

Stratus® SINAP™ Family

Develop and run revenue-generating voice and data services — SS7, IP, or converged. Landline or mobile.

Stratus' carrier-grade signaling software, Stratus® Intelligent Network Applications Platform (SINAP™), supports the SS7 and IP protocols you need to develop, run, manage, and scale revenue-generating voice and data services in circuit and packet networks.

SINAP software enables rapid application development through its effective combination of software development tools and open application programming interfaces (APIs) at all protocol layers (INAP, TCAP, SCCP, ISUP, and MTP-3). These services can run transparently over both SS7 and IP networks. Standards-compliant SINAP products run on Stratus® Continuum® servers with the HP-UX® operating system and on the new ftServer® T Series with fault-tolerant Linux. Whether you are a network operator, service provider, or solution developer, you benefit from a trusted, open, and robust SS7/C7 platform.

This widely deployed development and runtime environment gives you the tools to accelerate time to market and reduce the cost to develop services that are network as well as protocol independent. You are able to achieve seamless migration of applications from traditional SS7-over-MTP networks to emerging SS7-over-IP networks that use the SIGTRAN M3UA and SCTP protocols. And you'll help maximize investment in existing circuit infrastructure even as you develop and deploy converged and next-generation packet services.

The SINAP portfolio remains at the forefront of technological advances, emerging protocol standards, and solution-enabling features. When you build your solution or service on SINAP software, you have the confidence of using a platform that has consistently demonstrated value in operator networks for more than 10 years.



The SINAP portfolio brings it all together:

- Enables software-based IN, IP, converged, wireline, and wireless services
- Open, standard SS7/C7 platform deployed globally
- Faster time to market, C, Java™-based SLEE
- Higher service quality through SIBs reuse
- Continuous availability of revenue-generating services
- Maximum price/performance — transactions/second, response time
- Ultra-scalable to support growth of services, subscribers via SS7-over-IP
- Dynamically configurable combinations of protocols, stacks, applications
- Easy to manage, install, configure, maintain
- Worldwide, 24 x 7 customer support
- Extensible to support new, open standards and technologies, including SIGTRAN

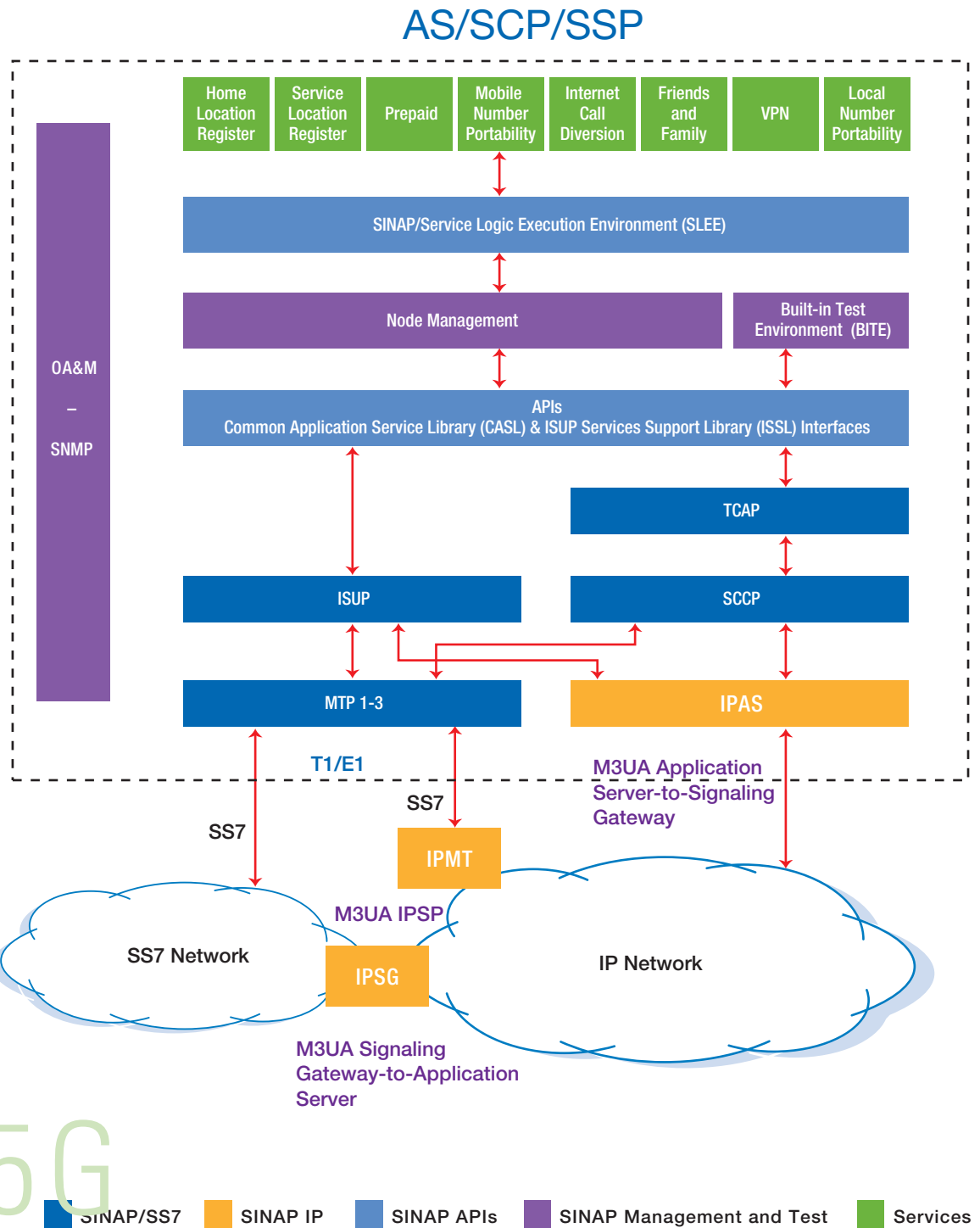
SS7

c o n v e r g e d

IP

SINAP components in the network

The SINAP family: your proven SS7 development and runtime environment on leading UNIX operating systems.



3G

M o b i l e

2.5G

Key

The SINAP product family combines an SS7 stack with converged IP, a management and test subsystem, and an API for creating C programs and Java-based intelligent network SCP/SSP services

Open, complete platform for revenue-generating services

SINAP/SS7

This high-performance protocol stack for SS7 and C7 solutions — offering greater performance, reliability, and scalability than other stacks running on the same hardware — is widely deployed today within large-scale GSM and IN solutions, in both ITU- and ANSI-compliant networks around the globe.

SINAP/Multistack

Flexible multistack capability enables internetwork gateways and convenient test configurations. Combinations range from four SS7/C7 nodes of the same protocol variant on one network, to four nodes of different protocol variants on four different networks. Hybrid stacks with one protocol variant over another are supported.

SINAP/C-SLEE

(Service Logic Execution Environment)

This high-performance, scalable service logic execution environment supports C language-based applications that use IN protocols, including AIN 0.1, CS-1, CS-2, and CAMEL.

SINAP/J-SLEE

(Service Logic Execution Environment)

This high-performance, scalable service logic execution environment supports Java™ language applications that use IN protocols, including AIN 0.1, CS-1, CS-2, and CAMEL.¹

SINAP/J-SCE

(Service Creation Environment)

This integrated environment for building and testing Java applications works with popular commercial Java IDEs, including Sun™ ONE Studio 4.²

Network operators and solution developers use SINAP software to build and run market-leading services — as they've done for 10+ years.

T D M A G S C D M A

SINAP/IP

Supporting SIGTRAN M3UA standards, SINAP/IP can be configured as either an IPAS, IPMT, or IPSG network element. These products, described below, are add-on modules to the SINAP core. Significantly, existing SINAP applications developed for SS7 networks need only be recompiled with SINAP IP software to run on IP networks.

- **IPAS (IP Application Server)**

This network element enables INAP, TCAP, and SCCP services on servers in IP networks. SINAP applications built to run on SS7-over-MTP can run on SS7-over-IP without modifications. IPAS also combines with signaling gateways to provide distributed, scalable, and continuously available IP-based SS7 services.

- **IPSG (IP Signaling Gateway)**

INAP, TCAP, and SCCP services on servers within IP networks can interoperate with traditional SS7-based signaling end points (SEPs) using an IPSG. It interconnects traditional SS7-over-MTP end points with SS7-over-IP based servers that support SIGTRAN protocols. IPSG load-shares incoming TCAP and SCCP messages (from the SS7 network) across dynamically registered IP-based application servers while preserving transaction context, which creates more scalable and resilient networks.

- **IPMT (IP Message Transfer)**

IPMT allows traditional SS7-over-MTP based SEPs to interoperate with other SEPs across IP networks, without requiring changes to the legacy SEPs. For example, a network operator could continue to use existing mobile switching centers (MSCs) over an IP network while introducing new IP-based services. The IPMT communicates with legacy SEPs using the traditional SS7-over-MTP protocol, then converts the messages using SIGTRAN's SS7-over-IP protocol to communicate to an IP-based SEP, or to communicate to another IPMT element that converts the messages back to SS7-over-MTP for connection to other legacy SEPs. IPMT also supplies the means to offload traffic — including selected subsets such as SMS, or all SS7 traffic — from overloaded SS7-over-MTP networks onto SS7-over-IP networks.

SINAP product specifications

Hardware platforms and Operating Systems

Stratus Continuum® 400 series	32-bit HP-UX 11.00.01, 64-bit HP-UX 11.00.03
Stratus ftServer T Series	ftLinux (Stratus fault-tolerant Linux)
Sun Netra™ 20 and Sun Fire™ V480 servers	64-bit Solaris 8

System I/O adapter support

TCAP and ISUP	U420 supports 1 T1/E1 port and 8 SS7 links, U403 and U405 (V.35) on HP-UX 11.00.01 only
TCAP	U916/U918 supports 4 T1/E1 ports, 32 TCAP low-speed links
ISUP	U916/U918 supports 4 T1/E1 ports, 16 ISUP low-speed links
Stratus Continuum systems	Up to 8 U916s: maximum 128 SS7 links per system
Stratus T Series systems	Up to 10 U918s: maximum 128 SS7 links per system
Sun servers	Up to 3 U916s: maximum 96 SS7 links per system

SINAP/SS7 features

Multistack	Supports 1 to 4 nodes (point codes)
Application memory requirement	Supports 32-bit and 64-bit mode applications
Node Management Subsystem	Includes terminal handler, disk I/O server, client management, command manager, trouble management, measurement collection, deferred message
Built-in Test Environment (BITE)	Monitors applications, processes, nodes, links, IPC; includes built-in log analysis program
Simple Network Management Protocol (SNMP)	MIB and subagent

SINAP/IP features

IPAS in ASP mode	Allows IPAS to IPSP connectivity
IPAS in IPSP mode	Allows IPAS to IPAS and IPAS to IPMT connectivity

SINAP/SS7 protocol conformance

ITU-93 MTP1, MTP2, and MTP3	Q.701, Q.702, Q.703, Q.704, Q.707
ITU-93 and ITU-91 ISUP	Q.761, Q.762, Q.763, Q.764, Q.767
ITU-97 and ITU-93 based ISUP variants	UK (97) Belgium, China, Telstra (Australia), NTT, Spain, Mexico, Germany, Taiwan, Sweden, France Telecom
Q-767 based ISUP variants	Netherlands, Italy, Brazil
ITU-93 TCAP	Q.771, Q.772, Q.773, Q.774
ITU-93 SCCP	Q.761, Q.762, Q.763, Q.764, Q.767
ANSI-92 MTP1, MTP2, MTP3	ANSI T1.111
ANSI-92 SCCP, ISUP, TCAP	ANSI T1.112, ANSI T1.113, ANSI T1.114
SINAP/C-SLEE and J-SLEE protocol conformance	ETSI INAP, CS1, CS2; CAMEL; AIN 0.1
SINAP/SS7-TCAP performance (simple application)	Up to 10,000 TCAP TPS @ 80% CPU utilization
TCAP response times	Average < 50 ms, 95% < 100 ms, 99% < 250 ms

SINAP/IP protocol conformance

SCTP	RFC-2960, RFC 3309
M3UA	RFC 3332
SUA*	draft-ietf-sigtran-sua-16

SINAP/SS7 configuration support

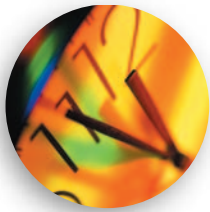
Links per SINAP platform	128 Low Speed Links (LSL), 16 High Speed Links (HSL)* >128 LSL* across all nodes
Link operating speeds	CCITT/ANSI/China/Korea : 4.8, 9.6, 19.2, 38.4, 56, 64 Kbits/s NTT: 4.8, 48, 64 Kbits/s
Max. number links/link sets	16
Max. number of routes per route set	ITU/NTT/China/Korea: 8; ANSI: 4
Max. number route sets/node	2,048 (4 nodes: max. of 8,192 route sets)
Max. number applications registered with a SINAP node	32 (4 nodes: max. of 128 applications)
Max. processes running concurrently	255 (registered with a SINAP node)
Max. instances per application	16
Max. links per combined link set (CLS)	32 ANSI

SINAP/IP configuration support

Number of IPASs connected to IPMT/IPSPG	200
Max. number of IPASs with the same point code	16
Max. number SSNs for all IPASs	254
Max. number of IP Addresses per SCTP endpoint	2, a primary and a secondary for multi-homing
Max. number of SCTP associations to a single endpoint	1 may be multi-homed
Max. number of SCTP associations per stack	200 on each of four stacks (each stack 1-2 IP interfaces)

* Support planned for future release

Specifications and descriptions are summary in nature and subject to change without notice.



**Continuous
Availability**



**Operational
Simplicity**



**Financial
Advantage**

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