
Procedure for Configuring Radius Servers

1. **Radius Server Mode:** Choose **Internal** if you want to use the XS-3900's internal RADIUS server, or choose **External** to use an external RADIUS server.
2. **Primary IP Address:** If you are using an external RADIUS server, enter the primary server's IP address.
3. **Primary Port Number:** If you are using an external RADIUS server, enter the primary port number.
4. **Secondary IP Address (optional):** If desired, enter the secondary RADIUS server's IP address.

If the primary RADIUS server becomes off-line, the Array will "failover" to the secondary RADIUS server (defined here).

5. **Secondary Port Number:** If desired, enter the secondary port number.
6. **Timeout:** Define the maximum idle time (in seconds) before the RADIUS session times out. The default is 600 seconds.
7. **Primary Shared Secret / Verify Secret:** If you are using RADIUS, enter the primary shared secret, then re-enter the primary shared secret to verify that you typed it correctly.
8. **Secondary Shared Secret / Verify Secret:** If you are using RADIUS, enter the secondary shared secret, then re-enter the secondary shared secret to verify that you typed it correctly.
9. Click on the **Apply** button to apply the new settings to this session.
10. Click on the **Save** button to save your changes (otherwise your new settings will not take effect).

Radius User

This page allows you to manage local RADIUS user accounts (create, modify and delete). When finished, click on the **Save** button to save your changes.

XS-3900 Wireless LAN Array


Array Status
Express Set-Up
Network Interfaces
JAP Interfaces
SSID
Security
Security Management
Radius Server
Radius User
MAC Access List
Admin Management
Rogue AP List
Stations
Services
Array Info
Tools
Show Config
Event Log

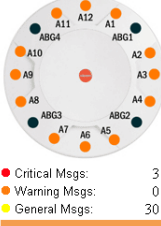
RADIUS User Management

New User Name:
User Password:
Verify Password:
SSID: (Network Name)

User Management:

BillRadiusTest

User Password:
Verify Password:
SSID: (Network Name)



Critical Msgs: 3
Warning Msgs: 0
General Msgs: 30

Location: Name: Xirrus_WLAN_Array Gigabit 1 IP: 10.0.1.2

Figure 79. WMI: Radius User Page

Procedure for Configuring Radius Users

1. **New User Name:** Enter a new RADIUS user name.
2. **User Password:** Enter a password for this user.
3. **Verify Password:** Re-enter the user password to verify that you typed it correctly.
4. **SSID (Network Name):** Choose an SSID from the pull-down list (this will be the only SSID a user can associate to).
5. Click on the **Create User** button to add this user to the list.

Editing Radius Users

6. **User Management:** If you want to edit an existing RADIUS user account, select the user from the list. You must now enter the user password and select an SSID.
 - a. **User Password:** Enter the password of the user account you want to edit.
 - b. **Verify Password:** Re-enter the password to verify that you typed it correctly.
 - c. **SSID (Network Name):** Choose an SSID from the pull-down list.

When you have finished making your edits, click on the **Modify** button to apply the changes.

7. Alternatively, you can delete users by selecting the user from the list and clicking on the **Delete** button.
8. Click on the **Save** button to save your changes (otherwise your new settings will not take effect).

MAC Access List

This page allows you to create new MAC access lists, delete existing lists, and add/remove MAC addresses. When finished, click on the **Save** button to save your changes.

XS-3900 Wireless LAN Array

XIRRUS

Array Status

Express Set-Up

Network Interfaces

IAP Interfaces

SSID

Security

Security Management

Radius Server

Radius User

MAC Access List

Admin Management

Rogue AP List

Stations

Services

Array Info

Tools

Show Config

Event Log

MAC Access List Create/Delete

MAC Access List Type: ☐ Disabled ☒ Allow List ☐ Deny List

New MAC Address:

MAC Access List Management:

00:09:2b:65:47:ae

00:10:5b:96:47:fb

A11

A12

A1

ABG1

A2

A3

A4

ABG2

A5

A6

A7

ABG3

A8

A9

A10

ABG4

Critical Msgs: 3

Warning Msgs: 0

General Msgs: 38

Location:

Name: Xirrus_WLAN_Array

Gigabit 1 IP: 10.0.1.2

Figure 80. WMI: MAC Access List Page

Procedure for Configuring MAC Access Lists

1. **MAC Access List Type:** Select the MAC Access List type—either **Disabled**, **Allow List** or **Deny List**, then click on the **Modify** button to apply your changes.
 - **Allow List:** Only allows these MAC addresses to associate to the Array.
 - **Deny List:** Allows all MAC addresses except the addresses defined in this list.



In addition to these lists, other authentication methods (for example, RADIUS) are still enforced for users.

2. **New MAC Address:** If you want to add a MAC address to the ACL, enter the new MAC address here, then click on the **Add** button. The MAC address is added to the ACL.
3. **MAC Access List Management:** You can delete a MAC Access List by selecting the list you want to delete then clicking on the **Delete** button.
4. Click on the **Save** button to save your changes (otherwise your new settings will not take effect).

Admin Management

This page allows you to manage network administrator accounts (create, modify and delete). It also allows you to limit account access to a read only status. When finished, click on the **Save** button to save your changes.

XS-3900 Wireless LAN Array


Array Status
Express Set-Up
Network Interfaces
IAP Interfaces
SSID
Security
Security Management
Radius Server
Radius User
MAC Access List
Admin Management
Rogue AP List
Stations
Services
Array Info
Tools
Show Config
Event Log

New Admin ID:
New Admin

Privilege Level:
☐ Read
☒ Read/Write

Admin Password:

Verify Password:
Create

Admin ID:
admin
Delete

Privilege Level:
☐ Read
☒ Read/Write

Admin Password:

Verify Password:
Modify

Save



Critical Msgs: 3
Warning Msgs: 0
General Msgs: 38

Location:
Name: Xirrus_WLAN_Array
Gigabit 1 IP: 10.0.1.2




Figure 81. WMI: Admin Management Page

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Configuring the Xirrus Array

Procedure for Creating Network Administrator Accounts

1. **New Admin ID:** Enter a meaningful description for this new network administrator ID.
2. **Privilege Level:** Choose **Read** to restrict this administrator ID to read only status, or choose **Read/Write** if you want to give this administrator ID full read/write privileges. In the read only mode, administrators cannot save changes to configurations.
3. **Admin Password:** Enter a password for this ID.
4. **Verify Password:** Re-enter the password in this field to verify that you typed the password correctly. If you do not re-enter the correct password, an error message is displayed).
5. Click on the **Create** button to add this administrator ID to the list.

Editing Network Administrator Accounts

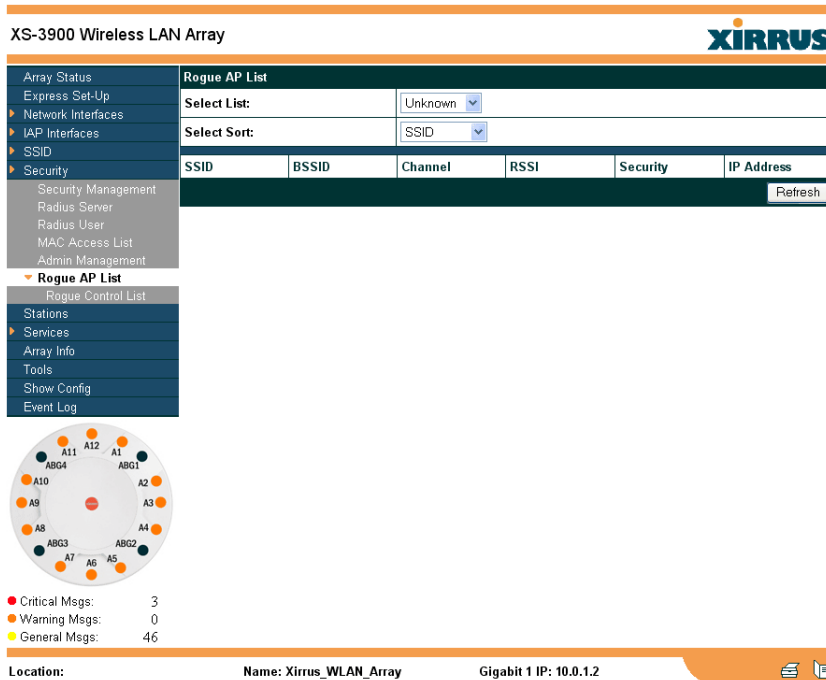
6. **Admin ID:** Choose the administrator ID you want to edit or delete from the list. If you are deleting the selecting administrator ID, click on the **Delete** button, otherwise go to Step 7.
7. **Privilege Level:** Choose **Read** to restrict the selected administrator ID to read only status, or choose **Read/Write** if you want to give this administrator ID full privileges.
8. **Admin Password:** Enter the password for the selected administrator ID.
9. **Verify Password:** Re-enter the password in the right field (this field must match the Admin Password field).
10. Click on the **Modify** button to apply the new settings to this session.
11. Click on the **Save** button to save your changes (otherwise your new settings will not take effect).

Rogue AP List

This page displays rogue APs, according to the list you select (either Unknown, Known or Approved). In addition, you can sort the results based on the following parameters:

- SSID
- BSSID
- Channel
- RSSI
- Secure
- IP Address

You can refresh the list at any time by clicking on the **Refresh** button.



XS-3900 Wireless LAN Array

Rogue AP List

Select List:

Select Sort:

SSID	BSSID	Channel	RSSI	Security	IP Address
Refresh					

● Critical Msgs: 3
 ● Warning Msgs: 0
 ● General Msgs: 46

Location: Name: Xirrus_WLAN_Array Gigabit 1 IP: 10.0.1.2

Figure 82. WMI: Rogue AP List Page

Rogue Control List

This page allows you to set up a control list for rogue APs, based on a type that you define. When finished, click on the **Save** button to save your changes.

XS-3900 Wireless LAN Array

Array Status

Express Set-Up

Network Interfaces

AP Interfaces

SSID

Security

Security Management

Radius Server

Radius User

MAC Access List

Admin Management

Rogue AP List

Rogue Control List

Stations

Services

Array Info

Tools

Show Config

Event Log

Create Rogue Control List

New Rogue SSID:

New Rogue Control

Rogue Control Type:

☒ Known ☐ Approved

Create

Rogue Control List:

Bill Rogue Test

Delete

Rogue Control Type:

☒ Known ☐ Approved

Modify

Save

Critical Msgs:

3

Warning Msgs:

0

General Msgs:

46

Location:

Name: Xirrus_WLAN_Array

Gigabit 1 IP: 10.0.1.2

Figure 83. WMI: Rogue Control List Page

Procedure for Establishing Rogue AP Control

1. **New Rogue SSID:** Enter the SSID for the new rogue AP.
2. **Rogue Control Type:** Define the type, either **Known** or **Approved**.
3. Click on the **Create** button to add this rogue AP to the Rogue Control List.
4. **Rogue Control List:** If you want to edit the control type for a rogue AP, select the rogue from the list.
 - a. After selecting the rogue, redefine whether this rogue is **Known**, **Approved** or **Unknown**, then click on the **Modify** button to apply your change.
5. Alternatively, if you want to delete the selected rogue AP from the list, click on the **Delete** button.
6. Click on the **Save** button to save your changes (otherwise your new settings will not take effect).

Stations

This page displays stations (clients) that are currently associated with the Array. You can sort the results based on the following parameters:

- MAC
- IP Address
- Interface
- SSID
- VLAN

XS-3900 Wireless LAN Array

Array Status

Express Set-Up

Network Interfaces

IAP Interfaces

SSID

Security

Stations

Services

Array Info

Tools

Show Config

Event Log

Station Association

Select Sort:

MAC

MAC	Interface	SSID	VLAN
00:0f66:1a:06:61	a6	MGTest	0

Critical Msgs:

3

Warning Msgs:

0

General Msgs:

46

Location:

Name: Xirrus_WLAN_Array

Gigabit 1 IP: 10.0.1.2

Figure 84. WMI: Stations Page

Configuring the Xirrus Array

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Services

This is a status only page that allows you to review the current status of syslog and SNMP services. There are no configuration options available on this page, but if you are experiencing issues with network services, you may want to print this page for your records.

XS-3900 Wireless LAN Array



Array Status

Express Set-Up

Network Interfaces

IAP Interfaces

SSID

Security

Stations

Services

Time Settings

System Log

SNMP

Array Info

Tools

Show Config

Event Log



Critical Msgs: 3

Warning Msgs: 0

General Msgs: 46

Services			
NTP Server Status	NTP Server 1 Address	NTP Server 2 Address	
Disabled	time.nist.gov	129.6.15.29	
Syslog Server Status	Syslog Server IP	Syslog Server Level	
Enabled	0.0.0.0	Debug	
SNMP Status	SNMP Sink IP	SNMP Trap Port	SNMP Community String
Disabled		162	xirrus

Location:

Name: Xirrus_WLAN_Array

Gigabit 1 IP: 10.0.1.2




Figure 85. WMI: Services Page

Time Settings

This page allows you to manage the Array’s time settings, including synchronizing the Array’s clock with a universal clock from an NTP (Network Time Protocol) server. Synchronizing the Array’s clock with an NTP server ensures that syslog time-stamping is maintained across all units.

XS-3900 Wireless LAN Array

XIRRUS

Array Status

Express Set-Up

Network Interfaces

IAP Interfaces

SSID

Security

Stations

Services

Time Settings

System Log

SNMP

Array Info

Tools

Show Config

Event Log

Time Settings

Adjust Time: (hrs:min:sec)

☒

10

:

29

:

13

AM

Adjust Date: (day/month/year)

☐

5

/

23

/

2005

Auto Adjust Daylight Savings:

☐

TimeZone:

(GMT) Greenwich Mean Time: Dublin, Lisbon, London

Enable NTP Server:

☒ Yes

☐ No

NTP Server 1 Address:

time.nist.gov

NTP Server 2 Address:

129.6.15.29

Apply

Save

A11

A12

A1

ABG1

A2

A3

A4

ABG2

A5

A6

A7

ABG3

A8

A9

A10

ABG4

Critical Msgs:

4

Warning Msgs:

0

General Msgs:

46

Location:

Name: Xirrus_WLAN_Array

Gigabit 1 IP: 10.0.1.2

Figure 86. WMI: Time Settings Page

Configuring the Xirrus Array

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Procedure for Managing the Time Settings

Manual Time

1. **Adjust Time:** Check this box to allow manual adjustment of the time in hours, minutes and seconds (hrs:min:sec).
2. **Adjust Date:** Check this box to allow manual adjustment of the date (day/month/year).
3. **Auto Adjust Daylight Savings:** Check this box if you want the system to automatically adjust the time for daylight savings.
4. **Time Zone:** Select the time zone you want to use (normally your local time zone) from the pull-down list.

Using an NTP Server

5. **Enable NTP Server:** Check this box if you want to use an NTP (Network Time Protocol) server to synchronize the Array's clock. Without an NTP server assigned (no universal clock), each Array will use its own internal clock and stamp times accordingly, which may result in discrepancies. When this box is checked, the NTP Server 1 Address and NTP 2 Server 2 Address fields become active. If you don't want to use an NTP server, leave this box unchecked (default), otherwise enter the IP address or DNS name of the NTP server(s).
6. **NTP Server 1 Address:** Enter the IP address or DNS name of the primary NTP server.
7. **NTP Server 2 Address:** Enter the IP address or DNS name of the secondary NTP server.
8. Click on the **Apply** button to apply the new settings to this session.
9. Click on the **Save** button to save your changes (otherwise your new settings will not take effect).

System Log

This page allows you to enable or disable the Syslog server, define the server’s IP address, and set the level for Syslog reporting—the Syslog service will send Syslog messages to the defined Syslog server. When finished, click on the **Apply** button to apply the new settings to this session, then click on the **Save** button to save your changes.

XS-3900 Wireless LAN Array

Array Status

Express Set-Up

Network Interfaces

JAP Interfaces

SSID

Security

Stations

Services

Time Settings

System Log

SNMP

Array Info

Tools

Show Config

Event Log

System Log

Enable Syslog Server: ☒ Yes ☐ No

Server IP Address:

Syslog Server Level:

Maximum Syslog Records (1-500):

Apply

Save

A11

A12

A1

ABG1

A2

A3

A4

ABG2

A5

A6

A7

ABG3

A8

A9

A10

ABG4

Critical Msgs: 4

Warning Msgs: 0

General Msgs: 46

Location:

Name: Xirrus_WLAN_Array

Gigabit 1 IP: 10.0.1.2

Figure 87. WMI: System Log Page

Configuring the Xirrus Array

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Procedure for Configuring Syslog

1. **Enable Syslog Server:** Choose **Yes** to enable Syslog functionality, or choose **No** to disable this feature.
2. **Server IP Address:** If you enabled Syslog, enter the IP address of the Syslog server.
3. **Syslog Server Level:** Choose the level of Syslog reporting from the pull-down list. Levels include:
 - Emergency
 - Alerts
 - Critical
 - Error
 - Warning
 - Notification
 - Information
 - Debug



A screenshot of a web-based configuration interface showing a pull-down menu for 'Syslog Server Level'. The menu is open, displaying a list of log levels: Emergency, Alerts, Critical, Error, Warning, Notification, Information, and Debug. The 'Debug' option at the bottom is highlighted with a blue background. The menu has a small blue arrow icon on the right side of the header.

The default level is Debug.

4. **Maximum Syslog Records:** Enter a value in this field to define how many syslog records are processed (up to a maximum of 500).
5. Click on the **Apply** button to apply the new settings to this session.
6. Click on the **Save** button to save your changes (otherwise your new settings will not take effect).

SNMP

This page allows you to enable or disable SNMP and define the SNMP parameters. SNMP allows remote management of the Array by the Xirrus Management System (XM-3300), or other SNMP-based management system. When finished, click on the **Apply** button to apply the new settings to this session, then click on the **Save** button to save your changes.

XS-3900 Wireless LAN Array

Array Status

Express Set-Up

Network Interfaces

WAP Interfaces

SSID

Security

Stations

Services

Time Settings

System Log

SNMP

Array Info

Tools

Show Config

Event Log

SNMP

Enable SNMP:

SNMP Sink IP Address:

Trap Port:

Community String:

Yes

No

162

xirrus

Apply

Save

A11

A12

A1

ABG1

A2

A3

A4

ABG2

A5

A6

A7

ABG3

A8

A9

A10

ABG4

Critical Msgs: 4

Warning Msgs: 0

General Msgs: 46

Location:

Name: Xirrus_WLAN_Array

Gigabit 1 IP: 10.0.1.2

Figure 88. WMI: SNMP Page

Procedure for Configuring SNMP

1. **Enable SNMP:** Choose **Yes** to enable SNMP functionality, or choose **No** to disable this feature.
2. **SNMP Link IP Address:** Enter the IP address of the SNMP link.
3. **Trap Port:** Enter the trap port.
4. **Community String:** Enter the community string.
5. Click on the **Apply** button to apply the new settings to this session.
6. Click on the **Save** button to save your changes (otherwise your new settings will not take effect).

Array Info

This is a status only page that allows you to review the current status of the Array. There are no configuration options available on this page, but if you are experiencing issues with network services, you may want to print this page for your records.

XS-3900 Wireless LAN Array



Array Controller Software				
Component	Part Number	Serial Number	Date	
Array	Unknown	Unknown	Unknown	
Controller	0003-000.010	0000016426	2000-Jan-01 0:02	
IAP Module 0	0013-003.010	0000000500	2005-Mar-31 15:24	
IAP Module 1	0013-005.010	0000000208	2005-Mar-31 15:24	
IAP Module 2	0013-003.010	0000000505	2005-Mar-31 15:25	
IAP Module 3	0013-003.010	0000000501	2005-Mar-31 15:25	

Array Info

Tools

Show Config

Event Log

FPGA Status	Boot Version	S/W Version
Queue Control/FTE	0.002	0.002
Encryption Engine	0.001	0.001
Multi-Channel MAC	0.030	0.034

Interface	MAC Address(es)
Ethernet 10/100 MAC	00:0f:7d:00:40:2a
Gigabit 1 MAC	00:0f:7d:00:40:2b
Gigabit 2 MAC	00:0f:7d:00:40:2c
IAP MAC Range	00:0f:7d:29:00:e0:0f

Component	Version
Boot Loader	Xirrus Boot Loader 1.0.0 (May 12 2005). Build: 2255
IAP Driver	#1508 Mon May 16 17:14:05 PDT 2005
System Software	1.1



● Critical Msgs: 4

● Warning Msgs: 0

● General Msgs: 46

Location:

Name: Xirrus_WLAN_Array

Gigabit 1 IP: 10.0.1.2




Figure 89. WMI: Array Info Page

Tools

This page allows you to reset the system's configuration parameters to their factory default values, reboot the system, and ping other IP addresses for diagnostic purposes.

XS-3900 Wireless LAN Array



Array Status

Express Set-Up

Network Interfaces

IAP Interfaces

SSID

Security

Stations

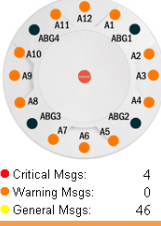
Services

Array Info

Tools

Show Config

Event Log



Critical Msgs: 4

Warning Msgs: 0

General Msgs: 46

Tools

System Configuration Reset:

System Reboot:

Software Upgrade:

Config Update:

Config Download: [xs_current.conf](#)

System Tools: ☒ Trace Route ☐ Ping

IP Address:

Timeout:

Output:

Location:

Name: Xirrus_WLAN_Array

Gigabit 1 IP: 10.0.1.2

Figure 90. WMI: Tools Page

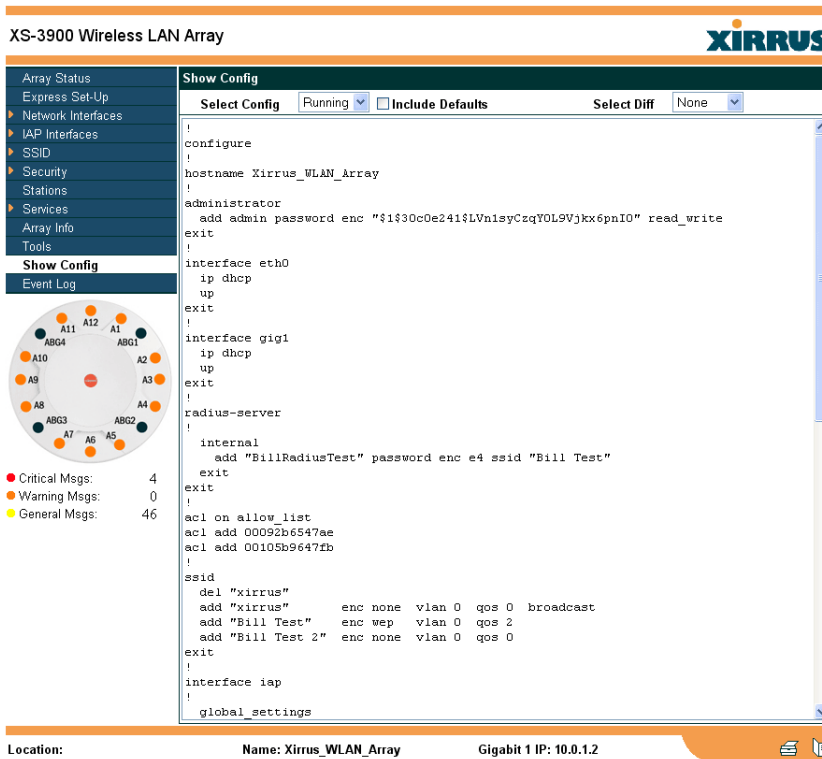
Procedure for Configuring System Tools

1. **System Configuration Reset:** Click on the **Reset** button to reset the system's current configuration settings to the factory default values—*all previous configuration settings will be lost.*
2. **System Reboot:** Click on the **Reboot** button to reboot the system—*you must reboot the Array.*
3. **Software Upgrade:** Enter the filename and directory location (or click on the **Browse** button to locate the software upgrade file), then click on the **Upload** button to upload the new file to the Array.
4. **Config Update:** This field allows you to define the path to a configuration file (one that you previously saved—see next step). Click on the **Browse** button if you need to browse for the location of the file, then click on the **Upload** button to update your configuration settings.
5. **Config Download:** Click on this link to save the Array's current configuration settings to a file (that you can upload at a later date). The system will prompt you for a destination for the file.
6. **System Tools:** Choose **Trace Route** or **Ping**.
7. **IP Address:** Enter the IP address of the target device.
8. **Timeout:** Enter a value (in seconds) before the action times out.
9. Click on the **Execute** button to perform the test. Results are displayed in the Output frame.

Show Config

This page allows you to display the configuration settings for the Array, based on the following sort options:

- **Running**—Displays the current configuration (the one running now).
- **Saved**—Displays the saved configuration from this session.
- **Startup**—Displays the configuration at start up.
- **Factory**—Displays the configuration established at the factory.



XS-3900 Wireless LAN Array

Show Config

Select Config: Running ☐ Include Defaults Select Diff: None

```

!
configure
!
hostname Xirrus_WLAN_Array
!
administrator
  add admin password enc "$1$30c0e241$LVn1syCzqY0L9VjKx6pn10" read_write
exit
!
interface eth0
  ip dhcp
  up
exit
!
interface gig1
  ip dhcp
  up
exit
!
radius-server
!
  internal
    add "BillRadiusTest" password enc e4 ssid "Bill Test"
  exit
exit
!
acl on allow_list
acl add 00092b6547ae
acl add 00105b9647fb
!
ssid
  del "xirrus"
  add "xirrus"      enc none  vlan 0  qos 0  broadcast
  add "Bill Test"  enc wep   vlan 0  qos 2
  add "Bill Test 2" enc none  vlan 0  qos 0
exit
!
interface iap
!
global_settings

```

Location: Name: Xirrus_WLAN_Array Gigabit 1 IP: 10.0.1.2

Figure 91. WMI: Show Config Page

If you want to see just the differences between the Running, Saved, Startup, and Factory configurations, you can do this by choosing a configuration from the **Select Config** pull-down menu then selecting an alternative configuration from the **Select Diff** pull-down menu.

You also have the option of including the default configuration settings. To do this, choose your configuration then click in the **Include Defaults** check box.

Event Log

This is a status only page that allows you to review the event log, where system alerts and messages are displayed. Although there are no configuration options available on this page, you do have the choice of deciding how the event messages are sorted (Time Stamp, Priority, or Message).

- **Time Stamp**—sorts the list based on the time the event occurred.
- **Priority**—sorts the list based on the priority assigned to the message.
- **Message**—sorts the list based on the message category.

XS-3900 Wireless LAN Array

Event Log

- Array Status
- Express Set-Up
- Network Interfaces
- IAP Interfaces
- SSID
- Security
- Stations
- Services
- Array Info
- Tools
- Show Config

Log		
Select Sort: Priority		
Time Stamp	Priority	Message
May 23 10:27:49	Alerts	Possible rogue AP detected. SSID: SST-PR-1, BSSID: 32:01:ef:00:06:02, Channel: 6, RSSI: 168, Security: WEP
May 23 08:20:16	Alerts	Possible rogue AP detected. SSID: SST-PR-1, BSSID: 4e:03:30:03:d6:01, Channel: 6, RSSI: 168, Security: WEP
May 23 07:32:27	Alerts	Possible rogue AP detected. SSID: reym, BSSID: 00:0c:41:b1:9b:60, Channel: 6, RSSI: 169, Security: none
May 23 06:19:06	Alerts	Possible rogue AP detected. SSID: michaelwarsing, BSSID: 00:09:5b:9c:01:4a, Channel: 11, RSSI: 224, Security: none
May 23 10:06:16	Notification	Configuration saved
May 23 09:56:19	Notification	Configuration saved
May 23 09:56:18	Notification	Admin user admin write access granted
May 23 09:56:06	Notification	ACL MAC address 00:10:5b:96:47:fb added
May 23 09:56:06	Notification	Admin user admin write access granted
May 23 09:56:42	Notification	ACL MAC address 00:09:2b:65:47:ae added
May 23 06:17:41	Notification	Interface eth0 ip address changed to 192.168.0.7
May 23 06:17:29	Information	Array initialized successfully

Refresh Clear

● Critical Msgs: 4
● Warning Msgs: 0
● General Msgs: 8

Location: Name: Xirrus_WLAN_Array Gigabit 1 IP: 10.0.1.2

Figure 92. WMI: Event Log Page

Click on the **Refresh** button to refresh the messages, or click on the **Clear** button to delete all messages. If you are experiencing problems with your network you may want to print this page for your records.

The Command Line Interface

This chapter covers configuration and management tasks using the product's Command Line Interface (CLI), and includes a procedure for establishing a Telnet connection to the Xirrus Array. Section headings for this chapter include:

- “Establishing a Secure Shell (SSH) Connection” on page 143
- “Basic Commands” on page 144
- “Command Modes” on page 145
- “Selecting Interfaces” on page 148
- “Commands” on page 149

Establishing a Secure Shell (SSH) Connection

Use this procedure to initialize the system and log in to the Command Line Interface (CLI) via a Secure Shell (SSH) utility, such as PuTTY.

1. Start your SSH session and communicate with the XS-3900 via its default IP address (10.0.1.1).

When connected to the Array, a login prompt appears on your screen. The default login user name and password is **admin** (for both). Login names and passwords are case-sensitive.

2. Enter **admin** when prompted for a user name and password. You are now logged in to the Array's Command Line Interface.

```
Username: admin
Password: *****

XirrusArray#
  configure  Enter configuration mode
  enable     Change privilege level
  exit       Quit the CLI
  help       Description of the interactive help system
  quit       Quit the CLI
  save       Save running configuration to flash
  show       Display current information about the selected item

XirrusArray#
```

Figure 93. Command Line Interface

Basic Commands

Help

To get help at any point type **help** or **?** to view the interactive help system.

Tab Key

The **Tab** key allows auto-completion of commands such that only a few unique characters need to be entered followed by the Tab key, which will automatically fill in the rest of the command.

? Key

The **?** key displays the list of available commands at any point of typing in the command line.

Save

You must type **save** to save the current configuration to flash memory so that changes are kept when the Array is rebooted.

Show

Displays the current settings and is useful when verifying the current configuration settings.

End

Returns you to the to top-level configure mode.

Exit

Exits the current command mode level, and enters the next level up.

Quit

Exits the command line interface.

No

Disables an item that is currently enabled; or sets the selected item to the default value.

Command Modes

Configure Mode

Allows major functional changes to interfaces and Array configuration.

Requires read/write administrator privileges

From the default prompt, type **configure** then press <ENTER>

```
Xirrus-Array# configure
```

```
Xirrus-Array(config)#
```

The prompt changes to show the current mode in parentheses.



When inputting commands you need only type as many characters as the system requires before it recognizes your input.

Admin Mode

Allows you to manage user accounts, including adding accounts, deleting accounts, and displaying current user account information.

Requires read/write administrator privileges

From the configure mode, type **admin** then press <ENTER>

```
Xirrus-Array(config)# admin
```

```
Xirrus-Array(config-admin)#
```

Contact Info Mode

Allows you to display the current contact information for the Array, or modify the existing contact information.

Requires read/write administrator privileges

From the configure mode, type **contact** then press <ENTER>

```
Xirrus-Array(config)# contact
```

```
Xirrus-Array(config-contact-info)#
```

Date & Time Mode

Allows you to configure the date and time settings used by the Array.

Requires read/write administrator privileges

From the configure mode, type **date** then press <ENTER>

```
Xirrus-Array(config)# date
```

```
Xirrus-Array(config-date-time)#
```

DHCP Mode

Allows you to enable, disable and configure the DHCP server.

Requires read/write administrator privileges

From the configure mode, type **dhcp** then press <ENTER>

```
Xirrus-Array(config)# dhcp
```

```
Xirrus-Array(config-dhcp-server)#
```

DNS Mode

Allows you to configure the DNS settings.

Requires read/write administrator privileges

From the configure mode, type **dns** then press <ENTER>

```
Xirrus-Array(config)# dns
```

```
Xirrus-Array(config-dns)#
```

Radius Mode

Allows you to make configuration changes to the internal RADIUS server.

Requires read/write administrator privileges

From the configure mode, type **radius** then press <ENTER>

```
Xirrus-Array(config)# radius
```

```
Xirrus-Array(config-radius-server)#
```

Run Test Mode

Allows you to execute diagnostic run tests (for example, pings and trace routes).

Requires read/write administrator privileges

From the configure mode, type **run-tests** then press <ENTER>

```
Xirrus-Array(config)# run-tests
```

```
Xirrus-Array(run-test)#
```

Security Mode

Allows you to set security parameters for the Array.

Requires read/write administrator privileges

From the configure mode, type **security** then press <ENTER>

```
Xirrus-Array(config)# security
```

```
Xirrus-Array(config-security)#
```

SNMP Mode

Allows you to enable, disable or configure SNMP.

Requires read/write administrator privileges

From the configure mode, type **snmp** then press <ENTER>

```
Xirrus-Array(config)# snmp
```

```
Xirrus-Array(config-snmp)#
```

SSID Mode

Allows you to add, delete and modify SSIDs, or display the current definitions for a selected SSID.

Requires read/write administrator privileges

From the configure mode, type **ssid** then press <ENTER>

```
Xirrus-Array(config)# ssid
```

```
Xirrus-Array(config-ssid)#
```

Syslog Mode

Allows you to enable, disable and configure the Syslog server.

Requires read/write administrator privileges

From the configure mode, type **syslog** then press <ENTER>

```
Xirrus-Array(config)# syslog
```

```
Xirrus-Array(config-syslog)#
```

Selecting Interfaces

From the configure mode select the desired interface.

```
interface {console | iap | gig1 | gig2 | eth0};
```

console	asynchronous serial console port
iap	integrated access point interface
gig1	gigabit Ethernet interface
gig2	gigabit Ethernet interface
eth0	10/100 Ethernet interface

Example:

```
Xirrus-Array(config)# interface iap
```

```
Xirrus-Array(config-iap)#
```

Commands

This section contains detailed information for each CLI command, organized alphabetically. The following table provides a listing of the commands. Click on any command in this list to “jump” to that command.

administrator	more
acl	radius-server
console	reboot
contact-info	reset
copy	run-script
date-time	run-tests
dhcp-server	save
dir	security
dns	show
erase	snmp
eth0	ssh
ftp	syslog
gig1	telnet
gig2	
hostname	
iap	
iap global_settings	
iap global_a_settings	
iap global_bg_settings	
location	

administrator

DESCRIPTION

Adds and edits administrator accounts and privileges—available from the **config** command mode.

SYNTAX

administrator [add <uid> password [enc] <passwd> {read_only | read_write} | del <uid>]

PARAMETERS

add <uid>	Add user ID
read_only	Read only permissions
read_write	Read/write permissions
password	Define user password
enc	Enter password in encrypted form (<i>must be in quotes</i>)

DEFAULTS

None.

USAGE GUIDELINES

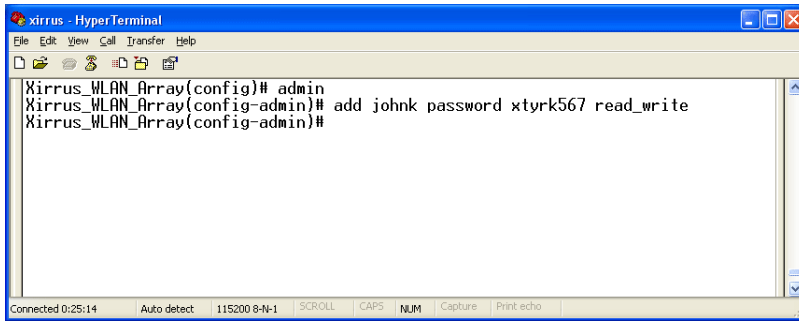
The **show** command within the **config-admin** mode will display all administrator accounts and privileges.

EXAMPLE

To add a new administrator account:

config-administrator

(config-admin)# add johnk password xtyrk567 read_write



The screenshot shows a HyperTerminal window titled "xirrus - HyperTerminal". The window contains the following text:

```
Xirrus_WLAN_Array(config)# admin
Xirrus_WLAN_Array(config-admin)# add johnk password xtyrk567 read_write
Xirrus_WLAN_Array(config-admin)#
```

The status bar at the bottom of the window displays: "Connected 0:25:14", "Auto detect", "115200 8-N-1", "SCROLL", "CAPS", "NUM", "Capture", and "Print echo".

Figure 94. CLI: Adding a New Administrator Account

SEE ALSO

None.

acl

DESCRIPTION

Configures the MAC based Access Control Lists to allow or limit the association of stations to the Array.

SYNTAX

```
acl {off | on {allow_list | deny_list} | add <amac> | del <dmac>}
```

PARAMETERS

on	Enable access control list
off	Disable access control list
allow_list	Enable allow list, where this list is a list of users to allow association to the array
deny_list	Enable deny list, where this list is used to deny association to the array
add	Add MAC address to the list
del	Delete MAC address from the list

DEFAULTS

None.

USAGE GUIDELINES

None.

EXAMPLE

To allow association to the array, type:

```
Xirrus_WLAN_Array(config)# acl on allow_list  
Xirrus_WLAN_Array(config)# acl add 00:00:a1:cd:45
```

SEE ALSO

None.

console

DESCRIPTION

Configures the Console Interface (serial port)—available from the **config-interface** command mode.

SYNTAX

```
console { {baud <brate> | bytesize <bsz> | stopbits <sbit> | parity {none | odd | even} | timeout <idleto> }@}
```

PARAMETERS

timeout	Console inactivity timeout in seconds
baud	Async port baud rate 2400 - 115,200 bps
bytesize	Async port word size 7 or 8 bits
stopbits	Async port number of stop bits 0, 1, or 2
parity	Async port number of parity bits
<i>none</i>	No parity
<i>odd</i>	Odd parity
<i>even</i>	Even parity

DEFAULTS

115,200, 8bit, No Parity, 1 Stop bit, No Flow Control.

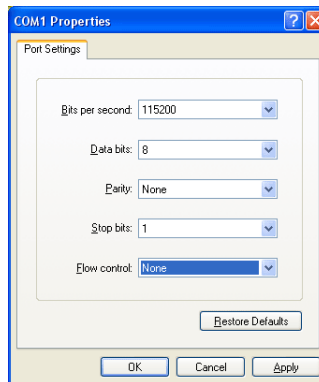


Figure 95. CLI: Default Serial Port Settings

USAGE GUIDELINES

None.

EXAMPLE

To set the baud rate of the console serial port to 9600 baud:

```
config-interface console  
(config-console)# baud 9600
```

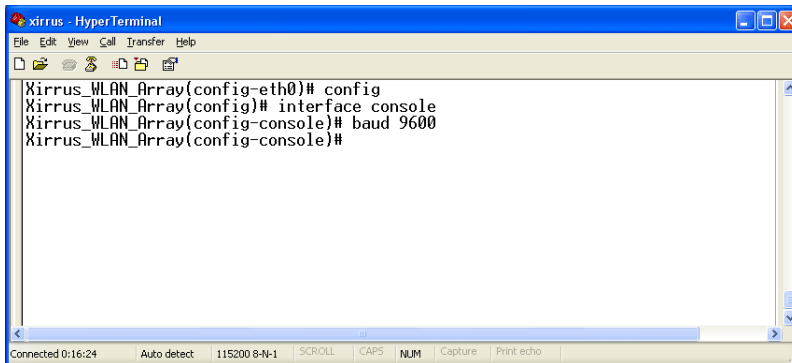


Figure 96. CLI: Setting the IP Address for the Serial Port

SEE ALSO

None.

contact-info

DESCRIPTION

Sets the contact information for this Array—available from the **config** command mode.

SYNTAX

contact-info {name [<conname>] | email [<emailcontact>] | phone [<contele>]}@

PARAMETERS

contact-info	Contact information for assistance on this Array
name	Contact name (<i>must be within quotes</i>)
email	Contact email address (<i>must be within quotes</i>)
phone	Contact telephone number (<i>must be within quotes</i>)

DEFAULTS

None.

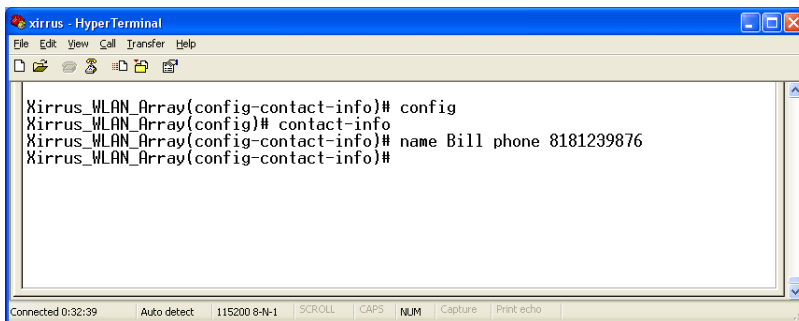
USAGE GUIDELINES

None.

EXAMPLE

To add new contact information (name and telephone number):

```
config-contact-info
(config-contact-info)# name Bill phone 8181239876
```



```
xirrus - HyperTerminal
File Edit View Call Transfer Help
Xirrus_WLAN_Array(config-contact-info)# config
Xirrus_WLAN_Array(config)# contact-info
Xirrus_WLAN_Array(config-contact-info)# name Bill phone 8181239876
Xirrus_WLAN_Array(config-contact-info)#
```

Connected 0:32:39 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo

Figure 97. CLI: Adding a New Administrator Account

SEE ALSO

None.

copy

DESCRIPTION

Creates a copy of the specified file on the Flash file system.

SYNTAX

copy <sourcefile> <destinationfile>

PARAMETERS

sourcefile	The existing source file name
destinationfile	The new destination file name

DEFAULTS

None.

USAGE GUIDELINES

None.

EXAMPLE

To create a backup of the current system image file, type:

```
Xirrus_WLAN_Array(config)# copy XS-39-1.1.0 XS-39-1.1.BAK
```

SEE ALSO

dir

delete

date-time

DESCRIPTION

Set the date/time for the Array—available from the **config** command mode, using the format **hh:mm mm/dd/yyyy**.

SYNTAX

date-time <date/time>

PARAMETERS

dst_adjust	Adjust daylight savings
no	Disable daylight savings
ntp	Configure the NTP server
set	Set the date and time for the Array
timezone	Configure the time zone

DEFAULTS

None.

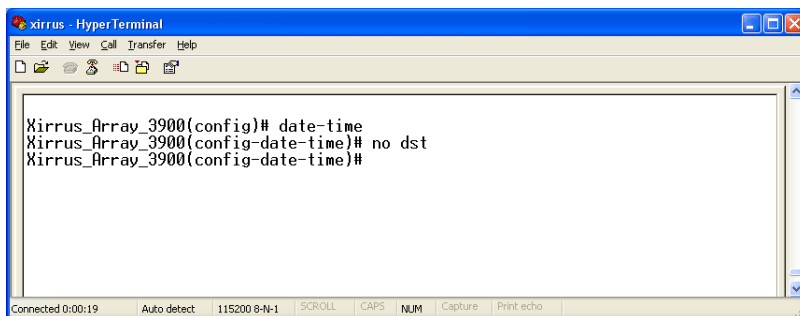
USAGE GUIDELINES

You access the **date-time** command mode from the **config** mode.

EXAMPLE

To disable daylight savings, type:

(config-date-time)# no dst



```
xirrus - HyperTerminal
File Edit View Call Transfer Help
Xirrus_Array_3900(config)# date-time
Xirrus_Array_3900(config-date-time)# no dst
Xirrus_Array_3900(config-date-time)#
Connected 0:00:19 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo
```

Figure 98. CLI: Disabling Daylight Savings

SEE ALSO

None.

dhcp-server**DESCRIPTION**

Configures the local DHCP server settings—available from the **Config-> dhcp-server** command mode.

SYNTAX

dhcp {on | off | {start-ip-range <sipr> | end-ip-range <eipr> | default-lease <defl> | max-lease <maxl>}@}

PARAMETERS

on	Enable the DHCP server
off	Disable the DHCP server
start-ip-range	Starting IP address for the lease pool
end-ip-range	Ending IP address for the lease pool
default-lease	Default lease period (in minutes), if one is not requested
max-lease	Maximum lease period allowed
show	Display the current DHCP server settings

DEFAULTS

Default lease time 300
Maximum lease time 300

USAGE GUIDELINES

None.

EXAMPLE

To set the IP address range for the local DHCP server and enable the server, type:

```
Xirrus_WLAN_Array(config)# dhcp-server
Xirrus_WLAN_Array(config-dhcp-server)# start-ip-range 192.168.1.100
end-ip-range 192.168.1.200
Xirrus_WLAN_Array(config-dhcp-server)# show
```

DHCP Server Settings Summary

```
-----
State          disabled
Address range start 192.168.1.100
Address range end 192.168.1.200
Default lease time 300
Maximum lease time 300
```

SEE ALSO

None.

dir

DESCRIPTION

Lists the contents of the local Flash file system directory.

SYNTAX

dir

PARAMETERS

None.

DEFAULTS

None.

USAGE GUIDELINES

None.

EXAMPLE

To list the local Flash file system directory contents, type:

Xirrus_WLAN_Array(config)# dir

The following will appear:

```
.  
..  
lastboot  
xs37-1.0.37.bin
```

SEE ALSO

Delete

Copy

dns

DESCRIPTION

Used to configure the DNS settings—available from the **Config-> dns** command mode.

SYNTAX

dns { domain [<dom>] | server1 [<srv1>] | server2 [<srv2>] | server3 [<srv3>]}

PARAMETERS

domain	Enter your domain name (Example: <i>www.mydomain.com</i>)
server1	Enter the first DNS server IP address
server2	Enter the second DNS server IP address
server3	Enter the third DNS server IP address

DEFAULTS

None.

USAGE GUIDELINES

Server1, Server2, and Server3 IP addresses must be entered using the standard A.B.C.D notation.

EXAMPLE

To configure the first DNS server, type:

```
Xirrus_WLAN_Array(config)# dnsy
```

```
Xirrus_WLAN_Array(config-dns)# server1 10.10.10.1
```

SEE ALSO

None.

erase

DESCRIPTION

Erases the specified file from the Flash file system.

SYNTAX

Erase <filename>

PARAMETERS

filename existing file to delete.

DEFAULTS

None.

USAGE GUIDELINES

None.

EXAMPLE

To erase the file **old-configuration**, type:

Xirrus_WLAN_Array(config)# erase old-configuration

SEE ALSO

dir

copy

eth0

DESCRIPTION

Configures the 10/100 Ethernet Interface Settings—available from the **config-interface** command mode.

SYNTAX

eth0 {[no] autoneg [on | off] | defaults | duplex {half | full} | speed <spdsel> | mtu <mtusz> | down | up | ip {dhcp | {addr <statip> | mask <ipmask> | gateway <gway>}@}}

PARAMETERS

half	Half duplex
full	Full duplex
mtu	Set the maximum MTU size allowed (64-17940)
defaults	Reset the interface to default values
duplex	Half or full duplex mode
speed	10M or 100M operations
down	Shut this interface down
up	Bring this interface up
ip	Set IP address (A.B.C.D)
dhcp	IP address, mask and gateway are obtained through DHCP
addr <IP Address>	Static IP address (A.B.C.D)
gateway <IP Address>	Gateway IP address (A.B.C.D)
mask <mask>	IP mask (A.B.C.D)
autoneg	Autonegotiation on or off
<i>on</i>	Enable autonegotiation
<i>off</i>	Disable autonegotiation

DEFAULTS

None.

USAGE GUIDELINES

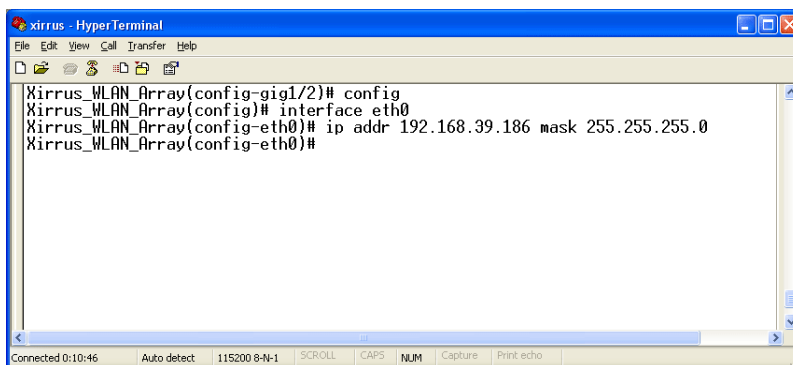
None.

EXAMPLE

To set the IP address of the 10/100 Ethernet interfaces:

config-interface eth0

(config-eth0)# ip addr 192.168.39.186 mask 255.255.255.0



The screenshot shows a HyperTerminal window titled "xirrus - HyperTerminal". The window contains the following text:

```
Xirrus_WLAN_Array(config-gig1/2)# config
Xirrus_WLAN_Array(config)# interface eth0
Xirrus_WLAN_Array(config-eth0)# ip addr 192.168.39.186 mask 255.255.255.0
Xirrus_WLAN_Array(config-eth0)#
```

The status bar at the bottom of the window displays "Connected 0:10:46", "Auto detect", "115200 8-N-1", "SCROLL", "CAPS", "NUM", "Capture", and "Print echo".

Figure 99. CLI: Setting the IP Address for the Fast Ethernet Interface

SEE ALSO

config-interface gig1

config-interface gig2

ftp

DESCRIPTION

Opens an ftp connection to a remote system.

SYNTAX

ftp <ip-address>

PARAMETERS

<ip-address> IP address of remote ftp host (in A.B.C.D format)

DEFAULTS

None.

USAGE GUIDELINES

Once an ftp connection is established, the following commands are available from the ftp prompt:

binary	delete	ls	recv
bye	dir	mkdir	rename
cd	disconnect	open	rmdir
cdup	get	put	send
chmod	hash	pwd	size
close	help	quit	?

EXAMPLE

None.

SEE ALSO

None.

gig1

DESCRIPTION

Configures the Gigabit 1 Ethernet Interface Settings—available from the **config-interface** command mode.

SYNTAX

gig1 {[no] autoneg [on | off]; | [no] management [on | off] | down | up | defaults | duplex {half | full} | speed <spdse> | mtu <mtusz> | ip {dhcp | {addr <statip> | mask <ipmask> | gateway <gway>}@}}

PARAMETERS

half	Half duplex
full	Full duplex
mtu	Set the maximum MTU size allowed
defaults	Reset the interface to default values
duplex	Half or full duplex mode
speed <speed>	100M or 1000M operation
down	Shut this interface down
up	Bring this interface up
ip	Set the IP address
dhcp	IP address, mask and gateway are obtained through DHCP
addr <IP Address>	Static IP address (A.B.C.D)
gateway <IP Address>	Gateway IP address (A.B.C.D)
mask <mask>	IP mask (A.B.C.D)
management	Enable or disable management via interface
<i>no</i>	Managed elsewhere
<i>on</i>	Enable management
<i>off</i>	Disable management
autoneg	Autonegotiation on or off
<i>no</i>	Disable selected feature
<i>on</i>	Enable autonegotiation
<i>off</i>	Disable autonegotiation

DEFAULTS

None.

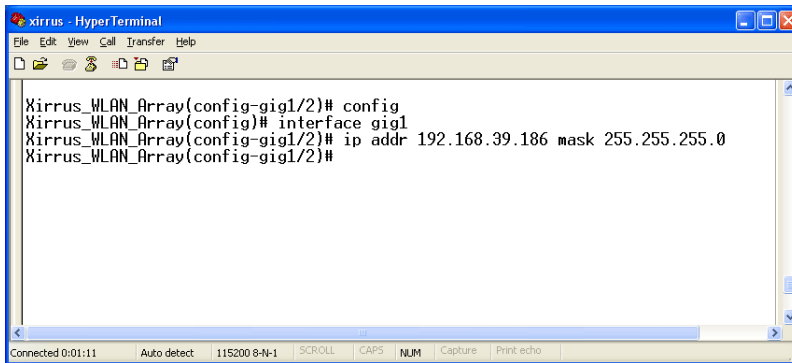
USAGE GUIDELINES

Setting the Gigabit1 interface parameters will automatically set the Gigabit2 parameters to the same values.

EXAMPLE

To set the IP address of the gigabit Ethernet interfaces:

```
config-interface gig1  
(config-gig1/2)# ip addr 192.168.39.186 mask 255.255.255.0
```



```
xirrus - HyperTerminal  
File Edit View Call Transfer Help  
Xirrus_WLAN_Array(config-gig1/2)# config  
Xirrus_WLAN_Array(config)# interface gig1  
Xirrus_WLAN_Array(config-gig1/2)# ip addr 192.168.39.186 mask 255.255.255.0  
Xirrus_WLAN_Array(config-gig1/2)#  
Connected 0:01:11 Auto detect 115200 8-N-1 SCROLL CAPS NUM Capture Print echo
```

Figure 100. CLI: Setting the IP Address for the Gigabit 1 Interface

SEE ALSO

```
config-interface gig2  
config-interface eth0
```

gig2

DESCRIPTION

Configures the Gigabit 2 Ethernet Interface Settings—available from the **config-interface** command mode.

SYNTAX

```
gig2 {[no] autoneg [on | off]; | [no] management [on | off] | down | up |
defaults | duplex {half | full} | speed <spdse> | mtu <mtusz> |
ip {dhcp | {addr <statip> | mask <ipmask> | gateway <gway>}@}}
```

PARAMETERS

half	Half duplex
full	Full duplex
mtu	Set the maximum MTU size allowed
defaults	Reset the interface to the default values
duplex	Half or full duplex mode
speed <speed>	100M or 1000M operation
down	Shut this interface down
up	Bring this interface up
ip	Set the IP address
dhcp	IP address, mask and gateway are obtained through DHCP
addr <IP Address>	Static IP address (A.B.C.D)
gateway <IP Address>	Gateway IP address (A.B.C.D)
mask <mask>	IP mask (A.B.C.D)
management	Enable or disable management via interface
<i>no</i>	Managed elsewhere
<i>on</i>	Enable management
<i>off</i>	Disable management
autoneg	Autonegotiation on or off
<i>no</i>	Disable selected feature
<i>on</i>	Enable autonegotiation
<i>off</i>	Disable autonegotiation

DEFAULTS

None.