

## Session Initiation Protocol Stack for NexusWare® Core

### FEATURES

Session Initiation Protocol (SIP) Stack

RFC 3261 Compliant

Thread-Based Design for Maximum Performance

Extra Parameters for Custom SIP Header

Per-Call Context (State Checking)

Target Applications: SIP Server, SIP Proxy Server, SIP Softphone Application, or SIP Media Gateway

Installable Package for NexusWare® Core

Application Development with Windows® or Linux®

NexusWare SIP Kit contains:  
• SIP Stack (Linkable Library)  
• Example Applications  
• Software User Manuals

Consistent and Well-Documented Application Programming Interface (API)

NexusWare® SIP is a Session Initiation Protocol (SIP) stack and API software package included with NexusWare Core that provides a powerful foundation for application developers for building SIP proxy servers, SIP location servers, SIP registrar servers, and SIP media gateways for wireless and IP telephony systems.

Designed to work in conjunction with NexusWare Core, PT's CGL OS and development environment, NexusWare SIP is compliant with the RFC3261 specification to ensure interoperability and effortless integration of the latest advances in SIP into a wide range of applications that enable the following:

- 3G-SEG
- Access Controllers
- Application Servers (Proxy, Redirect, Registrar)
- BGCF
- Conference Bridges
- CSCF
- Gateways
- IM-MGW
- Interactive Voice Response
- MRFC
- Session Border Controllers
- SIP Multimedia Servers
- SIP-Enabled Firewall/NAT
- Softphones
- Softswitches
- Video Terminals
- Voice Enabled and e-Commerce Solutions
- Voice/Video Messaging

#### Configurability, Scalability, Compatibility

The full SIP stack provides all necessary SIP functionality and is complemented by a consistent and well documented API for embedded applications. Reliability is built in with the ability to encode, send, parse, and

receive SIP messages over UDP, TCP, and IPSec to manage SIP calls and transactions. The distributed processing architecture of NexusWare combined with our broad hardware offering allows for scalability and growth as required, without compromising overall host system performance. Designed to interoperate with PT's wide range of intelligent compute and T1/E1/J1 modules, NexusWare SIP provides extensive system scalability and flexibility to build applications that support next-generation services and functionality.

#### NexusWare SIP Stack Features

- Configurable Parameters for Default SIP and RTP Port Numbers
- IPv6
- NAT Traversal
- Packetization Parameters for Controlling Re-transmissions, Number of Connections
- Presence
- SDP Encapsulation
- SIP Message Generator: INVITE, ACK, BYE, OPTIONS, CANCEL, REGISTER, NOTIFY, SUBSCRIBE, INFO, and REFER
- SIP Response Generator
- SIP/SDP Message Parsers
- Supports Call Hold, Call Waiting, Call Transfer, Call Forward, etc.
- Supports TCP and UDP
- Timer Management



# NexusWare® SIP PRODUCT SHEET

## Session Initiation Protocol Stack for NexusWare® Core

### ORDERING INFORMATION

#### PT-NSIPKIT-12351

SIP Installable Software Package

#### PT-NXSWARE-11359

NexusWare® Core Development Environment and Associated Tools

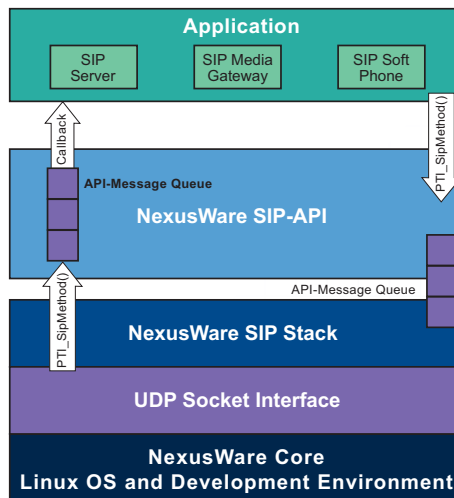
#### PT-SIPMANP-12357

SIP Software Maintenance Package

For more information visit [www.pt.com](http://www.pt.com) or call your local representative.

### NexusWare® SIP Software Architecture

The following diagram reveals how NexusWare SIP interacts with the NexusWare Core OS, PT's hardware, and the SIP application.



NexusWare® SIP Environment

### SIP API Overview

The ease of use provided by NexusWare SIP comes from its fully documented API. The NexusWare SIP API provides a full set of services that allow for seamless interaction with the application and transport stack (TCP/ UDP).

The SIP-API connects the SIP Stack to a user's application. There is also a set of API functions by which the application communicates to the SIP Stack and which can be grouped into **SIP Stack Control**, **SIP Stack Configuration**, and **SIP Messages** categories:

- **SIP Stack Control** APIs bind to the SIP Stack and register application callbacks, start/stop the SIP Stack and monitor the application queue. The SIP Stack control functions include: SipBindAPI, UnbindAPI, Start, Stop, and WaitForCall.
- **SIP Stack Configuration** APIs allow users to configure global parameters that include: SetMaxForwards, SetMaxCalls, SetPort, and SetPubIP.
- **SIP Messages** are sent out the SIP Stack. These include: Invite, Cancel, Transfer, Register, Notify, Ringing.

NexusWare SIP also features a set of application callbacks, which are called by the SIP-API on behalf of the application when the SIP Stack communicates to the application. These callbacks are generally initiated by the SIP Stack receiving SIP messages from the UDP socket. These callbacks include: Invite, Cancel, Transfer, Refer, Reinvite, Register, Notify, Options, Ack, Cancel, and Response.

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