

Configuring MC3810 for TDM Cross Connect

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Introduction

This document illustrates the MC3810 configuration necessary for the sample network scenario in the Network Diagram section of this document. This document is an extension of Cross Connect and Frame Forward Signaling for Cisco MC3810 PRI.

The Cisco MC3810 has built-in time-division multiplexing (TDM) buses. TDM buses allow the MC3810 to perform the TDM cross-connect (drop and insert) function.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on Cisco IOS® Software Release 12.2T and later.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to the Cisco Technical Tips Conventions for more information on document conventions.

Configure

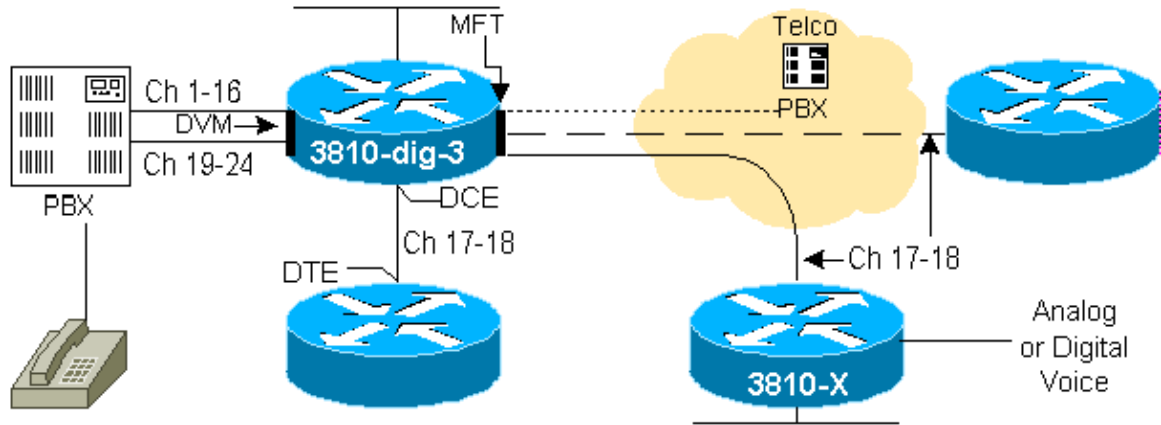
In this section, you are presented with the information to configure the features described in this document.

Note: Use the Command Lookup Tool (registered customers only) to obtain more information on the commands used in this section.

Network Diagram

The MC3810 named 3810-dig-3 in this network diagram performs these tasks:

- Passes channel 1–16 as uncompressed voice. This allows the PBX to be connected to PSTN.
- Passes channel 17–18 as 128 K data channel to another device (via interface Serial 0).
- Transmits data and compressed voice over channel 19–24.



Configurations

This configuration allows 3810-dig-3 to perform the tasks listed in the network diagram section.

```
3810-dig-3
3810-dig-3#show run
network-clock base-rate 64k
!
controller T1 0
mode cas
tdm-group 1 timeslots 1-16 type e&m
tdm-group 2 timeslots 17-18
framing esf
linecode b8zs
channel-group 0 timeslots 19-24 speed 64
!
controller T1 1
mode cas
tdm-group 1 timeslots 1-16 type e&m
voice-group 0 timeslots 19-24 type e&m-wink-start
framing esf
linecode b8zs
!
interface Serial0
no ip address
encapsulation clear-channel
clockrate network 128000; map to channel 17 & 18
!
cross-connect 0 T1 0 1 T1 1 1
cross-connect 2 Serial0 T1 0 2
end
```

Note: The **type e&m** command argument under the T1 interface configuration must be configured for channels that carry uncompressed voice. This ensures the integrity of A/B or A/B/C/D bit. The A/B and A/B/C/D bits show the signaling information for on-hook and off-hook status of the phone connected to the

PBX.

Verify

Use this section to confirm that your configuration works properly.

The Output Interpreter Tool (registered customers only) (OIT) supports certain **show** commands. Use the OIT to view an analysis of **show** command output.

When you enable the **debug serial interface** command, you must enter the **show controller interface t1 1** command in order to view the results.

Use the **show controller t1 1** command in order to ensure that the router functions properly in the network.

```
3810-dig-3#show controller t1 1
T1 1 is up.
  Applique type is Channelized T1
  Cablelength is short
  No alarms detected.
  Slot 4 DSX Serial #09556414 Model TEB HWVersion 4.70
  Framing is ESF, Line Code is B8ZS, Clock Source is Line.
  Data in current interval (5 seconds elapsed):
    0 Line Code Violations, 0 Path Code Violations
    0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
    0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
  Robbed bit signals state:
    timeslots      rxA rxB rxC rxD          txA txB txC txD
1                 1  1  1  1          1  1  1  1
2                 1  1  1  1          1  1  1  1
3                 1  1  1  1          1  1  1  1
4                 1  1  1  1          1  1  1  1
5                 1  1  1  1          1  1  1  1
6                 1  1  1  1          1  1  1  1
7                 1  1  1  1          1  1  1  1
8                 1  1  1  1          1  1  1  1
9                 1  1  1  1          1  1  1  1
10                1  1  1  1          1  1  1  1
11                1  1  1  1          1  1  1  1
12                1  1  1  1          1  1  1  1
13                1  1  1  1          1  1  1  1
14                1  1  1  1          1  1  1  1
15                1  1  1  1          1  1  1  1
16                1  1  1  1          1  1  1  1
17                1  1  1  1          1  1  1  1
18                1  1  1  1          1  1  1  1
19                1  1  1  1          1  1  1  1
20                1  1  1  1          1  1  1  1
21                1  1  1  1          1  1  1  1
22                1  1  1  1          1  1  1  1
23                1  1  1  1          1  1  1  1
```

Troubleshoot

This section provides information you can use to troubleshoot your configuration.

Troubleshooting Commands

The Output Interpreter Tool (registered customers only) (OIT) supports certain **show** commands. Use the OIT to

view an analysis of **show** command output.

Note: Refer to Important Information on Debug Commands before you use **debug** commands.

Use the **debug dsx signaling** or the **debug serial interface** command in order to see the A/B or A/B/C/D bit on the MFT or DVM. The **debug dsx signaling** command shows the A/B bits in real time as they pass through the router from interface to interface. The **debug serial interface** command, on the other hand, shows a snapshot in time of the A/B bit as it passes through the router. Use the **clear counter** command in order to clear the log of A/B bit information before you enter either debug command because you might see many pages of stored information otherwise.

It is important to view the A/B and A/B/C/D bit information because you can then see in which timeslot the bits fall in the T1 frame. In a cross connect situation, you want to ensure that the A/B and A/B/C/D bits fall in the same timeslots for each cross connected interface; the MFT and the DV in this case.

Related Information

- [Voice Technology Support](#)
- [Voice and Unified Communications Product Support](#)
- [Recommended Reading: Troubleshooting Cisco IP Telephony](#)
- [Technical Support & Documentation – Cisco Systems](#)

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