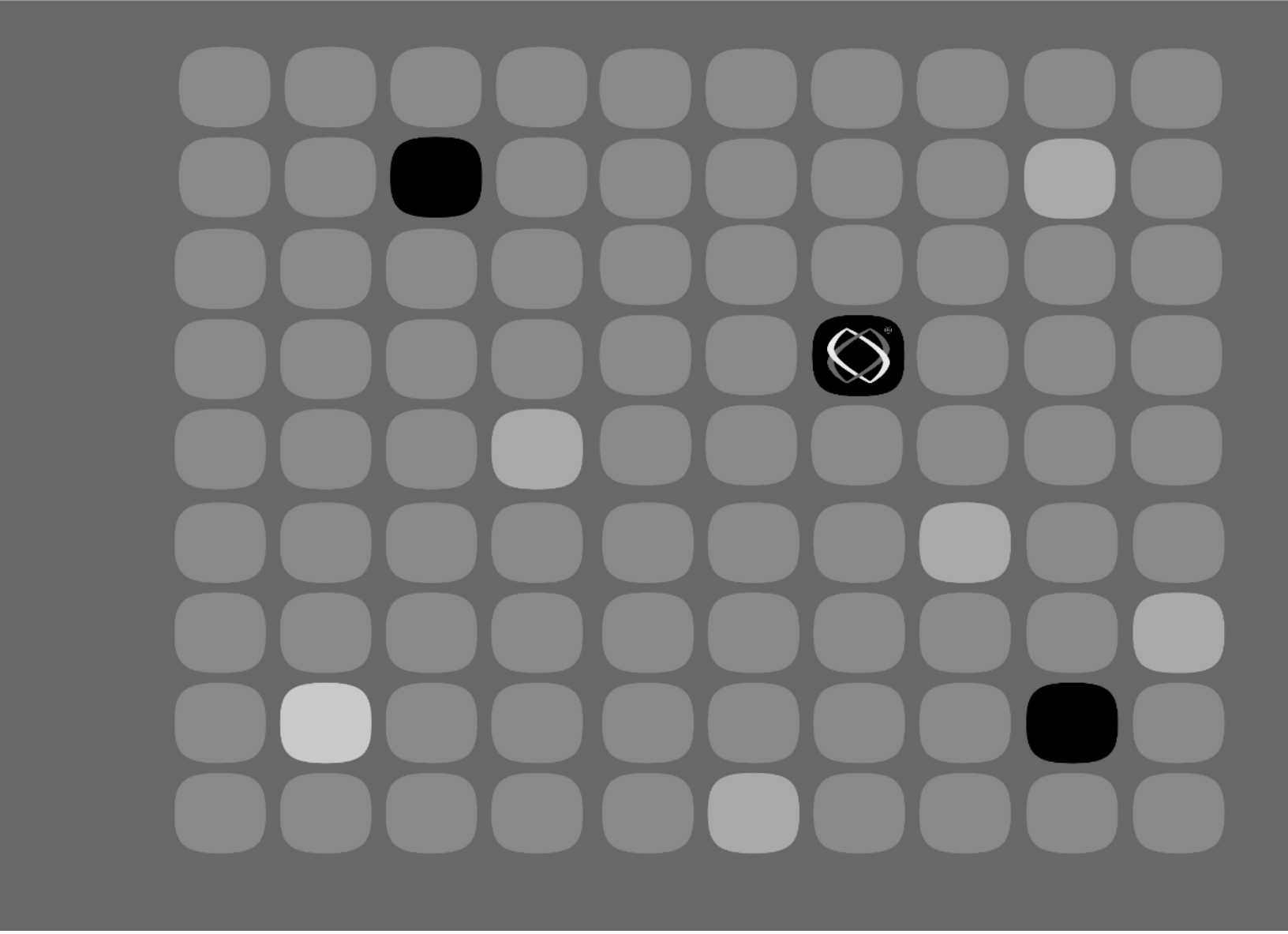

Basic Programming Reference Manual

UNISYS
INFOCONNECT
Development Kit

P/N 028156

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About This Manual

Purpose

This reference manual, relative to release 3.0, provides detailed information about the INFOConnect Connectivity Services (ICS) programming interface, messages, and data types available for ICS Accessory development and for the development of additional data filters (Service Libraries) and connection types (External Interface Libraries).

Scope

This is a Basic INFOConnect Developer's Kit. This manual is intended purely as a reference for use in developing components to the INFOConnect Connectivity Services product.

Audience

The *INFOConnect Development Kit Basic Programming Reference Manual* audience is the programmer who is developing cooperative applications that use INFOConnect Connectivity Services for data communications, or developing reusable INFOConnect accessories. This manual is also geared towards the developer who wishes to build additional data filters (Service Libraries) and connection types (External Interface Libraries). For information on the concepts and procedures involved in developing ICS components, refer to the *INFOConnect Development Kit Basic Developer's Guide*.

Prerequisites

Applications dependent on Microsoft® Windows™ 3.0 or 3.1 (referred to in this document as Windows or MS-Windows) must be familiar with the Windows Software Development Kit. Familiarity with a C language compiler compatible with Microsoft Windows 3.0 or 3.1 is also necessary.

XVT™ is the presentation toolkit that is supported by Unisys for developing portable applications on the MS-Windows platform. Therefore, the programmer wishing to develop portable user interface code using XVT must be familiar with the XVT Presentation Toolkit.

How to Use This Guide

This is a reference manual. It is meant to be used as a reference tool in conjunction with the *INFOConnect Development Kit Basic Developer's Guide*.

Organization

This manual consists of the following sections and appendixes. In addition, a glossary and an index appear at the end of this manual.

Section 1. Introduction

This section provides background information about the INFOConnect Connectivity Services program and, in particular, about the INFOConnect Development Kit.

Section 2. Functions by Category

This section lists and briefly describes the ICS API functions according to these categories:

Accessory API
DosLink API
Memory Management API
General Utilities
Library API

Section 3. INFOConnect Connectivity Services API

This section contains an alphabetical list of the ICS API. The documentation for each function includes the function prototype, a description of the function, an explanation of each of the parameters, and the possible return values. Also included is are any special notes about use of the function, as well as a key table noting which ICS layer would use the function. Related topics, such as specific data types or events/messages related to the API, are also listed.

Section 4. ICS Messages/Events

This section contains an alphabetical list and documentation for the Windows messages and XVT/Win events defined by INFOConnect Connectivity Services.

Section 5. ICS Data Structures/Types

This section contains an alphabetical list and documentation for the data structures and types defined by INFOConnect Connectivity Services.

Section 6. ICS Accessory Definition

This section describes the components of an ICS Accessory.

Appendix A. Standard IDs (Keys) & Component Numbers

Appendix A lists and describes the INFOConnect Connectivity Services standard IDs for accessories and libraries, as well as the standard component numbers and currently assigned vendor-specific component numbers.

Appendix B. Status Types and Statuses

Appendix B lists and describes the INFOConnect Connectivity Services status types and statuses.

Appendix C. Errors and Results

Appendix C lists and describes the INFOConnect Connectivity Services errors and informative results, as well as errors specific to Unisys-provided ICS components.

Related Product Information

INFOConnect™ Development Kit Basic Developer's Guide (4173 5408-000)

Describes how to use the IDK to develop INFOConnect Accessories, and to develop additional data filters (Service Libraries) and connection types (External Interface Libraries).

INFOConnect™ Connectivity Services Installation and Configuration Guide (4240 0119-200)

Contains information on installing and configuring the INFOConnect runtime product.

Microsoft® Windows™ Software Development Kit Programmer's Reference

Contains reference material for the Windows SDK.

Microsoft® Windows™ Software Development Kit Guide to Programming

Describes how to use the Windows SDK to develop Windows applications and dynamic link libraries.

XVT™ Programmer's Manual

Contains reference material for the XVT developers kit.

Notational Conventions

Convention	Description
Accessory	When selected in the key table of a specific INFOConnect API description, indicates that this API is specific to INFOConnect Accessories through the Accessory AIL. Note that the API is available to those INFOConnect applications and libraries that have initialized themselves by calling the **IcInitIcs** function.
AIL	Abbreviation for Application Interface Library. When selected in the key table of a specific INFOConnect API description, indicates that this API must either be provided by the AIL or is available as a utility to the AIL. Note that functions that begin with **IcLib**... must be provided by the AIL at the given ordinal values. Unless otherwise stated, the term AIL also refers to its various forms, such as interprocess interface library and stack interface library.
Bold	Function names and data types/structures appear in bold.
Byte	In this document, this term is equivalent to one octet.
Configurator	When selected in the key table of a specific INFOConnect API description, indicates that this API is specific to Configuration Accessories. The API is available to those INFOConnect accessories and libraries that have initialized themselves as a Configurator by calling the **IcOpenDatabase** function.

Convention	Description
DosLink	When selected in the key table of a specific INFOConnect API description, indicates that this API is specific to those DOS applications that run in MS-Windows Enhanced Mode and use INFOConnect Connectivity Services for data communications.
EIL	Abbreviation for External Interface Library. When selected in the key table of a specific INFOConnect API description, indicates that this API must either be a callback function provided by the EIL or is available as a utility to the EIL. Note that functions that begin with **IcLib**... must be provided by the EIL at the given ordinal values.
HI	Refers to the high word (high-order 16 bits) of a long parameter.
IN, OUT	In parameter description, indicates if the parameter is input (IN), output (OUT), or both input/output (IN/OUT).
*IN, *OUT	In parameter description of pointer parameters, indicates whether the data POINTED to is input (*IN), output (*OUT), or both input/output (*IN/*OUT). The pointer parameter itself must always be input.
italicized words	Function parameters and fields of a data structure are italicized.
LO	Refers to the low word (low-order 16 bits) of a long parameter.

Convention	Description
NA	In parameter description, indicates that the value of the input parameter is not defined. Use the appropriate NULL value.
Shell	When selected in the key table of a specific INFOConnect API description, indicates that this API is specific to INFOConnect Shells. Note that the API is also available to those INFOConnect accessories or libraries that have initialized themselves as a Shell by calling the **IcInitShell** function.
SL	Abbreviation for Service Library. When selected in the key table of a specific INFOConnect API description, indicates that this API must either be provided by the SL or is available as a utility to the SL. Note that functions that begin with **IcLib**... must be provided by the SL at the given ordinal values.
(ver)	In the function heading, indicates the first version of the INFOConnect Development Kit in which the given API is available.
WIN	Abbreviation for Windows. When selected in the key table of a specific INFOConnect API description, indicates that this API is Windows-specific.
XVT	When selected in the key table of a specific INFOConnect API description, indicates that this API is XVT/Win-specific.

Naming Conventions

INFOConnect Connectivity Services provides a Microsoft Windows version of the communications interface, as well as an interface utilizing XVT for Windows. The ICS function names follow the style conventions of the Windows platform. XVT/Win-specific API follows the style conventions of that platform.

Function names are constructed by using the IC prefix followed by a verb/noun combination. This combination indicates the action (such as the verb *open*) of the function and the object (such as the noun *session*) on which the function operates. Each word in the function name begins with a capital letter (for example, **IcOpenSession**). The XVT/Win-specific API function names are in lower case with each word in the name separated by an underscore (for example, **ic_open_session**).

All **#defined** names are capitalized (for example, **IC_RCVDONE**).

ICS events for the Windows platform must be registered with Windows. This is done using the quoted version described in the Events/Messages section of this manual (for example, "**IC_RcvDone**"). ICS events for the XVT/Win platform are in all capital letters and are prefixed by **E_IC_** (for example, **E_IC_RCV_DONE**).

Section 1
Introduction

The INFOConnect Connectivity Services (ICS) Program provides a workstation platform that delivers code portability and reusability to the developer of a cooperative system. ICS provides an open, layered architecture that allows application independence from session/presentation-type services and from specific data communications protocols. This is achieved by addressing many known limitations and differences among Graphical User Interfaces (GUIs), communication protocols and other aspects of supporting cooperative systems.

The INFOConnect Development Kit (IDK) provides the tools required for a developer to build portable and reusable components for the INFOConnect product. By using the IDK, developers can create ICS components that can plug into the various layers of the ICS architecture. This IDK consists of the *INFOConnect Development Kit Basic Programming Reference Manual* (this document), the *INFOConnect Development Kit Basic Developer's Guide*, and the INFOConnect Developer's Diskette(s). The IDK Diskette(s) contain libraries that provide a consistent application programming interface (API) across the various platforms supported, as well as many sample INFOConnect components. Developers who utilize the INFOConnect Development Kit can be assured that all components documented within this Kit will work together.

ICS Accessory API

The INFOConnect Connectivity Services Accessories API provides both a Microsoft Windows version of the INFOConnect Connectivity Services API and a platform independent version utilizing XVT/Win. XVT/Win-specific API is provided for those ICS functions that require a buffer handle parameter. Use the ICS provided memory utilities for XVT/Win to obtain global buffers. To access ICS functions that have a Windows window handle parameter, use GET_HWND() under XVT 2.0, or first use the XVT/Win **get_value()** function to obtain the Windows **ATTR_NATIVE_WINDOW** window handle under XVT 3.

INFOConnect also provides an API for DOS applications that run under MS-Windows Enhanced mode and wish to use the MS-Windows version of the INFOConnect API for client/server-type data communications. See the *INFOConnect Development Kit Basic Developer's Guide* for information on writing these types of applications.

ICS Library API

Since XVT does not currently support the development of dynamic link libraries, service libraries and external interface libraries must be developed for specific platforms. Therefore, INFOConnect Connectivity Services provides a GUI specific programming interface for developing these libraries. Each library is required to provide a core set of functions and may utilize the ICS programming interface. See Section 2, "ICS Library API" for a brief description of the ICS programming interface for library development.

Section 2
Functions By Category

This section lists and briefly describes the ICS API functions according to these categories:

Accessory API
DosLink API
Memory Management API
General Utilities
Library API

ICS Accessory API

The ICS Accessory Application Programming Interface (AAPI) is the interface provided for accessories and applications used in session management and error handling. The INFOConnect Accessory AIL (IcAAPI16.DLL) exports this AAPI. Note that the AAPIs exist in the ICS Manager and are, by default, available to the INFOConnect accessory. Both MS-Windows and XVT/Win versions of the AAPI are provided.

MS-Windows API

To access Windows-specific AAPI, messages, and data types, include the **icwin.h** include file after **WINDOWS.H**.

Basic Session Management Functions

Name	Purpose
IcCloseSession	Initiates session termination.
IcExitOk	Responds to an ICS exit request.
IcInitIcs	Initializes ICS.
IcLcl	Cancels pending transmits and/or receives.
IcOpenAccessory	Starts an ICS accessory with a local connection.
IcOpenSession	Initiates session establishment.
IcRcv	Requests a buffer of data.
IcRegisterMsgSession	Registers ICS events.
IcXmt	Initiates transmission of a data buffer.

Additional Session Management Functions

Name	Purpose
IcChangeHandle	Changes the ownership of an open session.
IcGetPathID	Obtains the path ID of an active session.
IcGetSessionID	Obtains a session identification string from a session handle.
IcGetSessionInfo	Returns pertinent information about a session.
IcSetStatus	Sends a status message.

Error Handling

Name	Purpose
IcDefaultErrorProc	Allows ICS to handle an error result.
IcGetString	Converts an error result into a string.
IcSetError	Used by accessories to generate errors.

XVT/Win API

The XVT/Win API, events, and data types are made available to your application by INFOConnect Connectivity Services through the **XVT.H** include file. This is done by running the ICXVTMOD utility (See the *IDK Basic Developer's Guide* for more information on installing the IDK). Therefore, there is no additional file to include in order to access these functions.

Basic Session Management Functions

Name	Purpose
ic_close_session	Initiates session termination.
ic_exit_ok	Responds to an ICS exit request.
ic_init_ics	Initializes ICS.
ic_lcl	Cancels pending transmits and/or receives.
ic_open_accessory	Starts an ICS accessory with a local connection.
ic_open_session	Initiates session establishment.
ic_rcv	Requests a buffer of data.
ic_register_msg_session	Registers ICS events.
ic_xmt	Initiates transmission of a data buffer.

Additional Session Management Functions

Name	Purpose
ic_change_handle	Changes the ownership of an open session.
ic_get_path_id	Obtains the path identification string of an active session.
ic_get_session_id	Obtains a session identification string from a session handle.
ic_get_session_info	Returns pertinent information about a session.
ic_set_status	Sends a status message.

Error Handling

Name	Purpose
ic_default_error_proc	Allows ICS to handle an error result.
ic_get_string	Converts an error result into a string.
ic_set_error	Used by accessories to generate errors.

ICS DosLink Client/Server Applications

DosLink Client/Server-type applications may access the MS-Windows version of the Basic Session Management Functions, Additional Session Management Functions, Memory Management Functions and the **IcSetError** function, as well as the functions listed below. To access this API, and the ICS messages and data types, include the **icdos.h** include file. DosLink Client/Server applications can run in Windows enhanced mode only, and DosLinkS.EXE must be running. See the *IDK Basic Developer's Guide* for more information.

Name	Purpose
IcCreateHandle	Creates an ICS memory handle from a DOS far string pointer with offset zero.
IcCreateHwnd	Creates an ICS window handle.
IcCreateSession	Creates an ICS session structure.
IcDestroyHandle	Destroys the handle created by IcCreateHandle.
IcDestroyHwnd	Destroys the handle created by IcCreateHwnd.
IcDestroySession	Destroys an ICS session structure.
IcGetNextEvent	Retrieves the next event for a session.
IcGetServiceName	Retrieves the service name of the partner session.
IcHandleOffset	Sets the memory offset for the DOS far string pointer.
IcNextEvent	Indicates the callback routine is ready for the next event.
IcRegisterCallback	Registers a session's callback routine.
IcSetServerInfo	Declares a session to be a server session.

ICS Memory Management API

MS-Windows API

This memory management API is accessible by ICS accessories and libraries. No additional include file is needed in order to access this API.

Name	Purpose
IcAllocBuffer	Allocates sharable memory.
IcFreeBuffer	Frees memory allocated with **IcAllocBuffer**.
IcGetBufferSize	Returns the size of a buffer allocated with **IcAllocBuffer**.
IcLockBuffer	Locks memory allocated with **IcAllocBuffer**.
IcReadBuffer	Reads data from a buffer.
IcReAllocBuffer	Resizes memory allocated with **IcAllocBuffer**.
IcUnlockBuffer	Unlocks memory locked with **IcLockBuffer**.
IcWriteBuffer	Writes data to a buffer.

XVT/Win API

This API is defined in **XVT.H**. No additional include file is needed to access this API.

Name	Purpose
ic_buf_alloc	Allocates sharable memory.
ic_buf_free	Frees memory allocated with **ic_buf_alloc**.
ic_buf_lock	Locks memory allocated with **ic_buf_alloc**.
ic_buf_realloc	Resizes memory allocated with **ic_buf_alloc**.

ic_buf_unlock	Unlocks memory locked with **ic_buf_lock**.
ic_galloc	Allocates non-sharable memory.
ic_gfree	Frees memory allocated with **ic_galloc**.
ic_glock	Locks memory allocated with **ic_galloc**.
ic_grealloc	Resizes memory allocated with **ic_galloc**.
ic_gunlock	Unlocks memory locked with **ic_glock**.

General Utilities

These general utilities are accessible by ICS accessories and libraries. No additional include file is needed in order to access these general utilities under either platform.

Name	Purpose
IC_CHECK_DATAFLAGS	Use to retrieve the value of an **IC_STATUS_DATAFLAGS** status.
IC_CHECK_RESULT_SEVERE	Use to check the severity of an **IC_RESULT**.
IC_GET_RESULT_CONTEXT	Use to extract the context from an **IC_RESULT**.
IC_GET_RESULT_SUBTYPE	Use to extract the subtype from an **IC_RESULT**.
IC_GET_RESULT_SUBVALUE	Use to extract the subvalue from an **IC_RESULT**.
IC_GET_RESULT_TYPE	Use to extract the type from an **IC_RESULT**.
IC_GET_RESULT_VALUE	Use to extract the value from an **IC_RESULT**.
IC_MAKE_RESULT	Creates an **IC_RESULT** from a context, a type, and a value.
IcRunHelp3	Invokes the ICS help system.

MS-Windows API

Name	Purpose
IcGetINFOConnectDir	Use to obtain CodeDir or DataDir.
IcMgrTraceBuffer	Writes a buffer of data to IcTrace's debug file.
IcMgrTraceResult	Writes an **IC_RESULT** to IcTrace's debug file.

Path Management Functions

Name	Purpose
IcGetNewPath	Initiates a path configuration dialog.
IcGetPathNames	Provides a list of configured paths.

Accessory Management

Name	Purpose
IcDeregisterAccessory	Companion to **IcRegisterAccessory**.
IcGetContext	Converts a string identifier into a context.
IcGetContextString	Converts a context into a string identifier.
IcRegisterAccessory	Identifies the application as an accessory.
IcRunAccessory	Independently starts an ICS accessory.

Accessory-Only Utilities

The following general utilities are available for ICS accessories only. Include the **icutil.h** include file to access them.

Name	Purpose
IcGetCmdlineOption	Retrieves a given command line option.

XVT/Win API

Name	Purpose
ic_get_infoconnect_dir	Use to obtain CodeDir or DataDir.

Path Management Functions

Name	Purpose
ic_get_new_path	Initiates a path configuration dialog.
ic_get_path_names	Provides a list of configured paths.

Accessory Management

Name	Purpose
ic_deregister_accessory	Companion to **ic_register_accessory**.
ic_get_context	Converts a string identifier into a context.
ic_get_context_string	Converts a context into a string identifier.
ic_register_accessory	Identifies the application as an accessory.
ic_run_accessory	Independently starts an ICS accessory.

ICS Library API

Entry Points Provided by SLs and EILs

Each of the following procedures must be exported by SLs and EILs at the given ordinal numbers. To view the prototypes associated with these **IcLib...** procedures, see the **icproto.h** include file. The library should use procedure names that more closely adhere to its purpose. For example, a TTY EIL could use function names that begin with IcTTY..., and a COMS SL could use names that begin with IcCOMS... The specific library's .DEF file references the function names used by that implementation.

The library procedures listed under Library Load/Unload, Session Establishment, and Session Communications are guaranteed to be called under the INFOConnect Shell's task.

The **icdict.h** file is included into the library's resource file to support the ICS required resources. See the ICS Data Structures/Types section for information on the structure of these user-defined resources. Refer to *Microsoft® Windows™ Software Development Kit, Programmer's Reference,* User-Defined Resource Statement section for more information.

Since XVT does not currently support the development of dynamic link libraries, service libraries and external interface libraries must be developed for specific platforms.

MS-Windows API

Library Load/Unload

Name	Purpose
IcLibInstall @ 6	First procedure called by ICS when the library is loaded.
IcLibTerminate @ 12	Last procedure called by ICS before the library is unloaded

Session Establishment

Name	Purpose
IcLibOpenChannel @ 16	Called when the channel is first opened.
IcLibCloseChannel @ 17	Procedure called when the channel is no longer needed.
IcLibOpenSession @ 9	Called to open a session on the given channel.
IcLibCloseSession @ 2	Procedure called to close the session.
IcLibIdentifySession @ 5	Called to uniquely identify a session.

Session Communications

Name	Purpose
IcLibEvent @ 3	Called to process ICS messages.
IcLibXmt @ 13	Procedure called to transmit data.
IcLibRcv @ 8	Procedure called to receive data.
IcLibLcl @ 7	Called to cancel pending transmits and/or receives.
IcLibSetResult @ 11	Called to process status and error messages.

Session Information

Name	Purpose
IcLibGetSessionInfo @ 10	Procedure called to provide session related information.
IcLibGetString @ 4	Called to convert an error result into a string.

Session Configuration

Name	Purpose
IcLibUpdateConfig @ 1	Procedure called to update configuration.
IcLibVerifyConfig @ 14	Called to verify the contents of a configuration buffer.
IcLibPrintConfig @ 15	Procedure called to obtain displayable configuration information.

ICS Utilities for Library Development

To access the library utilities API, messages, and data types, include the **iclib.h** include file after **WINDOWS.H**.

MS-Windows API

Name	Purpose
IcAddRefContextID	Locks a library into memory until it is released.
IcGetChannelID	Obtains the ID of a channel.
IcGetContextID	Obtains the context of a library and locks the library until it is released. Loads the library if not already loaded.
IcIsDebug	Obtains the current debug mode of ICS.
IcMgrEilEvent	Posts events to an EIL's event procedure.
IcMgrGetSessionInfo	Returns pertinent information about the lower a part of a session.

IcMgrLcl	Sends local requests down the library stack.
IcMgrRcv	Sends receive requests down the library stack.
IcMgrSendEvent	Posts events upwards in the library stack.
IcMgrSetResult	Sends status and error results down the library stack.
IcMgrXmt	Sends transmit requests down the library stack.
IcNotifyConfig	Passes notification messages to the active configurators.
IcReleaseContextID	Releases the context of a library and decrements its reference count. Companion to **IcAddRefContextID** and **IcGetContextID**.
IcRunLibHelp	Invokes the ICS help system.
IcSetSessionError	Records errors.

Section 3
INFOConnect API

This section fully documents, in alphabetical order, all of the INFOConnect API. Note that alphanumerics precede underscores.

The information given for each function includes the function prototype, a description of the function, an explanation of each of the function parameters, and the function's possible return values. Following this are any special notes about the function. Included is a table that flags the ICS component that would use the function. The first line of the table indicates the platform for which the function is geared: Windows, XVT/Win, or DOS (DosLink). The rest of the table indicates the ICS layer that would use the function: accessory, ICS Shell, ICS Configuration Accessories, Application Interface Library, Service Library, or External Interface Library. Following the table is a list of additional functions, data types, and messages/events that are related to the function and may, therefore, provide additional information.

This manual is part of the *Basic INFOConnect Developer's Kit*.

IcAddRefContextID

(3.0)

IC_RESULT FAR PASCAL IcAddRefContextID
(IC_RESULT_CONTEXT *context*)

IcAddRefContextID is used to delay unloading the given library from memory. This may be necessary to ensure that the library remains in memory until after the library has completed the processing initiated by **IcLibCloseChannel**. The library is guaranteed to remain in memory until after a matching **IcReleaseContextID** is called.

Note that **IcAddRefContextID** increments the reference count for the given library. When use of the library is completed, **IcReleaseContextID** must be called to decrement the reference count. After the count reaches zero, the library's termination routine will be called and the library will be unloaded from memory.

Parameters	**Description**	
context	IN	An **IC_RESULT_CONTEXT** of the library to lock into memory.

Return Value:

IC_OK if successful. See Appendix C for possible errors.

Note: ***IcAddRefContextID*** *and* ***IcReleaseContextID*** *must occur in matching pairs.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcReleaseContextID	function

IcAllocBuffer

(1.0)

HANDLE FAR PASCAL IcAllocBuffer
(unsigned *bufsize*)

IcAllocBuffer allocates a global buffer that can be shared by different tasks.

Parameters	Description	
bufsize	IN	The number of bytes to allocate.

Return Value:

A global buffer handle is returned if the memory was allocated. (HANDLE)NULL is returned if the memory could not be allocated.

Note: *ICS data communication buffers must be shared by different tasks.* ***IcAllocBuffer*** *ensures that these buffers are properly allocated to satisfy any operating system requirements for shared buffers. Therefore, buffers passed to the INFOConnect Connectivity Services routines MUST have been allocated through* ***IcAllocBuffer****.*

● WIN	❍ XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcFreeBuffer function

IcChangeHandle

(1.0)

IC_RESULT FAR PASCAL IcChangeHandle
(HIC_SESSION *hsession*,
HWND *hWnd*)

IcChangeHandle changes the ownership of a currently established communication session. All subsequent communication messages are then directed to the window function associated with that new window.

Parameters	**Description**	
hsession	IN	The **HIC_SESSION** handle of the opened communication session to which the new window becomes associated.
hWnd	IN	The window handle for the window that will obtain ownership of the given communication session.

Return Value:

IC_OK is returned if the change was successful.
IC_ERROR_UNOPENEDSESSION is returned if the given communication session is not a valid, established session. See Appendix C for other possible errors.

Note: *An implicit **IcLcl(*****hsession, IC_LCL_RCVXMT****) is performed prior to the switch.*

● WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcLcl	function
HIC_SESSION	data type
IC_LCL_FLAGS	data type
IcNextEvent	function
IC_NEXTEVENT_FLAGS	data type

IC_CHECK_DATAFLAGS

(3.0)

IC_CHECK_DATAFLAGS (*r*)

The **IC_CHECK_DATAFLAGS** macro checks a status message to determine if it is an **IC_STATUS_DATAFLAGS** status.

Parameters	**Description**	
r	IN	The status result.

Return Value:

TRUE if the status is an **IC_STATUS_DATAFLAGS** status. FALSE otherwise.

● WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_STATUS_DATAFLAGS data type

IC_CHECK_RESULT_SEVERE

(2.0)

IC_CHECK_RESULT_SEVERE (*result*)

The **IC_CHECK_RESULT_SEVERE** macro checks the severity of the given **IC_RESULT**.

Parameters	Description	
result	IN	An **IC_RESULT** to check.

Return Value:

TRUE if the **IC_RESULT_TYPE** is **IC_ERROR_SEVERE** or **IC_ERROR_TERMINATE**. FALSE otherwise.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IC_ERROR_SEVERE	data type
IC_ERROR_TERMINATE	data type
IC_RESULT	data type
IC_RESULT_TYPE	data type

IcCloseSession

(1.0)

IC_RESULT FAR PASCAL IcCloseSession
(HIC_SESSION *hsession*)

IcCloseSession causes INFOConnect Connectivity Services to close the given communication session.

Parameters	Description	
hsession	IN	The **HIC_SESSION** handle of the open communication session to close.

Return Value:

IC_OK is returned. The result of the communication session closure will be sent to the application's window procedure as the ICS message **IC_SESSIONCLOSED**. This result will be **IC_OK** if the session closed properly. See Appendix C for possible errors.

Notes:

– *An **IC_OK** result from **IcOpenSession** requires that **IcCloseSession** be called regardless of the **IC_SESSIONESTABLISHED** message result.*

– *ICS DosLink applications should call **IcDestroySession** after calling this routine to flush the event buffer and destroy the session record.*

● WIN ❍ XVT ● DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IcOpenSession	function
IcDestroySession	function
IcNextEvent	function
IC_NEXTEVENT_FLAGS	data type

IcCreateHandle

(2.0)

HANDLE FAR PASCAL IcCreateHandle
(LPSTR *mem*,
WORD *len*)

For ICS DosLink applications, **IcCreateHandle** creates a memory handle for use with the ICS API.

ICS DosLink applications would normally use **IcAllocBuffer** to obtain memory buffers. **IcCreateHandle** can be used instead only if the application's memory pointer has a zero offset. If the application's memory pointer does not have a zero offset, see the **IcHandleOffset** function.

Parameters	Description	
mem	IN	A pointer to the memory which the new handle should reference.
len	IN	The size of the data, in bytes.

Return Value:

The ICS memory handle is returned. NULL if the handle could not be created, that is, the pointer offset is not equal to zero.

❍ WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcAllocBuffer	function
IcDestroyHandle	function
IcHandleOffset	function

IcCreateHwnd

(2.0)

HWND FAR PASCAL IcCreateHwnd
(LPSTR *classname*)

For ICS DosLink applications, **IcCreateHwnd** creates an MS-Windows type window handle for use with the ICS API.

Parameters	Description	
classname	*IN	An MS-Windows class, or, to use the ICS default, this could be a NULL string or the pointer itself may be NULL.

Return Value:

An ICS window handle is returned. NULL is returned if the handle could not be created.

❍ WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

IcCreateSession

(2.0)

IC_RESULT FAR PASCAL IcCreateSession
(LPHIC_SESSION *lpsession*)

For ICS DosLink applications, **IcCreateSession** creates an ICS session structure and returns its session handle. This handle must be passed in on the call to **IcOpenSession**.

If the ICS DosLink application is using a callback function (in contrast to polling using **IcGetNextEvent**), then **IcRegisterCallback** must be called before calling **IcOpenSession**. If the ICS DosLink application wishes to be a server session (instead of defaulting to a client session), then **IcSetServerInfo** must be called before calling **IcOpenSession**.

Parameters	Description	
lpsession	*OUT	An **HIC_SESSION** to be initialized with the ICS session handle.

Return Value:

IC_OK is returned if successful. See Appendix C for possible errors.

❍ WIN ❍ XVT ● DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IcOpenSession	function
IcRegisterCallback	function
IcSetServerInfo	function
IcDestroySession	function

IcDefaultErrorProc

(1.0)

IC_RESULT FAR PASCAL IcDefaultErrorProc
(HWND *hWnd*,
HANDLE *hData*,
unsigned *uType*,
IC_RESULT *error*)

IcDefaultErrorProc retrieves, formats, and displays the error string corresponding to the given ICS error to the user. It is called for all errors that the application does not wish to handle itself.

Only severe, terminate, and warning errors are presented to the user unless the user runs the ICS Shell with the *-d* (for debug) parameter. In this case, all errors passed in to **IcDefaultErrorProc** are formatted and displayed to the user.

Parameters	Description	
hWnd	IN	The handle of the calling application's window.
hData	IN	The handle of the open communication session for which the error occurred, or NULL if not applicable.
uType	IN	The ICS error message type (for example, **IC_ERROR**, **IC_RCVERROR**, etc.) or NULL if not applicable.
error	IN	The ICS error that occurred.

Return Value:

IC_OK is returned.

● WIN	❍ XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_RESULT	data type
IC_ERROR_INFO	data type
IC_ERROR_WARNING	data type
IC_ERROR_SEVERE	data type
IC_ERROR_TERMINATE	data type
IcGetString	function

IcDeleteLibraryConfig

(2.0)

IC_RESULT FAR PASCAL IcDeleteLibraryConfig
(IC_RESULT_CONTEXT *context,*
int *TableNumber,*
int *KeyIndex,*
void FAR * *KeyStruct*)

IcDeleteLibraryConfig deletes the record with the given key from the given table in the ICS database.

Parameters	Description	
context	IN	The library's context.
TableNumber	IN	The number of the table from which to delete.
KeyIndex	IN	The zero-relative index of the key field from the beginning of the record.
KeyStruct	*IN	A pointer to the key portion of the database table record structure for the given table with the necessary key field initialized.

Return Value:

IC_OK if successful. See Appendix C for other possible errors.

Notes:

– ***IcDeleteLibraryConfig*** *is used only on library's invisible tables (**IC_TF_INVISIBLETABLE IC_TABLE_FLAGS** flag). Path and Channel tables are managed by the ICS Manager and through the **IcLibUpdateConfig** procedure.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcReadLibraryConfig	function
IcWriteLibraryConfig	function
IC_DICT_NODE	data type
IC_TABLE_FLAGS	data type

IcDeregisterAccessory

(1.0)

IC_RESULT FAR PASCAL IcDeregisterAccessory
(IC_RESULT_CONTEXT *context*)

IcDeregisterAccessory removes the association between the given **IC_RESULT_CONTEXT** and its accessory. The *context* is no longer valid.

Parameter		Description
context	IN	The **IC_RESULT_CONTEXT** of the accessory to deregister.

Return Value:

IC_OK is returned if successful, **IC_ERROR_INTERNAL** is returned if the context exceeds the context table bounds.

● WIN	❍ XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_RESULT_CONTEXT	data type
IcRegisterAccessory	function

IcDestroyHandle

(2.0)

void FAR PASCAL IcDestroyHandle
(HANDLE *hMem*)

For ICS DosLink applications, **IcDestroyHandle** destroys the memory handle created by **IcCreateHandle**.

Parameter	Description	
hMem	IN	The memory handle to be destroyed.

Return Value:

None.

❍ WIN ❍ XVT ● DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IcCreateHandle function

IcDestroyHwnd

(2.0)

void FAR PASCAL IcDestroyHwnd
(HWND *hWnd*)

For ICS DosLink applications, **IcDestroyHwnd** destroys the window handle created by **IcCreateHwnd**.

Parameters	Description	
hWnd	*IN	The ICS window handle to be destroyed.

Return Value:

None.

❍ WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcCreateHwnd	function

IcDestroySession

(2.0)

IC_RESULT FAR PASCAL IcDestroySession
(HIC_SESSION *session*)

For ICS DosLink applications, **IcDestroySession** destroys the ICS session structure created by **IcCreateSession**. The session handle is no longer valid, and all pending events for this session are destroyed. This implies that if the application uses **IcRegisterCallback**, it will no longer be called.

Parameters	Description	
session	IN	The session to be destroyed.

Return Value:

IC_OK is returned if successful. See Appendix C for possible errors.

Note: ***IcDestroySession*** *must be called after* ***IcCloseSession*** *when the session handle is no longer needed. Failure to do so will result in a notification message from the DosLink.386 virtual device when the DOS virtual machine is destroyed stating that INFOConnect sessions were active.*

❍ WIN ❍ XVT ● DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IcCloseSession	function
IcOpenSession	function

IcDialogConfig

(3.0)

IC_RESULT FAR PASCAL IcDialogConfig
(HIC_CONFIG *hConfig*,
HINSTANCE *hInstance*,
LPCSTR *Dlg*,
DLGPROC *DlgProc*,
LPARAM *lParam*)

IcDialogConfig accesses the Windows DialogBoxParam procedure to display the given dialog box. Use it when you wish to display a dialog box for some given *hConfig*.

Parameters	Description	
hConfig	IN	The **HIC_CONFIG** handle of the open configuration session.
hInstance	IN	The instance handle.
Dlg	*IN	The dialog box template name.
DlgProc	IN	The instance address of the dialog callback procedure.
lParam	IN	The initialization value for **lParam**.

Return Value:

The return value is the MAKELONG of the value returned from the Windows DialogBoxParam function. For consistency, the dialog callback procedure can use EndDialog(..., LOWORD(**IC_OK**) for returning TRUE and EndDialog(..., LOWORD(**IC_CANCELED**) for returning FALSE.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcLibUpdateConfig	function
IcLibVerifyConfig	function

IcExitOk

(2.0)

IC_RESULT FAR PASCAL IcExitOk
(BOOL *Ok*)

IcExitOk is used to notify INFOConnect Connectivity Services that a session can or cannot be closed. It is used in response to several **IC_STATUS_COMMMGR** status messages. A distributed application may use **IcExitOk** to prevent ICS from exiting in order to gracefully terminate the host component.

Parameters	Description	
Ok	IN	TRUE if the session may be safely closed, FALSE to abort the termination of ICS.

Return Value:

IC_OK if successful. See Appendix C for possible errors.

Note: *If **IcExitOk** is not called in response to the **IC_COMMMGR_QUERYEXIT** status message, the ICS Shell will query the user for permission to close the open communication sessions.*

● WIN ● XVT ❍ DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IC_STATUS_COMMMGR data type

IcFreeBuffer

(1.0)

IC_RESULT FAR PASCAL IcFreeBuffer
(HANDLE *hBuffer*)

IcFreeBuffer frees memory previously allocated through **IcAllocBuffer**.

Parameters	**Description**	
hBuffer	IN	The handle of the global buffer to free.

Return Value:

IC_OK if successful. See Appendix C for possible errors.

● WIN	❍ XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcAllocBuffer	function

IcGetBufferSize

(1.0)

DWORD FAR PASCAL IcGetBufferSize
HANDLE *hBuffer*)

IcGetBufferSize returns the size of the specified buffer.

Parameters	Description	
hBuffer	IN	The handle of a buffer allocated with **IcAllocBuffer**.

Return Value:

Size, in bytes, of the given memory block. If the given handle is not valid or if the memory has been discarded, this is zero.

● WIN	❍ XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcAllocBuffer	function

IcGetChannelID

(2.0)

IC_RESULT FAR PASCAL IcGetChannelID
(IC_RESULT_CONTEXT *context*,
HIC_CHANNEL *hIcChannel*,
LPSTR *buffer*,
unsigned *len*)

IcGetChannelID obtains the channel ID from a channel handle.

Parameters	**Description**	
context	IN	A library context.
hIcChannel	IN	The ICS **HIC_CHANNEL** handle of the channel from which to retrieve the channel ID.
buffer	*OUT	A buffer to receive the channel ID.
len	IN	The size of the buffer in bytes.

Return Value:

IC_OK if successful. **IC_ERROR_BADPARAMETER** if a parameter is incorrect. **IC_ERROR_TRUNCATED** if the buffer was too small and the data was truncated. See Appendix C for other possible errors.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

HIC_CHANNEL	data type

IcGetCmdlineOption

(3.0)

IC_RESULT FAR PASCAL IcGetCmdlineOption
(LPSTR *sCmdLine*,
char *option*,
char *endDelimiter*,
LPSTR *sValue*,
unsigned *uValueSize*)

IcGetCmdlineOption parses the given command line for the given option and retrieves the value associated with that option, if one exists. The option's value follows the option character on the command line.

IcGetCmdlineOption is always case INSENSITIVE.

Parameters	Description	
sCmdLine	*IN	The null terminated command line on which to parse.
option	IN	The character option for which to search.
endDelimiter	IN	The delimiter for the value of the option. This is usually a space.
sValue	*OUT	The value associated with the given *option*, if one exists on the command line.
uValueSize	IN	The size of the *sValue* buffer. It should be big enough to include an additional null character.

Return Value:

IC_OK is returned if the *option* was found on the command line. In this case, *sValue* contains the value immediately following the option, if one exists. The **IC_ERROR_NOFIND** informational error is returned if the *option* was not found on the command line. **IC_ERROR_TRUNCATED** is returned if the destination buffer is too small for the option's value.

Notes:

– *To access this procedure, include the **icutil.h** include file into your application.*

– *If the same option exists multiple times on the command line, IcGetCmdlineOption returns only the first occurrence.*

● WIN	❍ XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

Section 6, "ICS Accessory Definition"

IcGetContext

(1.0)

IC_RESULT FAR PASCAL IcGetContext
(LPSTR *name*,
LPIC_RESULT_CONTEXT *lpcontext*)

IcGetContext provides the context associated with the given unique context string.

Parameters	**Description**	
name	*IN	A unique context identification string, as defined in the .HIC include file of the component.
lpcontext	*OUT	An **IC_RESULT_CONTEXT** type that receives the context associated with *name*, if it exists.

Return Value:

IC_OK is returned if the context is found and returned.
IC_CONTEXTSTRING_NOT_FOUND is returned if the context could not be retrieved. In this case, the value pointed to by *lpcontext* is invalid.

● WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

LPIC_RESULT_CONTEXT	data type
IcGetContextString	function

IcGetContextID

(2.0)

IC_RESULT FAR PASCAL IcGetContextID
(LPSTR *ID*,
LPIC_RESULT_CONTEXT *context*)

IcGetContextID returns the context of the given library. The library is loaded, if necessary, and locked for use by the calling component. When the caller is done with the library, it must call **IcReleaseContextID**.

Parameters	Description	
ID	*IN	A library ID.
context	*OUT	An **IC_RESULT_CONTEXT** to receive the library context.

Return Value:

IC_OK if successful. See Appendix C for possible errors.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcReleaseContextID function

IcGetContextString

(1.0)

IC_RESULT FAR PASCAL IcGetContextString
(IC_RESULT_CONTEXT *context,*
LPSTR *buffer*,
unsigned *length*)

IcGetContextString provides the unique, null-terminated context string associated with the given context.

Parameters	**Description**	
context	IN	A context.
buffer	*OUT	A buffer to receive the unique context string associated with the given context.
length	IN	The size of the buffer in bytes.

Return Value:

IC_OK is returned if the context string is successfully retrieved. Otherwise, **IC_CONTEXT_NOT_FOUND** is returned and buffer is filled with NULLs.

● WIN ● XVT ❍ DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IC_RESULT_CONTEXT	data type
IcGetContext	function

IcGetINFOConnectDir

(2.0)

IC_RESULT FAR PASCAL IcGetINFOConnectDir
(enum IC_DIRECTORYTYPES *dirtype*,
LPSTR *pstr*,
unsigned *strsize*)

IcGetINFOConnectDir returns INFOConnect directory information.

Parameters	**Description**	
dirtype	IN	The **IC_DIRECTORYTYPES** type information to retrieve.
pstr	*OUT	The string to receive the information.
strsize	IN	The length of the string in bytes. This should be at least **IC_MAXFILENAMESIZE**.

Return Value:

IC_OK if successful. See Appendix C for possible errors.

Note: ***IC_CODEDIR*** *requests the name of the directory containing the ICS code files. This directory can be a shared directory.* ***IC_DATADIR*** *requests the name of the directory containing the ICS data files. Applications should use this directory for all use configuration files.*

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IC_DIRECTORYTYPES data type

IcGetLibraryDefault

(2.0)

IC_RESULT FAR PASCAL IcGetLibraryDefault
(IC_RESULT_CONTEXT *context*,
int *TableNumber*,
void far * *buffer*,
unsigned *len*)

IcGetLibraryDefault retrieves the default configuration data for the library's given table.

Parameters	**Description**	
context	IN	A library context.
TableNumber	IN	The number of the table for which to retrieve the default data.
buffer	*OUT	A buffer to receive the data.
len	IN	The size of the buffer in bytes.

Return Value:

IC_OK if successful. **IC_ERROR_BADPARAMETER** if a parameter is incorrect. **IC_ERROR_TRUNCATED** if the buffer was too small and the data was truncated. See Appendix C for other possible errors.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

IcGetNewPath

(1.0)

IC_RESULT FAR PASCAL IcGetNewPath
(HANDLE *hWnd*,
HANDLE *hBuffer*,
unsigned *len*)

IcGetNewPath provides a programmatic interface to the ICS path configuration dialogs.

When the user has completed the configuration, an **IC_NEWPATH** message is sent to *hWnd*. At this point, the buffer designated by *hBuffer* will contain the unique, null-terminated path ID of the newly configured ICS path, or, if the user cancelled the path configuration, it will contain NULL.

Parameters	Description	
hWnd	IN	The handle of the calling application's window.
hBuffer	IN	The handle to a buffer allocated with **IcAllocBuffer** to be filled with a null-terminated path identification string (path ID).
len	IN	The size of buffer in bytes. This must be at least **IC_MAXPATHIDSIZE**.

Return Value:

IC_OK when the configuration procedure has been initiated.
IC_ERROR_BADPARAMETER (and the configuration procedures are not initiated) if *len* is less than **IC_MAXPATHIDSIZE** or if *hBuffer* is NULL.

● WIN	❍ XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_NEWPATH message

IcGetNextEvent

(2.0)

void FAR PASCAL IcGetNextEvent
(HIC_SESSION *session*,
LPHANDLE *hWnd*,
LPWORD *message*,
LPLONG *lParam*)

For ICS DosLink applications, **IcGetNextEvent** retrieves the next event for the session. It is used to poll for events, and may be used instead of, or in addition to, the callback routine.

Parameters	**Description**	
session	IN	A session handle.
hWnd	*OUT	The window handle on which the event occurred.
message	*OUT	The event, or **IC_NULLEVENT** if no messages are available.
lParam	*OUT	The long parameter for the event.

Return Value:

IC_OK is returned if successful. See Appendix C for possible errors.

❍ WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

IcGetPathID

(2.0)

IC_RESULT FAR PASCAL IcGetPathID
(HIC_SESSION *hsession*,
LPSTR *buffer*,
unsigned *length*)

IcGetPathID provides the identification string of the ICS path for the given communication session.

Parameters	Description	
hsession	IN	An **HIC_SESSION** communication session handle. The session need not be established.
buffer	*OUT	A global buffer to receive the null-terminated path identification string.
length	IN	The size of the buffer in bytes. This must be at least **IC_MAXPATHIDSIZE**.

Return Value:

IC_OK if successful. Possible errors are **IC_ERROR_BADPARAMETER** and **IC_ERROR_UNOPENEDSESSION**. See Appendix C for other possible errors.

● WIN	❍ XVT	❍ DosLink
● Accessory	● Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

IcGetPathNames

(1.0)

IC_RESULT FAR PASCAL IcGetPathNames
(HANDLE hB*uffer*,
unsigned *length*)

IcGetPathNames provides a list of the configured path IDs. The list is returned in the given buffer and consists of a two-byte integer (count of configured ICS paths) followed by as many complete 'path entries' that will fit in the buffer. Each 'path entry' consists of a one byte (character) flag ('1' == currently active, '0' == currently inactive) followed by a null-terminated ASCII string (the path ID).

Parameters	**Description**	
hBuffer	IN	The handle to a buffer, allocated with **IcAllocBuffer**, in which the list is returned.
length	IN	The size of the buffer in bytes.

Return Value:

IC_OK if successful. **IC_ERROR_BADPARAMETER** if *len* is less than 3 or if hB*uffer* is NULL. See Appendix C for other possible errors.

● WIN	❍ XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

IC_GET_RESULT_CONTEXT

(1.0)

IC_GET_RESULT_CONTEXT (*result*)

The **IC_GET_RESULT_CONTEXT** macro extracts the **IC_RESULT_CONTEXT** from the given **IC_RESULT**.

Parameters	Description	
result	IN	An **IC_RESULT** status or error from which the context is extracted.

Return Value:

The extracted context.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IC_RESULT	data type
IC_RESULT_CONTEXT	data type

IC_GET_RESULT_SUBTYPE

(2.0)

IC_GET_RESULT_SUBTYPE (*result*)

The **IC_GET_RESULT_SUBTYPE** macro extracts the **IC_RESULT_SUBTYPE** from the given **IC_RESULT**.

Parameters	Description	
result	IN	An **IC_RESULT** status or error from which the subtype is extracted.

Return Value:

The extracted subtype.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IC_RESULT	data type
IC_RESULT_SUBTYPE	data type

IC_GET_RESULT_SUBVALUE

(2.0)

IC_GET_RESULT_SUBVALUE (*result*)

The **IC_GET_RESULT_SUBVALUE** macro extracts the **IC_RESULT_SUBVALUE** from the given **IC_RESULT**.

Parameters	Description	
result	IN	An **IC_RESULT** status or error from which the subvalue is extracted.

Return Value:

The extracted subvalue.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IC_RESULT	data type
IC_RESULT_SUBVALUE	data type

IC_GET_RESULT_TYPE

(1.0)

IC_GET_RESULT_TYPE (*result*)

The **IC_GET_RESULT_TYPE** macro extracts the **IC_RESULT_TYPE** from the given **IC_RESULT**.

Parameters	**Description**	
result	IN	An **IC_RESULT** status or error from which the type is extracted.

Return Value:

The extracted type.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IC_RESULT	data type
IC_RESULT_TYPE	data type

IC_GET_RESULT_VALUE

(1.0)

IC_GET_RESULT_VALUE (*result*)

The **IC_GET_RESULT_VALUE** macro extracts the **IC_RESULT_VALUE** from the given **IC_RESULT**.

Parameters	Description	
result	IN	An **IC_RESULT** status or error from which the value is extracted.

Return Value:

The extracted value.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IC_RESULT	data type
IC_RESULT_VALUE	data type

IcGetServiceName

(2.0)

IC_RESULT FAR PASCAL IcGetServiceName
(HIC_SESSION *session*,
LPSTR *name*,
unsigned *length*)

For ICS DosLink client/server applications, **IcGetServiceName** retrieves the service name of the partner session. If this is called by a server session, the pathname (that is, the path parameter from the client's call to **IcOpenSession**) is returned.

Parameters	**Description**	
session	IN	A session handle.
name	*OUT	A global buffer to receive the null-terminated service name.
length	IN	The size of the buffer in bytes.

Return Value:

IC_OK is returned if successful. See Appendix C for possible errors.

❍ WIN ❍ XVT ● DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IcOpenSession	function
IcSetServerInfo	function

IcGetSessionID

(2.0)

IC_RESULT FAR PASCAL IcGetSessionID
(HIC_SESSION *hsession*,
LPSTR *buffer*,
unsigned *length*)

IcGetSessionID returns the unique session identification string (ID) for the given session. The session ID consists of the path ID, followed by a semicolon and the unique session name, if it exists.

Parameters	Description	
hsession	IN	The **HIC_SESSION** handle of the communication session whose ID is to be retrieved.
buffer	*OUT	A buffer, allocated with **IcAllocBuffer**, in which to return the communication session ID.
length	IN	The size of the buffer in bytes. This must be at least **IC_MAXSESSIONIDLEN**.

Return Value:

IC_OK if successful. **IC_ERROR_UNOPENEDSESSION** if the session handle is invalid, **IC_ERROR_TRUNCATED** if the buffer was not large enough to hold the session ID. See Appendix C for other possible errors.

● WIN ❍ XVT ● DosLink

● Accessory ● Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

IcGetSessionInfo

(1.0)

IC_RESULT FAR PASCAL IcGetSessionInfo
(HIC_SESSION *hsession*,
LPIC_SINFO *info*)

IcGetSessionInfo initializes the given **IC_SINFO** data structure with pertinent information about the communication session.

Parameters	**Description**	
hsession	IN	The **HIC_SESSION** handle of an established communication session.
info	*OUT	An **IC_SINFO** record to be filled with communication session information.

Return Value:

IC_OK if the structure was initialized. See Appendix C for possible errors.

● WIN	● XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_SINFO	data type

IcGetString

(1.0)

IC_RESULT FAR PASCAL IcGetString
(HIC_SESSION *hsession*,
IC_RESULT *result*,
LPSTR *buffer*,
unsigned *length*)

IcGetString retrieves the text associated with the given error result. The null-terminated text is placed in the given buffer.

Parameters	Description	
hsession	IN	The communication session on which the error occurred, or **NULL_HIC_SESSION** if not relevant.
result	IN	The error result.
buffer	*OUT	A buffer to receive the text.
length	IN	The size of the buffer in bytes. This should be at least **IC_MAXSTRINGLENGTH**.

Return Value:

IC_OK if successful. See Appendix C for possible errors.

● WIN	❍ XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_RESULT data type

IcHandleOffset

(2.0)

IC_RESULT FAR PASCAL IcHandleOffset
(HIC_SESSION *session*,
WORD *utype*,
LPSTR *mem*,
HANDLE FAR * *lphandle*)

For ICS DosLink applications, **IcHandleOffset** creates a memory handle for use with the ICS API.

Parameters	Description	
session	IN	A session handle.
utype	IN	The type of the buffer. Use **IC_XMTDONE** for a transmit buffer, use **IC_RCVDONE** for a receive buffer.
mem	IN	The far pointer to the data.
lphandle	*OUT	The **HANDLE** variable to receive the buffer handle.

Return Value:

IC_OK is returned if successful. See Appendix C for possible errors.

Note: *ICS DosLink applications would normally use **IcAllocBuffer** to obtain memory buffers. If the **IcHandleOffset** function is used, the call must immediately precede the call to **IcRcv** or **IcXmt**.*

❍ WIN ❍ XVT ● DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IcCreateHandle	function
IcAllocBuffer	function

IcInitIcs

(1.0)

IC_RESULT FAR PASCAL IcInitIcs
(int *version*,
int *revision*)

IcInitIcs allows INFOConnect Connectivity Services to initialize, if necessary.

Parameters	Description	
version	IN	The highest ICS version that the calling program understands. The program does not take advantage of any new features that a higher ICS version may contain.
revision	IN	The highest ICS revision which the calling program understands. The program does not take advantage of any new features that a higher ICS revision may contain.

Return Value:

IC_OK if ICS initializes successfully or has been previously initialized, **IC_ERROR_NEWVERSION** if a newer version of ICS is needed. See Appendix C for other possible errors.

Note: ***IcInitIcs*** *MUST be called once prior to calling any of the INFOConnect Connectivity Services functions.*

● WIN ● XVT ● DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IC_STATUS_COMMMGR data type

IC_STATUS event

IcIsDebug

(2.0)

BOOL FAR PASCAL IcIsDebug
(enum IC_DEBUG *debug*)

IcIsDebug reports the status of the requested debug mode of INFOConnect.

Parameters	Description	
debug	IN	The debug mode for which to check.

Return Value:

The return value is TRUE if INFOConnect is running in the specified debug mode. FALSE otherwise.

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_DEBUG	data type

IcLcl

(1.0)

IC_RESULT FAR PASCAL IcLcl
(HIC_SESSION *hsession*,
IC_LCL_FLAGS *which*)

IcLcl cancels the pending request (designated by *which*) for the given communication session. An **IC_LCLRESULT** message will be received for the cancelled requests.

Parameters	**Description**	
hsession	IN	The established communication session's **HIC_SESSION** handle.
which	IN	An **IC_LCL_FLAGS** value that designates which pending request to cancel.

Return Value:

IC_OK is returned if the communication session is valid. Otherwise, **IC_ERROR_UNOPENEDSESSION** is returned. See Appendix C for other possible errors.

● WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_LCL_FLAGS	data type

IcLibCloseChannel

(2.0)

IC_RESULT FAR PASCAL IcLibCloseChannel
(HIC_CHANNEL *hLibChannel*)

IcLibCloseChannel is provided by the ICS library and is called to terminate a communication channel. This routine is called after all sessions that were opened with this channel handle have been closed. At this point, channel related data may be cleaned up.

Parameters	Description	
hLibChannel	IN	The library handle of the channel to close. This is the value returned from the **IcLibOpenChannel** call.

Return Values:

IC_OK if successful. Otherwise, a standard or a library-specific error.

Notes:

- ***IcLibCloseChannel*** *must be exported at ordinal value 17.*
- *If the library has no channel configuration information (that is, no* ***IC_TF_CHANNELTABLE****),* ***IcLibCloseChannel*** *is called once when the last session using the library is closed. The library should perform any session-related cleanup.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

HIC_CHANNEL	data type
IC_TABLE_FLAGS	data type
IcLibOpenChannel	function

IcLibCloseSession

(1.0)

IC_RESULT FAR PASCAL IcLibCloseSession
(HIC_SESSION *hLibSession*,
HIC_CHANNEL *hLibChannel*)

IcLibCloseSession is provided by the ICS library and is called to terminate a communication session. At this point, session related data is to be cleaned up.

Parameters	**Description**	
hLibSession	IN	The library handle of the session to close.
hLibChannel	IN	The library handle of the session's channel. This is optionally used by the library to facilitate locating the appropriate session.

Return Values:

IC_OK if successful. Otherwise, a standard or a library-specific error.

Note: ***IcLibCloseSession*** *must be exported at ordinal value 2.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

HIC_SESSION	data type
HIC_CHANNEL	data type
IcLibOpenSession	function

IcLibEvent

(1.0)

IC_RESULT FAR PASCAL IcLibEvent
(UINT *uType*,
HIC_SESSION *hLibSession*,
GLOBALHANDLE *hBuffer*,
UINT *uSize*)

IcLibEvent is provided by the ICS library and allows the library to process events directed to it. After any initial processing, the corresponding events are issued up the library stack by calling **IcMgrSendEvent**.

Parameters	**Description**	
uType	IN	An Event
hLibSession	IN	The library handle of a session.
hBuffer	IN	A handle to a global buffer or the HIWORD of an **IC_RESULT**, depending on *uType*.
uSize	IN	The buffer size in bytes or the LOWORD of an **IC_RESULT**, depending on *uType*.

Return Value:

IC_OK if the message is valid and can be processed for the given communication session. Otherwise, a standard or a library-specific error.

Notes:

- ***IcLibEvent** must be exported at ordinal value 3.*
- *The first message received by the library is the **IC_SESSIONESTABLISHED** message. To guarantee that the session has been properly established, libraries must wait for this message before sending messages to the session.*
- *The last message received by the library is the **IC_SESSIONCLOSED** message. The library must not send any messages to the session after the **IC_SESSIONCLOSED** is received.*

– *The library's session handle, **hLibSession**, may be **NULL_HIC_SESSION** when **IcLibEvent** is called with the **IC_COMMMGR_INITIALIZED** and **IC_COMMMGR_TERMINATED** status messages. When reacting to **IC_COMMMGR_TERMINATED**, the library may need to decrement its use count. If the use count is not zero when INFOConnect closes, an entry will be made into the trace log file by the active Trace library.*

– *The AIL should both send the message to the application AND call **IcMgrSendEvent**. This allows the ICS Manager to verify that the ICS messages are flowing up the library stack.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

HIC_SESSION	data type
IcMgrSendEvent	function
IcOpenSession	function

Section 4, "ICS Messages/Events"

IcLibGetSessionInfo

(1.0)

IC_RESULT FAR PASCAL IcLibGetSessionInfo
(HIC_SESSION *hLibSession*,
LPIC_SINFO *sinfo*)

IcLibGetSessionInfo is provided by the ICS library and is called to alter the pertinent fields in the given **IC_SINFO** record. An external interface library receives the structure with the ICS Manager defaults (currently, this is a zero-filled structure). The library must initialize all of the fields that pertain to it. A service library should modify only those fields that pertain to it.

Parameters	Description	
hLibSession	IN	The library handle of a session.
sinfo	*OUT	An **IC_SINFO** record to be updated with the session information.

Return Value:

IC_OK if successful. Otherwise, a standard or a library-specific error.

Note: ***IcLibGetSessionInfo*** *must be exported at ordinal value 10.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

LPIC_SINFO	data type
IC_SINFO	data type

IcLibGetString

(1.0)

IC_RESULT FAR PASCAL IcLibGetString
(HIC_SESSION *hLibSession,*
IC_RESULT *result,*
LPSTR *buffer,*
UINT *length*)

IcLibGetString is provided by the ICS library and should retrieve the null-terminated string associated with the given error result. Every library-specific error must have an associated string for displaying the error to the user.

If the library has used the **IcSetSessionError** utility, then the string may contain up to three string inserts (%s only). The ICS Manager will substitute the inserts into the string on behalf of the library, after the library returns.

Parameters	Description	
hLibSession	IN	The library handle of the communication session on which the error occurred. The library may use information associated with this handle to modify the string before returning it. *hLibSession* is **NULL_HIC_SESSION** if the error is not associated with any session.
result	IN	The error result.
buffer	*OUT	A buffer to receive the string.
length	IN	The size of the buffer in bytes.

Return Value:

IC_OK if successful. An **IC_RESULT** error otherwise. See Appendix C for possible errors.

Note: ***IcLibGetString*** *must be exported at ordinal value 4.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcSetSessionError function

IcLibIdentifySession

(1.0)

HANDLE FAR PASCAL IcLibIdentifySession
(HIC_SESSION *hLibSession*)

IcLibIdentifySession is provided by the ICS library. If all libraries in a session return **IC_VERIFY_OK** from **IcLibOpenSession**(...**IC_OPEN_VERIFY**,...), **IcLibIdentifySession** is called for each library in the communication session to retrieve a unique session identifier.

Parameters	Description	
hLibSession	IN	The library handle of a session.

Return Value:

If a library supports multiple sessions on a single path (a multiplexing library), it should return a handle to a global buffer (allocated through **IcAllocBuffer**) that contains a unique alphanumeric identification string. This string should meaningfully identify the session to the user. It may be up to **IC_MAXSESSIONIDSUFFIX** bytes long. Additional bytes are truncated.

A library that is not multiplexing may return (HANDLE)NULL.

Notes:

- ***IcLibIdentifySession** must be exported at ordinal value 5.*
- ***IcLibIdentifySession** is called starting with the service library at the top of the library stack and ending with the external interface library, until a single library returns a non-NULL buffer handle. If all libraries return NULL, the ICS Manager generates the unique session identification string using **hIcSession**.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcAllocBuffer	function

IcLibInstall

(1.0)

IC_RESULT FAR PASCAL IcLibInstall
(IC_RESULT_CONTEXT *context*)

IcLibInstall is provided by the ICS library and is called once by the ICS Manager when the library is loaded for either configuration and/or communication session establishment. It is used to initialize the library.

If installation fails (that is, returns an **IC_ERROR_TERMINATE** error type), the library is immediately terminated. Therefore, only STANDARD terminate errors may be returned from **IcLibInstall** in the failure case. Non-standard errors cannot be used in the failure case because, since the library has not installed properly, it is not available to return text through the **IcLibGetString** function.

Parameters	**Description**	
context	IN	The unique context identification for the library.

Return Value:

IC_OK if installation completes successfully. If installation fails, return a STANDARD **IC_RESULT** terminate error. In this case, the library is immediately unloaded. If a library-specific **IC_ERROR_SEVERE** is returned, the library is loaded and **IcLibGetString** may be called to retrieve the text associated with the error. In this case, no sessions will be opened over this library, and **IcLibTerminate** will eventually be called before the library is unloaded. See Appendix C for possible errors.

Notes:

- ***IcLibInstall*** *must be exported at ordinal value 6.*
- ***IC_ERROR_INFO*** *and* ***IC_ERROR_WARNING*** *type return values do not constitute installation failure.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcLibTerminate function

IcLibLcl

(1.0)

IC_RESULT FAR PASCAL IcLibLcl
(HIC_SESSION *hLibSession*,
IC_LCL_FLAGS *which*)

IcLibLcl is provided by the ICS library and is called to stop reception of communication messages. Each library should do what is necessary to cancel pending requests. After processing, ALL libraries must pass the request to the underlying component by calling **IcMgrLcl**.

Parameters	**Description**	
hLibSession	IN	The library handle of a session.
which	IN	Bit flag designating which pending request to cancel. See **IC_LCL_FLAGS** data type.

Return Value:

IC_OK is returned if the communication session is valid and the command can be processed. Otherwise, a standard or a library-specific error.

Notes:

- ***IcLibLcl** must be exported at ordinal value 7.*
- *The **IC_LCL_CLOSESESSION** type indicates an impending call to **IcLibCloseSession**. The library should not attempt to use any of this session's buffers once **IcLibLcl** returns from being called with the **IC_LCL_CLOSESESSION** flag.*
- *The **which** flag contains bit fields. Therefore, use bit operators to test for the necessary request types. For example, (**which** & **IC_LCL_RCV**) is TRUE if the **IC_LCL_RCV** bit is set.*

– *All libraries, including EILs, must call **IcMgrLcl** to inform the underlying components that the library has completed processing. If the EIL fails to call **IcMgrLcl** on the **IC_LCL_CLOSESESSION** flag, the **IC_SESSIONCLOSED** message will never be sent to the EIL's **IcLibEvent** procedure and the session will never close.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcMgrLcl	function
IC_LCL_FLAGS	data type

IcLibOpenChannel

(2.0)

IC_RESULT FAR PASCAL IcLibOpenChannel
(HIC_CHANNEL *hIcChannel*,
void FAR * *buffer*,
UINT *len*,
IC_OPEN_OPTIONS *Options*,
LPHIC_CHANNEL *lphLibChannel*)

IcLibOpenChannel is provided by the ICS library and is called to initialize a library channel. It is used to create and initialize channel related data. **IcLibOpenChannel** is called once before any session that uses this channel is opened. It should open the requested channel.

Parameters	Description	
hIcChannel	IN	The ICS **HIC_CHANNEL** handle of the channel. The library must use this value on all calls from the library to the ICS Manager where a channel handle is required. See **IcGetChannelID**.
buffer	*IN	The buffer of global data for that channel. The data in this buffer corresponds to the data defined in the library's **IC_TF_CHANNELTABLE** data dictionary.
len	IN	The size of the buffer in bytes.
Options	IN	**IC_OPEN_VERIFY** if the channel should only be verified for opening. That is, if the session can be opened, return **IC_VERIFY_OK** without actually performing the open request.

lphLibChannel	*IN/*OUT	If needed, the library should assign a value which uniquely identifies this channel within the library (the default value is *hIcChannel*). The value returned here is used on all future calls from the ICS Manager to the library to identify the channel. (For example, **IcLibOpenSession**, **IcLibCloseChannel**.) See the discussion in the *IDK Basic Developer's Guide* about 'aliasing'.

Return Values:

IC_OK, or **IC_ERROR_INFO** or **IC_ERROR_WARNING** result type, if the open was successful. **IC_VERIFY_OK** if the verify was successful. Otherwise, a standard or a library-specific error.

Notes:

- ***IcLibOpenChannel*** *must be exported at ordinal value 16.*
- *If the library has no channel configuration information (that is, no* ***IC_TF_CHANNELTABLE****),* ***IcLibOpenChannel*** *is called once with* ***NULL_HIC_CHANNEL****, a NULL buffer, and zero length. The library should simply return a successful result.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

HIC_CHANNEL	data type
LPHIC_CHANNEL	data type
IcLibCloseChannel	function
IC_OPEN_OPTIONS	data type
IC_TABLE_FLAGS	data type

IcLibOpenSession

(1.0)

IC_RESULT FAR PASCAL IcLibOpenSession
(HIC_SESSION *hIcSession*,
HIC_CHANNEL *hLibChannel*,
void FAR * *buffer*,
UINT *len*,
IC_OPEN_OPTIONS *Options*,
LPHIC_SESSION *lphLibSession*)

IcLibOpenSession is provided by the ICS library and is called either to initialize a library communication session or to verify that a session can be opened. It is to be used to create and initialize session related data.

Parameters	Description	
hIcSession	IN	The ICS **HIC_SESSION** handle of the session to open. The library must use this value on all calls from the library to the ICS Manager where a session handle is required. (For example, **IcMgrXmt**, **IcMgrRcv**, etc.)
hLibChannel	IN	The library handle of the session's channel. This is the value returned from **IcLibOpenChannel**.
buffer	*IN	The buffer of path-specific data for that channel. The data in this buffer corresponds to the data defined in the library's **IC_TF_PATHTABLE** data dictionary.
len	IN	The size of the buffer in bytes.

Options	IN	**IC_OPEN_VERIFY** flag if the session should only be verified for opening. That is, if the session can be opened, return **IC_VERIFY_OK** and do not open the session. Otherwise, return an error.
lphLibSession	*IN/*OUT	If needed, the library should assign a value which uniquely identifies this session within the library (the default value is *hIcSession*).

Return Values:

IC_OK, or **IC_ERROR_INFO** or **IC_ERROR_WARNING** result type, if the open was successful. **IC_VERIFY_OK** if the verify was successful. Otherwise, a standard or a library-specific error.

Notes:

- ***IcLibOpenSession*** *must be exported at ordinal value 9.*
- *The* ***Options*** *flag contains bit fields. Therefore, use bit operators to test for the necessary request types. For example, (****Options*** *&* ***IC_OPEN_VERIFY****) is TRUE if the* ***IC_OPEN_VERIFY*** *bit is set.*
- *The value returned in* ***lphLibSession*** *is used as the* ***hLibSession*** *input value with all future calls from the ICS Manager to the library to identify the session. For example,* ***IcLibXmt****,* ***IcLibRcv****,* ***IcLibLcl****,* ***IcLibSetResult****,* ***IcLibGetSessionInfo****,* ***IcLibIdentifySession****,* ***IcLibCloseSession*** *will all be called with this session handle.* ***IcLibGetString*** *and* ***IcLibEvent*** *will be called with this session handle if the session handle applies. See* ***IcLibGetString*** *and* ***IcLibEvent*** *for more information.*
- *If the library has no path data (that is, no* ***IC_TF_PATHTABLE****),* ***IcLibOpenSession*** *is called with a NULL buffer and zero length.*

– *After a successful return, the ICS Manager calls **IcLibOpenSession** again with (**Options** = **IC_OPEN_VERIFY**) and (**hIcSession** = **NULL_HIC_SESSION**) to determine if multiple instances of this path are supported.*

  *The ICS Manager continues the path verification through the list of libraries in the stack. If at least one library in the stack returns something other than **IC_VERIFY_OK**, then this path is excluded from the Select Path dialog box. Otherwise (that is, all libraries in the stack return **IC_VERIFY_OK**) the **IcLibIdentifySession** function is called starting with the service library at the top of the library stack and ending with the external interface library, until a single library returns a non-NULL buffer handle. If all libraries return NULL, the ICS Manager generates the unique session identification string using **hIcSession**.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

HIC_SESSION	data type
LPHIC_SESSION	data type
HIC_CHANNEL	data type
IcLibCloseSession	function
IcLibIdentifySession	function
IC_OPEN_OPTIONS	data type
IC_TABLE_FLAGS	data type

IcLibPrintConfig

(2.0)

IC_RESULT FAR PASCAL IcLibPrintConfig
(UINT *TableNumber,*
IC_PRINT_DETAIL *detail,*
void FAR * *buffer,*
UINT *len,*
LPSTR *print,*
UINT *prlen*)

IcLibPrintConfig is provided by the ICS library and is called to obtain a displayable string of library-specific configuration information.

Parameters	Description	
TableNumber	IN	The number of the configuration table from the library's resource file.
detail	IN	The amount of detail to include. Currently, only summary information is supported. Therefore, this is **IC_PRINT_SUMMARY**.
buffer	*IN	The buffer of data for summarizing.
len	IN	The size of the buffer in bytes.
print	*OUT	A string to receive the summarized data.
prlen	IN	The size of the output string in bytes. When (*detail* == **IC_PRINT_SUMMARY**), *prlen* is at least **IC_MAXPRINTSTRING** large.

Return Values:

IC_OK if successful. Otherwise, a standard or a library-specific error.

Notes:

- ***IcLibOpenSession*** *must be exported at ordinal value 15.*
- *The summarized data is brief, including only pertinent information. For example, the TTY EIL may return a buffer for display as follows.*

  COM1,2400,7,1,E

- ***IcLibOpenSession*** *must return an* ***IC_ERROR_UNKNOWN_COMMAND*** *result for all unknown* detail *values.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

IcLibRcv

(1.0)

IC_RESULT FAR PASCAL IcLibRcv
(HIC_SESSION *hLibSession*,
HANDLE *buffer*,
UINT *length*)

IcLibRcv is provided by the ICS library and is called to receive data into the specified buffer. Each library should do what is necessary to initiate a receive. A service library should eventually pass the request to the underlying library stack by calling **IcMgrRcv**.

Parameters	**Description**	
hLibSession	IN	The library handle of a session.
buffer	IN	A handle to a global buffer in which data will be returned.
length	IN	The size of buffer in bytes.

Return Value:

IC_OK if the communication session is valid and the command can be processed. If the library supports a single receive request at a time and already has a request outstanding, it should return **IC_ERROR_RCV_BUSY**. Otherwise, a standard or a library-specific error.

Note: ***IcLibRcv*** *must be exported at ordinal value 8.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcMgrRcv	function

IcLibSetResult

(1.0)

IC_RESULT FAR PASCAL IcLibSetResult
(HIC_SESSION *hLibSession*,
UINT *uType*,
IC_RESULT *result*)

IcLibSetResult is provided by the ICS library and passes status and error information between the various INFOConnect communication layers. After any necessary processing, the **IC_RESULT** is passed back to the ICS Manager by calling **IcMgrSetResult**. The result of calling **IcMgrSetResult** is to be the return value from **IcLibSetResult** .

Parameters	Description	
hLibSession	IN	The library handle of a session.
uType	IN	The type of the **IC_RESULT**: **IC_ERROR** or **IC_STATUS**.
result	IN	The **IC_RESULT** message. See Appendix B for the defined ICS statuses. See Appendix C for the defined ICS errors.

Return Value:

If a processing error occurred, a standard or a library-specific error. Otherwise, the return value from the call to **IcMgrSetResult**.

Note: ***IcLibSetResult*** *must be exported at ordinal value 11.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_STATUS	message
IC_ERROR	message
IcMgrSetResult	function

IcLibTerminate

(1.0)

IC_RESULT FAR PASCAL IcLibTerminate
(*void*)

IcLibTerminate is provided by the ICS library and is called once by the ICS Manager when all library sessions and channels have been closed and the library is about to be unloaded. Any global cleanup may be done here.

Parameters	**Description**
None.	

Return Value:

IC_OK if successful. Otherwise, a standard or a library-specific error.

Note: ***IcLibTerminate*** *must be exported at ordinal value 12.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcLibInstall	function

IcLibUpdateConfig

(3.0)

IC_RESULT FAR PASCAL IcLibUpdateConfig
(HIC_CONFIG *hConfig*,
UINT *TableNumber*,
LPSTR *buffer*,
UINT *len*,
IC_COMMAND *Command*)

IcLibUpdateConfig is provided by the ICS library and should present a dialog box to the administrator, when appropriate (for example, during an Add or Modify action). Otherwise, the procedure may perform any desired data cleanup, etc.

Note that the *TableNumber* parameter determines what type of configuration is being performed: path specific or global. Therefore, the appropriate dialog box may be displayed.

IcDialogConfig is provided to display the dialog box for the *hConfig*.

Parameters	Description	
hConfig	IN	The **HIC_CONFIG** handle of the open configuration session.
TableNumber	IN	The number of the table from the library's resource file that is being configured.
buffer	*IN/*OUT	A buffer of data to be modified. Note that this may contain default data from the library's RC file.
len	IN	The size of the buffer in bytes.
Command	IN	An **IC_COMMAND**. This is the action that caused this function to be called.

Return Values:

IC_OK if successful. **IC_CANCELED** if the user canceled from the dialog. Otherwise, a standard or a library-specific error.

Notes:

- ***IcLibUpdateConfig*** *must be exported at ordinal value 1. It should allow the user to update the given data and it should return an appropriate result. The ICS Manager will update the ICS database accordingly.*
- ***IcLibUpdateConfig*** *must return an* ***IC_ERROR_UNKNOWN_COMMAND*** *result for all unknown* Commands.
- *For* ***IC_TF_PATHTABLE*** *and* ***IC_TF_CHANNELTABLE*** *tables, the library receives only the data it defines in its data dictionary. It does not receive the path or channel keys that are added by ICS. For the exceptional case where the library wishes to access this information, it can do so as follows for the* ***IC_TF_PATHTABLE****:*

```
typedefstruct{
        -
}MYLIBPATHCONFIG;

typedefstruct{
        PATHIDpathID;
        CHANNELIDchannelID;
        MYLIBPATHCONFIGMyLibPathConfig;
}PATHCONFIG

typedefPATHCONFIGFAR*LPPATHCONFIG;
```

Therefore, the PATHID would be referenced by:

```
(LPPATHCONFIG)((LPSTR)buffer-sizeof(PATHID)-sizeof(CHANNELID));
```

And the CHANNELID would be referenced by:

```
(LPPATHCONFIG)((LPSTR)buffer-sizeof(CHANNELID));
```

*The **IC_TF_CHANNELTABLE** access is similar:*

```
typedefstruct{
    -
}MYLIBCHANNELCONFIG;

typedefstruct{
    CHANNELIDchannelID;
    MYLIBCHANNELCONFIGMyLibChannelConfig;
}CHANNELCONFIG

typedefCHANNELCONFIGFAR*LPCHANNELCONFIG;
```

Therefore, the CHANNELID would be referenced by:

```
(LPCHANNELCONFIG)((LPSTR)buffer-sizeof(CHANNELID));
```

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_COMMAND	data type
IC_DICT_NODE	data type
IC_TABLE_FLAGS	data type

IcLibVerifyConfig

(3.0)

IC_RESULT FAR PASCAL IcLibVerifyConfig
(HIC_CONFIG *hConfig*,
UINT *TableNumber*,
LPSTR *buffer*,
UINT *len*,
IC_VERIFY *Command*)

IcLibVerifyConfig is provided by the ICS library to verify the contents of the configuration buffer. If *Command* is **IC_VER_DISPLAY**, errors are to be displayed to the user. If *Command* is **IC_VER_MODIFY**, the erroneous data is to be presented to the user for correction. Otherwise, an error is returned.

Parameters	**Description**	
hConfig	IN	The **HIC_CONFIG** handle of the open configuration session.
TableNumber	IN	The number of the table from the resource file that is being verified.
buffer	*IN/*OUT	A buffer of configuration data to be verified, and possibly modified.
len	IN	The size of the buffer in bytes.
Command	IN	An **IC_VERIFY** command.

Return Values:

IC_OK if successful. Otherwise, a standard or a library-specific error.

Notes:

- ***IcLibVerifyConfig*** *must be exported at ordinal value 14. It is used to allow the library to perform semantic checking on configuration data that has been input in an alternate manner. The library may wish to call this routine from the IcLibUpdateConfig routine to perform semantic checking on its configuration data.*
- ***IcDialogConfig*** *is provided to display the dialog box for the* ***hConfig****.*
- ***IcLibVerifyConfig*** *must return an* ***IC_ERROR_UNKNOWN_COMMAND*** *result for all unknown* ***Commands****.*
- *If the library changes a configuration record structure (thus incrementing the revision number of the data table), INFOConnect automatically performs the upgrade from the previous format to the new format. Data is copied field by field from a record in the old format to a new record in the updated format according to the field numbers.* ***IcLibVerifyConfig*** *is then called with the* ***IC_VER_UPGRADE*** *command so that the library can perform any necessary data conversions using* ***IC_UPGRADE_INFO****. Finally,* ***IcLibVerifyConfig*** *is called with the* ***IC_VER_SAVE*** *command so that the library can verify the data record before that record is save into the configuration database.*

  After all data records have been processed, quick configuration is invoked.

  See the ***IC_VERIFY*** *data type and the IDK Basic Developer's Guide for more information.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_VERIFY	data type
IC_UPGRADE_INFO	data structure

IcLibXmt

(1.0)

IC_RESULT FAR PASCAL IcLibXmt
(HIC_SESSION *hLibSession*,
HANDLE *buffer*,
UINT *length*)

IcLibXmt is provided by the ICS library and is called to initiate transmission of a data buffer. A service library should eventually pass the request to the underlying library stack by calling **IcMgrXmt**.

Parameters	**Description**	
hLibSession	IN	The library handle of a session.
buffer	IN	A handle to a global buffer of data.
length	IN	The number of bytes to transmit.

Return Value:

IC_OK is returned if the communication session is valid and the command can be processed. If the library supports a single transmit request at a time and already has a request outstanding, it should return **IC_ERROR_XMT_BUSY**. Otherwise, a standard or a library-specific error.

Note: ***IcLibXmt*** *must be exported at ordinal value 13.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcMgrXmt	function

IcLockBuffer

(1.0)

LPSTR FAR PASCAL IcLockBuffer
(HANDLE *hBuffer*)

IcLockBuffer locks memory previously created through **IcAllocBuffer**.

Parameters	**Description**	
hBuffer	IN	The handle of a global buffer, allocated with **IcAllocBuffer**, to lock.

Return Value:

An LPSTR type pointer to the locked block of memory or NULL if the memory handle is not valid.

● WIN	❍ XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcAllocBuffer	function
IcUnlockBuffer	function

IC_MAKE_RESULT

(1.0)

IC_MAKE_RESULT (*context, type, value*)

The **IC_MAKE_RESULT** macro creates an **IC_RESULT** from the given **IC_RESULT_CONTEXT**, **IC_RESULT_TYPE**, and **IC_RESULT_VALUE**.

Parameters	**Description**	
context	IN	An **IC_RESULT_CONTEXT**.
type	IN	An **IC_RESULT_TYPE**.
value	IN	An **IC_RESULT_VALUE**.

Return Value:

The created **IC_RESULT** status or error.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IC_RESULT	data type
IC_RESULT_CONTEXT	data type
IC_RESULT_TYPE	data type
IC_RESULT_VALUE	data type

IcMgrEilEvent

(3.0)

IC_RESULT FAR PASCAL IcMgrEilEvent
(HIC_SESSION *hIcSession,*
UINT *uType,*
HANDLE *hBuff,*
UINT *uSize*)

IcMgrEilEvent allows external interface libraries to post messages to their own event procedure. This may be useful for processing interrupts as events.

Parameters	Description	
hIcSession	IN	The ICS Manager's **HIC_SESSION** handle.
uType	IN	A message type.
hBuff	IN	A handle to a global buffer or the HIWORD of an **IC_RESULT**, depending on *uType*.
uSize	IN	The buffer size in bytes or the LOWORD of an **IC_RESULT**, depending on *uType*.

Return Value:

IC_OK is returned if the communication session is valid and the command can be processed. See Appendix C for possible errors.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcLibEvent	function

IcMgrGetSessionInfo

(3.0)

IC_RESULT FAR PASCAL IcMgrGetSessionInfo
(HIC_SESSION *hSession*,
LPIC_SINFO *info*)

IcMgrGetSessionInfo initializes the given **IC_SINFO** data structure with pertinent information about the lower communication session.

Parameters	**Description**	
hSession	IN	The ICS Manager's **HIC_SESSION** handle of an established communication session.
info	*OUT	An **IC_SINFO** record to be filled with communication session information.

Return Value:

IC_OK if the structure was initialized. See Appendix C for possible errors.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	● Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_SINFO	data type

IcMgrLcl

(3.0)

IC_RESULT FAR PASCAL IcMgrLcl
(HIC_SESSION *hIcSession,*
UINT *which*)

IcMgrLcl is an entry point into the underlying library stack to stop reception of communication messages. The pending request or requests (designated by *which*) for the given communication session are cancelled.

Parameters	Description	
hIcSession	IN	The ICS Manager's **HIC_SESSION** handle.
which	IN	Designates the **IC_LCL_FLAGS** type of pending request to cancel.

Return Value:

IC_OK is returned if the communication session is valid and the command can be processed. See Appendix C for possible errors.

Note: *All libraries, including EILs, must call **IcMgrLcl** to inform the underlying components that the library has completed processing. If the EIL fails to call **IcMgrLcl** when the **IC_LCL_CLOSESESSION** flag is received in **IcLibLcl**, the **IC_SESSIONCLOSED** message will never be sent to the EIL's **IcLibEvent** procedure and the session will never close.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_LCLRESULT	message
IC_LCL_FLAGS	data type

IcMgrRcv

(3.0)

IC_RESULT FAR PASCAL IcMgrRcv
(HIC_SESSION *hIcSession*,
HANDLE *buffer*,
UINT *length*)

IcMgrRcv is an entry point into the underlying library stack to request to receive data into the specified buffer.

Parameters	**Description**	
hIcSession	IN	The ICS Manager's **HIC_SESSION** handle.
buffer	IN	A handle to a global buffer in which received data will be returned.
length	IN	The size of the buffer in bytes.

Return Value:

IC_OK is returned if the communication session is valid and the command can be processed. See Appendix C for possible errors.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	❍ EIL

See also:

IC_RCVDONE	message
IC_RCVERROR	message

IcMgrSendEvent

(3.0)

IC_RESULT FAR PASCAL IcMgrSendEvent
(HIC_SESSION *hIcSession*,
UINT *uType*,
HANDLE *hBuffer*,
UNIT *uSize*)

IcMgrSendEvent posts a message to the next higher layer in the library stack for the given communication session.

Parameters	Description	
hIcSession	IN	The ICS Manager's **HIC_SESSION** handle.
uType	IN	A message type.
hBuffer	IN	A handle to a global buffer or the HIWORD of an **IC_RESULT**.
uSize	IN	The size of the buffer in bytes or the LOWORD of an **IC_RESULT**.

Return Value:

IC_OK if the message is valid and was posted to the next higher layer in the library stack. See Appendix C for possible errors.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_ERROR	message
IC_RCVDONE	message
IC_RCVERROR	message
IC_SESSIONESTABLISHED	message
IC_STATUS	message
IC_XMTDONE	message
IC_XMTERROR	message

IcMgrSetResult

(3.0)

IC_RESULT FAR PASCAL IcMgrSetResult
(HIC_SESSION *hIcSession*,
UINT *uType*,
IC_RESULT *result*)

IcMgrSetResult is an entry point into the underlying library stack to process status and error information.

Parameters	Description	
hIcSession	IN	An ICS Manager's **HIC_SESSION** handle.
uType	IN	The type of the **IC_RESULT**: **IC_ERROR** or **IC_STATUS**.
result	IN	The **IC_RESULT** message. See Appendix B for the defined ICS statuses. See Appendix C for the defined ICS errors.

Return Value:

IC_OK if successful. An **IC_RESULT** error otherwise. See Appendix C for possible errors.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_ERROR	message
IC_STATUS	message
IC_RESULT	data type

IcMgrTraceBuffer

(3.0)

IC_RESULT FAR PASCAL IcMgrTraceBuffer
(IC_RESULT_CONTEXT *Context*,
HIC_SESSION *hIcSession*,
UINT *uType*,
LPSTR *Tag*,
void FAR * *Buffer*,
UINT *Len*)

IcMgrTraceBuffer allows libraries to write a buffer of data to the trace.log debug file. The data is only written if tracing has been enabled for the given session.

The IcTrace hook library also uses **IcMgrTraceBuffer** to trace INFOConnect data communications by writing buffer contents to a trace file, trace.log, located in the DataDir directory.

Parameters	Description	
Context	IN	The library's context.
hIcSession	IN	An ICS Manager's **HIC_SESSION** handle.
uType	IN	A message type, or **IC_NULLEVENT** if not applicable.
Tag	IN	An identifying string.
Buffer	*IN	A buffer of data to write.
Len	IN	The size of the buffer, in bytes.

Return Value:

IC_OK is returned if the request is valid, whether or not the data is written to the file (since tracing may not be enabled). See Appendix C for possible errors.

● WIN	❍ XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_DEBUG	data type
IcMgrTraceResult	function

IcMgrTraceResult

(3.0)

IC_RESULT FAR PASCAL IcMgrTraceResult
(IC_RESULT_CONTEXT *Context,*
HIC_SESSION *hIcSession,*
UINT *uType,*
LPSTR *Tag,*
IC_RESULT *Result*)

IcMgrTraceResult allows libraries to write an **IC_RESULT** to the trace.log debug file. The data is only written if tracing has been enabled for the given session.

The IcTrace hook library also uses **IcMgrTraceResult** to trace INFOConnect data communications by writing events and **IC_RESULT**s to a trace file, trace.log, located in the DataDir directory.

Parameters	**Description**	
Context	IN	The library's context.
hIcSession	IN	An ICS Manager's **HIC_SESSION** handle.
uType	IN	A message type, or **IC_NULLEVENT** if not applicable.
Tag	*IN	An identifying string.
Result	IN	An **IC_RESULT** to write.

Return Value:

IC_OK is returned if the request is valid, whether or not the data is written to the file (since tracing may not be enabled). See Appendix C for possible errors.

● WIN	❍ XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_DEBUG	data type
IcMgrTraceResult	function

IcMgrXmt

(3.0)

IC_RESULT FAR PASCAL IcMgrXmt
(HIC_SESSION *hIcSession*,
HANDLE *buffer*,
UINT *length*)

IcMgrXmt is an entry point into the underlying library stack to initiate transmission of the given data buffer.

Parameters	**Description**	
hIcSession	IN	The ICS Manager's **HIC_SESSION** handle.
buffer	IN	A handle to a global buffer of data.
length	IN	The number of bytes to transmit.

Return Value:

IC_OK is returned if the communication session is valid and the command can be processed. See Appendix C for possible errors.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	❍ EIL

See also:

IC_XMTDONE	message
IC_XMTERROR	message

IcNextEvent

(2.0)

IC_RESULT FAR PASCAL IcNextEvent
(HIC_SESSION *session*,
IC_NEXTEVENT_FLAGS *flags*,
WORD *delay*)

For ICS DosLink applications, **IcNextEvent** indicates that the callback routine is ready for the next event. It can also be used to set a timer and to query for events.

Parameters	**Description**	
session	IN	A session handle.
flags	IN	**IC_NEXTEVENT_FLAGS** flags.
delay	IN	If the **IC_NEXTEVENT_TIMER** flag is set, this specifies, in milliseconds, the amount of time elapsed before receiving a timer event (**IC_TIMER**).

Return Value:

IC_OK is returned if successful, or if the **IC_NEXTEVENT_CHECK** flag is specified and there are no events in the queue. If the **IC_NEXTEVENT_CHECK** flag is specified and there are events in the queue, **IC_INFO_QEVENT** is returned. See Appendix C for possible errors.

Notes:

- ***IcNextEvent** must be called by the callback routine with the (**IC_NEXTEVENT_POP**|**IC_NEXTEVENT_READY**) flags when it is done processing an event. This removes the event from the queue and informs ICS that the callback routine is ready to receive the next event. ICS DosLink applications that use the **IcRegisterCallback** function (in contrast to polling using **IcGetNextEvent**), must follow each call to all ICS APIs with a call to **IcNextEvent** with the **IC_NEXTEVENT_READY** flag.*
- *ICS DosLink applications may poll ICS for events instead of, or as well as, registering the callback routine. See **IcGetNextEvent** for more information.*
- *For the INFOConnect 2.0 release, the event returned after the given delay is **IC_SETDONE**, NOT **IC_TIMER**.*

❍ WIN ❍ XVT ● DosLink

● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_NEXTEVENT_FLAGS data types

IcNotifyConfig

(3.0)

IC_RESULT FAR PASCAL IcNotifyConfig
(IC_COMPONENT *ComponentNum*,
UINT *TableNum*,
UINT *Message*,
IC_SERIALNUM *SerialNum*)

IcNotifyConfig notifies configuration windows of changes that have been made to the configuration database.

Parameters	Description	
ComponentNum	IN	The supplier-specific **IC_COMPONENT** of the component that owns the table that has been altered.
TableNum	IN	The table number of the table that has been altered.
Message	IN	The message indicating the change.
SerialNum	IN	The one-relative index of the record that has been altered. The serial number key is **IC_KEY_SERIALNUM**.

Return Value:

IC_OK is returned if successful. See Appendix C for possible errors.

Note: *Libraries that support dynamic tables use* ***IcNotifyConfig*** *to ensure that the* ***IC_MSG_CONFIG*** *message types are distributed properly. All messages must be distributed for* ***IC_TF_DYNAMICTABLE*** *tables. For* ***IC_TF_ACTIVE...*** *tables,* ***IcNotifyConfig*** *should be called for the update message only. It should be called on a timer tick or after some maximum transaction count.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_MSG_CONFIG	data type messages
IC_TABLE_FLAGS	data type

IcOpenAccessory

(1.0)

IC_RESULT FAR PASCAL IcOpenAccessory
(HWND *hWnd*,
LPSTR *name*
LPSTR *options*,
LPSTR *sessionname*,
LPIC_SINFO *sinfo*,
LPHIC_SESSION *lphsession*)

IcOpenAccessory allows an application to invoke an ICS accessory via dynamically created ICS paths linked with the LOCAL external interface library.

Parameters	Description	
hWnd	IN	The handle of the window attached to this communication session.
name	*IN	The accessory ID. See Appendix A for ICS Standard IDs.
options	*IN	A null-terminated string of command line options, excluding the path (*-p*) option. See Section 6 for information on command line options.
sessionname	*IN	A null-terminated identification string (not necessarily unique) created by the application that names the newly created ICS paths. This is the name that is used to create the communication session name that is returned by a call to **IcGetSessionName**. This name appears in the title bar of the invoked accessory.
sinfo	*IN	An **IC_SINFO** record that has been previously initialized, possibly by a call to **IcGetSessionInfo**.

lphsession	*OUT	An **HIC_SESSION** to receive the communication session handle of the newly opened session.

Return Value:

IC_OK if successful. Possible error results are **IC_ERROR_NOMEMORY**, **IC_ERROR_BADPARAMETER**, **IC_ERROR_ACCESSORY_NOT_FOUND**, and **IC_ERROR_ACCESSORY_FAILED**. See Appendix C for other possible errors.

Notes:

– *Since **IcOpenAccessory** calls **IcRunAccessory**, it supports the -**W**x**y** window state command line option. This option determines the state of the accessory's window when it is executed by the ICS Manager. The valid values for **x** and **y** are as follows:*

x		**y**	
value	**meaning**	**value**	**meaning**
n	normal	a	active
m	maximized	b	background
i	iconized		
h	hidden		

*Using any other values results in the return of an **IC_ERROR_INVALID_WINOPTION** error.*

*The default window state is normal and active. Invalid value combinations are hidden/active and maximized/background. These combinations result in the return of an **IC_ERROR_INVALID_WINCOMBO** error.*

– *To invoke an accessory without a communication session connection between the calling application and the accessory, use **IcRunAccessory**.*

● WIN ● XVT ❍ DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IcGetSessionName	function
IcGetSessionInfo	function
IcRunAccessory	function
IC_SINFO	data structure

IcOpenSession

(1.0)

IC_RESULT FAR PASCAL IcOpenSession
(HWND *hWnd*,
LPSTR *path*,
LPHIC_SESSION *lphsession*)

IcOpenSession requests the establishment of a logical communications connection, either within the system (that is, the ICS path uses the LOCAL external interface library) or to another computer.

Parameters	Description	
hWnd	IN	The window handle of the window attached to this communication session. All messages from INFOConnect Connectivity Services for this session are sent to this window. If **IcRegisterMsgSession** is used to register windows messages, this parameter should be NULL.
path	*IN	The INFOConnect Connectivity Services path ID to be associated with the communication session. If this is NULL or if the pointer itself is NULL, INFOConnect Connectivity Services will prompt the user for a path ID. Or, for ICS DosLink Client/Server type applications, this is the service name that is used to identify the partner to which the link is made.
lphsession	*OUT	An **HIC_SESSION** to receive the session handle.

	*IN/OUT	For ICS DosLink Client/Server type applications, this must be initialized as the session handle that is obtained from a call to **IcCreateSession**.

Return Value:

If the request is valid, then either **IC_OK** or an **IC_ERROR_WARNING** or **IC_ERROR_INFO** type error (other than **IC_ERROR_CANCELOPEN**) is returned and the **LPHIC_SESSION** is set to a valid session handle and the communication session becomes associated with the application's window. Otherwise, an error is returned, the session handle is set to **NULL_HIC_SESSION**, and the connection is not available. Some possible errors are **IC_ERROR_NOMEMORY** and the informational error **IC_ERROR_CANCELOPEN**. See Appendix C for other possible errors.

Notes:

- ***IC_ERROR_CANCELOPEN*** *is an* ***IC_ERROR_INFO*** *error type that indicates that the user cancelled from the select path dialog box. For this special return value, the session handle is* ***NULL_HIC_SESSION*** *and no session is opened. Therefore, this return value should be treated as a special case return value from* ***IcOpenSession****.*
- *If either* ***IC_OK*** *or an* ***IC_ERROR_WARNING*** *or* ***IC_ERROR_INFO*** *type error (other than* ***IC_ERROR_CANCELOPEN****) is returned, the ICS message* ***IC_SESSIONESTABLISHED*** *will be sent to the application when the communication session establishes. The session handle is not valid unless the* ***IC_SESSIONESTABLISHED*** *event is received with an* ***IC_OK*** *result, or an* ***IC_ERROR_INFO*** *or* ***IC_ERROR_WARNING*** *result type. This handle should then be used with any other INFOConnect Connectivity Services function dealing with this communication session.*
- *If an* ***IC_SESSIONESTABLISHED*** *event is received with an* ***IC_ERROR_SEVERE*** *or* ***IC_ERROR_TERMINATE*** *error result, communication session establishment failed and the session handle is invalid. The communication session is to be closed immediately by calling* ***IcCloseSession****.*
- *If using* ***IcRegisterMsgSession*** *to register for messages and the* ***hWnd*** *and* ***path*** *parameters are both NULL, then the Windows desktop automatically becomes the parent window. To prevent this, call* ***IcSelectPath*** *to display the select path dialog box from your application.*
- *For ICS DosLink applications that are using the callback facility, the* ***hWnd*** *parameter that is input here is the same handle that is used as the window handle of the callback function.*

● WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_SESSIONESTABLISHED	message
IcCloseSession	function
IcCreateSession	function
IcRegisterMsgSession	function
IcSelectPath	function

IcRcv

(1.0)

IC_RESULT FAR PASCAL IcRcv
(HIC_SESSION *hsession*,
HANDLE *buffer*,
UINT *length*)

IcRcv is called to request a block of data for the given communication session. For most sessions, one receive request may be outstanding for a session at a time, with the subsequent receive request will result in an **IC_ERROR_RCV_BUSY** receive error.

Parameters	**Description**	
hsession	IN	The established communication session's handle.
buffer	IN	The handle of a buffer allocated with **IcAllocBuffer** to receive the data.
length	IN	Maximum number of bytes to receive.

Return Value:

IC_OK is returned if the communication session is valid. Otherwise, **IC_ERROR_UNOPENEDSESSION** is returned. See Appendix C for other possible errors.

Note: *When the receive request is complete, an ICS message of either* ***IC_RCVDONE*** *or* ***IC_RCVERROR*** *(or "**IC_RcvDone**" or "**IC_RcvError**", as appropriate) will be sent to the application.*

● WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_RCVDONE	message
IC_RCVERROR	message
IcLcl	function

IcReadBuffer

(3.0)

IC_RESULT FAR PASCAL IcReadBuffer
(HANDLE *hBuffer*,
UINT *BufOffset*,
void FAR * *Data*,
UINT *DataOffset*,
UINT *Len*)

IcReadBuffer reads data from a buffer identified by a Windows HANDLE to a buffer identified by a far pointer.

Parameters	**Description**	
hBuffer	IN	The handle of the buffer from which to read the data.
BufOffset	IN	The offset into the buffer designated by *hBuffer* of the data. This is usually zero.
Data	*OUT	The buffer to receive the data.
DataOffset	IN	The offset into the buffer where the data is read. This is usually zero.
Len	IN	The number of bytes to read.

Return Value:

IC_OK if successful. **IC_ERROR_NOMEMORY** if the buffer could not be locked. See Appendix C for other possible errors.

● WIN	❍ XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcWriteBuffer function

IcReadLibraryConfig

(2.0)

IC_RESULT FAR PASCAL IcReadLibraryConfig
(IC_RESULT_CONTEXT *context*,
int *TableNumber*,
int *KeyIndex*,
void FAR * *KeyStruct*,
void FAR * *buffer*,
unsigned *len*)

IcReadLibraryConfig reads the record with the given key(s) from the given table. *KeyStruct* is a pointer to the key portion of the data dictionary record structure for the given table. The necessary key field must be initialized.

Parameters	Description	
context	IN	The library's context.
TableNumber	IN	The number of the table from which to read.
KeyIndex	IN	The zero-relative index of the key field from the beginning of the record.
KeyStruct	*IN	The key portion of the database table record structure for the given table with the necessary key field initialized.
buffer	*OUT	A buffer to receive the record. This cannot contain the same structure pointed to by *KeyStruct*.
len	IN	The size of the buffer in bytes. This should be at least the size of the database record.

Return Value:

IC_OK if successful. **IC_ERROR_TRUNCATED** if the buffer was too small and the record was truncated. See Appendix C for other possible errors.

Notes:

– ***IcReadLibraryConfig*** *is used only on library's invisible tables (****IC_TF_INVISIBLETABLE*** *flag). Path and Channel tables are managed by the ICS Manager and through* ***IcLibUpdateConfig*** *procedure.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcWriteLibraryConfig	function
IcDeleteLibraryConfig	function
IC_DICT_NODE	data type
IC_TABLE_FLAGS	data type

IcReAllocBuffer

(1.0)

HANDLE FAR PASCAL IcReAllocBuffer
(HANDLE *hBuffer*,
unsigned *bufsize*)

IcReAllocBuffer reallocates memory previously created through **IcAllocBuffer**.

Parameters	**Description**	
hBuffer	IN	The handle of the global buffer to reallocate.
bufsize	IN	The new size, in bytes, of the reallocated buffer.

Return Value:

A buffer handle is returned if the memory was reallocated, (HANDLE)NULL otherwise.

● WIN	❍ XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcAllocBuffer	function

IcRegisterAccessory

(1.0)

IC_RESULT FAR PASCAL IcRegisterAccessory
(LPSTR *name*,
unsigned *types*,
LPIC_RESULT_CONTEXT *context*)

IcRegisterAccessory associates the accessory name with a context, and returns that context through **LPIC_RESULT_CONTEXT**. The context is a dynamically assigned identifier that can be used to uniquely identify the accessory when generating statuses and errors.

Parameters	Description	
name	*IN	A null-terminated, unique accessory context string.
types	IN	Reserved for future use. Must be zero.
context	*OUT	An **IC_RESULT_CONTEXT** that receives the context associated with *name*.

Return Value:

IC_OK is returned if successful. See Appendix C for possible errors.

● WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_RESULT_CONTEXT	data type
LPIC_RESULT_CONTEXT	data type

IcRegisterCallback

(2.0)

IC_RESULT FAR PASCAL IcRegisterCallback
(HIC_SESSION *session*,
IC_CALLBACK *cb*)

For ICS DosLink applications, **IcRegisterCallback** registers, or updates, the application's callback function with ICS. This callback routine will be called for each event on that session.

Each ICS API call implies that the callback routine is not ready to receive events. Therefore, the application must call **IcNextEvent** after each ICS API call in order to notify ICS that the callback routine is ready.

Parameters	Description	
session	IN	A session handle.
cb	*IN	The callback function.

Return Value:

IC_OK is returned if successful. See Appendix C for possible errors.

Notes:

- *When the callback routine is done processing an event, it should call **IcNextEvent** with the (**IC_NEXTEVENT_POP|IC_NEXTEVENT_READY**) flags to remove the event from the queue and inform ICS that it is ready to receive the next event. ICS DosLink applications that use the **IcRegisterCallback** function (in contrast to polling using **IcGetNextEvent**), must follow each call to all ICS APIs with a call to **IcNextEvent** with the **IC_NEXTEVENT_READY** flag.*
- *ICS DosLink applications may poll ICS for events instead of, or as well as, registering the callback routine. See **IcGetNextEvent** for more information.*

❍ WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcNextEvent	function
IC_NEXTEVENT_FLAGS	data type
IC_CALLBACK	data type

IcRegisterMsgSession

(3.0)

IC_RESULT FAR PASCAL IcRegisterMsgSession
(HIC_SESSION *hIcSession,*
HWND *hWnd*
UINT *wParam,*
UINT *MessageOffset,*
UINT *MessageCount*)

IcRegisterMsgSession registers the ICS messages with Windows on a per-session basis.

MessageOffset is specific to each application and can be different for each *hSession*. Developers may use WM_USER as the message offset. The message switch statement may then be coded using *MessageOffset*+**IC_NULLEVENT**, etc. See Section 4 for the sequence of messages.

The given window will only receive messages from *MessageOffset* to (*MessageOffset* + *MessageCount)*. To stop receiving messages, call **IcRegisterMsgSession** with the *MessageCount* parameter **IC_NULLEVENT**.

Parameters	**Description**	
hIcSession	IN	The **HIC_SESSION** handle of the open session.
hWnd	IN	The handle of the window to receive the ICS messages.
wParam	IN	A value to be passed in as the *wParam* word parameter for every message. For example, this may be *hSession* or perhaps the ID of a control.
MessageOffset	IN	The Windows message offset for the messages. This is usually, but not necessarily, WM_USER.
MessageCount	IN	The number of messages to register. See Section 4 for the number of messages available.

Return Value:

IC_OK is returned if successful. See Appendix C for possible errors.

Notes:

- *If MessaegOffset is zero, messages are returned as in the ICS 2.0 release (that is, they are registered with Windows RegisterWindowMessage procedure).*
- *Call **IcOpenSession** with a NULL window handle. Note that if the path ID parameter to **IcOpenSession** is also NULL, then the Windows desktop automatically becomes the parent window. To prevent this, call **IcSelectPath** to display the select path dialog box from your application.*

● WIN	❍ XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcOpenSession	function
IcSelectPath	function

IcReleaseContextID

(2.0)

IC_RESULT FAR PASCAL IcReleaseContextID
(IC_RESULT_CONTEXT *context*)

IcReleaseContextID releases the context of the given library from configuration. The library is unlocked from configuration and unloaded, if necessary.

IcReleaseContextID must be called by the configuration accessory after either **IcGetContextID** or **IcAddRefContextID** has been called and the library configuration has been accessed. In other words, each time **IcGetContextID** is called, **IcReleaseContextID** must eventually be called.

Parameters	**Description**	
context	IN	An **IC_RESULT_CONTEXT** to be released.

Return Value:

IC_OK if successful. See Appendix C for other possible errors.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcGetContextID	function

IcRunAccessory

(1.0)

IC_RESULT IcRunAccessory
(LPSTR *ID*,
LPSTR *options*)

IcRunAccessory allows an application to invoke an ICS accessory. There is no communication session connection between the calling application and the accessory.

Parameters	Description	
ID	*IN	The accessory ID. See Appendix A for ICS Standard IDs.
options	*IN	A null-terminated string of command line options. See Section 6 for information on command line options.

Return Value:

IC_OK if successful. Possible error results are **IC_ERROR_NOMEMORY**, **IC_ERROR_BADPARAMETER**, **IC_ERROR_ACCESSORY_NOT_FOUND**, and **IC_ERROR_ACCESSORY_FAILED**. See Appendix C for other possible errors.

Notes:

– ***IcRunAccessory*** *supports the -W**xy** window state command line option. This option determines the state of the accessory's window when it is executed by the ICS Manager. The valid values for **x** and **y** are as follows:*

x		**y**	
value	**meaning**	**value**	**meaning**
n	normal	a	active
m	maximized	b	background
i	iconized		
h	hidden		

*Using any other value results in the return of an **IC_ERROR_INVALID_WINOPTION** error.*

*The default window state is normal and active. Invalid value combinations are hidden/active and maximized/background. These combinations result in the return of an **IC_ERROR_INVALID_WINCOMBO** error.*

– *To invoke an accessory with a communication session connection between the calling application and the accessory (via dynamically created ICS paths linked with the LOCAL external interface library), use **IcOpenAccessory**.*

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IcOpenAccessory function

IcRunHelp3

(3.0)

IC_RESULT FAR PASCAL IcRunHelp3
(UINT *type*,
LPSTR *ID*,
LPSTR *lpFile*,
DWORD *Topic*)

IcRunHelp3 runs the Windows help system. The help file should be installed into the same directory as the executable, and it should have the same root file name as the library or accessory. For package component IDs, the package help file name is the last help file specified in the packages .INF installation file.

To access the INFOConnect help file, the *type* should be **IC_MANAGER** and *ID* and *lpFile* should be NULL.

If *lpFile* is a fully qualified file name, it is used as the help file. If the file name is not fully qualified or if it is NULL, the INFOConnect database will be queried to determine the fully qualified help file name. In this case, the *type* and *ID* must be given.

Parameters	Description	
type	IN	The type of component ID: **IC_ACCESSORY**, **IC_LIBRARY**, **IC_PACKAGE** or **IC_MANAGER**.
ID	*IN	A component or package ID, or NULL if a fully qualified file name is given for *lpFile*.
lpFile	*IN	NULL or a fully qualified null-terminated help file name.
Topic	IN	A help context topic number at which to position.

Return Value:

IC_OK if successful. See Appendix C for possible errors.

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IcRunLibHelp

(3.0)

IC_RESULT FAR PASCAL IcRunLibHelp
(IC_RESULT_CONTEXT *context,*
DWORD *Topic*)

IcRunLibHelp runs the Windows help system for the library with the given context ID. The help file should be installed into the same directory as the executable, and it should have the same root file name.

Parameters	**Description**	
context	IN	An **IC_RESULT_CONTEXT** of the library whose help file should be invoked.
Topic	IN	A help context topic number at which to position.

Return Value:

IC_OK if successful. See Appendix C for possible errors.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

IcSelectPath

(3.0)

IC_RESULT FAR PASCAL IcSelectPath
(HWND hWnd,
HIC_CONFIG hPath,
UINT Options,
LPSTR PathID,
UINT Len)

IcSelectPath displays the select path dialog box to the user, allowing the user to choose the path on which to open a session.

Parameters	Description	
hWnd	IN	The window that becomes the parent window of the select path dialog box.
hPath	IN	An **HIC_CONFIG** that is used to filter the available paths. Use **NULL_HIC_CONFIG** to present all available paths to the user.
Options	IN	Use zero. This causes active paths to be excluded from the list of available paths.
PathID	*OUT	The selected path ID, or NULL if none was selected.
Len	IN	The size of the buffer. This should be at least **IC_MAXPATHIDSIZE**.

Return Value:

IC_OK if successful. The **IC_ERROR_INFO** error **IC_ERROR_CANCELOPEN** if the user cancelled from the dialog box. See Appendix C for a list of possible errors.

Note: *Currently, the filtering of paths is not supported. Therefore,* ***hPath*** *is always assumed to be* ***NULL_HIC_CONFIG****.*

● WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcOpenSession function

IcSetError

(1.0)

IC_RESULT FAR PASCAL IcSetError
(HIC_SESSION *hsession*,
IC_RESULT *error*)

IcSetError passes various error-type information through the INFOConnect communication session to a library in the library stack or to an attached application.

Parameters	**Description**	
hsession	IN	The communication session's handle.
error	IN	The **IC_RESULT** error message. See Appendix C for the ICS errors.

Return Value:

IC_OK is returned if the communication session is valid. Otherwise, **IC_ERROR_UNOPENEDSESSION** is returned.

For ICS DosLink Client/Server applications, an **IC_ERROR_NOPARTNER** return value indicates that the other half of the session is not established and the request is ignored.

Note: *Accessory-specific errors require a unique accessory context. To obtain this, use* ***IcRegisterAccessory***.

● WIN	● XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_RESULT	data type
IcRegisterAccessory	function

IcSetServerInfo

(2.0)

IC_RESULT FAR PASCAL IcSetServerInfo
(HIC_SESSION *session*,
LPIC_SINFO *info*)

For ICS DosLink applications, **IcSetServerInfo** makes the session a server session and initializes the given **IC_SINFO** data structure with pertinent information about the communication session. **IcSetServerInfo** must be called before calling **IcOpenSession**.

Once a session is declared as a server, the application may call **IcSetServerInfo** after calling **IcOpenSession**. This causes an **IC_CONNECT_SERVER** (**IC_STATUS_CONNECT** type) status to be sent to the client session.

Parameters	Description	
session	IN	A session handle.
info	*IN	An **IC_SINFO** record to be passed to the client session during an **IcGetSessionInfo** call.

Return Value:

IC_OK is returned if successful. See Appendix C for possible errors.

❍ WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcOpenSession	function
IC_SINFO	data type
IC_STATUS_CONNECT	data type

IcSetSessionError

(1.0)

IC_RESULT FAR PASCAL IcSetSessionError
(HIC_SESSION *hIcSession,*
IC_RESULT_CONTEXT *context,*
IC_RESULT *error,*
LPSTR *lpinsert1,*
LPSTR *lpinsert2,*
LPSTR *lpinsert3*)

IcSetSessionError must be used when returning ICS standard error results (see Appendix C for a list of standard error results) to insure that the correct library is associated with the given error. The **IcSetSessionError** procedure may also be useful when returning library-specific errors, especially those which require up to three string inserts (%s formatting ONLY). This alleviates the library from managing the information itself.

Parameters	Description	
hIcSession	IN	The ICS session handle on which the error occurred, or **NULL_HIC_SESSION** if not applicable.
context	IN	The unique library context.
error	IN	The **IC_RESULT** error.
lpinsert1	*IN	A string of maximum **IC_MAXERRORINSERT** bytes. This string will be used as the first string insert. The pointer itself may be NULL.
lpinsert2	*IN	A string of maximum **IC_MAXERRORINSERT** bytes. This string will be used as the second string insert. The pointer itself may be NULL, and it must be if *lpinsert1* is NULL.

lpinsert3	*IN	A string of maximum **IC_MAXERRORINSERT** bytes. This string will be used as the third string insert. The pointer itself may be NULL, and it must be if *lpinsert2* is NULL.

Return Value:

The return value is the **IC_RESULT** error input parameter.

Example:

The following example shows returning the standard **IC_ERROR_INTERNAL**, which accepts one insert, a string describing the location of the error.

```
return IcSetSessionError(hIcSession,MyContext,
    IC_ERROR_INTERNAL,"IcLibOpenSession",NULL,NULL);
```

The following example returns a library-specific error, **TTY_XMTERROR_TRANSMITTING**.

```
IC_RESULT error;

error=IC_MAKE_RESULT(MyContext,TTY_ERROR,
    TTY_XMTERROR_TRANSMITTING);

return IcSetSessionError(hIcSession,MyContext,
    error,NULL,NULL,NULL);
```

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_MAKE_RESULT	function
IcLibGetString	function

IcSetStatus

(1.0)

IC_RESULT FAR PASCAL IcSetStatus
(HIC_SESSION *hsession*,
IC_RESULT *status*)

IcSetStatus passes various status information through the INFOConnect communication session to a library in the library stack or to an attached application. An **IC_STATUSRESULT** message will be received when the status has been delivered.

Parameters	Description	
hsession	IN	The handle of the communication session.
status	IN	The **IC_RESULT** status message. See Appendix B for the defined ICS statuses.

Return Value:

IC_OK is returned if the communication session is valid. Otherwise, **IC_ERROR_UNOPENEDSESSION** is returned.

For ICS DosLink Client/Server applications, an **IC_ERROR_NOPARTNER** return value indicates that the other half of the session is not established and the request is ignored.

Note: *Accessory-specific statuses require a unique accessory context. To obtain this, use **IcRegisterAccessory**.*

● WIN ● XVT ● DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IC_RESULT	data type
IcRegisterAccessory	function

IcUnlockBuffer

(1.0)

IC_RESULT FAR PASCAL IcUnlockBuffer
(HANDLE *hBuffer*)

IcUnlockBuffer unlocks memory previously locked by **IcLockBuffer**.

Parameters	Description	
hBuffer	IN	The handle of a global buffer to unlock.

Return Value:

IC_OK if successful. See Appendix C for possible errors.

● WIN	❍ XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcAllocBuffer	function
IcLockBuffer	function

IcWriteBuffer

(3.0)

IC_RESULT FAR PASCAL IcWriteBuffer
(HANDLE *hBuffer*,
UINT *BufOffset*,
void FAR * *Data*,
UINT *DataOffset*,
UINT *Len*)

IcWriteBuffer writes data from a buffer identified by a far pointer to a buffer identified by a Windows HANDLE.

Parameters	Description	
hBuffer	IN/*OUT	The handle of the buffer from which to write the data.
BufOffset	IN	The offset into the buffer designated by *hBuffer* where the data is written. This is usually zero.
Data	*IN	The buffer from which the data is written.
DataOffset	IN	The offset into the buffer from where the data is written. This is usually zero.
Len	IN	The number of bytes of data to write.

Return Value:

IC_OK if successful. **IC_ERROR_NOMEMORY** if the buffer could not be locked. See Appendix C for other possible errors.

● WIN	❍ XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcReadBuffer function

IcWriteLibraryConfig

(2.0)

IC_RESULT FAR PASCAL IcWriteLibraryConfig
(IC_RESULT_CONTEXT *context,*
int *TableNumber,*
void FAR * *buffer,*
unsigned *len*)

IcWriteLibraryConfig overwrites the given record in the given table in the ICS database. If the record does not exist, it is added; if the record does exist, it is located and updated using the primary key.

Parameters	**Description**	
context	IN	The library's context.
TableNumber	IN	The number of the table for which to write.
buffer	*IN	The buffer to write.
len	IN	The size of the buffer in bytes.

Return Value:

IC_OK if successful. **IC_ERROR_INVALID_CONFIGREC** if the length of the buffer does not equal the length of the record stored in the ICS database. See Appendix C for other possible errors.

Notes:

– ***IcWriteLibraryConfig** is used only on library's invisible tables (**IC_TF_INVISIBLETABLE** flag). Path and Channel tables are managed by the ICS Manager and through **IcLibUpdateConfig** procedure.*

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcReadLibraryConfig	function
IcDeleteLibraryConfig	function
IC_DICT_NODE	data type
IC_TABLE_FLAGS	data type

IcXmt

(1.0)

IC_RESULT FAR PASCAL IcXmt
(HIC_SESSION *hsession*,
HANDLE *buffer*,
UINT *length*)

IcXmt is called to transmit a block of data for the given communication session. For most sessions, one transmission may be outstanding for a session at a time, with the subsequent transmit request will result in an **IC_ERROR_XMT_BUSY** transmit error.

If the **IC_SINFO** record indicates that the session is not transparent (that is, *transparent* == FALSE), then the data should NOT contain any special, protocol-specific characters. Special characters will be added by the underlying ICS libraries as required by the protocol.

Parameters	**Description**	
hsession	IN	The established communication session's handle.
buffer	IN	A buffer, allocated with **IcAllocBuffer**, of data to be transmitted.
length	IN	The number of bytes to transmit.

Return Value:

IC_OK is returned if the communication session is valid. Otherwise, **IC_ERROR_UNOPENEDSESSION** is returned.

Note: *When the transmission is complete, an INFOConnect Connectivity Services message of either* ***IC_XMTDONE*** *or* ***IC_XMTERROR*** *will be sent to the application. The buffer must not be modified until one of these messages is received or until an* ***IC_LCLRESULT*** *is received after a call to* ***IcLcl****.*

● WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_XMTDONE	message
IC_XMTERROR	message
IC_SINFO	data structure

NOREF

(2.0)

NOREF(*a*)

The **NOREF** macro may be used to reference a procedure's formal parameter that would not otherwise be referenced. Unreferenced formal parameters cause nuisance errors from optimizing compilers.

Parameters	Description	
a	IN	A variable.

Return Value:

The input variable.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

ic_buf_alloc

(1.0)

IC_BUFHND ic_buf_alloc
(long *bufsize*)

ic_buf_alloc allocates sharable memory and returns its **IC_BUFHND** handle type.

Parameter		Description
bufsize	IN	The number of bytes to allocate.

Return Value:

An **IC_BUFHND** handle type is returned if the memory was allocated.
NULL_IC_BUFHND type is returned if the memory could not be allocated.

Note: *ICS data communication buffers must be shared by different tasks.* ***ic_buf_alloc*** *ensures that these buffers are properly allocated to satisfy any operating system requirements for shared buffer. Therefore, buffers passed to the INFOConnect Connectivity Services routines MUST have been allocated through* ***ic_buf_alloc****.*

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

ic_buf_free	function
IC_BUFHND	data type
NULL_IC_BUFHND	data type

ic_buf_free

(1.0)

void ic_buf_free
(IC_BUFHND *hBuffer*)

ic_buf_free frees memory previously allocated through **ic_buf_alloc**.

Parameter		Description
hBuffer	IN	The **IC_BUFHND** buffer memory handle of the buffer to free.

Return Value:

None.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

ic_buf_alloc	function
IC_BUFHND	data type

ic_buf_lock

(1.0)

STR_FAR ic_buf_lock
(IC_BUFHND *hBuffer*)

ic_buf_lock locks memory previously created through **ic_buf_alloc**.

Parameter	Description	
hBuffer	IN	The **IC_BUFHND** buffer memory handle of the buffer to lock.

Return Value:

An XVT STR_FAR type pointer to the locked block of memory.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

ic_buf_alloc	function
ic_buf_unlock	function
IC_BUFHND	data type

ic_buf_realloc

(1.0)

IC_BUFHND ic_buf_realloc
(IC_BUFHND *hBuffer*,
long *bufsize*)

ic_buf_realloc reallocates memory previously created through **ic_buf_alloc**.

Parameters	Description	
hBuffer	IN	The **IC_BUFHND** buffer memory handle of the buffer to reallocate.
bufsize	IN	The new size, in bytes, of the reallocated buffer.

Return Value:

An **IC_BUFHND** handle type is returned if the memory was allocated.
NULL_IC_BUFHND type is returned if the memory could not be allocated.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

ic_buf_alloc	function
IC_BUFHND	data type
NULL_IC_BUFHND	data type

ic_buf_unlock

(1.0)

void ic_buf_unlock
(IC_BUFHND *hBuffer*)

ic_buf_unlock unlocks memory previously locked through **ic_buf_lock**.

Parameter		Description
hBuffer	IN	The **IC_BUFHND** buffer memory handle of the buffer to unlock.

Return Value:

None.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

ic_buf_lock	function
IC_BUFHND	data type

ic_change_handle

(1.0)

IC_RESULT ic_change_handle
(HIC_SESSION *hsession*,
WINDOW *hWnd*)

ic_change_handle changes the ownership of a currently established communication session. All subsequent communication events are then directed to the main event procedure associated with that new window.

Parameters	Description	
hsession	IN	The **HIC_SESSION** handle of the opened communication session to which the new window becomes associated.
hWnd	IN	The WINDOW handle for the window that will obtain ownership of the given communication session.

Return Value:

IC_OK is returned if the change was successful.
IC_ERROR_UNOPENEDSESSION is returned if the given communication session is not a valid, established session. See Appendix C for other possible errors.

Note: *An implicit* ***ic_lcl(*****hsession, *IC_LCL_RCVXMT)* *is performed prior to the switch.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

ic_lcl	function
HIC_SESSION	data type
IC_LCL_FLAGS	data type

ic_close_session

(1.0)

IC_RESULT ic_close_session
(HIC_SESSION *hsession*)

ic_close_session causes INFOConnect Connectivity Services to close the given communication session.

Parameter		Description
hsession	IN	The **HIC_SESSION** handle of the open communication session to close.

Return Value:

IC_OK is returned. The result of the communication session closure will be sent to the application's main event procedure through the INFOConnect-XVT event **E_IC_SESSION_CLOSE**. This result will be **IC_OK** if the communication session closed properly. See Appendix C for other possible errors.

Note: *An **IC_OK** result from **ic_open_session** requires that **ic_close_session** be called regardless of the **E_IC_SESSION_EST** event result.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

ic_open_session	function

ic_default_error_proc

(1.0)

IC_RESULT ic_default_error_proc
(WINDOW *hWnd*,
HIC_SESSION *hsession*,
unsigned *uType*,
IC_RESULT *error*)

ic_default_error_proc retrieves, formats, and displays the error string corresponding to the given ICS error to the user. It is called for all errors that the application does not wish to handle itself.

Only severe, terminate, and warning errors are presented to the user unless the user runs the ICS Shell with the *-d* (for debug) parameter. In this case, all errors that are passed in to this procedure are formatted and displayed to the user.

Parameters	Description	
hWnd	IN	The handle of the calling application's window.
hsession	IN	The **HIC_SESSION** handle of the open communication session for which the error occurred, or **NULL_HIC_SESSION** if not applicable.
uType	IN	The ICS error event type (for example, **E_IC_ERROR**, etc.) or NULL if not applicable.
error	IN	The ICS error that occurred.

Return Value:

IC_OK is returned.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_RESULT	data type
HIC_SESSION	data type
NULL_HIC_SESSION	data type
IC_ERROR_INFO	data type
IC_ERROR_WARNING	data type
IC_ERROR_SEVERE	data type
IC_ERROR_TERMINATE	data type
ic_get_string	function

ic_deregister_accessory

(1.0)

IC_RESULT ic_deregister_accessory
(IC_RESULT_CONTEXT *context*)

ic_deregister_accessory removes the association between the given **IC_RESULT_CONTEXT** and its accessory. The *context* is no longer valid.

Parameter		Description
context	IN	The **IC_RESULT_CONTEXT** of the accessory to deregister.

Return Value:

IC_OK is returned if successful, **IC_ERROR_INTERNAL** is returned if the *context* exceeds the context table bounds.

❍ WIN ● XVT ❍ DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IC_RESULT_CONTEXT	data type
ic_register_accessory	function

ic_exit_ok

(2.0)

IC_RESULT ic_exit_ok
(BOOLEAN *Ok*)

ic_exit_ok is used to notify INFOConnect Connectivity Services that a session can or cannot be closed. It is used in response to several **IC_STATUS_COMMMGR** status messages. A distributed application may use **ic_exit_ok** to prevent ICS from exiting in order to gracefully terminate the host component.

Parameter	Description	
Ok	IN	TRUE if the session may be safely closed, FALSE to abort the termination of ICS.

Return Value:

IC_OK if successful. See Appendix C for possible errors.

Note: *If this procedure is not called in response to the **IC_COMMMGR_QUERYEXIT** status message, the ICS Shell will query the user for permission to close the open communication sessions.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_STATUS_COMMMGR data type

ic_galloc

(1.0)

IC_MEMHND ic_galloc
(long *bufsize*)

ic_galloc allocates memory that is NOT sharable and returns its **IC_MEMHND** handle type.

Parameter		Description
bufsize	IN	The number of bytes to allocate.

Return Value:

An **IC_MEMHND** handle type is returned if the memory was allocated. **NULL_IC_MEMHND** type is returned if the memory could not be allocated.

Note: *Buffers created through **ic_galloc** are for large, general purpose, intra-application memory usage. Use **ic_buf_alloc** for shared memory allocation.*

❍ WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

❍ AIL ❍ SL ❍ EIL

See also:

ic_gfree	function
IC_MEMHND	data type
NULL_IC_MEMHND	data type

ic_get_context

(1.0)

IC_RESULT ic_get_context
(STR_FAR *name*,
LPIC_RESULT_CONTEXT *lpcontext*)

ic_get_context provides the context associated with the given unique context string.

Parameters	**Description**	
name	*IN	The unique context string.
lpcontext	*OUT	An **IC_RESULT_CONTEXT** type that receives the context associated with *name*, if it exists.

Return Value:

IC_OK is returned if the context is found and returned.
IC_CONTEXTSTRING_NOT_FOUND is returned if the context could not be retrieved. In this case, the value pointed to by *lpcontext* is invalid.

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

LPIC_RESULT_CONTEXT	data type
ic_get_context_string	function

ic_get_context_string

(1.0)

IC_RESULT ic_get_context_string
(IC_RESULT_CONTEXT *context,*
STR_FAR *buffer,*
unsigned *length*)

ic_get_context_string provides the unique, null-terminated context string associated with the given context.

Parameters	Description	
context	IN	A context.
buffer	*OUT	A buffer to receive the unique context string associated with the given context.
length	IN	The size of the buffer in bytes.

Return Value:

IC_OK is returned if the context string is successfully retrieved. Otherwise, **IC_CONTEXT_NOT_FOUND** is returned and buffer is filled with NULLs.

❍ WIN ● XVT ❍ DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IC_RESULT_CONTEXT	data type
ic_get_context	function

ic_get_infoconnect_dir

(2.0)

IC_RESULT ic_get_infoconnect_dir
(enum IC_DIRECTORYTYPES *dirtype*,
STR_FAR *pstr*,
unsigned *strsize*)

ic_get_infoconnect_dir returns INFOConnect directory information.

Parameters	Description	
dirtype	IN	The **IC_DIRECTORYTYPES** type of information to retrieve.
pstr	*OUT	A string to receive the information.
strsize	IN	The length of the string in bytes. This should be at least **IC_MAXFILENAMESIZE**.

Return Value:

IC_OK if successful. See Appendix C for possible errors.

Note: ***dirtype IC_CODEDIR*** *requests the name of the directory containing the ICS code files. This directory can be a shared directory.* ***IC_DATADIR*** *requests the name of the directory containing the ICS data files. Applications should use this directory for all use configuration files.*

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_DIRECTORYTYPES data type

ic_get_new_path

(1.0)

IC_RESULT ic_get_new_path
(WINDOW *hWnd*,
IC_BUFHND *hBuffer*,
unsigned *len*)

ic_get_new_path provides a programmatic interface to the ICS path configuration dialogs.

Parameters	**Description**	
hWnd	IN	The WINDOW handle of the calling application's window.
hBuffer	IN	The handle to a globally allocated buffer to be filled with a null-terminated path identification (path ID) string. This buffer must have been allocated through **ic_buf_alloc**.
len	IN	The size of buffer in bytes. This must be at least **IC_MAXPATHIDSIZE**.

Return Value:

IC_OK when the configuration procedure has been initiated.
IC_ERROR_BADPARAMETER (and the configuration procedure is not initiated) if len is less than **IC_MAXPATHIDSIZE** or if *hBuffer* is **NULL_IC_BUFHND**.

Note: *When the user has completed the configuration dialogs, an* ***E_IC_NEWPATH*** *event is sent to* ***hWnd****. At this point, the buffer designated by* ***hBuffer*** *will contain the unique, null-terminated path ID of the newly configured ICS path, or, if the user cancelled the path configuration, it will contain NULL.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

E_IC_NEWPATH event

ic_get_path_id

(2.0)

IC_RESULT ic_get_path_id
(HIC_SESSION *hsession*,
STR_FAR *buffer*,
unsigned *length*)

ic_get_path_id provides the identification string of the ICS path for the given communication session.

Parameters	Description	
hsession	IN	An **HIC_SESSION** communication session handle. The session need not be established.
buffer	*OUT	A global buffer to receive the null-terminated path identification string.
length	IN	The size of the buffer in bytes. This must be at least **IC_MAXPATHIDSIZE**.

Return Value:

IC_OK if successful. Possible errors are **IC_ERROR_BADPARAMETER** and **IC_ERROR_UNOPENEDSESSION**. See Appendix C for other possible errors.

❍ WIN ● XVT ❍ DosLink

● Accessory ● Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

ic_get_path_names

(1.0)

IC_RESULT ic_get_path_names
(IC_BUFHND *buffer*,
unsigned *length*)

ic_get_path_names provides a list of the configured path IDs. The list is returned in the given buffer and consists of a two-byte integer (count of configured path IDs) followed by as many complete 'path entries' that will fit in the buffer. Each 'path entry' consists of a one byte (character) flag ('1' == currently active, '0' == currently inactive) followed by a null-terminated ASCII string (the path ID).

Parameters	Description	
buffer	IN	A global buffer, allocated through **ic_buf_alloc**, in which the list is returned.
length	IN	The size of the buffer in bytes.

Return Value:

IC_OK if successful. **IC_ERROR_BADPARAMETER** if len is less than 3 or if *hBuffer* is **NULL_IC_BUFHND**. See Appendix C for other possible errors.

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

ic_get_session_id

(2.0)

IC_RESULT ic_get_session_id
(HIC_SESSION *hsession*,
STR_FAR *buffer*,
unsigned *length*)

ic_get_session_id returns the unique session identification string (session ID) for the given session. The session ID consists of the path ID, followed by a semicolon and the unique session name, if it exists.

Parameters	Description	
hsession	IN	The **HIC_SESSION** handle of the communication session whose ID is to be retrieved.
buffer	*OUT	A global buffer, allocated with **ic_buf_alloc**, in which to return the communication session ID.
length	IN	The size of the buffer in bytes. This must be at least **IC_MAXSESSIONIDLEN**.

Return Value:

IC_OK if successful. **IC_ERROR_UNOPENEDSESSION** if the session handle is invalid, **IC_ERROR_TRUNCATED** if the buffer was not large enough to hold the session ID. See Appendix C for other possible errors.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

ic_get_session_info

(1.0)

IC_RESULT ic_get_session_info
(HIC_SESSION *hsession*,
LPIC_SINFO *info*)

ic_get_session_info initializes the given **IC_SINFO** data structure with pertinent information about the communication session.

Parameters	Description	
hsession	IN	The **HIC_SESSION** handle of an established communication session.
info	*OUT	An **IC_SINFO** record to be filled with communication session information.

Return Value:

IC_OK if the structure was initialized. See Appendix C for other possible errors.

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_SINFO	data type

ic_get_string

(1.0)

IC_RESULT ic_get_string
(HIC_SESSION *hsession*,
IC_RESULT *result*,
STR_FAR *buffer*,
unsigned *length*)

ic_get_string retrieves the text associated with the given error result. The null-terminated text is placed in the given buffer.

Parameters	Description	
hsession	IN	The communication session on which the error occurred, or **NULL_HIC_SESSION** if not relevant.
result	IN	The error result.
buffer	*OUT	A buffer to receive the text.
length	IN	The size of the buffer in bytes. This should be at least **IC_MAXSTRINGLENGTH**.

Return Value:

IC_OK if successful. See Appendix C for possible errors.

❍ WIN ● XVT ❍ DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IC_RESULT	data type

ic_gfree

(1.0)

void ic_gfree
(IC_MEMHND *hBuffer*)

ic_gfree frees memory previously allocated through **ic_galloc**.

Parameters	**Description**	
hBuffer	IN	**IC_MEMHND** general memory handle of the buffer to free.

Return Value:

None.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

ic_galloc	function
IC_MEMHND	data type

ic_glock

(1.0)

STR_FAR ic_glock
(IC_MEMHND *hBuffer*)

ic_glock locks memory previously created through **ic_galloc**.

Parameters	Description	
hBuffer	IN	The **IC_MEMHND** general memory handle of the buffer to lock.

Return Value:

An XVT STR_FAR type pointer to the locked block of memory.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

ic_galloc	function
ic_gunlock	function
IC_MEMHND	data type

ic_grealloc

(1.0)

IC_MEMHND ic_grealloc
(IC_MEMHND *hnd*,
long *bufsize*)

ic_grealloc reallocates memory previously created through **ic_galloc**.

Parameters	Description	
hnd	IN	The **IC_MEMHND** general memory handle of the buffer to reallocate.
bufsize	IN	The new size, in bytes, of the reallocated buffer.

Return Value:

An **IC_MEMHND** handle type is returned if the memory was allocated. **NULL_IC_MEMHND** type is returned if the memory could not be allocated.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

ic_galloc	function
IC_MEMHND	data type
NULL_IC_MEMHND	data type

ic_gunlock

(1.0)

void ic_gunlock
(IC_MEMHND *hBuffer*)

ic_gunlock unlocks memory previously locked through **ic_glock**.

Parameters	Description	
hBuffer	IN	The **IC_MEMHND** general memory handle of the buffer to unlock.

Return Value:

None.

❍ WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

❍ AIL ❍ SL ❍ EIL

See also:

ic_galloc	function
ic_glock	function
IC_MEMHND	data type
NULL_IC_MEMHND	data type

ic_init_ics

(1.0)

IC_RESULT ic_init_ics
(int *version*,
int *revision*)

ic_init_ics allows INFOConnect Connectivity Services to initialize, if necessary. It MUST be called once from the application's *appl_init* routine prior to calling any of the INFOConnect Connectivity Services functions.

Parameters	Description	
version	IN	The highest ICS version which the calling program understands. The program does not take advantage of any new features that a higher ICS version may contain.
revision	IN	The highest ICS revision which the calling program understands. The program does not take advantage of any new features that a higher ICS revision may contain.

Return Value:

IC_OK if ICS initializes successfully or has been previously initialized, **IC_ERROR_NEWVERSION** if a newer version of ICS is needed. See Appendix C for other possible errors.

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_STATUS_COMMMGR	data type and
IC_STATUS	event

ic_lcl

(1.0)

IC_RESULT ic_lcl
(HIC_SESSION *hsession*,
short *which*)

ic_lcl cancels the pending request (designated by *which*) for the given communication session. An **E_IC_LCL_RESULT** event will be received for the cancelled requests.

Parameters	Description	
hsession	IN	The established communication session's **HIC_SESSION** handle type.
which	IN	One of the **IC_LCL_FLAGS** values that designates which pending request to cancel.

Return Value:

IC_OK is returned if the communication session is valid. Otherwise, **IC_ERROR_UNOPENEDSESSION** is returned. See Appendix C for other possible errors.

❍ WIN ● XVT ❍ DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IC_LCL_FLAGS data type

ic_open_accessory

(1.0)

IC_RESULT ic_open_accessory
(WINDOW *hWnd*,
STR_FAR *name*,
STR_FAR *options*,
STR_FAR *sessionname*,
LPIC_SINFO *sinfo*,
LPHIC_SESSION *lphsession*)

ic_open_accessory allows an application to invoke an ICS accessory via dynamically created ICS paths linked with the LOCAL external interface library.

Parameters	Description	
hWnd	IN	The XVT WINDOW handle of the window attached to this communication session.
name	*IN	The accessory ID. See Appendix A for ICS Standard IDs.
options	*IN	A null-terminated string of command line options, excluding the path (*-p*) option. (See Section 6 for information on command line options.)
sessionname	*IN	A null-terminated identification string (not necessarily unique) created by the application that names the newly created ICS paths. This is the name that is used to create the communication session name that is returned by a call to **ic_get_session_id**. This name appears in the title bar of the invoked accessory.
sinfo	*IN	An **IC_SINFO** record that has been previously initialized, possibly by a call to **ic_get_session_info**.

lphsession	*OUT	An **HIC_SESSION** to receive the handle of the newly opened communication session.

Return Value:

IC_OK if successful. Possible error results are **IC_ERROR_NOMEMORY**, **IC_ERROR_BADPARAMETER**, **IC_ERROR_ACCESSORY_NOT_FOUND**, and **IC_ERROR_ACCESSORY_FAILED**. See Appendix C for other possible errors.

Notes:

– *Since this procedure calls **IcRunAccessory**, it supports the **-Wxy** window state command line option. This option determines the state of the accessory's window when it is executed by the ICS Manager. The valid values for **x** and **y** are as follows:*

x		**y**	
value	**meaning**	**value**	**meaning**
n	normal	a	active
m	maximized	b	background
i	iconized		
h	hidden		

*Using any other values results in the return of an **IC_ERROR_INVALID_WINOPTION** error.*

*The default window state is normal and active. Invalid value combinations are hidden/active and maximized/background. These combinations result in the return of an **IC_ERROR_INVALID_WINCOMBO** error.*

– *To invoke an accessory without a communication session connection between the calling application and the accessory, use **ic_run_accessory**.*

❍ WIN ● XVT ❍ DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

ic_get_session_id function

ic_get_session_info	function
IC_SINFO	data structure

ic_open_session

(1.0)

IC_RESULT ic_open_session
(WINDOW *hWnd*,
STR_FAR *path*,
LPHIC_SESSION *lpsession*)

ic_open_session requests the establishment of a logical communications connection either within the system (that is, the ICS path uses the LOCAL external interface library) or to another computer.

Parameters	Description	
hWnd	IN	The XVT WINDOW handle of the window attached to this communication session. All events generated from INFOConnect Connectivity Services for this session are sent to this window. If i**c_register_msg_session** is used to register windows messages, this parameter should be NULL_WIN.
path	*IN	The INFOConnect Connectivity Services path ID to be associated with the communication session. If this is NULL or if the pointer itself is NULL, INFOConnect Connectivity Services will prompt the user for a path ID.
lpsession	*OUT	An **HIC_SESSION** to receive the handle.

Return Value:

If the request is valid, then either **IC_OK** or an **IC_ERROR_WARNING** or **IC_ERROR_INFO** type error (other than **IC_ERROR_CANCELOPEN**) is returned, the **LPHIC_SESSION** is set to a valid **HIC_SESSION** handle and the communication session becomes associated with the application's window. Otherwise, an error is returned, the session handle is set to **NULL_HIC_SESSION**, and the connection is not available. Some possible errors are

IC_ERROR_NOMEMORY and the informational error **IC_ERROR_CANCELOPEN**. See Appendix C for other possible errors. See Appendix C for other possible errors.

Notes:

- ***IC_ERROR_CANCELOPEN*** *is an* ***IC_ERROR_INFO*** *error type that indicates that the user cancelled from the select path dialog box. For this special return value, the session handle is* ***NULL_HIC_SESSION*** *and no session is opened. Therefore, this return value should be treated as a special case return value from* ***ic_open_session***.
- *If either* ***IC_OK*** *or an* ***IC_ERROR_WARNING*** *or* ***IC_ERROR_INFO*** *type error (other than* ***IC_ERROR_CANCELOPEN****) is returned, the INFOConnect-XVT event* ***E_IC_SESSION_EST*** *will be sent to the application when the communication session establishes. The session handle is not valid unless the* ***E_IC_SESSION_EST*** *event is received with the* event.v.ic.v.result *of* ***IC_OK****, or with an* ***IC_ERROR_INFO*** *or* ***IC_ERROR_WARNING*** *result type. This handle should then be used with any other INFOConnect Connectivity Services function dealing with this communication session.*
- *If an* ***E_IC_SESSION_EST*** *event is received with an* ***IC_ERROR_SEVERE*** *or* ***IC_ERROR_TERMINATE*** *error result in* event.v.ic.v.result*, communication session establishment failed and the session handle type is invalid. The session is to be closed immediately by calling* ***ic_close_session***.
- *If using* ***ic_register_msg_session*** *to register for messages and the* hWnd *and* path *parameters are both NULL, then the Windows desktop automatically becomes the parent window. To prevent this, call* ***IcSelectPath*** *to display the select path dialog box from your application.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

E_IC_SESSION_EST	event
ic_close_session	function
ic_register_msg_session	function
IcSelectPath	function

ic_rcv

(1.0)

IC_RESULT ic_rcv
(HIC_SESSION *hsession*,
IC_BUFHND *buffer*,
unsigned *length*)

ic_rcv is called to request a block of data for the given communication session. Only one receive request may be outstanding for a session at a time.

Parameters	Description	
hsession	IN	The established communication session's handle type.
buffer	IN	The handle of a buffer allocated through **ic_buf_alloc** to receive the data.
length	IN	Maximum number of bytes to receive.

Return Value:

IC_OK is returned if the communication session is valid. Otherwise, **IC_ERROR_UNOPENEDSESSION** is returned. See Appendix C for other possible errors.

Note: *When the receive request is complete, an INFOConnect-XVT event of either **E_IC_RCV_DONE** or **E_IC_RCV_ERROR** will be sent to the application.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

E_IC_RCV_DONE	event
E_IC_RCV_ERROR	event
ic_lcl	function

ic_register_accessory

(1.0)

IC_RESULT ic_register_accessory
(STR_FAR *name*,
unsigned *types*,
LPIC_RESULT_CONTEXT *context*)

ic_register_accessory associates the accessory name with a context, and returns that context through **LPIC_RESULT_CONTEXT**. The context is a dynamically assigned identification that can be used to uniquely identify the accessory when generating statuses and errors.

Parameters	Description	
name	*IN	A null-terminated, unique accessory context string.
types	IN	Reserved for future use. Must be zero.
context	*OUT	An **IC_RESULT_CONTEXT** that receives the context associated with *name*.

Return Value:

IC_OK is returned if successful. See Appendix C for possible errors.

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_RESULT_CONTEXT	data type
LPIC_RESULT_CONTEXT	data type

ic_register_msg_session

(3.0)

IC_RESULT ic_register_msg_session
(HIC_SESSION *hIcSession*,
WINDOW *hWnd*
UINT *wParam*,
UINT *MessageCount*)

ic_register_msg_session registers the ICS events with Windows on a per-session basis.

The given window will only receive events less than or equal to *MessageCount*. To stop receiving messages, call **ic_register_msg_session** with the *MessageCount* parameter **E_IC_NULLEVENT**.

Parameters	Description	
hIcSession	IN	The **HIC_SESSION** handle of the open session.
hWnd	IN	The handle of the window to receive the ICS messages.
wParam	IN	A value to be passed in as the *event.v.ic.session* word parameter for every message. For example, this may be *hSession* or perhaps the ID of a control.
MessageCount	IN	The number of messages to register. See Section 4 for the number of messages available.

Return Value:

IC_OK is returned if successful. See Appendix C for possible errors.

Note: *Call **ic_open_session** with a NULL window handle. Note that if the path ID parameter to **ic_open_session** is also NULL, then the Windows desktop automatically becomes the parent window. To prevent this, call **IcSelectPath** to display the select path dialog box from your application.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

ic_open_session	function
IcSelectPath	function

ic_run_accessory

(1.0)

IC_RESULT ic_run_accessory
(STR_FAR *ID*,
STR_FAR *options*)

ic_run_accessory allows an application to invoke an ICS accessory. There is no communication session connection between the calling application and the accessory.

Parameters	Description	
ID	*IN	The accessory ID. See Appendix A for ICS Standard IDs.
options	*IN	A null-terminated string of command line options. See Section 6 for valid command line options.

Return Value:

IC_OK if successful. Possible error results are **IC_ERROR_NOMEMORY**, **IC_ERROR_BADPARAMETER**, **IC_ERROR_ACCESSORY_NOT_FOUND**, and **IC_ERROR_ACCESSORY_FAILED**. See Appendix C for other possible errors.

Notes:

– *This procedure supports the **-Wxy** window state command line option. This option determines the state of the accessory's window when it is executed by the ICS Manager. The valid values for **x** and **y** are as follows:*

x		**y**	
value	**meaning**	**value**	**meaning**
n	normal	a	active
m	maximized	b	background
i	iconized		
h	hidden		

*Using any other values results in the return of an **IC_ERROR_INVALID_WINOPTION** error.*

*The default window state is normal and active. Invalid value combinations are hidden/active and maximized/background. These combinations result in the return of an **IC_ERROR_INVALID_WINCOMBO** error.*

– *To invoke an accessory with a communication session connection between the calling application and the accessory (via dynamically created ICS paths linked with the LOCAL external interface library), use **ic_open_accessory**.*

❍ WIN ● XVT ❍ DosLink

● Accessory ● Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

ic_open_accessory function

ic_set_error

(1.0)

IC_RESULT ic_set_error
(HIC_SESSION *hsession*,
IC_RESULT *error*)

ic_set_error passes various error information through the INFOConnect communication session to a library in the library stack or to an attached application.

Parameters	Description	
hsession	IN	The **HIC_SESSION** handle.
error	IN	The **IC_RESULT** error message. See Appendix C for the ICS errors.

Return Value:

IC_OK is returned if the communication session is valid. Otherwise, **IC_ERROR_UNOPENEDSESSION** is returned.

Note: *Accessory-specific errors require a unique accessory context. To obtain this, use* ***ic_register_accessory****.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_RESULT	data type
ic_register_accessory	function

ic_set_status

(1.0)

IC_RESULT ic_set_status
(HIC_SESSION *hsession*,
IC_RESULT *status*)

ic_set_status passes various status information through the INFOConnect communication session to a library in the library stack or to an attached application. An **E_IC_STATUS_RESULT** event will be received when the status has been delivered.

Parameters	Description	
hsession	IN	The session's handle.
status	IN	The **IC_RESULT** status message. See Appendix B for the defined ICS statuses.

Return Value:

IC_OK is returned if the communication session is valid. Otherwise, **IC_ERROR_UNOPENEDSESSION** is returned.

Note: *Accessory-specific statuses require a unique accessory context. To obtain this, use* ***ic_register_accessory****.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IC_RESULT	data type
ic_register_accessory	function

ic_xmt

(1.0)

IC_RESULT ic_xmt
(HIC_SESSION *hsession*,
IC_BUFHND *buffer*,
unsigned *length*)

ic_xmt is called to transmit a block of data for the given communication session. Only one transmission may be outstanding for a session at a time. If the **IC_SINFO** record indicates that the session is not transparent (that is, *transparent* == FALSE), then the data should NOT contain any special, protocol-specific characters. Special characters will be added by the underlying ICS libraries as required by the protocol.

parameters	**Description**	
hsession	IN	The established communication session's **HIC_SESSION** handle type.
buffer	IN	A buffer handle, allocated through **ic_buf_alloc**, of data to be transmitted.
length	IN	The number of bytes to transmit.

Return Value:

IC_OK is returned if the communication session is valid. Otherwise, **IC_ERROR_UNOPENEDSESSION** is returned.

Note: *When the transmission is complete, an INFOConnect-XVT event of either* ***E_IC_XMT_DONE*** *or* ***E_IC_XMT_ERROR*** *will be sent to the application. The buffer must not be modified until one of these messages is received or until an* ***E_IC_LCL_RESULT*** *is received after a call to* ***ic_lcl****.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

E_IC_XMT_DONE	event
E_IC_XMT_ERROR	event
IC_SINFO	data structure

Section 4
ICS Messages/Events

Several messages are generated in response to INFOConnect Connectivity Services events.

MS-Windows Note

To avoid potential conflicts with message numbers in MS-Windows, the messages must be registered with either **IcRegisterMsgSession** or *RegisterWindowMessage*. For *RegisterWindowMessage,* the message strings are designated in this section as quoted strings (like "IC_RcvDone"). See the *INFOConnect Basic Developer's Guide* for information on registering Window's messages.

Libraries use the defined message index. These are capitalized, such as **IC_RCVDONE**.

Note

IcRegisterMsgSession and **ic_register_msg_session** ICS API are available to register messages using an offset and count. The following is the message sequence that may be used for the count of messages to register. Therefore, to register for all of the messages, use **IC_LASTEVENT**.

IC_NULLEVENT
IC_SESSIONESTABLISHED
IC_SESSIONCLOSED
IC_STATUS
IC_XMTDONE
IC_RCVDONE
IC_XMTERROR
IC_RCVERROR
IC_NEWPATH
IC_ERROR
IC_TIMER
IC_STATUSRESULT
IC_LCLRESULT
IC_SENDSTATUS
IC_LASTEVENT

E_IC_ERROR

This event is generated when an error occurs. The pertinent values in EVENT are as follows:

– **event.v.ic.session** is the session handle type for the communication session on which the error occurred or **NULL_HIC_SESSION** if not applicable.

– **event.v.ic.v.result** is the error result. See Appendix C for a list of ICS errors.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

EVENT data structure

E_IC_LCL_RESULT

This event is generated when a call to **ic_lcl** finally completes. The pertinent values in EVENT are as follows:

- **event.v.ic.session** is the session handle type for the communication session for which the message was generated.
- **event.v.ic.v.result** is the ICS result. See Appendix C for a list of ICS errors.

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

EVENT	data structure
ic_lcl	function

E_IC_NEWPATH

This event is generated only when an application uses the **ic_get_new_path** interface into the ICS path configuration. It is sent to the application's main event function by the configuration accessory when the user exits the final configuration form. The pertinent values in EVENT are as follows:

- **event.v.ic.session** is the handle of the buffer that received the new path identification string.
- **event.v.ic.v.result** is **IC_OK** if the add succeeded, **IC_CANCELED** if the user cancelled from the dialogs, or from an ICS error. See Appendix C for a list of ICS errors.

Note:

This event is sent to the main configuration accessory's window to initiate the ICS path configuration. In this case, the pertinent values in EVENT are as follows:

- ***event.v.ic.session** is the application's window handle to which the **E_IC_NEWPATH** event must be sent.*
- ***event.v.ic.v.rcv.buffer** is the handle of the buffer to receive the new path identification string.*
- ***event.v.ic.v.rcv.length** is the length, in bytes, of the buffer.*

*When processing has completed, the configuration accessory must post the **E_IC_NEWPATH** event to the application's window with the appropriate event values.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	● Configurator
● AIL	❍ SL	❍ EIL

See also:

EVENT	data structure
ic_get_new_path	function

E_IC_NULLEVENT

This message indicates that no additional events are available.

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

E_IC_RCV_DONE

This event is generated when a receive request completes. The pertinent values in EVENT are as follows:

- **event.v.ic.session** is the session handle type for the communication session for which the message was generated.
- **event.v.ic.v.rcv.buffer** is the buffer handle type of the received buffer.
- **event.v.ic.v.rcv.length** is the length, in bytes, of the buffer received.

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

EVENT	data structure
ic_rcv	function

E_IC_RCV_ERROR

This event is generated when a receive request fails. The pertinent values in EVENT are as follows:

- **event.v.ic.session** is the communication session handle type.
- **event.v.ic.v.result** is the ICS error. See Appendix C for a list of ICS errors.

Note: *Applications can ignore or log errors of type **IC_ERROR_INFO** or **IC_ERROR_WARNING** The receive request remains outstanding, which is in accordance with the definition of **IC_ERROR_INFO** and **IC_ERROR_WARNING** error types.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

EVENT	data structure
ic_rcv	function

E_IC_SESSION_CLOSE

This event is generated to notify an application of communication session termination. It normally results when the application requests session closure. However, it may also be caused by error conditions or by session termination by the user, such as clearing the session from the ICS Shell. The pertinent values in EVENT are as follows:

– **event.v.ic.session** is the handle type for the communication session for which the message was generated.

– **event.v.ic.v.result** is **IC_OK** if the communication session closed properly. Otherwise, it is an ICS error. See Appendix C for a list of ICS error results.

❍ WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

❍ AIL ❍ SL ❍ EIL

See also:

EVENT	data structure
ic_close_session	function

E_IC_SESSION_EST

This event is generated when a communication session is established as a result of a successful request to open a session. The pertinent values in EVENT are as follows:

- **event.v.ic.session** is the handle type for the communication session for which the message was generated.
- **event.v.ic.v.result** is **IC_OK** or an **IC_ERROR_INFO** or **IC_ERROR_WARNING** result type if the communication session establishment succeeded (this implies that the session handle type is now valid). Otherwise, the result is an ICS error. See Appendix C for a list of ICS errors.

Note: *If the application receives the **E_IC_SESSION_EST** event with an **IC_ERROR_SEVERE** or **IC_ERROR_TERMINATE** result type, the session must be closed immediately. If the **E_IC_SESSION_EST** event result is an **IC_ERROR_INFO** or **IC_ERROR_WARNING** type (or **IC_OK**), the session may be used for communication before being closed.*

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

EVENT	data structure
ic_open_session	function
ic_close_session	function

E_IC_STATUS

This event is generated to report status information. The pertinent values in EVENT are as follows:

- **event.v.ic.session** is the session handle type for the communication session for which the message was generated.
- **event.v.ic.v.result** is the status. See Appendix B for the defined statuses.

Notes:

- *The accessory need not process all status events.*
- *Applications that wish to react to **IC_COMMMGR_INITIALIZED** and **IC_COMMMGR_TERMINATED** statuses will receive **event.v.ic.session** == **NULL_HIC_SESSION** since these statuses are not associated with an INFOConnect session*
- *This event reports status information that may have been generated by the underlying library stack, by the ICS Manager, or by another ICS application. In contrast, the **E_IC_STATUS_RESULT** event is received only after a call to **ic_set_status** and reports that the status event has been delivered.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

EVENT data structure

E_IC_STATUS_RESULT

This event is generated when a call to **ic_set_status** finally completes. The pertinent values in EVENT are as follows:

- **event.v.ic.session** is the session handle type for the communication session for which the message was generated.
- **event.v.ic.v.result** is the ICS result. See Appendix C for a list of ICS errors.

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

EVENT	data structure
ic_set_status	function

E_IC_XMT_DONE

This event is generated when a transmission request completes. The pertinent values in EVENT are as follows:

- **event.v.ic.session** is the session handle for the communication session for which the message was generated.
- **event.v.ic.v.rcv.buffer** is the handle of the transmitted buffer.
- **event.v.ic.v.rcv.length** is the length of the transmitted data.

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

EVENT data structure

E_IC_XMT_ERROR

This event is generated if a transmission request fails. The pertinent values in EVENT are as follows:

- **event.v.ic.session** is the session handle type for the communication session for which the message was generated.
- **event.v.ic.v.result** is the ICS error. See Appendix C for a list of ICS errors.

Note: *Applications may ignore or log errors of type **IC_ERROR_INFO** or **IC_ERROR_WARNING**. The transmit request remains outstanding, which is in accordance with the definition of **IC_ERROR_INFO** and **IC_ERROR_WARNING** error types.*

❍ WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

EVENT data structure

IC_ERROR / "IC_Error"

This message is generated when an error, other than a transmit or receive error, occurs. The **IC_RESULT** accompanies this message.

The application receives the error in the *lParam* parameter. The **HIC_SESSION** on which the error occurred (or **NULL_HIC_SESSION** if not applicable) is returned to the application in *wParam*. Libraries may also generate library-specific errors which are indicated by the library's unique result context. See Appendix C for a list of standard errors.

● WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_RESULT	data type
IcMgrSendEvent	function
IcMgrSetResult	function

IC_LASTEVENT

This is the highest currently-defined INFOConnect message number. Use this to register for all ICS messages through **IcRegisterMsgSession**.

● WIN	❍ XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcRegisterMsgSession function

IC_LCLRESULT / "IC_LclResult"

This message is generated by an IIL when a call to **IcLcl** finally completes. The *wParam* data contains the handle for the communication session for which the message was generated. The *lParam* data contains the ICS result. See Appendix C for a list of ICS errors.

● WIN	❍ XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
● AIL	❍ SL	❍ EIL

See also:

IcLcl function

IC_NEWPATH / "IC_NewPath"

This message is generated only when an application uses the **IcGetNewPath** interface into ICS path configuration. It is sent to the application by the configuration accessory when the user exits the last configuration form.

The application receives the handle of the buffer that received the new path identification string in *wParam*. The *lParam* data contains **IC_OK** if the add succeeded, **IC_CANCELED** if the user cancelled from the dialogs, or an ICS error. See Appendix C for a list of ICS errors.

Note:

This event is also sent to the main configuration accessory's window to initiate the ICS path configuration.

- *The **wParam** data contains the application's window handle to which the **IC_NewPath** message must be sent.*
- *HI data of **lParam** contains the handle of the buffer designated to receive the new path identification string.*
- *LO data of **lParam** contains the length, in bytes, of the buffer.*

*When processing has completed, the configuration accessory must post the **IC_NewPath** message to the application's window with the appropriate values.*

● WIN	❍ XVT	❍ DosLink
● Accessory	❍ Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcGetNewPath function

IC_NULLEVENT

This message indicates that no additional events are available. For ICS DosLink applications that are polling for messages, this is the message is generated when no other messages are available.

● WIN	❍ XVT	● DosLink
❍ Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcGetNextEvent function

IC_RCVDONE / "IC_RcvDone"

This message is generated when data becomes available due to the successful completion of a previous receive request. The buffer handle and the length of the received data accompany this message.

The application receives the handle for the communication session for which the message was generated in *wParam*. HI data of *lParam* contains the buffer handle of the received data. LO data of *lParam* contains the length of received data.

● WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcRcv	function
IcMgrSendEvent	function

IC_RCVERROR / "IC_RcvError"

This message is generated when a request to receive data fails. The **IC_RESULT** accompanies this message.

The application receives the handle for the communication session for which the message was generated in *wParam*. The *lParam* data contains the ICS error. See Appendix C for a list of ICS errors.

Notes:

– *Applications can ignore or log errors of type **IC_ERROR_INFO** or **IC_ERROR_WARNING**. The receive request remains outstanding, which is in accordance with the definition of **IC_ERROR_INFO** and **IC_ERROR_WARNING** error types.*

– *Libraries should not generate **IC_ERROR_INFO** or **IC_ERROR_WARNING** type **IC_RESULT**s for this message in order to maintain compatibility with older ICS applications. Instead, these types of informational errors should be sent to the application through an **IC_ERROR** message. Note that the receive request remains outstanding, which is in accordance with the definition of **IC_ERROR_INFO** and **IC_ERROR_WARNING** error types.*

*If the library does generate informational and warning type receive errors, ICS 2.0 applications will need to execute with the Diagnostic service library to filter and translate these messages to **IC_ERROR** messages. For more information on the Diagnostic service library, see the IDK Developer's Guide.*

– *If a library also sends an **IC_STATUS** message to the application, the message should be sent after the error message so that the application is informed of the reason for the status message before the message is received.*

● WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcRcv	function
IcMgrSendEvent	function

IC_SENDSTATUS

This message is available for Interprocess Interface libraries to send status messages immediately up the library stack. Currently, the **IC_STATUS_COMMMGR** status messages are supported in this way. If the application has not registered for **IC_SENDSTATUS**, the message is translated by the AIL to the **IC_STATUS** message before being delivered to the application.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	❍ SL	❍ EIL

See also:

IC_STATUS message

IC_SESSIONCLOSED / "IC_SessionClosed"

This message is generated to notify an application of communication session termination. It normally results from a request by the accessory to close the session. However, it may also be caused by error conditions or by user termination of a session.

The application receives the handle for the communication session for which the message was generated in the *wParam* data. The *lParam* data contains **IC_OK** if the communication session closed properly. Otherwise, it is an ICS error. See Appendix C for a list of ICS error results.

Notes:

– *Only libraries with the **max_version** field of the **IC_RC_NODE** resource structure greater than **IC_VERSION_2_0** will receive this message in their event procedures. The message must be passed up the library stack (by calling **IcMgrSendEvent**) in order for the session to close.*

● WIN	❍ XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcCloseSession function

IC_SESSIONESTABLISHED / "IC_SessionEstablished"

This message is generated when a communication session finishes establishing as a result of a successful request to open a session.

The application receives the handle for the communication session for which the message was generated in the *wParam* data. The *lParam* data contains **IC_OK** or an **IC_ERROR_INFO** or **IC_ERROR_WARNING** result type if the communication session establishment succeeded (this implies that the session handle type is now valid). Otherwise, the *lParam* data contains an ICS error. See Appendix C for a list of ICS errors.

IC_SESSIONESTABLISHED is the first message received by a library, including EILs. To guarantee that the session has been properly established, libraries must wait for this message before sending any messages to the session or making any calls to **IcMgrXmt**, **IcMgrRcv**, **IcMgrLcl**, or **IcMgrSetResult**. EIL developers must note that after any initial processing, this message must be issued up the library stack by calling **IcMgrSendEvent**.

Notes:

- *If the application receives this message with an **IC_ERROR_SEVERE** or **IC_ERROR_TERMINATE** result type, the application must close the session immediately. If the message result is an **IC_ERROR_INFO** or **IC_ERROR_WARNING** type (or **IC_OK**), the session may be used for communication before being closed.*
- *Libraries with the **max_version** field of the **IC_RC_NODE** resource structure less than **IC_VERSION_2_1** will receive ONLY **IC_SESSIONESTABLISHED** in their event procedures.*

● WIN	❍ XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcOpenSession	function
IcCloseSession	function
IcLibEvent	function

IC_STATUS / "IC_Status"

This message is generated to report status information from the underlying communication session layers. The **IC_RESULT** status accompanies this message.

The application receives the handle for the communication session for which the message was generated in the *wParam* data. The *lParam* data contains the specific status message. See Appendix B for defined status types.

Notes:

- *The accessory need not process all status messages.*
- *Applications that wish to react to **IC_COMMMGR_INITIALIZED** and **IC_COMMMGR_TERMINATED** statuses must register "**IC_Status**" with Windows, since these statuses are not associated with an INFOConnect session (wParam == **NULL_HIC_SESSION**).*
- *Libraries with the **max_version** field of the **IC_RC_NODE** resource structure greater than **IC_VERSION_2_0** will the **IC_COMMMGR_INITIALIZED** and **IC_COMMMGR_TERMINATED** statuses with **hLibSession** == **NULL_HIC_SESSION**, since these statuses are not associated with a session.*
- *This message reports status information that may have been generated by the underlying library stack, by the ICS Manager, or by another ICS application. In contrast, the **IC_STATUSRESULT** message is received only after a call to **IcSetStatus** and reports that the status message has been delivered.*

● WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcSetStatus	function
IC_STATUSRESULT	message
IcMgrSendEvent	function
IcMgrSetResult	function

IC_STATUSRESULT / "IC_StatusResult"

This message is generated by an IIL when a call to **IcSetStatus** finally completes. It indicates that the status has been delivered.

The application receives the handle for the communication session for which the message was generated in the *wParam* data. The *lParam* data contains the ICS result. See Appendix C for a list of ICS errors.

Note: *The status messages that are delivered by calling **IcSetStatus** are delivered to the application via the **IC_STATUS** message.*

● WIN	❍ XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
● AIL	❍ SL	❍ EIL

See also:

IcSetStatus	function
IC_Status	message

IC_TIMER / "IC_Timer"

For ICS DosLink applications that use a callback routine and set a timer, this message is generated when the timer expires.

● WIN	❍ XVT	● DosLink
❍ Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcNextEvent function

IC_XMTDONE / "IC_XmtDone"

This message is generated when a request to transmit data completes. The buffer handle of the transmitted data and the length of the transmitted data must accompany this message.

The application receives the handle for the communication session for which the message was generated in the *wParam* data. HI data of *lParam* contains the buffer handle of the transmitted data. LO data of *lParam* contains the length of the transmitted data.

● WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcXmt	function
IcMgrSendEvent	function

IC_XMTERROR / "IC_XmtError"

This message is generated if a request to transmit data fails. The **IC_RESULT** error accompanies this message.

The application receives the handle for the communication session for which the message was generated in the *wParam* data. The *lParam* data contains the error. See Appendix C for a list of ICS errors.

Notes:

- *Applications can ignore or log errors of type **IC_ERROR_INFO** or **IC_ERROR_WARNING**. The transmit request remains outstanding, which is in accordance with the definition of **IC_ERROR_INFO** and **IC_ERROR_WARNING** error types.*
- *Libraries should not generate **IC_ERROR_INFO** or **IC_ERROR_WARNING** type **IC_RESULTs** for this message in order to maintain compatibility with older ICS applications. Instead, these types of informational errors should be sent to the application through an **IC_ERROR** message. Note that the transmit request remains outstanding, which is in accordance with the definition of **IC_ERROR_INFO** and **IC_ERROR_WARNING** error types.*

  *If the library does generate informational and warning type transmit errors, ICS 2.0 applications will need to execute with the Diagnostic service library to filter and translate these messages to **IC_ERROR** messages. For more information on the Diagnostic service library, see the IDK Developer's Guide.*
- *If a library also sends an **IC_STATUS** message to the application, the message should be sent after the error message so that the application is informed of the reason for the status message before the message is received.*

● WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcXmt	function
IcMgrSendEvent	function

Section 5
ICS Data Structures/Types

The following data structures and types are defined for INFOConnect Connectivity Services.

CHANNELID

```
typedef struct {
    char ID[IC_MAXCHANNELIDSIZE];
} CHANNELID;
```

This data structure type defines a channel identification string.

ID	The channel ID.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
● AIL	● SL	● EIL

EVENT

```
typedef struct s_event {
 union {
  ...
  struct {
    HIC_SESSION session;
    union {
       struct {     /* E_IC_RCV_DONE, E_IC_XMT_DONE */
         IC_BUFHND buffer;
         short length;
       } rcv;
       IC_RESULT result;
    } v;
  } ic;
  struct {
     char session;
     short function;
     IC_BUFHND datahnd;
     unsigned short length;
     unsigned short pspos
     BOOLEAN connected;
     IC_RESULT result;
  } sc;
  ...
  } v;
} EVENT, *EVENT_PTR;
```

This is an addition to the XVT EVENT structure. This addition occurs when the ICXVTMOD program is executed to update the **XVT.H** include file. See the *INFOConnect Development Kit Developer's Guide* for more information on using ICXVTMOD.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

Section 4, "ICS Messages/Events"

HIC_CHANNEL

A channel handle data type.

● WIN	● XVT	❍ DosLink
❍ Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

HIC_CONFIG

A configuration handle data type. A valid handle denotes a configuration session.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcOpen...Config functions

HIC_SESSION

A session handle data type.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

HIC_STATUSBUF

An extended status buffer handle data type.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_STATUSBUF data structure

IC_BASEREVISION

The base revision number of the **IC_BASEVERSION** of the ICS IDK that is supported by the ICS Manager.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

IC_BASEVERSION

The base version number of the ICS IDK that is supported by the ICS Manager.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

IC_BUFHND

INFOConnect Connectivity Services global buffer handle type for shared data.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

IC_BUILD_REVISION

The specific generation number for this software revision. This number appears in parentheses at the end of the version string, **IC_VERSION_STRING**.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_VER_INFO data structure

IC_CALLBACK

typedef LONG
(FAR PASCAL *IC_CALLBACK)(WORD,WORD,WORD,LONG);

This is a special typedef for ICS DosLink applications that is used for the event callback routine.

❍ WIN	❍ XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcRegisterCallback function

IC_COMMAND

ICS type used to communicate the action that is causing the library's **IcLibUpdateConfig** procedure to be invoked. The following commands are defined.

IC_CMD_ABOUT

The user is requesting About Box information.

IC_CMD_ADD

The user is performing an Add action.

IC_CMD_COPY

The user is performing a Copy action.

IC_CMD_DELETE

The user is performing a Delete action.

IC_CMD_DISCARD

This command is received when data from the previous call is being discarded.

IC_CMD_EXAMINE

The user is performing an Examine action.

IC_CMD_MODIFY

The user is performing a Modify action.

IC_CMD_SAVE

This command is received immediately before the data is saved to the database. If the data is not being saved, an **IC_CMD_DISCARD** command is received.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcLibUpdateConfig function

IC_COMPONENT

ICS type that associates the supplier with the component. The **IC_COMPONENT** consists of a component number and a supplier number. Both *generic* and *branded* **IC_COMPONENT**s are defined. Generic **IC_COMPONENT**s are defined in **ic.hic** and are used by those components that conform to the interface defined in the component's .HIC include file. Branded **IC_COMPONENT**s encompass those components from a particular vendor. The supplier number of branded **IC_COMPONENT**s is assigned through the Malvern Development Group. The vendor is responsible for managing the component numbers for its INFOConnect products. The currently assigned supplier numbers, component numbers, and **IC_COMPONENT**s are recorded in the **ic.hic** include file for your reference. See Appendix A for more information.

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

ic.hic	header file
Appendix A	"Component Numbers

IC_COMPONENT_TYPE

Flags used in the component's resource file to mark the component's type.

IC_ACCESSORY

Accessory identification for use in the accessory resource file.

IC_APILIBRARY

Identification for use in the library resource file for the library component of an application. This library component should be installed either in the same directory as the ICS Manager (the default directory is the Windows system directory) or in the Windows DLL path. A library of this type will be accessed by various applications. It contains configuration information for the application and may perform configuration tasks and contain application-specific API. See **IC_APPLIBRARY** below.

IC_APPINTERFACE

Application Interface Library (AIL) identification for use in the library's resource file. Libraries of this type cannot be included in path templates. A library of this type creates sessions with itself as the topmost library. Also see **IC_IPCINTERFACE** and **IC_STACKINTERFACE** below.

IC_APPLIBRARY

Identification for use in the library resource file for the library component of an application. This library component should be installed in the same directory as the application and may contain application-specific API. A library of this type contains configuration information for the application and may perform configuration tasks. See **IC_APILIBRARY** above.

IC_HOOKLIBRARY

Hook Library identification for use in the resource file of a hook library. Hook libraries provide special features to the ICS Manager. The library must export the **IcLibInstall**, **IcLibTerminate**, and **IcLibGetString** procedures as documented.

IC_INTERFACE

External Interface Library (EIL) identification for use in the library's resource file.

IC_IPCINTERFACE

Interprocess Interface Library (IIL) identification for use in the library's resource file. IILs associate two sessions in different processes by internally linking the EIL role of one session to the AIL role of the other session. Libraries of this type are typically not included in path templates. This type of library is automatically included in sessions when an AIL requests a path that must be opened in a different process. The library acts as an EIL in the first session which it links to the second session where it acts in the AIL role.

IC_LIBRARY

Service or external interface library identification for use when the library type is not important.

IC_MANAGER

ICS Manager identification.

IC_QUICKCONFIG

Quick Configuration Library identification for use in the resource file of a quick configuration library.

IC_SERVICE

Service Library identification for use in the library's resource file.

IC_STACKINTERFACE

Stacking interface library identification for use in the library's resource file. Libraries of this type typically implement multiplexing or switching functions on lower level sessions. Stack interface libraries associate two sessions in the same process by internally linking the EIL role of one session to the AIL role of the other session. Libraries of this type can be included in path templates as an EIL (for use by the higher level paths). During **IcLibOpenChannel** or **IcLibOpenSession**, this type of library typically behaves like an AIL and creates a session with a lower level path.

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_RC_NODE	data structure

IC_DEBUG

ICS type used to set and query the mode of ICS. Tracing can occur at the application level (that is, the data flow between the application and the library stack is monitored), or it can occur at the library level (that is, the data flow between each library in the library stack is monitored, along with application level data flow). Enabling the tracing facility means that the Trace Service Library is inserted between as many libraries in the library stack as possible while maintaining a stack of less than the current 15 library limit.

IC_DEBUG_DBWINLOG

In this mode, the ICS Manager's debug window is enabled for displaying debug information if **IC_DEBUG_TRACELOG** is not set. If **IC_DEBUG_TRACELOG** is set, debug information is handled only by the TraceLog library.

IC_DEBUG_LIBOPENAPI

In this mode, the library open/close-type API are traced. This includes the install/terminate API, the open/close API for sessions, channels, etc., and the load/free library API.

IC_DEBUG_MODE

Implies that the default error procedure will display all messages that it receives to the user.

IC_DEBUG_MONITOR

In this mode, the library with the ID 'Monitor' is added to all sessions. The Monitor library maintains transaction-related information on a per-session basis.

IC_DEBUG_SWITCHES

This is the number of **IC_DEBUG_...** switches.

IC_DEBUG_TRACE

Enables tracing at the application level for all sessions that are opened with templates that have the Trace flag set.

IC_DEBUG_TRACEALL

Enables tracing at the application level for all sessions that are opened after this mode is set.

IC_DEBUG_TRACEALLSTACK

Enables tracing at the library level for all sessions that are opened after this mode is set.

IC_DEBUG_TRACEENABLE

Enables the addition of the library with the Trace library ID to be inserted in the stack of libraries.

IC_DEBUG_TRACELOG

Activates tracing. This indicates that the special purpose TraceLog library is loaded and tracing begins. The TraceLog library manages the trace log debug file for all library calls to **IcMgrTraceBuffer** and **IcMgrTraceResult**.

IC_DEBUG_TRACEPATH

Enables tracing at the application level for all sessions that are opened with paths that have the Trace flag set.

IC_DEBUG_TRACEPATHSTACK

Enables tracing at the library level for all sessions that are opened with paths that have the Trace flag set.

IC_DEBUG_TRACESTACK

Enables tracing at the library level for all sessions that are opened with templates that have the Trace flag set.

Notes:

– *Note that application level tracing is controlled by:*

IC_DEBUG_TRACEALL	All open sessions
IC_DEBUG_TRACEPATH	Open sessions with flagged paths (default set)
IC_DEBUG_TRACE	Open sessions with flagged templates

– *Library level tracing, which includes application level tracing, is controlled by:*

IC_DEBUG_TRACEALLSTACK	All open sessions
IC_DEBUG_TRACEPATHSTACK	Open sessions with flagged paths
IC_DEBUG_TRACESTACK	Open sessions with flagged templates (default set)

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcIsDebug function

IC_DICT_FIELD

```
typedef struct aDictField {
    unsigned short StringId;
    unsigned short KeyFlags;
    unsigned short DataType;
    unsigned short BitOffset;
    unsigned short BitLength;
} IC_DICT_FIELD;
```

This data structure type defines the format of a single line in a data dictionary table. Each line of a data dictionary table describes a single field of a table record.

StringId	The numeric ID of the string table entry for the string ID of this field. An ID of zero indicates the end of the data dictionary table.
KeyFlags	The **IC_FIELD_FLAGS** flag that describes this field.
DataType	The **IC_FIELDTYPE** that describes this field. The data type does NOT specify the length of the data. Length is specified by *BitLength*.

BitOffset	The offset of this field, in bits, from the start of the structure. Using -1 causes the offset to automatically default to follow the previous field.
BitLength	The length of the field in bits.

Note: *The length of a table record is computed by the field with the greatest (**BitOffset** + **BitLength**), converting this to byte size and rounding up to the nearest byte.*

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_FIELDTYPE	data type
IC_FIELD_FLAGS	data type

IC_DICT_NODE

```
typedef struct aICDICTNode {
    unsigned TableCount;
    unsigned TableFirst;
    unsigned DictRcType;
    unsigned DefaultRcType;
    unsigned reserved1;
    unsigned reserved2;
    unsigned reserved3;
    unsigned reserved4;
    IC_DICT_TABLE Table [];
} IC_DICT_NODE;
```

This data structure type defines the format of the *dictionary_id* RCDATA entry in the library's resource file. All libraries that contain path, channel, or invisible data must define that data in data dictionary tables. This resource entry is needed to access these tables. See **IC_DICT_FIELD** for the expected format of a line in a data dictionary table. Refer to *Microsoft® Windows™ Software Development Kit Reference*, User-Defined Resource Statement section for more information.

TableCount	The number of data dictionary tables.

TableFirst	The base number of the data dictionary tables.
DictRcType	The RC data type of the data dictionary tables.
DefaultRcType	The RC data type of the default data tables. The numeric IDs of the default data tables must be the same as those of the corresponding data dictionary tables.
reserved1	Reserved, must be zero.
reserved2	Reserved, must be zero.
reserved3	Reserved, must be zero.
reserved4	Reserved, must be zero.
Table	See the **IC_DICT_TABLE** data structure. Note that there must be *TableCount* Table entries.

Notes:

- *The **TableCount** and **TableFirst** fields determine the data dictionary table numbers. Therefore, the tables must be numbered sequentially.*
- *Each data dictionary table must fully define the corresponding configuration data structure.*
- *Each data dictionary table must have a default data table that must have the same numeric ID as the corresponding data dictionary table. The default data table must contain the default data as a binary image of the corresponding data structure. No field-type processing is performed on this default, user-defined data resource. Therefore, it is imperative that the default data table be a binary image of the data dictionary table. Again, refer to Microsoft® Windows™ Software Development Kit Reference, User-Defined Resource Statement section and the INFOConnect Development Kit Basic Developer's Guide for more information.*

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_RC_NODE	data structure

IC_DICT_TABLE data structure

IC_DICT_TABLE

```
typedef struct {
    IC_TABLE_FLAGS Flags;
    UINT TableId;
    UINT Ver;
} IC_DICT_TABLE;
```

This data structure type defines a table entry in the **IC_DICT_NODE** structure. The **IC_DICT_NODE** structure must contain one entry for each data dictionary table defined by the library.

Flags	The **IC_TABLE_FLAGS** for the table.
TableId	The string resource string number of the table's string identifier, or title.
Ver	The table version. Changes to *Ver* (in combination with the record length) between library releases identifies that the configuration database table requires reorganization.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_TABLE_FLAGS	data type
IC_DICT_NODE	data structure

IC_DIRECTORYTYPES

ICS type relating to directory-type and database-type information.

IC_CODEDIR

This is the directory type for retrieving the name of the directory that contains INFOConnect code files. It is either the *CodeDir* entry from the [INFOConnect] section of WIN.INI or, if that does not exist, the directory from which the ICS Communications Manager DLL is executing. See the *ICS Installation and Configuration Guide* for more information.

IC_DATADIR

This is the directory type for retrieving the name of the directory that contains INFOConnect data files. For standalone and publish installations, this directory name is either the *DataDir* entry from the [INFOConnect] section of WIN.INI or, if that does not exist, the Windows Directory. For other types of installation, this directory name is retrieved from the **IcMgr.INI** file. See the *ICS Installation and Configuration Guide* for more information.

IC_MASTERDIR

This is the directory type for retrieving the name of the directory that contains INFOConnect master database. The master database contains the administrative configurations created during network installation of INFOConnect.

IC_MGR_INI

This is the type used for retrieving the fully qualified filename of the **IcMgr.INI** file that is currently in use. The **IcMgr.INI** file is used to record directory-type information and installation options for Local standalone and

LAN installations. See the *ICS Installation and Configuration Guide* for more information.

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

See also:

IcGetINFOConnectDir function

ic_get_infoconnect_dir function

IC_EMU_LEVEL

The Emergency Maintenance Upgrade level. This identifier appears after the **IC_MINOR_VERSION** in the version information string. It is an alphabetic identifier, A through Z (mapping 1 through 26) that distinguishes emergency upgrades that occur between minor software releases. For non-emergency release levels, this is zero and does not appear in the version string, **IC_VERSION_STRING**.

● WIN ● XVT ● DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

IC_ERROR_INFO

The ICS informative result, or error, type. An error in the range of this type indicates that the request succeeded and suggests that the application log this minor error (or information) for future reference, if desired. It need not be displayed to the user.

Note: *ICS DosLink applications cannot use **IcDefaultErrorProc** to display errors. As of the current INFOConnect release level, the application cannot use **IcGetString** to retrieve the error string. A future release will allow the use of **IcGetString** so that the application can display the error string itself.*

● WIN ● XVT ● DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

See also:

IcDefaultErrorProc	function
ic_default_error_proc	function
IC_ERROR_MASK	data type

IC_ERROR_MASK

The mask used to determine the range of the type of the error result. See the *IDK Developer's Guide* for an example of using this mask.

● WIN ● XVT ● DosLink

● Accessory ● Shell ● Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IC_CHECK_RESULT_SEVERE	macro

IC_ERROR_SEVERE

The ICS serious error type indicating that this particular request failed. An error in the range of this type must be displayed to the user.

Note: *ICS DosLink applications cannot use **IcDefaultErrorProc** to display errors. As of the current INFOConnect release level, the application cannot use **IcGetString** to retrieve the error string. A future release will allow the use of **IcGetString** so that the application can display the error string itself.*

● WIN ● XVT ● DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

See also:

IcDefaultErrorProc	function
ic_default_error_proc	function

IC_ERROR_MASK data type

IC_ERROR_TERMINATE

The ICS fatal error type indicating that this request failed. All other requests using the associated session handle will also fail. Therefore, an error in the range of this type suggests that the communication session be closed. If the default error procedure is called, the error message will be displayed to the user and the communication session will be closed automatically.

Note: *ICS DosLink applications cannot use **IcDefaultErrorProc** to display errors. As of the current INFOConnect release level, the application cannot use **IcGetString** to retrieve the error string. A future release will allow the use of **IcGetString** so that the application can display the error string itself.*

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IcDefaultErrorProc function

ic_default_error_proc function

IC_ERROR_MASK data type

Appendix C for a list of ICS errors

IC_ERROR_WARNING

The ICS warning result, or error, type. An error in the range of this type indicates that the request succeeded and suggests that the error should either be displayed to the user or logged by the application for future reference. User intervention (for example, re-configuring or upgrading the software) will remove the warning of this type. The default error procedure will display errors of this type.

Note: *ICS DosLink applications cannot use **IcDefaultErrorProc** to display errors. As of the current INFOConnect release level, the application cannot use **IcGetString** to retrieve the error string. A future release will allow the use of **IcGetString** so that the application can display the error string itself.*

- WIN
- XVT
- DosLink

- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IcDefaultErrorProc	function
ic_default_error_proc	function
IC_ERROR_MASK	data type

Appendix C for a list of ICS errors

IC_FIELD_FLAGS

Data dictionary field flags.

IC_FF_ALTERNATE_KEY

Data dictionary field flag that marks the field as being an alternate key.

IC_FF_LINK_KEY

Data dictionary field flag that marks the field as having the same field name and field type as the primary key in another table.

IC_FF_LINK_KEY_CHANNEL

This data dictionary field flag marks a field in a primary key structure as a link to channel information. This field must be at least **IC_MAXCHANNELIDSIZE** big. The structure should also include a field for the unique portion of the primary key. This allows the IcAdmin utility to locate and automatically copy the channel related information that exists in a library's invisible table.

For example, the primary key in a library's invisible table that contains channel-related information would be declared as follows:

```
ID_CHAN_HOSTDATA,IC_FF_PRIMARY_KEY,IC_FT_STRUCTURE,0,256
ID_CHANNEL,IC_FF_LINK_KEY_CHANNEL,IC_FT_STRING1,0,128
ID_HOSTDATA,IC_FF_NO_KEY,IC_FT_STRING1,128,128
/*define the remaining fields here*/
```

IC_FF_LINK_KEY_PATH

This data dictionary field flag marks a field in a primary key structure as a link to path information. This field must be at least **IC_MAXPATHIDSIZE** big. The structure should also include a field for the unique portion of the primary key. This allows the IcAdmin utility to locate and automatically copy the path related information that exists in a library's invisible table.

For example, the primary key in a library's invisible table that contains path-related information would be declared as follows:

```
ID_PATH_WSDATA,IC_FF_PRIMARY_KEY,IC_FT_STRUCTURE,0,256
ID_PATH,IC_FF_LINK_KEY_CHANNEL,IC_FT_STRING1,0,128
ID_WSDATA,IC_FF_NO_KEY,IC_FT_STRING1,128,128
/*define the remaining fields here*/
```

IC_FF_NO_KEY

Data dictionary field flag that is used for fields that are not keys.

IC_FF_PRIMARY_KEY

Data dictionary field flag that marks a field as a unique key. The **IC_TF_PATHTABLE** and **IC_TF_CHANNELTABLE** table keys are managed by the ICS Manager. They should not have primary key fields. **IC_TF_INVISIBLETABLE** tables are managed directly by the library. These tables must have one primary key field and it must be the first field of the table.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_DICT_FIELD data structure

IC_FIELDTYPE

These ICS flags are used in a library's data dictionary to mark the field type.

IC_FT_BINARY

Data dictionary field flag that marks the field as type binary.

IC_FT_BOOL

Data dictionary field flag that marks the field as type boolean.

IC_FT_CHAR

Data dictionary field flag that marks the field as a case sensitive, character type field that is not necessarily null-terminated. If the input data length is shorter, the field will be padded to length with null characters.

IC_FT_INT

Data dictionary field flag that marks the field as type integer.

IC_FT_STRING

Data dictionary field flag that marks the field type as a null-terminated string that is case sensitive.

IC_FT_STRINGI

Data dictionary field flag that marks the field type as a case insensitive, null-terminated string. Note that *stringi* does not refer to the string form of integers.

IC_FT_STRUCTURE

Data dictionary field flag that marks the fields following as part of the given structure. The fields included in the structure are those that fall within the structure's *BitOffset* and (*BitOffset* + *BitLength*).

IC_FT_UNSIGNED

Data dictionary field flag that marks the field as type unsigned integer.

IC_FST_COMPONENT

The subtype field flag that marks the field as type **IC_COMPONENT**.

IC_FST_COUNTER

The subtype field flag that marks the field as a counter.

IC_FST_GAUGE

The subtype field flag that marks the field as a counter for a gauge.

IC_FST_ICVER

The subtype field flag that marks the field as type **IC_VER**.

IC_FST_REVISIONNUM

The subtype field flag that marks the field as type **IC_REVISIONNUM**.

IC_FST_SERIALNUM

The subtype field flag that marks the field as type **IC_SERIALNUM**.

IC_FST_TIMETICK

The subtype field flag that marks the field as a counter for timer ticks.

IC_FTX_COMPONENT

The extended field type (type/subtype composite) tag used in the library RC file to mark the **IC_COMPONENT** field of an INFOConnect table.

IC_FTX_COUNTER

The extended field type (type/subtype composite) tag used in the library RC file to mark a field of an INFOConnect table as a counter.

IC_FTX_GAUGE

The extended field type (type/subtype composite) tag used in the library RC file to mark a field of an INFOConnect table as a counter for a gauge.

IC_FTX_ICVER

The extended field type (type/subtype composite) tag used in the library RC file to mark a field of an INFOConnect table as type **IC_VER**.

IC_FTX_REVISIONNUM

The extended field type (type/subtype composite) tag used in the library RC file to mark a field of an INFOConnect table as type **IC_REVISIONNUM**.

IC_FTX_SERIALNUM

The extended field type (type/subtype composite) tag used in the library RC file to mark a field of an INFOConnect table as type **IC_SERIALNUM**.

IC_FTX_TIMETICK

The extended field type (type/subtype composite) tag used in the library RC file to mark a field of an INFOConnect table as a counter for timer ticks.

● WIN ❍ XVT ❍ DosLink

❍ Accessory ❍ Shell ❍ Configurator

● AIL ● SL ● EIL

See also:

IC_DICT_FIELD data structure

IC_HEADER_SIZE

The size of the header in the INFOConnect RCDATA section of the resource file. This incudes the *version* field up to and including the *ConfigRcId* field. See the **IC_RC_NODE** data structure.

● WIN ❍ XVT ❍ DosLink

❍ Accessory ❍ Shell ❍ Configurator

● AIL ● SL ● EIL

See also:

IC_RC_NODE data structure

IC_HEADER_3_0

The size of the header in the INFOConnect RCDATA section of the resource file for the 3.0 Release. This incudes the *version* field up to and including the *SupplierNum* field. See the **IC_RC_NODE** data structure.

● WIN ❍ XVT ❍ DosLink

❍ Accessory ❍ Shell ❍ Configurator

● AIL ● SL ● EIL

See also:

IC_RC_NODE data structure

IC_KEY_SERIALNUM

This is the special, reserved key number for referencing the *SerialNum* key of table records. The *SerialNum* is the unique serial number for the record.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
● AIL	● SL	● EIL

IC_LCL_FLAGS

This type designates which kind of local action should be performed.

IC_LCL_CLOSESESSION

Flag used to cancel the pending receive and transmit requests just before a session is closed. This flag may be processed specially by the library by preparing for an impending session close. (The library must not attempt to use any transmit or receive buffers or send any messages for that session while waiting for it to close.) **IC_LCL_CLOSESESSION** is used in combination with **IC_LCL_RCVXMT**.

IC_LCL_RCV

This flag is used to cancel the pending request to receive data.

IC_LCL_RCVXMT

Flag used to cancel both the pending receive and pending transmit requests.

IC_LCL_XMT

Used to cancel the pending request to transmit data.

● WIN	● XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcLcl	function
ic_lcl	function

IcLibLcl	function
IcMgrLcl	function

IC_LIBRARY_FLAGS

These library flags are used in the **IC_RC_NODE** of a library's resource file.

IC_LF_ERRORHELP

Error flag that is to be included in the **IC_RC_NODE** resource type for libraries that have context sensitive help topics for every library-defined error value. The help topic number for the text of the error must correspond to the **IC_RESULT_VALUE** of the error. This is used by INFOConnect Connectivity Services to provide trouble-shooting help from the ICS default error dialog.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_RC_NODE	data structure

IC_MAXACCESSORYIDLEN

The maximum length of an accessory identifier (accessory ID), not including the terminating null character.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MAXACCESSORYIDSIZE

The maximum size of an accessory identifier (accessory ID), including the terminating null character.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

IC_MAXCHANNELIDLEN

The maximum length of a channel identifier (channel ID), not including the terminating null character.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

IC_MAXCHANNELIDSIZE

The maximum size of a channel identifier (channel ID), including the terminating null character.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

IC_MAXCONNECTEDPATHIDLEN

The maximum length of a dynamically connected path identification (path ID) string, not including the terminating null character.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

IC_MAXDESCRIPTIONSIZE

The maximum size of a description string, including the terminating null character.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MAXERRORINSERT

The maximum size of a string inserted into an error string, including the terminating null character.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcSetSessionError	function
IcLibGetString	function

IC_MAXERRORSTRING

The maximum length of an error string, not including the terminating null character. Every library-specific error must have an associated string for displaying the error to the user. If the library uses the IcSetSessionError utility, the string may contain up to three string inserts (%s formatting ONLY).

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcSetSessionError	function
IcLibGetString	function

IC_MAXFILENAMESIZE

The maximum size of a fully qualified filename, including the terminating null character.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MAXIDSIZE

The maximum size of a library or accessory identifier (or key), including the terminating null character.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MAXLIBRARYIDLEN

The maximum length of a library identifier (library ID), not including the terminating null character.

● WIN	● XVT	❍ DosLink
❍ Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MAXLIBRARYIDSIZE

The maximum size of a library identifier (library ID), including the terminating null character.

● WIN	● XVT	❍ DosLink
❍ Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MAXPACKAGEIDSIZE

The maximum size of a package ID, including the terminating null character.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MAXPATHIDLEN

The maximum length of a path identification (path ID) string, not including the terminating null character.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MAXPATHIDSIZE

The maximum size of a path identifier (path ID), including the terminating null character.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MAXPRINTSTRING

The maximum size of a printable string. That is, the size of print buffer parameter of **IcLibPrintConfig**, including the terminating null character.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcLibPrintConfig function

IC_MAXSESSIONIDLEN

The maximum length of a communication session identification (session ID) string, not including the terminating null character.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MAXSESSIONIDSIZE

The maximum size of a communication session identification (session ID) string, including the terminating null character.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MAXSESSIONIDSUFFIX

The maximum number of bytes that are returned from **IcLibIdentifySession** that are used in creating the session ID string.

● WIN ❍ XVT ❍ DosLink

❍ Accessory ❍ Shell ❍ Configurator

● AIL ● SL ● EIL

IC_MAXSTRINGLENGTH

The maximum length of a string, not including the terminating null character.

● WIN ● XVT ● DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

IC_MAXTEMPLATEIDLEN

The maximum length of a template identifier (template ID), not including the terminating null character.

● WIN ● XVT ● DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

IC_MAXTEMPLATEIDSIZE

The maximum size of a template identifier (template ID), including the terminating null character.

● WIN ● XVT ● DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

IC_MAXVENDORNAMELEN

The maximum length of a vendor name, not including the terminating null character.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MAXVENDORNAMESIZE

The maximum size of a vendor name, including the terminating null character.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MAXWSIDSIZE

The maximum size of a workstation ID, including the terminating null character.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_MEMHND

INFOConnect Connectivity Services global buffer handle type for non-shared, intra-application memory.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

IC_MINOR_VERSION

The minor portion of the version. This number appears after the '.' in the version string, **IC_VERSION_STRING**.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

IC_MSG_CONFIG

These are the indices for the Configuration Accessory API messages that are generated when a configuration data table has be altered. These messages must have been previously registered by the accessory before they can be sent to the accessory.

The messages are sent to all configurators that have the altered configuration object open.

IC_ADD_CONFIG

The index for the Configuration Accessory API message that is generated when a configuration data record has been added to a configuration table.

If the initial attempt to post this message fails, posting the message will be retried after some time interval until either it succeeds, or until a message is available for a configuration record with another serial number. In this case, all configuration messages will queue up until an **IC_REFRESH_CONFIG** is successfully delivered.

If an **IC_ADD_CONFIG** message has not yet been delivered and an **IC_DELETE_CONFIG** message for the same configuration record (that is, a configuration record with the same serial number) becomes available, no message is delivered.

If an **IC_ADD_CONFIG** message has not yet been delivered and an **IC_UPDATE_CONFIG** message for the same configuration record becomes available, only the **IC_ADD_CONFIG** message is delivered.

This message is message index 1.

IC_DELETE_CONFIG

This is the index for the Configuration Accessory API message that is generated when a configuration data record has been deleted from a configuration table.

If the initial attempt to post this message fails, posting the message will be retried after some time interval until either it succeeds, or until a message is available for a configuration record with another serial number. In this case, all configuration messages will queue up until an **IC_REFRESH_CONFIG** is successfully delivered.

It is message index 3.

IC_REFRESH_CONFIG

This message is posted initially. It is also posted after some time interval when an attempt to post an **IC_ADD_CONFIG**, **IC_UPDATE_CONFIG**, or **IC_DELETE_CONFIG** message for multiple configuration records (that is, configuration messages with different serial numbers) fails.

This message is message index 0.

IC_UPDATE_CONFIG

This is the index for the Configuration Accessory API message that is generated when a configuration data record has been updated in a configuration table.

If the initial attempt to post this message fails, posting the message will be retried after some time interval until either it succeeds, or until a message is available for a configuration record with another serial number. In this case, all configuration messages will queue up until an **IC_REFRESH_CONFIG** is successfully delivered.

If an **IC_UPDATE_CONFIG** message has not yet been delivered and an **IC_DELETE_CONFIG** message for the same configuration record (that is, a configuration record with the same serial number) becomes available, only the **IC_DELETE_CONFIG** message is delivered.

It is message index 2.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcNotifyConfig function

IC_NEXTEVENT_FLAGS

These flags are used by ICS DosLink applications that use a callback function (in contrast to polling using **IcGetNextEvent**).

IC_NEXTEVENT_CHECK

Used to check the message queue for messages.

IC_NEXTEVENT_POP

Used to request that the current message be popped from the message queue.

IC_NEXTEVENT_READY

Flag used to inform ICS that the callback routine is ready to receive the next message. ICS DosLink applications must follow each call to all ICS APIs with a call to **IcNextEvent** with this flag.

IC_NEXTEVENT_TIMER

Used to set a timer value.

● WIN ❍ XVT ● DosLink

● Accessory ❍ Shell ❍ Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IcNextEvent	function
IcRegisterCallback	function
IC_INFO_QEVENT	informative return value

IC_OK

An **IC_RESULT** indicating no error.

● WIN ● XVT ● DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

IC_OPEN_OPTIONS

ICS option flags that indicate the open options for **IcLibOpenChannel** and **IcLibOpenSession**.

IC_OPEN_VERIFY

If (*Options* & **IC_OPEN_VERIFY**) is true on the **IcLibOpen...** function call, the library should return **IC_VERIFY_OK** if an attempt to open this session would succeed. It should return an error if an attempt to open this session would fail. This information is used to prune the list of path IDs available to the user from the select path dialog.

● WIN ● XVT ● DosLink

❍ Accessory ❍ Shell ❍ Configurator

● AIL ● SL ● EIL

See also:

IcLibOpenSession function

IC_PACKAGE

Package identification that defines an ID as a package ID.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

IC_PATH_FLAGS

ICS flags that indicate the status of a path.

IC_PF_HIDDEN

ICS flag indicating that a path is hidden. That is, the path will not appear as a choice in the ICS Select Path dialog box.

IC_PF_SYSTEM

ICS flag indicating a library ID.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

IC_PRINT_SUMMARY

A flag that requests summary format of the library's configuration data.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcLibPrintConfig function

IC_RC_NODE

```
typedef struct aICRCNode {
    unsigned version;
    unsigned revision;
    IC_COMPONENT_TYPE type;
    unsigned header_size;
    unsigned dictionary_id;
    unsigned id;
    unsigned description;
    unsigned vendor;
    unsigned module_id;
    IC_SESSION_FLAGS session_flags;
    IC_LIBRARY_FLAGS library_flags;
    unsigned ConfigRcId;
    /* The following fields were added in the 2.02 Release  */
    /* Use the IC_HEADER_3_0 for this resource header size */
    unsigned max_version;
    unsigned max_revision;
    unsigned sybtype;
    unsigned GenericDictMap;
    IC_COMPONENT GenericNum
    IC_COMPONENT SupplierNum
} IC_RC_NODE;
```

This data structure type defines the format of the INFOConnect RCDATA resource. INFOConnect is defined in the **icdef.h** include file. This resource is required for all INFOConnect Connectivity Services libraries and accessories. Refer to *Microsoft® Windows™ Software Development Kit Reference*, User-Defined Resource Statement section for more information.

version	The oldest level of Connectivity Services that this component supports. See **IC_VERSION_....**
revision	The oldest level of Connectivity Services that this component supports. See **IC_REVISION_....**

type	The **IC_COMPONENT_TYPE** of the file.
header_size	The size of the header. See **IC_HEADER_....**
dictionary_id	The numeric ID of the dictionary resource RCDATA, formatted as an **IC_DICT_NODE**, or zero if no data dictionary tables exist.
id	The string resource string number of the file's ID. See Appendix A for a list of ICS Standard IDs. This ID is used as the default when the library or accessory is installed.
description	The string resource string number of the file's description. This description is used as the default when the library or accessory is installed.
vendor	The string resource string number of the vendor identification.
module_id	The string resource string number of the file's module ID. This should be the name from the .DEF file and may be the same as *id*.
session_flags	The pertinent **IC_SESSION_FLAGS** or zero if not applicable.
library_flags	The pertinent **IC_LIBRARY_FLAGS** or zero if not applicable.
ConfigRcId	The numeric ID of the template configuration resource RCDATA (**IC_Template...**), or zero if one doesn't exist.
max_version	The highest level of Connectivity Services that this component supports. See **IC_VERSION_....**
max_revision	The highest level of Connectivity Services that this component supports. See **IC_REVISION_....**
subtype	Reserved. Must be zero.
GenericDictMap	If this is a trace hook library, this is the ordinal value for the **IcLibTrace** entry point. Otherwise, this must be zero.

GenericNum	The generic component value. Note that this LONG value must appear in the RC file as two values: LO, HI.
SupplierNum	The supplier component value. Note that this LONG value must appear in the RC file as two values: LO, HI.

Note: *During installation, the library/accessory ID and description will be extracted from the string table and used as defaults when adding the library/accessory to the ICS database. The **CONFIGRCID** RCDATA is only valid for accessories and libraries. It will be parsed and the resulting templates added to the ICS database. Refer to Microsoft® Windows™ Software Development Kit Reference, User-Defined Resource Statement section for more information. See **IC_TemplateInit** for an example of the format of the **CONFIGRCID** RCDATA resource.*

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

See also:

IC_DICT_NODE	data type
IC_HEADER_SIZE	data type
IC_ACCESSORY	data type
IC_SERVICE	data type
IC_INTERFACE	data type
IC_SESSION_FLAGS	data type
IC_LIBRARY_FLAGS	data type
IC_Template...	data types

IC_RECORD_INFO

typedef struct {
IC_SERIALNUM *SerialNum*;
IC_REVISIONNUM *RevisionNum*;
} IC_RECORD_INFO;

This data structure type defines the informational fields for the records of the active path (session) and active channel tables.

SerialNum	The unique serial number for the record.
RevisionNum	The count of the number of times this record has been modified.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

IC_RECORD_SIZE

The size of an **IC_DICT_FIELD** data type in bytes.

● WIN	● XVT	❍ DosLink
❍ Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_DICT_FIELD data type

IC_RESULT

INFOConnect Connectivity Services type used to communicate status and error information. It is the type returned by most INFOConnect functions and by most ICS events. It consists of the following three parts:

IC_RESULT_CONTEXT

The context that defines the result.

IC_RESULT_TYPE

The result type.

IC_RESULT_VALUE

The result value.

Note: *See Appendix B for a list of ICS statuses. See Appendix C for a list of ICS errors.*

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_ERROR_MASK	data type
IC_ERROR_INFO	data type
IC_ERROR_WARNING	data type
IC_ERROR_SEVERE	data type
IC_ERROR_TERMINATE	data type
IC_RESULT_SUBTYPE	data type
IC_RESULT_SUBVALUE	data type

IC_RESULT_CONTEXT_CFG

The INFOConnect Configuration Accessory result context.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

IC_RESULT_CONTEXT_ICDB

The result context of the INFOConnect Database DLL.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

IC_RESULT_CONTEXT_ICUTIL

The result context of the INFOConnect Utilities DLL.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

IC_RESULT_CONTEXT_INVALID

The INFOConnect invalid result context.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

IC_RESULT_CONTEXT_STD

The INFOConnect standard result context for the ICS Manager.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

IC_RESULT_SUBTYPE

INFOConnect Connectivity Services type that interprets part of **IC_RESULT_VALUE** as a subtype field. This is used by the **IC_STATUS_UTS** status message. See Appendix B for more information on this status message.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IC_RESULT_VALUE	data type
IC_RESULT_SUBVALUE	data type

IC_RESULT_SUBVALUE

INFOConnect Connectivity Services type that interprets part of **IC_RESULT_VALUE** as a subvalue field. This is especially useful for the **IC_STATUS_UTS** status message. See Appendix B for more information on this status message.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IC_RESULT_VALUE	data type
IC_RESULT_SUBTYPE	data type

IC_REVISION_...

Used to delimit the range of release revisions of the ICS API supported by this component.

IC_REVISION_1_0

ICS Revision 1.0.

IC_REVISION_1_2

ICS Revision 1.2.

IC_REVISION_2_0

ICS Revision 2.0.

IC_REVISION_2_02

ICS Revision 2.02.

IC_REVISION_3_0

ICS Revision 3.0.

Etc.

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator
● AIL ● SL ● EIL

See also:

IC_RC_NODE data structure

IC_REVISIONNUM

ICS data type for the count of the number of times a configuration record has been modified.

● WIN ● XVT ❍ DosLink

❍ Accessory ❍ Shell ● Configurator
❍ AIL ❍ SL ❍ EIL

See also:

IC_RECORD_INFO data structure

IC_SERIALNUM

ICS data type for the unique serial number of a configuration record.

● WIN ● XVT ❍ DosLink

❍ Accessory ❍ Shell ● Configurator
❍ AIL ❍ SL ❍ EIL

See also:

IC_RECORD_INFO data structure

IC_SESSION_FLAGS

These session flags are used in the **IC_RC_NODE** of a library's resource file.

IC_SF_SESSIONSTATUS

This flag is to be included in the **IC_RC_NODE** resource type for libraries that can respond to the **IC_CONNECT_STATUS** status type.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_RC_NODE	data structure
IC_STATUS_CONNECT	status type

IC_SINFO

```
typedef struct aSINFO {
    long max_size;
    unsigned transparent:1;
    unsigned block_mode:1;
    unsigned reliable:1;
    unsigned focus_notify:1;
    unsigned server:1
    unsigned untrans8:1
    unsigned connect:1
    unsigned reconnect:1
    unsigned autoreconnect:1
    unsigned :1
    unsigned :1
    unsigned :1
    unsigned :1
    unsigned :1
    unsigned :1
    unsigned :1
    short padword;
    long padlong[6];
} IC_SINFO;
```

This data structure type defines a record of pertinent information about a communication session.

max_size	The maximum size of a transmission block or a received block of data that can be transported across the connection.
transparent	Signifies whether or not all binary data streams can be safely sent across this connection. FALSE implies that, at the very least, only the alpha-numerics, period, comma, and ESC can be safely sent.
block_mode	Signifies whether or not the data is sent and received as messages or just as a stream of characters. For some libraries, the **IC_STATUS_BLOCKING** status can alter the state of this field.

reliable	Signifies whether or not undelivered messages are signaled to the application (usually through communication session failure).
focus_notify	Signifies whether or not the application should call the Set Status procedure with **IC_REACTIVATE_ON** or **IC_REACTIVATE_OFF** each time it gains or loses focus.
server	Signifies whether or not this is a server.
untrans8	Reserved for future use.
connect	Signifies whether or not the library generates **IC_CONNECT_OPEN** and **IC_CONNECT_CLOSE** statuses.
reconnect	Signifies whether or not the library honors **IC_CONNECT_OPEN**, **IC_CONNECT_CLOSE**, and **IC_CONNECT_EOF** statuses from the application.
autoreconnect	Signifies whether or not the library will assume an **IC_CONNECT_OPEN** status whenever it generates an **IC_CONNECT_CLOSE** status.
unsigned	Reserved for future use.
padword	Reserved for future use.
padlong	Reserved for future use.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IcGetSessionInfo	function
ic_get_session_info	function
IcSetStatus	function
ic_set_status	function
IcLibGetSessionInfo	function
IC_STATUS_BLOCKING	data type
IC_STATUS_REACTIVATE	data type

IC_STATUSBUF

```
typedef struct aSTATUSBUF {
    IC_RESULT icstatus;
    IC_RESULT icerror;
    long reserved;
    unsigned uBufSize;
    unsigned uDataSize;
} IC_STATUSBUF;
```

This data structure type defines a header for a data buffer that is used with the extended status **IC_STATUS_BUFFER**.

icstatus	The actual status message associated with the data buffer of information.
icerror	The **IC_RESULT** of the status request.
reserved	Reserved for future use.
uBufSize	The actual size, in bytes, of the data buffer.
uDataSize	The size, in bytes, of the valid data.

Notes:

- *The data buffer must immediately follow the **IC_STATUSBUF** header. It should not contain pointers, but may contain offsets within the structure.*
- *The **IC_STATUS_BUFFER** status message request can be synchronous or asynchronous. For a synchronous message, the library receives and processes the **IC_STATUS_BUFFER** status message, setting the **icerror** field to either **IC_OK** or an error. The **icerror** result is returned, and appears to the application as an **IC_STATUSRESULT** message. An **IC_OK** result implies that the data buffer has been accessed and **uDataSize** is the size of the valid information.*

  *For an asynchronous message, the library receives the **IC_STATUS_BUFFER** status message, sets the **icerror** field to **IC_INCOMPLETE** and returns **IC_INCOMPLETE**. The application receives the **IC_StatusResult** message with the **IC_INCOMPLTE** result. When the library finally supplies the **uDataSize** and accesses the data buffer, the **icerror** field should be set to **IC_COMPLETE** or to an error and the **IC_STATUS_BUFFER** status message should be sent back to the application.*

  *In both cases, the application should be responsible for freeing the buffer. The buffer should not be freed, however, until after the application receives an **IC_StatusResult** response of **IC_OK** or an error. If the result is **IC_INCOMPLETE**, this is the asynchronous case and the buffer should not be freed until the status is returned via the **IC_STATUS_BUFFER** status message.*

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_STATUS_BUFFER status type

IC_STATUS_BLOCKING

This is an application-initiated status type that is used to control the blocking mode of those service libraries that support it.

IC_BLOCKING_ON

Turn blocking mode ON.

IC_BLOCKING_OFF

Turn blocking mode OFF.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IcSetStatus	function
ic_set_status	function
IcLibSetResult	function
IC_SINFO	data structure

IC_STATUS_BUFFER

IC_STATUS_BUFFER is an extended status that allows a buffer of information to be exchanged between ICS components. It is to be used whenever the status information to be exchanged exceeds the limits of the **IC_RESULT** structure. In this case, the **IC_RESULT_VALUE** portion of the status message is an INFOConnect buffer handle of type **HIC_STATUSBUF**.

The **IC_STATUS_BUFFER** status message request can be synchronous or asynchronous. For a synchronous message, the library receives and processes the **IC_STATUS_BUFFER** status message, setting the *icerror* field to either **IC_OK** or an error. The *icerror* result is returned to the application as an **IC_STATUSRESULT** message. An **IC_OK** result implies that *data* has been accessed and *uDataSize* is the size of the valid information.

For an asynchronous message, the library receives the **IC_STATUS_BUFFER** status message, sets the *icerror* field to **IC_INCOMPLETE** and returns **IC_INCOMPLETE**. The application receives the **IC_STATUSRESULT** message with the **IC_INCOMPLTE** result. When the library finally supplies the *uDataSize* and *data*, the *icerror* field should be set to **IC_COMPLETE** or to an error and the **IC_STATUS_BUFFER** status message should be sent back to the application using **IcMgrSendEvent**.

In both cases, the application should be responsible for freeing the buffer. The buffer should not be freed, however, until after the application receives an **IC_STATUSRESULT** response of **IC_OK** or an error. If the result is **IC_INCOMPLETE**, this is the asynchronous case and the buffer should not be freed until the status is returned via the **IC_STATUS_BUFFER** status message.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IcSetStatus	function
ic_set_status	function
IcLibSetResult	function

IC_STATUS_COMMMGR

This status type originates from the ICS Manager itself and conveys initialization or termination information. If the ICS Manager terminates, the ICS accessory must call the ICS initialization routine before calling any other ICS procedures.

IC_COMMMGR_CANCELEXIT

Status sent to all ICS communications sessions that previously received an **IC_COMMMGR_QUERYEXIT** status when one of the applications calls **IcExitOk**(FALSE).

IC_COMMMGR_EXIT

Status sent to all ICS communications sessions if **IcExitOk**(FALSE) is never called. The ICS Manager will then exit.

IC_COMMMGR_INITIALIZED

Status sent to all Windows applications when the ICS Manager finishes initializing. ICS accessories may now call the ICS initialization routine, if necessary, before establishing INFOConnect sessions.

IC_COMMMGR_QUERYEXIT

Status sent to all ICS communications sessions when the user closes the INFOConnect Shell. If the application does not wish to close the session, it should cancel the exit by calling **IcExitOk**(FALSE).

IC_COMMMGR_QUERYSHUTDOWN

Status sent to all ICS communications sessions when Windows is exiting. If the application does not wish to close the session, it should cancel the exit by calling **IcExitOk**(FALSE).

IC_COMMMGR_REINSTALL

Status posted to all windows by *install.exe* when the ICS Manager is being reinstalled.

IC_COMMMGR_TERMINATED

Status sent to all Windows applications when the ICS Manager finishes terminating. All ICS accessories should either close or call the ICS initialization routine before establishing another ICS session.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
  - AIL
  - SL
  - EIL

IC_STATUS_CONNECT

When initiated from an external interface library, this status type signifies the state of the connection. When initiated from an application, a networking external interface library is instructed to alter the state of the connection, if possible. The connection states are defined by one of the following statuses.

IC_CONNECT_ACTIVITY

The physical connection (not necessarily this communication session) is functioning as expected.

IC_CONNECT_CLOSE

The logical connection is NOT available for bi-directional communication under the current configuration.

IC_CONNECT_EOF

The logical communication session is physically closed (for use under TCP/IP).

IC_CONNECT_NOACTIVITY

The physical connection is NOT functioning as expected.

IC_CONNECT_OPEN

The logical connection is available for bi-directional communication under the current configuration.

IC_CONNECT_STATUS

Status originating from the application requesting that the EIL display status information to the user. This is the status sent when the user selects the Status button from the INFOConnect Shell.

IC_CONNECT_BROKEN

Status that indicates that the other half of two connected sessions has closed.

IC_CONNECT_JOINED

Status that indicates that two sessions have been connected. For example, this is the status received when two DosLink sessions are connected.

IC_CONNECT_SERVER

Status that originates from the server application (such as the DosLink Server accessory) that indicates readiness to the client.

Note: *Library developers should take care not to generate an over abundance of status messages to prevent thrashing. This is especially important on entry level workstations that may have insufficient memory to execute the current application mix.*

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IcSetStatus	function
ic_set_status	function
IcLibSetResult	function
IcSetServerInfo	function

IC_STATUS_CONTROL

When initiated from an external interface library, this status type signifies that a request is being made to the application. When initiated from an application, it

signifies a request to another connected application. The requests are defined by one of the following statuses.

IC_CONTROL_ACTIVATE

This status requests that the application's window become active for user input. It is usually initiated from the ICS Shell through the GoTo button.

IC_CONTROL_RCVREADY

This status requests that the application perform a receive request if it does not already have a request outstanding.

IC_CONTROL_RCVAVAIL

This is a notification that a message is available but not deliverable due to the state of the application.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IcSetStatus	function
ic_set_status	function
IcLibSetResult	function
IcOpenAccessory	function
ic_open_accessory	function

IC_STATUS_DATAFLAGS

This application-initiated status controls the state of messages. It is used with the **IcSetStatus**/**IcXmt** functions and the **IC_RCVDONE** event to mark expedited and/or multipart messages. The initial state of messages is assumed to be **IC_DATAFLAGS_NONE**.

IC_DATAFLAGS(*v*)

This is a macro that creates an **IC_DATAFLAGS** status with status value *v*.

IC_DATAFLAGS_EXPEDITED

This status indicates that the following transmitted message is urgent. It is to be delivered ahead of any other messages in the message queue.

IC_DATAFLAGS_MORE

This status indicates that the following transmitted messages are part of a multipart message.

IC_DATAFLAGS_NONE

This status indicates that none of the data flags are set. It is used to indicate the last part of a multipart message. Note that this status is sent before the final part of the message is transmitted.

IC_DATAFLAGS_RESERVED1

Reserved status.

IC_DATAFLAGS_RESERVED2

Reserved status.

Notes:

– *The following is an example of sending two expedited messages:*

```
IcSetStatus(hSession, IC_DATAFLAGS(IC_DATAFLAGS_EXPEDITED));
IcXmt();      /* send an expedited message */
IcXmt();      /* send another expedited message */
IcSetStatus(hSession, IC_DATAFLAGS(IC_DATAFLAGS_NONE));    /* restore default state */
-
```

– *The following is an example of sending multipart messages:*

```
IcSetStatus(hSession, IC_DATAFLAGS(IC_DATAFLAGS_MORE));
IcXmt();      /* send first part of multipart message */
...   /* send additional parts of message */
IcXmt();      /* ... */
IcSetStatus(hSession, IC_DATAFLAGS(IC_DATAFLAGS_NONE));   /* restore default state */
IcXmt();      /* send last part of multipart message */
...
```

– *The following is an example of sending multipart, expedited messages:*

```
IcSetStatus(hSession, IC_DATAFLAGS(IC_DATAFLAGS_EXPEDITED|IC_DATAFLAGS_MORE));
IcXmt();      /* send first part of expedited message */
...
IcXmt();      /* send middle of expedited message */
IcSetStatus(hSession, IC_DATAFLAGS(IC_DATAFLAGS_EXPEDITED));
IcXmt();      /* send last part of expedited message */
...   /* send more expedited messages */
IcSetStatus(hSession, IC_DATAFLAGS(IC_DATAFLAGS_NONE));   /* restore default state */
IcXmt();      /* send normal message */
...
```

– *The following shows a portion of the **IC_RCVDONE** case:*

```
IC_RESULT_VALUE dataflags;

case IC_Status:
    if(IC_CHECK_DATAFLAGS(cstatus))
        dataflags = IC_GET_RESULT_VALUE(cstatus);
case IC_RcvDone:
    if(dataflags & IC_DATAFLAGS_EXPEDITED){
        ...   /* handle expedited case */
    }
    if(dataflags & IC_DATAFLAGS_MORE){
        ...   /* handle multipart case */
    }
```

● WIN	● XVT	● DosLink
● Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_CHECK_DATAFLAGS macro

IC_STATUS_FKEY

This application-initiated status type is used to send function key messages to the underlying layers of the ICS communication session. The function keys are defined by one of the following statuses.

IC_FKEY_BREAK

The break key.

IC_FKEY_1

Function key 1.

IC_FKEY_2

Function key 2.

...

...

IC_FKEY_23

Function key 23.

IC_FKEY_24

Function key 24.

IC_FKEY_MSGWAIT

Uniscope-specific break key.

IC_FKEY_SYSMODE

Uniscope-specific OS3 system mode key.

IC_FKEY_WSMODE

Uniscope-specific OS3 workstation mode key.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

IC_STATUS_LINESTATE

This external interface library-initiated status type signifies the state of the underlying layer of the ICS communication session. The line states are defined by one of the following statuses.

IC_LINESTATE_LCL

The ICS communication session is neither transmitting nor receiving.

IC_LINESTATE_RCV

The ICS communication session is in receive mode.

IC_LINESTATE_XMT

The ICS communication session is in transmit mode.

Note: *For performance reasons, the DosLink Server filters out the* ***IC_STATUS_LINESTATE*** *status types.*

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IC_STATUS	message
E_IC_STATUS	event
IcSetStatus	function
ic_set_status	function
IcLibSetResult	function

IC_STATUS_REACTIVATE

This application-initiated status type is used to notify the underlying communication session layers that the application window has received or lost focus.

IC_REACTIVATE_ON

Application has received focus and *sinfo.focus_notify* is TRUE.

IC_REACTIVATE_OFF

Application has lost focus and *sinfo.focus_notify* is TRUE.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IcGetSessionInfo	function
ic_get_session_info	function
IcSetStatus	function
ic_set_status	function
IcLibSetResult	function
IcLibGetSessionInfo	function
IC_SINFO	data type

IC_STATUS_TRANS

This application-initiated status type is used to notify the backplane of the beginning and end of transactions. The initial state of all applications is assumed to be **IC_TRANSACTION_OFF**.

IC_TRANSACTION_ON

Indicates that **IC_TRANSACTION_BEGIN** and **IC_TRANSACTION_END** status will be sent.

IC_TRANSACTION_OFF

Indicates that **IC_TRANSACTION_BEGIN** and **IC_TRANSACTION_END** status will not be sent.

IC_TRANSACTION_BEGIN

Sent at the beginning of a transaction.

IC_TRANSACTION_END

Sent at the end of a transaction.

● WIN	● XVT	❍ DosLink
● Accessory	❍ Shell	❍ Configurator
❍ AIL	❍ SL	❍ EIL

See also:

IcSetStatus	function
ic_set_status	function
IcLibSetResult	function

IC_STATUS_UTS

This status type may be used to send and receive special messages to/from the UTS external interface libraries. See Appendix B for more information on the special values that this status message supports.

- WIN
- XVT
- DosLink
- Accessory
- Shell
- Configurator
- AIL
- SL
- EIL

See also:

IcGetSessionInfo	function
ic_get_session_info	function
IcSetStatus	function
ic_set_status	function
IC_STATUS	message
E_IC_STATUS	event
IC_RESULT_SUBTYPE	data type
IC_RESULT_SUBVALUE	data type
Appendix B	

IC_TABLE_FLAGS

These are flags used in a library's data dictionary that mark different kinds of configuration tables.

IC_TF_ACTIVECHANNEL

This flag marks a table as containing channel data for those channels that are involved in active sessions. **IC_TF_ACTIVECHANNEL** tables must be managed by the library.

By default, the first field of this table is the **ICSTD_ACTIVECHANNEL** channel ID field.

IC_TF_ACTIVECUSTOM

Flag that marks a table as containing dynamic, custom information. Data in **IC_TF_ACTIVECUSTOM** tables are managed by the library.

IC_TF_ACTIVEPATH

Data dictionary table flag that marks a table as containing path-type information for active paths. Also called a session table. **IC_TF_ACTIVEPATH** tables must be managed by the library. The ICS Manager gets access to this information through **IcLibAccessConfig**.

By default, the first two fields of this table are the **ICSTD_ACTIVEPATH** path ID field and **ICSTD_ACTIVEPATHCHANNEL** channel ID field.

IC_TF_CHANNELTABLE

Flag that marks a table as channel data. Data in **IC_TF_CHANNELTABLE**s is to be made visible to the user through the global configuration dialog. The corresponding database table, along with the table's primary key, is managed by the ICS Manager. There can be zero or one channel tables. If a channel table is defined, a path table must also be defined containing at least one field. The field, however, may be a filler field.

By default, the first field of this table is the **ICSTD_CHANNEL** channel ID field.

IC_TF_CUSTOMTABLE

Data dictionary table flag that marks a table as being a visible table other than channel or path. This table is managed by the library itself through a dialog box which the user can access through the ICS Shell or Configurator. There can be any number of custom tables.

IC_TF_DYNAMICTABLE

This flag marks a table as containing dynamic data. **IC_TF_DYNAMICTABLE** tables are invisible and must be managed by the library. The ICS Manager gets access to this information through **IcLibAccessConfig**.

IC_TF_INVISIBLETABLE

Data dictionary table flag that marks a table as being managed by the library itself. Data in **IC_TF_INVISIBLETABLE**s must be managed by the library. There can be any number of invisible tables.

IC_TF_PATHTABLE

This flag marks a table as path-specific data. Data n **IC_TF_PATHTABLE**s is to be made visible to the user through the path configuration dialog. The corresponding database table, along with the table's primary key, is managed by the ICS Manager. There can be zero or one path tables. However, if a

channel table is defined, a path table must also be defined. As of the current INFOConnect release this table must have at least one field. The field, however, may be a filler field.

By default, the first two fields of this table are the **ICSTD_PATH** path ID field and **ICSTD_PATHCHANNEL** channel ID field.

IC_TF_STACKTABLE

Data dictionary table flag that marks a table as being a stack table.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_DICT_FIELD	data structure
IcLibAccessConfig	function
IcLibUpdateConfig	function

IC_TABLETYPE

ICS type of configuration tables.

IC_ACTIVECHANNEL

Denotes the active channel table.

IC_ACTIVECUSTOM

Denotes the active custom table.

IC_ACTIVEPATH

Denotes the active path table (also referred to as the session table).

IC_CHANNEL

Denotes the channel table.

IC_CUSTOMTABLE

Denotes the custom table.

IC_PATH

Denotes the path table.

IC_TEMPLATE

Denotes the template table.

IC_UNKNOWN

Denotes an unknown table.

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_TABLE_FLAGS data type

IC_TemplateBegin

The ICS template resource flag for starting the definition of a template. This must be followed by the template identification (template ID).

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_TemplateInit data type

IC_TemplateChannel

The ICS template resource flag for identifying the channel ID in a template definition. This is an optional flag and, if it exists, must be followed by the channel identification.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_TemplateInit	data type

IC_TemplateConfig

The ICS template resource flag for identifying the configuration library ID of the configuration library associated with this template. This is an optional flag and, if it exists, must be followed by the library ID of the library that controls configuration for this template. If this flag exists, **IC_TemplateConfigTable** must also exist.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_TemplateInit	data type
IC_TemplateConfigTable	data type

IC_TemplateConfigTable

The ICS template resource flag for identifying the table number of the configuration table for the configuration library associated with this template. This is an optional flag and, if it exists, must be followed by the table number of the configuration table as defined in the library's resource file. If this flag exists, **IC_TemplateConfig** must also exist.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_TemplateInit data type

IC_TemplateConfig data type

IC_TemplateDescription

The ICS template resource flag for identifying the template description in a template definition. This flag must be followed by the description.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_TemplateInit data type

IC_TemplateEnd

The ICS template resource flag for ending the definition of a template.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_TemplateInit data type

IC_TemplateFlags

The ICS template resource flag for identifying the template flags of a template. The template flags, if it exists, can be "H" for hidden (that is, **IC_PF_HIDDEN**), "S" for system (that is, **IC_PF_SYSTEM**), or "HS" for hidden and system (that is, **IC_PF_HIDDEN** & **IC_PF_SYSTEM**).

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IC_TemplateInit data type

IC_TemplateInit

The ICS template resource flag for starting a series of one or more template descriptions.

Notes:

– *The following is an example of the format of the* ***CONFIGRCID*** *RCDATA resource.*

```
CONFIGRCID RCDATA
BEGIN
IC_TemplateInit

IC_TemplateBegin        "TP1" /*templateid*/
IC_TemplateDescription  "TraceLocal"
IC_TemplateLibrary      "Trace"     /*librarystack*/
IC_TemplateLibrary      'Local'
IC_TemplateEnd

IC_TemplateBegin        "TP2"
IC_TemplateDescription  'ServiceLocal'
IC_TemplateLibrary      'Service'
IC_TemplateChannel          'sChanID'   /*optionalchannelID*/
IC_TemplateLibrary      'Local'
IC_TemplateEnd

IC_TemplateBegin        "TTY"
IC_TemplateDescription  "TTYCommunications"
IC_TemplateOpenID           "ANSI"      /*optionalOpenID*/
IC_TemplateLibrary      "TTY"
IC_TemplateEnd

IC_TemplateBegin        'Local'
IC_TemplateDescription  'LocalCommunications'
IC_TemplateFlags        'H'   /*optionalflags*/
IC_TemplateConfig       'Local'
IC_TemplateConfigTable  '1002'
IC_TemplateLibrary      'Local'
IC_TemplateEnd

IC_TemplateTerm
END
```

– *There may be any number of template definitions (template definitions are bounded by **IC_TemplateBegin** and **IC_TemplateEnd**).*

● WIN ❍ XVT ❍ DosLink

❍ Accessory ❍ Shell ❍ Configurator

● AIL ● SL ● EIL

See also:

IC_RC_NODE data type

IC_TemplateLibrary

The ICS template resource flag for identifying the library ID in a template definition. There may be one or more of these and each must be followed by the library identification. If a channel ID is to be associated with a library in a template, the channel flag must immediately follow the library flag/library ID line in the resource.

● WIN ❍ XVT ❍ DosLink

❍ Accessory ❍ Shell ❍ Configurator

● AIL ● SL ● EIL

See also:

IC_TemplateInit data type

IC_TemplateOpenID

The ICS template resource flag for identifying the template *OpenID* of a template. This flag is optional. If it exists, it must be followed by the template's *OpenID*. The *OpenID* is an identifier, usually a standard accessory ID, with which to associate this template. See Appendix A for a list of standard IDs.

● WIN ❍ XVT ❍ DosLink

❍ Accessory ❍ Shell ❍ Configurator

● AIL ● SL ● EIL

See also:

IC_TemplateInit data type

IC_TemplateTerm

The ICS template resource flag for terminating a list of one or more template definitions.

● WIN ❍ XVT ❍ DosLink

❍ Accessory ❍ Shell ❍ Configurator

● AIL ● SL ● EIL

See also:

IC_TemplateInit data type

IC_UPGRADE_INFO

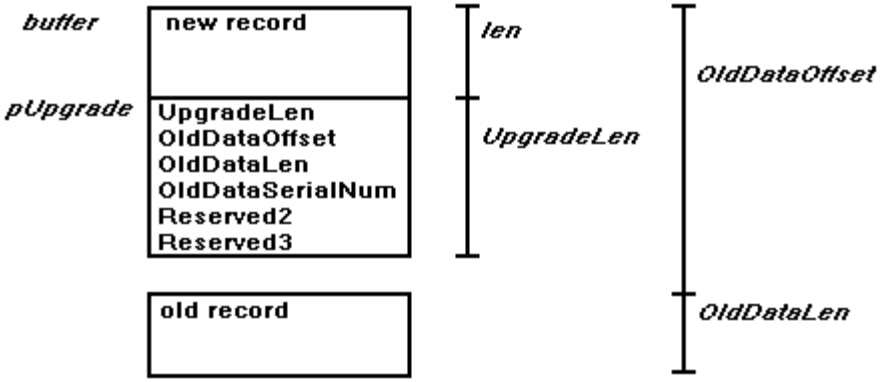
typedef struct aUPGRADEINFO {
UINT *UpgradeLen*;
UINT *OldDataOffset*;
UINT *OldDataLen*;
UINT *OldDataSerialNum*;
long *Reserved2*;
long *Reserved3*;
} IC_UPGRADE_INFO;

This data structure type defines the data found at (*buffer* + *len*) for **IcLibVerifyConfig** when *Command* == **IC_VER_UPGRADE**.

UpgradeLen	The size, in bytes, of this data structure.
OldDataOffset	The offset of the previously formatted data buffer (or 'old' data) from the start of the **IcLibVerifyConfig** buffer parameter.

OldDataLen	The size, in bytes, of the old data buffer.
OldDataSerialNum	The serial number of the table from which the old data buffer came.
Reserved2	Reserved for future use.
Reserved3	Reserved for future use.

Note: *The following is a pictorial view of the relationship of the new buffer (the buffer parameter to **IcLibVerifyConfig**), the **IC_UPGRADE_INFO** data structure, and the old data buffer.*



● WIN ❍ XVT ❍ DosLink

❍ Accessory ❍ Shell ❍ Configurator

● AIL ● SL ● EIL

See also:

IcLibVerifyConfig function

IC_VER

The ICS type for component versions.

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_VER_INFO

```
typedef union {
    IC_VER IcVer;
    struct {
        WORD Rev;
        WORD Ver;
    } w;
    struct
        BYTE Revision;
        BYTE EmuLevel;
        BYTE MinorVersion;
        BYTE MajorVersion;
    } b;
} IC_VER_INFO;
```

This data structure type defines the format of the version control information.

IcVer	The ICS **IC_VER** version number.

Alternate View:

Rev	The Revision portion of **IcVer**.
Ver	The Version portion of **IcVer**.

Alternate View:

Revision	The **IC_BUILD_REVISION**.
EmuLevel	The **IC_EMU_LEVEL**, 1 through 26 (mapping A through Z), zero if this is not an emergency release.
MinorVersion	The minor, **IC_MINOR_VERSION**, portion of the version.
MajorVersion	The major portion of the version.

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

IC_VERIFY

ICS type use to communicate the action to be taken in a library's **IcLibVerifyConfig** procedure when the configuration is in error. The following commands are defined.

IC_VER_DELETE

The given configuration data is about to be deleted. Perform any special verification/cleanup of related information.

IC_VER_DISPLAY

Verify and display errors to the user.

IC_VER_MODIFY

Verify, displaying errors to the user for modification.

IC_VER_SAVE

The given configuration data is about to be saved. Verify without displaying errors to the user.

IC_VER_UPGRADE

Perform special upgrade processing and data conversions on the given buffer of data. Note that an **IC_UPGRADE_INFO** data structure is located at (*buffer* + *len*) for providing access to the data in the previous format.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

See also:

IcLibVerifyConfig	function
IC_UPGRADE_INFO	data structure

IC_VERIFY_OK

An **IC_RESULT** indicating that no error occurred during a verify action.

● WIN	❍ XVT	❍ DosLink
❍ Accessory	❍ Shell	❍ Configurator
● AIL	● SL	● EIL

IC_VERSION_FILE

The default file version for Windows version control.

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_VER_INFO	data structure
icdef.rh	include file

IC_VERSION_PRODUCT

The default product version for Windows version control.

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

See also:

IC_VER_INFO	data structure
icdef.rh	include file

IC_VERSION_STRING

The ICS current version information in string format.

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

IC_VERSION_...

Used to delimit the range of release levels of the ICS API supported by this component. These are used as the *version* (oldest version) and the *max_version* (newest version) values in the INFOConnect RCDATA resource for backward compatibility.

IC_VERSION_CHECK

Used for backward compatibility to release version 1.0.

IC_VERSION_1_0

ICS Version 1.0.

IC_VERSION_1_2

ICS Version 1.2.

IC_VERSION_2_0

ICS Version 2.0.

IC_VERSION_2_02

ICS Version 2.02.

IC_VERSION_3_0

ICS Version 3.0.

Etc.

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

See also:

IC_RC_NODE data structure

ICSTD_ACTIVECHANNEL

Identifies the **HIC_CHANNEL** channel handle field of an active channel table.

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

See also:

IC_TABLE_FLAGS data type

ICSTD_ACTIVEPATH

Identifies the **HIC_SESSION** session (active path) handle field of an active path table.

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

See also:

IC_TABLE_FLAGS data type

ICSTD_ACTIVEPATHCHANNEL

Identifies the **HIC_CHANNEL** channel handle field of an active path table.

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

See also:

IC_TABLE_FLAGS data type

ICSTD_CHANNEL

Identifies the channel ID field of a channel table.

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

See also:

IC_TABLE_FLAGS data type

ICSTD_PATH

Identifies the path ID field of a path table.

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

See also:

IC_TABLE_FLAGS data type

ICSTD_PATHCHANNEL

Identifies the channel ID field of a path table.

● WIN ● XVT ❍ DosLink

● Accessory ● Shell ● Configurator

● AIL ● SL ● EIL

See also:

IC_TABLE_FLAGS data type

ICXVTCONFIG

This tag must be defined by XVT applications in order to use the ICS configuration API. Add the following line before *#include <xvt.h>*.

```
#define ICXVTCONFIG
```

❍ WIN ● XVT ❍ DosLink

❍ Accessory ❍ Shell ● Configurator

❍ AIL ❍ SL ❍ EIL

ICXVTWIN

This tag must be defined by XVT applications that also include the WINDOWS.H include file. Add the following line before *#include <xvt.h>*.

```
#define ICXVTWIN
```

❍ WIN ● XVT ❍ DosLink

❍ Accessory ❍ Shell ● Configurator

❍ AIL ❍ SL ❍ EIL

LPHIC_CHANNEL

Far pointer to an **HIC_CHANNEL** type.

● WIN ❍ XVT ❍ DosLink

❍ Accessory ❍ Shell ❍ Configurator

● AIL ● SL ● EIL

LPHIC_SESSION

Far pointer to an **HIC_SESSION** type.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

LPIC_RESULT_CONTEXT

Far pointer to an **IC_RESULT_CONTEXT** type.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

LPIC_SINFO

Far pointer to an **IC_SINFO** record type.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_SINFO	data structure

LPIC_STATUSBUF

Far pointer to an **IC_STATUSBUF** record type.

● WIN	● XVT	● DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_STATUSBUF data structure

LPIC_UPGRADE_INFO

Far pointer to an **IC_UPGRADE_INFO** record type.

● WIN ● XVT ❍ DosLink

❍ Accessory ❍ Shell ❍ Configurator

● AIL ● SL ● EIL

See also:

IC_UPGRADE_INFO data structure

LPIC_VER_INFO

A far pointer to an **IC_VER_INFO** structure.

● WIN ● XVT ❍ DosLink

❍ Accessory ❍ Shell ● Configurator

❍ AIL ❍ SL ❍ EIL

See also:

IC_VER_INFO data structure

NULL_HIC_CHANNEL

ICS NULL channel handle.

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

NULL_HIC_CONFIG

ICS NULL configuration handle.

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

NULL_HIC_SESSION

ICS NULL session handle.

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

NULL_HIC_STATUSBUF

ICS NULL extended status buffer handle.

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

IC_STATUSBUF data structure

NULL_IC_BUFHND

INFOConnect Connectivity Services NULL buffer handle type for shared data. Use this to test for the validity of an **IC_BUFHND** type.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

NULL_IC_MEMHND

INFOConnect Connectivity Services NULL buffer handle type for non-shared, intra-application memory. Use this to test for the validity of an **IC_MEMHND** type.

❍ WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
❍ AIL	❍ SL	❍ EIL

PATHID

```
typedef struct {
    char ID[IC_MAXPATHIDSIZE];
} PATHID;
```

This data structure type defines a path ID.

ID	The path ID.

● WIN	● XVT	❍ DosLink
❍ Accessory	❍ Shell	● Configurator
● AIL	● SL	● EIL

VER_FILEDESCRIPTION_STR

Used in the Windows 3.1 version structure for all INFOConnect files that utilize the version definition. This value, which is a descriptive string of the component, must be defined by your component before including the **icdef.rh** file. See the *Windows*

3.1 Software Development Kit for information on updating the default version values in **icdef.rh**.

Note: *The following is an example of an accessory resource for an application called MyApp.EXE that uses version control.*

```
#include "ver.h"

#define VER_FILETYPE                VFT_APP
#define VER_FILESUBTYPE             VFT2_UNKNOWN
#define VER_FILEDESCRIPTION_STR     "MyApp Description"
#define VER_INTERNALNAME_STR        "MyApp"

#include "icdef.rh"

/* Insert the rest of your RC file here */
```

● WIN	● XVT	○ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

VER_FILESUBTYPE	data type
VER_FILETYPE	data type

VER_FILESUBTYPE

Used in the Windows 3.1 version structure for all INFOConnect files that utilize the version definition. This value, which is a version subtype, must be defined by your component before including the **icdef.rh** file.

Valid subtype values are defined in **VER.H** from the Windows 3.1 SDK.

- ● WIN
- ● XVT
- ❍ DosLink
- ● Accessory
- ● Shell
- ● Configurator
- ● AIL
- ● SL
- ● EIL

See also:

VER_FILEDESCRIPTION_STR data type for an example

VER_FILETYPE

Used in the Windows 3.1 version structure for all INFOConnect files that utilize the version definition. This value, which is a version type, must be defined by your component before including the **icdef.rh** file.

Valid file-type values are defined in **VER.H** from the Windows 3.1 SDK.

- ● WIN
- ● XVT
- ❍ DosLink
- ● Accessory
- ● Shell
- ● Configurator
- ● AIL
- ● SL
- ● EIL

See also:

VER_FILEDESCRIPTION_STR data type for an example

VER_INTERNALNAME_STR

Used in the Windows 3.1 version structure for all INFOConnect files that utilize the version definition. This value, which is the internal name of the component, must be defined by your component before including the i**cdef.rh** file.

● WIN	● XVT	❍ DosLink
● Accessory	● Shell	● Configurator
● AIL	● SL	● EIL

See also:

VER_FILEDESCRIPTION_STR	data type for an example

Section 6
ICS Accessory Definition

An ICS accessory is an ICS application that can be invoked and controlled by other ICS applications. Accessories are written to be useful in building more sophisticated products. An accessory adheres to the following.

- Parse and react to the ICS-defined command line parameters.

Table 6–1. ICS Command Line Parameters

Parameter	Meaning
<*options file*>	The filename of the configuration options file. This file, when saved by the user, is to contain at least the most recent command line parameter options. This filename, if it exists, must be the first parameter on the command line.
-d or -D	Indicates running in debug mode, if the accessory supports it.
-k or -K	Followed by optional spaces and the current accessory's ID. This option is always on the command line when the accessory is being invoked by an application (that is, the accessory is being executed as a result of a call to **IcOpenAccessory** or **IcRunAccessory**).

continued

Table 6–1. ICS Command Line Parameters (cont.)

Parameter	Meaning
-l or -L	Followed by optional spaces and the screen coordinates of the top left and bottom right window corners, enclosed in parentheses, as follows: (left,top,right,bottom)
-p or -P	Followed by optional spaces and the desired path name (path ID). When present, the accessory must open a session with the indicated path before any other processing. If an error is encountered (for example, an invalid options file format or an invalid command line parameter) the accessory must explicitly close the opened session.
-w*xy* or -W*xy*	Window state parameter that is generated by a call to **IcRunAccessory**. Accessories must not define this command line parameter for its own purposes. Accessories must, however, recognize and react to the parameter. See the **IcRunAccessory** function in Section 6 for the valid values for *x* and *y*.

- Display the session name and the accessory's identification string on the accessory window's title bar.
- Register and deregister itself, obtaining a context number. See **IcRegisterAccessory** and **IcDeregisterAccessory**.
- Provide a .HIC include file that contains the accessory's context string and any accessory-specific statuses and errors.
- Respond to the **IC_CONTROL_ACTIVATE** status message by bringing itself into focus. If the accessory window was iconized, it should be restored.
- Delimit transactions using the **IC_STATUS_TRANS** status message.
- Terminate when all ICS sessions that it is using are closed.
- Provide the **IC_RC_NODE** type of user-defined resource in the resource file.

- Adhere to the ICS on-line help style that follows:
  - Follow the MS-Windows 3.1 Help guidelines. See the **Windows 3.1 Software Development Kit** for more information. In particular, the Help pull-down menu includes a Contents item, a Search for Help on item, a How to Use Help item, and an About item.
  - Install the help book in the same directory as the executable. The help book should have the same root name as the executable with the HLP extension.
  - Accessories that require ICS 2.0 or higher can use the Windows 3.1 help compiler, since the Windows 3.1 Help engine is redistributed with the Connectivity Services package.

Appendix A
Standard IDs (Keys) & Component Numbers

The following, case-insensitive IDs are standard for INFOConnect Connectivity Services. This means that any vendor developing an accessory or library that functions as described must associate itself with the corresponding ID through its resource file and install procedure. This ensures that accessories can access the desired runtime regardless of the vendor. This does not preclude the use of unique IDs where necessary.

Accessory IDs

ID	Description
ANSI	VT-220 Emulator
DosLinkServer	DosLink Server Accessory
MT	A Series MT Emulator
PPT	Printer Pass Through for A Series
SNMP	SNMP Agent
UTS60	UTS60 Emulator
UTS60G	UTS60 Graphics Engine

Service Library IDs

ID	Description
COMS	A Series COMS
DTPX	DTPX Service
HCLNTS	HLCN Terminal Services
INT1	2200 Interactive 1
TCP-A	A Series TCP/IP Access
TELCON	DCP TELCON
TELNET	TELNET Services
TP0	TCP TP0/RFC1006 Services
Trace	Trace INFOConnect Session Activity
TTY-1100	1100 Demand TTY

External Interface Library IDs

ID	Description
AVGATE	A Series LAN Gateway
DosLink	ICS DosLink Access
Local	Local Communications
NetBIOS	NetBIOS Access
OSGATE	OS 2200 LAN Gateway
OSI	OSI Access
PS	Poll/Select Access
Stack	ICS Path Stacker
TCP	TCP/IP Socket Access
TTY	TTY Access
UTS	Uniscope Access
WinSock	Windows Socket Access
XNS	XNS Access
X25	X.25 Access

Component Numbers

Component numbers are defined by the **IC_COMPONENT** data type and are used by the INFOConnect Connectivity Services configuration accessory to uniquely identify components.

Every INFOConnect component is assigned two **IC_COMPONENT**s: a *generic* **IC_COMPONENT** and a *branded* (supplier-specific) **IC_COMPONENT**. Components with non-zero generic **IC_COMPONENT**s conform to the interface defined by the specific component's .HIC include file. The branded **IC_COMPONENT** uniquely identifies the component. A component with a zero generic **IC_COMPONENT** performs some specific function defined by the vendor of that component.

The generic **IC_COMPONENT** identifies the component according to its function. The same generic **IC_COMPONENT** is used by all components that implement the same function. These types of components are preferable because they provide more flexibility and inter-operate with more current and future INFOConnect components. The developer provides the **IC_COMPONENT** value in the **IC_RC_NODE** of the component's resource file. If a non-zero generic **IC_COMPONENT** is not provided, the component is assumed to provide a unique function. No generic **IC_COMPONENT** value is assigned.

The branded **IC_COMPONENT** uniquely identifies the specific component. The vendor provides this value in the **IC_RC_NODE** of the component's resource file. If a non-zero branded **IC_COMPONENT** is not provided, a unique value will be generated and assigned when the library ID is added to the INFOConnect configuration database.

An **IC_COMPONENT** is constructed so that it can be managed using the universal Simple Network Management Protocol (SNMP) / Management Information Base (MIB). It consists of two parts: a component number and a supplier number. Generic **IC_COMPONENT**s and the supplier number of branded **IC_COMPONENT**s are assigned through the Malvern Development Group. Each vendor is responsible for managing the component number of the **IC_COMPONENT**s for its INFOConnect products. The currently assigned generic **IC_COMPONENT**s and branded supplier numbers are recorded in the **ic.hic** include file.

Notes:

- *The Windows resource compiler does not accept LONG values in resources. The* ***IC_COMPONENT*** *value must appear in the* ***IC_RC_NODE*** *resource as its two parts. Because of x86 little-endian architecture, the* ***IC_COMPONENT*** *parts must be specified in the reverse order in the INFOConnect resource: supplier number followed by the component number.*
- *To obtain a vendor-specific, or branded, supplier number for your components, submit a Contact in the Primus database.*

Appendix B
Status Types and Statuses

This section provides an overview of ICS standard statuses, which are also documented in Section 5, "ICS Data Structures and Types." The statuses are presented according to their use by components, as follows.

- Statuses Sent from Accessory to Library
- Statuses Sent from Library to Accessory
- Statuses Sent from Accessory to Accessory
- Statuses Sent from ICS to Accessory
- UTS-Specific Statuses
- DosLink-Specific Statuses
- Library Support for 1.11 Applications

Note that statuses may be described in multiple sections. Applications should process incoming events as needed. Service libraries and external interface libraries should produce the necessary status events when it is meaningful to do so.

Libraries may use these standard statuses or they may also generate their own, library-specific statuses using the library's context along with library-defined status types and status values. These values must be defined in the library's .HIC include file along with the context string to associate with the library's context. Applications wishing to recognize a library-specific status would include the particular library's .HIC include file. It would then be able to get the library's context from the context string by using **IcGetContext**. The application would recognize the library-specific status by retrieving the **IC_RESULT_CONTEXT** from the status.

Statuses Sent from Accessory to Library

IC_STATUS_BLOCKING

IC_STATUS_BLOCKING is an application-initiated status type that is used to control the blocking mode of those service libraries that support it. The application toggles the blocking mode using the following statuses.

IC_BLOCKING_ON	Turn blocking on.
IC_BLOCKING_OFF	Turn blocking off.

Applications that require blocking should either be altered to support non-blocking interfaces or refuse to support a session over a library that sets **sinfo.block_mode** to FALSE.

IC_STATUS_BUFFER

IC_STATUS_BUFFER is an extended status that allows a buffer of information to be exchanged between an ICS application and an ICS library. It is to be used whenever the status information to be exchanged exceeds the bounds of the **IC_RESULT** structure. In this case, the **IC_RESULT_VALUE** portion of the status message is an INFOConnect buffer handle of type **HIC_STATUSBUF**. The **IC_STATUSBUF** data structure is defined as follows:

```
typedef struct aSTATUSBUF {
    IC_RESULT icstatus;
    IC_RESULT icerror;
    long reserved;
    unsigned uBufSize;
    unsigned uDataSize;
} IC_STATUSBUF;
```

icstatus	The actual status message associated with the buffer of information.
icerror	The **IC_RESULT** of the status request.
reserved	Reserved for future use.
uBufSize	The actual size, in bytes, of the data buffer.
uDataSize	The size, in bytes, of the valid data in the data buffer.

Note that the data buffer must immediately follow the **IC_STATUSBUF** header. It should not contain pointers, but may contain offsets within the structure.

The **IC_STATUS_BUFFER** status message request can be synchronous or asynchronous. For a synchronous message, the library receives and processes the **IC_STATUS_BUFFER** status message, setting the *icerror* field to either **IC_OK** or an error. The *icerror* result is returned to the application as an **IC_StatusResult** message. An **IC_OK** result implies that the data buffer has been accessed and *uDataSize* is the size of the valid information.

For an asynchronous message, the library receives the **IC_STATUS_BUFFER** status message, sets the *icerror* field to **IC_INCOMPLETE** and returns **IC_INCOMPLETE**. The application receives the **IC_StatusResult** message with the **IC_INCOMPLETE** result. When the library finally supplies the *uDataSize* and accesses the data buffer, the *icerror* field should be set to **IC_COMPLETE** or to an error. The **IC_STATUS_BUFFER** status message should then be sent back to the application.

In both cases, the application should be responsible for freeing the data buffer. The data buffer should not be freed, however, until after the application receives an **IC_StatusResult** response of **IC_OK** or an error. If the result is **IC_INCOMPLETE**, this is the asynchronous case and the data buffer should not be freed until the status is returned via the **IC_STATUS_BUFFER** status message.

IC_STATUS_CONNECT

The **IC_STATUS_CONNECT** status type instructs the external interface library to alter the connection state. The connection states are defined by one of the following statuses.

IC_CONNECT_OPEN	Request to reopen the connection. This status is supported only if *sinfo.reconnect* is TRUE. If the library cannot honor this request, it should return an error from its **IcSetStatus** procedure.
IC_CONNECT_CLOSE	Close the connection. This status is supported only if *sinfo.reconnect* is TRUE.
IC_CONNECT_EOF	Request that no more data be sent (for use under TCP/IP). This status is supported only if *sinfo.reconnect* is TRUE.
IC_CONNECT_STATUS	Request that the EIL display status information to the user. This is the status sent when the user selects the Status button from the ICS Shell.

See the **IC_STATUS_CONNECT** entry in the Statuses Sent From Library to Accessory section below.

IC_STATUS_DATAFLAGS

This status controls the state of messages to mark expedited and/or multipart messages. The initial state of messages is assumed to be non-expedited and single part.

IC_DATAFLAGS(*v*)	A macro that creates an **IC_DATAFLAGS** status with value *v*.
IC_DATAFLAGS_EXPEDITED	This status indicates that the following transmitted message is urgent. It is to be delivered ahead of any other messages in the message queue.
IC_DATAFLAGS_MORE	This status indicates that the following transmitted messages are part of a multipart message.
IC_DATAFLAGS_NONE	This status indicates that none of the data flags are set. It is used to indicate the last part of a multipart message.

IC_DATAFLAGS_RESERVED1	Reserved status.
IC_DATAFLAGS_RESERVED2	Reserved status.

IC_STATUS_FKEY

This application-initiated status type is used to send function key messages to the underlying layer of the ICS communication session. The function keys are defined by one of the following statuses.

IC_FKEY_BREAK	The break key
IC_FKEY_1	Function key 1
IC_FKEY_2	Function key 2
.	.
.	.
.	.
IC_FKEY_23	Function key 23
IC_FKEY_24	Function key 24
IC_FKEY_MSGWAIT	Uniscope-specific BEL character key
IC_FKEY_SYSMODE	Uniscope-specific OS3 system mode key used to set system mode
IC_FKEY_WSMODE	Uniscope-specific OS3 workstation mode key used to set workstation mode

IC_STATUS_REACTIVATE

These status messages must be sent by an application to the communication session by calling the set status procedure when **sinfo.focus_notify** is TRUE.

IC_REACTIVATE_ON	Application has received focus and sinfo.focus_notify is TRUE.
IC_REACTIVATE_OFF	Application has lost focus and sinfo.focus_notify is TRUE.

A library that needs to be notified of an application gaining/losing input focus (such as COMS), should set **sinfo.focus_notify** to TRUE in the **IcLibGetSessionInfo** procedure. (The COMS library generates and transmits messages (?on...) when the current window changes.)

Applications without visible windows must either support these statuses or refuse to support a session over a library that requests this type of notification.

IC_STATUS_TRANS

These status messages are sent by INFOConnect accessories to delimit transactions. Note that the initial state of all applications is assumed to be **IC_TRANSACTION_OFF**.

IC_TRANSACTION_ON	Indicates that **IC_TRANSACTION_BEGIN** and **IC_TRANSACTION_END** status will be sent.
IC_TRANSACTION_OFF	Indicates that **IC_TRANSACTION_BEGIN** and **IC_TRANSACTION_END** status will not be sent.
IC_TRANSACTION_BEGIN	Sent at the beginning of a transaction.
IC_TRANSACTION_END	Sent at the end of a transaction.

Statuses Sent from Library to Accessory

IC_STATUS_CONNECT

These **IC_STATUS_CONNECT** statuses are typically issued from the EIL and report the state of the connection. The connection states are defined by one of the following statuses.

IC_CONNECT_OPEN	The logical connection is available for bidirectional communication under the current configuration.
IC_CONNECT_CLOSE	The logical connection is NOT available for bidirectional communication under the current configuration. This is the initial state of the session.
IC_CONNECT_EOF	The logical communication session is physically closed, no more data will be received (for use under TCP/IP).
IC_CONNECT_ACTIVITY	The physical connection (not necessarily this communication session) is functioning as expected.
IC_CONNECT_NOACTIVITY	The physical connection is NOT functioning as expected.
IC_CONNECT_BROKEN	Status that indicates that the other half of two connected sessions has closed. For example, a DosLink session receives this status when its partner session is closed.
IC_CONNECT_JOINED	Status that indicates that two sessions have been connected. For example, this is the status received when two DosLink sessions are connected.

IC_CONNECT_SERVER	Status that originates from the server application (such as the DosLink Server accessory) that indicates readiness to the client.

Libraries should send these statuses only when the status of the connection changes.

See also the **IC_STATUS_CONNECT** entry in the "Statuses Sent from Accessory to Library" section.

IC_STATUS_CONTROL

When initiated from an external interface library, a status of this type makes a request to the application. The requests are defined by one of the following statuses.

IC_CONTROL_ACTIVATE	This status requests that the applications window become active for user input. This occurs when the user selects the GoTo button on the user interface window.
IC_CONTROL_RCVREADY	This status requests that the application perform a receive request. It indicates to the application that a received message **must** be delivered or it may be lost.
IC_CONTROL_RCVAVAIL	This is a notification, or advisory, status indicating that a message is available but not deliverable due to the state of the application. The session may be blocked until the message is delivered (for example, Poll/Select remains in the enqueued state until the message is delivered).

See the **IC_STATUS_CONTROL** entry in the "Statuses Sent from Accessory to Accessory" section.

IC_STATUS_LINESTATE

This EIL-initiated status type signifies the state of the underlying layer of the ICS communication session. This status is generally used by terminal emulators, such as MT and T27 type emulators. Therefore, Poll/Select libraries should generate these statuses.

An **IC_STATUS_LINESTATE** status message is generated by the external interface library each time the line state changes. Pass the event to the application by calling **IcMgrSendEvent(...)**. Applications receiving this event may or may not wish to process it.

The meaning of the line state statuses are as follows.

IC_LINESTATE_LCL	The ICS communication session is neither transmitting nor receiving.
IC_LINESTATE_RCV	The ICS communication session is in receive mode.
IC_LINESTATE_XMT	The ICS communication session is in transmit or transmit/receive mode.

Statuses Sent from Accessory to Accessory

IC_STATUS_DATAFLAGS

This application-initiated status controls the state of messages. It is used with the **IcSetStatus**/**IcXmt** functions and the **IC_RcvDone** event to mark expedited and/or multipart messages. The initial state of messages is assumed to be non-expedited and single part.

IC_DATAFLAGS(*v*)	A macro that creates an **IC_DATAFLAGS** status with value *v*.
IC_DATAFLAGS_EXPEDITED	This status indicates that the following transmitted message is urgent. It is to be delivered ahead of any other messages in the message queue.
IC_DATAFLAGS_MORE	This status indicates that the following transmitted messages are part of a multipart message.
IC_DATAFLAGS_NONE	This status is complementary to **IC_DATAFLAGS_MORE**. It is used to indicate the last part of a multipart message.
IC_DATAFLAGS_RESERVED1	Reserved status.
IC_DATAFLAGS_RESERVED2	Reserved status.

Note: *For an example, see the **IC_STATUS_DATAFLAGS** status in Section 5, "Data Structures and Types".*

IC_STATUS_CONTROL

This status makes a request to another connected accessory. The requests are defined by one of the following statuses.

IC_CONTROL_ACTIVATE	This status requests that the other application's window become active for user input.
IC_CONTROL_RCVREADY	This status requests that the other application perform a receive request.

See the **IC_STATUS_CONTROL** entry in the Statuses Sent From Library to Accessory section above.

Statuses Sent from ICS to Accessory

IC_STATUS_COMMMGR

This status type originates from the ICS Manager itself and conveys initialization or termination information. If the ICS Manager terminates, the ICS accessory must call the ICS initialization routine before calling any other ICS procedures.

IC_COMMMGR_INITIALIZED	Status sent to all Windows applications when the ICS Manager finishes initializing. ICS accessories may now call the ICS initialization routine, if necessary, before establishing INFOConnect sessions.
IC_COMMMGR_TERMINATED	Status sent to all Windows applications when the ICS Manager finishes terminating. All ICS accessories should either close or call the ICS initialization routine before establishing another ICS session.
IC_COMMMGR_QUERYEXIT	Status sent to all ICS communications sessions when the user closes the INFOConnect Shell. If the application does not wish to close the session, it should cancel the exit by calling **IcExitOk(FALSE)**. Otherwise, call **IcExitOk(TRUE)**.
IC_COMMMGR_QUERYSHUTDOWN	Status sent to all ICS communications sessions when Windows is exiting. If the application does not wish to close the session, it should cancel the exit by calling **IcExitOk(FALSE)**. Otherwise, call **IcExitOk(TRUE)**.

IC_COMMMGR_CANCELEXIT	Status sent to all ICS communications sessions that previously received an **IC_COMMMGR_QUERYEXIT** status when at least one of the applications called **IcExitOk(FALSE)**.
IC_COMMMGR_EXIT	Status sent to all ICS communications sessions if **IcExitOk(FALSE)** is never called. The ICS Manager will then exit.
IC_COMMMGR_REINSTALL	Status posted to all windows by *install.exe* when the ICS Manager is being reinstalled.

UTS-Specific Statuses

IC_STATUS_UTS

IC_UTS_SELECTION
IC_UTS_DVC_READY
IC_UTS_DVC_BUSY
IC_UTS_DVC_ERROR
IC_UTS_DVC_NOTREADY
IC_UTS_ATTENTION

IC_UTS_DESELECT_ACTIVITY
IC_UTS_DESELECT_DID
IC_UTS_MSGWAIT
IC_UTS_POC

This status type may be used to send and receive special messages to/from the UTS external interface library (and the INT1 SL).

The library may send the following status to the application. The **IC_RESULT_VALUE** is interpreted as two subfields: **IC_RESULT_SUBTYPE** (subtype) and **IC_RESULT_SUBVALUE** (subvalue). A special macro, **IC_MAKE_UTS_RESULT(t, v)**, is available to create an **IC_RESULT** from the standard context and from the **IC_RESULT_TYPE** and **IC_RESULT_VALUE**.

IC_UTS_SELECTION subtype 0

IC_UTS_DESELECT_ACTIVITY	This status message has a subvalue of 0x71. It is a request to deselect the current device.
IC_UTS_DESELECT_DID	This status message has a subvalue of 0x72. It is a request to flush and deselect the current device.
IC_UTS_MSGWAIT	This status message has a subvalue of 0x07. This is message wait.
Subvalues in the range of 0x20 - 0x6F and 0x73 - 0x7F	These status messages request the selection of the given Device ID (DID).

The application may send the following status to the UTS external interface. The **IC_RESULT_VALUE** is interpreted as two subfields: **IC_RESULT_SUBTYPE** (subtype) and **IC_RESULT_SUBVALUE** (subvalue).

IC_UTS_DVC_READY subtype 0x10

Subvalues in the range of 0x20 - 0x6F and 0x73 - 0x7F	These status messages indicate that the given device (DID) is ready.

IC_UTS_DVC_BUSY subtype 0x11

Subvalues in the range of 0x20 - 0x6F and 0x73 - 0x7F	These status messages indicate that the given device (DID) is busy.

IC_UTS_DVC_ERROR subtype 0x12

Subvalues in the range of 0x20 - 0x6F and 0x73 - 0x7F	These status messages indicate that the given device (DID) has an error.

IC_UTS_DVC_NOTREADY subtype 0x13

Subvalues in the range of 0x20 - 0x6F and 0x73 - 0x7F	These status messages indicate that the given device (DID) is not responding.

IC_UTS_ATTENTION subtype 0x20

IC_UTS_POC	This status message has a subvalue of 0x36. It indicates power confidence tests have completed (that is, send <DLE>6 to the host).

DosLink-Specific Statuses

DOSLINK_SINFO

This status type, when associated with the DosLink EIL context, is sent from the DosLink Server accessory by calling **IcMgrSetResult**. The value of the status is the session handle on which to retrieve **SINFO** data. The DosLink EIL uses the result value as the session handle for calling **IcMgrGetSessionInfo**. The **SINFO** record is then passed to the DosLink Client using the DosLink **IcSetServerInfo** API. When the **SINFO** data has been copied to the DosLink Client session, an **IC_CONNECT_SERVER** (**IC_STATUS_CONNECT** type) status is sent to the client session. The session information data is then available to the client session.

Library Support for 1.11 Applications

Applications written with the 1.11 version of the IDK use the **IC_STATUS_SPECIALMSG** status message instead of the **IC_STATUS_UTS** or the **IC_STATUS_FKEY** statuses. In order for 2.0 libraries to support these applications, they should be aware of this.

The **IC_STATUS_SPECIALMSG** status with **IC_RESULT_VALUE** 0x07 (Message Wait), has the same binary value as the new **IC_UTS_MSGWAIT** status. The **IC_UTS_DESELECT...** statuses also have the same binary values as their **IC_STATUS_SPECIALMSG** counterparts. Therefore, libraries need not do any special processing for sending these status to version 1.11 applications.

Version 1.11 applications will be sending **IC_STATUS_SPECIALMSG** type statuses to the library. If the library receives an **IC_UTS_SELECTION** (subtype == 0) status message from an application, the library should use the **IC_RESULT_SUBVALUE** to perform the **IC_STATUS_FKEY** action using the following table.

SUBVALUE	Status
0x37	IC_FKEY_1
0x47	IC_FKEY_2
0x57	IC_FKEY_3
0x67	IC_FKEY_4
0x20 to 0x32	IC_FKEY_5 to IC_FKEY_22

UTS EIL (and INT1 SL)

0x07	IC_FKEY_MSGWAIT

TTY EIL

0x00	IC_FKEY_BREAK

The **IC_STATUS_SPECIALMSG** status is presented below for completeness. Existing applications should be modified to use the **IC_STATUS_UTS** and **IC_STATUS_FKEY** statuses before release 3.0 of the IDK.

IC_STATUS_SPECIALMSG

This status type was used by the 1.11 version of some of the ICS layers to send and receive special messages through the communication session. The unique status values are defined as follows.

TTY EIL

TTY external interface library interprets the following **IC_STATUS_SPECIALMSG IC_RESULT_VALUE**, sent by an application, as follows.

0x00	Break key.

The application uses the **IC_MAKE_RESULT** macro with **IC_RESULT_CONTEXT_STD**, **IC_STATUS_SPECIALMSG**, and value 0x00 to create this status before calling the set status procedure.

From UTS EIL or INT1 SL to the Accessory

The UTS external interface library and the INT1 service library generate the following **IC_STATUS_SPECIALMSG IC_RESULT_VALUE**s to an application.

0x07	Unsolicited MESSAGE WAIT from host.
0x72	Deselection DID has been received from host.

The application can use the **IC_GET_RESULT_TYPE** and **IC_GET_RESULT_VALUE** macros to examine the status result.

From Accessory to UTS EIL or INT1 SL

The UTS external interface library and the INT1 service library interpret the following **IC_STATUS_SPECIALMSG IC_RESULT_VALUE**s from an application as follows.

0x07	Message Wait.
0x37	F1 Key.

0x47	F2 Key.
0x57	F3 Key.
0x67	F4 Key.
0x20	F5 Key.
0x21	F6 Key.
0x22	F7 Key.
0x23	F8 Key.
0x24	F9 Key.
0x25	F10 Key.
0x26	F11 Key.
0x27	F12 Key.
0x28	F13 Key.
0x29	F14 Key.
0x2A	F15 Key.
0x2B	F16 Key.
0x2C	F17 Key.
0x2D	F18 Key.
0x2E	F19 Key.
0x2F	F20 Key.
0x30	F21 Key.
0x31	F22 Key.

The application uses the **IC_MAKE_RESULT** macro with **IC_RESULT_CONTEXT_STD**, **IC_STATUS_SPECIALMSG**, and the desired value from above to create the status result before calling the set status procedure.

Appendix C
Errors and Results

This appendix lists and describes the INFOConnect Connectivity Services errors and informative results, as well as standard configuration accessory errors and errors specific to Unisys-provided ICS service libraries and external interface libraries. These fields must be provided by other vendors developing the given library.

Library-specific errors are generated using the library's context along with library-defined error types and error values. These values are defined in the library's .HIC include file along with the context string associated with the library's context. (The context string must be unique up to the first eight characters.) To maintain flexibility, applications should generally not be coded to particular library-specific errors. However, those developer's wishing to recognize a library-specific error would include that particular library's .HIC include file into the application. The application would then be coded to retrieve the library's context from the context string using **IcGetContext**. The library-specific error is recognized using the **IC_GET_RESULT_...** API to retrieve various parts from the error result, including the **IC_RESULT_CONTEXT**.

INFOConnect Connectivity Services

ICS Standard Errors

The following error results are common/general errors defined for INFOConnect Connectivity Services. They may be returned as the result of a procedure call or with an error event (**IC_Error**, **IC_RcvError**, and so forth under MS-Windows or **E_IC_ERROR**, and so forth under XVT).

Most errors (with the exception of interactive library configuration and the Version 2.0 implementation of the EIL AutoDial feature in TTY, for example) are filtered back through the application. The application may be coded to handle the error itself, perhaps by displaying it to the user or by performing some other action, or the error may be passed back to INFOConnect by calling the INFOConnect default error procedure.

Library developers may use any of the standard error results, but must call **IcSetSessionError** prior to exiting the active procedure. (See **IcSetSessionError** in Section 3, "INFOConnect API", for more information.)

Terminate-type errors indicate that the particular request failed and that all other requests on the associated session will also fail. Therefore, the communication session must be closed. If the default error procedure is called, the error message will be displayed to the user and the communication session will be closed automatically.

Severe-type errors indicate that a particular request failed. Errors in the range of this type are serious enough that they are always displayed to the user.

Errors in the range of the **IC_ERROR_WARNING** type indicate that the request succeeded and suggest that the result should either be displayed to the user or logged by the application for future reference. User intervention (for example, reconfiguring or upgrading the software) will prevent the warning from reoccurring.

Errors in the range of the **IC_ERROR_INFO** type are informative. They may be optionally logged by the application and should not be displayed to the user. Results that do not indicate an error, but rather some return condition, are also of type **IC_ERROR_INFO**.

IC_ASSIGNMENT_ERROR (Value 902)

The template ID is already assigned to a template.
The requested update has not been made.

Level: **Severe**

IC_ASSIGNMENT_ERROR indicates that the requested template ID cannot be assigned. This error occurs when an attempt is made to use a template ID that is already assigned to a template.

The user seeing this error can either use a different template ID or can rename the existing template before retrying the action.

IC_ASSIGNMENT_UPDATED (Value 2004)

The template ID has been updated.

Level: **Informational**

IC_ASSIGNMENT_UPDATED result indicates that the request to update to a template ID that has been previously assigned to a template has been completed.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_CANCELED (Value 2003)

The user cancelled from the dialog.

Level: **Informational**

The **IC_CANCELED** result indicates that the user cancelled from the active dialog.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_COMPLETE (Value 2013)

The pending request has successfully completed.

Level: **Informational**

The **IC_COMPLETE** result indicates that a pending request has been completed. This is the result used to identify the completion of an extended, asynchronous status request. See Appendix B for information on extended statuses.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_CONTEXT_ALREADY_CREATED (Value 701)

The ICS context for <*context string*> has already been created.
Context strings must be unique.

Level: **Severe**

IC_CONTEXT_ALREADY_CREATED indicates that the requested INFOConnect context already exists. This error occurs when an attempt is made to load the INFOConnect component with the given context string and a component with that same context string has already been loaded. Each context string must be unique.

The user seeing this error should unload the existing component before trying to load the component with the same context string.

IC_CONTEXT_ALREADY_DELETED (Value 702)

The ICS context for <*context*> has already been deleted.
Contact the component's vendor for further information.

Level: **Severe**

IC_CONTEXT_ALREADY_DELETED indicates that a request to delete a context cannot be completed. This error occurs when the given context does not exist because either it was already deleted or it was never created. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor for further information.

IC_CONTEXT_INVALID (Value 703)

Invalid Context: <*context*>.
Contact the component's vendor for further information.

Level: **Severe**

IC_CONTEXT_INVALID indicates an invalid context has been detected. This error occurs when an attempt is made to access the given context and that context has not been successfully initialized. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor for further information.

IC_CONTEXT_NOT_FOUND (Value 704)

Context <*context*> not found.
Contact the component's vendor for further information.

Level: **Severe**

IC_CONTEXT_NOT_FOUND indicates that the given context cannot be found in the INFOConnect table of contexts. This error occurs when an attempt is made to access a component whose context was not successfully created. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor for further information.

IC_CONTEXTSTRING_NOT_FOUND (Value 705)

Context string <*context string*> not found.
Contact the component's vendor for further information.

Level: **Severe**

IC_CONTEXTSTRING_NOT_FOUND indicates that the given context string cannot be found in the INFOConnect table of contexts. This error occurs when an attempt is made to access a component whose context was not successfully created. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor for further information.

IC_CONTEXTSTRING_TRUNCATED (Value 706)

Context string <*context string* > truncated.
Contact the component's vendor for further information.

Level: **Severe**

IC_CONTEXTSTRING_TRUNCATED indicates that the retrieved context string was truncated. This error occurs when an attempt is made to retrieve the context string from a context and the output buffer parameter is not big enough to hold the context string. The buffer should be at least 9 bytes big.

The user seeing this error should contact the component's vendor for further information.

IC_CONTEXTTABLE_FULL (Value 700)

The context table is full. Close some Windows applications and retry the action.

Level: **Severe**

IC_CONTEXTTABLE_FULL indicates that no more context entries can be added to the table of context/context strings. This error occurs in low memory conditions.

The user seeing this error should close some Windows applications and try the action again.

IC_ERROR_ACCESSORY_FAILED (Value 801)

Accessory <*name*> execution failed. Verify that this is a valid Windows code file.

Level: **Severe**

IC_ERROR_ACCESSORY_FAILED indicates that the given accessory could not be executed. This error occurs when an attempt is made to execute an INFOConnect application as an accessory and the accessory cannot execute successfully (see the **IcOpenAccessory** and **IcRunAccessory** functions).

The user seeing this error should verify that the given file is a valid Windows code file.

IC_ERROR_ACCESSORY_NOT_FOUND (Value 800)

Accessory <*name*> not found. Verify the accessory installation, the file name, and the DOS path.

Level: **Severe**

IC_ERROR_ACCESSORY_NOT_FOUND indicates that the given file could not be located. This error occurs when an attempt is made to execute an INFOConnect

accessory through **IcOpenAccessory** or **IcRunAccessory** and the file or the DOS path could not be found.

The user seeing this error should verify that the given file name and DOS path, as well as the ICS installation of the accessory.

IC_ERROR_ALREADYCLOSED (Value 509)

The ICS Communications Manager has already been terminated. Close and restart the INFOConnect Shell.

Level: **Severe**

IC_ERROR_ALREADYCLOSED indicates that no INFOConnect Shell is executing. This error occurs only from **IcTerminateShell** when **IcInitShell** has not been called. ICS Shell developers must be sure to call **IcInitShell** and **IcTerminateShell** in pairs. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_ERROR_APP_BUSY (Value 11)

Application queue full. Message discarded.

Level: **Severe**

IC_ERROR_APP_BUSY indicates that a message cannot be posted to an application. This error occurs when the application's message queue is full.

The user seeing this error should give control to the application so that some messages may be delivered.

IC_ERROR_APP_GONE (Value 12)

Application queue closed. Message discarded.

Level: **Severe**

IC_ERROR_APP_GONE indicates that a message cannot be posted to an application. This error occurs when an AIL/IIL attempts to post a message to an application whose window handle is no longer valid. This may occur if the application terminates without closing all of its INFOConnect sessions.

The user seeing this error should contact the application's vendor.

IC_ERROR_BADFUNCTION (Value 300)

Internal error: Bad function. Contact the component's vendor for further information.

Level: **Severe**

For ICS DosLink applications, **IC_ERROR_BADFUNCTION** indicates an internal error to the DosLink.386 driver.

The user seeing this error should contact the component's vendor.

IC_ERROR_BADPARAMETER (Value 4)

Invalid parameter received. Contact the component's vendor for further information.

Level: **Severe**

IC_ERROR_BADPARAMETER is returned when an ICS procedure receives an invalid parameter. This may occur when an unexpected NULL string pointer is received or when a buffer length is less than the minimum required by the called procedure. Errors of this type should not occur in the final release of a product.

The user seeing this error should contact the component's vendor.

IC_ERROR_BADREVISION (Value 302)

This component references unknown revision <*number*>. Reboot the computer and try again.

Level: **Severe**

IC_ERROR_BADREVISION indicates that the given revision number is unknown to the ICS Manager. It may occur when a component contains an invalid or unknown revision number or as the result of memory corruption.

The user seeing this error should attempt to recreate it before contacting the component's vendor.

IC_ERROR_BADSESSION (Value 1)

Invalid session handle detected at <*string*>.
Session must be terminated.

Level: **Termination**

IC_ERROR_BADSESSION indicates that an invalid session handle has been detected. This error occurs when some underlying layer of INFOConnect Connectivity Services receives a handle to a session that is not a valid session handle or, where required, the handle of an established session. Once the error message is displayed, the communication session is to be closed through the close session procedure. If the default error procedure is called, it closes the session automatically.

For debugging purposes, library developers returning this error result from an ICS library must first call **IcSetSessionError** with the *lpinsert1* parameter pointing to a string that identifies the location in the code where the error was detected (for example, **IcLibXmt**).

The user seeing this error should turn on the Tracing Log facility from the INFOConnect manager for the session and recreate the error. The resulting log file should be sent to the INFOConnect support representative.

IC_ERROR_BADTEMPLATE (Value 611)

Configuration of path template <*template name*> is invalid. Choose Modify from Install Path Templates to update the corrupted data.

Level: **Severe**

IC_ERROR_BADTEMPLATE is an internal error indicating that the specified path template configuration is corrupted. It may occur as the result of disk corruption.

The user seeing this error should modify the template and save it, allowing the corrupted data to be overwritten.

IC_ERROR_BADVERSION (Value 301)

This component references unknown version <number>. Reboot the computer and try again.

Level: **Severe**

IC_ERROR_BADVERSION indicates that the given version number is unknown to the ICS Manager. It may occur when a component contains an invalid or unknown version number or as the result of memory corruption.

The user seeing this error should attempt to recreate it before contacting the component's vendor.

IC_ERROR_CANCELOPEN (Value 2000)

User did not select a valid path identification.

Level: **Informational**

The **IC_ERROR_CANCELOPEN** result occurs when the user selects the Cancel button on the Select Path dialog box during the open session procedure. Note that this is an informational result that indicates the dialog box was successfully executed and that a path was NOT selected by the user.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_ERROR_CHAN_BUSY (Value 612)

Library <*name*> is still busy opening channel <identifier>. Wait until the channel has opened and try again.

Level: **Severe**

IC_ERROR_CHAN_BUSY indicates that a library's **IcLibOpenSession** routine is being called before a previous call to the library's **IcLibOpenChannel** routine for that same channel has been completed. This may occur, for instance, if **IcLibOpenChannel** waits for user input.

The user seeing this error should wait until the channel finishes opening and try to open the path again.

IC_ERROR_CHANNELINUSE (Value 503)

Channel <*identifier*> already in use by <library> non-multiplexing library. The requested path cannot be opened at this time.

Level: **Severe**

IC_ERROR_CHANNELINUSE indicates that the given ICS path (specified by <identifier>) cannot be opened a second time. This error occurs from **IcOpenSession** when the channel configured for the given ICS path is already being used by the non-multiplexing library specified by <library>.

The user seeing this error should close one of the applications.

IC_ERROR_COLON_PRESENT (Value 906)

Colon(:) not allowed in ID. Correct the ID and try again.

Level: **Severe**

IC_ERROR_COLON_PRESENT indicates that the ICS ID erroneously contains a colon. ICS does not allow colons in IDs.

The user seeing this error should correct the ID and try the action again.

IC_ERROR_INITICS (Value 500)

Unable to start INFOConnect. ABORTING.
Contact the INFOConnect support representative for further information.

Level: **Severe**

IC_ERROR_INITICS indicates that INFOConnect cannot be executed. This error occurs from **IcInitIcs** when an unknown error occurs during INFOConnect Connectivity Services initialization. INFOConnect is aborted.

The user seeing this error should contact the INFOConnect support representative.

IC_ERROR_INMODIFY (Value 507)

Path <*name*> is currently being modified.
You cannot establish a session with this path.

Level: **Severe**

IC_ERROR_INMODIFY indicates that the given path cannot be opened. This error occurs when the user is modifying a path and, at the same time, attempts to open a session over it. These two activities are mutually exclusive. The session will not be established.

The user seeing this error should finish modifying the path configuration before attempting to use it.

IC_ERROR_INTERNAL (Value 5)

Internal error detected at <*string*>.
Contact the component vendor for further instruction.

Level: **Severe**

IC_ERROR_INTERNAL indicates a non-fatal internal error has been detected. This error occurs when some layer of ICS detects an impossible or unlikely state. For debugging purposes, developers returning this error from an ICS library must first call **IcSetSessionError** with the *lpinsert1* parameter pointing to a location identification string.

The user seeing this error should contact the component's vendor for more information.

IC_ERROR_INVALID_CONFIGREC (Value 900)

Invalid configuration record structure returned.
Configuration aborted. Select Configure from the Configure Packages window.

Level: **Severe**

IC_ERROR_INVALID_CONFIGREC indicates that a configuration record was invalid. This error occurs when the structure of the record does not match that expected by the ICS database.

The user seeing this error should select Configure from the Configure Packages window to force a data upgrade to occur. The action should then be retried. If the error still occurs, contact the component's vendor.

IC_ERROR_INVALIDPATH (Value 502)

Invalid path requested: <*path ID*>. Verify the path configuration.

Level: **Severe**

IC_ERROR_INVALIDPATH indicates that the given path ID is invalid. This error occurs when the user tries to establish a session with a path ID that is not configured.

The user seeing this error should verify that a path with the given path ID is properly configured.

IC_ERROR_INVALID_WINCOMBO (Value 8)

Invalid window state combination. Contact the component's vendor for further information.

Level: **Severe**

IC_ERROR_INVALID_WINCOMBO indicates that a request was made to open an ICS accessory with a hidden/active or maximized/background window state. This error occurs when one of these invalid combinations of window state options is passed to **IcOpenAccessory** or **IcRunAccessory** (through the -W option). See **IcOpenAccessory** or **IcRunAccessory** in Section 3, "INFOConnect API", , for more information. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_ERROR_INVALID_WINOPTION (Value 7)

Invalid window state option. Contact the component's vendor for further information.

Level: **Severe**

IC_ERROR_INVALID_WINOPTION indicates that a request was made to open an ICS accessory using unknown window state options. This error occurs when an invalid window state option is passed to **IcOpenAccessory** or **IcRunAccessory** (through the -W option). See **IcOpenAccessory** or **IcRunAccessory** in Section 3 of the *ICS Reference Manual*, "INFOConnect API", for more information. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_ERROR_LIBRARY_CONFIG (Value 901)

The given ID is still configured in a path. Delete this path or reconfigure it without this library.

Level: **Severe**

IC_ERROR_LIBRARY_CONFIG indicates that the library cannot be deleted. This error occurs when an attempt is made to delete a library while it is still configured in a path.

The user seeing this error should delete or reconfigure the path without the offending library ID before deleting the library.

IC_ERROR_LOSTRCV (Value 305)

Receive request lost. Please retry the request.

Level: **Severe**

For ICS DosLink applications, **IC_ERROR_LOSTRCV** indicates that a receive request was lost.

The user seeing this error should retry the receive request.

IC_ERROR_LOSTXMT (Value 306)

Transmit request lost. Please retry the request.

Level: **Severe**

For ICS DosLink applications, **IC_ERROR_LOSTXMT** indicates that a transmit request was lost.

The user seeing this error should retry the transmit request.

IC_ERROR_MGR_BUSY (Value 9)

Communication queue full. Request ignored.

Level: **Severe**

IC_ERROR_MGR_BUSY indicates that a message cannot be posted. This error occurs when the ICS Communications Manager message queue is full. The accessory must relinquish control so that some messages may be delivered.

The user seeing this error should close the accessory to allow messages to be delivered and contact the accessory's vendor.

IC_ERROR_NEWREVISION (Value 615)

This component requires a newer version (<*number*>) of the INFOConnect Communications Manager. Update the ICS software before using this component.

Level: **Severe**

IC_ERROR_NEWREVISION indicates that the component cannot execute with the installed ICS Manager. This error occurs when a newer revision of an ICS accessory or application attempts to run with an older version of ICS.

The user seeing this error must update the ICS software before using the component.

IC_ERROR_NEWVERSION (Value 605)

This application requires Version <*number*> of the INFOConnect Communications Manager. Update the ICS software before using this component.

Level: **Severe**

IC_ERROR_NEWVERSION indicates that the component cannot execute with the installed ICS Manager. This error occurs when a newer version of an ICS accessory or application attempts to run with an older version of ICS.

The user seeing this error must update the ICS software before using the calling application.

IC_ERROR_NOCHANDATA (Value 609)

Channel <*identifier*> configuration data for library <*library*> missing. Have the Administrator modify the channel configuration for this library.

Level: **Severe**

IC_ERROR_NOCHANDATA is an internal error indicating that the specified library is missing the specified channel configuration data. This may occur as the result of disk corruption.

The user seeing this error should modify the channel configuration.

IC_ERROR_NOCLOSE (Value 508)

The ICS Communications Manager is not ready to terminate. Be sure that all dialogs are closed.

Level: **Severe**

IC_ERROR_NOCLOSE indicates that the ICS Manager cannot be closed. This error occurs, for example, when the user still has the Select Path dialog open.

The user seeing this error should close all ICS dialogs before closing INFOConnect.

IC_ERROR_NODATABASE (Value 102)

Database Not Found. Please terminate and restart INFOConnect.

Level: **Termination**

IC_ERROR_NODATABASE indicates that a valid INFOConnect database could not be located. This error occurs when the database was not properly opened or

created. During initialization, the ICS Shell would have received the specific database error and should have displayed the error to the user. Once the error message is displayed, INFOConnect should be terminated and restarted.

The user seeing this error should verify that all INFOConnect command line parameters are correct. If the problem still occurs, contact the ICS Shell vendor.

IC_ERROR_NOFIND (Value 2008)

The requested information could not be found.

Level: **Informational**

The **IC_ERROR_NOFIND** result indicates that requested information could not be found.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_ERROR_NOLIBLOAD (Value 600)

Unable to load <*component*>. The result code is <number>. Verify that this is a valid Windows code file.

Level: **Severe**

IC_ERROR_NOLIBLOAD indicates that the ICS component specified by <*component*> cannot be loaded. A result code is specified by <*number*>.

The user seeing this error should verify that the given component is a valid Windows code file and that Windows itself is properly installed.

IC_ERROR_NOLIBRARY (Value 607)

Library <*name*> is not installed. Install the necessary library and try again.

Level: **Severe**

IC_ERROR_NOLIBRARY indicates that the specified library is not currently installed. This may occur if the Trace library is deinstalled or deleted and the user attempts to trace sessions. The error may also occur if the Local library is deinstalled or deleted and an application attempts to use an accessory.

The user seeing this error should install the necessary library.

IC_ERROR_NOMEMORY (Value 3)

Memory Error. Free some memory and try again.

Level: **Severe**

IC_ERROR_NOMEMORY is returned when an attempt to allocate or access an ICS memory block fails. It occurs in low memory conditions.

The user seeing this error should free some memory before continuing.

IC_ERROR_NOPARTNER (Value 303)

Partner session could not be found.

Level: **Warning**

IC_ERROR_NOPARTNER indicates that the partner session (for example, for an ICS DosLink Client/Server application) is not yet established.

The user seeing this error should wait until the partner session establishes before continuing to use the session.

IC_ERROR_NOPATHDATA (Value 608)

Path configuration data for library <*name*> is missing. Modify the path configuration and try again.

Level: **Severe**

IC_ERROR_NOPATHDATA is an internal error indicating that the specified library is missing path configuration data. It may occur as the result of disk corruption.

The user seeing this error should modify the path configuration.

IC_ERROR_NOPATHID (Value 903)

Path ID missing. Verify the path ID and try again.

Level: **Severe**

IC_ERROR_NOPATHID indicates that the path ID is not found. It occurs when an attempt is made to access a path with an ID that is not assigned.

The user seeing this error should verify that the path ID is correct and retry the action.

IC_ERROR_NORCVMEM (Value 309)

Internal error: no receive memory. Free some memory and try again.

Level: **Severe**

For ICS DosLink applications, the **IC_ERROR_NORCVMEM** internal error is returned when an attempt to allocate or access an ICS memory block fails. It occurs in low memory conditions.

The user seeing this error should free some memory before continuing.

IC_ERROR_NOSESSION (Value 2001)

Session is not established.

Level: **Informational**

IC_ERROR_NOSESSION result indicates that the session in question has not yet been successfully established. The session is in the process of opening, and may or may not open successfully .

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_ERROR_NOSESSIONMEM (Value 307)

Internal error: no session memory. Free some memory and try again.

Level: **Severe**

For ICS DosLink applications, **IC_ERROR_NOSESSIONMEM** is returned when an attempt to allocate or access an ICS memory block fails. It occurs in low memory conditions.

The user seeing this error should free some memory before continuing.

IC_ERROR_NOTEMPLATE (Value 610)

Path template <*template ID*> is not configured. Try to reconfigure the template.

Level: **Severe**

IC_ERROR_NOTEMPLATE is an internal error indicating that a path is attempting to use the specified path template that does not exist. It may occur as the result of disk corruption.

The user seeing this error should try to reconfigure the given template. If the error still occurs, contact the INFOConnect Configuration Accessory vendor.

IC_ERROR_NOVERSION (Value 603)

Cannot verify version information. <*name*> not loaded. Try reinstalling this product.

Level: **Severe**

IC_ERROR_NOVERSION indicates that ICS version information cannot be verified. It occurs when the specified file does not contain the required INFOConnect RCDATA version information in its resource file. This may occur as the result of memory or disk corruption.

The user seeing this error should reinstall the offending product before retrying the action. If the error still occurs, contact the component's vendor.

IC_ERROR_NOXMTMEM (Value 308)

Internal error: no transmit memory. Free some memory and try again.

Level: **Severe**

For ICS DosLink applications, the **IC_ERROR_NOXMTMEM** internal error is returned when an attempt to allocate or access an ICS memory block fails. It occurs in low memory conditions.

The user seeing this error should free some memory before continuing.

IC_ERROR_OLDVERSION (Value 614)

This component requires obsolete version <*number*>. Contact the component's vendor for a software upgrade.

Level: **Severe**

IC_ERROR_OLDVERSION indicates that the component cannot be executed. It occurs when an application requires an older version of ICS.

The user seeing this error should contact the component's vendor to obtain an updated version of the component.

IC_ERROR_PATHBUSY (Value 510)

Path <*path ID*> is currently active. Multiple instances of this path are not allowed.

Level: **Severe**

IC_ERROR_PATHBUSY indicates that the given path cannot be opened. It occurs when an attempt is made to open a second session over a non-multiplexing path.

The user seeing this error should close the active session before attempting to open another session using that path.

IC_ERROR_PATHID_EXISTS (Value 908)

Path ID already exists. Use a different ID or rename the existing path.

Level: **Severe**

IC_ERROR_PATHID_EXISTS indicates that a path ID already exists. It occurs when an attempt is made to add a path with a path ID that is already assigned.

The user seeing this error should either use a different ID or rename the existing path ID.

IC_ERROR_PICHANNELINUSE (Value 504)

Channel <*identifier*> in use. Not sharable between <*library*> and <*library*> external interface libraries.

Level: **Severe**

IC_ERROR_PICHANNELINUSE indicates that the given channel cannot be used by both of the given external interface libraries simultaneously. It occurs from **IcOpenSession** when the user attempts to use a single multiplexing service library with two different external interface libraries over the same channel.

The user seeing this error should close the active session before opening a session over the other path.

IC_ERROR_PIVERSION (Value 602)

<*name*> is not a valid INFOConnect external interface library. Library not loaded. Try reinstalling this product.

Level: **Severe**

IC_ERROR_PIVERSION indicates that the given file cannot be loaded as an external interface library. It occurs when the specified file does not properly identify itself as an INFOConnect EIL.

The user seeing this error should reinstall the offending product before trying to open the session. If the error still occurs, contact the component's vendor.

IC_ERROR_PMCHANNELINUSE (Value 505)

Channel <*identifier*> in use. Not sharable between <*library*> and <*library*> service libraries.

Level: **Severe**

IC_ERROR_PMCHANNELINUSE indicates that the given channel cannot be used by both of the given service libraries simultaneously. It occurs from **IcOpenSession** when the user attempts to use a single multiplexing service library with two different external interface libraries over the same channel.

The user seeing this error should close the active session before opening a session over the other path.

IC_ERROR_PMVERSION (Value 601)

<*name*> is not a valid INFOConnect service library.
Library not loaded. Try reinstalling this product.

Level: **Severe**

IC_ERROR_PMVERSION indicates that the given file cannot be loaded as a service library. It occurs when the specified file does not properly identify itself as an INFOConnect SL.

The user seeing this error should reinstall the offending product before trying to open the session. If the error still occurs, contact the component's vendor.

IC_ERROR_QUEUEFULL (Value 304)

Queue full.

Level: **Severe**

For ICS DosLink applications, the **IC_ERROR_QUEUEFULL** internal error indicates that a message cannot be posted to a DosLink application. It occurs when the DosLink.386 driver's queue is full.

The user seeing this error should give control to the application so that some messages may be delivered.

IC_ERROR_RCV_BUSY (Value 10)

Station is still receiving. Request ignored.

Level: **Severe**

IC_ERROR_RCV_BUSY indicates that a receive request is still outstanding. It occurs when a second request to receive data is made before the first one completes. The accessory should wait for a receive-done or a receive-error type message before requesting more data.

The user seeing this error should wait until the accessory receives data for the outstanding request before making another receive request.

IC_ERROR_REOPEN (Value 2)

Internal Error.
Attempt to re-open external interface library.
Contact the component vendor for further instruction.

Level: **Severe**

IC_ERROR_REOPEN indicates an internal error. It occurs when an attempt is made to reopen a communications device.

The user should contact the component's vendor.

IC_ERROR_SERVICE_NOT_AVAILABLE (Value 1001)

Unavailable service requested: <*service name*>. *Verify the service name with the component's documentation.*

Level: **Severe**

IC_ERROR_SERVICE_NOT_AVAILABLE indicates that the request for the given service cannot be fulfilled. It occurs when a request is made for a service that is not supported.

The user seeing this error should verify that the service name is correct by referring to the component's documentation.

IC_ERROR_SHELL_ACTIVE (Value 103)

An INFOConnect Shell is already active.
You cannot run multiple shells.

Level: **Termination**

The **IC_ERROR_SHELL_ACTIVE** error indicates that an attempt has been made to execute two INFOConnect Shell applications. It occurs when an accessory tries to register itself as the INFOConnect Shell through **IcInitShell** and an INFOConnect Shell is already running. Only one ICS Shell may be active at a time. The second must terminate.

The user seeing this error should terminate the offending application.

IC_ERROR_SIZE_EXCEEDED (Value 904)

ID length limited to %d characters. Correct the ID and try again.

Level: **Severe**

IC_ERROR_SIZE_EXCEEDED indicates that a ID is too big. It occurs when an ID exceeds **IC_MAX***IDLEN**.

The user seeing this error should correct the ID and try the action again.

IC_ERROR_SPACE_PRESENT (Value 905)

Space not allowed in ID. Correct the ID and try again.

Level: **Severe**

IC_ERROR_SPACE_PRESENT indicates that an ID erroneously contains a space. ICS does not allow spaces in IDs.

The user seeing this error should correct the ID and try the action again.

IC_ERROR_TERMINATE_CLEAR (Value 104)

A request has been made to clear this session.

Level: **Termination**

IC_ERROR_TERMINATE_CLEAR simply notifies an application that a communication session is being cleared. It occurs when the user chooses the ***Clear*** button from the INFOConnect user interface. The application has a chance to intercept this error and perform its termination routine before allowing the session to terminate. If the default error procedure is called, the session will close automatically. Unless INFOConnect is being executed in Debug mode, the associated error text will not be displayed by the default error procedure.

The user seeing this error should choose OK on the default error dialog to allow the session to close. The user will not see this error unless a *-d* appears as a command line parameter to INFOConnect.

IC_ERROR_TERMINATE_EXIT (Value 105)

A request has been made to close this session so INFOConnect can exit.

Level: **Termination**

IC_ERROR_TERMINATE_EXIT simply notifies the application that a communication session is being terminated because the user is closing INFOConnect Connectivity Services. The application has a chance to intercept this error and perform its termination routine before allowing the session to terminate. If the default error procedure is called, the session will close automatically. Unless INFOConnect is being executed in Debug mode, the associated error text will not be displayed by the default error procedure.

The user seeing this error should choose OK on the default error dialog to allow the session to close. The user will not see this error unless a *-d* appears as a command line parameter to INFOConnect.

IC_ERROR_TERMINATE_NOMSG (Value 0)

A request has been made to unconditionally terminate this session.

Level: **Termination**

IC_ERROR_TERMINATE_NOMSG simply requests that a communication session be unconditionally terminated. This is the error that is generated by the Local EIL when one half of the connected communications session is closed, and also by the IcTELNET SL if the TCP socket is closed. If the default error procedure is called, the session will close automatically. Unless INFOConnect is being executed in Debug mode, the associated error text will not be displayed by the default error procedure.

The user seeing this error should choose OK on the default error dialog to allow the session to close. The user will not see this error unless a *-d* appears as a command line parameter to INFOConnect.

IC_ERROR_TERMINATE_SHUTDOWN (Value 106)

A request has been made to close this session so workstation can shutdown.

Level: **Termination**

IC_ERROR_TERMINATE_SHUTDOWN simply notifies the application that a communication session is being terminated because the user is closing Windows. The application has a chance to intercept this error and perform its termination routine before allowing the session to terminate. If the default error procedure is called, the session will close automatically. Unless INFOConnect is being executed in Debug mode, the associated error text will not be displayed by the default error procedure.

The user seeing this error should choose **OK** on the default error dialog to allow the session to close. The user will not see this error unless a *-d* appears as a command line parameter to INFOConnect.

IC_ERROR_TILDE_PRESENT (Value 907)

Tilde(~) not allowed in ID. Correct the ID and try again.

Level: **Severe**

IC_ERROR_TILDE_PRESENT indicates that an ID erroneously contains a tilde (~). ICS does not allow tildes in IDs.

The user seeing this error should correct the ID and try the action again.

IC_ERROR_TIMERS (Value 1)

Too Many Timers. Terminate some timers and retry.

Level: **Severe**

IC_ERROR_TIMERS indicates that a Windows timer cannot be started. It occurs when an attempt is made to start a Windows timer and the maximum number of timers has already been reached.

The user seeing this error should terminate some Windows applications that are using the timer resource and try the action again.

IC_ERROR_TRUNCATED (Value 2002)

Buffer too small. String truncated.

Level: **Informational**

IC_ERROR_TRUNCATED result indicates that the output data has been truncated.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_ERROR_UNIMPLEMENTED (Value 2012)

The requested function is not implemented.

Level: **Informational**

The **IC_ERROR_UNIMPLEMENTED** result is returned from function stubs that have not yet been implemented. This error should not occur in the released version of a product.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_ERROR_UNKNOWN (Value 1000)

Unknown error encountered. Contact the component's vendor for more information.

Level: **Severe**

IC_ERROR_UNKNOWN indicates an unknown error. Developer's should attempt to use more descriptive errors.

The user seeing this error should contact the component's vendor.

IC_ERROR_UNKNOWN_COMMAND (Value 2010)

Unknown command.

Level: **Informational**

The **IC_ERROR_UNKNOWN_COMMAND** result indicates that a command parameter is unknown.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_ERROR_UNKNOWN_PARAMETER (Value 2009)

Unknown parameter.

Level: **Informational**

The **IC_ERROR_UNKNOWN_PARAMETER** result indicates that a parameter value is unknown.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_ERROR_UNKNOWN_TABLE (Value 2011)

Unknown table.

Level: **Informational**

The **IC_ERROR_UNKNOWN_TABLE** result indicates that a table parameter is unknown.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_ERROR_UNOPENEDSESSION (Value 506)

Attempt to use unopened session. Verify the path configuration and clear the session, if necessary.

Level: **Severe**

IC_ERROR_UNOPENEDSESSION indicates that the session is not yet available for communication. It occurs when an application attempts to use a session handle that either does not exist or that has not yet finished establishing. See the **IC_SessionEstablished** message type (or the **E_IC_SESSION_EST** event type) for more information.

The user seeing this error may need to clear the session and verify that the path configuration is correct before reopening the session.

IC_ERROR_UPGRADE_WAIT (Value 613)

Library <*name*> is waiting for configuration data upgrade. Select Configure from the Configure Packages window.

Level: **Severe**

IC_ERROR_UPGRADE_WAIT indicates that the quick configuration accessory has not performed the data upgrade for a library whose data record format has changed. It may occur when quick configuration is abnormally terminated.

The user seeing this error should run quick configuration for the "Incomplete" packages to force the data upgrade to occur.

IC_ERROR_WRONGVERSION (Value 604)

Current version of INFOConnect does not support this version of <*name*>. Library not loaded. Upgrade the necessary software.

Level: **Severe**

IC_ERROR_WRONGVERSION indicates that the given library cannot be executed. It occurs when the version of the specified ICS library is not supported by the current running version of ICS.

The user seeing this error should either update the library software or the ICS software.

IC_ERROR_XMT_BUSY (Value 6)

Station is still transmitting. Request ignored.

Level: **Severe**

IC_ERROR_XMT_BUSY indicates that a transmit request is still outstanding. It occurs when a second request to transmit data is made before the first one completes. The accessory should wait for a transmit-done or a transmit-error type message before retransmitting.

The user seeing this error should wait until the accessory transmits data for the outstanding request before making another transmit request.

IC_IGNORE (Value 2007)

This request is being ignored at this time.

Level: **Informational**

The **IC_IGNORE** result indicates that a request is being ignored.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_INCOMPLETE (Value 2006)

The request cannot be completed at this time.

Level: **Informational**

The **IC_INCOMPLETE** result indicates that a request could not be completed. The request may be completed at a later time. See the **IC_COMPLETE** informational result.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_INFO_QEVENT (Value 320)

Message Queued.

Level: **Informational**

The **IC_INFO_QEVENT** result occurs when querying the ICS DosLink **IcNextEvent** API with the **IC_NEXTEVENT_CHECK** flag and indicates that at least one event is queued for the session.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_OK (Value 0)

No Error.

Level: **Informational**

The **IC_OK** result indicates a successful completion of the request.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

IC_VERIFY_OK (Value 2005)

The requested session may be successfully opened.

Level: **Informational**

The **IC_VERIFY_OK** result indicates that a verify action completed successfully.

The user seeing this result may wish to log it for future reference. Otherwise, the result may be ignored.

ICS Standard Configurator Errors

The following error results are common/general errors defined for the ICS standard configurator. They may be returned as the result of a procedure call or with an error event (**IC_Error**, **IC_RcvError**, and so forth under MS-Windows or **E_IC_ERROR**, and so forth under XVT). These errors have the **IC_RESULT_CONTEXT_CFG** context.

IC_CFG_ALREADY_ACTIVE (Value 141)

Init Config already active.

Level: **Warning**

IC_CFG_ALREADY_ACTIVE may occur in the ICS 2.02 release when a configuration application attempts to initialize the configuration API twice.

The user seeing this error should contact the component's vendor.

IC_CFG_BIT_FIELD (Value 134)

Bit field unsupported. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_BIT_FIELD indicates that an invalid action is being attempted on a bit field. See the **IcGetField**, **IcSetField**, **IcGetKey**, and **IcSetKey** functions. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_DATA_MISMATCH (Value 113)

Data format mismatch. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_DATA_MISMATCH occurs when a given **IC_DATA_INFO.Length** or **IC_DATA_INFO.TableRevisionNum** does not match those of the selected object. It will also occur if the size of requested data exceeds the **IC_DATA_INFO.DataLength** for the selected object. See the **IcGetLibData**, **IcSetLibData**, and **IcCopyLibConfig** functions.

The user seeing this error should contact the component's vendor.

IC_CFG_DATA_TRUNCATED (Value 133)

Data record truncated.

Level: **Warning**

IC_CFG_DATA_TRUNCATED indicates that the retrieved data record was truncated. It occurs when an attempt is made to retrieve a configuration data record and the output buffer parameter is not big enough to hold the context string. See **IcGetLibDataInfo** for information on retrieving information about the configuration data record.

The user seeing this error should contact the component's vendor for further information.

IC_CFG_DELETE_INUSE (Value 143)

Request to delete item rejected. You must first delete all references to the item. Still in use by <identifier>.

Level: **Severe**

IC_CFG_DELETE_INUSE occurs if an attempt is made to delete a configuration object that is configured as part of another configuration object. For example, a template cannot be deleted if a path is configured with it; a library or channel cannot be deleted if a path or template is configured using it; and a library's path configuration cannot be deleted if an ICS path is configured with it.

The user seeing this error should modify the configuration so that the configuration does not access the configuration object before deleting it.

IC_CFG_DIFFERENT_ACTIVE (Value 140)

Init Config of different version already active. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_DIFFERENT_ACTIVE may occur in the ICS 2.02 release when a configuration application attempts to initialize the configuration API twice.

The user seeing this error should contact the component's vendor.

IC_CFG_INFO_EXCESS (Value 132)

Excess info requested.

Level: **Warning**

IC_CFG_INFO_EXCESS is currently not referenced.

IC_CFG_INFO_IMPOSSIBLE (Value 127)

Retrieval of informational data is impossible. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INFO_IMPOSSIBLE occurs when a request for configuration information (**IC_TABLE_INFO**, **IC_DATA_INFO**, **IC_KEY_INFO**, **IC_FIELD_INFO**) is made and the length parameter is less than the size of the appropriate record for any version of ICS. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INFO_TRUNCATED (Value 131)

Additional info available.

Level: **Warning**

IC_CFG_INFO_TRUNCATED is currently not referenced.

IC_CFG_INTERNAL_ERROR (Value 100)

Internal Configuration API Error. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INTERNAL_ERROR is an internal error with the Configuration Accessory API.

The user seeing this error should contact the configuration accessory's vendor for further instruction.

IC_CFG_INVALID_DATABASE (Value 160)

Invalid HIC_DATABASE. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_DATABASE indicates that an **HIC_DATABASE** parameter is invalid. This error occurs when attempting to access a database that has never been opened or that has already been closed. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_DB (Value 105)

Invalid IC_DB parameter. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_DB indicates that an **IC_DB** parameter is invalid. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_DBMODE (Value 106)

Invalid IC_DB_MODE parameter. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_DBMODE indicates that an **IC_DB_MODE** parameter is invalid. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_FIELD (Value 109)

Invalid Field number. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_FIELD occurs when a reference is made to a non-existing field number, non-existing field name, or a non-existing **IC_FIELD_REVISIONNUM**. Check the component's .HIC include file for currently defined field numbers. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_FIELD_TYPE (Value 111)

Invalid field type parameter. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_FIELD_TYPE indicates that the field type parameter is invalid. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_HANDLE (Value 103)

Invalid HIC_CONFIG. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_HANDLE indicates that the handle parameter is invalid. This occurs when the configuration object has never been opened, a severe error occurred during the open, or the object was already closed. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_HWND (Value 161)

Invalid configuration window handle. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_HWND indicates that the window handle parameter is invalid. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_KEY (Value 108)

Invalid Key number. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_KEY occurs when a reference is made to a non-existing key number, or to a table that has no keys or **IC_KEY_SERIALNUM** defined. Check the component's .HIC include file for currently defined key numbers. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_LIBRARY (Value 104)

Attempt to select library failed. Verify the library ID and try again.

Level: **Severe**

IC_CFG_INVALID_LIBRARY indicates that a library's configuration cannot be accessed. The error occurs when an attempt is made to access an invalid library ID.

The user seeing this error should verify that the library ID is correct.

IC_CFG_INVALID_POSITION (Value 112)

Invalid IC_POSITION parameter. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_POSITION indicates that the position parameter is invalid. This error occurs when **IcPositionConfig** receives an invalid **IC_POSITION** parameter, or receives the **IC_POS_NEXTDUP**, **IC_POS_NEXT**, or **IC_POS_PREVIOUS** parameter when no configuration object is currently selected. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_PROPERTY (Value 116)

Unsupported property parameter. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_PROPERTY indicates that the property parameter is invalid. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_SIZE (Value 114)

Unsupported field size. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_SIZE occurs when an attempt is made to get (or set) a field or key with a variable when the conversion between the variable and the field/key is unsupported. For example, trying to get a 2 byte integer into a 1 byte variable will result in this error. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_TABLE (Value 107)

Invalid Table parameter. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_TABLE indicates that the table parameter does not reference a valid configuration table for the currently selected component. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_TABLE_TYPE (Value 110)

Invalid table type parameter. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_TABLE_TYPE indicates that the table type parameter is invalid. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_TEMPLATE (Value 162)

Path config contains invalid Path Template. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_TEMPLATE indicates that the table type parameter is invalid. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_TYPE (Value 115)

Unsupported field type. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_TYPE occurs when an attempt is made to get (or set) a field or key with an incompatible type. For example, trying to get a **IC_FT_INTEGER** of a field defined as **IC_FT_CHAR** will result in this error. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_INVALID_TYPE_SIZE (Value 135)

Unsupported field type/size. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_INVALID_TYPE_SIZE occurs when an attempt is made to get (or set) a field or key with an incompatible field size/field type combinations. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_MISMATCH_DATA (Value 126)

Mismatch data format. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_MISMATCH_DATA is currently not referenced.

IC_CFG_NAME_TRUNCATED (Value 130)

Retrieved name truncated.

Level: **Warning**

IC_CFG_NAME_TRUNCATED indicates that the retrieved field name (**IcGetFieldName**) or table name (**IcGetLibTableName**) was truncated. It occurs when an attempt is made to retrieve a field name or table name and the output buffer parameter is not big enough to hold the name.

IC_CFG_NEW_DATA (Value 128)

New record created.

Level: **Warning**

IC_CFG_NEW_DATA indicates that a new configuration data record was created from the default configuration data. It occurs from those configuration functions that automatically create new records when the database is read/write and the requested record does not currently exist. See **IcFindNewConfig**.

The user seeing this error should modify the default configuration data appropriately.

IC_CFG_NO_DATA_MEMORY (Value 136)

No memory to load configuration data. Free some memory and try again.

Level: **Severe**

IC_CFG_NO_DATA_MEMORY indicates that a configuration object data buffer cannot be allocated. It occurs in low memory conditions.

The user seeing this error should free some memory and retry the action.

IC_CFG_NO_HCFG_MEMORY (Value 139)

No memory to open config session. Close some ICS configuration applications and try again.

Level: **Severe**

IC_CFG_NO_HCFG_MEMORY occurs when a configuration object cannot be allocated. It occurs in low memory conditions.

The user seeing this error should close one or more ICS configuration applications and try the action again.

IC_CFG_NO_HDB_MEMORY (Value 138)

No memory to open config database. Close some ICS configuration applications and try again.

Level: **Severe**

IC_CFG_NO_HDB_MEMORY occurs when the database configuration object cannot be allocated. It occurs in low memory conditions.

The user seeing this error should close one or more ICS configuration applications and try the action again.

IC_CFG_NO_HLIB_MEMORY (Value 162)

No memory to open config library. Close some ICS configuration applications and try again.

Level: **Severe**

IC_CFG_NO_HLIB_MEMORY occurs when the database configuration object cannot be allocated. It occurs in low memory conditions.

The user seeing this error should close one or more ICS configuration applications and try the action again.

IC_CFG_NO_INFO_MEMORY (Value 137)

No memory to load configuration info. Free some memory and try again.

Level: **Severe**

IC_CFG_NO_INFO_MEMORY occurs when an attempt to allocate a configuration definition buffer fails. It occurs in low memory conditions.

The user seeing this error should free some memory and try the action again.

IC_CFG_NO_INIT (Value 102)

Application never IcInitConfig. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_NO_INIT may occur in the ICS 2.02 release when a configuration application attempts to use the configuration API before it initializes it.

The user seeing this error should contact the component's vendor.

IC_CFG_NOT_FOUND (Value 125)

Configuration data not found. Verify the configuration.

Level: **Severe**

IC_CFG_NOT_FOUND indicates that a configuration record could not be found. It occurs when either the requested record is missing, or from **IcPositionConfig** when there are no more entries at which to position.

The user seeing this error should verify that the configuration is correct.

IC_CFG_NOT_IMPLEMENTED (Value 101)

Configuration API not implemented. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_NOT_IMPLEMENTED occurs when requesting service from configuration API that has not yet been implemented. All functions will be implemented as documented in a future ICS release. Developers should code accordingly. Therefore, this error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_STILL_ACTIVE (Value 142)

Init Config is still active.

Level: **Warning**

IC_CFG_STILL_ACTIVE indicates that configuration objects are still open and active. This error occurs when a configuration application closes a configuration session before closing the active configuration objects. The configuration objects remain active.

The user seeing this error should complete the configuration task.

IC_CFG_UNKNOWN_COMPONENT (Value 119)

Unknown component. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_UNKNOWN_COMPONENT is currently not referenced.

IC_CFG_UNKNOWN_FIELDTYPE (Value 122)

Unknown field type. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_UNKNOWN_FIELDTYPE is currently not referenced.

IC_CFG_UNKNOWN_GENERIC (Value 121)

Unknown generic component. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_UNKNOWN_GENERIC is currently not referenced.

IC_CFG_UNKNOWN_PROPERTY (Value 118)

Unknown property number. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_UNKNOWN_PROPERTY indicates that the property parameter is unsupported. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_UNKNOWN_ROLE (Value 117)

Unknown role parameter. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_UNKNOWN_ROLE indicates that the role parameter is invalid. This error should not occur in the released version of a product.

The user seeing this error should contact the component's vendor.

IC_CFG_UNKNOWN_SUPPLIER (Value 120)

Unknown supplier. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_UNKNOWN_SUPPLIER is currently not referenced.

IC_CFG_UNSAVED_DATA (Value 129)

Unsaved data discarded.

Level: **Warning**

IC_CFG_UNSAVED_DATA is currently not referenced.

IC_CFG_WRONG_FIELDSIZE (Value 123)

Wrong field size. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_WRONG_FIELDSIZE is currently not referenced.

IC_CFG_WRONG_FIELDTYPE (Value 124)

Wrong field type. Contact the component's vendor for more information.

Level: **Severe**

IC_CFG_WRONG_FIELDTYPE is currently not referenced.

IcACOMS

IcACOMS is a multiplexing library that manages A Series COMS-specific communications protocol. The **icacoms.hic** include file defines the generic interface of the IcACOMS AIL.

IcACOMS Errors

The following error values are specific to the IcACOMS library. They are distinguished by the context associated with the context string **COMS_CONTEXTSTRING**, defined in the **icacoms.hic** include file. Include this file in an application that is coded to be aware of these specific errors.

COMS_CHANNEL_ACTIVE (Value 225)

Channel already active.

Level: **Warning**

The **COMS_CHANNEL_ACTIVE** warning occurs when an attempt is made to open a COMS channel that is already open. Each COMS channel can only be opened once.

The user seeing this error should not try to open the channel again.

COMS_ERROR_ACTIVESESS (Value 211)

Internal Error. OpenSession requested by an active session. Contact the component vendor for further instruction.

Level: **Severe**

COMS_ERROR_ACTIVESESS is an internal error that occurs when an attempt is made to re-open a COMS communication session that has not been properly closed.

The user seeing this error should contact the vendor for further instruction.

COMS_ERROR_DUPLICATE (Value 214)

Selected CUSTOM PATH is already active.

Level: **Severe**

COMS_ERROR_DUPLICATE occurs when an attempt is made to establish a communication session on a COMS custom window that is already active.

The user seeing this error should not try to open the second instance of the custom path. Only one instance of each custom path can be active at a time.

COMS_ERROR_INSERTCHANNEL (Value 216)

Memory error while accessing Channel List.
Free up some memory and try again.

Level: **Severe**

COMS_ERROR_INSERTCHANNEL indicates that an internal IcACOMS error has occurred, and usually signifies a memory error.

The user seeing this error should free some memory and try again.

COMS_ERROR_INSERTSESSION (Value 215)

Memory error while accessing Session List.
Free up some memory and try again.

Level: **Severe**

COMS_ERROR_INSERTSESSION indicates that an internal IcACOMS error has occurred, and usually signifies a memory error.

The user seeing this error should free some memory and try again.

COMS_ERROR_INSERTWINDOWS (Value 217)

Memory error while accessing COMS Windows List.
Free up some memory and try again.

Level: **Severe**

COMS_ERROR_INSERTWINDOWS indicates that an internal IcACOMS error has occurred, and usually signifies a memory error.

The user seeing this error should free some memory and try again.

COMS_ERROR_MAXDIALOGS (Value 212)

Maximum COMS Dialogs Active. Close some and try again.

Level: **Severe**

COMS_ERROR_MAXDIALOGS occurs when the maximum number of COMS dialogs has been reached.

The user seeing this error should either close some dialogs and try again or open the session on a different COMS window.

IcHLCNTS

IcHLCNTS is an external interface library that provides an interface to A Series Host Lan Connection (HLCN) Terminal Services (TS). The **ichlcnts.hic** include file defines the generic interface of the IcHLCNTS EIL.

The IcHLCNTS EIL also acts as the package's configuration library. The package configuration table is defined by **ICHLCNTS_HOST_TABLENUM**.

IcHLCNTS Errors

The following error values are specific to the IcHLCNTS external interface library. They are distinguished by the context associated with the context string **HCLNTS_CONTEXTSTRING**, defined in the **ichlcnts.hic** include file. Include this file in an application that is coded to be aware of these specific errors.

NTS_CONNECT_DENIED (Value 3)

HOST DENIED CONNECTION

Level: **Severe**

NTS_CONNECT_DENIED indicates that the A Series host rejected the connection of the terminal name configured in the path.

The user seeing this error should check the configuration and verify the terminal name with the MIS department.

If the user has configured this path to receive messages, then this error text appears as a message on the terminal screen. Otherwise, the error is returned as an error message to the application. See **NTS_CONNECT_REJECTED**.

NTS_CONNECT_FAILED (Value 2)

CONNECT REQUEST FAILED

Level: **Severe**

NTS_CONNECT_FAILED indicates that the NetBIOS connection was lost while waiting for the host to connect. It occurs when IcHCLNTS receives a status message from NetBIOS indicating that the session is closed.

The user seeing this error should hit transmit to try to re-establish the session.

If the user has configured this path to receive messages, then this error text appears as a message on the terminal screen. Otherwise, the error is returned as an error message to the application.

NTS_CONNECT_LOST (Value 4)

CONNECTION HAS BEEN LOST

Level: **Severe**

NTS_CONNECT_LOST indicates that the NetBIOS connection to the host has been lost or the host terminated the session. It occurs when IcHCLNTS receives a status message from NetBIOS indicating that the session is closed.

The user seeing this error should hit transmit to try to re-establish the session.

If the user has configured this path to receive messages, then this error text appears as a message on the terminal screen. Otherwise, the error is returned as an error message to the application.

NTS_CONNECT_REJECTED (Value 22)

Connection request denied: (<*host error*>) <*associated text*>
Transmit again to retry the connection attempt.

Level: **Severe**

NTS_CONNECT_REJECTED reports the error code received from the host, as well as the error text from the host. The error occurs when the A Series host rejects the connection attempt. It is returned to the application only if the path has not been configured to receive messages.

The user seeing this error should hit transmit to try to re-establish the session.

If the user has configured this path to receive messages, then the text associated with the **NTS_CONNECT_DENIED** error appears on the terminal screen followed by the error text from the host.

NTS_CREDITS_EXCEEDED (Value 23)

Protocol error. Buffer credits exceeded. Message discarded.

Level: **Severe**

NTS_CREDITS_EXCEEDED indicates that a message has been discarded. It occurs when the host has sent data that has exceeded the specified protocol limits.

The user seeing this error should trace both the configured path and the host path associated with the path's channel. The debug files should be sent to the component vendor for further action.

NTS_MSG_OK (Value 1)

.ok.

Level: **Non-error**

This terminal data message appears on the terminal screen if the user has configured the path for input edit and has issued a terminal options command (for example, ?+s, ?-i, etc.).

NTS_NO_HOSTPATH (Value 24)

HostPath <*name*> referenced by HLCNTS Channel <*identifier*> has not been configured.

Level: **Severe**

NTS_NO_HOSTPATH occurs when an attempt is made to open the given host path that is associated with the given channel and that host path has not yet been configured.

The user seeing this error should configure the host path and try again.

NTS_TERMINAL_ACTIVE (Value 21)

Terminal <*name*> is already active. Unable to open terminal multiple times.

Level: **Severe**

NTS_TERMINAL_ACTIVE indicates that the open session request failed. It occurs when an attempt is made to open a second session using a terminal name that is already open.

The user seeing this error should not try to open a terminal session multiple times.

IcLCW

IcLCW is a service library that, when used in conjunction with the IcXNS external interface library, provides LAN Connected Workstation-specific, value-added functionality. The **iclcw.hic** include file defines the generic interface of the IcLCW SL.

The IcLCW SL also acts as the package's configuration library. The package configuration table is defined by **ICLCW_TEMPL_TABLENUM**.

IcLCW Errors

There are no error results specific to the IcLCW service library.

IcLocal

IcLocal is an external interface library that manages data communications between two applications on the same system. The **iclocal.hic** include file defines the generic interface of the IcLocal EIL.

IcLocal Errors

There are no error results specific to the IcLocal external interface library.

IcMon

IcMon is a service library that maintains transaction-related information on a per-session basis. The generic component ID is **IC_GENERIC_MON**. The **icmon.hic** include file defines the generic interface of the IcMon SL.

IcMon Errors

The following error values are specific to the IcMon service library. They are distinguished by the context associated with the context string **ICMON_CONTEXTSTRING**, defined in the **icmon.hic** include file. Include this file in an application that is coded to be aware of these specific errors.

ICMON_ERR_KEYVALUE (Value 500)

Invalid key for monitor's configuration record.

Level: **Severe**

ICMON_ERR_KEYVALUE indicates that the **ICMON_OPTIONSTABLE_KEY** key is incorrect. It may occur as the result of memory or disk corruption.

The user seeing this error should reconfigure the monitor library. If the error still occurs, contact the component's vendor for further information.

ICMON_ERR_NODUPEOPTIONS (Value 502)

Only one Monitor Options record is allowed.

Level: **Severe**

ICMON_ERR_NODUPEOPTIONS indicates that the options table can only have one record. It occurs if an application attempts to add a second record to the Monitor's options table.

The user seeing this error should contact the component's vendor.

ICMON_ERR_RANGEVALUE (Value 501)

Invalid RANGE in monitor's configuration options. RANGE values must be in increasing order.

Level: **Severe**

ICMON_ERR_RANGEVALUE occurs when the transaction counters, denoted by fields **ICMON_SESS_PREV_RT_RANGE1, ICMON_SESS_PREV_RT_RANGE2,** and **ICMON_SESS_PREV_RT_RANGE3** are not set in ascending order.

The user seeing this error should reconfigure the monitor library.

IcNBIOS

IcNBIOS is an external interface library that provides an interface to NetBIOS protocol stacks. The **icnbios.hic** include file defines the generic interface of the IcNBIOS EIL.

IcNBIOS Errors

The following error values are specific to the IcNBIOS external interface library. They are distinguished by the context associated with the context string **NETBIOS_CONTEXTSTRING**, defined in the **icnbios.hic** include file. Include this file in an application that is coded to be aware of these specific errors.

Note that the configurable Auto Connect feature of IcNBIOS alters the errors that will be reported. When this feature is enabled, the IcNBIOS EIL will automatically reconnect failed sessions. The error will be returned to the application with the informational error level. These are normally not displayed by the default error procedure.

NETBIOS_DUP_NAME (Value 4)

NetBIOS name already in use on the network.

Level: **Termination**

NETBIOS_DUP_NAME occurs when a request is made to claim a NetBIOS name that is already active on the network.

The user seeing this error must choose a different NetBIOS name before opening the session.

NETBIOS_ERR_ADATA (Value 8)

Error %#2x getting adapter data to retrieve the permanent node name.

Level: **Severe**

NETBIOS_ERR_ADATA reports the error number that occurs when adapter data, which contains the permanent node name, could not be retrieved.

The user seeing this error should supply a NetBIOS name in the path configuration and try again.

NETBIOS_ERR_ADD_NAME (Value 5)

Error %#2x adding NetBIOS name.
See NetBIOS documentation for more information.

Level: **Termination**

NETBIOS_ERR_ADD_NAME reports the error number that occurred when adding (claiming) a NetBIOS name on the network fails. This may be the result of an abnormal termination of INFOConnect.

The user seeing this error should reboot the machine.

NETBIOS_ERR_CALL (Value 7)

Error %#2x on call. See NetBIOS documentation for more information.

Level: **Severe**

NETBIOS_ERR_CALL reports the error number that occurs when a call to the remote device cannot be performed.

The user seeing this error should refer to the NetBIOS documentation for more information on the given error number.

NETBIOS_ERR_CONNECT (Value 9)

NetBIOS call error %#2x. See NetBIOS documentation for more information.

Level: **Termination** or **Informational**

NETBIOS_ERR_CONNECT reports the error number that occurs when a call to the remote device completes in error.

This error is normally a terminate-type error. However, if the user has configured this path with auto connection and the error number is 05h, 12h, or 14h, then the error is returned to the application as an informational-type error and the NetBIOS call is attempted again.

The user seeing this error should close session and re-open it to try to reconnect.

NETBIOS_ERR_DELETE_NAME (Value 11)

Error %#2x deleting NetBIOS name from the network.
See NetBIOS documentation for more information.

Level: **Severe**

NETBIOS_ERR_DELETE_NAME reports the error number that occurs when deleting a NetBIOS name fails. The machine may have to be rebooted to reinitialize the local name table.

The user seeing this error should refer to the NetBIOS documentation for more information on the given error number.

NETBIOS_ERR_LISTEN (Value 6)

Error %#2x on listen.
See NetBIOS documentation for more information.

Level: **Severe**

NETBIOS_ERR_LISTEN reports the error number that occurs when a listen for an incoming call was attempted. If the Auto Connect feature if IcNBIOS was enabled, the listen will be retried.

The user seeing this error should refer to the NetBIOS documentation for more information on the given error number.

NETBIOS_ERR_RECEIVE (Value 32)

Rcv error %#2x. See NetBIOS documentation for more information.

Level: **Severe** or **Informational**

This error reports the error number that occurs when receiving a message.

NETBIOS_ERR_RECEIVE is normally a severe-type error (thus canceling the receive request). However, if the user has configured this path with auto connection and the error number is 0ah or 18h, then an informational-type error is reported to the application, the connection is closed, and an attempt is made to re-open the connection and continue the receive request.

The user seeing this error should refer to the NetBIOS documentation for more information on the given error number.

NETBIOS_ERR_RECEIVING (Value 22)

A receive is still pending. Request ignored.

Level: **Severe**

NETBIOS_ERR_RECEIVING indicates that a receive request is still outstanding. It occurs when an attempt is made to issue a second receive request. Only one receive request may be outstanding at a time.

The user seeing this error should wait until the accessory receives data for the outstanding request before making another receive request.

NETBIOS_ERR_SEND (Value 33)

Xmt error %#2x. See NetBIOS documentation for more information.

Level: **Severe** or **Warning**

NETBIOS_ERR_SEND reports the error number that occurs when transmitting a message.

This error is normally a severe-type error (thus canceling the transmit request). However, if the user has configured this path with auto connection and the error number is 0ah or 18h, then a warning-type error is reported to the application, the connection is closed, and an attempt is made to re-open the connection and continue the transmit request.

The user seeing this error should refer to the NetBIOS documentation for more information on the given error number.

NETBIOS_ERR_SENDING (Value 23)

A transmit is still pending. Request ignored.

Level: **Severe**

NETBIOS_ERR_SENDING indicates that a transmit request is still outstanding. It occurs when an attempt is made to issue a second transmit request. Only one transmit request may be outstanding at a time.

The user seeing this error should wait until the accessory transmits data for the outstanding request before making another transmit request.

NETBIOS_INTERNAL (Value 10)

ICNBIOS EIL internal error <*number*>.
Contact component vendor for more information.

Level: **Severe**

NETBIOS_INTERNAL reports an internal IcNBIOS error number.

The user seeing this error should report the IcNBIOS error number to the component's vendor.

NETBIOS_NOT_FOUND (Value 3)

NetBIOS not found. Load NetBIOS before running Windows.

Level: **Severe**

NETBIOS_NOT_FOUND occurs when NetBIOS could not be found.

The user seeing this error should verify that NetBIOS is loaded before running Windows.

NETBIOS_XMT_BUSY (Value 21)

Station is still transmitting. Request to terminate transmit ignored.

Level: **Severe**

NETBIOS_XMT_BUSY occurs when a transmission is still in process and the application requested to cancel it. The **IC_LCL_XMT** request is ignored.

The user seeing this error should wait until the transmit request has completed.

IcTCP

The IcTCP external interface library provides generic TCP/IC socket access. The **ictcp.hic** include file defines the generic interface of the IcTCP EIL.

IcTCP Errors

There are no error results specific to the IcTCP external interface library.

IcTELNET

The IcTELNET service library provides basic TELNET services over TCP/IP. This allows VT-type emulator to hosts which support TELNET (for example, U Series, 1100/2200 Series, A Series). The **ictelnet.hic** include file defines the generic interface of the IcTELNET SL.

The IcTELNET SL also acts as the package's configuration library. The package configuration table is defined by **ICTEL_TEMPL_TABLENUM**.

IcTELNET Errors

The following error values are specific to the IcTELNET service library. They are distinguished by the context associated with the context string **TELNET_CONTEXTSTRING**, defined in the **ictelnet.hic** include file. Include this file in an application that is coded to be aware of these specific errors.

TELNET_BAD_CONFIG (Value 12)

Internal Error. Contact the component vendor for more information.

Level: **Severe**

TELNET_BAD_CONFIG is an internal error that indicates that an error has occurred within the INFOConnect database. It may occur as the result of disk corruption.

The user seeing this error should contact the component vendor for more information.

TELNET_ERR_RECEIVING (Value 22)

A receive is still pending. Request ignored.

Level: **Severe**

TELNET_ERR_RECEIVING occurs when an attempt is made to issue a second receive request. Only one receive request may be outstanding at a time.

The user seeing this error should wait until the receive request has completed.

TELNET_ERR_SENDING (Value 23)

A transmit is still pending. Request ignored.

Level: **Severe**

TELNET_ERR_SENDING occurs when an attempt is made to issue a second transmit request. Only one transmit request may be outstanding at a time.

The user seeing this error should wait until the transmit request has completed.

TELNET_INTERNAL (Value 10)

IcTELNET Service Library internal error <*number*>.
Contact component vendor for more information.

Level: **Severe**

TELNET_INTERNAL reports an internal IcTELNET error number.

The user seeing this error should report the IcTELNET error number to the component's vendor.

IcTrace

The IcTrace service library traces INFOConnect data communications calls and events and writes them to a trace file, trace.log, located in the DataDir directory. The **ictrace.hic** include file defines the generic interface of the IcTrace SL.

IcTrace Errors

There are no error results specific to the IcTrace service library.

IcTTY

IcTTY is an external interface library that manages a TTY connection through the computer's COM ports. The **ictty.hic** include file defines the generic interface of the IcTTY EIL.

IcTTY Errors

The following error values are specific to the IcTTY external interface library. They are distinguished by the context associated with the context string **TTY_CONTEXTSTRING**, defined in the **ictty.hic** include file. Include this file in an application that is coded to be aware of these specific errors.

The following errors prefixed by **TTY_ERROR_...** may occur during communication session establishment. They correspond to the results returned by MS-Windows if an error occurs while opening the Windows communication device.

TTY_ERROR_BAUDERROR (Value 8)

Baud rate is not supported. Reconfigure path and try again.

Level: **Termination**

TTY_ERROR_BAUDERROR indicates that the configured baud rate is unsupported.

The user seeing this error should reconfigure this path and try again.

TTY_ERROR_BYTEERROR (Value 7)

Invalid byte size specified. Reconfigure path and try again.

Level: **Termination**

TTY_ERROR_BYTEERROR indicates that the configured byte size is invalid.

The user seeing this error should reconfigure this path and try again.

TTY_ERROR_DEFPARAM (Value 5)

Default parameters are bad. Verify configuration.

Level: **Termination**

TTY_ERROR_DEFPARAM indicates that the default parameters are invalid.

The user seeing this error should reconfigure this path, verify the Windows communications port configuration, and try again.

TTY_ERROR_DIALABORTED (Value 11)

User Aborted Autodialing.

Level: **Termination**

TTY_ERROR_DIALABORTED indicates that the user aborted the auto dialing feature of the IcTTY EIL. The session will not be opened.

TTY_ERROR_NOPORT (Value 1)

Com port does not exist. Reconfigure and try again.

Level: **Termination**

TTY_ERROR_NOPORT indicates that the communication ID is invalid or unsupported.

The user seeing this error should reconfigure this path, verify the Windows communications port configuration, and try again.

TTY_ERROR_NOQs (Value 4)

Unable to allocate I/O queues. Free up some memory and try again.

Level: **Termination**

TTY_ERROR_NOQs indicates that there is not enough memory to allocate the input/output queues. It occurs in low memory conditions.

The user seeing this error should free some memory and try again.

TTY_ERROR_NOTIMER (Value 10)

Dialing timer could not be started.

Level: **Termination**

TTY_ERROR_NOTIMER occurs when an attempt to start the auto dialing Windows timer fails. Dialing cannot continue, and the session will not be opened.

The user seeing this error should terminate some Windows applications that are using the timer resource and try again.

TTY_ERROR_NOTOPEN (Value 3)

Com port is not open. Verify Windows communication port configuration.

Level: **Termination**

TTY_ERROR_NOTOPEN indicates that the communication device could not be opened.

The user seeing this error should verify that the Windows communication port configuration is correct.

TTY_ERROR_OPEN (Value 2)

Device is already open. Verify that another application is not using the communications port.

Level: **Termination**

TTY_ERROR_OPEN indicates that the communication device is already open.

The user seeing this error should verify that another application is not using the communications port.

TTY_ERROR_UNAVAILPORT (Value 6)

Com port is not available. Verify communications hardware.

Level: **Termination**

TTY_ERROR_UNAVAILPORT indicates that the device hardware is not available.

The user seeing this error should verify that the communications hardware is correctly installed and operational.

TTY_ERROR_UNKNOWN (Value 9)

Unknown status returned by Windows.

Level: **Termination**

TTY_ERROR_UNKNOWN indicates that an unknown error result was returned by MS-Windows.

The user seeing this error should contact the component's vendor.

TTY_LCLERROR_FAILED (Value 40)

The communications port could not be set into Local mode. Verify handshaking configuration.

Level: **Termination**

TTY_LCLERROR_FAILED indicates that the previous request to set the communications port into local mode did not succeed.

The user seeing this error should verify the handshaking configuration.

TTY_RCVERROR_FAILED (Value 22)

The communications port could not be set into Receive mode. Verify handshaking configuration.

Level: **Termination**

TTY_RCVERROR_FAILED indicates that the previous request to set the communications port into Receive mode did not succeed.

The user seeing this error should verify the handshaking configuration.

TTY_RCVERROR_FRAME (Value 21)

The hardware detects a framing error.
Check hardware and verify hardware configuration.

Level: **Severe**

TTY_RCVERROR_FRAME occurs when the hardware detects a framing error.

The user seeing this error should verify the hardware and the hardware configuration.

TTY_RCVERROR_OVERRUN (Value 20)

A receive overrun error has occurred, data has been lost.
Contact the component vendor for further instruction.

Level: **Severe**

TTY_RCVERROR_OVERRUN occurs when data in the receive buffer is not read before more data arrives.

The user seeing this error should contact the component's vendor.

TTY_XMTERROR_CTSTO (Value 30)

Clear-to-send timeout. Check wiring and verify configuration.

Level: **Severe**

TTY_XMTERROR_CTSTO occurs when the Clear-to-send signal times out while trying to transmit.

The user seeing this error should verify the wiring and the configuration.

TTY_XMTERROR_DSRTO (Value 31)

Data-set-ready timeout. Check wiring and verify configuration.

Level: **Severe**

TTY_XMTERROR_DSRTO occurs when the Data-set-ready signal times out while trying to transmit.

The user seeing this error should verify the wiring and the configuration.

TTY_XMTERROR_RLSDTO (Value 32)

Receive-line-signal-detect timeout. Check wiring and verify configuration.

Level: **Severe**

TTY_XMTERROR_RLSDTO occurs when the Receive-line-signal-detect signal times out while trying to transmit.

The user seeing this error should verify the wiring and the configuration.

TTY_XMTERROR_TRANSMITTING (Value 34)

Station is still transmitting. Request ignored.

Level: **Termination**

TTY_XMTERROR_TRANSMITTING indicates that the previous request to transmit has not completed. This request is rejected. The application/accessory should wait for a transmit-done or a transmit-error type event/message before retransmitting.

The user seeing this error should contact the component's vendor.

TTY_XMTERROR_TXFULL (Value 33)

The transmit queue is full while trying to queue a character. Contact the application vendor for further information.

Level: **Severe**

TTY_XMTERROR_TXFULL occurs when data cannot be queued because the transmit queue is full.

The user seeing this error should contact the application's vendor.

IcXNS

IcXNS is an external interface library that allows access to network nodes on a Novell® LAN. The **icxns.hic** include file defines the generic interface of the IcXNS EIL.

IcXNS Errors

The following error values are specific to the IcXNS external interface library. They are distinguished by the context associated with the context string **XNS_CONTEXTSTRING**, which is defined in the **icxns.hic** include file. Include **icxns.hic** and **dcdevice.hic** in an application that is coded to be aware of these specific errors.

DCDEV_BAD_DEVICE (Value 1003)

Internal Error.
Invalid XNS device driver (XNSCOM.SYS).

Level: **Severe**

DCDEV_BAD_DEVICE occurs when the version of the installed XNSCOM.SYS device is not a valid XNS device.

The user seeing this error should reinstall the XNS device driver.

DCDEV_NO_CHANNEL (Value 1006)

No channel available. Increase /Sn parameter of
XNSCOM.SYS device in config.sys or close an active session.

Level: **Severe**

DCDEV_NO_CHANNEL occurs when no channel is available.

The user seeing this error should increase the /*Sn* parameter for the XNS device driver in CONFIG.SYS and reboot the machine or close an active XNS session.

DCDEV_NO_DEVICE (Value 1001)

Unable to open device. Verify that device=<path>XNSCOM.SYS is present in CONFIG.SYS.

Level: **Severe**

DCDEV_NO_DEVICE occurs when the required data communications device could not be opened.

The user seeing this error should verify that the device statement for the XNS device driver in CONFIG.SYS is correct.

DCDEV_NO_DRIVER (Value 1005)

XNSCOM.SYS requires IPX.COM to be loaded.

Level: **Severe**

DCDEV_NO_DRIVER occurs when IPX.COM is not loaded. IPX.COM must be loaded before loading Windows.

The user seeing this error should load IPX before loading Windows.

DCDEV_NOT_DEVICE (Value 1002)

Unable to verify device. Verify that CONFIG.SYS references the correct version of XNSCOM.SYS.

Level: **Severe**

DCDEV_NOT_DEVICE occurs when the required device could not be verified.

The user seeing this error should verify that CONFIG.SYS references the correct version of XNSCOM.SYS and reboot if necessary.

DCDEV_OLD_DEVICE (Value 1004)

Old XNS device driver (XNSCOM.SYS).

Level: **Warning** or **Severe**

DCDEV_OLD_DEVICE occurs when the version of the installed XNSCOM.SYS device is older than the IcXNS.DLL library. If the library can continue, this is a warning type message; otherwise, it is severe.

The user seeing this error should verify that CONFIG.SYS references the correct version of XNSCOM.SYS and reboot if necessary.

DCDEV_READ_ERROR (Value 1020)

Internal Read error.
Contact the component vendor for further instruction.

Level: **Severe**

DCDEV_READ_ERROR indicates that the data communications device could not read data.

The user seeing this error should contact the component's vendor.

DCDEV_WRITE_ERROR (Value 1021)

Internal Write error.
Contact the component vendor for further instruction.

Level: **Severe**

DCDEV_WRITE_ERROR indicates that the data communications device could not write data.

The user seeing this error should contact the component's vendor.

DCDEV_WRITE_INCOMPLETE (Value 1022)

Write incomplete. Verify that the /b parameter of XNSCOM.SYS device in config.sys matches the application's suggested value.

Level: **Severe**

DCDEV_WRITE_INCOMPLETE indicates that the data communications device could not complete writing data.

The user seeing this error should verify that the /*b* parameter for the XNS device driver in CONFIG.SYS matches the application's suggested value.

XNS_ADDRESS_ERROR (Value 701)

LAN terminal address error.

Level: **Severe**

XNS_ADDRESS_ERROR occurs when the LAN terminal address is in error.

The user seeing this error should verify the configured address.

XNS_SOCKET_ERROR (Value 702)

Same socket already open.

Level: **Severe**

XNS_SOCKET_ERROR occurs when the configured socket is already open.

The user seeing this error should verify that the socket configuration is correct.

Glossary

A

AAPI
See *Accessory Application Programming Interface*.

accessory
An ICS application that can be invoked and controlled by other ICS applications. Accessories are written to be useful in building more sophisticated products. An accessory adheres to the rules outlined in Section 6 of this manual.

Accessory Application Programming Interface (AAPI)
The interface available to INFOConnect applications and accessories. The AAPI defines a collection of services for sending and receiving data across a data communications connection in a transport-independent manner.

accessory ID
See *ID*.

AIL
See *application interface library*.

aliasing (channel and session)
The *ICS Manager* uses channel identifiers in the form of **HIC_CHANNEL**s and session identifiers in the form of **HIC_SESSION**s. Libraries must use these identifiers, or handles, when calling the ICS Manager API as needed. The library may create an alias for these identifiers by assigning a value that uniquely identifies the channel or session in the **IcLibOpenChannel** or **IcLibOpenSession** procedure. In this case, the library will receive this value on all calls from the ICS Manager. Otherwise, the library receives the ICS Manager's identifier.

application interface library (AIL)
A library that implicitly appears at the top of the library stack and typically exports the application interface to accessories. The INFOConnect Accessory AIL (IcAAPI16.DLL) exports all session related interfaces of the INFOConnect Accessories API. Other AAPI functions are exported directly by the *ICS Manager* and are also available to INFOConnect accessories.

Application Type
See *Open ID*.

B

branded component numbers
A supplier-specific identifier that uniquely identifies a component. See *component number*.

C

channel data
Global channel-related data for ICS libraries that is reusable on a per-session basis. Default data may be supplied by the library during template installation. Channel data may be configured by the user through channel configuration and associated with path data during path configuration. This is the data passed into **IcLibOpenChannel**.

CodeDir
The name of the directory that contains INFOConnect code files. CodeDir refers to either the [INFOConnect] CodeDir entry from WIN.INI or, if that does not exist, the directory from which the ICS Manager DLLs are executing.

Communications Manager
The *ICS Manager* component that provides the interface between the accessory and the library components. The Communications Manager handles loading the necessary libraries at session establishment.

communication path
See *path*.

communication session
See *session*.

component number
Identifiers used by the INFOConnect Connectivity Services configuration accessory to uniquely identify components. *Component numbers* are defined by the **IC_COMPONENT** data type. See Appendix A for a more information.

configuration session
An instance of active configuration of a particular INFOConnect element (such as an INFOConnect path or library).

configuration accessory or configurator
An INFOConnect accessory that provides the user interface to the configuration functions for the INFOConnect Connectivity Services product. There may be more than one configuration accessory executing. The configuration accessory provided on the ICS runtime diskettes is referred to as the INFOConnect Manager.

Configuration Manager

The *ICS Manager* component that provides the configuration feature of INFOConnect by allowing access to the *Database Manager*. It also manages the interface between libraries during configuration.

context

A dynamically assigned identification for INFOConnect Connectivity Services loaded DLLs and registered accessories. It can be used to uniquely identify the accessory/library where the status and error messages are defined. A context is part of an **IC_RESULT** value.

context string

Unique identification string that is used to obtain a unique context for loaded ICS components. The context string is defined in the component's .HIC include file.

cooperative system

A system consisting of multiple components that may be executing on a single computer system or on different computer systems. INFOConnect Connectivity Services provides the communications layer between different components of the cooperative system when one of the components is running on a workstation GUI platform.

D

data dictionary table
A table of **IC_DICT_FIELD**s followed by a single NULL value. This is a user-defined resource type with the type ID given as the *DictRcType* field value in the **IC_DICT_NODE** resource. The name IDs are computed using the *TableFirst* and *TableCount* field values of the same resource. Each table defines some portion of a library's configuration data.

Database Manager
The *ICS Manager* component that maintains the configuration database.

DataDir
The name of the directory that contains INFOConnect data files. DataDir refers to either the [INFOConnect] DataDir entry from WIN.INI or, if that does not exist, the Windows Directory.

DosLink
Client/Server-type DOS applications that run in Windows enhanced mode and utilize the ICS API for data communications.

DosLink API
A subset of the Accessory API that defines those INFOConnect data communications services available to DOS applications.

E

EIL
See *external interface library*.

exit-hook library
A special library that gains control from the ICS Installation Accessory at certain points during installation and deinstallation of the product. There may be only one exit-hook library per package. If this library exists, its filename is recorded in the package INF installation file.

external interface library (EIL)
A library that acts as an adaptor to a particular type of communications hardware or software. Each **path** is configured with a single EIL. EILs act as the point where a path connects to another "environmental context". This is often an external communications driver, but an EIL can also connect to another INFOConnect path and initiate another pass through the INFOConnect architecture. Applications, as well as other libraries in the path, are unaware of EILs.

G

generic component number
Identifies a component according to its function.. See *component number*.

Graphical User Interface (GUI)
User presentation that consists of managing multiple objects on a single screen. The interface consists of windows, dialogs, keyboard, and, mouse support which together provide a high-level of consistency to the users perception of the system.

GUI
See *Graphical User Interface*.

H

.HIC include file
An include file provided by an ICS library component that contains the library's context string, library-specific statuses and errors, and definitions for each of the library's configuration tables along with field definitions for each field of the tables.

hidden path
A path configured as *hidden* will not appear for selection at runtime when an INFOConnect application or accessory opens a session without a pre-specified path. This is useful when a path is pre-configured for use by a particular application or accessory and so should not be chosen for use with other applications.

hidden template
A template configured as *hidden* will not appear for selection during path configuration. This is useful for administrators to configure templates that are not normally visible to the user.

hook library
A special purpose library that provides special features to the *ICS Manager*. See *trace library*, *exit-hook library*.

I

ICS Manager or The Manager

The backplane of the INFOConnect Connectivity Services product. The ICS Manager consists of a set of dynamic link libraries that control data communications as well as provide access to the INFOConnect API. The following components provide all of the features of the ICS product: *Communication Manager*, *Configuration Manager*, *Database Manager*, *INFOConnect Manager*, *Installation Manager*, and *Utility Manager*.

ICS path

See *path*.

IC_RESULT

An **IC_RESULT** is a small packet of data used to describe errors and statuses. Most INFOConnect functions and events return an **IC_RESULT** indicating success or failure. Functions exist to translate 'error' **IC_RESULT**s into displayable text strings. **IC_RESULT** consists of three parts: a context, a type, and a value. Utilities exist to extract the various parts from an **IC_RESULT** and to create an **IC_RESULT** from its parts.

ID (accessory ID/library ID)

An ID, or key, that identifies the fully qualified runfile name. It must be less than **IC_MAXIDSIZE** large, and is usually installed for the user during product installation.

IIL

See *interprocess interface library*.

.INF file

An installation script file for an INFOConnect package.

INFOCONN.CFG

This file contains configuration information for INFOConnect Connectivity Services and its currently configured paths.

INFOConnect library

Application Interface Libraries, *Service Libraries*, *External Interface Libraries*, *Quick Configuration Libraries*, and *Hook Libraries* are collectively referred to as INFOConnect libraries. Also see *interprocess interface library* and *stack library*.

INFOConnect Manager
The *ICS Manager* component that is the user interface to ICS. It provides both configurator and shell accessory features.

installation accessory
An INFOConnect utility that provides the user interface for installation, deinstallation, and quick configuration of INFOConnect components. The installation accessory provided on the ICS runtime diskettes is referred to as the Installation Manager. Also see *local installation*, *standalone installation*, *subscribe installation*, and *publish installation*.

Installation Manager
The *ICS Manager* component that provides the installation, deinstallation, and quick configuration features. Also see *installation accessory*.

INSTMGR.CFG
This file contains package information for INFOConnect Connectivity Services and its currently installed packages.

interprocess interface library (IIL)
A library that acts as both an *AIL* and an *EIL*. An IIL associates two sessions in different processes by internally linking the EIL role of one session to the AIL role of the other session. Libraries of this type are typically not included in path templates. The IIL is automatically included in sessions when an AIL requests a path that must be opened in a different process.

L

library
See *INFOConnect library*, *multiplexing library*.

library channel
See *channel data*.

library ID
See *ID*.

library stack
A stack of ICS libraries consisting of an application interface library, zero to 14 service libraries, and terminated by a single external interface library.

local installation
Installation (/L option) of a package on a workstation or server that redirects files destined for the Windows and Windows system directories to the installation destination directory. This option, therefore, affects the destination of files during *standalone installation*, *publish installation*, and *subscribe installation*.

M

Manager
See *ICS Manager*.

multiplexing library
A *stack interface library* that can support multiple communication sessions (where it is configured as an *EIL*) over another session. The sessions are associated with a channel in the EIL role which is associated with a lower level path. Typically, this lower level path is specified during channel configuration of the EIL role.

O

Open ID
The *Open ID*, also referred to as Application Type, is a library or accessory identifier that is used to narrow the list of available paths or templates during a selection.

P

path (ICS path or communication path)
Defines the hardware and software components (and their configurations) necessary for communicating between components of a cooperative application. It involves zero or more (up to 14) service libraries and one external interface library, along with their respective configurations. The path may involve communications within the system or to another computer. It is identified by a **path ID**.

path data
Data that is specific to ICS libraries and is unique on a per-session basis. Path data will be configured by the user through path configuration. This is the data passed into **IcLibOpenSession**.

path ID
A unique, user-assigned string of fifteen characters or less, containing no spaces, colons(:), or tildes(~) that identifies an ICS **path**.

path template
See *template*.

publish installation
Installation (/A option) of a package to a shared directory on a network by the network administrator. All necessary files are copied to various directories on the server, including the Windows and the Windows system directories. The package is shared by network users through a *subscribe installation*. Also see *local installation*.

Q

quick configuration library
A special purpose library that performs quick configuration for a library or a set of libraries in a package.

S

service library (SL)
A library that acts as a filter on the data and status messages which flow between an application interface library and external interface library. Zero or more service libraries can be stacked in a single INFOConnect **path**. Service libraries generally operate independently and are unaware of the other libraries in the path.

session (communication session)
An open or active instance of an ICS path. It has an associated session handle that is a unique integer used by INFOConnect Connectivity Services to identify the communication session.

session identification string
A string consisting of the path ID and, if multiple copies of the path can be active, a semicolon and the unique library-defined session ID.

session manager stack library
A *stack interface library* that can support multiple communication sessions (where it is configured as an *EIL*) over another session. The sessions are grouped into a session group (sometimes by using a channel). One or more alternate lower level paths may be configured for fallback when the primary lower level path is unavailable. This type of library filters the data stream for commands that reroute the session data to different applications.

shell or shell accessory
An INFOConnect utility that acts as the EXE portion of the *ICS Manager*. It must call the **IcInitShell** procedure before entering its message loop. Only one INFOConnect Shell can be running at any given time, and it may or may not include a configuration accessory.

SL

See *service library*.

stack

See *library stack*.

stack interface library

A library that acts as both an *AIL* and an *EIL*. A stack interface library provides multiplexing or switching functions on lower level sessions. These types of libraries associate two sessions in the same process by internally linking the EIL role of one session to the AIL role of the other session. Libraries of this type can be included in path templates as an EIL (for use by higher level paths). Also see *multiplexing library*, *switching library*, *session manager stack library*.

stack library

See *stack interface library*.

standalone installation

Installation of a package on a workstation. All necessary files are copied to various directories on the workstation, including the Windows and the Windows system directories. Also see *local installation*.

subscribe installation

Installation (/N option) of a package from a network to a workstation that allows the workstation to access the shared copy of the package. Various files may be copied to the Windows and the Windows system directories. Also see *local installation*.

switching stack library

A *stack interface library* that stacks one session (where it is configured as an *EIL*) on top of another session and filters the data stream for commands to close and open the lower session.

system path

A path marked as *system* implies that the path's associated *Open ID* is intended to reference a library rather than an accessory. This is convenient for low-level paths that are used as transport layers by higher level paths (usually by supplying the path ID as *channel data* for the *EIL* associated with the higher-level path template). Paths marked as system do not appear for selection during path configuration. These paths are normally configured automatically by the library component that uses these path. System paths should also be marked as *hidden* to prevent them from appearing for user selection at runtime.

system template
A template marked as *system* implies that the template's associated *Open ID* is intended to reference a library rather than an accessory. This is convenient for low-level paths that are used as transport layers by higher level paths (usually by supplying the path ID as *channel data* for the *EIL* associated with the higher-level template). System templates are typically used by library configuration and quick configuration libraries when creating system paths. Therefore, they are normally configured automatically by the library components that use these templates. Templates marked as system should also be marked as *hidden* in order to prevent them from appearing for user selection.

T

template
A stack of ICS libraries consisting of zero or more service libraries terminated by a single external interface library. The EIL may be associated with channel data. Templates are usually installed for the user during library installation and are selected during path configuration to create paths. Templates generally categorize the basic types of connections available on a workstation. This simplifies the path configuration process by reducing a large number of libraries to a small set of path templates.

template ID
A string, or key, less than **IC_MAXIDSIZE** large that identifies the *template*.

trace library
A special service library that traces session communication so that session activity can be monitored.

trace log library
A special library that manages a log file by writing information to it.

U

Utility Manager
The *ICS Manager* component that provides internal utilities.

X

XVT

XVT is a software toolkit produced by XVT Software Inc. that provides graphical presentation services like windows, list boxes, scroll bars, etc. to applications. Developers using XVT instead of directly using the underlying window system (i.e. making direct calls to Windows functions) may readily port their applications to any of the GUIs that Unisys offers on its workstations. INFOConnect applications are strongly encouraged, but not required, to use the XVT toolkit instead of the native presentation services.

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