TMGIP7800 VoIP Transcoding Gateway – Up to 33,920 transcoding sessions

The TelcoBridges *T*trans™ TMGIP7800 is our carrier-class VoIP transcoding gateway.

A *T*trans TMGIP7800 system consists of 1 or 2 TMGIP7800-CTRL controllers to manage up to 16 TMGIP7800-IP transcoder units.

Recognized for its high-capacity and high-performance, the TMGIP7800 is a 2,120 to 33,920 simultaneous G.711 to complex codec VoIP transcoding sessions gateway that offers the industry's highest density solution.

Product Characteristics:

- ✓ Up to 33,920 sessions of G.726 <-> G.711
- ✓ Up to 27,136 sessions of G.729A <-> G.711
- ✓ Up to 23,744 sessions of G.723 <-> G.711
- ✓ Up to 20,864 sessions of EFR <-> G.711
- ✓ Up to 18,432 sessions of AMR-NB <-> G.711
- ✓ Up to 17,792 sessions of G.723 <-> G.729
- ✓ Up to 12,992 sessions of AMR-WB <-> G.711
- ✓ Up to 12,992 sessions of G.722 <-> G.711
- ✓ 2,120 to 33,920 simultaneous G.711 codec VoIP transcoding sessions
- ✓ Hot-swap redundant power supply (AC or DC)
- ✓ From 3U to 20U VoIP transcoding gateway

*T*trans™ TMGIP7800 Data Sheet

TelcoBridges TMGIP7800 is a highly scalable transcoding solution growing from a few thousand sessions to tens of thousands sessions without expensive entry costs.   You can grow your TMGIP7800 system according to your business' needs

- Manage multiple N+1 redundancy groups
- Add new units to grow your live system without impacting actual traffic
- Single system to manage

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TMGIP7800 System

TMGIP7800 solution components
1 or 2 TMGIP7800-CTRL
1 to 16 TMGIP7800 transcoding units
2 TMGIP7800-TMS (optional)

TMGIP7800-CTRL
Manages all components in the system
Performs call control on all components
Supports active/standby redundancy

TMGIP7800-IP transcoding unit
Runs SIP signaling stack
Provides VoIP network interfaces
Hardware accelerated media processing
   and transcoding
Each additional unit adds more capacity to the system

TMGIP7800-TMS (optional)
Non-blocking universal media switched fabric
   across all transcoding units
Second TMGIP7800-TMS enables redundancy

Capacity and Voice Processing

VoIP interfaces
Up to 32 Ethernet ports 100/1000Base-T (2 per
   transcoding unit)
RJ45 connectors on rear of unit
Up to 256 different IP addresses (16 per
   transcoding unit)
Ethernet port bonding and 802.1q VLAN support

Vocoding
2,120 to 33,920 VoIP transcoding sessions
Universal codecs: G.711, G.723.1, G.726, G.729ab,
   T.38 V.17, clear mode (RFC 4040)
Other codecs: G.722, G.722.2 (AMR-WB), G.728,
   G.729eg, iLBC, AMR, EVRC, GSM FR/EFR,
   QCELP, T.38 V.34

Fax/modem/data
T.38 fax relay (V.17 and V.34)
Automatic G.711 fallback
Modem and data passthrough, NSE, VBD support
Clear mode (RFC 4040)

DTMF relay
RFC 2833/4733, SIP INFO method, in-band

Echo cancellation
G.168 echo cancellation
128 ms echo tail on all sessions simultaneously

Voice processing
Adaptive and programmable jitter buffer (20 to 200 ms)
Voice activity detection (VAD)
Comfort noise generation (CNG)

Voice recording and announcement playback
Up to 32,768 channels (using optional IVR
   mezzanine on each transcoding unit)
Also available using existing VoIP channels

High Availability & Redundancy
IP port redundancy
Self-recovery software
Seamless software upgrade
Fault tolerant software
Configuration database redundancy

Signaling
Simultaneously supports any combination or all of the
following signaling protocols:

SIP
Supported RFCs: 2327, 2833, 2976, 3204, 3261, 3262,
   3263, 3264, 3311, 3323, 3325, 3326, 3372, 3389,
   3398, 3515, 3551, 3555, 3578, 3581, 3665, 3666,
   3764, 3891, 4028, 4694, 4733, 5806
SIP-I/SIP-T
Extensive SIP header manipulation

*T*ctrl (Call Control)

Toolpack framework call control
Call routing based on: trunk group, calling/called
    numbers (with digit manipulation) and/or
    various other protocol information/headers.
Customizable routing including priority-based, load-
    balancing, black listing, call limiting, route
    retries, etc.
Customizable call cause code mapping
Programmable call routing
Access and manipulation of call parameters
RADIUS authentication and authorization (supports
    multiple RADIUS servers)
SIP-based local number portability and CNAM lookup

H.248 (MEGACO) call control
ITU-T H.248 versions 1 and 2
UDP, SCTP, IPSec transport
DTMF and fax detection
Call progress, DTMF and COT tone generation
Call quality and inactivity alerts
H.248 control port redundancy (supports virtual IP)

Session management and billing
SIP peer availability polling
RTP inactivity monitoring, RTCP
CDR generation (RADIUS and/or csv files)
Integrated lawful intercept (ETSI ES 201 671 v.2.1.1)

OAMP+T

Operations & Administration
Provisioning, management and status GUI
CLI and configuration file machine-to-machine
    interface (RESTful)
Configuration change audit logging
Access, user and privilege management
SNMP V2, V3 GET, TRAPs (alarms)
Extensive SNMP call statistics MIBs

Management
Up to 4 Ethernet ports 100/1000Base-T
    (2 per TMG-CTRL unit)
Up to 2 VGA for local monitor (1 per TMG-CTRL unit)
Up to 8 USB ports (4 per TMG-CTRL unit)
Up to 2 DB9 RS232 serial port (2 per TMG-CTRL unit)

GUI-based and CLI system upgrade
GUI-based configuration copy, backup and restore
Storage for multiple software versions
Storage for multiple configuration files
Extensive system status display

Provisioning
Non-service affecting configuration changes
Offline configuration validation
Multiple configuration files archive
Northbound API (RESTful) for automated provisioning

Network Analytics (*TB* Analytics)
Live call trace with protocol information and
    ladder diagrams
Live test call with media playback and recording
TB Sigtrace – Protocol signaling capture into pcap files
Media call recording (scriptable for calling and
    called numbers)

Maintenance
Replaceable fan filters on transcoding units

Regulatory Compliance

Safety
CAN.CSA C22.2
EN 60950-1:2005
EN 60950-1:2006

EMC
FCC Part 15:2013, Subpart B,
CE Mark (EN55022:2010, Class A, EN61000, ETSI EN
300 386)

HS Code
85176200

Environmental

Operating temperature:
    0 to +70 °C, 95% rel. hum. non-condensing
Storage temperature:
    -10 to +85 °C, 95% rel. hum. non-condensing
Designed to meet NEBS Level 3
RoHS compliant

TMGIP7800-CTRL specification

IBM 5458 System x3250 Express Model
Xeon E3-1231 v3 3.4GHz 1600MHz 4C processor
8MB cache, 16 GB memory
40 GB RAID 1 SSD

Electrical characteristics

TMGIP7800 System
90 to 260 VAC, 47 to 63 Hz, -40 to -60 VDC
Hot-swap redundant power supplies
    (for each component)
From 616 to 3210W power consumption
    (depending on configuration)

TMGIP7800-CTRL
90 to 260 VAC, 47 to 63 Hz
Hot-swap redundant power supplies
Maximum 460W power consumption

TMGIP7800-IP transcoding units
90 to 260 VAC, 47 to 63 Hz, -40 to -60 VDC
Hot-swap redundant power supplies
Maximum 131W power consumption

TMGIP7800-TMS
90 to 260 VAC, 47 to 63 Hz, -40 to -60 VDC
Hot-swap redundant power supplies
Maximum 72W power consumption

Dimensions & Weight

TMGIP7800 Overall System
3U to 20U depending on configuration
19" rack mount
Height: 5.25" (133.4mm) to 40.25" (1022.4mm)
Width: 17.4" (442mm)
Depth: 22" (559mm)
Weight: 60.2lbs (27.3kg) to 332.4lbs (151.4kg)

TMGIP7800-CTRL
1U, 19" rack mount
1.75" (44.5mm) H x 16.9" (429mm) W x 22" (559mm) D
23lbs (10.4kg)

TMGIP7800-IP transcoding units
1U, 19" rack mount
1.75" (44.5mm) H x 16.9" (429mm) W x 16" (406mm) D
14.25lbs (6.5kg)

TMGIP7800-TMS
1U, 19" rack mount
1.75" (44.5mm) H x 16.9" (429mm) W x 16" (406mm) D
17lbs (7.71kg)

*T*trans TMGIP7800-CTRL, front view

*T*trans TMGIP7800-CTRL, rear view

*T*trans TMGIP7800-IP transcoding unit, front view

*T*trans TMGIP7800-IP transcoding unit, rear view

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