

# Management Software

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AT-S67  
AT-S68



# User's Guide

FOR USE WITH AT-FS7016 AND AT-FS7024  
SMART SWITCHES

VERSION 1.0.0

PN 613-50494-00 Rev A



Simply connecting the  world

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# Preface

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This user's guide contains instructions on how to use and configure the AT-S67 and AT-S68 management software through the RS-232 Terminal Port to manage the AT-FS7000 Series Smart Switches.

The AT-FS7000 Series Smart Switches are available in the following models:

- ❑ AT-FS7016
- ❑ AT-FS7024

## How this Guide is Organized

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This guide contains the following chapters and appendices:

Chapter 1, **Getting Started**, explains how to start a local management session.

Chapter 2, **Port Configuration**, contains procedures for viewing and changing the parameter settings for the individual ports on a switch.

Chapter 3, **Port Trunking**, contains the procedures for creating a port trunk.

Chapter 4, **Port Mirroring**, contains the procedures for creating a port mirror and configuring advanced port mirroring.

Chapter 5, **Virtual LANs**, describes port-based VLANs and also contains procedures for creating, modifying, and deleting VLANs.

Chapter 6, **Quality of Service (QoS)**, describes QoS and also contains the procedure for adjusting the QoS parameters.

Chapter 7, **Switch Administration**, contains the procedures for setting the login passwords.

Chapter 8, **System Configuration**, contains the procedures for setting the MAC Aging Time and resetting the switch to factory defaults.

Chapter 9, **Ethernet Statistics**, contains the procedures for displaying the statistics for the switch or a port on the switch. This chapter also contains the procedure for clearing the statistics.

Chapter 10, **Running Diagnostics**, contains the procedures for displaying the firmware version and running a self test to troubleshoot the switch.

Appendix A, **AT-S67 and AT-S68 Default Settings**, list the factory default settings of the management software.

## Document Conventions

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This guide uses the following conventions:

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**Note**

Notes provide additional information.

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**Caution**

Cautions indicate that performing or omitting a specific action may result in equipment damage or loss of data.

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**Warning**

Warnings indicate that performing or omitting a specific action may result in bodily injury.

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## Where to Find Related Guides

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The Allied Telesyn web site at [www.alliedtelesyn.com](http://www.alliedtelesyn.com) provides you with an easy way to access the most recent documentation and technical information for all of our products. All Allied Telesyn products can be downloaded from the web site in PDF format.

The following guide provides port specifications, topologies, installation instruction, and troubleshooting information for the AT-FS7000 Series Switches. This guide is shipped with its respective product and is available from the Allied Telesyn web site.

- ❑ **AT-FS7016 and AT-FS7024 Installation Guide**  
PN 613-50469-00

## Contacting Allied Telesyn

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This section provides Allied Telesyn contact information for technical support as well as sales or corporate information.

### **Online Support**

You can request technical support online by accessing the Allied Telesyn Knowledge Base from the following web site at **kb.alliedtelesyn.com**. You can use the Knowledge Base to submit questions to our technical support staff and review answers to previously asked questions.

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To obtain a RMA number, contact Allied Telesyn's Technical Support at our web site at **www.alliedtelesyn.com**

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### **Tell Us What You Think**

If you have any comments or suggestions on how we might improve this or other Allied Telesyn documents, please fill out the General Enquiry Form online. This form can be accessed by selecting "Contact Us" from **www.alliedtelesyn.com**.



# Chapter 1

# Getting Started

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This chapter provided information and instructions on how to start a local management session using the AT-S67 or AT-S68 management software. This chapter contains the following sections:

- ❑ **Overview** on page 12
- ❑ **Starting a Local Management Session** on page 13

## Overview

---

The AT-S67 and AT-S68 management software offers limited management features that simplifies the task of creating or expanding an Ethernet or Fast Ethernet network. The features, functions, and interface are the same for both the AT-S67 and AT-S68 management software. However, the AT-S67 is the management software for use with the AT-FS7016 Smart Switch and the AT-S68 is the management software for use with the AT-FS7024 Smart Switch.

The AT-S67 and AT-S68 management software comes pre-installed on the switches with default settings for all the operating parameters. To change or adjust the operating parameters, you must access the switch's management software.

You can create a local management session with an AT-FS7016 or AT-FS7024 Smart Switch by connecting a terminal or PC with a terminal emulator program to the RS-232 Terminal Port using a straight-through RS-232 cable. This type of management session is referred to as a "local" because you must be physically close to the switch where the switch is located.

Once the session is started, a Main Menu is displayed so that you can make selections to configure and monitor the switch. You can configure all of a switch's operating parameters from a local management session.

For instructions on starting a local management session, refer to **Starting a Local Management Session** on page 13.

## Starting a Local Management Session

The AT-FS7016 and AT-FS7024 Smart Switches features a RS-232 Terminal Port. You can access the HyperTerminal interface through the RS-232 port on the front of the switch.

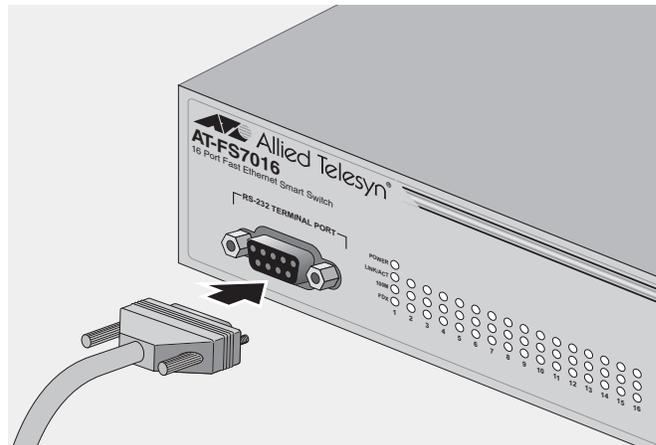
### Note

A switch does not need an IP address to be managed from a local management session. You can start a session at any time on either an AT-FS7016 or AT-FS7024 Smart Switch in your network. Running a local management session does not interfere with the flow of Ethernet traffic through the unit.

### Starting a Local Management Session

To start a local management session, perform the following procedure:

1. Connect one end of a straight-through RS-232 cable with a DB-9 connector to the RS-232 Terminal Port on the switch. Refer to Figure 1.



**Figure 1** Connecting the RS-232 Cable to the RS-232 Terminal Port

2. Connect the other end of the cable to the RS-232 port on a terminal or PC with a terminal emulator program.
3. Configure the terminal or terminal emulator program as follow:
  - Baud per second: 9600
  - Data bits: 8
  - Stop bits: 1
  - Flow control: None

---

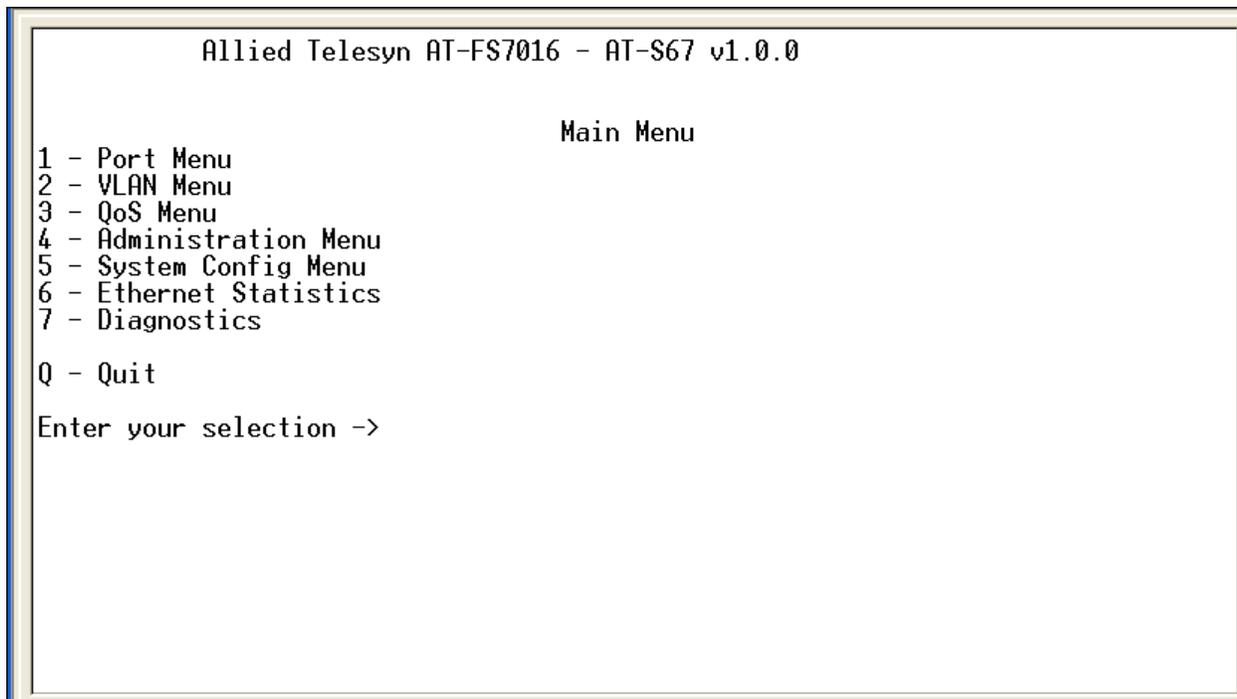
**Note**

These default settings are for a DEC VT100 or ANSI terminal, or an equivalent terminal emulation program.

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4. Press **<Enter>** twice.
5. If prompted for a password, enter the password for the management software. The default password is "friend". To change the default password, refer to **Switch Administration** on page 67.

The Main Menu is displayed.



**Figure 2** Main Menu

## Using the Terminal Interface

If you are using a DEC VT00 or ANSI (the default) terminal configuration, refer to the table below for instructions on how to move through the menus and select menu options.

When directed to	You must
Enter your selection	Type the menu option number or letter.
Enter information (for example, entering a port number)	Type the information and press <b>&lt;Enter&gt;</b> .
Return to previous menu	Select <b>R</b> for Return to Previous Menu or press <b>&lt;Esc&gt;</b> .

When you press **<Enter>** to select a field in which you can enter a value, the **->** symbol is displayed. For example:

```
Select Chip Number [1-2] ->
```

The **->** symbol indicates that you can enter a new value for the parameter or change the existing value. Once you have entered a value, press **<Enter>**. Parameter changes are immediately activated on the AT-FS7000 Series Switches.

## Quitting from a Local Session

To quit a local session type **Q** for Quit. You should always be sure to exit from a management session when you are finished managing the switch. This will prevent unauthorized changes to the switch's configuration should you leave your workstation unattended.

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### Note

A local management session will automatically time-out if there has been no management activity after the time-out value has expired. If a local session times out, you will need to log in again. The time-out value is not configurable and is factory set to 10 minutes.

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## Chapter 2

# Port Configuration

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This chapter contains procedures for viewing and changing the parameter settings for the individual ports on a switch. This chapter contains the following sections:

- ❑ **Configuring Port Parameters** on page 18
- ❑ **Displaying Port Status** on page 21

## Configuring Port Parameters

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To configure the parameter settings for a port on the switch, perform the following procedure:

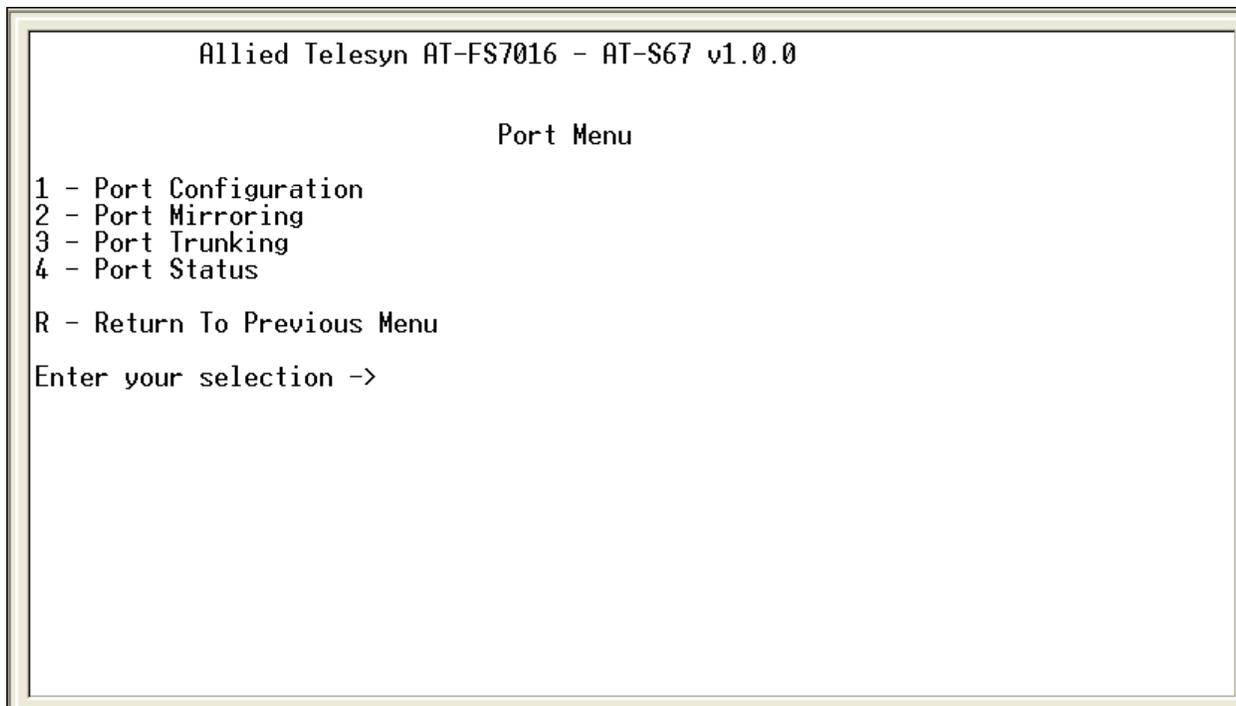
---

**Note**

You can only configure one port at a time.

---

1. From the Main Menu, type **1** to select Port Menu. The Port Menu in Figure 3 is displayed.



**Figure 3** Port Menu

2. From the Port Menu, type **1** to select Port Configuration. one of the following prompts is displayed:

For an AT-FS7016 switch

```
Enter Port Number [1 to 16] ->
```

For an AT-FS7024 switch

```
Enter Port Number [1 to 24] ->
```

3. Enter the number of the port you want to configure and press **<Enter>**. The Port Configuration Menu in Figure 4 is displayed.

```

Allied Telesyn AT-FS7016 - AT-S67 v1.0.0

                                Port Configuration Menu

Configuring Port 5
1 - TX/RX..... Tx/Rx Enabled
2 - Flow Control..... Enabled
3 - AutoNegotiation..... Enabled

S - Save Port Configuration
R - Return To Previous Menu
Enter your selection -> _

```

**Figure 4** Port Configuration Menu

4. Change the port parameters as desired. The parameters are described below:

#### **1- TX/RX**

This option allows you to manually disable or enable a port on the switch so that it can no longer receive or send frames. You may want to disable a port if a problem occurs with the end-node or the cable connected to the port. Once the problem has been fixed, you can enable the port again to resume normal network operation. You can also disable an unused port to secure it from unauthorized connections. Enable port is the default setting.

#### **2 - Flow Control**

When the port is operating in full-duplex mode, it will use a special pause packet to stop the end-node from sending frames. The pause packet notifies the end-node to stop transmitting for a specific period of time. The flow control allows the port to decrease the frequency in which it is sending packets to the receiving end-node, if packets are being sent too fast.

When the port is operating in half-duplex mode and flow control is enabled and if the RX buffer becomes full, the switch will produce a jamming signal. This jamming signal sends a collision to the end-node notifying the end-node to stop sending packets until the jamming signal is cleared.

Possible Flow Control settings are Enable and Disabled. The default setting is Enabled.

### 3 - AutoNegotiation

You use this parameter to configure the port for Auto-negotiation or to manually set the port's speed and duplex mode. If you select Enabled, which is the default, the switch will set both the speed and duplex mode for the port automatically. If you select Disable, two additional parameters are displayed in the Port Configuration Menu:

```
4 - Speed ..... 10 MB
5 - Duplex .....Half Duplex
```

You use these two parameters to set the port's speed and duplex mode.

The possible setting for 4 - Speed are:

10 - indicates the port is operating at 10 Mbps.

100 - indicates the port is operating at 100 Mbps

The possible settings for 5 - Duplex are half-duplex and full-duplex.

5. Once you have set the port parameters, type **S** to select Save Port Configuration.

You will be returned to the Port Menu.

The port configurations have been set. To configure additional ports repeat this procedure.

## Displaying Port Status

To display the status of the ports on an AT-FS7000 Series Switch, perform the following procedure:

1. From the Main Menu, type **1** to select Port Menu. The Port Menu shown in **Figure 3** on page 18 is displayed.
2. From the Port Menu, type **4** to select Port Status. The Port Status window in Figure 5 is displayed.

```

Allied Telesyn AT-FS7016 - AT-S67 v1.0.0
Port Status
Prt  Link  Neg  Spd  Dplx  Flow  State
-----
1    DOWN  AUTO  ---  ---  ON    DISABLE
2    DOWN  AUTO  ---  ---  ON    ENABLE
3    DOWN  AUTO  ---  ---  ON    ENABLE
4    DOWN  AUTO  ---  ---  ON    ENABLE
5    DOWN  MANUAL 10   Half-Duplex  ON    ENABLE
6    DOWN  AUTO  ---  ---  ON    ENABLE
7    DOWN  MANUAL 100  Full-Duplex  NONE  ENABLE
8    DOWN  AUTO  ---  ---  ON    ENABLE

N - Next Page
U - Update Display
R - Return to Previous Menu

Enter your selection ->

```

**Figure 5** Port Status Window

The information in this window is for viewing purposes only. To change these parameters refer to **Configuring Port Parameters** on page 18. The parameters are described below:

### Prt

The port number on the switch. For an AT-FS7016 port numbers will range from 1 to 16. For an AT-FS7024 port numbers will range from 1 to 24.

### Link

The status of the link between the port and the end-node connected to the port. Possible settings are Up and Down. Up indicates that a valid link exists between the port and the end-node. Down indicates that the port and the end-node have not established a valid link.

**Neg**

The status of Auto-negotiation on the port. Possible settings are Auto and Manual. Auto indicates that the port is using Auto-negotiation to set operating speed and duplex mode. Manual indicates that the operating speed and duplex mode have been set manually.

**Spd**

The operating speed of the port. Possible values are 10; indicating the port is operating at 10 Mbps, and 100; indicating the port is operating at 100 Mbps.

**Dplx**

The duplex mode of the port. Possible settings are half-duplex and full-duplex. Half-duplex indicates that the port is operating at half-duplex mode. Full-duplex indicates that the port is operating at full-duplex mode.

**Flow**

The flow control setting for the port. Flow control allows the port to decrease the frequency in which it is sending frames to the receiving end-node, if frames are being sent too fast. It will also send flow control frames to a transmitting end-node to request that the port slow its speed of transmission. Possible settings are Enabled (ON) or Disabled (NONE).

**State**

The current operating status of the port. Possible values are Enabled and Disabled. Enabled indicates the port is sending and receiving Ethernet frames. Disabled indicates the port has been manually disabled.

## Chapter 3

# Port Trunking

---

This chapter provides information and procedures for creating a port trunk. This chapter contains the following sections:

- ❑ **Overview** on page 24
- ❑ **Creating a Port Trunk** on page 27
- ❑ **Deleting a Port Trunk** on page 30
- ❑ **Displaying Port Trunks** on page 32
- ❑ **Resetting Port Trunks** on page 33

## Overview

Port trunking is an economical way for you to increase the bandwidth between two Ethernet switches. A port trunk is 2, 3, or 4 ports that have been grouped together to function as one logical path. A port trunk increases the bandwidth between switches and is useful in situations where a single physical data link between switches is insufficient to handle the traffic load.

A port trunk always sends packets from a particular source to a particular destination over the same link within the trunk. A single link is designated for flooding broadcasts and packets of unknown destination.

Figure 6 illustrates a port trunk of four data links between two AT-FS7016 switches.

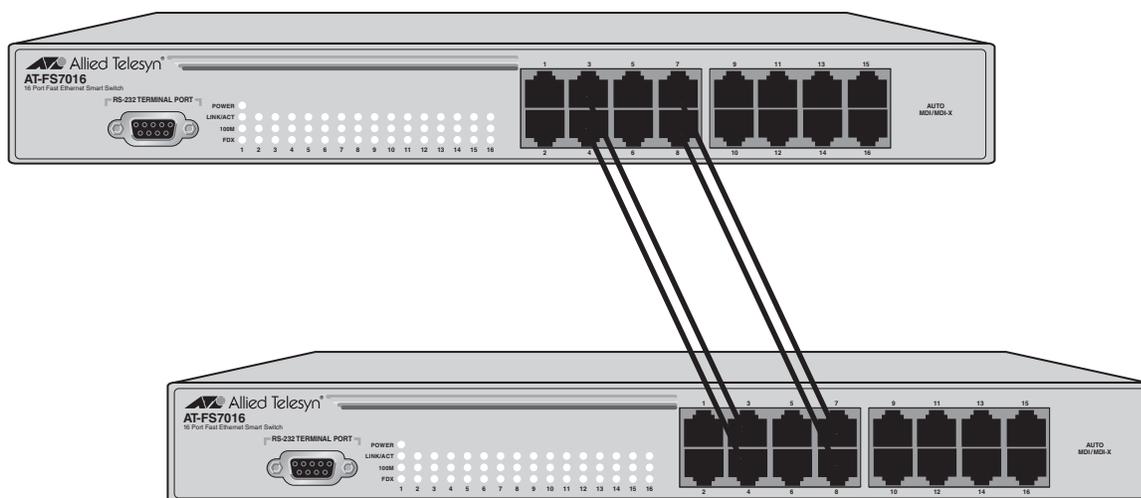


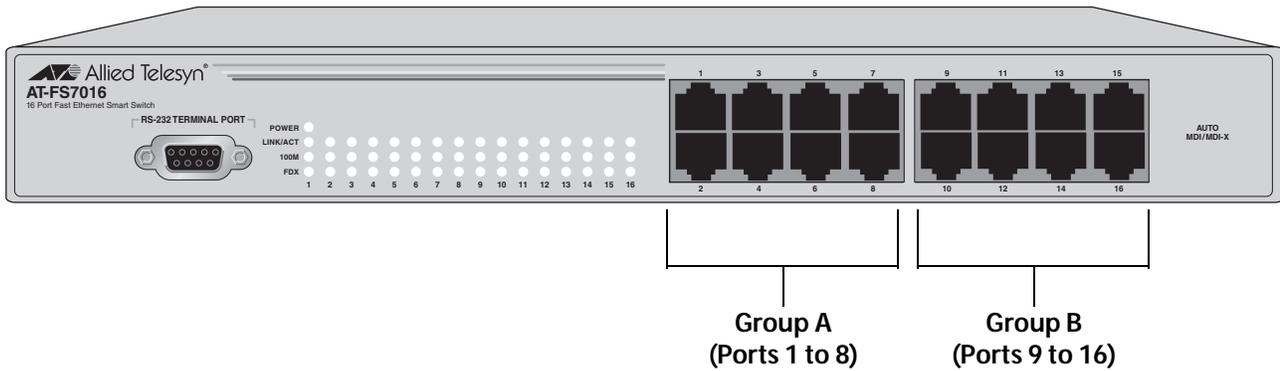
Figure 6 Port Trunk Example

### Port Trunking Guidelines

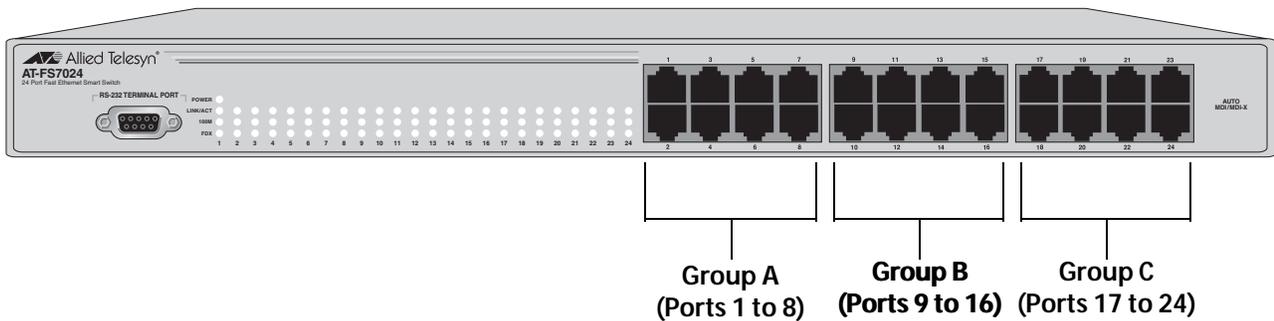
Observe the following guidelines when creating a port trunk:

- A port trunk can consist of 2, 3, or 4 ports.
- The ports of a trunk must be of the same medium type. For example, they can be all twisted pair ports or all fiber optic ports.
- The speed, duplex mode, and flow control settings must be the same for all the ports in a trunk.
- The ports of a trunk must be members of the same VLAN. A port trunk cannot consist of ports from different VLANs.

- ❑ Trunking ports cannot span across port groups. Refer to Figure 7 and Figure 8 for port groupings.



**Figure 7** AT-FS7016 Port Grouping



**Figure 8** AT-FS7024 Port Grouping

- ❑ When cabling a trunk, the order of the connection should be maintained on both nodes. The lowest numbered port in a trunk on the switch should be connected to the lowest numbered port of the trunk on the other device, the next lowest numbered port on the switch should be connected to the next lowest numbered port on the other device, and so on.

For example, assume that you are connecting a trunk between two AT-FS7024 switches. On the first AT-FS7024 switch you had chosen ports 12, 13, 14, and 15 for a trunk. On the second AT-FS7024 switch you had chosen ports 21, 22, 23, and 24. To maintain the order of the port connections, you would connect port 12 on the first AT-FS7024 switch to port 21 on the second AT-FS7024 switch, port 13 to port 22, and so on.

- ❑ Do not connect the cables to the trunk port on the switches until after you have configured the trunk with the management software. Connecting the cables before configuring the software will create a loop in you network topology. Data loops can result in broadcast storms and poor network performance.

## Creating a Port Trunk

---

To create a port trunk, perform the following procedure:

1. From the Main Menu, type **1** to select Port Menu. The Port Menu as shown in **Figure 3** on page 18 is displayed.
2. From the Port Menu, type **3** to select Port Trunking. The Port Trunking Menu in Figure 9 is displayed.

```
Allied Telesyn AT-FS7016 - AT-S67 v1.0.0

Port Trunking

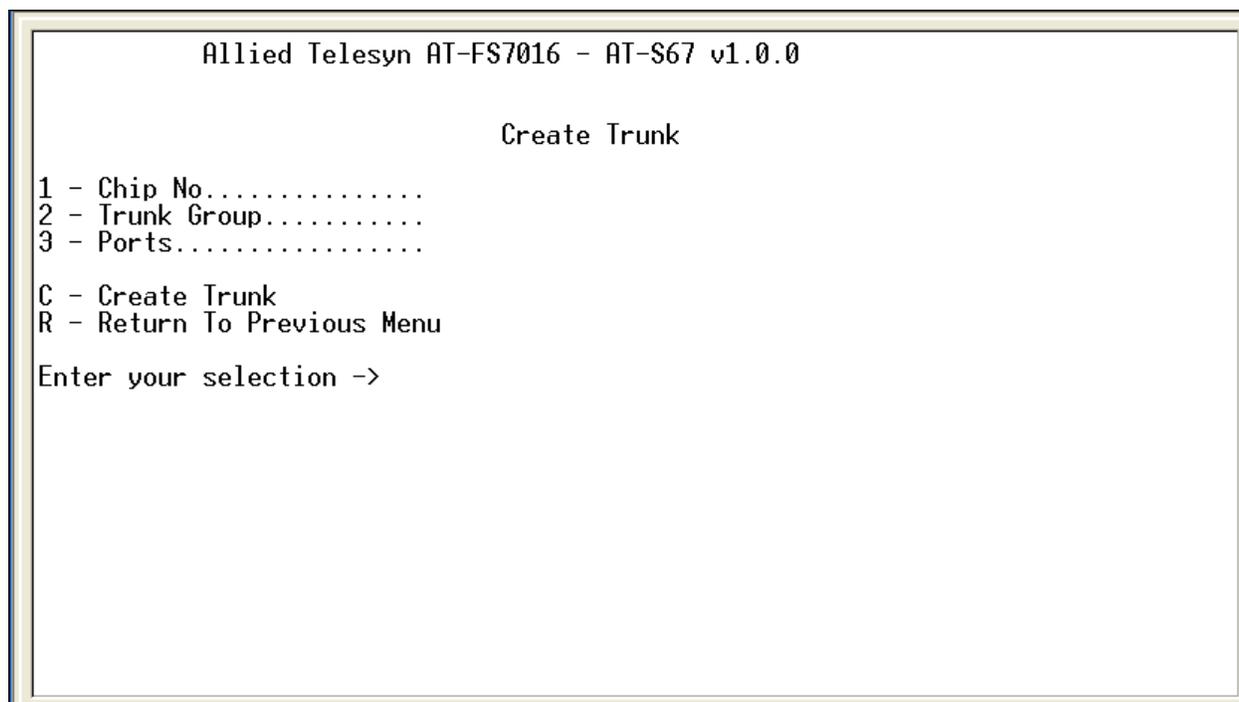
1 - Create Trunk
2 - Delete Trunk
3 - Show Trunks
4 - Reset Trunk Configuration

R - Return To Previous Menu

Enter your selection ->
```

**Figure 9** Port Trunking Menu

3. Type **1** to select Create Trunk. The Create Trunk Menu in Figure 10 is displayed.



**Figure 10** Create Trunk Menu

4. Type **1** to select Chip No. One of the following prompts will be displayed:

For an AT-FS7016 switch:

```
Select Chip Number [1-2] ->
```

For an AT-FS7024 switch:

```
Select Chip Number [1-3] ->
```

The AT-FS7016 has two forwarding chips and the AT-FS7024 has 3. Each forwarding chip contains 8 ports. For example, on the AT-FS7016, Ports 1 through 8 are controlled by Chip 1 and Ports 9 through 16 are controlled by Chip 2. The trunking port cannot span across chips.

5. Select the chip number and press **<Enter>**.

6. From the Create Trunk Menu, type **2** to select Trunk Group. One of the following prompts will be displayed:

For an AT-FS7016 switch:

```
Select Trunk Group [1-8] ->
```

For an AT-FS7024 switch:

```
Select Trunk Group [1-12] ->
```

```
Trunk Group...
```

7. Select your trunk group and press **<Enter>**.
8. From the Create Trunk Menu, type **3** to select Ports. One of the following prompts will be displayed:

For an AT-FS7016 switch:

```
Select Port Number[1-8] ->
```

For an AT-FS7024 switch:

```
Select Port Number [1-24] ->
```

---

**Note**

A trunk must have at least two ports designated.

---

9. Type the number of the ports you wish to trunk and press **<Enter>**.

You can specify the ports individually (for example 1,2,3) or as a range (for example 2-4).

10. Type **C** to select Create Trunk.
11. Type **S** to select Save Configuration Changes.
12. Configure the ports on the remote switch for port trunking.
13. Connect the cables to the ports of the trunk on the switch.

The port trunk is ready for network operation. To create additional port trunks, type **R** twice to return to the Create Trunk Menu then start with **Step 4** on page 28 to repeat this procedure.

## Deleting a Port Trunk

---



### Caution

Disconnect the cables from the port trunk on the switch before performing the following procedure. Deleting a port trunk without first disconnecting the cables can create loops in your network topology. Data loops can result in broadcast storms and poor network performance.

---

To delete a port trunk, perform the following procedure:

1. From the Main Menu, type **1** to select Port Menu. The Port Menu in **Figure 3** on page 18 is displayed.
2. From the Port Menu, type **3** to select Port Trunking. The Port Trunking Menu in **Figure 9** on page 27 is displayed.
3. Type **2** to select Delete Trunk. The Delete Trunk Menu in Figure 11 is displayed.

```
Allied Telesyn AT-FS7016 - AT-S67 v1.0.0

                          Delete Trunk

1 - Trunk Group.....
D - Delete Trunk
R - Return To Previous Menu

Enter your selection ->
```

**Figure 11** Delete Trunk Menu

4. Type **1** to select Trunk Group. One of the following prompts will be displayed:

For an AT-FS7016 switch:

```
Select Trunk Group [1-8] ->
```

For an AT-FS7024 switch:

```
Select Trunk Group [1-12] ->
```

5. Type the number of the trunk group you wish to delete and press **<Enter>**.

The Delete Trunk Menu will be displayed showing the values for the Trunk Group, Chip No, and Ports.

6. Type **D** to select Delete Trunk. The following prompt is displayed:

```
Are you sure you want to delete this Trunk Group  
(Y/N) ->
```

7. Type **Y** for yes to delete the port trunk or **N** for no to cancel this procedure.

8. Type **S** to select Save Configuration Changes.

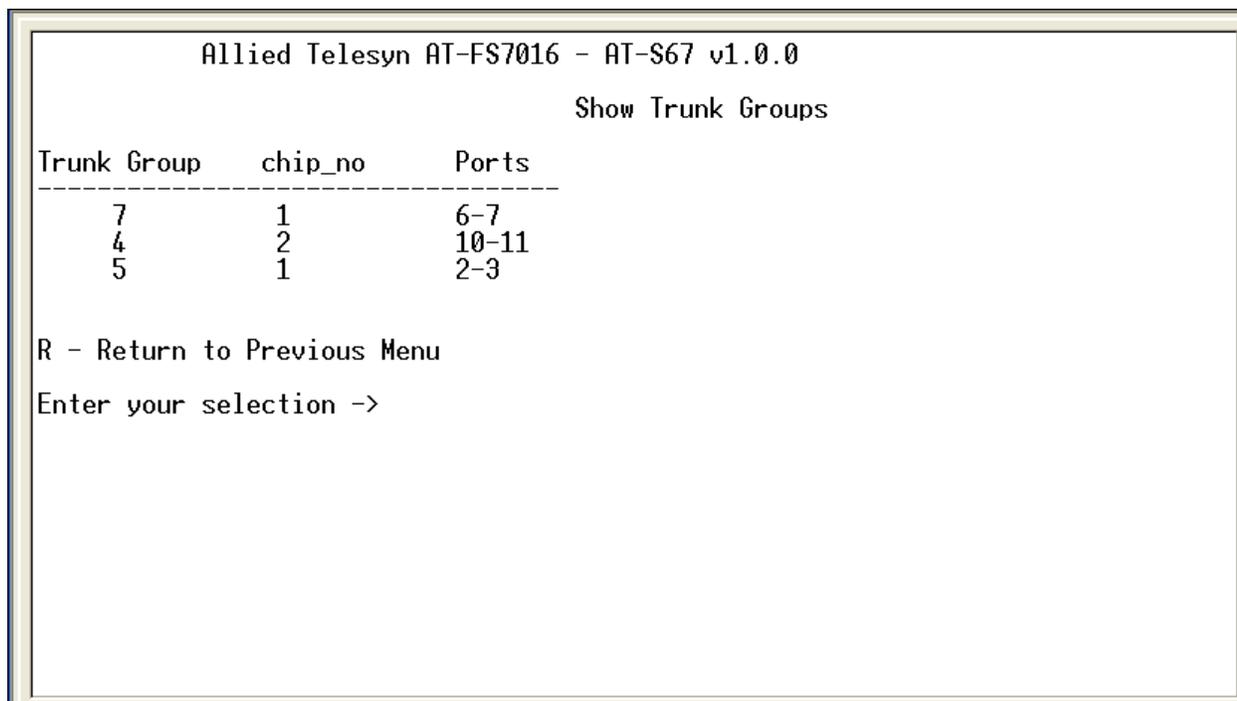
The port trunk has been deleted.

## Displaying Port Trunks

---

To display a port trunk, perform the following procedure:

1. From the Main Menu, type **1** to select Port Menu. The Port Menu as shown in **Figure 3** on page 18 is displayed.
2. From the Port Menu, type **3** to select Port Trunking. The Port Trunking Menu in **Figure 9** on page 27 is displayed.
3. Type **3** to select Show Trunks. The Show Trunk Groups window in Figure 12 is displayed.



**Figure 12** Show Trunk Groups Window

The information in this window is for viewing purposes only.

4. Type **R** to Return to Previous Menu.

You will be returned to the Port Trunking Menu.

## Resetting Port Trunks

---

To reset the port trunk, perform the following procedure:

1. From the Main Menu, type **1** to select Port Menu. The Port Menu in **Figure 3** on page 18 is displayed.
2. From the Port Menu, type **3** to select Port Trunking. The Port Trunking Menu in **Figure 9** on page 27 is displayed.
3. Type **4** to select Reset Trunk Configuration. The following prompt is displayed:

```
Are you sure you want to Reset All Trunk Groups  
(Y/N) ->
```

4. Type **Y** to reset the trunk configuration.
5. Type **S** to select Save Configuration Changes.

The port trunks have been reset back to the factory default.



## Chapter 4

# Port Mirroring

---

This chapter provides information and procedures for creating a port mirror and advanced port mirroring. This chapter contains the following sections:

- ❑ **Overview** on page 36
- ❑ **Creating a Port Mirror** on page 37
- ❑ **Deleting a Port Mirror** on page 40
- ❑ **Configuring Advanced Mirroring** on page 41

## Overview

---

The port mirroring feature allows you to monitor the traffic being received and transmitted on one or more ports on a switch. This is done by having traffic copied to another port on the switch. You can connect a network analyzer to the port where the traffic is being copied and monitor the traffic on the other ports without impacting network performance or speed.

Observe the following guidelines when creating a port mirror:

- ❑ You can monitor from one to up to 23 ports, depending on your model. However, the more ports you mirror, the less likely the mirroring port will be able to handle all the traffic. For example, if you mirror the traffic of six heavily active ports, the mirror port is likely to drop packets. This means that the mirror port will not provide an accurate mirror of the traffic of the other six ports.
- ❑ The ports to be mirrored and the mirroring port must be located on the same switch.
- ❑ The ports to be mirrored and the mirroring port must be operating at the same speed. For example, you cannot use a 10 Mbps port to mirror traffic on a 100 Mbps port.

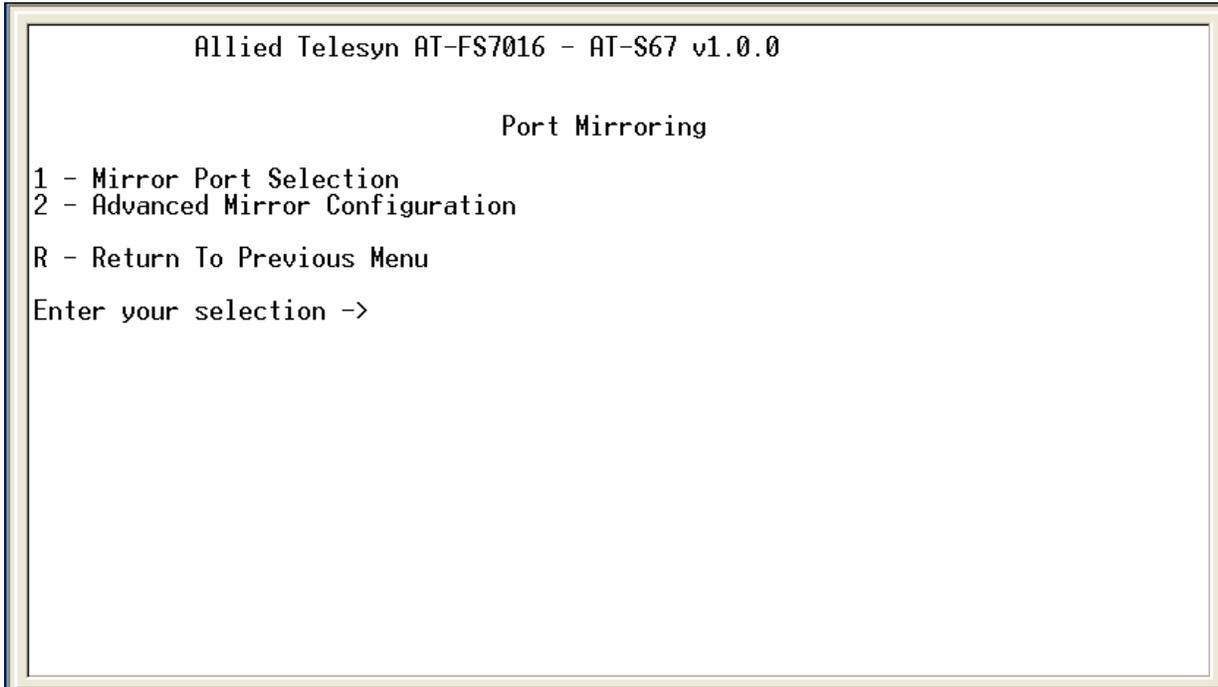
The AT-S67 and AT-S68 management software also features an advanced port mirroring. For information and instructions, refer to **Configuring Advanced Mirroring** on page 41.

## Creating a Port Mirror

---

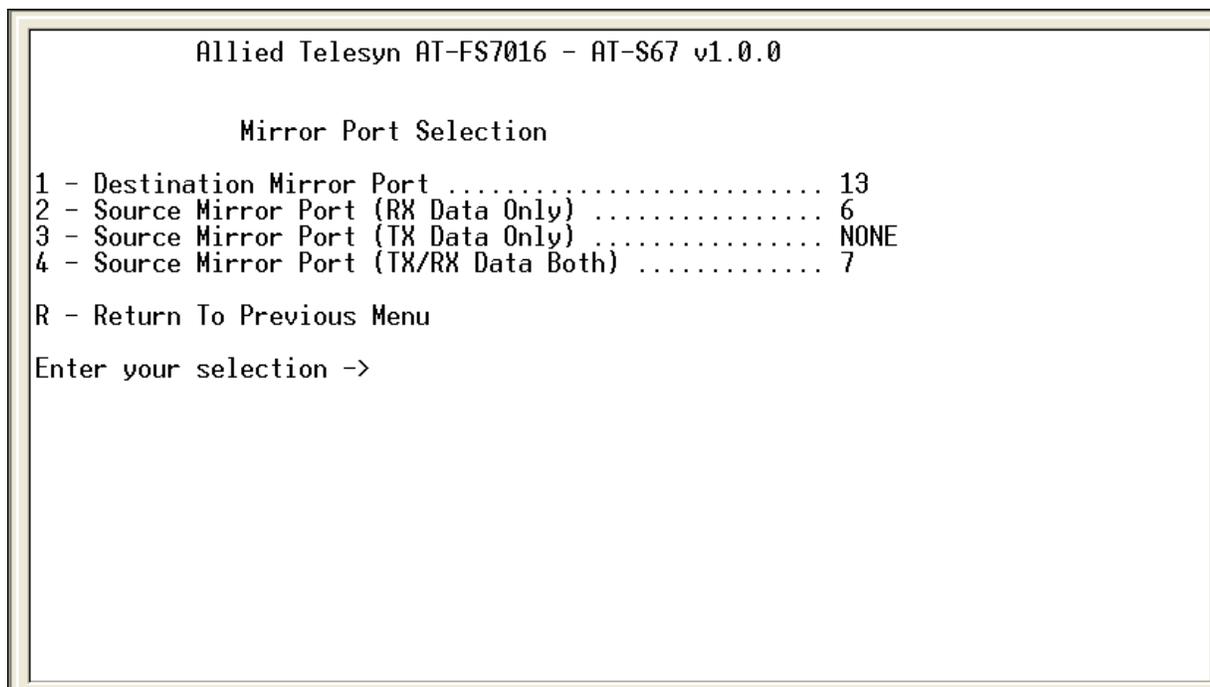
To create a port mirror, perform the following procedure:

1. From the Main Menu, type **1** for Port Menu. The Port Menu in **Figure 3** on page 18 is displayed.
2. From the Port Menu, type **2** for Port Mirroring. The Port Mirroring Menu in Figure 13 is displayed.



**Figure 13** Port Mirroring Menu

3. Type **1** to select Mirror Port Selection. The Mirror Port Selection Menu in Figure 14 is displayed.



**Figure 14** Mirror Port Selection Menu

4. Type **1** to select Destination Mirror Port. One of the following prompts will be displayed:

For an AT-FS7016 switch:

```
Select port(1-16, 0 to disable):
```

For an AT-FS7024 switch:

```
Select port(1-24, 0 to disable):
```

5. Type the number of the port that will function as the mirror port (the port where traffic will be copied) and press **<Enter>**.
6. Select one of the following:

**2 - Source Mirror Port (RX Data Only)**

This option will mirror received traffic only.

**3 - Source Mirror Port (TX Data Only)**

This option will mirror transmitted traffic only.

**4 - Source Mirror Port (TX/RX Data Both)**

This option will mirror transmitted and received traffic.

7. Enter the number of the port whose traffic is to be mirrored. To mirror the traffic of more than one port, enter the ports individually (for example 1, 5, 7) or as a range (for example 9-12) and press **<Enter>**. You can also enter **None** to reset the port value.
8. Type **S** to select Save Mirror Configuration.

The port mirror is now functional.

## Deleting a Port Mirror

---

To delete a port mirror, perform the following procedure:

1. From the Main Menu, type **1** to select Port Menu. The Port Menu in **Figure 3** on page 18 is displayed.
2. From the Port Menu, type **2** to select Port Mirroring. The Port Mirroring Menu in **Figure 13** on page 37 is displayed.
3. Type **1** to select Destination Mirror Port. One of the following prompts will be displayed:

For an AT-FS7016 switch:

```
Select port(1-16, 0 to disable):
```

For an AT-FS7024 switch:

```
Select port(1-24, 0 to disable):
```

4. Type **0** (zero) and press **<Enter>**.
5. Type **S** to select Save Mirror Configuration.

The port mirror on the switch is deleted. The port that was functioning as the port mirror is now available for normal network operations.

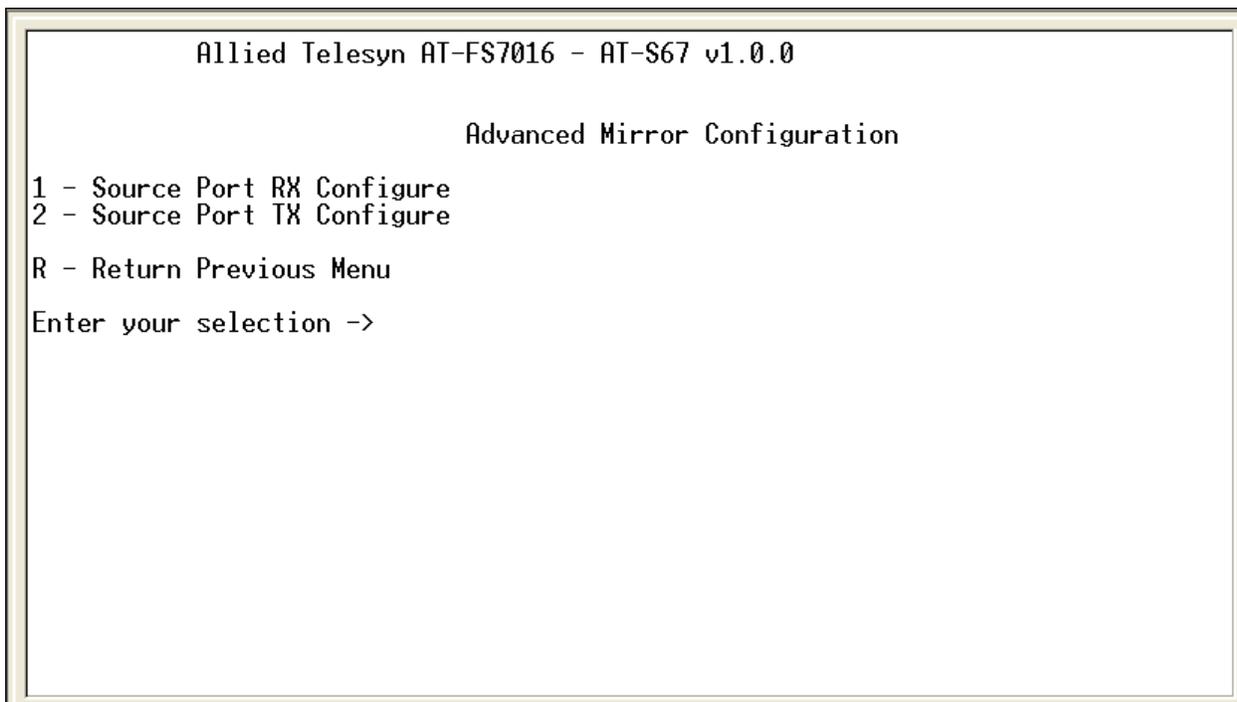
## Configuring Advanced Mirroring

---

The advanced mirroring configuration allows the user to filter the source's mirrored traffic by mirroring divider and MAC address for either receive (RX) or transmit (TX) data.

To configure the advanced port mirroring parameters, perform the following procedure:

1. From the Main Menu, type **1** for Port Menu. The Port Menu in **Figure 3** on page 18 is displayed.
2. From the Port Menu, type **2** for Port Mirroring Menu. The Port Mirroring Menu in **Figure 13** on page 37 is displayed.
3. Type **2** to select Advanced Mirror Configuration. The Advanced Mirror Configuration Menu in Figure 15 is displayed.



```
Allied Telesyn AT-FS7016 - AT-S67 v1.0.0

                          Advanced Mirror Configuration

1 - Source Port RX Configure
2 - Source Port TX Configure

R - Return Previous Menu

Enter your selection ->
```

**Figure 15** Advanced Mirror Configuration Menu

4. Select one of the following:

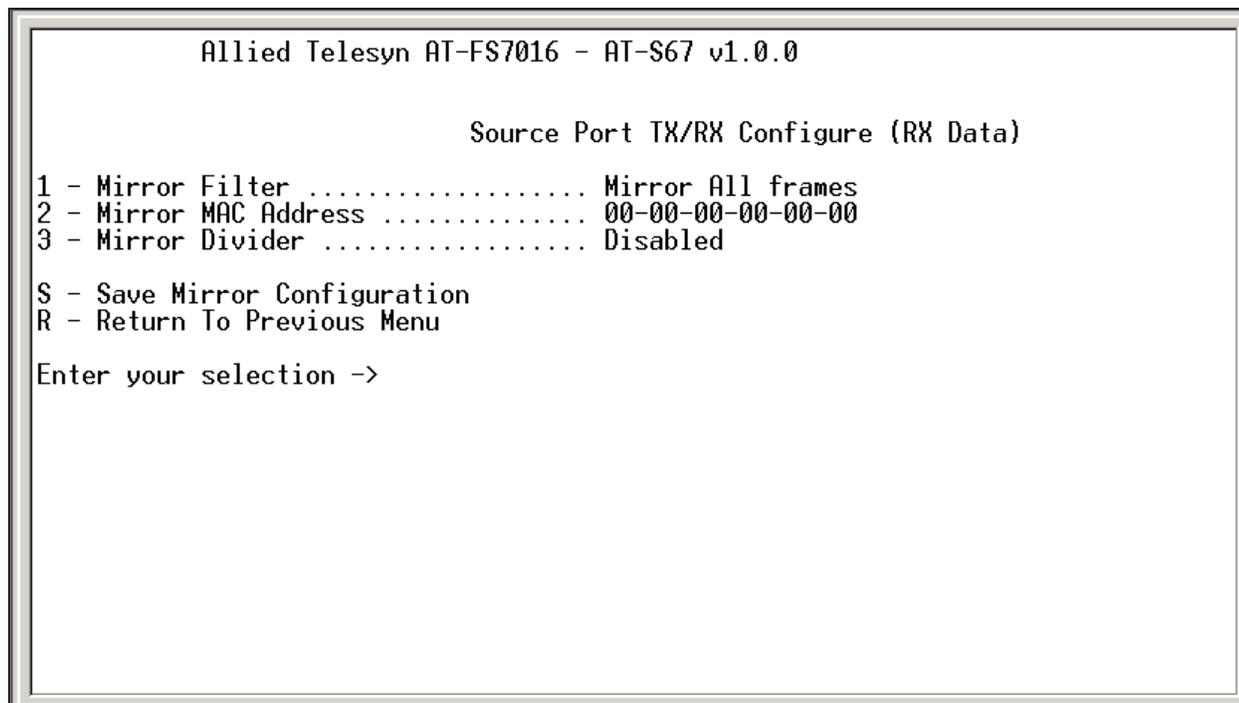
**1 - Source Port RX Configure**

This option will configure the source port's receive mirroring filter.

**2 - Source Port TX Configure**

This option will configure the source port's transmit mirroring filter.

- Depending on your selection in Step 4, a screen similar to Figure 16 will be displayed.



**Figure 16** Source Port TX/RX Configure (RX Data) Menu

- Type **1** to select Mirror Filter. The following prompt is displayed:

```
Enter new filter (A-All Frames, D-Dest Addr,
S-Source Addr):
```

- Type your selection and press **<Enter>**.
- Type **2** to select Mirror MAC Address. The following prompt is displayed:

```
Mirror Frames with MAC Address =
```

- Enter the MAC address and press **<Enter>**.
- Type **3** to select Mirror Divider.

---

**Note**

If you selected Mirror All Frames under Mirror Filter, you do not need to change this parameter.

---

The following prompt is displayed:

```
Select Divider value (2-1023, 1 to Disable) ->
```

The Mirror Divider allows you to set the frequency at which to mirror the frames. For example, setting the Mirror Divider to 10 will mirror the frames in either the receive or transmit direction every 10 frames. Thus the mirrored frame rate will be 1 out of every 10 frames of the source frame rate.

11. Type **S** to select Save Mirror Configuration.

The advanced mirroring feature has been configured.



## Chapter 5

# Virtual LANs

---

This chapter contains procedures for creating, modifying, deleting, and clearing port-based Virtual Local Area Networks (VLANs) from a local management session. This chapter contains the following sections:

- ❑ **VLAN Features** on page 46
- ❑ **Overview of Port-based VLANs** on page 48
- ❑ **Creating a Port-based VLAN** on page 50
- ❑ **Modifying a VLAN** on page 54
- ❑ **Deleting a VLAN** on page 56
- ❑ **Clearing All VLANs** on page 58
- ❑ **Showing VLANs** on page 59

## VLAN Features

---

A Virtual Local Area Network (VLAN) is a logical grouping of devices on different physical LAN segments that allows users to communicate as if they were physically connected to a single LAN, independent of the physical configuration of the network.

With VLAN switch management software, you can segment your network and group end-nodes with related functions into their own separate, logical LAN segments. For example, the marketing personnel in your company may be spread throughout a building. Assigning marketing to a single VLAN allows marketing personnel to share resources and bandwidth as if they were connected to the same segment. The resources of other departments can be visible to the marketing VLAN members, accessible, or accessible only to specified individuals.

A few benefits of a VLAN architecture are described in the following sections.

### **Increased Performance**

In traditional Layer 2 switched networks, broadcast packets are sent to each and every individual port. VLANs address the limitations of standard switch segmentation by containing broadcast as well as end-node-to-end-node traffic.

Grouping users into logical networks limits broadcast traffic to users performing similar functions or users within individual workgroups. High traffic, the danger of broadcast storms, router latency, and data collisions are significantly reduced, and the efficiency of the entire network is improved.

### **Improved Manageability**

VLANs provide a fundamental improvement in the design, administrations, and management of LANs. Before VLANs, physical changes to a network were made at the switch in the wiring closet.

For example, if an employee transferred to a new department, changing that employee's LAN segment assignment often required a physical wiring change at the switch.

As a software-based solution, VLANs eliminate the restriction of existing network design and cabling infrastructure and allow the centralized configuration of switches located in many different locations. VLAN memberships are changed quickly and efficiently from the management console rather than in a wiring closet.

**Increased  
Security**

VLANs provide additional security not available in a shared media network environment. Because a switched network only delivers frames to intended recipients, and only broadcast frames to other members of the VLAN, a network administrator can segment users requiring access to sensitive information into separate VLANs from the rest of the general user community.

Since data traffic generated by an end-node in a VLAN is restricted only to the other end-nodes of the same VLAN, VLANs can be used to control the flow of data in your network. It can also prevent data from flowing to unauthorized end-nodes.

## Overview of Port-based VLANs

---

Port-based VLANs are the simplest and most common form of a VLAN. In a port-based VLAN configuration, each port of the switch is assigned to a specific VLAN. For example, you can designate port 1, 2, and 3 as part of the engineering VLAN and ports 5, 6, and 7 as part of the marketing VLAN.

A port-based VLAN can have as many or as little ports as needed. The VLAN can consist of all the ports on the AT-FS7016 or AT-FS7024 Smart Switch, or just a few ports.

Ports in a port-based VLAN are referred to as “untagged ports” and the frames received on the ports as “untagged frames”. The term “untagged” is based on that fact that the frames received on a port will not contain any information that indicates VLAN membership, and that VLAN membership will be determined only by the port’s PVID.

### **Port VLAN Identifier**

Each port in a port-based VLAN must have a Port VLAN Identifier (PVID). The switch associates a frame to a port-based VLAN by the PVID assigned to the port on which the frame is received and forwards the frame only to those ports with the same PVID. Consequently, all the ports of a port-based VLAN must have the same PVID.

Some switches and switch management programs require that you assign the PVID value for each port manually. However, the AT-S67 and AT-S68 management software performs this task automatically. The software automatically assigns a PVID to a port, making it identical to the VID of the VLAN to which the port is a member.

### **Special VLAN Configuration Feature**

The AT-FS7016 and AT-FS7024 Smart Switches provide an enhanced port-based VLAN feature, which allows a port to be a member of more than one port-based VLAN. This feature allows you to configure a single uplink port (for example, to a router) on every VLAN for the purpose of connecting to a remote location without compromising the basic security features of a multiple VLAN configuration.

An example of this implementation would be a hotel network which requires all rooms to be isolated from each other but allow all rooms to access the internet through a common router.

## **Port-based VLAN Guidelines**

The following is a summary of general guidelines to observe when creating port-based VLANs:

- ❑ Each port-based VLAN must be assigned a unique VID.
- ❑ Each port must be assigned a PVID. This value is assigned automatically by the AT-S67 and AT-S68 management software. The value is the same for all ports in a port-based VLAN and is identical to the VLAN's VID, except when using the special VLAN configuration feature.
- ❑ If there are end-nodes in different VLANs that need to communicate with each other, a router or Layer 3 switch is required to interconnect the VLANs. In this case, each VLAN must have its own port connection to the router. The special VLAN configuration feature will not facilitate inter-VLAN communication.

## Creating a Port-based VLAN

---

To create a port-based VLAN, perform the following procedure:

1. From the Main Menu, type **2** to select VLAN Menu. The VLAN Menu in Figure 17 is displayed.

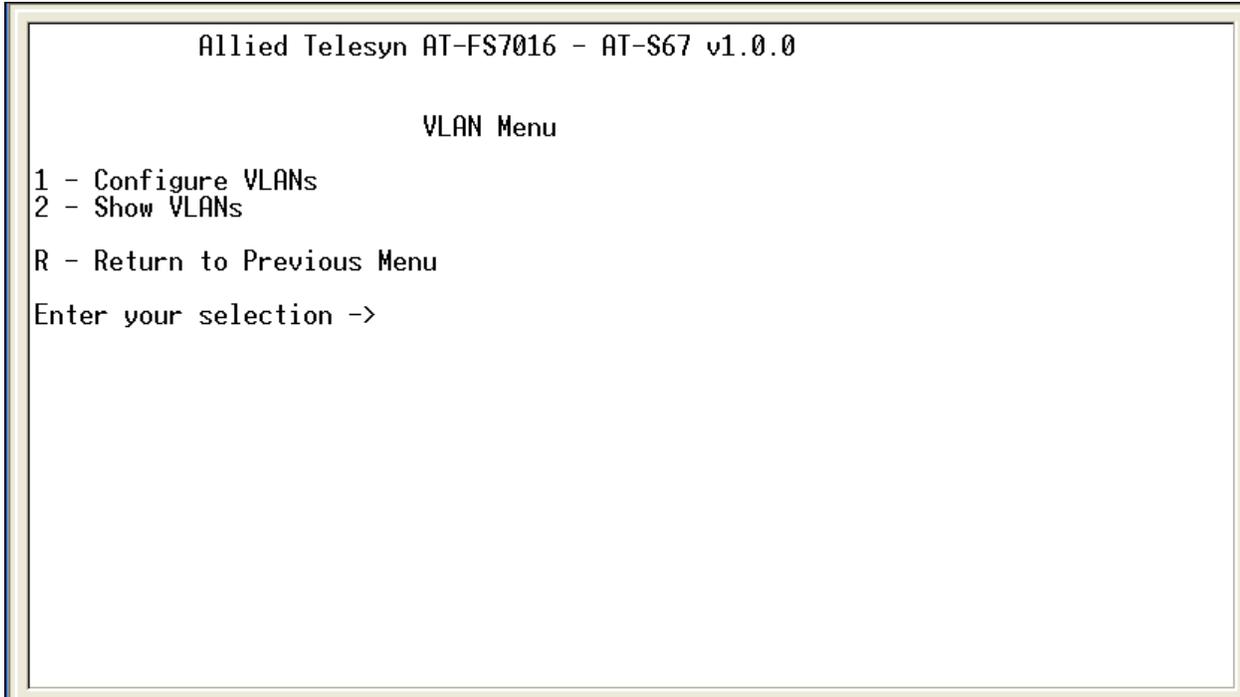


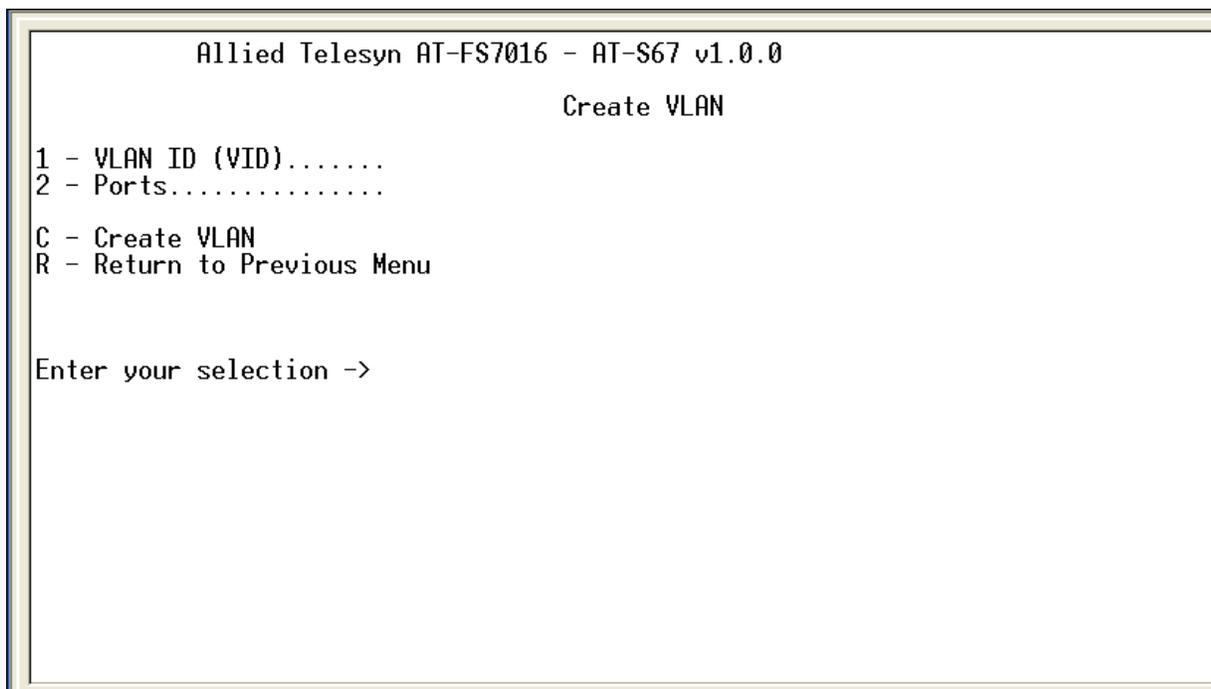
Figure 17 VLAN Menu

- From the VLAN Menu, type **1** to select Configure VLANs. The Configure VLANs Menu in Figure 18 is displayed.

```
Allied Telesyn AT-FS7016 - AT-S67 v1.0.0
                                Configure VLANs
1 - Create VLAN
2 - Modify VLAN
3 - Delete VLAN
4 - Clear All VLANs
R - Return to Previous Menu
Enter your selection ->
```

**Figure 18** Configure VLANs Menu

3. Type **1** to select Create VLAN. The Create VLAN Menu in Figure 19 is displayed.



**Figure 19** Create VLAN Menu

4. Type **1** to select VLAN ID (VID). The following prompt is displayed:

```
Enter new value [1 to 26] ->
```

---

**Note**

A VLAN must have a VID.

---

5. Press **<Enter>**.
6. Type **2** to select Ports. The following prompt is displayed:

```
Enter new value ->
```

You can specify the port individually (for example, 2, 3, 5) or as a range (for example, 2-4).

7. Press **<Enter>**.
8. Type **C** to Create VLAN. The following prompt is displayed:

```
Creating VLAN. Please wait...
```

If the switch is successful in creating a VLAN, the following message is displayed:

```
SUCCESS - Press any key to continue...
```

9. Type **S** to select Save VLAN Configuration.

A port-based VLAN has been created. To create additional VLANs, type **R** twice to return to the Create VLAN Menu then start with **Step 4** on page 52 to repeat this procedure.

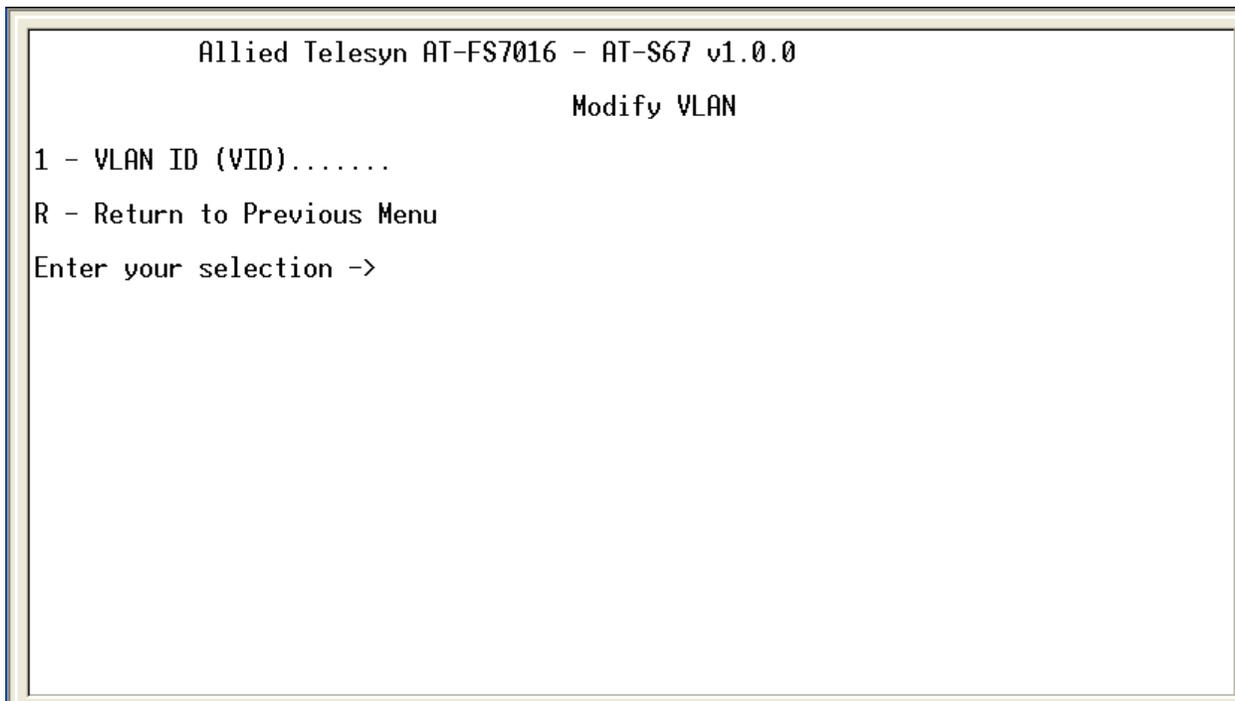
## Modifying a VLAN

---

To modify a VLAN, you must know the VID of the VLAN that you want to modify. To view the VLAN's ID, refer to **Showing VLANs** on page 59.

To modify a VLAN, perform the following procedure:

1. From the Main Menu, type **2** to select VLAN Menu. The VLAN Menu in **Figure 17** on page 50 is displayed.
2. From the VLAN Menu, type **2** to select Modify VLAN. The Modify VLAN Menu in Figure 20 is displayed.



**Figure 20** Modify VLAN Menu

3. Type **1** to select VLAN ID (VID). The VLAN ID is used to identify which VLAN you want to modify. The following prompt is displayed:

```
Enter new value [1 to 26] ->
```

---

**Note**

If you have forgotten the VLAN ID, type **R** twice then **2** to show VLANs. Type **N** to scroll through the configured VLANs until you identify the VLAN ID needing modification. Note the VLAN ID and return to the VLAN Menu by typing **R** then **1** and then **2** to return to the Modify VLAN Menu.

---

4. Enter the VID of the VLAN you want to modify and press **<Enter>**.

The Modify VLAN Menu is displayed showing the current VLAN ID and the port(s) members. You can now change the VLAN ID or the port members of the VLAN.

5. Type **2** to select Ports. The following prompt is displayed:

```
Enter new value ->
```

6. Enter the new value and press **<Enter>**.

7. Type **M** to select Modify VLAN.

8. The following message is displayed:

```
Modifying VLAN. Please wait...
```

9. Type **S** to select Save VLAN Configuration. The following confirmation prompt is displayed:

```
SUCCESS - Press any key to continue...
```

The VLAN has been modified. Repeat this procedure starting with **Step 3** on page 54 to modify additional VLANs.

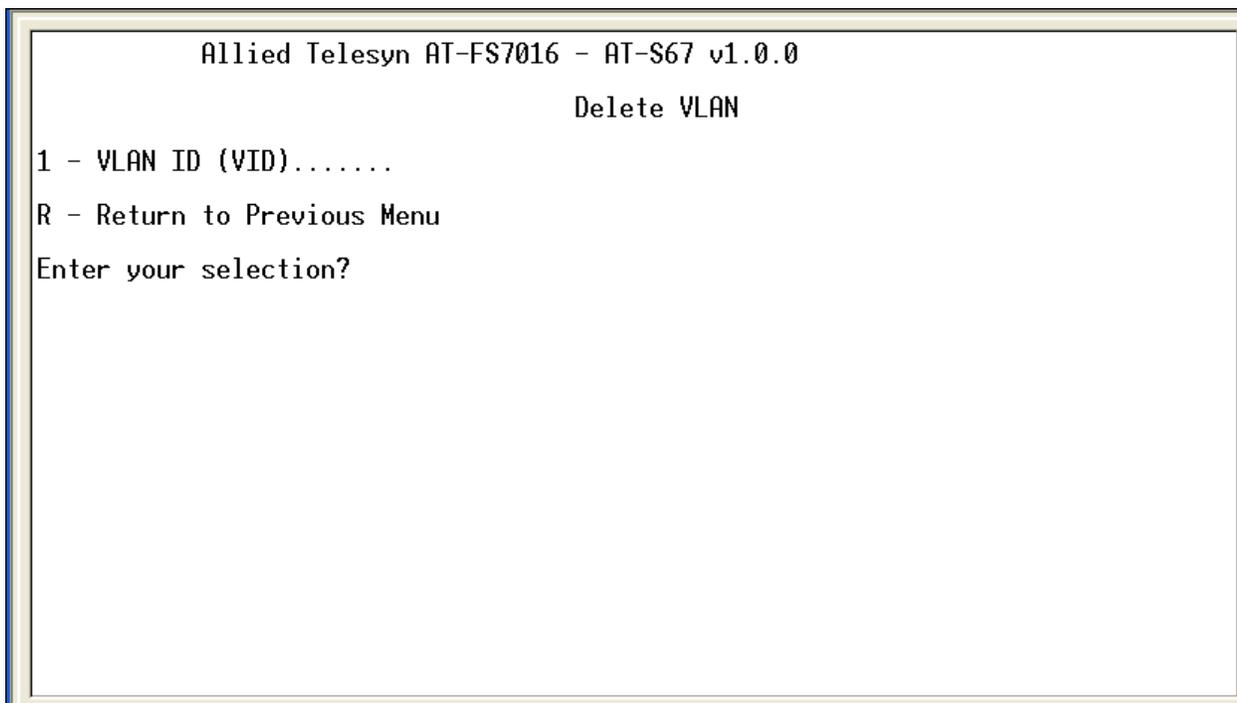
## Deleting a VLAN

---

To delete a VLAN, you must know the VID of the VLAN that you want to delete. To view the VLAN's ID, refer to **Showing VLANs** on page 59. To delete all VLANs refer to **Clearing All VLANs** on page 58.

To delete a VLAN, perform the following procedure:

1. From the Main Menu, type **2** to select VLAN Menu.
2. From the VLAN Menu, type **1** to select Configure VLANs. The Configure VLANs Menu in **Figure 18** on page 51 is displayed.
3. From the Configure VLANs Menu, type **3** to select Delete VLAN. The Delete VLAN Menu in Figure 21 is displayed.



**Figure 21** Delete VLAN Menu

4. Type **1** to select VLAN ID (VID). The following prompt is displayed:

```
Enter new value [1 to 26] ->
```

5. Enter the VID of the VLAN that you want to delete and press **<Enter>**.

---

**Note**

The default VLAN VID of 1 cannot be deleted.

---

The Delete VLAN Menu is displayed showing the VLAN ID and the port(s) associated with that specific ID.

6. Type **D** to select Delete VLAN. The following message is displayed:

```
Are you sure you want to delete this Vlan (Y/N) ->
```

7. Type **Y** to delete the VLAN and press **<Enter>**.

8. If **Y** is selected the following prompt is displayed:

```
Deleting VLAN. Please wait...
```

Then

```
SUCCESS - Press any key to continue...
```

9. Type **S** to select Save VLAN Configuration.

The VLAN has been deleted. Repeat this procedure starting with **Step 4** on page 56 to delete additional VLANs.

## Clearing All VLANs

---

To clear all VLANs, perform the following procedure:

---

**Note**

The default VLAN VID of 1 cannot be deleted.

---

1. From the Main Menu, type **2** to select VLAN Menu. The VLAN Menu in **Figure 17** on page 50 is displayed.

2. From the VLAN Menu, type **1** to select Configure VLANs. The Configuring VLANs in **Figure 18** on page 51 is displayed.

3. Type **4** to select Clear All VLANs. The following prompt is displayed:

```
Are you sure you want clear all VLANs (Y/N) ->
```

4. Type **Y** to clear all VLANs and press **<Enter>**.

The following confirmation prompt is displayed:

```
SUCCESS - Press any key to continue...
```

5. Type **S** to Save VLAN Configuration. The following confirmation prompt is displayed:

```
SUCCESS - Press any key to continue...
```

All VLANs have been deleted.

## Showing VLANs

To view the VID number and member ports of all VLANs on an AT-FS7016 or AT-FS7024 Smart Switch, perform the following procedure:

1. From the Main Menu, type **2** to select VLAN Menu. The VLAN Menu as shown in **Figure 17** on page 50 is displayed.
2. From the VLAN Menu, type **2** to select Show VLANs. An example of the Show VLANs Menu is shown in Figure 22.

```

Allied Telesyn AT-FS7016 - AT-S67 v1.0.0
                                Show VLANs
VID          Ports
-----
 1          1-16
 2          NONE
 3          NONE
 4          NONE
 5          NONE
 6          NONE
 7          NONE
 8          NONE

N - Next Page
U - Update Display
R - Return to Previous Menu

Enter your selection ->

```

**Figure 22** Show VLANs Window

The information in this window is for viewing purposes only.

3. Type **N** to view next page, **U** to update display or **R** to return to previous menu.



## Chapter 6

# Quality of Service (QoS)

---

This chapter contains procedures for configuring the Quality of Service (QoS) parameters of the switch. This chapter contains the following sections:

- ❑ **QoS Overview** on page 62
- ❑ **Configuring Port-based QoS** on page 63
- ❑ **Resetting the QoS** on page 66

## QoS Overview

---

The AT-FS7000 Series Switches feature QoS based on the IEEE 802.1p standard. QoS can be important to network environments when there are time-critical applications, such as voice transmission or video conferencing, that can be adversely affected by packet transfer delays.

When QoS is enabled, the switch will assign the ingress frames to either high priority and low priority. The switch determines these priorities based on the 802.1p tag within the frame. If the frame is untagged the switch will classify the frame based on the value assigned to the ingress port.

For tagged frames, you can set the 802.1p frame TCI Threshold which has a value between 1 and 8. The TCI Threshold will send the tagged frame into either a high priority queue or low priority queue depending on the TCI Threshold value. If the value of the frame tag is equal to or less than the TCI Threshold the frame will be sent to the low priority queue. For example, if the TCI Threshold is set to 5, incoming frames with a tag of 6 and above will be sent to the high priority queue. Frames with a tag of 5 and below will be sent to the low priority queue.

For untagged frames, the port based QoS values that are assigned to each port determine if the frame is assigned to the high priority queue or the low priority queue.

You can also set the weights to the high and low priority queues for the egress of the frames. The priority queue weights have a value between 1 and 15. Weights are designed to allow a set number of outgoing frames to be delivered from the high priority queue and the low priority queue based on the high/low ratio. For example, if you have a high priority queue weight of 15 and low priority queue weight of 1, this means for every 15 high priority frames sent 1 low priority frame will be sent.

When the QoS is disabled, all tagged and untagged frames are treated equally and placed in one queue on the switch.

## Configuring Port-based QoS

To configure the QoS, perform the following procedure:

1. From the Main Menu, type **3** to select QoS Menu. The QoS Menu shown in Figure 23 is displayed.

```

Allied Telesyn AT-FS7016 - AT-S67 v1.0.0

                                QoS Menu

1 - QoS Enable/Disable..... Disabled
2 - High Priority Queue Weighting..... 15
3 - Low Priority Queue Weighting..... 1
4 - 802.1p frame TCI THRESHOLD..... 4
5 - Port Based QoS
6 - Reset QoS Settings

S - Save QoS Settings
R - Return to Previous Menu

Enter your selection ->

```

**Figure 23** QoS Menu

2. From the QoS Menu, select **1** to enable port-based QoS.

---

### Note

If QoS Enable/Disable is disabled, all tagged and untagged frames are placed in one queue on the switch.

---

3. Type **2** to select High Priority Queue Weighting. The following prompt is displayed:

```
Enter new value [1 to 15] ->
```

4. Enter the new value and press **<Enter>**.

You will be returned to the QoS Menu.

- Type **3** to select Low Priority Queue Weighting. The following prompt is displayed:

```
Enter new value [1 to 15] ->
```

- Enter the new value and press **<Enter>**.

You will be returned to the QoS Menu.

- Type **4** to set the 802.1p frame TCI Threshold. The TCI Threshold will determine if a tagged frame is sent to either a high priority queue or low priority queue.

The following prompt will be displayed:

```
Enter new value [1 to 8] ->
```

- Enter the new value and press **<Enter>**.

You will be returned to the QoS Menu.

- Type **5** to select Port Based QoS. The Port Based QoS Menu in Figure 24 is displayed.

Allied Telesyn AT-FS7016 - AT-S67 v1.0.0								
Port Based QoS								
Port	1	2	3	4	5	6	7	8
	Low	Low	High	Low	Low	Low	Low	Low
Port	9	10	11	12	13	14	15	16
	Low	Low	Low	Low	Low	Low	Low	Low

P - Select Port  
R - Return to Previous Menu  
Enter your selection ->

**Figure 24** Port Based QoS Menu

Port-based QoS will determine if an untagged frame is sent to either a high priority queue or low priority queue based on the port-based QoS configuration.

10. Type **P** to select the port you wish to set. One of the following prompts will be displayed:

For an AT-FS7016 switch:

```
Enter Port Number [1 - 16] ->
```

For an AT-FS7024 switch:

```
Enter Port Number [1 - 24] ->
```

11. Enter the port number and press **<Enter>**. The following prompt will be displayed:

```
Enter new value [H - High L - Low] ->
```

12. Type **H** or **L** to select the port priority.

13. To set another port, type **P** and repeat steps 10 through 12 or type **R** to return to the QoS menu.

14. From the QoS Menu, type **S** to Save QoS Settings.

The QoS parameters have been set.

## Resetting the QoS

---

To reset the QoS parameters back to the factory default, perform the following procedure:

1. From the Main Menu, type **3** to select QoS Menu. The QoS Menu in **Figure 23** on page 63 is displayed.
2. Type **6** to select Reset QoS Settings. The following prompt is displayed:

```
Do you really want to Reset? [Y]es  [N]o:
```

3. Type **Y** to continue.
4. You will be returned to the QoS Menu.
5. Type **S** to Save QoS Settings. The following confirmation prompt is displayed:

```
Success - Press any key to continue...
```

The QoS parameters have been reset back to the factory defaults.

## Chapter 7

# Switch Administration

---

This chapter contains instructions for changing the login password. The login password enables the user to access the Main Menu to configure the management software. This chapter also contains instructions for downloading a new application image.

This chapter contains the following sections:

- ❑ **Changing the Login Password** on page 68

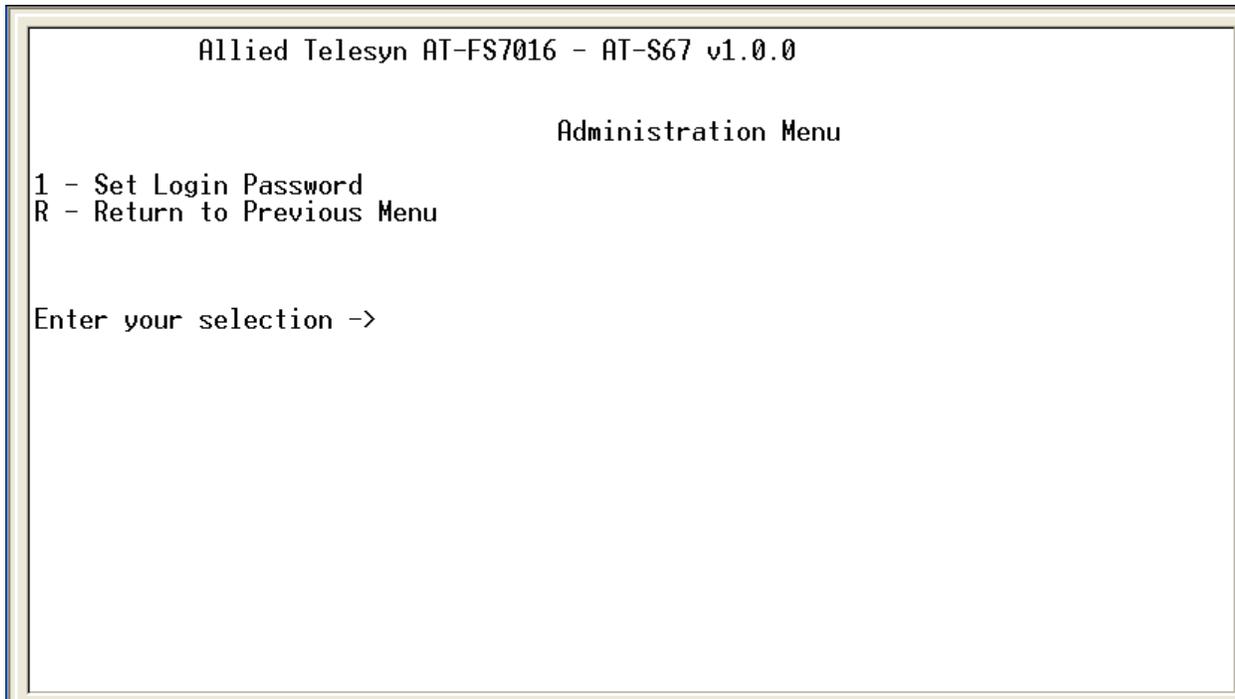
## Changing the Login Password

---

The login password prevents unauthorized access to the local management session. Any user who starts a management session will be required to enter the password. The AT-S67 and AT-S68 management software's default password is "friend".

To change the login password, perform the following procedure:

1. From the Main Menu, type **4** to select Administration Menu. The Administration Menu in Figure 25 is displayed.



**Figure 25** Administration Menu

2. From the Administration Menu, type **1** to select Set Login Password. The following prompt will be displayed:

```
Enter Current Login Password:
```

---

**Note**

If you enter an invalid password, the switch will not allow the current password to be changed.

---

3. Type the current password and press **<Enter>**. The following prompt will be displayed:

```
Enter New Password:
```

4. Type in the new password and press **<Enter>**. The following prompt will be displayed:

```
Re-enter New Password:
```

5. Re-enter the new password and press **<Enter>**. The following prompt will be displayed:

```
SUCCESS - Password changed.  
Press any key to continue...
```

The password has been changed.



## Chapter 8

# System Configuration

---

This chapter contains information and instructions for setting the MAC Aging time and resetting the switch to the factory defaults.

This chapter contains the following sections:

- ❑ **MAC Address Overview** on page 72
- ❑ **Changing the MAC Aging Time** on page 74
- ❑ **Resetting the Switch** on page 75

## MAC Address Overview

---

Every hardware device that you connect to your network has an unique MAC address. A MAC address is assigned to a device by the device's manufacturer. For example, every network interface card that you use to connect your computers to your network has a MAC address assigned to it by the adapter's manufacturer.

The AT-FS7000 Series Switch's MAC address table can contain up to 4 kilobytes. The switch uses the table to store the MAC addresses of the network end-nodes connected to its ports, along with the port number on which each address was learned.

The switch learns the MAC addresses of the end-nodes by examining the source address of each packet received on a port. It adds the address and port on which the packet was received to the MAC address table if the address has not already been entered in the table. The result is a table that contains all the MAC addresses of the devices that are connected to the switch's ports and the port numbers where each address was learned.

When the switch receives a packet, it also examines the destination address and, by referring to its MAC address table, determines the port where the destination end-node is connected. It then forwards the packet to the appropriate port and onto the end-node. This increases network bandwidth by limiting each frame to the appropriate port when the intended end-node is located, freeing the other switch ports for receiving and transmitting data.

If the switch receives a packet with a destination address that is not in the MAC address table, it floods the packet to all the ports on the switch. If the ports have been grouped into virtual LANs, the switch floods the packet only to those ports which belong to the same VLAN as the port on which the packet was received. This prevents packets from being forwarded onto inappropriate LAN segments and increases network security. When the destination end-node responds, the switch add its MAC address and port number to the table.

If the switch receives a packet with a destination address that is on the same port on which the packet was received, it discards the packet without forwarding it on to any port. Since both the source end-node and the destination end-node for the packet are located on the same port on the switch, there is no reason for the switch to forward the packet. This also increases network performance by preventing frames from being forwarded unnecessarily to other network devices.

The type of MAC address described above is referred to as a dynamic MAC address. Dynamic MAC addresses are addresses that the switch learns by examining the source MAC addresses of the frames received on the ports.

Dynamic MAC addresses are not stored indefinitely in the MAC address table. The switch deletes a dynamic MAC address from the table if it does not receive any frames from the end-node over a specified period of time. The switch assumes that the end-node with that MAC address is no longer active and that its MAC address can be purged from the table. This prevents the MAC address table from becoming filled with addresses of end-nodes that are no longer active.

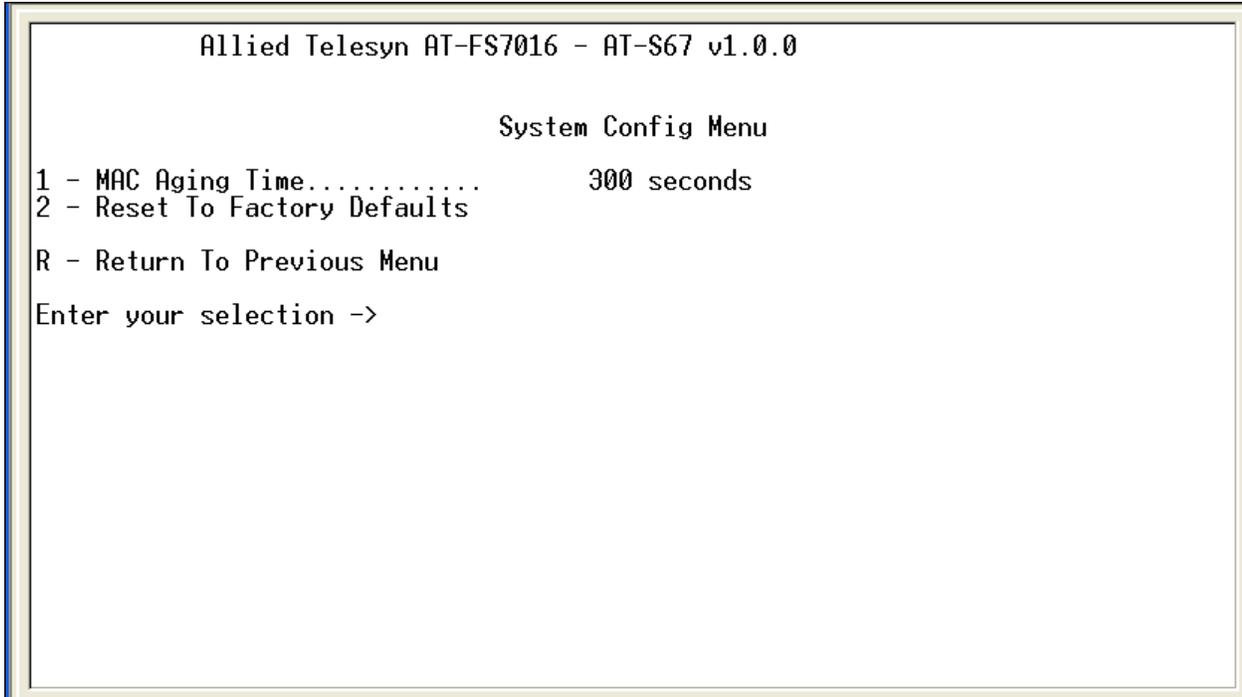
The period of time that switch waits before purging an inactive dynamic MAC address is called the "aging timer". This value is adjustable on the AT-FS7000 Series Switches. The default value is 300 seconds (5 minutes). For instructions on changing the aging timer, refer to **Changing the MAC Aging Time** on page 74.

## Changing the MAC Aging Time

---

To change the MAC aging time, perform the following procedure:

1. From the Main Menu, type **5** to select System Config Menu. The System Config Menu in Figure 26 is displayed.



**Figure 26** System Config Menu

2. Type **1** to select MAC Aging Time. The following prompt will be displayed:

```
Enter New Value (1-65535):
```

---

**Note**

The default value is 300 seconds (5 minutes).

---

3. Enter a new value and press **<Enter>**.

The new MAC aging time has been set.

## Resetting the Switch

---

To reset the switch back to the factory default settings, perform the following procedure:

1. From the Main Menu, type **5** to select System Config Menu. The System Config Menu in **Figure 26** on page 74 is displayed.
2. Type **2** to select Reset to Factory Defaults. The following confirmation prompt will be displayed:

```
Do you want to Restore Settings to Factory
Defaults? [Y]es or [N]o:
```

3. Type **Y** to continue.

You will be returned to the System Config Menu.

The switch has been reset back to the factory defaults.



## Chapter 9

# Ethernet Statistics

---

This chapter contains the procedures for displaying data traffic statistics per port and for the switch.

This chapter contains the following sections:

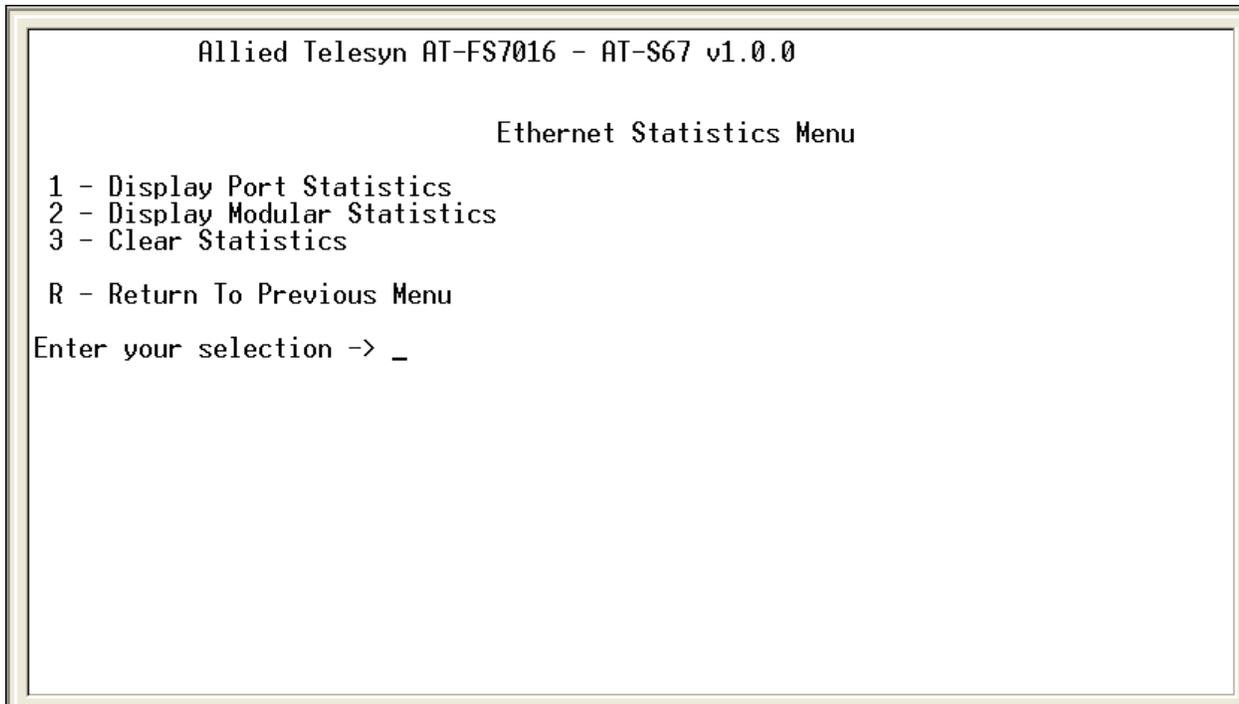
- ❑ **Displaying Port Statistics** on page 78
- ❑ **Displaying Switch Statistics** on page 81
- ❑ **Clearing Statistics** on page 83

## Displaying Port Statistics

---

To display the port statistics, perform the following procedure:

1. From the Main Menu, type **6** to select Ethernet Statistics. The Ethernet Statistics Menu in Figure 27 is displayed.



**Figure 27** Ethernet Statistics Menu

2. Type **1** to select Display Port Statistics. The Display Port Statistics Window in Figure 28 is displayed.

```

Allied Telesyn AT-FS7016 - AT-S67 v1.0.0

                Display Port Statistics

Port           1           2           3           4
-----
TOTAL PACKETS      0           0           0           0
TX TOTAL PACKETS   0           0           0           0
RX TOTAL PACKETS   0           0           0           0
RX BROADCAST       0           0           0           0
RX MULTICAST       0           0           0           0
RX UNICAST         0           0           0           0
RX CRC_ERR         0           0           0           0
RX ALIGNMENT_ERR   0           0           0           0
RX FRAGMENT        0           0           0           0
RX OVERSIZE        0           0           0           0

N - Next Page
U - Update Display

R - Return To Previous Menu

Enter your selection?

```

**Figure 28** Display Port Statistics Window

The information in this window is for viewing purposes only. The parameters are described below:

**Total Packets**

The total number of valid packets received and transmitted on the port.

**TX Total Packets**

The total number of packets transmitted out the port.

**RX Total Packets**

The total number of packets received on the port.

**RX Broadcast**

The number of broadcast packets received on the port.

**RX Multicast**

The number of multicast packets received on the port.

**RX Unicast**

The number of unicast packets received on the port.

**RX CRC\_ERR**

The number of packets with Cyclic Redundancy Check (CRC) errors but with the proper length (64-1518 bytes) received on the port.

**RX Alignment\_ERR**

The number of packets with alignment errors received on the port.

**RX Fragment**

The number of undersized packets received on the port.

**RX Oversize**

The number of packets exceeding the maximum specified by IEEE 802.3 (1518 bytes including the CRC) received on the port.

3. Type **N** to go to the next page, **U** to update the port statistics display or **R** to return to the previous menu.

## Displaying Switch Statistics

To display the statistics of the switch, perform the following procedure:

1. From the Main Menu, type **6** to select Ethernet Statistics. The Ethernet Statistics Menu shown in **Figure 27** on page 78 is displayed.
2. Type **2** to select Display Modular Statistics. The Display Modular Statistics window in Figure 29 is displayed.

```

Allied Telesyn AT-FS7016 - AT-S67 v1.0.0
      Display Modular Statistics
Ports                               (01-16)
-----
TOTAL PACKETS                       0
TX TOTAL PACKETS                     0
RX TOTAL PACKETS                     0
RX BROADCAST                         0
RX MULTICAST                         0
RX UNICAST                           0
RX CRC_ERR                           0
RX ALIGNMENT_ERR                     0
RX FRAGMENT                          0
RX OVERSIZE                          0

U - Update Display
R - Return To Previous Menu
Enter your selection?

```

**Figure 29** Display Modular Statistics Window

The information in this window is for viewing purposes only. The parameters are described below:

### **Total Packets**

The total number of valid packets received and transmitted by the switch.

### **TX Total Packets**

The total number of packets transmitted from the switch.

### **RX Total Packets**

The total number of packets received by the switch.

### **RX Broadcast**

The number of broadcast packets received on the switch.

**RX Multicast**

The number of multicast packets received on the switch.

**RX Unicast**

The number of unicast packets received on the switch.

**RX CRC\_ERR**

The number of packets with Cyclic Redundancy Check (CRC) errors but with the proper length (64-1518 bytes) received by the switch.

**RX Alignment\_ERR**

The number of packets with alignment errors received on the switch.

**RX Fragment**

The number of undersized packets received on the switch.

**RX Oversize**

The number of packets exceeding the maximum specified by IEEE 802.3 (1518 bytes including the CRC) received on the switch.

3. Type **U** to update the switch's statistics display or **R** to return to the previous menu.

## Clearing Statistics

---

To clear the statistics, perform the following procedure:

1. From the Main Menu, type **6** to select Ethernet Statistics. The Ethernet Statistics Menu shown in **Figure 27** on page 78 is displayed.
2. Type **3** to select Clear Statistics.  
The statistics for the ports and the switch are immediately cleared.
3. Type **R** twice to return to the Main Menu.



## Chapter 10

# Running Diagnostics

---

This chapter contains instructions for displaying the firmware version of the management software, running self test, and dumping the software configurations.

This chapter contains the following sections:

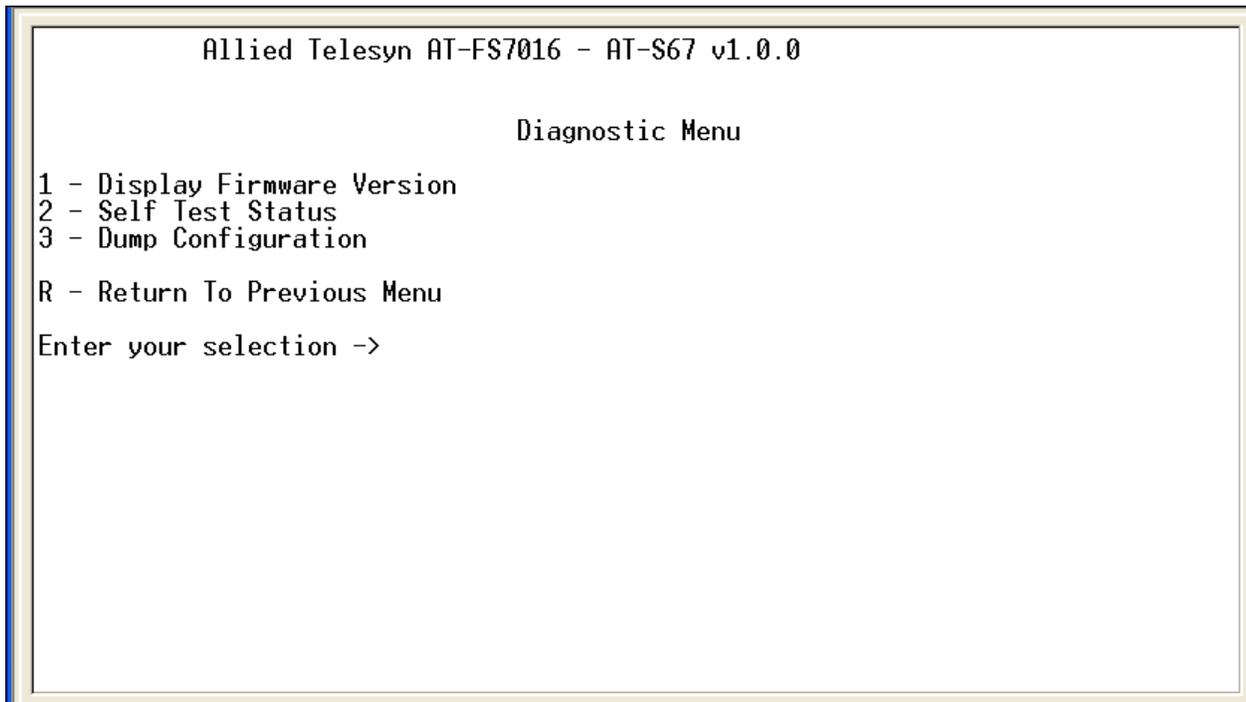
- ❑ **Displaying the Firmware Version** on page 86
- ❑ **Running a Self Test** on page 87
- ❑ **Dumping the Software Configuration** on page 88

## Displaying the Firmware Version

---

To display the version of firmware of the management software, perform the following procedure:

1. From the Main Menu, type **8** to select Diagnostics. The Diagnostics Menu in Figure 30 is displayed.



**Figure 30** Diagnostics Menu

2. Type **1** to select Display Firmware Version. A prompt will be displayed similar to the following:

```
Firmware version: AT-S67 v1.0.0
```

```
Press any key to continue...
```

3. Press any key to return to the Diagnostics Menu.

## Running a Self Test

---

To run a test on each of the chip sets, perform the following procedure:

1. From the Main Menu, type **8** to select Diagnostics. The Diagnostics Menu in **Figure 30** on page 86 is displayed.
2. Type **2** to select Self Test Status. The Show Self Test Status window in **Figure 31** is displayed.

```
Allied Telesyn AT-FS7016 - AT-S67 v1.0.0

                          Show Self Test Status

Chip:00
MIB RAM.....PASS
Buffer Control RAM.....PASS
Internal packet buffer memory.....PASS

Chip:01
MIB RAM.....PASS
Buffer Control RAM.....PASS
Internal packet buffer memory.....PASS

Press any key to continue ...
```

**Figure 31** Show Self Test Status Window

The information in this window is for viewing purposes only.

The following prompt is displayed.

Press any key to continue...

3. Press any key to return to the Diagnostics Menu.

## Dumping the Software Configuration

**Note**

This feature is useful only to Allied Telesyn Customer Support to diagnose a problem with your configuration. This command 'dumps' the configuration information on the screen.

To display the software configuration, perform the following procedure:

1. From the Main Menu, type **8** to select Diagnostics. The Diagnostics Menu in **Figure 30** on page 86 is displayed.
2. Type **3** to select Dump Configuration. A window similar to Figure 32 is displayed.

```

                                Diagnostic Menu

1 - Display Firmware Version
2 - Self Test Status
3 - Dump Configuration

R - Return To Previous Menu

Enter your selection -> 3
ABCD  0002  FDAF  0000  0040  0000  0040  0000  FFBF
0000  FFFE  0000  FFFE  0000  2C01  0060  0000  3412
7856  AB90  0000  000D  0040  0000  005D  7865  7834
0000  4080  0000  0000  40F1  6006  0000  0060  0000
0000  0000  0101  0000  0A09  0A09  0A09  0A09  4209
0A41  0A09  0A09  0000  0000  0000  0000  0507  0000
0004  0000  0000  0000  0000  0000  0000  0000  0000
0000  FFFF  0000  0000  0000  0000  0000  0000  0000
0000  0000  0000  0000  0000  0000  0000  0000  0000
0000  0000  0000  0000  0000  0000  0000  0000  0000
0000  0000  0000  0000  0000  0000  0000  0000  0000
0000  0000  0000  0000  0000  0000  0000  0000  0000
0000  0000  0000  0000  0000  0000  0000  0000  0000
0000  0000  0000  0000  0000  ABCD  0000  0000  0000
Press any key to continue ...
    
```

**Figure 32** Dump Configuration Window

3. Press any key to return to the Diagnostics Menu.

## Appendix A

# AT-S67 and AT-S68 Default Settings

---

This appendix lists the factory default settings for the AT-S67 and AT-S68 version 1.0.0 management software.

Parameter	Default Setting
<b>Port Configuration</b>	
TX/RX	TX/RX Enabled
Flow Control	Enabled
Auto Negotiation	Enabled
<b>Port Mirroring</b>	
Destination Mirror Port	None
Source Mirror Port (RX Data Only)	None
Source Mirror Port (TX Data Only)	None
Source Mirror Port (TX/RX Data Both)	None
<b>Advanced Mirror Configuration (TX/RX Data)</b>	
Mirror Filter	Mirror All Frames
Mirror MAC Address	00-00-00-00-00-00
Mirror Divider	Disabled
<b>Port Trunking</b>	
Port Group	No trunk groups

Parameter	Default Setting
<b>VLAN</b>	
PVID	AT-FS7016 Switch: 1 (ports 1 - 16) AT-FS7024 Switch: 1 (ports 1 - 24)
<b>QoS</b>	
QoS Enable/Disable	Disabled
High Priority Queue Weighting	15
Low Priority Queue Weighting	1
802.1p Frame TCI Threshold	4
Port Based QoS	Low (all ports)
<b>Administration</b>	
Set Login Password	friend
<b>System Configuration</b>	
MAC Aging Time	300 seconds