server certificate as the trusted certificate. This setting must be updated if the certificate is renewed.

Publish Tenant Account

FIGURE 30 Publish Tenant Account

The screenshot shows a 'System Setup' page with a table of initialization tasks. All tasks are marked as 'Completed' with a green checkmark. Below the table, there is a section for 'Access Point Setup' with various configuration parameters. At the bottom, there is a 'User Experience' section with an end-user portal URL.

Initialization Task	Status
Create Certificate Authorities:	✔ Completed.
Create Certificate Templates:	✔ Completed.
Create Device Configurations:	✔ Completed.
Configure Workflow:	✔ Completed.
Activate Sponsor Portal:	✔ Completed.
Publish Enrollment Portal:	✔ Completed.
	✔ System is ready to handle enrollments.

Access Point Setup:	
	The following information will be necessary to configure the access point with the appropriate secure SSID configuration.
SSID:	eng-AnnaBrocade (WPA2-Enterprise, AES (CCMP), Broadcast)
RADIUS IP:	anna242.cloudpath.net
RADIUS Authentication Port:	14391
RADIUS Accounting Port:	14392
RADIUS Shared Secret:	q5urhc6x3aj6c6ep5uex
RADIUS Attributes:	BYOD Policy Template - VLAN: '1' Guest Policy Template - VLAN: '1'

User Experience:	
	End-users will use the enrollment portal to activate devices.
End-User Portal:	https://anna242.cloudpath.net/enroll/AnnaBrocade-1/Production/

After the initial setup tasks, the system finishes the initialization process. When the publishing tasks are complete, the system is ready to use. The setup information is also emailed to the system administrator for this account.

Tenant Account Login

This section describes how a tenant can access and manage the tenant account.

Tenant Logs In

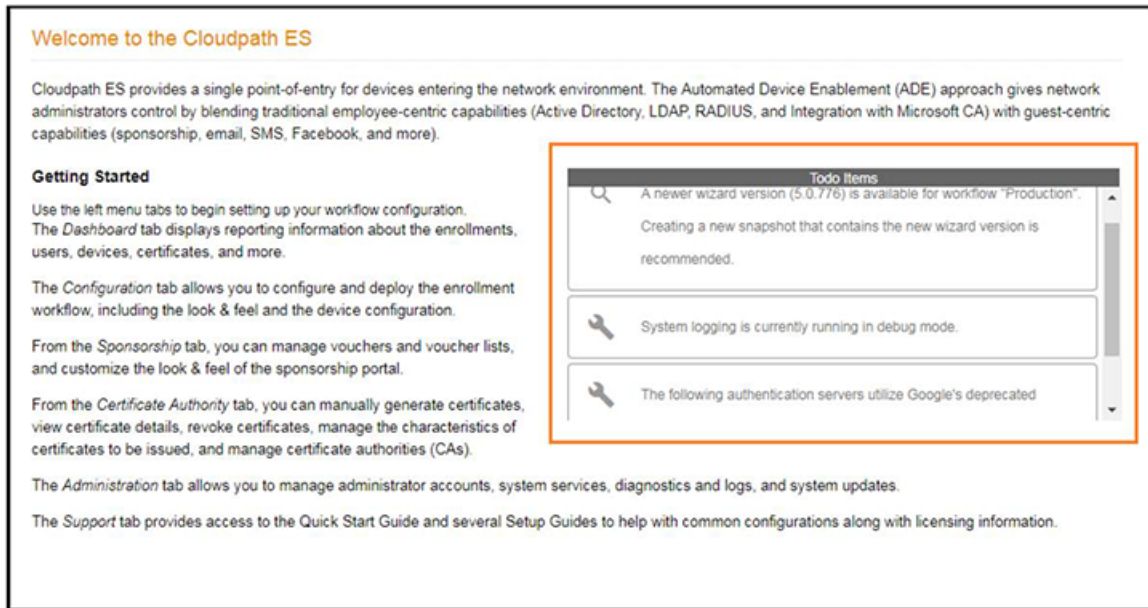
Enter the hostname for the tenant account into a browser to access the tenant account and log in using the credentials previously set up. See the “Account Admin Setup Credentials” section of the [Adding Tenant Accounts](#) on page 27 topic.

The hostname can be found in the Cloudpath Setup Information emailed to the account administrator.

To Do Items

After account login, the **Cloudpath Welcome** page is displayed. If the **ToDo Items** list displays, the configuration items listed describe what is needed to complete the account setup.

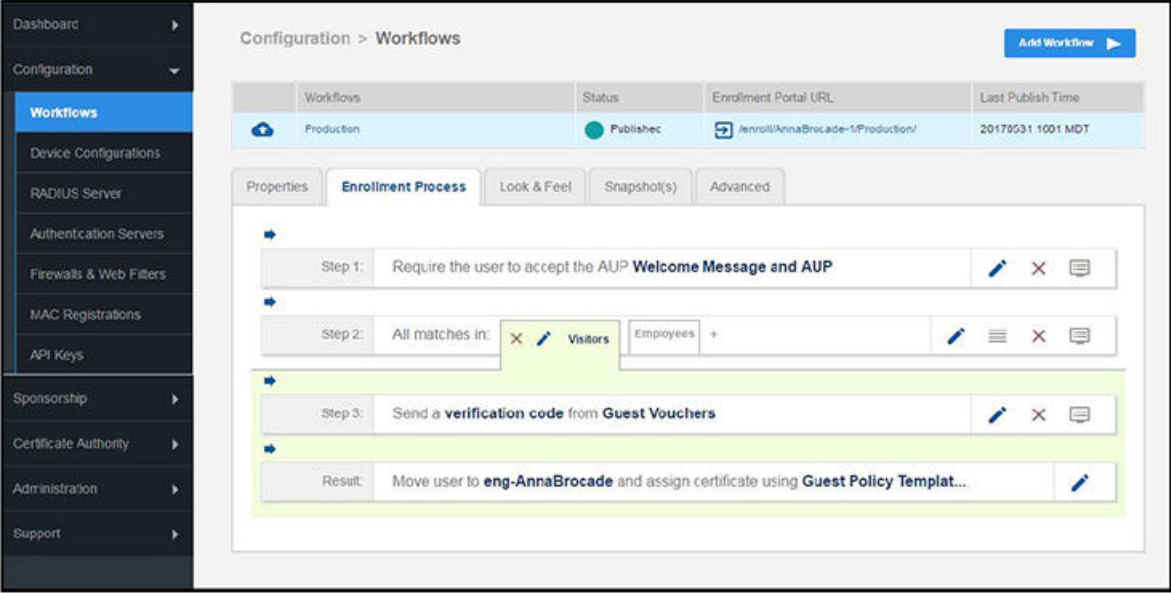
FIGURE 31 Cloudpath Welcome Page



Enrollment Workflow

During the initial system setup, a default workflow was configured. Navigate to **Configuration > Workflows** to view and manage the enrollment workflow for the tenant account.

FIGURE 32 Workflow Setup Page Tenant



Refer to the complete set of technical documentation for more information about configuring the tenant account enrollment workflows.

Configuration documentation can be found on the **Support > Documentation** tab, and also on the Ruckus Wireless Support website at: <https://support.ruckuswireless.com/documents?filter=89#documents>.



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