



# DATACOM

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## SYSTEMS INC



## TS-1404, TS-1406, TS-2408 10G Aggregation Taps

### FASTstart Guide

December 2016

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## 1.6 Safety Notices and Warnings



These explanatory labels are included in this information for the user in accordance with the requirements of IEC 60825.1.



**WARNING: Class 1 laser and LED product. A class 1 laser is safe under all conditions of normal use. Invisible laser radiation may be emitted from optical port openings when no fiber cable is connected, avoid exposure to laser radiation and do not stare into open optical ports.**

**IMPORTANT:** Rack Mount Instructions are included here to call the attention of installation technicians to pertinent safety and warning issues prior to the installation of the product as follows:

- A. Elevated Operating Ambient — If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature specified.
- B. Reduced Air Flow — Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- C. Mechanical Loading — Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- D. Circuit Overloading — Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- E. Reliable Earthing — Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

## 2 Overview

This FASTstart Guide for the TS-1404, TS-1406, and TS-2408 10G Aggregation Taps is intended to provide you with information needed to get your Aggregation Tap up and running. Additional support, documentation and help can be found on the Datacom Systems website: <http://www.datacomsystems.com>

The SINGLEstream family of products increases network visibility and leverages your investment in network analyzers, probes, and security equipment by allowing you to simultaneously monitor many peripheral network tools simultaneously. Greater visibility accelerates problem resolution, reduces downtime and increases enterprise productivity.

The SINGLEstream TS-1404, TS-1406, and TS-2408 10G Aggregation Taps are compatible with all vendor hardware and can be controlled by a Command Line Interface (CLI), which will allow you to control your Datacom products regardless of what network appliances you choose to deploy.

## 2.1 What Shipped?

- 1- TS-1404, TS-1406, or TS-2408 10G Aggregation Tap
- 2- Switching AC Adapters
- 1- DRL512-2M-R (copper RJ45) cable
- 1- DB9 M/F straight through cable
- 2- AC Line Cords

## 2.2 Specifications

### TS-1404 Ports:

**Network:** Two (2) LC Fiber 10G/1G Ports. Split ratio and micron specifications vary.

**Any-To-Any:** Two (2) SFP+ (Supports SFP+ SR, LR, LRM, SFP SX, LX, BT)

### TS-1406 Ports:

**Network:** Two (2) LC Fiber 10G/1G Ports. Split ratio and micron specifications vary.

**Any-To-Any:** Four (4) SFP+ (Supports SFP+ SR, LR, LRM, SFP SX, LX, BT)

### TS-2408 Ports:

**Network:** Four (4) LC Fiber 10G/1G Ports. Split ratio and micron specifications vary.

**Any-To-Any:** Four (4) SFP+ (Supports SFP+ SR, LR, LRM, SFP SX, LX, BT)

### Management Port (front):

RJ45 @ 10/100/1000 Mb Full-Duplex

### Serial Port (front):

DB9 @ 115,200 bps; 8 data bits; Parity none; 1 stop bit; Flow control none

### Power Requirements:

**Maximum Power Consumption:** Less than 90 Watts

**Individual Power Supply Rating:** 100-240V ~50-60Hz 7A MAX.

### Dimensions (H x W x D):

1.5 x 8.3 x 12.5 in (3.81 x 21.08 x 31.75 cm)

**Weight:**

3.75 lbs (1.7 kgs)

**Environmental:****Operating Temperature:** 32° to 104°F (0° to 40°C)**Storage Temperature:** -22° to 149°F (-30° to 65°C)**Humidity:** 5 to 90% non-condensing**Warranty:**Visit <http://www.datacomsystems.com/support/warranty-info> for more information.

## 2.3 Supported SFP Transceivers

Datacom Systems supports the following small form-factor pluggable (SFP) transceivers and enhanced small form-factor pluggable (SFP+) transceivers:

Model #	Specification
FCLF-8521-3	100BASE-TX, 1000BASE-T
FTLF1318P3BTL	1000BASE-LX
FTLF1319F1GTL	1000BASE-LX
FTLF8519P3BTL	1000BASE-SX Ethernet
FTLX1412D3BCL	10GBASE-LR, 10GBASE-LW
FTLX1471D3BCV	1000BASE-LX, 10GBASE-LR, 10GBASE-LW
FTLX1612M3BCL	10GBASE-ER, 10GBASE-EW, 10GBASE-ER/EW + FEC
FTLX1671D3BCL	10GBASE-ER, 10GBASE-EW
FTLX1811M3	10GBASE-ZR, 10GBASE-ZW
FTLX8511D3	10GBASE-SR, 10GBASE-SW
FTLX8512D3BCL	10GBASE-SR, 10GBASE-SW
FTLX8571D3BCL	10GBASE-SR, 10GBASE-SW
FTLX8571D3BCV	1000BASE-SX, 10GBASE-SR, 10GBASE-SW

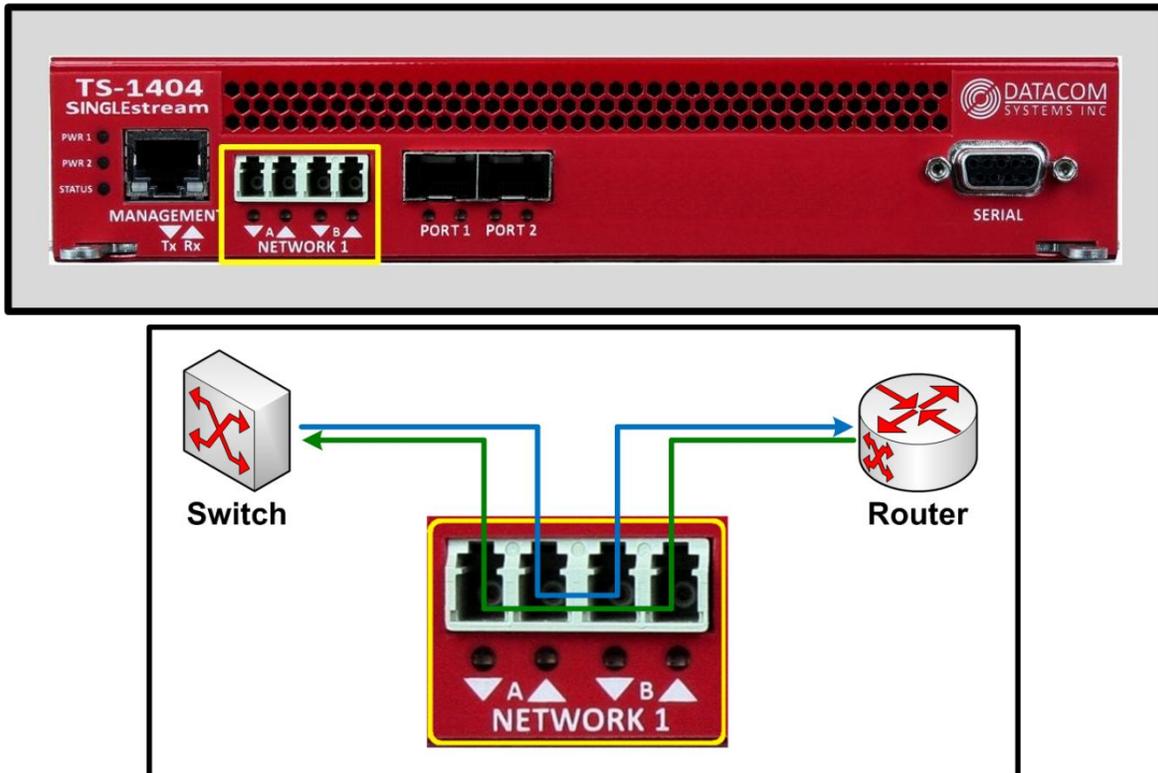
## 2.4 Rack Installation

Please refer to the rack mount installation guide for the RMC-2C at:

<http://www.datacomsystems.com/products/accessories>

## 2.5 Front - Port Types

**Network Ports:** Depending on the model, there are between 2 and 4 LC Fiber ports on the front of the SINGLEstream™. These ports are used to passively tap a network link, allowing the SINGLEstream™ to non-intrusively make a copy of network traffic. Due to the passive connection to the network, configuration changes and power loss have no effect on the link state, or the traffic going over the link.



**Any-To-Any Ports:** Depending on the model, there are between 2 and 4 SFP ports on the front of the SINGLEstream™. These ports can be dynamically assigned as output ports or additional input ports. Configuring the ports as input ports allows you to connect SPAN ports or additional Taps to the SINGLEstream™. When configured as output ports, they provide network tools access to traffic from all input ports.



**Serial Port:** The serial port can be used to connect to the SINGLEstream™ Aggregation Tap using a DB9 M/F straight through cable. Using a terminal emulator such as Tera Term or Putty, the serial port may be accessed for login and configuration using the CLI interface.



**Management Port:** The management port can be used to connect to the SINGLEstream™ Aggregation Tap using a standard copper ethernet RJ-45 cable. Using a terminal emulator such as Tera Term or Putty, the management may be accessed for login and configuration using the CLI interface using either Telnet or SSH.



## 2.6 Front - Power & Status Indicators

On the front panel, the power status of the device can be determined through three indicators labeled “POWER 1”, “POWER 2”, and “STATUS”.



The LEDs located next to each power label will illuminate **green** when an active power supply is connected.

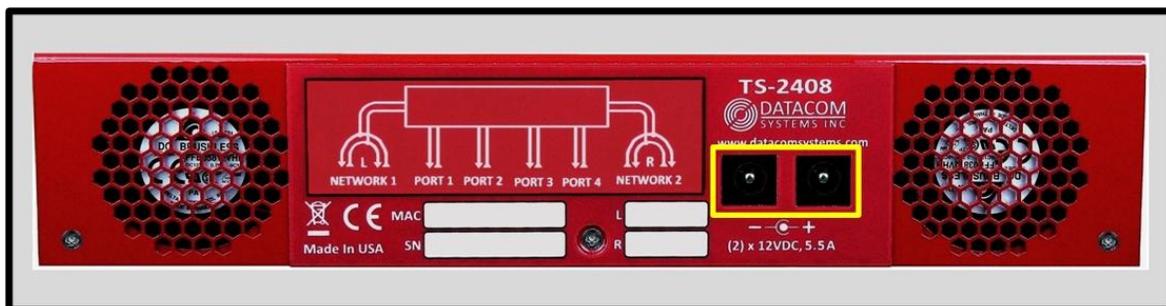
When the power indicators illuminate **red**, it indicates that there is either not a power supply connected, or there is a power supply issue.

Although only one power source is required to power the SINGLEstream™, use of a second independent power source is strongly recommended to assure maximum link uptime.

The “STATUS” LED indicator flashes **green** during the boot-up cycle and turns solid **green** upon a successful boot sequence indicating the SINGLEstream™ is operational.

## 2.7 Rear - Power Ports

Each SINGLEstream™ has two power ports on the back. These are dual redundant power ports should be connected to power supplies on two separate circuits to ensure maximum link uptime. The SINGLEstream™ is capable of running from a single power supply. These LED indicators function in unison with the “POWER 1”, and “POWER 2” indicators on the front of the device



## 2.8 Rear — Unit Identifiers

Important information such as the MAC address, serial number, and micron specification of the bypass switch network links can be found on the back of the unit.



**MAC:** The Media Access Control (MAC) address for the management for on the front of the device is printed here. This is a permanent address that will indicate the unique SINGLEstream™ ID to the network.

**Serial:** The serial number is used to identify a specific Datacom product for tracking or support contract purposes.

**L and R:** These fields are used to determine the micron and split ratio of the tap ports on the front of the unit.

		Split Ratio			
		50/50	70/30	80/20	90/10
Micron	9	59	79	89	99
	50	55	75	85	95
	62.5	56	76	86	96

### 3 Network IP Address Configuration

All SINGLEstream™ Aggregation Taps can be accessed and configured through the management port on the front of the unit. Once set up, this port can be used to access the device through Telnet.

#### 3.1 Default Settings

All SINGLEstream™ 1404, 1406, and 2408 Aggregation Taps series units are shipped with a factory default configuration as follows:

Telnet	
<b>Port:</b>	22
User Settings	
<b>Username:</b>	Administrator
<b>Password:</b>	admin
Management Port Settings	
<b>IP Address:</b>	192.168.1.1
<b>Subnet Mask:</b>	255.255.0.0
<b>Default Gateway:</b>	192.168.0.1
Serial Terminal Settings	
<b>Bits per second:</b>	115200
<b>Data bits:</b>	8
<b>Parity:</b>	None
<b>Stop:</b>	1
<b>Flow Control:</b>	None

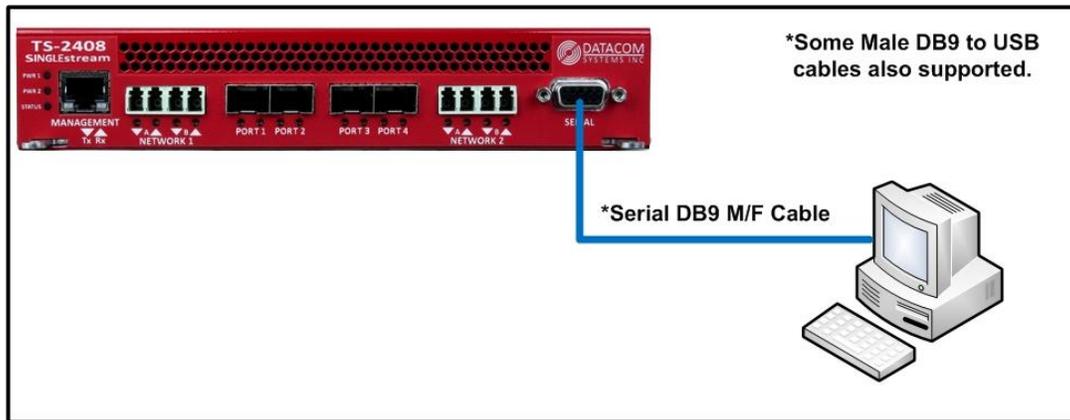
**IMPORTANT:** If you expect to remotely connect to the SINGLEstream™ series, you must change the IP Address, Subnet Mask and Gateway to match your Local Area Network.

In order to initially change the IP settings on the management port, you can connect to the device over the serial port on the front.

## 3.2 Setting up the SINGLEstream™ for Management Port Access

**Step 1:** First, connect your PC and your SINGLEstream™ using the provided Datacom Systems DB9 M/F straight through cable. Connect the DB9 Female pin end to the serial port on your PC and connect the DB9 Male pin to the serial port on your SINGLEstream™.

**NOTE:** For PCs without 9-pin serial ports, check with your product representative for available sources of a USB RS-232 Serial Adapter.



**Step 2:** Using the supplied AC Line Cords and AC Adapters, plug the SINGLEstream™ into an external power source.

**Step 3:** Open the terminal emulation application (PuTTY or Tera Term for example) on your PC, and use it to establish a serial connection to the SINGLEstream™.

**Step 4:** Once connected, hitting the Enter key twice in a row will bring up the login prompt. Log in to the SINGLEstream™ with the default credentials of “Administrator” and then “admin”.

```
Login:Administrator
Password:*****

+++ Access Granted +++
TS-1404 >|
```

**Step 5:** Set up the IP address, subnet, and gateway on the device to match the network that the management port is connected to. This can be done by using the commands:

- MANAGEMENT SET IP (<IP address> | “DHCP”)
- MANAGEMENT SET SUBNET <Subnet mask>
- MANAGEMENT SET GATEWAY <Gateway IP address>
- EXIT

```
TS-1404 >management set ip 10.1.53.1
TS-1404 >management set subnet 255.255.255.0
TS-1404 >management set gateway 10.1.53.1
TS-1404 >|
```

You must enter the “exit” command and log back into the SINGLEstream™ before the changes are applied. This occurs so that a remote connection such as telnet or SSH is not interrupted immediately when an IP address is changed.

```
TS-1404 >exit
+++ Session Has Ended
```

**Step 6:** Once you have logged back in to the device, enter the “management get info” command. This will display setting information regarding the management port. Verify that the settings are correct.

```
TS-1404 >management get info
MANAGEMENT PORT : STATIC MODE
IP = 10.1.53.1
NETMASK = 255.255.255.0
GATEWAY = 10.1.53.1
DNS =
TFTP SERVER = 10.1.53.219
CURRENT IP ADDRESS = 10.1.53.1
MAC ADDRESS = 00:14:e2:00:31:46
UNIT NAME = TS-1404
UNIT SERIAL NUMBER = 16211502
APPLICATION VERSION = 101116A1
DAEMON: Telnet Linux Shell ON
DAEMON: Telnet CLI ON
DAEMON: SSH CLI/Shell Access ON
DAEMON: Network Time Protocol OFF
CLI Timeout: 10 Minutes
```

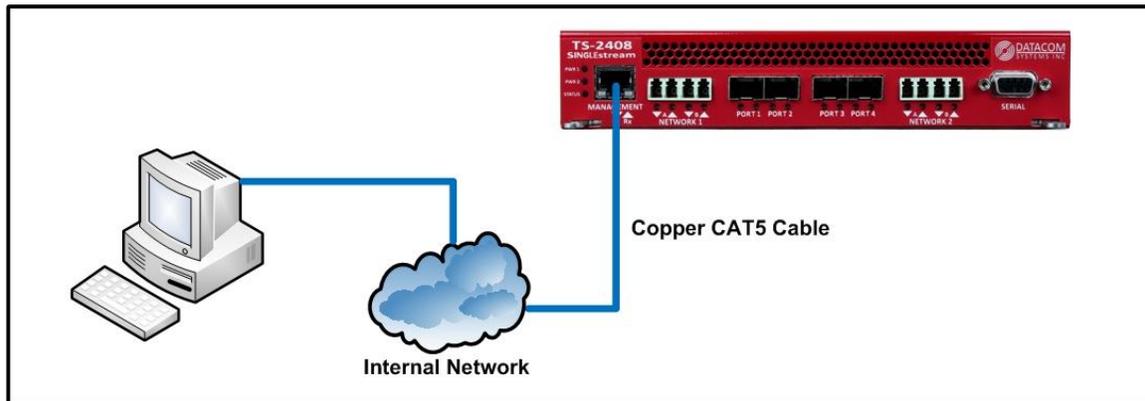
You may choose to configure the SINGLEstream™ using either the serial port or the management port. All configuration capabilities are the same for each connection method.

## 4 Management Connection

### 4.1 Setup

Once the management port configuration on the SINGLEstream™ has been set up to match your chosen network location, you must next connect the straight through CAT5 cable to your network.

**NOTE:** In situations where the management port is connected directly to a laptop or PC, a crossover cable may be required.



When the cable is connected, the LED light on the left side of the port will illuminate **green**. This indicates that a link has been established with the device on the other end of the cable. The LED on the right side of the port will occasionally blink **green** when traffic is being passed.

To confirm that there is connectivity between the SINGLEstream™ and the connected device, open a terminal and ping its IP address.

```
C:\Users\ >ping 192.168.12.95

Pinging 192.168.12.95 with 32 bytes of data:
Reply from 192.168.12.95: bytes=32 time=1ms TTL=62

Ping statistics for 192.168.12.95:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 1ms, Average = 1ms
```

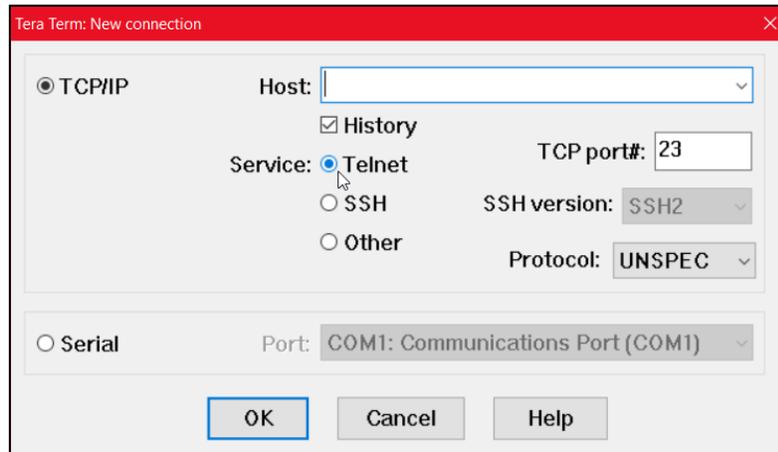
## 4.2 Connecting via Telnet/SSH

Once the Management port is configured and connected to the network, the SINGLEstream™ may be configured using a CLI over Telnet or SSH.

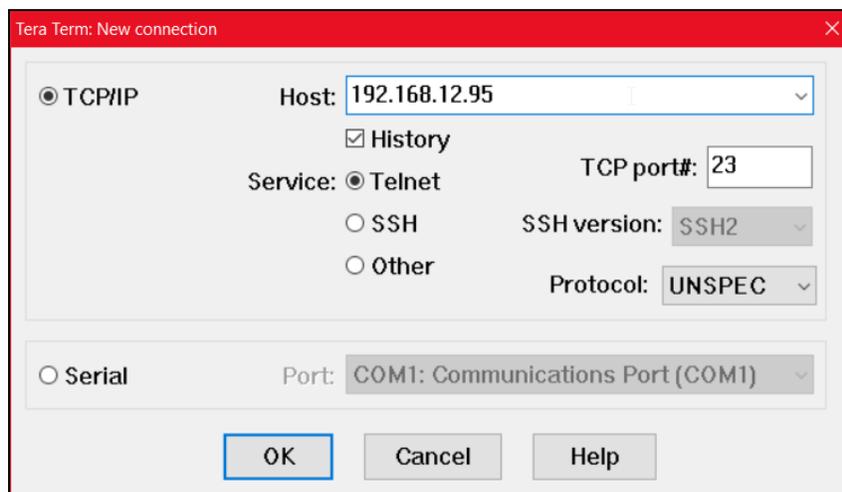
After confirming network connectivity in step 4.1, a terminal emulator may be used to configure the device.

The following steps show the process for connecting to the SINGLEstream™ through either Telnet . The images used in the steps are from the terminal emulator Tera Term. Most terminal emulators can be used to connect to the SINGLEstream™, however using either Tera Term or Putty is recommended

**Step 1:** Open the terminal emulator. Select Telnet as a method for connection.



**Step 2:** Enter the IP address of the SINGLEstream in the Host field. Click “OK”



**Step 3:** You will be presented with login prompt. This could appear in the form of a pop-up window, or a terminal depending on the terminal emulator used. The default credentials are “Administrator”, “admin”.

```
Login:Administrator
Password:*****
+++ Access Granted +++
```

**Step 4:** To confirm that connection to the correct device was made, enter the “system get info” command to view unique identifiers for the unit such as the Serial Number and MAC Address.

```
TS-1406>management get info
MANAGEMENT PORT : STATIC MODE
IP = 192.168.12.95
NETMASK = 255.255.254.0
GATEWAY = 192.168.12.1
DNS = 172.16.0.130
TFTP SERVER = 192.168.12.55
CURRENT IP ADDRESS = 192.168.12.95
MAC ADDRESS = 00:67:22:55:11:22
UNIT NAME =
UNIT SERIAL NUMBER =
APPLICATION VERSION =
DAEMON: Telnet Linux Shell ON
DAEMON: Telnet CLI ON
```

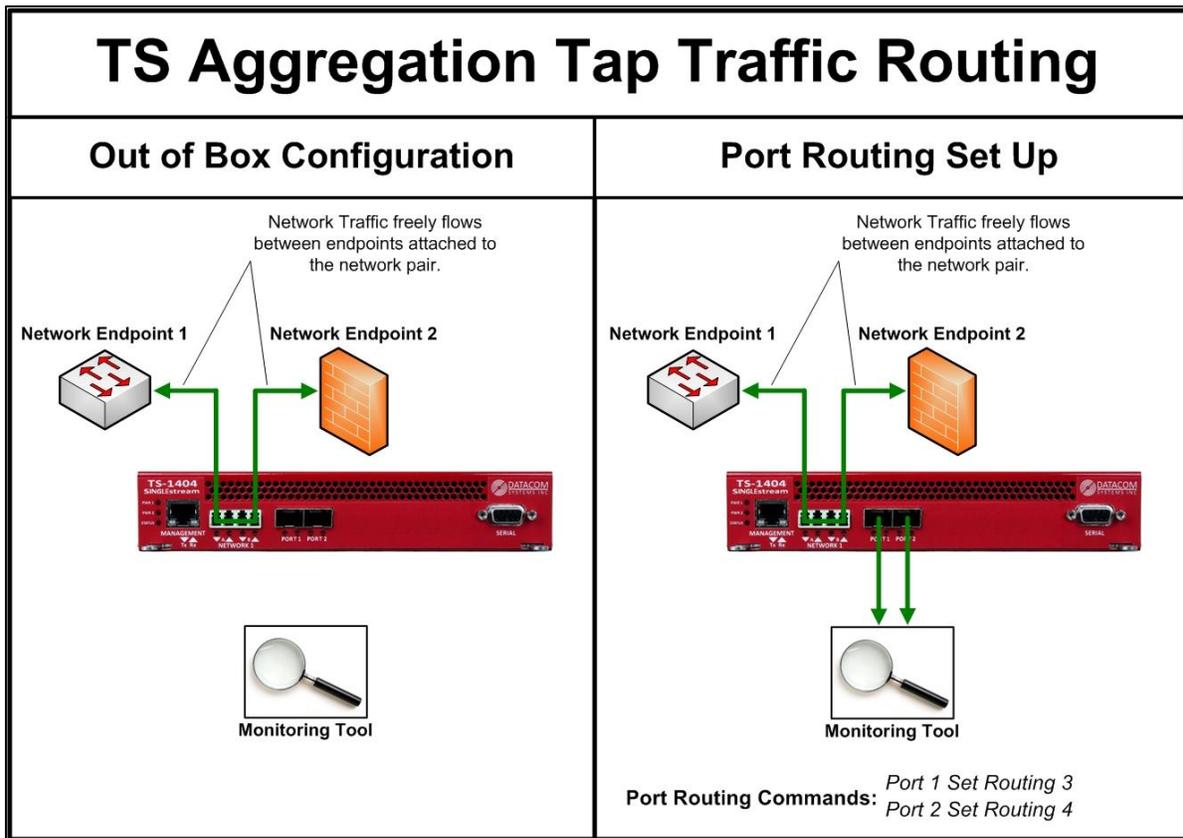
## 5 Configuration Examples

### 5.1 Setting up Port Routing, Aggregation, Regeneration, and Media Conversion

#### 5.1.1 Port Routing Setup:

Once the management settings on the SINGLEstream have been configured, the next step to configure the SINGLEstream is normally to set up port routing. Port routing directs the SINGLEstream where it should send incoming traffic.

In most solutions, port routing is set up to direct traffic from Network or SPAN ports to monitoring ports. The below picture will show you how to set up basic port routing on a SINGLEstream 1404 Tap.



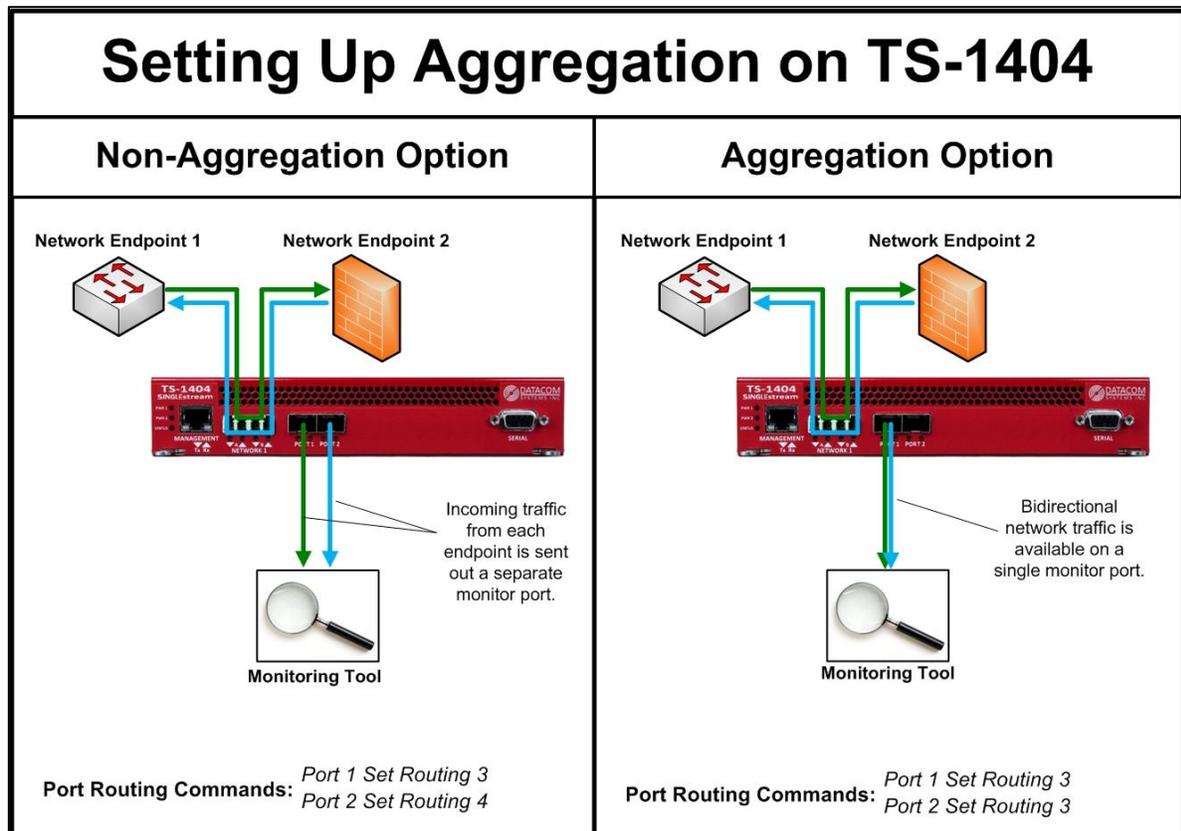
## 5.1.2 Aggregation Setup:

Aggregation is useful in implementations where a monitoring tool needs to see bidirectional traffic from a single link, or traffic from multiple links. Aggregation combines multiple streams of traffic together to provide complete visibility to a single monitoring tool.

When aggregating traffic streams, it's important to consider the total combined traffic rate. Ports on the SINGLEstream are capable of line rate transmission, however many monitoring tools are not capable of receiving traffic at line rate.

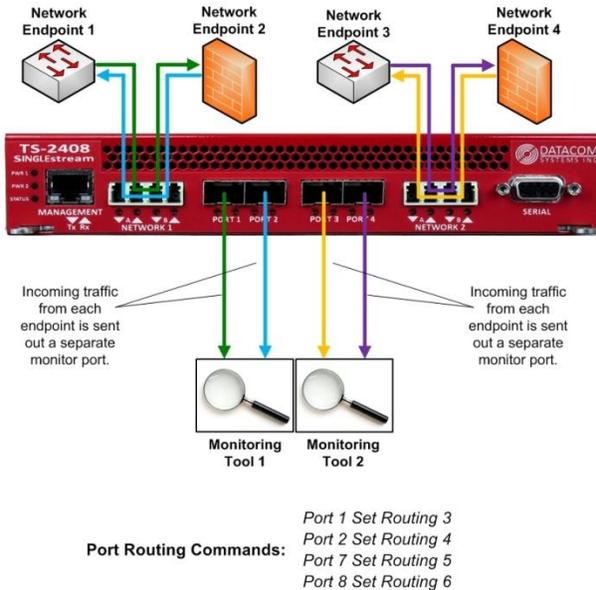
A monitoring tool with a 10G port may only be capable of processing a lower rate of traffic. It's important to review the rate of traffic on your network compared with the rate of traffic that your monitoring tool is capable of receiving.

The below picture will show you how to set up aggregation on a SINGLEstream 1404 and SINGLEstream 2408 Tap.

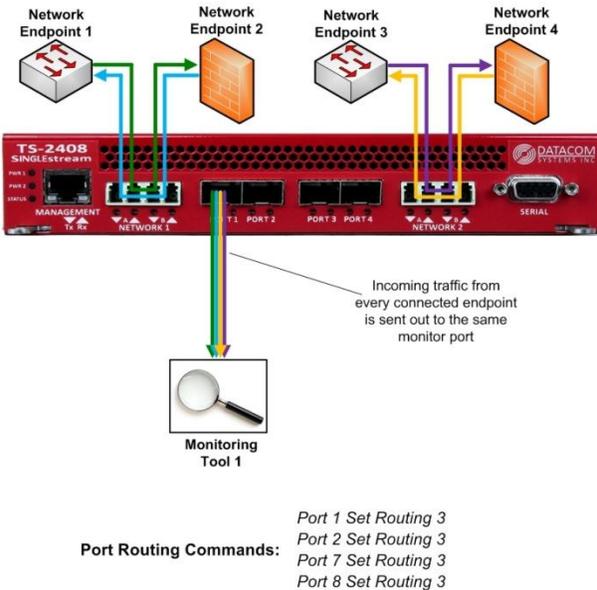


## Setting Up Aggregation on TS-2408

### Non-Aggregation Option



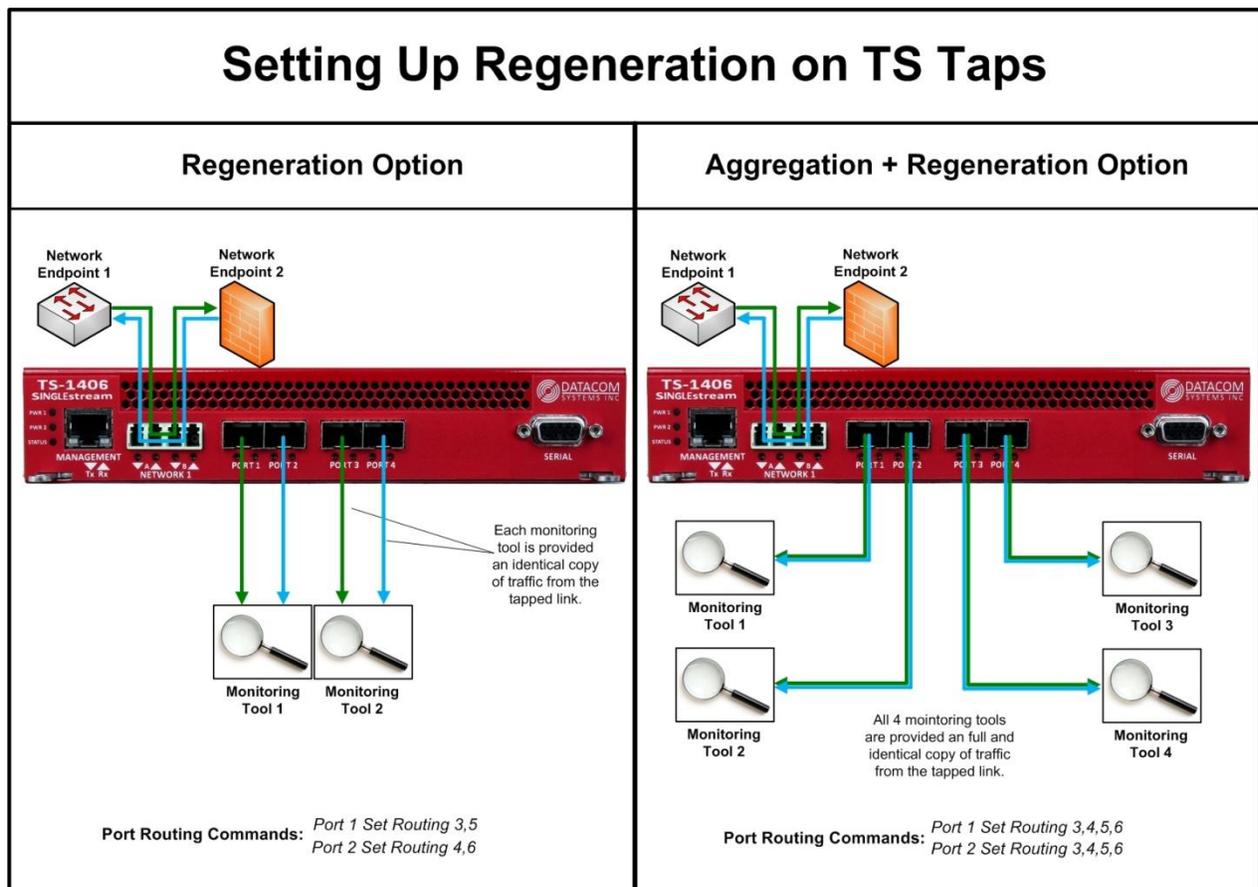
### Aggregation Option



### 5.1.3 Regeneration Setup:

Regeneration is useful in implementations where multiple monitoring tools need access to the same network traffic. Regeneration creates multiple copies of traffic and shares each copy with a separate monitoring tool.

Regeneration can be combined with Aggregation, allowing multiple monitoring ports access to traffic from multiple links/SPAN ports. The below picture shows how to set up Regeneration on the SINGLEstream 1406 Tap.

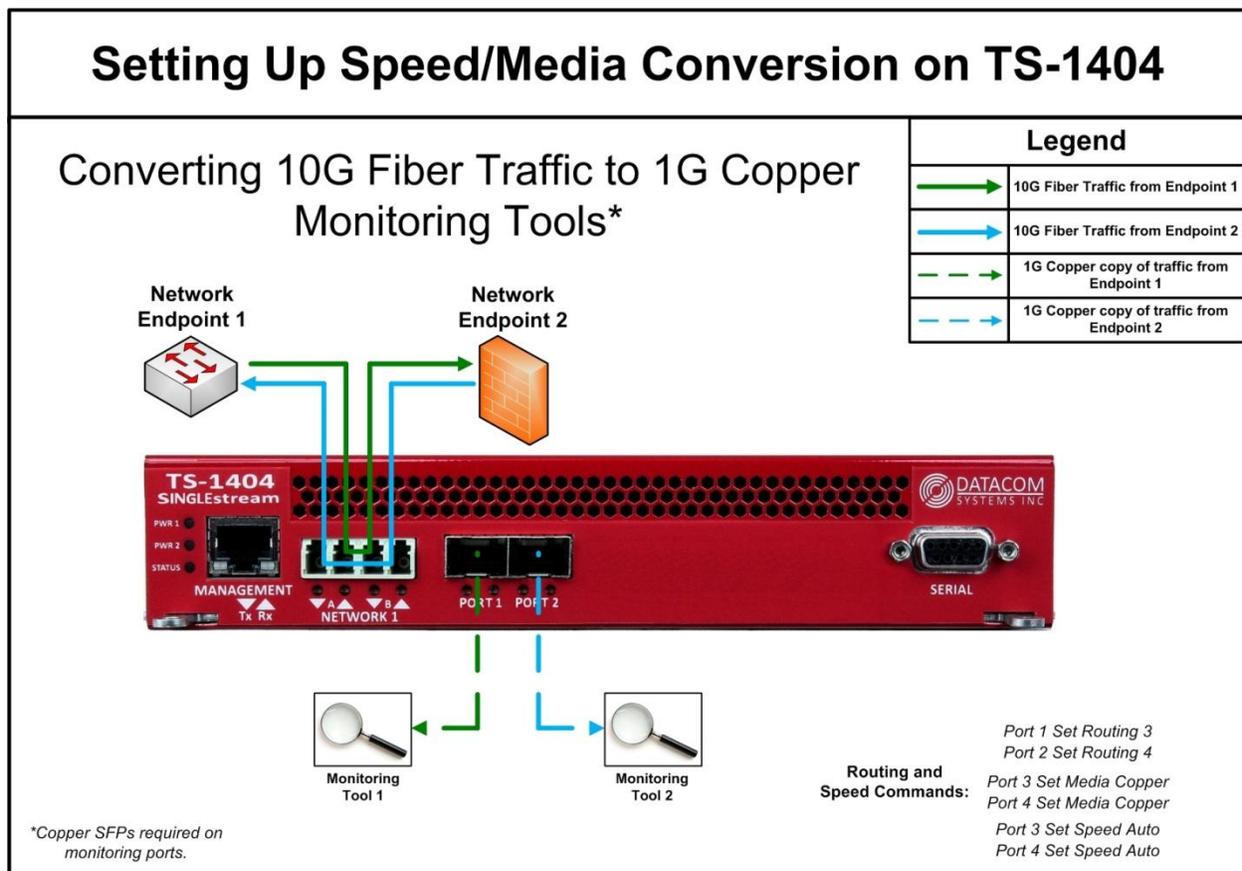


### 5.1.4 Speed/Media Conversion Setup:

As network link speeds increase faster than the speed capability monitoring tools, it can make maintaining the monitoring solution difficult. The SINGLEstream is capable of speed and media conversion, which translates high speed traffic down to lower speeds for monitoring tools to consume.

When upgrading from 1G to 10G networks, often times the network links also undergo a change from copper to fiber media. Like speed differences, media differences can also cause a monitoring tool to no longer be able to receive traffic from the network.

The SINGLEstream can convert copper traffic to fiber or vice versa, allowing a monitoring solution to retain existing monitoring tools, even when the network changes.

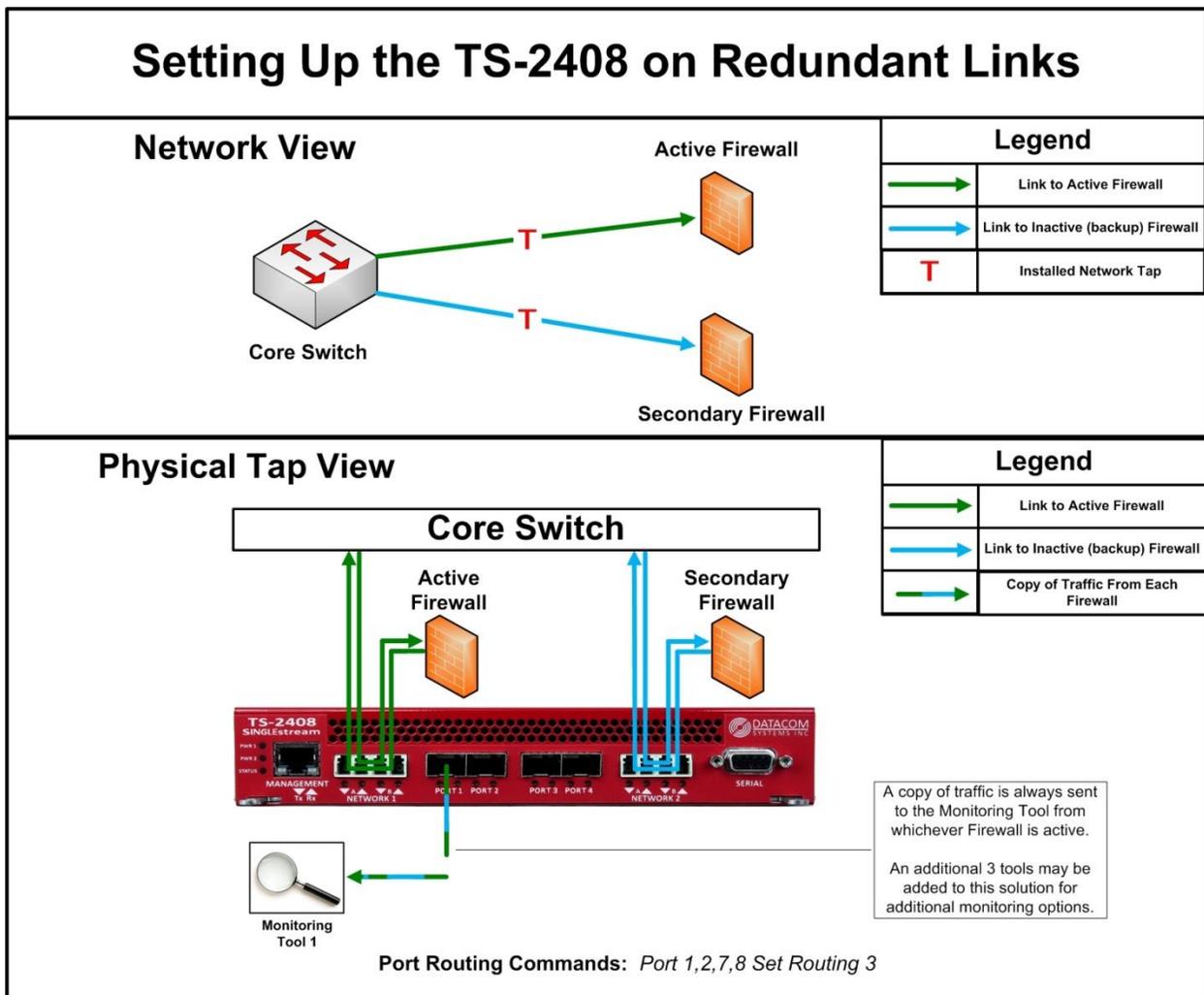


## 5.2 Setting up the Singlestream on Redundant Links

### 5.2.1 Dual-Redundant Link Setup:

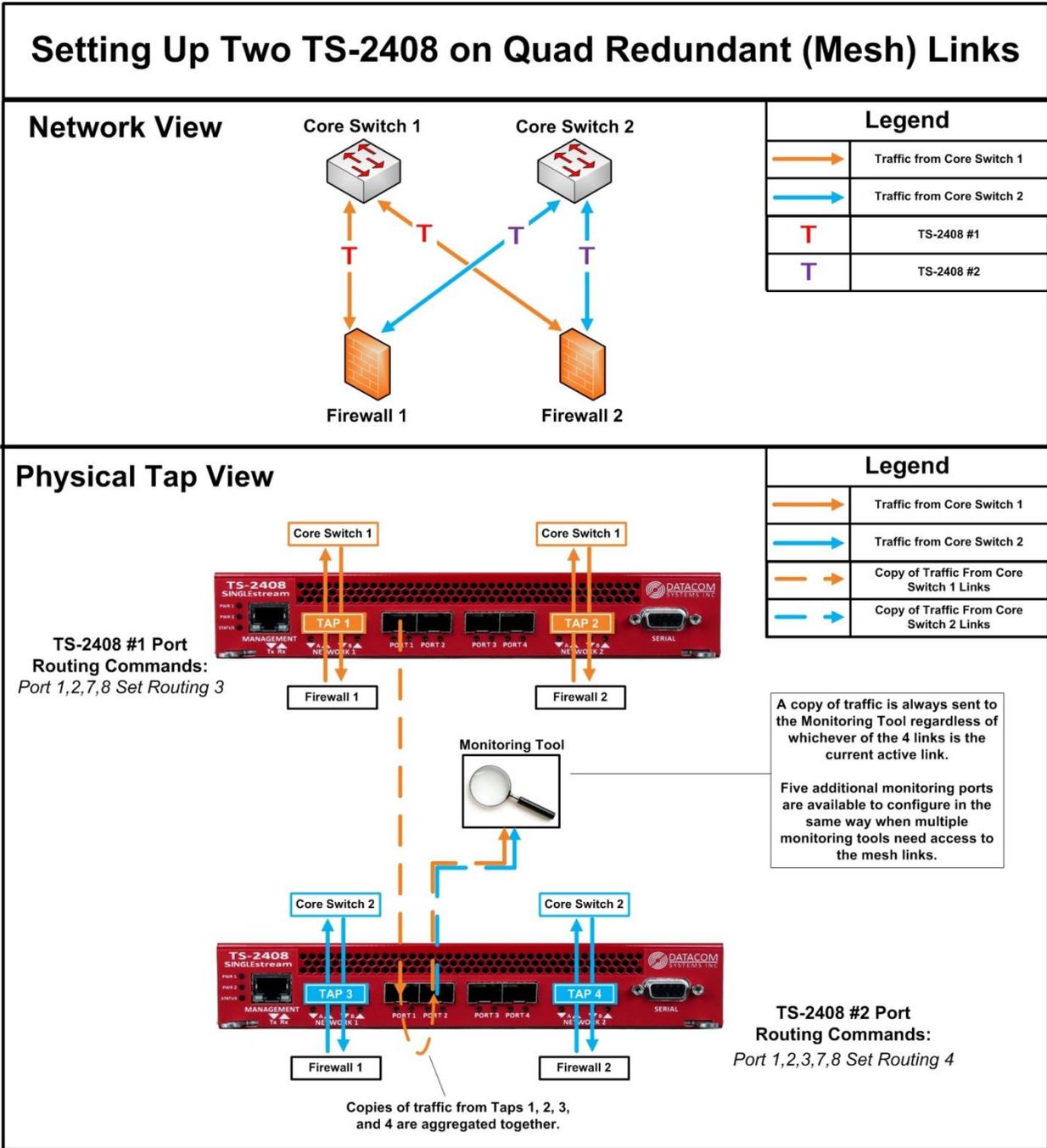
In network implementations where there are dual-redundant links set up to improve network reliability, it's important to tap both links to ensure that network monitoring is uninterrupted even when the active link fails.

A TS-2408 can be simultaneously installed on two links, providing copies of traffic from each link to one or more monitoring tools. Because the TS-2408 always has access to each link, a failover of the primary link to the secondary link the transition on the tap is an automatic and smooth process.



### 5.2.2 Quad-Redundant Link (Mesh) Setup:

Similar to the Dual-Redundant setup, a pair of TS-2408 taps can be installed in a mesh network topology for redundant monitoring. The TS-2408s can share copies of traffic with each other, allowing each of them access to the 4 links. The total solution allows one or more monitoring tools full access to a mesh network topology, regardless of the currently active link.



## 6 Command List

### 6.1 Email Notification Commands

#### 6.1.1 Email Get Settings

<b>Usage Guidelines</b>	Use this command to display all configurable email settings.
<b>Syntax</b>	EMAIL GET SETTINGS
<b>Example</b>	EMAIL GET SETTINGS
<b>Command Notes</b>	<p><b>Displays the following configurable values:</b></p> <ul style="list-style-type: none"> <li>• Email Source/Destination</li> <li>• Email Password</li> <li>• Email Server</li> <li>• Email Triggers <ul style="list-style-type: none"> <li>○ -Link State</li> <li>○ -Power Supply Failure</li> <li>○ -Boot</li> </ul> </li> </ul>

#### 6.1.2 Email Send Test

<b>Usage Guidelines</b>	Use this command to send a test email using the configured Source/Destination IP, Server, and Password. Recommended to verify connectivity between the SINGLEstream and the server.
<b>Syntax</b>	EMAIL SEND TEST
<b>Example</b>	EMAIL SEND TEST

#### 6.1.3 Email Set Password

<b>Usage Guidelines</b>	Use this command to set the password for the email Source.
<b>Syntax</b>	EMAIL SET PASSWORD
<b>Example</b>	EMAIL SET PASSWORD
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>• If the entered password is not the exact password for the email source address, email notifications will not be sent.</li> <li>• The email password is case-sensitive.</li> </ul>

### 6.1.4 Email Set Destination

<b>Usage Guidelines</b>	Use this command to set the Destination for the email notifications. This email address will receive notifications for all triggers that are turned on.
<b>Syntax</b>	EMAIL SET DESTINATION (email@address.com)
<b>Example</b>	EMAIL SET DESTINATION monitoring@acmetest.com
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>• The email address is case-sensitive.</li> <li>• This should match an existing email address on the configured server.</li> </ul>

### 6.1.5 Email Set Source

<b>Usage Guidelines</b>	Use this command to set the Source for the email notifications. The emails that are sent to the destination address will show that they are from this sender.
<b>Syntax</b>	EMAIL SET SOURCE (email@address.com)
<b>Example</b>	EMAIL SET SOURCE notifications@acmetest.com
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>• The email address is case-sensitive.</li> <li>• This should match an existing email address on the configured server.</li> </ul>

### 6.1.6 Email Set Server

<b>Usage Guidelines</b>	Use this command to set the server address that the SINGLEstream will use to send out email notifications.
<b>Syntax</b>	EMAIL SET SERVER (mail.server.com)
<b>Example</b>	EMAIL SET SERVER west.exch12345.serverdata.net

### 6.1.7 Email Set Trigger

<b>Usage Guidelines</b>	Use this command to decide when to send out an email notification. Email Notifications can be sent out based on link state changes, Power Supply Status Change, Fan State Change, During a Warm/Cold Boot.
<b>Syntax</b>	EMAIL SET TRIGGER <Feature> (ON/OFF)
<b>Example</b>	EMAIL SET TRIGGER Heartbeat ON
<b>Command Notes</b>	<b>Feature Triggers Available:</b> <ul style="list-style-type: none"> <li>• Link</li> <li>• Power</li> <li>• Boot</li> <li>• Fan</li> <li>• *</li> </ul>

## 6.2 Management Port Commands

### 6.2.1 Management Get Info

<b>Usage Guidelines</b>	This command is used to print current IP information for the management port, in addition to system information.
<b>Syntax</b>	MANAGEMENT GET INFO
<b>Example</b>	MANAGEMENT GET INFO
<b>Command Notes</b>	<b>Displays:</b> <ul style="list-style-type: none"> <li>• DHCP/Static mode</li> <li>• IP, Subnet, Gateway</li> <li>• DNS Server IP</li> <li>• TFTP Server IP</li> <li>• MAC Address</li> <li>• System Name, Serial Number, Firmware Version.</li> <li>• Telnet State</li> <li>• SSH State</li> <li>• NTP State</li> <li>• Command Line Timeout</li> </ul>

## 6.2.2 Management Reset

<b>Usage Guidelines</b>	This command is used to resend the DHCP Discovery manually.
<b>Syntax</b>	MANAGEMENT RESET
<b>Example</b>	MANAGEMENT RESET

## 6.2.1 Management Set CLI Timeout

<b>Usage Guidelines</b>	This command is used to set the telnet command line timeout. If there is no activity from a Telnet or SHH login from within the time specific by this command, they will be disconnected.
<b>Syntax</b>	MANAGEMENT SET CLI TIMEOUT <1-1000>
<b>Example</b>	MANAGEMENT SET CLI TIMEOUT 100
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>• The number component of the command determines the timeout in minutes.</li> <li>• Only enter positive values into the timeout field.</li> </ul>

## 6.2.2 Management Set Daemon Telnet

<b>Usage Guidelines</b>	This command is used to set the telnet command line on or off.
<b>Syntax</b>	MANAGEMENT SET DAEMON TELNET <ON/OFF>
<b>Example</b>	MANAGEMENT SET DAEMON TELNET ON
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>• If turned off, connections through Telnet will not be accepted by the SINGLEstream.</li> </ul>

## 6.2.3 Management Set Daemon SSH

<b>Usage Guidelines</b>	This command is used to set the SSH command line on or off.
<b>Syntax</b>	MANAGEMENT SET DAEMON SSH <ON/OFF>
<b>Example</b>	MANAGEMENT SET DAEMON SSH ON
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>• If turned off, connections through SSH will not be accepted by the SINGLEstream.</li> </ul>

## 6.2.4 Management Set Daemon Shell

<b>Usage Guidelines</b>	This command is used to set the ability for remote login for recovery.
<b>Syntax</b>	MANAGEMENT SET DAEMON SHELL <ON/OFF>
<b>Example</b>	MANAGEMENT SET DAEMON SHELL ON

## 6.2.5 Management Set Daemon NTPD

<b>Usage Guidelines</b>	This command is used to set the NTP Feature on or off.
<b>Syntax</b>	MANAGEMENT SET DAEMON NTPD <ON/OFF>
<b>Example</b>	MANAGEMENT SET DAEMON NTPD ON
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>When turned on, the unit will use the configured NTP server to determine the Date/Time instead of the manually configured values.</li> </ul>

## 6.2.1 Management Set IP DHCP

<b>Usage Guidelines</b>	This command is used to configure the IP address for the Dynamic Host Configuration Protocol (DHCP) server. This is an alternative to setting the IP/Subnet/Gateway information manually.
<b>Syntax</b>	MANAGEMENT SET IP DHCP
<b>Example</b>	MANAGEMENT SET IP DHCP
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>When turned on, the static IP information entered the “Management set IP”, “Management Set Subnet”, and “Management Set Gateway” commands will no longer be used. It’s recommended that you do not activate this command unless you have serial access to the SINGLEstream at the time of issuing it.</li> </ul>

## 6.2.2 Management Set DNS

<b>Usage Guidelines</b>	This command is used to configure the IP address for the Domain Name System (DNS).
<b>Syntax</b>	MANAGEMENT SET DNS <IPv4 address>
<b>Example</b>	MANAGEMENT SET DNS 192.168.1.26

## 6.2.3 Management Set IP

<b>Usage Guidelines</b>	This command is used to configure the IP address for the management port on the switch.
<b>Syntax</b>	MANAGEMENT SET IP <IPv4 address>
<b>Example</b>	MANAGEMENT SET IP 192.168.1.25

## 6.2.4 Management Set Gateway

<b>Usage Guidelines</b>	This command is used to configure the gateway address for the management port on the switch.
<b>Syntax</b>	MANAGEMENT SET GATEWAY <IPv4 address>
<b>Example</b>	MANAGEMENT SET GATEWAY 192.168.1.1

## 6.2.5 Management Set Password

<b>Usage Guidelines</b>	This command is used to change the password to log into the SINGLEstream.
<b>Syntax</b>	MANAGEMENT SET PASSWORD <string>
<b>Example</b>	MANAGEMENT SET PASSWORD DatacomPass4321
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>Entering this command will replace the default password “admin” for the user.</li> </ul>

## 6.2.6 Management Set Subnet

<b>Usage Guidelines</b>	This command is used to configure the subnet address for the management port on the switch.
<b>Syntax</b>	MANAGEMENT SET SUBNET <IPv4 address>
<b>Example</b>	MANAGEMENT SET SUBNET 255.255.255.0

## 6.2.7 Management Set TFTP Server

<b>Usage Guidelines</b>	This command is used to configure the IP address for the TFTP Server that the SINGLEstream will communicate with.
<b>Syntax</b>	MANAGEMENT SET TFTP SERVER <IPv4 address>
<b>Example</b>	MANAGEMENT SET TFTP SERVER 192.168.1.25
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>The SINGLEstream can use the TFTP server to send system log files, and to receive new firmware versions for upgrading.</li> </ul>

## 6.2.8 Management Set Username

<b>Usage Guidelines</b>	This command is used to change the username to log into the SINGLEstream.
<b>Syntax</b>	MANAGEMENT SET USERNAME <string>
<b>Example</b>	MANAGEMENT SET USERNAME AuthUser
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>Entering this command will replace the default "Administrator" user.</li> </ul>

## 6.3 Port Commands

### 6.3.1 Port Get Info

<b>Usage Guidelines</b>	This command is used to display all information for a port, or set of ports.
<b>Syntax</b>	PORT (1,2,3,4,5,6,7,8,*) GET INFO
<b>Example</b>	PORT 6 GET INFO
<b>Command Notes</b>	<b>Fields Displayed:</b> <ul style="list-style-type: none"> <li>• Media Type</li> <li>• Configured Speed</li> <li>• Link Status</li> <li>• Current Traffic Routing</li> </ul>

### 6.3.2 Port Get Counter

<b>Usage Guidelines</b>	This command is used to display port counter information for a port, or set of ports. Simple counter output that shows Tx and Rx packets.
<b>Syntax</b>	PORT (1,2,3,4,5,6,7,8,*) GET COUNTER
<b>Example</b>	PORT GET COUNTER
<b>Command Notes</b>	<b>Fields Displayed:</b> <ul style="list-style-type: none"> <li>• Rx Packets</li> <li>• Tx Packets</li> <li>• Rx Bytes</li> <li>• Tx Bytes</li> </ul>

### 6.3.3 Port Get Counter Detail

<b>Usage Guidelines</b>	This command is used to display port counter information for a port, or set of ports. This option will display various packet counters that are used for diagnostic purposes.
<b>Syntax</b>	PORT (1,2,3,4,5,6,7,8,*) GET COUNTER Detail
<b>Example</b>	PORT GET COUNTER Detail
<b>Command Notes</b>	<b>Fields Displayed:</b> <ul style="list-style-type: none"> <li>• RX Packets</li> <li>• TX Packets</li> <li>• Rx Bytes</li> <li>• Tx Bytes</li> <li>• Various Diagnostic Fields</li> </ul>

### 6.3.4 Port Reset Counter

<b>Usage Guidelines</b>	This command is used reset the port counters for a port or set of ports.
<b>Syntax</b>	PORT (1,2,3,4,5,6,7,8,*) RESET COUNTER
<b>Example</b>	PORT * RESET COUNTER

### 6.3.5 Port Set Media

<b>Usage Guidelines</b>	This command is used to change the media type of an monitor port from fiber to copper or vice versa.
<b>Syntax</b>	PORT (3,4,5,6,*) SET MEDIA <Copper,Fiber>
<b>Example</b>	PORT ALL SET MEDIA FIBER
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>• Use this command in combination with the “Port Set Speed” command to set up the SINGLEstream ports to match the monitoring tool.</li> <li>• Using the “*” Symbol will change all ports.</li> </ul>

### 6.3.6 Port Set Routing

<b>Usage Guidelines</b>	This command is used to direct traffic flow from one port to another on the SINGLEstream. To aggregate, direct traffic from multiple input ports to a single output port. To replicate direct traffic from one or more input port to multiple output ports.
<b>Syntax</b>	PORT (1,2,3,4,5,6,7,8,*) SET ROUTING (3,4,5,6,*,OFF)
<b>Example</b>	PORT 1 SET ROUTING 4
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>• Network pairs will always route to one another.</li> <li>• You cannot route traffic to a network port.</li> <li>• Using the “*” will select all ports in that section.</li> </ul>

### 6.3.7 Port Set Speed

<b>Usage Guidelines</b>	This command is used to change the speed of the port. Use it to make the port on the SINGLEstream the same as the attached Network endpoint or monitoring tool.
<b>Syntax</b>	PORT (1,2,3,4,5,6,7,8,*) SET SPEED <speed>
<b>Example</b>	PORT ALL SET SPEED 10G
<b>Command Notes</b>	<p><b>Network Port Possible Speeds:</b></p> <p><b>Fiber</b></p> <ul style="list-style-type: none"> <li>• 1G</li> <li>• 10G</li> </ul> <p><b>Monitor Port Possible Speeds:</b></p> <p><b>Copper</b></p> <ul style="list-style-type: none"> <li>• 10M</li> <li>• 100M</li> <li>• 1G</li> </ul> <p><b>Fiber</b></p> <ul style="list-style-type: none"> <li>• 1G-AUTO</li> <li>• 1G-MANUAL</li> <li>• 10G</li> </ul>

## 6.4 Switch Commands

### 6.4.1 Switch Restart

<b>Usage Guidelines</b>	This command is used to reboot the bypass switch. During the reboot, the link will be passively closed in order to allow link state for part of the duration of the reboot.
<b>Syntax</b>	SWITCH RESTART
<b>Example</b>	SWITCH RESTART
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>• This command is case sensitive, and has no shortcut version. You must type it out in all caps.</li> </ul>

## 6.4.2 Reset To Factory Defaults

<b>Usage Guidelines</b>	This command is used to reset the configuration on the SINGLEstream to its out-of-the box settings. A system reboot will take place once this command is issued.
<b>Syntax</b>	RESET TO FACTORY DEFAULTS
<b>Example</b>	RESET TO FACTORY DEFAULTS
<b>Command Notes</b>	<ul style="list-style-type: none"><li>This command is case sensitive, and has no shortcut version. You must type it out in all caps.</li></ul>

## 6.4.3 Update System Firmware

<b>Usage Guidelines</b>	This command is used to upgrade the firmware on the SINGLEstream. Once the command is issued, the SINGLEstream will attempt to download and install the firmware file located on the user configured TFTP server. Make sure that there is connectivity between the TFTP server and SINGLEstream before using this command.
<b>Syntax</b>	UPDATE SYSTEM FIRMWARE
<b>Example</b>	UPDATE SYSTEM FIRMWARE
<b>Command Notes</b>	<ul style="list-style-type: none"><li>This command is case sensitive, and has no shortcut version. You must type it out in all caps.</li></ul>

## 6.5 System Commands

### 6.5.1 System Get Info

<b>Usage Guidelines</b>	This command is used to display all system information.
<b>Syntax</b>	SWITCH GET INFO
<b>Example</b>	SWITCH GET INFO
<b>Command Notes</b>	<b>Fields Displayed:</b> <ul style="list-style-type: none"> <li>• Product Model</li> <li>• Current Operating Mode</li> <li>• Firmware Version</li> <li>• System Name</li> <li>• System Serial Number</li> <li>• System Time</li> <li>• NTP Server / Time Zone</li> </ul>

### 6.5.1 System Reset Logfile

<b>Usage Guidelines</b>	This command is used to clear the current system logfile that contains commands entered, logins, and events.
<b>Syntax</b>	SYSTEM RESET LOGFILE
<b>Example</b>	SYSTEM RESET LOGFILE
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>• Entering this command will remove all historical information regarding commands entered, users logged in, and events from the SINGLEstream.</li> </ul>

## 6.5.2 System Send Logfile

<b>Usage Guidelines</b>	This command is used to send the current log file to the configured TFTP server. The IP address of the TFTP server that is used is taken from the “MANAGEMENT SET TFTP SERVER” command.
<b>Syntax</b>	SYSTEM SEND LOGFILE
<b>Example</b>	SYSTEM SEND LOGFILE
<b>Command Notes</b>	<p><b>The Log File Includes:</b></p> <p><b>Command Inputs</b></p> <ul style="list-style-type: none"> <li>• System Name.</li> <li>• System IP Address.</li> <li>• User that issued.</li> <li>• Exact string entered.</li> <li>• Timestamp</li> </ul> <p><b>Events</b></p> <ul style="list-style-type: none"> <li>• System Name.</li> <li>• System IP Address.</li> <li>• Event that occurred (Cold boot, Port state change, etc)</li> <li>• Timestamp</li> </ul> <p><b>User Logins</b></p> <ul style="list-style-type: none"> <li>• System Name.</li> <li>• System IP Address.</li> <li>• User that Logged in.</li> <li>• Login Method (Telnet, Serial, etc)</li> <li>• Timestamp</li> </ul>

## 6.5.3 System Set Name

<b>Usage Guidelines</b>	This command is used set the system name that is displayed in the prompt, and used in other features such as the prompt, system log, and email notifications.
<b>Syntax</b>	SYSTEM SET NAME <string>
<b>Example</b>	SYSTEM SET NAME SINGLEstream-Lab-04
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>• Name field can be a maximum of 31 characters.</li> </ul>

### 6.5.4 System Set NTPDserver

<b>Usage Guidelines</b>	This command is used set the NTP server that will be used to resolve the SINGLEstreams Date/Time.
<b>Syntax</b>	SYSTEM SET NTPDSEVER (pool.ntp.org)
<b>Example</b>	SYSTEM SET NTPDSEVER (pool.ntp.org)
<b>Command Notes</b>	<p><b>Either set an IP address or the address of an NTP server.</b></p> <p><b>Examples:</b></p> <ul style="list-style-type: none"> <li>• 192.168.12.8</li> <li>• 0.pool.ntp.org</li> </ul>

### 6.5.5 System Set Time

<b>Usage Guidelines</b>	This command is used to manually set the time of the SINGLEstream. This command is only available if NTP is turned off.
<b>Syntax</b>	SYSTEM SET TIME (YEAR:MONTH:DAY:HOUR:MINUTE)
<b>Example</b>	SYSTEM SET TIME 2016:10:05:04:01

### 6.5.6 System Set Zone

<b>Usage Guidelines</b>	This command is used set the time zone that NTP will use to translate information from the configured NTP server.
<b>Syntax</b>	SYSTEM SET ZONE (EST,CST,MST,PST,UTC-11,UTC+12)
<b>Example</b>	SYSTEM SET ZONE EST
<b>Command Notes</b>	<ul style="list-style-type: none"> <li>• You can use UTC values between UTC-12 – UTC+14.</li> </ul>

## 7 Customer Service

Datacom Customer Service is available via telephone and Internet. You may also find the assistance you need at our website: <http://www.datacomsystems.com>.

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