

## Chapter 47

# Stream Printing for AT-9900 Switches

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## Introduction

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This chapter describes the stream printing service provided by the AT-9900 switch, and how to set up and use stream printing on the AT-9900 switch. Stream printing is a TCP-based printing service providing a simpler alternative to the Line Printer Daemon (LPD) protocol.

Stream printing on AT-9900 switches requires IP to be enabled and configured. See [Chapter 13, Internet Protocol \(IP\)](#) for descriptions of these commands.

## Overview

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Stream printing is a TCP-based printing service that provides a simpler alternative to the Line Printer Daemon (LPD) protocol.

Stream printing has the following advantages:

- It does not require a complicated printer driver on the client machine, as LPD does.
- It does not require the switch to process control files, as LPD does.

The switch supports stream printing on any asynchronous port. A printer must be connected to the asynchronous port, and the asynchronous port must be configured as a stream printer port so that the switch establishes the required TCP ports for incoming calls. Stream printer ports on the switch are named.

The switch sets up TCP listen ports for stream printing for those ports that have been configured as stream printer ports. The TCP port numbers used for stream printing are related to the asynchronous port number to which the printer is attached by a simple mapping:

$$\text{TCP port number} = \text{asynchronous port number} + 5000 \text{ (decimal)}$$

For example, if asynchronous port 0 on the switch is configured as a stream printer port, client machines must use TCP port number 5000 to print to the printer attached to this port. Attempting to send data to a TCP port number that does not map to a port that has been configured for stream printing results in a connection failure.

The switch IP address and TCP port numbers must also be configured on the client machines that will be using the stream printing service. Refer to the documentation for the stream printing implementation on the client machine for more information.

To send data to the printer, a client machine opens a raw TCP data connection to the IP address and TCP port number on the switch and transmits the print data over the TCP connection directly to the printer. There are no overheads associated with stream printing above the TCP setup phase.

## Configuring Stream Printing

**Procedure** To set up a stream printer port on the switch use the command:

```
add stream=stream-name port=port [dtr]
```

Both the stream name and port number used for the stream printer must be specified. The stream name should be unique on the switch and not already in use, and the port must be an asynchronous port not already in use. The port must also be set to a fixed speed (i.e. not be set to autobauding).

To check that the stream port has been set up correctly, use the command:

```
show stream [=stream-name]
```

A further check can be made by displaying the status of the TCP ports in use by using the command:

```
show tcp
```

See [Chapter 13, Internet Protocol \(IP\)](#) for complete details of this command.

To remove a stream printer, use the command:

```
delete stream=stream-name
```

The stream name must be specified in the command. This command removes the stream printer, closes the TCP listen port for the printer and frees the asynchronous port.

To modify a stream printer, use the command:

```
set stream=stream-name [port=port] [dtr]
```

To reset a stream printer, use the command:

```
reset stream=stream-name
```

The stream name must be specified in the command. Resetting the stream printer clears any current TCP connection, resets the stream printer's asynchronous port and reopens the TCP listen port for the stream printer.

You can not disable a stream printer. If a stream printer is to be turned off for a period of time, you must delete the stream printer port and then add it back again later.

**Example** In this example, a stream printer called printOffice is configured on asynchronous port 0. Since the port has not been modified since the switch was installed, it is currently set to autobauding. The port will be set to 9600 baud to match the printer's capabilities. The commands are:

```
set asyn=0 speed=9600
add stream=printOffice port=0
show stream
```

Output is in the following figure.

Figure 47-1: Example output from the **show stream** command

Name	Port	DTR	Connects	Characters
-----	-----	-----	-----	-----
printOffice	00	enabled	0000	0000000000

## Command Reference

This section describes commands available on the AT-9900 switch to configure and manage stream printing.

Stream printing requires IP to be enabled and configured correctly. See [Chapter 13, Internet Protocol \(IP\)](#) for detailed descriptions of the commands required to enable and configure IP.

See “Conventions” on page xlix of [About this Software Reference](#) in the front of this manual for details of the conventions used to describe command syntax.

See [Appendix A, Messages](#) for a complete list of messages and their meanings.

## add stream

**Syntax** `ADD STReam=stream-name POrt=port [DTR]`

**Description** This command adds a stream printer to the switch. The properties of the stream printer just added are displayed in the same format as the **show stream** command.

Parameter	Description
STReam	Unique name for the stream printer you want to add. The <i>stream-name</i> is not case sensitive and consists of: <ul style="list-style-type: none"><li>a string 1 to 15 characters long</li><li>any printable characters</li></ul> If <i>stream-name</i> contains spaces it must be enclosed in double quotes. Default: no default
POrt	Asynchronous port the stream printer is attached to. The <i>port</i> is the asynchronous port number. Ports are numbered sequentially starting with 0. The port must be set to a fixed speed and must not already be in use as a stream printer. The switch opens a TCP listen port for the stream printer. The TCP port number is the asynchronous port number plus 5000 (decimal). Default: no default
DTR	Disables the DTR signal on the asynchronous port. Default: no default

**Examples** To add a stream printer called *Stores* on asynchronous port 0, use the command:

```
add str=stores po=0
```

**Related Commands**

- [delete stream](#)
- [reset stream](#)
- [set stream](#)
- [show stream](#)

## delete stream

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**Syntax** DELEte STReam=*stream-name*

**Description** This command deletes a stream printer. Any existing print job is aborted, and no more print jobs are accepted for the printer. The stream printer is removed, the asynchronous port allocated to the stream printer is freed, and the TCP listen port is closed.

The **stream** parameter specifies the name of the existing stream printer you want to delete.

**Examples** To delete the stream printer called *Stores*, use the command:

```
del str=stores
```

**Related Commands** [add stream](#)  
[reset stream](#)  
[set stream](#)  
[show stream](#)

## reset stream

---

**Syntax** RESET STReam=*stream-name*

**Description** This command resets a stream printer. The asynchronous port and TCP connection are reset, and the stream printer is cleared of any existing print job.

The **stream** parameter specifies the name of the existing stream printer you want to reset.

**Examples** To reset the stream printer called *Stores*, use the command:

```
reset str=stores
```

**Related Commands** [add stream](#)  
[delete stream](#)  
[set stream](#)  
[show stream](#)

## set stream

**Syntax** SET STReam=*stream-name* [POrt=*port*] [DTR]

**Description** This command modifies the parameters of a stream printer. The properties of the stream printer just modified are displayed in the same format as the **show stream** command.

Parameter	Description
STReam	Unique name for the stream printer you want to modify. The <i>stream-name</i> is not case sensitive and consists of: <ul style="list-style-type: none"><li>a string 1 to 15 characters long</li><li>any printable characters</li></ul> If <i>stream-name</i> contains spaces it must be enclosed in double quotes. Default: no default
POrt	Asynchronous port the stream printer is attached to. The <i>port</i> is the asynchronous port number. Ports are numbered sequentially starting with 0. The port must be set to a fixed speed and must not already be in use as a stream printer.  The switch opens a TCP listen port for the stream printer. The TCP port number is the asynchronous port number plus 5000 (decimal). Default: no default
DTR	Disables the DTR signal on the asynchronous port. Default: no default

**Examples** To disable DTR on the port assigned to a stream printer called *Stores*, use the command:

```
set str=stores dtr
```

**Related Commands** [add stream](#)  
[delete stream](#)  
[reset stream](#)  
[show stream](#)

## show stream

**Syntax** `SHow STReam [=stream-name]`

**Description** This command displays information about stream printers ([Figure 47-2](#), [Table 47-1](#)).

If you specify a value for the **stream** parameter, only information about the specified stream printer is displayed.

If you do not specify a value for the **stream** parameter, information about all stream printers is displayed.

Figure 47-2: Example output from the **show stream** command

Name	Port	DTR	Connects	Characters
Printer1	00	enabled	0012	0000023854

Table 47-1: Parameters in output of the **show stream** command

Parameter	Meaning
Name	Name of the stream printer.
Port	Asynchronous port used by the stream printer.
DTR	Whether or not DTR is enabled on the asynchronous port; one of "enabled" or "disabled".
Connects	Number of connections that have been made to the stream printer.
Characters	Number of characters that have been sent to the stream printer.

**Examples** To display details of the stream printer called Stores, use the command:

```
sh str=stores
```

**Related Commands**

- [add stream](#)
- [delete stream](#)
- [reset stream](#)
- [set stream](#)

