

Key Features

- **Reliable** - Distributed and concurrent signaling up to eight hosts
- **Cost Efficient** - Operates on industry-standard, NEBS-compliant servers
- **Open, Standards-based** - Supports SIGTRAN and SS7 protocols
- **Capacity** - Signaling capacity up to 511 SS7 links
- **Signaling points** - support up to eight
- **Global Variants** - Compatible with networks in over 60 countries
 - ANSI, ITU, China, and country variants of MTP, ISUP, SCCP and TCAP
 - GSMA I/F, GSM MAP, ANSI 41
- **Node management** with MML, GUI, and SNMP
- **Virtual SS7 Environment** simulating an SS7 board, its driver, and cable connections
- **SS7 Interface Support** for T1, E1, and J1 (75, 100, 120 Ohm), V.35 and RS-449 interlaces
- **Board Support** for PCI, PCI-e and PMC bus architectures up to 128 links per card
- **Dual TCP/IP** communication
- **H.110 bus** support
- **OS Support** Solaris 9, Solaris 10, RedHat Enterprise Linux 5
- **STP Global Title Translation**
- **Fault detection** - investigation and recovery mechanisms

Distributed7 Product Family

NewNet Distributed7 Application Platform Summary

Distributed7 is a carrier grade, high-performance, multi-host distributed telecommunications application development environment. Developers can rapidly create and deploy highly fault tolerant revenue-generating services or mission-critical network nodes for global wireless, VoIP, and wireline service providers.

Distributed7 resides on open architecture computer platforms using off-the-shelf SS7 controller boards that plug into industry-standard backplanes. Distributed7 provides a collection of telecommunications software building blocks for SS7 and IP application development, including MTP, SCCP, TCAP, ISUP, IS-41, GSM A-Interface, GSM MAP, SIGTRAN, Diameter and SIP.

With the Distributed7 platform, software fault tolerance is achieved through multi-host distributed system architecture with built-in recovery mechanisms, including a TCP/IP-based heartbeat mechanism, SS7 layer distribution, and data replication in both the user and kernel space across all of the host platforms. This allows for example all stable ISUP calls to recover gracefully from any host failures.

Signaling Control and Transaction Handling Functions

The Distributed7 SS7 platform provides all the signaling control and transaction handling functions to efficiently build network elements and services, including:

- Service Control Point (SCP)
- Intelligent Peripheral (IP)
- Service Data Point (SDP)
- Protocol Converter
- Home Location Register (HLR)
- Signaling Gateway (SG)
- Visitor Location Register (VLR)
- Media Gateway Controller (MGC)
- Mobile Switching Center (MSC)
- Authentication Center (AuC)
- Intelligent and Next-Generation Network Services

Distributed Functionality

The highly reliable Distributed7 platform supports distributed system functionality in MTP, SCCP, TCAP and ISUP layers. In the distributed configuration, multiple Computing hosts run concurrently, as part of a single signaling point. Distributed7 provides the fail-over mechanisms to prevent service interruption. Links from the SS7 network terminate on multiple hosts, even if they belong to the same link set. Furthermore, all hosts are simultaneously active. If a host becomes unavailable, the Remaining hosts continue to process the active ISUP calls, bringing availability to 99.999%.

NewNet Distributed7 Signaling Gateway Platform Summary

Distributed7 offers service providers a comprehensive and cost-effective SS7/IP gateway solution, that provides seamless interconnection between the public switched telephone network (PSTN) and IP networks. When deployed with its Signaling Gateway option, Distributed7 acts as a front-end distributed SS7 server for enhanced services applications. It uses IETF SIGTRAN protocols to carry SS7 MTP user traffic (ISUP, SCCP, and TCAP) over MTP3 user adaptation layer (M3UA)/stream control transmission protocol (SCTP)/IP when communicating with the IP-based, next-generation network elements. When configured with this option, Distributed7 also supports signaling connection control part (SCCP) global title translation (GTT) service.

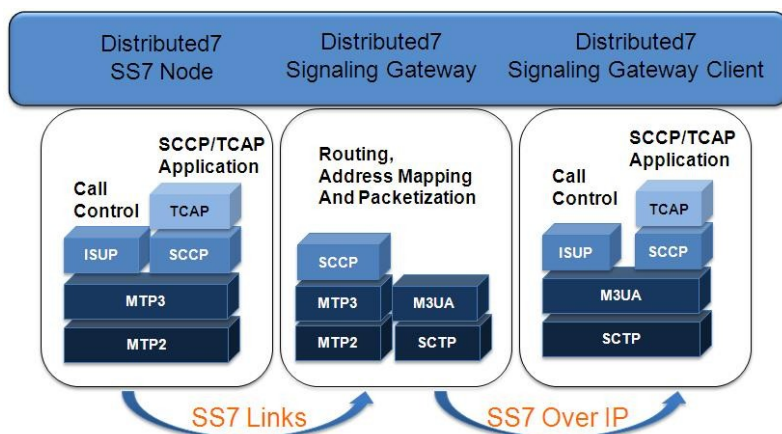
Technical Specifications

FEATURES	DESCRIPTION
SIGTRAN Stack	RFC 3332/4666 compliant M3UA RFC 2960 compliant SCTP
SS7 Stack	ANSI (1992, 1996), ITU (1993,1997) compliant SCCP, TCAP, ISUP
System Administration and Network Configuration Interface	Standards-based MML and SNMP
SS7 API	C/C++ API for SCCP, TCAP, and ISUP, JAIN API for TCAP/ISUP
Systems Availability	99.999% availability in distributed configuration
IP to SS7 routing mechanisms	Routing keys based on DPC, OPC, SIO, and CIC
Security	IPsec

Capacity Specifications

Item	Capacity
Hosts support in Cluster	8
Own Signaling Points	8
SS7 Links	511
Link Sets	64
Route Sets	2048
Destination Point Codes in IP Domain	2048
Application servers/routes keys	2048

Architecture Diagram



Performance Specifications

Layer	Performance
M3UA Traffic	10,000 Message Signaling Units (MSUs) per second/50 bytes/MSU

Key Features and Functions

- Global SS7 implementation of ANSI, ITU, China, and wide range of country variants including hybrid stacks
- Configurable from 1 simplex to 8 distributed hosts
- Distribution of SS7 layers across multi hosts in a flexible manner i.e. full concurrent stacks with applications. Partial stack, front-end/back-end configuration
- Distributed processing environments with up to 8 inter-connected hosts with up to 8 signaling points per cluster
- Node management with MNL, GUI, and SNMP
- Virtual SS7 environment simulating an SS7 board, its driver, and cable connections
- Support for T1, E1, and J1, (75,100,120, Ohm), V.35 and RS-449 interfaces
- Support for PCI and PMC bus architectures with up to 128 links per card
- Dual TCP/IP communication
- H.110 bus support

NewNet Distributed7 Signaling Transfer Point

Designed for wireless, VoIP, and wireline networks, the NewNet Distributed7 platform can act as an SS7 link concentrator, functioning as a Signaling Transfer Point (STP). In this configuration it receives traffic from the SS7 network and routes it to specified Signaling End Points (SEP). When deployed as a mini-STP, Distributed7 lowers the costs of operation within service provider's networks by reducing the number of expensive links needed on Class 5 switches. It also reduces costs by consolidating the number of links connecting to an inter-working network. Service providers can benefit when using Distributed7 as both an interconnecting node and as an internal hub for SS7 traffic.

Reduce the number of SS7 links with Distributed7 STP option



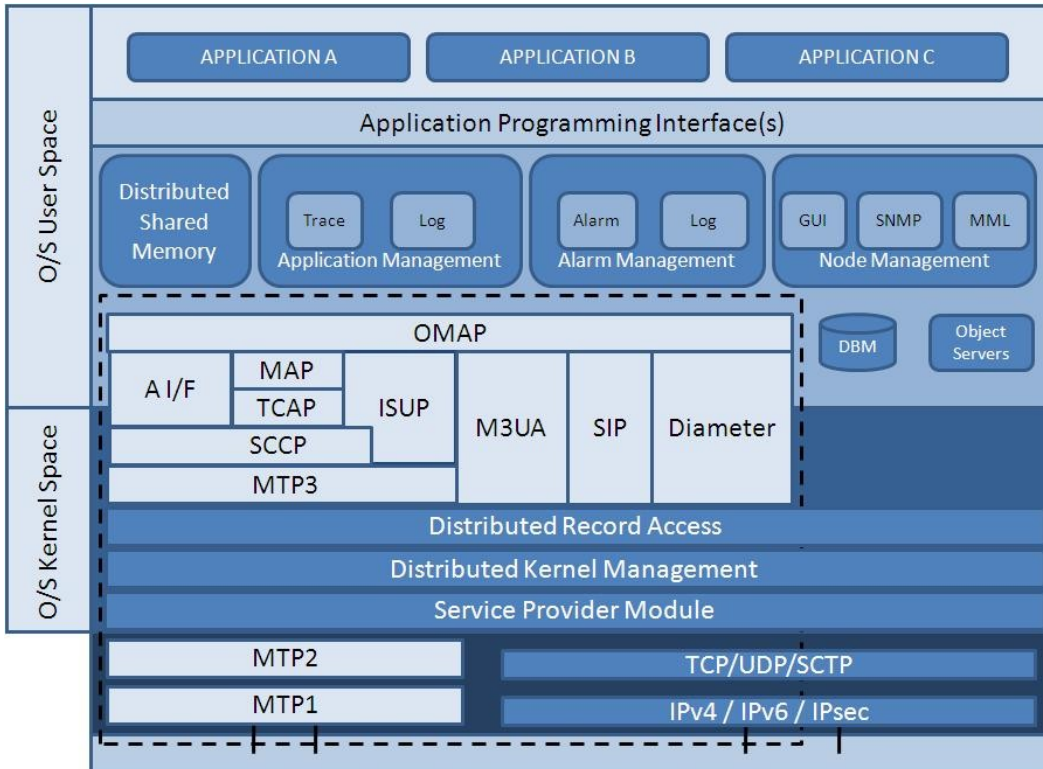
Key Features and Functions

- **Reliable-** Distributed Architecture, eliminating single point of failure and message loss
- **Versatile-** Stand-alone product which can be deployed in a number of configurations to replace underutilized, expensive long-haul SS7 links
- **Cost Efficient-** Operates on industry-standard, NEBS-compliant servers taking advantage of the price, performance, and reliability improvements in the underlying hardware platform
- **Highly Scalable-** Supports both small and large configurations
- **Open, Standards-based-** Supports SIGTRAN and SS7 protocols including integrated GTT services support to and from IP

Capacity Specifications

- Up to 511 SS7 links
- Link set connections for up to 64 adjacent signaling nodes
- Route set connections for up to 2,048 signaling nodes
- 16 Global Title types
- 256 Translation types per global title type

Distributed7 Software Architecture



Distributed7 Compliance & Operating Environment

SS7 Standards Compliance

SS7 Layer	ANSI (1992,1996)	ITU (1993, 1997)
MTP	ANSI T1.111.1 - T1.111.8	ITU Q.701-Q.708
SCCP	ANSI T1.112.1 - T1.112.5	ANSI T1.112.1 - T1.112.5
TCA	PANSI T1.114.1 - T1.114.5	ITU Q.771-Q.774
ISUP	ANSI T1.113.1 - T1.113.4	ITU Q.761-Q.764

Wireless Standard Compliance

Interface	Document Number
GSM A I/F	ETSI GSM 04.01-08
GSM MAP	ETSI 09.02 Version 7.3.0
ANSI-41	EIA/TIA IS41.1D - IS41.5D

Technical Operating Environment

Processors	Bus	OS	SS7 Interface
SPARC	PCI	Solaris 9	T1, E1, HSL
AMD	PCIe	Solaris 10	V.35
Intel	PMC, AMC	RedHat Enterprise Linux R4,R5	RS-449

About NewNet Communication Technologies

NewNet Communication Technologies is a recognized leader in signaling and messaging solutions for wireless, IP, and wireline networks. The robust, scalable signaling platforms have enabled rapid development and deployment of a wide spectrum of carrier grade, revenue generating and compliance applications. NewNet is a pioneer in the development of standards based SS7 signaling solutions and is committed to providing unparalleled service and value to our customers. For nearly two decades, NewNet has been synonymous with messaging excellence and is the trusted name in SS7 and SIGTRAN signaling solutions.

For more information on our products and services, visit our website at: www.newnet.com

NewNet Communication Technologies, LLC

Trumbull Corporate Park
35 Nutmeg Drive,
Trumbull, CT 06611

www.newnet.com

Specifications published here are current as of the date of publication of this document. NewNet Communication Technologies LLC reserves the right to change specifications without prior notice. At any time, you may verify product specifications by contacting our headquarters in Trumbull CT.

©2010 NewNet Communications Technologies, LLC. All rights Reserved.



NewNet Communication Technologies

FOUNDATIONS FOR NETWORK INNOVATION