



BROADSOFT

BroadCloud

BroadCloud Adtran Total Access Quick Start Guide

Specification Document

Version 2.0

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BroadCloud Adtran NetVanta QSG

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1. Scope

This document will provide a quick start configuration guide for provisioning the Adtran Total Access line of Integration Access Devices for use with the BroadSoft BroadCloud VoIP Network. It is important to note that this document is not intended to provide an extensive view of all configuration options available on the Total Access IADs. Instead, it will focus on the most common configuration procedures necessary for proper interoperability with the BroadSoft BroadCloud VoIP network.

BroadSoft BroadCloud does not manage the customer Total Access IAD configurations or provide in depth support for customer configurations not included in this document. If configuration options not covered in this document are required, please consult the Adtran website at www.adtran.com or contact Adtran support by phone using the contact number listed on their website.

2. Overview

The Adtran Total Access Integrated Access Device or IAD currently ships in two families of hardware. The families differ from each other in the density of both the data and voice capacity supported. The first of these is the TA900 family, which has support for the following:

- 4, 8, 12, 16, or 24 FXS Analog Lines
- One T1 interface for PRI or CAS signaling
- One T1 interface for data connectivity
- One Ethernet interface for data connectivity

The second of these families is the TA900e, which has support for the following:

- 8, 16, or 24 FXS Analog Lines
- 1 FXO Analog Line
- Up to two T1 interfaces for PRI or CAS signaling
- Up to four T1 interfaces for data connectivity
- Two Ethernet interfaces for data connectivity

This document will describe the default state in which each IAD ships, mandatory tasks that must be completed for proper functionality in the BroadSoft BroadCloud VoIP Network, optional tasks that can be performed to support an individual customer's needs, and common administrative tasks that can be performed on the IAD.

3. Default Configurations

Each of the Total Access models covered in this document will initially boot up supporting a factory default configuration that offers little in the way of functionality. This makes initial turn-up of the IAD somewhat difficult and time consuming. In order to

ease the initial configuration of the IAD, BroadSoft BroadCloud loads a configuration on the IAD that allows for quicker turn-up of the IADs.

WARNING!!! Restoring the IAD to the factory default will return it to the Adtran default state. This state requires serial connection to the box to complete the initial configuration.

NOTE: If the IAD has been restored to the factory default or if it has been acquired from a source other than BroadSoft BroadCloud, it is recommended that the BroadSoft BroadCloud default configuration be loaded on the IAD before proceeding any further. In order to obtain a copy of the BroadSoft BroadCloud default configuration, one must visit the SIP Advantage Sales Management dashboard where a link to the default configurations for all models of the TA900 and TA900e is available.

NOTE: Once the BroadSoft BroadCloud default configuration has been obtain, follow the steps contained in Section 6.6 of this document to load it on the IAD.

The configuration established by BroadSoft BroadCloud adheres to the following requirements:

1. The IADs are configured as routers by default.
2. Each IAD has a single ppp T1 configured as the WAN. For both the TA900 and TA900e this is the T1 0/1 port.
3. The WAN T1 is configured to dynamically learn its IP Address from the remote peer to which it is connected.
4. Each IAD has a single Ethernet port configured as the LAN. For both the TA900 and TA900e this is the ETH 0/1 port.
5. The LAN is configured with a network of 10.10.10.0 and a subnet mask of 255.255.255.0.
6. The LAN is assigned a static address of 10.10.10.1.
7. The LAN is assigned a DHCP server that dynamically assigns addresses for the 10.10.10.0/24 network.
8. A Firewall is configured that NATs all traffic from clients on the LAN to the address on the WAN.
9. QoS Maps are assigned to the WAN and LAN to ensure that VoIP traffic has the highest priority of all traffic traversing the IAD.
10. Each IAD is configured to have one T1 port active and configured for NI2 PRI. For the TA900 this is the T1 0/2 port. For the TA900e this is the T1 0/3 port.
11. The PRI is configured with all 23 B-Channels active.

12. The PRI is configured to send calling name in the initial PRI Setup message it sends to the CPE to initiate a new call.
13. The PRI is configured to send the digits it receives from the BroadSoft BroadCloud VoIP Network as is to the CPE.
14. The PRI channel selection sequence is set to Linear Hunt Ascending.
15. All FXS ports on both the TA900 and TA900e are disabled by default.
16. All FXO ports on the TA900e are disabled by default.
17. The ETH 0/2, T1 0/2, and T1 0/4 ports on the TA900e are disabled by default.
18. The IAD's Primary Clock Source is configured as the active PRI T1. For the TA900 this is the T1 0/2 port. For the TA900e this is the T1 0/3 port.
19. The IAD's SNTP Time Server is configured as ntp.adpt-tech.com.
20. The IAD's Time Zone is configured as (GMT-06:00) Central Time (US & Canada).

4. Mandatory Configuration

The following sub-sections will detail procedures that must be performed on every Total Access IAD to finalize turn-up and place the IAD in an operable state in the BroadSoft BroadCloud VoIP Network. These procedures will be further subcategorized into those that must be performed on the data portion of the IAD and those on the voice portion of the IAD.

NOTE: All the procedures defined in the following sub-sections assume that the BroadSoft BroadCloud default configuration is used as the starting point.

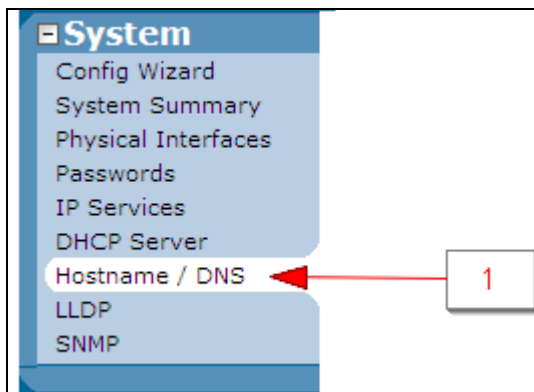
4.1 Data Configuration

The following sub-sections will detail procedures that must be performed on the Total Access IAD's data configuration in order for it to function properly in the BroadSoft BroadCloud VoIP Network. These procedures include configuring DNS Servers.

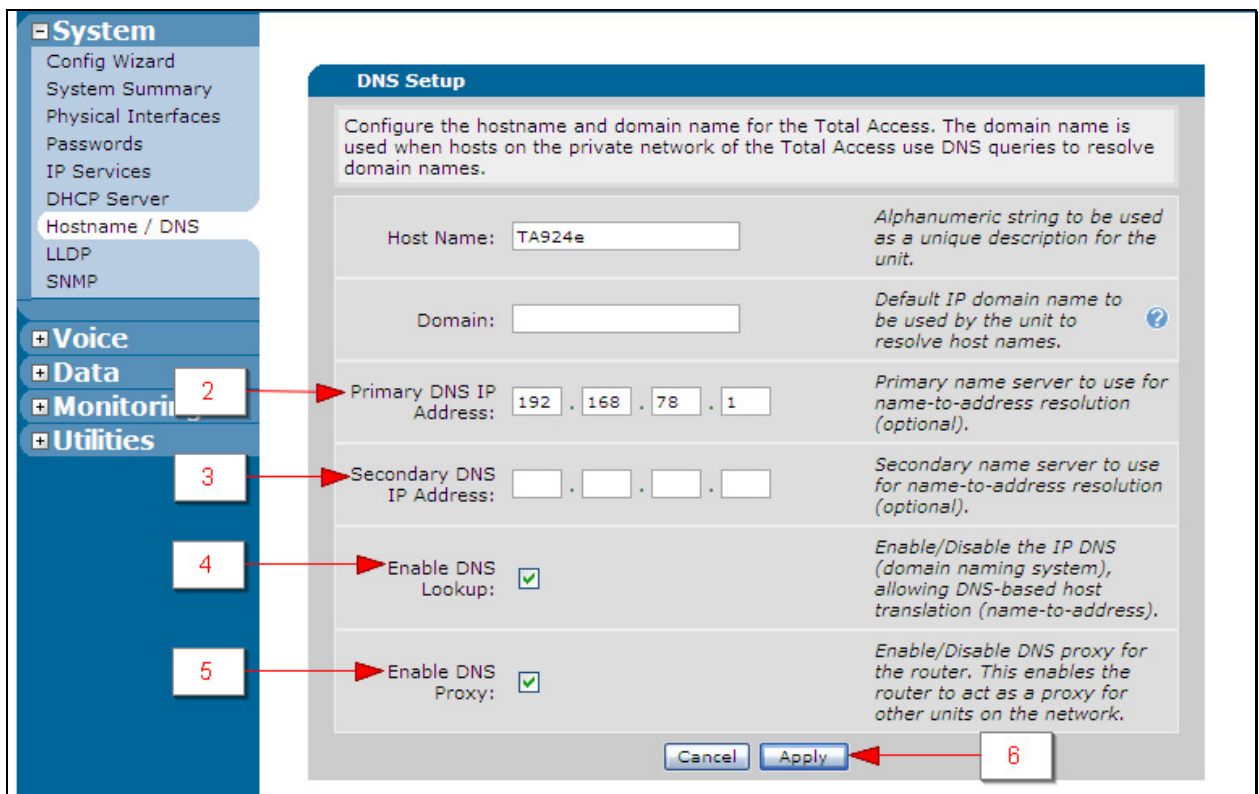
4.1.1 Configure DNS Servers

Complete the following steps to configure the DNS servers the IAD will use to resolve DNS addresses.

1. Select the **Hostname/DNS** link located under the **System** heading in the left hand margin.



2. Enter the IP Address of the first DNS Server in the **Primary DNS IP Address** textboxes.
3. If applicable, enter the IP Address of the second DNS Server in the **Secondary DNS IP Address** textboxes.
4. Check the **Enable DNS Lookup** checkbox.
5. Check the **Enable DNS Proxy** checkbox.
6. Click the **Apply** button.



4.2 Voice Configuration

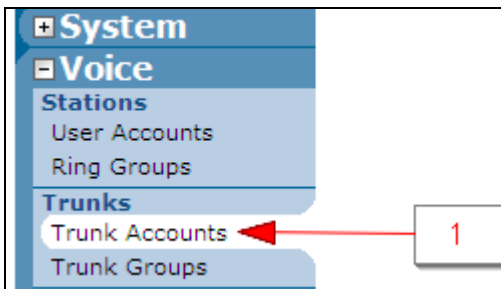
The following sub-sections will detail procedures that must be performed on the Total Access IAD's voice configuration in order for it to function properly in the BroadSoft BroadCloud VoIP Network. These procedures include configuring a registration phone number on the SIP Trunk and configuring a channel selection sequence on the TDM Trunk.

NOTE: The Total Access must provide an originating calling number that is valid in the BroadSoft BroadCloud VoIP Network for all outbound calls. Calls that do not contain a valid calling number will not complete.

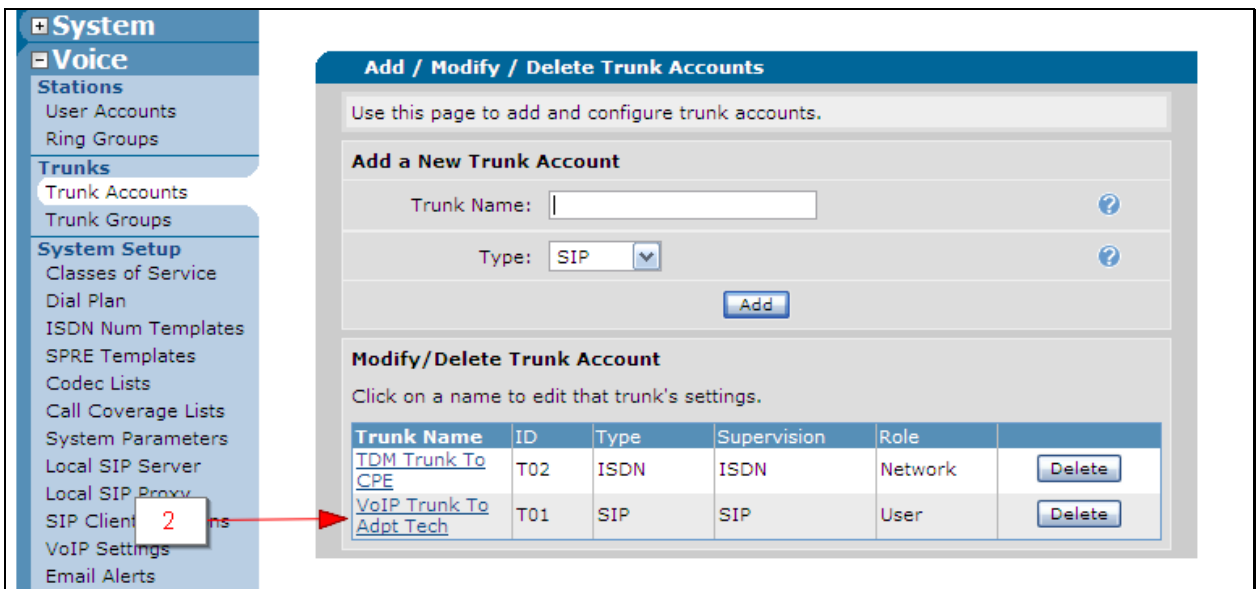
4.2.1 Configuring SIP Trunk Registration

Complete the following steps to configure the phone number the IAD will use to register itself with the BroadSoft BroadCloud VoIP Network.

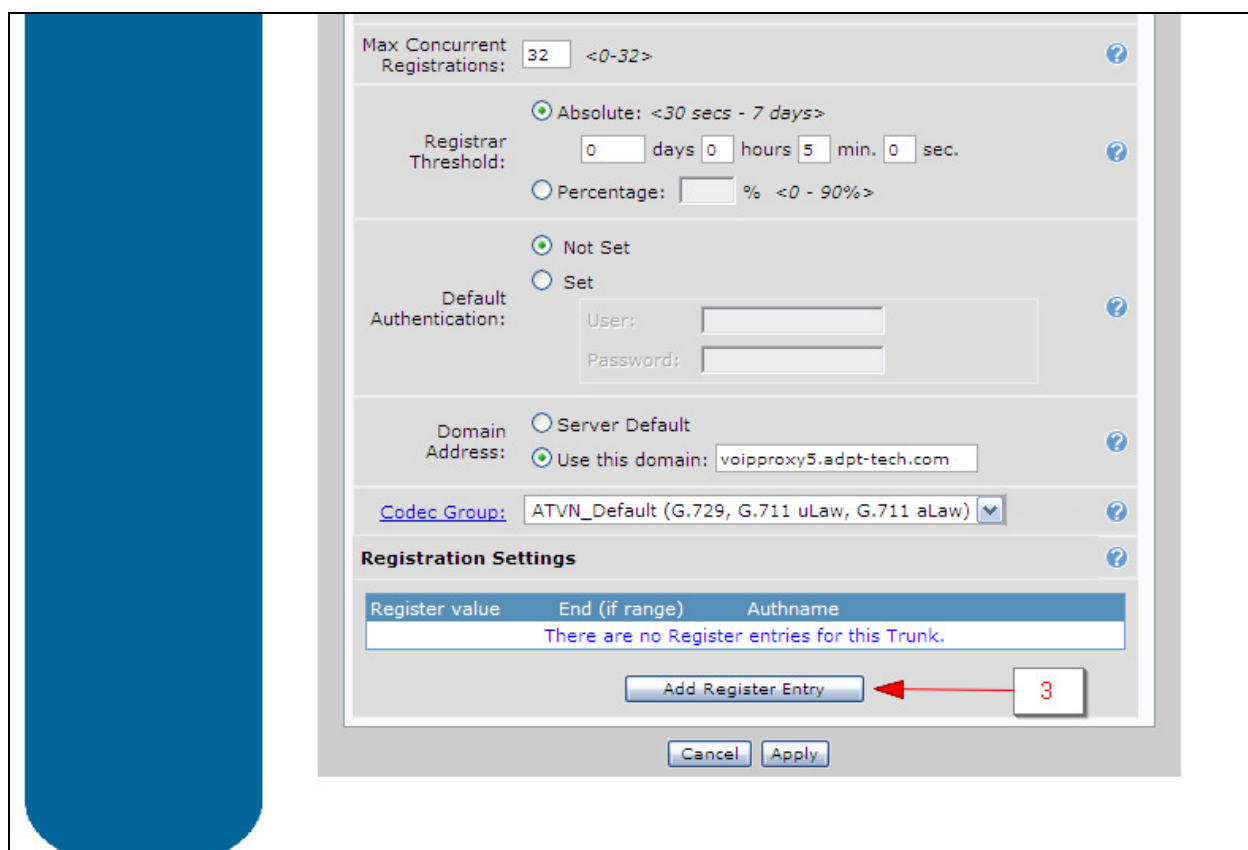
1. Select the **Trunk Accounts** link located under the **Voice** heading in the left hand margin.



2. Click the **VoIP Trunk To Adpt Tech** link under the **Trunk Name** column header.



3. Scroll down and click the **Add Register Entry** button.



Max Concurrent Registrations: <0-32> ?

Registrar Threshold: ☒ Absolute: <30 secs - 7 days> ?
 days hours min. sec.
☐ Percentage: % <0 - 90%> ?

Default Authentication: ☒ Not Set ?
☐ Set ?
 User:
 Password:

Domain Address: ☐ Server Default ?
☒ Use this domain: ?

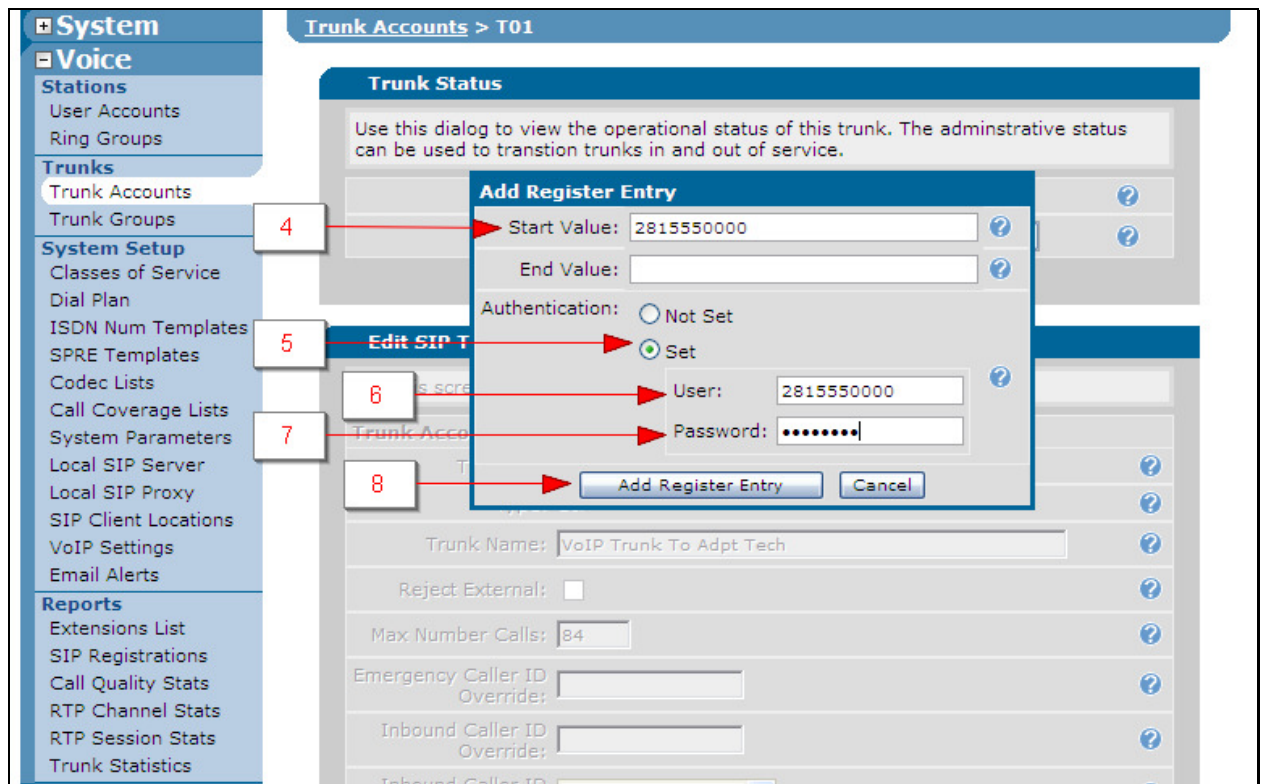
Codec Group: ?

Registration Settings ?

Register value	End (if range)	Authname
There are no Register entries for this Trunk.		

3

4. Enter the main trunk number in the **Start Value** textbox.
5. Select the **Set** radial button from the **Authentication** list.
6. Enter the main trunk number in the **User** textbox.
7. Enter the main trunk number's authentication password in the **Password** textbox.
8. Click the **Add Register Entry** button.

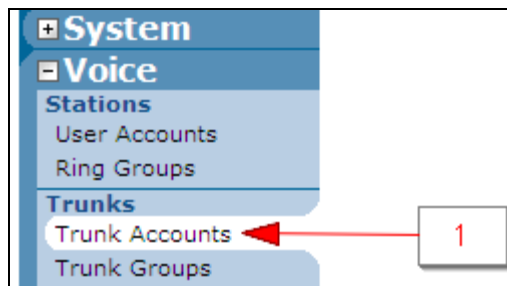


4.2.2 Configuring TDM Trunk Channel Selection Sequence

Complete the following steps to configure the selection sequence which the IAD will use when determining the channel on the TDM trunk to seize when terminating a call to the CPE.

NOTE: It is important to configure the IAD selection sequence so that it selects channels in a manner opposite from the CPE. For example, if the CPE is configured for Circular Hunt Descending then the IAD should be configured for Circular Hunt Ascending. This is important for minimizing the situation when the IAD and CPE select the same channel and cause a glare issue.

1. Select the **Trunk Accounts** link located under the **Voice** heading in the left hand margin.



2. Click the **TDM Trunk To CPE** link under the **Trunk Name** column header.

System

- Voice**
 - Stations
 - User Accounts
 - Ring Groups
 - Trunks**
 - Trunk Accounts
 - Trunk Groups
 - System Setup**
 - Classes of Service
 - Dial Plan
 - ISDN Num Templates
 - SPRE Templates
 - Codec Lists
 - Call Coverage Lists
 - System Parameters
 - Local SIP
 - Local SIP Proxy
 - SIP Client Locations
 - VoIP Settings
 - Email Alerts

Add / Modify / Delete Trunk Accounts

Use this page to add and configure trunk accounts.

Add a New Trunk Account

Trunk Name:

Type:

Modify/Delete Trunk Account

Click on a name to edit that trunk's settings.

Trunk Name	ID	Type	Supervision	Role	
TDM Trunk To CPE	T02	ISDN	ISDN	Network	<input type="button" value="Delete"/>
VoIP Trunk To Adpt Tech	T01	SIP	SIP	User	<input type="button" value="Delete"/>

3. Select the appropriate selection sequence from the **Resource Selection** dropdown box.
4. Click the **Apply** button.

System

Voice

Stations

User Accounts

Ring Groups

Trunks

Trunk Accounts

Trunk Groups

System Setup

Classes of Service

Dial Plan

ISDN Num Templates

SPRE Templates

Codec Lists

Call Coverage Lists

System Parameters

Local SIP Server

Local SIP Proxy

SIP Client Locations

VoIP Settings

Email Alerts

Reports

Extensions List

SIP Registrations

Call Quality 3

RTP Channel Stats

RTP Session Stats

Trunk Statistics

Data

Monitoring

Utilities

Trunk Accounts > 'TDM Trunk To CPE'

Trunk Status

Use this dialog to view the operational status of this trunk. The administrative status can be used to transition trunks in and out of service.

Operational Status: Available

Administrative Status: Enabled

Reset Apply

Edit Trunk

Use this dialog to modify the Trunk Account configuration.

Trunk Account Information

Trunk ID: T02

Type: ISDN

Supervision: ISDN

Trunk Name: TDM Trunk To CPE

Reject External: ☐

Resource Selection: Circular Hunt Descending

Emergency Caller ID Override:

Inbound Caller ID Override:

Inbound Caller ID Override Method: Always

ISDN Settings

ISDN Interface: pri 1

Min Needed B Channels: ☒ Not specified ☐ Specified:

Max Needed B Channels: ☒ Not specified ☐ Specified:

VoIP Settings DNIS Substitution

Codec Group: ATVN_Default (G.729, G.711 uLaw, G.711 aLaw)

Modem ☐ Enabled

Passthrough: Detection Timespan: 8 secs <0-8>

VAD: ☐ Enabled

PLC: ☒ Enabled

NLS: ☒ Enabled

ALC: ☐ Enabled

Echo Cancellation: ☒ Enabled

RTP Settings

Frame Packetization: 20 ms

Packet Delay Mode: Adaptive

Nominal: 50 ms <10 - 240, incr of 10>

Maximum: 100 ms <40 - 320, incr of 10>

Packet Delay: Fax: 50 ms <0 - 500>

Set to Defaults

DTMF Relay: ☐ Inband ☒ NTE Value: 101 <96 - 127>

RTP DSCP Value: ☒ Use Global Default: 46 ☐ Specified: 0 <0 - 63>

Cancel Apply 4

5. Optional Configuration

The following sub-sections will detail procedures that may need to be performed depending on the particular needs of a given customer. These procedures will be further subcategorized into those that must be performed on the data portion of the IAD and those on the voice portion of the IAD.

NOTE: All the procedures defined in the following sub-sections assume that the BroadSoft BroadCloud default configuration is used as the starting point.

5.1 Data Configuration

The following sub-sections will detail procedures that can be used to customize the data network configuration of an IAD. These procedures include setting a static IP on the T1 PPP WAN, configuring the IAD with a T1 MLPPP WAN interface, configuring the IAD with an Ethernet WAN interface with DHCP, and configuring the IAD with an Ethernet WAN interface with Static IP Addressing.

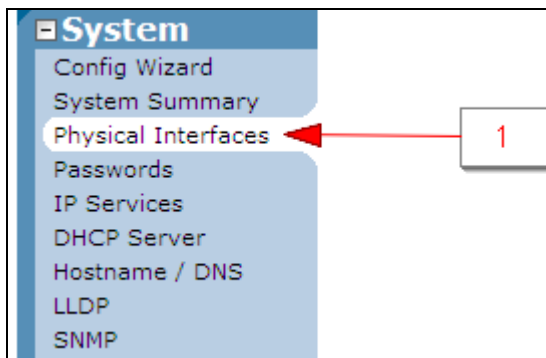
NOTE: For the purposes of this document, all T1 provisioning will focus on PPP encapsulation.

5.1.1 Configuring Static IP Addressing on T1 PPP WAN

Complete the steps in the following sections to assign a static IP address to the T1 PPP WAN Interface.

5.1.1.1 Configure the PPP Interface

1. Select the **Physical Interfaces** link located under the **System** heading in the left hand margin.



2. Select the **ppp 1** link under the **Logical Interface** column header.

System

Config Wizard

System Summary

Physical Interfaces

Passwords

IP Services

DHCP Server

Hostname / DNS

LLDP

SNMP

+ Voice

+ Data

+ Monitoring

+ Utilities

Physical Interfaces

This is a list of all the physical interfaces that are either physically tied to the product or connected via a plug-in module. View or edit the configuration of an interface by clicking its name.

Name	Logical Interface	Line Status	Type
t1 0/1	ppp 1	Up	WAN-T1
t1 0/2	none	Interface Disabled	WAN-T1
t1 0/3	pri 1	Up	WAN-T1
t1 0/4	none	Interface Disabled	WAN-T1
eth 0/1	none	100Mbps/full	Ethernet
eth 0/2	none	Interface Disabled	Ethernet
fxo 0/0	none	Interface Disabled	FXO
fxs 0/1	none	Interface Disabled	FXS
fxs 0/2	none	Interface Disabled	FXS
fxs 0/3	none	Interface Disabled	FXS
fxs 0/4	none	Interface Disabled	FXS
fxs 0/5	none	Interface Disabled	FXS
fxs 0/6	none	Interface Disabled	FXS
fxs 0/7	none	Interface Disabled	FXS
fxs 0/8	none	Interface Disabled	FXS
fxs 0/9	none	Interface Disabled	FXS
fxs 0/10	none	Interface Disabled	FXS
fxs 0/11	none	Interface Disabled	FXS
fxs 0/12	none	Interface Disabled	FXS
fxs 0/13	none	Interface Disabled	FXS
fxs 0/14	none	Interface Disabled	FXS
fxs 0/15	none	Interface Disabled	FXS
fxs 0/16	none	Interface Disabled	FXS
fxs 0/17	none	Interface Disabled	FXS
fxs 0/18	none	Interface Disabled	FXS
fxs 0/19	none	Interface Disabled	FXS
fxs 0/20	none	Interface Disabled	FXS
fxs 0/21	none	Interface Disabled	FXS
fxs 0/22	none	Interface Disabled	FXS
fxs 0/23	none	Interface Disabled	FXS
fxs 0/24	none	Interface Disabled	FXS

3. Select the **Static** option in the **Address Type** dropdown box.
4. Enter the IP address assigned to the T1 interface in the **IP Address** textboxes.
5. Enter the Subnet Mask assigned to the T1 interface in the **Subnet Mask** textboxes.
6. Select the **Primary** option in the **IP Address Type** dropdown box.
7. Click the **Apply** button.

System

Config Wizard

System Summary

Physical Interfaces

Passwords

IP Services

DHCP Server

Hostname / DNS

LLDP

SNMP

Voice

Data

Monitoring

Utilities

Physical Interfaces > t1 0/1 > PPP Config

PPP Configuration for "ppp 1"

Basic configuration for the PPP interface.

Description: <input type="text" value="PPP One"/>	Description label (optional)
Enabled: <input checked="" type="checkbox"/>	Enable data flow for this interface.
Weighted Fair Queuing: <input checked="" type="checkbox"/>	If disabled, FIFO queuing method will be used.
MTU: <input type="text" value="1500"/>	Maximum Transmit Unit
Physical Interface: t1 0/1	Physical interface connection for this interface.
Qos-policy: None	Outbound QoS-Policy map.
Default Peer IP Address: <input type="checkbox"/>	Set an IP address for the remote end of this interface (optional).

Authentication Settings

Sent Authentication Type: <input type="text" value="None"/>	Used by the remote peer to authenticate this unit
Sent Username: <input type="text"/>	Required when unit must authenticate to the remote peer
Sent Password: <input type="text"/>	Transmitted to the remote peer
Confirm Sent Password: <input type="text"/>	You must enter the new password again to guarantee accuracy.
Peer AuthenticationType: <input type="text" value="None"/>	Used when authenticating remote peers
Peer Username: <input type="text"/>	Required when remote peer must authenticate to this unit
Peer Password: <input type="text"/>	Received from the remote peer
Confirm Peer Password: <input type="text"/>	You must enter the new password again to guarantee accuracy.

IP Settings

Address Type: <input type="text" value="Static"/>	Set to 'None' if connecting to a Bridge with IP routing disabled.
IP Address: <input type="text" value="192"/> . <input type="text" value="168"/> . <input type="text" value="80"/> . <input type="text" value="2"/>	IP address for this numbered interface
Subnet Mask: <input type="text" value="255"/> . <input type="text" value="255"/> . <input type="text" value="255"/> . <input type="text" value="252"/>	Subnet Mask for this numbered interface
Dynamic DNS: <input type="text" value="disabled"/>	Used to register this interface's IP address with a DNS Name.

Media-Gateway

IP Address Type: <input type="text" value="Primary"/>	RTP traffic will flow over the selected IP address.
---	---

Monitoring

RTP Monitoring: <input type="checkbox"/>	Enables RTP monitoring on this interface.
--	---

3

4

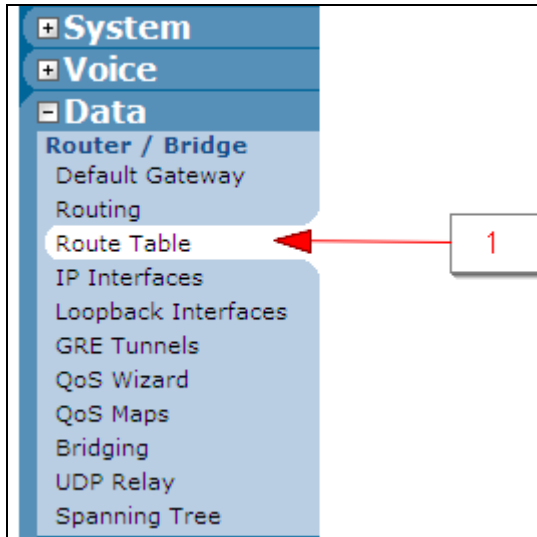
5

6

7

5.1.1.2 Default Route Configuration

1. Select the **Route Table** link located under the **Data** heading in the left hand margin.



2. Enter an address of 0.0.0.0 in the **Destination Address** textboxes.
3. Enter a subnet mask of 0.0.0.0 in the **Destination Mask** textboxes.
4. Select the **Address** radial button in the **Gateway** list and enter the default gateway address.
5. Click the **Add** button.

System
Voice
Data
Router / Bridge
Default Gateway
Routing
Route Table
IP Interface
Loopback Interface
GRE Tunnels
QoS Wizard
QoS Maps
Bridging
UDP Relay
Spanning Tree
Firewall
Firewall Wizard
General Firewall
Security Zones
URL Filtering
URL Filters
Top Websites
Wireless
AC / AP
Radios / VAPs
Clients
MAC Access List
AP Firmware

Add a Static Route to the Route Table

Static Routes are often required to reach networks that are not learned via a dynamic routing protocol. Enter the appropriate information below to add a static route or click on a route below to use it as a template for a new route. [IP Routing](#) must be enabled in order to add static routes.

Destination Address: . . . Enter the network to add to the route table.

Destination Mask: . . . Enter the appropriate mask for this network.

Gateway:

☒ Address . . . Enter the gateway address to reach this network.
- OR -
☐ Interface Select the interface to be used as the gateway.

Administrative Distance (optional): The Distance metric for this network. (Optional parameter)

Tag (optional): Set an administrative tag on this route (Optional parameter)

Track Name (optional): Activates this route only while the specified track is not failing. (Optional parameter used when network monitoring is active.)

5.1.1.3 Assign DNS Servers

1. Select the **Hostname/DNS** link located under the **System** heading in the left hand margin.

System
Config Wizard
System Summary
Physical Interfaces
Passwords
IP Services
DHCP Server
Hostname / DNS
LLDP
SNMP

2. Enter the IP Address of the first DNS Server in the **Primary DNS IP Address** textboxes.
3. If applicable, enter the IP Address of the second DNS Server in the **Secondary DNS IP Address** textboxes.
4. Check the **Enable DNS Lookup** checkbox.
5. Check the **Enable DNS Proxy** checkbox.

6. Click the **Apply** button.

System

- Config Wizard
- System Summary
- Physical Interfaces
- Passwords
- IP Services
- DHCP Server
- Hostname / DNS**
- LLDP
- SNMP

+ Voice

+ Data

+ Monitor

+ Utilities

DNS Setup

Configure the hostname and domain name for the Total Access. The domain name is used when hosts on the private network of the Total Access use DNS queries to resolve domain names.

Host Name: Alphanumeric string to be used as a unique description for the unit.

Domain: Default IP domain name to be used by the unit to resolve host names. ?

Primary DNS IP Address: . . . Primary name server to use for name-to-address resolution (optional).

Secondary DNS IP Address: . . . Secondary name server to use for name-to-address resolution (optional).

Enable DNS Lookup: ☒ Enable/Disable the IP DNS (domain naming system), allowing DNS-based host translation (name-to-address).

Enable DNS Proxy: ☒ Enable/Disable DNS proxy for the router. This enables the router to act as a proxy for other units on the network.

5.1.2 Configuring T1 MLPPP WAN Access

Complete the steps in the following sections to provision a T1 MLPPP interface on the IAD for WAN Access.

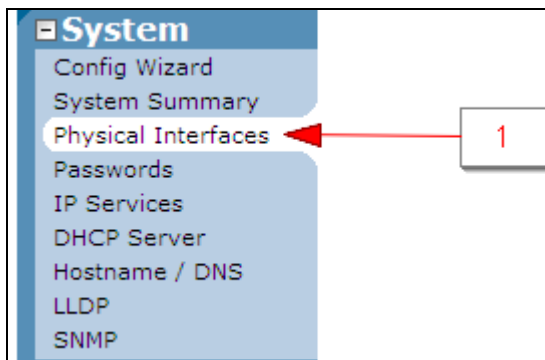
NOTE: The procedure detailed below applies only to the TA908e, TA916e, and TA924e models.

NOTE: The procedure detailed below assumes that Static IP Addressing will be used. If one of the other methods is required, substitute for that method where appropriate.

NOTE: For deployments that require more than two T1s, repeat the steps defined in section 5.1.2.3 to add a third and fourth T1 to the MLPPP interface.

5.1.2.1 Configure T1 PPP Multilink Interface

1. Select the **Physical Interfaces** link located under the **System** heading in the left hand margin.



2. Select the **t1 0/1** link under the **Name** column header.

A screenshot of the 'Physical Interfaces' configuration page. The left sidebar shows the 'System' menu with 'Physical Interfaces' selected. The main content area has a title 'Physical Interfaces' and a description: 'This is a list of all the physical interfaces that are either physically tied to the product or connected via a plug-in module. View or edit the configuration of an interface by clicking its name.' Below this is a table with four columns: Name, Logical Interface, Line Status, and Type. The first row is highlighted in blue and contains the text 't1 0/1', 'ppp 1', 'Up', and 'WAN-T1'. A red arrow points from a white box containing the number '2' to the 't1 0/1' link in the Name column.

Name	Logical Interface	Line Status	Type
t1 0/1	ppp 1	Up	WAN-T1
t1 0/2	none	Interface Disabled	WAN-T1
t1 0/3	pri 1	Up	WAN-T1
t1 0/4	none	Interface Disabled	WAN-T1
eth 0/1	none	100Mbps/full	Ethernet
eth 0/2	none	Interface Disabled	Ethernet
fxs 0/0	none	Interface Disabled	FXS
fxs 0/1	none	Interface Disabled	FXS
fxs 0/2	none	Interface Disabled	FXS
fxs 0/3	none	Interface Disabled	FXS
fxs 0/4	none	Interface Disabled	FXS
fxs 0/5	none	Interface Disabled	FXS
fxs 0/6	none	Interface Disabled	FXS
fxs 0/7	none	Interface Disabled	FXS
fxs 0/8	none	Interface Disabled	FXS
fxs 0/9	none	Interface Disabled	FXS
fxs 0/10	none	Interface Disabled	FXS
fxs 0/11	none	Interface Disabled	FXS
fxs 0/12	none	Interface Disabled	FXS
fxs 0/13	none	Interface Disabled	FXS
fxs 0/14	none	Interface Disabled	FXS
fxs 0/15	none	Interface Disabled	FXS
fxs 0/16	none	Interface Disabled	FXS
fxs 0/17	none	Interface Disabled	FXS
fxs 0/18	none	Interface Disabled	FXS
fxs 0/19	none	Interface Disabled	FXS
fxs 0/20	none	Interface Disabled	FXS
fxs 0/21	none	Interface Disabled	FXS
fxs 0/22	none	Interface Disabled	FXS
fxs 0/23	none	Interface Disabled	FXS
fxs 0/24	none	Interface Disabled	FXS

3. Click the **Delete** button located in the **ppp 1** row.

System

Config Wizard
System Summary
Physical Interfaces
Passwords
IP Services
DHCP Server
Hostname / DNS
LLDP
SNMP

+ Voice
+ Data
+ Monitoring
+ Utilities

Physical Interfaces > t1 0/1

Configuration for "t1 0/1"

Basic configuration for the T1 interface.

Description:

Description label (optional)

Enable:

☒

Enable or disable this interface

Clocking:

System-Wide Clock Source

Please go to the 'Clock Source' page to set the system clock source.

Framing:

ESF

Select the framing that matches the network provider framing format

Coding:

B8ZS

Select the coding that matches the network provider line coding

FDL:

ANSI

Select the format for the facility data link channel

ResetApply

Configured DS0 Connections for "t1 0/1"

Use this dialog to connect a group of DS0's to a particular interface or service provided by this unit. To configure a connected interface's settings, click on the item in the list below. To remap a group of DS0's that are currently in use, click the delete button to remove the connections group.

Add a Connection

Connect To:

None

Select an interface type to map to the DS0s

Available DS0 Range:

All DS0s in use

DS0 Range:

1

to

1

Set the range of DS0s to be mapped

Speed:

64kbps

Select the speed for the DS0s being mapped

Add

Connected Interface	Multilink	DS0's Used	Group Number	Speed	
ppp 1	Disabled	1-24	1	3	64kbps Delete

- Select the **PPP** option in the **Connect To** dropdown box.
- Select the range of DS0s that will be assigned to the T1 from the **DS0 Range** dropdown boxes.
- Select the appropriate DS0 speed from the **Speed** dropdown box.
- Check the **Multilink** checkbox.
- Select the **Create New Interface** option in the **PPP Multilink Interface** dropdown box.

- Click the **Add** button to commit the changes and advance the screen to the PPP configuration page.

System

- Config Wizard
- System Summary
- Physical Interfaces
- Passwords
- IP Services
- DHCP Server
- Hostname / DNS
- LLDP
- SNMP

Voice

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Physical Interfaces > t1 0/1

Configuration for "t1 0/1"

Basic configuration for the T1 interface.

Description: Description label (optional)

Enable: ☒ Enable or disable this interface

Clocking: [System-Wide Clock Source](#) Please go to the 'Clock Source' page to set the system clock source.

Framing: Select the framing that matches the network provider framing format ?

Coding: Select the coding that matches the network provider line coding

FDL: Select the format for the facility data link channel ?

Configured DS0 Connections for "t1 0/1"

Use this dialog to connect a group of DS0's to a particular interface or service provided by this unit. To configure a connected interface's settings, click on the item in the list below. To remap a group of DS0's that are currently in use, click the delete button to remove the connections group.

Add a Connection

Connect To: Select an interface type to map to the DS0s

Available DS0 Range: 1-24

DS0 Range: to Set the range of DS0s to be mapped

Speed: Select the speed for the DS0s being mapped

Multilink: ☒ Enable multilink for the selected encapsulation (PPP or Frame Relay).

PPP Multilink Interface: Create a new PPP interface or select an existing one for multilink.

Connected Interface	Multilink	DS0's Used	Group Number	Speed
There are no connections configured				

5.1.2.2 Configure PPP Multilink Interface for First T1

- Enter a label for the PPP interface in the **Description** textbox.

2. Check the **Enable** checkbox.
3. Select the **Static** option in the **Address Type** dropdown box.
4. Enter the IP address assigned to the T1 in the **IP Address** textboxes.
5. Enter the Subnet Mask assigned to the T1 interface in the **Subnet Mask** textboxes.
6. Select the **Primary** option in the **IP Address Type** dropdown box.
7. Click the **Apply** button.

System

- Config Wizard
- System Summary
- Physical Interfaces
- IP Services
- DHCP Server
- Hostname / Domain
- LLDP
- SNMP

Voice

Data

Monitoring

Utilities

Physical Interfaces > t1 0/1 > PPP Config

PPP Configuration for "ppp 1"

Basic configuration for the PPP interface.

Description:	ppp 1	Description label (optional)
Enabled:	<input checked="" type="checkbox"/>	Enable data flow for this interface.
Weighted Fair Queuing:	<input checked="" type="checkbox"/>	If disabled, FIFO queuing method will be used.
MTU:	1500	Maximum Transmit Unit
Physical Interface:	t1 0/1	Physical interface connection for this interface.
Qos-policy:	None	Outbound QoS-Policy map.
Default Peer IP Address:	<input type="checkbox"/>	Set an IP address for the remote end of this interface (optional).
Multilink Fragmentation:	<input type="checkbox"/>	Enable multilink fragmentation operation.
Multilink Interleave:	<input type="checkbox"/>	Enable multilink interleave operation.

Authentication Settings

Sent Authentication Type:	None	Used by the remote peer to authenticate this unit
Sent Username:	<input type="text"/>	Required when unit must authenticate to the remote peer
Sent Password:	<input type="text"/>	Transmitted to the remote peer
Confirm Sent Password:	<input type="text"/>	You must enter the new password again to guarantee accuracy.
Peer Authentication Type:	None	Used when authenticating remote peers
Peer Username:	<input type="text"/>	Required when remote peer must authenticate to this unit
Peer Password:	<input type="text"/>	Received from the remote peer
Confirm Peer Password:	<input type="text"/>	You must enter the new password again to guarantee accuracy.

IP Settings

Address Type:	Static	Set to 'None' if connecting to a Bridge with IP routing disabled.
IP Address:	192 . 168 . 80 . 2	IP address for this numbered interface
Subnet Mask:	255 . 255 . 255 . 252	Subnet Mask for this numbered interface
Dynamic DNS:	<disabled>	Used to register this interface's IP address with a DNS Name.

Media-Gateway

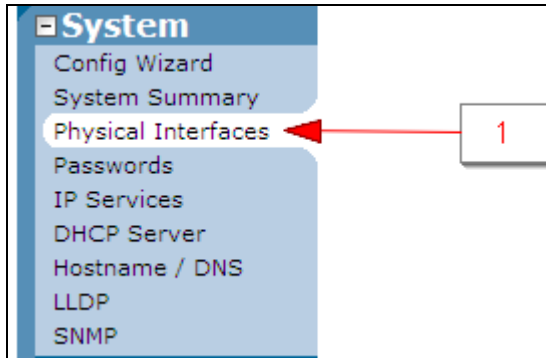
IP Address Type:	Primary	RTP traffic will flow over the selected IP address.
------------------	---------	---

Monitoring

RTP Monitoring:	<input type="checkbox"/>	Enables RTP monitoring on this interface.
-----------------	--------------------------	---

5.1.2.3 Configuring the Second T1 Interface

1. Select the **Physical Interfaces** link located under the **System** heading in the left hand margin.



2. Select the **t1 0/2** link under the **Name** column header.

A screenshot of the 'Physical Interfaces' configuration page. The left sidebar shows the 'System' menu with 'Physical Interfaces' selected, highlighted with a red box and the number '2'. The main content area displays a table of physical interfaces.

Physical Interfaces

This is a list of all the physical interfaces that are either physically tied to the product or connected via a plug-in module. View or edit the configuration of an interface by clicking its name.

Name	Logical Interface	Line Status	Type
t1 0/1	ppp 1	Up	WAN-T1
t1 0/2	none	Interface Disabled	WAN-T1
t1 0/3	pri 1	Up	WAN-T1
t1 0/4	none	Interface Disabled	WAN-T1
eth 0/1	none	100Mbps/full	Ethernet
eth 0/2	none	Interface Disabled	Ethernet
fxo 0/0	none	Interface Disabled	FXO
fxs 0/1	none	Interface Disabled	FXS
fxs 0/2	none	Interface Disabled	FXS
fxs 0/3	none	Interface Disabled	FXS
fxs 0/4	none	Interface Disabled	FXS
fxs 0/5	none	Interface Disabled	FXS
fxs 0/6	none	Interface Disabled	FXS
fxs 0/7	none	Interface Disabled	FXS
fxs 0/8	none	Interface Disabled	FXS
fxs 0/9	none	Interface Disabled	FXS
fxs 0/10	none	Interface Disabled	FXS
fxs 0/11	none	Interface Disabled	FXS
fxs 0/12	none	Interface Disabled	FXS
fxs 0/13	none	Interface Disabled	FXS
fxs 0/14	none	Interface Disabled	FXS
fxs 0/15	none	Interface Disabled	FXS
fxs 0/16	none	Interface Disabled	FXS
fxs 0/17	none	Interface Disabled	FXS
fxs 0/18	none	Interface Disabled	FXS
fxs 0/19	none	Interface Disabled	FXS
fxs 0/20	none	Interface Disabled	FXS
fxs 0/21	none	Interface Disabled	FXS
fxs 0/22	none	Interface Disabled	FXS
fxs 0/23	none	Interface Disabled	FXS
fxs 0/24	none	Interface Disabled	FXS

3. Enter a label for the T1 in the **Description** textbox.
4. Select the **Enable** checkbox.

5. Select the appropriate framing from the **Framing** dropdown box.
6. Select the appropriate coding from the **Coding** dropdown box.
7. Select the appropriate facility data link formatting from the **FDL** dropdown box.
8. Click the **Apply** button.
9. Select the **PPP** option from the **Connect To** dropdown box.
10. Select the range of DS0s that will be assigned to the T1 from the **DS0 Range** dropdown boxes.
11. Select the appropriate DS0 speed from the **DS0 Speed** dropdown box.
12. Check the **Multilink** checkbox.
13. Select the **ppp 1** option from the **PPP Multilink Interface** dropdown box.
14. Click the **Add** button.

System

- Config Wizard
- System Summary
- Physical Interfaces**
- Passwords
- IP Services
- DHCP Server
- Hostname / Domain
- LLDP
- SNMP

Voice

Data

Monitoring

Utilities

Physical Interfaces > t1 0/2

Configuration for "t1 0/2"

Basic configuration for the T1 interface.

Description: *Description label (optional)*

Enable: ☒ *Enable or disable this interface*

Clocking: [System-Wide Clock Source](#) *Please go to the 'Clock Source' page to set the system clock source.*

Framing: *Select the framing that matches the network provider framing format*

Coding: *Select the coding that matches the network provider line coding*

FDL: *Select the format for the facility data link channel*

Settings applied successfully

Configured DS0 Connections for "t1 0/2"

Use this dialog to connect a group of DS0's to a particular interface or service provided by this unit. To configure a connected interface's settings, click on the item in the list below. To remap a group of DS0's that are currently in use, click the delete button to remove the connections group.

Add a Connection

Connect To: *Select an interface type to map to the DS0s*

Available DS0 Range: 1-24

DS0 Range: to *Set the range of DS0s to be mapped*

Speed: *Select the speed for the DS0s being mapped*

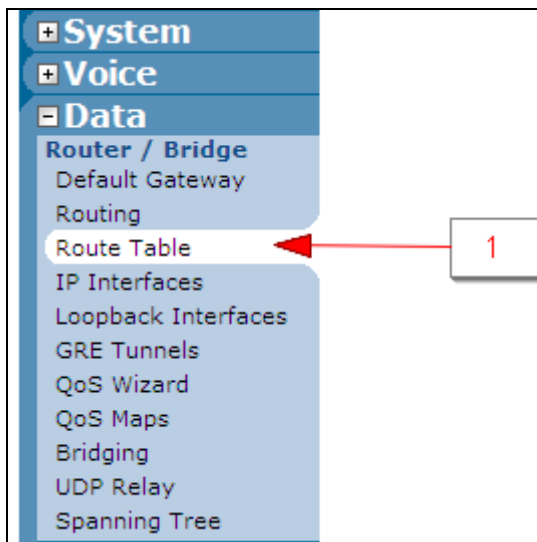
Multilink: ☒ *Enable multilink for the selected encapsulation (PPP or Frame Relay).*

PPP Multilink Interface: *Create a new PPP interface or select an existing one for multilink.*

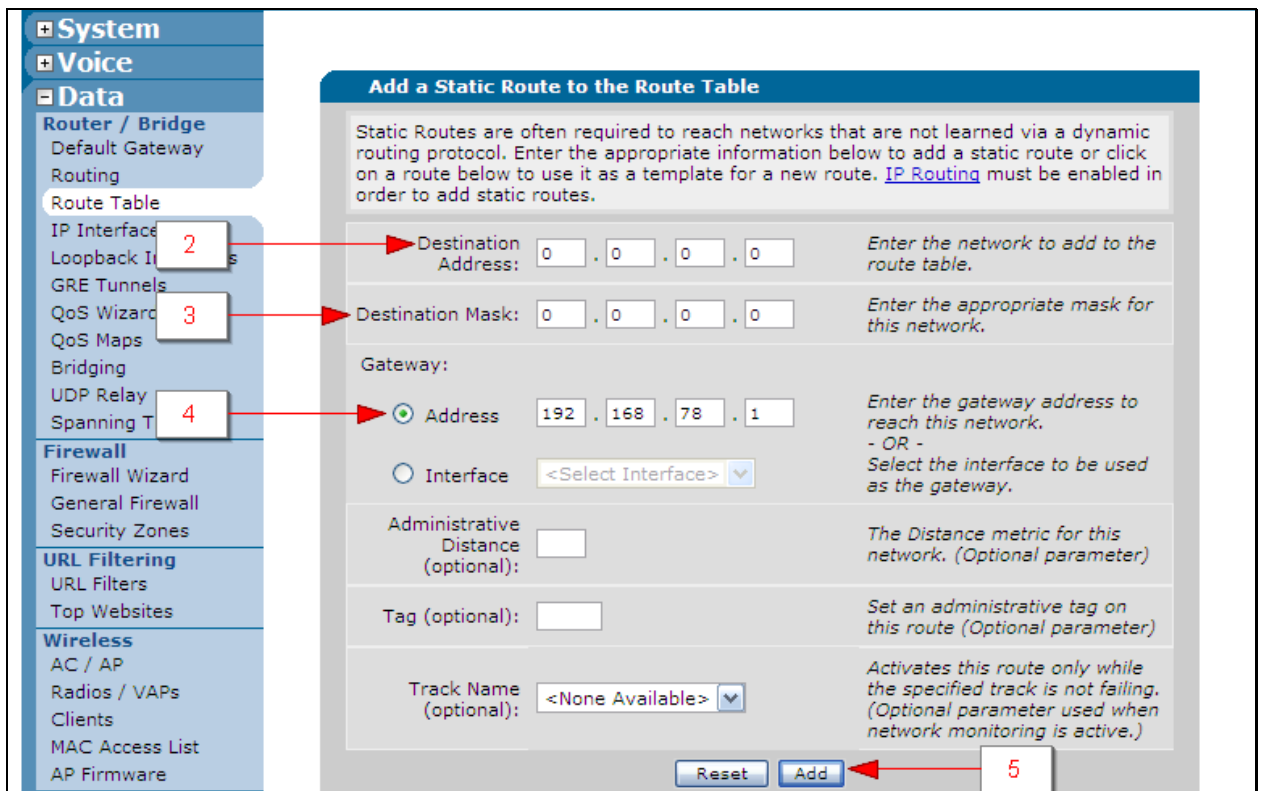
Connected Interface	Multilink	DS0's Used	Group Number	Speed
There are no connections configured				

5.1.2.4 Default Route Configuration

1. Select the **Route Table** link located under the **Data** heading in the left hand margin.

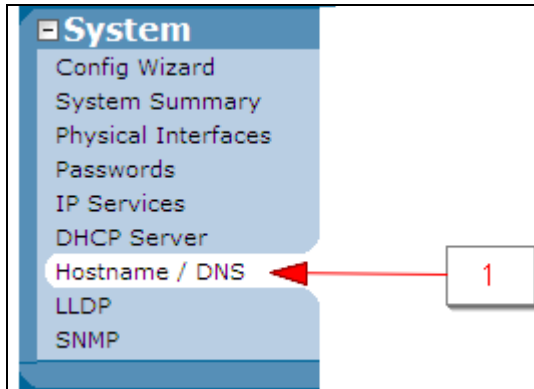


2. Enter an address of 0.0.0.0 in the **Destination Address** textboxes.
3. Enter a subnet mask of 0.0.0.0 in the **Destination Mask** textboxes.
4. Select the **Address** radial button in the **Gateway** list and enter the default gateway address.
5. Click the **Add** button.



5.1.2.5 Assign DNS Servers

1. Select the **Hostname/DNS** link located under the **System** heading in the left hand margin.



2. Enter the IP Address of the first DNS Server in the **Primary DNS IP Address** textboxes.
3. If applicable, enter the IP Address of the second DNS Server in the **Secondary DNS IP Address** textboxes.
4. Check the **Enable DNS Lookup** checkbox.
5. Check the **Enable DNS Proxy** checkbox.
6. Click the **Apply** button.

System

- Config Wizard
- System Summary
- Physical Interfaces
- Passwords
- IP Services
- DHCP Server
- Hostname / DNS**
- LLDP
- SNMP

+ Voice

+ Data

+ Monitoring

+ Utilities

DNS Setup

Configure the hostname and domain name for the Total Access. The domain name is used when hosts on the private network of the Total Access use DNS queries to resolve domain names.

Host Name: Alphanumeric string to be used as a unique description for the unit.

Domain: Default IP domain name to be used by the unit to resolve host names. ?

Primary DNS IP Address: . . . Primary name server to use for name-to-address resolution (optional).

Secondary DNS IP Address: . . . Secondary name server to use for name-to-address resolution (optional).

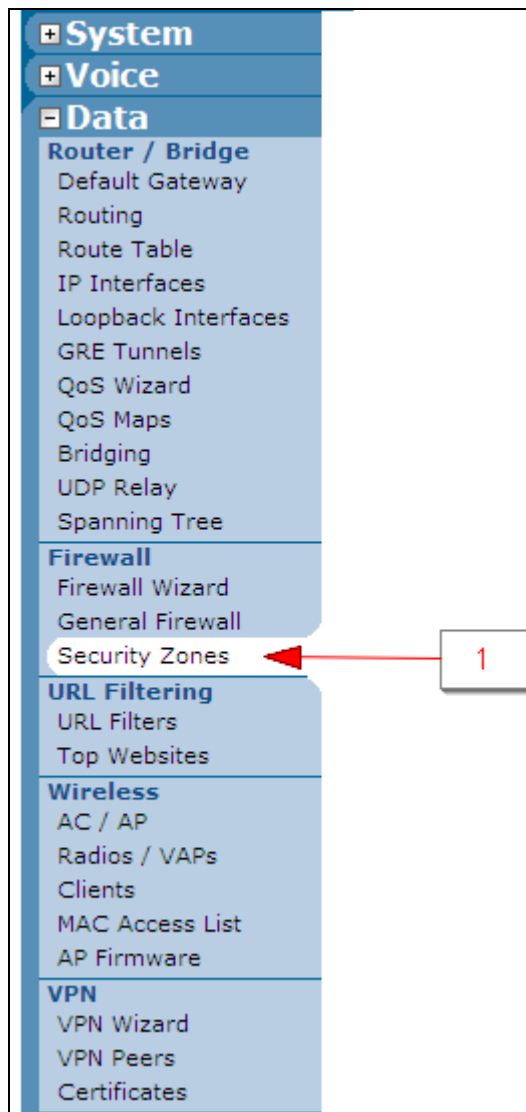
Enable DNS Lookup: ☒ Enable/Disable the IP DNS (domain naming system), allowing DNS-based host translation (name-to-address).

Enable DNS Proxy: ☒ Enable/Disable DNS proxy for the router. This enables the router to act as a proxy for other units on the network.

5.1.2.6 Re-Configure the Firewall

NOTE: In the process of deleting and re-adding the ppp interface on the T1, the firewall policy assigned to the WAN interface by the default configuration is removed by the system and must be re-configured.

1. Select the **Security Zones** link located under the **Data** heading in the left hand margin.



2. Select the **Public** zone in the **New Security Zone** dropdown box for the **ppp 1** interface.
3. Click the **Assign** button.

Assign Interfaces to Security Zones

Each interface must be associated with a Security Zone. A Security Zone is configured with a set of policies that define what action the firewall will perform on data sessions originating from that zone.

Interface Name	Current Security Zone	New Security Zone
eth 0/1	Private	Private
ppp 1	<none>	Public

Reset Assign

Edit Security Zones

A security zone contains one or more policies. The security zone can be applied to interfaces to allow, discard or NAT traffic as it enters the Total Access. A security zone that has no configured policies will allow all traffic to enter the interface. Click on the 'Active Sessions' number to view the running version of your policy-class association table.

Modify Security Zones

Click on the link on the security zone name in order to modify that security zone.

Security Zone	Active Sessions	
Private	5	Rename
Public	0	Rename
<Click to add a Security Zone>	N/A	Rename

5.1.2.7 Re-configure the QoS Map

NOTE: In the process of deleting and re-adding the ppp interface on the T1, the QoS Map assigned to the WAN interface by the default configuration is removed by the system and must be re-configured.

1. Select the **QoS Maps** link located under the **Data** heading in the left hand margin.

System

Voice

Data

Router / Bridge

Default Gateway

Routing

Route Table

IP Interfaces

Loopback Interfaces

GRE Tunnels

QoS Wizard

QoS Maps

Bridging

UDP Relay

Spanning Tree

2. Select the **WAN_OUT** option in the **Outbound QoS-Policy** dropdown box in the **ppp 1** row.
3. Click the **Apply** button.

System

Voice

Data

Router / Bridge

Default Gateway

Routing

Route Table

IP Interfaces

Loopback Interfaces

GRE Tunnels

QoS Wizard

QoS Maps

Bridging

UDP Relay

Spanning Tree

Firewall

Firewall Wizard

General Firewall

Security Zones

URL Filtering

URL Filters

Top Websites

Wireless

AC / AP

Radios / VAPs

Clients

MAC Access List

AP Firmware

VPN

VPN Wizard

VPN Peers

Certificates

Monitoring

Utilities

Add / Modify / Delete QoS Map

Configure a QoS Map

Add New QoS Map

Map Name:

QoS map tag. (maximum of 79 characters)

Sequence Number:

Sequence to insert into QoS map entry. Valid values are 0-65535.

Add

Modify/Delete a QoS Map

To view or modify an existing QoS map, click the link in the desired row. A '*' in the bandwidth column denotes class based bandwidth otherwise the bandwidth is priority based.

<input type="checkbox"/>	Policy	Matching	Marking	Bandwidth (Burst bytes)
<input type="checkbox"/>	LAN_IN-20	ACL	DSCP (46)	disabled
<input type="checkbox"/>	LAN_IN-21	ACL	DSCP (26)	disabled
<input type="checkbox"/>	LAN_OUT-20	DSCP(ef)	disabled	unlimited
<input type="checkbox"/>	LAN_OUT-21	DSCP(af31)	disabled	unlimited
<input type="checkbox"/>	WAN_IN-20	ACL	DSCP (46)	disabled
<input type="checkbox"/>	WAN_IN-21	ACL	DSCP (26)	disabled
<input type="checkbox"/>	WAN_OUT-20	DSCP(ef)	disabled	unlimited
<input type="checkbox"/>	WAN_OUT-21	DSCP(af31)	disabled	unlimited

Remove Selected QoS-Maps

Assign a QoS-policy to an Interface

Assign a QoS policy to an interface's input/output. If traffic shaping is disabled, you must click on the link provided and enable traffic shaping before assigning an outbound policy to that interface.

Modify Assignment

Name	Available Bandwidth(Kbps)	Inbound QoS-policy	Outbound QoS-policy
eth 0/1	75000	LAN_IN	LAN_OUT
eth 0/2	Traffic Shaping disabled	<none>	<None>
ppp 1	2304	2	3

Reset Apply

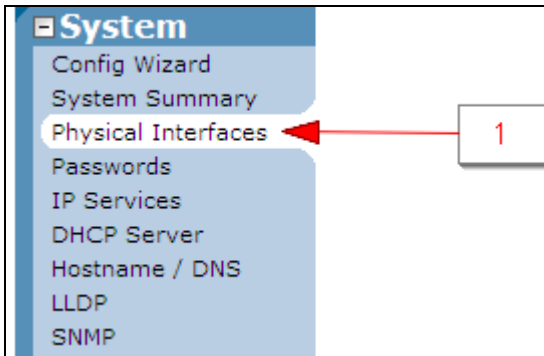
5.1.3 Configuring Ethernet WAN Access with DHCP

Complete the steps in the following sections to provision an Ethernet interface on the IAD for WAN Access with DHCP.

NOTE: The steps outlined in this section apply only to the TA908e, TA916e, and TA924e models.

5.1.3.1 Remove the T1 Interface

1. Select the **Physical Interfaces** link located under the **System** heading in the left hand margin.



2. Select the **t1 0/1** link under the **Name** column header.

A screenshot of the 'Physical Interfaces' configuration page. The left sidebar shows the 'System' menu with 'Physical Interfaces' selected, highlighted with a red box and the number '2'. The main content area is titled 'Physical Interfaces' and contains a table of interfaces.

This is a list of all the physical interfaces that are either physically tied to the product or connected via a plug-in module. View or edit the configuration of an interface by clicking its name.

Name	Logical Interface	Line Status	Type
t1 0/1	ppp 1	Up	WAN-T1
t1 0/2	none	Interface Disabled	WAN-T1
t1 0/3	pri 1	Up	WAN-T1
t1 0/4	none	Interface Disabled	WAN-T1
eth 0/1	none	100Mbps/full	Ethernet
eth 0/2	none	Interface Disabled	Ethernet
fxs 0/0	none	Interface Disabled	FXS
fxs 0/1	none	Interface Disabled	FXS
fxs 0/2	none	Interface Disabled	FXS
fxs 0/3	none	Interface Disabled	FXS
fxs 0/4	none	Interface Disabled	FXS
fxs 0/5	none	Interface Disabled	FXS
fxs 0/6	none	Interface Disabled	FXS
fxs 0/7	none	Interface Disabled	FXS
fxs 0/8	none	Interface Disabled	FXS
fxs 0/9	none	Interface Disabled	FXS
fxs 0/10	none	Interface Disabled	FXS
fxs 0/11	none	Interface Disabled	FXS
fxs 0/12	none	Interface Disabled	FXS
fxs 0/13	none	Interface Disabled	FXS
fxs 0/14	none	Interface Disabled	FXS
fxs 0/15	none	Interface Disabled	FXS
fxs 0/16	none	Interface Disabled	FXS
fxs 0/17	none	Interface Disabled	FXS
fxs 0/18	none	Interface Disabled	FXS
fxs 0/19	none	Interface Disabled	FXS
fxs 0/20	none	Interface Disabled	FXS
fxs 0/21	none	Interface Disabled	FXS
fxs 0/22	none	Interface Disabled	FXS
fxs 0/23	none	Interface Disabled	FXS
fxs 0/24	none	Interface Disabled	FXS

3. Uncheck the **Enable** checkbox.
4. Click the **Apply** button.
5. Click the **Delete** button located in the **ppp 1** row.

The screenshot displays the BroadSoft configuration interface. On the left, a sidebar menu shows the navigation structure: **System** (with sub-items: Config Wizard, System Summary, Physical Interfaces, Passwords, IP Services, DHCP Server, Hostname / DNS, LLDP, and SNMP), **Voice**, **Data**, **Monitoring**, and **Utilities**. A red box with the number '3' highlights the **Physical Interfaces** link in the System menu.

The main content area is titled **Physical Interfaces > t1 0/1**. It contains two sections:

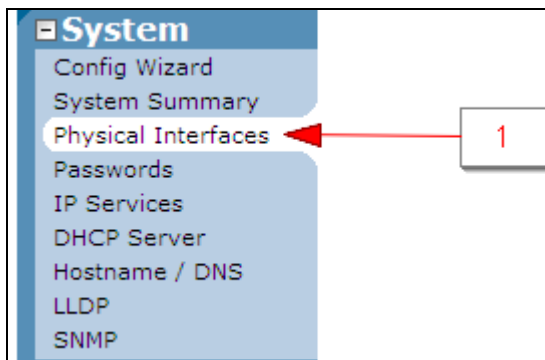
- Configuration for "t1 0/1"**: This section provides basic configuration for the T1 interface. It includes fields for Description, Enable (checkbox), Clocking (set to System-Wide Clock Source), Framing (set to ESF), Coding (set to B8ZS), and FDL (set to ANSI). A red box with the number '4' highlights the **Apply** button at the bottom of this section.
- Configured DS0 Connections for "t1 0/1"**: This section allows connecting a group of DS0s to the interface. It includes an 'Add a Connection' form with fields for Connect To (set to None), Available DS0 Range (All DS0s in use), DS0 Range (1 to 1), and Speed (64kbps). Below this is a table of connected interfaces:

Connected Interface	Multilink	DS0's Used	Group Number	Speed	
ppp 1	Disabled	1-24	1	64kbps	Delete

A red box with the number '5' highlights the **Delete** button in the table row for 'ppp 1'.

5.1.3.2 Configure the Ethernet Interface

1. Select the **Physical Interfaces** link located under the **System** heading in the left hand margin.



2. Click the **eth 0/2** link under the **Name** column header.

A screenshot of the 'Physical Interfaces' configuration page. The left sidebar shows the 'System' menu with 'Physical Interfaces' selected. Below it are 'Voice', 'Data', 'Monitoring', and 'Utilities' sections. A red arrow points from a white box containing the number '2' to the 'eth 0/2' link in the 'Name' column of the table. The table lists various physical interfaces with their logical interfaces, line statuses, and types.

Name	Logical Interface	Line Status	Type
t1 0/1	ppp 1	Up	WAN-T1
t1 0/2	none	Interface Disabled	WAN-T1
t1 0/3	pri 1	Up	WAN-T1
t1 0/4	none	Interface Disabled	WAN-T1
eth 0/1	none	100Mbps/full	Ethernet
eth 0/2	none	Interface Disabled	Ethernet
fxs 0/0	none	Interface Disabled	FXS
fxs 0/1	none	Interface Disabled	FXS
fxs 0/2	none	Interface Disabled	FXS
fxs 0/3	none	Interface Disabled	FXS
fxs 0/4	none	Interface Disabled	FXS
fxs 0/5	none	Interface Disabled	FXS
fxs 0/6	none	Interface Disabled	FXS
fxs 0/7	none	Interface Disabled	FXS
fxs 0/8	none	Interface Disabled	FXS
fxs 0/9	none	Interface Disabled	FXS
fxs 0/10	none	Interface Disabled	FXS
fxs 0/11	none	Interface Disabled	FXS
fxs 0/12	none	Interface Disabled	FXS
fxs 0/13	none	Interface Disabled	FXS
fxs 0/14	none	Interface Disabled	FXS
fxs 0/15	none	Interface Disabled	FXS
fxs 0/16	none	Interface Disabled	FXS
fxs 0/17	none	Interface Disabled	FXS
fxs 0/18	none	Interface Disabled	FXS
fxs 0/19	none	Interface Disabled	FXS
fxs 0/20	none	Interface Disabled	FXS
fxs 0/21	none	Interface Disabled	FXS
fxs 0/22	none	Interface Disabled	FXS
fxs 0/23	none	Interface Disabled	FXS
fxs 0/24	none	Interface Disabled	FXS

3. Enter a label for the interface in the **Description** textbox.
4. Check the **Enable** checkbox.
5. Check the **Traffic Shaping** checkbox.
6. Select the **DHCP** option from the **Address Type** dropdown box.

7. Select the **Primary** option in the **IP Address Type** dropdown box.
8. Click the **Apply** button.

System

Config Wizard

System Summary

Physical Interfaces

Passwords

IP Services

DHCP Server

Hostname / Domain

LLDP

SNMP

Voice

Data

Monitoring

Utilities

Physical Interfaces > Ethernet 0/2

Configuration for "Ethernet 0/2"

Basic configuration for the Ethernet interface.

Description: Ethernet WAN

Description label (optional)

Enable: ☒

Enable or disable this interface.

Speed/Duplex: Auto

Selection of Auto will auto-negotiate the best speed and duplex.

Factory MAC Address: 00 : A0 : C8 : 35 : 93 : EE

The factory Media Access Control address

MAC Address Masquerade: ☐

Check to allow MAC Address Masquerade.

MAC Address: 00 : A0 : C8 : 35 : 93 : EE

Set the masquerade Media Access Control address.

Traffic-Shaping: ☒

Enable traffic-shaping.

Traffic-Shaping rate: 100000000

Outbound rate in bits per second <1000-100000000>

Qos-policy: None

Outbound QoS-Policy map

Interface Mode: IP routing

Select an interface mode.

Wireless Control Protocol

Enable AWCP: ☒

Enable/Disable Wireless Control Protocol.

IP Settings

Address Type: DHCP

Set to 'None' if connecting to a Bridge with IP routing disabled.

Track Name: <None Available>

Removes default routes and DNS servers configured by DHCP when track is not failing. (Optional parameter used with network monitoring.)

Dynamic DNS: <disabled>

Used to register this interface's IP address with a DNS Name.

Media-Gateway

IP Address Type: Primary

RTP traffic will flow over the selected IP address.

Monitoring

RTP Monitoring: ☐

Enables RTP monitoring on this interface.

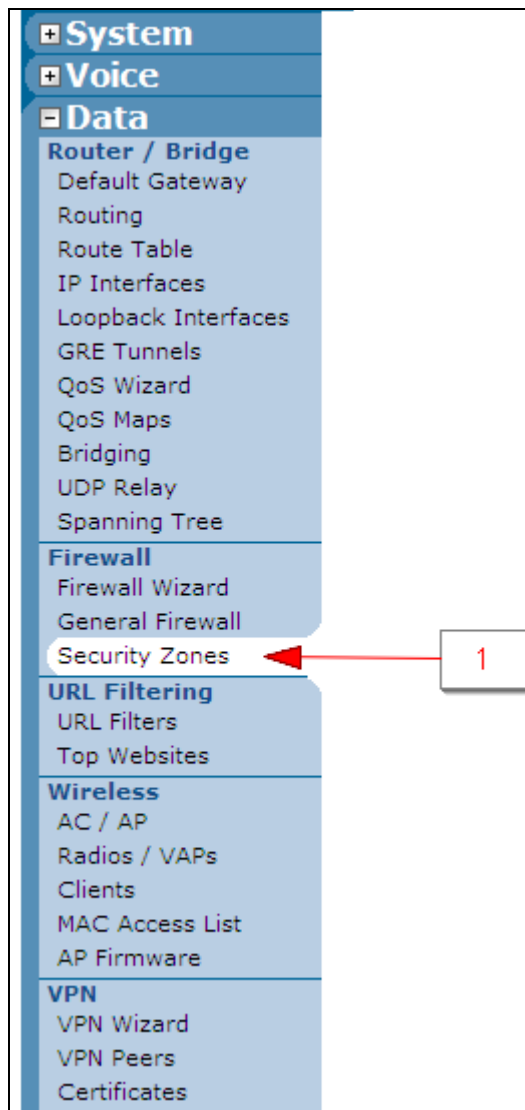
Reset

Apply

5.1.3.3 Re-configure the Firewall

NOTE: In the process of replacing the T1 PPP interface with the Ethernet interface, the firewall policy assigned to the WAN interface by the default configuration is removed by the system and must be re-configured.

1. Select the **Security Zones** link located under the **Data** heading in the left hand margin.



2. Select the **Public** zone in the **New Security Zone** dropdown box for the **eth 0/2** interface.
3. Click the **Assign** button.
4. Click the **Private** link under the **Security Zone** column header.

Assign Interfaces to Security Zones

Each interface must be associated with a Security Zone. A Security Zone is configured with a set of policies that define what action the firewall will perform on data sessions originating from that zone.

Interface Name	Current Security Zone	New Security Zone
eth 0/1	Private	Private
eth 0/2	<none>	Public

Reset Assign

Edit Security Zones

A security zone contains one or more policies. The security zone can be applied to interfaces to allow, discard or NAT traffic as it enters the Total Access. A security zone that has no configured policies will allow all traffic to enter the interface. Click on the 'Active Sessions' number to view the running version of your policy-class association table.

Modify Security Zones

Click on the link on the security zone name in order to modify that security zone.

Security Zone	Active Sessions	
Private	2	Rename
Public	0	Rename
<Click to add a Security Zone>	N/A	Rename

4

5. Click the **NAT list** link under the **Description** column header.

Security Zones > Security Zone 'Private'

Configure Policies for Security Zone 'Private'

New policies can be added to Security Zone 'Private' by clicking the "Add Policy" button. Existing policies can be modified or deleted or their evaluation order may be changed using the list below.

Add New Policy to Security Zone 'Private'

Add Policy to Zone 'Private'

Modify/Delete Policies in Security Zone 'Private'

To view or modify an existing policy, click the "Description" link in the desired row.

Priority	Description	Action
▲ ▼	Allow list PrivateSelf	Advanced Delete
▲ ▼	NAT list NAT	Advanced Delete

Traffic not matching one of the policies above will be blocked.

5

6. Select the **Interface** radial button in the **NAT IP Address** list and select **eth 0/2** from the **Interface** dropdown box.

7. Click the **Apply** button.

System

Voice

Data

Router / Bridge

Default Gateway

Routing

Route Table

IP Interfaces

Loopback Interfaces

GRE Tunnels

QoS Wizard

QoS Maps

Bridging

UDP Relay

Spanning Tree

Firewall

Firewall Wizard

General Firewall

Security Zones

URL Filtering

URL Filters

Top Websites

Wireless

AC / AP

Radios / VAPs

Clients

MAC Access List

AP Firmware

VPN

VPN Wizard

VPN Peers

Security Zones > Security Zone 'Private' > Policy 'NAT list NAT'

Configuration for Policy 'NAT list NAT' in Security Zone 'Private'

Policy Type: Advanced *Allows low-level configuration of all policy parameters.*

Policy Description: NAT list NAT *Optional description for this policy*

Advanced Policy Data

Policy Action: NAT ?

Destination Security Zone: <Any Security Zone> ?

Stateless Processing: ☐ ?

NAT Type: ☒ Source with Overloading ?
☐ Destination ?

☐ Specified ?

NAT IP Address: . . . ?

☒ Interface eth 0/2 ? 6

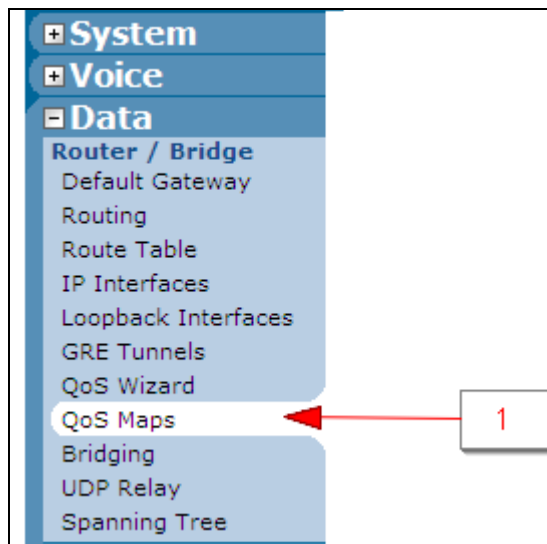
Port Translation: ☒ Disabled ?
☐ Specified ?

Cancel Apply 7

5.1.3.4 Re-configure the QoS Map

NOTE: In the process of replacing the T1 PPP interface with the Ethernet interface, the QoS Map assigned to the WAN interface by the default configuration is removed by the system and must be re-configured.

1. Select the **QoS Maps** link located under the **Data** heading in the left hand margin.



2. Select the **WAN_IN** option in the **Inbound QoS-Policy** dropdown box in the **eth 0/2** row.
3. Select the **WAN_OUT** option in the **Outbound QoS-Policy** dropdown box in the **eth 0/2** row.
4. Click the **Apply** button.

The screenshot displays the BroadSoft configuration interface. On the left is a navigation menu with categories: System, Voice, Data, Firewall, URL Filtering, Wireless, VPN, Monitoring, and Utilities. The 'Data' category is expanded, showing options like Router / Bridge, Default Gateway, Routing, Route Table, IP Interfaces, Loopback Interfaces, GRE Tunnels, QoS Wizard, QoS Maps, Bridging, UDP Relay, and Spanning Tree. The 'QoS Maps' option is selected.

The main content area is titled 'Add / Modify / Delete QoS Map'. It contains two sections:

- Add New QoS Map:** Includes fields for 'Map Name' (with a note: 'QoS map tag. (maximum of 79 characters)') and 'Sequence Number' (with a note: 'Sequence to insert into QoS map entry. Valid values are 0-65535.'). An 'Add' button is at the bottom.
- Modify/Delete a QoS Map:** Includes a table of existing QoS maps and a 'Remove Selected QoS-Maps' button.

The table in the 'Modify/Delete a QoS Map' section is as follows:

<input type="checkbox"/>	Policy	Matching	Marking	Bandwidth (Burst bytes)
<input type="checkbox"/>	LAN_IN-20	ACL	DSCP (46)	disabled
<input type="checkbox"/>	LAN_IN-21	ACL	DSCP (26)	disabled
<input type="checkbox"/>	LAN_OUT-20	DSCP(ef)	disabled	unlimited
<input type="checkbox"/>	LAN_OUT-21	DSCP(af31)	disabled	unlimited
<input type="checkbox"/>	WAN_IN-20	ACL	DSCP (46)	disabled
<input type="checkbox"/>	WAN_IN-21	ACL	DSCP (26)	disabled
<input type="checkbox"/>	WAN_OUT-20	DSCP(ef)	disabled	unlimited
<input type="checkbox"/>	WAN_OUT-21	DSCP(af31)	disabled	unlimited

Below the table is a 'Remove Selected QoS-Maps' button.

The second section, 'Assign a QoS-policy to an Interface', includes a text box explaining that traffic shaping must be enabled for outbound policies. Below this is a 'Modify Assignment' table:

Name	Available Bandwidth(Kbps)	Inbound QoS-policy	Outbound QoS-policy
eth 0/1	75000	LAN_IN	LAN_OUT
eth 0/2	75	WAN_IN	WAN_OUT

At the bottom of the 'Modify Assignment' section are 'Reset' and 'Apply' buttons. Red arrows and numbers 2, 3, and 4 are overlaid on the image to indicate specific steps: arrow 2 points to the 'eth 0/2' row, arrow 3 points to the 'WAN_OUT' dropdown, and arrow 4 points to the 'Apply' button.

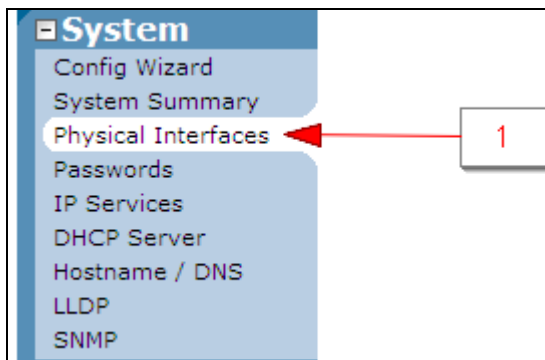
5.1.4 Configuring Ethernet WAN Access with Static IP Addressing

Complete the steps in the following sections to provision an Ethernet interface on the IAD for WAN Access with Static IP Addressing.

NOTE: The steps outlined in this section apply only to the TA908e, TA916e, and TA924e models.

5.1.4.1 Remove the T1 Interface

1. Select the **Physical Interfaces** link located under the **System** heading in the left hand margin.



2. Select the **t1 0/1** link under the **Name** column header.

A screenshot of the 'Physical Interfaces' configuration page. The left sidebar shows the 'System' menu with 'Physical Interfaces' selected. A red arrow points from a box labeled '2' to the 't1 0/1' link in the 'Name' column of the table. The table lists various physical interfaces with their logical interfaces, line status, and types.

Name	Logical Interface	Line Status	Type
t1 0/1	ppp 1	Up	WAN-T1
t1 0/2	none	Interface Disabled	WAN-T1
t1 0/3	pri 1	Up	WAN-T1
t1 0/4	none	Interface Disabled	WAN-T1
eth 0/1	none	100Mbps/full	Ethernet
eth 0/2	none	Interface Disabled	Ethernet
fxs 0/0	none	Interface Disabled	FXS
fxs 0/1	none	Interface Disabled	FXS
fxs 0/2	none	Interface Disabled	FXS
fxs 0/3	none	Interface Disabled	FXS
fxs 0/4	none	Interface Disabled	FXS
fxs 0/5	none	Interface Disabled	FXS
fxs 0/6	none	Interface Disabled	FXS
fxs 0/7	none	Interface Disabled	FXS
fxs 0/8	none	Interface Disabled	FXS
fxs 0/9	none	Interface Disabled	FXS
fxs 0/10	none	Interface Disabled	FXS
fxs 0/11	none	Interface Disabled	FXS
fxs 0/12	none	Interface Disabled	FXS
fxs 0/13	none	Interface Disabled	FXS
fxs 0/14	none	Interface Disabled	FXS
fxs 0/15	none	Interface Disabled	FXS
fxs 0/16	none	Interface Disabled	FXS
fxs 0/17	none	Interface Disabled	FXS
fxs 0/18	none	Interface Disabled	FXS
fxs 0/19	none	Interface Disabled	FXS
fxs 0/20	none	Interface Disabled	FXS
fxs 0/21	none	Interface Disabled	FXS
fxs 0/22	none	Interface Disabled	FXS
fxs 0/23	none	Interface Disabled	FXS
fxs 0/24	none	Interface Disabled	FXS

3. Uncheck the **Enable** checkbox.
4. Click the **Apply** button.
5. Click the **Delete** button located in the **ppp 1** row.

System

- Config Wizard
- System Summary
- Physical Interfaces**
- Passwords
- IP Services
- DHCP Server
- Hostname / DNS
- LLDP
- SNMP

Physical Interfaces > t1 0/1

Configuration for "t1 0/1"

Basic configuration for the T1 interface.

Description: Description label (optional)

Enable: ☐ Enable or disable this interface

Clocking: [System-Wide Clock Source](#) Please go to the 'Clock Source' page to set the system clock source.

Framing: Select the framing that matches the network provider framing format

Coding: Select the coding that matches the network provider line coding

FDL: Select the format for the facility data link channel

Reset Apply

Configured DS0 Connections for "t1 0/1"

Use this dialog to connect a group of DS0's to a particular interface or service provided by this unit. To configure a connected interface's settings, click on the item in the list below. To remap a group of DS0's that are currently in use, click the delete button to remove the connections group.

Add a Connection

Connect To: Select an interface type to map to the DS0s

Available DS0 Range: **All DS0s in use**

DS0 Range: to Set the range of DS0s to be mapped

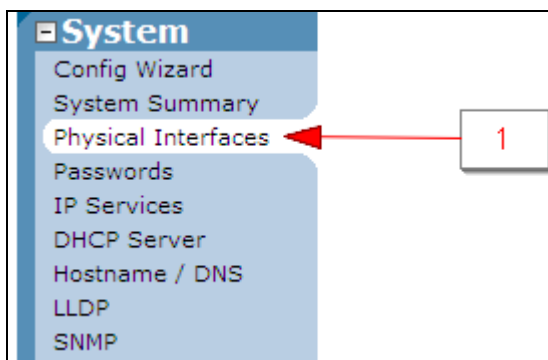
Speed: Select the speed for the DS0s being mapped

Add

Connected Interface	Multilink	DS0's Used	Group Number	Speed	
ppp 1	Disabled	1-24	1	64kbps	Delete

5.1.4.2 Configure the Ethernet Interface

1. Select the **Physical Interfaces** link located under the **System** heading in the left hand margin.



2. Click the **eth 0/2** link under the **Name** column header.

A screenshot of the 'Physical Interfaces' configuration page. The left sidebar shows the 'System' menu with 'Physical Interfaces' selected. Below it are 'Voice', 'Data', 'Monitoring', and 'Utilities'. A red arrow points from a box labeled '2' to the 'eth 0/2' link in the 'Name' column of the table. The table lists various interfaces with their logical interfaces, line statuses, and types.

Name	Logical Interface	Line Status	Type
t1 0/1	ppp 1	Up	WAN-T1
t1 0/2	none	Interface Disabled	WAN-T1
t1 0/3	pri 1	Up	WAN-T1
t1 0/4	none	Interface Disabled	WAN-T1
eth 0/1	none	100Mbps/full	Ethernet
eth 0/2	none	Interface Disabled	Ethernet
fxs 0/0	none	Interface Disabled	FXS
fxs 0/1	none	Interface Disabled	FXS
fxs 0/2	none	Interface Disabled	FXS
fxs 0/3	none	Interface Disabled	FXS
fxs 0/4	none	Interface Disabled	FXS
fxs 0/5	none	Interface Disabled	FXS
fxs 0/6	none	Interface Disabled	FXS
fxs 0/7	none	Interface Disabled	FXS
fxs 0/8	none	Interface Disabled	FXS
fxs 0/9	none	Interface Disabled	FXS
fxs 0/10	none	Interface Disabled	FXS
fxs 0/11	none	Interface Disabled	FXS
fxs 0/12	none	Interface Disabled	FXS
fxs 0/13	none	Interface Disabled	FXS
fxs 0/14	none	Interface Disabled	FXS
fxs 0/15	none	Interface Disabled	FXS
fxs 0/16	none	Interface Disabled	FXS
fxs 0/17	none	Interface Disabled	FXS
fxs 0/18	none	Interface Disabled	FXS
fxs 0/19	none	Interface Disabled	FXS
fxs 0/20	none	Interface Disabled	FXS
fxs 0/21	none	Interface Disabled	FXS
fxs 0/22	none	Interface Disabled	FXS
fxs 0/23	none	Interface Disabled	FXS
fxs 0/24	none	Interface Disabled	FXS

3. Enter a label for the interface in the **Description** textbox.
4. Check the **Enable** checkbox.
5. Check the **Traffic Shaping** checkbox.
6. Select the **Static** option from the **Address Type** dropdown box.

7. Enter the IP Address assigned to the WAN interface in the **IP Address** textboxes.
8. Enter the Subnet Mask assigned to the WAN interface in the **Subnet Mask** textboxes.
9. Select the **Primary** option in the **IP Address Type** dropdown box.
10. Click the **Apply** button.

System

- Config Wizard
- System Summary
- Physical Interfaces**
- Passwords
- IP Services
- DHCP Server
- Hostname / Domain
- LLDP
- SNMP

Voice

Data

Monitoring

Utilities

Physical Interfaces > Ethernet 0/2

Configuration for "Ethernet 0/2"

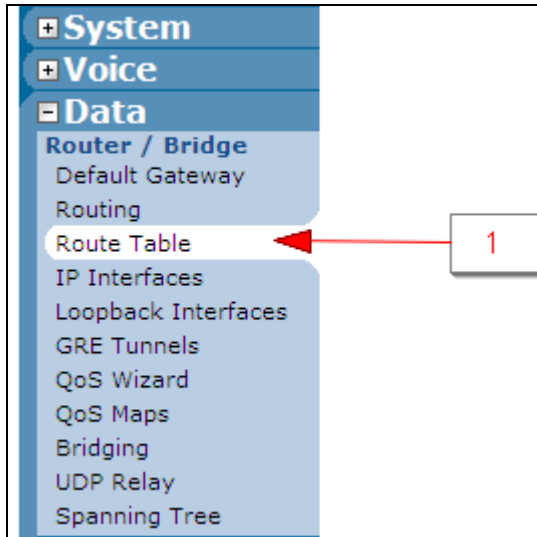
Basic configuration for the Ethernet interface.

Description:	Ethernet WAN	Description label (optional)
Enable:	<input checked="" type="checkbox"/>	Enable or disable this interface.
Speed/Duplex:	Auto	Selection of Auto will auto-negotiate the best speed and duplex.
Factory MAC Address:	00 : A0 : C8 : 35 : 93 : EE	The factory Media Access Control address
MAC Address Masquerade:	<input type="checkbox"/>	Check to allow MAC Address Masquerade.
MAC Address:	00 : A0 : C8 : 35 : 93 : EE	Set the masquerade Media Access Control address.
Traffic-Shaping:	<input checked="" type="checkbox"/>	Enable traffic-shaping.
Traffic-Shaping rate:	100000000	Outbound rate in bits per second <1000-100000000>
Qos-policy:	None	Outbound QoS-Policy map
Interface Mode:	IP routing	Select an interface mode.
Wireless Control Protocol		
Enable AWCP:	<input checked="" type="checkbox"/>	Enable/Disable Wireless Control Protocol.
IP Settings		
Address Type:	Static	Set to 'None' if connecting to a Bridge with IP routing disabled.
IP Address:	192 . 168 . 78 . 45	IP address for this numbered interface
Subnet Mask:	255 . 255 . 255 . 0	Subnet Mask for this numbered interface
Dynamic DNS:	<disabled>	Used to register this interface's IP address with a DNS Name.
Media-Gateway		
IP Address Type:	Primary	RTP traffic will flow over the selected IP address.
Monitoring		
RTP Monitoring:	<input type="checkbox"/>	Enables RTP monitoring on this interface.

Reset Apply

5.1.4.3 Default Route Configuration

1. Select the **Route Table** link located under the **Data** heading in the left hand margin.



2. Enter an address of 0.0.0.0 in the **Destination Address** textboxes.
3. Enter a subnet mask of 0.0.0.0 in the **Destination Mask** textboxes.
4. Select the **Address** radial button in the **Gateway** list and enter the default gateway address.
5. Click the **Add** button.

System
Voice
Data
Router / Bridge
Default Gateway
Routing
Route Table
IP Interface
Loopback Interfaces
GRE Tunnels
QoS Wizard
QoS Maps
Bridging
UDP Relay
Spanning Tree
Firewall
Firewall Wizard
General Firewall
Security Zones
URL Filtering
URL Filters
Top Websites
Wireless
AC / AP
Radios / VAPs
Clients
MAC Access List
AP Firmware

Add a Static Route to the Route Table

Static Routes are often required to reach networks that are not learned via a dynamic routing protocol. Enter the appropriate information below to add a static route or click on a route below to use it as a template for a new route. [IP Routing](#) must be enabled in order to add static routes.

Destination Address: . . . Enter the network to add to the route table.

Destination Mask: . . . Enter the appropriate mask for this network.

Gateway:

☒ Address . . . Enter the gateway address to reach this network.
- OR -
☐ Interface Select the interface to be used as the gateway.

Administrative Distance (optional): The Distance metric for this network. (Optional parameter)

Tag (optional): Set an administrative tag on this route (Optional parameter)

Track Name (optional): Activates this route only while the specified track is not failing. (Optional parameter used when network monitoring is active.)

5.1.4.4 Assign DNS Servers

1. Select the **Hostname/DNS** link located under the **System** heading in the left hand margin.

System
Config Wizard
System Summary
Physical Interfaces
Passwords
IP Services
DHCP Server
Hostname / DNS
LLDP
SNMP

2. Enter the IP Address of the first DNS Server in the **Primary DNS IP Address** textboxes.
3. If applicable, enter the IP Address of the second DNS Server in the **Secondary DNS IP Address** textboxes.
4. Check the **Enable DNS Lookup** checkbox.
5. Check the **Enable DNS Proxy** checkbox.

6. Click the **Apply** button.

System

- Config Wizard
- System Summary
- Physical Interfaces
- Passwords
- IP Services
- DHCP Server
- Hostname / DNS**
- LLDP
- SNMP

+ Voice

+ Data

+ Monitor

+ Utilities

DNS Setup

Configure the hostname and domain name for the Total Access. The domain name is used when hosts on the private network of the Total Access use DNS queries to resolve domain names.

Host Name: Alphanumeric string to be used as a unique description for the unit.

Domain: Default IP domain name to be used by the unit to resolve host names. ?

Primary DNS IP Address: . . . Primary name server to use for name-to-address resolution (optional).

Secondary DNS IP Address: . . . Secondary name server to use for name-to-address resolution (optional).

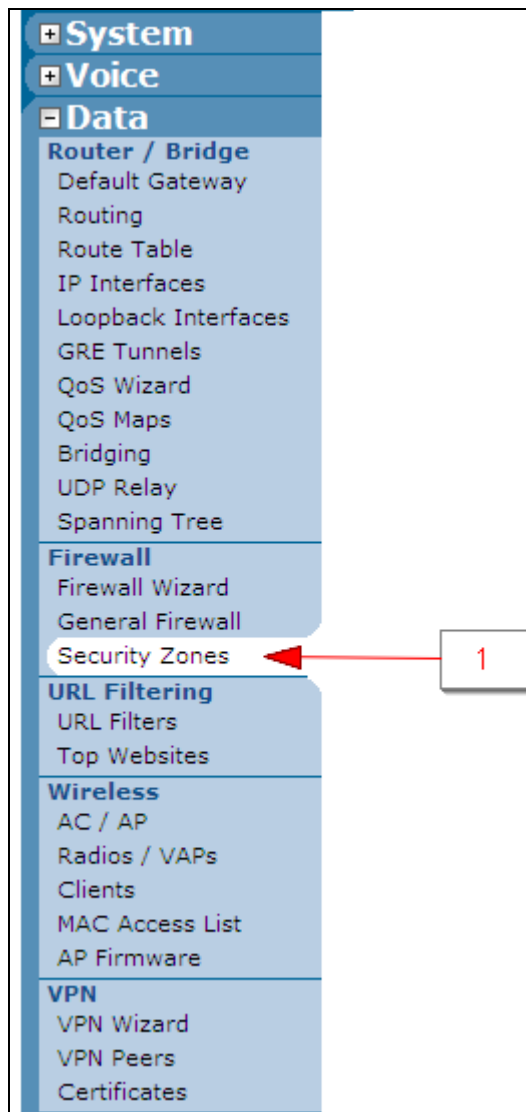
Enable DNS Lookup: ☒ Enable/Disable the IP DNS (domain naming system), allowing DNS-based host translation (name-to-address).

Enable DNS Proxy: ☒ Enable/Disable DNS proxy for the router. This enables the router to act as a proxy for other units on the network.

5.1.4.5 Re-configure the Firewall

NOTE: In the process of replacing the T1 PPP interface with the Ethernet interface, the firewall policy assigned to the WAN interface by the default configuration is removed by the system and must be re-configured.

1. Select the **Security Zones** link located under the **Data** heading in the left hand margin.



2. Select the **Public** zone in the **New Security Zone** dropdown box for the **eth 0/2** interface.
3. Click the **Assign** button.
4. Click the **Private** link under the **Security Zone** column header.

Assign Interfaces to Security Zones

Each interface must be associated with a Security Zone. A Security Zone is configured with a set of policies that define what action the firewall will perform on data sessions originating from that zone.

Interface Name	Current Security Zone	New Security Zone
eth 0/1	Private	Private
eth 0/2	<none>	Public

Buttons: Reset, Assign

Edit Security Zones

A security zone contains one or more policies. The security zone can be applied to interfaces to allow, discard or NAT traffic as it enters the Total Access. A security zone that has no configured policies will allow all traffic to enter the interface. Click on the 'Active Sessions' number to view the running version of your policy-class association table.

Modify Security Zones

Click on the link on the security zone name in order to modify that security zone.

Security Zone	Active Sessions	
Private	2	Rename
Public	0	Rename
<Click to add a Security Zone>	N/A	Rename

Callout boxes: 2 points to the 'Public' dropdown in the 'New Security Zone' column; 3 points to the 'Assign' button; 4 points to the 'Security Zones' link in the left sidebar.

5. Click the **NAT list** link under the **Description** column header.

Security Zones > Security Zone 'Private'

Configure Policies for Security Zone 'Private'

New policies can be added to Security Zone 'Private' by clicking the "Add Policy" button. Existing policies can be modified or deleted or their evaluation order may be changed using the list below.

Add New Policy to Security Zone 'Private'

[Add Policy to Zone 'Private'](#)

Modify/Delete Policies in Security Zone 'Private'

To view or modify an existing policy, click the "Description" link in the desired row.

Priority	Description	Action
▲ ▼	Allow list PrivateSelf	Advanced Delete
▲ ▼	NAT list NAT	Advanced Delete

Traffic not matching one of the policies above will be blocked.

Callout box 5 points to the 'NAT list NAT' link in the 'Description' column.

6. Select the **Interface** radial button in the **NAT IP Address** list and select **eth 0/2** from the **Interface** dropdown box.

7. Click the **Apply** button.

System

Voice

Data

- Router / Bridge
- Default Gateway
- Routing
- Route Table
- IP Interfaces
- Loopback Interfaces
- GRE Tunnels
- QoS Wizard
- QoS Maps
- Bridging
- UDP Relay
- Spanning Tree

Firewall

- Firewall Wizard
- General Firewall
- Security Zones

URL Filtering

- URL Filters
- Top Websites

Wireless

- AC / AP
- Radios / VAPs
- Clients
- MAC Access List
- AP Firmware

VPN

- VPN Wizard
- VPN Peers

Security Zones > Security Zone 'Private' > Policy 'NAT list NAT'

Configuration for Policy 'NAT list NAT' in Security Zone 'Private'

Policy Type: Advanced *Allows low-level configuration of all policy parameters.*

Policy Description: NAT list NAT *Optional description for this policy*

Advanced Policy Data

Policy Action: NAT ?

Destination Security Zone: <Any Security Zone> ?

Stateless Processing: ☐ ?

NAT Type: ☒ Source with Overloading ?
☐ Destination ?

NAT IP Address: . . . ?

☒ Interface eth 0/2 ?

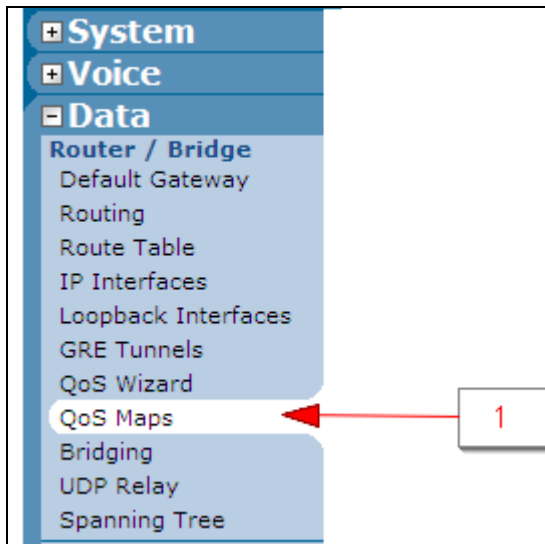
Port Translation: ☒ Disabled ?
☐ Specified ?

Cancel Apply

5.1.4.6 Re-configure the QoS Map

NOTE: In the process of replacing the T1 PPP interface with the Ethernet interface, the QoS Map assigned to the WAN interface by the default configuration is removed by the system and must be re-configured.

1. Select the **QoS Maps** link located under the **Data** heading in the left hand margin.



2. Select the **WAN_IN** option in the **Inbound QoS-Policy** dropdown box in the **eth 0/2** row.
3. Select the **WAN_OUT** option in the **Outbound QoS-Policy** dropdown box in the **eth 0/2** row.
4. Click the **Apply** button.

+ System

+ Voice

+ Data

Router / Bridge

Default Gateway

Routing

Route Table

IP Interfaces

Loopback Interfaces

GRE Tunnels

QoS Wizard

QoS Maps

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Radios / VAPs

Clients

MAC Access List

AP Firmware

VPN

VPN Wizard

VPN Peers

Certificates

+ Monitoring

+ Utilities

Add / Modify / Delete QoS Map

Configure a QoS Map ?

Add New QoS Map

Map Name: QoS map tag. (maximum of 79 characters)

Sequence Number: Sequence to insert into QoS map entry. Valid values are 0-65535.

Modify/Delete a QoS Map

To view or modify an existing QoS map, click the link in the desired row. A '*' in the bandwidth column denotes class based bandwidth otherwise the bandwidth is priority based.

<input type="checkbox"/>	Policy	Matching	Marking	Bandwidth (Burst bytes)
<input type="checkbox"/>	LAN_IN-20	ACL	DSCP (46)	disabled
<input type="checkbox"/>	LAN_IN-21	ACL	DSCP (26)	disabled
<input type="checkbox"/>	LAN_OUT-20	DSCP(ef)	disabled	unlimited
<input type="checkbox"/>	LAN_OUT-21	DSCP(af31)	disabled	unlimited
<input type="checkbox"/>	WAN_IN-20	ACL	DSCP (46)	disabled
<input type="checkbox"/>	WAN_IN-21	ACL	DSCP (26)	disabled
<input type="checkbox"/>	WAN_OUT-20	DSCP(ef)	disabled	unlimited
<input type="checkbox"/>	WAN_OUT-21	DSCP(af31)	disabled	unlimited

Assign a QoS-policy to an Interface

Assign a QoS policy to an interface's input/output. If traffic shaping is disabled, you must click on the link provided and enable traffic shaping before assigning an outbound policy to that interface.

Modify Assignment

Name	Available Bandwidth(Kbps)	Inbound QoS-policy	Outbound QoS-policy
eth 0/1	75000	<div style="border: 1px solid #ccc; padding: 2px;">LAN_IN</div>	<div style="border: 1px solid #ccc; padding: 2px;">LAN_OUT</div>
eth 0/2	75	<div style="border: 1px solid #ccc; padding: 2px;">WAN_IN</div>	<div style="border: 1px solid #ccc; padding: 2px;">WAN_OUT</div>

5.2 Voice Configuration

The following sub-sections will detail procedures that can be used to customize the voice configuration of the IAD. These procedures include configuring the PRI name delivery method, reducing the number of B Channels on the PRI, configuring an additional PRI, configuring a CAS trunk, and configuring an analog FXS user.

5.2.1 Configuring PRI Name Delivery

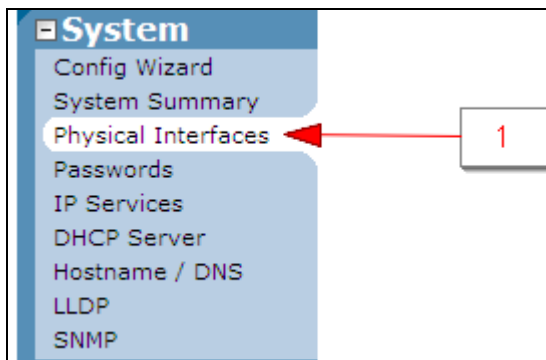
The default configuration of the Total Access has the PRI configured to send calling name to the CPE via the PRI Setup message sent to initiate calls. Some CPE require that the calling name be sent at different points in the call setup. This section will define the

steps that must be completed in order to change the method used by the Total Access to deliver calling name to the CPE.

NOTE: The Total Access supports four methods of delivering Calling Name over a PRI to the CPE. These methods are:

1. *None -> Calling Name is not delivered.*
2. *Setup -> Calling Name is delivered via a Facility IE within the Setup message.*
3. *Proceeding -> Calling Name is delivered in a Facility message after the CPE has sent the Call Proceeding Message.*
4. *Display -> Calling Name is delivered via a Display IE within the Setup message.*

1. Select the **Physical Interfaces** link located under the **System** heading in the left hand margin.



2. Select the **pri 1** link under the **Logical Interface** column header.

System

Config Wizard

System Summary

Physical Interfaces

Passwords

IP Services

DHCP Server

Hostname / DNS

LLDP

SNMP

Voice

Data

Monitoring

Utilities

Physical Interfaces

This is a list of all the physical interfaces that are either physically tied to the product or connected via a plug-in module. View or edit the configuration of an interface by clicking its name.

Name	Logical Interface	Line Status	Type
t1 0/1	ppp 1	Up	WAN-T1
t1 0/2	none	Interface Disabled	WAN-T1
t1 0/3	pri 1	Interface Disabled	WAN-T1
t1 0/4	none	Interface Disabled	WAN-T1
eth 0/1	none	100Mbps/full	Ethernet
eth 0/2	none	Interface Disabled	Ethernet
fxo 0/0	none	Interface Disabled	FXO
fxs 0/1	none	Interface Disabled	FXS
fxs 0/2	none	Interface Disabled	FXS
fxs 0/3	none	Interface Disabled	FXS
fxs 0/4	none	Interface Disabled	FXS
fxs 0/5	none	Interface Disabled	FXS
fxs 0/6	none	Interface Disabled	FXS
fxs 0/7	none	Interface Disabled	FXS
fxs 0/8	none	Interface Disabled	FXS
fxs 0/9	none	Interface Disabled	FXS
fxs 0/10	none	Interface Disabled	FXS
fxs 0/11	none	Interface Disabled	FXS
fxs 0/12	none	Interface Disabled	FXS
fxs 0/13	none	Interface Disabled	FXS
fxs 0/14	none	Interface Disabled	FXS
fxs 0/15	none	Interface Disabled	FXS
fxs 0/16	none	Interface Disabled	FXS
fxs 0/17	none	Interface Disabled	FXS
fxs 0/18	none	Interface Disabled	FXS
fxs 0/19	none	Interface Disabled	FXS
fxs 0/20	none	Interface Disabled	FXS
fxs 0/21	none	Interface Disabled	FXS
fxs 0/22	none	Interface Disabled	FXS
fxs 0/23	none	Interface Disabled	FXS
fxs 0/24	none	Interface Disabled	FXS

3. Select the appropriate name delivery method from the **Name Delivery** dropdown box.
4. Click the **Apply** button.

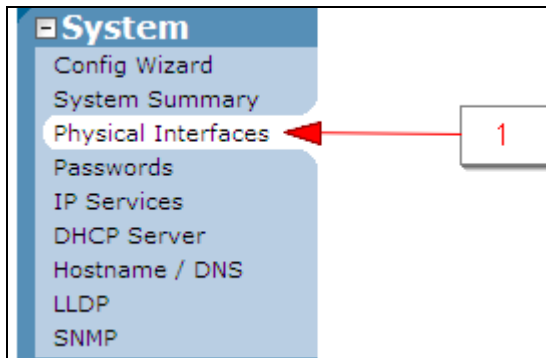
5.2.2 Reducing the Number of Active PRI B-Channels

The default configuration of the Total Access has all 23 B-Channels on the PRI set to active. Some implementations require a smaller number of B-Channels in order to implement the PRI. This section will cover the steps that must be performed to reduce the number of active B-Channels on the PRI.

NOTE: If the number of active B-Channels is less than the number of SIP Trunks provisioned through the SIP Advantage service, the total number of simultaneous calls will be determined by the total number of active B-Channels. Because of this, it is recommended that all PRI B-Channels be provisioned in the active state and the total number of simultaneous calls be controlled through the SIP Advantage service. Doing so will eliminate the need to activate or deactivate B-Channels if more or less simultaneous calls are needed in the future.

5.2.2.1 T1 Interface Configuration

1. Select the **Physical Interfaces** link located under the **System** heading in the left hand margin.



2. Select the **t1 0/3** link under the **Name** column header.

A screenshot of the 'Physical Interfaces' configuration page. The left-hand margin shows the 'System' menu with 'Physical Interfaces' selected. A red arrow points from a box containing the number '2' to the 't1 0/3' link in the 'Name' column of the table. The table lists various physical interfaces with their logical interfaces, line status, and types.

Name	Logical Interface	Line Status	Type
t1 0/1	ppp 1	Up	WAN-T1
t1 0/2	none	Interface Disabled	WAN-T1
t1 0/3	pri 1	Up	WAN-T1
t1 0/4	none	Interface Disabled	WAN-T1
eth 0/1	none	100Mbps/full	Ethernet
eth 0/2	none	Interface Disabled	Ethernet
fxo 0/0	none	Interface Disabled	FXO
fxs 0/1	none	Interface Disabled	FXS
fxs 0/2	none	Interface Disabled	FXS
fxs 0/3	none	Interface Disabled	FXS
fxs 0/4	none	Interface Disabled	FXS
fxs 0/5	none	Interface Disabled	FXS
fxs 0/6	none	Interface Disabled	FXS
fxs 0/7	none	Interface Disabled	FXS
fxs 0/8	none	Interface Disabled	FXS
fxs 0/9	none	Interface Disabled	FXS
fxs 0/10	none	Interface Disabled	FXS
fxs 0/11	none	Interface Disabled	FXS
fxs 0/12	none	Interface Disabled	FXS
fxs 0/13	none	Interface Disabled	FXS
fxs 0/14	none	Interface Disabled	FXS
fxs 0/15	none	Interface Disabled	FXS
fxs 0/16	none	Interface Disabled	FXS
fxs 0/17	none	Interface Disabled	FXS
fxs 0/18	none	Interface Disabled	FXS
fxs 0/19	none	Interface Disabled	FXS
fxs 0/20	none	Interface Disabled	FXS
fxs 0/21	none	Interface Disabled	FXS
fxs 0/22	none	Interface Disabled	FXS
fxs 0/23	none	Interface Disabled	FXS
fxs 0/24	none	Interface Disabled	FXS

3. Click the **Delete** button located in the **pri 1** row.

System

Config Wizard
System Summary
Physical Interfaces
Passwords
IP Services
DHCP Server
Hostname / DNS
LLDP
SNMP

Voice

Data

Monitoring

Utilities

Physical Interfaces > t1 0/3

Configuration for "t1 0/3"

Basic configuration for the T1 interface.

Description: PRI One

Description label (optional)

Enable: ☒

Enable or disable this interface

Clocking: [System-Wide Clock Source](#)

Please go to the 'Clock Source' page to set the system clock source.

Framing: ESF

Select the framing that matches the network provider framing format

Coding: B8ZS

Select the coding that matches the network provider line coding

FDL: ANSI

Select the format for the facility data link channel

Reset Apply

Configured DS0 Connections for "t1 0/3"

Use this dialog to connect a group of DS0's to a particular interface or service provided by this unit. To configure a connected interface's settings, click on the item in the list below. To remap a group of DS0's that are currently in use, click the delete button to remove the connections group.

Add a Connection

Connect To: None

Select an interface type to map to the DS0s

Available DS0 Range: All DS0s in use

DS0 Range: 1 to 1

Set the range of DS0s to be mapped

Speed: 64kbps

Select the speed for the DS0s being mapped

Add

Connected Interface	Multilink	DS0's Used	Group Number	Speed	
pri 1	N/A	1-24	1	3	64kbps Delete

- Select the **PRI** option in the **Connect To** dropdown box.
- Select the range of DS0s that will be assigned to the T1 from the **DS0 Range** dropdown boxes.
- Click the **Add** button to commit the changes and advance the screen to the PRI configuration page.

System

- Config Wizard
- System Summary
- Physical Interfaces**
- Passwords
- IP Services
- DHCP Server
- Hostname / DNS
- LLDP
- SNMP

+ Voice

+ Data

+ Monitoring

+ Utilities

Physical Interfaces > t1 0/3

Configuration for "t1 0/3"

Basic configuration for the T1 interface.

Description:	PRI One	Description label (optional)
Enable:	<input checked="" type="checkbox"/>	Enable or disable this interface
Clocking:	System-Wide Clock Source	Please go to the ' Clock Source ' page to set the system clock source.
Framing:	ESF	Select the framing that matches the network provider framing format ?
Coding:	B8ZS	Select the coding that matches the network provider line coding
FDL:	ANSI	Select the format for the facility data link channel ?

Reset Apply

Configured DS0 Connections for "t1 0/3"

Use this dialog to connect a group of DS0's to a particular interface or service provided by this unit. To configure a connected interface's settings, click on the item in the list below. To remap a group of DS0's that are currently in use, click the delete button to remove the connections group.

Add a Connection

Connect To: PRI Select an interface type to map to the DS0s

Available DS0 Range: 1-24

DS0 Range: 1 to 10 + 24 Set the range of DS0s to be mapped

Speed: 64kbps Select the speed for the DS0s being mapped

Add

Connected Interface	Multilink	DS0's Used	Group Number	Speed
There are no connections configured				

5.2.2.2 PRI Interface Configuration

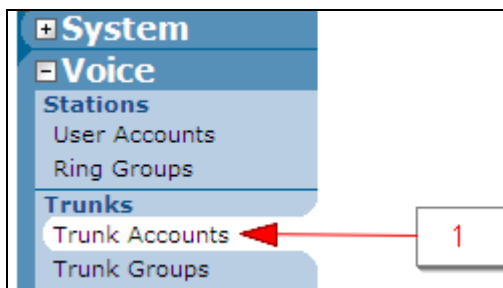
1. Enter a label for the PRI interface in the **Description** textbox.
2. Check the **Enable** checkbox.
3. Select the appropriate type from the **Switch Type** dropdown box.
4. Select the appropriate emulation from the **Protocol Emulation** dropdown box.
5. Select the appropriate delivery method from the **Name Delivery** dropdown box.

6. Select the appropriate number of digits to transfer from the **Digits Transferred** dropdown box.
7. Click the **Apply** button.

The screenshot shows the BroadSoft configuration interface. On the left, the 'Physical Interfaces' link is highlighted with a red box and arrow labeled '1'. The main area displays the 'PRI Configuration' form. The 'Digits Transferred' dropdown menu is set to 'All' and is highlighted with a red box and arrow labeled '6'. The 'Apply' button at the bottom right is highlighted with a red box and arrow labeled '7'.

5.2.2.3 Re-configure the Trunk Account

1. Select the **Trunk Accounts** link located under the **Voice** heading in the left hand margin.



2. Click the **TDM Trunk To CPE** link under the **Trunk Name** column header.

System

- Voice**
 - Stations
 - User Accounts
 - Ring Groups
 - Trunks
 - Trunk Accounts
 - Trunk Groups
 - System Setup
 - Classes of Service
 - Dial Plan
 - ISDN Num Templates
 - SPRE Templates
 - Codec Lists
 - Call Coverage Lists
 - System Parameters
 - Local SIP **2**
 - Local SIP Proxy
 - SIP Client Locations
 - VoIP Settings
 - Email Alerts

Add / Modify / Delete Trunk Accounts

Use this page to add and configure trunk accounts.

Add a New Trunk Account

Trunk Name:

Type:

Modify/Delete Trunk Account

Click on a name to edit that trunk's settings.

Trunk Name	ID	Type	Supervision	Role	
TDM Trunk To CPE	T02	ISDN	ISDN	Network	<input type="button" value="Delete"/>
VoIP Trunk To Adpt Tech	T01	SIP	SIP	User	<input type="button" value="Delete"/>

3. Select the **pri 1** option from the **ISDN Interface** dropdown box.
4. Click the **Apply** button.

System

Voice

Stations

User Accounts

Ring Groups

Trunks

Trunk Accounts

Trunk Groups

System Setup

Classes of Service

Dial Plan

ISDN Num Templates

SPRE Templates

Codec Lists

Call Coverage Lists

System Parameters

Local SIP Server

Local SIP Proxy

SIP Client Locations

VoIP Settings

Email Alerts

Reports

Extensions List

SIP Registrations

Call Quality Stats

RTP Channel Stats

RTP Session Stats

Trunk Statistics

Data

Monitoring

Utilities

Trunk Accounts > 'TDM Trunk To CPE'

Trunk Status

Use this dialog to view the operational status of this trunk. The administrative status can be used to transition trunks in and out of service.

Operational Status: Available

Administrative Status: Enabled

Reset Apply

Edit Trunk

Use this dialog to modify the Trunk Account configuration.

Trunk Account Information

Trunk ID: T02

Type: ISDN

Supervision: ISDN

Trunk Name: TDM Trunk To CPE

Reject External: ☐

Resource Selection: Linear Hunt Descending

Emergency Caller ID Override:

Inbound Caller ID Override:

Inbound Caller ID Override Method: Always

ISDN Settings

ISDN Interface: pri 1

Min Needed B Channels: ☒ Not specified ☐ Specified:

Max Needed B Channels: ☒ Not specified ☐ Specified:

VoIP Settings **DNIS Substitution**

Codec Group: ATVN_Default (G.729, G.711 uLaw, G.711 aLaw)

Modem Passthrough: ☐ Enabled

Detection Timespan: 8 secs <0-8>

VAD: ☐ Enabled

PLC: ☒ Enabled

NLS: ☒ Enabled

ALC: ☐ Enabled

Echo Cancellation: ☒ Enabled

RTP Settings

Frame Packetization: 20 ms

Packet Delay Mode: Adaptive

Nominal: 50 ms <10 - 240, incr of 10>

Maximum: 100 ms <40 - 320, incr of 10>

Packet Delay: Fax: 50 ms <0 - 500>

Set to Defaults

DTMF Relay: ☐ Inband ☒ NTE Value: 101 <96 - 127>

RTP DSCP Value: ☒ Use Global Default: 46 ☐ Specified: 0 <0 - 63>

Cancel Apply

5.2.3 Configuring Multiple PRI

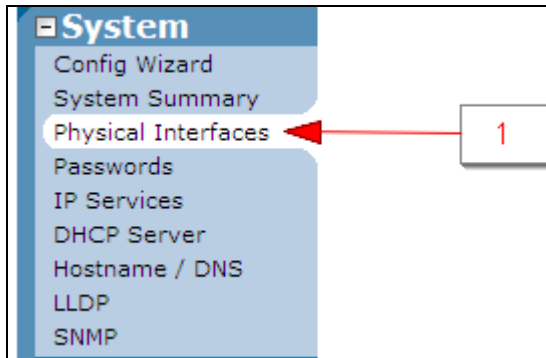
Complete the steps in the following sections to provision multiple PRI interfaces on the IAD.

NOTE: Non-Facility Associated Signaling (NFAS) is a feature that allows a PRI configuration where multiple PRIs can share a D channel. The IADs do not make use of this feature in their support of multiple PRI. Instead, they create two unique PRI each with its own D-channel and then group them together under a common trunk group.

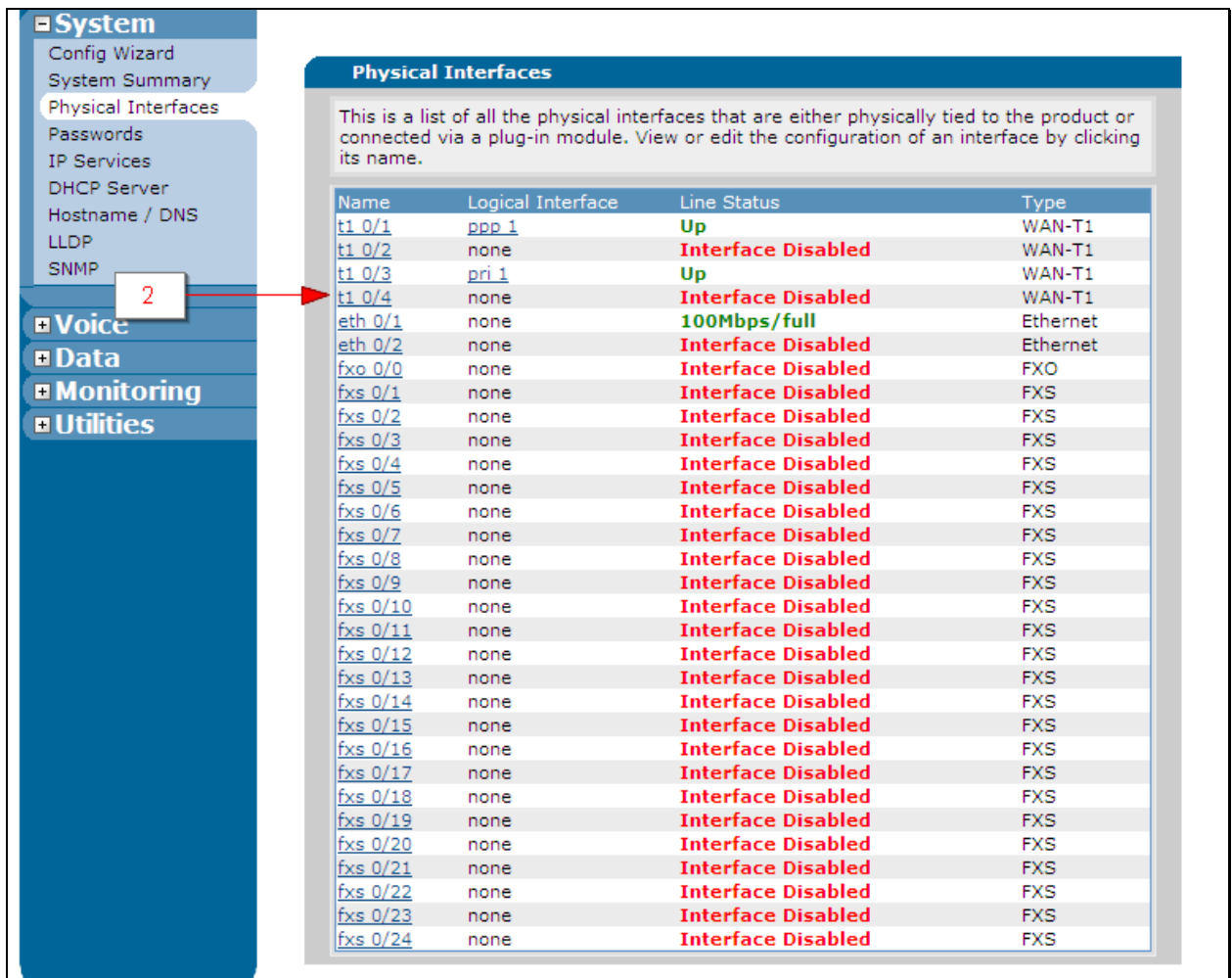
NOTE: The steps outlined in this section apply only to the TA908e, TA916e, and TA924e models.

5.2.3.1 T1 Interface Configuration

1. Select the **Physical Interfaces** link located under the **System** heading in the left hand margin.



2. Select the **t1 0/4** link under the **Name** column header.



System

- Config Wizard
- System Summary
- Physical Interfaces**
- Passwords
- IP Services
- DHCP Server
- Hostname / DNS
- LLDP
- SNMP

Physical Interfaces

This is a list of all the physical interfaces that are either physically tied to the product or connected via a plug-in module. View or edit the configuration of an interface by clicking its name.

Name	Logical Interface	Line Status	Type
t1 0/1	ppp 1	Up	WAN-T1
t1 0/2	none	Interface Disabled	WAN-T1
t1 0/3	pri 1	Up	WAN-T1
t1 0/4	none	Interface Disabled	WAN-T1
eth 0/1	none	100Mbps/full	Ethernet
eth 0/2	none	Interface Disabled	Ethernet
fxo 0/0	none	Interface Disabled	FXO
fxs 0/1	none	Interface Disabled	FXS
fxs 0/2	none	Interface Disabled	FXS
fxs 0/3	none	Interface Disabled	FXS
fxs 0/4	none	Interface Disabled	FXS
fxs 0/5	none	Interface Disabled	FXS
fxs 0/6	none	Interface Disabled	FXS
fxs 0/7	none	Interface Disabled	FXS
fxs 0/8	none	Interface Disabled	FXS
fxs 0/9	none	Interface Disabled	FXS
fxs 0/10	none	Interface Disabled	FXS
fxs 0/11	none	Interface Disabled	FXS
fxs 0/12	none	Interface Disabled	FXS
fxs 0/13	none	Interface Disabled	FXS
fxs 0/14	none	Interface Disabled	FXS
fxs 0/15	none	Interface Disabled	FXS
fxs 0/16	none	Interface Disabled	FXS
fxs 0/17	none	Interface Disabled	FXS
fxs 0/18	none	Interface Disabled	FXS
fxs 0/19	none	Interface Disabled	FXS
fxs 0/20	none	Interface Disabled	FXS
fxs 0/21	none	Interface Disabled	FXS
fxs 0/22	none	Interface Disabled	FXS
fxs 0/23	none	Interface Disabled	FXS
fxs 0/24	none	Interface Disabled	FXS

- Enter a label for the T1 in the **Description** textbox.
- Select the **Enable** checkbox.
- Select the appropriate framing from the **Framing** dropdown box.
- Select the appropriate coding from the **Coding** dropdown box.
- Select the appropriate facility data link formatting from the **FDL** dropdown box.
- Click the **Apply** button.
- Select the **PRI** option from the **Connect To** dropdown box.
- Select the range of DS0s that will be assigned to the T1 from the **DS0 Range** dropdown boxes.
- Click the **Add** button to commit the changes and advance the screen to the PRI configuration page.

System

- Config Wizard
- System Summary
- Physical Interfaces
- Passwords
- IP Services
- DHCP Server
- Hostname / Domain
- LLDP
- SNMP

Physical Interfaces > t1 0/4

Configuration for "t1 0/4"

Basic configuration for the T1 interface.

Description: *Description label (optional)*

Enable: ☒ *Enable or disable this interface*

Clocking: [System-Wide Clock Source](#) *Please go to the 'Clock Source' page to set the system clock source.*

Framing: *Select the framing that matches the network provider framing format*

Coding: *Select the coding that matches the network provider line coding*

FDL: *Select the format for the facility data link channel*

Settings applied successfully

Configured DS0 Connections for "t1 0/4"

Use this dialog to connect a group of DS0's to a particular interface or service provided by this unit. To configure a connected interface's settings, click on the item in the list below. To remap a group of DS0's that are currently in use, click the delete button to remove the connections group.

Add a Connection

Connect To: *Select an interface type to map to the DS0s*

Available DS0 Range: 1-24

DS0 Range: to + 24 *Set the range of DS0s to be mapped*

Speed: *Select the speed for the DS0s being mapped*

Connected Interface	Multilink	DS0's Used	Group Number	Speed
There are no connections configured				

5.2.3.2 PRI Interface Configuration

1. Enter a label for the PRI interface in the **Description** textbox.
2. Check the **Enable** checkbox.
3. Select the appropriate type from the **Switch Type** dropdown box.
4. Select the appropriate emulation from the **Protocol Emulation** dropdown box.
5. Select the appropriate delivery method from the **Name Delivery** dropdown box.

6. Select the appropriate number of digits to transfer from the **Digits Transferred** dropdown box.
7. Click the **Apply** button.

System
Config Wizard
System Summary
Physical Interfaces
Passwords
IP Services
DHCP Server
Hostname / DNS
LLDP
SNMP

Physical Interfaces > t1 0/4 > PRI Config

PRI Configuration
Basic configuration for PRI interface.

Description: pri 2

SNMP Alias:

Enabled: ☒

Switch Type: National ISDN 2

Protocol Emulation: Network

B-Channel Restart: ☐ Enabled

Resource Selection: Auto

Name Delivery: setup

Digits Transferred: All

Digit Prefix:

Cancel Apply

5.2.3.3 Add New Trunk Account

1. Select the **Trunk Accounts** link located under the **Voice** heading in the left hand margin.

System
Voice
Stations
User Accounts
Ring Groups
Trunks
Trunk Accounts
Trunk Groups

2. Enter a name for the trunk in the **Trunk Name** textbox.
3. Select the **ISDN** option from the **Type** dropdown box.
4. Click the **Add** button to commit the changes and advance the screen to the Trunk Account configuration page.

System

- Voice**
 - Stations
 - User Accounts
 - Ring Groups
 - Trunks
 - Trunk Account **2**
 - Trunk Groups
 - System Setup
 - Classes of Service **3**
 - Dial Plan
 - ISDN Num Templates
 - SPRE Templates
 - Codec Lists
 - Call Coverage Lists
 - System Parameters
 - Local SIP Server
 - Local SIP Proxy
 - SIP Client Locations
 - VoIP Settings
 - Facsimile Alerts

Add / Modify / Delete Trunk Accounts

Use this page to add and configure trunk accounts.

Add a New Trunk Account

Trunk Name:

Type:

Add **4**

Modify/Delete Trunk Account

Click on a name to edit that trunk's settings.

Trunk Name	ID	Type	Supervision	Role	
TDM Trunk To CPE	T02	ISDN	ISDN	Network	Delete
VoIP Trunk To Adpt Tech	T01	SIP	SIP	User	Delete

5.2.3.4 New Trunk Account Configuration

1. Select the appropriate selection sequence from the **Resource Selection** dropdown box.
2. Select the **pri 2** option from the **ISDN Interface** dropdown box.
3. Select the **ATVN_Default** option from the **Codec Group** dropdown box.
4. Select the **20 ms** option from the **Frame Packetization** dropdown box.
5. Select the **NTE Value** radial button in the **DTMF Relay** list and enter a value of **101**.
6. Select the **Use Default Value: 46** radial button in the **RTP DSCP Value** list.
7. Click the **Apply** button.

System

Voice

Stations

User Accounts

Ring Groups

Trunks

Trunk Accounts

Trunk Groups

System Setup

Classes of Service

Dial Plan

ISDN Num Templates

SPRE Templates

Codec Lists

Call Coverage Lists

System Parameters

Local SIP Server

Local SIP Proxy

SIP Client Locations

VoIP Settings

Email Alerts

Reports

Extensions List

SIP Registrati

Call Quality S

RTP Channel Stats

RTP Session Stats

Trunk Statistics

Data

Monitoring

Utilities

Trunk Accounts > 'TDM Trunk2 To CPE'

Trunk Status

Use this dialog to view the operational status of this trunk. The administrative status can be used to transition trunks in and out of service.

Operational Status: Unavailable

Administrative Status: Enabled

Reset Apply

Edit Trunk

Use this dialog to modify the Trunk Account configuration.

Trunk Account Information

Trunk ID: T03

Type: ISDN

Supervision: ISDN

Trunk Name: TDM Trunk2 To CPE

Reject External: ☐

Resource Selection: Circular Hunt Descending

Emergency Caller ID Override:

Inbound Caller ID Override:

Inbound Caller ID Override Method: Always

ISDN Settings

ISDN Interface: pri 2

Min Needed B Channels: ☒ Not specified ☐ Specified:

Max Needed B Channels: ☒ Not specified ☐ Specified:

VoIP Settings **DNIS Substitution**

Codec Group: ATVN_Default (G.729, G.711 uLaw, G.711 aLaw)

Modem Passthrough: ☐ Enabled

Detection Timespan: 8 secs <0-8>

VAD: ☐ Enabled

PLC: ☒ Enabled

NLS: ☒ Enabled

ALC: ☐ Enabled

Echo Cancellation: ☒ Enabled

RTP Settings

Frame Packetization: 20 ms

Packet Delay Mode: Adaptive

Nominal: 50 ms <10 - 240, incr of 10>

Maximum: 100 ms <40 - 320, incr of 10>

Packet Delay: Fax: 50 ms <0 - 500>

Set to Defaults

DTMF Relay: ☐ Inband ☒ NTE Value: 101 <96 - 127>

RTP DSCP Value: ☒ Use Global Default: 46 ☐ Specified: 0 <0 - 63>

Cancel Apply

1

2

3

4

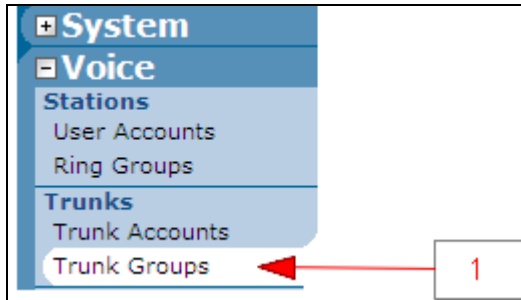
5

6

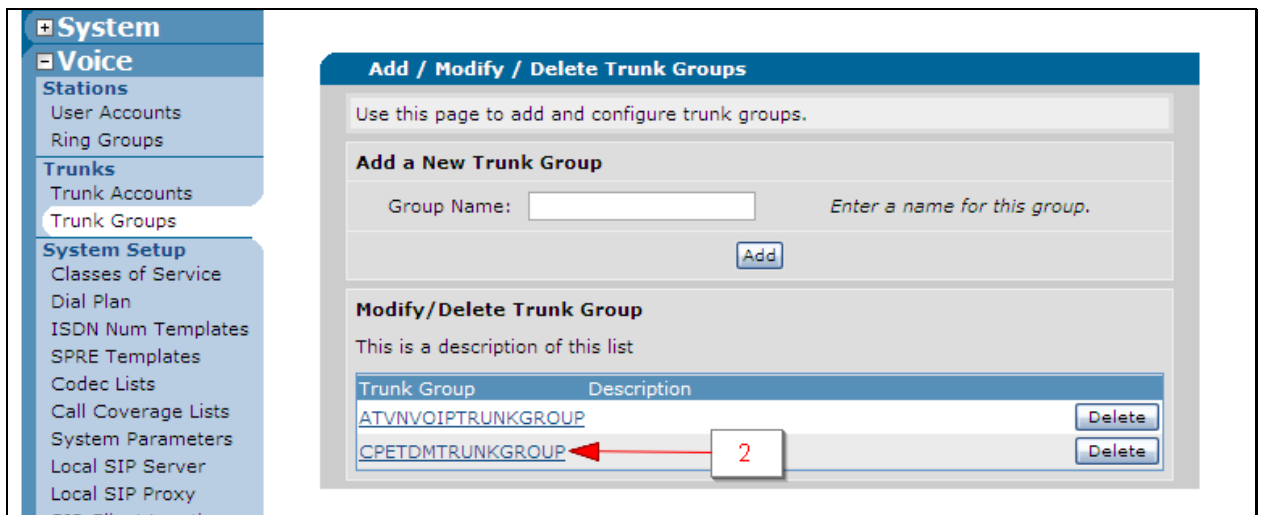
7

5.2.3.5 Add Second PRI to Trunk Group

1. Select the **Trunk Accounts** link located under the **Voice** heading in the left hand margin.



2. Select the **CPETDMTRUNKGROUP** link under the **Trunk Group** column header.



3. Click the **Add Members** button.

System

Voice

Stations

Trunks

System Setup

Reports

Data

Monitoring

Utilities

Trunk Groups > 'CPETDMTRUNKGROUP'

Edit Trunk Group 'CPETDMTRUNKGROUP'

Basic configuration for a Trunk Group. Click 'Apply' when done.

Trunk Group Information

Trunk Group Name: CPETDMTRUNKGROUP

Description:

Resource Selection: Linear Hunt

Trunk Group Members

Below is a list of [Trunk Accounts](#) that are being used in this Trunk Group.

Add Members..

3

Trunk Account	ID	Type	Supervision
TDM Trunk To CPE	T02	ISDN	ISDN

Outbound Call Templates

Check the appropriate boxes below to enable specific outbound call templates. **NOTE:** [Class of service](#) should be used to restrict the types of calls individual users can make (ie: 900 numbers, etc).

<input type="checkbox"/> Local Calls (10 Digit)	Low Cost	(NXX-NXX-XXXX)
<input type="checkbox"/> Long Distance Calls	Low Cost	(1-NXX-NXX-XXXX)
<input type="checkbox"/> Toll-Free Calls	Low Cost	(1-800/855/866/877/888-NXX-XXXX)
<input type="checkbox"/> International Calls	Low Cost	(011-\$)
<input type="checkbox"/> n11 Calls (411, 611)	Low Cost	(411, 611)
<input type="checkbox"/> 911 Calls	Low Cost	(911)
<input type="checkbox"/> Operator-Assisted calls	Low Cost	(0-NXX-NXX-XXXX)
<input type="checkbox"/> Carrier Specified calls	Low Cost	(10-10-XXX-\$)
<input type="checkbox"/> 900 Calls	Low Cost	(1-900/976-NXX-XXXX 976-XXXX)

Detailed View - Permit/Restriction Call Templates

Cancel

Apply

4. Check the checkbox associated with the ISDN Trunk Account added in the previous section.
5. Click the **Add Selected Trunks** button.

System

Voice

Stations

User Accounts

Ring Groups

Trunks

Trunk Accounts

Trunk Groups

System Setup

Classes of Service

Dial Plan

ISDN Num Te

SPRE Templates

Codec Lists

Call Coverage Lists

System Parameters

Local SIP Server

Local SIP Proxy

SIP Client Loc

VoIP Settings

Email Alerts

Reports

Extensions List

SIP Registrations

Call Quality Stats

RTP Channel Stats

RTP Session Stats

Trunk Statistics

Data

Monitoring

Utilities

Trunk Groups > 'CPETDMTRUNKGROUP'

Edit Trunk Group 'CPETDMTRUNKGROUP'

Basic configuration for a Trunk Group. Click 'Apply' when done.

Add Members to Trunk Group

Click on one or more rows to select Trunk Accounts to add as members of this trunk group. **Hint: Use the Shift key to select ranges.**

Add?	Trunk Account	ID	Type	Supervision
<input type="checkbox"/>	VoIP Trunk To Adpt Tech	T01	SIP	SIP
<input checked="" type="checkbox"/>	TDM Trunk2 To CPE	T03	ISDN	ISDN

Add Selected Trunks **Cancel** **Clear Selections**

Check the appropriate boxes below to enable specific outbound call templates. **NOTE:** *Class of service* should be used to restrict the types of calls individual users can make (ie: 900 numbers, etc).

<input type="checkbox"/>	Local Calls (10 Digit)	(NXX-NXX-XXXX)
<input type="checkbox"/>	Long Distance Calls	(1-NXX-NXX-XXXX)
<input type="checkbox"/>	Toll-Free Calls	(1-800/855/866/877/888-NXX-XXXX)
<input type="checkbox"/>	International Calls	(011-\$)
<input type="checkbox"/>	n11 Calls (411, 611)	(411, 611)
<input type="checkbox"/>	911 Calls	(911)
<input type="checkbox"/>	Operator-Assisted calls	(0-NXX-NXX-XXXX)
<input type="checkbox"/>	Carrier Specified calls	(10-10-XXX-)\$
<input type="checkbox"/>	900 Calls	(1-900/976-NXX-XXXX 976-XXXX)

Detailed View - Permit/Restriction Call Templates

Cancel **Apply**

5.2.4 Configuring CAS Trunk Group

Complete the steps in the following sections to provision a CAS Trunk on the IAD.

5.2.4.1 Remove PRI Configuration

1. Select the **Trunk Accounts** link located under the **Voice** heading in the left hand margin.

System

Voice

Stations

User Accounts

Ring Groups

Trunks

Trunk Accounts

Trunk Groups

- Click the **Delete** button in the **TDM Trunk To CPE** row.

System

- Voice**
 - Stations
 - User Accounts
 - Ring Groups
 - Trunks
 - Trunk Accounts
 - Trunk Groups
 - System Setup
 - Classes of Service
 - Dial Plan
 - ISDN Num Templates
 - SPRE Templates
 - Codec Lists
 - Call Coverage Lists
 - System Parameters
 - Local SIP Server
 - Local SIP Proxy
 - SIP Client Locations
 - VoIP Settings

Add / Modify / Delete Trunk Accounts

Use this page to add and configure trunk accounts.

Add a New Trunk Account

Trunk Name:

Type:

Add

Modify/Delete Trunk Account

Click on a name to edit that trunk's settings.

Trunk Name	ID	Type	Supervision	Role	
TDM Trunk To CPE	T02	ISDN	ISDN	Network	Delete
VoIP Trunk To Adpt Tech	T01	SIP	SIP	User	Delete

- Select the **Physical Interfaces** link located under the **System** heading in the left hand margin.

System

- Config Wizard
- System Summary
- Physical Interfaces**
- Passwords
- IP Services
- DHCP Server
- Hostname / DNS
- LLDP
- SNMP

- Select the **t1 0/3** link under the **Name** column header.

System

Config Wizard

System Summary

Physical Interfaces

Passwords

IP Services

DHCP Server

Hostname / DNS

LLDP

SNMP

4

Voice

Data

Monitoring

Utilities

Physical Interfaces

This is a list of all the physical interfaces that are either physically tied to the product or connected via a plug-in module. View or edit the configuration of an interface by clicking its name.

Name	Logical Interface	Line Status	Type
t1 0/1	ppp 1	Up	WAN-T1
t1 0/2	none	Interface Disabled	WAN-T1
t1 0/3	pri 1	Up	WAN-T1
t1 0/4	none	Interface Disabled	WAN-T1
eth 0/1	none	100Mbps/full	Ethernet
eth 0/2	none	Interface Disabled	Ethernet
fxo 0/0	none	Interface Disabled	FXO
fxs 0/1	none	Interface Disabled	FXS
fxs 0/2	none	Interface Disabled	FXS
fxs 0/3	none	Interface Disabled	FXS
fxs 0/4	none	Interface Disabled	FXS
fxs 0/5	none	Interface Disabled	FXS
fxs 0/6	none	Interface Disabled	FXS
fxs 0/7	none	Interface Disabled	FXS
fxs 0/8	none	Interface Disabled	FXS
fxs 0/9	none	Interface Disabled	FXS
fxs 0/10	none	Interface Disabled	FXS
fxs 0/11	none	Interface Disabled	FXS
fxs 0/12	none	Interface Disabled	FXS
fxs 0/13	none	Interface Disabled	FXS
fxs 0/14	none	Interface Disabled	FXS
fxs 0/15	none	Interface Disabled	FXS
fxs 0/16	none	Interface Disabled	FXS
fxs 0/17	none	Interface Disabled	FXS
fxs 0/18	none	Interface Disabled	FXS
fxs 0/19	none	Interface Disabled	FXS
fxs 0/20	none	Interface Disabled	FXS
fxs 0/21	none	Interface Disabled	FXS
fxs 0/22	none	Interface Disabled	FXS
fxs 0/23	none	Interface Disabled	FXS
fxs 0/24	none	Interface Disabled	FXS

- Click the **Delete** button located in the **pri 1** row.

System

Config Wizard
System Summary
Physical Interfaces
Passwords
IP Services
DHCP Server
Hostname / DNS
LLDP
SNMP

+ Voice
+ Data
+ Monitoring
+ Utilities

Physical Interfaces > t1 0/3

Configuration for "t1 0/3"

Basic configuration for the T1 interface.

Description: PRI One

Description label (optional)

Enable: ☒

Enable or disable this interface

Clocking: System-Wide Clock Source

Please go to the 'Clock Source' page to set the system clock source.

Framing: ESF

Select the framing that matches the network provider framing format

Coding: B8ZS

Select the coding that matches the network provider line coding

FDL: ANSI

Select the format for the facility data link channel

Reset Apply

Configured DS0 Connections for "t1 0/3"

Use this dialog to connect a group of DS0's to a particular interface or service provided by this unit. To configure a connected interface's settings, click on the item in the list below. To remap a group of DS0's that are currently in use, click the delete button to remove the connections group.

Add a Connection

Connect To: None

Select an interface type to map to the DS0s

Available DS0 Range: All DS0s in use

DS0 Range: 1 to 1

Set the range of DS0s to be mapped

Speed: 64kbps

Select the speed for the DS0s being mapped

Add

Connected Interface	Multilink	DS0's Used	Group Number	Speed	
pri 1	N/A	1-24	1	5	64kbps Delete

5.2.4.2 T1 Interface Configuration

1. Enter a label for the T1 in the **Description** textbox.
2. Select the **Enable** checkbox.
3. Select the appropriate framing from the **Framing** dropdown box.
4. Select the appropriate coding from the **Coding** dropdown box.
5. Select the appropriate facility data link formatting from the **FDL** dropdown box.

6. Click the **Apply** button.
7. Select the **Reserve for RBS Trunks** option from the **Connect To** dropdown box.
8. Select the range of DS0s that will be assigned to the T1 from the **DS0 Range** dropdown boxes.
9. Click the **Add** button.

The screenshot displays the BroadSoft configuration interface for the 'Physical Interfaces > t1 0/3' section. The left sidebar shows the navigation menu with 'System' selected. The main content area is divided into two sections: 'Configuration for "t1 0/3"' and 'Configured DS0 Connections for "t1 0/3"'. The 'Configuration for "t1 0/3"' section contains fields for Description, Enable, Clocking, Framing, Coding, and FDL, each with a corresponding number (1-5) pointing to it. The 'Apply' button is highlighted with a red arrow and number 6. Below this, a green message states 'Settings applied successfully'. The 'Configured DS0 Connections for "t1 0/3"' section includes instructions, an 'Add a Connection' section with fields for 'Connect To', 'Available DS0 Range', 'DS0 Range', and 'Speed', and an 'Add' button highlighted with a red arrow and number 10. A table at the bottom shows 'Connected Interface', 'Multilink', 'DS0's Used', 'Group Number', and 'Speed', with a message 'There are no connections configured'.

System

- Config Wizard
- System Summary
- Physical Interfaces
- Passwords
- IP Services
- DHCP Server
- Hostname / Domain
- LLDP
- SNMP

Physical Interfaces > t1 0/3

Configuration for "t1 0/3"

Basic configuration for the T1 interface.

Description: CAS One *Description label (optional)*

Enable: ☒ *Enable or disable this interface*

Clocking: [System-Wide Clock Source](#) *Please go to the 'Clock Source' page to set the system clock source.*

Framing: ESF *Select the framing that matches the network provider framing format*

Coding: B8ZS *Select the coding that matches the network provider line coding*

FDL: ANSI *Select the format for the facility data link channel*

Reset Apply

Settings applied successfully

Configured DS0 Connections for "t1 0/3"

Use this dialog to connect a group of DS0's to a particular interface or service provided by this unit. To configure a connected interface's settings, click on the item in the list below. To remap a group of DS0's that are currently in use, click the delete button to remove the connections group.

Add a Connection

Connect To: Reserve for RBS Trunks *Select an interface type to map to the DS0s*

Available DS0 Range: 1-24

DS0 Range: 1 to 24 *Set the range of DS0s to be mapped*

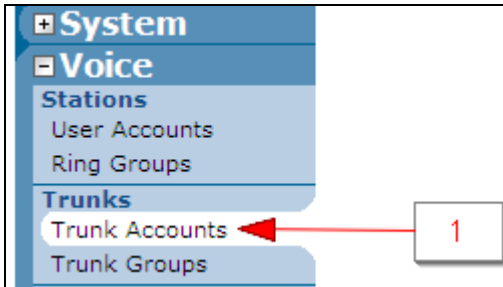
Speed: 64kbps *Select the speed for the DS0s being mapped*

Add

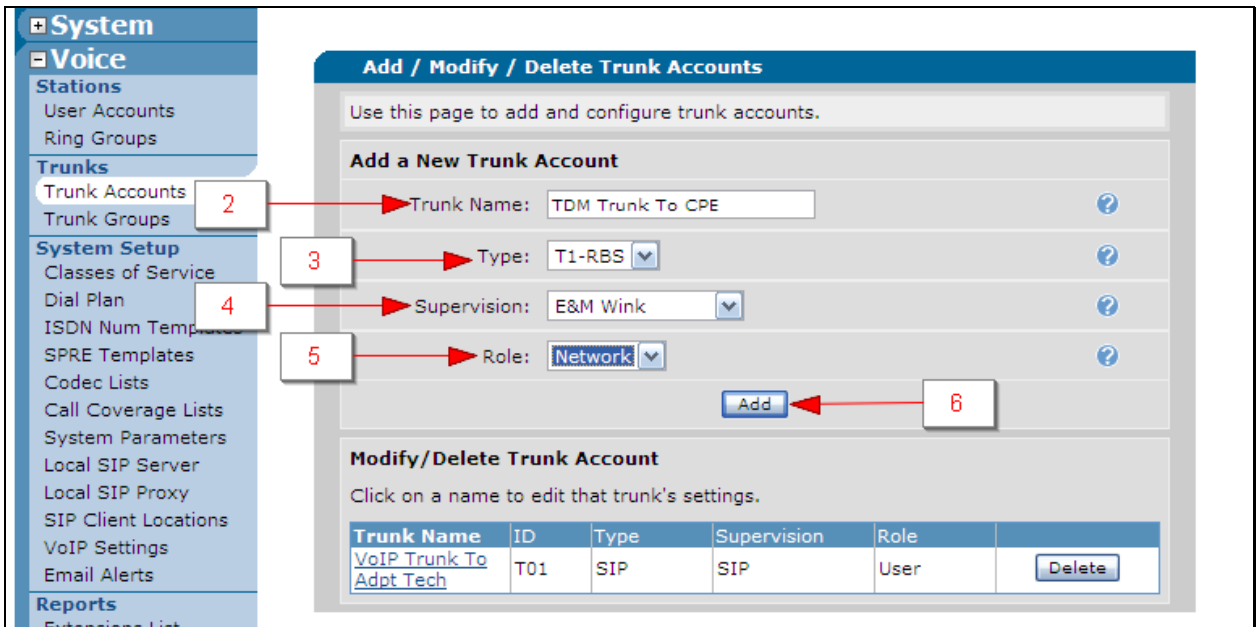
Connected Interface	Multilink	DS0's Used	Group Number	Speed
There are no connections configured				

5.2.4.3 Add New Trunk Account

1. Select the **Trunk Accounts** link located under the **Voice** heading in the left hand margin.



2. Enter a name for the trunk in the **Trunk Name** textbox.
3. Select the **T1-RBS** option from the **Type** dropdown box.
4. Select the appropriate supervision setting from the **Supervision** dropdown box.
5. Select the **Network** option from the **Role** dropdown box.
6. Click the **Add** button to commit the changes and advance the screen to the Trunk Account configuration page.



5.2.4.4 New Trunk Account Configuration

1. If applicable, check the **DID(Direct Inward Dial)** checkbox.
2. If the above checkbox is selected, select the appropriate number of digits for the IAD to send to the CPE from the **DID digits** dropdown box.
3. Select the appropriate selection sequence from the **Resource Selection** dropdown box.

- Click the **Assign DS0s** button to bring up the **Add DS0s to Trunk Account** pop up.

System

- Voice**
 - Stations
 - User Accounts
 - Ring Groups
 - Trunks
 - Trunk Accounts
 - Trunk Groups
 - System Setup
 - Classes of Service
 - Dial Plan
 - ISDN Num Templates
 - SPRE Templates
 - Codec Lists
 - Call Coverage Lists
 - System Parameters
 - Local SIP Server
 - Local SIP Proxy
 - SIP Client Locations
 - VoIP Settings
 - Email Alerts
 - Reports
 - Extensions List
 - SIP Registrations
 - Call Quality Statistics
 - RTP Channel Statistics
 - RTP Session Statistics
 - Trunk Statistics
- Data**
- Monitoring**
- Utilities**

Trunk Accounts > 'TDM Trunk To CPE'

Trunk Status

Use this dialog to view the operational status of this trunk. The administrative status can be used to transition trunks in and out of service.

Operational Status: **Unavailable** ?

Administrative Status: Enabled ?

Reset Apply

Edit Trunk

Use this dialog to modify the Trunk Account configuration.

Trunk Account Information

Trunk ID: T02 ?

Type: RBS ?

Supervision: Wink ?

Role: Network ?

Trunk Name: TDM Trunk To CPE ?

Reject External: ☐ ?

DID(Direct Inward Dialing): ☒ ?

DID Digits: 10 ?

Resource Selection: Linear Hunt Descending ?

Emergency Caller ID Override: ?

Inbound Caller ID Override: ?

Inbound Caller ID Override Method: Always ?

DS0 VoIP Settings DNIS Substitution

Assign DS0s

Assign DS0s...

Connected DS0

The following DS0 are currently connected to this trunk. A status of "Not Available" may be displayed if DS0 in a range are in different states:

DS0	Status
There are no configured DS0 in this account.	

Cancel Apply

- Check the checkbox under the **Add?** column header for each DS0 that needs to be added to the trunk account.
- Click the **Add DS0s** button to apply the selections and close the **DS0s to Trunk Account** pop up.

System

- Voice**
 - Stations
 - User Accounts
 - Ring Groups
 - Trunks**
 - Trunk Accounts
 - Trunk Groups
- System Setup**
 - Classes of Service
 - Dial Plan
 - ISDN Num Templates
 - SPRE Templates
 - Codec Lists
 - Call Coverage Lists
 - System Parameters
 - Local SIP Server
 - Local SIP Proxy
 - SIP Client Locations
 - VoIP Settings
 - Email Alerts
- Reports**
 - Extensions List
 - SIP Registrations
 - Call Quality Stats
 - RTP Channel Stats
 - RTP Session Stats
 - Trunk Statistics
- Data**
- Monitoring**
- Utilities**

Trunk Accounts > 'TDM Trunk To CPE'

Trunk Status

Use this dialog to view the operational status of this trunk. The administrative status can be used to transition trunks in and out of service.

Operational Status: **Unavailable**

Administrative Status: **Enabled**

Edit Trunk

Add DS0s to Trunk Account

Click on one or more rows to select DS0s to add as members of the trunk account. **Hint: Use the Shift key to select ranges of DS0s.**

To reserve DS0s for use on this Trunk, select a T1 from the [Interfaces](#) page.

Add?	DS0s	Description
<input checked="" type="checkbox"/>	t1 0/3 ds0 1	CAS One
<input checked="" type="checkbox"/>	t1 0/3 ds0 2	CAS One
<input checked="" type="checkbox"/>	t1 0/3 ds0 3	CAS One
<input checked="" type="checkbox"/>	t1 0/3 ds0 4	CAS One
<input checked="" type="checkbox"/>	t1 0/3 ds0 5	CAS One
<input checked="" type="checkbox"/>	t1 0/3 ds0 6	CAS One
<input checked="" type="checkbox"/>	t1 0/3 ds0 7	CAS One

Add DS0s **Cancel** **Clear Selections**

Override:

Inbound Caller ID Override:

Inbound Caller ID Override Method: **Always**

DS0 **VoIP Settings** **DNIS Substitution**

Assign DS0s

Assign DS0s..

Connected DS0

The following DS0 are currently connected to this trunk. A status of "Not Available" may be displayed if DS0 in a range are in different states:

DS0	Status
There are no configured DS0 in this account.	

Cancel **Apply**

- Click the **VoIP Settings** tab.
- Select the **ATVN_Default** option from the **Codec Group** dropdown box.
- Select the **20 ms** option from the **Frame Packetization** dropdown box.
- Select the **NTE Value** radial button in the **DTMF Relay** list and enter a value of **101**.

11. Select the **Use Default Value: 46** radial button in the **RTP DSCP Value** list.
12. Click the **Apply** button.

System

Voice

Stations

User Accounts

Ring Groups

Trunks

Trunk Accounts

Trunk Groups

System Setup

Classes of Service

Dial Plan

ISDN Num Templates

SPRE Templates

Codec Lists

Call Coverage Lists

System Parameters

Local SIP Server

Local SIP Proxy

SIP Client Locations

VoIP Settings

Email Alerts

Reports

Extensions List

SIP Registrations

Call Quality Stats

RTP Channel Stats

RTP Session Stats

Trunk Statistics

Data

Monitoring

Utilities

Trunk Accounts > 'TDM Trunk To CPE'

Trunk Status

Use this dialog to view the operational status of this trunk. The administrative status can be used to transition trunks in and out of service.

Operational Status: ?

Administrative Status: Enabled ?

[Reset](#) [Apply](#)

Edit Trunk

Use this dialog to modify the Trunk Account configuration.

Trunk Account Information

Trunk ID: T02 ?

Type: RBS ?

Supervision: Wink ?

Role: Network ?

Trunk Name: TDM Trunk To CPE ?

Reject External: ☐ ?

DID(Direct Inward Dialing): ☒ ?

DID Digits: 10 ?

Resource Selection: Linear Hunt Descending ?

Emergency Caller ID Override: ?

Inbound Caller ID Override: ?

Inbound Caller ID Override Method: Always ?

DS0 [VoIP Settings](#) [DNIS Substitution](#)

VoIP Settings

Codec Group: ATVN_Default (G.729, G.711 uLaw, G.711 aLaw) ?

Modem ☐ Enabled ?

Passthrough: Detection Timespan: 8 secs. <0-8> ?

VAD: ☐ Enabled ?

PLC: ☒ Enabled ?

NLS: ☒ Enabled ?

ALC: ☐ Enabled ?

Echo Cancellation: ☒ Enabled ?

RTP Settings

Frame Packetization: 20 ms ?

Packet Delay Mode: Adaptive ?

Nominal: 50 ms <10 - 240, incr of 10>

Maximum: 100 ms <40 - 320, incr of 10>

Packet Delay: Fax: 50 ms <0 - 500>

[Set to Defaults](#)

DTMF Relay: ☐ Inband ?

☒ NTE Value: 101 <96 - 127> ?

RTP DSCP Value: ☐ Use Global Default: 46 ?

☒ Specified: 0 <0 - 63>

[Cancel](#) [Apply](#)

7

8

9

10

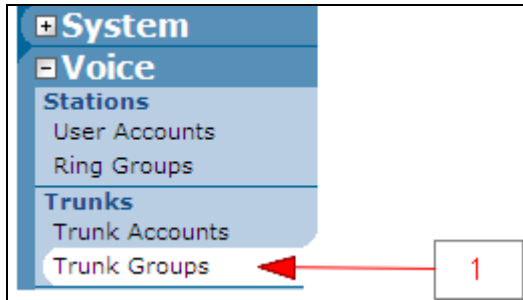
11

12

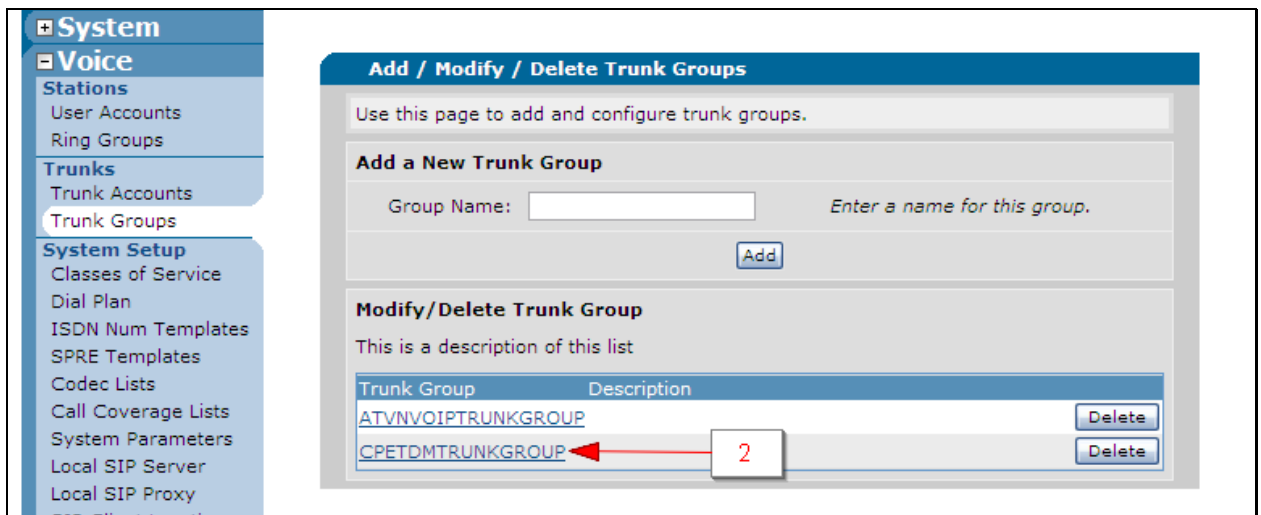
Successfully added ports/DS0s.

5.2.4.5 Trunk Group Configuration

1. Select the **Trunk Accounts** link located under the **Voice** heading in the left hand margin.



2. Select the **CPETDMTRUNKGROUP** link under the **Trunk Group** column header.



3. Click the **Add Members** button.

System

Voice

Stations

User Accounts

Ring Groups

Trunks

Trunk Accounts

Trunk Groups

System Setup

Classes of Service

Dial Plan

ISDN Num Templates

SPRE Templates

Codec Lists

Call Coverage

System Parameters

Local SIP Server

Local SIP Proxy

SIP Client Locations

VoIP Settings

Email Alerts

Reports

Extensions List

SIP Registrations

Call Quality Stats

RTP Channel Stats

RTP Session Stats

Trunk Statistics

Data

Monitoring

Utilities

Trunk Groups > 'CPETDMTRUNKGROUP'

Edit Trunk Group 'CPETDMTRUNKGROUP'

Basic configuration for a Trunk Group. Click 'Apply' when done.

Trunk Group Information

Trunk Group Name: CPETDMTRUNKGROUP

Description:

Resource Selection: Linear Hunt

Trunk Group Members

Below is a list of [Trunk Accounts](#) that are being used in this Trunk Group.

Add Members..

Trunk Account	ID	Type	Supervision
There are no members configured for this Trunk Group.			

Outbound Call Templates

Check the appropriate boxes below to enable specific outbound call templates. **NOTE:** [Class of service](#) should be used to restrict the types of calls individual users can make (ie: 900 numbers, etc).

<input type="checkbox"/> Local Calls (10 Digit)	Low Cost	(NXX-NXX-XXXX)
<input type="checkbox"/> Long Distance Calls	Low Cost	(1-NXX-NXX-XXXX)
<input type="checkbox"/> Toll-Free Calls	Low Cost	(1-800/855/866/877/888-NXX-XXXX)
<input type="checkbox"/> International Calls	Low Cost	(011-\$)
<input type="checkbox"/> n11 Calls (411, 611)	Low Cost	(411, 611)
<input type="checkbox"/> 911 Calls	Low Cost	(911)
<input type="checkbox"/> Operator-Assisted calls	Low Cost	(0-NXX-NXX-XXXX)
<input type="checkbox"/> Carrier Specified calls	Low Cost	(10-10-XXX-\$)
<input type="checkbox"/> 900 Calls	Low Cost	(1-900/976-NXX-XXXX 976-XXXX)

Detailed View - Permit/Restriction Call Templates

Permit Template	Cost
\$	Low (0)

Restriction Template

There are no configured Restriction Templates

Configure Advanced Templates

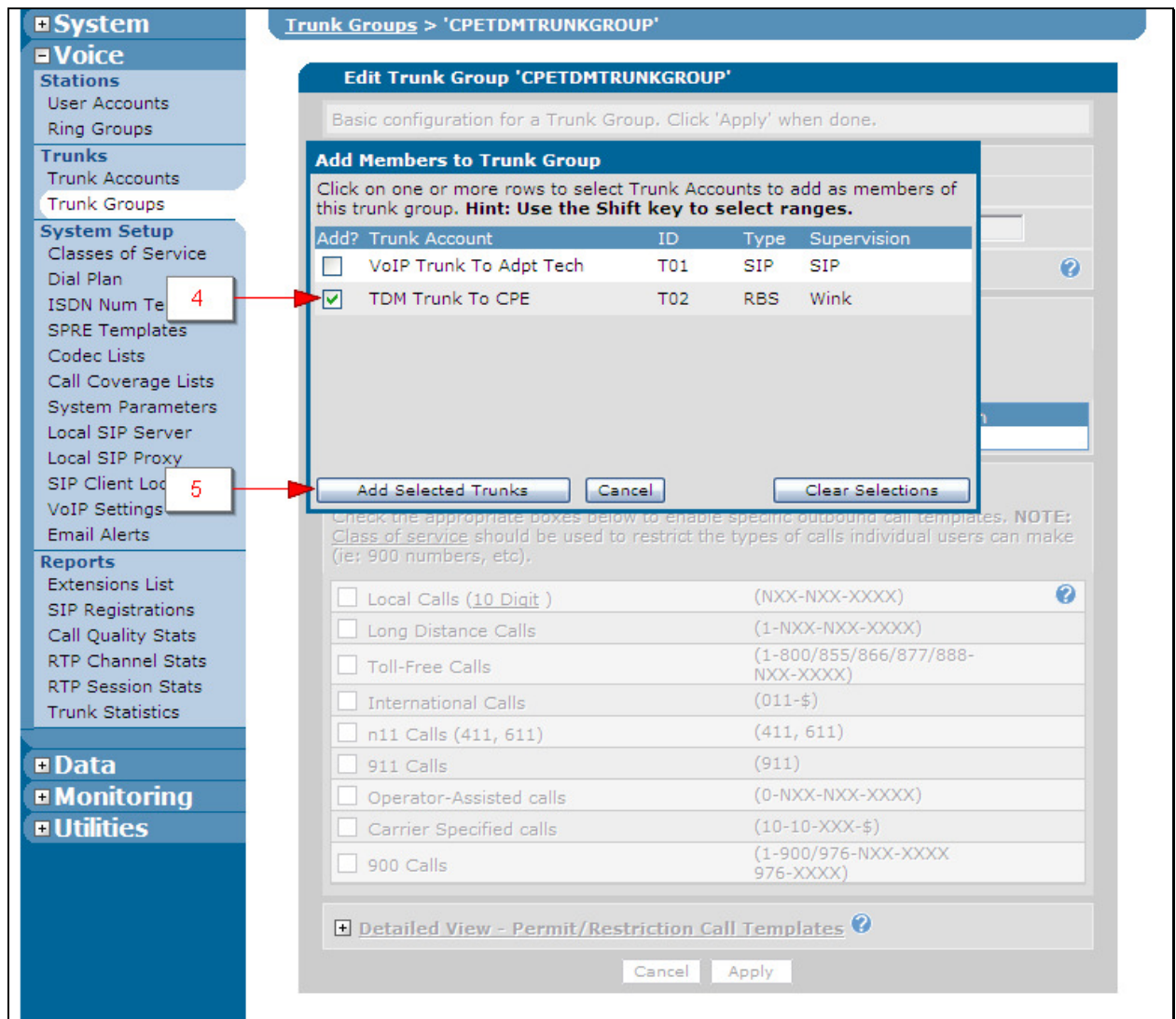
Cancel

Apply

- Check the checkbox associated with the CAS Trunk Account added in the previous section.
- Click the **Add Selected Trunks** button.

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5.2.4.6 Adding a Second CAS Trunk Account to a CAS Trunk Group

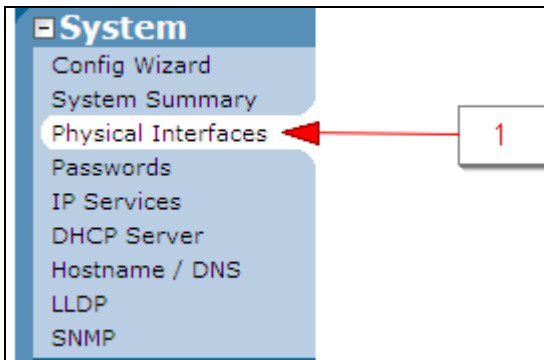
For the TA908e, TA916e, and TA924e models of the Total Access IAD, it is possible to add a second CAS Trunk Interface to an existing CAS Trunk Group. In order to do this, repeat the steps defined in sections 5.2.4.2-5.2.4.5 using t1 0/4 as the interface to provision.

5.2.5 Configuring an FXS User

Complete the steps in the following sections to provision an FXS User on the IAD.

5.2.5.1 Configuring the FXS Interface

1. Select the **Physical Interfaces** link located under the **System** heading in the left hand margin.



2. Under the **Name** column header, select the **fxs 0/x** link for the interface being configured.

The screenshot shows the 'Physical Interfaces' configuration page. It includes a sidebar menu with 'Physical Interfaces' selected. The main content area has a title 'Physical Interfaces' and a description: 'This is a list of all the physical interfaces that are either physically tied to the product or connected via a plug-in module. View or edit the configuration of an interface by clicking its name.' Below this is a table with the following columns: Name, Logical Interface, Line Status, and Type.

Name	Logical Interface	Line Status	Type
t1 0/1	ppp 1	Up	WAN-T1
t1 0/2	ppp 1	Up	WAN-T1
t1 0/3	none	Up	WAN-T1
t1 0/4	none	Interface Disabled	WAN-T1
eth 0/1	none	100Mbps/full	Ethernet
eth 0/2	none	Interface Disabled	Ethernet
fxo 0/0	none	Interface Disabled	FXO
fxs 0/1	none	Interface Disabled	FXS
fxs 0/2	none	Interface Disabled	FXS
fxs 0/3	none	Interface Disabled	FXS
fxs 0/4	none	Interface Disabled	FXS
fxs 0/5	none	Interface Disabled	FXS
fxs 0/6	none	Interface Disabled	FXS
fxs 0/7	none	Interface Disabled	FXS
fxs 0/8	none	Interface Disabled	FXS
fxs 0/9	none	Interface Disabled	FXS
fxs 0/10	none	Interface Disabled	FXS
fxs 0/11	none	Interface Disabled	FXS
fxs 0/12	none	Interface Disabled	FXS
fxs 0/13	none	Interface Disabled	FXS
fxs 0/14	none	Interface Disabled	FXS
fxs 0/15	none	Interface Disabled	FXS
fxs 0/16	none	Interface Disabled	FXS
fxs 0/17	none	Interface Disabled	FXS
fxs 0/18	none	Interface Disabled	FXS
fxs 0/19	none	Interface Disabled	FXS
fxs 0/20	none	Interface Disabled	FXS
fxs 0/21	none	Interface Disabled	FXS
fxs 0/22	none	Interface Disabled	FXS
fxs 0/23	none	Interface Disabled	FXS
fxs 0/24	none	Interface Disabled	FXS

3. Select the **Enable** checkbox.
4. Enter an appropriate gain value in the **Receive Gain** textbox.
5. Enter an appropriate gain value in the **Transmit Gain** textbox.

6. Select the appropriate signaling from the **Signaling Type** dropdown box.
7. Select the appropriate impedance from the **Impedance** dropdown box.
8. Select the appropriate voltage from the **Ring Voltage** dropdown box.
9. Click the **Apply** button.

System

- Config Wizard
- System Summary
- Physical Interfaces**
- Passwords
- IP Services
- DHCP Server
- Hostname / DNS
- LLDP
- SNMP

Voice

Data

Monitoring

Utilities

Physical Interfaces > fxs 0/1

Configuration for fxs 0/1

Basic configuration for the FXS ports. Use the select boxes below to quickly apply this port's settings to multiple ports.

☒ 0/1 ☐ 0/2 ☐ 0/3 ☐ 0/4 ☐ 0/5 ☐ 0/6 ☐ 0/7 ☐ 0/8 ☐ 0/9 ☐ 0/10 ☐ 0/11
☐ 0/12 ☐ 0/13 ☐ 0/14 ☐ 0/15 ☐ 0/16 ☐ 0/17 ☐ 0/18 ☐ 0/19 ☐ 0/20 ☐ 0/21
☐ 0/22 ☐ 0/23 ☐ 0/24

[Select All](#) [Unselect All](#)

Description: Optional descriptive label for this interface. Up to 80 alphanumeric characters.

Enable: ☒ Enable or disable this interface

Receive Gain: Set receive gain (-12.0 to 6.0)

Transmit Gain: Set transmit gain (-12.0 to 6.0)

Signaling Type: Set the 2wire signaling mode

Impedance: Set the terminating impedance for the interface

Ring Voltage: Set desired ring voltage

5.2.5.2 Configuring the FXS User Settings

1. Select the **User Accounts** link located under the **Voice** heading in the left hand margin.

System

Voice

- Stations**
- User Accounts**
- Ring Groups
- Trunks**
- Trunk Accounts
- Trunk Groups

2. Enter the phone number of the user in the **Extension** textbox.
3. Select the **Analog Station** option in the **Phone Type** dropdown box.

4. Select the **Analog FXS 0/x** port being assigned to the user in the **Phone Port** dropdown box.
5. Click the **Apply** button.

6. Click the **VoIP Settings** tab.
7. Select the **ATVN_Default** option from the **Codec Group** dropdown box.
8. Select the **20 ms** option from the **Frame Packetization** dropdown box.
9. Select the **NTE Value** radial button in the **DTMF Relay** list and enter a value of **101**.
10. Select the **Use Default Value: 46** radial button in the **RTP DSCP Value** list.
11. Click the **Apply** button.

System

Voice

Stations

User Accounts

Ring Groups

Trunks

Trunk Accounts

Trunk Groups

System Setup

Classes of Service

Dial Plan

ISDN Num Templates

SPRE Templates

Codec Lists

Call Coverage Lists

System Parameters

Local SIP Server

Local SIP Proxy

SIP Client Locations

VoIP Settings

Email Alerts

Reports

Extensions List

SIP Registrations

Call Quality Stats

RTP Channel Stats

RTP Session Stats

Trunk Statistics

Data

Monitoring

Utilities

User Accounts > '2815551000'

Edit User '2815551000'

Use this dialog to modify the User Account configuration.

Extension: x2815551000

First Name: Optional, 40 characters max

Last Name: Optional, 40 characters max

Phone Type: Analog Station

Phone Port: Analog FXS 0/1

Login PIN: <Must be 4 digits>

Alias: There are no aliases for this account.

Aliases:

Class of Service: Default

User Config

Call Coverage

VoIP Settings

SIP Identity Settings

SIP Identity	SIP Trunk	Register	Authname
There are no SIP Identities for this account.			

Codec Group: ATVN_Default (G.729, G.711 uLaw, G.711 aLaw)

Modem: ☐ Enabled

Passthrough: Detection Timespan: 8 secs <0-8>

VAD: ☐ Enabled

PLC: ☒ Enabled

NLS: ☒ Enabled

ALC: ☐ Enabled

Echo Cancellation: ☒ Enabled

RTP Settings

Frame Packetization: 20 ms

Packet Delay Mode: Adaptive

Nominal: 50 ms <10 - 240, incr of 10>

Maximum: 100 ms <40 - 320, incr of 10>

Packet Delay: Fax: 50 ms <0 - 500>

DTMF Relay: ☐ Inband ☒ NTE Value: 101 <96 - 127>

RTP DSCP Value: ☒ Use Global Default: 46 ☐ Specified: 0 <0 - 63>

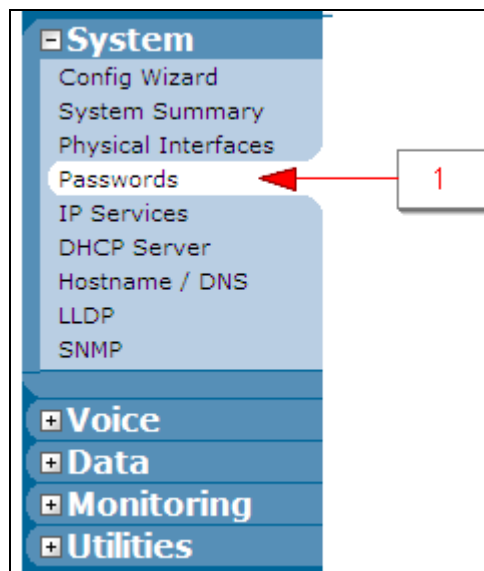
6. Administrative Tasks

The following sub-sections will detail procedures that can be used to administer the Total Access IADs. These procedures include adding a new user, editing an existing user's password, allowing admin access via the WAN interface, saving the current configuration of the IAD, downloading the current configuration of the IAD to an external system, restoring the IAD from a configuration stored on an external system, upgrading the IAD firmware, and deleting stored IAD firmware.

6.1 Adding a New User

Complete the following steps to add a new user to the IAD.

1. Select the **Passwords** link located under the **System** heading in the left hand margin.



2. Enter the name of the new user in the **Username** textbox.
3. Enter the password assigned to the new user in the **Password** textbox.
4. Re-enter the password assigned to the new user in the **Confirm Password** textbox.
5. Click the **Add** button.

System

- Config Wizard
- System Summary
- Physical Interfaces
- Passwords**
- IP Services
- DHCP Server
- Hostname / DNS
- LLDP
- SNMP

Voice

Data

Monitoring

Utilities

Password Encryption

You are able to independently control the encryption of passwords in this unit.

Encryption Enabled ☐ Enables encryption on all passwords. ?

Reset Apply

Login Configuration

User Login List Portal-List (Optional)

Use this table to configure the username and password to use with portals requiring username-based authentication. If you do not assign a portal-list to a username, that username can be used to authenticate any portal that is setup to use the local user list.

Username: user Alphanumeric string up to 32 characters in length (case-sensitive).

Password: Alphanumeric string up to 32 characters in length (case-sensitive).

Confirm Password: You must enter the new password again to guarantee accuracy.

Portal-list Name: <none available> Portal-list to apply to user login. (Optional)

Add

Modify/Delete User-list

NOTE: The username that was used for login cannot be deleted.

User Name	Portal-list Name
<input type="checkbox"/> admin	<none available>

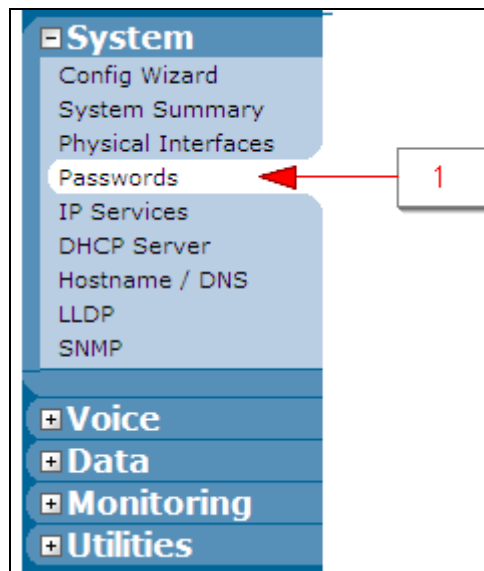
Apply Portal-list Changes

Remove Selected Users

6.2 Editing an Existing User

Complete the following steps to edit the password of an existing user on the IAD.

1. Select the **Passwords** link located under the **System** heading in the left hand margin.



2. Enter the name of the user being edited in the **Username** textbox.
3. Enter the new password being assigned to the existing user in the **Password** textbox.
4. Re-enter the new password being assigned to the existing user in the **Confirm Password** textbox.
5. Click the **Add** button.

System

Config Wizard

System Summary

Physical Interfaces

Passwords

IP Services

DHCP Server

Hostname / DNS

LLDP

SNMP

+ Voice

+ Data

+ Monitoring

+ Utilities

Password Encryption

You are able to independently control the encryption of passwords in this unit.

Encryption Enabled ☐
Enables encryption on all passwords. ?

Reset
Apply

Login Configuration

User Login List
Portal-List (Optional)

Use this table to configure the username and password to use with portals requiring username-based authentication. If you do not assign a portal-list to a username, that username can be used to authenticate any portal that is setup to use the local user list.

Username:

Alphanumerical string up to 32 characters in length (case-sensitive).

Password:

Alphanumerical string up to 32 characters in length (case-sensitive).

Confirm Password:

You must enter the new password again to guarantee accuracy.

Portal-list Name: (Optional)

Portal-list to apply to user login.

Add

Modify/Delete User-list
NOTE: The username that was used for login cannot be deleted.

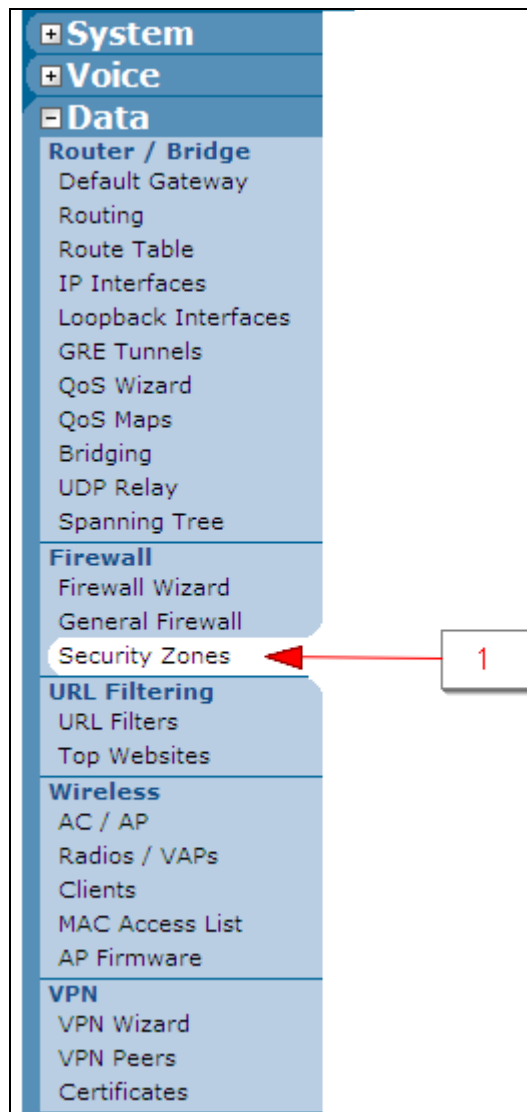
	User Name	Portal-list Name
<input type="checkbox"/>	admin	<input type="text" value="<none available>"/>
<input type="checkbox"/>	user	<input type="text" value="<none available>"/>

Apply Portal-list Changes
Remove Selected Users

6.3 Allowing Admin Access via the WAN

Complete the following steps to allow user logins via the WAN interface for the purposes of administering the IAD.

1. Select the **Security Zones** link located under the **Data** heading in the left hand margin.



2. Click the **Public** link under the **Security Zone** column header.

System
Voice
Data
Router / Bridge
Default Gateway
Routing
Route Table
IP Interfaces
Loopback Interfaces
GRE Tunnels
QoS Wizard
QoS Maps
Bridging
UDP Relay
Spanning Tree
Firewall
Firewall Wizard
General Firewall
Security Zones
URL Filtering
URL Filters
Top Websites
Wireless
AC / AP
Radios / VAPs
Clients
MAC Access List
AP Firmware

Assign Interfaces to Security Zones

Each interface must be associated with a Security Zone. A Security Zone is configured with a set of policies that define what action the firewall will perform on data sessions originating from that zone.

Interface Name	Current Security Zone	New Security Zone
eth 0/1	Private	Private
eth 0/2	<none>	<none>
ppp 1	Public	Public

Reset Assign

Edit Security Zones

A security zone contains one or more policies. The security zone can be applied to interfaces to allow, discard or NAT traffic as it enters the Total Access. A security zone that has no configured policies will allow all traffic to enter the interface. Click on the 'Active Sessions' number to view the running version of your policy-class association table.

Modify Security Zones

Click on the link on the security zone name in order to modify that security zone.

Security Zone	Active Sessions	
Private	2	Rename
Public	0	Rename
<Click to add a Security Zone>	N/A	Rename

3. Click the **Add Policy to Zone 'Public'** button.

System
Voice
Data
Router / Bridge
Default Gateway
Routing
Route Table
IP Interfaces
Loopback Interfaces
GRE Tunnels
QoS Wizard
QoS Maps
Bridging
UDP Relay
Spanning Tree
Firewall
Firewall Wizard
General Firewall
Security Zones

Security Zones > Security Zone 'Public'

Configure Policies for Security Zone 'Public'

New policies can be added to Security Zone 'Public' by clicking the "Add Policy" button. Existing policies can be modified or deleted or their evaluation order may be changed using the list below.

Add New Policy to Security Zone 'Public'

Add Policy to Zone 'Public'

Modify/Delete Policies in Security Zone 'Public'

To view or modify an existing policy, click the "Description" link in the desired row.

Priority	Description	Action
	Allow list SrcAdptSIP	Advanced Delete

Traffic not matching one of the policies above will be blocked.

4. Select the **Admin Access** policy from the **Policy Type** dropdown box.

5. Click the **Continue** button.

System
Voice
Data
Router / Bridge
Default Gateway
Routing
Route Table
IP Interfaces
Loopback Interfaces
GRE Tunnels
QoS Wizard
QoS Maps
Bridging
UDP Relay
Spanning Tree
Firewall
Firewall Wizard
General Firewall
Security Zones
URL Filtering
URL Filters
Top Websites
Wireless
AC / AP
Radios / VAPs
Clients
MAC Access List
AP Firmware
VPN
VPN Wizard
VPN Peers
Certificates
Monitoring
Utilities

Security Zones > Security Zone 'Public' > New Policy -- Select Policy Type

Add New Policy -- Select Policy Type

Select which type of policy to create. Explanations of each policy type are listed below.

Policy Type: Admin Access

Select which policy type to create, then click Continue.

Policy Types Explained

The following policy types may be configured:

- Port Forward:** Allows hosts from the 'Public' Security Zone to access all or selected ports on a private server in another Security Zone. Depending on the configuration, a Port Forward will NAT a public IP Address to a private IP Address for all protocols and ports or just a subset, like TCP/FTP and TCP/WWW. Typically used when Security Zone 'Public' is applied to interfaces connected to the Internet.
- Many:1 NAPT:** Allows hosts from the 'Public' Security Zone to share a single public IP address for Internet access. Also known as Internet connection sharing. Typically used when Security Zone 'Public' is applied to interfaces connected to a private (local) network.
- Admin Access:** Used to allow administrative access to the Total Access from hosts in the 'Public' Security Zone.
- Filter:** Blocks specified traffic from the 'Public' Security Zone from entering any other Security Zone.
- Allow:** Allows specified traffic from the 'Public' Security Zone to continue toward all other Security Zones unaffected.
- 1:1 NAT:** Forwards traffic destined for an IP address on the system to a specific IP address in another security zone by changing the destination IP address. Traffic in the reverse direction will have its source address modified to be the IP address used on inbound connections. Typically used when Security Zone 'Public' is applied to interfaces connected to the Internet.
- Advanced:** Allows low-level configuration of all policy parameters.

Cancel Continue

6. If applicable, enter a specific **Address** and **Netmask** to limit access to certain addresses.
7. Select from the **Admin Access Type** checkboxes the types of access that will be allowed.
8. Click the **Apply** button.

System
Voice
Data
Router / Bridge
Default Gateway
Routing
Route Table
IP Interfaces
Loopback Interfaces
GRE Tunnels
QoS Wizard
QoS Maps
Bridging
UDP Relay
Spanning Tree
Firewall
Firewall Wizard
General Firewall
Security Zones
URL Filtering
URL Filters
Top Websites
Wireless
AC / AP
Radios / VAPs
Clients

Security Zones > Security Zone 'Public' > New Policy

Add New Policy to Security Zone 'Public'

Policy Type: Admin Access
Used to restrict administrative access to the Total Access.

Policy Description:
Optional description for this policy

Admin Access Data

☒ Any
☐ Specified

Public Address: Address: . . .
Mask: . . .
The Total Access will only allow admin access from the specified address.

Admin Access Type:

☐ HTTP ☒ SSH
☒ HTTPS ☐ SNMP
☐ FTP ☐ Telnet
☒ Ping
These are the methods used to access the Total Access remotely.

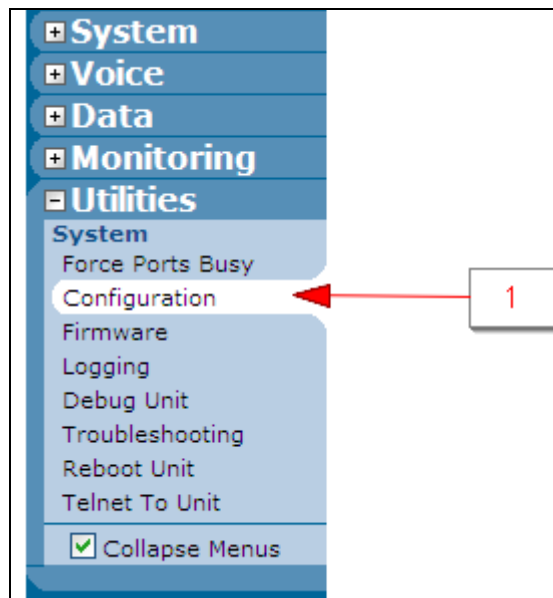
Cancel Apply

6.4 Saving the IAD Configuration

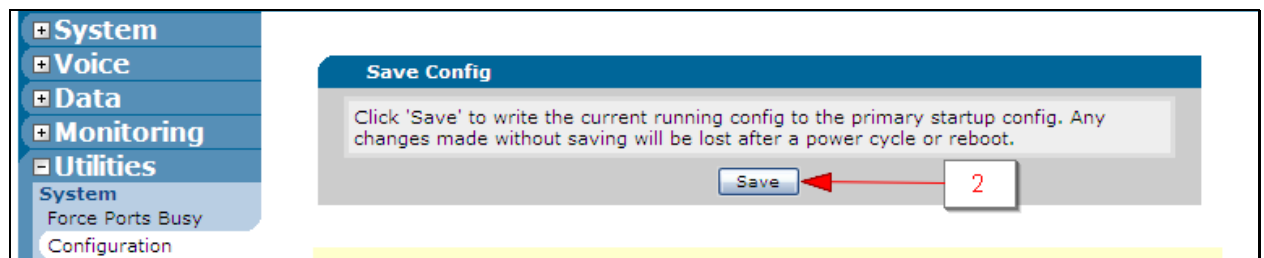
Complete the following steps to save the current IAD configuration into flash memory.

WARNING!!! The following steps must be performed before rebooting the IAD if changes to the configuration have been made since the last reboot. Failure to do so will result in loss of these configuration changes once the IAD has rebooted.

1. Select the **Configuration** link located under the **Utilities** heading in the left hand margin.



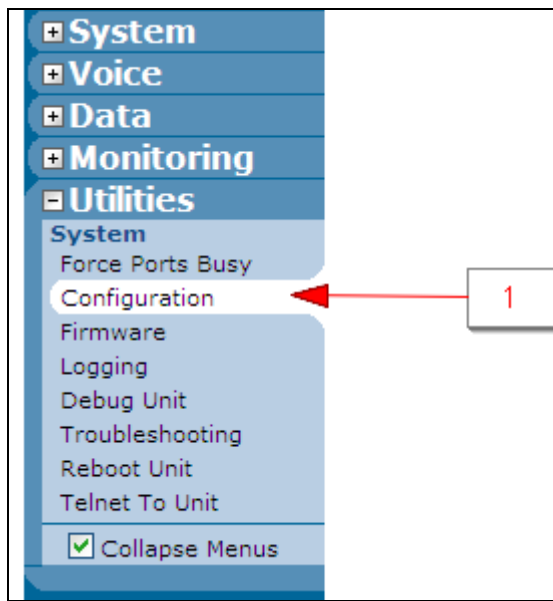
2. Click the **Save** button.



6.5 Downloading the IAD Configuration

Complete the following steps to download and store the IAD configuration to an external system.

1. Select the **Configuration** link located under the **Utilities** heading in the left hand margin.



2. Click the **Download** button.



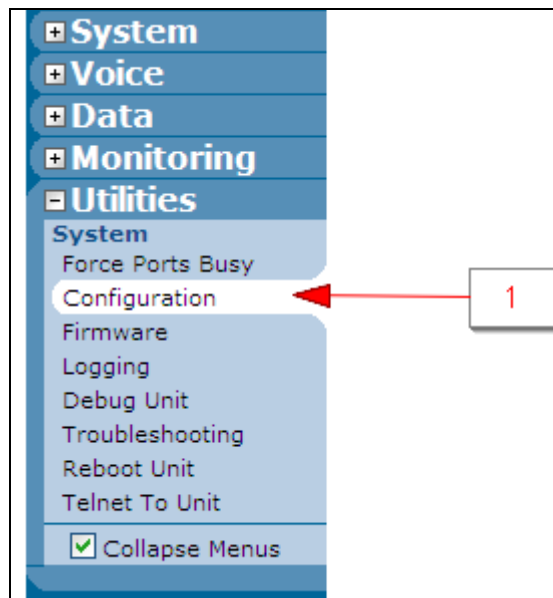
3. When prompted, select a location to store the file.

6.6 Restoring the IAD Configuration

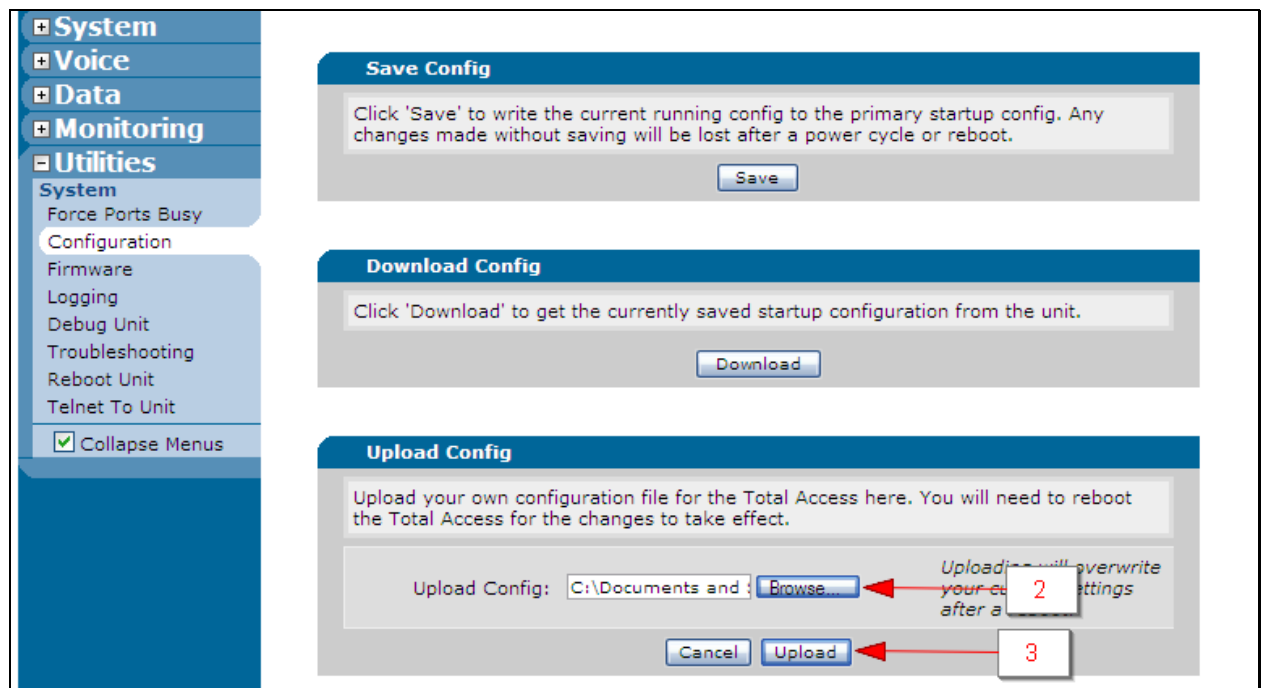
Complete the following steps to restore the IAD to a previous configuration using a configuration file stored on a local computer.

WARNING!!! Any changes made to the IAD that are not in the stored configuration file will be lost upon application of the file.

1. Select the **Configuration** link located under the **Utilities** heading in the left hand margin.



2. Click the **Browse** button and select from the local file system the configuration file being restored.
3. Click the **Upload** button.



4. Once the file upload has completed, click the **Reboot** button to restart the box and apply the configuration.

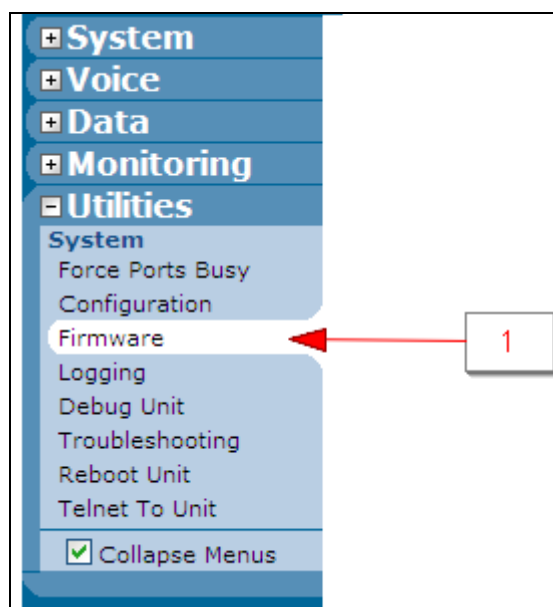
The screenshot shows the BroadSoft configuration interface. On the left is a navigation menu with the following items: System, Voice, Data, Monitoring, and Utilities. Under Utilities, there are sub-items: System, Force Ports Busy, Configuration, Firmware, Logging, Debug Unit, Troubleshooting, Reboot Unit, and Telnet To Unit. The 'Collapse Menu' checkbox is checked. The main content area has four sections: 'Save Config' with a 'Save' button; 'Download Config' with a 'Download' button; 'Upload Config' with an 'Upload Config' field, a 'Browse...' button, and 'Cancel' and 'Upload' buttons; and 'Reboot Unit' with a 'Reboot Now' button. A green message states 'config-TA924e-03-27-2009.cfg Successfully Uploaded'. An orange alert box in the 'Reboot Unit' section states: 'ALERT: The unit will need to be rebooted for the new configuration to take effect. Rebooting the unit will temporarily disrupt network traffic. The connection to the unit will be lost while the unit is rebooting. Please wait at least 60 seconds before attempting to restore the connection.' A red arrow points from a box containing the number '4' to the 'Reboot Now' button.

6.7 Upgrading the IAD Firmware

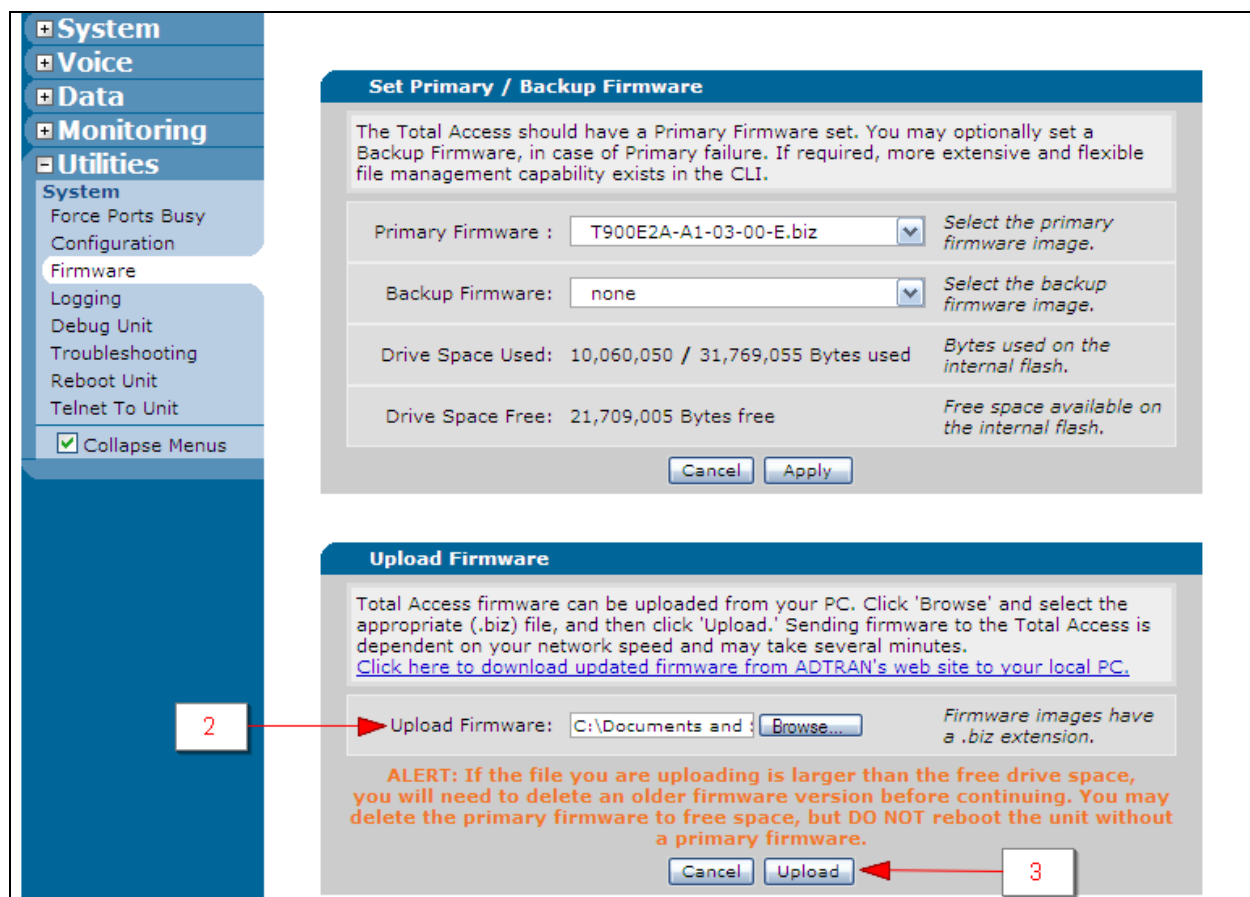
Complete the following steps to upgrade the current version of the IAD firmware.

NOTE: If the IAD does not have enough disk space to store the new firmware, complete the steps in the “Deleting Stored IAD Firmware” section before attempting the update.

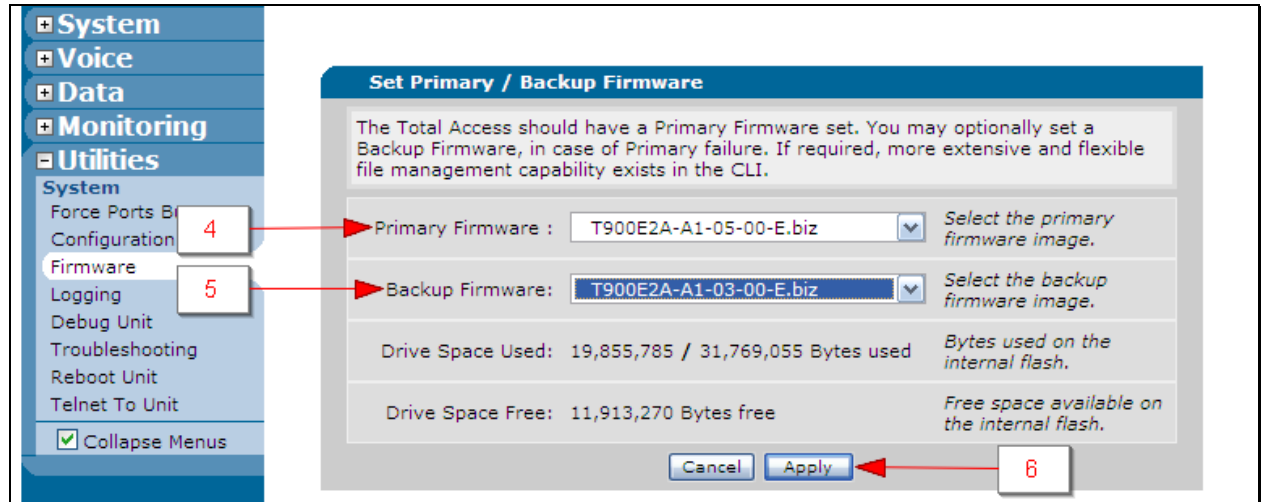
1. Select the **Firmware** link located under the **Utilities** heading in the left hand margin.



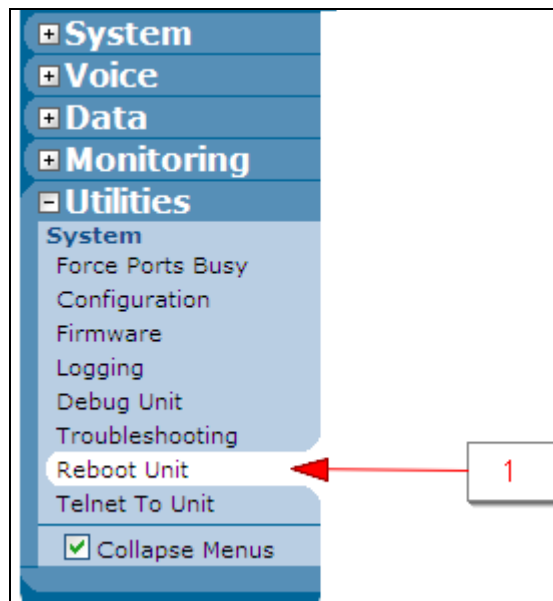
2. Click the **Browse** button and select from the local file system the firmware file being loaded.
3. Click the **Upload** button.



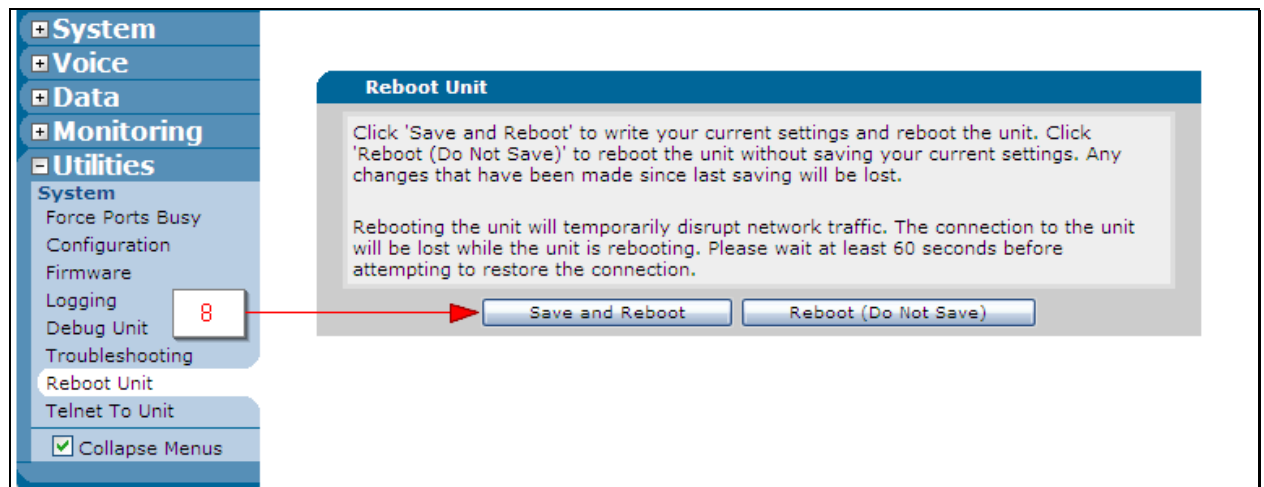
4. Select the newly uploaded firmware in the **Primary Firmware** dropdown box.
5. Select the previous primary firmware in the **Backup Firmware** dropdown box.
6. Click the **Apply** button.



7. Select the **Reboot Unit** link located under the **Utilities** heading in the left hand margin.



8. Click the **Save and Reboot** button.

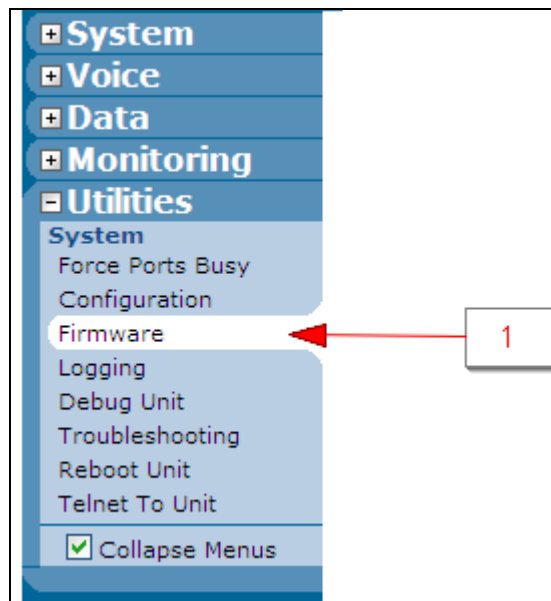


6.8 Deleting Stored IAD Firmware

Complete the following steps to delete an IAD firmware file in order to free up disk space.

WARNING!!! It is possible to delete the primary firmware, but not recommended because of the adverse affects it will have on the IAD if rebooted. Because of this, BroadSoft BroadCloud recommends that only the secondary firmware be deleted using the steps that follow.

1. Select the **Firmware** link located under the **Utilities** heading in the left hand margin.



2. Select the firmware from the **Delete Firmware** dropdown.
3. Click the **Delete** button.

- System
- Voice
- Data
- Monitoring
- Utilities
 - System
 - Force Ports Busy
 - Configuration
 - Firmware
 - Logging
 - Debug Unit
 - Troubleshooting
 - Reboot Unit
 - Telnet To Unit
 - ☒ Collapse Menus

Set Primary / Backup Firmware

The Total Access should have a Primary Firmware set. You may optionally set a Backup Firmware, in case of Primary failure. If required, more extensive and flexible file management capability exists in the CLI.

Primary Firmware :	<input type="text" value="T900E2A-A1-03-00-E.biz"/>	Select the primary firmware image.
Backup Firmware:	<input type="text" value="T900E2A-A1-05-00-E.biz"/>	Select the backup firmware image.
Drive Space Used:	19,855,785 / 31,769,055 Bytes used <small>Bytes used on the internal flash.</small>	
Drive Space Free:	11,913,270 Bytes free <small>Free space available on the internal flash.</small>	

Upload Firmware

Total Access firmware can be uploaded from your PC. Click 'Browse' and select the appropriate (.biz) file, and then click 'Upload.' Sending firmware to the Total Access is dependent on your network speed and may take several minutes.
[Click here to download updated firmware from ADTRAN's web site to your local PC.](#)

Upload Firmware:

Firmware images have a .biz extension.

ALERT: If the file you are uploading is larger than the free drive space, you will need to delete an older firmware version before continuing. You may delete the primary firmware to free space, but DO NOT reboot the unit without a primary firmware.

Delete Firmware

In order to upload new firmware, you may need to delete older versions. Select a firmware file to delete from your Total Access and click 'Delete.'

Delete Firmware:

It is safe to delete the primary firmware, but DO NOT reboot. Rebooting may cause undesired behavior.

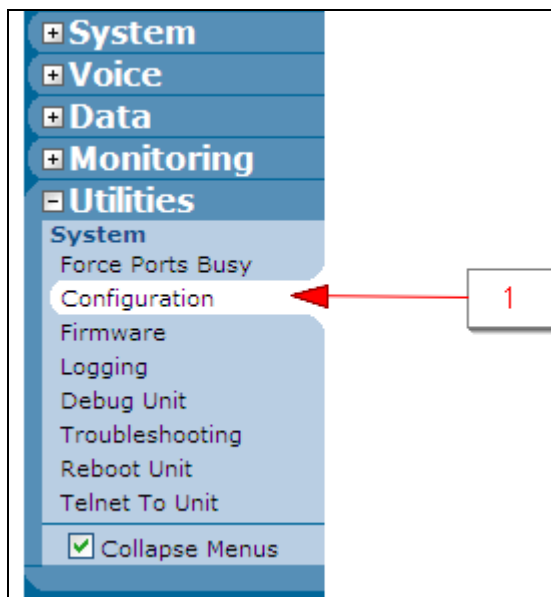
Appendix A - TA900 Ethernet WAN Configuration

Some deployments may require that the single Ethernet port on the TA900 be used as a WAN port. This configuration effectively removes all router functionality on the TA900 and converts it to a client of the network on which it resides. The following steps will detail how this configuration is applied to transform the TA900 from a router to a network client.

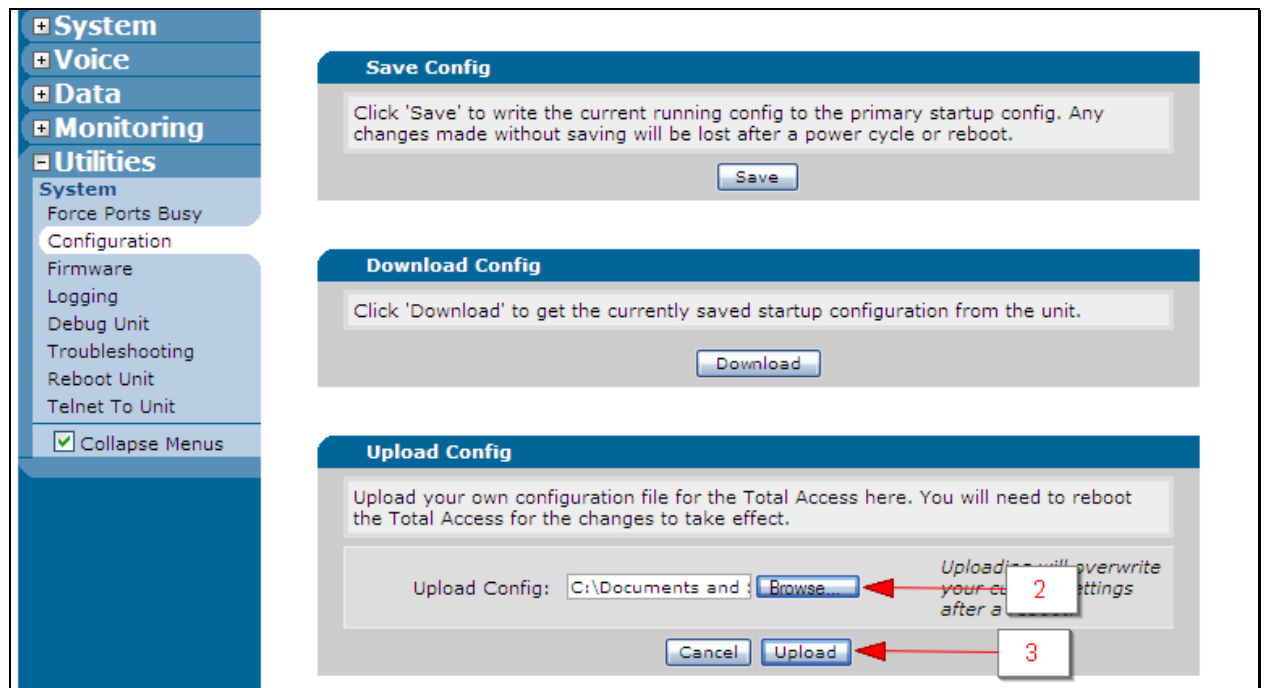
NOTE: The following section assumes that the TA900 is currently configured with the default router configuration and the TA900 is being accessed via a PC connected to the ETH 0/1 LAN port.

NOTE: The steps outlined here only apply to the TA900 family of IADs. The TA900e IADs can be left in the default router configuration with no adverse affects on their ability to provide voice service.

1. Select the **Configuration** link located under the **Utilities** heading in the left hand margin.



2. Click the **Browse** button and select from the local file system the appropriate default Ethernet WAN configuration provided by BroadSoft BroadCloud.
3. Click the **Upload** button.



4. Once the file upload has completed, click the **Reboot** button to restart the box and apply the configuration.

The screenshot shows the BroadSoft configuration interface. On the left is a navigation menu with the following items: System, Voice, Data, Monitoring, and Utilities. The Utilities menu is expanded, showing sub-items: System, Force Ports Busy, Configuration, Firmware, Logging, Debug Unit, Troubleshooting, Reboot Unit, and Telnet To Unit. The 'Collapse Menus' checkbox is checked. The main content area has a blue header and contains four sections: 'Save Config', 'Download Config', 'Upload Config', and 'Reboot Unit'. The 'Save Config' section has a 'Save' button. The 'Download Config' section has a 'Download' button. The 'Upload Config' section has an 'Upload Config' label, a text input field, a 'Browse...' button, and 'Cancel' and 'Upload' buttons. A green message states 'config-TA924e-03-27-2009.cfg Successfully Uploaded'. The 'Reboot Unit' section has an orange alert box with text about rebooting and a 'Reboot Now' button. A red arrow points from a box containing the number '4' to the 'Reboot Now' button.

System

Voice

Data

Monitoring

Utilities

System

Force Ports Busy

Configuration

Firmware

Logging

Debug Unit

Troubleshooting

Reboot Unit

Telnet To Unit

☒ Collapse Menus

Save Config

Click 'Save' to write the current running config to the primary startup config. Any changes made without saving will be lost after a power cycle or reboot.

Save

Download Config

Click 'Download' to get the currently saved startup configuration from the unit.

Download

Upload Config

Upload your own configuration file for the Total Access here. You will need to reboot the Total Access for the changes to take effect.

Upload Config: Browse...

Cancel Upload

Uploading will overwrite your current settings after a reboot.

config-TA924e-03-27-2009.cfg Successfully Uploaded

Reboot Unit

ALERT: The unit will need to be rebooted for the new configuration to take effect. Rebooting the unit will temporarily disrupt network traffic. The connection to the unit will be lost while the unit is rebooting. Please wait at least 60 seconds before attempting to restore the connection.

Reboot Now

4

5. Disconnect the PC from the ETH 0/1 port.
6. Connect the ETH 0/1 port to the existing network at which time the TA900 will use DHCP to acquire an IP address from the network.
7. Reference the DHCP server on the network to learn the IP address that was assigned to the TA900.
8. From a PC on the same network as the TA900, open an internet browser, insert the IP address in the URL box, press return, and log into the TA900 using the default user name admin and the default password password.
9. Complete the steps defined in the Mandatory Voice Configuration section of this document to finalize the initial turn-up of the TA900 for use in the BroadSoft BroadCloud VoIP Network.

Appendix B - T1 Cable Pin Outs

Connecting the Total Access T1 Interface requires the use of a cable terminated with RJ45 connectors on both ends. The pin out of the cable will need to be either straight through T1 or crossover T1 cable. Depending on the CPE one of the following pin outs must be used.

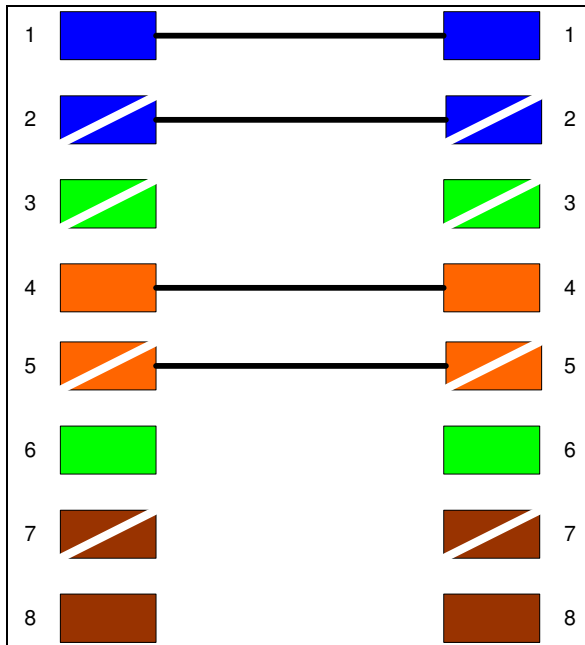


Figure 1: T1 Straight Cable Pin Out

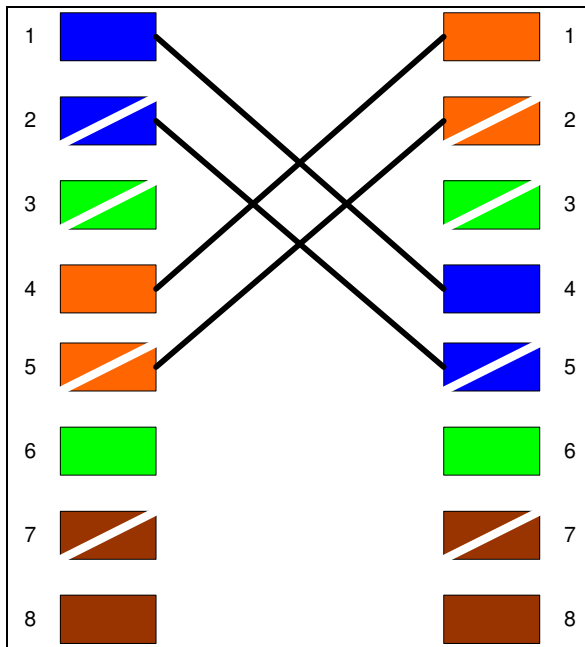


Figure 2: T1 Crossover Cable Pin Out

7.