Configuring Links

Additional sections:

*Configuring LS Links*

*Configuring Annex A Links*

*Configuring ATM Links*

*Configuring M2PA Links*

*Configuring M2UA Links*

*Configuring Generic Links*

In this section:

- LS (low-speed channelized) time division multiplex (LS or TDM) links
- Annex A (high-speed unchannelized) links
- Asynchronous Transfer Mode (ATM) links
- M2PA links
- M2UA links
- Generic Links

For detailed information about the appropriate description of the various supported CPUs and VMs for the DSC Platforms, see [Terminology](#).

The LS, Annex A, and ATM Links are only supported on the DSC 8000.

The following table provides the link types and their respective capacity that are configured on the DSC at the MTP3. This table shows the physical links that can be terminated on the DSC; however, the actual link count depends on the system configuration.

**Table 1**: Supported Link Types and Link Capacity for the Sonus Signaling Systems

<table>
<thead>
<tr>
<th>System</th>
<th>I/O Card Type</th>
<th>LS Links</th>
<th>ATM Links</th>
<th>Annex A</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSC 8000</td>
<td>AMC348</td>
<td>Up to 126 per card</td>
<td>Up to 7 per card</td>
<td>Up to 4 per card</td>
</tr>
<tr>
<td>Up to 32 I/O cards¹</td>
<td>Up to 4536 per system</td>
<td>Up to 252 per system</td>
<td>Up to 144 per system</td>
<td></td>
</tr>
</tbody>
</table>

¹ The number of I/O cards depends on the system load levels and CPU capacity.
The LS, Annex A, and ATM links are processed through I/O cards. However, the M2PA, M2UA, and Generic Links are processed through Routing CPUs and are used for the transport of SS7 MTP3 signaling messages over Internet Protocol (IP) using the services of the Stream Control Transmission Protocol (SCTP).

Note
You can view a summary of all links created on a DSC Platform (see View All Links).

The DSC Platform supports Access-links (A-links), Bridge-links (B-links), Cross-links (C-links), Diagonal links (D-links), Extended links (E-links), and Fully Associated-links (F-links).

For information about modifying the link type for Japanese networks, see Configuring F-Links for Japanese Networks.

A linkset can comprise the following signaling links in a single linkset:

**LS (low-speed channelized) time division multiplex (LS or TDM) links**
Time division multiplex is a mechanism for dividing the bandwidth of a T1 or E1 into separate channels or time slots to be used as links. An E1 TDM provides a 2.048Mbps communications link divided into 32 time slots of 64Kbps each. A T1 TDM provides a 1.544Mbps communication link divided into 24 time slots of 64K bps. For more information, see Configuring LS Links.

**Annex A (high-speed unchannelized) links**
An unchannelized link or Annex A link is similar to a channelized LS channelized TDM link, but the Annex A link utilizes the full bandwidth available on the E1 or T1 according to Q.703/Annex A. This link provides data rates of 1.5 and 2.0Mbit/s as a national option, which means that an entire T1 or E1 is used as a single Annex A link. For more information, see Configuring Annex A Links.

**Asynchronous Transfer Mode (ATM) links**
Q.2931 protocol over signaling ATM adaptation layer (QSAAL) supports connection control signaling. The messages are sent over this layer, which ensures their reliable delivery. The message types for Q.2931 are point-to-multipoint messages and include ALERTING, PROGRESS, SETUP ACKNOWLEDGE, INFORMATION, and NOTIFY. For more information, see Configuring ATM Links.

**M2PA links**
M2PA is a SIGTRAN protocol that supports the transport of SS7 MTP2 user part signaling messages over IP using SCTP. Therefore, an M2PA link is used for communication between SS7 systems over IP rather than T1 or E1 TDM links. M2PA links are based on RFC4615. For more information, see Configuring M2PA Links.

**M2UA links**
The MTP3 to MTP2 interface is described in ITU Q.701 and ANSI T1.111.1 in terms of abstract primitives. M2UA is an IETF protocol (RFC3331) that provides a realization of the MTP3 to MTP2 interface in terms of messages exchange over SCTP and associated procedures. This allows M2UA-capable MTP3 and MTP2 from different vendors, or in different geographic locations, to inter-operate.
Several links may be configured on the (remote) MTP2, and several links may be managed using the same M2UA/SCTP association. In the Web UI, the M2PA connection between MTP3 and MTP2 is modeled as an L2 Connection with Type set to HWM_SCTP and M2UA Protocol Type set to M3UA.

The links that use an M2UA L2 Connection are M2UA Links. M2UA links can be any link type supported by the (remote) MTP2.

**Generic Links**

A Generic Link may be either an IPSP or an MG link, both of which are customer-proprietary link types. These links are M2PA-like in their network function, but use an M3UA-like message format.