Orbix 3.3 Service Pack 10 Release Notes

May 2009

Contents

Introduction

Orbix 3.3 SP 10 is a service pack release of Orbix 3.3 on the following platforms:

- Microsoft Windows XP
- Sun Solaris 9 (SPARC)
- Sun Solaris 10 (SPARC)
- HP-UX 11i (11.11)
- HP-UX 11i v2 (11.23)

This document contains information about Orbix 3.3 SP 10, 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 SP 10 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 at http://www.iona.com/docs under the heading Orbix Generation 3.

Migrating from an Earlier Version of Orbix

For information on migrating from an earlier version of Orbix to Orbix 3.3 SP 10, see the migration guide at: www.iona.com/products/MigrationGuide.pdf.

Interoperability with Other Products

The Java and C++ editions of Orbix 3.3 SP 10 have been tested 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 SP 10 have also been tested and are interoperable with the following Orbix products:

- Orbix 3.3 SP 9 C++ and Java editions
- Orbix 3.3 SP 8 C++ and Java editions
- Orbix 3.3 SP 7 C++ and Java editions
- Orbix 3.3 SP 6 C++ and Java editions
- Orbix 3.3 SP 5 C++ and Java editions
- Orbix 3.3.4 C++ and Java editions
- 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 6.0 SP3 C++ and Java

- 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 `es` utility is licensed.

- OrbixOTS 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. There are no instructions on how to use this feature, and no bugs in this feature are fixed.

- 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.

Documentation Errata

The following is a list of errors in the Orbix 3.3 documentation:

- The `CORBA::ORB::connectionTimeout()` is in milliseconds, and not in seconds, as stated in the *Orbix Programmer's Reference, C++ Edition*.

Development Environments

For details of the operating system versions and compiler versions on which Orbix 3.3 SP 10 is built and certified, see the following link:

http://www.iona.com/products/orbix/orbix_platforms.htm

Note: You can build and run an Orbix 3.3 SP 10 application on any of the platforms listed for Orbix 3.3 in the preceding link.

Java-Specific Information

The following subsections contain information that is relevant for all elements and services that use Java.

JRE not included

The Orbix 3.3 SP 10 installer does not include a Java Runtime Environment (JRE).

JAVA_P_FLAG

The `JAVA_P FLAG` environment variable was introduced in Orbix 3.3 SP 7. The purpose of this flag is to enable Orbix 3.3's Java ORB class implementation to take precedence over Sun's, when running Orbix 3.3 Java applications. The Orbix 3.3 SP 10 installer automatically sets the value of this variable to `/p`.

When Orbix 3.3 SP 10 is installed, this variable is available in the `setenv.sh` environment script, which enables it to be set in the Orbix environment.

For more details, read the following Knowledge Base article (4799.578):

- [What is JAVA_P_FLAG for and how is it used in Orbix 3](#)

Orbix 3.3 SP 10 C++ Edition

This section describes changes made to the Orbix 3.3 SP C++ Edition for the Orbix 3.3 SP 10 C++ Edition.

New Features

Orbix 3.3 SP 10 C++ Edition is binary compatible with Orbix 3.3 C++ Edition. No new features have been added, and no existing features have been modified.

New and Modified APIs

Orbix 3.3 SP 10 C++ Edition is binary compatible with Orbix 3.3 C++ Edition. There are no new APIs, and no existing APIs have been modified.

Functionality Removed

Orbix 3.3 SP 10 C++ Edition is binary compatible with Orbix 3.3 C++ Edition. No functionality has been removed.

Deprecated Features

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

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 SP 5
Server Manager (`ServerManager.bat`)	Allows you to manage the Implementation Repository	No	Orbix 3.3 SP 5

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 SP 10 C++ Edition:

Incident ID	Synopsis
71387	Memory leak in Orbix daemon.
71781	Orbix server hangs during SSL handshake indefinitely when client fails to send response.
71918	`liborbixmt.so` is linking to `libssl.so` instead of `libsslmt.so`.
71998	Some 64-Bit Orbix libraries are not able to be loaded with memory addresses over 4GB.
72131	Core in `isForeignFD()`.

Orbix 3.3 SP 10 Java Edition

This section describes changes made to the Orbix 3.3 SP 9 Java Edition for the Orbix 3.3 SP 10 Java Edition.

New Features

Orbix 3.3 SP 10 Java Edition is binary compatible with Orbix 3.3 Java Edition. No new features have been added and no existing features have been modified.

New and Modified APIs

Orbix 3.3 SP 10 Java Edition is binary compatible with Orbix 3.3 Java Edition. No new APIs were added, and no existing APIs were modified.

Functionality Removed

Orbix 3.3 SP 10 Java Edition is binary compatible with Orbix 3.3 Java Edition. No functionality has been removed.

Deprecated Features

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

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 SP 5

Note: OrbixWeb 3.2 was released February 1999.

Bugs Fixed

There were no bugs fixed in the Java Edition in this release.

Orbix Code Generation Toolkit 3.3 SP 10

This section describes changes made to the Orbix 3.3 SP 9 Code Generation Toolkit for the Orbix 3.3 SP 10 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 statements are incorrect. IDLgen does NOT support opaque data types.

New Features

Orbix 3.3 SP 10 Code Generation Toolkit is binary compatible with Orbix 3.3. Code Generation Toolkit. No new features have been added and no existing features have been modified.

New and Modified APIs

No new APIs have been added and no existing APIs have been modified.

Functionality Removed

Orbix Code Generation Toolkit 3.3 SP 10 is binary compatible with Orbix Code Generation Toolkit 3.3. No functionality has been removed.

Bugs Fixed

No bugs were fixed in Orbix Code Generation Toolkit 3.3 SP 10.

OrbixCOMet Desktop 3.3 SP 10

This section describes changes made to OrbixCOMet Desktop 3.3 SP 9 for Orbix COMet Desktop 3.3 SP 10.

New Features

OrbixCOMet Desktop 3.3 SP 10 is binary compatible with OrbixCOMet Desktop 3.3. No new features have been added and no existing features have been modified.

New and Modified APIs

No new APIs have been added and no existing APIs have been modified.

Functionality Removed

OrbixCOMet Desktop 3.3 SP 10 is binary compatible with OrbixCOMet Desktop 3.3. No functionality has been removed.

Deprecated Features

The following is a list of features deprecated in OrbixCOMet Desktop Edition:

Feature	Description	Feature Removed	When Deprecated
COMet Tools COMetCfg.exe	COMet GUI Tools	N	Orbix 3.3 SP 5

Bugs Fixed

No bugs were fixed in OrbixCOMet Desktop 3.3 SP 10.

OrbixNames 3.3 SP 10

This section describes changes made to OrbixNames 3.3 SP 9 for OrbixNames 3.3 SP 10.

New Features

OrbixNames 3.3 SP 10 is binary compatible with OrbixNames 3.3. No new features have been added and no existing features have been modified.

New and Modified APIs

No new APIs have been added and no existing APIs have been modified.

Functionality Removed

No functionality has been removed.

Deprecated Features

The following is a list of features deprecated in OrbixNames:

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 SP 5

Bugs Fixed

No bugs were fixed in OrbixNames 3.3 SP 10.

Orbix Wonderwall 3.3 SP 10

This section describes changes made to Orbix Wonderwall 3.3 SP 9 for Orbix Wonderwall 3.3 SP 10.

New Features

Orbix Wonderwall 3.3 SP 10 is binary compatible with Orbix Wonderwall 3.3. No new features have been added and no existing features have been modified.

New and Modified APIs

No new APIs have been added and no existing APIs have been modified.

Functionality Removed

No functionality has been removed.

Deprecated Features

The following is a list of features deprecated in Orbix Wonderwall:

Feature	Description	Feature Removed	When Deprecated
IIOPProxyW (`iiopproxyw.exe`)	GUI-based iiopproxy	No	Orbix 3.3 SP 5
IORExplorer (`iorexplorer.bat`)	Load, view, change and save IORs using this graphical explorer	No	Orbix 3.3 SP 5
Wonderwall Configuration (wwConfig.bat)	Allows you to change the default security configuration settings for Wonderwall using a GUI	No	Orbix 3.3 SP 5
Wonderwall Log Analyzer (`wwLogViewer.bat`)	Allows you to view log files using a GUI	No	Orbix 3.3 SP 5

Bugs Fixed

No bugs were fixed in Orbix Wonderwall 3.3 SP 10.

OrbixEvents 3.3 SP 10

This section describes changes made to OrbixEvents 3.3 SP 9 for OrbixEvents 3.3 SP 10.

New Features

OrbixEvents 3.3 SP 10 is binary compatible with OrbixEvents 3.3. No new features have been added and no existing features have been modified.

New and Modified APIs

No new APIs have been added and no existing APIs have been modified.

Functionality Removed

No functionality has been removed.

Bugs Fixed

No bugs were fixed in OrbixEvents 3.3 SP 10.

Orbix SSL C++ 3.3 SP 10

This section describes changes made to OrbixSSL C++ 3.3 SP 9 for OrbixSSL C++ 3.3 SP 10.

New Features

OrbixSSL C++ 3.3 SP 10 is binary compatible with OrbixSSL C++ 3.3. No new features have been added and no existing features have been modified.

New and Modified APIs

No new APIs have been added and no existing APIs have been modified.

Functionality Removed

No functionality has been removed.

Credit Attribution

1. The bundled OpenSSL command line utility and toolkit includes software written by Eric A. Young (eay@cryptsoft.com). The version of OpenSSL used is 0.9.8i. The cryptographic libraries used by OrbixSSL C++ were also written by Eric A. Young. For more details on OpenSSL, please see the OpenSSL website at www.openssl.org.

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 SSL C++ 3.3 SP 10:

Incident ID	Synopsis
71704	The SSL invocation policy `IT_SPECIFIED_SECURE_CONNECT` and `IT_SPECIFIED_INSECURE_CONNECT` does not work.

Known Problems

The installer does not automatically update the 64-bit SSL libraries with the default location of the Orbix SSL configuration file.

Orbix SSL Java 3.3 SP 10

This section describes changes made to OrbixSSL Java 3.3 SP 9 for OrbixSSL Java 3.3 SP 10.

New Features

OrbixSSL Java 3.3 SP 10 is binary compatible with OrbixSSL Java 3.3. No new features have been added and no existing features have been modified.

New and Modified APIs

No new APIs have been added and no existing APIs have been modified.

Functionality Removed

No functionality has been removed.

Deprecated Features

The following is a list of features deprecated in OrbixSSL Java 3.3 SP 10:

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 for converting OrbixSSL private keys	No	Orbix 3.3.1

Bugs Fixed

There are no bug fixes in OrbixSSL Java 3.3 SP 10.

Credit Attribution

1. The bundled OpenSSL command line utility and toolkit includes software written by Eric A. Young (eay@cryptsoft.com). The version of openssl used is 0.9.8i. The cryptographic libraries used by OrbixSSL C++ were also written by Eric A. Young. For more details on OpenSSL please see the OpenSSL website at www.openssl.org.

2. OrbixSSL Java uses the JSSL/Jcrypto 2.0 toolkit as its backend SSL engine. The cryptographic libraries used by OrbixSSL Java were written by Baltimore Technologies.

OrbixOTS 3.3 SP 10

This section describes changes made to OrbixOTS 3.3 SP 9 for OrbixOTS 3.3 SP 10.

New Features

OrbixOTS 3.3 SP 10 is binary compatible with OrbixOTS 3.3. No new features have been added and no existing features have been modified.

New and Modified APIs

No new APIs have been added and no existing APIs have been modified.

Functionality Removed

No functionality has been removed.

Bugs Fixed

No bugs were fixed in OrbixOTS 3.3 SP 10.

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
- OrbixCOMet
- OrbixNames
- OrbixEvents
- OrbixSSL (C++ and Java)
- OrbixOTS

Orbix C++ Edition

This section describes changes made to Orbix Generation 3 C++ Edition products between Orbix 3.3 and Orbix 3.3 SP 9, which are relevant to Orbix 3.3 SP 10 C++ Edition.

New APIs

The following new APIs were added in Orbix 3.3 SP 9:

- `CORBA::BOA::getFileDescriptors(int*& fdSet)`

- `CORBA::ORB::getAllOrbixFDs(int*& fdSet)`

- `CORBA::ORB::getForeignFDSet(int*& fdSet)`

- `CORBA::ORB::getSelectableFDSet(int*& fdSet)`

For more details, see the *Orbix Reference Guide, C++ Edition*.

IFR Refactoring

Some refactoring of the IFR implementation was carried out in Orbix 3.3 SP 5 that affects repository storage. These changes affect the internal representation of the IFR repository. It is possible to continue using the existing IFR repository with the new IFR. However, if you start using the new IFR and need to revert back to the older versions (pre 3.3 SP 4) the IFR repository needs to be depopulated and repopulated using the original IDL files or a backup of the old repository. It is recommended that you back up your IFR repository before installing any service pack after Orbix 3.3 SP 5.

Tips

IT_MASK_SIGTERM, IT_MASK_SIGQUIT and IT_MASK_SIGINT

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

Before you start your application, you should export these variables as follows:

```
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

This section summarizes known issues and suggested workarounds for earlier Orbix 3.3 releases.

Incident ID	Synopsis
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 `Warning: identifier Attribute clashes with keyword` even though it is 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.

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 option 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 un-marshaling `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 error 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 arguments (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, because 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 SP 9 daemon in Orbix 3.0.1 environment

An Orbix 3.3 SP 9 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 SP 9 daemon. You need to append the library path in the environment with the Orbix 3.3 SP 9 library path.

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

Orbix Java Edition

This section describes changes made to Orbix Generation 3 Java Edition products between Orbix 3.3 and Orbix 3.3 SP 9 that are relevant to Orbix 3.3 SP 10 Java Edition.

New Features

Since Orbix 3.3 SP 9, a callback port can be specified through the following configuration variables:

- `OrbixWeb.IT_CALLBACK_PORT_BASE`

- `Orbix.Web.IT_CALLBACK_PORT_RANGE`

These configuration variables specify the first port to be assigned, and the number of ports starting at this port number to assign. For example, a base of 5000 and range of 2 allocates 5000 and 5001 for the callbacks. If another client tries to connect with base and range after these two ports are assigned, an exception about setting the range to a larger size is thrown, and the client quits.

These configuration variables can be specified in any of the following ways:

- In the configuration file (`OrbixWeb3.cfg`).

- Programatically through the code. For example:

```
IE.Iona.OrbixWeb._CORBA.Orbix.SetConfigItem("OrbixWeb.IT_CALLBACK_PORT
_BASE", "5000");
IE.Iona.OrbixWeb._CORBA.Orbix.SetConfigItem("OrbixWeb.IT_CALLBACK_PORT
_RANGE", "10");
```

- By passing them as system properties to the JVM when running the client. For example:

```
-DorbixWeb.IT_CALLBACK_PORT_BASE=5000
-DorbixWeb.IT_CALLBACK_PORT_RANGE=10
```

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.

Tips

Using the IDLJ compiler with JDK 1.4.x

Since JDK 1.4.0, the javac compiler is more strict than previous versions and rejects import statements that import a type from the unnamed namespace. The default code generated by the IDLJ compiler contains import statements without a namespace or package name if your IDL contains any data definition in global scope, and the generated code results in errors while compiling with javac. Therefore, when using JDK 1.4, supply `–jP <packagename>` to the IDLJ compiler. By doing this, the generated code comes under the given package name and compiles without any problems.

For more details, read the following Knowledge Base article (4797.953):

[Why my existing IDL does not compile while using JDK 1.4.x](#)

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 3.3.4, 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 use high availability features (these features are detailed in the Orbix 2000 2.0 installation guide).

Known Problems

This section summarizes known issues and suggested workarounds in earlier Orbix 3.3 Java editions.

Incident ID	Synopsis
65605	The Server Manager GUI does not update when a server is started and then stopped (affects Orbix 3.3.2 and upwards). This GUI is deprecated.
64957	Fragmentation error occurs on the client side if large chunk of data is sent in fragments from an ASP 5.*x* and higher server. The Fragments received from the ASP server are malformed. This is interoperability issue between ASP and Orbix Java 3.3 SP 5.

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.

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

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

The following error 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`:

```
<Orbix 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.)

To undo the registration:

```
rmit NS
registerns12
```

Multiple "font not found" messages starting JDK 1.3.1

When the 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 3 Code Generation Toolkit products between Orbix 3.3 and Orbix 3.3 SP 9 that are relevant to Orbix Code Generation Toolkit 3.3 SP 10.

Tips

Using the IDLJ compiler with JDK 1.4.x

Since JDK 1.4.0, the javac compiler is more strict than previous versions and rejects import statements that import a type from the unnamed namespace. The default code generated by the IDLJ compiler contains import statements without a namespace or package name if your IDL contains any data definition in global scope, and the generated code results in errors while compiling with javac. Therefore, when using JDK 1.4, supply `-jP <packagename>` to the IDLJ compiler. By doing this, the generated code comes under the given package name and compiles without any problems.

For more details, read the following Knowledge Base article (4797.953):

[Why my existing IDL does not compile while using JDK 1.4.x](#)

Known Problems

- The parser used by the IDLgen supports CORBA 2.3 specifications. You may therefore encounter problems when using identifiers that are recognized as keywords by the CORBA 2.3 specification (for example, factory).

- The file that produces the list of genies has been renamed from `-list` to `list.tcl`. However, the command line argument that produces the list of genies is still `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 in the configuration directory.

OrbixCOMet

This section describes changes made to Orbix Generation 3 COMet products between Orbix 3.3 and Orbix 3.3 SP 9 that are relevant to Orbix COMet 3.3 SP 10.

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:

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

  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 in 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 clients to the VB server and vice-versa. It also includes an example of how to programmatically set configuration values when using the OrbixCOMet `custsur.exe` as a CORBA server.

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

- Marshaling 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 supported.

  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 a bounded sequence from a COM client that has OrbixCOMet loaded in-process, any unused elements in the sequence should be memset to zero `0`. OrbixCOMet attempts to skip these unused elements, but you might get a marshaling error if the element types are complex.

  `Any`s 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 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 demonstrations, 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.)

OrbixNames

This section describes changes made to Orbix generation 3 Names products between Orbix 3.3 and Orbix 3.3 SP 9 that are relevant to OrbixNames 3.3 SP 10.

Features

IT_NAMES_REP_CLEAN_CNT configuration variable added to orbixnames3.cfg

The `IT_NAMES_REP_CLEAN_CNT` configuration variable 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.

Tips

Using the IDLJ compiler with JDK 1.4.x

Since JDK 1.4.0, the javac compiler is more strict than previous versions and rejects import statements that import a type from the unnamed namespace. The default code generated by the IDLJ compiler contains import statements without a namespace or package name if your IDL contains any data definition in global scope, and the generated code results in errors while compiling with javac. Therefore, when using JDK 1.4, supply `-jP <packagename>` to the IDLJ compiler. By doing this, the generated code comes under the given package name and compiles without any problems.

For more details, read the following Knowledge Base article (4797.953):

[Why my existing IDL does not compile while using JDK 1.4.x](#)

Known Problems

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

Bug ID: 4276129 in JDK1.3.1 - Multiple font not found messages starting jdk1.3.1

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.

Workarounds

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

Bug ID: 4285197 in JDK 1.3.1 - 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: Copy the `.so` into `${JDKHOME}/jre/lib/sparc` (or set a symbolic name).

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

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

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

The remaining steps are relevant for Solaris, HP-UX and NT.

All system classes only look up 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 an 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 an SSL-enabled OrbixNames 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-p`assword

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

8. Use the C++ utilities with the `–s` option.

Orbix Wonderwall

This section describes changes made to Orbix Generation 3 Wonderwall products between Orbix 3.3 and Orbix 3.3 SP 9 that are relevant to Orbix Wonderwall 3.3 SP 10.

Tips

Using the IDLJ compiler with JDK 1.4.x

Since JDK 1.4.0, the javac compiler is more strict than previous versions and rejects import statements that import a type from the unnamed namespace. The default code generated by the IDLJ compiler contains import statements without a namespace or package name if your IDL contains any data definition in global scope, and the generated code results in errors while compiling with javac. Therefore, when using JDK 1.4, supply `-jP <packagename>` to the IDLJ compiler. By doing this, the generated code comes under the given package name and compiles without any problems.

For more details, read the following Knowledge Base article (4797.953):

[Why my existing IDL does not compile while using JDK 1.4.x](#)

Known Problems

This section summarizes known issues and suggested workarounds in earlier Orbix Wonderwall releases.

Incident ID	Synopsis
12000109	The JRE used for the IORexplorer utility on an Orbix 3.3.4 installation is incompatible with Pentium4 processors. This applies to all other Wonderwall GUI tools.
	Because all GUIs shipped with Orbix 3.3 are deprecated, this will not be fixed, and is closed as a restriction.
67886	Failures occur when the `idl_demo_sslcli` and `idl_demo_sslsrv` demos in `/Wonderwall/OrbixSSL/` are run in `semisecure` mode on all Windows platforms.
	For the `idl_demo_sslcli` demonstration, after launching iiopproxy and when the client is run it fails with the following exception:

	`Unexpected system exception 1`
	
	`org.omg.CORBA.COMM_FAILURE: Communication failure`
	
	`no server at host : 10.2.5.125 minor code: 12080 completed: No`

	This is because an incorrect certificate was picked up by the client.
	For the `idl_demo_sslsrv` demonstration, when the client tries

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to communicate with the server, the server throws the following exception:

```
org.omg.CORBA.NO_PERMISSION: No permission for
attempted op.
SSL handshakefailure. : MAC failed.
[alertLevel=FATAL,
alertDescription=BAD
_RECORD_MAC] minor code: 10139 completed: No
at
IE.Iona.OrbixWeb.SSL.SSLSocketConnection.completeH
andshake(SSLSocketConnection.java:363)
at
IE.Iona.OrbixWeb.CORBA.ClientConnection.run(Client
Connection.java:1196)
at java.lang.Thread.run(Thread.java:484)
```

This is because of incorrect certificate used by the server.

Workarounds:

For the `idl_demo_sslcli` demonstration, replace the following line [32]

```
public static String KEYFILE="server.pem";
public static String KEYFILE="server.jpk";
```

in the source of server (`javaserver1.java`)

For the `idl_demo_sslcli` demonstration, replace the following line [32]

```
public static String KEYFILE="client.pem";
```

with

```
public static String KEYFILE="client.jpk";
```

in the source of server (`javaserver1.java`)

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</table>

OrbixEvents

This section describes changes made to Orbix Generation 3 Events products between Orbix 3.3 and Orbix 3.3 SP 9 that are relevant to Orbix Events 3.3 SP 10.

Tips

Using the IDLJ compiler with JDK 1.4.x

Since JDK 1.4.0, the javac compiler is more strict than previous versions and rejects import statements that import a type from the unnamed namespace. The default code generated by the IDLJ compiler contains import statements without a namespace or package name if your IDL contains any data definition in global scope, and the generated code results in errors while compiling with javac. Therefore, when using JDK 1.4, supply `-jP <packagename>` to the IDLJ compiler. By doing this, the generated code comes under the given package name and compiles without any problems.

For more details, read the following Knowledge Base article (4797.953):

[Why my existing IDL does not compile while using JDK 1.4.x](#)

Known Problems

Multiple event channels, when joined, slow down the performance of an events consumer significantly.

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, and so on, 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, 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. To avoid such blocking situations, increase the event buffer sizes by changing the following configuration variables:

Configuration Variable	Description
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`.

OrbixSSL (C++ and Java)

This section describes changes made to Orbix generation 3 SSL (C++ and Java) products between Orbix 3.3 and Orbix 3.3 SP 9 that are relevant to OrbixSSL 3.3 SP 10 (C++ and Java).

Tips

Using the IDLJ compiler with JDK 1.4.x

Since JDK 1.4.0, the javac compiler is more strict than previous versions and rejects import statements that import a type from the unnamed namespace. The default code generated by the IDLJ compiler contains import statements without a namespace or package name if your IDL contains any data definition in global scope, and the generated code results in errors while compiling with javac. Therefore, when using JDK 1.4, supply `-jP <packagename>` to the IDLJ compiler. By doing this, the generated code comes under the given package name and compiles without any problems.

For more details, read the following Knowledge Base article (4797.953):

[Why my existing IDL does not compile while using JDK 1.4.x](#)

Known Problems

Baltimore J/SSL toolkit does not support PKCS12 certificate generated by SSLEAY.

The methods `getIssuer()` and `getSubject()` on the `IT_X509Cert` class both return instances of the `IT_AVAList` class. The `IT_AVAList` class provides a method, `byte[] convert(IT_Format)`, that allows you 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.

OrbixOTS

This section describes changes made to Orbix generation 3 OTS products between Orbix 3.3 and Orbix 3.3 SP 9 that are relevant to OrbixOTS 3.3 SP 10.

Tips

Using the IDLJ compiler with JDK 1.4.x

Since JDK 1.4.0, the javac compiler is more strict than previous versions and rejects import statements that import a type from the unnamed namespace. The default code generated by the IDLJ compiler contains import statements without a namespace or package name if your IDL contains any data definition in global scope, and the generated code results in errors while compiling with javac. Therefore, when using JDK 1.4, supply `–jP <packagename>` to the IDLJ compiler. By doing this, the generated code comes under the given package name and compiles without any problems.

For more details, read the following Knowledge Base article (4797.953):

[Why my existing IDL does not compile while using JDK 1.4.x](#)

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.

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 that 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 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 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, which 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 operating system 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 for Java OTS 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 because there is not an existing connection.