



Mainframe Release Notes

Version 6.2, May 2005

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Service Pack 2 Information

Orbix Mainframe 6.2 Service Pack 2 (SP2) contains all the fixes and enhancements that have been made available since the release of Orbix Mainframe 6.2. This includes fixes to address system stability and performance as well as Service Pack 1 enhancements to the code base to improve user experience.

Service Pack 2 is released as a delta release, containing only the files that have been modified to address included fixes. Consequently, Service Pack 2 assumes that you have already installed and configured Orbix Mainframe 6.2 as per the *Orbix Mainframe Installation Guide* version 6.2. The instructions for installing Service Pack 2 are contained in the *Orbix Mainframe Installation Guide* version 6.2 SP2.

Note: Orbix Mainframe 6.2 SP2 automatically reinstalls any fixes and enhancements that were supplied with Orbix Mainframe 6.2 SP1.

Product Information

Orbix Mainframe 6.2 is an implementation of the Common Object Request Broker Architecture (CORBA) for z/OS and z/OS UNIX System Services. It complies with the following Object Management Group (OMG) standards:

- CORBA 2.6
- GIOP 1.2, 1.1, and 1.0
- C++ Language Mapping (formal/99-07-41)

The Orbix Mainframe Artix Transport component complies with the following W3C specifications:

- SOAP 1.1
- HTTP 1.0 and 1.1
- WSDL 1.1

The Artix Transport also complies with the Web Services Interoperability Organization specification *Basic Profile Version 1.0* and the OASIS *Web Services Security UsernameToken Profile 1.0* specification for credentials checking in SOAP headers.

More information on Orbix Mainframe, including all the latest documentation updates for Orbix Mainframe and other platforms, can be found on the IONA Technologies web site at: <http://www.iona.com/support/docs/index.xml>.

Differences between the z/OS product and the other products are noted in this document.

Platforms and Compilers Removed

The following platforms and compilers have been removed in the Orbix Mainframe 6.2 release:

- OS/390—This operating system is no longer supported by IBM.
- z/OS 1.2—This version of z/OS is no longer supported by IBM. It is replaced in this release by z/OS 1.5, z/OS 1.6, and z/OS 1.7.
- IBM z/OS 1.2 (ANSI) C++—This version of the C++ compiler is no longer supported by IBM. It is replaced in this release by the IBM z/OS 1.5 (ANSI) C++, IBM z/OS 1.6 (ANSI) C++, and IBM z/OS 1.7 (ANSI) C++ compilers.
- COBOL for OS/390 V2.1.2—This compiler is no longer supported by IBM. It is replaced in this release by the Enterprise COBOL V3.3.0 & Enterprise COBOL V3.3.1 compilers.
- Artix 1.3—The demonstration code previously shipped for Artix 1.3 has been replaced with code for the latest supported version, Artix 3.0.1.
- Weblogic 8.1—The demonstration code previously shipped for Weblogic 8.1 has been replaced with code for the latest supported version, Weblogic 8.1 SP3.
- Axis 1.1—Demonstration code for Axis clients is no longer provided.

New in Orbix Mainframe 6.2 Service Pack 2

The following feature is new in Orbix Mainframe 6.2 Service Pack 2:

- [“Dynamic Updates to the Naming Service” on page 3](#)

Dynamic Updates to the Naming Service

Object publishing support for the IMS and CICS adapters has been improved to support dynamic updates to the Naming Service. This allows the user to ensure that the Naming Service is kept up-to-date with the current set of available adapter deployed objects.

One side effect of these improvements is that several configuration variables around object publishing have been deprecated. Even though these older configuration variables continue to be supported in Orbix Mainframe 6.2 Service Pack 2, they might not be supported in future releases. IONA therefore recommends that users should adopt the newer syntax as soon as possible.

The new configuration items are as follows:

Note: If you are using IMS, simply substitute `cicsa` with `imsa` in each case.

<code>plugins:cicsa:object_publishers</code>	This specifies which object publishers to enable for the adapter. Valid options are "naming_service" and "filesystem".
<code>plugins:cicsa:object_publisher: filesystem:filename</code>	This supercedes the <code>plugins:cicsa:write_iors_to_file</code> configuration item. It specifies the name of the file to which object references should be written, if you have specified "filesystem" for the <code>plugins:cicsa:object_publishers</code> item.
<code>plugins:cicsa:object_publisher: naming_service:context</code>	This supercedes the <code>plugins:cicsa:write_iors_to_ns_context</code> configuration item. It specifies the Naming Service context to which object references should be published, if you have specified "naming_service" for the <code>plugins:cicsa:object_publishers</code> item.
<code>plugins:cicsa:object_publisher: naming_service:update_mode</code>	This specifies whether adapter-deployed objects should only be published during start-up, or whether updates should also be published. Valid values are "startup" and "current".
<code>plugins:cicsa:object_publisher: naming_service:nested_scopes</code>	This supercedes the <code>plugins:cicsa:place_iors_in_nested_ns_scopes</code> configuration item. It specifies whether or not nested scopes should be used.
<code>plugins:cicsa:object_publisher: naming_service:group:prefix</code>	This supercedes the <code>plugins:cicsa:write_iors_to_ns_group_with_prefix</code> configuration item. It specifies the Naming Service group to which object references should be published.

<pre>plugins:cicsa:object_publisher: naming_service:group:member_ name</pre>	<p>This supercedes the <code>plugins:cicsa:write_ior_to_ns_group_member_name</code> configuration item. It specifies the Naming Service group to which object references should be published.</p>
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New in Orbix Mainframe 6.2 Service Pack 1

The following features are new in Orbix Mainframe 6.2 Service Pack 1:

- [“GIOP Request Logger” on page 5](#)
- [“itfileloc URL Resolver” on page 5](#)
- [“IMSPCBE Include File” on page 6](#)

GIOP Request Logger

The new request logger plug-in provides a server interceptor to log both GIOP connection and operation-specific information on a per-request and per-reply basis. This plug-in may be used in the CICS or IMS server adapter to monitor the invocation traffic. The following is a sample log message:

```
Mon, 01 May 2006 14:38:52.0000000 [thehost:IMSA,A=0040]
(IT_REQUEST_LOGGER:202) I - [REQUEST] 10.2.100.8, 1408, johndoe,
run_transaction(), PART
Mon, 01 May 2006 14:38:53.0000000 [thehost:IMSA,A=0040]
(IT_REQUEST_LOGGER:202) I - [REPLY] 10.2.100.8, 1408, johndoe,
run_transaction(), PART, NO_EXCEPTION
```

itfileloc URL Resolver

The `itfileloc` URL resolver introduces support allowing any interoperable object reference (IOR) to be specified from file. This support is available to any application or utility that invokes upon the `orb.string_to_object()` method and may be used in configuration (for example, to specify an initial reference).

An `itfileloc` object reference takes the following form:

```
<scheme_specific> = <IORFILE:STRING> |
<ARGUMENT-NUM:NUMERIC>'?'<IORFILE:STRING>
```

The `itfileloc` syntax allows object references to be specified in plain IOR files, or else parsed as string literals from simple text files (for example, resulting from `itlocator -prepare`).

The following are sample uses of `itfileloc`:

- `itfileloc:3@DD:MYDD (IORLCT)`
- `itfileloc:3@DD:MYDD2`
- `itfileloc:3@'user.ORBIX62A.CONFIG (IORLCT) '`
- `itfileloc:3@/space/hfsv/locator.prepare`
- `itfileloc:/space/hfsv/locator.ior`

IMSPCBE Include File

A new PL/I include file which gets included by Orbix PL/I IMS programs, where the `-E` flag has been specified to the Orbix 6.2 SP1 IDL-to-PL/I generator. It allows programs to be compiled using the Enterprise PL/I compiler when `DEFAULT (NONASSIGNABLE)` is specified as a compiler option. Note that it is only for use with the Enterprise PL/I compiler.

New in Orbix Mainframe 6.2

The following features are new in Orbix Mainframe 6.2.

- [“Supported Platforms and Compilers” on page 6](#)
- [“High Availability” on page 8](#)
- [“Security” on page 9](#)
- [“Management” on page 9](#)
- [“Buffered Logging” on page 10](#)
- [“Support for IMS and CICS-initiated 2PC Transactions” on page 10](#)
- [“IMS/CICS Client Adapter Supports Type Information Files” on page 10](#)
- [“IMS Conversational Transactions Supported over APPC” on page 10](#)
- [“imsraw Interface Allows Non-responding IMS Transactions” on page 11](#)
- [“Extended COBOL and PL/I Type Support” on page 11](#)
- [“Artix Transport” on page 11](#)

Supported Platforms and Compilers

Orbix Mainframe 6.2 includes support for the following new platforms and compilers:

- z/OS 1.5
- z/OS 1.6
- z/OS 1.7
- CICS TS 2.3
- CICS TS 3.2
- Enterprise COBOL V3.3.0
- Enterprise COBOL V3.3.1
- Enterprise PL/I V3.3.0
- Enterprise PL/I V3.4.0
- IBM z/OS 1.5 (ANSI) C++
- IBM z/OS 1.6 (ANSI) C++
- IBM z/OS 1.7 (ANSI) C++

See the Installation Prerequisites section in the [Orbix Mainframe 6.2 Installation Guide](#) for full details of all supported platforms and compilers.

High Availability

Orbix Mainframe 6.2 includes the following new high availability features:

- Berkeley DB replication
- Performance enhancements

In Orbix 6.2, changes have been made at the Berkeley DB level. Berkeley DB has the ability to propagate replication data between different instances of the database. Orbix Mainframe inherits this ability to replicate, and propagates the data across the network through the persistent state service (PSS) layer.

This provides a dramatic performance improvement when slaves are being promoted to master. Unlike in previous releases of Orbix Mainframe, the database does not need to be opened, closed and recovered with each replication update at a slave replica.

For more detail on the high availability features in Orbix 6.2, see the [Orbix Administrator's Guide](#).

Security

Orbix Mainframe 6.2 includes the following new security features:

- Automatic warnings when SSL certificates near their expiration date or meet some other user-specified criteria. For more information see the [Orbix Mainframe Security Guide](#).
- Support for external bridging to a CSIV2 or Orbix security domain from a non-CORBA technology domain (for example, the Artix Transport component). The key requirement for secure bridging from a non-CORBA technology domain is the ability to propagate security credentials into the CORBA domain. Two new IDL interfaces, `IT_CSI::CSICurrent2` and `IT_CSI::CSICurrent3`, support this capability. For details, see the following reference guide pages:

http://www.iona.com/support/docs/orbix/6.2/reference/corba_pref/cpp/IT_CSI/CSICurrent2.html

http://www.iona.com/support/docs/orbix/6.2/reference/corba_pref/cpp/IT_CSI/CSICurrent3.html

For more information on the Artix Transport component see the [Orbix Mainframe Artix Transport User's Guide](#).

Management

Orbix Mainframe 6.2 includes the following new management features:

- “Performance logging”
- “Dynamic logging”

Performance logging

Orbix Mainframe 6.2 introduces performance logging. When performance logging is configured, you can see how each Orbix server is responding to load and get metrics on server availability and response time. A simple configuration setting is all that is required to set this in action.

The performance logging plug-ins can log this data to a USS file or to the JES2/JES3 job output. For more detailed information, see the [Orbix Mainframe Management User's Guide](#).

Dynamic logging

Orbix Mainframe 6.2 applications now respond dynamically to changes made to the event log filters. The log filters can be modified using the `itadmin` command-line interface or by using the IONA Management Console. For more information, see the [Orbix Administrator's Guide](#).

Buffered Logging

Orbix Mainframe 6.2 supports buffered logging of the output stream. The logs are buffered and output to file when the buffer reaches a certain size and an adequate period of time has lapsed. Both of these values are configurable. Buffered logging improves the performance of servers that log extensively. For more information, see the [Orbix Administrator's Guide](#).

Support for IMS and CICS-initiated 2PC Transactions

With Orbix Mainframe 6.0, an IMS or CICS server could participate fully in a two-phase commit (2PC) transaction provided that the co-ordinator was running off-host. Orbix Mainframe 6.2 extends this support by providing an on-host transaction co-ordinator that allows an IMS or CICS program to initiate a 2PC transaction. This co-ordinator can include transactions running off-host. For more information, see the Orbix Mainframe OTS Guide.

IMS/CICS Client Adapter Supports Type Information Files

With Orbix Mainframe 6.0, the client adapter required that all interfaces were registered in the IFR. The client adapter has been enhanced in Orbix Mainframe 6.2 to support the use of local type information files as an alternative to contacting the IFR. For more information, see the Orbix Mainframe [CICS Adapters Administrator's Guide](#) and the Orbix Mainframe [IMS Adapters Administrator's Guide](#).

IMS Conversational Transactions Supported over APPC

Orbix Mainframe 6.0 supported IMS conversational transactions using the OTMA protocol. This support is extended in Orbix Mainframe 6.2 to allow IMS conversational transactions over APPC also.

imsraw Interface Allows Non-responding IMS Transactions

The `imsraw` interface has been extended to add two new interfaces—`imsraw_run_transaction_no_reply` and `run_transaction_binary_no_reply`. These new interfaces will allow the IMS adapter to process transactions that do not send a reply back to the originating client.

Extended COBOL and PL/I Type Support

Orbix Mainframe 6.2 extends its support for various COBOL and PL/I types to include:

- [“Extended IDL fixed type mapping support”](#)
- [“Full “long long” support in PL/I”](#)

Extended IDL fixed type mapping support

The COBOL and PL/I IDL compiler has been enhanced in Orbix Mainframe 6.2 to allow for 31-digit sizes. This effectively adds support for larger fixed types in IDL, PL/I and COBOL. This support is enabled via the IDL compiler's `-E` option. When used it results in changes to the generated COBOL copybooks or PL/I include files, and also to the runtime DLLs. For PL/I, this feature requires the Enterprise PL/I compiler. For COBOL, this feature can be used with any supported COBOL compiler provided the `ARITH(EXTEND)` compiler option is used.

Full “long long” support in PL/I

The Orbix Mainframe 6.2 IDL compiler now supports the `long long` type which can be used in conjunction with the Enterprise PL/I compiler. This significantly extends the range of values supported (2^{16} times more). This support is enabled via the IDL compiler's `-E` option. When used it results in changes to the generated PL/I include files and also to the runtime DLLs.

Artix Transport

The separately licensed Artix Transport component of Orbix Mainframe enables existing or new CORBA servers on the mainframe to be exposed as Web services to the network. Specifically, it allows distributed client applications across the Internet to integrate with Orbix COBOL or Orbix PL/I servers running in batch, CICS, or IMS on OS/390, using SOAP over HTTP(S) as the communication protocol. It enables Orbix servers on the mainframe to be exposed as Web services, without the need for any code changes to these applications.

It therefore provides a powerful mechanism for the rapid integration of distributed network components, allowing Orbix Mainframe servers to participate fully in the business flow. For more information, see the Orbix Mainframe [Artix Transport User's Guide](#).

Restrictions

This section discusses the following topics:

- [“Features Unavailable in Orbix Mainframe”](#)
- [“The itadmin Tool” on page 13](#)
- [“Orbix Management” on page 13](#)
- [“iS2 Integration” on page 14](#)
- [“z/OS Restrictions” on page 14](#)

Features Unavailable in Orbix Mainframe

Orbix Mainframe 6.2 includes much of the functionality available in Orbix 6.2 on other platforms. Programming and administrative information for those platforms generally applies to z/OS UNIX System Services also. However, the following items are not yet available:

Feature	Comment
Configuration Repository (CFR)	No CFR service is provided. Only file-based configuration domains are supported in this release. A remote CFR cannot be used to share configuration information with other platforms.
C++/Java Code generation toolkit	IDLgen tool is not provided.
itconfigure utility	Not provided.
System log stream	The <code>system_log_stream</code> plug-in is not provided. However, the <code>wto_log_stream</code> plug-in can be used to issue event messages to the console log.
Activator	This installation contains a z/OS UNIX System Services activator but no z/OS activator.

Feature	Comment
TLS	TLS on z/OS requires IBM's System SSL software. Instructions are provided that explain how to generate certificates using RACF, for use with the product demonstrations.
Compression plug-in	Not provided.
Events	Not provided.
Notification	Not provided.
Trader	Not provided.
Multicast transport	Not provided.
Shared memory transport	Not provided.
Management service	Not provided. See "Orbix Management" on page 13 for more information.
Security service	Not provided. See "iS2 Integration" on page 14 for more information.
Firewall Proxy Service	Not provided.
JMS notification bridge	Not provided.

The itadmin Tool

The `itadmin` tool provided on z/OS supports a subset of the full functionality provided on other Orbix 6.2 platforms. This can be used as a command-line utility or in a command shell, but not from Tcl scripts or in transactions. The `itadmin` tool can also be run in batch mode using the sample JCL provided in `HLQ.ORBIX62.JCL(ORXADMIN)`.

Orbix Management

Orbix Mainframe provides full support for the Orbix Management API and thus enables you to instrument servers running on the mainframe. This includes instrumentation of all servers at the ORB level, and an additional instrumentation for the Naming Service. Because the IONA Administrator

Management Service is not provided with Orbix Mainframe, this service must be running on an off-host Orbix deployment and must be contactable by the managed servers on the mainframe.

See the [Mainframe Management User's Guide](#) for more details on IONA Administrator, managing Orbix Mainframe services from another platform, and instrumenting your own servers using the C++ Management API.

See the [Orbix Management User's Guide](#) for more details on the use of the off-host components of IONA Administrator.

iS2 Integration

Orbix Mainframe provides restricted support for integration with the IONA Security Framework (ISF); this allows Orbix Mainframe to interoperate within a secure iS2-enabled location domain.

Since the iS2 Security Service is not provided with Orbix Mainframe, this service must be running on an off-host Orbix deployment and must be contactable by the Orbix Mainframe applications.

The main restriction in Orbix Mainframe 6.2 is that the IONA realm/role authorization functionality is not supported. See the [Mainframe Security Guide](#) for more information.

z/OS Restrictions

The following z/OS restrictions apply:

- [“Text Files” on page 14](#)
- [“Environment Variables” on page 15](#)
- [“Floating Point Format” on page 16](#)
- [“NFS-mounted HFS” on page 16](#)
- [“Virtual Storage Exceeded in PL/I” on page 16](#)

Text Files

Text files containing IDL, configuration, licences, and IOR files might contain data that is too long to fit within the record length of a particular data set.

In such cases, Orbix Mainframe 6.2 uses a continuation column format similar to that used by the MVS Assembler:

Example 1: *A Stringified Object Reference in a LRECL=80 Dataset*

```
IOR:000000000000001949444c3a457874656e64656454797065546573743a312e30000\
0000000000001000000000000007e000102000000000d36332e36352e3133332e353600\
0007520000001b3a3e0231310c0000000004000246000041c608000000000000000000\
000000300000000000000080000000049545f41000000010000001c0000000010020417\
00000001000100010001010000000001000101090000000600000006000000000011
```

For fixed-record-length data sets, the last eight columns of a record (that is, columns 72–80, which might contain JCL sequence numbers inserted by the ISPF editor) are ignored, and column 71 is used as a continuation column. If this is blank, the data on the line logically ends at its last non-blank character. If the column is not blank, the data on the line is considered to continue in the first column of the next record.

So, in [Example 1](#), the string is considered to be one long line consisting of IOR: followed by 348 hexadecimal digits. The backslashes used in the continuation column are not part of the reference.

This applies only to RECFM=FB data sets. VB data sets are also supported for text files and the data in columns 72–80 is not ignored.

A utility program, `orxcopy`, is provided to copy and format records between data sets and HFS files, or between data sets of different record lengths or types. This can be run as follows from the z/OS UNIX System Services shell:

```
orxcopy asp62.cfg "'TEST.CONFIG(DEFAULT@)'"
orxcopy "'TEST.DEMO.IORS (TYPETEST)'" typetest_objref.txt
```

You can also run this utility in batch, using sample JCL provided in the `ORXCOPY` member of `HLQ.ORBIX62.JCL`.

Environment Variables

Environment variables documented in Appendix D of the [Orbix Administrator's Guide](#) apply on z/OS. However, these variables are usually checked only after certain DD cards, and can contain PDS names as well as path names. For example:

Locating IDL configuration file:

1. Check the `IT_IDL_CONFIG_FILE` environment variable. On z/OS, this can point to a data set:

```
$ export IT_IDL_CONFIG_FILE="//HLQ.ORBIX62.CONFIG(IDL)"
```

2. Check the `IT_IDL_CONFIG_PATH` environment variable. On z/OS, this list can include a data set:

```
$ export IT_IDL_CONFIG_PATH="//tmp/my.cfg://HLQ.ORBIX62.CONFIG(IDL)"
```

3. Check `DD:ITCONFIG(IDL)`. This is z/OS-specific.
4. Check `ITProductDir/asp/6.2/etc/idl.cfg`, where `ITProductDir` is the value of environment variable `IT_PRODUCT_DIR` or defaults (on z/OS) to `/opt/iona`.

Floating Point Format

Only the native 390 format of Floating Point is supported.

NFS-mounted HFS

External attributes are not honored for HFS files that have been NFS-mounted on z/OS. Therefore, if you wish to run IONA services (for example, locator, activator, node daemon, and so on), you must ensure that your HFS is locally mounted.

Virtual Storage Exceeded in PL/I

If you intend to build the Orbix PL/I demonstrations on z/OS 1.7 with the Enterprise PL/I compiler, you must first increase the region size specified in the Orbix PL/I build jobs from 4 MB to 7 MB, to prevent getting a `virtual storage exceeded` error. This error does not occur if you submit the Orbix PL/I build jobs using releases of z/OS prior to 1.7.

z/OS-Specific Features

This section discusses the following z/OS-specific features:

- [“Codeset Negotiation” on page 18](#)
- [“SAF Plug-in” on page 18](#)
- [“TLS Plug-in” on page 18](#)
- [“IMS and CICS Server Adapters” on page 18](#)
- [“IMS and CICS Client Support” on page 19](#)
- [“GIOP Principal Support” on page 19](#)
- [“itmfaloc” on page 20](#)
- [“Type Information Store” on page 20](#)
- [“WTO Announce Plug-In” on page 20](#)
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Codeset Negotiation

Orbix supports codeset negotiation as specified in CORBA 2.3.1/1.3.7.

Orbix Mainframe adds support for negotiating EBCDIC codeset IBM-1047 for character data, so unnecessary conversions can be avoided between z/OS clients and servers. Wide character data is also supported, but the native z/OS `wchar` format cannot be used as a transmission codeset. Orbix Mainframe always converts wide character data to one of the supported representations (UCS-2, UCS-4, UTF-16) for transmission.

SAF Plug-in

This Orbix Mainframe plug-in provides optional Principal-based access control, similar to that found in the Orbix 2.3 for OS/390 products. A server can accept or reject incoming requests based on a `CORBA::Principal` value in the request header. The value is treated as a z/OS user ID and access is checked against an operation-specific SAF profile name. Access can therefore be controlled on a per-operation basis, or (using generic profiles) on a per-server basis. More detail can be found in `HLQ.ORBIX62.DOC(SAF)`.

TLS Plug-in

This Orbix Mainframe plug-in enables TLS applications to use a PKI system for authenticating each side of a TLS connection. For more details, see the [SSL Prerequisites](#) section in the [Mainframe Installation Guide](#).

IMS and CICS Server Adapters

The IMS server adapter and CICS server adapter components of Orbix Mainframe provide a simple way to integrate distributed CORBA and EJB clients on various platforms with existing and new IMS and CICS transactions running on z/OS. These server adapters enable you to develop and deploy Orbix COBOL and PL/I servers in IMS and CICS. The server adapters can execute in a z/OS or z/OS UNIX System Services address space. You can use the server adapters to integrate IMS and CICS servers with distributed CORBA clients running on various platforms. They also facilitate the integration of existing IMS and CICS transactions, not developed using Orbix, with distributed CORBA clients, without the need for changes to the existing programs.

The IMS server adapter can be configured to use either OTMA or APPC to communicate with IMS. Similarly, the CICS server adapter can be configured to use APPC or EXCI to communicate with CICS. Both server adapters also provide

distributed transactional support using OTS and RRS. The server adapters can also be run using the TLS plug-in shipped with Orbix Mainframe, to provide SSL-secured communication with client applications.

While providing the same functionality as previous versions of the IMS and CICS server adapters, this version has been rewritten and incorporates significant performance improvements over previous versions. If you are migrating from a previous version, see the following user manuals:

- [IMS Adapters Administrator's Guide](#)
- [CICS Adapters Administrator's Guide](#)

IMS and CICS Client Support

This support allows an IMS or CICS transaction to act as a CORBA client and communicate with a CORBA server. This is enabled by deploying the Orbix Mainframe client adapter on z/OS or z/OS UNIX System Services, and an Orbix Mainframe IFR server.

The Orbix Mainframe client program running inside IMS or CICS uses IONA's custom-built IMS/CICS micro-kernel runtime. This supports APPC client calls to the client adapter, which then forwards these client requests as GIOP messages over IIOp to the target server. The server can be implemented in C++, Java, COBOL, or PL/I, and it can run in z/OS batch, inside IMS or CICS, or on another host platform.

The client adapter uses APPC to communicate with IMS or CICS. Like the server adapters, the client adapters can also be run using the TLS plug-in shipped with the Orbix Mainframe, to provide SSL-secured communication with client applications. For more detailed information see the [IMS Adapters Administrator's Guide](#) and the [CICS Adapters Administrator's Guide](#).

GIOP Principal Support

In addition to the facilities already available to transmit a GIOP user principal with a request in GIOP 1.0 and GIOP 1.1, support has been added in this release to transmit a principal via GIOP 1.2, using a service context. This is enabled by setting the configuration variable

```
policies:giop:interop:policy:enable_principal_service_context to true.
```

The service context ID used can be selected with the configuration variable `policies:giop:interop_policy:principal_service_context_id`, if the default service context ID `0x49545F44` is not correct for your environment. This support enables components like the client adapter, IMS server adapter, and CICS server

adapter to send and receive principals over GIOP 1.2. It is no longer necessary for these components to set the GIOP version to 1.1 if both the client and server can use a service context to send and receive the principal.

A facility to obtain the principal from a current variable has also been added. This current is called the GIOP current and the principal can be obtained in both binary and text format. The portable interceptor demonstration described in both the [IMS Adapters Administrator's Guide](#) and the [CICS Adapters Administrator's Guide](#) demonstrates how this can be used.

itmfaloc

A new plug-in, `itmfaloc`, is now shipped with Orbix Mainframe. This is a URL resolver that allows an `itmfaloc` URL to be used instead of a stringified interoperable object reference (IOR). This facilitates the task of locating IMS and CICS adapter objects. Using an `itmfaloc` URL is similar to calling `itadmin mfa resolve`, but an `itmfaloc` URL exposes this functionality to Orbix applications directly. Any Orbix Mainframe application can use `itmfaloc` URLs. Also, any Orbix Mainframe utilities (such as `itadmin`) can use `itmfaloc` URLs. See the [IMS Adapters Administrator's Guide](#) and the [CICS Adapters Administrator's Guide](#) for more details on the operation of `itmfaloc` URLs.

Type Information Store

Orbix Mainframe 6.2 allows IMS and CICS adapters to use either the IFR or the type information store to obtain interface details dynamically. The type information store is a new file-based mechanism. You can have the Orbix IDL compiler generate type information files that the adapter then uses to marshal and unmarshal types on-the-wire. Type information files are an alternative to using the IFR. The use of type information files allows the adapter to run in standalone mode. It also addresses potential versioning issues with IDL.

WTO Announce Plug-In

For external monitoring and automation purposes, the following messages can be written when an Orbix Mainframe server starts up and later ends on z/OS:

```
+ORX2001I ORB orbname STARTED (app-id)
+ORX2002I ORB orbname ENDED (app-id)
```

These messages can be enabled in any server without code changes, by configuring the `orb_plugins` list for the server to include the name `wto_announce`.

WTO Event Log Stream Plug-In

The WTO Event Log Stream enables all event log messages to be directed to the operator console; this log stream can be used with the `local_log_stream`, which is used to write messages to `stdout/stderr`.

The format of the WTO message is as follows:

```
"ORXL[event_id][severity_code]" "subsystem" "text"
```

The components of the WTO message can be explained as follows:

<i>event_id</i>	The event ID.
<i>severity_code</i>	The severity of the event being logged. Valid values are: <ul style="list-style-type: none"> • I— information message • W— warning message • S— error message • E— fatal error message
<i>subsystem</i>	Identifies the component from which the event originated.
<i>text</i>	Event details, textual information describing the event.

The following are examples of WTO messages:

```
+ORXL020I IT_LOCATOR Locator daemon started, domain name:
  default_domain.location
+ORXL031I IT_LOCATOR Locator daemon stopped, domain name:
  default_domain.location
```

Due to the WTO 126-character limit per message, the Orbix event message might be truncated.

These messages can be enabled in any server, without code changes, by configuring the `orb_plugins` list for the server to include the name `wto_log_stream`, and by configuring the `event_log:filters` list as necessary.

Operator STOP Command

Orbix servers can use the `IT_TerminationHandler` programming interface to handle signals and stop cleanly. On z/OS, such servers can be stopped using the UNIX shell command, `kill`, or using the operator command `STOP`; for example:

```
P EXTSRV,A=0040
```

COBOL and PL/I build JCL

The procedures supplied for building COBOL and PL/I servers and clients have changed since they were first released in IONA Mainframe Integrator 2.0. Further updates have been added to the PL/I build procedures since Orbix Mainframe 5.1 was released. To ensure that your PL/I programs compile and link correctly with subsequent versions, you must replace any JCL that you have stored in non-IONA libraries with the latest shipped JCL.

Binary Compatibility

Orbix Mainframe 6.2 represents a minor version upgrade, therefore binary compatibility has been maintained with the Orbix Mainframe 6.0 release. However, to take advantage of the RTII C++ compiler feature, we were forced to break binary compatibility for C++ applications. As a result, you must rebuild and recompile your C++ applications to use the RTII feature.

Configuration

A number of configuration items have changed in this release, meaning that an existing ASP 6.0 configuration file will not work in an Orbix 6.2 domain. See the [Mainframe Migration and Upgrade Guide](#) for more information

PL/I Server Implementation

The PL/I server accessor module (`idlmembernameZ`) was eliminated in release 5.0.1 of Orbix Mainframe. The code previously in this member is now in the server implementation instead. As a result, you will be required to make some minor additions to PL/I source code. For full details of the required changes, see the [Mainframe Migration and Upgrade Guide](#).

ORBARGS DD Statement

Orbit Mainframe makes extensive use of the JCL `PARM` keyword. `PARM` has a limit of 100 characters of data. Any `PARM` setting with more than 100 characters of data will cause a JCL error.

If `PARM` contains `-ORB` arguments, such as `-ORBname iona_utilities.cicsa`, the `PARM` data can be shortened by moving the `-ORB` arguments from the `PARM` to a file pointed to by the `ORBARGS DD` statement. This may resolve the excessive `PARM` length JCL error. The following is a JCL example:

```
//REG EXEC PROC=ADMIN
//PARM='mfa resolve Simple/SimpleObject > DD:IOR'
//IOR DD DSN=&ORBIX..DEMOS.IORS(SIMPLE),DISP=SHR
//ORBARGS DD *
-ORBname iona_utilities.cicsa
/*
```

The `-ORBname iona_utilities.cicsa` does not have to appear in the `PPARM` symbolic parameter of the `ORXADMIN` procedure, where `PPARM` forms part of the data in the `PARM`. This saves 29 characters of `PARM` data.

The following rules apply when using the `ORBARGS DD` name:

- Use it only for arguments of the form `-ORBxxx yyy`. Do not use it for other arguments.
- Code only one `-ORBxxx` argument per line.
- Up to a maximum of 16 lines can be coded.
- Each line must be of the form `-ORBxxx yyy`, where `xxx` represents the `-ORB` argument, and `yyy` represents the value for that argument.
- If multiple lines are coded, an invalidly coded line invalidates all others.
- If the same argument is coded both in the `RPARM` and `ORBARGS`, the `RPARM` takes precedence.
- `ORBARGS` can be used with `DD *` or with `DD DSN=` pointing to a fixed block data set with a logical record length of 80 bytes.

LTERM Propagation

The OTMA IMS server adapter can propagate into IMS a logical terminal (LTERM) field that originates from the client application. It can also subsequently return the LTERM value obtained from IMS back to the client.

Multiple Configuration Domains and Non-default Locales

Improvements have been made in the following areas:

- Support for deploying in a non-default locale (that is, a locale other than IBM-1047)
- Support for deploying multiple configuration domains
- Support for running Orbix Mainframe services in non-default locales and within multiple configuration domains

Load Balancing and Fault Tolerance

Improvements have been made in the following areas:

- Refactored node daemon and process monitoring—The node daemon has been refactored in Orbix 6.x, to remove the need for “ping” messages between the node daemon and the servers being monitored. This in turn has greatly enhanced process monitoring of high-availability components.
- ATLI2—The inclusion of this next-generation transport layer provides much greater scalability and throughput at the network level. More consistent and reliable connection handling code means faster detection of remote host failure for high-availability components.

OTMA Conversational Support

The IMS adapter component of Orbix Mainframe now provides a facility to run conversational transactions, using the OTMA plug-in. See the [IMS Adapters Administrator's Guide](#) for more information.

Known Problems

The following are the list of current known problems for Orbix Mainframe 6.2:

- [“TCP/IP” on page 25](#)
- [“wchar/wstring in COBOL and PL/I” on page 25](#)
- [“Client Principal value in COBOL and PL/I” on page 25](#)
- [“Management Information” on page 25](#)
- [“Object References” on page 26](#)
- [“IFR Cache File” on page 26](#)
- [“ITDOMAIN DD” on page 26](#)

- [“Close Connection Log Messages” on page 26](#)
- [“@ Sign in Italian and German Code Pages” on page 27](#)
- [“Error Deploying IFR in Polish Code Page” on page 27](#)
- [“ORXIDL Procedure” on page 28](#)
- [“RRS” on page 28](#)
- [“PREPCICA Fails if APPC Used” on page 28](#)
- [“UNIX System Services C++ Security PI Demonstration” on page 28](#)
- [“C++ Compiler Options” on page 28](#)

TCP/IP

Orbit Mainframe servers will perform a graceful shutdown if the TCP/IP stack fails unexpectedly. The servers must be manually restarted to resume service after the stack becomes available.

Also, servers are limited to approximately 2000 concurrent TCP/IP connections, and might not deal properly with new incoming connections above that limit. Until this is fixed, it can be mitigated by setting configuration variable:

```
plugins:iiop:incoming_connections:hard_limit = "2000";
```

wchar/wstring in COBOL and PL/I

COBOL and PL/I programs using IDL types `wchar` and `wstring` might get unexpected results. This will be fixed in a future release.

Client Principal value in COBOL and PL/I

COBOL and PL/I servers running in batch mode cannot retrieve the client principal if present. This value is set to blanks.

Management Information

This version of the IMS/CICS adapter mapping client read statistics operation does not return values for the total number of client connections and the total number of exceptions. These values are returned as zero. This functionality may be added in a future release.

Object References

Object references are supported in COBOL and PL/I client programs running inside IMS or CICS.

Server-side object references are currently not supported in COBOL and PL/I server programs running inside IMS or CICS. This means that the IDL interfaces implemented in such servers must contain neither the IDL `object` keyword nor an interface name in any IDL operation arguments/return values.

IFR Cache File

The server adapters' `ifr:cache` setting must be configured to point to a UNIX System Services file pathname. This feature does not work correctly if a regular z/OS data set is used. This will be fixed in a future release.

ITDOMAIN DD

The `ITDOMAIN DD` statement can be used to specify the configuration domain, but cannot be used in JCL that updates settings in the configuration as it may conflict with a service currently running and using the `ITDOMAIN DD` statement. An error opening the configuration file will occur.

To avoid this issue, use an `ORBARGS DD` statement in place of the `ITDOMAIN DD` statement. The `ORBARGS DD` points to a file that contains a `-ORBdomain_name` statement specifying the configuration domain. An example of this is shown in `HLQ.ORBIX62.JCL(DEPLOY2)`.

To enhance usability, most of the Orbix Mainframe JCL makes use of the `ITDOMAIN DD` statement.

Close Connection Log Messages

Orbix Mainframe servers will issue `IT_ATLI2_IP` warning messages if the TCP/IP socket is closed unexpectedly on the client side. This can occur if the client crashes, but it could also occur if the client application does not close its connection properly before it shuts down. This is the case with some other ORB implementations.

Note: All warning and error messages displayed in these cases are benign.

@ Sign in Italian and German Code Pages

Some of the JCL shipped in `HLQ.ORBIX62.JCLLIB` contains characters that are variant in the Italian and German code pages, IBM-280 and IBM-273 respectively. As a result, the `$SECOND` JCL in Orbix Mainframe 6.2 was enhanced to convert the JCL in `HLQ.ORBIX62.JCLLIB` which includes the default domain name, `DEFAULT@`. However the `@` is a variant in both of these code pages and as a result, the member name created by the conversion job is not valid when running Orbix Mainframe 6.2 in these locales when the system and compiler are running in a different locale. In this scenario, you will need to do the following:

1. In `orbixhlq.JCLLIB(DEPLOY1)` and `orbixhlq.JCLLIB(DEPLOY2)`, change the deployed domain name by updating the `SYSUT2 DD` name in the `MAKECON` step.

Note: You will also need to update the `ORBARGS` member in `HLQ.ORBIX62.CONFIG` to use the same name.

2. In all other JCL that requires a domain name, update the `DOMAIN` variable towards the top of the JCL to reflect your new name. For example, `SET DOMAIN='DEFAULT@'` might become `SET DOMAIN="SECURE"`

Note: Any JCL that references a dataset with the `@` sign embedded in the file name will also need to be updated, for example, `PREPSOAP` in `HLQ.ORBIX62.JCLLIB`.

Error Deploying IFR in Polish Code Page

If you have installed and configured Orbix Mainframe 6.2 to run in the Polish code page, IBM-870, the IFR fails to deploy with errors of `OBJECT_NOT_EXIST` and `SERVANT_NOT_FOUND`.

The workaround for this issue is to use a type information file instead. This issue will be resolved in a future release.

ORXIDL Procedure

The PDK library, `HLQ.ORBIX62.INCLUDE.ORBIX@PD.IDL`, has been omitted from the `SYSLIB` concatenation in the ORXIDL procedure. This means that if an IDL compiler includes a file from the PDK, the IDL compiler will be unable to find it. The workaround for this issue is to manually update the ORXIDL procedure as follows:

```
//SYSLIB DD DISP=SHR,DSN=&ORBIX..INCLUDE.OMG.IDL
//      DD DISP=SHR,DSN=&ORBIX..INCLUDE.ORBIX.IDL
//      DD DISP=SHR,DSN=&ORBIX..INCLUDE.ORBIX@EXT.IDL
//      DD DISP=SHR,DSN=&ORBIX..INCLUDE.ORBIX@PD.IDL
```

This will be fixed in a future release.

RRS

IMS transactions using RRS currently fail on z/OS 1.6 with a U0711 abend. IBM is working to resolve this issue under PMR 42026.

PREPCICA Fails if APPC Used

The PREPCICA job, shipped in `HLQ.ORBIX62.JCLLIB(PREPCICA)`, which is used to generate IORs for the CICS server adapter, will fail if the CICS server adapter is configured to use APPC. This is because `cicsraw` is not supported by APPC, but the job still tries to generate an IOR for it.

This will be fixed in a future release.

UNIX System Services C++ Security PI Demonstration

The readme file, `README_CXX.txt`, has been omitted for the UNIX System Services C++ Security PI demo located in

`InstallDir/asp/6.2/demos/corba/pdk/security_pi`.

Contact customer services at support@iona.com if you want a copy of this file.

This will be fixed in a future release.

C++ Compiler Options

The C++ compiler options shipped in `HLQ.ORBIX62.PROCLIB(ORXCPP0)` include a `TARGET(ZOSV1R2)` option.

Although the C++ product demonstrations will work using this option, you may not want to use it when compiling your own C++ applications, because it restricts the program's functionality to features that were available in z/OS V1R2. You should therefore remove this option. This will be fixed in a future release. Refer to the [Mainframe Migration and Upgrade Guide](#) for more details.

Fixed Bugs

This section discusses the following topics:

- [“Summary of Bug Fixes in Version 6.2 Service Pack 2”](#)
- [“Summary of Bug Fixes in Version 6.2 Service Pack 1”](#)
- [“Summary of Bug Fixes in Version 6.2”](#)
- [“Summary of Bug Fixes in Version 6.0” on page 40](#)
- [“Summary of Bug Fixes in Version 5.1” on page 43](#)
- [“Summary of Bug Fixes in Version 5.0.1” on page 45](#)
- [“Summary of Bug Fixes in Version 5.0” on page 46](#)

Summary of Bug Fixes in Version 6.2 Service Pack 2

The following customer reported bugs are fixed in version 6.2 Service Pack 2.

Table 1: *Bugs Fixed in Orbix Mainframe 6.2 Service Pack 2*

Bug ID	Description
69810	Fixed IMS adapter to prevent an abort if a client sends a service context with an LTERM incorrectly.
69993 70336	Added extra information to the Security Guide on the use of CSiv2 authentication. The secure configuration template has also been updated to assist with this.
70136	Allow the adapters to register interfaces with the Naming Service at runtime as they are added, rather than just at start-up.
70427	A new chapter has been added to the Orbix Mainframe Management Guide describing how to set up and use the management logging plug-ins.

Table 1: *Bugs Fixed in Orbix Mainframe 6.2 Service Pack 2 (Continued)*

Bug ID	Description
70558	Fix added to prevent OC4 abend in adapters when they register an object group with a Naming Service that is down or unreachable.
70571	Naming Service abends when a client is resolving an object while someone else calls "itadmin ns stop iona_services.naming".
70683	A new section detailing how to configure Orbix logging to use GDGs has been added to the Orbix Mainframe Configuration Reference.
70684	plugins*:display_timings from the adapters now use Orbix logging instead of stdout.
70706	TLS bug resulting in message delivery misordering.
70798	CSI interceptor ignores a bogus SSO token and lets an invocation through even if authenticate() fails.
70812	Fixed a problem where a PL/I client cannot register two different IDL interfaces.
70814	Fix to prevent a rare OC4 abend with the Locator.
70839	TLS handshake errors now display the host address and port of the handshake peer process to assist in tracking down problems.

Summary of Bug Fixes in Version 6.2 Service Pack 1

The following customer reported bugs are fixed in version 6.2 Service Pack 1..

Table 2: *Bugs Fixed in Orbix Mainframe 6.2 Service Pack 1*

Bug ID	Description
69801	Enhancement to MFA to read initial references from file.
69922	COBOL IDL compiler does not allow a specific interface in an input file to be used as input.
69936	SOAP NO_PERMISSION error messages are badly formatted.

Table 2: *Bugs Fixed in Orbix Mainframe 6.2 Service Pack 1 (Continued)*

Bug ID	Description
69984	DEFAULT (NONASSIGNABLE) compiler option results in compile errors (Enterprise PL/I compiler).
69999	Enhancement request to document mainframe shared library name and purpose.
70000	Client adapter fails to run with direct persistence turned off.
70015	Event logging does not allow a native data set to be specified for buffering.
70020	Enhancement request to document ORXCOPY usage.
70024	WTO is badly timed.
70027	Enhancement to allow client principal security to be disabled.
70113	<p>Enhancement request to log passing of user to CICS via EXCI.</p> <p>Note: As part of this bug fix, to enable the logging of user ID details, the <code>event_log:filters</code> configuration item must contain <code>INFO_MED</code> in its list of values for the <code>IT_MFA</code> filter. For example:</p> <pre>cicsa { event_log:filters = ["*=WARN+ERROR+FATAL", "IT_MFA=INFO_HI+INFO_MED+WARN+ERROR+FATAL"]; ... };</pre>
70123	Adapters produce an S0C4 abend when reading very large type information stores.
70143	PL/I IDL compiler is generating invalid code for bounded sequences.
70151	Enhance adapter log file exception message to show minor code.
70172	PL/I IDL compiler behaves badly when <code>-Mcreate</code> is specified.
70201	IMS and CICS clients that specify an accessor ID for CSLv2 generate incorrect requests.

Table 2: *Bugs Fixed in Orbix Mainframe 6.2 Service Pack 1 (Continued)*

Bug ID	Description
70210	Client adapter does not keep its connection to servers between invocations.
70214	User switch may cause file-based logging to be permanently redirected to <code>stderr</code> .
70246	Certificate DN name not readable on z/OS.
70261	Orbix 6.2 does not include JCL for <code>IORDUMP</code> .
70273	The <code>plugins:codeset:char:ncs</code> configuration variable is not honored on z/OS.
70284	Enhancement request to implement a per-transaction granularity for timeouts in the IMS adapter (using OTMA).
70306	IMS and CICS adapter calls to <code>_primary_interface()</code> result in memory leaks.
70336	Enhancements to client adapter security documentation.
70346	Timetrack timing output does not use 24-hour clock.
70431	Enhancement request for a plug-in that combines connection information with GIOP request information.
70437	Documentation enhancement to describe the <code>use_client_principal_user_security</code> configuration item.
70438	Documentation enhancement to describe the relationship between <code>ORBname</code> and <code>ORBid</code> as pertains to the <code>ORBARGS</code> Orbix COBOL API.
70447	Documentation enhancement to describe the <code>place_iors_in_nested_ns_scopes</code> configuration item.
70461	Orbix COBOL applications using unbounded strings leak under certain circumstances.
70482	General clean-up addressing several memory-related issues in Orbix COBOL and Orbix PL/I.
70516	Deallocate requests for APPC conversation may fail.

Table 2: *Bugs Fixed in Orbix Mainframe 6.2 Service Pack 1 (Continued)*

Bug ID	Description
70522	TRAN/LTERM STOPPED error message does not include user ID and the tran name.
70557	Documentation enhancement to more fully describe memory management of dynamic types under Orbix COBOL.

Summary of Bug Fixes in Version 6.2

The following customer-reported bugs are fixed in version 6.2.

Table 3: *Bugs Fixed in Orbix Mainframe 6.2*

Bug ID	Description
66810	IMS Adapter abends with SOC4 in prepare mode when user changed timeout value to ""
67874	Enhancement request for SEQFREE in PL/I so that it does a deep free on all its members.
68184	Enhancement request for the Client Adapter to read type information from a dataset or HFS.
68260	Mismatched braces ({}) in configuration are not reported and lead to confusing problems later on.
68372	Client authentication is not being enforced by an Orbix Mainframe server.
68521	Enhancement for IDL compiler mfa backend to change the default mapping file name.
68553	Modify the names of the libraries shipped with Orbix Mainframe to adhere to common naming standards.
68558	Enhancement request to the Orbix PL/I backend to flag the truncation of a <code>long long</code> with an appropriate error message.
68566	Allow IMS clients to initiate two-phase commit transactions.

Table 3: *Bugs Fixed in Orbix Mainframe 6.2 (Continued)*

Bug ID	Description
68582	Enhancement request for the IMS APPC imsraw adapter to allow non-replying transactions to be run.
68593	<code>itadmin</code> mfa resolve abends when referencing a domain that is not running
68600	Allow the log levels to be dynamically refreshed without stopping and starting IONA Services.
68602	Register the IOR for the IMS adapter automatically with the Naming Service.
68604	Certify Orbix Mainframe with IMS V8.1.
68606	Certify Orbix Mainframe on z/OS 1.5.
68617	Enhancement request for the IMS Adapter to allow conversational support over APPC.
68633	Archive files are placed in the home directory and not in the <code>old_logs</code> directory as they should.
68634	<code>lg_max</code> value is ignored for setting maximum value of archive files and the rolled files are never moved.
68635	Intercommunications sometimes fail between Orbix Mainframe on z/OS 1.4 and Orbix on Solaris 6.0.3 when using TLS.
68643	Enhancement request for the IMS OTMA imsraw adapter to allow non-replying transactions to be run.
68693	Enhancement request for the COBOL and PL/I IDL compiler to allow for 31 digit sizes
68724	If a native file or invalid pathname is used as the <code>local_log_stream</code> filename, it is ignored.
68727	There is an illegal "/" character in a sequence name generated by the IDL PL/I compiler using nested modules.

Table 3: *Bugs Fixed in Orbix Mainframe 6.2 (Continued)*

Bug ID	Description
68737	When the minor code <code>HOST_LOOKUP_FAILED</code> is issued from a TRANSIENT exception, output the name of the host in the message.
68758	Provide access to the PCB in an IMS COBOL server.
68761	Enhancement request to provide full <code>long long</code> support in PL/I.
68764	IMS timing calculations produce incorrect values.
68783	SSL error occurs when Orbix 6.1 client closes it's connections to an Orbix Mainframe Server.
68797	Enhancement to provide IDLIN and IDLINC DD statements.
68806	Enhancement to provide an IDLPARM DD statement.
68812	Please add a flag to the PL/I IDL compiler so that we can generate the PCB information as it was in the 2.3.X products.
68864	Change Cobol & PL/I backend to allow a length of 0 for STRSET as it currently causes a failure in the code.
68865	Change the statistics method so that it runs in its own thread.
68876	When running servers in locales other than IBM-1047, some characters are not being converted correctly.
68877	When running services in locales other than IBM-1047, the logging writes IBM-1047 instead of proper character set.
68892	PL/I and COBOL Backends ignore <code>-N</code> preprocess flag on the IDL compiler.
68927	Update the PL/I documentation to say that PODVER is not deprecated.
68945	CICS adapter abends in the skeleton code when a client makes concurrent requests with different commarea sizes.
68954	Dynamically re-allocating sequences is not working correctly in PL/I or COBOL.

Table 3: *Bugs Fixed in Orbix Mainframe 6.2 (Continued)*

Bug ID	Description
68963	When including multiple PL/I files, code for all the typedefs are generated even if not referenced.
68969	IMS adapter abends when receiving concurrent <code>_is_a()</code> calls for a base type.
68971	IT_CPLM:INVALID_DISCRIMINATOR_TYPECODE when using unions without default values inside a sequence.
68979	Change IDL job to not return RC 0 when there is a name clash warning.
68989	Enhancement to show transaction name and principal in adapter error messages.
68998	Only generate runtime information for typedefs that are used in the IDL by operations and attributes.
69042	Dynamic refresh of typeinfo files is not working correctly.
69047	Reason Text is missing from Exception messages inside IMS & CICS.
69050	Cobol and PL/I union support does not allow users to specify cases that don't exist.
69054	Request arguments attribute in the <code>PortableInterceptor::RequestInfo::arguments()</code> class appears to be broken.
69064	Update to IMS / CICS adapter documentation to include details about RACF program control.
69074	Improve exception reporting as exceptions reported by client are difficult to find in the adapter log file.
69079	Add a minor code analyzer to Orbix Mainframe.
69083	SOC4 abend occurs in adapter when buffer points to 0.
69088	Add a new flag to the adapters so that their IORs will be written to a file up on start up.

Table 3: *Bugs Fixed in Orbix Mainframe 6.2 (Continued)*

Bug ID	Description
69103	Enhancement request to allow Orbix Mainframe run in the japanese locale - IBM-939.
69171	Hang between two threads in ATLI2_TLS/ATLI2_IP if data is coming in and needs to go out on the same connection.
69192	When exporting an IS2-enabled IOR, the IS2 domain is encoded in EBCDIC.
69201	A duplicate PROC is generate by PL/I idl backend in L member which will not compile.
69235	Enhancement request to reduce adapter timing information to one line per entry.
69238	Interpretation of <code>policies:csi:auth_over_transport:target_supports</code> is out of sync with Orbix 6.1 SP1.
69255	Large memory consumption when a server using TLS connections is stressed.
69288	Enhancement request to allow a password to be sent with a userid in client principal mode.
69292	Add an option to generate code with DISPLAY instead of PUT SKIP LIST in PL/I.
69299	Error when calling SEQLSET in PL/I with length argument equals 0.
69344	Reduction of PL/I code size (excessive variable declarations)
69356	Add a warning message when unbounded sequences have reached their maximum and are re-allocated to sequence max + 1.
69357	Update to documentation about itadmin mfa reload to indicate it is also refreshing the cache.
69358	SOC4 abend in <code>IT_Buffer::copy_octets</code> .
69366	-Qs option in COBOL is inconsistent.
69953	CORBA binding to the Security Service requires the CSI client interceptor.

Table 3: *Bugs Fixed in Orbix Mainframe 6.2 (Continued)*

Bug ID	Description
69486	CSI interceptor picks up <code>principal_sponsor:use_principal_sponsor</code> instead of <code>principal_sponsor:csi:use_principal_sponsor</code> .
69487	CSI interceptor prints out the username and domain name in UTF-8.
69523	Add a command to initiate graceful Adapter shutdown.
69593	C++ CSIv2 Client interceptor will authenticate itself when it is configured not to.
69603	Documentation for SEQSET exception needs clarification in the PL/I guide.
69623	<code>IT_GIOP::Current::received_principal_as_string()</code> doesn't always return the correct principal.
69641	Marshalling of sequences/arrays of octets in PL/I is comparatively slow.
69643	Add some header files to the Orbix distribution package.
69647	Inheritance results in wrong method being called.
69666	Adapter tries to delegate the DN of x509 certificate to CICS.
69689	Dynamically resizing sequences in Cobol doesn't work as documented.
69696	Can't use a corbaloc URL to federate name services.
69701	Enhancement request for the IMS/CICS adapters to create a naming context for a module name when exporting objects to the Naming service
69706	Allow <code>imsa:display_timings</code> to show more than 100 threads.

The following Artix-related bugs that are relevant to Orbix Mainframe have also been fixed.

Table 4: *Artix-related Bugs Fixed in Orbix Mainframe 6.2*

Bug ID	Description
69089	SOAP DLL can not be loaded.
69304	PI: <code>m_sec_current->received_credentials()</code> returns <code>BAD_OPERATION</code> .
69386	When running services in locales other than IBM-1047, the logging writes IBM-1047 instead of the proper character set.
69443	Remove IONA Security Header information which is irrelevant in .NET clients that use WSE.
69448	WSE credentials are checked despite the namespace associated with them.
69450	Special characters e.g. German umlaut cause .NET clients to fail.
69473	Display timestamps is printing extra information.
69490	Change the logging behavior to indicate that default settings are being used.
69569	401 response with blank username/password in basic authentication.
69598	Promote http/https Info message for a 401 response.
69749	The SOAP DLL has a dependency on Kerberos which should be removed.
69776	Using an IP address instead of a hostname results in error <code>IT_HTTP:CANNOT_CREATE_LISTENER</code> .
69813	XMLSPY 2005 R3 reports target namespace issue with import definitions in generated WSDL.

Summary of Bug Fixes in Version 6.0

The following customer-reported bugs are fixed in version 6.0.

Table 5: *Bugs Fixed in Orbix Mainframe 6.0*

Bug ID	Description
65203	Create WTO log stream to help automate system monitoring.
66308	Orbix 2000 Services running on a dynamic VIPA may loop if the DVIPA is deactivated.
66916	COBOL and PL/I IDL compiler now accept a parameter to specify where copybooks and include files will be written.
66919	PSS/DB replication does not work.
67514	PL/I include files generate a put skip list with the concatenation symbols used, which may lead to code page issues.
67661	IMS Adapter and <code>itadmin</code> do not communicate with services on another platform that are fully secure.
67704	IMS/CICS adapters will not prepare with German PageCode.
67708	COBOL and PL/I applications using unions might get unexpected results.
67713	IMS/CICS adapters do not support <code>_is_a</code> .
67714	Allow prepare jobs to accept the <code>umask</code> flag to specify directory permissions.
67747	Deploy/deployt job does not work when using a different locale.
67749	Locale conversion jobs (<code>ICONV</code>) in the <code>\$SECOND</code> member fail with <code>RC 12</code> .
67751	Allow <code>itadmin</code> to stop IMS adapter.
67754	PL/I unions mapping for boolean discriminators and enum discriminators create an incorrect storage value.

Table 5: *Bugs Fixed in Orbix Mainframe 6.0 (Continued)*

Bug ID	Description
67801	If you specify many IDL parameters, you may get IEF6421 EXCESSIVE PARAMETER LENGTH IN THE PARM FIELD.
67829	Add client-side object reference support for CICS and IMS Orbix applications.
67832	EXCESSIVE PARAMETER LENGTH IN THE PARM FIELD message when passing additional information in the RPARM JCL symbolic.
67840	IFR does not return attributes/operations of base interfaces when calling <code>describe_interface</code> on a child interface.
67864	<code>itadmin mfa list</code> shows mappings for interfaces that aren't available in the IFR.
67865	PL/I IDL compiler does not generate user exceptions correctly if they contain structures.
67873	PL/I inout sequences are corrupted if an input sequence is also sent and the SEQGET occurs after the inout has been allocated.
67878	Allow the IONA services to use a specified port when using indirect persistence.
67887	Change existing IMSHLQ symbolic variable to IMSRES variable to allow complete substitution of the IMS RESLIB.
67896	IMS 7 modified default behavior for OTMA C/I when returning segment sizes longer than those provided.
67906	iS/2 functionality to be incorporated into Orbix Mainframe 6.0.
67971	Enhance the IDL compiler to generate dynamic addressing for CICS Server implementations.
68015	Allow HFS files in native IDL compile jobs.
68023	Remove <code>_isPosixOn()</code> check inside of the NART code.
68037	Please update IMS Adapter documentation to include PDS names to APF-authorize when using client principal.

Table 5: *Bugs Fixed in Orbix Mainframe 6.0 (Continued)*

Bug ID	Description
68043	Ship minor code files.
68045	Input stream not locale aware for SYSIN file streams.
68063	IORDUMP in native does not read cards from DD cards.
68075	OBJGTID - API shouldn't be used in IMS or CICS.
68092	Allow customers to use scoped or unscoped versions of IMSRAW and CICSRAW.
68156	Documentation for COAERR is missing a key part in its example code.
68165	Allow CICS Adapter to be configurable whether CICS is running or not.
68222	ASP 5.1 hangs when running prepare for a TLS-enabled Naming Service.
68227	TLS bug in Orbix 5.1 allows client to connect securely without providing a certificate.
68235	Enhance the IMS Adapter to check for 0 length input data being sent to IMS.
68266	Enhance the IMS adapter to allow conversational support over OTMA.
68283	The PL/I IDL compiler generates incompatible code with <code>-TIMSX</code> option, if <code>x</code> is greater than 0.
68290	Please enhance the documentation for the CICS Adapter support for CICSRAW over APPC.
68362	IMS/CICS Client Adapter sends a corrupted Any containing a <code>struct</code> containing strings.
12000140	IDL compiler / ORXIDL does not accept <code>-ORBDomain_name</code>
12000734	Modify the dataset naming standards to allow for 19 character high level qualifiers.

Table 5: *Bugs Fixed in Orbix Mainframe 6.0 (Continued)*

Bug ID	Description
12000752	ORXCFGMD proc in DEPLOY JCLs should allow passing of PPARM parameters for advanced configurations such as multiple domain setups.
12000753	DEPLOY1 and DEPLOYT JCL should provide a way to define the include path other than FILEDOMA, which is the default behavior.
12000759	ORXPLISC, ORXPLCSC procedures should use the &CEE symbolic variable.
12000760	ORXPLICC, ORXPLCCC procedures should use the &CEE symbolic variable.
12000786	The IMS Adapter does not seem to process requests that are fully secure.
12000806	Add the ORBTIME functionality to IMS clients.

Summary of Bug Fixes in Version 5.1

The following customer-reported bugs are fixed in version 5.1.

Table 6: *Bugs Fixed in Orbix Mainframe 5.1*

Bug ID	Description
65132	z/OS-specific: Orbix 2000 2.0 will not run in locales with multibyte character encodings.
66079	Please allow JCL for <code>itadmin</code> to accept in-stream parameters longer than 80 characters.
66089	IDL PL/I generator does not create entries for typecodes in the mapping file.
66286	Multi-dimension Orbix 2000 PL/I arrays are not marshalled properly.
66350	No mapping file gets generated if -O and -M flags are used together with the PL/I generator in native z/OS.

Table 6: *Bugs Fixed in Orbix Mainframe 5.1 (Continued)*

Bug ID	Description
66418	Allow ORXADMIN to accept a filename on the mfa resolve <interface> command in the SYSIN data set on z/OS.
66481	PL/I clients and servers abend with S22C.
67045	Unbounded sequences - COAPUT failure when initial maximum exceeded - possible length problem.
67236	IDL COBOL compiler does not terminate declaration correctly.
67268	POD performance enhancement for Orbix Mainframe IMS adapter.
67269	Enhancement with regards to Orbix IMS performance.
67340	IDL backend for PL/I and COBOL gives RC 0 when a specified mapping file does not exist.
67343	IDL interface called "service" is not processed correctly by the COBOL backend. IDL compiler needs to be changed to note that "Service" is a reserved word in COBOL. For the purposes of COBOL and PL/I generation, the Orbix IDL compiler has been updated to cater for the reserved word list pertaining to Enterprise COBOL, COBOL for OS/390, Enterprise PL/I, and PL/I for OS/390 compilers.
67346	Please update HLQ.ASP50.PROCS (ORXLKIMS) to use a symbolic reference for the IMS libraries.
67361	Add objrel calls to PL/I and to COBOL / PL/I generators.
67376	The usage of anys within structures and sequences are causing a problem in COBOL. Could be alignment related.
67397	COBOL any types fail when populated with a structure that contains more than three strings and the any itself is inside a structure within a sequence.
67410	Orbix 2.3 COBOL and PL/I used to allow a length of 0 for STRSET. Orbix no longer does. This causes a failure in the code.

Table 6: *Bugs Fixed in Orbix Mainframe 5.1 (Continued)*

Bug ID	Description
67447	Add IMS Drain feature to adapter to refresh security environment in OTMA connections.
67609	Orbix Mainframe does not allow fully secure locators and node daemons.
12000138	Please enhance the help list to include module name for the mfa plug-in.
12000580	Adapter gateways (IMS and CICS) should provide a way to export their references to a naming service on startup.

Summary of Bug Fixes in Version 5.0.1

The following customer-reported bugs are fixed in version 5.0.1.

Table 7: *Bugs Fixed in Orbix Mainframe 5.0.1*

Bug ID	Description
65390	The IDL COBOL & PL/I compiler generated uncompileable output for IDL that contained diamond inheritance. This was caused by the generation of duplicate procedure names in both compilers, and by a bug in the comment generator in the PL/I backend.
65476	Too much PL/I code being generated with the new Orbix IDL compiler for PL/I. The size of the generated <i>idlmembernameX</i> copybook has now been substantially reduced.
65545	Changes to the value in <code>plugins:ims_appc:ims_or_cics_destination_name</code> are ignored. All connection requests are still made to the default destination name, <code>ORBIXIMS</code> . The shipped variable has been changed to <code>plugins:ims_appc:ims_destination_name = "ORBIXIMS";</code>
66855	PL/I backend (IDL compiler) crashes sometimes when generating server implementation.

Table 7: *Bugs Fixed in Orbix Mainframe 5.0.1 (Continued)*

Bug ID	Description
67056	When no mapping option is used, the 4 character hashes generated to cater for long names in the COBOL copybooks changes. This is because of a bug in the COBOL plug-in for the IDL Compiler. As a result, changes were made to the shipped demos to reflect the new hash value. For example, Simple demo <code>SIMPLE-SIMPLEOBJECT-70FE</code> ARGS changed to <code>SIMPLE-SIMPLEOBJECT-DCD9</code> -ARGS.
67064	Orbix 5.0 COBOL client fails with Protection Exception when it passes a sequence of <code>anys</code> to a server.
12000143	<i>Mainframe Installation Guide</i> does not state which libraries are to be added to the IMS MPP region.
12000147	Orbix 5.0 PL/I and COBOL build demo JCL ships with a <code>UNIT=VIO</code> that is not defined at all customer locations.

Summary of Bug Fixes in Version 5.0

The following customer-reported bugs are fixed in version 5.0.

Table 8: *Bugs Fixed in Orbix Mainframe 5.0*

Bug ID	Description
65460	Re-registering a type (other than an interface) causes the IFR to be left in a corrupted state.
65637	Change in the supplied <code>CORBA</code> COBOL copybook in <code>HLQ.ASP51.INCLUDE.COPYLIB</code> , to make the <code>01 ORBIX-STATUS-INFORMATION</code> data item, <code>EXTERNAL</code> , accessible to the server implementation, and therefore <code>ORBSTAT</code> does not need to be called in the implementation.
65680	Inherited constants are now listed only under the interface where they are declared and not also in the interface's constant structures for which they are inherited. This is because an interface that inherits another interface's constants may redefine the constants—and if the generated structure contained both its own constants and its inherited constants, a naming conflict would occur.

Table 8: *Bugs Fixed in Orbix Mainframe 5.0 (Continued)*

Bug ID	Description
65927	IFR server core dumps if the search item is a scoped name which is not in the IFR
66089	The mapping member now generates entries for any typedefs listed in the interface, in addition to what it generated before.
66092	The PL/I back-end no longer generates an interface parameter in the server implementation member (the <code>idlmembernameI</code> member), nor does it add calls to retrieve the interface name from the <code>reqinfo</code> structure in the server accessor member (the <code>idlmembernameZ</code> member). The select member (the <code>idlmembernameD</code> member) has also been updated appropriately. This generation now matches what was done by <code>genpli</code> in Orbix 2.3.x.
66326	Cannot start the IFR in direct persistence mode.

Note: PL/I sequences of structs containing sequences are generated correctly using Orbix 2000, Orbix 5.x, and Orbix 6.0.

Orbix 2.3.x's `genpli` used the `typedef` name for the innermost sequence name in this case, while the PL/I backend correctly uses the sequence variable name defined in the `struct` that contains the sequence.

Sample Code

There are a number of demonstrations provided in your installation. Details on building and running the demonstrations are provided in the following locations:

- `HLQ.ORBIX62.DEMOS.CICS.COBOL.README`
- `HLQ.ORBIX62.DEMOS.CICS.PLI.README`
- `HLQ.ORBIX62.DEMOS.COBOL.README`
- `HLQ.ORBIX62.DEMOS.CPP.README`
- `HLQ.ORBIX62.DEMOS.IMS.COBOL.README`
- `HLQ.ORBIX62.DEMOS.IMS.PLI.README`
- `HLQ.ORBIX62.DEMOS.PLI.README`
- `HLQ.ORBIX62.DEMOS.ARTIX.README`
- `InstallDir/asp/6.2/demos/README.txt`

Reporting Problems

Contact customer support at <http://www.iona.com/support/contact/> or support@iona.com.

When contacting customer support, try to provide as many details as possible about the problem, including details of when it first started to occur, a test case (if possible), all related logs, and any applicable SVC dumps or CEEDUMPs.

Other Resources

- [IONA University](#) delivers practical and insightful courses that cover technical and product issues as well as standards-based best practices gleaned from real-world projects.
- [IONA Global Services](#) provide product expertise and consulting solutions that empower end-users, system integrators and software vendors with the knowledge to fully leverage Orbix. Together, IONA consultants and Orbix equip you with a single platform for integrating and developing extremely reliable, scalable and secure e-Business systems.
- Technical documentation relating to Orbix Mainframe is available at <http://www.iona.com/support/docs/orbix/mainframe/6.2/index.xml>. This site contains the most up-to-date versions of the documentation.
- [The IONA Knowledge Base](#) is a database of articles that contain practical advice on specific development issues, contributed by IONA developers, support specialists, and customers.