

Models

A client/server, CORBA-compliant object execution environment that fully leverages Compaq NonStop Himalaya servers.

Features

- State-of-the-art Java environment for Compaq NonStop Himalaya servers
 - Inter-operable with multiple platforms
 - Leading transaction processing expertise
 - Dynamic workload balancing
 - Comprehensive transaction protection
 - Supported on Compaq NonStop Himalaya servers
 - Distributed middleware based on CORBA 2.3
 - Inter-operability via Internet Inter-ORB Protocol (IIOP)
 - Supports CORBA naming, events, and object transaction services
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Introduction

Compaq NonStop Java Object Request Broker/MP (Compaq NonStop JORB/MP) software runs on Compaq NonStop Himalaya servers. It is a client/server, CORBA-compliant object execution environment that fully utilizes the parallel features of the latest Compaq NonStop Himalaya servers. It also includes JORB Lite, a Java only implementation that allows development and testing on any compliant Java Virtual Machine, the runtime environment required to execute a Java program.

Compaq NonStop JORB/MP software is based on Object Request Broker (ORB) technology which is, a method of structuring resources and objects so that they can be found anywhere in the network. Once the resources are located, programs connect to them using the CORBA technology in Compaq NonStop JORB/MP software. Standards such as Java and CORBA help in leveraging the Java deployment technologies on Compaq NonStop Himalaya servers.

Inter-operable with multiple platforms

Compaq NonStop JORB/MP software is a set of CORBA-compliant, object-oriented structuring and location services. It is a Java implementation of Compaq NonStop Distributed Object Manager/MP (Compaq NonStop DOM/MP) software, which is based on CORBA for C++.

Compaq NonStop JORB/MP software provides inter-operability across platforms via CORBA-compliant ORBs. These brokers include mechanisms that allow objects to send requests and responses transparently between applications on different machines in a distributed environment, making CORBA the most popular server-side ORB.

This product also provides inter-operability with other vendors' Java ORBs that are compliant with CORBA 2.0 or later and that have implemented the mandatory Internet Inter-ORB Protocol (IIOP), which allows integration of CORBA-based products. Compaq NonStop JORB/MP objects transparently "snap on" to the Compaq NonStop DOM/MP product's highly scalable and reliable framework, enabling them to inherit all of the fundamental capabilities of scalability, reliability, and performance. Compaq NonStop JORB/MP objects are also fully open and flexible, with source and bytecode inter-operability across heterogeneous platforms, objects, and models.

Leading transaction processing expertise

Compaq NonStop JORB/MP software capitalizes on the unsurpassed reliability and application scalability that Compaq NonStop servers bring to enterprise transaction processing. In addition, it transparently combines the productivity advantages of object technology from Compaq NonStop DOM/MP software, with its request and response services, to meet the transaction requirements of CORBA 2.3. Applications using Compaq NonStop JORB/MP software can benefit from these services and facilities without special application programming.

Dynamic workload balancing

Compaq NonStop JORB/MP software takes advantage of Compaq NonStop Transaction Services/MP (Compaq NonStop TS/MP) software to manage application workload by dynamically adding or deleting server processes, providing better response times and optimal use of server resources. It is possible to transparently distribute Compaq NonStop system applications across a server or network of servers and scale applications by replicating processes on a single node or adding server processes on other nodes.

Comprehensive transaction protection

Compaq NonStop JORB/MP software ensures the integrity of distributed databases by constantly monitoring transactions for completion. The software works with Compaq NonStop Transaction Manager/MP (Compaq NonStop TM/MP) software to coordinate updates to either Enscribe or Compaq NonStop SQL databases on Compaq NonStop Himalaya servers. In conjunction with the high-performance recovery services of Compaq NonStop TM/MP software, Compaq NonStop JORB/MP maintains database consistency in the event of a hardware or software malfunction or power outage.

Inter-operability via Internet Inter-ORB Protocol

With Compaq NonStop JORB/MP software, Compaq NonStop Himalaya servers can seamlessly operate in a multi-vendor distributed object computing environment using IIOP interfaces that are compliant with CORBA 2.3. IIOP specifies how messages are exchanged over a TCP/IP network. By using IIOP, Compaq NonStop JORB/MP software makes it possible to use the Internet as a backbone through which other ORBs can communicate.

Scalability

Scalability allows a system to grow as usage increases. Compaq NonStop JORB/MP software contributes to scalability in the following dimensions:

- Network connections
 - ORB processes
 - Application processes
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Network connections

On some ORB platforms, clients must use separate port numbers for each server connection, which can dramatically restrict the number of clients connected to the ORB. Compaq NonStop JORB/MP software does not have this limitation. Instead, clients use a single port number to connect to any number of servers on the same system.

ORB processes

With Compaq NonStop JORB/MP software, the ORB capacity can be increased without disturbing applications in process. The number of Comm Servers can also be increased to support a growth in request traffic, and TCP/IP processes can be increased to provide more port numbers.

A new client can connect to the ORB on any of its existing ports. No configuration change is required on either the client workstation or the Compaq NonStop Himalaya system.

Application processes

The throughput of application servers can be increased by running them as Compaq NonStop TS/MP server pools, in which each process runs the same application logic. The number of servers in the pool can be specified as a configuration option, or Compaq NonStop TS/MP software can automatically vary the number of servers and distribute work among them as required for load balancing.

Stateless and stateful object invocations

Compaq NonStop JORB/MP software can run server processes as Compaq NonStop TS/MP server pools. This allows several processes to act as one logical server, in which the least busy server gets any new work, thus providing automatic load balancing. Compaq NonStop TS/MP server pools support both stateful (traditional) objects and stateless (high-performance) objects. A stateless object request can go to a different server instance on each method invocation; a stateful object request initially goes to the least busy server instance, and then subsequent method invocations return to the same server instance. Compaq NonStop JORB/MP software provides the application programmer with both choices, providing flexibility in designing server-side objects.

Additional features

Compaq NonStop JORB/MP software provides the base ORB and other key features defined by the Object Management Group (OMG), including:

- CORBA-compliant Interface Definition Language (IDL)
- Java language bindings
- Naming service
- Event service
- Object transaction service (OTS)

These features are discussed in the Compaq NonStop Transaction Server for Java software product information.

Compaq NonStop Transaction Server for Java software

Compaq NonStop JORB/MP software is an integral part of the Compaq NonStop Transaction Server for Java (Compaq NonStop TSJ) product bundle, which provides all of the tools you need to develop a complete Java solution for your business-critical applications. In addition to Compaq NonStop JORB/MP software, the Compaq NonStop TSJ bundle includes:

- Compaq NonStop Server for Java software, an enterprise-class environment that allows you to run standard Java applications on Compaq NonStop Himalaya servers. Compaq NonStop Server for Java software includes a Java Virtual Machine, all core Java application program interfaces, standard Java Development Kit tools, and the JavaBeans Development Kit, as well as support for Java Database Connectivity long names, Java to Pathway inter-operability, and transactions.
- Compaq NonStop Java Transaction Services/Object Transaction Services (Compaq NonStop JTS/OTS) software, a highly scalable and reliable implementation of the Sun JTS and OMG OTS specifications, supporting full heterogeneous transactions.
- Compaq iTP WebServer product, a full range of services for running online commercial or informational enterprise applications on the Internet. By creating Java servlets to execute under this product, you can significantly enhance the efficiency of your Web pages while benefiting from the fundamental advantages of Java technology and the Compaq NonStop Himalaya platform.

See the Compaq NonStop Transaction Server for Java software product information to learn how this product bundle can bring the portability of distributed business-critical Java applications to the industry's most reliable, scalable platform, Compaq NonStop Himalaya servers.

Ordering Information

Product ID	Description
SE62V1	Compaq NonStop JORB/MP Software Development Kit: Includes all components necessary to develop an application, install and configure Compaq NonStop JORB/MP software, and execute programs; these components comprise the Compaq NonStop DOM/MP Framework and JORB Lite; the kit also includes the runtime version.
SE64V1	Compaq NonStop JORB/MP Runtime Version: Includes the Compaq NonStop DOM/MP Framework and only those components necessary to install and execute Compaq NonStop JORB/MP application programs.
142996	Getting Started
142997	Compaq NonStop JORB Administration Guide
142995	Compaq NonStop JORB Programmer's Guide

Specifications

System Requirements	Hardware	Software
	Any Compaq NonStop Himalaya server capable of running the D42+ or G02+ release of the Compaq NonStop Kernel operating system. NOTE: that Compaq NonStop JORB/MP software is not supported on the K1000 processor.	Compaq NonStop Kernel operating system, Release D42.01 or G02 or later Compaq NonStop Kernel Open System Services (OSS) Compaq NonStop TS/MP (SA-58) Compaq NonStop TM/MP Compaq NonStop Server for Java 1.5 or later Runtime-dependent factions Native C89 (only required for SE62V1) OSS Include Files OSS Language and Utilities
Compaq software development tools	Server	Tandem C++ compiler

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