

# Enhance Unified Messaging Applications Using Intel® Dialogic® J-Series Boards

## Executive Summary

Voice mail, fax, and email have become indispensable in offices of every size. Because organizations rely on these media for message delivery, better management is a growing business need. Using a unified approach to message delivery and storage is the most efficient way to manage these very different media. Although the forms of unified messaging (UM) solutions vary, they all rely on the convergence of voice and data. Today's Internet Protocol (IP) and speech technologies are expanding the potential of UM offerings and how employees manage their multiple-media messages.

Intel® Dialogic® brand J-Series multimedia processing and call control products can enable flexible UM solutions, providing the integrated collection and retrieval of messages in different media formats. Intel development tools and professional services facilitate the creation of customized applications and systems for developers, integrators, service providers, and end users.

Unified messaging lets users

- ▶ locate and access the most important messages quicker than when accessing their voice mailbox via the phone
- ▶ access and review all their messages at once, rather than having to dial one number for voice mail, dial-up for email on another number, and locate an assistant to manually forward fax messages
- ▶ annotate a fax or email message with a voice introduction before forwarding it to other users in the UM system

## Unified Messaging Applications

The following list is a sample of UM applications that can be enabled by the Dialogic J-Series boards.

- ▶ Messaging
- ▶ Unified messaging
- ▶ Voice mail
- ▶ Voice- and fax-to-email
- ▶ Email- and fax-to-voice mail



## The J-Series Boards

The J-Series boards are suitable for developing applications that require multimedia functionality in a single PCI slot. The consistent features, application programming interface, and installation requirements of the J-Series make it easy to scale applications from four analog lines to two E-1 trunks (60 voice channels) using a single PCI slot with little or no changes to existing software. When additional PCI slots are available, more boards can be added to further increase system density.

The table illustrates how J-Series boards support different environments and applications.

Environment	J-Series Boards
Telco or service provider (xSP) with E-1/T-1 trunks (SS7*, ISDN, or CAS signaling)	D/600JCT-2E1, D/600JCT-1E1, D/480JCT-2T1, D/480JCT-1T1
Medium-to-large enterprise with E-1/T-1 trunks (ISDN or CAS signaling)	D/300JCT-E1, D/600JCT-1E1, D/240JCT-T1, D/480JCT-1T1
Medium-to-large enterprise with analog trunks or analog PBX extensions	D/120JCT-LS
Small-medium-large enterprise with compatible** digital PABX ports	D/82JCT-U
Small-to-medium enterprise with analog trunks or analog PABX extensions	D/41JCT-LS

\* SS7 signaling requires additional hardware. Visit the SS7 Solutions Web page at <http://www.intel.com/network/csp/products/4177web.htm> for more information.

\*\*Visit the D/82JCT-U PBX Integration Platform Web page at <http://www.intel.com/network/csp/products/6040web.htm> for PBX compatibility information.

## Features and Benefits

The J-Series boards are ideal for developers and service providers interested in creating and deploying cost-effective, highly scalable, low- to high-density UM applications that require multimedia resources including voice, software-based speech recognition, and fax.

J-Series boards reduce the cost of ownership for systems requiring multimedia functionality by featuring programmable ports capable of supporting voice, fax, call handling, and host-based speech technologies. They let system integrators and developers lower costs by incorporating more ports per chassis, using less expensive desktop-style machines, and simplifying configuration and installation.

Most J-Series products feature continuous speech processing (CSP) support for host-based automatic speech recognition (ASR), and come pre-loaded with DSP-based Softfax fax capability. The CSP barge-in capability, coupled with perfect digit DTMF (touchtone) functionality lets users get to their messages quickly by speaking or keying ahead through the menu options.

The following J-Series boards currently have CSP capability.

D/600JCT-1E1	ISDN or CAS = 30 ports CSP
D/480JCT-2T1	CAS = 48 ports CSP
D/480JCT-1T1	ISDN=24 ports CSP
D/240JCT-T1	CAS = 24 ports CSP
D/120JCT-LS	12 ports CSP

Low bit rate coders such as GSM and G.726 (the de facto standard when complying with Voice Profile for Internet Messaging applications) provide the capability to migrate legacy voice mail systems to enhanced unified messaging solutions.

Advanced features in the J-Series boards enable self-service options such as Click-to-talk, voice portal services for information retrieval and v-Commerce capabilities, advanced call routing and call data handling, and more; all designed to ensure greater customer satisfaction and a positive end user experience.

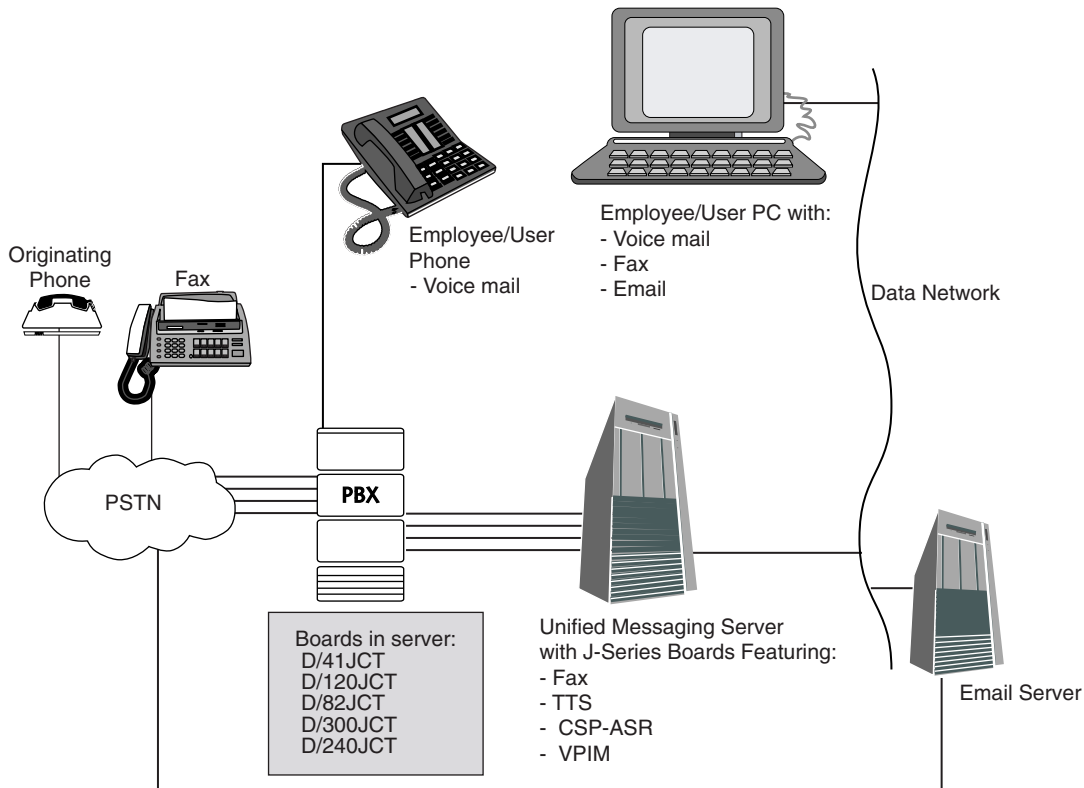
Each board series offers specialized features to help satisfy the needs of their targeted markets.

- ▶ The single span JCT Series, featuring the D/240JCT-T1 and D/300JCT-E1 boards, provides the necessary functionality and network connectivity for medium-to-large enterprises to deploy UM. The digital signaling capability of E-1 and T-1 trunks provides the network connectivity method of choice for larger enterprises.
- ▶ The dual span JCT Series, featuring the D/600JCT-2E1 and D/480JCT-2T1 boards, provides the necessary density, functionality, and network connectivity for telcos and service providers to offer UM.
- ▶ The D/120JCT-LS board is a core building block for global multimedia solutions in medium-to-large enterprises. With 12 analog loop-start telephony ports, this high-density PCI voice processing board features a unique dual-processor architecture that handles all telephony signaling and performs all DTMF and audio/voice signal-processing tasks on-board, which reduces host CPU overhead.
- ▶ The D/82JCT-U board offers eight digital interfaces connecting to some of the most widely used PBXs on the market. Unified messaging applications built with the D/82JCT-U board let small-to-medium-to-large enterprises maximize the value of their PBX investment and reap the benefits of digital signaling for call control.
- ▶ The D/41JCT-LS board is the entry-level, high-performance, four-port analog voice and fax processing board for UM applications in small-to-medium enterprises. Capable of supporting fax on all four ports simultaneously, this board offers the most features per channel of any of the J-Series of boards.

The J-Series boards enable developers, system integrators and end users to lower costs and rapidly scale their **Unified Messaging** systems by installing multiple boards in industry-standard PCI computers and servers.

## Typical Configurations

In this diagram, the UM system processes voice calls through the PSTN and PBX. When a user is unavailable to answer an incoming call, the voice-messaging component of the UM system answers the call and records a message, which the user can still retrieve via the phone. Fax messages are processed through the PSTN and PBX and directed to the UM system where they are stored for user access and retrieval. Email messages are processed by and stored on the email server, the UM system communicates to the email server through the data network (i.e., LAN, WAN, etc.).



*Unified Messaging Configuration*

The UM system containing the voice mail and fax messages, the email server containing the email messages, and the user PC are all connected to the data network and communicate with each other. The user can therefore use their PC to access and retrieve all voice, fax, and email messages.

Depending on the configuration and services selected in any given application, some or all of the UM capabilities can be provided by J Series boards.

- ▶ lower system cost due to “all-in-one” multimedia capabilities
- ▶ pre-processing for text-to-speech (TTS) applications providing telephone access and management of email or fax messages
- ▶ pre-processing for speech recognition for converting voice messages to email messages and speech-enabled auto-attendant
- ▶ on-board, DSP based Softfax for consolidation of fax message processing

## For More Information

Visit the Intel Web site at <http://www.intel.com/network/csp/> for more information, or contact a technical sales representative at 1-800-755-4444, and ask the operator for sales.

Notes

## Notes

## Notes

Information in this document is provided in connection with Intel® products. No license express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel® products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel products are not intended for use in medical, life saving, or life sustaining applications.

Intel may make changes to specifications and product descriptions at any time, without notice.

Intel and Dialogic are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

**Intel Corporation**

1515 Route Ten  
Parsippany, NJ 07054  
Phone: 1-973-993-3000  
Fax: 1-973-993-3093


**For more information**

To learn more, and for a complete listing of our global offices, visit our site on the World Wide Web at [www.intel.com](http://www.intel.com)

Intel and Dialogic are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Printed in the USA  
© Intel Corporation, 2001  
All rights reserved.

00-7582-001 09/01

 Printed on recycled paper.

