

Sun Java™ Device Test Suite 2.0

Ensuring High-Quality Java™ ME Implementations on Mobile Devices



Highlights

- Benchmark tests compare device performance at application level
- Readiness tests confirm device capabilities and supported APIs, accelerating the QA process
- Defragmentation tests discover implementation-specific defects that necessitate application workarounds
- Frequent updates provide rapid response to customer needs
- New JavaTest™ harness allows user to choose between graphical and command line interfaces
- Online help offers on-demand assistance with extensive information
- Two weeks of on-site support



The Sun Java™ Device Test Suite 2.0 is the industry-standard tool for assessing the quality of Java Platform, Micro Edition (ME) implementations. This single tool performs quality testing for all implementations created using the Java ME platform Mobile Service Architecture (JSR 248 specification, pending). The Java Device Test Suite consists of an extensible set of test packs, flexible centralized management facility, and distributed test execution environment. It helps wireless device manufacturers and carriers maximize product quality and average revenue per user (ARPU), while minimizing time to market. A complete Java ME solution, the Java Device Test Suite provides QA teams with the tests they require.

Testing for quality

The tests can be divided into five main categories:

- **Runtime tests** imitate real applications and their interaction with external components such as message senders and receivers. These tests exercise multiple APIs in realistic scenarios that include error conditions. Some runtime tests, called negative tests, check that an implementation correctly handles invalid inputs, states, and usages. Devices that pass runtime tests are likely to deliver a high quality user experience. Stress tests evaluate the behavior and robustness of a Java implementation, as they stretch memory and processor resources to their limits.
- **Benchmark tests** compare a device's actual performance with performance goals. These tests measure system load and frame rate under application-like conditions, and compare them to threshold values established by running the same tests on reference devices. Different performance goals can be established for device classes, such as mass-market phones and smart phones.
- **Over-the-Air (OTA) provisioning tests** verify a device's ability to correctly and securely implement application life cycle operations (such as install and remove) and communicate properly with a provisioning server.
- **Defragmentation tests** target Java ME implementations that are identified by application developers as nonstandard implementations. The Java Device Test Suite team works with application developers, device manufacturers, and carriers to identify divergent implementations that fragment the application ecosystem.
- **Security tests** verify the correct implementation of the Mobile Service Architecture model of certificates, permissions, and policies.

A wide range of tests for a wide range of devices

The Java Device Test Suite offers a test pack for each specification in the JSR 248 Mobile Services Architecture. Users can choose to run any combination of tests, according to the features supported by a device and available resources.

The Java Device Test Suite 2.0 covers these specifications:

Technology	Specification
Personal Digital Assistant (PDA) optional packages	JSR 75
Java APIs for Object Exchange (OBEX) and Bluetooth	JSR 82
Mobile Information Device Profile (MIDP)	JSR 118
Mobile Media API (MMAPI)	JSR 135
Connected Limited Device Configuration (CLDC)	JSR 139
Web Services API (WSA), includes JAXP and JAX-RP	JSR 172
Security and Trust Services API (SATSA)	JSR 177
Location API (LAPI) optional package	JSR 179
Session Initiation Protocol (SIP)	JSR 180
Mobile 3D Graphics API	JSR 184
Java Technology for the Wireless Industry (JTWI)	JSR 185
Wireless Messaging API (WMA)	JSR 205
Content Handler API (CHAPI)	JSR 211
Scalable Vector Graphics (SVG) extension to 2D	JSR 226
Payment API (PAPI)	JSR 229
Advanced Multimedia Supplement (AMMS)	JSR 234
Internationalization (Mobile I18N)	JSR 238
Mobile Service Architecture (MSA)	JSR 248

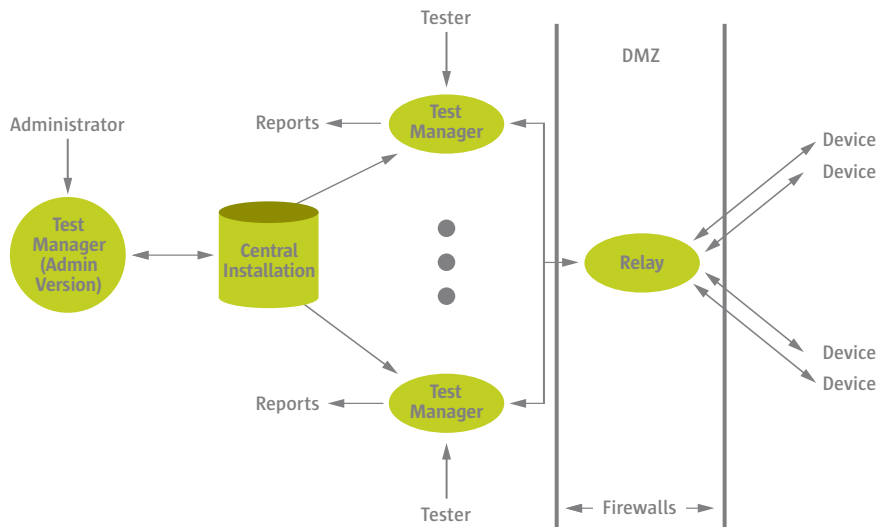


Figure 1. Java Device Test Suite environment — centralized administration deployment

In addition to Java specification-based tests, Java Device Test Suite includes two sets of readiness tests. One set quickly verifies the ability of early development devices to run the rest of the tests. A second set discovers the JSRs and optional packages that are supported by a device, so that no time is wasted running irrelevant tests.

Extending test coverage

The test packs included in the Java Device Test Suite can be adapted and extended to support additional device features. Multimedia test packs have built-in support for popular audio, video, and MIDI formats. These same tests can, without programming, be tailored to accommodate additional customer-specified formats.

Carriers and manufacturers invest significant resources in developing Licensee Open Classes to differentiate their devices. QA teams can create custom tests for, and install them into, the Java Device Test Suite.

An accommodating test environment

The Java Device Test Suite architecture accommodates the workflow of both carriers and device manufacturers. Self-administration can be allowed in every workstation, or test administration can be limited to a single manager. The system's shared central installation holds the tests, documentation, and framework executables. (Figure 1 and 2.)

The Java Device Test Suite includes thousands of automated tests and a command line-interface that runs tests and generates reports without operator intervention.

Firewall support

When testing over the air, the relay facilitates test manager-to-device communication across a firewall. Only a single HTTP port needs to be opened in the firewall for the relay. Testing can also be conducted over a serial cable or local network, if support is built into the test device.

Learn more

To find out more about the Java Device Test Suite, please visit java.sun.com/products/javadevice.

About Sun

Sun provides a complete portfolio of affordable, interoperable, and open software systems designed to help you maximize the utilization and efficiency of your IT infrastructure. Built from the secure, highly available foundations of UNIX® and Java, these systems deliver implementations that are preintegrated and backward compatible. Sun's portfolio consists of Solaris and Linux software for SPARC® and x86 platforms, Sun N1™ software, and the Sun Java System.

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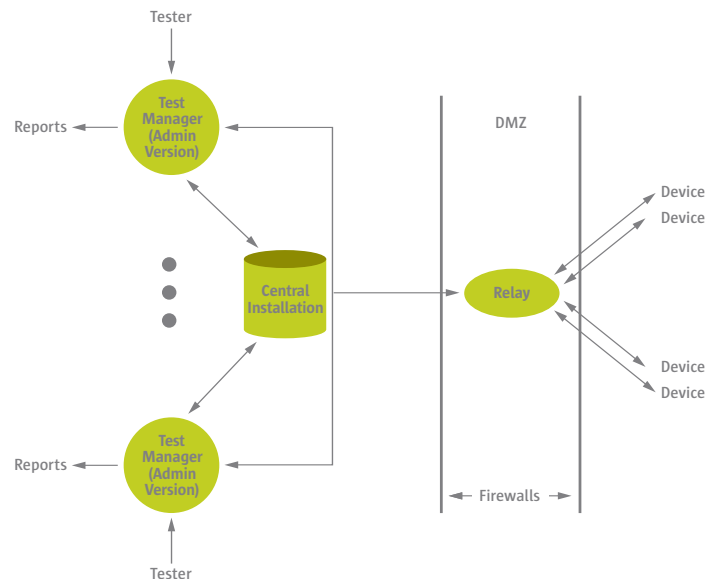


Figure 2. Java Device Test Suite environment — distributed administration deployment

implementations that are preintegrated and backward compatible. Sun's portfolio consists of Solaris and Linux software for SPARC® and x86 platforms, Sun N1™ software, and the Sun Java System.

The Java System is a radical approach that changes forever the way businesses acquire, develop, and manage software. Only Sun has the experience and the end-to-end portfolio to deliver such a unique and industry-revolutionizing strategy. With the Java System, network services and critical business applications are up and running faster, easier, and at a lower cost than ever before, so you can focus on innovation, competition, and bottom-line results.

Operating system requirements

- Windows XP SP2
- Solaris™10 Operating System (OS)