

FUJITSU Software

Interstage Application Server

A decorative horizontal band with a dark red background. It features several glowing, white, curved lines that sweep across the band, creating a sense of motion and depth. The lines are composed of many thin, parallel lines, giving them a textured appearance.

Overview

Windows/Solaris/Linux

B1WS-1082-03ENZ0(00)
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Preface

Purpose of This Document

This document explains the benefits and main features of this product.

Intended Readers

This document is intended for first-time users of this product. This document assumes that readers already have the following:

- A basic knowledge of the Internet
- A basic knowledge of Java/Java EE and Java EE applications
- A basic knowledge of the operating system used

Structure of This Document

The structure of this manual is as follows:

[Chapter 1 Overview](#)

This explains the benefits and main features of this product.









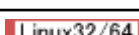
[Chapter 2 Product Structure](#)

This explains the product structure.

Conventions

Representation of Platform-specific Information

In the manuals of this product, there are parts containing content that relates to all products that run on the supported platform. In this case, an icon indicating the product platform has been added to these parts if the content varies according to the product. For this reason, refer only to the information that applies to your situation.

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Contents

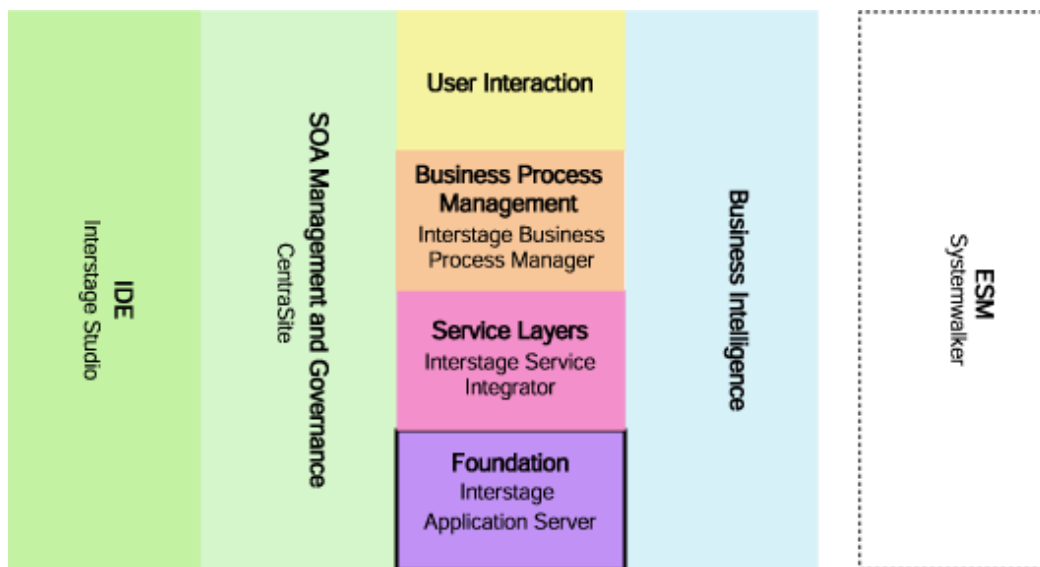
Chapter 1 Overview.....	1
1.1 About Interstage Application Server.....	1
1.2 Benefits and Main Features.....	1
1.2.1 Stability for Business Operations.....	1
1.2.1.1 System Management.....	1
1.2.1.2 Business Application Management.....	2
1.2.1.3 Support for High Performance and Scalability.....	2
1.2.1.4 Improved Response Stability.....	2
1.2.2 Business Operation Efficiency with Reduced Costs.....	3
1.2.2.1 Reducing Business Operation Load.....	3
1.2.3 Quick Business System Builds with Reduced Costs.....	3
1.2.3.1 Ease of Application Development through Industry Standard/Open Technology.....	4
1.2.3.2 Effective Utilization of Current Business/Existing Systems.....	4
1.2.4 Secure System Build.....	5
1.2.4.1 Secure Operating Environment.....	5
1.2.4.2 Protection Against Illegal Access.....	5
1.2.4.3 Security Audit Trail.....	5
1.3 Improvements in Version 11.....	5
1.3.1 Latest Standard Specification (Java SE 7).....	5
1.3.2 Smart Setup Enhancement.....	5
1.3.3 Interstage HTTP Server 2.2 (Web Server Based on Apache HTTP Server Version 2.2).....	6
1.3.4 jQuery UI.....	6
Chapter 2 Product Structure.....	7

Chapter 1 Overview

1.1 About Interstage Application Server

Interstage Application Server is a high-reliability/high-performance application server which adapts quickly to changes in business environments as a service-oriented architecture (SOA) based infrastructure, and realizes the following:

- Accelerated business system builds using standard technologies such as Java EE
- Stable business operations through proactive problem avoidance and automatic recovery
- Streamlined business operations and reduced operational costs through simplified operations and visualization
- A secure system which protects against security threats



1.2 Benefits and Main Features

This section explains the benefits and main features of Interstage Application Server.

1.2.1 Stability for Business Operations

The application runtime environment is based on open technologies providing high reliability and high performance, and is highly robust. This built-in robustness improves reliability by preventing problems from occurring and also improves system availability even if a problem occurs. It ensures stable and continuous operation of your business regardless of the scale of the system.

1.2.1.1 System Management

Automatic Extension of System Resources/Predictive Monitoring

System resources such as system memory are tuned automatically, with resources extended according to the load during the operation. Additionally, the consumption of system resources is monitored, so application errors caused by insufficient resources are avoided. As a result, problems such as stopped operations caused by insufficient resources can be prevented.

Hot Standby

With hot standby on the web server or application server, if a fault occurs on the server which is running the application, the standby server automatically takes over operation and starts running the application. This is called a "failover". By combining hot standby and load balancing, a high-reliability/high-performance system is realized.

Load Balancing

Load balancing prevents degradation in response time due to concentrated high load. It also isolates servers when they are in a fault state, which maintains the normal response time of the system and stabilizes the business operation.

- Load balancing using a web server (for small-scale configurations)

The web server dispatches business operations to balance the load.

- Load balancing using the IPCOM network server (for large-scale configurations)

Resource usage is measured, and dispatched for each method call, therefore load balancing at a very fine level is possible.

1.2.1.2 Business Application Management

Operation Management Control by Business Unit (IJSERVER Cluster/WorkUnit)

By managing multiple applications in business units as IJSERVER clusters/WorkUnits, and the mechanism which makes operations possible, the effective utilization of resources and automatic recovery following an error is possible.

Automatic Recovery of Business

Application errors such as abends, loops and deadlocks are detected early, so business can be recovered automatically by restarting the application. Business requests are even accepted during recovery, which avoids stopping or delaying business operations. In the application recovery processing, the settings can be modified for the IJSERVER cluster/WorkUnit service level.

Resource Pooling

Server resources such as processes and threads are obtained in advance and then reused in the IJSERVER cluster/WorkUnit. The server resources are utilized to the maximum extent possible, enabling optimal use of the CPU and memory.

Hot Deployment

Applications can be added or switched without impacting on the business operation. Applications can be switched dynamically without stopping business operations, even if an application has been fixed or an interface has been modified. Costs associated with system changes can therefore be reduced and flexible support for environment changes can be achieved.

Diagnostic Log Feature/Automatic Batch Resource Collection

If application errors such as abends, loops or deadlocks have occurred, error messages and diagnostic logs can be referenced from the Management Console. Additionally, resources which are required for troubleshooting can be batch collected automatically.

1.2.1.3 Support for High Performance and Scalability

Application Multiplex Control (Multiple Containers)

Multiplex execution of applications is controlled, so a stable response is guaranteed even for a large number of requests. Together with preventing performance degradation because of a concentration in access, CPU performance can be used effectively, and scalable configurations also be supported.

Additionally, by running business on multiple containers, even if a problem has occurred on a particular container, the business operation can be continued on another container, so the impact of the problem can be localized.

Multiple Web Server Operations

Multiple web servers can be operated. Each web server can be run in an individual process, therefore standalone operations such as additional web server builds and single start/stop operations are possible. Multiple web servers can be built on one server, so the server can be used effectively.

1.2.1.4 Improved Response Stability

Java Response Equalization (Concurrent GC)

In the Java VM, in addition to the existing Parallel GC, Concurrent GC (Parallel GC with Concurrent Mark Sweep GC) is provided to execute GC (Garbage Collection) in parallel with the application thread. Using this feature, the stop time for the application thread using GC is kept to a minimum, so variations in response can be brought under control.

1.2.2 Business Operation Efficiency with Reduced Costs

Operations are simplified and visualized by starting/stopping/monitoring the status of and switching business operations using the Management Console, and by collecting performance information and displaying it graphically.

Additionally, actions in a virtual environment are supported, so operations which can leverage the benefits of a virtual environment are possible. Accordingly, efficient operations and a reduction in operational costs are realized.

1.2.2.1 Reducing Business Operation Load

Simple GUI Operations

Business operations can easily be manipulated using a GUI (Interstage Java EE Admin Console/Interstage Management Console). Additionally, multiple applications can be managed as an IJServer cluster/WorkUnit.

All business build/operation actions can be executed, such as the configuration of the environment settings ranging from build/start/stop of the business to modifying the process concurrency, and monitoring the processing time and the resources consumed during runtime.

Additionally, using the Management Console, the database connection can be configured, and the settings for connecting to Symfoware Server and Oracle Database (such as the RAC high-speed connection failover feature) can easily be configured.

Fixed Operations/Repeated Operations using Commands

All the operation management operations can be executed using commands. The Management Console provides a user-friendly interface that enables complex and repetitive operations to be executed easily.

Business Response Monitoring/Performance Analysis

The performance information (Java heap, Garbage Collection status, processing volume, CPU usage) of the business application can be displayed graphically, and the logs can be collected.

Management Console/Performance Monitor Logging

From the Management Console, the performance information of business applications which are running can be checked easily. Additionally, using monitor logging, the performance information can be logged to a file at fixed intervals.

Java VisualVM

A support tool (Java VisualVM) is provided which investigates problems such as performance bottlenecks and memory leaks.

Java Monitoring Feature

The Java monitoring feature enables the performance data for Java VMs of the applications which are running on the application server to be collected and displayed.

Support for Virtual Environments

Support for virtualization provides a means of reducing the operational cost of a large number of servers, extending the life of an existing system, and adapting to sudden changes in the business environment. In Interstage Application Server, actions in various virtual environments such as VMware, Hyper-V, and Xen are supported, so operations which exploit the merits of these virtual environments are possible.

1.2.3 Quick Business System Builds with Reduced Costs

Quick business system builds are realized through ease of application development using standard technologies such as Java EE, and high portability from third-party vendors and open-source software (OSS).

Additionally, even during version upgrades which have occurred by updating the system, for example, continued use of the application is supported by a mechanism which guarantees application compatibility. Accordingly, reductions in business system build times and business update costs are realized.

1.2.3.1 Ease of Application Development through Industry Standard/Open Technology

Support for Java EE

A runtime environment based on GlassFish v2.1 or v3.1 is provided, and application development can be performed with high productivity using EJB 3.0 and Servlet 3.0 for example. Additionally, in the runtime environment based on GlassFish v2.1 or v3.1, Java EE application high-reliability/high-performance operations are realized through the Interstage high-reliability/high-performance technology.

High-Performance/High-Reliability Java Runtime Infrastructure

This product contains Fujitsu JDK 6/JDK 7, which provides the Java application Runtime Environment, and is fully compatible with the standard Oracle JDK. Fujitsu's own feature enhancement has been used for predictive monitoring of memory to preempt insufficient memory situations, and for maintenance enhancements, so high-performance/high-reliability Java applications can be executed.

Web Service Runtime Infrastructure

This product provides compatibility with the web service interconnection protocol WS-I BP, and supports the building, operating, and linkage of the service as an SOA platform. It can easily connect with business services including third-party vendors and .NET environments to expand the range of applications available for the business. It can be used with simple operations such as the configuration of environment settings and application deployment, so a practical and easy to use web service can be realized.

Framework with an Extensive Range of Components

A framework containing an extensive range of highly-functional components for the efficient development of various applications is included as standard. High-quality applications can easily be developed using this framework. Standard technologies such as Struts and JavaServer Faces (JSF) are also supported, so a variety of applications can be developed by leveraging skills in these areas.

Provision of JavaScript Libraries

Application Development Framework for Smart Devices

jQuery Mobile (JavaScript framework) for smart device development is supported. jQuery Mobile can be used to easily and quickly develop applications that support smart devices.

jQuery UI

jQuery UI can be used to realize on personal computers the kind of rich web content created on smart devices.

Detailed information on this framework is located in the following folder of the product media:

```
<drive>:\smartp
```

To access the framework documentation, open the following file:

```
Application Development Framework for Smart Devices - User's Guide  
<drive>:\smartp\jquery\document\index.html
```

1.2.3.2 Effective Utilization of Current Business/Existing Systems

Provision of Multiple Generations of Application Runtime Environments

You can deploy both new business systems created with the latest version of Java, existing business systems created with older versions of Java, and existing business systems created with COBOL or C, on a single application server. The business systems can work together or run independently. Since this application server bundles the older version of Java Runtime Environment, you can run existing Java applications, which no longer work on the latest application server environments provided by third parties. With this feature, you can easily perform server aggregation and build a system using existing business systems. (Note that only the Enterprise Edition supports applications created with COBOL and C.)

Practical Use of Existing Systems

Using features such as message communication and gateways, existing systems such as mainframes can easily be utilized from an Internet environment. System expansion and integration according to changes in the business environment are possible at low cost and in a short period.

Using COBOL/C/C++ Language Resources

Applications developed in languages such as COBOL and C/C++ can also be used as well as those developed in Java. For this reason, high-reliability business systems can be built in a short period using existing resources developed in these languages.

Additionally, the application can be operated and monitored in the IJServer cluster/WorkUnit (business unit) from the Management Console, regardless of the development language, for example Java, COBOL, or C.

1.2.4 Secure System Build

An operating environment which combines the enhanced security, usability, and operability of the business system is realized. A secure system can be built immediately after the installation, without the need for complex configurations. It prevents information leaks, and is also ready for security audits by a third-party organization.

1.2.4.1 Secure Operating Environment

A secure operating environment can be built at the same time as the installation. Appropriate access permission settings for all business resources, operator restrictions, and the application of communication encryption according to the operation, for example, can be used immediately after the installation. Information is protected from security threats such as illegal access to a business operation, or intercepted communications, so a secure business system can be built quickly.

1.2.4.2 Protection Against Illegal Access

Security features, such as the SSL 3.0 client/server authentication and encryption features, and SSL communication using certificates, have been implemented which realize high security, and are indispensable in business-to-business transactions on the Internet and in systems that publish information to customers.

1.2.4.3 Security Audit Trail

To prevent information leaks, it is possible to record the "who", "which data", and "using which pathway" access methods. Simple analysis, through the cross-referencing of each log with an ID filter, and the early detection of suspicious users who have accessed information (such as the web server IP address and the authenticated user name recorded in the Symfoware audit log) which is recorded on the web server, enables trace logs to be analyzed quickly and validity of the business operation to be certified.

1.3 Improvements in Version 11

The following enhancements have been added to Application Server version 11:

- Latest Standard Specification (Java SE 7)
- Smart Setup Enhancement
- Interstage HTTP Server 2.2 (web server based on Apache HTTP Server Version 2.2)
- jQuery UI

1.3.1 Latest Standard Specification (Java SE 7)

The latest standard specification (Java SE 7) Java runtime environment is provided.

By using functionalities added in Java SE 7, the following can be expected:

- Improved development productivity
- Improved performance
- Enhanced security

1.3.2 Smart Setup Enhancement

The *ijsmartsetup* command is provided as the smart setup enhancement.

This command prompts the user for resource (IJServer cluster or JDBC resource, for example) information required to run user applications. Using this information, it builds the user application operating environment by creating the resources and deploying the user application.

For this reason, web applications can be set up easily using the *ijsmartsetup* command, even without product knowledge.

1.3.3 Interstage HTTP Server 2.2 (Web Server Based on Apache HTTP Server Version 2.2)

In addition to "Interstage HTTP Server" (a web server based on Apache HTTP Server Version 2.0), which is already provided, Interstage Application Server V11.1 provides "Interstage HTTP Server 2.2" (a web server based on Apache HTTP Server Version 2.2). Use Interstage HTTP Server 2.2 when you want to use the features of Apache HTTP Server Version 2.2 to build web servers.

Use "Custom installation" to install these features.

1.3.4 jQuery UI

jQuery UI is supported. Using jQuery UI, it is possible to easily and quickly develop powerful web applications with advanced usability.

Chapter 2 Product Structure

This section explains the Interstage Application Server product structure, and the support for the main features.

Interstage Application Server Standard-J Edition

This edition is for the Java standard model which runs on single-server environments.

It conforms to the Java EE and web service standard technologies, for example, and can execute Java applications which were developed through high productivity.



This edition is used for single server environments.

This is a runtime environment on one server, or a standalone runtime environment in which there is no hot standby, even when there are multiple servers.

Interstage Application Server Enterprise Edition

This is the enterprise model for multiserver environments, which supports multiple languages (COBOL/C/C++) and realizes high reliability/high availability.

In addition to the features of Interstage Application Server Standard-J Edition, features such as multilanguage and hot standby are supported. Stable responses and a nonstop system 24 hours a day, 365 days of the year are realized, which is ideal for large-scale system builds.



This edition is used for multiserver environments.

This environment executes business applications on multiple servers using the multiserver management feature, or hot standby, where one server takes over business operations from another.

The tables below provide a comprehensive comparison of the Application Server editions.

Legend for the following tables

SJE: Standard-J Edition

EE: Enterprise Edition

OK: Feature available for associated system

Table 2.1 Interstage Application Server Edition Comparison: Web/Distributed Environment

Function	Windows for x86 (*2)		Windows for x64		Oracle Solaris (32bit) (*1) (*2)		Oracle Solaris (64bit) (*1)		Linux for x86 (*2)		Linux for Intel64	
	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE
Web server (*3)	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
CORBA service (partial CORBA 2.1-2.4 support) (*4)		Ok		Ok		Ok		Ok		Ok		Ok
Database linkage service (ObjectTransactionService)		Ok		Ok		Ok				Ok		Ok
XML processor (*5)	Ok	Ok	Ok	Ok	Ok	Ok			Ok	Ok	Ok	Ok
Directory service (LDAP compliant)	Server function		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	LDAP SDK		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

Function		Windows for x86 (*2)		Windows for x64		Oracle Solaris (32bit) (*1) (*2)		Oracle Solaris (64bit) (*1)		Linux for x86 (*2)		Linux for Intel64	
		SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE
Asynchronous communication function	Event service		Ok		Ok		Ok		Ok		Ok		Ok
	Notification service		Ok		Ok		Ok		Ok		Ok		Ok
Web service	SOAP 1.1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	JAXM 1.1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	JAX-RPC 1.1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	JAX-WS 2.0	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	SAAJ 1.2	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	SAAJ 1.3	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	WS-I Basic Profile 1.0	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	WS-I Basic Profile 1.1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Web Services for J2EE 1.1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Web Services for J2EE 1.2	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	WS-Security (*20)	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
WSDL1.1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	
Java EE 6 runtime environment	Servlet 3.0 New	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	JavaServer Pages 2.2 New	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Enterprise JavaBeans 3.1 New	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Java Message Service 1.1 New	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Java Transaction API 1.1 New	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	JavaMail 1.4 New	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Java EE 5 runtime environment	Servlet 2.5	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	JavaServer Pages 2.1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Enterprise JavaBeans 3.0	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Java Message Service 1.1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Java Transaction API 1.1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	JavaMail 1.4	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
J2EE 1.4 runtime environment	Servlet 2.4 (*6)	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	JavaServer Pages 2.0 (*6)	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Enterprise JavaBeans 2.1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Java Message Service 1.1	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Java Transaction API 1.0.1	Ok	Ok	Ok	Ok	Ok	Ok			Ok	Ok	Ok	Ok
	JavaMail 1.4	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
GlassFish v2.1 based servlet (Servlet 2.5/JavaServer Pages 2.1)		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
GlassFish v3.1 based servlet (Servlet 3.0/JavaServer Pages 2.2) New		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

Function		Windows for x86 (*2)		Windows for x64		Oracle Solaris (32bit) (*1) (*2)		Oracle Solaris (64bit) (*1)		Linux for x86 (*2)		Linux for Intel64	
		SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE
IPv6 support (*7)		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Web Package function (*8)		Ok	Ok			Ok	Ok			Ok	Ok		

Table 2.2 Interstage Application Server Edition Comparison: Security

Function		Windows for x86 (*2)		Windows for x64		Oracle Solaris (32bit) (*1) (*2)		Oracle Solaris (64bit) (*1)		Linux for x86 (*2)		Linux for Intel64	
		SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE
User authentication function	Authentication with LDAP Service	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Authentication function of Web server	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Authentication/encryption function using SSL		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
HTTP tunneling			Ok		Ok		Ok		Ok		Ok		Ok
Proxy linkage			Ok				Ok						
Single sign-on	Business Server	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Authentication server	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Repository server	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Single Sign-on to Active Directory Linkage		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Security Audit Trail		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

Table 2.3 Interstage Application Server Edition Comparison: Application Execution Environment

Function		Windows for x86 (*2)		Windows for x64		Oracle Solaris (32bit) (*1) (*2)		Oracle Solaris (64bit) (*1)		Linux for x86 (*2)		Linux for Intel64	
		SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE
CORBA application	C/C++		Ok		Ok		Ok		Ok		Ok		Ok
	COBOL		Ok		Ok		Ok				Ok		Ok
	Java		Ok		Ok		Ok		Ok		Ok		Ok
Java EE runtime environment applications	Java	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
J2EE runtime environment applications	Java	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
GlassFish-based runtime environment applications	Java	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

Function		Windows for x86 (*2)		Windows for x64		Oracle Solaris (32bit) (*1) (*2)		Oracle Solaris (64bit) (*1)		Linux for x86 (*2)		Linux for Intel64	
		SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE
Component execution environment (EJB)	CMP (Container Managed Persistence)	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	BMP (Bean Managed Persistence)	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Operation control per job	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Multiple EJB container execution	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Java server execution environment	JDK 6 (Fujitsu VM) (*9)	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	JDK 7 (Fujitsu VM) (*10)	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Concurrent GC New			Ok		Ok		Ok		Ok		Ok		Ok
Java Management Agent		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Java Tools (Java VisualVM)		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Java object reference compression feature				Ok	Ok							Ok	Ok
Access to web applications without using a web server		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Java execution environment using Portable-ORB		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Integrated management of requests and responses between client and server by means of session management			Ok				Ok				Ok		
Process bind function			Ok				Ok				Ok		

Table 2.4 Interstage Application Server Edition Comparison: Application Control

Function		Windows for x86 (*2)		Windows for x64		Oracle Solaris (32bit) (*1) (*2)		Oracle Solaris (64bit) (*1)		Linux for x86 (*2)		Linux for Intel64	
		SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE
Interstage Management Console (*22)		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Multiserver management (*24)	Admin Server (*23)		Ok		Ok		Ok				Ok		Ok
	Managed Server		Ok		Ok		Ok				Ok		Ok
Resource Distribution Management			Ok				Ok				Ok		
Application Management	Start and stop of application units	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Sharing of processes from multiple clients	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Non-resident application mode		Ok				Ok				Ok		
	Process concurrency	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	Snapshot/log function at execution	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

Function		Windows for x86 (*2)		Windows for x64		Oracle Solaris (32bit) (*1) (*2)		Oracle Solaris (64bit) (*1)		Linux for x86 (*2)		Linux for Intel64	
		SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE
	Operation and performance management of application units	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Timeout monitoring		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Automatic centralized monitoring (*11)		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Automatic operation including batch application execution (*12)		Ok	Ok	Ok	Ok	Ok	Ok			Ok	Ok	Ok	Ok
Transaction Type Analysis (*13)		Ok	Ok			Ok	Ok			Ok	Ok		

Table 2.5 Interstage Application Server Edition Comparison: Usability

Function		Windows for x86 (*2)		Windows for x64		Oracle Solaris (32bit) (*1) (*2)		Oracle Solaris (64bit) (*1)		Linux for x86 (*2)		Linux for Intel64	
		SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE
Point and click installation		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Simplified configuration management		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

Table 2.6 Interstage Application Server Edition Comparison: High Reliability and Scalability

Function		Windows for x86 (*2)		Windows for x64		Oracle Solaris (32bit) (*1) (*2)		Oracle Solaris (64bit) (*1)		Linux for x86 (*2)		Linux for Intel64	
		SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE
Load balancing based on feedback from resource usage status of the load balanced server (*14)			Ok		Ok (*15)		Ok		Ok (*15)		Ok		Ok (*15)
Request distribution/fault monitoring from the HTTP server to back-end servers (*16)		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Hot standby	1: 1 active-standby mode		Ok		Ok		Ok		Ok		Ok		Ok
Hot deployment of applications (dynamic modification/addition)	Web applications	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	EJB applications	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	CORBA applications												
Dynamic process concurrency modification			Ok		Ok		Ok		Ok		Ok		Ok
Business application priority control (*17)			Ok		Ok		Ok		Ok		Ok		Ok
Object closure/release function			Ok		Ok		Ok		Ok		Ok		Ok
Session recovery function	Session registry server		Ok		Ok		Ok		Ok		Ok		Ok
	Session registry client	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

Table 2.7 Interstage Application Server Edition Comparison: Interoperability

Function	Windows for x86 (*2)		Windows for x64		Oracle Solaris (32bit) (*1) (*2)		Oracle Solaris (64bit) (*1)		Linux for x86 (*2)		Linux for Intel64	
	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE
Feature for asynchronous communication with AIM (*18)		Ok		Ok		Ok				Ok		Ok
Development of applications for ORB connections with GS		Ok		Ok		Ok		Ok		Ok		Ok
ORB connections with GS (system) (*19)	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Interoperability with ORB of other vendors		Ok		Ok		Ok		Ok		Ok		Ok
Interoperability with EJB of other vendors	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Interoperability with SOAP of other vendors	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Interoperability with WS-I BP of other vendors	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

Table 2.8 Interstage Application Server Edition Comparison: Development Aids

Function	Windows for x86 (*2)		Windows for x64		Oracle Solaris (32bit) (*1) (*2)		Oracle Solaris (64bit) (*1)		Linux for x86 (*2)		Linux for Intel64	
	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE
Use of Interstage Studio	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Use of other development environments (Sun Studio, Microsoft Visual Studio, etc.)	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

Table 2.9 Interstage Application Server Edition Comparison: Framework

Function	Windows for x86 (*2)		Windows for x64		Oracle Solaris (32bit) (*1) (*2)		Oracle Solaris (64bit) (*1)		Linux for x86 (*2)		Linux for Intel64	
	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE	SJE	EE
Application Development Framework for Smart Devices New	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Application development support (*21)	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

Notes

- *1 Installation/use in Solaris non-global zone is also supported.
- *2 This product runs as a 32-bit application even on 64-bit operating systems.
- *3 Apache 2.0.59-compatible environment is provided.
- *4 In Standard-J Edition only supports linkage with CORBA server applications on other servers (the execution of CORBA server applications in the server in which this product is installed is not supported)
- *5 The XML processor is the XML parser provided as standard in the previous version, and can be used on migrated systems/C applications. In this version, we recommend using Xerces2.
- *6 Tomcat 5.5.20 compatible environment is provided
- *7 Only IPv6/IPv4 dual stacks are supported by the following functionalities for the operating systems listed in the tables below:

JDK/JRE, Java EE 6, J2EE EJB, JTS/JTA (SSL linkage is not supported), CORBA service (SSL linkage is not supported), EventService (SSL linkage is not supported), Database Linkage Service (SSL linkage is not supported), Component Transaction Service (except for the server machine status monitoring mechanism and load balancing that uses linkage with IPCOM), HTTP/HTTPS communication using Interstage HTTP Server, Single Sign-on , Directory Service, *ctrl* command (used to obtain the CRL) of the certificate/key management environment created using the SMEE command

*8 The Web Package function and its uses are as follows:

Usage/Function item		Web Package function	
		SJE	EE
Web environment	Web server	Ok	Ok
Security	SSL authentication/encryption function	Ok	Ok
Systems Management	Interstage Management Console	Ok	Ok
Request distribution control	Web server connector request distribution (fault monitoring)	Ok	Ok
	Web server connector fault monitoring		Ok

*9 A Java VM developed by Fujitsu is provided. The version is 6 update31.

*10 A Java VM developed by Fujitsu is provided. The version is 7 update3.

*11 Supported when integrated with Systemwalker Centric Manager

*12 Supported when integrated with Systemwalker Operation Manager

*13 Supported when integrated with Systemwalker Quality Coordinator (Only J2EE is supported)

*14 By measuring the load balancing target server resource usage status and linking with IPCOM EX2000 (IN or LB, and the IIOP load balancing options), detailed load balancing per method call is possible. Using a load balancing policy which is unique to Interstage, IIOP load balancing and WorkUnit fault monitoring (according to the number of waiting messages) is possible. Note that HTTP load balancing (when the load balancing target server resource usage status is not measured) which uses IPCOM (or Interstage Traffic Director) is possible in all Interstage Application Server editions.

*15 Load balancing which uses the load balancing policy which is unique to Interstage (according to the number of waiting messages) is not supported.

*16 This is supported in the web server connector fault monitoring provided in the Web Package bundled with the Standard-J Edition, and the Enterprise Edition.

- The following functions are provided as the web server connector load balancing.

Function category	Function	Notes
Transfer method	Minimum number of requests	Requests are sorted to the server processing the fewest number of requests.
Fault monitoring	Fault monitoring (Ping)	
	Service port monitoring	
Session uniqueness assurance	Cookie	
Protocol	HTTP, HTTPS	

*17 CORBA application priority control is possible.

*18 This is supported in the Event Channel Linkage Service.

*19 The applications that can be used conform to the range provided in each Interstage Application Server.

*20 Framework features are shown in table below.

- Web application framework
- EJB application framework

*21 OASIS WS-Security is not supported as a product function, but is provided as a sample.

*22 This is supported in Java EE 5/J2EE/CORBA. It is not supported in Java EE 6.

*23 This is not supported in non-global zone.

*24 Only supported in J2EE and CORBA.