

# **Access Point and Bridge Basic Configuration**

# Objectives

**Upon completion of this module, you will be able to perform the following tasks:**

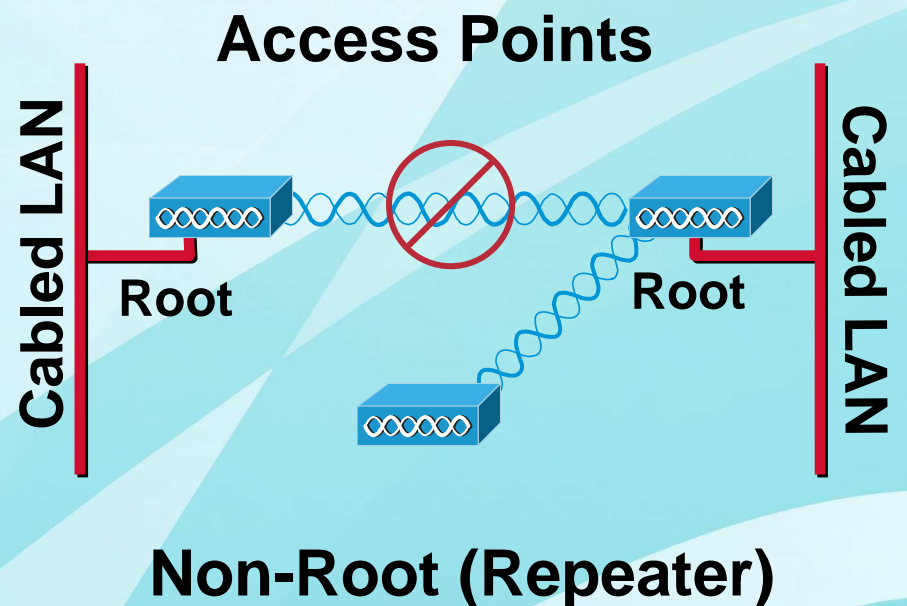
- Explain the difference between a root and non-root mode access point.
- Assign an IP Address to an access point using the IPSU.
- Configure various parameters on an access point.

# Root Mode

- Every network system has some type of hierarchy- In Cisco's RF system this is the function of the ROOT parameter.
- It acts like the RF traffic cop by:
  - Controlling association to and from other devices
  - Controlling roaming and handoffs

# Access Point - Root Mode

- Root (Access point)
  - Accepts association and communicates with ONLY clients and repeaters
  - Will NOT communicate with other Root devices
  - Any number of Root access points per RF system
- Non-Root (Repeater)
  - Associates and communicates to a Root=ON or another Root=OFF that is associated to a Root=ON
  - Accepts association and communicates with ONLY clients and repeaters, as long as it is registered to a Root=ON



# **Access Point LEDs**

# Front Cover LED's

- Status Lights
- Ethernet
- Status
- Radio Activity

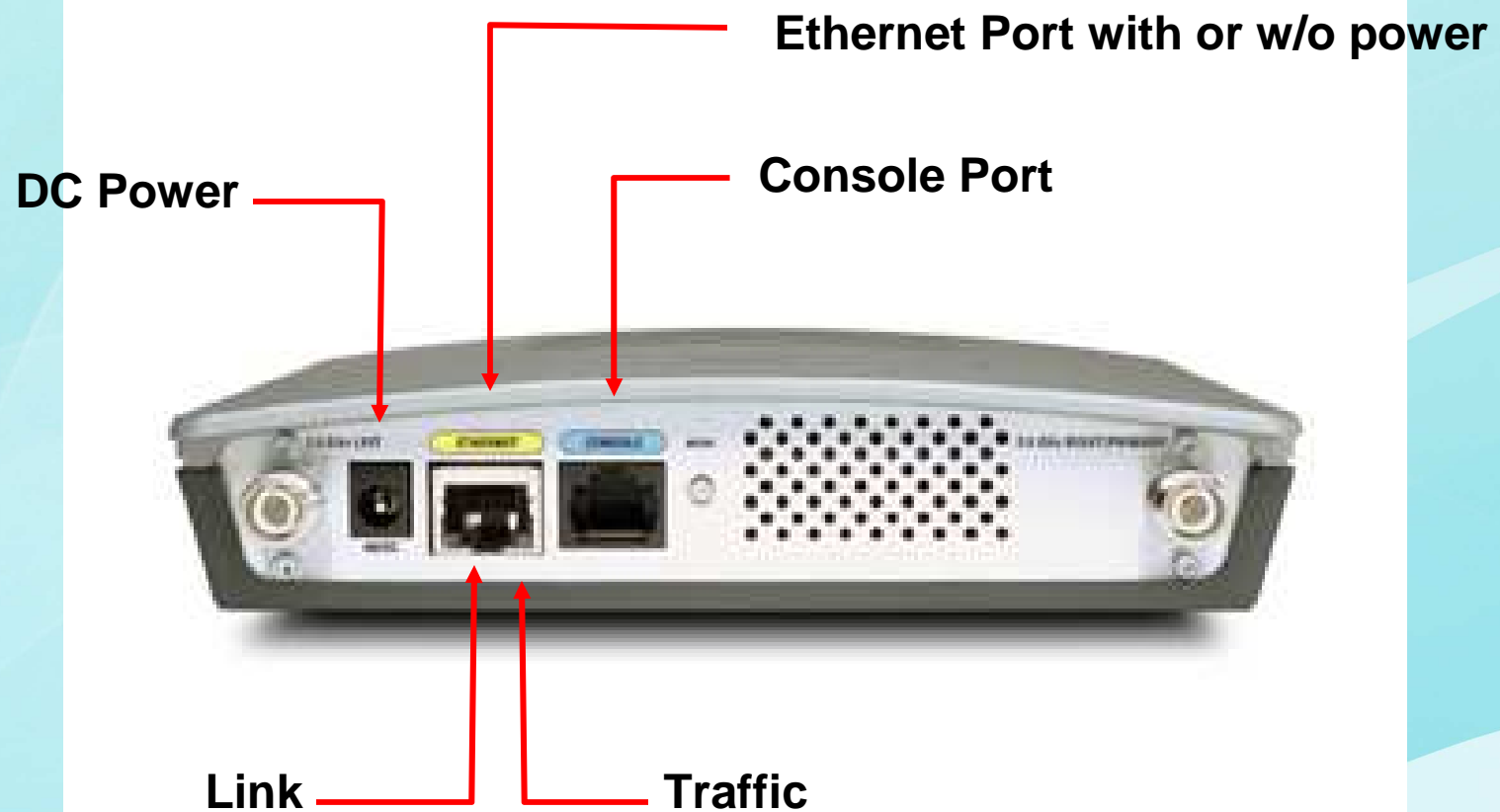
**Ethernet Activity**

**Status**

**Radio Activity**



# 1200 Series Access Point Ports

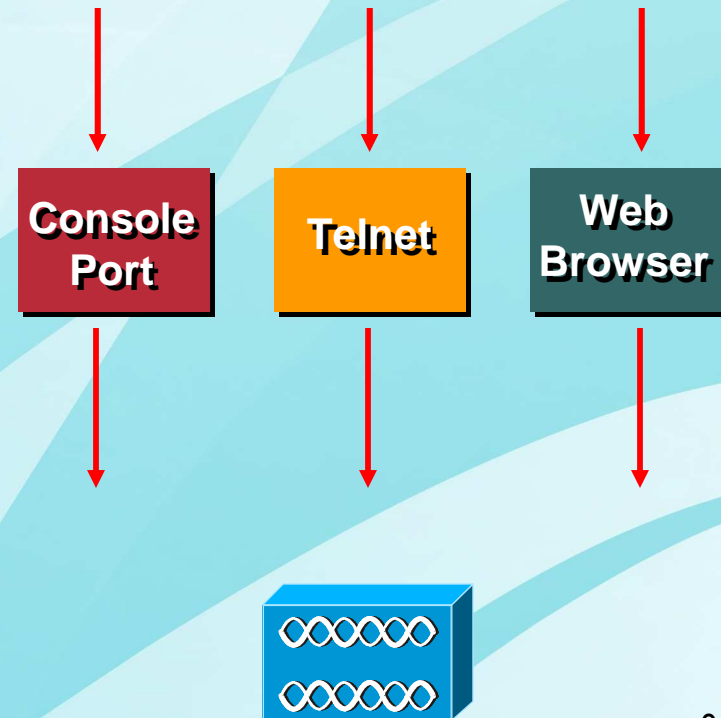


# Connecting to the Access Point

- **Console port**
  - Requires roll-over cable
- **Telnet**
  - Requires an IP address
- **Web Browser**
  - Requires an IP address
  - Preferred connection

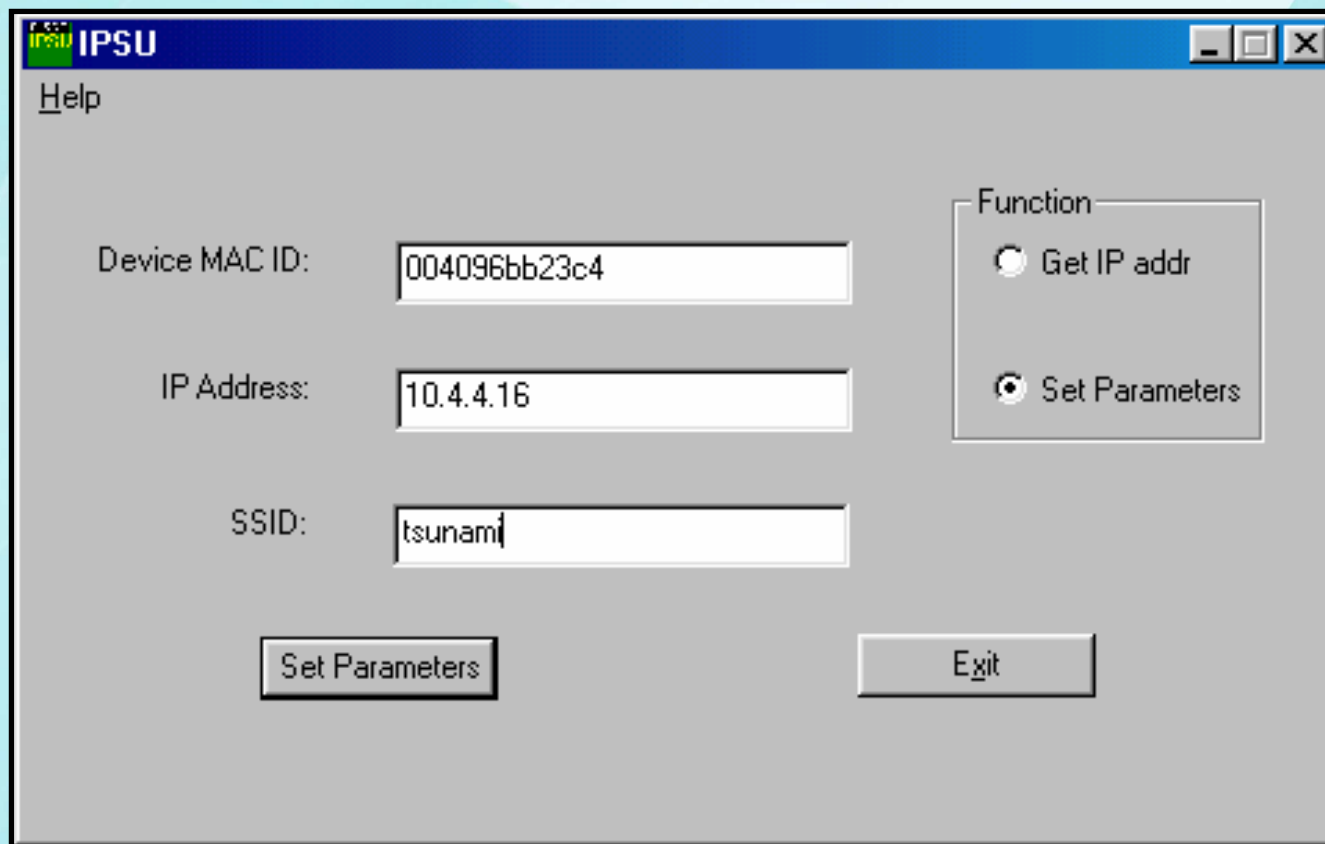
## To set an IP address:

- Use DHCP
- Use IPSU
- Set using Console port





# IPSU



The image shows a screenshot of the IPSU application window. The window has a blue title bar with the text "IPSU" and standard Windows window controls (minimize, maximize, close). Below the title bar is a menu bar with a single item "Help". The main area of the window is light gray and contains three text input fields on the left and a function selection box on the right. The input fields are labeled "Device MAC ID:", "IP Address:", and "SSID:". The "Device MAC ID" field contains the text "004096bb23c4", the "IP Address" field contains "10.4.4.16", and the "SSID" field contains "tsunami". The function selection box, titled "Function", contains two radio button options: "Get IP addr" and "Set Parameters". The "Set Parameters" option is selected. At the bottom of the window, there are two buttons: "Set Parameters" on the left and "Exit" on the right.

IPSU

Help

Device MAC ID: 004096bb23c4

IP Address: 10.4.4.16

SSID: tsunami

Function

☐ Get IP addr

☒ Set Parameters

Set Parameters Exit

# Express Setup Menu

System Name:	AP1200-d268e6		
MAC Address:	00:09:e8:d2:68:e6		
System Serial Number:	VDF0627Q03U		
<u>C</u> onfiguration Server Protocol:	DHCP ▾		
Default IP Address:	10.0.0.1		
Default IP Subnet Mask:	255.255.255.0		
Default <u>G</u> ateway:	255.255.255.255		
AP Radio: Internal:			
Service Set ID (SSID):	tsunami	<a href="#">more...</a>	
Role in Radio Network:	Root Access Point ▾		
Optimize Radio Network For:	<input checked="" type="radio"/> Throughput <input type="radio"/> Range <input type="radio"/> Custom		
Ensure Compatibility With:	<input type="checkbox"/> 2Mb/sec Clients <input type="checkbox"/> non-Aironet 802.11		
AP Radio: Module:			
Service Set ID (SSID):	tsunami	<a href="#">more...</a>	
Role in Radio Network:	Root Access Point ▾		
Optimize Radio Network For:	<input checked="" type="radio"/> Default <input type="radio"/> Throughput <input type="radio"/> Range <input type="radio"/> Custom		
Ensure Compatibility With:	<input type="checkbox"/> non-Aironet 802.11		
<u>S</u> ecurity Setup			
<u>S</u> NMP Admin. Community:			
Apply OK Cancel Restore Defaults			

# Express Setup Menu

# Main Menu (Home)

Current Associations				
<u>Clients: 1 of 1</u>		<u>Repeaters: 0 of 0</u>		<u>Bridges: 0 of 0</u>
<u>APs: 1</u>				
Recent Events				
Time	Severity	Description		
00:47:37	<a href="#">Info</a>	Station [YourLastName]004096416bd4 Reassociated		
00:47:37	<a href="#">Info</a>	Disassociating [YourLastName]004096416bd4, reason "Not Associated"		
00:47:35	<a href="#">Info</a>	Station [YourLastName]004096416bd4 roamed		
00:47:35	<a href="#">Info</a>	Disassociating [YourLastName]004096416bd4, reason "Sender is Leaving (has left) BSS"		
00:47:18	<a href="#">Info</a>	Station [YourLastName]004096416bd4 Associated		
Network Ports				<u>Diagnostics</u>
Device	Status	Mb/s	IP Addr.	MAC Addr.
<u>Ethernet</u>	No Link	0.0	10.0.0.1	0009e8d2 68e6
<u>AP Radio: Internal</u>	Up	11.0	10.0.0.1	0009e8d2 68e6
<u>AP Radio: Module</u>	Up	54.0	10.0.0.1	0009e8d2 68e6

# Setup of Network Ports

# Main Setup

<u>Express Setup</u>				
Associations				
<u>Display Defaults</u>		<u>Port Assignments</u>	<u>Advanced</u>	
<u>Address Filters</u>	<u>Protocol Filters</u>	<u>VLAN</u>	<u>SSIDs: Int, Mod</u>	
Event Log				
<u>Display Defaults</u>	<u>Event Handling</u>		<u>Notifications</u>	
Services				
<u>Console/Telnet</u>	<u>Boot Server</u>	<u>Routing</u>	<u>Name Server</u>	
<u>Time Server</u>	<u>FTP</u>	<u>Web Server</u>	<u>SNMP</u>	
<u>Cisco Services</u>	<u>Security</u>	<u>Accounting</u>		
Network Ports			<u>Diagnostics</u>	
<u>Ethernet</u>	<u>Identification</u>	<u>Hardware</u>	<u>Filters</u>	<u>Advanced</u>
<u>AP Radio: Internal</u>	<u>Identification</u>	<u>Hardware</u>	<u>Filters</u>	<u>Advanced</u>
<u>AP Radio: Module</u>	<u>Identification</u>	<u>Hardware</u>	<u>Filters</u>	<u>Advanced</u>

# Ethernet Identification

Primary Port?	<input checked="" type="radio"/> yes	<input type="radio"/> no	Adopt Primary Port Identity?	<input checked="" type="radio"/> yes	<input type="radio"/> no
MAC Addr.:	00:09:e8:d2:68:e6				
System Serial Number:	VDF0627Q03U				
Default IP Address:	<input type="text" value="10.0.0.1"/>				
Default IP Subnet Mask:	<input type="text" value="255.255.255.0"/>				
Current IP Address:	10.0.0.1				
Current IP Subnet Mask:	255.255.255.0				
Maximum Packet Data Length:	1504				
<div>Apply OK Cancel Restore Defaults</div>					

## Access Point Radio: Internal Identification

Primary Port? <input type="radio"/> yes <input checked="" type="radio"/> no		Adopt Primary Port Identity? <input checked="" type="radio"/> yes <input type="radio"/> no	
MAC Addr.:	00:01:64:47:48:2b		
Radio Serial Number:	VEN06040198		
Default IP Address:	<input type="text" value="10.0.0.4"/>		
Default IP Subnet Mask:	<input type="text" value="255.255.255.0"/>		
Current IP Address:	10.0.0.1		
Current IP Subnet Mask:	255.255.255.0		
Maximum Packet Data Length:	2304		
Service Set ID (SSID):	<input type="text" value="tsunami"/>	<a href="#">more...</a>	
LEAP User Name:	<input type="text"/>		
LEAP Password:	<input type="password" value="••••••••••"/>		
Firmware Version:	5.02.03		
Boot Block Version:	1.64		
<div>Apply OK Cancel Restore Defaults</div>			



# Access Point Radio: Module Identification

Primary Port? <input type="radio"/> yes <input checked="" type="radio"/> no		Adopt Primary Port Identity? <input checked="" type="radio"/> yes <input type="radio"/> no	
MAC Addr.:	00:07:50:d5:e7:47		
Radio Serial Number:	VMS062505BY		
Default IP Address:	<input type="text" value="10.0.0.2"/>		
Default IP Subnet Mask:	<input type="text" value="255.255.255.0"/>		
Current IP Address:	10.0.0.1		
Current IP Subnet Mask:	255.255.255.0		
Maximum Packet Data Length:	2304		
Service Set ID (SSID):	<input type="text" value="tsunami"/>	<a href="#">more...</a>	
LEAP User Name:	<input type="text"/>		
LEAP Password:	<input type="password" value="••••••••••"/>		
Firmware Version:	5.02.03		
Boot Block Version:	1.59		
<div>Apply OK Cancel Restore Defaults</div>			

# Ethernet Hardware

Speed:	Auto
CAM Size:	0
Loss of Backbone Connectivity # of Secs (1-10000):	2
Loss of Backbone Connectivity Action:	No action
Loss of Backbone Connectivity SSID:	tsunami

This system supports Ethernet-inline power from powered switches. Some models of such switches do not fully support Ethernet speed auto-negotiation. Because of this, selection of "Auto" for Ethernet speed will not take effect until the next **Cold Boot** of this system.

Apply OK Cancel Restore Defaults

## Ethernet Hardware (cont.)

Speed:	Auto
CAM Size:	0
Loss of Backbone Connectivity # of Secs (1-10000):	2
Loss of Backbone Connectivity Action:	No action
Loss of Backbone Connectivity SSID:	tsunami

This system supports Ethernet-inline power from powered switches. Some models of such switches do not fully support Ethernet speed auto-negotiation. Because of this, selection of "Auto" for Ethernet speed will not take effect until the next **Cold Boot** of this system.

Apply OK Cancel Restore Defaults

## Ethernet Hardware (cont.)

Speed:	Auto
CAM Size:	0
Loss of Backbone Connectivity # of Secs (1-10000):	2
Loss of Backbone Connectivity Action:	No action
Loss of Backbone Connectivity SSID:	tsunami

This system supports Ethernet-inline power from powered switches. Some models of such switches do not fully support Ethernet speed auto-negotiation. Because of this, selection of "Auto" for Ethernet speed will not take effect until the next **Cold Boot** of this system.

Apply OK Cancel Restore Defaults

## Ethernet Hardware (cont.)

Speed:	Auto
CAM Size:	0
Loss of Backbone Connectivity # of Secs (1-10000):	2
Loss of Backbone Connectivity Action:	No action
Loss of Backbone Connectivity SSID:	tsunami

This system supports Ethernet-inline power from powered switches. Some models of such switches do not fully support Ethernet speed auto-negotiation. Because of this, selection of "Auto" for Ethernet speed will not take effect until the next **Cold Boot** of this system.

Apply OK Cancel Restore Defaults

# Access Point Radio: Internal Hardware

Service Set ID (SSID):  [more...](#)

Allow "Broadcast" SSID to Associate?: ☐ yes ☒ no

Enable "World Mode" multi-domain operation?:  ▼

Data Rates (Mb/sec):  
1.0  ▼ 2.0  ▼ 5.5  ▼ 11.0  ▼

Transmit Power:  ▼

Frag. Threshold (256-2338):  RTS Threshold (0-2339):

Max. RTS Retries (1-255):  Max. Data Retries (1-255):

Beacon Period (19-5000 Kusec):  Data Beacon Rate (DTIM):

Default Radio Channel:  ▼ In Use: 6

Search for less-congested Radio Channel?:  ▼ [Restrict Searched Channels](#)

Receive Antenna:  ▼ Transmit Antenna:  ▼

If VLANs are *not* enabled, set Radio Data Encryption through the link below. If VLANs are enabled, Radio Data Encryption is set independently for each enabled VLAN through [VLAN Setup](#).

[Radio Data Encryption \(WEP\)](#)

## Access Point Radio: Internal Hardware (cont.)

Service Set ID (SSID):  [more...](#)

Allow "Broadcast" SSID to Associate?: ☐ yes ☒ no

Enable "World Mode" multi-domain operation?:

Data Rates (Mb/sec):

1.0   2.0   5.5   11.0

Transmit Power:

Frag. Threshold (256-2338):  RTS Threshold (0-2339):

Max. RTS Retries (1-255):  Max. Data Retries (1-255):

Beacon Period (19-5000 Kusec):  Data Beacon Rate (DTIM):

Default Radio Channel:   In Use: 6

Search for less-congested Radio Channel?:   [Restrict Searched Channels](#)

Receive Antenna:   Transmit Antenna:

If VLANs are *not* enabled, set Radio Data Encryption through the link below. If VLANs *are* enabled, Radio Data Encryption is set independently for each enabled VLAN through [VLAN Setup](#).

[Radio Data Encryption \(WEP\)](#)

# Access Point Radio: Internal Hardware (cont.)

Service Set ID (SSID):  [more...](#)

Allow "Broadcast" SSID to Associate?: ☐ yes ☒ no

Enable "World Mode" multi-domain operation?:  ▼

Data Rates (Mb/sec):  
1.0  ▼ 2.0  ▼ 5.5  ▼ 11.0  ▼

Transmit Power:  ▼

Frag. Threshold (256-2338):  RTS Threshold (0-2339):

Max. RTS Retries (1-255):  Max. Data Retries (1-255):

Beacon Period (19-5000 Kusec):  Data Beacon Rate (DTIM):

Default Radio Channel:  ▼ In Use: 6

Search for less-congested Radio Channel?:  ▼ [Restrict Searched Channels](#)

Receive Antenna:  ▼ Transmit Antenna:  ▼

If VLANs are *not* enabled, set Radio Data Encryption through the link below. If VLANs *are* enabled, Radio Data Encryption is set independently for each enabled VLAN through [VLAN Setup](#).

[Radio Data Encryption \(WEP\)](#)



# Access Point Radio: Module Hardware

Service Set ID (SSID):  [more...](#)

Allow "Broadcast" SSID to Associate?: ☒ yes ☐ no

Enable "World Mode" multi-domain operation?: no

Data Rates (Mb/sec):

6.0	<input type="text" value="basic"/>	9.0	<input type="text" value="yes"/>	12.0	<input type="text" value="basic"/>	18.0	<input type="text" value="yes"/>
24.0	<input type="text" value="basic"/>	36.0	<input type="text" value="yes"/>	48.0	<input type="text" value="yes"/>	54.0	<input type="text" value="yes"/>

Transmit Power:

Frag. Threshold (256-2338):  RTS Threshold (0-2339):

Max. RTS Retries (1-255):  Max. Data Retries (1-255):

Beacon Period (19-5000 Kusec):  Data Beacon Rate (DTIM):

Default Radio Channel:  In Use: 50

Search for less-congested Radio Channel?:  [Restrict Searched Channels](#)

Receive Antenna:  Transmit Antenna:

If VLANs are *not* enabled, set Radio Data Encryption through the link below. If VLANs *are* enabled, Radio Data Encryption is set independently for each enabled VLAN through [VLAN Setup](#).

[Radio Data Encryption \(WEP\)](#)

# Access Point Radio: Module Hardware (cont.)

Service Set ID (SSID):  [more...](#)

Allow "Broadcast" SSID to Associate?: ☒ yes ☐ no

Enable "World Mode" multi-domain operation?: no

Data Rates (Mb/sec):

6.0	<input type="button" value="basic"/>	9.0	<input type="button" value="yes"/>	12.0	<input type="button" value="basic"/>	18.0	<input type="button" value="yes"/>
24.0	<input type="button" value="basic"/>	36.0	<input type="button" value="yes"/>	48.0	<input type="button" value="yes"/>	54.0	<input type="button" value="yes"/>

Transmit Power:

Frag. Threshold (256-2338):	<input type="text" value="2338"/>	RTS Threshold (0-2339):	<input type="text" value="2339"/>
Max. RTS Retries (1-255):	<input type="text" value="32"/>	Max. Data Retries (1-255):	<input type="text" value="32"/>
Beacon Period (19-5000 Kusec):	<input type="text" value="100"/>	Data Beacon Rate (DTIM):	<input type="text" value="2"/>
Default Radio Channel:	<input type="button" value="36 [5180 MHz]"/> In Use: 50		
Search for less-congested Radio Channel?:	<input type="button" value="no"/>	<a href="#">Restrict Searched Channels</a>	

Receive Antenna:       Transmit Antenna:

If VLANs are *not* enabled, set Radio Data Encryption through the link below. If VLANs *are* enabled, Radio Data Encryption is set independently for each enabled VLAN through [VLAN Setup](#).

[Radio Data Encryption \(WEP\)](#)

# Access Point Radio: Module Hardware (cont.)

Service Set ID (SSID):  [more...](#)

Allow "Broadcast" SSID to Associate?: ☒ yes ☐ no

Enable "World Mode" multi-domain operation?: no

Data Rates (Mb/sec):

6.0	<input type="text" value="basic"/>	9.0	<input type="text" value="yes"/>	12.0	<input type="text" value="basic"/>	18.0	<input type="text" value="yes"/>
24.0	<input type="text" value="basic"/>	36.0	<input type="text" value="yes"/>	48.0	<input type="text" value="yes"/>	54.0	<input type="text" value="yes"/>

Transmit Power:

Frag. Threshold (256-2338):  RTS Threshold (0-2339):

Max. RTS Retries (1-255):  Max. Data Retries (1-255):

Beacon Period (19-5000 Kusec):  Data Beacon Rate (DTIM):

Default Radio Channel:  In Use: 50

Search for less-congested Radio Channel?:  [Restrict Searched Channels](#)

Receive Antenna:  Transmit Antenna:

If VLANs are *not* enabled, set Radio Data Encryption through the link below. If VLANs *are* enabled, Radio Data Encryption is set independently for each enabled VLAN through [VLAN Setup](#).

[Radio Data Encryption \(WEP\)](#)

## Ethernet Advanced

Requested Status:	Up ▼
Current Status:	Up
Packet Forwarding:	Enabled ▼
Forwarding State:	Forwarding
Default Multicast Address Filter:	Allowed ▼
Maximum Multicast Packets/Second:	0
Default Unicast Address Filter:	Allowed ▼
<b>Always</b> unblock Ethernet when STP is disabled:	<input type="radio"/> Yes <input checked="" type="radio"/> No
Optimize Ethernet for:	Performance ▼
<input type="button" value="Apply"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Restore Defaults"/>	

## Ethernet Advanced (cont.)

Requested Status:	Up
Current Status:	Up
Packet Forwarding:	Enabled
Forwarding State:	Forwarding
Default Multicast Address Filter:	Allowed
Maximum Multicast Packets/Second:	0
Default Unicast Address Filter:	Allowed
<b>Always</b> unblock Ethernet when STP is disabled:	<input type="radio"/> Yes <input checked="" type="radio"/> No
Optimize Ethernet for:	Performance
<input type="button" value="Apply"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Restore Defaults"/>	

## Ethernet Advanced (cont.)

Requested Status:	Up
Current Status:	Up
Packet Forwarding:	Enabled
Forwarding State:	Forwarding
Default Multicast Address Filter:	Allowed
Maximum Multicast Packets/Second:	0
Default Unicast Address Filter:	Allowed
<b>Always unblock Ethernet when STP is disabled:</b>	<input type="radio"/> Yes <input checked="" type="radio"/> No
Optimize Ethernet for:	Performance

Apply OK Cancel Restore Defaults

# Access Point Radio: Internal Advanced

Requested Status:	Up ▼
Current Status:	Up
Packet Forwarding:	Enabled ▼
Forwarding State:	Forwarding
Default Multicast Address Filter:	Allowed ▼
Maximum Multicast Packets/Second:	0
Radio Cell Role:	Access Point/Root ▼
SSID for use by Infrastructure Stations (such as Repeaters):	0
Disallow Infrastructure Stations on any <i>other</i> SSID:	<input type="radio"/> yes <input checked="" type="radio"/> no
Use Aironet Extensions:	<input checked="" type="radio"/> yes <input type="radio"/> no
Classify Workgroup Bridges as Network Infrastructure:	<input checked="" type="radio"/> yes <input type="radio"/> no
Require use of Radio Firmware 5.02.03:	<input checked="" type="radio"/> yes <input type="radio"/> no
Ethernet Encapsulation Transform:	RFC1042 ▼

## Quality of Service Setup

If VLANs are *not* enabled, set the following three parameters on this page. If VLANs *are* enabled, the following three parameters are set independently for each enabled VLAN through VLAN Setup.

## Access Point Radio: Internal Advanced (cont.)

Requested Status:	Up ▼
Current Status:	Up
Packet Forwarding:	Enabled ▼
Forwarding State:	Forwarding
Default Multicast Address Filter:	Allowed ▼
Maximum Multicast Packets/Second:	0

Radio Cell Role:	Access Point/Root ▼
SSID for use by Infrastructure Stations (such as Repeaters):	0
Disallow Infrastructure Stations on any <i>other</i> SSID:	<input type="radio"/> yes <input checked="" type="radio"/> no
Use Aironet Extensions:	<input checked="" type="radio"/> yes <input type="radio"/> no
Classify Workgroup Bridges as Network Infrastructure:	<input checked="" type="radio"/> yes <input type="radio"/> no
Require use of Radio Firmware 5.02.03:	<input checked="" type="radio"/> yes <input type="radio"/> no
Ethernet Encapsulation Transform:	RFC1042 ▼

Quality of Service Setup

If VLANs are *not* enabled, set the following three parameters on this page. If VLANs *are* enabled, the following three parameters are set independently for each enabled VLAN through VLAN Setup.



## Access Point Radio: Internal Advanced (cont.)

Requested Status:	Up ▾
Current Status:	Up
Packet Forwarding:	Enabled ▾
Forwarding State:	Forwarding
Default Multicast Address Filter:	Allowed ▾
Maximum Multicast Packets/Second:	0
Radio Cell Role:	Access Point/Root ▾
SSID for use by Infrastructure Stations (such as Repeaters):	0
Disallow Infrastructure Stations on any <i>other</i> SSID:	<input type="radio"/> yes <input checked="" type="radio"/> no
Use Aironet Extensions:	<input checked="" type="radio"/> yes <input type="radio"/> no
Classify Workgroup Bridges as Network Infrastructure:	<input checked="" type="radio"/> yes <input type="radio"/> no
Require use of Radio Firmware 5.02.03:	<input checked="" type="radio"/> yes <input type="radio"/> no
Ethernet Encapsulation Transform:	RFC1042 ▾
<u>Quality of Service Setup</u>	
<p>If VLANs are <i>not</i> enabled, set the following three parameters on this page. If VLANs <i>are</i> enabled, the following three parameters are set independently for each enabled VLAN through <u>VLAN Setup</u>.</p>	

## Access Point Radio: Internal Advanced (cont.)

Requested Status:	Up ▼
Current Status:	Up
Packet Forwarding:	Enabled ▼
Forwarding State:	Forwarding
Default Multicast Address Filter:	Allowed ▼
Maximum Multicast Packets/Second:	0
Radio Cell Role:	Access Point/Root ▼
SSID for use by Infrastructure Stations (such as Repeaters):	0
Disallow Infrastructure Stations on any <i>other</i> SSID:	<input type="radio"/> yes <input checked="" type="radio"/> no
Use Aironet Extensions:	<input checked="" type="radio"/> yes <input type="radio"/> no
Classify Workgroup Bridges as Network Infrastructure:	<input checked="" type="radio"/> yes <input type="radio"/> no
Require use of Radio Firmware 5.02.03:	<input checked="" type="radio"/> yes <input type="radio"/> no
Ethernet Encapsulation Transform:	RFC1042 ▼

### Quality of Service Setup

If VLANs are *not* enabled, set the following three parameters on this page. If VLANs *are* enabled, the following three parameters are set independently for each enabled VLAN through VLAN Setup.

## Access Point Radio: Internal Advanced (cont.)

Requested Status:	Up ▼
Current Status:	Up
Packet Forwarding:	Enabled ▼
Forwarding State:	Forwarding
Default Multicast Address Filter:	Allowed ▼
Maximum Multicast Packets/Second:	0
Radio Cell Role:	Access Point/Root ▼
SSID for use by Infrastructure Stations (such as Repeaters):	0
Disallow Infrastructure Stations on any <i>other</i> SSID:	<input type="radio"/> yes <input checked="" type="radio"/> no
Use Aironet Extensions:	<input checked="" type="radio"/> yes <input type="radio"/> no
Classify Workgroup Bridges as Network Infrastructure:	<input checked="" type="radio"/> yes <input type="radio"/> no
Require use of Radio Firmware 5.02.03:	<input checked="" type="radio"/> yes <input type="radio"/> no
Ethernet Encapsulation Transform:	RFC1042 ▼

Quality of Service Setup

If VLANs are *not* enabled, set the following three parameters on this page. If VLANs *are* enabled, the following three parameters are set independently for each enabled VLAN through VLAN Setup.

# Access Point Radio: Internal Advanced (cont.)

## Lower Portion of Screen

Enhanced MIC verification for WEP:	None ▼
Temporal Key Integrity Protocol:	None ▼
Broadcast WEP Key rotation interval (sec):	0 (0=off)
To configure 802.11 Authentication, EAP, Unicast Address Filters, and the Maximum Number of Associations for this radio's Primary SSID (the default SSID), please use the link below.	
<a href="#">Advanced Primary SSID Setup more...</a>	
Preferred Access Point 1:	00:00:00:00:00:00
Preferred Access Point 2:	00:00:00:00:00:00
Preferred Access Point 3:	00:00:00:00:00:00
Preferred Access Point 4:	00:00:00:00:00:00
Radio Modulation:	Standard ▼
Radio Preamble:	Short ▼
<input type="button" value="Apply"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Restore Defaults"/>	

# Access Point Radio: Internal Advanced (cont.)

## Lower Portion of Screen

Enhanced MIC verification for WEP:

Temporal Key Integrity Protocol:

Broadcast WEP Key rotation interval (sec):  (0=off)

To configure 802.11 Authentication, EAP, Unicast Address Filters, and the Maximum Number of Associations for this radio's Primary SSID (the default SSID), please use the link below.

[Advanced Primary SSID Setup more...](#)

Preferred Access Point 1:

Preferred Access Point 2:

Preferred Access Point 3:

Preferred Access Point 4:

Radio Modulation:

Radio Preamble:

# Access Point Radio: Module Advanced

Requested Status:	Up ▼
Current Status:	Up
Packet Forwarding:	Enabled ▼
Forwarding State:	Blocking
Default Multicast Address Filter:	Allowed ▼
Maximum Multicast Packets/Second:	0
Radio Cell Role:	Access Point/Root ▼
SSID for use by Infrastructure Stations (such as Repeaters):	0
Disallow Infrastructure Stations on any <i>other</i> SSID:	<input type="radio"/> yes <input checked="" type="radio"/> no
Use Aironet Extensions:	<input checked="" type="radio"/> yes <input type="radio"/> no
Classify Workgroup Bridges as Network Infrastructure:	<input checked="" type="radio"/> yes <input type="radio"/> no
Require use of Radio Firmware 5.02.03:	<input checked="" type="radio"/> yes <input type="radio"/> no
Ethernet Encapsulation Transform:	RFC1042 ▼
<u>Quality of Service Setup</u>	
If VLANs are <i>not</i> enabled, set the following three parameters on this page. If VLANs are enabled, the following three parameters are set independently for each enabled VLAN through <u>VLAN Setup</u> .	

## Access Point Radio: Module Advanced (cont.)

Requested Status:	Up <input type="button" value="v"/>
Current Status:	Up
Packet Forwarding:	Enabled <input type="button" value="v"/>
Forwarding State:	Blocking
Default Multicast Address Filter:	Allowed <input type="button" value="v"/>
Maximum Multicast Packets/Second:	0
<hr/>	
Radio Cell Role:	Access Point/Root <input type="button" value="v"/>
SSID for use by Infrastructure Stations (such as Repeaters):	0
Disallow Infrastructure Stations on any <i>other</i> SSID:	<input type="radio"/> yes <input checked="" type="radio"/> no
Use Aironet Extensions:	<input checked="" type="radio"/> yes <input type="radio"/> no
Classify Workgroup Bridges as Network Infrastructure:	<input checked="" type="radio"/> yes <input type="radio"/> no
Require use of Radio Firmware 5.02.03:	<input checked="" type="radio"/> yes <input type="radio"/> no
Ethernet Encapsulation Transform:	RFC1042 <input type="button" value="v"/>
<hr/>	
<u>Quality of Service Setup</u>	
<p>If VLANs are <i>not</i> enabled, set the following three parameters on this page. If VLANs are enabled, the following three parameters are set independently for each enabled VLAN through <u>VLAN Setup</u>.</p>	

## Access Point Radio: Module Advanced (cont.)

Requested Status:	Up ▼
Current Status:	Up
Packet Forwarding:	Enabled ▼
Forwarding State:	Blocking
Default Multicast Address Filter:	Allowed ▼
Maximum Multicast Packets/Second:	0
<hr/>	
Radio Cell Role:	Access Point/Root ▼
SSID for use by Infrastructure Stations (such as Repeaters):	0
Disallow Infrastructure Stations on any <i>other</i> SSID:	<input type="radio"/> yes <input checked="" type="radio"/> no
Use Aironet Extensions:	<input checked="" type="radio"/> yes <input type="radio"/> no
<hr/>	
Classify Workgroup Bridges as Network Infrastructure:	<input checked="" type="radio"/> yes <input type="radio"/> no
Require use of Radio Firmware 5.02.03:	<input checked="" type="radio"/> yes <input type="radio"/> no
Ethernet Encapsulation Transform:	RFC1042 ▼
<hr/>	
<u>Quality of Service Setup</u>	
<p>If VLANs are <i>not</i> enabled, set the following three parameters on this page. If VLANs are enabled, the following three parameters are set independently for each enabled VLAN through <u>VLAN Setup</u>.</p>	



## Access Point Radio: Module Advanced (cont.)

Requested Status:	Up ▼
Current Status:	Up
Packet Forwarding:	Enabled ▼
Forwarding State:	Blocking
Default Multicast Address Filter:	Allowed ▼
Maximum Multicast Packets/Second:	0
Radio Cell Role:	Access Point/Root ▼
SSID for use by Infrastructure Stations (such as Repeaters):	0
Disallow Infrastructure Stations on any <i>other</i> SSID:	<input type="radio"/> yes <input checked="" type="radio"/> no
Use Aironet Extensions:	<input checked="" type="radio"/> yes <input type="radio"/> no
Classify Workgroup Bridges as Network Infrastructure:	<input checked="" type="radio"/> yes <input type="radio"/> no
Require use of Radio Firmware 5.02.03:	<input checked="" type="radio"/> yes <input type="radio"/> no
Ethernet Encapsulation Transform:	RFC1042 ▼
<u>Quality of Service Setup</u>	
<p>If VLANs are <i>not</i> enabled, set the following three parameters on this page. If VLANs are enabled, the following three parameters are set independently for each enabled VLAN through <u>VLAN Setup</u>.</p>	

## Access Point Radio: Module Advanced (cont.)

Requested Status:	Up ▼
Current Status:	Up
Packet Forwarding:	Enabled ▼
Forwarding State:	Blocking
Default Multicast Address Filter:	Allowed ▼
Maximum Multicast Packets/Second:	0
Radio Cell Role:	Access Point/Root ▼
SSID for use by Infrastructure Stations (such as Repeaters):	0
Disallow Infrastructure Stations on any <i>other</i> SSID:	<input type="radio"/> yes <input checked="" type="radio"/> no
Use Aironet Extensions:	<input checked="" type="radio"/> yes <input type="radio"/> no
Classify Workgroup Bridges as Network Infrastructure:	<input checked="" type="radio"/> yes <input type="radio"/> no
Require use of Radio Firmware 5.02.03:	<input checked="" type="radio"/> yes <input type="radio"/> no
Ethernet Encapsulation Transform:	RFC1042 ▼
<u>Quality of Service Setup</u>	
<p>If VLANs are <i>not</i> enabled, set the following three parameters on this page. If VLANs are enabled, the following three parameters are set independently for each enabled VLAN through VLAN Setup.</p>	

# Access Point Radio: Module Advanced (cont.)

## Lower Portion of Screen

Enhanced MIC verification for WEP:	None ▼
Temporal Key Integrity Protocol:	None ▼
Broadcast WEP Key rotation interval (sec):	0 (0=off)
<p>To configure 802.11 Authentication, EAP, Unicast Address Filters, and the Maximum Number of Associations for this radio's Primary SSID (the default SSID), please use the link below.</p> <p><a href="#">Advanced Primary SSID Setup more...</a></p>	
Preferred Access Point 1:	00:00:00:00:00:00
Preferred Access Point 2:	00:00:00:00:00:00
Preferred Access Point 3:	00:00:00:00:00:00
Preferred Access Point 4:	00:00:00:00:00:00
<div>Apply OK Cancel Restore Defaults</div>	

# Access Point Radio: Module Advanced (cont.)

## Lower Portion of Screen

Enhanced MIC verification for WEP:	None ▼
Temporal Key Integrity Protocol:	None ▼
Broadcast WEP Key rotation interval (sec):	0 (0=off)

To configure 802.11 Authentication, EAP, Unicast Address Filters, and the Maximum Number of Associations for this radio's Primary SSID (the default SSID), please use the link below.

[Advanced Primary SSID Setup more...](#)

Preferred Access Point 1:	00:00:00:00:00:00
Preferred Access Point 2:	00:00:00:00:00:00
Preferred Access Point 3:	00:00:00:00:00:00
Preferred Access Point 4:	00:00:00:00:00:00

Apply OK Cancel Restore Defaults

# Statistics

# Statistics - Ethernet Port

Configuration		Set Properties	
Status of "emac0"	<b>No Link</b> (primary)	Maximum Rate (Mb/s)	0.0
IP Address	10.0.0.1	MAC Address	0009e8d268e6
Duplex	Full		
Statistics		Refresh	
Receive		Transmit	
	Alert <input type="checkbox"/>		Alert <input type="checkbox"/>
Unicast Packets	0	Unicast Packets	0
Multicast Packets	0	Multicast Packets	0
Total Bytes	0	Total Bytes	0
Total Errors	1	Total Errors	60
Discarded Packets	1	Discarded Packets	0
Forwardable Packets	746	by CoS (0-7): 0, 0, 0, 0, 0, 0, 0, 0	
Filtered Packets	0	Forwarded Packets	60
Packet CRC Errors	0	Max Retry Packets	0
Carrier Sense Lost	11	Total Collisions	0
Late Collisions	0	Late Collisions	0
Overrun Packets	0	Underrun Packets	0
Packets Too Long	0		
Packets Too Short	0		
Packets Truncated	0		

# Statistics – Access Point Radio: Internal Port

Options: Detailed Config. ☐ Detailed Stats. ☐ Individual Rates ☐ Apply

**Configuration**

**Set Properties**

Status of "awcu"	Up	Maximum Rate (Mb/s)	11.0
IP Address	10.0.0.1	MAC Address	0009e8d268e6
SSID	tsunami		
Operational Rates (Mb/s)	1.0B, 2.0B, 5.5B, 11.0B	Transmit Power (mW)	5

**Statistics**
Refresh

Receive	Alert <input type="checkbox"/>	Transmit	Alert <input type="checkbox"/>
Unicast Packets	311	Unicast Packets	303
Multicast Packets	0	Multicast Packets	141
Total Bytes	34030	Total Bytes	217697
Total Errors	0	Total Errors	6
Discarded Packets	0	Discarded Packets	0
Forwardable Packets	644	by CoS (0-7): 0, 0, 0, 0, 0, 0, 0, 0	
Filtered Packets	0	Forwarded Packets	1841
Packet CRC Errors	14734	Max Retry Packets	6
Packet WEP Errors	0	Total Retries	306
Overrun Packets	0	Cancelled Assoc. Lost	0
Duplicate Packets	0	Cancelled AID	2
Lifetime Exceeded	0	Lifetime Exceeded	0
MIC Packets	0	MIC Packets	0
MIC Errors	0	MIC Errors	0
MIC Sequ. Errors	0		
MIC Auth. Errors	0		

# Statistics – Access Point Radio: Module Port

Options: Detailed Config. ☐ Detailed Stats. ☐ Individual Rates ☐ Apply

Configuration		Set Properties	
Status of "awel"	Up	Maximum Rate (Mb/s)	54.0
IP Address	10.0.0.1	MAC Address	0009e8d268e6
SSID	tsunami		
Operational Rates (Mb/s)	6.0B, 9.0, 12.0B, 18.0, 24.0B, 36.0, 48.0, 54.0	Transmit Power (mW)	25

Statistics <span>Refresh</span>			
Receive <span>Alert</span> <input type="checkbox"/>		Transmit <span>Alert</span> <input type="checkbox"/>	
Unicast Packets	0	Unicast Packets	0
Multicast Packets	0	Multicast Packets	0
Total Bytes	0	Total Bytes	0
Total Errors	0	Total Errors	0
Discarded Packets	0	Discarded Packets	0
Forwardable Packets	0	by CoS (0-7): 0, 0, 0, 0, 0, 0, 0, 0	
Filtered Packets	0	Forwarded Packets	0
Packet CRC Errors	0	Max Retry Packets	0
Packet WEP Errors	0	Total Retries	0
Overflow Packets	0	Cancelled Assoc. Lost	0
Duplicate Packets	0	Cancelled AID	0
Lifetime Exceeded	0	Lifetime Exceeded	0
MIC Packets	0	MIC Packets	0
MIC Errors	0	MIC Errors	0
MIC Sequ. Errors	0		
MIC Auth. Errors	0		



# **Setup of Association Parameters and Features**

# Association Table

☒ Client ☒ Repeater ☒ Bridge ☒ AP ☐ Infra. Host ☐ Multicast ☐ Entire Network

Press to Change Settings:


Apply

Save as Default


Restore Current Defaults

## Association Table

*additional display filters*

Device	Name	 IP Addr./Name	MAC Addr.	VLAN	State	Parent
1200 Series AP	AP1200-d268e6	10.0.0.1	0009e8d268e6			
350 Series AP	AP350-41c667	0.0.0.0	00409641c667		Assoc	[self:Internal]
350 Series Client	YourLastName	10.0.0.5	004096416bd4		Assoc	[self:Internal]

# Station Information

System Name	YourLastName	Device	350 Series Client
MAC Address	[Aironet]00:40:96:41:6b:d4		
IP Address	 10.0.0.5		
VLAN ID	0	Policy Grp.	0
State	Assoc, AID=29, SSID=0	Class	Client
Status	OK, Short Preambles		

Deauthenticate
Disassociate
Clear Stats
Refresh

Number of Pkts.  Pkt. Size  Ping  
 Number of Pkts.  Pkt. Size  Link Test

To Station <span>Alert <input type="checkbox"/></span>		From Station <span>Alert <input type="checkbox"/></span>	
Packets OK	395	Packets OK	432
Total Bytes OK	323873	Total Bytes OK	44972
Total Errors	0	Total Errors	0
Max. Retry Pkts.	0		
Short Retries	9	WEP Errors	0
Long Retries	63		

« Parent	<a href="#">[self]</a>	Next Hop	<a href="#">[self]</a>
Current Rate	11.0 Mb/s	Operational Rates	1.0B, 2.0B, 5.5B, 11.0B Mb/s
Latest Retries	0 short, 0 long	Latest Signal Str.	70%

Hops to Infra.	1	Echo Packets	0
Activity Timeout	00:00:32	Latest Activity	00:00:00

Communication Over Interface: 350 Series awc0

# Link Test

<a href="#">Home</a>	<a href="#">Map</a>	<a href="#">Network</a>	<a href="#">Associations</a>	<a href="#">Setup</a>	<a href="#">Logs</a>	<a href="#">Help</a>	Uptime: 3 days, 02:13:54
<b>System Name</b>	AP1200-38421d			<b>Device</b>	1200 Series AP		
<b>MAC Address</b>	00:05:9a:38:42:1d						
<b>IP Address</b>	<a href="#">Go</a> 10.0.0.1						
<b>VLAN ID</b>	0			<b>Policy Grp.</b>	0		
<b>State</b>	[self]			<b>Class</b>	Access Point		
<b>Status</b>	OK						
				<a href="#">Clear Stats</a>	<a href="#">Refresh</a>		
				Number of Pkts.	<input type="text" value="5"/>	Pkt. Size	<input type="text" value="64"/>
				<a href="#">Ping</a>			
<b>To Station</b>				<a href="#">Alert</a>	<input type="checkbox"/>	<b>From Station</b>	
				<a href="#">Alert</a>	<input type="checkbox"/>		
<b>Packets OK</b>	144734			<b>Packets OK</b>	40453		
<b>Total Bytes OK</b>	16072138			<b>Total Bytes OK</b>	10141426		
<b>Total Errors</b>	0			<b>Total Errors</b>	0		
<b>Max. Retry Pkts.</b>	0			<b>WEK Errors</b>	0		
<b>Short Retries</b>	0						
<b>Long Retries</b>	0						
<b>Stations Associated</b>				2 Clients, 0 Repeaters, 0 Bridges			
<b>Load</b>	0			<b>Software Version</b>	12.00.06		
<b>Uptime</b>	3 days, 02:13:44			<b>Announcement Pkts.</b>	17813		
<b>Hops to Infra.</b>	0			<b>Echo Packets</b>	0		
<b>Activity Timeout</b>	never			<b>Latest Activity</b>	00:00:00		
<b>Communication Over Interface:</b> <a href="#">Ethernet emac0</a>							

## Link Test (cont.)

<a href="#">Home</a>	<a href="#">Map</a>	<a href="#">Network</a>	<a href="#">Associations</a>	<a href="#">Setup</a>	<a href="#">Logs</a>	<a href="#">Help</a>	Uptime: 3 days, 02:13:54		
<b>System Name</b>		AP1200-38421d			<b>Device</b>		1200 Series AP		
<b>MAC Address</b>		00:05:9a:38:42:1d							
<b>IP Address</b>		<a href="#">Go</a> 10.0.0.1							
<b>VLAN ID</b>		0			<b>Policy Grp.</b>		0		
<b>State</b>		[self]			<b>Class</b>		Access Point		
<b>Status</b>		OK							
<input type="button" value="Clear Stats"/> <input type="button" value="Refresh"/>									
Number of Pkts.				<input type="text" value="5"/>	Pkt. Size		<input type="text" value="64"/>	<input type="button" value="Ping"/>	
<b>To Station</b>				<b>Alert</b>		<b>From Station</b>			
				<input type="checkbox"/>					
<b>Packets OK</b>				144734		<b>Packets OK</b>			
<b>Total Bytes OK</b>				16072138		<b>Total Bytes OK</b>			
<b>Total Errors</b>				0		<b>Total Errors</b>			
<b>Max. Retry Pkts.</b>				0		<b>WEP Errors</b>			
<b>Short Retries</b>				0					
<b>Long Retries</b>				0					
<b>Stations Associated</b>		2 Clients, 0 Repeaters, 0 Bridges							
<b>Load</b>		0			<b>Software Version</b>		12.00.06		
<b>Uptime</b>		3 days, 02:13:44			<b>Announcement Pkts.</b>		17813		
<b>Hops to Infra.</b>		0			<b>Echo Packets</b>		0		
<b>Activity Timeout</b>		never			<b>Latest Activity</b>		00:00:00		
<b>Communication Over Interface:</b> <a href="#">Ethernet emac0</a>									

# **Firmware Upgrade and Distribution**

# Firmware Distribution

Current User:	User Manager Not Enabled	
Distribute <b>All</b> Firmware:	<input checked="" type="radio"/> yes	<input type="radio"/> no
Current Version of System Firmware:	11.59	<input checked="" type="checkbox"/>
Current Version of Web Pages:	12.00	<input checked="" type="checkbox"/>
Current Version of Internal Radio Firmware:	5.02.03	<input checked="" type="checkbox"/>
Current Version of Module Radio Firmware:	5.02.03	<input checked="" type="checkbox"/>
		<input type="button" value="Start"/> <input type="button" value="Abort"/>

## Firmware Distribution (cont.)

Current User:	User Manager Not Enabled	
Distribute <b>All</b> Firmware:	<input checked="" type="radio"/> yes	<input type="radio"/> no
Current Version of System Firmware:	11.59	<input checked="" type="checkbox"/>
Current Version of Web Pages:	12.00	<input checked="" type="checkbox"/>
Current Version of Internal Radio Firmware:	5.02.03	<input checked="" type="checkbox"/>
Current Version of Module Radio Firmware:	5.02.03	<input checked="" type="checkbox"/>
		<input type="button" value="Start"/> <input type="button" value="Abort"/>



## Update Firmware (Through Browser)

Current Version of System Firmware:	11.59
Current Version of Web Pages:	12.00
Current Version of Internal Radio Firmware:	5.02.03
Current Version of Module Radio Firmware:	5.02.03

### Retrieve All Firmware Files

New File for All Firmware:

Browse...

Browser Update Now

Done

# Hot Standby Management

Service Set ID (SSID)	<input type="text" value="tsunami"/>
MAC Address For the Monitored AP:	<input type="text" value="00:00:00:00:00:00"/>
Polling Frequency:	<input type="text" value="1"/> (Seconds)
Polling Tolerance Duration:	<input type="text" value="5"/> (Seconds)
Current State:	Hot Standby is not running.
Current Status:	Hot Standby unit is OK.

# Cisco Discovery Protocol

Cisco Discovery Protocol (CDP): ☒ Enabled ☐ Disabled

Packet hold time:  Seconds

Packets sent every:  Seconds

Individual Interface Enable:

☒ 01: Ethernet

☒ 10: Repeater:Not Associated

Apply

OK

Cancel

Restore Defaults

# **System Management**

# Manage System Configuration

<input now"="" restart="" system="" type="button" value=" " warm"=""/>		<input cold"="" now"="" restart="" system="" type="button" value=" "/>
<u>Download Non-Default System Configuration <i>Except</i> IP Identity</u>		
<input type="button" value="Reset System Factory Defaults Except IP Identity"/>		
<u>Download Non-Default System Configuration</u>	<u>Download <b>All</b> System Configuration</u>	
<input type="button" value="Reset All System Factory Defaults"/>		
Additional System Configuration File:		<input type="text"/> <input type="button" value="Browse..."/>
<input type="button" value="Read Config File from Server"/>		<input type="button" value="Browser Update Now"/>
<input type="button" value="Done"/>		

# SNMP Setup

# SNMP

Simple Network Management Protocol (SNMP): ☐ Enabled ☒ Disabled

System Description: Cisco 1200 Series AP 11B59.07 BETA

System Name: AP1200-d268e6

System Location:

System Contact: Aironet Wireless Communications, I

SNMP Trap Destination:

SNMP Trap Community:

[Browse Management Information Base \(MIB\)](#)

Apply

OK

Cancel

Restore Defaults

# Filtering



# Available Filters

Ethertype Filters

IP Protocol Filters

IP Port Filters

Policy Groups

DSCP-to-CoS Conversion

Quality of Service for AP Radio: Interr

Quality of Service for AP Radio: Mod

## Layer 2 Filtering

<b>ARP</b>	<b>DEC XNS</b>	<b>EAPOL (old)</b>
<b>RARP</b>	<b>DEC MOP</b>	<b>EAPOL (new)</b>
<b>IP</b>	<b>DEC LAT</b>	<b>Telxon TXP</b>
<b>Berkeley Trailer Negotiation</b>	<b>Ethertalk ARP</b>	<b>Aironet DDP</b>
<b>LAN Test</b>	<b>IXP 802.2</b>	<b>Enet Config Test</b>
<b>X.25 Level 3</b>	<b>IXP 802.3</b>	<b>NetBUI</b>
<b>Banyan</b>	<b>Novell IXP (old)</b>	
<b>CDP</b>	<b>Novell IXP (new)</b>	

## Available Filters (cont.)

<u>Ethertype Filters</u> <u>IP Protocol Filters</u> <u>IP Port Filters</u>  <u>Policy Groups</u> <u>DSCP-to-CoS Conversion</u>  <u>Quality of Service for A</u> <u>Quality of Service for A</u>			<b>Layer 3 Filtering</b>	
			<b>dummy</b>	<b>XNS-IDP</b>
			<b>Internet Control Message Protocol</b>	<b>ISO-TP4</b>
			<b>Internet Group Management Protocol</b>	<b>ISO-CNLP</b>
			<b>Transmission Control Protocol</b>	<b>Banyan VINES</b>
			<b>Exterior Gateway Protocol</b>	<b>CHAOS</b>
			<b>Encapsulation Header</b>	<b>PUP</b>
			<b>Spectralink Voice Protocol</b>	<b>raw</b>
			<b>User Datagram Protocol</b>	

## Available Filters (cont.)

Ethertype Filters

IP Protocol Filters

IP Port Filters

### Layer 4 Filtering

Policy Groups

DSCP-to-CoS Conversion

Quality of Service for AP Rad

Quality of Service for AP Rad

<b>TCP port service multiplexer</b>	<b>FTP Data</b>	<b>Domain Name Server</b>
<b>echo</b>	<b>FTP Control (21)</b>	<b>MTP</b>
<b>discard (9)</b>	<b>Secure Shell (22)</b>	<b>BOOTP Server</b>
<b>Systat (11)</b>	<b>Telnet</b>	<b>BOOTP Client</b>
<b>daytime (13)</b>	<b>Simple Mail Transport Protocol</b>	<b>FTP</b>
<b>netstat (15)</b>	<b>time</b>	<b>gopher</b>
<b>Quote of the Day</b>	<b>Resource Location Protocol</b>	<b>rje</b>
<b>Message Send Protocol</b>	<b>IEN 116 Name Server</b>	<b>finger</b>
<b>Ttytst source</b>	<b>whois</b>	<b>Hypertext Transport Protocol</b>

## Available Filters (cont.)

### Layer 4 Filtering, cont.

<b>ttylink</b>	<b>FTP Data</b>	<b>NETBOIS Datagram Service</b>
<b>Kerberos v5</b>	<b>Sun RPC</b>	<b>NETBOIS Session Service</b>
<b>supdup</b>	<b>Tap ident authentication</b>	<b>Interim Mail Access Protocol v2</b>
<b>hostname</b>	<b>sftp</b>	<b>Simple Network Management Protocol</b>
<b>TSAP</b>	<b>Uucp-path</b>	<b>SNMP Traps</b>
<b>CSO Name Server</b>	<b>Network News Transfer Protocol</b>	<b>ISO CMIP Management Over IP</b>
<b>Remote Telnet</b>	<b>USENET News Transfer Protocol</b>	<b>ISO CMIP Agent Over IP</b>
<b>Postoffice v2</b>	<b>Network Time Protocol</b>	<b>X Display Manager Control Protocol</b>
<b>Postoffice v3</b>	<b>NETBIOS Name Service</b>	<b>NeXTStep Window Server</b>

## Available Filters (cont.)

### Layer 4 Filtering, cont.

<b>Border Gateway Protocol</b>	<b>IXP</b>	<b>newdate</b>
<b>Prospero</b>	<b>Interactive Mail Access Protocol v3</b>	<b>courier</b>
<b>Internet Relay Chap</b>	<b>Unix LISTSERV</b>	<b>conference</b>
<b>SNMP Unix Multiplexer</b>	<b>syslog</b>	<b>netnews</b>
<b>AppleTalk Routing</b>	<b>Unix spooler</b>	<b>netwall</b>
<b>AppleTalk name binding</b>	<b>talk</b>	<b>UUCP Daemon</b>
<b>AppleTalk echo</b>	<b>ntalk</b>	<b>Kerberos rlogin</b>
<b>AppleTalk Zone Information</b>	<b>timeserver</b>	<b>Kerberos rsh</b>
<b>NISO Z39.50 database</b>	<b>route</b>	<b>Rfs_server</b>

## Available Filters (cont.)

### Layer 4 Filtering, cont.

<b>Kerberos kadmin</b>	<b>SUP debugging</b>	<b>Concurrent Versions System</b>
<b>network dictionary</b>	<b>ingreslock</b>	<b>Cisco IAPP</b>
<b>SUP server</b>	<b>Prospero non-privileged</b>	<b>Radio Free Ethernet</b>
<b>Swat for SAMBA</b>	<b>RADIUS</b>	

# MAC Address Filters

## New MAC Address Filter:

Dest MAC Address:

☒ Allowed ☐ Disallowed

Add

The default settings for multicast and unicast destination MAC addresses transmitted from each network interface are specified on the Advanced Setup page for that network interface.

## Existing MAC Address Filters:

Remove

Lookup MAC Address on Authentication Server if not in Existing Filter List? ☐ yes ☒ no

Is MAC Authentication alone sufficient for a client to be fully authenticated? ☐ yes ☒ no

Apply

OK

Cancel

Remove All

# Applied MAC Address Filter

## New MAC Address Filter:

Dest MAC Address:

☒ Allowed ☐ Disallowed

Add

The default settings for multicast and unicast destination MAC addresses transmitted from each network interface are specified on the Advanced Setup page for that network interface.

## Existing MAC Address Filters:

00:40:96:12:3a:bc Disallowed

Remove

Lookup MAC Address on Authentication Server if not in Existing Filter List?

☐ yes ☒ no

Is MAC Authentication alone sufficient for a client to be fully authenticated?

☐ yes ☒ no

Apply

OK

Cancel

Remove All



# Ethertype Protocol Filters

Set ID: <input type="text"/>	Set Name: <input type="text"/>	<input type="button" value="Add New"/>
<b>Existing Ethertype Protocol Filter Sets:</b>		
<div><div></div></div>		<input type="button" value="Edit"/> <input type="button" value="Remove"/>

## Adding Ethertype Protocol Filters

Name:	<input type="text" value="Ethertype Test 1"/>				
Default Disposition:	<input type="text" value="forward"/> ▼				
Default Time To Live (msec):					
	unicast:	<input type="text" value="0"/>	multicast:	<input type="text" value="0"/>	
Special Cases:	<input type="text"/>				<input type="button" value="Add New"/>
Select an entry from below to	<input type="button" value="Edit"/>	or	<input type="button" value="Remove"/>		
<b>Time-to-Live (msec)</b>					
<i>select</i>	<b>Ethertype</b>	<b>Disposition</b>	<b>Priority</b>	<b>Unicast</b>	<b>Multicast</b>
				<b>Alert?</b>	
<input type="button" value="Apply"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Restore Defaults"/>					

## Adding Ethertype Protocol Filters (cont.)

Disposition:	block
Priority:	default
Unicast Time-to-Live (msec):	0
Multicast Time-to-Live (msec):	0
Alert?:	<input type="radio"/> yes <input checked="" type="radio"/> no
<input type="button" value="Apply"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Restore Defaults"/>	

## Adding Ethertype Protocol Filters (cont.)

Disposition:	block
Priority:	default
Unicast Time-to-Live (msec):	0
Multicast Time-to-Live (msec):	0
Alert?:	<input type="radio"/> yes <input checked="" type="radio"/> no
<div>Apply OK Cancel Restore Defaults</div>	

## Adding Ethertype Protocol Filters (cont.)

Name:

Default Disposition:

Default Time To Live (msec):  
unicast:  multicast:

Special Cases:

Select an entry from below to  or

<i>select</i>	<b>Ethertype</b>	<b>Disposition</b>	<b>Priority</b>	<b>Time-to-Live (msec)</b>		<b>Alert?</b>
				<b>Unicast</b>	<b>Multicast</b>	
<input type="radio"/>	[Appletalk ARP] 0x80f3	block	default	0	0	

# IP Protocol Filter Sets

Set ID: <input type="text"/>	Set Name: <input type="text"/>	<input type="button" value="Add New"/>				
<b>Existing IP Protocol Filter Sets:</b>						
<table><tr><td>202</td><td>Voice Over IP</td></tr><tr><td colspan="2"><input type="text"/></td></tr></table>		202	Voice Over IP	<input type="text"/>		<input type="button" value="Edit"/> <input type="button" value="Remove"/>
202	Voice Over IP					
<input type="text"/>						

## Adding IP Protocol Filters

Name:	IP Protocol Test 1	
Default Disposition:	forward ▼	
Default Time To Live (msec):		
	unicast: 0	multicast: 0
Special Cases:		Add New
Select an entry from below to	Edit	or Remove
<b>Time-to-Live (msec)</b>		
<i>select</i>	IP Protocol	Disposition Priority Unicast Multicast Alert?
Apply OK Cancel Restore Defaults		

## Adding IP Protocol Filters (cont.)

Disposition:	block ▼
Priority:	default ▼
Unicast Time-to-Live (msec):	0
Multicast Time-to-Live (msec):	0
Alert?:	<input type="radio"/> yes <input checked="" type="radio"/> no
<input type="button" value="Apply"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Restore Defaults"/>	



## Adding Ethertype Protocol Filters (cont.)

Disposition:	block
Priority:	default
Unicast Time-to-Live (msec):	0
Multicast Time-to-Live (msec):	0
Alert?:	<input type="radio"/> yes <input checked="" type="radio"/> no
<div>Apply OK Cancel Restore Defaults</div>	

## Adding IP Protocol Filters (cont.)

Name:

Default Disposition:

Default Time To Live (msec):

unicast:  multicast:

Special Cases:

Select an entry from below to  or

				Time-to-Live (msec)		
<i>select</i>	IP Protocol	Disposition	Priority	Unicast	Multicast	Alert?
<input type="radio"/>	[VINES] 0x0053	block	default	0	0	

## IP Port Filter Sets

Set ID:  Set Name:

Add New


Existing IP Port Filter Sets:

--

Edit

Remove

## Adding IP Port Filters (cont.)

Name:	<input type="text" value="IP Port Test 1"/>				
Default Disposition:	<input type="text" value="forward"/> 				
Default Time To Live (msec):					
	unicast:	<input type="text" value="0"/>	multicast:	<input type="text" value="0"/>	
Special Cases:	<input type="text" value="Kerberos"/>			<input type="button" value="Add New"/>	
Select an entry from below to	<input type="button" value="Edit"/>		or	<input type="button" value="Remove"/>	
<b>Time-to-Live (msec)</b>					
<i>select</i>	<b>IP Port</b>	<b>Disposition</b>	<b>Priority</b>	<b>Unicast</b>	<b>Multicast Alert?</b>
<input type="button" value="Apply"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Restore Defaults"/>					

## Adding IP Port Filters (cont.)

Disposition:	block
Priority:	default
Unicast Time-to-Live (msec):	0
Multicast Time-to-Live (msec):	0
Alert?:	<input type="radio"/> yes <input checked="" type="radio"/> no
<input type="button" value="Apply"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Restore Defaults"/>	

## Adding Ethertype Protocol Filters (cont.)

Disposition:	block
Priority:	default
Unicast Time-to-Live (msec):	0
Multicast Time-to-Live (msec):	0
Alert?:	<input type="radio"/> yes <input checked="" type="radio"/> no
<div>Apply OK Cancel Restore Defaults</div>	

## Adding IP Port Filters (cont.)

Name:

Default Disposition:

Default Time To Live (msec):

unicast:  multicast:

Special Cases:

Select an entry from below to  or

				Time-to-Live (msec)		
<i>select</i>	IP Port	Disposition	Priority	Unicast	Multicast	Alert?
<input type="radio"/>	[Kerberos v5] 88	block	default	0	0	

# Applying Filters

	Receive	Transmit
<u>E</u> therType	[1] Ethertype Test 1 ▾	[0] -None- ▾
<u>I</u> P Protocol	[0] -None- ▾	[1] IP Protocol Test 1 ▾
<u>I</u> P Port	[0] -None- ▾	[1] IP Port Test 1 ▾
<input type="button" value="Apply"/>		<input type="button" value="OK"/>
<input type="button" value="Cancel"/>		<input type="button" value="Restore Defaults"/>



# VLAN Configuration

# VLAN Setup

**Express Setup**

**Associations**

<a href="#">Display Defaults</a>	<a href="#">Port Assignments</a>	<a href="#">Advanced</a>
<a href="#">Address Filters</a>	<a href="#">Protocol Filters</a>	<a href="#">SSIDs: <u>Int</u>, <u>Mod</u></a>
<a href="#">VLAN</a>		

[Display Defaults](#)

[Console/Telnet](#)

[Time Server](#)

[Cisco Services](#)

[Ethernet](#)

[AP Radio: Internal](#)

[AP Radio: Module](#)

**VLAN Summary Status**

VLAN (802.1Q) Tagging:  
802.1Q Encapsulation Mode:  
Maximum Number of enabled VLAN IDs:  
Native VLAN ID:  
Single VLAN ID which allows **Unencrypted** packets:  
Optionally allow **Encrypted** packets on the unencrypted VLAN:

☐ Enabled ☒ Disabled

--Disabled--

16

(0=all require encryption)

☒ yes ☐ no

VLAN ID:  VLAN Name:

Add New

Existing VLANs:

\*\*When VLAN Disabled\*

Edit

Remove

Apply

OK

Cancel

RestoreAll

## VLAN Setup (cont.)

**VLAN Summary Status**

VLAN (802.1Q) Tagging: ☐ Enabled ☒ Disabled

802.1Q Encapsulation Mode: --Disabled--

Maximum Number of enabled VLAN IDs: 16

Native VLAN ID:

Single VLAN ID which allows **Unencrypted** packets:  (0=all require encryption)

Optionally allow **Encrypted** packets on the unencrypted VLAN: ☒ yes ☐ no

VLAN ID:  VLAN Name:

**Existing VLANs:**

\*When VLAN Disabled\*

## VLAN Setup (cont.)

### VLAN Summary Status

VLAN (802.1Q) Tagging: ☐ Enabled ☒ Disabled

802.1Q Encapsulation Mode: --Disabled--

Maximum Number of enabled VLAN IDs: 16

Native VLAN ID:

Single VLAN ID which allows **Unencrypted** packets:  (0=all require encryption)

Optionally allow **Encrypted** packets on the unencrypted VLAN: ☒ yes ☐ no

VLAN ID:  VLAN Name:

**Existing VLANs:**

\*\*When VLAN Disabled\*

## VLAN Setup (cont.)

VLAN Name:	GigaWave Office	
VLAN Enable:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	
Default Priority:	default	
Default Policy Group:	[0] None	
Enhanced MIC verification for WEP:	None	
Temporal Key Integrity Protocol:	None	
WEP Key Rotation Interval:	0 (0=off)	
Alert?:	<input type="radio"/> yes <input checked="" type="radio"/> no	
	<b>Encryption Key</b>	<b>Key Size</b>
WEP Key 1:	<input type="text"/>	not set
WEP Key 2:	<input type="text"/>	not set
WEP Key 3:	<input type="text"/>	not set
WEP Key 4:	<input type="text"/>	not set
Enter 40-bit WEP keys as 10 hexadecimal digits (0-9, a-f, or A-F). Enter 128-bit WEP keys as 26 hexadecimal digits (0-9, a-f, or A-F).		
Apply OK Cancel Restore Defaults		

## VLAN Setup (cont.)

VLAN Name:	<input type="text" value="GigaWave Office"/>	
VLAN Enable:	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	
Default Priority:	<input type="text" value="default"/>	
Default Policy Group:	<input type="text" value="[0] None"/>	
Enhanced MIC verification for WEP:	<input type="text" value="None"/>	
Temporal Key Integrity Protocol:	<input type="text" value="None"/>	
WEP Key Rotation Interval:	<input type="text" value="0"/> (0=off)	
Alert?:	<input type="radio"/> yes <input checked="" type="radio"/> no	
	<b>Encryption Key</b>	<b>Key Size</b>
WEP Key 1:	<input type="text"/>	<input type="text" value="not set"/>
WEP Key 2:	<input type="text"/>	<input type="text" value="not set"/>
WEP Key 3:	<input type="text"/>	<input type="text" value="not set"/>
WEP Key 4:	<input type="text"/>	<input type="text" value="not set"/>
<p>Enter 40-bit WEP keys as 10 hexadecimal digits (0-9, a-f, or A-F). Enter 128-bit WEP keys as 26 hexadecimal digits (0-9, a-f, or A-F).</p>		
<input type="button" value="Apply"/> <input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Restore Defaults"/>		

# VLAN Summary Status

[Home](#) [Map](#) [Network](#) [Associations](#) [Setup](#) [Logs](#) [Help](#) Uptime: 00:16:05

802.1Q Encapsulation Mode: Hybrid Trunk [VLAN Detailed Setup](#)

ID	Name	Enabled?	Def. Pri.	Def. Pol. Grp.	MIC	TKIP	Key Rotate	Alert?	Encryption
<u>1(N)</u>	GigaWave Office	yes	best effort	[0]	MMH	Cisco	0	no	optional
<u>2</u>	Guest	yes	best effort	[0]	none	none	0	no	optional
<u>3</u>	Warehouse	yes	best effort	[0]	none	none	0	no	optional

Done

## VLAN Summary Status (cont.)

<a href="#">Home</a>	<a href="#">Map</a>	<a href="#">Network</a>	<a href="#">Associations</a>	<a href="#">Setup</a>	<a href="#">Logs</a>	<a href="#">Help</a>	Uptime: 00:16:05		
802.1Q Encapsulation Mode: Hybrid Trunk							<u>VLAN Detailed Setup</u>		
ID	Name	Enabled?	Def. Pri.	Def. Pol. Grp.	MIC	TKIP	Key Rotate	Alert?	Encryption
<u>1(N)</u>	GigaWave Office	yes	best effort	[0]	MMH	Cisco	0	no	optional
<u>2</u>	Guest	yes	best effort	[0]	none	none	0	no	optional
<u>3</u>	Warehouse	yes	best effort	[0]	none	none	0	no	optional
<div>Done</div>									



# Assigning SSIDs to VLANs

**Express Setup**

**Associations**

<a href="#">Display Defaults</a>	<a href="#">Port Assignments</a>	<a href="#">Advanced</a>
<a href="#">Address Filters</a>	<a href="#">Protocol Filters</a>	<a href="#">SSIDs: Int, Mod</a>

[Display Defaults](#)

<a href="#">Console/Telnet</a>	<a href="#">Boot Server</a>
<a href="#">Time Server</a>	<a href="#">FTP</a>
<a href="#">Cisco Services</a>	<a href="#">Security</a>

<b>Ethernet</b>	<a href="#">Identification</a>
<b>AP Radio: Internal</b>	<a href="#">Identification</a>
<b>AP Radio: Module</b>	<a href="#">Identification</a>

HomeMapNetworkAssociationsSetupLogsHelp

Uptime: 00:19:37

**Service Set Summary Status**

Device:  
SSID for use by Infrastructure Stations (such as Repeaters):  
Disallow Infrastructure Stations on any other SSID:

AP Radio: Internal  
0  
☐ yes ☒ no

Service Set ID(SSID):

Existing SSIDs:

[0] GigaWave(primary)  
[1] Warehouse

## Assigning SSIDs to VLANs (cont.)

Home Map Network Associations Setup Logs Help Uptime: 00:19:37

**Service Set Summary Status**

Device: AP Radio: Internal

SSID for use by Infrastructure Stations (such as Repeaters): 0

Disallow Infrastructure Stations on any *other* SSID: ☐ yes ☒ no

Service Set ID(SSID):

**Existing SSIDs:**

[0]	GigaWave(primary)
[1]	Warehouse

## Assigning SSIDs to VLANs (cont.)

The screenshot displays a network configuration interface. The top navigation bar includes tabs for Home, Map, Network, Associations, Setup, Logs, and Help. The 'Associations' tab is active, showing the 'Service Set Summary Status' section. This section includes fields for Device, AP Radio (Internal), SSID for use by Infrastructure Stations (0), and Disallow Infrastructure Stations on any other SSID (no). Below this, the 'Service Set ID(SSID):' field is set to 'Guest', with an 'Add New' button next to it. A red arrow points from this button to a detailed configuration window.

The detailed configuration window, titled 'Map' and 'Help', shows the configuration for the 'Guest' SSID. It includes fields for Device, AP Radio (Internal), Service Set ID (SSID) (Guest), Current Number of Associations (0), Maximum Number of Associations (0), Default VLAN ID ([2] Guest), and Default Policy Group ID ([0] -None-). Below these fields are three columns for authentication types: Open, Shared, and Network-EAP. The 'Open' column has a checked checkbox for 'Accept Authentication Type' and an unchecked checkbox for 'Require EAP'. The 'Shared' and 'Network-EAP' columns have unchecked checkboxes for 'Accept Authentication Type' and 'Require EAP'. The 'Default Unicast Address Filter' is set to 'Allowed' for all three authentication types. A green note at the bottom states: 'To require static or server-based MAC-Address authentication, set "Default Unicast Address Filter" to "Disallowed"'. At the bottom of the window are buttons for Apply, OK, Cancel, and Restore Defaults.

Uptime: 00:19:37

**Service Set Summary Status**

Device: AP Radio: Internal

SSID for use by Infrastructure Stations (such as Repeaters): 0

Disallow Infrastructure Stations on any other SSID: ☐ yes ☒ no

Service Set ID(SSID): Guest Add New

Existing SSIDs:

Uptime: 00:20:42

Device: AP Radio: Internal

Service Set ID (SSID): Guest

Current Number of Associations: 0

Maximum Number of Associations: 0

Default VLAN ID: [2] Guest

Default Policy Group ID: [0] -None-

Accept Authentication Type: ☒ Open ☐ Shared ☐ Network-EAP

Require EAP: ☐ ☐ ☐

Default Unicast Address Filter: Allowed Allowed Allowed

To require static or server-based MAC-Address authentication, set "Default Unicast Address Filter" to "Disallowed".

Apply OK Cancel Restore Defaults

# Service Set Summary Status

<a href="#">Home</a>	<a href="#">Map</a>	<a href="#">Network</a>	<a href="#">Associations</a>			<a href="#">Setup</a>	<a href="#">Logs</a>	<a href="#">Help</a>	Uptime: 00:24:31		
<div>Service Set Detailed Setup</div>											
Idx	SSID	Curr. Assoc	Max Assoc	Auth Alg.	Def. Pol. Grp.	VLAN	Enabled?	MIC	TKIP	Key Rotate	Encryption
<u>0</u>	GigaWave	2	0	open	[0]	<u>1(N)</u>	yes	MMH	Cisco	0	optional
<u>1</u>	Warehouse	0	0	open	[0]	<u>3</u>	yes	none	none	0	optional
<u>2</u>	Guest	0	0	open	[0]	<u>2</u>	yes	none	none	0	optional
											<div>Done</div>

# QoS Configuration

# DSCP to CoS Conversion

Ethertype Filters  
IP Protocol Filters  
IP Port Filters

Policy Groups

DSCP-to-CoS Conversion

Quality of Service for AP Radio: In  
 Quality of Service for AP Radio: M

Map

Help

Uptime: 00:28:56

DSCP	CoS	DSCP	CoS	DSCP	CoS	DSCP	CoS
0	Best Effort	16	Spare	32	Controlled Load	48	Interactive Voice
1	No Change	17	No Change	33	No Change	49	No Change
2	No Change	18	Spare	34	Controlled Load	50	No Change
3	No Change	19	No Change	35	No Change	51	No Change
4	No Change	20	No Change	36	No Change	52	No Change
5	No Change	21	No Change	37	No Change	53	No Change
6	No Change	22	No Change	38	No Change	54	No Change
7	No Change	23	No Change	39	No Change	55	No Change
8	Background	24	Excellent Effort	40	Interactive Video	56	Network Control
9	No Change	25	No Change	41	No Change	57	No Change
10	Background	26	Excellent Effort	42	No Change	58	No Change
11	No Change	27	No Change	43	No Change	59	No Change
12	No Change	28	No Change	44	No Change	60	No Change
13	No Change	29	No Change	45	No Change	61	No Change
14	No Change	30	No Change	46	Interactive Video	62	No Change
15	No Change	31	No Change	47	No Change	63	No Change

Apply

OK

Cancel

Restore Defaults

# Quality of Service

Map Help Uptime: 00:31:49

Generate QBSS Element: ☐ yes ☒ no

Use Symbol Extensions: ☐ yes ☒ no

Send IGMP General Query: ☐ yes ☒ no

Traffic Category	CWmin	CWmax
1: Background	31 <input type="button" value="v"/>	255 <input type="button" value="v"/>
2: (spare)	31 <input type="button" value="v"/>	255 <input type="button" value="v"/>
0: Best Effort (default)	31 <input type="button" value="v"/>	255 <input type="button" value="v"/>
3: Excellent Effort	31 <input type="button" value="v"/>	255 <input type="button" value="v"/>
4: Controlled Load	15 <input type="button" value="v"/>	255 <input type="button" value="v"/>
5: Interactive Video	15 <input type="button" value="v"/>	63 <input type="button" value="v"/>
6: Interactive Voice	3 <input type="button" value="v"/>	31 <input type="button" value="v"/>
7: Network Control	7 <input type="button" value="v"/>	127 <input type="button" value="v"/>

Allowed values for **CWmin** and **CWmax** are 1, 3, 7, 15, 31, 63, 127, 255, 511, and 1023.  
**CWmin** must be less than or equal to **CWmax**.

Apply OK Cancel Restore Defaults

## Quality of Service (cont.)

[Ethertype Filters](#)

[IP Protocol Filters](#)

[IP Port Filters](#)

[Policy Groups](#)

[DSCP-to-CoS Conversion](#)

[Quality of Service for AP Ra](#)

[Quality of Service for AP Ra](#)

[Map](#) [Help](#) Uptime: 00:31:49

Generate QBSS Element: ☐ yes ☒ no

Use Symbol Extensions: ☐ yes ☒ no

Send IGMP General Query: ☐ yes ☒ no

Traffic Category	CWmin	CWmax
1: Background	31	255
2: (spare)	31	255
0: Best Effort (default)	31	255
3: Excellent Effort	31	255
4: Controlled Load	15	255
5: Interactive Video	15	63
6: Interactive Voice	3	31
7: Network Control	7	127

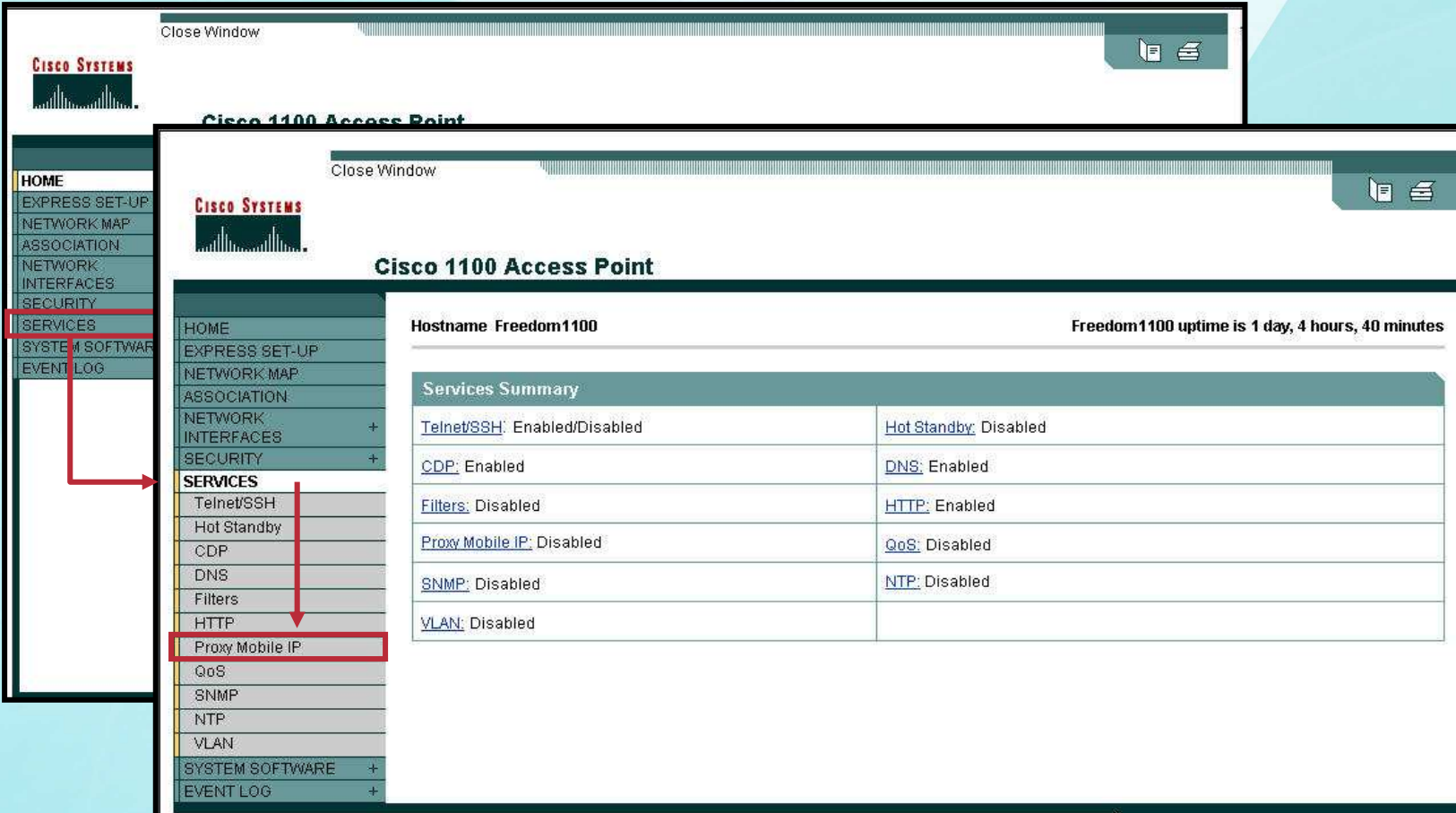
Allowed values for **CWmin** and **CWmax** are 1, 3, 7, 15, 31, 63, 127, 255, 511, and 1023.  
**CWmin** must be less than or equal to **CWmax**.

[Apply](#) [OK](#) [Cancel](#) [Restore Defaults](#)



# **Cisco Aironet Proxy Mobile IP**

# Proxy Mobile IP



The screenshot displays the Cisco 1100 Access Point configuration interface. The left sidebar shows the navigation menu with 'SERVICES' highlighted. The main content area shows the 'Services Summary' page for the device 'Freedom1100'. The page indicates that the device has been up for 1 day, 4 hours, and 40 minutes.

Services Summary	
<a href="#">Telnet/SSH</a> : Enabled/Disabled	<a href="#">Hot Standby</a> : Disabled
<a href="#">CDP</a> : Enabled	<a href="#">DNS</a> : Enabled
<a href="#">Filters</a> : Disabled	<a href="#">HTTP</a> : Enabled
<a href="#">Proxy Mobile IP</a> : Disabled	<a href="#">QoS</a> : Disabled
<a href="#">SNMP</a> : Disabled	<a href="#">NTP</a> : Disabled
<a href="#">VLAN</a> : Disabled	

# Proxy Mobile IP General-Setup

Close Window

**CISCO SYSTEMS**

**Cisco 1100 Access Point**

**GENERAL SET-UP** SA BINDINGS SUBNET TABLE STATISTICS

Hostname Freedom1100 Freedom1100 uptime is 1 day, 4 hours, 41 minutes

**Services: Proxy Mobile IP- General Set-Up**

**Proxy Mobile IP:** ☐ Enabled ☒ Disabled


**Authoritative Access Points (Hostname or IP Address)**

1. DISABLED
2. DISABLED
3. DISABLED

HOME  
EXPRESS SET-UP  
NETWORK MAP  
ASSOCIATION  
NETWORK INTERFACES +  
SECURITY +  
**SERVICES**  
Telnet/SSH  
Hot Standby  
CDP  
DNS  
Filters  
HTTP  
**Proxy Mobile IP**  
QoS  
SNMP  
NTP  
VLAN  
SYSTEM SOFTWARE +  
EVENT LOG +

# Proxy Mobile IP General-Setup (cont.)

Close Window



**Cisco 1100 Access Point**

HOME  
EXPRESS SET-UP  
NETWORK MAP  
ASSOCIATION  
NETWORK INTERFACES +  
SECURITY +  
**SERVICES**  
Telnet/SSH  
Hot Standby  
CDP  
DNS  
Filters  
HTTP  
**Proxy Mobile IP**  
QoS  
SNMP  
NTP  
VLAN  
SYSTEM SOFTWARE +  
EVENT LOG +

GENERAL SET-UP

SA BINDINGS

SUBNET TABLE

STATISTICS

Hostname Freedom1100

Freedom1100 uptime is 1 day, 4 hours, 41 minutes

Services: Proxy Mobile IP- General Set-Up

Proxy Mobile IP:

☐ Enabled ☒ Disabled

Authoritative Access Points (Hostname or IP Address)

1.

2.

3.

AITA\SWBU\CWNA\08

108

# Proxy Mobile IP Security Association Bindings

Close Window

**CISCO SYSTEMS**

**Cisco 1100 Access Point**

GENERAL SET-UP **SA BINDINGS** SUBNET TABLE STATISTICS

Hostname Freedom1100 Freedom1100 uptime is 1 day, 6 hours, 19 minutes

**Services: Proxy Mobile IP- Security Association Bindings**

**Current SA Bindings List**

< NEW >

**New/ Edit SA Binding**

IP Address Range: DISABLED to DISABLED

Security Parameter Index: DISABLED (100-FFFFFFFF Hexadecimal)

Key: DISABLED

☐ ASCII (<17 chars) ☒ Hexadecimal (32 chars)

**SERVICES**

- Telnet/SSH
- Hot Standby
- CDP
- DNS
- Filters
- HTTP
- Proxy Mobile IP**
- QoS
- SNMP
- NTP
- VLAN
- SYSTEM SOFTWARE +
- EVENT LOG +



# Proxy Mobile IP Security Association Bindings (cont.)

The screenshot displays the Cisco 1100 Access Point configuration web interface. At the top, there is a 'Close Window' button and a Cisco Systems logo. The main title is 'Cisco 1100 Access Point'. Below this, there are four tabs: 'GENERAL SET-UP', 'SA BINDINGS' (which is selected), 'SUBNET TABLE', and 'STATISTICS'. The 'SA BINDINGS' tab shows the 'Current SA Bindings List' on the left, which is currently empty, and a 'New/ Edit SA Binding' form on the right. The form includes fields for 'IP Address Range' (set to 'DISABLED' to 'DISABLED'), 'Security Parameter Index' (set to 'DISABLED' with a note '(100-FFFFFFFF Hexadecimal)'), and 'Key' (set to 'DISABLED'). There are also radio buttons for 'ASCII (<17 chars)' and 'Hexadecimal (32 chars)', with 'Hexadecimal' being selected. The left sidebar contains a menu with various configuration options: HOME, EXPRESS SET-UP, NETWORK MAP, ASSOCIATION, NETWORK INTERFACES, SECURITY, SERVICES, Telnet/SSH, Hot Standby, CDP, DNS, Filters, HTTP, Proxy Mobile IP (highlighted), QoS, SNMP, NTP, VLAN, SYSTEM SOFTWARE, and EVENT LOG. The top right corner shows the uptime: 'Freedom1100 uptime is 1 day, 6 hours, 19 minutes'.

Close Window

CISCO SYSTEMS

Cisco 1100 Access Point

GENERAL SET-UP SA BINDINGS SUBNET TABLE STATISTICS

Hostname Freedom1100 Freedom1100 uptime is 1 day, 6 hours, 19 minutes

Services: Proxy Mobile IP- Security Association Bindings

Current SA Bindings List

< NEW >

New/ Edit SA Binding

IP Address Range: DISABLED to DISABLED

Security Parameter Index: DISABLED (100-FFFFFFFF Hexadecimal)

Key: DISABLED

☐ ASCII (<17 chars) ☒ Hexadecimal (32 chars)

HOME  
EXPRESS SET-UP  
NETWORK MAP  
ASSOCIATION  
NETWORK INTERFACES +  
SECURITY +  
SERVICES  
Telnet/SSH  
Hot Standby  
CDP  
DNS  
Filters  
HTTP  
Proxy Mobile IP  
QoS  
SNMP  
NTP  
VLAN  
SYSTEM SOFTWARE +  
EVENT LOG +

# Proxy Mobile IP Subnet Table

Close Window

**CISCO SYSTEMS**

**Cisco 1100 Access Point**

GENERAL SET-UP SA BINDINGS **SUBNET TABLE** STATISTICS

HOME  
EXPRESS SET-UP  
NETWORK MAP  
ASSOCIATION  
NETWORK INTERFACES +  
SECURITY +  
**SERVICES**  
Telnet/SSH  
Hot Standby  
CDP  
DNS  
Filters  
HTTP  
**Proxy Mobile IP**  
QoS  
SNMP  
NTP  
VLAN  
SYSTEM SOFTWARE +  
EVENT LOG +

Hostname Freedom1100 Freedom1100 uptime is 1 day, 6 hours, 20 minutes

Services: Proxy Mobile IP- Subnet Table

Home Agent	Mask

# Proxy Mobile IP Statistics

Cisco 1100 Access Point

HOME

EXPRESS SET-UP

NETWORK MAP

ASSOCIATION

NETWORK INTERFACES +

SECURITY +

SERVICES

Telnet/SSH

Hot Standby

CDP

DNS

Filters

HTTP

Proxy Mobile IP

QoS

SNMP

NTP

VLAN

SYSTEM SOFTWARE +

EVENT LOG +

GENERAL SET-UP

SA BINDINGS

SUBNET TABLE

STATISTICS

Hostname Freedom1100

Freedom1100 uptime is 1 day, 6 hours, 21 minutes

Services: Proxy Mobile IP - Statistics

Proxy Mobile IP

Mobile IP Status

Disabled

Home Agent

Foreign Agent

Active AAP

Traffic

Solicitations Sent

Registration Request Successes

Authentication Failures for HA

Authentication Failures for FA

Registration Requests Sent

Deregister Requests Sent

Registration Replies Received

Deregister Replies Received

Registration Requests Denied by FA

Registration Requests Denied by HA

Advertisements Received

Mobile Nodes

IP Address

Status



# Proxy Mobile IP Statistics (cont.)

Cisco 1100 Access Point				
<div>HOME</div> <div>EXPRESS SET-UP</div> <div>NETWORK MAP</div> <div>ASSOCIATION</div> <div>NETWORK INTERFACES +</div> <div>SECURITY +</div> <div>SERVICES</div> <div>Telnet/SSH</div> <div>Hot Standby</div> <div>CDP</div> <div>DNS</div> <div>Filters</div> <div>HTTP</div> <div>Proxy Mobile IP</div> <div>QoS</div> <div>SNMP</div> <div>NTP</div> <div>VLAN</div> <div>SYSTEM SOFTWARE +</div> <div>EVENT LOG +</div>	GENERAL SET-UP		SA BINDINGS	SUBNET TABLE
	STATISTICS			
	Hostname Freedom1100		Freedom1100 uptime is 1 day, 6 hours, 21 minutes	
	Services: Proxy Mobile IP - Statistics			
	Proxy Mobile IP			
	Mobile IP Status		Disabled	
	Home Agent			
	Foreign Agent			
	Active AAP			
	Traffic			
Solicitations Sent			Registration Request Successes	
Authentication Failures for HA			Authentication Failures for FA	
Registration Requests Sent			Deregister Requests Sent	
Registration Replies Received			Deregister Replies Received	
Registration Requests Denied by FA			Registration Requests Denied by HA	
Advertisements Received				
Mobile Nodes				
IP Address		Status		

# Proxy Mobile IP Statistics (cont.)

HOME

EXPRESS SET-UP

NETWORK MAP

ASSOCIATION

NETWORK INTERFACES +

SECURITY +

SERVICES

Telnet/SSH

Hot Standby

CDP

DNS

Filters

HTTP

Proxy Mobile IP

QoS

SNMP

NTP

VLAN

SYSTEM SOFTWARE +

EVENT LOG +

Cisco 1100 Access Point

GENERAL SET-UP

SA BINDINGS

SUBNET TABLE

STATISTICS

Hostname Freedom1100

Freedom1100 uptime is 1 day, 6 hours, 21 minutes

Services: Proxy Mobile IP- Statistics

Proxy Mobile IP

Mobile IP Status

Disabled

Home Agent

Foreign Agent

Active AAP

Traffic

Solicitations Sent

Registration Request Successes

Authentication Failures for HA

Authentication Failures for FA

Registration Requests Sent

Deregister Requests Sent

Registration Replies Received

Deregister Replies Received

Registration Requests Denied by FA

Registration Requests Denied by HA

Advertisements Received

Mobile Nodes

IP Address

Status

# **Cisco Aironet Access Point IOS Overview**

# IOS Overview

- Same Cisco IOS and commands as Cisco switches and routers
- Some new commands for 802.11
- Access via console or Telnet as applicable

```
Current configuration : 1159 bytes
!
version 12.2
no service pad
service timestamps debug uptime
service timestamps log uptime
service password-encryption
!
hostname ap
!
enable password 7 02250D480809
!
username Cisco password 7 062506324F41
ip subnet-zero
!
ip ssh time-out 120
ip ssh authentication-retries 3
!
bridge irb
!
interface Dot11Radio0
no ip address
no ip route-cache
!
ssid soap
authentication open
guest-mode
!
speed basic-1.0 basic-2.0 basic-5.5 basic-11.0
station-role root
holdoff-time mac-authentication 600
bridge-group 1
bridge-group 1 subscriber-loop-control
bridge-group 1 block-unknown-source
no bridge-group 1 source-learning
no bridge-group 1 unicast-flooding
bridge-group 1 spanning-disabled
!
interface FastEthernet0
no ip address
no ip route-cache
duplex auto
speed auto
bridge-group 1
no bridge-group 1 source-learning
bridge-group 1 spanning-disabled
--More--
```

## IOS Overview (cont.)

- 802.11 is simply another interface on AP
  - Falls within wired architecture
- Extends wired features to the wireless

```
ap#show ip int bri
Interface          IP-Address      OK? Method Status      Protocol
BVI1               10.91.1.1       YES NVRAM    up          up
Dot11Radio0        unassigned      YES NVRAM    up          up
FastEthernet0      unassigned      YES NVRAM    up          up
ap#
```

## IOS Overview (cont.)

**User EXEC**

**Privileged EXEC**

### User Access Verification

Username: Cisco

Password:

ap>

ap>enable

Password:

ap#

ap#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

ap(config)#

ap(config)#interface dot11Radio 0

ap(config-if)#

# IOS Overview (cont.)

## Global Configuration

## Interface Configuration

### User Access Verification

Username: Cisco

Password:

ap>

ap>enable

Password:

ap#

ap#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

ap(config)#

ap(config)#interface dot11Radio 0

ap(config-if)#



# IOS Command Reference

- Privileged Exec
  - 37- 802.11 commands
- Global Configuration
  - 15- 802.11 commands
- Configuration Interface
  - 35- 802.11 commands



**Cisco Aironet 1100 Series Access Point  
Command Reference**



# IOS Power Local Example


## 1100-AP(config-if)# power local 50

**Network Interfaces: Radio-802.11b Settings**

**Enable Radio:**

☒ Enable

**Current Status (Software/Hardware):**

 Enabled

**Role in Radio Network  
(Fallback mode upon loss  
of Ethernet connection):**

☒ Access Po  
☐ Access Po  
☐ Access Po  
☐ Repeater N

**Data Rates:**

Best Range

1.0 Mb/sec:

☒ Require

2.0 Mb/sec:

☒ Require

5.5 Mb/sec:

☒ Require

11.0 Mb/sec:

☒ Require

**Transmitter Power (mW):**

☐ 1 ☐ 5 ☐ 20 ☐ 30 ☒ 50 ☐ 100 ☐ max

**power local**

Use the **power local** configuration interface command to configure the access point radio power level. Use the **no** form of the command to reset the parameter to defaults.

[no] power local {1 | 5 | 20 | 30 | 50 | 100 | maximum}

<b>Syntax Description</b>	1, 5, 20, 30, 50, 100, or maximum	Specifies access point power setting in mW. (Maximum power is regulated by the regulatory agency in the country of operation and is set during manufacture of the access point. Refer to <a href="#">Table 2-2</a> .)				
<b>Defaults</b>	The default local power level is maximum.					
<b>Command Modes</b>	Configuration interface					
<b>Command History</b>	<table><thead><tr><th>Release</th><th>Modification</th></tr></thead><tbody><tr><td>12.2(4)JA</td><td>This command was introduced.</td></tr></tbody></table>	Release	Modification	12.2(4)JA	This command was introduced.	
Release	Modification					
12.2(4)JA	This command was introduced.					
<b>Usage Guidelines</b>	Use this command to specify the local transmit power level. Lower power levels reduce the radio cell size and interference between cells. The maximum transmit power is limited by region.					
<b>Examples</b>	<p>This example shows how to specify a 50-mW transmit power level for the access point:</p> <pre>1100-AP(config-if)# power local 50</pre> <p>This example shows how to reset the access point power to defaults:</p> <pre>1100-AP(config-if)# no power local</pre>					

# IOS SSID Example

## 1100-AP(config-if)# ssid Ivory-AP25

**Express Set-Up**

System Name:  
MAC Address:  
  
Configuration Server Protocol:  
IP Address:  
IP Subnet Mask:  
Default Gateway:  
  
SSID:  
Broadcast SSID in Beacon:  
Role in Radio Network:  
Optimize Radio Network for:  
Aironet Extensions:  
  
SNMP Community:

ap  
0005.9a39.aaaa  
  
☒ DHCP ☐ Static IP  
192.168.1.203  
255.255.255.0  
192.168.1.1  
  
Ivory-AP25  
☐ Yes ☒ No  
☒ Access Point Root ☐ Repeater  
☒ Throughput ☐ Range ☐ Custom  
☒ Enable ☐ Disable  
  
defaultCommunity  
☒ Read-Only ☐ Read-Write

### ssid

Use the **ssid** configuration interface command to specify the radio service set identifier (SSID) and to enter into the ssid configuration mode. Use the **no** form of the command to remove an SSID.

**[no] ssid ssid-string**

Syntax Description	ssid-string	Specifies the SSID name for the radio, expressed as a case-sensitive alphanumeric string from 1 to 32 characters.
--------------------	-------------	-------------------------------------------------------------------------------------------------------------------

Defaults	The factory default SSID is tsunami.
----------	--------------------------------------

Command Modes	Configuration interface
---------------	-------------------------

Command History	Release	Modification
	12.2(4)JA	This command was introduced

Usage Guidelines	Use this command to specify a unique SSID for your wireless network. Several access points on a network, or subnetwork, can share a SSID. The <b>no</b> form of the command removes the SSID, which inhibits clients that use that SSID from associating with the access point.
------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

**Examples** This example shows how to set the radio SSID to Ivory-AP25:

```
1100-AP(config-if)# ssid Ivory-AP25
```

This example shows how to remove the SSID named Ivory-AP25 and all its configuration settings:

```
1100-AP(config-if)# no ssid Ivory-AP25
```

# Proxy Mobile IP Example

The screenshot displays the Cisco 1100 Access Point configuration web interface. The top navigation bar includes tabs for GENERAL SET-UP, SA BINDINGS, SUBNET TABLE, and STATISTICS. The left sidebar lists various configuration categories: HOME, EXPRESS SET-UP, NETWORK MAP, ASSOCIATION, NETWORK INTERFACES, SECURITY, SERVICES, Telnet/SSH, Hot Standby, CDP, DNS, Filters, HTTP, Proxy Mobile IP (highlighted), QoS, SNMP, NTP, VLAN, SYSTEM SOFTWARE, and EVENT LOG. The main content area is titled 'Cisco 1100 Access Point' and shows the 'GENERAL SET-UP' tab. The hostname is 'GigawaveAP1100' and the uptime is '25 minutes'. Under the 'Services: Proxy Mobile IP: General Set-Up' section, the 'Proxy Mobile IP' option is set to 'Disabled'. Below this, the 'Authoritative Access Points (Hostname or IP Address)' section contains three entries, all set to 'DISABLED'. The interface includes 'Apply' and 'Cancel' buttons at the bottom right and a 'Close Window' button at the bottom left. The footer text reads 'Copyright (c) 1992-2002 by Cisco Systems, Inc.'

Close Window

Cisco SYSTEMS

### Cisco 1100 Access Point

GENERAL SET-UP SA BINDINGS SUBNET TABLE STATISTICS

Hostname GigawaveAP1100 GigawaveAP1100 uptime is 25 minutes

#### Services: Proxy Mobile IP: General Set-Up

Proxy Mobile IP: ☐ Enabled ☒ Disabled

Authoritative Access Points (Hostname or IP Address)

1. DISABLED
2. DISABLED
3. DISABLED

Apply Cancel

Close Window Copyright (c) 1992-2002 by Cisco Systems, Inc.

# IOS Channel Example

1100-AP(config-if)# channel 2457

### Network Interfaces: Radio-802.11b Settings

**Enable Radio:** ☒ Enable

**Current Status (Software/Hardware):** Enable

**Role in Radio Network (Fallback mode upon loss of Ethernet connection):**

- ☒ Access Point
- ☐ Access Point
- ☐ Access Point
- ☐ Repeater

**Data Rates:** ☐ Best Fit

1.0 Mb/sec: ☒ Require

2.0 Mb/sec: ☒ Require

5.5 Mb/sec: ☒ Require

11.0 Mb/sec: ☒ Require ☐ Enable ☐ Disable

**Transmitter Power (mW):** ☐ 1 ☐ 5 ☐ 20 ☐ 30 ☒ 50 ☐ 100 ☐ max

**Default Radio Channel:** Channel 10 - 2457 MHz

### channel

**Defaults** The default channel is least-congested.

**Command Modes** Configuration interface

**Command History**

Release	Modification
12.2(4)JA	This command was introduced.

**Examples**

This example shows how to set the access point radio channel 10 with a center frequency of 2457.

```
1100-AP(config-if)# channel 2457
```

This example shows how to set the access point to scan for the least-congested radio channel.

```
1100-AP(config-if)# channel least-congested
```

This example shows how to set the beacon parameter to defaults:

```
1100-AP(config-if)# no channel
```

**Related Commands**

Command	Description
show controllers dot11radio	Displays the radio controller information and status

# IOS Channel Example (cont.)

## channel

Use the **channel** configuration interface command to set the radio channel frequency. Use the **no** form of this command to reset the channel frequency to defaults.

**[no] channel {number | frequency | least-congested}**

Syntax Description	<i>number</i>	Specifies a channel number (see <a href="#">Table 2-1</a> ).
	<b>Note</b>	The valid numbers depend on the channels allowed in your regulatory region and are set during manufacturing.
	<i>frequency</i>	Specifies the center frequency for the radio channel. Center frequency options are available in your regulatory region (See <a href="#">Table 2-1</a> ).
	<b>Note</b>	The valid frequencies depend on the channels allowed in your regulatory region and are set during manufacturing.
	<i>least-congested</i>	Enables or disables the scanning for a least busy radio channel to communicate with the client adapter

**Table 2-1 Center Frequencies for IEEE 802.11b Radios**

Channel Identifier	Center Frequency (MHz)	Regulatory Domains				
		Americas (-A)	EMEA (-E)	Japan (-J)	Israel (-I)	China (-C)
1	2412	X	X	X	-	X
2	2417	X	X	X	-	X
3	2422	X	X	X	X	X
4	2427	X	X	X	X	X
5	2432	X	X	X	X	X
6	2437	X	X	X	X	X
7	2442	X	X	X	X	X
8	2447	X	X	X	X	X
9	2452	X	X	X	X	X
10	2457	X	X	X	-	X
11	2462	X	X	X	-	X
12	2467	-	X	X	-	-
13	2472	-	X	X	-	-
14	2484	-	-	X	-	-



# Summary

Upon completion of this module, you will be able to perform the following tasks:

- **Explain the difference between a root and non-root mode access point.**
- **Assign an IP Address to an access point using the IPSU.**
- **Configure various parameters on an access point.**

## Review Questions

- Must the IPSU be used to assign an IP address to an access point?
- Does a blinking status light on the top panel LEDs indicate a problem?
- How many ways can you connect to an access point?
- What does Hot Standby mean?