ENTERPRISE & MOBILITY

Deploying Brocade Mobility Products with the Brocade FastIron CX Series

Step-by-step guide from unpacking Brocade Mobility controllers and access points to configuring devices and setting up wireless connectivity.
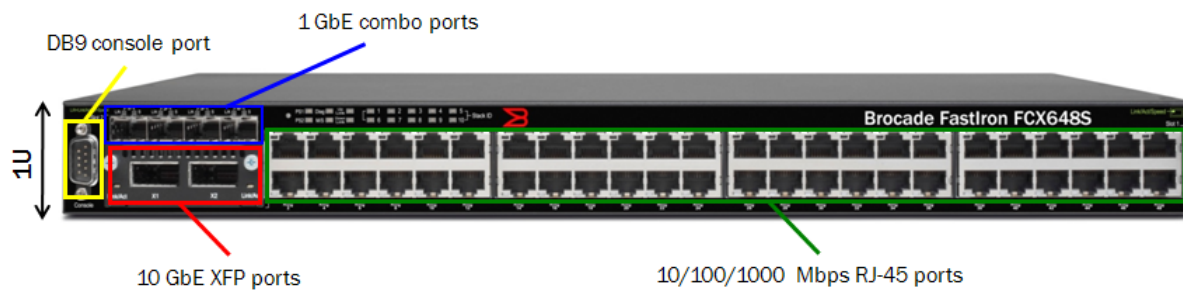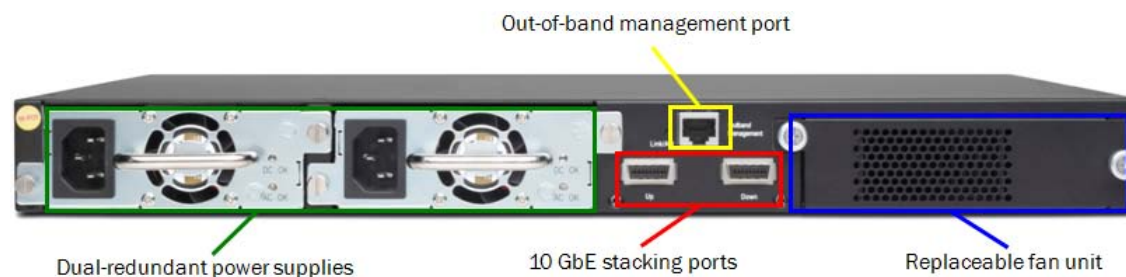
BROCADE

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BROCADE PRODUCTS OVERVIEW

Brocade FastIron CX Series: FCX624S-HPOE

- Compact 1U form factor

- 24 or 48 10/100/1000 Mbps RJ-45 ports, with or without PoE/PoE+

- Four GbE SFP combo ports

- Two optional 10 GbE XFP ports

- DB9 console port for management

- LEDs for port status, stack member ID, and more

- 16 dedicated GbE stacking ports

- Optional second hot-swappable, redundant power supply

- Replaceable fan unit providing side-to-rear airflow

- 10/100/1000 out-of-band management port

RFS6000 Controller

- Mid to large enterprises

- 48 Access Points (APs) per switch

- 256 Adptive Access Points (AAPs) per switch

- 576 APs per cluster

- 3,072 AAPs per cluster

- Expansion slots for 3G/4G wireless backhaul and voice

- 2,000 – 20,000 users

RFS7000 Controller

- Large enterprises and data centers

- 256 Access Points (APs) per switch

- 1,024 AAPs per switch

- 3,072 APs per cluster

- 12,280,072 AAPs per cluster

- 8,000 – 96,000 users

For both controllers, clustering provides:

- Seamless Layer 2/3 mobility between RF switches

- Smart license sharing

- Dynamic AP load balancing

- AP steering

- High Availability (HA) during RF switch/network failure (manual or automatic reversion)

- Increased aggregate throughput/scaling

Centralized configuration is performed via a cluster Command-Line Interface (CLI) and Web interface

State information exchange is provided for:

- AP and MU distribution

- Identify unauthorized APs

- Smart RF

- Integrated DHCP

Brocade Mobility AP300

- Thin indoor access point

- Single 802.11b/g or dual-band 802.11a/b/g radios

- External antenna support

- Deployed with a centralized wireless controller

- WIPS sensor mode

Brocade Mobility AP7131

- Full-feature indoor access point

- Dual-band 802.11a/b/g/n radios

- Standalone or distributed with a centralized wireless controller

- Wireless mesh support

- WIPS sensor mode

Brocade Mobility AP5181

- Full-feature, hardened access point

- Designed for harsh environments

- Dual-band 802.11a/b/g radios

- External antenna support

- Standalone or distributed with a centralized wireless controller

- Wireless mesh support

- WIPS sensor mode

Motorola AirDefense

- Centralized, hardened appliance

- Protection for WLAN infrastructure and devices

- Secure Layer 3 connections between sensors and appliance

- Minimal WAN bandwidth needed by sensors: less than 3 Kbps

- Two types of sensors

  - Dedicated sensors are separate devices; use one for every 3 to 5 APs

  - Integrated sensors are built into Brocade Mobility access points

- All sensors provide 24x7 protection for gap-free security
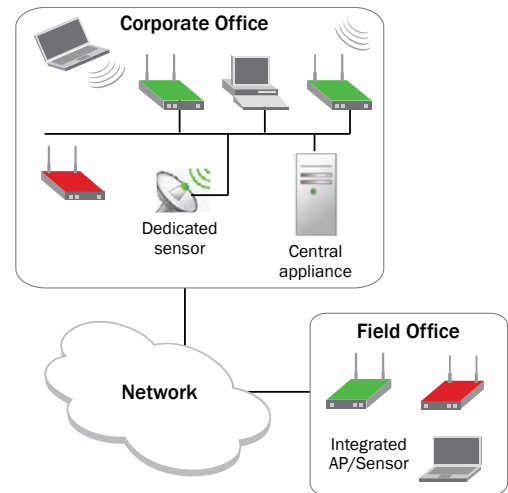
NOTE: In the illustration, red is used to flag a rogue AP.

DESIGN EXAMPLE
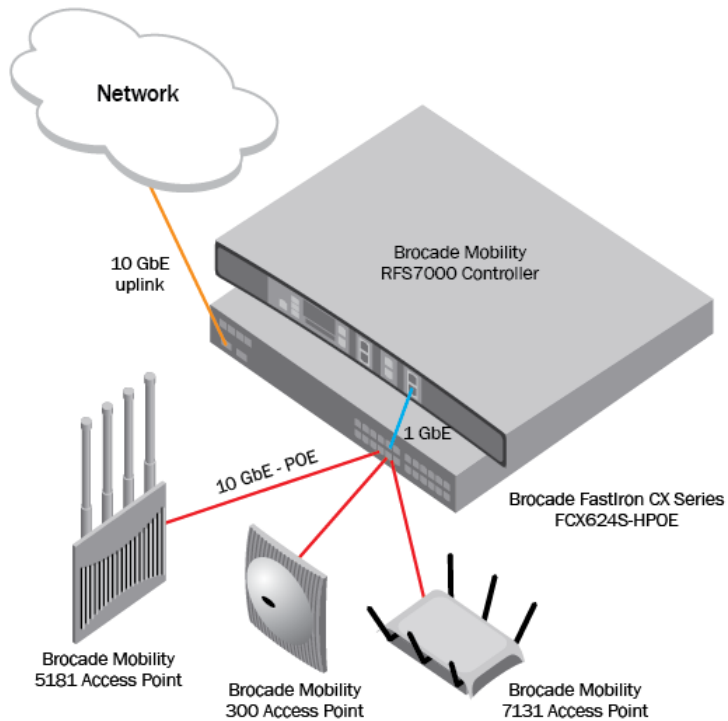
SERVER REQUIREMENTS

Hardware:

- Windows Server 2003, 2008, or XP

- Intel Dual CPU Core2 duo 2.4GHz or equivalent

- 4 GB memory

- 40 GB disk space

System Services:

- DHCP Server

- Domain Name Server (DNS)

- Microsoft Explorer

- Mozilla Firefox

- Console Port

- Ethernet connectivity

WHAT'S IN THE BOX

Brocade FCX 624S-HPOE

- Brocade FastIron CX device

- 115V AC power cable (for AC sourced devices)

- Rack-mount brackets

- Warranty card

- A straight-through EIA or TIA DB-9 serial cable (F/F).

Brocade RFS7000

- Mobility RFS7000 Controller with rack brackets installed

- Console cable

- *Deploying Brocade Mobility Products with the Brocade FastIron CX Series* (this document)

- China RoHS compliance document

Brocade AP300 (internal antenna)

- Brocade Mobility 300 antenna

- 2 x screws

- 2 x wall anchors

- *Quick Installation Guide* (hardware only, no configuration)

Brocade AP7131

- Mobility 7131 model access point (accessories depend on SKU ordered)

- *Deploying Brocade Mobility Products with the Brocade FastIron CX Series* (this document)

- Wall mount screw and anchor kit

- Accessories Bag (4 x rubber feet, LED light pipe, badge with label for above-the-ceiling installation)

- China RoHS compliance addendum

Brocade AP5181

- Mobility 5181 802.11 a+bg dual-radio access point

- *Deploying Brocade Mobility Products with the Brocade FastIron CX Series* (this document)

- Set of cable connectors

- 3 x antenna connector dust covers

- 2 x connector cover AP67 jacks, plus chain_LTW-M9/14-SB

- Waste Electrical and Equipment (WEEE) addendum

CONFIGURING WINDOWS SERVICES

Step 1: Set up DNS

1. Go to the Windows **Configure Your Server** wizard.

2. Enable **DNS Server**.

3. Create the **domain**.

4. Add **RFS7000** to the forward lookup table.

Step 2: Set up DHCP

1. Go to the Windows **Configure Your Server** wizard.

2. Enable **DHCP Server**.

3. Create reservations for **RFS7000** and **APs**.

Step 3: Configure IE for RFS7000 and AP Web servers

1. Open an IE browser window.

2. Go to **Tools > Internet Options > Advanced**.

3. Deselect **Use HTTP 1.1**.

CONFIGURING THE BROCADE FCX 624S-HPOE SWITCH

Step 1: Provide power to the switch

Step 2: Connect to the console port interface

1. Connect a PC or terminal to the serial port of the system using a straight-through cable. The serial port has a male DB-9 connector. **NOTE:** You need to run a terminal emulation program on the PC.

2. Launch the terminal emulation program and set the following session parameters:

    -   Baud: 9600 bps

    -   Data bits: 8

    -   Parity: None

    -   Stop bits: 1

    -   Flow control: None

NOTE: The EIA or TIA 232 serial communication port serves as a connection point for management by a PC or SNMP workstation. Brocade devices come with a standard male DB-9 connector

Step 3: Basic switch configuration

1. Enter Privileged Mode:

    FCX _SW>
    FCX _SW#

2. Enter configuration mode:

    FCX _SW#conf t
    FCX _SW(config)#

3.   Configure the basics.

   a.   Hostname:

        CX_SW(config)#hostname RSL_RACK_1_SW

   b.   Banner:

        RSL_RACK_1_SW(config)#banner Wireless Lab

4.   Set the management VLAN IP address for Telnet.

   a.   Set VLAN 1:

        RSL_RACK_1_SW(config)#vlan 1
        RSL_RACK_1_SW(config-vlan-1)#

   b.   Enable management VLAN:

        RSL_RACK_1_SW(config-vlan-1)#management-vlan

   c.   Enable telnet on management VLAN1:

        RSL_RACK_1_SW(config)#telnet server enable vlan 1

   d.   Set the Telnet password:

        RSL_RACK_1_SW(config)#enable telnet password *password*

5.   Set the default gateway:

     RSL_RACK_1_SW(config)#vlan 1
     RSL_RACK_1_SW(config-vlan-1)#default-gateway *10.1.1.1 1*

Step 4: Configure VLANs

1.   Create a wireless VLAN:

     RSL_RACK_1_SW(config)#vlan 20
     RSL_RACK_1_SW(config-vlan-20)#

2.   Tag wireless VLAN ports:

     RSL_RACK_1_SW(config-vlan-20)#tagged ethernet *1/1/20*

Step 5: Configure Interfaces for POE

1. Enter the interface connected to the AP:

    RSL_RACK_1_SW(config)#int eth 1/1/20
    RSL_RACK_1_SW(config-if-e1000-1/1/20)#

2. Provide a port name description for what is connected:

    RSL_RACK_1_SW(config-if-e1000-1/1/20)#port-name *Connected to BR-AP7131*

3. Enable the port POE:

    RSL_RACK_1_SW(config-if-e1000-1/1/20)#inline power

CONFIGURING THE BROCADE RFS7000 CONTROLLER

Step 1: Provide power to the controller

Step 2: Set up the controller console port

To add the Brocade Mobility RFS7000 Controller to the network and prepare it for initial configuration:

1. Using the console cable provided, connect the Mobility RFS7000 Controller serial port to an RS-232 (DB-9) serial port on a separate computer (the "configuration computer").

2. On the configuration computer, configure a terminal emulation application (such as HyperTerminal):

    -   19200bps transfer rate

    -   8 data bits

    -   No parity

    -   1 stop bit

    -   No flow control

    -   No hardware compression

Step 3: Set the IP address for the controller

1. Connect to the RFS7000 console port.

2. Initial login:

    -   login: cli

    -   User Access Verification

    -   Username: admin

    -   Password: admin123

    -   Brocade WLAN Controller

    -   BR-RFS7000>

3. Enter Privileged Mode

    BR-RFS7000>enable
    BR-RFS7000#

4.   Enter Configuration Mode:

BR-RFS7000#conf t
Enter configuration commands, one per line. End with CNTL/Z.
BR-RFS7000(config)#

5.   Change the host name:

BR-RFS7000(config)#hostname *RSL_BR-RFS7000*
RSL_BR-RFS7000(config)#

6.   Add the management IP address to VLAN 1:

RSL_BR-RFS7000(config)#int vlan 1
RSL_BR-RFS7000(config-if)#management

-    For DHCP (default): RSL_BR-RFS7000(config-if)#ip address dhcp
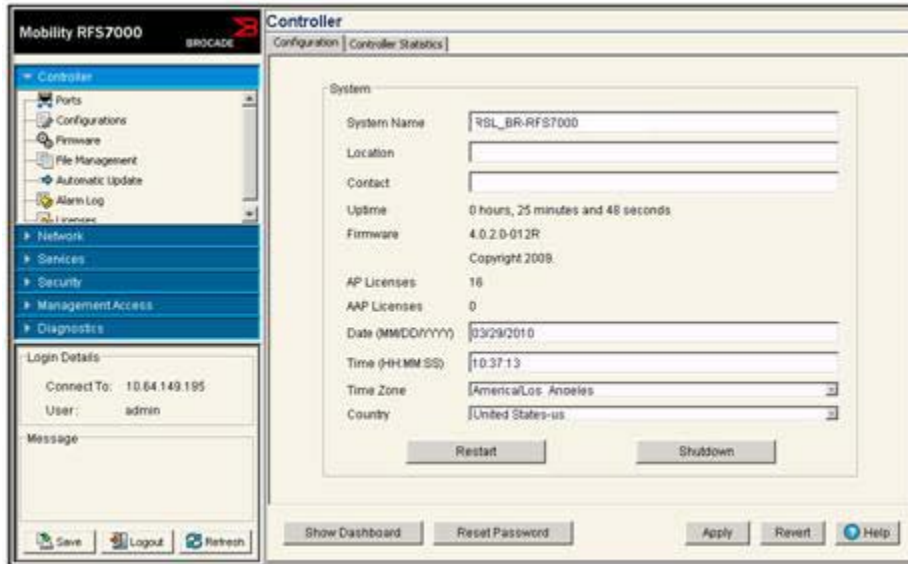
-    For Static IP: ip address *10.1.1.2/24*

Step 4: Basic controller configuration

1.   Connect to the RFS7000 with HTTP.

a.   Open IE Explorer (HTTP 1.1 disabled) with the IP address learned from DHCP or set it statically
(http://10.1.1.2/).

b.   Enter a user name (admin) and password (admin123).

2.   Set the controller information (location/contact/time).

3.   Obtain an AP license key for AP adoption. You will need both the RFS7000 serial # and transaction key:

   a.   Log in to the Brocade License Portal.

   b.   Select **License Management > License Generation with Transaction Key**.

   c.   Enter the required information, Serial Number as Unique ID, and Transaction Key. Click **Add** and click the End User Agreement radio button.

   d.   Click **Generate**.

4.   Add the license to the RFS7000.
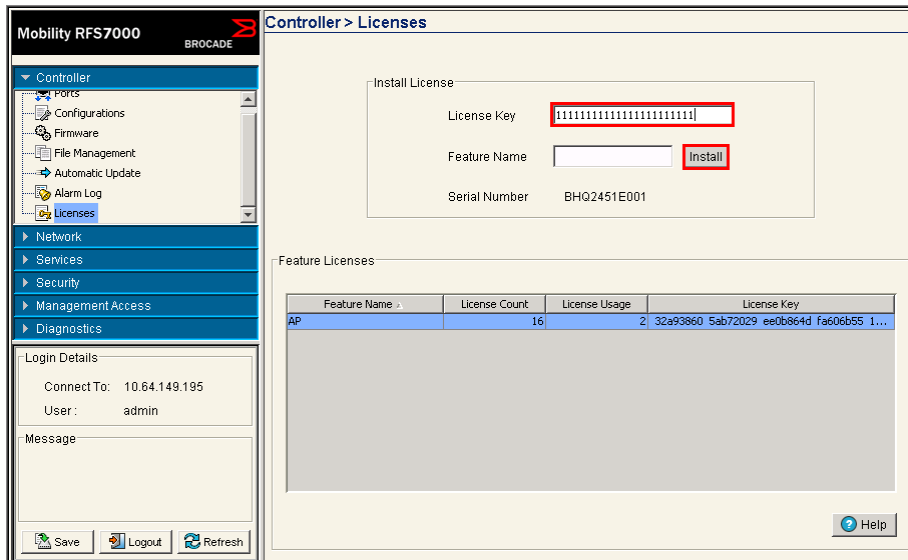
5. Set the PSK for advanced AP adoption:

    e. Go to the **Network > Access Point > Secure WiSPe** tab.

    f. Enter a default pre-shared secret.
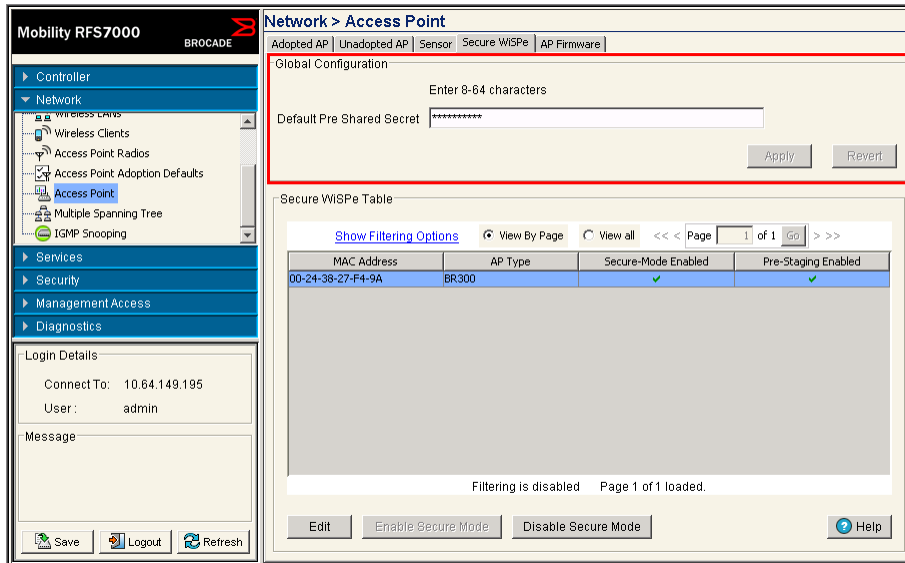
This completes the basic configuration for AP adoption.

CONFIGURING ACCESS POINTS

Brocade AP300

Step 1: Find the AP300 MAC address

Step 2: Provide power to the AP300

Step 3: Adopt AP300 in RFS7000

1. The Brocade AP300 will be automatically detected by the RFS7000. Go to **Network > Access Point** and click the **Unadopted AP** tab.

2. Referencing the correct MAC address, select the AP300 to adopt and click **Adopt**. Once the AP has been adopted it can be found in the Adopted Tab.

Brocade AP7131/AP5181

Step 1: Provide power to the access point

Step 2: Connect to the console using these console terminal settings

-   19200 bps transfer rate

-   8 data bits

-   No parity

-   1 stop bit

-   No flow control

-   No hardware compression

Step 3: Set the IP address

1. Connect to the AP console port.

2. Initial login procedure:

    -   login: admin

    -   Password: admin123

    -   admin>

3. Enter the network submenu:

    admin>network
    admin(network)>

4. Enter the LAN submenu:

    admin(network)>lan
    admin(network.lan)>

5. Enable LAN1:

    admin(network.lan)>set lan 1 enable
    admin(network.lan)>

6. Set the access point as a DHCP client:

    admin(network.lan)>set ip-mode 1 client

    If you are using a DHCP client, go to Step 4.

7. Set a static IP address:

    a. Set interface IP mode to static & assign IP address

        admin(network.lan)>set ip-mode 1 static
        admin(network.lan)>set ipadr 1 *10.1.1.3*

    b. Set Default Gateway IP address

        admin(network.lan)>set dgw 1 *10.1.1.254*

    c. Set Domain Name

        admin(network.lan)>set domain 1 *SEHD.com*
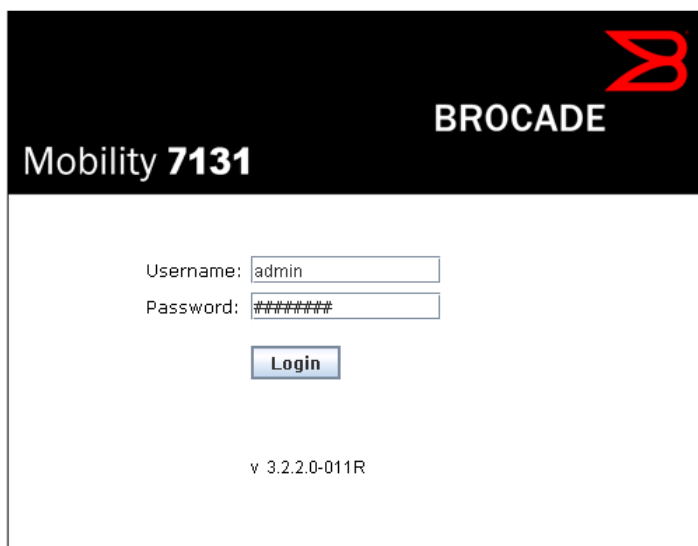
    d. Set Domain Name Server

        admin(network.lan)>set dns 1 1 *10.1.1.100*

Step 4: Configuring controller pairing (DHCP not used)

1. Connect to the RFS7000 with HTTP:

    a. Open IE Explorer (with HTTP 1.1 disabled) with the IP address learned from DHCP or set statically (http://10.1.1.3/).

    b. Enter the user name (admin) and password (admin123).

2. Click **Adaptive AP Setup**:

    a. Using DNS, enter the FQDN of the controller.

    b. Enter the controller IP addresses.

    c. Click the **Auto Discovery Enable** checkbox.

    NOTE: When the Auto Discovery Enable checkbox is selected, the access point begins the controller discovery (adoption) process using DHCP first, then a user-provided domain name, and finally using a static IP addresses. This setting is disabled by default. When disabled, the AP functions as a standalone access point without trying to discover (adopt) a controller. Consequently, the access point will not be able to obtain an AAP configuration.

    d. Enter the PSK for the controller.
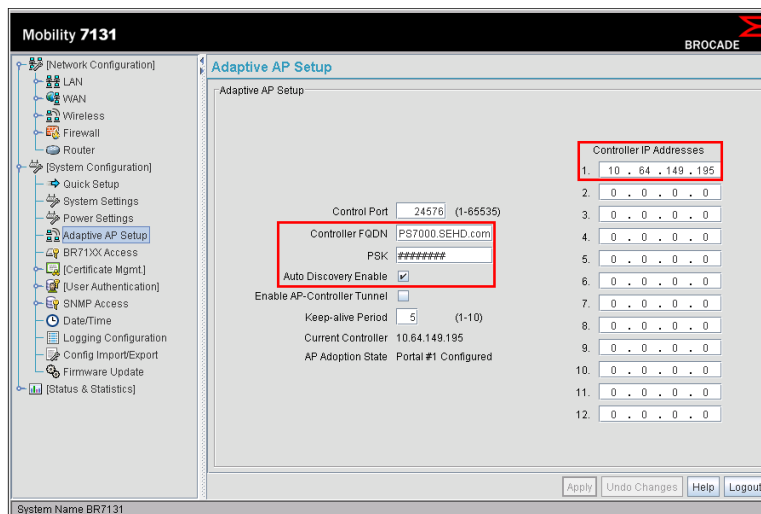
Step 5: Adopt AP7131 in the RFS7000

1. Go to **Network > Access Point** and click the **Unadopted AP** tab.

2. Referencing the correct MAC address, select the correct AP to adopt and click **Adopt**. Once the AP has been adopted, it can be found in the Adopted tab.

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