TelcoBridges

The TelcoBridges Tdev™ TMP7900 is a very high capacity, carrier-grade computer telephony (CTI) development platform that meets the needs of service providers looking to expand their value-added services (VAS) offerings, while consolidating multiple racks of devices for call control and media into a single system. Offering multiple redundant quad-core Intel Xeon©-based hosts with multi-terabyte local RAID-1 storage, the TMP7900 can run additional applications such as softswitches and session border controllers locally, further answering the need for device consolidation and convergence.

While also delivering seamless voice interoperability across TDM and IP networks, with support for core telecom features such as VOIP signaling, transcoding, tandem switching and advanced call routing, the TMP7900 provides an advanced application platform for delivering ring-back tones, unified communications, pre-paid/post-paid calling, conferencing, Fax over IP (T.38), voicemail, and other enhanced services to subscribers, irrespective of access protocol or device. Leveraging TelcoBridges' Toolpack™ software toolkit, the TMP5900 provides the ability to rapidly develop and deploy applications that tie together real-time communications from the network with stored external data sources to provide unique subscriber-specific services.

The TMP7900 provides the ultimate in flexibility, easily scaling to full rack capacity of 1024 T1/E1/J1, 48 DS-3 or 16 STM-1 interfaces as service uptake increases, with the ability to mix and matching different interface types. At full capacity, the TMP7900 provides up to 32,768 non-blocking universal voice ports.

FEATURES & BENEFITS

Carrier grade: Architected to NEBS Level 3, the TMP6400 is designed to meet the need for reliability that service providers and their customers demand. The TMP6400 features a non-blocking architecture, providing full availability of call channels and other system resources (IVR, VOIP).

Density: Supporting up to 1024 T1/E1/J1, 48 DS-3 or 16 STM-1 interfaces in a single system, the TMP7900 offers significant density in a single rack. The TMP7900 provides up to 32,768 IP voice ports at an industry-leading lowest cost per port. Enables consolidation of multiple disparate signaling and connectivity devices into a single unified system.

High-availability: The TMP7900 features redundancy at multiple layers across all hardware and software elements to ensure maximum uptime and graceful recovery in case of component failure. Network redundancy is provided with support for multiple redundant links and concurrent SS7 point codes.

Flexibility: The TMP7900 supports multiple 'any-to-any' switching across multiple network interfaces and signaling protocols (SS7, ISDN, CAS R2, SIGTRAN, SIP and H.248) in a single system. It also supports transcoding for all major wireline, wireless and internet codecs.

For more information on how the Tmedia TMP7900 computer telephony platform can help transform your offerings, visit www.telcobridges.com.

AVAILABLE CONFIGURATIONS

TMP7910 – 256 x T1/E1/J1
TMP7912 – 512 x T1/E1/J1
TMP7914 – 768 x T1/E1/J1
TMP7916 – 1024 x T1/E1/J1
TMP7920 – 12 x DS-3
TMP7922 – 24 x DS-3
TMP7924 – 36 x DS-3
TMP7926 – 48 x DS-3
TMP7930 – 4 x STM-1
TMP7932 – 8 x STM-1
TMP7934 – 12 x STM-1
TMP7936 – 16 x STM-1

Each configuration is available with AC or DC power.

> Tdev **TMG7900**

TMP7900 SPECIFICATIONS

NETWORK INTERFACES
Telephony
256 to 1024 T1/E1/J1 TDM ports (hardware & software upgradeable); or
12 to 48 DS-3 (hardware & software upgradeable); or
4 to 16 OC3/STM-1 (with Automatic Protection Switching (APS))
Additional T1/E1/J1 interfaces for SS7 signaling and/or BITS synchronization

Capacity
TDM: 1536 to 32,768 channels

VoIP: 1536 to 32,768 universal ports per device; even more using less complex codecs such as G.711

WAN IP
Multiple 100/1000 Base-T for VoIP traffic

LAN
Multiple 100/1000 Base-T access for OAM&P

MEDIA PROCESSING

PCM Coding	A-law to µ-law encoding and conversion
Universal Codecs	G.711, G723.1, G.726, G.729ab, T.38 (2048 channels)
DTMF Relay	RFC2833, SIP INFO method, in-band
Echo Cancellation	G.168 – 128ms tail length on all channels simultaneously
Fax Support	T.38 fax relay, Group 3, Fax/modem bypass, G.711 fax fallback
Optional Codecs*	AMR, AMR-WB (G.722.2), GSM-FR/GSM-EFR, EVRC/QCELP, G.728, G729eg**,** iLBC

> Independent dynamic codec selection per channel

APPLICATION AND DEVELOPMENT SOFTWARE
TB Media Gateway™ application (w/source code)
> TDM-to-TDM switching, TDM-to-IP-to-TDM gateway, IP-to-IP hairpinning
> Transcoding, trunking, call routing, fax relay and other functions
> Call Detail Records (CDR): user-definable text files and RADIUS
>Call routing engine
>> Fully scriptable (based on Ruby scripting language)
>>CLI (ANI)-based routing and translation
>>DID (DNIS)-based routing and translation
>>Least cost routing (with time of day/week/year scheduling and other criteria)
>> Routing based on Nature of Address (NOA), Numbering Plan Indicator (NPI), and others
>>Pre-and post-routing digit translation
> High availability

Toolpack Application Development Environment
> Pre-developed C++ classes (call bridging, call routing, IVR, embedded web-based GUI, voicemail, ODBC database access/RADIUS for CDRs, etc.)
> Linux, Intel/SPARC Solaris, Windows OS environments

REGULATORY COMPLIANCE

EMC	FCC Part 15, EN55022, EN61000, ENV50204
NEBS	Designed to meet Level 3
Safety	CE, UL60950, CSA C22.2 No.60950-1-03

SIGNALING
ISDN PRI (14+ variants), National ISDN-2, Euro ISDN, DMS100, DMS250, 4ESS, 5ESS, Japan INS-NET1500
SIP: RFC 3261 User Agent, SIP Authentication
CAS R2: scriptable state machine (shipping in Q3 2010)

SS7:* (20+ variants) MTP2, MTP3, SS7/C7 TCAP and ISUP
> Up to 64 SS7 links, up to 2048 CICs, HSL, redundant SS7, single or multiple point codes
SIGTRAN:* M2PA, M2UA, M3UA
H.248:* ITU-T H.248.1 (shipping in Q3 2010)

QUALITY OF SERVICE (VoIP)
Dynamic jitter buffer (adaptive and fixed), Packet loss concealment, Silence Suppression; Denial of Service (DoS) protection for VoIP media

IVR FEATURES
DSP-based plug-in modules with options of 512, 1024, 1536 and 2048 channels per system component; maximum total capacity of 32,768 channels per system; field upgradeable
> Play and record
> DTMF detection, generation, suppression
> Voice Activity Detection (VAD), Comfort Noise Generation (CNG), Automatic Gain Control (AGC; conferencing only)

MANAGEMENT INTERFACES
Multiple 100/1000base-T and DB-9 management interfaces

MANAGEMENT & CONTROL
> SNMP v2 GET of individual appliance configuration and statistics
>TelcoBridges Element Management System (Toolpack)
>> Live configuration and software upgrades via HTTP
>> Monitoring via HTTP
>> Configuration of multiple devices in the same system with a single interface

HARDWARE SPECIFICATIONS
Physical Interfaces
PSTN: 16 to 1024 T1/E1/J1 via RJ45, 4 to 48 dual BNC DS-3, 4 to 16 STM-1 optical or electrical link (with APS)
IP: Multiple 100/1000 Base-T Ethernet VoIP ports
OAM & Control: Multiple 100/1000 Base-T Ethernet ports

CPU
Multiple redundant Intel Xeon quad-core servers with X3470 CPU @ 2.93Ghz; each features 8 GB RAM, 2 x 500GB SATA HDD configured for RAID-1; Intel 3400 series motherboard

Dimensions
42U rack composed of multiple 2U units
>Each 2U unit is 3.5" H (88.9 mm) x 17.4" W (442 mm) x 16" D (406 mm)
Weight: 2U model @ 22 lbs (10 kg)

Environmentals
AC Power: 90 to 260 Volts AC, 47/63 Hz
DC Power: -40 to -60 Volts DC
Operating temperature range: 0 to +55 °C, 95% rel. hum. non-condensing
Storage temperature range: -10 to +75 °C, 95% rel. hum. non-condensing

* Additional licenses required.