

# NEC

# DSX

## **Voxitas SIP Trunk Setup**

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Revision History		
Issue	Date	Revisions
1.03	1/19/11	<ul style="list-style-type: none"> <li>Corrected typo: Available SIP line numbers in a DSX-40 without a COIU expansion card are 5-12.</li> <li>In the System Administrator, <i>Single</i> registration mode is called <i>Common</i>.</li> </ul>
1.04	1/20/11	<ul style="list-style-type: none"> <li>Added a note about the requirement for Voxitas to force Caller ID in the regional server model.</li> </ul>
1.05	4/23/11	<ul style="list-style-type: none"> <li>Updated required software level, expanded RTP port forwarding range, and added System Administrator screen shots.</li> <li>Removed requirement for 1104-09.</li> </ul>

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## 1 Overview

The DSX is compatible with Voxitas trueVoice SIP Trunking. This setup guide summarizes the account information you will receive from Voxitas and provides step-by-step instructions on how to program that information into the DSX.

You can set up SIP trunks as standard loop start lines or DID lines. All the features available with other types of loop start and DID lines are also available with Voxitas SIP trunks. For details on the features available with loop start and DID lines, refer to the on-line DSX Software Manual at:

[http://www.necdsx.com/docs/dita/dsx\\_v3\\_complete/index.html](http://www.necdsx.com/docs/dita/dsx_v3_complete/index.html)

Note: DSX does not currently support T.38 fax and multiple host names.

## 2 Voxitas Setup

To set up your Voxitas trueVoice SIP Trunking account, contact Voxitas at <http://www.voxitas.com>. Once your account is set up they will provide you with the following service information:

**Table 1: Voxitas Account Information**

Option	Description
Registration/Proxy Server	<p>The Registration/Proxy Server is the SIP registration domain for your Voxitas SIP trunks. When your SIP trunks initially register they use this domain.</p> <p><i>If Voxitas specifies a regional registration server (e.g., stl01a.netlogic.net), they <b>must</b> force Caller ID <b>in their account setup</b> for compatibility with DSX. This is not required for *.voxitas.com registrations.</i></p>
SIP Trunk Username	<p>Each of your Voxitas SIP trunks will have a unique username. This is the username that Voxitas uses to authenticate the trunk.</p>
SIP Trunk Password	<p>Each of your Voxitas SIP trunks will also have a unique password. The password is required with the username to authenticate the trunk.</p>
DID(s)	<p>These are the telephone numbers that users will dial to reach you over your Voxitas SIP trunks. Each SIP trunk will have a unique DID number.</p>
DNS Server	<p>Voxitas will provide you with the IP address of their Domain Name System (DNS) server.</p>

## 3 System Router Setup

### 3.1 NAT and SIP

In the router to which the DSX is connected, enable NAT and disable all special SIP management features (such as SIP ALG).

### 3.2 Port Forwarding

Forward UDP ports 5060 and 1024 through 1215 to the DSX system's IP address.

4 DSX Setup

4.1 Software Level

3.31.96 or higher.

4.2 Assign SIP Lines

IP Line Assignment (1231/1232/1233)

Line	Name	Phone Number	Registered	Provider	Fax/Data	Description	Username	Password
1				None ▼	<input type="checkbox"/>			
2				None ▼	<input type="checkbox"/>			
3				None ▼	<input type="checkbox"/>			
4				None ▼	<input type="checkbox"/>			
5				None ▼	<input type="checkbox"/>			
6				None ▼	<input type="checkbox"/>			
7				None ▼	<input type="checkbox"/>			
8				None ▼	<input type="checkbox"/>			

1231-01: IP Lines [SYSTEM: PORTS: IP LINES: IP LINE ASSIGNMENT]

The first DSX SIP line is the first line beyond the last assigned line. Each SIP line uses an IP resource (licensed VoIP port) in DSX. The maximum number of VoIP licenses is 8 in DSX-40 and 16 in DSX-80/160.

Example with DSX-40:

- The first SIP line in a DSX-40 without a COIU expansion card is line 5. Available SIP line numbers are 5-12.
- With the COIU expansion card installed, the first SIP line is line 9. Available SIP line numbers are 9-16.
- DSX-40 supports a maximum of 8 VoIP licenses. When the total number of licenses are in use, only Peer-to-Peer calls are available.

Example with DSX-80/160:

- The first SIP line in a DSX-80/160 with a single 8COIU card is line 9. Available SIP lines are 9-17.
- The last line number in DSX-80/160 is 64. In a system with an 8COIU and two T1/PRI cards, this will limit the available number of SIP lines.
- DSX-80/160 supports a maximum of 16 VoIP licenses. When the total number of licenses are in use, only Peer-to-Peer calls are available.

1232-01: IP Line Provider Number [SYSTEM: PORTS: IP LINES: IP LINE ASSIGNMENT]

Assign each SIP line in DSX to a provider number (1 or 2). DSX supports up to two providers simultaneously.

Example: If Voxitas is your only SIP trunk provider, assign all the SIP lines designated in 1231-01 to provider 1.

1232-02: IP Line Username [SYSTEM: PORTS: IP LINES: IP LINE ASSIGNMENT]

For each Voxitas SIP trunk, enter the username. This is the *SIP Trunk Username* entry in Table 1. Each Voxitas SIP trunk has a unique username.

1232-03: IP Line Password [SYSTEM: PORTS: IP LINES: IP LINE ASSIGNMENT]

For each Voxitas SIP trunk, enter the password. This is the *SIP Trunk Password* entry in Table 1. Each Voxitas SIP trunk has a unique password.

**4.3 Select the SIP Trunk Provider Type**

Provider 1		IP Service (1831) / IP Line Registration (1832)	
Service Provider	Generic Sip	Description	
Server Address		Proxy Address	
Registration Type	None	User	
Profile	4	Password	
SIP TOS	0	Name	SIP Trunk
		RTP TOS	0

**1831-01: Provider Number** [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2)]

Select the provider number you want to set up. This selection corresponds to the provider number you assigned to the SIP lines in 1232-01.

Example: If Voxitas is your only SIP trunk provider, and you have chosen provider 1 in 1232-01, select provider 1 for this option also.

**1831-02: Provider Type** [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): SERVICE PROVIDER]

Dial 07 to choose *Voxitas* as the type for the provider selected in 1831-01.

**1831-03: Provider Name** [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): DESCRIPTION]

The provider name is an optional 18-character entry that describes the provider. Enter any name you like – the entry does not affect provider setup or registration.

**1831-04: Profile** [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): PROFILE]

Select the VoIP profile that the system will use when connecting to the SIP trunk provider. The entry you make here corresponds to the profiles set up in programs 1811-1815. **Choose profile 4.**

**4.4 Set Up the SIP Trunk Registration**

**1832-01: Provider IP Registration** [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): SERVER ADDRESS]

Select the provider number you want to set up (see 1831-01) and enter the Table 1 *Registration/Proxy Server* entry as it was provided to you by Voxitas.

If Voxitas specifies *sip.voxitas.com* for your registration server, you should use *alpha.voxitas.com*. **Do not** use *sip.voxitas.com*. Do not make this substitution if Voxitas specifies a regional registration server (e.g., *stl01a.netlogic.net*).

**1832-02: Registration Type** [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): REGISTRATION TYPE]

Choose the IP line registration type. DSX IP lines can share the same registration (01: *Single*) or have a unique registration for each line (02: *Per Line*). For Voxitas, choose 02: *Per Line*.

**1832-03: Account Username** [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): USER]

**1832-04: Account Password** [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): PASSWORD]

**1832-05: Proxy** [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): PROXY ADDRESS]

**1832-06: SIP Type or Service (ToS)** [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): SIP TOS]

**1832-07: RTP Type of Service (ToS)** [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): RTP TOS]

These options are not used with Voxitas SIP trunks.

**4.5 Codec Setup**

Profile Name (1811)

Codecs (1812)

Priority	Codec	Frame Size	Jitter Minimum	Jitter Standard	Jitter Maximum	Silence Compression
1	G.729	40ms	40	80	160	<input type="checkbox"/>
2	G.711	40ms	40	80	160	<input type="checkbox"/>
3	G.722	40ms	40	80	160	<input type="checkbox"/>
4	G.726*	40ms	40	80	160	<input type="checkbox"/>
5	G.723*	60ms	60	120	240	<input type="checkbox"/>
6	ILBC*	30ms	30	60	120	<input type="checkbox"/>

\* Additional Codecs provided for 3rd party SIP phones

Settings (1813)

Jitter Mode  Silence Threshold  Idle Noise  Tx Gain  Rx Gain

Echo Canceller (1814)

Echo Cancel Enable Echo Tail   NLP Enable NLP Noise Mode  Auto Gain Control

Payload Types (1815)

DTMF Type  DTMF Payload  (96 - 127) ILBC Payload  (96 - 127) G.726 Payload  (96 - 127)

**1812: Codecs** [SYSTEM: VOIP: PROFILE 4: CODECS]  
 For Voxitas SIP Trunks, leave Profile 4 at default.

**4.6 Assign DID Numbers to your SIP Lines**

Type (3101)

Type  Name   DTMF Dialing  PBX Line

Phone Number

**3101-07: Telephone Number** [LINES: CONFIG: SETUP: TYPE: PHONE NUMBER]  
 For each of your SIP lines, enter the telephone number that corresponds the *DID Number* in Table 1. Each line must have a unique entry. This entry is required for both Loop Start and DID lines.

**4.7 Add the Voxitas DNS Server to the DSX DNS List**

Ethernet (1104)

IP Address	<input type="text"/>	Subnet Mask	<input type="text"/>	Router	<input type="text"/>	Release	Refresh
		DNS #1	<input type="text"/>	DNS #2	<input type="text"/>	Renew	
System Admin Port	<input type="text" value="8000"/> (1024-85535)						
Phone Manager Port	<input type="text" value="80"/> (1-85535)	MAC Address	<input type="text"/>	WAN Address	<input type="text"/>		

**1104-04: Primary Domain Name Server** [SYSTEM: CONFIG: COMMUNICATION: ETHERNET: DNS #1]  
 Be sure to include the Voxitas DNS Server as the primary DNS server. This entry is the *DNS Server* entry in Table 1.

You can only make this entry when **1103-01: DHCP Enabled** [SYSTEM: CONFIG: COMMUNICATION: DHCP: DHCP ENABLED] is set to *No*.

**4.8 Fax Setup**

**1812: Codecs** [SYSTEM: VOIP: PROFILE X: CODECS]

**1815: DTMF** [SYSTEM: VOIP: PROFILE X: PAYLOAD TYPES]

SIP trunks to be used for fax must be set for *G.711, 20mS Frame Size*, with *Inband DTMF*. The fax is transmitted in-band DTMF only.