

Dialogic® Natural Access Signaling Software for Solaris

Release Notes

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Release 5.3.5 (Build 3)

1 Overview

This is a maintenance release of the Dialogic® NaturalAccess™ Signaling Software for Solaris. It includes changes and corrections as detailed below.

This is the first full release of the Dialogic® NaturalAccess™ Signaling Software for Solaris since Release 5.3.2 (Build 14). It is fully backwards compatible with that release.

1.1 Applicability

This release is suitable for TX 5000 and TX 4000 users. The release has been validated in conjunction with the following operating system distributions:

- Solaris 10 (Update 10) x86 (32 bit).
- Solaris 10 (Update 10) SPARC (64-bit).
- Solaris 10 (Update 10) SPARC (mixed 32-bit applications with 64-bit kernel)

This product is designed for use in conjunction with the appropriate version of the *Dialogic® NaturalAccess™ Development Environment* software which can be downloaded from the Dialogic web site. The following table shows the compatibility between board types, operating system distributions and the *Dialogic® NaturalAccess™ Development Environment* version and identifies which of the packages contained in this release should be used in each configuration

Operating System	NaturalAccess	TX 4000 / TX 5000
Solaris 10 (Update 10) x86 (32 bit)	9.0.3	txss7-5.3.5-2-isol.tgz
Solaris 10 (Update 10) SPARC (64-bit)	9.0.1	txss7-5.3.5-2-ss64.tgz
Solaris 10 (Update 10) SPARC (mixed)	9.0.4	txss7-5.3.5-2-ssol.tgz

1.2 Software Installation

The flash memory of all TX boards must be updated with the TX Base kernel that ships with this software release. Typically this happens automatically when the `ss7load` batch file runs (it uses the `txflash` utility, with the `-s` option, to automatically update the flash image with the correct kernel.

Note: In systems where `ss7load.bat` is not used, refer to the instructions in the TX 4000, TX 4000C, and TX 5000E Series Installation Manual for information regarding updating the kernel using the `txflash` utility.

Before installing the TX Software package the user must first install the NaturalAccess 9.x appropriate to the specific Solaris distribution in use, details on how to do this are provided in the installation manual *Installing the Dialogic® NaturalAccess™ Development Environment R9.x* available from the Dialogic web-site.

Now install the TX Software package as detailed in the installation manual *Installing Dialogic® NaturalAccess™ Signaling Software Release 5.3*. The TX board driver will be loaded during this procedure.

1.3 Resolved Customer Issues

Updates to resolve the following customer issues are included in this release: IPY00099786, IPY00101622, IPY00101681, IPY00101677, IPY00101700, IPY00102002, IPY00102059, IPY00102145, IPY00102158, IPY00102720 and IPY00102719.

2 New Functionality

2.1 Support for 32 Bit Applications (IPY00102719)

This release includes a build that supports 32 bit applications running on a SPARC 64 bit kernel.

3 Other Changes

3.1 TX 5000 Blower Speed (IPY00101622)

This release corrects the algorithm for determining the speed of the blower when using boards fitted with the latest firmware. Previously if a new type blower was fitted as a spare in the field it was not possible to obtain the correct speed indication.

If a new type blower is fitted as a replacement in the field it is necessary for the user to set S2 switch 7 to 'ON'. The software then knows to assume that a new type blower is fitted.

3.2 HMID - Long term memory leak (IPY00102158)

This release corrects an issue in HMID where a memory leak would eventually exhaust all memory on a system resulting in a failure of the HMID module.

3.3 TX Base - GetLocalStreamInfo (IPY00101677)

This release corrects an issue where an attempt to retrieve local stream information using the GetLocalStreamInfo() function would always return a result code of INV_PARAM.

3.4 MTP123 – TX5000 Dual Redundancy Licensing

This release corrects an issue where a dual redundant TX5000 system would restrict the user to the number of links licensed by a single board rather than the sum of the two boards.

3.5 MTP123 - Link reconfiguration (IPY00101700)

This release corrects multiple issues where attempting to remove and reinsert MTP3 links would remove the configuration at MTP2 but fail to remove the entire MTP3 link configuration resulting in an inability to reconfigure the MTP3 link.

3.6 MTP123 - Failure on TFP/TFR receipt (IPY00102145)

This release corrects an issue in MTP3 where, under certain conditions, a board failure could be observed when TFP was received on the only valid link in a linkset.

3.7 SCCP – sccpmgr causes failure (IPY00102002)

This release corrects an issue where an out of range SAP parameter within sccpmgr can cause a board failure.

3.8 TCAP – Data buffers not being released (IPY00099786)

This release corrects an issue where if the Dialogue Portion of a TCAP message received from the network has User Information data and the Component Portion is rejected by the module, the data buffer holding the User Information failed to be released by the module.

3.9 SIGTRAN – Disable Routing Context (IPY00102720)

This release adds the ability to disable the sending of Routing Context on a per-association basis. The user should add the following new command to the PSP section in the M3UA configuration file (M3UAcpn.cfg) for those PSPs where sending of Routing Context is not required.

```
RTE_CTX_DISABLE TRUE # Disable RC for this PSP
```

The PS configurations must still contain the RTE_CTX parameters. If multiple local PSs are configured to use the same PSP then the Routing Context is mandatory and must therefore not be disabled. Traffic received without a RC in this situation will cause a message to be logged to TXAlarm and an error message sent to the peer.

3.10 SIGTRAN – Association status to user parts

This release adds the option of providing association status indications (M3UA_ASSOC_DOWN and M3UA_ASSOC_ACTIVE) to user parts. These indications are received via a call to the M3UARetrieveMessage() function as an alternative to calling the M3uaPspStatus() function to request the association status.

To enable the new indications set options bit 3 in the '-o' options on the command line of the sigtran task, for example:

```
cplot -c 1 -f sigtran.elf -n sigtran -o 8 -p 20 -a -s 256000
```

Starting m3uaapp will result in the initial status of the associations being reported. Indications will also be generated when the association state changes (Active/Down).

3.11 SIGTRAN – Failure to Reinitialise Association following ABORT (IPY00102059)

This release corrects an issue in SCTP which could result in associations failing to connect to a peer following the reception of an ABORT chunk.

3.12 SIGTRAN – SCTP Associations Established Multiple Times

This release corrects an issue where multiple activations caused an error message "SbUiSctAssocReq: Invalid association ID (already exists)" to occur.

3.13 SIGTRAN – Header File Changes (IPY00101681)

This release corrects an issue which prevented both mtp3 and m3ua header files being included in the same source file. Applications using both mtp3def.h and m3uadef.h will now compile.

Dialogic
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Release 5.3.2 (Build 14)

1 Overview

This is a maintenance release which consolidates all previously released patches for the TX SS7 5.3 for Solaris release into a single release.

This is the first full release since 5.3.0 (Release 5.3.1 having been used internally only) and it is fully backwards compatible with that release.

1.1 Applicability

These release notes document the content of Release 5.3.2 (Build 14).

This release is suitable for TX 5000 and TX 4000 users. The release has been validated in conjunction with the following operating system distributions:

- Solaris 10 (Update 10) x86 (32 bit).
- Solaris 10 (Update 10) SPARC (64-bit).

This product is designed for use in conjunction with the appropriate version of the *Dialogic® NaturalAccess™ Development Environment* software which can be downloaded from the Dialogic web site. The following table shows the compatibility between board types, operating system distributions and the *Dialogic® NaturalAccess™ Development Environment* version and identifies which of the packages contained in this release should be used in each configuration

Operating System	NaturalAccess	TX 4000 / TX 5000
Solaris 10 (Update 10) x86 (32 bit)	9.0.3	txss7-5.3.2-14-isol.tgz
Solaris 10 (Update 10) SPARC (64-bit)	9.0.1	txss7-5.3.2-14-ss64.tgz

1.2 Software Installation

The flash memory of all TX boards must be updated with the TX Base kernel that ships with this software release. Typically this happens automatically when the `ss7load` batch file runs (it uses the `txflash` utility, with the `-s` option, to automatically update the flash image with the correct kernel.

Note: In systems where `ss7load.bat` is not used, refer to the instructions in the TX 4000, TX 4000C, and TX 5000E Series Installation Manual for information regarding updating the kernel using the `txflash` utility.

Before installing the TX Software package the user must first install the NaturalAccess 9.x appropriate to the specific Solaris distribution in use, details on how to do this are provided in the installation manual *Installing the Dialogic® NaturalAccess™ Development Environment R9.x* available from the Dialogic web-site.

Now install the TX Software package as detailed in the installation manual *Installing Dialogic® NaturalAccess™ Signaling Software Release 5.3*. The TX board driver will be loaded during this procedure.

1.3 Resolved Customer Issues

Updates to resolve the following customer issues are included in this release: IPY00055573, IPY00092459, IPY00092729, IPY00094480, IPY00098870, IPY00099122, IPY00099785, IPY00100101, IPY00100235, IPY00100399, IPY00100512, IPY00100596, IPY00100609 and IPY00100716, IPY00100807, IPY00100952, IPY00100953 and IPY00101159.

The following previously released patches are all included within this release: 8248, 8251, 9086, 9129, 9214, 9242, 9259, 9261, 9282, 9283, 9288, 9295, 9314, 9341, 9343, 9358, 9359, 9363, 9365, 9366, 9367 and 9368.

2 Changes

2.1 TX Base – Default Installation Permissions (IPY00094480)

In the previous release non-root users didn't have read permission for the /opt/dialogic directory this has been corrected in this release.

2.2 TX Base – TX 5000 TX CPKOS can become locked (Patch 9242)

This release corrects a problem that under heavy traffic load with multiple TX board-based tasks running at the same priority could result in failure of the heartbeat mechanism.

2.3 TX Base - TXMON Generates Traffic on Redundancy Link (Patch 9259)

This release corrects a problem where TXMON, operating in stand-alone mode, would attempt to communicate with a non-existent mate.

2.4 TX Base - Clock Synchronization (Patch 8248)

By default, the TX 4000 and TX 5000 boards synchronize their on-board clocks with the host every 5 minutes. A new command has been added to the cpcon_ utility to allow the user to change the synchronization interval.

The TX 4000 [hbus] and TX 5000 [hcomm] command sets include the new command timesync which has the following syntax where <new_timer_value> is the synchronization interval, specified in seconds:

```
timesync <new_timer_value>
```

2.5 TX Base – HMI Daemon Failure (Patch 9214)

The Health-Management Interface (HMI) Daemon has been updated to prevent a deadlock which caused the HMI to stop generating events or processing commands.

2.6 TX Base - HMI Traffic Lost (IPY00092459, Patch 9261)

This release corrects a problem that caused communication between the health-management API and the health-management task to be lost.

2.7 TX Base- TXMON HMI Network Connectivity Events (IPY00100609, Patch 9366)

This release corrects an issue which prevented generation of the HMI network connectivity events (HMI_EVN_NETWORK_DOWN and HMI_EVN_NETWORK_UP).

2.8 TX Base - Add support for new TX 5000 Blower (IPY00100716, Patch 9367)

The blower mounted on the TX 5000 board has been replaced by an alternative model. The new blower is form, fit and function identical except that it produces twice as many pulses per revolution to indicate fan speed and this results in an incorrect fan speed being reported by the cpcon utility. This release supports both the 'old' and the 'new' blower.

New production boards identify the blower type in onboard non-volatile memory allowing the software to automatically detect that a 'new' type blower is fitted.

When the new type blower is fitted as a replacement in the field, there is no automatic way for the software to detect the blower type. Therefore it is necessary for the user to set S2 switch 7 to 'ON'. The software then knows to assume that a new type blower is fitted.

2.9 MTP123 - MTP Protocol Failure (Patch 9282)

MTP has been updated to prevent a failure occurring during the link set proving interval.

2.10 MTP123 –Japanese MTP Operation (Patch 9282)

This release includes the following corrections for Japanese operation:

- Support multiple destinations in JNTT transfer messages
- TFP not honored after double switchover. T5 used for JNTT
- Use correct SLC value in CBD/CBA for Japanese variants

2.11 MTP123 - Japanese Operation SUERM Expiry (IPY00099785, Patch 9358)

This release corrects an issue where under certain circumstances MTP2 would fail to detect link failure when the physical TDM was disconnected.

2.12 MTP123 –Inter-Board Link (IPY00100596, Patch 9368)

This release resolves an issue where repeated insertion / removal of the inter-board link could cause the MTP3 links on the backup board to fail to come up.

2.13 ISUP - ITU-BICC CIC Parameter Size (IPY00055573, Patch 9086)

Previously, ISUP incorrectly used a 2 byte CIC parameter in the CGB message. ISUP has been updated to use a 4 byte CIC parameter.

2.14 ISUP - Unexpected Blocking Acknowledgement (Patch 9359)

A new ISUP option (Bit 16) has been introduced that when set will cause an unblocking request (UBL) to be sent in response to an unexpected blocking acknowledgement (UBA) rather than simply discarding the unsolicited UBA.

2.15 ISUP - Circuit Status Mismatching (IPY00100101, Patch 9359)

Previously, when ISUP was in an unequipped state due to T17 timer expiry (no acknowledgement to a RSC) and was remotely blocked, when ISUP subsequently retransmitted a RSC and received BLO followed by a RLC to acknowledge the RSC the circuit state changed to an in service state ignoring that it had received a blocking indication from the remote switch. In this situation ISUP will now remember that it has been remotely blocked and not attempt to route new calls on the circuit.

2.16 ISUP - Outgoing Call Circuit Not Transitioning to Idle (IPY00100235, Patch 9359)

Prior to this release when ISUP was attempting to release an outgoing call and it received a RSC it did not stop timers T1 and T5 and did not transition to an idle state. This has been corrected.

2.17 ISUP - User Override of REL Message Cause Value (Patch 9295)

ISUP has been updated to allow the user to configure the location field value in the cause value of REL messages generated within the ISUP layer (for example on expiry of timer T7). This feature does not affect REL messages generated due to a request by the application; in this case, all cause value parameter fields are under control of the application.

This feature is controlled using the `-o` parameter when configuring ISUP. Bit 17 should be set to 1 and Bits 23 to Bits 20 should be set to the hex representation of the required location value.

For example, to enable override of the location value to ITU-T Q.850 value '4 - public network serving the remote user', the options parameter should be set to "-o 0x4200".

```
$TXUTIL/cplot -c $BRD -f $TXBASE/isup.$TASKTYPE -n isup -p 21 -a  
-s 40960 -o 0x4200
```

2.18 ISUP - Blocked Management Events (IPY00098870, Patch 9341)

ISUP has been updated to prevent entering a state where ISUP management event indications would become queued behind ISUP data messages, preventing user applications from receiving messages.

2.19 ISUP -Handling of Japan NTT CQM/CQR (IPY00099122, Patch 9343)

ISUP has been update to correctly handle the circuit group query response message (CQM/CQR).

2.20 BICC - Reception of Messages Larger than 272 Octets (IPY00100399, Patch 9363)

This patch removes a restriction which previously prevented receipt of BICC variant messages containing more than 272 octets and generated a 'buffer overflow' indication.

2.21 SCCP – BACKUP_PC/SSN_BPC Cross Reference (Patch 8251)

This release corrects an issue where the SCCP task would fail if the SCCP configuration ROUTE command BACKUP_PC or SSN_BPC fields referenced each other.

2.22 SCCP - SLS Override Value (Patch 9314)

In previous releases, SCCP was incorrectly setting the SLS value to 0 when operating in SLS Override mode. This has been corrected and the least-significant 8 bits of the TCAP transaction Id are used for the SLS value.

2.23 SIGTRAN - Support for 128 Associations (Patch 9288)

The SIGTRAN stack now supports up to 128 associations, DPC's, and routing contexts.

2.24 SIGTRAN - Source-Based Routing (Patch 9283)

The SIGTRAN stack now supports source-based routing which restricts each outbound packet to a particular Ethernet interface. If the destination IP address is within that interface's subnet then the packet is sent over the local network. All other packets are sent to the interface's source route gateway, if defined, otherwise to a gateway that is located on the given interface's subnet.

When using source-based routing, certain network configurations can require that a specific gateway address be assigned to each Ethernet interface. The `ifcreate` command has been extended to include an optional source route gateway. The gateway address is used whenever performing source-based routing and a destination endpoint falls outside of the interface's local network.

The updated `ifcreate` command is:

```
ifcreate <ifNum> <IP addr> <mask> [<srcRteGw>]
```

where

<ifNum> = 1-based Ethernet interface number

<IP addr> = IP address to assign to interface

<mask> = IP Subnet Mask

<srcRteGw>= optional gateway used when routing by source address

For example:

```
ifcreate 1 10.3.9.15 255.255.255.0 10.3.9.1
```

Note: Gateway route definitions are still required for non-SIGTRAN IP communication (such as outbound ICMP requests).

2.25 SIGTRAN - Peer-Server Support of Duplicate Routing Context (Patch 9129)

The SIGTRAN stack has been updated to support a single, duplicate routing context for multiple Peer-Server (PS) configurations. This feature is activated updating the SIGTRAN load line within `ss7load` and setting Bit 1 of the '-o' parameter in the `ss7load` shell script. For example:

```
$TXUTIL/cplot -c $BRD -f $TXBASE/sigtran.$TASKTYPE -n sigtran \  
-p 20 -a -s 256000 -o 0x02
```

Note: Enabling this feature will cause all inbound routing to be based on the incoming packet's service information field (SIF).

2.26 SIGTRAN - ASP Sends Route Context Within DATA Message (Patch 9129)

The SIGTRAN stack, when configured as an ASP, now correctly sends a route context within a DATA message.

2.27 SIGTRAN - SCTP INIT Disable Source IP Address (Patch 9288)

The SIGTRAN stack has been updated to optionally disable the sending of the Source IP address in the SCTP INIT Message. This feature can be enabled by setting Bit 0 of the Sigtran load link '-o' parameter in the ss7load shell script.

2.28 SIGTRAN - Delay re-establishment of associations (Patch 9365)

If an ABORT is received in response to an INIT there is potential for the same sequence to be immediately repeated as M3UA immediately attempts to start a new association. This release adds a 10 second delay in M3UA after termination indication before attempting a new association to avoid the issue.

This release also causes ABORT with code 'Invalid Mandatory Parameter' to generate SCT_STATUS_ABORT rather than SCT_STATUS_INV to ensure that the association recovery is attempted.

2.29 SIGTRAN - Association status showing 'Cookie Wait' (IPY00100807)

This release corrects an issue in SCTP where, under certain conditions, an uninitialized timer could cause the association to stop resending INIT chunks and remain in the COOKIE_WAIT state indefinitely.

2.30 SIGTRAN – ASP Active Retries (IPY00100952)

This release now enables ASP Active retries using the existing timer on receiving no response or an error (e.g. management blocking). The timer is stopped when either the PSP becomes active, or ASP Inactive/Down is sent.

2.31 SIGTRAN – Single RC in ASP Inactive (IPY00100953)

Where ASP Inactive is sent automatically (e.g. as a result of a board changing from primary to backup), it will now contain a single RC (Routing Context) parameter. Where multiple RCs are in use, multiple ASP Inactive messages will be sent. This now matches the existing behavior of the ASP Active request.

Management control commands remain unchanged, in that the number of RCs present will be determined by the command.

2.32 SIGTRAN – Sequencing of bundled SCTP chunks (IPY00101159)

This release corrects an issue in SCTP which could result in message miss-sequencing when recovering multiple messages which had been transmitted as a single SCTP bundle.

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