

# Next Generation Java Card™ Platform

## Technology Preview



Since the introduction of Java Card™ technology in 1997, Sun Microsystems and its licensees have been working closely to ensure the specifications reflect the requirements from the smart card industry. Next Generation Java Card technology will unlock the potential from the latest advances in smart card technology while responding to the exploding demand for interoperable products. This release will take an evolutionary step forward with the introduction of the first new Java Card technology architecture in ten years. It will also ensure continued support for existing deployments and applications.

### One Technology, Two Editions

Next Generation Java Card technology will be available in two separate, coherent Editions. **Java Card technology, Classic Edition** targets the most resource-constrained devices. It is based on an evolution of the existing Java Card platform, Version 2.2.2.

**Java Card technology, Connected Edition** includes new network-oriented features such as support for web applications, and a significantly enhanced execution environment. Both Editions are compatible with applications written for previous versions. They share key security features and build on the trust and expertise derived from ten years of deploying secure Java Card technology.

### Connected Engine

The Connected Edition of Java Card technology introduces a new architecture to run the most complex network security services.

Among the most notable new features are:

- Embedded webserver with Java Servlet API
- Multi-threaded Environment
- Communication over USB, ISO 7816, NFC
- Client and Server Communication
- Enhanced Security Framework
- Full Backward Compatibility

Critical to this level of functionality is a new version of the Java Card Virtual Machine - the engine that executes Java Card technology applications. It is derived from the technology already used in over 1 billion mobile phones worldwide and is able to support some of the richer features of the Java™ language: loading of Java class files without pre-processing, concurrent execution of applications, on-card bytecode verification

and automatic garbage collection. It has also been reduced in size and enhanced to support the security requirements of a smart card environment. It is the cornerstone of a solution that provides new levels of functionality and convenience to developers.

### Secure Web Services

A key functionality in the Connected Edition is its ability to host web applications and traditional smart card applications simultaneously. Web applications provide services over the IP network using standard Internet protocols such as HTTP/HTTPS. They can be easily meshed into web services infrastructures. Smart card applications use industry protocols, such as ISO 7816 or 14443, and operate in existing card environments. Next Generation Java Card technology will simplify the deployment of security services within all-IP networks, while continuing to execute legacy card applications. Java Card technology products can then make the most of the introduction of high-speed protocols, such as USB, while maintaining support for existing contact or NFC infrastructures.

### A New Developer Experience

Application developers will gain access to Java platform features so far available only in desktop environments. Card applications will be written using the Servlet API technology already widely used in IT, while leveraging standard development tools and techniques.

The flexibility associated with this new developer experience means that the availability of content and the proliferation of smart card technology will increase tremendously.

### About Java Card technology

- Java Card technology enables smart cards and other devices with very limited memory to run small applications that employ Java technology.
- With over 3 billion Java Powered smart cards deployed worldwide, Java Card technology is the most pervasive open platform for secure devices.
- Java Card technology provides smart card manufacturers with a secure and interoperable execution platform that can store and update multiple applications on a single device.
- In 2008 Sun Microsystems will release the Next Generation of its market-leading Java Card technology and revolutionize the way smart card services are conceived and deployed.

[java.sun.com/javacard](http://java.sun.com/javacard)

