

Java™ 2 Platform, Enterprise Edition (J2EE™) Client Provisioning Specification

The vending machine model of provisioning.



Key feature highlights

- Deploys powerful “vending machine” model of provisioning
- Helps attract new customers and new markets with popular content such as Java™ 2 Platform, Micro Edition (J2ME™) Mobile Information Device Profile (MIDP) applications, ring tones, screen savers, multimedia content, and more
- Defines standard interfaces for submission, discovery, and delivery of wireless content
- Leverages Java 2 Platform, Enterprise Edition (J2EE™) technology, a prominent standard with many successful deployments
- Adds protection for enterprise integration investment when migrating to new provisioning servers

In today's wireless marketplace, consumers expect easy, seamless access to a wide array of content and services, including applications, ring tones, and images. At the same time, content developers want to bring products to market faster by writing and packaging their products once, then deploying them anywhere. The challenge: How can functionality and data be provisioned from back-end applications maintained on servers to a constantly expanding base of wireless client devices? Meeting everyone's needs requires a standardized framework that enables packaging content bundles and describing the device capabilities required by each, so users get the right content every time — automatically. Java™ Specification Request (JSR) 124 — the Java 2 Platform, Enterprise Edition (J2EE™) Client Provisioning Specification — helps meet the challenge of this explosion in wireless computing.

JSR 124 — The J2EE Client Provisioning Specification

The J2EE Client Provisioning Specification is a J2EE technology-compliant specification that employs a powerful “vending machine” model of provisioning. As shown in Figure 1, the architecture enables centralized, automated distribution of content and applications through a Web

site. Here, customers can browse available content, choose items, pay for them, and have them delivered — similar to the way a vending machine works. Within enterprises, provisioning servers enable tracking of software installations by employees, to ensure compliance with licensing terms.

Digital Vending Machine

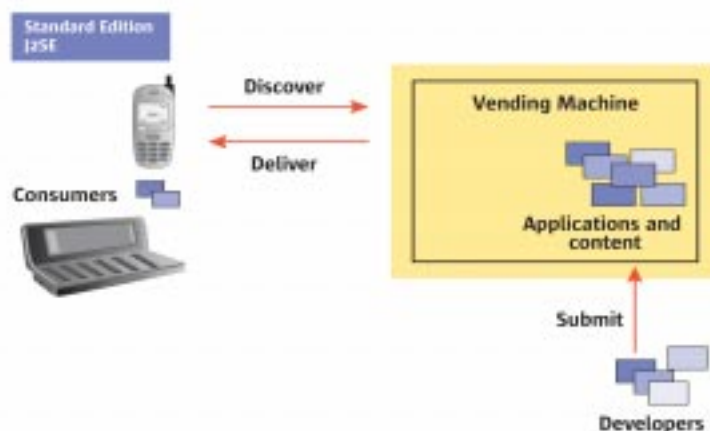


Figure 1: Digital Vending Machine

The J2EE Client Provisioning Specification employs a powerful, “vending machine” model of provisioning, defining standard ways to handle the submission, discovery, and delivery phases of content provisioning.

Delivered as part of the Java Community ProcessSM program and led by Sun Microsystems, the J2EE Client Provisioning Specification 1.0 standard was created by an expert group of wireless operators, provisioning server vendors, device manufacturers, and information technology vendors. Built on J2EE technology, it implements the vending machine model by defining standard ways to handle the submission, discovery, and delivery phases of content provisioning.

Vending Machine Communities

Three distinct groups are involved in the operation of a digital vending machine — content developers, vending machine operators, and consumers — who all play key roles. First, content developers package their content into a special file format, Provisioning Archive (PAR), and submit those files to vending machine operators. The vending machine operators define the submission, discovery, and delivery processes. Consumers can then search for and choose the content they need.

Provisioning server vendors provide implementations of the J2EE Client Provisioning Specification to vending machine operators, and also deliver additional services such as customization and integration.

The Client Provisioning Framework

The J2EE Client Provisioning Specification Framework encompasses three key phases: submission, discovery, and delivery.

Content Submission

The content submission process keeps the vending machine stocked. The J2EE Client Provisioning Specification defines the PAR file format (a zip file that contains one or more client bundles), which serves as a standard content packaging format. Content developers package their content into PAR files, then deliver it to operators through the content submission process.

The content submission process is defined by the vending machine operators who make such decisions as who is allowed to submit content, how they are compensated, and what submission mechanism they can use (usually a Web service or Web page). The vending machine operators also provide a manual or automated content validation process.

Content Discovery

Utilizing the content discovery process, customers browse available content, then select desired items and pay for them if necessary, although subscribers or enterprise customers have other means of paying. In addition, customers may need to agree to licensing terms before downloading content.

Since they may be employing mobile devices or browsers on desktop machines, different types of Web pages (WML versus HTML) need to be generated. To make the content discovery process as transparent as possible for end users, the J2EE Client Provisioning Specification defines a capability matching engine that matches available content to devices, and APIs to search content repositories.

Content Delivery

The J2EE Client Provisioning Specification defines a delivery adapter structure to manage content downloading, as well as mechanisms to add new delivery adapters. Examples include MIDP Over-the-Air (OTA) adapters for Java technology-enabled wireless phones, the Java Network Launching Protocol (JNLP) for Java 2 Platform, Standard Edition (J2SE™) technology-enabled desktop systems, and so on.

Vending machine operators define the integration of the content delivery process into their business models, such as billing systems, subscriber databases, and so on. As a further refinement, new delivery adapters can be implemented to provide content to TV set-top boxes, telematics-enabled vehicles, and more.

Benefits for Provisioning Server Vendors

The J2EE Client Provisioning Specification is built on and leverages the J2EE standard, and opens doors to new customers, markets, and revenue streams by deploying popular offerings such as ring tones, screen savers, multimedia, and more. New client types are smoothly incorporated through extensibility interfaces.

At the same time, the J2EE Client Provisioning Specification offers plenty of room for innovation and differentiation because it defines only the most common features of provisioning servers — the rest is up to each provisioning server vendor.

Benefits for Vending Machine Operators

The J2EE Client Provisioning Specification integrates into back-end systems, leveraging J2EE technology to customize the provisioning server for specific business model requirements and billing and database solutions.

It also helps protect the enterprise integration investment when migrating to new provisioning servers that are compliant with the J2EE Client Provisioning Specification. This makes it possible to increase the amount of available content, especially content that is packaged in the PAR file format, that can be absorbed through well-defined submission mechanisms. Maintenance costs are lowered through a one-stop delivery mechanism for all types of content. And because it can smoothly incorporate new client types, the J2EE Client Provisioning Specification offers a source of potential new revenue through deployment to additional clients.

Java™ 2 Platform, Enterprise Edition (J2EE™) Client Provisioning Specification

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To learn more about the JSR 124, the J2EE Client Provisioning Specification, please visit java.sun.com/j2ee/provisioning.

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