Orbix 3.3.4

Release Notes

September 2002

Contents

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Introduction

Orbix 3.3.4 is a Service Pack Release of Orbix 3.3. This document contains information about Orbix 3.3.4, including build information, details of bugs that have been fixed in this release, known problems and workarounds, new features, tips, and deprecated features.

Orbix 3.3.4 and Orbix 3.0.1

For details of the changes that took place between Orbix 3.0.1 and Orbix 3.3, see the Orbix 3.3 Release Notes.

There have there been no changes to the APIs since Orbix 3.3.

Migrating from an Earlier Version of Orbix

For information on migrating from an earlier version of Orbix to Orbix 3.3.4, see the Migration Guide at:
www.iona.com/products/MigrationGuide.pdf

Interoperability with Other IONA Products

The Java and C++ Editions of Orbix 3.3.4 have been tested with, and are interoperable with each other, except for those areas that are documented under known problems.

The Java and C++ editions of Orbix 3.3.4 have also been tested with, and are interoperable with, the following Orbix products:

- Orbix 3.3.3 C++ and Java Editions.
- Orbix 3.3.2 C++ and Java Editions.
- Orbix 3.3.1 C++ and Java Editions.
- Orbix 3.3 C++ and Java Editions.
- Orbix E2A Application Server Platform 5.1 C++ and Java.
- Orbix 2000 SSL C++ and Java Editions.
- Orbix Trader 1.2.1 Java Edition (no C++ Edition available).
- Orbacus 4.0.5.
- Orbix 3.0.1
- OrbixWeb 3.2

Licensing

- The IDL compilers, `idl.exe` and `idlj.exe`, are licensed.
- The Orbix daemon `orbixd` is licensed.
- The OrbixSSL `update` utility is licensed.
- The OrbixEvents 3.3 `es` utility is licensed.
- OrbixOTS 3.3 shared libraries (DLLs on Windows NT), `libEncinaClientOrbix` and `libEncinaServerOrbix` are licensed.

Deprecated Features Policy

When a feature is deprecated it means that:

- No support for this feature is given for the current version and for subsequent versions (that is, we do not explain how to use it and we do not fix any bugs in this feature).
- If you have not used this feature before, DO NOT start using it with this release.
- If you are already using this feature then you should remove it if at all possible.
- The feature may not be present in future versions of the product.

Development Environments

This table details the operating system versions and compiler versions, on which Orbix 3.3.4 is built and certified.

Platform and O/S version	Built on	Certified on	C++ Compiler version	Built on JDK version	Certified on JDK version
Solaris 2.6	No	Yes (against Sol 2.7 build)	Sun C++ 5.1 (32 bit)	1.2.2_05a	1.2.2_05a 1.3.1_b24
Solaris 2.7	Yes	Yes	Sun C++ 5.1 (32 bit)	1.2.2_05a	1.2.2_05a 1.3.1-b24
Solaris 2.8	Yes	Yes	Sun C++ 5.2 (32 bit)	1.2.2_05a	1.2.2_05a 1.3.1-b24
HP-UX 11.00	Yes	Yes	HP ANSI C++ (aCC) A.03.31	1.2.2_12	1.2.2_12 1.3.1_02
HP-UX 11 i	No	Yes (against HP-UX 11 build)	HP ANSI C++ (aCC)A.03.31	1.2.2_12	1.2.2_12 1.3.1_02
Windows NT 4.0 SP 6	Yes	Yes	Visual C++ 6.0 SP 3	1.2.2_007	1.2.2_007 1.3.1-b24
Windows 2000 SP 2	No	Yes (against Win NT 4.0 build)	Visual C++ 6.0 SP 3	1.2.2_007	1.2.2_007 1.3.1-b24
Windows XP Base O/S i.e. not patches installed.	No	Yes (against Win NT 4.0 build)	Visual C++ 6.0 SP 3	1.2.2_007	1.2.2_007 1.3.1-b24
Tru64 5.1A*	Yes	Yes	Compaq C++ v6.2-024 (64 bit)	1.2.2_12	1.2.2 1.3.1_1
AIX 4.3.3	Yes	Yes	IBM VisualAge C++ v5.0	1.2.2	1.2.2 (IBM build) 1.3.1 (IBM build)
AIX 5 L	No	Yes (against AIX 4.3.3 build)	IBM VisualAge C++ v5.0.2	1.3.1	1.3.1 (IBM build)

* Orbix 3.3.4 has been upgraded from Tru64 5.1 to Tru64 5.1 A

Orbix 3.3.4 C++ Edition

This section describes changes made to the Orbix 3.3.3 C++ Edition for the Orbix 3.3.4 C++ Edition.

New Features

Orbix 3.3.4 C++ Edition is binary compatible with Orbix 3.3 C++ Edition therefore no new APIs have been added nor existing ones modified.

New and Modified APIs

Orbix 3.3.4 C++ Edition is binary compatible with Orbix 3.3 C++ Edition, therefore no new APIs have been added nor existing ones modified.

Functionality Removed

Orbix 3.3.4 C++ Edition is binary compatible with Orbix 3.3 C++ Edition, therefore no functionality has been removed.

Deprecated Features

The following is a list of deprecated features in Orbix C++ Editions:

Feature	Description	Feature Removed	When Deprecated
_bind()	Should use other means.	NO	Orbix 3.0
Transformers	Can use SSL for security.	NO	Orbix 3.0
Piggy Backing Data with Filters	Should use Service Contexts.	NO	Orbix 3.0
Opaque Data Type		NO	Orbix 3.0
Orbix Network Protocol (POOP)	Must use IIOP instead.	NO	Orbix 3.0
IDL Compiler options –i and -f		NO	Orbix 3.0
IR	Replaced with the IFR.	YES	Orbix 3.0
Locator	Can implement own load balancing solution.	YES	Orbix 3.3

Non Native Exceptions	Must use Native Exceptions	YES	Orbix 3.3
TIE macro DEF_TIE(I,X)	Use other form	Yes.	Orbix 3.3
Configuration Explorer `ConfigurationExplorer.bat`	Allows you to configure Orbix components without modifying the configuration files directly.	*No*	Orbix 3.3.4
Server Manager `ServerManager.bat`	Allows you to manage the Implementation Repository.	No	Orbix 3.3.4

Note: Orbix 3.0 was released February 1999 and Orbix 3.3 was released September 2000.

Bugs Fixed

This section describes the bugs fixed in this release. All bugs are cross platform unless otherwise stated. All bugs are described in terms of the following:

- **Incident ID**

  This is the reference number used by the development teams to track bugs, which may in turn relate to one or more problem reports (PR) as reported by customers.

- **Synopsis**

  This is a short description of the reported problem. A description of the fix is included where necessary.

The following bugs were fixed in Orbix 3.3.4 C++ Edition:

Incident ID	Synopsis
64300	The Orbix 3 runtime incorrectly marshals fragmented GIOP messages from an Orbix 2000 server when GIOP 1.1 is enabled.
65089	When trying to narrow an Orbix 2000 IOR to an incorrect type might result in an exception being thrown (incorrect behavior) rather than a nil pointer being returned (correct behavior).
65223	Orbix 3.3.2 IORs that differ only in port number, resolve to the same object reference.
65426	The port number specified with `IT_IIOP_PORT` is not handled correctly by the Orbix3.3.3 runtime.
65632	`putidl` opens many connections to the IFR in multi-homed environment when `IT_LOCAL_HOST` is set to a secondary IP address.
65789	A secure Java server denies invocations from a secure C++ client.
65858	`IT_USE_HOST_IN_IOR` does not work correctly in Orbix 3.3.x on Tru64

	Tru64.
66046	Orbix Consumer core dumps when communicating with a Visibroker 3.3.4 patch 25 supplier.
66117	Orbix 3.3.2 incorrectly narrows/unmarshals object references with unexpected type Ids.
66211	Orbix 3.3.x Consumer process size continues to grow each time it extracts a complex data type from an Any data type sent from an ORBacus 3.3.4 Supplier.
66282	The Orbix Daemon puts a value of `0` for the port number in location forwarded IORs if a persistently registered server is not running which causes Orbix clients to loop recursively.
66318	Orbix3.3 does not support a `_get_interface` operation.
66398	Socket handles leak in Orbix 3.3.3.
66417	An Orbix 3.3.x Consumer process size continuously increases when extracting a `CORBA::Any` sent from an Orbix 2000 Supplier.
66446	Orbix 3.3.3 incorrectly processes a `string_to_object` operation for a ORBacus IOR with null `type_id`. It gives the following exception "`sysex: 10107-- Invalid object reference`".
66448	If Orbix3.3.3 narrows the Orbix 2000 naming context twice, the second narrowing returns a NIL object.
66451	`ProcessEvents()` does not throw an exception when another process is already listening on that port.
66806	Running `Chmodit` corrupts a server's `.IMP` files.
66871	Orbix deadlocks when `host()` and `string_to_object()` are called concurrently.
66920	A Memory leak occurs in `liborbixmt.3.3.forte60.so.1` (in the `bankdii` demonstration).
66923	Orbix 3.3.x crashes in `IT_TypeCodeCacheItem::getMemberType()` on HP-UX 11.
66942	This bug occurs when differences in IDL definitions of an 'erroneous' operation on the client side and the server side cause the server to throw a marshalling exception on the first invocation of the 'erroneous' operation, and on the second exit with an `[Orbix::Exhausted available memory...]` error message. Subsequently the server crashes. A New Orbix scoped configuration variable `IT_EXIT_ON_BAD_ALLOC` has been added (refer to Configuration Variable `IT_EXIT_ON_BAD_ALLOC`) in this release to resolve this issue.
67050	A union data type put into an Any data type which is an `out` parameter of a Orbix 2000/E2A server cannot be interpreted by an Orbix 3.3.x client.

67089	An Orbix 3.3.3 client cannot communicate with a Orbix 2000 v2.0 server when IIOP version is set to 1.0 on client side and 1.1 on server side.
67128	An Orbix 3.3.3 OTS client fails with an exception when it calls `commit` on an Orbix 2000 server containing an XA object.
67133	Loading the IFR with an IDL file that has the same name for parameter declaration and parameter identifier differing in case only, fails with Orbix 3.3.3. Refer to IDL Compiler Options for details of the `-strict` option, and the knowledge base article: 4350.712 - "Strict CORBA compliance checking using Orbix 3.3 idl compiler. "
67257	The Orbix daemon leaks memory when multiple threads call `_bind()`.
67296	Missing symbols in the shared libraries of Orbix 3.3.3 TP4.
67316	The Orbix 3.3.1 process leaks memory when the diagnostics level is set to `3`.
12000055	`object_to_string()` does not record the marker name automatically given by Orbix 3.3.3 unless `marker()` is called explicitly to set the marker name before obtaining the IOR.
12000091	With a server is registered with `-addpath`, `orbixd` throws a `ClassNotFound` exception when trying to auto launch.
12000225	Orbix 3.3.3 performance decreases when using a dual processor Windows NT4 SP6a machine passing large sequences.
12000313	Memory leaks occur for compiled IDL skeleton code where the IDL has an opaque type with an `in` parameter.
12000331	`IsEventPending()` returns `false` while `select()` says that there is still pending data on the socket (on multi-processor NT machines).
12000341	A memory leak occurs in the Orbix 3.3.2 daemon channels.
12000362	Makefile on Orbix3.3.3 jumpstart demo is not a valid windows Makefile.

IDL Compiler Options

The following compiler options has been added to Orbix C++ Edition 3.3.4.

Compiler Option	Description
`-KQ`	This option generates server-side memory initialization and de-allocation code with the IDL compiler for IDL operations that contain an opaque `in` parameters. This is not a binary compatible feature. Typically this switch is used with the `const_in_opaque` option to generate code that is free of memory leaks when using opaque `in` parameters
`-strict`	This option enables strict CORBA compliant IDL grammar checking. It should be used where strict compliance to the CORBA specification

	should be used where strict compliance to the CORBA specification for IDL is desired. By default this feature is not enabled to preserve compatibility between the Orbix 3.3.4 IDL compiler and earlier versions or Orbix. Using this option will cause compilation to fail for IDL that is not strictly compliant to the CORBA specification for IDL. Note that IDL that fails to compile only when this option is set will normally produce fully functional stub code.

Configuration Variable `IT_EXIT_ON_BAD_ALLOC`

Name `IT_EXIT_ON_BAD_ALLOC`

Type Boolean

Default Yes

This configuration variable has been introduced to resolve the bug 66942: If a mismatch occurs between IDL definitions for a given object or operation between client and server, corrupt data can be sent along a connection. During unmarshalling this corruption could, in some circumstances, cause Orbix to report an [`Orbix:: Exhausted available memory...`] error and to terminate an application.

This variable modifies the Orbix memory allocation failure handling. Setting it to `NO` will force Orbix to throw a `bad_alloc()` exception on allocation failure rather than terminating an application. This allows Orbix to throw an exception to the remote side during unmarshalling if the scenario described above occurs.

If the value is set to "`NO`" on the server side, the client will receive a marshalling exception and the server continues to process requests without exit.

Known Problems and Workarounds

This section summarizes known issues and suggested workarounds for Orbix 3.3.4 C++ Edition.

Incident ID	Synopsis
64993	There are certain uses of the loop back IP address (127.0.0.1) that cause problems in `_bind`. Alternatives are 'localhost', the explicit local IP address, the explicit local hostname, and the explicit local fully qualified hostname.
64992	There is a known problem with foreign FDs (File Descriptors) on HPUX 11. When Orbix is asked to manage foreign FDs, there are some situations where the process hangs. It is not typical to ask Orbix to manage foreign FDs, and this problem can be avoided by not asking Orbix to manage foreign FDs.
64991	There is a known problem using C++ keywords in various situations in the IDL file. Using C++ keywords for attribute names, operations names and field names (of structures and exceptions) works. However, using C++ keywords as the type name of a module, interface, exception, or struct does not work. Customers should

avoid using C++ keywords in the IDL as the type names of modules, interfaces, exceptions, and structs.

56121	The IDL compiler issues warnings if the IDL contains identifiers that are reserved keywords but not all lower case. For example, the IDL "interface `Attribute{};`" causes the warning "Warning : identifier Attribute clashes with keyword" even though its a valid interface name and is case-different from the reserved keyword "attribute".
55600	No overloaded output-streaming operator (<<) is provided for the unsigned long long CORBA type (`CORBA::ULongLong`) in Orbix 3.3.
55599	No overloaded output-streaming operator (<<) is provided for the signed long long CORBA type (`CORBA::LongLong`) in Orbix 3.3.
55547	Orbix 3.3 generated IDL stub code on Windows NT for multi-dimensional arrays as in parameters should work around known VC6 multidimensional array const bug.
56334	When service context handlers in Orbix runtime encounter an abnormal condition, the diagnostic messages are not very informative.

Orbix 3.3.4 Java Edition

This section describes changes made to the Orbix 3.3.4 Java Edition for the Orbix 3.3.4 Java Edition.

New Features

Orbix 3.3.4 Java Edition is binary compatible with Orbix 3.3 Java Edition, therefore no new APIs have been added nor existing ones modified.

New and Modified APIs

Orbix 3.3.4 Java Edition is binary compatible with Orbix 3.3 Java Edition, therefore no new APIs have been added nor existing ones modified.

Functionality Removed

Orbix 3.3.4 Java Edition is binary compatible with Orbix 3.3 Java Edition therefore no functionality has been removed.

Deprecated Features

The following is a list of features deprecated in Orbix Java Editions:

Feature	Description	Feature Removed	When Deprecated
_bind()	Should use other means.	NO	OrbixWeb 3.2
Transformers	Can use SSL for security.	NO	OrbixWeb 3.2
Piggy Backing Data with Filters	Should use Service Contexts.	NO	OrbixWeb 3.2
Opaque Data Type		NO	OrbixWeb 3.2
Orbix Network Protocol (POOP)	Must use IIOP instead.	NO	OrbixWeb 3.2
IDL Compiler options `-i` and `-f`		NO	OrbixWeb 3.2
Orbix Java Activator (`Orbixdj.bat`)	Java Activator in Graphical mode	NO	Orbix 3.3.4

Note: OrbixWeb 3.2 was released February 1999.

Bugs Fixed

This section describes the bugs fixed in this release. All bugs are cross platform unless otherwise stated. All bugs are described in terms of the following:

- **Incident ID**

  This is the reference number used by the development teams to track bugs, which may in turn relate to one or more problem reports (PR) as reported by customers.

- **Synopsis**

  This is a short description of the reported problem. A description of the fix is included where necessary.

The following bugs were fixed in Orbix 3.3.4 Java Edition:

Incident ID	Synopsis
Orb Runtime	
64471	Orbix 3.3 Java throws the wrong exception when marshalling a null string with `IT_MARSHAL_NULLS_OK = "false"`
65410	Calling `orb.shutdown()` followed by `ORB.init()` does not create a new, clean ORB independent of the other
65789	A secure OTS Java server denies invocation from a secure OTS C++ client using Service Context.
66163	`idlj` compiler produces incorrect type code which breaks interoperability. (A new idl compiler switch `-jK` is available as part of this fix. Please refer to the Orbix Java Edition section in the Appendix.)
66198	The Orbix Daemon puts a value of `0` for the port number in location forwarded IORs if a persistently registered server is not running which causes OrbixWeb clients to loop recursively.
66625	Need ability to turn off reverse lookups in Java in Orbix. (A new configuration variable `IT_USE_REVERSE_LOOKUP` has been introduced as part of this fix. Please refer to the Orbix Java Edition section in the Appendix.)
66695	http-keepalive-timeout is ignored in an Orbix Java Client sent by Wonderwall in a http-keepalive Response.
66873	Orbix 3.3.3 incorrectly marshals an empty `wstring` passed to it.
66886	OrbixWeb uses `IT_NS_PORT` internally to find the IFR.
67065	The Orbix 3.3.3 Java API, `makeIOR()` does not pick up the IIOP version.
67082	The Orbix 3.3.3 Java Listener class loops recursively after a socket exception.
67173	When large byte arrays are passed over the wire, a stack overflow occurs.

67197	`BOA_init()` is not synchronized in Orbix Java 3.3.3.
12000079	Enhancement : OrbixWeb can output a timestamp with the log messages. A new configuration variable `IT_USE_TIMESTAMP` has been added to achieve this. Please refer to the New Orbix Java Configuration Variables for further details.
12000083	The Orbix 3.3.3 ORB utilizes too much of the CPU.
12000085	The Orbix 3.x Naming Service fails to send an IIOP 1.1 `locateReply` even when `IT_DEFAULT_IIOP_VERSION="11";`
12000164	A multi threaded client results in an `IllegalThreadedState` Exception by the ORB because start method is called on the `ConnectTable` thread more than once.
12000165	A multi-threaded Client hangs (with high CPU usage in some cases) after several invocations.
12000251	Setting `IT_ENABLE_MULTI_HOMED_SUPPORT = "true"` causes Orbix 3.3.3 to report duplicate marker in use.
12000309	An Orbix 3.3.3 Java client loops recursively after its first effort to contact the server fails with a slow starting server.
12000337	`StringIndexOutOfBoundsException` thrown by `IE.Iona.OrbixWeb.IIOP.CDRcoder.readStringBuf()`
12000584	Client hangs if server does not respond before `IT_CONNECTION_TIMEOUT`.
12000585	Sporadically, client connections are permanently dropped after some time even if `IT_CONNECTION_TIMEOUT` is set to `-1`.

IDL Compiler

51634	The IDL compiler puts files compiled on the same command line into the wrong package when using the `-jP` option and a complex package.
51644	Performance problem: the read method in an IDL generated Helper class is called twice.
66163	The `idlj` compiler produces incorrect type code that breaks interoperability. A new idl compiler switch `-jK` has been introduced as part of this fix. Please refer to the New Orbix Java Compiler Option for more information.
66881	Orbix 3.3.3 both Java and C++ do not detect an out of bounds exception for strings embedded in a sequence.
67311	The `idlj` compiler does not generate proper code for a type defined bounded string of arrays.

New Orbix Java Configuration Variables

The following configuration variables have been added to Orbix Java Edition 3.3.4:

Name: `IT_USE_TIMESTAMP`

Type: boolean

Default: false

Description: This flag when set to true, prints the timestamp in diagnostic information when `OrbixWeb.setDiagnostics` is set to 255. The format of this timestamp is `YYYY:MM:DD hh:mm:ss`.

Name: `IT_USE_REVERSE_LOOKUP`

Type: boolean

Default: true

Description: This flag when set to false, allows ORB to avoid DNS queries for getting hostname based on IP address.

The following configuration variable has been added to Orbix Java Edition 3.3.3:

Name: `IT_USE_DAEMON_PORT`

Type: boolean

Default: false

Description: This flag when set to true, publishes the daemon port in the IORs in the case of an Automatic or Persistent Launch. Also when this configuration variable is set to true the Orbix Java Servers listen ONLY on the Daemon assigned port.

Note: When this configuration variable is set to true, the Orbix Java configuration variables, `IT_IIOP_LISTEN_PORT` and `IT_SSL_IIOP_LISTEN_PORT`, are be ignored.

New Orbix Java Compiler Option

The following compiler switch has been added to Orbix Java Edition 3.3.4:

`-jK`

This flag when used, generates typecode information without the underscore '_', for reserved java keywords.

Known Problems and Workarounds

This section summarizes known issues and suggested workarounds for Orbix 3.3.4 Java Edition.

Incident ID	Synopsis
65605	The Server Manager GUI doesn't update when a server is started and then stopped (affects Orbix 3.3.2 and upwards). This GUI is deprecated.
65457	The OrbixWeb 3.3 `gridApplet` demonstration does not work unless you access the HTML file through a web server. **Solution:** To run this applet demonstration, launch the web_server with document root as `ORBIX_HOME` (this can be set in the main `httpd.cf` file if you are using an apache web server). Copy all the .cfg files from `ORBIX_HOME\config` to `ORBIX_HOME\demos\classes` and then change the cfg value to "`./`" in the copied `iona.cfg`. There is no need to copy `OrbixWeb.jar` from `ORBIX_HOME\lib` to `ORBIX_HOME\demos\classes`, and no need to do any changes to index.html. Please refer to the Knowledge Base article **2419.728** for further details.
55822	A type defined `CORBA::Typecode` type does not generate correct code.

JVM 1.2.2-8/1.2.2_12 segmentation violations on Tru64 5.1A

There is a known problem on the Compaq Tru64 5.1A platform when running an Orbix 3.3.4 Java application and using the 1.2.2-8 or 1.2.2-12 JDK. By default Just-in-Time (JIT) compilation is enabled and in some circumstances, this may cause a segmentation violation error to occur in the 1.2.2 Java interpreter. This results in the following output:

```
SIGSEGV 11* segmentation violation
si_signo [11]: SIGSEGV 11* segmentation violation
```

This behavior on Tru64 5.1A with JDK 1.2.2_8/12 has been confirmed by Compaq (Ref. No. "Java PTR #80-6-619") and is currently being investigated.

Workaround: Compaq recommend disabling of the JVM JIT compilation on the Tru64 5.1A platform. This can be done by setting the environment variable "`JAVA_COMPILER`" to "`NONE`" before running your application. You can verify that JIT compilation is not being used by checking the output of `java -version`:

```
$ export JAVA_COMPILER=NONE
$ java -version
java version "1.2.2-12"
```

```
Classic VM (build J2SDK.v.1.2.2:08/14/2001-17:00, native threads,
nojit)
```

Please **mailto:support@iona.com** if you require any further information.

Orbix Code Generation Toolkit 3.3.4

This section describes changes made to the Orbix 3.3.3 Code Generation Toolkit for the Orbix 3.3.4 Code Generation Toolkit.

Note: The Orbix 3.0.1 and Orbix 3.3 Code Generation Toolkit Programmer's Guides state that there is IDLgen support for opaque data types. These are incorrect statements IDLgen does NOT support opaque data types.

New Features

Orbix 3.3.4 Code Generation Toolkit is binary compatible with Orbix 3.3 Code Generation Toolkit, therefore no new APIs have been added nor existing ones modified.

No new features have been added in this release.

New and Modified APIs

Orbix Code Generation Toolkit 3.3.4 is binary compatible with Orbix Code Generation Toolkit 3.3, therefore no new APIs have been added nor existing ones modified.

Functionality Removed

Orbix Code Generation Toolkit 3.3.4 is binary compatible with Orbix Code Generation Toolkit 3.3, therefore no functionality has been removed.

Bugs Fixed

The following bugs were fixed in Orbix Code Generation Toolkit 3.3.4.

This section describes the bugs fixed in this release. All bugs are cross platform unless otherwise stated. All bugs are described in terms of the following:

- **Incident ID**

  This is the reference number used by the development teams to track bugs, which may in turn relate to one or more problem reports (PR) as reported by customers.

- **Synopsis**

  This is a short description of the reported problem. A description of the fix is included where necessary.

Incident ID	Synopsis
66699	The Orbix 3.3.3 idlgen binary on HP-UX11 does not run on PA-RISC 1.1 architecture.

OrbixCOMet Desktop 3.3.4

This section describes changes made to OrbixCOMet Desktop 3.3.3 for OrbixCOMet Desktop 3.3.4.

New Features

OrbixCOMet Desktop 3.3.4 is binary compatible with OrbixCOMet Desktop 3.3, therefore no new APIs have been added nor existing ones modified.

New and Modified APIs

OrbixCOMet Desktop 3.3.4 is binary compatible with OrbixCOMet Desktop 3.3, therefore no new APIs have been added.

The Existing API, `GetConfigValue()` in `IORBObject` and `DIORBObject` interfaces are extended to provide the GUID of interface during runtime.To obtain the GUID of an interface at runtime using the `GetConfigValue()` API, pass the first parameter to the API in one of the following formats (depending on which GUID is required).

for COM UUID : `IT_COMET_GET_COM_UUID.`*`interface-name`*
for AUTOMATION UUID : `IT_COMET_GET_AUTO_UUID.`*`interface-name`*
for DUAL Interface UUID : `IT_COMET_GET_DUAL_UUID.`*`interface-name`*

Functionality Removed

OrbixCOMet Desktop 3.3.4 is binary compatible with OrbixCOMet Desktop 3.3, therefore no functionality has been removed.

Deprecated Features

The following is a list of features deprecated in Orbix Java Editions:

Feature	Description	Feature Removed	When Deprecated
COMet Tools `COMetCfg.exe`	COMet GUI Tools	NO	Orbix 3.3.4

Bugs Fixed

This section describes the bugs fixed in this release. All bugs are cross platform unless otherwise stated. All bugs are described in terms of the following:

- **Incident ID**

  This is the reference number used by the development teams to track bugs, which may in turn relate to one or more problem reports (PR) as reported by customers.

- **Synopsis**

  This is a short description of the reported problem. A description of the fix is included where necessary.

The following bugs were fixed in OrbixCOMet Desktop 3.3.4.

Incident ID	Synopsis
55254	The OrbixCOMet tool, `ts2idl`, generates empty CORBA modules in certain cases.
66826	OrbixCOMet does not generate all the interfaces in COM CoClass while using `ts2idl` to generate OMG IDL.
66863	The GUID of an interface cannot be obtained during runtime. Refer to New and Modified APIs in this section for a workaround.
66885	The OrbixCOMet tool, `ts2idl`, does not correctly map a derived interface from COM IDL to OMG IDL.
67016	The OrbixCOMet tool, `ts2idl`, produces code that does not compile correctly when the IDL contains a `const` value.
67067	When object references are passed in through a method call the `ts2sp` tool generates invalid code.
67068	The OrbixCOMet tool, `ts2idl`, does not handle COM IDL arrays from the type library correctly.
67274	The `ts2idl` tool generates OMG IDL that does not include `LifeCycle.idl`. Also the generated code does not compile correctly with the IDL compiler.
12000176	The OrbixCOMet tool, `ts2idl`, does not generate correct OMG IDL from a Microsoft type library.

OrbixNames 3.3.4

This section describes changes made to OrbixNames 3.3.3 for OrbixNames 3.3.4.

New Features

OrbixNames 3.3.4 is binary compatible with OrbixNames 3.3, therefore no new APIs have been added nor existing ones modified.

The following new feature has been added to OrbixNames 3.3.4

New and Modified APIs

OrbixNames 3.3.4 is binary compatible with OrbixNames 3.3, and so no new APIs have been added nor existing ones modified.

Functionality Removed

OrbixNames 3.3.4 is binary compatible with OrbixNames 3.3, therefore no functionality has been removed.

Deprecated Features

The following is a list of features deprecated in Orbix Java Editions:

Feature	Description	Feature Removed	When Deprecated
Names Service browser `NamesBrowser.bat`	Allow you to monitor and manage the Naming Service externally to your applications.	NO	Orbix 3.3.4

Bugs Fixed

This section describes the bugs fixed in this release. All bugs are cross platform unless otherwise stated. All bugs are described in terms of the following:

- **Incident ID**

  This is the reference number used by the development teams to track bugs, which may in turn relate to one or more problem reports (PR) as reported by customers.

- **Synopsis**

This is a short description of the reported problem. A description of the fix is included where necessary.

The following bugs were fixed in OrbixNames 3.3.4:

Incident ID	Synopsis
67248	The 3.3.3 Naming Service hangs when contacted by an ASP 5.1 client using corbaloc
67256	The 3.3.3 Naming Service hangs on call to `rebind()`
12000077	The OrbixNames Load Balancing algorithm (Random Object) only uses the first 10 objects registered in the RandomObject group list regardless of the amount of objects that are registered on it.

Note for JDK 1.1.x Users

If you are using JDK 1.1.x, instead of using the `registerns12` script to register the Naming Service, use the following command:

```
putit -j NS IE.Iona.OrbixWeb.CosNaming.NS
```

Orbix Wonderwall 3.3.4

This section describes changes made to Orbix Wonderwall 3.3.3 for Orbix Wonderwall 3.3.4.

New Features

Orbix Wonderwall 3.3.4 is binary compatible with Orbix Wonderwall 3.3, therefore no new APIs have been added nor existing ones modified.

No new features have been added in this release.

New and Modified APIs

Orbix Wonderwall 3.3.4 is binary compatible with Orbix Wonderwall 3.3, therefore no new APIs have been added nor existing ones modified.

Functionality Removed

Orbix Wonderwall 3.3.4 is binary compatible with Orbix Wonderwall 3.3, therefore no functionality has been removed.

Deprecated Features

The following is a list of deprecated features in Orbix C++ Editions:

Feature	Description	Feature Removed	When Deprecated
IIIOPProxyW (`iiopproxyw.exe`)	GUI Based iiopproxy	NO	Orbix 3.3.4
IORExplorer (`iorexplorer.bat`)	Load, view, change and save IORs using this graphical explorer	NO	Orbix 3.3.4
Wonderwall Configuration (`wwConfig.bat`)	Allow you to change the default security configuration settings for Wonderwall using a GUI.	NO	Orbix 3.3.4
Wonderwall Log Analyzer (`wwLogViewer.bat`)	Allows you to view log files using a GUI	NO	Orbix 3.3.4

Bugs Fixed

There are no bugs fixes in OrbixWonderwall 3.3.4.

Known Problems and Workarounds

This section summarizes known issues and suggested workarounds for OrbixWonderwall 3.3.4.

Incident ID	Synopsis
12000109	JRE used for the IORexplorer utility on an Orbix3.3.3 installation is incompatible with Pentium4 processors. This applies to all other Wonder Wall GUI tools

OrbixEvents 3.3.4

This section describes changes made to OrbixEvents 3.3.3 for OrbixEvents 3.3.4.

New Features

Orbix Events 3.3.4 is binary compatible with OrbixEvents 3.3, therefore no new APIs have been added nor existing ones modified.

No new features have been added in this release.

New and Modified APIs

OrbixEvents 3.3.4 is binary compatible with OrbixEvents 3.3, therefore no new APIs have been added nor existing ones modified.

Functionality Removed

OrbixEvents 3.3.4 is binary compatible with OrbixEvents 3.3, therefore no functionality has been removed.

Bugs Fixed

This section describes the bugs fixed in this release. All bugs are cross platform unless otherwise stated. All bugs are described in terms of the following:

- **Incident ID**

  This is the reference number used by the development teams to track bugs, which may in turn relate to one or more problem reports (PR) as reported by customers.

- **Synopsis**

  This is a short description of the reported problem. A description of the fix is included where necessary.

The following bugs were fixed in OrbixCOMet Desktop 3.3.4.

65234 The OrbixEvents service leaks memory.

OrbixSSL C++ 3.3.4

This section describes changes made to OrbixSSL C++ 3.3.3 for OrbixSSL C++ 3.3.4.

New Features

OrbixSSL C++ 3.3.4 is binary compatible with OrbixSSL C++ 3.3, therefore no new APIs have been added nor existing ones modified.

New and Modified APIs

OrbixSSL C++ 3.3.4 is binary compatible with OrbixSSL C++ 3.3, therefore no new APIs have been added nor existing ones modified.

Functionality Removed

OrbixSSL C++ 3.3.4 is binary compatible with OrbixSSL C++ 3.3, therefore no functionality has been removed.

Credit Attribution

1. The bundled OpenSSL command line utility includes software written by Eric A. Young (`eay@cryptsoft.com`). For more details on OpenSSL please see the OpenSSL website at www.openssl.org.
2. On Solaris, NT and HP-UX OrbixSSL C++ uses the SSLeay SSL toolkit internally. The cryptographic libraries used by OrbixSSL C++ were written by Eric A. Young (`eay@cryptsoft.com`).
3. On Tru 64 OrbixSSL C++ uses the openssl-0.9.4 OpenSSL toolkit internally. The cryptographic libraries used by OrbixSSL C++ were written by Eric A. Young (eay@cryptsoft.com).

Bugs Fixed

There are not bug fixes in OrbixSSL C++ 3.3.4.

Known Problems and Workarounds

This section summarizes known issues and suggested workarounds for OrbixSSL C++ 3.3.4. There are no known problems with OrbixSSL C++ 3.3.4.

OrbixSSL Java 3.3.4

This section describes changes made to OrbixSSL Java 3.3.3 for OrbixSSL Java 3.3.4.

New Features

OrbixSSL Java 3.3.4 is binary compatible with OrbixSSL Java 3.3, therefore no new APIs have been added nor existing ones modified.

No new features have been added in this release.

New and Modified APIs

OrbixSSL Java 3.3.4 is binary compatible with OrbixSSL Java 3.3, therefore no new APIs have been added nor existing ones modified.

Functionality Removed

OrbixSSL Java 3.3.4 is binary compatible with OrbixSSL Java 3.3, therefore no functionality has been removed.

Deprecated Features

Feature	Description	Feature Removed	When Deprecated
RC2 Cipher Suite	JCP toolkit	YES	Orbix 3.3
JPK File Support	JPK file support for loading private keys in OrbixSSL Java. `keyenc` utility stays there for converting OrbixSSL private keys.	NO	Orbix 3.3.1

Bugs Fixed

There are not bug fixes in OrbixSSL Java 3.3.4.

Known Problems and Workarounds

This section summarizes known issues and suggested workarounds for OrbixSSL Java 3.3.4. There are no known problems with OrbixSSL Java 3.3.4.

Credit Attribution

1. The bundled OpenSSL command line utility includes software written by Eric A. Young (`eay@cryptsoft.com`). For more details on OpenSSL please see the OpenSSL website at www.openssl.org.

2. OrbixSSL C++ uses the openssl-0.9.4 OpenSSL toolkit internally. These Cryptographic libraries used by OrbixSSL C++ were written by Eric A. Young (`eay@cryptsoft.com`).

3. OrbixSSL Java uses the JSSL/Jcrytpto 2.0 toolkit as its backend SSL engine. The cryptographic libraries used by OrbixSSL Java were written by Baltimore Technologies. For more details on the cryptographic libraries used by OrbixSSL Java see the Baltimore Technologies website at http://www.baltimore.com/.

OrbixOTS 3.3.4

This section describes changes made to OrbixOTS 3.3.3 for OrbixOTS 3.3.4.

New Features

OrbixOTS 3.3.4 is binary compatible with OrbixOTS 3.3, therefore no new APIs have been added nor existing ones modified.

New and Modified APIs

OrbixOTS 3.3.4 is binary compatible with OrbixOTS 3.3, therefore no new APIs have been added nor existing ones modified in this release.

Functionality Removed

OrbixOTS 3.3.4 is binary compatible with OrbixOTS 3.3 therefore no functionality has been removed.

Bugs Fixed

This section describes the bugs fixed in this release. All bugs are cross platform unless otherwise stated. All bugs are described in terms of the following:

- **Incident ID**

  This is the reference number used by the development teams to track bugs, which may in turn relate to one or more problem reports (PR) as reported by customers.

- **Synopsis**

  This is a short description of the reported problem. A description of the fix is included where necessary.

The following bugs were fixed in OrbixOTS 3.3.4:

Incident ID	Synopsis
65427	The OTS server leaks handles when inactive. This was observed with the `filesys` demonstration after running a few basic queries and disconnecting while the server was kept idle after disconnection. The internal caching mechanism of OTS never released the cached entries causing a leak. A configuration variable, `OTS_OOB_CACHE_PERIOD`, was provided to fix the problem.
66119	The OTS server leaks handle even after the cache timeout despite the configuration variable added to fix bug 65427.

66214 The OrbixOTS `TransBank` Java demonstration does not compile with JDK 1.3.1.

66338 The OTS server does not respond to user requests after several hours.

Configuration Variable `OTS_OOBCACHE_GC_PERIOD`

A configuration variable, `OTS_OOBCACHE_GC_PERIOD`, (in seconds) has been added to the list of configurable items in OTS.

This variable is used for garbage collection of out-of-band `TranComm` proxies and implementation objects. The out-of-band Garbage Collector thread activates once every `OTS_OOBCACHE_GC_PERIOD` seconds and cleans up the OOB cached objects from the out-of-band Cache. The default value of `OTS_OOBCACHE_GC_PERIOD` is 300 seconds (5 minutes).

The configuration variable `OTS_OOBCACHE_GC_PERIOD` should not be confused with `OTS_GC_PERIOD` that is used for garbage collection of implementation objects used at application level (for example Account objects used in a transaction) from the Object Cache.

The Object Cache is a cache of application CORBA objects and is helpful in reducing the load time of transaction related application objects whereas the out-of-band Cache is a cache of `TranComm` proxies which are internal (to OTS) CORBA objects and used as part of the transaction protocol requests (that is out-of-band or OOB requests).

Known Problems and Workarounds

This section summarizes known issues and suggested workarounds for OrbixOTS 3.3.4.

Incident ID	Synopsis

67393	On AIX platforms, OrbixOTS C++ clients throw an "unexpected exception" during the `_narrow` call after the name resolution of the `filesys_bank` object.
	
	To get around this problem add the following lines to `SimpleClient.cxx` before the `_narrow` call.
	
	`...`
	`// Ask the NSW for a reference to the required object and`
	`// then narrow the reference to something we can use.`
	
	`CORBA::Object_var obj =`
	`ns_wrapper.resolveName(object_name);`
	
	`// workaround for _narrow "unexpected exception"`
	`// problem on AIX`
	
	`char str[1028];`
	`strcpy(str, CORBA::Orbix.object_to_string(obj));`
	`obj = CORBA::Orbix.string_to_object(str);`
	
	`// end workaround`
	
	`bank = TransBank::_narrow(obj);`
	`...`
	This is a regression introduced after the 3.3.3 release.

Reference Material

For a complete list of databases supported with this release and other technical information on this product, refer to the OrbixOTS section of the IONA knowledge base.

For information about Encina, refer to the IBM/Transarc website at http://www.transarc.ibm.com/.

Appendix

This appendix contains information that is relevant to all versions of Orbix 3.3. It does not contain information that is relevant to only one version of Orbix 3.3. It contains information about performance tips, known problems and workarounds, enhancements and new features to Orbix 3.3, but not introduced in this version. It does not contain any information about bug fixes (please refer to previous release notes for these).

This appendix contains the following sections:

- Orbix C++ Edition
- Orbix Java Edition
- Orbix Code Generation Toolkit
- Orbix COMet
- Orbix Names
- Orbix Events
- Orbix SSL (C++ and Java)
- Orbix OTS

Orbix C++ Edition

This section describes changes made to Orbix generation three C++ Edition products between Orbix 3.3 and Orbix 3.3.3, which are relevant to Orbix 3.3.4 C++ Edition.

Tips

Use of IT_MASK_SIGTERM, IT_MASK_SIGQUIT and IT_MASK_SIGINT

In regard to the use of configuration variables IT_MASK_SIGTERM, IT_MASK_SIGQUIT, IT_MASK_SIGINT to mask the asynchronous signals (SIGTERM, SIGQUIT, SIGINT) and IT_MASK_SIGUSR1, IT_MASK_SIGUSR2 to mask the user signals (SIGUSR1, SIGUSR2) in Orbix internal threads, do not use the method `setConfigValue()` to set these variables.

You need to export these variables as follows before you start your application:

export IT_MASK_SIGTERM=YES

export IT_MASK_SIGQUIT=YES

export IT_MASK_SIGINT=YES

export IT_MASK_SIGUSR1=YES

export IT_MASK_SIGUSR2=YES

Known Problems

Compilation problems on Windows NT result in the following error message:

"Warning: Orbix wants an fd_set of size 1024 or greater. Please include CORBA.h before winsock2.h"

This may be resolved by defining WIN32_LEAN_AND_MEAN when compiling.

For example: CL /c ... -DWIN32_LEAN_AND_MEAN ... myFile.cpp

If you do not wish to use this flag when compiling you may also resolve the problem by editing CORBA.h by moving line 22, #include <corba/PreCORBA.h>, to the position immediately after line 15, #define CORBA_INCLUDES.

Stopping double deletion of `CORBA::Any` when unmarshalling `CORBA::Anys` during DSI invocation processing.

Some applications use the following pattern for memory management of CORBA::Anys required for DSI request processing. This is incorrect and causes a memory corruption errors with this version of Orbix:

```
CORBA::NVList_ptr pArgList;
if (CORBA::Orbix.create_list(1, pArgList))
{
CORBA::Short value_of_n = 0;
// create an any on heap. This is the representative
// of the in argument.  All of the arguments (anys)
// will be stored in an NV list
//
CORBA::Any* pAny = new CORBA::Any(CORBA::_tc_short,
               &value_of_n, 0);
// populate the NV list with the heap allocated any
// and name of "n"
//
pArgList->add_value("n", *pany, CORBA::DSI_ARG_IN);
// read all the aguments (values) from the request
// into the NV list
//
rSrvReq.params(pArgList);
// do invocation processing
// ************* NOTE *****************
// Deleting the CORBA::Any is an error as the Orbix
// runtime will do so.
//
delete pAny;  // Error!  Don't do this.
}
```

This code would not have caused problems prior to Orbix 3.3.1 as Orbix 3.3 and earlier versions did not properly delete the Any. Since Orbix 3.3.1 Orbix deletes the Anys, so it is no longer necessary to do it.

Deploying an Orbix 3.3.4 Daemon in Orbix 3.0.1 Environment

Orbix 3.3.4 daemon can launch Orbix 3.0.1 servers. For all Orbix 3.0.1 Daemon utilities, your clients and servers work with the Orbix 3.3.4 daemon. All you need to do is append the Library Path in the environment with the Orbix 3.3.4 library path.

Note: This is not the case if you are using version 4.3.3 and 4.3.2 of AIX because none of the Orbix binaries built on version 4.3.3 operate on version 4.3.2 daemon utilities.

Orbix Java Edition

This section describes changes made to Orbix generation three Java Edition products between Orbix 3.3 and Orbix 3.3.3 that are relevant to Orbix 3.3.4 Java Edition.

Tips

CORBA Fixed-Point Data Type Support

The CORBA fixed-point data type is fully supported in this edition. It is possible, in this edition, to use fixed type variables in arrays, structures, sequences, unions, and other user-defined data types.

Support for Multiple Profiled IORs

In Orbix 3.3.3 the Client ORB iterates over a multi-profiled IOR until it is able to establish a connection to a server. It always starts at the first profile when connecting or reconnecting to a server.

This new feature enables interoperability with Orbix 2000 servers that utilize high availability features (these features are detailed in the Orbix 2000 2.0 install guide).

Implemented APIs

The following APIs have been implemented:

Class `IE.Iona.OrbixWeb.CORBA.Any`

Method `public void insert_fixed (java.math.BigDecimal d, org.omg.CORBA.TypeCode type)`

Description Takes one `java.math.BigDecimal` value along with TypeCode information, which includes scale and digits, information.

Class `IE.Iona.OrbixWeb.CORBA.Any`

Method `public void insert_fixed (java.math.BigDecimal d)`

Description	Takes one `java.math.BigDecimal` value without any typecode information
Class	`IE.Iona.OrbixWeb.CORBA.Any`
Method	`public java.math.BigDecimal extract_fixed() throws BAD_OPERATION`
Description	Extracts fixed type data from Any and return a `java.math.BigDecimal` value.

Known Problems

OrbixNames Fails to Launch Automatically on Windows NT

If you register the Naming Service with spaces in its `bootclasspath` variable in one of the following files, the OrbixNames server fails to be automatically launched by the daemon.

```
<IONA installation directory>\bin\registerns12.bat
```

(Automatic launch should occur when you run one of the utilities for OrbixNames, lsns for example, or when you run a client or server that tries to use the Naming Service.)

An error like this appears in the window for the Orbix Java daemon (`orbixdj`):

Can't find class `java.lang.NoClassDefFoundError`.

Solution

If you find the directory name "Program Files" in these files, replace every occurrence with progra~1:

<IONA installation directory>\bin\registerns12.bat

The above batch files are for registering the OrbixNames server with the daemon. If you have already registered the OrbixNames server, you can undo this and register it again as follows. (Ensure that the daemon is running first of all.)

To undo the registration:

```
rmit NS

registerns12
```

Multiple `font not found` messages starting JDK 1.2.2 (and 1.3.1)

When Server Manager and Configuration Explorer are launched, you get multiple `font not found` messages. The fonts specified in `font.properties` need to be found on the host system. Otherwise these messages are displayed:

```
Font specified in font.properties not found [-urw-itc zapfdingbats-
medium-r-normal--*-%d-*-*-p-*-sun-fontspecific]
Font specified in font.properties not found [-urw-itc zapfdingbats-
medium-r-normal--*-%d-*-*-p-*-sun-fontspecific]
Font specified in font.properties not found [-urw-itc zapfdingbats-
medium-r-normal--*-%d-*-*-p-*-sun-fontspecific]
```

Workaround

1. Customize the `font.properties` file for each machine.
2. Install the `SUNIWof` font packages.

Orbix Code Generation Toolkit

This section describes changes made to Orbix generation three Code Generation Toolkit products between Orbix 3.3 and Orbix 3.3.3 that are relevant to Orbix 3.3.4 Code Generation Toolkit.

Known Problems

- The parser used by the IDLgen supports CORBA 2.3 specifications. You may therefore encounter problems when using identifiers which are recognized as keywords by the CORBA 2.3 specification. For example, factory.
- The file which produces the list of genies has been renamed from –list to list.tcl. However, the command line argument which produces the list of genies is still the same, that is IDLgen –list
- The environment variable used by the IDLgen engine has changed to use IT_IDLGEN_CONFIG_FILE instead of IDLGEN_CONFIG_FILE.
- The Orbix Code Generation Toolkit 3.3 genies supplied do not work with previous released versions (3.0.2 or earlier) of the IDLgen product. The paths to any custom genies need to be placed into the idlgen.cfg file present in the configuration directory.

Orbix COMet

This section describes changes made to Orbix generation three COMet products between Orbix 3.3 and Orbix 3.3.3 that are relevant to Orbix 3.3.4 COMet

Tips on Upgrading from Orbix 3.0.1

For the benefit of users upgrading directly from version 3.0.1 baseline, some minor changes in operation are detailed below:

- When registering `custsur.exe` as a CORBA server, the minimum recommended timeout value that should be used is 500 msecs.
- In `CORBA->DCOM` mode, when anys containing complex types are passed

as parameters from the client to the server, ensure that any relevant types are registered in the typestore by using:

```
typeman -u -er <typename>
```

- In `CORBA->DCOM` mode, anonymous binds to CORBA wrappers have been deprecated. Instead, `ts2idl` generates a constant string of the form:

```
#ifndef _IT_COMET_ANON_
#define _IT_COMET_ANON_
const string IT_ANON = "IT_COMET_ANON";
#endif
```

- Markers used in calls to `_bind()` should begin with this string. For example, valid markers would be:

```
IT_COMET_ANON
IT_COMET_ANON1
IT_COMET_ANON_excelObj
```

and so on. As a result of this change, the default value for the `COMet.Mapping.EXTRA_REF_CORBAVIEW` configuration value is now *no*, in contrast to the previous 3.x releases.

- Anonymous binds are allowed for backwards compatibility if the configuration value is set to *yes* (either programmatically or within the configuration file) as shown below. However, this is not recommended in most cases (the use of `(D)IOrbixServerAPI` being a possible exception).

```
COMet.Mapping.ALLOW_ANON_MARKERS = "yes";
```

A callback demonstration between a CORBA client and a VB server has been added. See `demo\corbaclient\callback`. This includes the use of both simple types and complex types from CORBA client to the VB server and vice-versa. It also includes an example of how to programmatically set configuration values when using OrbixCOMet's `custsur.exe` as a CORBA server.

Note: The remaining issues cannot be treated as OrbixCOMet bugs, but are reported here for convenience.

- Marshalling interface pointers across apartment boundaries when using the bridge in-process is not supported. Out-of-process is supported.

  This is only relevant if the Bridge objects are instantiated in a COM Single Threaded Apartment. Using OrbixCOMet objects in a Free Threaded Apartment is okay.

  It is recommended that you create a Multithreaded Apartment when using OrbixCOMet in C++:

```
CoInitializeEx (0, COINIT_MULTITHREADED);
```

- There is a problem with Visual Basic keeping DLLs loaded in memory even after the application has terminated. This causes OrbixCOMet to prematurely execute its shutdown procedures in response to a positive result to `CoFreeUnusedLibraries()`.

  This results in an application crash the next time the application is executed in the VB environment.

  The workaround to this problem is to programmatically set the

OrbixCOMet configuration setting `COMET_SHUTDOWN_POLICY` to `atexit`.

- Certain versions of `regserv32` have been known to crash when registering a handler DLL. If this behavior is seen, use the OrbixCOMet `oleregit.exe` tool instead, located in the `<COMET ROOT>\bin` directory.

  For example:

  To register `foo.dll` use `oleregit foo.dll /REGSERVER`.
  To unregister `foo.dll` use `oleregit foo.dll /UNREGSERVER`.

- When uninstalling OrbixCOMet, you might need to unregister OrbixCOMet DLLs from the OLE registry by running the `unregCOmet.bat` batch file located in the `COMet\bin` directory.
- When using bounded sequence from a COM client that has OrbixCOMet loaded in-process, it is recommended that any unused elements in the sequence be memset to zero '0'. OrbixCOMet attempts to skip these unused elements, but you may get a marshalling error if the element types are complex.

  Anys are not supported in COM, that is, the use of `ICORBA_Any`.

Building and Running Demonstrations

Runtime libraries for PowerBuilder are not included with OrbixCOMet. You need this runtime installed if you wish to run these demonstrations.

You also need a valid installation of Orbix 3.3 in order to build the C++ CORBA servers in `<COMet Install>\demo\corbasrv`. You may use existing CORBA servers for some of these. For example, `grid` or `idl_demo`, which are standard Orbix demonstrations shipped on all platforms.

To build the C++ COM client demos you need Microsoft Visual C++ 6.0, or another compatible C++ compiler.

The makefiles for the CORBA servers call `putidl` to insert the IDL into the IFR. They also call `putit` to register the server in the Orbix implementation repository.

Note: C++ COM applications should not be compiled with the `/Og` or the `/Ox` switch (which implies the `/Og` switch). Instead, use `/Oityb1 /Gs` for release builds. Refer to the COM demonstration makefiles in `<COMet Install>\demos\com` for more details. (This is due to a bug in the code optimizer in the Visual C++ compiler.)

Orbix Names

This section describes changes made to Orbix generation three Names products between Orbix 3.3 and Orbix 3.3.3 that are relevant to Orbix 3.3.4 Names.

Features

IT_NAMES_REP_CLEAN_CNT Configuration Variable added

to orbixnames3.cfg

The configuration variable, IT_NAMES_REP_CLEAN_CNT, has been added to `orbixnames3.cfg`. This variable is used to remove deleted contexts from the configuration repository.

The default value for the new variable is set to `100`, which means that after deleting 100 contexts the naming repository is cleared.

In previous versions of Orbix 3.3 the naming repository was cleared every time a context was deleted which slowed down the performance of the Naming Service.

Known Problems

Note: The bug IDs 4276129, and 4285197 refer to JDK bugs, and are not assigned by IONA.

Bug ID: 4276129 in JDK1.2.2 - Multiple font not found messages starting jdk1.2.2

When the Naming Service is persistently launched, the Password dialog box is displayed at the same time as the missing font messages below:

```
Font specified in font.properties not found [-urw-itc
zapfdingbats-medium-r-normal--*-%d-*-*-p-*-sun-fontspecific]

Font specified in font.properties not found [-urw-itc
zapfdingbats-medium-r-normal--*-%d-*-*-p-*-sun-fontspecific]

Font specified in font.properties not found [-urw-itc
zapfdingbats-medium-r-normal--*-%d-*-*-p-*-sun-fontspecific]
```

The fonts specified in `font.properties` need to be found on the host system. Otherwise these messages are displayed.

The workarounds are:

- Customize the `font.properties` file for each machine.
- Install the `SUNIWof` font packages.

Bug ID: 4285197 in JDK 1.2.2 - Xbootclasspath prevents loading custom JNI libs (from user dirs):

When the Naming Service is launched by semi-secure `orbixd`, `libkdmjj.so/libkdmjj.sl/kdmjj.dll` of SSL is used to supply `orbixd` with the Naming service password. The marker used to launch the Naming Service involves `-Xbootclasspath` argument to the Java interpreter.

As a result of this bug, `orbixd` cannot supply the password to the KDM as the `kdmjj` library cannot be loaded. This results in the Naming Service asking for user input for password when it is automatically launched.

Workarounds

Solaris: On Solaris, copy the `.so` into `${JDKHOME}/jre/lib/sparc` (or set a symbolic name).

HPUX: On HPUX, copy the `.sl` into `${JDKHOME}/jre/lib/PA_RISC` (or set a symbolic name).

Windows NT: On NT, Copy the `.dll` into `${JDKHOME}\jre\bin`.

`${JDKHOME}` points to the JRE directory used in `IT_JAVA_INTERPRETER` used in `common.cfg`. That is the intended behavior.

Note: The remaining steps are relevant for Solaris, HPUX and NT

All system classes only lookup shared libraries in `$JAVA_HOME/bin`. If you do need to load custom libraries for the system classes, there are two choices:

1. Install custom libraries into `$JAVA_HOME/bin`;
2. Set the property `sun.boot.library.path` to include the user library path. The syntax is:

```
java -Dsun.boot.library.path=$JAVA_HOME/bin:$CUSTOM/bin ...
```

When SSL-enabled Names Server NS is run persistently or automatically launched by the Orbix Daemon, it listens on the port given by configuration variable `IT_SSL_IIOP_LISTEN_PORT` in `orbixnames3.cfg`.

Follow the steps below to automatically launch SSL-enabled Names server by the Orbix daemon and use the KDM utility to supply password to `orbixd`:

1. orbixssl.cfg should have the following entries and values for Naming Service:

```
IT_AUTHENTICATE_CLIENTS = "TRUE";

IT_SECURITY_POLICY = "SECURE";

IT_DAEMON_POLICY = "SEMI_SECURE_DAEMON";

IT_KDM_ENABLED = "TRUE";
```

2. `orbixnames.cfg` should have `IT_SSL IIOP_LISTEN_PORT` defined.

3. Start `orbixd`.

4. `putit` NS –j –jdk2 -- -Xbootclasspath:[… set of jars …] IE.Iona.OrbixWeb.CosNaming.NS –secure

5. Start kdm

6. Putkdm NS *kdm-password*

NS is the Implementation repository entry required for automatically launching the Naming Service.

7. Use the C++ utilities with `-s` switch.

Orbix Events

This section describes changes made to Orbix generation three Events products between Orbix 3.3 and Orbix 3.3.4 that are relevant to Orbix 3.3.4 Events.

Tips on Designing and Configuring your System

There are some steps you can take when designing and configuring your system for optimal throughput. These include:

Implementing Efficient Consumers

The quicker the consumer returns control to the event channel the higher the rate of events the channel can supply.

Not Overloading any Individual OrbixEvents Server

The optimal number of consumers depends on different issues including the event size, speed of the server host, speed of the consumer etc. and is best calculated by trial and error.

Increasing the Event Buffer Sizes

Each event channel maintains internal buffers of events and stores events until the consumer can process them. If the consumers are consistently slower than the suppliers then internal buffers can eventually fill and the suppliers block trying to supply events to the event channel. The suppliers block because the `push()` operation attempts to add an event to an event buffer and cannot complete until an event is removed from the buffer. An event is removed from the buffer after it has been supplied to all registered consumers. In order to avoid such blocking situations increase the event buffer sizes via changing configuration variables:

`IT_MAX_RECV_KB` - This is the queue of events to be pushed to consumers. This can NEVER be set to 0.

`IT_MAX_PEND_KB` - The queue size for events received by incoming push from a push supplier. This can be set to 0.

`IT_MAX_SEND_KB` - A thread takes the pending messages and moves them to this queue prior to sending. In the loop back case sending is simply the transfer to the receive queue. This can be set to 0.

Known Problems

Multiple event channels, when joined, slow down the performance of Events Consumer significantly.

Orbix SSL (C++ and Java)

This section describes changes made to Orbix generation three SSL (C++ and Java) products between Orbix 3.3.3 and Orbix 3.3.4 that are relevant to Orbix 3.3.4 SSL (C++ and Java).

Known Problems

Baltimore J/SSL Toolkit Does Not Support PKCS12 Certificate Generated by SSLEAY.

The methods on the IT_X509Cert class getIssuer() and getSubject() both return instances of the IT_AVAList class. The IT_AVAList class provides a method byte[] convert(IT_Format) that allows one to convert an AVAList to DER format. This convert method returns null in this release. All other methods on IT_AVAList work as before.

The OrbixSSL Java Programmer's Guide incorrectly states that you can set IT_SSL_TRACEFILE and IT_SSL_TRACE_LEVEL in the configuration file. They can only be set in the environment.

Orbix OTS

This section describes changes made to Orbix generation three OTS products between Orbix 3.3 and Orbix 3.3.3 that are relevant to Orbix 3.3.4 OTS.

Known Problems

OTS 3.3.1 Certification

OTS 3.3.1 is not certified for Solaris 2.6 with Oracle 8.1.6 the Oracle ProC compiler utility core dumps during compilation.

Apparent Purify Errors Indicate Leakage

OrbixOTS 3.3 has been comprehensively tested for memory leakage. An apparent leak is reported in thread-specific storage. This is not a true leak, but rather memory allocated per thread which is reused during the lifetime of the thread and is freed when the process exits. No memory growth occurs during the life of the program. This issue is evident on operations of the "`ThreadLocal<sometype>`" template class.

Transient Ports Break Recovery

Recoverable servers participating in a transaction should take care to ensure that their object references include the daemon port rather than their transient port. This is important in the event that the recoverable server goes down and the coordinating server must attempt transaction recovery. The recoverable server can only be

restarted by the coordinating server if the recoverable server's IOR contains the daemon port. Therefore, avoid calling `CORBA::ORB::useTransientPort` in recoverable servers.

TransactionFactory::recreate() Not Supported

`TransactionFactory::recreate()`is not supported in the current release of the Java server. There is currently no way to create an implicit association with an explicitly propagated transaction.

C++ Client and Java Server Interoperability

Pure C++ clients do not interoperate with Java servers in this release. For example, the C++ `simpleclient` program in the `gridcache` demonstration does not work with the Java `filesys` server. This is because a pure C++ client uses an optimized transaction factory to create its transactions in the understanding that it does not have to co-ordinate the transaction. Because the Java server also cannot co-ordinate, the transaction is be rolled back. A simple workaround is to implement the client as an OrbixOTS server.

Server Hangs on NT when Many Clients Run Sequentially

An OrbixOTS client supports a callback object whose object key includes the client's PID that is used in the absence of a server name. In the unusual scenario where a large number of clients are run sequentially against an OrbixOTS server on the same NT machine, the PID used in one client process may be reallocated by the OS to a second client process very soon after the first has completed. This may cause the OrbixOTS server to hang. It maintains a cache of client callback objects, and this cache may not be updated quickly enough to reflect the PID's reallocation. A simple workaround is to implement the client as an OrbixOTS server.

OrbixOTS and OrbixSSL

OrbixOTS clients implement callback objects to help manage transactions, and hence may require an OrbixSSL invocation policy to be configured. See the OrbixSSL documentation for more information on configuring policies for clients that implement callback objects.

Java OrbixOTS and OrbixSSL

Due to a problem in Orbix with callbacks to SSL-enabled Java servers, recovery is not possible of JavaOTS SSL servers.

Simple Java clients continue to work with SSL if they do not register resources with the transaction. Bi-directional IIOP provides a runtime workaround because it is not necessary to open a new connection for the callback. This does not work for recovery, as there isn't an existing connection.

Tips

Synchronization Objects in Java

When using Synchronization objects in Java a user must set the following two environment variables in `orbixots.cfg`:

OTS_INTEROP="TRUE"

OTS_ALWAYS_RETURN_CONTEXT="TRUE"

The first environment variable sets the IIOP/Service Context interoperable mode. The second setting always returns a propagation context to a foreign context.