



Orbix 3.0.1

Release Notes

April 2000

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Introduction

This document contains information about Orbix 3.0.1, including build information, information about new features, and details of faults that have been fixed in this release.

This document is divided into five main sections, each corresponding to one of the components of Orbix 3.0:

- Orbix 3.0.1
- Orbix Code Generation Toolkit 3.0.1
- OrbixNames 3.0.1
- Orbix Wonderwall 3.0.1

Orbix 3.0.1

This section describes changes made in Orbix 3.0.1.

Development Environments

This section describes the compiler and operating system version that Orbix 3.0 has been built and tested with. The following applies to both multi-threaded and single-threaded variants of Orbix 3.0.

OpenVMS 7.21

Orbix 3.0.1 has been successfully built on OpenVMS 7.21 using DEC CXX V6.2 for OpenVMS, TCP/IP V5.1, IDK V1.18, and MMS/MMK.

The demos shipped as part of Orbix for OpenVMS have build procedures compatible with Compaq's MMS and MadGoat's MMK tools.

To obtain a license for Compaq's MMS product, contact your local Compaq distributor.

The MadGoat utility is Freeware and is available at the MadGoat Web site (http://www.madgoat.com) and also on Compaq's OpenVMS Internet Product Suite.

Orbix for OpenVMS

Documentation

The following documentation is available for Orbix 3.0.1 on OpenVMS:

- Orbix 3.0.1 for OpenVMS Administrator's Guide.
- Orbix 3.0.1 for OpenVMS Installation Guide.

Orbix 3.0.1 for OpenVMS Release Notes.

Case-Insensitivity

Since OpenVMS is not case-sensitive, filenames and server names, which differ only in case, are not treated as different entities.

Problems occur if an attempt is made to register and use case-sensitive servers. Therefore, [jm1]Any_Demo is equivalent to [JM1]ANY_DEMO or [jm1]any_demo.

Note: Object names are case sensitive. In particular, when you bind to a server, the server object gets exactly the name given in the bind. Any attempt to reference it using a different case results in an error.

On OpenVMS systems, when a command has been set up as a native command, all inputs are changed to uppercase unless the input is enclosed in quotes, for example:

```
$ search foo.txt dummy is treated as $ SEARCH FOO.TXT DUMMY
```

On OpenVMS systems, when a command has been set up as a foreign command all inputs are changed to lowercase unless the input is enclosed in quotes, for example:

```
$ putit THIS SERVERNAME.EXE is treated as
$ putit this servername.exe
$ putit "This" "SERVERNAME.EXE" is treated as
$ putit This SERVERNAME.EXE
```

Orbix Utilities

The standard Orbix utilities have been included in this kit, for example, putit, catit. These have not been loaded into the DCL tables. Instead, symbols have been defined in orbix\$com:orbix\$setup.com to invoke them. These symbols allow the use of DCL or UNIX style flags.

Example of Switches for putit:

```
sputit /?
usage: putit [/VERSION(-v)] [/HOST(-h)=<host>]
[/PER_CLIENT(-per-client) | /PER_CLIENT_PID(-per-client-pid)]
[ [/SHARED(-shared) | /UNSHARED(-unshared)]
[/MARKER(-marker)=<marker>] ]
| [/PER_METH(-per-method) [/METHOD(-method)=<method>] ]
[ /IIOP_PORT(-port)=<iiop portnumber>]
[ /NUMBER(-n)=<number of servers> ]
<servername> [ <commandline> | /PERSISTENT(-persistent) ]
```

Note: If the command line includes switches, then you should encapsulate the command line inside double quotes, for example:

```
$ putit /SHARED /MARKER "*" -host foo my_server
"my_command -s1 -s2"
```

OpenVMS Style Utilities

These utilities support OpenVMS style and UNIX style switches; for example:

```
$ lsit -h dressing
       $ lsit /host=dressing
CATIT
CHMODIT
CHOWNIT
IDL
IFR
KILLIT
LSIT
MKDIRIT
ORBIXD
PINGIT
PSIT
PIDL
PUTIT
RDIFR
RMDIRIT
RMIDL
RMIT
```

UNIX Style Utilities

The following utilities support UNIX style switches only:

```
ORBIX_HOME:[BIN]INSTALL_LICENSE
IDLGEN
IORTOOL
IIOP_PROXY
```

IORDUMP MKIOR DUMPCONFIG ADD_MEMBER CATNS CAT_GROUP CAT_MEMBER DEL_GROUP DEL_MEMBER LIST_GROUPS LIST_MEMBERS LSNS NEWNCNS NEW_GROUP NS PICK_MEMBER PUTNCNS PUTNEWNCNS PUTNS REPUTNCNS REPUTNS RMNS IDLGEN

Daemon Privileges

BI2TCL

For the Orbix daemon to run, it must have the following privileges:

```
DETACH, GRPNAM, NETMBX
```

These can be held by the account that launches the daemon or the daemon itself can be VMS-installed with the required privileges, for example:

\$INSTALL

add orbix\$exe:orbixd.exe/priv=(netmbx,grpnam,detach)

Orbix Configuration

The file and directory names of the configuration file must be in UNIX style and must start with a '/', for example, in the file iona.cfg:

```
cfg_dir = "/orbix_home/config/";
```

IDLGen Configuration

The following are the configuration issues related to IDLGen on OpenVMS:

• All the pathnames in idlgen.cfg must be given in a UNIX style format, instead of using the standard VMS path notation, for example:

```
ORBIX_TESTROOT: [ALL] should be /ORBIX_TESTROOT/ALL
```

- No pathname in idlgen.cfg can contain a dollar sign; instead, logicals to override names containing dollar signs must be used.
- The /preprocess option passed to the cxx compiler must not be used, since this option had to be hard-coded in the tcl scripts (due to cxx-specific command line usage).
- The entry idlgen.preprocessor.args in idlgen.cfg should contain a -Iidlgen_include option, where idlgen_include is a logical pointing to the directory containing orb.idl, within the idlgen directory structure.
- The entry idlgen.tmp_dir in idlgen.cfg should contain a logical like "temp", pointing to a temporary directory; no VMS path can be used according to the first notice and no UNIX-style path can be used since the path appears in a cxx command line.

New Features in Orbix 3.0.1

This section describes new features added to Orbix 3.0.1.

Server Context Handler API Changes

Testing of thread-per-request filters and service context handlers uncovered a flaw in the thread safety of the current mechanism. As a result of this flaw, requests can corrupt service context data for other requests in certain conditions.

There is now a new service context handler class:

```
CORBA::Environment &Env = CORBA::IT_chooseDefaultEnv ())
    { return 1;}
  virtual CORBA::Boolean outboundRequest (
   CORBA::Request &incomingRequest, CORBA::Environment &Env =
   CORBA::IT_chooseDefaultEnv ())
    { return 1;}
  virtual CORBA::Boolean incomingReply (
   CORBA::Request &incomingRequest,
   CORBA::Environment &Env = CORBA::IT_chooseDefaultEnv ())
    { return 1;}
  virtual CORBA::Boolean outboundReply (
   CORBA::Request &incomingRequest,
   CORBA::Environment &Env = CORBA::IT_chooseDefaultEnv ())
    { return 1;}
  virtual CORBA::ULong context_id()
    { return m_context_id; }
};
```

Refer to the Orbix directory demos/servicecontext for an example of how to use this class.

Bugs Fixed in Orbix 3.0.1

This section describes the bugs fixed in this release. All bugs are cross platform unless otherwise stated. The bugs are broken down by module and 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 PRs (problem reports) as reported by customers.

• PR Number

Not all bugs fixed have a PR number (the number assigned by IONA support when a call is logged).

• Synopsis

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

Incident ID	PR Number	Synopsis
51970	220557	Forward declaration of interfaces in different IDL files in Orbix 3.0c creates duplicate code inside . ${\rm hh}$ file.
51984	220540 220878 221122 221368 221888 221904 223531	HP-UX product only: shared library hard-coded into Orbix 3.0 binaries.
52028		Resolve_initial_references() does not expand IT_NAMES_SERVER_HOST from IT_LOCAL_DOMAIN.
52059		An endian problem occurs in interoperability between Orbix and OrbixWeb when an IOR is encoded on the wire followed by a

long integer.

52068 Orbix now allows users to specify the IOR returned by

> resolve_initial_references(). For example, to add an IOR for a naming service (this can be for an OrbixNames server or any other server) the following entry can be added to

the Orbix configuration information:

Common.Services.NameService="IOR:...";

When the application then calls

resolve initial references(), the ORB will return a

proxy for this IOR. This will work for any other service. Replace 'NameService' in the configuration entry with the

service name that will be passed to resolve initial references().

The daemon was statically linked on NT. 52238

Persistent Java servers were not recognized by the Orbix

daemon.

Known Problems, Workarounds, and Tips

This section summarizes known issues and tips relating to Orbix 3.0.1.

Installation of DCL Commands

If the native OpenVMS commands have not been selected during installation, they may be installed later using the DCL script,

orbix\$com:orbix\$add_cld.com.

It is recommended that all Orbix utilities are set up as foreign commands.

Orphan Server Processes

If the daemon stops or is killed, then all server processes may not have terminated correctly. These processes use TCP ports and process slots which the daemon attempts to control.

Unless these servers are stopped, using the command orbixdaemonstop, prior to restarting the daemon ORB, internal errors will occur when an attempt is made to launch a registered server.

Use of Underscore in IORs

Use of the underscore character is not supported in IORs.

IIOP I.I and SSL

IIOP 1.1 IOR profiles do not contain the SSL tagged component.

Performance of Anys

In Orbix 3.0 there is a known performance issue relating to the use of the CORBA:: Any data type. This issue has been partially addressed in Orbix 3.0.1

Check the IONA knowledge base for updates at: www.iona.com/online/support/kb/index.html.

Length of Configuration Strings

The configuration files used by Orbix consist mainly of "name = value" pairs where the "value" is written as a string. The maximum length of a string literal is 256 characters. If you need to specify a longer string, you can do this by concatenating several string literals together with the "+" operator. For example:

This limitation that a string literal cannot be longer than 256 characters will be most noticeable if you want to embed an IOR inside a configuration file. In this case, you might need to split the IOR into several strings and join them together with the "+" operator, as illustrated in the above example.

Orbix Code Generation ToolKit 3.0.1

This section describes changes made in Orbix Code Generation Toolkit 3.0.1.

New Features

The following new features have been added in this release.

Third Party Contributions

This release of the Orbix Code Generation Toolkit contains Win32 ports of the GNU C++ preprocessor and GNU make utilities from the Cygwin project at Cygnus (www.cygnus.com). The JavaDeps utility from Steve Robbins (steve@nyongwa.montreal.qc.ca) is included also. The JavaDeps Home Page can be found at the following URL:

http://www.cs.mcgill.ca/~stever/software/JavaDeps/

Incidents Cleared in This Release

This section describes the incidents cleared in this release. All incidents are cross platform unless otherwise stated. The incidents are described in terms of **Incident ID**, **PR Number**, and **Synopsis**, as described on page 9.

Incident ID	PR Number	Synopsis
51929	-	Incorrect group permissions set on Solaris package installation.

Known Problems, Workarounds and Tips

This section summarizes known problems, workarounds and tips with the Orbix Code Generation Toolkit. A list of the known limitations of IDLgen is provided in Chapter 1 of the *Orbix Code Generation Toolkit Programmer's Guide*.

OrbixNames 3.0.1

This section describes changes in OrbixNames 3.0.1.

Development Environments

Development environment information for OrbixNames 3.0.1 is the same as that described for Orbix 3.0.1 on page 4.

Compatibility with Other IONA Products

It is not possible for OrbixNames 3.0.1 and the Java naming service supplied with OrbixWeb to share the same Bindings Repository.

New Features in OrbixNames 3.0.1

This section describes the new functionality and major changes added in OrbixNames 3.0.1.

SSL Support

OrbixNames can now be run securely using OrbixSSL. Before running OrbixNames securely, you must install OrbixSSL and enable SSL support.

-j Switch

The OrbixNames server is a Java application. On platforms other than Solaris, you can instruct the server to pass command-line switches directly to the Java interpreter. To do this, use the -j switch to the OrbixNames server.

For example, if you want to increase the virtual memory used by the interpreter when running OrbixNames, start the server as follows:

ns -j -mx9000000

Documentation

The OrbixNames user documentation has been updated for this release. The OrbixNames user documentation is a single volume, called the *OrbixNames Programmer's and Administrator's Guide*.

Configuration

Each Orbix 3 service has its own configuration file. The OrbixNames configuration variables are scoped and defined in the file orbixnames 3.cfg.

The command-line options available with OrbixNames can also be set in orbixnames3.cfg. The relevant variables are as follows:

Variable	Description
IT_NAMES_CACHE_SIZE	The number of contexts to be cached by OrbixNames. For example:
	<pre>IT_NAMES_CACHE_SIZE = "10";</pre>
IT_NAMES_DIAGNOSTICS	Sets the diagnostic level within the OrbixNames server. For example:
	<pre>IT_NAMES_DIAGNOSTICS = "0";</pre>
IT_NAMES_HASH_TABLE_SIZE	Sets the initial size of a context's hash table. For example:
	<pre>IT_NAMES_HASH_TABLE_SIZE = "23";</pre>
IT_NAMES_THREAD_POOL	The number of threads to be created to handle the invocations to the Naming Service. For example:
	<pre>IT_NAMES_THREAD_POOL_SIZE = "10";</pre>
IT_NAMES_TIMEOUT	The length of time in milliseconds after which the Naming Service will timeout. For example, to set an infinite timeout:
	<pre>IT_NAMES_TIMEOUT = "-1";</pre>
IT_NS_HASH_TABLE_LOAD_FACTOR	The factor by which a context's hash table is increased when full. For example:
	<pre>IT_NS_HASH_TABLE_LOAD_FACTOR = "0.5f";</pre>

The main configuration variable set is described in OrbixNames Programmer's and Administrator's Guide. In addition to these variables, it is now possible when using OrbixNames to configure the format of an IOR, with respect to its host address part. The IOR can contain either the IP address or a host name. The OrbixNames.IT_USE_HOSTNAME_IN_IOR variable determines this characteristic. The default value is TRUE. With this value, a host name appears in an IOR. Setting the value to ${\tt FALSE}$ causes the IOR to contain an IP address.

Incidents Cleared in OrbixNames 3.0.1

This section describes the incidents cleared in this release. All incidents are cross platform unless otherwise stated. The incidents are described in terms of **Incident ID**, **PR Number**, and **Synopsis**, as described on page 9.

Incident ID	PR Number	Synopsis
24780	160367	The command del_group , when used with the $-n$ switch, core dumps if the name exists but the group has already been deleted.
26180	163401	The operation CosNaming::NamingContext:: OBfactory() is not described in the documentation.
26960	163477	A port number 0 appears in the Naming Service IOR when the OrbixNames server is automatically launched.
28400	162529	The command putners core dumps if incorrect parameters are specified.
30940	176192	The lsns command, when used with the -h switch, hangs the OrbixNames server if the case of the host name is incorrect.
34560	187359	The operation ${\tt resolve}(\)$ returns object references that were previously removed from the Naming Service.
36580	189815	OrbixNames I.I does not work with proxified IORs created by Orbix Wonderwall iortool.
38000	192357	The command putnewncns crashes when a name of more than 600 bytes is specified.
51475	216644	The marker in the <code>ObjectKey</code> in a string format IOR should be in the form module/interface. OrbixNames I.I formatted this as module_interface.
52119	221571	Cannot specify an IOR for any Orbix service.
52172	221731	When creating a federation of name spaces, the command putnons generates an Unexpected system exception 12003 (Java exception).
52217	222042	When rebind_context() is passed a zero-length name, the Naming Service outputs Unexpected system exception 12003 (Java exception).
52308	222254	The command reputnens does not work and gives an unexpected exception.

Known Problems, Workarounds and Tips

This section describes the known issues and suggested workarounds for OrbixNames 3.0.1.

Orbix Names and Associated Utilities on OpenVMS

The Names server and associated utilities shipped for OpenVMS are Java-based and require the Java symbols to be defined. This is achieved by updating two system files as follows:

- I. Add the following line to SYS\$MANAGER: SYLOGIN.COM
 - \$ @sys\$startup:java\$setup.com
- Add this line to the system start-up file SYS\$STARTUP:SYSTARTUP_VMS.COM
 - \$ @sys\$startup:java\$startup.com

Interoperability Problem

The OrbixNames server assumes the existence of a non-empty principal in IIOP messages received from connecting clients. Some ORBs do not always send principal information from clients. Clients developed using these ORBs fail to connect to the OrbixNames server.

Changing the OrbixNames Port Number

The configuration variable IT_NS_PORT in orbixnames 3.cfg sets the port number on which applications communicate with the OrbixNames server. This has the same default value as the Orbix daemon port variable IT_DAEMON_PORT. The default is 1570. If you wish to change the OrbixNames port value, set the value of IT_NS_PORT in orbixnames 3.cfg.

The IT_NS_PORT value affects only Java applications. In addition, if the Orbix daemon locates the OrbixNames server for your applications, ensure that the value of IT_NS_PORT is the same as IT_DAEMON_PORT. If the OrbixNames server runs without the Orbix daemon, it is not necessary to synchronize these values.

Orbix Wonderwall 3.0.1

This section describes changes made in Orbix Wonderwall 3.0.1.

Licensing

This release of Orbix Wonderwall requires that you license the IIOP proxy with your Orbix 3.0 license key. The installation script attempts to do this. However, if you enter an invalid license key, the proxy will fail at start-up. To enter a new license key, run the following command on OpenVMS platforms:

```
[Orbix Wonderwall]/bin/install_license
[Orbix Wonderwall]/iiopproxy "key"
```

Development Environments

Orbix Wonderwall supports the same environments as those described for Orbix on page 4.

The GUI tools are not shipped with Orbix 3.0.1 on OpenVMS.

Compatibility

Orbix Wonderwall is designed to interoperate with any CORBA ORB that implements version 1.0 or 1.1 of the CORBA Internet Inter-ORB Protocol (IIOP).

New Features in Orbix Wonderwall 3.0

This section describes the new functionality and major changes added in Orbix Wonderwall 3.0.1.

SSL-Tagged Component Support in iortool

The iortool utility now has an extra flag that causes it to add an SSL-tagged component to a proxified IOR. The flag is -sslport.

Here is an example of how you might use this feature:

```
iortool -ior -proxify -host bloom -port 16000
    -sslport 3636 \ grid.ior > grid_proxified.ior
```

SSL Details Added to Configuration GUI

The configuration now has an SSL tab that adds configuration details that are relevant for an SSL-enabled Wonderwall.

Incidents Cleared in Orbix Wonderwall 3.0

Incident ID	PR Number	Synopsis
52094	220640	Objects specified using the bind syntax in Orbix Wonderwall's configuration file do not work with Orbix 3.0c servers.

Known Problems, Workarounds and Tips

This section describes known problems, workarounds, and tips for Orbix Wonderwall 3.0.1.

Fragmented Replies and HTTP Tunneling

Sending fragmented Reply messages from IIOP I.I servers over a HTTP-tunneled connection is not yet supported.

Timing Out of Servers with Transformers

If an activated server that requires use of a server transformer times out or is stopped, Orbix Wonderwall attempts to send a transformed message to the server's activation port. This port is associated with the orbixd or orbixdj process and causes the daemon to fail with an unmarshalling error. This in turn causes the server to be unavailable to the client.

Host Names and Orbix 2.3c

Orbix 2.3c does not use the host name in an IOR, but uses the host name contained in the object key instead. If you intend to use Orbix 2.3c clients to contact Orbix or OrbixWeb servers behind Orbix Wonderwall, with proxified IORs, you must run the Wonderwall and server on the same host, but using different ports. This problem is fixed in Orbix 3.0.

Contacting an Unregistered Server

The OrbixWeb 3.0 activator, orbixdj, produces the following stack trace if Orbix Wonderwall tries to bind to a server that is not registered in the Implementation Repository:

```
java.lang.NullPointerException
  at IE.Iona.OrbixWeb.CORBA.ServerRequest.target(ServerRequest.java)
  at IE.Iona.OrbixWeb.Activator.DJAuthenticationFilter.
        inRequestPreMarshal(DJAuthenticationFilter.java)
  at IE.Iona.OrbixWeb.CORBA.ServerRequest.
        inRequestPreMarshal(ServerRequest.java)
  at IE.Iona.OrbixWeb.CORBA.ServerDispatcher.
        dispatchSpecial(ServerDispatcher.java)
  at IE.Iona.OrbixWeb.CORBA.BOA.processRequest(BOA.java)
  at IE.Iona.OrbixWeb.CORBA.BOA.processOneEvent(BOA.java)
  at IE.Iona.OrbixWeb.CORBA.BOA.processEvents(BOA.java)
  at IE.Iona.OrbixWeb.CORBA.BOA.processEvents(BOA.java)
  at IE.Iona.OrbixWeb.CORBA.EventHandler.run(EventHandler.java)
  at java.lang.Thread.run(Thread.java)
```

This is fixed in OrbixWeb 3.0 patch 2 and later releases of OrbixWeb.

Further Information

For further information about updates to Orbix, including the latest patches, visit the Orbix Update Center at:

http://www.iona.com/online/support/update/index.html