



Migrating Dialogic® CSP 2090 Converged Services Platform Applications to the Dialogic® MSP 1010 Multi-Services Platform

Overview

The Dialogic® MSP 1010 Multi-Services Platform (MSP) supported by the familiar EXS® API which allows current Dialogic® CSP 2090 Converged Services Platform (CSP) customers to rapidly migrate their applications to the MSP. SwitchKit® users can basically re-compile and be on their way.

Long-time CSP customers will find the migration process straight-forward and painless.



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Functional Differences

The following table calls out the functional differences between the Converged Services Platform (CSP) and MSP including hardware and other important concepts.

Function	CSP	MSP
Slots	Slots with cards	No cards – only daughter board. Concept of slots applies to the MSP. Configuration and slot specific commands are still used.
I/O Cabling	50-pin Amphenol	RJ-48
SS7 over EXS®	SS7 server node controlling CICs on remote node(s) via the EXNET ring SS7 server node controlling CICs on remote node(s) via Ethernet (ISUP Remote Control).	The MSP cannot connect calls between two nodes Exnet® Ring Shares DSP resources over the Exnet® ring. No EXNET ring on the MSP.
Debug Access	Debug Cable and Telnet	Telnet
Reference Timing	Reference timing from Ref Clock connector on the CPU I/O (DB15).	Signaling/Timing port 0 and 1 are reserved for External Reference timing (RJ-48)
Download Options	TFTP	TFTP, FTP (recommended), SD card Hard configured from BOOTP server download (host flags)
TDM Interfaces	T1, E1, and DS3 allowed in same CSP.	Can include T1 or E1 or DS3. No combinations allowed. Hard configured from BOOTP server download (host flags)
Licensing	One license per feature	One license per node
VoIP Profiles	Set at runtime	Hard configured and downloaded from BOOTP server (host flags)
SIP stack	Embedded in Matrix Controller card	Host based
Port-consuming mode	Two modes: port-consuming and non-port consuming	Port Consuming mode only



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System Level Differences

The following are system level differences between the Converged Services Platform (CSP) and MSP:

- Poll Message

The CSP supports the EXS Poll Message (0x00AB). The MSP also supports an enhanced NGA System Poll (0x170) message which provides additional system information to the host. For backward compatibility, the EXS Poll Message (0x00AB) message is still supported but its use is not recommended.

- Service State

In the MSP, functional areas are managed as state machines. The NGA Service Configure (0x0160) message sets the desired service state, the NGA Service Query (0x0161) message queries the current state, and the NGA State Notify (0x0163) reports service state changes. These messages are sent asynchronously to the host. The MSP also sends the NGA State Notify (0x0163) and NGA System Notify (0x0173) messages.

- Fault Management

In the CSP, faults are stored on the card until queried by the host. On the MSP, faults are automatically uploaded to the FTP/TFTP server configured for system software downloads. The faults include a snapshot of all the system processes captured when the system faulted. The last 100 API messages prior to the fault are also included in the fault log.

Failure to configure the FTP server to receive faults will limit fault logging on the MSP to one fault (the oldest).

- Resetting the system

In the CSP, you reset a card as needed. On the MSP, you reset the whole box and you must reload the configuration.

- Downloading software.

CSP – from TFTP.

MSP – from FTP (recommended), TFTP, or SD card

- IP Address Configuration (same for CSP and MSP)

CSP - from BOOTP/DHCP Server

MSP – from BOOTP/DHCP Server



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- Serial Number Collection

The MSP Serial number used for license creation/notification is reported in the NGA System Poll (0x0170) message. SwitchKit® users simply click on the Node object to retrieve the information.

- Redundancy

The following table calls out the differences in redundancy in the CSP and MSP.

Type of Redundancy	CSP	MSP
ISDN Card (1+1)	Yes	No
Bearer	Yes	No (future release)
SS7 Signaling	Yes	Yes. Requires additional MSP. Host controlled from application or SwitchKit®.

Important! There is a major difference in the design of SS7 signaling redundancy on the MSP compared to the CSP. On the CSP, when an SS7 card pair experiences a failover the switch code handles the switchover process. On the MSP, it is the host's responsibility.

Redundancy Configuration – Example

Refer to the Dialogic support site below for an example configuration in raw API format.

<http://excelsupport.cantata.com/memberarea/pubsets/Excel/1010/10.2.2/10.2Pubs.asp>

In the example, only the Next Gen API is decoded because it is assumed non-SwitchKit® customers are familiar with the current EXS® API.

The following explains how to use this example configuration. This example captures the configuration of an SS7 redundant system as well as the failover of the active MSP.

There are also three log files to assist the development cycle:

- socket.log
- socket_decoded.log
- alarm.log



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The decoded log shows what is required from a host perspective to configure the MSPs for redundancy. In addition, it includes the actions required by the host to initiate the switchover process and reconfigure the former active MSP.

Sequence of Events

The following is the sequence of events in the log file:

1. MSP-0 & MSP-1 are configured with redundancy enabled.
2. The secondary link is in service (MSP-1).
3. The primary link is in service (MSP-0).
4. Power down MSP-0 (was primary/active).
5. Primary link goes down (MSP-0).
6. Power up MSP-0.
7. The MSP-0 is reconfigured with redundancy enabled once again (now primary/standby).
8. The primary link goes back in service.



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Configuration Considerations

Some API messages for configuring an MSP are different from those used to configure the same functionality on the CSP. Once you create a new configuration, you can use it on the MSP. Note that SwitchKit® users create the new configuration using ClientView.

You must take the following differences into consideration when configuring the MSP:

- Multi-node - To perform call control in a non-ring environment you must consider the following:

To get a call in one MSP and out of another MSP requires you to set up IP Inter-machine trunks. Because the density of an MSP is only a single DS3, if you want to cascade MSPs you need to change your call control application to use clear channel Route Controls message on the IP side to shuttle a call between nodes.

- Slot mapping

MSP functionality is mapped to a slot as described in the table below. Use the Card ID in the Cards Status Query (0x0083) message to receive information about particular MSP functionality.

Slot	Card ID	Card Type
0x00	0x71	SS7
0x01	0x01	T-ONE
0x01	0x0B	E-ONE
0x01	0x1F	DS3
0x02	0x22	Bearer Span
0x04	0x65	IPN-2
0x06	0x6B	DSP
0x08	0x76	ISDN
0x10	0xF8	Front Fan
0x12	0xF0	Power Supply
0x13	0xFA	Midplane (Chassis)
0x14	0xF3	CPU I/O
0x20	0x73	CPU

- For E1, there is a one-to-one mapping of timeslots to channels on the MSP which is different from the CSP. Refer to the E1 Span Configure (0x00D8) message in the respective CSP and MSP API Reference documentation.
- T1 mapping is the same on both products.



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SwitchKit®

SwitchKit® architecture is different on MSP than on the Converged Services Platform (CSP). The following is an overview of that architecture. Refer to the MSP web-based documentation for a detailed explanation.

SwitchKit® is a software package that consists primarily of eight modular components that reside on an external host computer. SwitchKit® acts as an application server, communicating with all applications and the MSP through a TCP/IP interface.

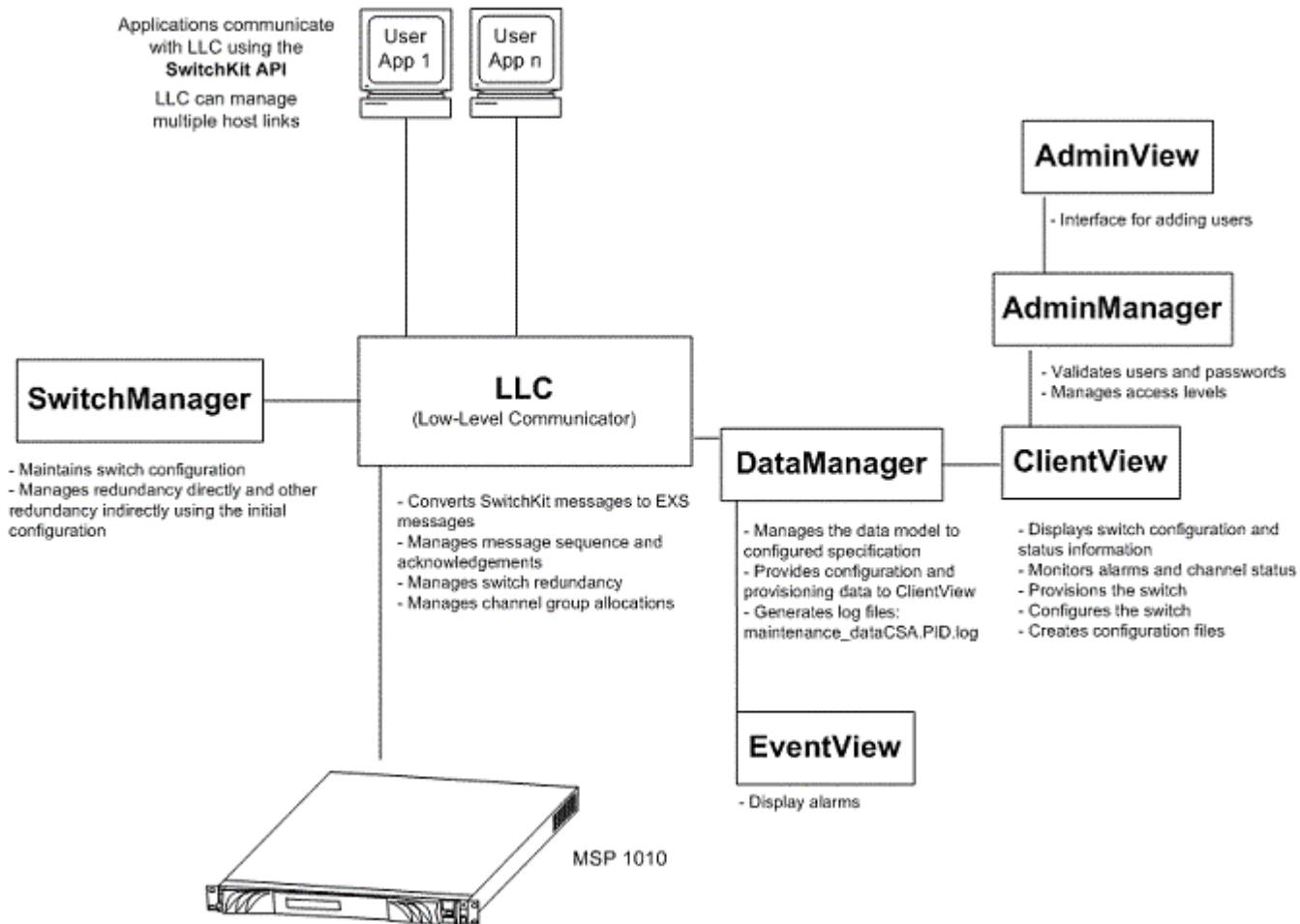
SwitchKit® also provides a comprehensive, high-level and open programming environment for the application development and maintenance of the MSP. SwitchKit® includes a feature-rich OAM&P (Operations, Administration, Maintenance, and Provisioning) system and a high-level API suite, freeing developers to concentrate on revenue-generating applications and services. Because it facilitates the development and integration of Dialogic switch-based telephony applications, it delivers important benefits to both system integrators and service providers.

ClientView

ClientView is a real-time Graphical User Interface for performing OAM&P and runs on all the operating systems that SwitchKit® runs on.

Diagram

The following diagram shows the main SwitchKit® components.





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Host Based Protocols

Dialogic offers host-based protocols to compliment the technologies embedded in the Converged Services Platform (CSP) and MSP.

These include the following:

- RADVISION SIP stack
- Dialogic does not provide a host-based H.323 stack, but enables any third party H.323 stack.
- The following are other host-based applications protocols available on the MSP:
 - INAP
 - MAP
 - CAMEL
 - WIN
 - ANSI41

An application built using these protocols can be used on either MSP or CSP without code changes.