



Cross Connects

This chapter describes provisioning line card cross connects and includes the following sections:

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DSO Cross Connects

You can create time division multiplexing (TDM) cross connects on the following line interface modules:

- DSX1/8
- DSX3-CHNL
- STSX1-CHNL
- T1-2-V35
- MSDSL-2W
- ISDN-BRI/8
- Analog (FXS/16, RPOTS/16, RUVG/8)

The following list shows which line interface modules in a Cisco 6732 or Cisco 6705 work with specific INDLs:

CARD	DSO INDL	FDL INDL	AAL5 INDL
T1-2-V35 HDSL2 MDSL	Y	Y	Y (in 6705)
DSX1	Y	Y	N
STS-1 DSX3-CHNL	Y	Y	N


Note

You cannot start a cross connect from an ISDN-BRI/8 line card, an analog line card, or the V.35 port of a T1-2-V35 line card, but these cards can serve as the destination of a cross connect. (See Figure 9-1 on page 9-3.)


Note

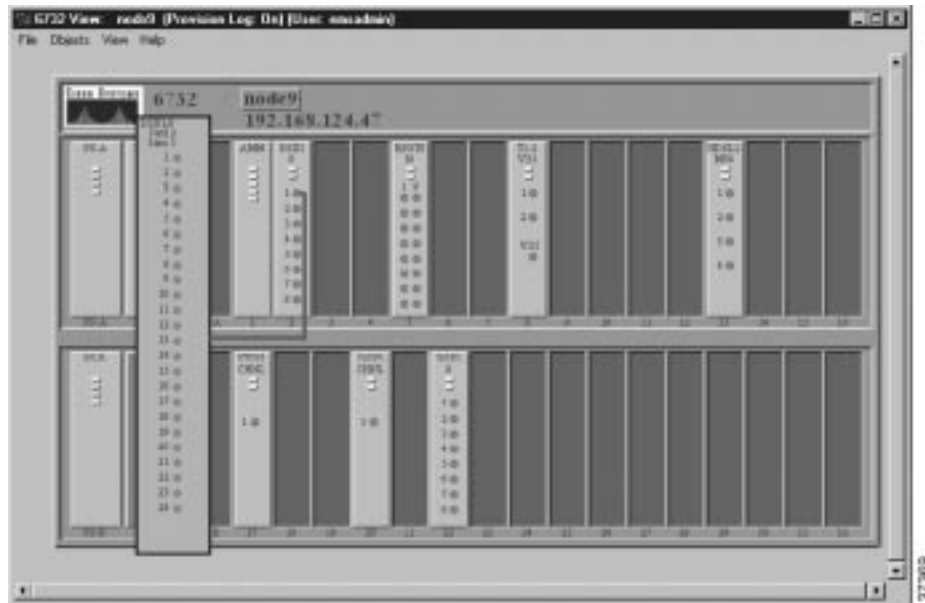
TDM cross connects cannot be made within the same card. You must drag the cross connect line to a destination other than the originating card. (See Figure 9-2 on page 9-4.)

The following section describes how to create and delete internal TDM cross connects on the NE.

Provisioning DS0 Cross Connects

- Step 1** From Cisco 6700 NodeView, move the cursor over the line to be cross connected. The line icon turns orange.
- Step 2** Right-click the line and select **Display Cross Connect** from the pop-up menu. EMS launches an expanded view of the line card and line to be provisioned. (See Figure 9-1.)
If no line exists yet, right-click the LED on the icon of the card and select **Display Cross Connect** from the pop-up menu.

Figure 9-1 Internal Cross Connect—Expanded Card and Line View



- Step 3** Click and drag from the line icon in the expanded card view to the desired destination line.
(See Figure 9-2.) If you are creating a cross connect from a DSX3-CHNL or STSX1-CHNL line card, you can use the pull-down field to select the DS1 to provision. (See Figure 9-3.)

After the visual cross connect is created, EMS launches the cross connect provisioning window.
(See Figure 9-4.)

Figure 9-2 Internal Cross Connect—Draw Visual Cross Connect

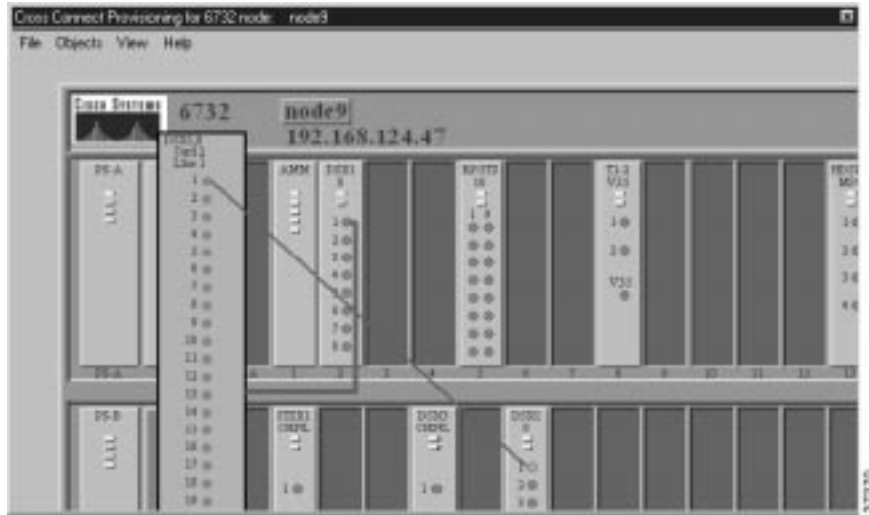


Figure 9-3 STSX1-CHNL DS1 Selection Field

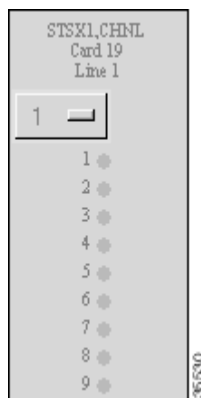
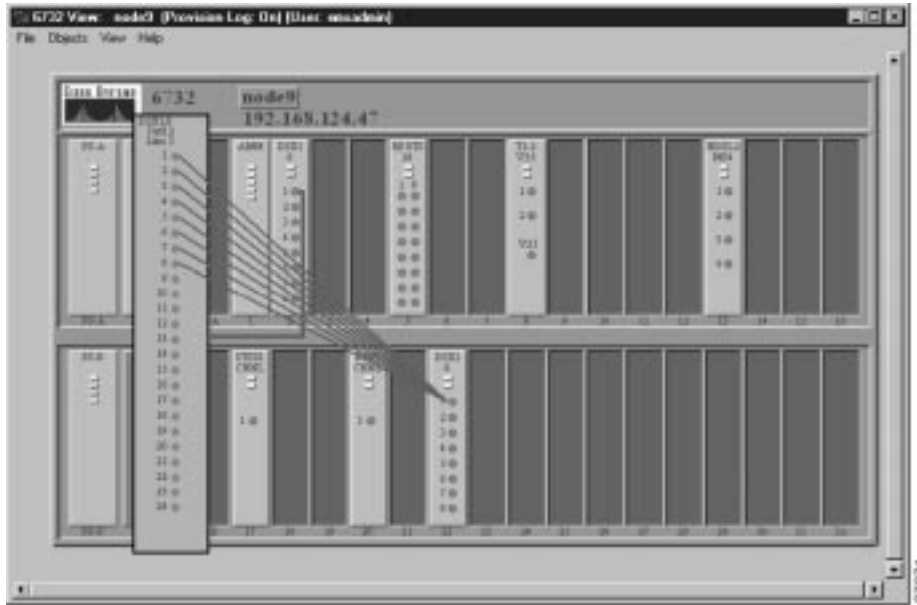


Figure 9-4 Internal Cross Connect—Create Cross Connect

- Step 4** Highlight the source DS0s in the **Lines/DS0s** list on the left side.
- Step 5** The **To Card Type**, **To Card**, and **To Line** fields are set to the destination line selected in Step 3. You can change the destination card type, card, and line in the pull-down fields on the right side.
- Step 6** Highlight the destination DS0s in the **Lines/DS0s/Channels** list on the right side.
- Step 7** Click **Create Data CC**, **Create Voice CC**, or **Create ISDN CC** to create a data, voice, or ISDN cross connect. EMS confirms the completion of the cross connects with the text “cc” placed next to each successfully provisioned DS0.

- Step 8** Click **Exit** to return to Cisco 6700 NodeView. All the provisioned cross connects are shown. (See Figure 9-5.)

Figure 9-5 Cross Connects Displayed



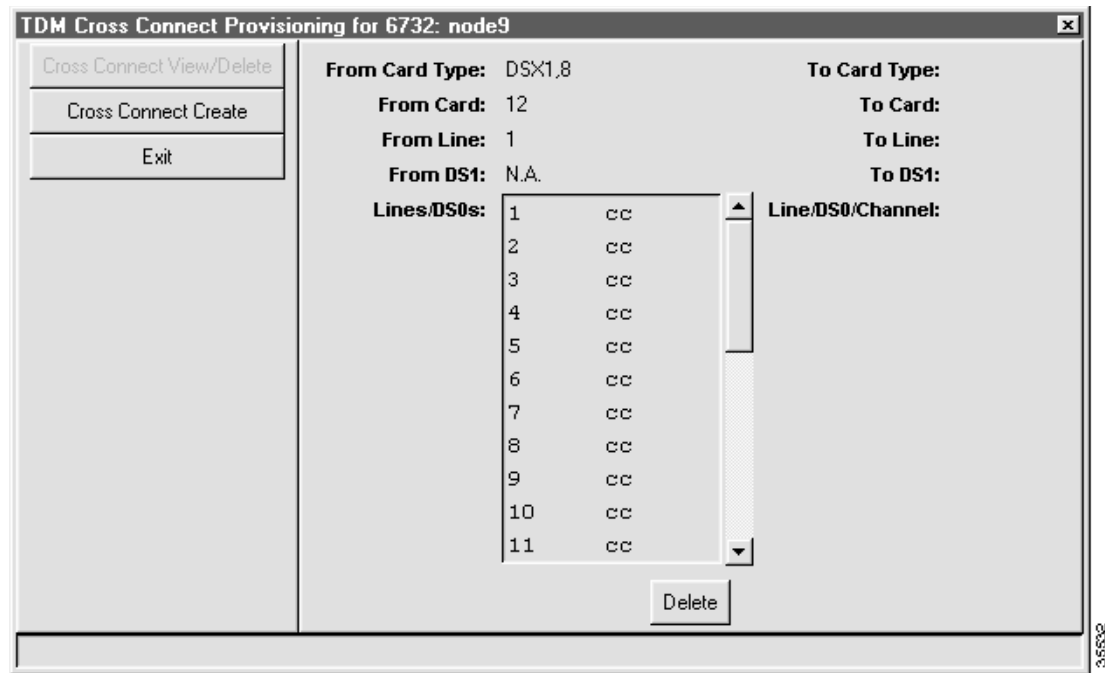
- Step 9** Right-click the expanded card display, and select **End Cross Connect Display** from the popup menu.

Deleting DSO Cross Connects

You can also use the cross connect provisioning screen to delete cross connects. You can initiate cross connect deletions from the NodeView with cross connects displayed, or from the cross connect provisioning window (select the **Cross Connect Provisioning** option).

- Step 1** With the cross connects displayed from the NodeView, double-click a specific cross connect line. EMS launches the cross connect provisioning window. (See Figure 9-6.)

Figure 9-6 Cross Connect Provisioning Window



- Step 2** From the **Lines/DS0** list, highlight the cross connections to be deleted.
- Step 3** Click **Delete** to remove the cross connections. EMS confirms the deletion by removing the “cc” text next to each line.

Ending DSO Cross Connect Provisioning

- Step 1** Right-click the expanded line card.
- Step 2** Select **End Cross Connect Display**.

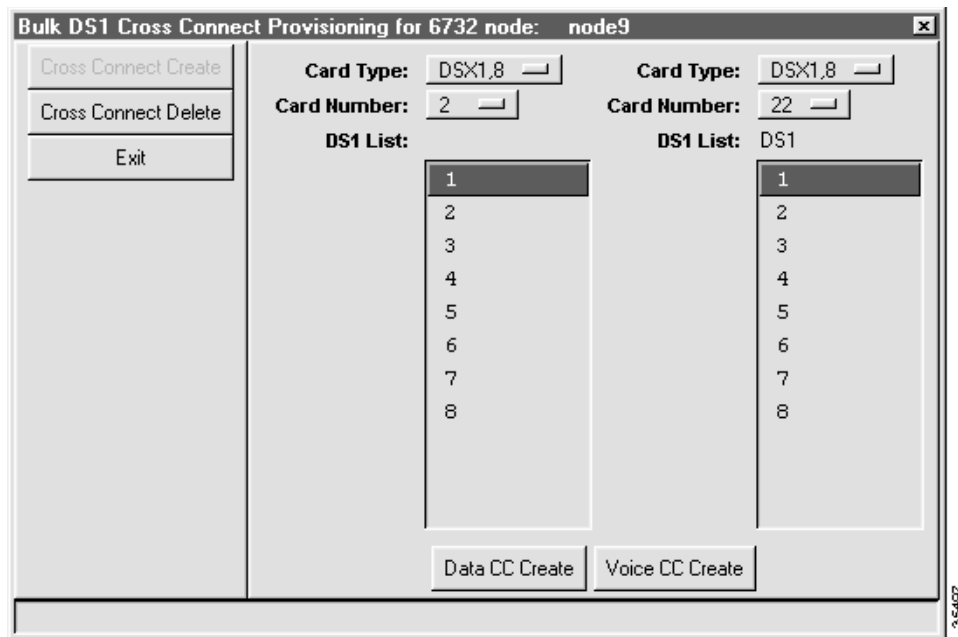
DS1 Cross Connects

Bulk Provisioning

You can use the bulk DS1 cross connect procedure to cross connect entire DS1 lines within the NE.

- Step 1** From Cisco 6700 NodeView, select **Objects > Bulk DS1 Cross Connect** from the menu bar. EMS launches the DS1 cross connect window. (See Figure 9-7.)

Figure 9-7 DS1 Cross Connect Window

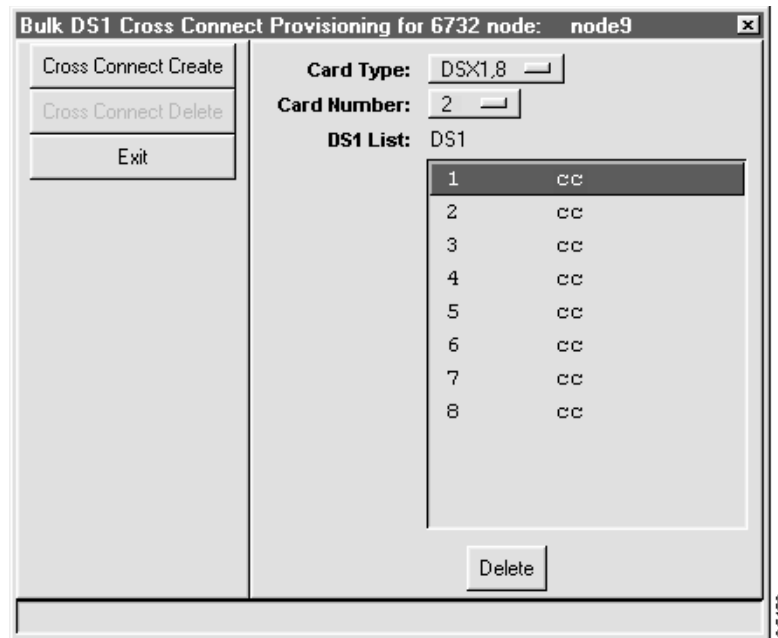


- Step 2** Select the **Card Type** and **Card Number** for the cross connect source.
- Step 3** Highlight the source DS1 lines in the **DS1 List** on the left side.
- Step 4** Select the **Card Type** and **Card Number** for the cross connect destination.
- Step 5** Highlight the destination DS1 lines in the **DS1 List** on the right side.
- Step 6** Click **Create Data CC** or **Create Voice CC** to create a data or voice. EMS confirms the completion of the cross connects with the text “cc” placed next to each successfully provisioned DS1.
- Step 7** Click **Exit** to return to the NodeView. All the provisioned cross connects are shown.

Deleting DS1 Cross Connects

- Step 1 From Cisco 6700 NodeView, select **Objects > Bulk DS1 Cross Connect** from the menu bar. EMS launches the DS1 cross connect window.
- Step 2 Click **Cross Connect Delete** in the function bar. EMS displays the DS1 cross connect delete window. (See Figure 9-8.)

Figure 9-8 DS1 Cross Connect Delete Window



- Step 3 From the **DS1 List**, highlight the cross connects to be deleted.
- Step 4 Click **Delete** to remove the cross connections. EMS confirms the deletion by removing the “cc” text next to each line.

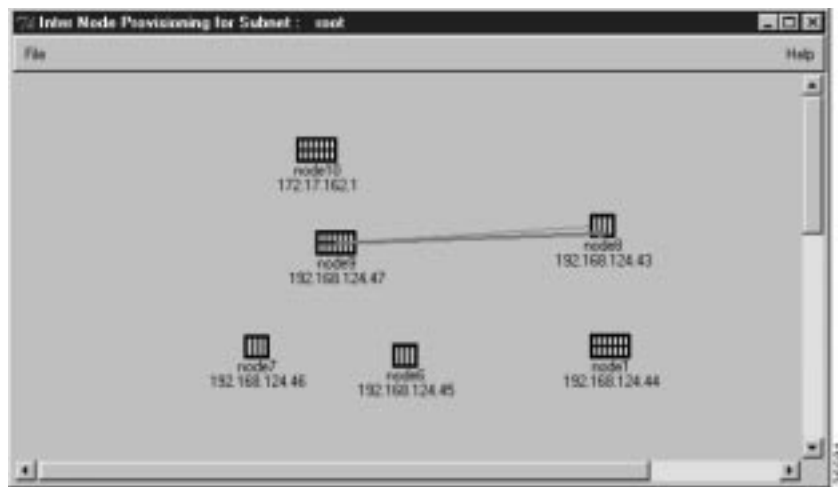
Remote Cross Connects

Inter node (remote) cross connects are made from one NE to another NE. Before you can create inter node cross connects, an inter node link must be established between the local and remote nodes. See Chapter 8, “Inter Node Links” for more information on provisioning inter node links.

Provisioning Remote Cross Connects

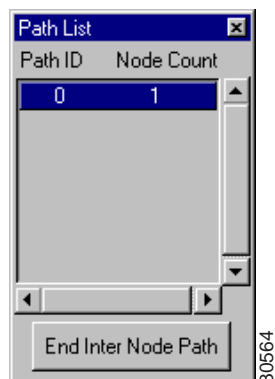
- Step 1 From Cisco 6700 NetView, select **Applications > Inter Node Provisioning** from the menu bar. EMS launches the inter node provisioning window.
- Step 2 Click and drag a line from the local node to the remote node. The line appears as a red arrow pointing to the remote node. (See Figure 9-9.)

Figure 9-9 Inter Node Provisioning—Create Path



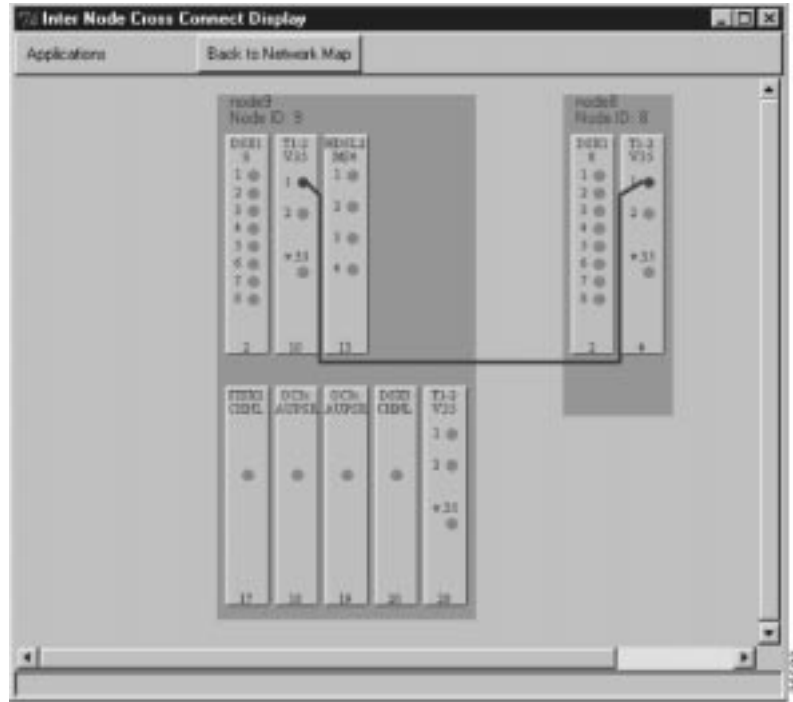
- Step 3 EMS displays a path list window, indicating the path that will be used to communicate between the two nodes (**Path ID**) and the number of nodes that are included in the path (**Node Count**). (See Figure 9-10.)

Figure 9-10 Inter Node Provisioning—Path List



- Step 4** If more than one path ID appears in the path list, select the desired path between the local and remote node. Click each path ID to show the path (red arrow) in the inter node provisioning window.
- Step 5** In the inter node provisioning window, double-click the red arrow. EMS launches the inter node cross connect display, showing the broadband line cards installed in each node. (See Figure 9-11.)

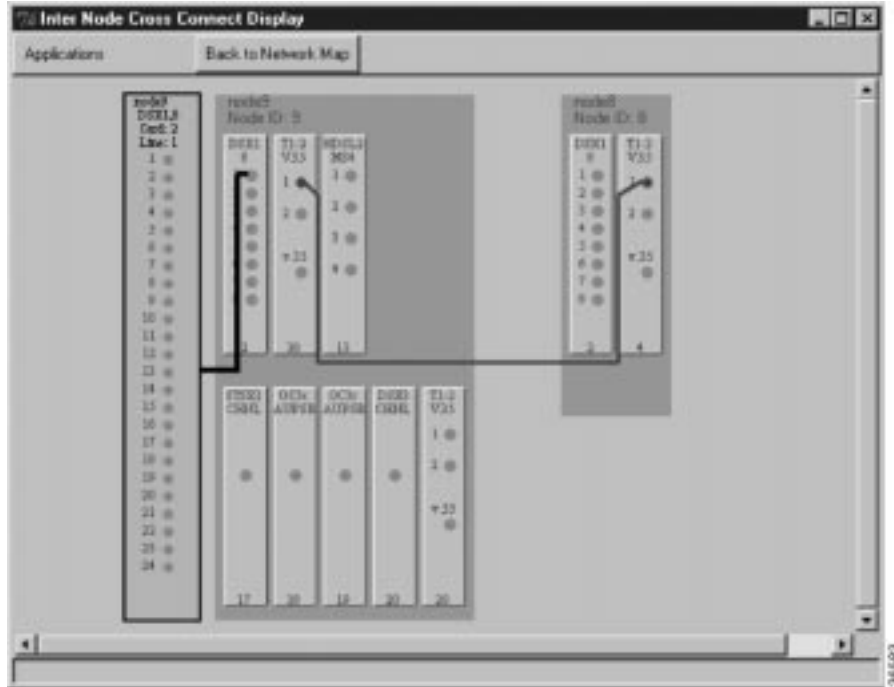
Figure 9-11 Inter Node Cross Connect



The blue line linking the two nodes is the inter node link. See Chapter 8, “Inter Node Links” for more information on provisioning inter node links.

- Step 6** Right-click the line icon on the local node, and select **Start Inter Node Cross Connect** from the popup menu. EMS launches the expanded (cross connect) line card view. (See Figure 9-12.)

Figure 9-12 Inter Node Cross Connect—Expanded Line Card View

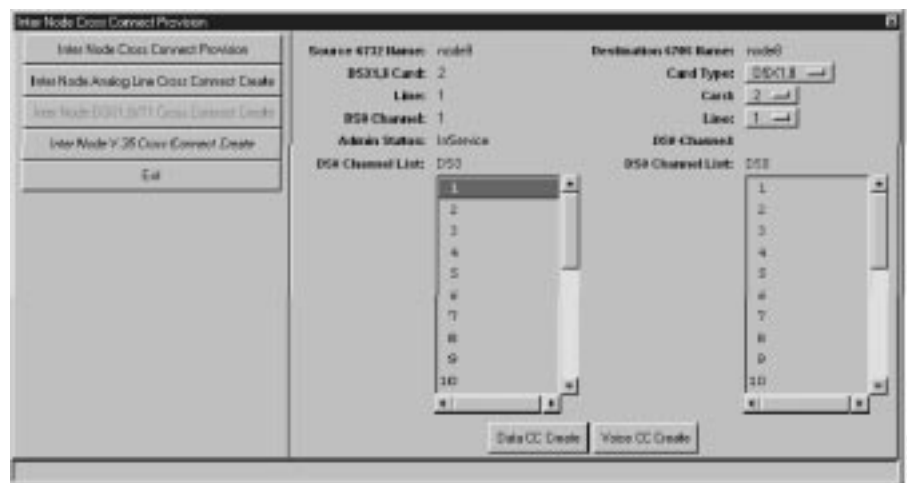


- Step 7** Drag a line from the source DS0 to the destination line on the other NE. (See Figure 9-13.) After the visual line is drawn, EMS launches the inter node cross connect provisioning window. (See Figure 9-14.)

Figure 9-13 Inter Node Cross Connect—Draw Visual Cross Connect



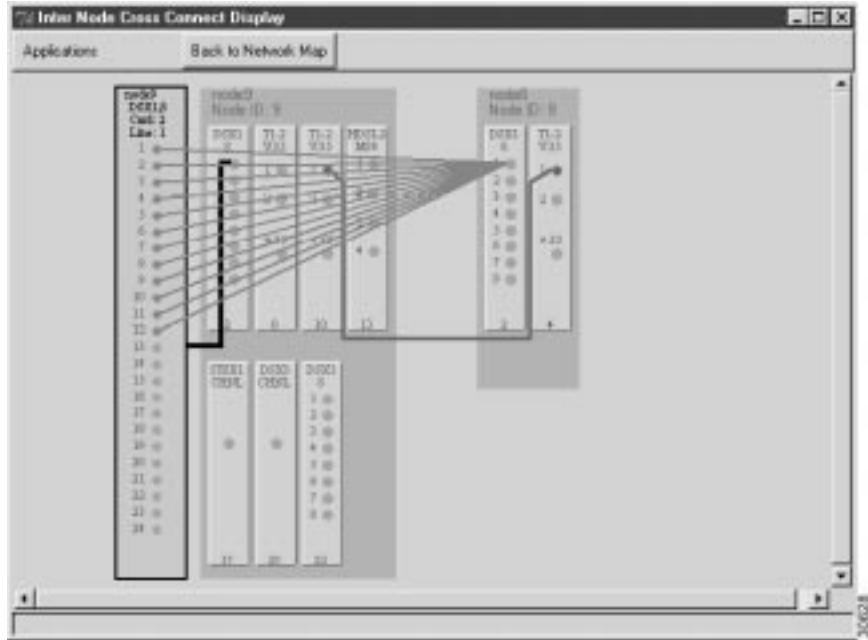
Figure 9-14 Inter Node Cross Connect Provisioning Window



- Step 8** In the **DS0 Channel List** on the left side, select the DS0 lines to be cross connected.
- Step 9** Select the destination lines in the **DS0 Channel List** on the right side.
- Step 10** Click **Data CC Create** or **Voice CC Create** to create a data or voice cross connection. EMS confirms the completion of the cross connects with the text “cc” placed next to each successfully provisioned line.

- Step 11** Click **Exit** to return to the inter node cross connect and visually confirm the inter node cross connects. (See Figure 9-15.)

Figure 9-15 Inter Node Cross Connects Displayed

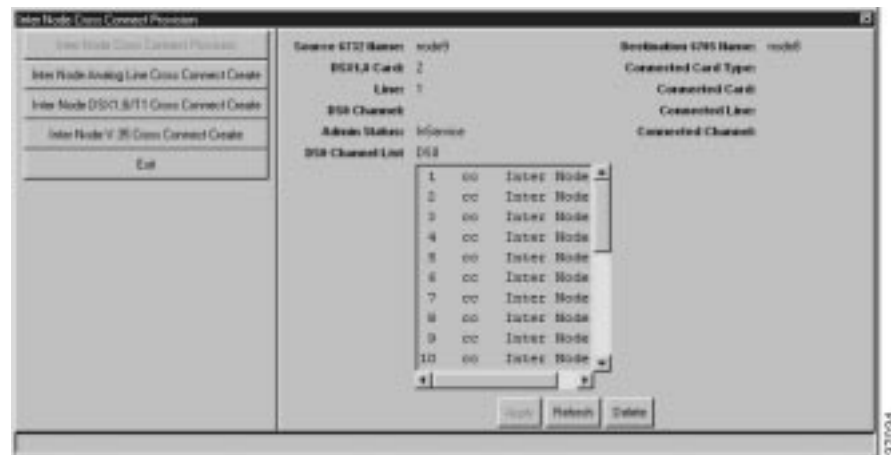


Deleting Remote Cross Connects

You can also use the inter node cross connect provisioning window to delete cross connects. You can initiate cross connect deletions from the NodeView with cross connects displayed, or from the inter node cross connect provisioning window (select the **Inter Node Cross Connect Provision** option).

- Step 1** With the cross connects displayed from the NodeView, double-click a specific cross connection line. EMS launches the inter node cross connect provisioning window. (See Figure 9-16.)

Figure 9-16 Initiate Delete Cross Connects



- Step 2** From the **DS0 Channel List**, select the cross connections to be deleted. Click **Delete** to remove the cross connections. EMS confirms the deletion by removing the “cc” text next to each line.

Ending Inter Node Cross Connect Provisioning

- Step 1** Right-click the expanded line card.
- Step 2** Select **End Cross Connect Display**.

