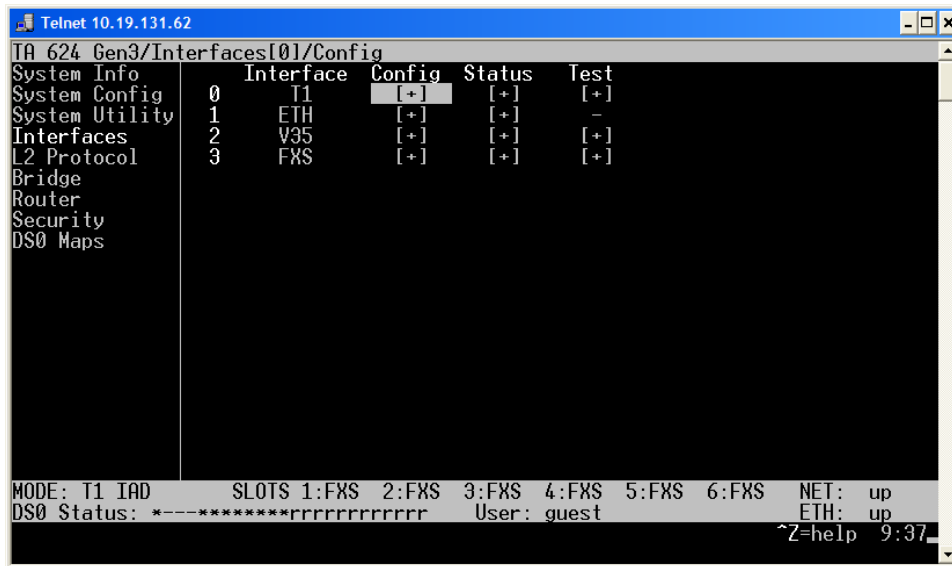


Configuring an ADTRAN Total Access 6xx Series for a full T1 data P2P connection “Host Router”:

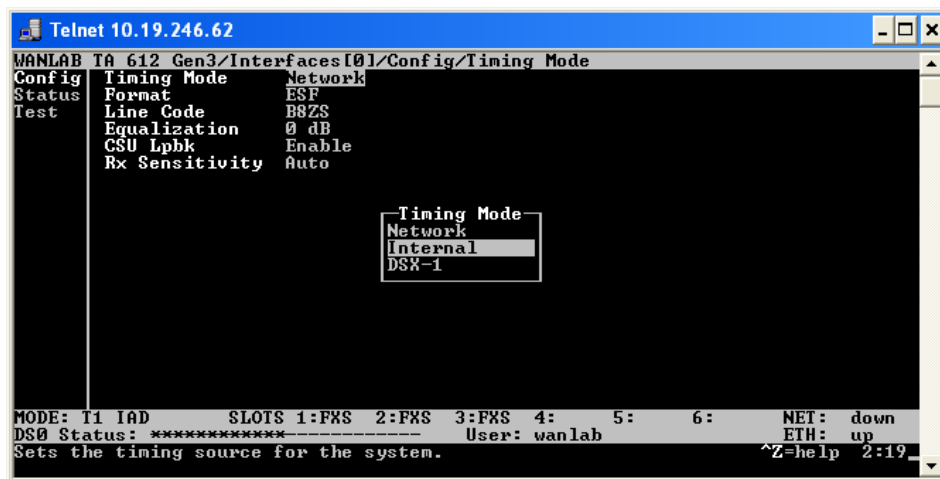
This document will walk you through the basic setup for a Total Access 6xx series. The process will follow the OSI model in that we begin with Layer 1 and work our way up to the router at Layer 3. The application is that we are using the full bandwidth of a T1 to connect and route two locations in a point-to-point configuration. Although there is no voice traffic in this application, simply changing the DS0 map would be all that is necessary for adding some voice channels.

1. From the Interfaces menu, select Config for the T1 Interface and hit Enter.



```
Telnet 10.19.131.62
TA 624 Gen3/Interfaces[0]/Config
System Info      Interface  Config  Status  Test
System Config    0         T1      [+]     [+]     [+]
System Utility   1         ETH     [+]     [+]     -
Interfaces       2         V35     [+]     [+]     [+]
L2 Protocol      3         FXS     [+]     [+]     [+]
Bridge
Router
Security
DS0 Maps
MODE: T1 IAD      SLOTS 1:FXS 2:FXS 3:FXS 4:FXS 5:FXS 6:FXS  NET: up
DS0 Status: *---*****rrrrrrrrrrr User: guest      ETH: up
^Z=help 9:37
```

2. This is where you configure the frame format, line coding, and T1 timing. We are going to use ESF/B8ZS (which are the defaults). Now we need to set the T1 clocking. T1 clocking is extremely important. There can be one and only one clock source on a T1 circuit. In this example we are going to set the main side router to be the clocking for the T1 circuit. Set the Timing Mode to Internal.



```
Telnet 10.19.246.62
MANLAB TA 612 Gen3/Interfaces[0]/Config/Timing Mode
Config Timing Mode Network
Status Format          ESF
Test    Line Code       B8ZS
        Equalization  0 dB
        CSU Lpbk     Enable
        Rx Sensitivity Auto
        Timing Mode
        Network
        Internal
        DSX-1
MODE: T1 IAD      SLOTS 1:FXS 2:FXS 3:FXS 4:  5:  6:  NET: down
DS0 Status: ***** User: wanlab      ETH: up
Sets the timing source for the system. ^Z=help 2:19
```


5. Arrow over to the Protocol column for the T1 interface. Hit Enter and select the appropriate protocol. For this example, we are setting up a PPP connection. When asked to confirm, hit Y.

```

Telnet 10.19.131.62
IA 624 Gen3/L2 Protocol[0]/Protocol
System Info      Interface Protocol Config Status
System Config    0      T1      AUTO      -      [+]
System Utility   1      ETH     802.3     [+]   [+]
Interfaces
L2 Protocol
Bridge
Router
Security
DS0 Maps

Protocol
PPP
PBE
AUTO
HDLC

MODE: T1 IAD      SLOTS 1:FXS 2:FXS 3:FXS 4:FXS 5:FXS 6:FXS NET: up *
DS0 Status: *---*****rrrrrrrrrrr User: guest      ETH: up
^Z=help 9:42

```

6. Arrow over to the Config column for the T1 interface. Hit Enter. Confirm that the Mode is set to Route IP as shown.

```

Telnet 10.19.131.62
IA 624 Gen3/L2 Protocol[0]/Config
Config Mode      Route IP
Status Authentication [+]
      PPP      [+]

MODE: T1 IAD      SLOTS 1:FXS 2:FXS 3:FXS 4:FXS 5:FXS 6:FXS NET: up *
DS0 Status: *---*****rrrrrrrrrrr User: guest      ETH: up
^Z=help 9:45

```

7. Arrow back to the left one time and down to Config for the Ethernet interface. Hit Enter and confirm that the Mode is set to Route IP. Hit H to return to the main menu.
8. From the Router menu, select Config and then Interfaces. Now select Setup for the T1 Interface. On this screen, you will enter the IP addresses you will be using as your WAN addresses. These are the addresses for the point-to-point link. The local IP is your end of the link. Typical settings are shown here.

```

Telnet 10.19.246.62
MANLAB TA 612 Gen3/Router/Config/Interfaces[21]/Setup
Setup
Active Yes
Address Mode User Specified
Local IP Address 10.0.0.1
IP Netmask 255.255.255.252
Far-End IP Address 10.0.0.2
NAT [+]
RIP [+]

MODE: T1 IAD SLOTS 1:FXS 2:FXS 3:FXS 4: 5: 6: NET: down *
DS0 Status: *****----- User: wanlab ETH: up
^Z=help 2:23

```

- Return to the Router/Config/Interfaces menu and select Setup for the Ethernet interface. Select Primary IP and then enter the IP address that you have allocated from your LAN to be the routers IP address. Hit H to return to the main menu.

```

Telnet 10.19.246.62
MANLAB TA 612 Gen3/Router/Config/Interfaces[11]/Setup/Primary IP/IP Address
Primary IP IP Address 192.168.1.254
Secondary IPs Subnet Mask 255.255.255.0
RIP [+]
Proxy ARP No

MODE: T1 IAD SLOTS 1:FXS 2:FXS 3:FXS 4: 5: 6: NET: down *
DS0 Status: *****----- User: wanlab ETH: up
^Z=help 2:30

```

Note: If you are telnetting to the unit and you choose to change the Ethernet IP address, you will need to change the IP address of your workstation to an address on the same network as the Total Access to continue configuring the unit.

- Now, you will need to configure the route table. Go to Router > Config > Routes. If this is just a point-to-point setup then you can set the Default Gateway as the remote side's WAN IP address. If there is a different Default Gateway (such as an Internet router), then you will need to set that as the Default Gateway and configure static routes. Fill in 192.168.2.0 for the "IP Address" and 255.255.255.0 for the "Subnet Mask." For Gateway type 10.0.0.2 because this is the next hop to get to the remote side network. Hit H to return to the main menu.

```

Telnet 10.19.246.62
WANLAB TA 612 Gen3/Router/Config/Routes/Static Routes[1]/Gateway
Static Routes
Num Active IP Address Subnet Mask Gateway Hops
1 No 192.168.2.0 255.255.255.0 10.0.0.2 1

MODE: T1 IAD SLOTS 1:FXS 2:FXS 3:FXS 4: 5: 6: NET: down *
DS0 Status: *****----- User: wanlab ETH: up
^Z=help 2:54

```

11. At this point, you should have a working configuration for the "Host Router." All 24 DS0s are being routed to the internal router of the Total Access. Connecting a switch to the 10/100 Base-T interface of the Total Access will allow your LAN to communicate to the remote location. *If you do not have the "Remote Router" configured see below.
12. For some initial troubleshooting, you can check the Interfaces/T1/Status menu. The Performance/Current numbers should be ZERO. Checking the Alarms menu should reveal no alarms (dashes are good, asterisks indicate alarms).
13. For further troubleshooting help, please call 1-888-423-8726 or email support@adtran.com.

Configuring an ADTRAN Total Access 6xx Series for a full T1 data P2P connection "Remote Router":

1. From the Interfaces menu, select Config for the T1 Interface and hit Enter.

```

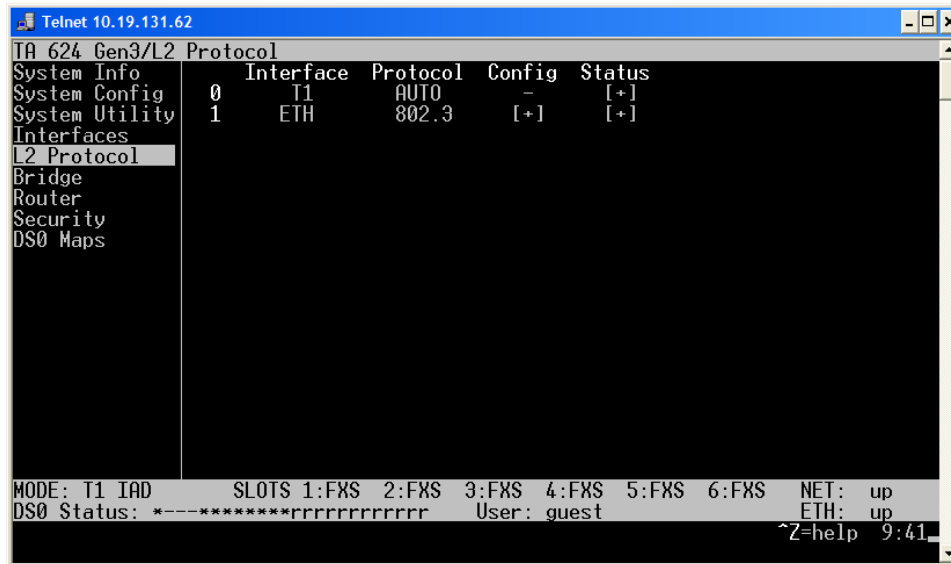
Telnet 10.19.131.62
TA 624 Gen3/Interfaces[0]/Config
System Info Interface Config Status Test
System Config 0 T1 [+] [+] [+]
System Utility 1 ETH [+] [+] -
Interfaces 2 V35 [+] [+] [+]
L2 Protocol 3 FXS [+] [+] [+]
Bridge
Router
Security
DS0 Maps

MODE: T1 IAD SLOTS 1:FXS 2:FXS 3:FXS 4:FXS 5:FXS 6:FXS NET: up
DS0 Status: *-----*****rrrrrrrrrrr User: guest ETH: up
^Z=help 9:37

```

2. This is where you configure the frame format, line coding, and T1 timing. We are going to use ESF/B8ZS (which are the defaults). Now we need to set the T1 clocking. T1 clocking is extremely important. There can be one and only one clock source on a T1 circuit. In this example we are

3. Hit H to return to the main menu, and then arrow down to the L2 Protocol menu.



```
Telnet 10.19.131.62
IA 624 Gen3/L2 Protocol
System Info      Interface Protocol Config Status
System Config    0      T1      AUTO    -      [+]
System Utility   1      ETH     802.3   [+]   [+]
Interfaces
L2 Protocol
Bridge
Router
Security
DS0 Maps

MODE: T1 IAD      SLOTS 1:FXS 2:FXS 3:FXS 4:FXS 5:FXS 6:FXS  NET: up
DS0 Status: *-----* User: guest      ETH: up
^Z=help 9:41
```

4. Arrow over to the Protocol column for the T1 interface. Hit Enter and select the appropriate protocol. For this example, we are setting up a PPP connection. When asked to confirm, hit Y.



```
Telnet 10.19.131.62
IA 624 Gen3/L2 Protocol[0]/Protocol
System Info      Interface Protocol Config Status
System Config    0      T1      AUTO    -      [+]
System Utility   1      ETH     802.3   [+]   [+]
Interfaces
L2 Protocol
Bridge
Router
Security
DS0 Maps

Protocol
PPP
FRE
AUTO
HDLC

MODE: T1 IAD      SLOTS 1:FXS 2:FXS 3:FXS 4:FXS 5:FXS 6:FXS  NET: up *
DS0 Status: *-----* User: guest      ETH: up
^Z=help 9:42
```

5. Arrow over to the Config column for the T1 interface. Hit Enter. Confirm that the Mode is set to Route IP as shown.

```

Telnet 10.19.131.62
TA 624 Gen3/L2 Protocol[01]/Config
Config Mode Route IP
Status Authentication [+]
          PPP [+]

MODE: T1 IAD SLOTS 1:FXS 2:FXS 3:FXS 4:FXS 5:FXS 6:FXS NET: up *
DS0 Status: *----- User: guest ETH: up
^Z=help 9:45

```

6. Arrow back to the left one time and down to Config for the Ethernet interface. Hit Enter and confirm that the Mode is set to Route IP. Hit H to return to the main menu.
7. From the Router menu, select Config and then Interfaces. Now select Setup for the T1 Interface. On this screen, you will enter the IP addresses you will be using as your WAN addresses. These are the addresses for the point-to-point link. The local IP is your end of the link. Typical settings are shown here. *They should be the opposite of the "Host Router."

```

Telnet 10.19.246.62
WANLAB TA 612 Gen3/Router/Config/Interfaces[21]/Setup
Setup Active Yes
      Address Mode User Specified
      Local IP Address 10.0.0.2
      IP Netmask 255.255.255.252
      Far-End IP Address 10.0.0.1
      NAT [+]
      RIP [+]

MODE: T1 IAD SLOTS 1:FXS 2:FXS 3:FXS 4: 5: 6: NET: down *
DS0 Status: *----- User: wanlab ETH: up
^Z=help 3:06

```

8. Return to the Router/Config/Interfaces menu and select Setup for the Ethernet interface. Select Primary IP and then enter the IP address that you have allocated from your LAN to be the routers IP address. Hit H to return to the main menu.


```

Telnet 10.19.246.62
WANLAB TA 612 Gen3/Router/Config/Interfaces[11]/Setup/Primary IP/IP Address
Primary IP      IP Address  10.19.246.62
Secondary IPs   Subnet Mask 255.255.255.0
                RIP          [+]
                Proxy ARP   No

                IP Address
                192.168.2.254

MODE: T1 IAD      SLOTS 1:FXS 2:FXS 3:FXS 4: 5: 6: NET: down *
DS0 Status: *****----- User: wanlab      ETH: up
^Z=help 3:08

```

Note: If you are telnetting to the unit and you choose to change the Ethernet IP address, you will need to change the IP address of your workstation to an address on the same network as the Total Access to continue configuring the unit.

- Now, you will need to configure the Default Gateway. Go to Router > Config > Routes. Since this is just a point-to-point setup then you can set the Default Gateway as the remote side's WAN IP address. Hit H to return to the main menu.

```

Telnet 10.19.246.62
WANLAB TA 612 Gen3/Router/Config/Routes/Default Gateway
Interfaces      Default Gateway 10.0.0.1
Routes          Static Routes    [+]
DHCP Server
UDP Relay

                Default Gateway
                10.0.0.1

MODE: T1 IAD      SLOTS 1:FXS 2:FXS 3:FXS 4: 5: 6: NET: down *
DS0 Status: *****----- User: wanlab      ETH: up
^Z=help 3:11

```

- At this point, you should have a working configuration for the Total Access Point-to-Point T1 configuration. All 24 DS0s are being routed to the internal router of the Total Access. Connecting a switch to the 10/100 Base-T interface of the Total Access will allow your LAN to communicate to the host location.
- For some initial troubleshooting, you can check the Interfaces/T1/Status menu. The Performance/Current numbers should be ZERO. Checking the Alarms menu should reveal no alarms (dashes are good, asterisks indicate alarms).
- For further troubleshooting help, please call 1-888-423-8726 or email support@adtran.com.