

CalXpress 3"

TECHNICAL INSTALLATION PROCEDURE

Iwatsu® ADIX

Edition Note

This is the first edition of the *Iwatsu® ADIX Technical Installation Procedure*. Information in this document applies to CallXpress3® systems with software Version 3.20F or higher installed.

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Preface

This Technical Installation Procedure describes how to integrate CallXpress3[®] with a specific telephone system. Use this document in conjunction with the *CallXpress3 Installation and Applications Guide* (P/N 081-05320-XX) to install and configure CallXpress[®] for the application.

This document is written for dealers who are experienced with CallXpress and who are familiar with CallXpress procedures and terminology. It also assumes that you are familiar with the features and programming of the telephone system.

The information in this document pertains to CallXpress3 systems with software Version 3.20F or higher, and PhoneXpress[®] systems with Version 1.00A or higher. The terms CallXpress, CallXpress3, and PhoneXpress are used interchangeably.

To make our documents clearer and easier to read, AVT[®] uses the pronoun *he* when referring to both women and men.

Integration Overview

This document describes how to integrate CallXpress3 with an Iwatsu® ADIX telephone system, hereafter called ADIX. Information contained in this document applies to ADIX Versions 4.2 and 5.2 only.

Some of the features provided by this CallXpress integration include:

- Automatic logon, in which CallXpress identifies the internal caller's extension number, then asks the caller for the security code of the associated subscriber mailbox.
- If an extension is busy or not answered, both internal and external callers can be forwarded to the subscriber's pre-recorded personal greeting. Callers can then leave detailed messages in the subscriber's mailbox.
- The message waiting indicator (MWI) can be automatically set when new messages are sent by callers and cancelled when new messages have been accessed by the subscriber.
- Callers can reach a subscriber-specific or general operator from CallXpress by dialing 0 at any time.

Theory of Operation

CallXpress integrates with the Iwatsu ADIX through analog station ports that are programmed for voice mail. The ADIX uses DTMF digits to send information about calls forwarded to CallXpress and about direct calls to CallXpress from an extension. When a call is sent to CallXpress, CallXpress goes offhook and receives the digits sent by the ADIX. It then either routes the call through a call processor mailbox to the forwarded subscriber's personal greeting or Extension Specific Processing (ESP) announcement, or logs the caller on to a mailbox and prompts for the security code. If CallXpress does **not** receive digits, it routes the caller to a call processor mailbox and presents the caller with a list of other call processing options, typically the automated attendant.

This integration supports MWI set and clear functions. CallXpress sets and clears MWI by dialing a feature code followed by the subscriber's telephone extension.

The Iwatsu ADIX has 20 programmable packets available. Not all of these packets are required to integrate with CallXpress. Specific information on the packets provided by the Iwatsu ADIX can be found in *Troubleshooting the Integration*, later in this document. For information on the call processors required for this integration, refer to Appendix A.

Figure 1 shows an overview of an ADIX integration.

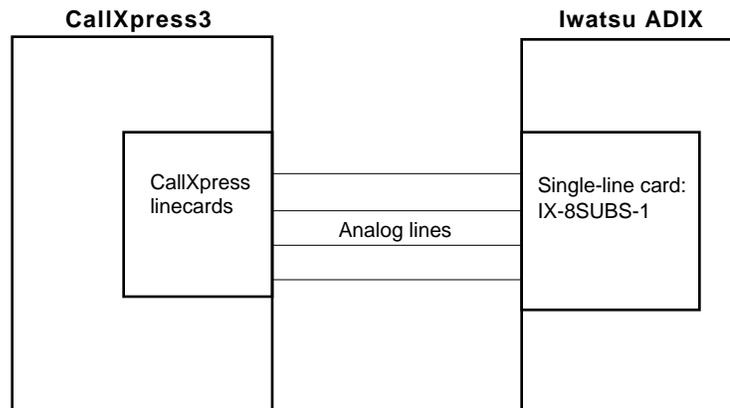


Figure 1. Overview of the integration

Recognized Call Types

Before processing a call, CallXpress must first identify it as a specific call type. Four different call types are recognized by CallXpress. After the call type is determined, CallXpress uses the information you specify on the Switch Protocol Configuration screen to process the call. Each call type is processed differently, as described below.

- *Direct Station Call (with Calling Party ID)*—CallXpress automatically logs an internal caller on to a mailbox and prompts for the security code. The caller has the options of entering the security code, logging on to a different mailbox, or accessing another feature in the system.
- *Direct Trunk Call (with Trunk Number ID)*—CallXpress plays the main announcement. It can optionally present distinct menu options based on the trunk number to an outside caller on a direct trunk call. An integrated port can service a direct trunk call with specific options, depending on the time of day and the day of the week. This call type is not used in the application provided in Appendix A.
- *Forwarded Station Call (with Called Party ID)*—CallXpress plays the personal greeting of the associated subscriber mailbox to internal callers that are forwarded to CallXpress.
- *Forwarded Trunk Call (with Called Party ID)*—CallXpress presents menu options that might be different from a forwarded station call to trunk callers forwarded to CallXpress.

For more information on the Switch Protocol Configuration screen, see *Configuring CallXpress*, later in this document.

Critical Application Considerations

Listed below are known limitations and conditions within the telephone system and CallXpress that affect the integration's performance. General recommendations are provided when ways to avoid these limitations exist.

- You must use CPU version IX-CPUL-1 or IX-CPU32 for the integration to function.
- Information contained in this document applies to Iwatsu ADIX Versions 4.2 and 5.2. The DTMF packets and programming information given here are not compatible with earlier versions.
- ADIX Versions 4.2 and 5.2 have many enhancements over earlier versions. Both versions provide 20 definable call progress packets to assist in identifying the type of calls coming to CallXpress. However, this document does not cover the packets that apply to automated attendant only, because AVT does not recommend flagging the ports for CallXpress as automated attendant only.
- AVT recommends using ground-start trunks and the IX-8SUBS-1 station card to provide a loop-current pulse for disconnect supervision.

If you do not provide loop-current pulse for disconnect, when a caller hangs up, the Iwatsu ADIX may send the disconnect code 55~~S~~ to CallXpress, which can cause problems for subscribers when listening to new messages. If a subscriber does not press the **S** key to stop listening to new messages, this code can cause the current new message and the next new message to be moved to the saved message queue. Also, this code does not allow you to use the 5 key as a valid action in any call processor mailboxes.

- Subscriber mailbox numbers must match extension numbers.
- If the application will use monitored or T-type transfers, do not allow DND at the extensions of subscribers who want to use caller queuing. The call progress pattern for DND is the same as station busy.
- If the application will use blind transfers, caller queuing and call screening will not be available.
- Program voice mail ports to overflow automatically to the operator when all ports are busy.

Table 1 quickly outlines the features and limitations of this integration.

Table 1. System compatibility information

Telephone System	Iwatsu ADIX
Software Requirements	Versions 4.2 and 5.2
End-to-End DTMF, Station	Yes
End-to-End DTMF, Console	Yes
Overflow to Operator from CallXpress	Yes
PBX Disconnect Code	Yes (see 1 below)
Modules Supported	
Automated Attendant	Yes
Voice Mail	Yes
Faxtext	Yes (see 2 below)
Fax Mail	Yes (see 2 below)
Networking	Yes
Automated Attendant	
Blind Transfer	Yes
Monitored Transfer	Yes
T-Transfer	Yes
Confirmed Transfer	Yes
Caller Queuing	Yes (see 3 below)
Call Screening	Yes (see 4 below)
Operator Overflow to CallXpress	Yes
CO Trunk ID	Yes (see 5 below)
Voice Mail	
Callouts/Message Notification	Yes
Set MWI	Yes
Cancel MWI	Yes
Call Forward to Personal Greeting	Yes
Automatic Subscriber Logon	Yes

- 1 Loop current disconnect with IX-8SUBS-1 card or 55\$ with standard line cards.
- 2 This feature requires separate analog lines; not available with PhoneXpress.
- 3 Caller queuing is not compatible with blind transfers.
- 4 Call screening is not compatible with blind or monitored transfers.
- 5 Available, but not used in the application provided in Appendix A.

Installation Requirements

Review this section before performing any of the procedures in this document. To successfully install this integration, you must meet the installation requirements listed below for the telephone system and CallXpress.

Telephone System Requirements

The following lists the requirements for the ADIX telephone system.

- One CPU card—for Version 4.2, use IX-CPUL-1; for Version 5.2 and later, use IX-CPUL32 5
- One single-line (2500-type) card; the latest versions of this card are the IX-8SUBS or IX-8SUBS-1. AVT recommends using the IX-8SUBS-1 card (the “-1” indicates that the card will provide a loop-current pulse for disconnect signaling)

Both IX-8SUBS and IX-8SUBS-1 are 8-circuit cards with one circuit required per CallXpress port. These cards should come equipped with two IX-4RCVS daughter boards for DTMF receivers.

- One RNGU ring generator

CallXpress Requirements

The following lists the requirements for CallXpress.

- CallXpress3 hardware platform
- CallXpress3 software Version 3.20F or higher, or PhoneXpress Version 1.00A or higher
- Voice mail and automated attendant

Programming the Telephone System

This section explains how to program an Iwatsu ADIX telephone system to integrate with CallXpress. The installing technician should be familiar with programming this telephone system.

For detailed information on programming and installing the Iwatsu ADIX telephone system, refer to the appropriate Iwatsu ADIX document:

- Engineering Bulletin EBA 91010, *ADIX System Voice Mail Integration*, Version 4.2 or 5.2, October 1991, Iwatsu Electric Co. Ltd.
- *Iwatsu ADIX Technical Manual*, Iwatsu Electric Co. Ltd.

Telephone Programming for CallXpress Ports

Follow these steps to program the ADIX for integration with CallXpress. The bracketed numbers represent the class, item, and element to be programmed. Areas that are not listed here are not important for programming the ADIX telephone system for CallXpress.

1. Set Port Definition: Voice Mail (VM) ports to [01.03 = 0-4-1-*nnn*, 01.04 = 0], where *nnn* = station logical port.
2. Set DTMF Packet Speed to **100ms on / 50ms off**, [04.71.10 = 2].
3. Set In-band Pause Time to **0** seconds [04.71.11 = 0].
4. Set Pre-disconnect Pause Time to **0** seconds [04.71.12=0].

5. Set the disconnect signal based on your application. Using an IX-8SUBS-1 linecard, AVT recommends setting it to loop open.

For an IX-8SUBS-1 linecard, set the disconnect signal to loop open [04.71.13=1], with the loop open duration of **700** msec [04.71.15=70].

For an IX-8SUBS, you will use a DTMF string as the disconnect signal. Disable the setting for loop open [04.71.13=0] and set the disconnect string to **55**** [04.77.19=55\$].

Note If you use the IX-8SUBS-1 linecard with loop-current disconnect signaling, do **not** program the system to use packet 19.

6. Disable trunk packets [04.71.14=0].



If you change this value, the sample application given in Appendix A will not work; you will need to create a custom CallXpress application for the site.

7. Assign the VM Hunt Group Access Number; for example [07.02.47 = 700], assigns an access number of 700.
8. Assign the VM Mailbox Access Number; for example [07.06.48 = 500], assigns an access number of 500.
9. Assign the voice mail logical ports to Hunt Group 47 [08.02.47]. Test these ports to make sure that they hunt when busy.
10. Deny Dial on Conversation for voice mail ports [10.28 = 0].
11. Set the MSG Waiting Code to [07.06.19 = 519]; the configuration shown here allows multiple ports to set and cancel MWI.
12. Set the cancel code to [07.06.01 = 501].

Note This setting affects other codes in the telephone system besides the clearing of MWI in voice mail. If a cancel code has already been programmed, use the existing code and modify the **Cancel MWI** field on the Switch Protocol Configuration screen to match (see *Configuring CallXpress*, later in this document, for details about this configuration screen).

13. Assign the Mailbox Access Key to key patterns for the digital telephones [14.01 = 11-47] and for the console [15.01 = 11-47].
14. Program VMI-E-ETU extension appearances onto the attendant's console to permit easy access to voice mail ports for calls and transfers.

15. Set up the Automated Attendant/Voice Mail Packet codes [04.77.01-20] as shown in Table 2. At this time, you can program up to twenty of the call packets that will be sent. Refer to your ADIX manual for detailed programming information.

Table 2. Programming information for packet codes

<i>Packets</i>	<i>Entry</i>	<i>Description</i>
1–5	<i>Blank, no entry</i>	Used for direct or extended callers who should hear the main system announcement.
7, 8, and 10	92	Used to route callers to a personal greeting or an ESP mailbox.
9, 11, and 12	93	Used to route callers to a personal greeting or an ESP mailbox.
6 and 13	91	Packets 6 and 13 are used for subscribers logging on to their subscriber mailboxes.
14–18	<i>Blank, no entry</i>	Not used in this application.
19	55\$ (program when using the IX-8SUBS card)	Specifies the disconnect code sent when the ADIX detects the caller has hung up; program this code only when using the IX-8SUBS card. When using IX-8SUBS-1 card, loop current is used for disconnect signalling.
20	<i>Blank</i>	(Optional) Used to indicate that central office line information should also be passed. This information allows you to build trunk sorter applications if needed.

Programming Subscriber Extensions for Voice Mail

Follow this information to program subscriber extensions for voice mail.

Program a MSG key for all subscribers on their telephones; otherwise, the FEAT key will flash when CallXpress has set the message waiting indicator (MWI) at extensions. If necessary, refer to the Iwatsu ADIX manuals for programming flex keys.

Program a VM button for any subscriber who will be transferring callers into CallXpress on a regular basis, such as the receptionist.

Call forward to personal greetings can be controlled by the following station programming:

- Station camp-on recall from a call transferred by CallXpress
- System call forwarding
- Station call forwarding as programmed by the individual subscriber

Note When system call forwarding has been programmed, it may not take effect until you have either reset the Iwatsu ADIX system or manually turned station call forwarding on then off from the individual station.

Configuring CallXpress

After you have programmed the telephone system, you must configure CallXpress for the integration. Follow these procedures to configure CallXpress:

1. Specify IWAADIX file as the telephone system in SETUP.

Press F5 and select the **IWAADIX** file from the list of telephone systems. For more information, refer to Chapter 5 of the *CallXpress3 Installation and Applications Guide*.

Note If using CallXpress Version 3.20E or *earlier*, you should choose **Generic** as the telephone system, then train call progress. You can also download the IWAADIX.SSF and IWAADIX.CPF files from the AVT bulletin board system (BBS) by calling (206) 820-4069.

2. Configure CallXpress screens.

To set up the configuration screens, refer to *Configuring CallXpress Screens*, later in this section.

3. For an existing system, modify mailboxes. For a new system, install the standard integration application diskette.

Refer to Appendix A for mailbox information and installation instructions.

4. If necessary, open all CallXpress lines.

When a new system starts, CallXpress lines are closed. To answer calls, you must open all CallXpress lines.

5. Test the integration.

Refer to *Testing the Integration*, later in this document.

Configuring CallXpress Screens

The configuration fields important to this integration are listed on the following pages. Be sure to follow the information provided here to ensure a successful integration with CallXpress and the telephone system.

Follow the instructions in the *CallXpress3 Installation and Applications Guide* for fields not specified here. In most cases, you can accept the default setting. Refer to the *CallXpress3 Installation and Applications Guide* if you need general screen and mailbox information.

- Environment Configuration screen (option A)

Answer telephone on ring #	1
Play audio trademark	No
Set MWI mode	First

- Line Configuration screen (option B)

#	Extension	Callout	MWI	Outband	Net	Desktop	Type
1	XXX	-	-	-	-	-	Loop start
2	XXX	-	-	-	-	-	Loop start
3	XXX	-	-	-	-	-	Loop start
4	XXX	-	-	-	-	-	Loop start
5	XXX	-	-	-	-	-	Loop start
6	XXX	-	-	-	-	-	Loop start
7	XXX	X	X	-	-	-	Loop start
8	XXX	-	X	-	-	-	Loop start

Enter the appropriate extension numbers for CallXpress lines in the Extension column.

Callouts can be assigned to any port. However, AVT recommends that you do **not** configure all ports for callouts.

MWI can be assigned to any port. However, AVT recommends that you do **not** configure all ports for MWI.

- Switch Protocol Configuration screen (option C)

	<i>Inband</i>	<i>Inband Code</i>	<i>Outband Code</i>
Line ringing	Yes		No
Transfer init	Yes	FP	No
Transfer abort	Yes	FP	No
Transfer abort RNA	No		No
Transfer complete	No		No
Reject call transfer	No		No
Set MWI	Yes	519X	No
Cancel MWI	Yes	501519X	No
Onhook	Yes		No
Offhook	Yes		No
MWI confirmation tone:	Ignore		
Offhook before packet:	No		

- Voice Message Configuration screen (option D)

Extension calls template	X
Local calls template	90X (Using least-cost routing)
Long distance calls template	90X (Using least-cost routing)
Digital pager callback number	X

- VIOS Configuration screen (option E)

Record DTMF detect time	70
Prompt playback DTMF detect time	50
Playback DTMF detect time	60
Length of dial tone for disconnect	10
Number of repetitions to recognize reorder tone	0
Length of reorder tone silence	250
Length of reorder tone noise	250
Variation allowed in noise/silence	70
Length of loop current drop for disconnect	500
Length of hook-flash	500
Answer on leading or trailing edge of ring	Trailing

- Answer Mode Configuration screen (option F)

The following shows a sample configuration based on the sample mailboxes given in Appendix A. These mailboxes are set up for a system with both voice mail and automated attendant installed.

<i>First line</i>	<i>Last line</i>	<i>Days/Date</i>	<i>Time</i>	<i>Mailbox</i>	<i>Name</i>
1	8	MO-FR	08:00	000	Day Main Menu
1	8	MO-FR	17:00	002	Night Main Menu

- Mailboxes required for the application; refer to Appendix A for configuration information.

Testing the Integration

After programming the ADIX and configuring CallXpress, you should test the installation to make sure that it runs smoothly. The tests in this section will help you determine if the integration functions properly.

Before you proceed with the tests in this section, it is imperative that you have already determined that CallXpress correctly provides basic telephone functions (2500-type). Follow the procedures in *Testing the Telephone System Interface* in Chapter 3 of the *CallXpress3 Installation and Applications Guide*.

The tests in this section allow you to verify CallXpress's ability to integrate with the ADIX telephone system. These tests cover the three basic integration schemes that are provided by the integration:

- MWI set and cancel
- Direct subscriber logon to a mailbox
- Call forward to a personal greeting

Because these tests may uncover problems with the telephone system as well as CallXpress, AVT recommends that these procedures be performed by an individual who is technically competent on both CallXpress and the telephone system. If your company is not responsible for the telephone system, arrange to have a technical representative from the telephone system vendor available for these tests. AVT also recommends that you perform these tests without subscribers accessing the CallXpress system, so the tests can be completed more quickly.

To facilitate testing and problem resolution, you will need the following items:

- Two working DTMF test telephone extensions within visual range of the CallXpress console.
- A telephone test set capable of monitoring calls. A test set with signal detection and measurement capabilities (digit grabber), such as the ZIAD PhD, is required to fully test all of the integration functions.
- Six unassigned mailbox numbers. The integration testing procedure requires three call processor mailboxes, one message center mailbox, and two subscriber mailboxes. If you installed the preconfigured database as described in Appendix A, the call processor and message center mailboxes exist already. However, you must create the subscriber mailboxes.

Before you begin the integration tests, verify the telephone system programming. For programming specifics, refer to *Programming the Telephone System*, earlier in this Technical Installation Procedure.

Preparing CallXpress for Testing

Follow these steps to prepare CallXpress for testing:

1. Create two subscriber mailboxes, one for each test telephone station.
 - a. Make sure that the Telephone ext field matches the actual extension number.
 - b. Make sure that the Set message-waiting light field is set to **Yes**.
 - c. Make sure that the Clear MWI mode field is set to **First**.
2. Record a personal greeting and a name for both mailboxes and verify that the recordings are present.
3. Verify that message center mailbox 070 exists. If not, create message center mailbox 070 as shown in Appendix A.
4. Verify that call processor mailboxes 000, 001, and 010 exist. If not, create these call processor mailboxes as shown in Appendix A.
5. If needed, record an announcement for call processor mailboxes 000, 001, and 010. Refer to Appendix A for sample announcements.

6. At the Line Configuration screen, verify that only one port has been designated for MWI callouts, preferably the last available port.
7. At the Answer Mode Configuration screen, verify that call processor 010 has been designated as the answer mode for all lines.

IMPORTANT

If any call fails the following tests, refer to *Troubleshooting the Integration*, later in this document.

MWI Set/Cancel Test

Follow these steps to test the MWI set and cancel functions.

Should you experience any problems with this test, use the digit grabber to monitor the call into CallXpress. This procedure allows you to hear and see the DTMF digits that the telephone system sends to CallXpress, helping you to diagnose the problem and make the appropriate changes.

1. Make sure that the test station being used has MWI capabilities and that the MWI is currently not set.
2. Place a call to CallXpress from the second test station and do the following:
 - a. Log on to the second test subscriber mailbox and record a message to send to the first test mailbox.
 - b. Press 5 to send the message.
 - c. Log off and hang up.
 - d. Observe the CallXpress Default screen. The MWI port will display Set MWI XXX.
 - e. Check the test station to confirm that the MWI has been set.

3. From the first test station, call CallXpress.
 - a. After CallXpress answers, enter your security code and listen to the test message.
 - b. Save or discard the message as desired.
 - c. Log off and hang up.
 - d. Observe the CallXpress Default screen. The MWI port will display Clr MWI XXX.
 - e. Check the test station to confirm that the MWI has been cancelled.

Direct Subscriber Logon Test

Follow these steps to test the direct subscriber logon. Again, if problems occur while performing this test, use the digit grabber to monitor another test call and help determine where the problem lies.

1. Verify that the telephone system is programmed appropriately.
2. From the test station, place a call to the pilot number of CallXpress and do the following:
 - a. Monitor the CallXpress Default screen to verify which mailbox is accessed when CallXpress answers.
 - b. When you hear *"Please enter your security code,"* enter the appropriate security code and make sure that you are in the correct mailbox.
 - c. Log off and hang up.

Call Forward to Personal Greeting Test

This test explains how to test call forward to a personal greeting. Again, if problems occur while performing this test, use the digit grabber to monitor another test call and help determine where the problem lies.

1. Set a test station so it call forwards on ring-no-answer (RNA) and busy to CallXpress.

Call Forward on Ring-No-Answer

2. From another test station that has a subscriber mailbox in CallXpress, place an internal call to the forwarded station.

After the designated number of rings at the station, the call should forward to CallXpress.

3. Observe the CallXpress Default screen to make sure that CallXpress answers the forwarded call with the appropriate subscriber's mailbox.

After CallXpress answers the call, you should immediately hear the personal greeting of the called station.

4. After the personal greeting ends, leave the subscriber a short message, then hang up (just like a non-subscriber would do).
5. Repeat Steps 2 through 4, but call into CallXpress using an *outside* line (this tests DID or DIT functionality).

Again, the call should forward to CallXpress and to the personal greeting of the called station.

If Used, Call Forward on Busy

6. Make the station busy and place an internal call to the busy station.

The call should immediately forward to CallXpress.

7. Observe the CallXpress Default screen to make sure that CallXpress answers the forwarded call with the appropriate subscriber's mailbox.

You should hear the personal greeting of the called station.

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8. Log off CallXpress at the personal greeting and hang up.
9. Repeat Steps 7 through 8, but call into CallXpress using an *outside* line.

Again, the call should forward to CallXpress and to the personal greeting of the called station.

This concludes the integration test procedures. Be sure to remove any mailboxes that were created for the sole purpose of running the integration tests. Also, verify that any configuration parameters changed for testing purposes have been changed back to realistic, working values.

Troubleshooting the Integration

This section provides information to help you troubleshoot an Iwatsu ADIX integration. To make sure that CallXpress responds appropriately to the information it receives from the telephone system, see *Viewing Inband Packets with a Digit Grabber* for details. You should also refer to *If You Have Problems—Common Integration Mistakes*, later in this section, for additional troubleshooting tips.

Viewing Inband Packets With a Digit Grabber

If you experience problems while testing the integration, use a digit grabber (such as a ZIAD PhD) to view the inband packets sent by the Iwatsu ADIX. Attach the ZIAD to the appropriate telephone line to view the communications between CallXpress and the Iwatsu ADIX.

Refer to Table 3 for information about the packets sent.

Table 3. Iwatsu ADIX inband packets

Number	Description	Automated Attendant/Voice Mail Mode Port Packet	CallXpress Response
1	When CallXpress answers a direct incoming CO call	No packet	Main announcement
2	When CallXpress answers a direct incoming ICM call	No packet	Main announcement
3	When CallXpress answers a CO camp-on call	No packet	Main announcement
4	When CallXpress answers an ICM camp-on call	No packet	Main announcement
5	When CallXpress answers a CO call transferred to a mailbox	[P07]+[Ext. No.]	Personal greeting or ESP
6	When CallXpress answers an ICM call transferred to a mailbox	[P08]+[Ext. No.]	Personal greeting or ESP
7	When CallXpress answers an ICM call to a mailbox	[P06]+[Ext. No.]	Security code prompt ¹
8	When CallXpress answers a forwarded CO call	[P09]+[Ext. No.]	Personal greeting or ESP
9	When CallXpress answers a forwarded ICM call	[P10]+[Ext. No.]	Personal greeting or ESP
10	When CallXpress answers a CO camp-on recall	[P11]+[Ext. No.]	Personal greeting or ESP
11	When CallXpress answers a consultation hold recall	[P05]+[Ext. No.]	Personal greeting or ESP
12	When CallXpress answers a CO/ICM camp-on recall when attempting DND/absence message station	[P12]+[Ext. No.]	Personal greeting or ESP
13	When CallXpress answers an ICM call from a station where the user has pressed the MSG key to retrieve a message	[P13]+[Ext. No.]	Security code prompt ¹
15	When a station or trunk connected to a Voice Mail/Automated Attendant port hangs up	Open loop if using the IX-8SUBS-1 linecard, otherwise [P19] 55\$	N/A

1 The CallXpress prompt "Please enter your security code."

If You Have Problems—Common Integration Mistakes

If the integration does not function properly after you install and configure it, review the following items before calling AVT Technical Support.

CallXpress

- Check your call processors to ensure that you have configured the proper numbering plan.
- Make sure that the configuration screens have the proper settings.
- If you see 55S or 5S on the CallXpress Default screen, you have a call processor configured for transfer on the 5 key and CallXpress is reacting to the IX-8SUBS linecard disconnect string. You should either convert to IX-8SUBS-1 linecards and use loop open for disconnect, or make sure that all call processors are configured for hangup on 5 and S keys.
- If subscribers complain that messages are unintendedly disappearing from their mailboxes and reappearing in the saved messages queue, you need to train subscribers on how to exit their mailboxes properly. When this situation occurs, CallXpress is reacting to the IX-8SUBS linecard disconnect string (55S), which is causing it to save messages. You can also resolve this problem by converting to IX-8SUBS-1 linecards and using loop open for disconnect.

ADIX

- If users are not forwarding to voice mail after system forwarding has been set, you must either reset the ADIX after programming system forwarding, or set and cancel station forwarding from each user's telephone at least once before system forwarding will occur.
- If all direct trunk callers are being misrouted when they dial the main company telephone number, the ADIX is sending trunk packets that CallXpress is not configured to handle. Unless you absolutely need them, disable trunk packet in class 04, item 71, element 14 [04.71.14=0].

Appendix A. Standard Application for Integrations

This appendix describes the standard application for all CallXpress3 Version 3.20 integrations with both voice mail and automated attendant. The accompanying CallXpress3 Standard Database diskette contains databases for 2-, 3-, and 4-digit mailbox configurations. The diskette also includes pre-recorded announcements for the mailboxes so the application can be used immediately.

Installing the Standard Application

This section explains how to install the CallXpress3 standard application. Installation of the standard application from diskette is to be performed only on new CallXpress systems with both voice mail and automated attendant.

To convert an existing application to the application described in this appendix, change the existing mailboxes individually as needed; refer to *Application Mailboxes*, later in this appendix for mailbox information.

Before installing the standard database diskette, you must first have completed the tasks described in *Configuring CallXpress*. Then, follow the steps on the next page to install the standard application.

WARNING

Do **not** install the CallXpress3 Standard Database diskette on a system with an existing application, or you will overwrite and destroy the databases and all existing voice files (names, announcements, and personal greetings) on the system.

1. Shut down CallXpress by selecting option A, Shut system down, from the CallXpress Main menu.
2. Place the CallXpress3 Standard Database diskette in drive A.
3. At the system prompt, type **A:INSTALL** and press ENTER.
4. At the menu, type the letter associated with the database you want to use.

- A** for 2-digit mailboxes (00–99)
- B** for 3-digit mailboxes (000–999)
- C** for 4-digit mailboxes (0000–9999)

5. At the confirmation prompt, type **Y** to verify your selection or **N** to cancel.

CallXpress copies the database files and announcements.

6. When finished, remove the diskette from the drive.

Do **not** use the CallXpress3 Standard Database diskette to restore the CallXpress databases, or you will overwrite and destroy the databases and all existing voice files

WARNING

on the system. The CallXpress3 Standard Database diskette is to be used only for the initial installation. If you need to restore the database after you have created subscriber mailboxes, use the current mailbox backup.

7. Start CallXpress by typing **CX** at the system prompt and pressing ENTER.

The CallXpress Logo screen appears.

8. Open CallXpress lines. To answer calls, you must open all lines because they are closed when a new system starts initially.

Customizing the Application for the Telephone System

The integration template can be used with the Iwatsu ADIX without change.

If the IX-8SUBS-1 card is not used in the application, you will need to change the **5** and **S** keys on all call processors to Hangup or Undefined. (Changes to the template are shown in **boldface** on the screens in this appendix.)

Note To make identical changes to a range of mailboxes—for example, to reconfigure the application for blind transfers—use the template edit feature from the Mailbox Configuration screen (refer to Chapter 5 in the *CallXpress3 Installation and Applications Guide*).

Application Mailboxes

This section lists the standard mailboxes in numerical order. To help you understand how the mailboxes are configured, an explanation follows each mailbox. Please note that the mailboxes shown here are configured for a system with 3-digit mailboxes.

The CallXpress3 Standard Database diskette contains pre-recorded announcements. If you want to customize the announcements, refer to the text shown here for sample wording. For example, you may want to add your company name and business hours where indicated.

IMPORTANT

When customizing the announcements, AVT recommends that you re-record *all* announcements for consistency throughout the application.

The standard mailboxes in the application are listed in Table A-1. For 4-digit mailbox numbers, append a zero to the beginning of the 3-digit mailbox number.

Table A-1. Standard application mailboxes

2-Digit	3-Digit	Name	Type
00	000	Day Main Menu	call processor
01	001	Day Secondary Menu	call processor
02	002	Night Main Menu	call processor
03	003	Night Secondary Menu	call processor
04	004	Holiday Main Menu	call processor
10	010	Day Integration Sorter	call processor
12	012	Night Integration Sorter	call processor
70	070	Day Integrated Messages	message center
72	072	Night Integrated Messages	message center
09	099	ESP for 199/No Operator	call processor
19	199	Night Message/No Operator	subscriber
21	221	Doe John	subscriber
99	999	System Administrator	subscriber

Monitored transfers are recommended if you want to use the caller queuing feature of CallXpress. To do so, it will be necessary to disable call forwarding busy at the telephone stations.

The application contains mailboxes for day, night, and holiday modes. The answer mode contains call processor mailboxes 000, 002, and 004. The company announcements are recorded in these mailboxes.

Two message center mailboxes can be used: 070 for day mode and 072 for night and holiday mode. Message center mailboxes 070 and 072 are used for integrated access to subscriber personal greetings. In this mode, no delay is encountered in the transfer process and, therefore, personal greetings are played immediately.

The integration sorter call processor mailboxes (010 and 012) provide the following functions:

- Send a forwarded outside caller directly to a subscriber's personal greeting or ESP mailbox.
- Send a forwarded internal caller directly to a subscriber's personal greeting.
- Allow subscribers to log on automatically to their mailboxes.
- Allow subscribers to manually transfer outside callers directly to another subscriber's personal greeting.

Call Processor Mailbox Configuration					
Mailbox number: 000			Name: DAY MAIN MENU		
Timeout:		4	Sponsor:		
Max msg length:		2700	Next CP:		001 DAY SECONDARY MENU
Log usage in SPU file:		No	Language:		Default
Key	Action	Number	Key	Action	Number
TO	Blind xfr	0	8	Undefined	
0	Blind xfr	0	9	Goto cp	010
1	Directory		*	Hangup	
2	Monitor xfr	XXX	#	Access msgs	
3	Monitor xfr	XXX	A	Undefined	
4	Monitor xfr	XXX	B	Undefined	
5	Undefined		C	Undefined	
6	Undefined		D	Undefined	
7	Undefined				

000—Day main menu. *“Thank you for calling [company]. If you know your party’s extension number, you may dial it at any time. For a directory of extensions, press 1, or stay on the line and the operator will assist you.”*

Call Processor Mailbox Configuration					
Mailbox number: 001			Name: DAY SECONDARY MENU		
Timeout:		4	Sponsor:		
Max msg length:		2700	Next CP:		
Log usage in SPU file:		No	Language:		Default
Key	Action	Number	Key	Action	Number
TO	Hangup		8	Undefined	
0	Blind xfr	0	9	Goto cp	010
1	Directory		*	Hangup	
2	Monitor xfr	XXX	#	Access msgs	
3	Monitor xfr	XXX	A	Undefined	
4	Monitor xfr	XXX	B	Undefined	
5	Undefined		C	Undefined	
6	Undefined		D	Undefined	
7	Undefined				

001—Day secondary menu. *“If you know your party’s extension number, you may dial it at any time. For a directory of extensions, press 1. To reach the operator, press 0.”*

Call Processor Mailbox Configuration					
Mailbox number: 002		Name: NIGHT MAIN MENU			
Timeout:	3	Sponsor:			
Max msg length:	2700	Next CP:	003	NIGHT SECONDARY MENU	
Log usage in SPU file: No		Language: Default			
Key	Action	Number	Key	Action	Number
TO	Access msgs	072199	8	Undefined	
0	Blind xfr	199	9	Goto cp	012
1	Directory		*	Hangup	
2	Monitor xfr	XXX	#	Access msgs	
3	Monitor xfr	XXX	A	Undefined	
4	Monitor xfr	XXX	B	Undefined	
5	Undefined		C	Undefined	
6	Undefined		D	Undefined	
7	Undefined				

002—Night main menu. *“Thank you for calling [company]. [Business hours are 8:00 a.m. to 5:00 p.m., Monday through Friday.] If you know your party’s extension number, you may dial it at any time. For a directory of extensions, press 1, or stay on the line for instructions on leaving a general message.”*

Rotary callers time out to hear the personal greeting recorded in mailbox 199. When a caller presses 0, he hears the announcement in call processor 099 (Extension Specific Processing for 199).

Call Processor Mailbox Configuration					
Mailbox number: 003		Name: NIGHT SECONDARY MENU			
Timeout:	4	Sponsor:			
Max msg length:	2700	Next CP:			
Log usage in SPU file: No		Language: Default			
Key	Action	Number	Key	Action	Number
TO	Hangup		8	Undefined	
0	Blind xfr	199	9	Goto cp	012
1	Directory		*	Hangup	
2	Monitor xfr	XXX	#	Access msgs	
3	Monitor xfr	XXX	A	Undefined	
4	Monitor xfr	XXX	B	Undefined	
5	Undefined		C	Undefined	
6	Undefined		D	Undefined	
7	Undefined				

003—Night secondary menu. *“If you know your party’s extension number, you may dial it at any time. For a directory of extensions, press 1.”*

Call Processor Mailbox Configuration					
Mailbox number: 004		Name: HOLIDAY MAIN MENU			
Timeout:	4	Sponsor:			
Max msg length:	2700	Next CP:	003	NIGHT SECONDARY	
MENU					
Log usage in SPU file:	No	Language:	Default		
Key	Action	Number	Key	Action	Number
TO	Access msgs	072199	8	Undefined	
0	Blind xfr	199	9	Goto cp	012
1	Directory		*	Hangup	
2	Monitor xfr	XXX	#	Access msgs	
3	Monitor xfr	XXX	A	Undefined	
4	Monitor xfr	XXX	B	Undefined	
5	Undefined		C	Undefined	
6	Undefined		D	Undefined	
7	Undefined				

004—Holiday main menu. *“Thank you for calling [company]. We are closed [for the holiday]. If you know your party’s extension number, you may dial it at any time. For a directory of extensions, press 1, or stay on the line for instructions on leaving a general message.”*

This call processor operates like the night main menu (002).

Call Processor Mailbox Configuration					
Mailbox number: 010			Name: DAY INTEGRATION SORTER		
Timeout: 2		Sponsor:			
Max msg length: 2700		Next CP: 001		DAY SECONDARY MENU	
Log usage in SPU file: No			Language: Default		
Key	Action	Number	Key	Action	Number
TO	Goto cp	000	8	Undefined	
0	Blind xfr	0	9	Undefined	
1	Access msgs		*	Hangup	
2	Access msgs	070	#	Access msgs	
3	Subscr msg	IXXX	A	Undefined	
4	Undefined		B	Undefined	
5	Undefined		C	Undefined	
6	Undefined		D	Undefined	
7	Undefined				

010—Day integration sorter. *“To transfer a caller to a subscriber’s personal greeting, press 3 and enter the subscriber’s mailbox number, then hang up.”* **This mailbox may or may not have an announcement, depending on the integration.**

The 0 key is defined as a transfer to allow a caller to reach an operator if the caller does not want to leave a message. The access messages action at the 1 key routes subscribers to CallXpress, where they are prompted to *“Enter your security code.”* The 2 key routes internal callers to subscribers’ personal greetings. The subscriber message action at the 3 key routes forwarded outside callers to Extension Specific Processing, if used, or to subscribers’ personal greetings.

Call Processor Mailbox Configuration					
Mailbox number: 012			Name: NIGHT INTEGRATION SORTER		
Timeout: 2		Sponsor:			
Max msg length: 2700		Next CP: 003		NIGHT SECONDARY MENU	
Log usage in SPU file: No			Language: Default		
Key	Action	Number	Key	Action	Number
TO	Goto cp	002	8	Undefined	
0	Blind xfr	199	9	Undefined	
1	Access msgs		*	Hangup	
2	Access msgs	072	#	Access msgs	
3	Subscr msg	IXXX	A	Undefined	
4	Undefined		B	Undefined	
5	Undefined		C	Undefined	
6	Undefined		D	Undefined	
7	Undefined				

012—Night integration sorter; this call processor operates like the day integration sorter (010).

Message Center Mailbox Configuration	
Mailbox number: 070	Name: DAY INTEGRATED MESSAGES
Sponsor:	
Language:	Default
Pause after mailbox entry:	1
Action to take on timeout:	Record message
Length of timeout before action:	0
Maximum message length:	999
Operator available:	Yes
Number to dial for operator:	0
Wait for operator on transfer:	No
Rings to wait for operator:	5
Use recipient's language:	No

070—Day integrated messages; message center for internally forwarded callers.

Message Center Mailbox Configuration	
Mailbox number: 072	Name: NIGHT INTEGRATED MESSAGES
Sponsor:	
Language:	Default
Pause after mailbox entry:	1
Action to take on timeout:	Record message
Length of timeout before action:	0
Maximum message length:	999
Operator available:	No
Number to dial for operator:	
Wait for operator on transfer:	No
Rings to wait for operator:	5
Use recipient's language:	No

072—Night integrated messages; message center for forwarded internal callers. This mailbox is similar to the day integrated messages message center (070), however no operator is available. This mailbox is used to route rotary callers to a general delivery mailbox at night and on holidays.

```

Call Processor Mailbox Configuration

Mailbox number: 099      Name: ESP FOR 199/NO OPERATOR
Timeout:                4      Sponsor:
Max msg length:        2700    Next CP: 003      NIGHT SECONDARY
MENU
Log usage in SPU file: No      Language: Default

Key Action      Number      Key Action      Number
-----
TO Hangup
0 Blind xfr     199
1 Directory
2 Monitor xfr   XXX
3 Monitor xfr   XXX
4 Monitor xfr   XXX
5 Undefined
6 Undefined
7 Undefined
8 Undefined
9 Goto cp       012
* Hangup
# Access msgs
A Undefined
B Undefined
C Undefined
D Undefined
    
```

099—ESP for 199/no operator call processor. *“No operator is available at this time. If you know your party’s extension number, you may dial it at any time. For a directory of extensions, press 1.”*

```

Subscriber Mailbox Configuration

Mailbox number: 199      Name: NIGHT MESSAGE/NO OPERATOR
Security code: 0000      Language: Default
Department:              Network priority: Regular
Message retention: 10    SA functions:
Telephone ext: 199      Allow screen editing: No
Set message-waiting light: No
Extension callouts allowed: Yes Local callouts allowed: No
Long dist callouts allowed: No Specific area codes (1):
Hold retry interval: 15 (2):
Hold retry attempts: 4 (3):
Rings to wait for transfer: 3 Operator number:
Incomplete xfer CP: 099 ESP FOR 199/NO OPERATOR
Hold ann:
Clear MWI mode: First Play recording help prompt: No
Subscriber directory: Yes Auto Attendant directory: No
Action to take on busy: None Auto Attendant announcement:
Short
    
```

199—Night message/no operator general delivery mailbox. *“Please specify who your message is for, your name, and a short message. Your message will be delivered at the start of the next business day. Please begin speaking after the tone.”*

This mailbox must have call blocking and Extension Specific Processing turned ON to route the people who press 0 to mailbox 099. It also takes messages from rotary callers routed to it by the night main menu (002).

For an explanation of how this mailbox works, refer to Chapter 6 in the *CallXpress3 Installation and Applications Guide*.

```

Subscriber Mailbox Configuration

Mailbox number: 221          Name: DOE JOHN
Security code: 0000         Language: Default
Department:                 Network priority: Regular
Message retention: 10       SA functions:
Telephone ext: 221         Allow screen editing: No
Set message-waiting light: Yes
Extension callouts allowed: Yes Local callouts allowed: Yes
Long dist callouts allowed: No Specific area codes (1):
Hold retry interval: 15     (2):
Hold retry attempts: 4     (3):
Rings to wait for transfer: 3 Operator number:
Incomplete xfer CP:
Hold ann:
Clear MWI mode: First      Play recording help prompt: No
Subscriber directory: Yes  Auto Attendant directory: Yes
Action to take on busy: None Auto Attendant announcement:
                          Short

```

221—Sample subscriber mailbox.

Although the standard database diskette does not include any subscriber mailboxes, you can use this mailbox as an example.

```

Subscriber Mailbox Configuration

Mailbox number: 999          Name: SYSTEM ADMINISTRATOR
Security code: 0000         Language: Default
Department:                 Network priority: Regular
Message retention: 10       SA functions: 2,5,6
Telephone ext: 999         Allow screen editing: Yes
Set message-waiting light: No
Extension callouts allowed: Yes Local callouts allowed: Yes
Long dist callouts allowed: No Specific area codes (1):
Hold retry interval: 15     (2):
Hold retry attempts: 4     (3):
Rings to wait for transfer: 3 Operator number:
Incomplete xfer CP:
Hold ann:
Clear MWI mode: First      Play recording help prompt: No
Subscriber directory: Yes  Auto Attendant directory: No
Action to take on busy: None Auto Attendant announcement:
                          Short

```

999—System administrator mailbox.

Although the standard database diskette does not include any system administrator mailboxes, you can use this mailbox as an example.

Glossary

The following terms are used throughout this document.

ADIX	Advanced Digital Information Exchange.
CO	Central Office.
COS	Class-of-Service.
DTMF	Dual-tone multifrequency. A generic term used to describe the signaling from a touch-tone telephone to the central switching equipment. A method of dialing using combinations of two tones from a group of eight.
ESP	Extension Specific Processing; also known as the incomplete transfer call processor. When enabled, incomplete transfers as well as forwarded callers will be provided with a menu of options specific to the subscriber. CallXpress plays this announcement instead of the subscriber's personal greeting.
IX-8SUBS	Analog station card with eight circuits; DTMF receivers should be mounted as daughter boards.
IX-8SUBS-1	Analog station card with eight circuits <i>recommended by AVT for this integration</i> ; DTMF receivers should be mounted as daughter boards.
IX-CPUL-1	System CPU (16-BIT) that supports up to 224 ports.
IX-CPUL32	System CPU (32-BIT) that supports up to 448 ports.
MWI	Message Waiting Indicator.

Technical Installation Procedure

PBX	Private Branch Exchange. A telephone exchange system that provides telephone switching in an office or building. Can also be a large, computerized telephone system with pooled access to available lines.
RNA	Ring-No-Answer.
RNGU	Ring generator.