

Java SIP

TOOLKIT

For Developing Java SIP Applications

RADVISION, the leading protocol toolkit vendor, is proud to introduce its new Java SIP toolkit. Based on RADVISION's award-winning SIP toolkit, the new Java SIP toolkit is a powerful and highly versatile set of tools designed to simplify and dramatically reduce development time of Java-based SIP applications, such as *Click to talk*, *Virtual Call Centers*, *Web Soft-Phones*, and SIP related *infrastructure based elements*, such as *SIP Proxies* and *SIP Registrars*. Implementing J2SE technology, the high performance Java SIP toolkit is IETF and JCP standards-compliant and provides multiple API layers for full user control and flexibility.

The Java SIP toolkit delivers superior performance, performing one scale faster than similar solutions – while never compromising Java's inherent ease-of-use. The Java SIP toolkit is based on RADVISION's industry-leading SIP toolkit, an interoperable, market-proven solution used by hundreds of customers worldwide.

Fully compliant with:

- RFC 3261
- JSR32 v1.2
- RFC 3262

The Java SIP toolkit comes with all the components developers require, including a set of quick start sample applications that demonstrate efficient JSR 32 API usage, a GUI test application and detailed documentation.

SIP – The Emerging Signaling Protocol

The Session Initiation Protocol (SIP) is emerging as the industry choice for real-time communication applications, such as voice and video over IP (V²oIP), Instant Messaging (IM), and presence. Based on proven Internet protocols, such as SMTP and HTTP, SIP is text-encoded and well-suited for the Internet and other IP environments. SIP provides the mechanisms to implement a broad range of features, including call control, next-generation service creation and interoperability with existing telephony systems. SIP is used as the signaling protocol in the most advanced and emerging architectures, such as IMS, TISPAN and PacketCable.

Java – Enabling Platform-Independent Development

Java is a popular software technology that embodies the concept of “write once – run all” – enabling written code to run on any machine or OS with no need to adjust the code to run on a specific platform environment. This is achieved by detaching the hardware processor from the compiled code, using a “virtual machine.” The Java programming language is very friendly and easy to develop on, and has become one of the most powerful and useful tools for rapid application development and service deployment.

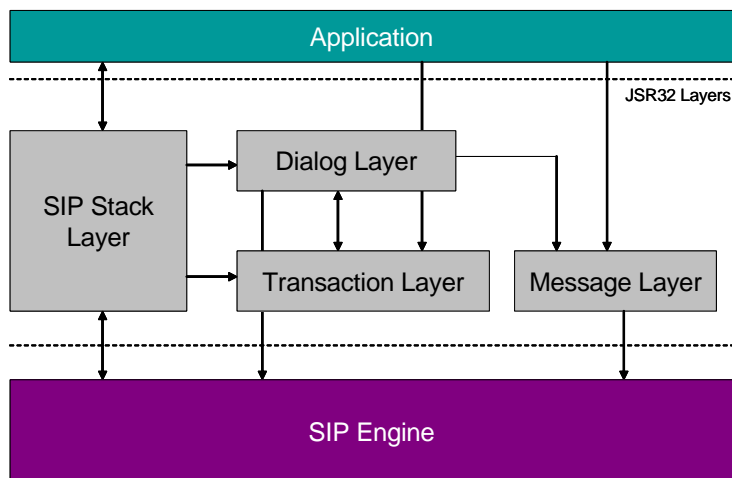
Java APIs are defined by the JCP (Java Community Process) organization. The JCP's standard for SIP toolkits is the JSR 32 (JAIN SIP API). As a leader in protocol definition and standardization efforts, RADVISION contributed significantly to the development of the latest JSR32 v1.2 standard.

JAVA SIP STACK ARCHITECTURE

The Java SIP Stack architecture follows the standard SIP stack layering model. By implementing the same standard layers, the Java SIP Stack enables superior flexibility as it enables the application layer to approach and manipulate each message.

The Java SIP stack architecture delivers the following advantages:

- Superior performance
- The JAVA SIP Stack inherits all the stability, maturity, scalability, and interoperability of RADVISION's proven legacy SIP Stack.



ARCHITECTURE LAYERS

SIP STACK LAYER – Sets the system configuration, logging, utilities and other resources, such as Providers and ListeningPoints. It is also responsible for the initialization and shutdown of all other layers.

DIALOG LAYER – Creates and manages dialog objects and maps incoming transactions to dialog objects.

TRANSACTION LAYER – Creates and manages transaction objects and maps incoming messages to transaction objects. Each transaction is responsible for maintaining states, and sending and receiving messages and retransmissions using the Transport layer.

SIP ENGINE

The SIP engine delivers superior performance. Whereas basic Java implementations might suffer from reduced performance compared with C-written stacks, RADVISION's Java SIP toolkit overcomes this challenge by using inner C layers, communicated through Java Native Interface (JNI) technology. The C layers are based on RADVISION's industry-leading SIP toolkit, providing outstanding performance and proven stability.

SIP ENGINE COMPONENTS

TRANSMITTER AND TRANSPORT – Responsible for sending and receiving SIP messages. The Transmitter layer performs all address resolution activities based on the message it is about to send. The Transport layer sends and receives messages, handles SIP networking I/O, and manages UDP sockets and TCP connections, as specified in RFC 3261.

MESSAGE AND PARSER – Handles parsing and encoding of SIP messages. Enables browsing and editing of SIP message contents, and comparison of message parts, such as SIP addresses and headers.

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