

Configuring Plug and Play in RV34x series routers

Objective

The objective of this document is to show you how to configure Plug and Play (PnP) and PnP support on the RV34x series router.

Introduction

Plug and Play (PnP) support was introduced in the Small Business environment with FindIT 1.1, which acts as the plug and play server. PnP dramatically simplifies deployment by provisioning device images or configurations as the device arrives on the network, known as zero touch or low touch configuration.

Some terms to be familiar with regarding PnP and FindIT:

- An Image is a firmware update for a PnP enabled device.
- A Configuration is a configuration file to be downloaded to the device. Configuration files contain all the information a device needs to participate in a network, such as gateway, IP addresses of known devices, security settings etc.
- An Unclaimed device is a device that has checked into the PnP server but does not have an Image or Configuration assigned to it.
- Provisioning is the act of supplying devices with images or configurations.

Applicable Devices

- RV34x series routers

Software Version

- 1.0.02.16

PnP Router configuration

Devices must first be configured to “check in” with the PnP server in order to receive provisioning. To configure the router to check into the FindIT Manager to support PnP, perform the following steps.

Step 1. Log in to the web configuration page of your router.



Router

cisco 1

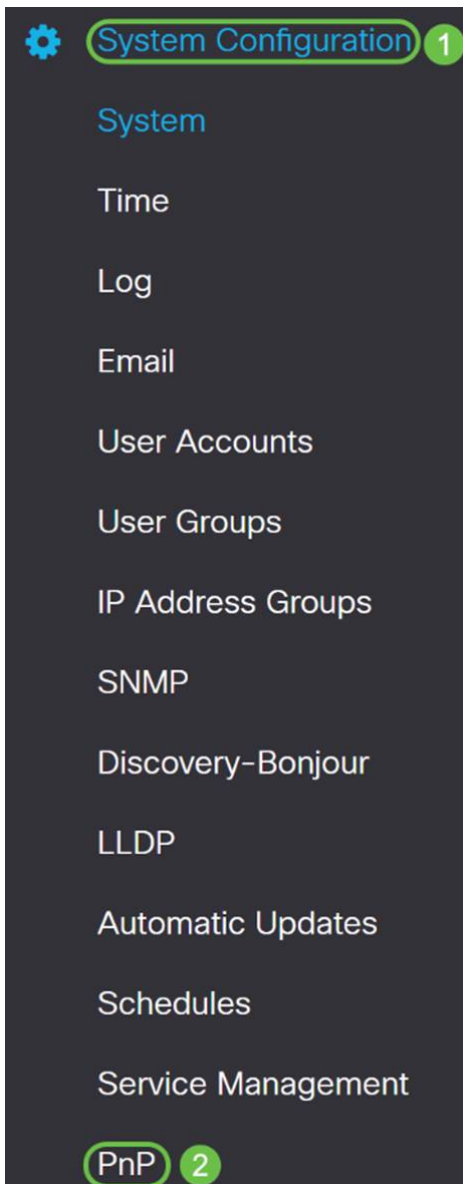
..... 2

English

Login 3

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Step 2. Navigate to **System Configuration > PnP**



Step 3. By default, PnP is enabled in the router and *PnP Transport* is set to *Auto* to discover the PnP server automatically. In this example, **Static** had been selected as the *PnP Transport* option.

Enable

PnP Transport: Auto Static

Transport: HTTPS Only

Note: Unlike switches, the RV34x series routers only support Hyper Text Transfer Protocol Secure (HTTPS) encrypted PnP communications.

Step 4. Enter the IP address or the Fully Qualified Domain Name (FQDN) of the FindIT manager and the port number if it using something other than Port 443. By default the router will trust any already trusted certificate authority (CA) certificate. If desired you can choose to only trust certificates from a particular certification authority by selecting only one Root CA certificate.

In this example,

IP/FQDN is **findit.sbcenter.net**

Port is **443**

CA Certificate is **Pre-Installed CA Bundles**

IP/FQDN: 1

Port: 2

CA Certificate: 3

Step 5. Click **Apply**.

PnP

Enable

PnP Transport: Auto Static

Transport: HTTPS Only

IP/FQDN:

Port:

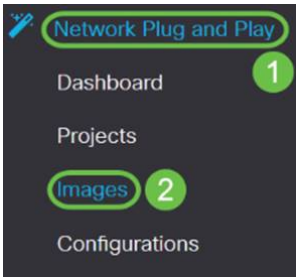
CA Certificate:

Image or Configuration Upload

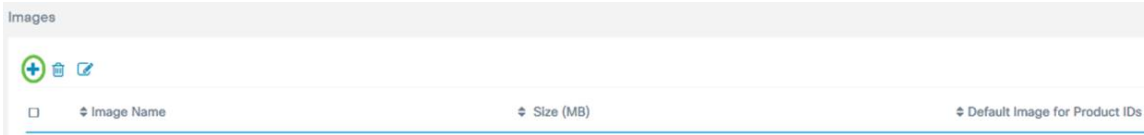
Getting to low, or no touch deployments requires the configuration or image files to be available to the device prior to powering on the first time. To upload an image or a configuration to the FindIT Manager to deploy to PnP devices, perform the following steps.

Step 1. Connect to the FindIT Network Manager and go to **Network Plug and Play** and choose *Images* or *Configurations*.

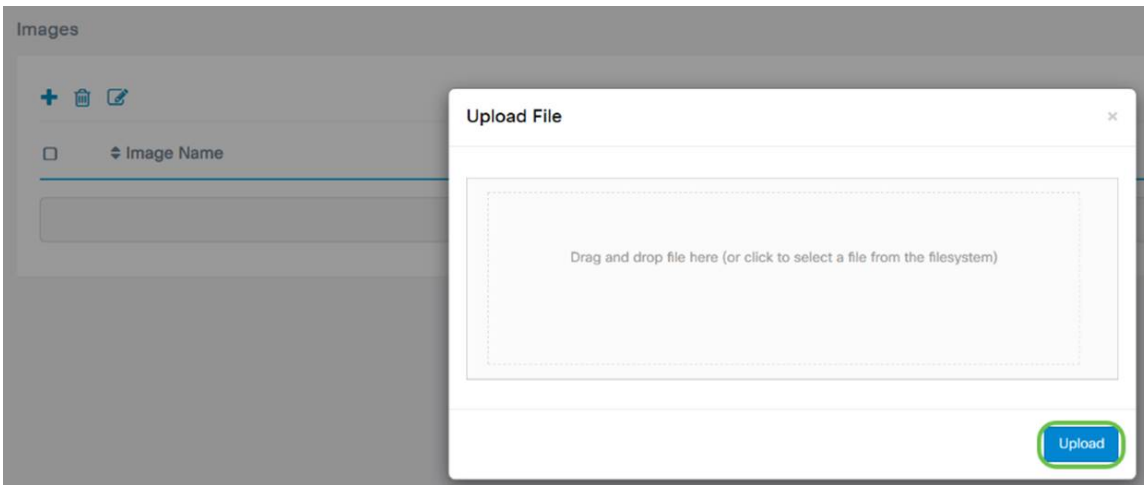
In this example, **Images** has been selected.



Step 2. Click on the **Add** icon to add an image file.



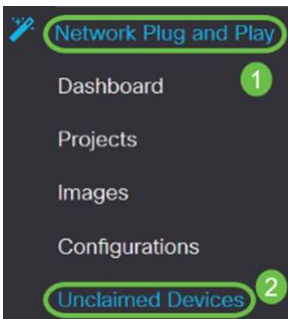
Step 3. Drag and drop the firmware file from a folder to the browser window and choose **Upload**.



Claiming Devices

Once the firmware or configuration has been uploaded, you can claim a device that has checked in. Claiming a device allows a FindIT server to deploy a configuration or image to that device.

Step 1. Login to the FindIT Manager and navigate to **Network Plug and Play > Unclaimed Devices**.



Step 2. Locate the device under *Unclaimed* devices and select it.

Unclaimed Devices

Unclaimed (5) Claimed (0) Ignored (0)

	Product ID	Serial Number	Device IP	Configure	Image	Status	Last Contact Time
<input checked="" type="checkbox"/>	RV340W-A-K9	PSZ20301D5X	24.230.59.155	<input type="text"/>	<input type="text"/>	PENDING	2018-12-06 23:24:39 UTC
<input type="checkbox"/>	RV260W-A-K9-NA	DNZ2227A3Y4	24.230.59.155	<input type="text"/>	<input type="text"/>	PENDING	2018-11-17 16:02:28 UTC

Step 3. Choose the configuration or image you want to apply and choose **Claim**. In this example, a configuration file has been selected. This will move the device from Unclaimed tab into the Claimed tab and the next time the device checks into the server it will deploy the configuration.

Unclaimed Devices

Unclaimed (5) Claimed (0) Ignored (0)

	Product ID	Serial Number	Device IP	Configure	Image	Status	Last Contact Time
<input checked="" type="checkbox"/>	RV340W-A-K9	PSZ20301D5X	24.230.59.155	<input type="text" value="RV340_configuration_2018"/>	<input type="text"/>	PENDING	2018-12-11 13:23:55 UTC

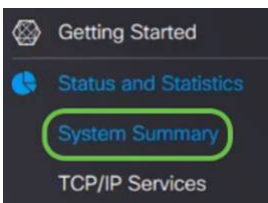
Configuring PnP Redirect

By default, PnP is enabled on the RV34x routers and is set to Auto discover the PnP server. This can occur from a Dynamic Host Configuration Protocol (DHCP) server or Domain Name System (DNS) query or Cisco's device help website.

PnP auto redirect allows you to use Cisco's device help website to allow PnP enabled devices from multiple networks to connect automatically to the desired PnP server. You will be able to handle the configurations and images of a large number of devices remotely.

To configure the PnP auto redirect, perform the following steps.

Step 1. Login to the web utility of the router. Navigate to **System Summary**.



Step 2. Obtain the *Serial number* and model number (*PID VID*) of the router from the *System Information*.

System Summary

System Information	
Host Name:	router445A0A
Serial Number:	PSZ20301D5X
System Up Time:	0 Days 1 Hours 12 Minutes 11 Seconds
Current Time:	2018-Oct-18, 09:42:12 CST
PID VID:	RV340W-A-K9 PP

Step 3. Go to Cisco Software Central website. (<https://software.cisco.com>)

Step 4. Log in using your Cisco Smart Account and navigate to *Plug and Play Connect*.



Network Plug and Play

Plug and Play Connect

Device management through Plug and Play Connect portal

[Learn about Network Plug and Play](#)

Training, documentation and videos

Step 5. Navigate to **Controller Profiles** to add details regarding the server.

[Cisco Software Central](#) > **Plug and Play Connect**

Plug and Play Connect

Devices | **Controller Profiles** | Network | Certificates

Step 6. Click on *Add Profiles...*

Devices | **Controller Profiles** | Network | Certificates

+ Add Profile...	Edit Selected...	Delete Selected
<input type="checkbox"/>	Profile Name	Controller Type
	<input type="text"/>	Any

Step 7. Select *Controller Type* as **PNP SERVER** and click **Next**.

Add Controller Profile ×

STEP 1
Profile Type

...
Conditional Steps

Choose the type of Profile to be created:

* Controller Type: 1

2

Cancel **Next**

Step 8. Enter the mandatory fields that includes *Profile Name*, *Primary Controller* (to include the URL) and upload the *Secure Sockets Layer (SSL) Certificate*.

Profile Settings:

* Profile Name:

Description:

Default Profile:

* Primary Controller:

Host Name: Protocol: Port:

* SSL Certificate:

Example of a set *Controller Profile* will be as follows:

Controller Profile	
Profile Name:	ANTHONY-FINDIIT
Description:	FindIT.sbcenter.net
Deployment Type:	onPrem
Primary Domain Name:	findit.sbcenter.net
Primary Protocol:	https
Primary Port:	443
Primary Certificate:	Uploaded
Controller Type:	PNP SERVER

Step 9. Once the Profile is built, you can add the device. To do this navigate to *Devices* and click on **Add Devices...**

Devices | Controller Profiles | Network | Certificates

<input type="checkbox"/>	Serial Number	Base PID
	<input type="text"/>	<input type="text"/>

Step 10. Add devices using either *Import using a CSV file* or *Enter Device info manually*.

Note: If you have a large number of devices to add, use *Import using a CSV file* option.

In this example, **Enter Device info manually** is chosen.

Click **Next**.

Add Device(s)

STEP 1 Identify Source | STEP 2 Identify Device(s) | STEP 3 Review & Submit | STEP 4 Results

Identify Source [Download Sample CSV](#)

Select one of the following two options to add devices:

Import using a CSV file

Enter Device info manually

Step 11. Click on **Identify Device...**

Add Device(s)

STEP 1 ✓
Identify Source

STEP 2
Identify Device(s)

Identify Devices

Enter device details by clicking Identify Device button and click Next to p

+ Identify Device...

Step 12. Enter the *Serial Number*, *Base PID*, *Controller Profile* information and *Description*.

Click **Save**.

Identify Device

Serial Number 1 PSZ2

Base PID 2 RV340W-A-K9-NA

Controller Profile 3 ANTHONY-FINDIIT

Description 4 RV340W - Anthony Lab

Cancel Save

Step 13. Review the settings and click **Submit**.

Add Device(s)

STEP 1 ✓ Identify Source

STEP 2 ✓ Identify Device(s)

STEP 3 Review & Submit

STEP 4 Results

Review & Submit
Submit action will submit following 1 newly identified device(s).

Row	Serial Number	Base PID	Certificate Serial Number	Controller	Description
1	PSZ20301DSX	RV340W-A-K9-NA	--	ANTHONY-FINDIIT	RV340W - Anthony Lab

Showing 1 Record

Cancel Back Submit

Step 14. A result screen will appear about the successful addition of the device. Click **Done**.

Add Device(s)

STEP 1 ✓ Identify Source

STEP 2 ✓ Identify Device(s)

STEP 3 ✓ Review & Submit

STEP 4 Results

Attempted to add 1 device(s)

✓ Successfully added 1 device(s) !
It may take a few minutes for the new devices to show up in the Devices table. Please wait a minute or two and refresh the page as needed.

Done

Step 15. Shortly after the router will check in to the server. Periodically the router will connect

in to the server after reboot. So redirection is not required. This will take a few minutes.

Plug and Play Connect

[Feedback](#) [Support](#) [Help](#)

[Devices](#) | [Controller Profiles](#) | [Network](#) | [Certificates](#)

<input type="checkbox"/>	Serial Number	Base PID	Product Group	Controller	Last Modified	Status	Actions
<input type="checkbox"/>	PS220301DSX RV340W - Anthony Lab	RV340W-A-K9-NA	Router	ANTHONY-FINDIT	2018-Oct-18, 15:44:59	Pending (Redirection)	Show Log...

When the router contacts the server, you will see the following screen.

Plug and Play Connect

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<input type="checkbox"/>	Serial Number	Base PID	Product Group	Controller	Last Modified	Status	Actions
<input checked="" type="checkbox"/>	PS220301DSX RV340W - Anthony Lab	RV340W-A-K9-NA	Router	ANTHONY-FINDIT	2018-Oct-18, 15:49:30	Contacted	Show Log...

You will get the following screen once the redirect is successful.

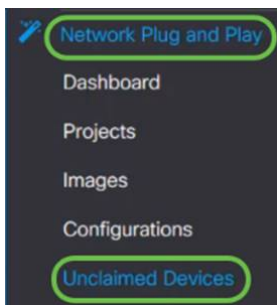
Plug and Play Connect

[Feedback](#) [Support](#) [Help](#)

[Devices](#) | [Controller Profiles](#) | [Network](#) | [Certificates](#)

<input type="checkbox"/>	Serial Number	Base PID	Product Group	Controller	Last Modified	Status	Actions
<input type="checkbox"/>	PS220301DSX RV340W - Anthony Lab	RV340W-A-K9-NA	Router	ANTHONY-FINDIT	2018-Oct-18, 15:50:42	Redirect Successful	Show Log...

Step 16. To see if the device has checked in to the FindIT Manager, go to FindIT Manager. Navigate to **Network Plug and Play > Unclaimed Devices**.



Step 17. See that the device had checked in to the FindIT manager. You can then manage the configurations or images for the RV34x.

<input type="checkbox"/>	Product ID	Serial Number	Device IP	Configure	Image	Status
<input type="checkbox"/>	RV340W-A-K9	PS220301DSX	24.230.59.155			PENDING

Conclusion

You should now have successfully configured PnP on the RV34x series routers.

If you want to learn more about FindIT and Network PnP, click [here](#).

For further information on how to request a smart account, click [here](#).

To learn more about registering FindIT Network Manager to Cisco Smart Account, click [here](#).

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