Indigo SIP Foundation Class™

The most comprehensive toolkit for rapid SIP server development

The Indigo SIP Foundation Class™ SDK consists of multi-platform, multi-layered Java APIs providing a strong basis for the development of SIP-based client and server applications such as SIP proxy servers, SIP registrars, etc. The stack's intuitive set of objects drastically simplifies the development of standards-based, high performance next generation communication applications.

SIP Intro

SIP originated in late 1996 where it used by the IETF for the distribution of multimedia content for IETF meetings, seminars and conferences. Because of its simplicity, power and extensibility, SIP was rapidly adopted for other uses across the IETF, most notably as a Voice Over Internet Protocol (VoIP) standard. Today, SIP is considered as the emerging signaling standard for all IP communications with a real-time interactivity component such as VoIP, instant messaging (IM), audio and video conferencing, e-learning, online gaming, etc.

SIP is used to establish, change and terminate sessions between one or more users in an IP-based network and is - as a part of the IETF standards process - modeled upon other Internet protocols such as SMTP and HTTP. This makes that SIP brings a new degree of scalability, interoperability and ease-of-building new services that is lacking in earlier, more telecom-centric protocols such as H.323.

SIP has gained broad industry acceptance and several industry leading companies such as Cisco, Microsoft, Ericsson and Nortel have announced their support for the SIP standard.

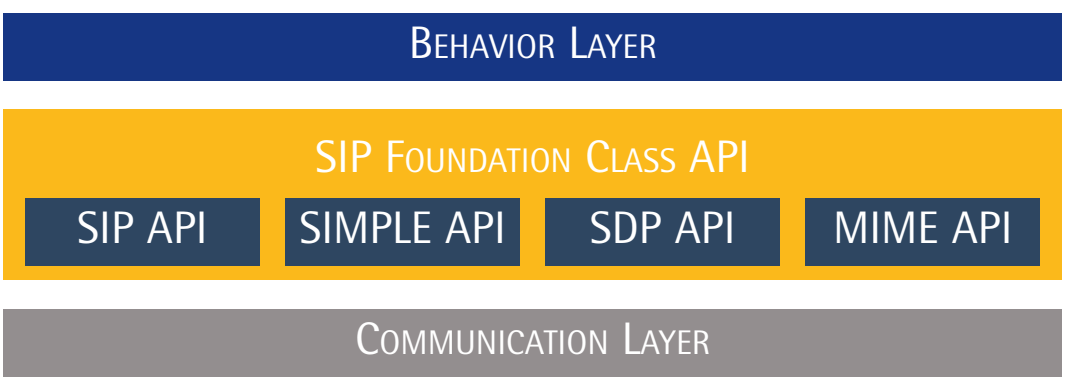
Products benefiting from the Indigo SIP Foundation Class™ are:

- SIP Proxy/Redirect/Registrar servers
- Softswitches
- SIP-enabled Firewall/NAT devices
- Gateways
- Conference bridges/Media Servers
- IP phones
- Softphones
- Instant messaging applications
- VoIP solutions
- Data/Voice/Video conferencing applications

Architecture

The Indigo SIP Foundation Class™ is the lowest level building block of Indigo's SIP server products and solutions. The toolkit benefits from a highly modular architecture in terms of performance, flexibility and scalability and consists of the following parts:

- a SIP parser and encoder (implementation of RFC 3261, including security);
- SIP extensions for presence and instant messaging (implementation of RFC3265, RFC3428 and Internet Draft Presence-07);
- an SDP protocol stack (implementation of RFC 2327); and
- a multipart MIME type implementation for SIP (RFC 2046).



The Indigo SIP Foundation Class™ provides an extensibility mechanism to create and use additional SIP methods, headers and parameters defined in extensions of the current standard (existing or yet to come).

Example code (Create INVITE)

```
SIPInviteMsg invite;
// create and initialize INVITE message
invite = new SIPInviteMsg();
// Set call id
SIPCallID callID = new SIPCallID();
callID.generateID("IndigoSoftware");
invite.setCallID(callID);
// Set to field
SIPUrl toUrl = \
new SIPUrl("sip:callee@destination");
invite.setTo(toUrl);
// Set request uri (same as to)
invite.setRequestUri(to);
// Set from field
SIPUrl fromUrl = \
new SIPUrl("sip:caller@origin");
invite.setFrom("Display Name",
fromUrl);
// Add subject
SIPMsgSubjectHdrField sub = \
new SIPMsgSubjectHdrField();
sub.setSubject("this is the subject");
invite.addHdrField(sub);
// Add body
MsgBody body = new MsgBody();
body.createMsgBody(); // not provided
invite.setMsgBody(body);
// Encode the message
byte[] message = invite.encode
// Message ready to be sent through
// the network
```

Features

- Compliance with SIP (RFC 3261)
- Compliance with SIMPLE extensions for Presence and Instant Messaging (RFC3265, RFC3428 and Internet Draft Presence-07)
- Compliance with SDP (RFC 2327)
- Low level APIs for full control over SIP/SIMPLE messages
- Parsing and generation of SIP messages
  - REGISTER
  - CANCEL
  - INVITE
  - BYE
  - ACK
  - OPTIONS
- Parsing and generation of SIMPLE messages
  - SUBSCRIBE
  - NOTIFY
  - MESSAGE
- Support of long and short headers
- Optimized parsing (lazy parsing)
- Multiple body formats
  - MIME
  - Multipart-MIME
- SDP API to generate and parse session descriptions
- Parsing and generation of SIP security headers
  - Digest
  - TLS
- Supported transport modes
  - TCP
  - UDP
  - TLS
- Provides powerful APIs for tracing and logging
- Extendibility to support
  - New SIP methods
  - New headers in existing methods
  - New parameters in existing headers

Benefits

High-Performance

Platform flexibility as the Indigo SIP Foundation Class™ is entirely Java based

Proven compliance with standards as Indigo is a long-standing participant of SIPit interoperability events

High-quality technical support, maintenance and product training

Professional Services for high value integration, customization, and consulting

Deliverables

A comprehensive documentation set containing:

- Code examples
- HTML based reference guide
- Developer's guide

Platforms supported

Intel Platform

- Pentium III 350, 512 MB RAM
- OS
  - Microsoft Windows NT4/2000/XP
  - Linux Kernel 2.2 and higher

UNIX Platform

- UltraSPARC II 400 Mhz, 512 MB RAM
- OS
  - Sun Solaris 7,8

* All platforms require J2SE 1.3. and higher

** Please enquire about support for other platforms and operating systems that may have become available

The Indigo product portfolio also includes:

Indigo SIP server & SDK™

A robust and comprehensible SIP server complemented by a high performance API toolkit for instant creation of communication applications. This powerful SIP solution pack forms a strong basis for architecting SIP-based networks and services.

Indigo Presence Server & SDK™

The first Java-based, full-fledged presence solution on the market. The Indigo Presence Server & SDK™ is the ultimate instrument to make the most of users' presence information in any type of Internet or telecom application.

Indigo Communications Server & SDK™

Indigo's Communications Server & SDK™ is an SIP/SIMPLE application server platform designed for the development and delivery of real-time communication applications and services. Combining the power of the Indigo SIP Server with the rich feature set of the Indigo Presence Server and their respective SDKs, the Indigo Communications Server & SDK™ enables rapid deployment of innovative real time communication services.

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