Multi-Service Router Card

Multi-port design provides (1) Ethernet LAN and (1) Ethernet WAN interfaces

Provides support for up to (8) PPP/MLPPP WAN T1s, or up to (2) PRI/CAS voice trunk T1s and (6) PPP/MLPPP WAN T1s from a single chassis

Delivers wire-speed routing performance on Ethernet or T1 interfaces

Advanced IP Routing and IP Service Delivery

The Multi-Service Router (MSR) card integrates advanced IP routing and IP service delivery capabilities into Force10 Networks' widely deployed Adit 600 access platform, enabling service providers and enterprises to migrate seamlessly from TDM to next-generation VoIP and data services. With the MSR, any Adit 600 can be configured with a powerful set of Ethernet/IP routing features including SIP-based VoIP gateway, VPN (IPSec, PPTP, L2TP), Stateful Firewall/NAT, and VLAN tagging. The result is a cost-effective solution that supports an evolution from separate, service-specific networks to a converged, next-generation IP network for both enterprises and service providers.

An Optimized Solution for the Migration to VoIP

The high-capacity, carrier-class features of the MSR are specifically optimized for supporting the migration of small- and medium-sized businesses (SMBs) from traditional TDM voice services to VoIP. The MSR provides an integrated SIP-based VoIP gateway that supports up to 40 simultaneous FXS calls (G.711 and G.729 codecs) as well as T.38 fax support. Supporting SIP-FXS calling for line applications, and SIP-PRI/CAS voice trunk calling for PBX applications, the MSR can also be paired with the CMG module in a single Adit chassis to support MGCP-to-SIP conversion and migration. The MSR card has been tested for interoperability with leading SIP Proxies/Registrars including Alcatel-Lucent, Avaya, Broadsoft and Sylantro.

A Broad Range of Services Supported in a Single, Scalable Platform

The fully modular design of the Adit 600 is unique in its ability to simultaneously support traditional TDM and IP services from a single cost-effective, compact, and flexible platform. Equipped with the MSR and other cards, the Adit becomes an all-in-one converged access gateway that provides any mix of VPN, high-density multi-link T1 or Ethernet WANs, VoIP trunking (PRI/CAS) or line termination (FXS), SIP/MGCP or TDM signaling. In addition, the Adit 600's remote management capabilities enable the realization of significant operational cost efficiencies by reducing time required for problem resolution, and by minimizing or eliminating costly truck rolls.

Key Features

- Multi-Service Router (MSR) card integrates advanced IP routing and IP service delivery capabilities into the Adit Converged Services Access Gateway platform
- Enables migration from TDM to advanced VoIP and data services while preserving existing capital investments
- SIP-based VoIP gateway supports up to 40 simultaneous FXS calls with G.711 and G.729 codecs and T.38 Fax
- Advanced Ethernet/IP routing functionality includes VPN (IPSec, PPTP, L2TP), Stateful Firewall/NAT, and VLAN tagging
- Supports SIP-FXS calling for line applications, and SIP-PRI/CAS voice trunk calling for PBX applications

Available MSR Interface Ports

10/100Base-TX WAN port (RJ-45 connector)

10/100Base-TX LAN port (RJ-45 connector)

Available Adit 600 Interface Ports

Up to 8 T1 links via Adit 600 back-chassis T1 ports, or Quad-T1 Service Cards

Up to 40 FXS channels via Adit 600 FXS-5G, FXS-8A, FXS-8B, FXS-8C, and FXS-8D Service Cards

MGCP-FXS calling via Adit 600 CMG-01 or CMG-02

Specifications: Adit 600 Multi-Service Router Card

Physical

Adit 600 MSR Router Card

Dimensions: 3.5 in (H) x 0.75 in (W) x 11.25 in (D)
8.9 cm (H) x 1.9 cm (W) x 28.6 cm (D)

Weight: 0.19Kg

Power

Dissipation: 8W

Internal solid-state (fuseless) protection

Fan-free operation

Environmental

Operating temperature range: 32°F to 104°F (0°C to 40°C)

Storage temperature range: -40°F to 158°F (-40°C to 70°C)

Cooling is by free air convection

Maximum operating altitude: 10,000 ft (3.048 m)

Maximum non-operating altitude: 40,000 ft (12,192 m)

Relative humidity (non-condensing) range: 0% to 95%

Requirements

Adit 600 TDM Controller Release R10.0 or higher

Management

On-board Card Alarm and VoIP Status indicator LEDs

CLI support through controller via RS-232 or Telnet

RADIUS Authentication

Web-based Interface via on-board LAN or WAN ports

Syslog Server

Software upgradeable via TFTP

Voice Processing and Mediation

SIP Call Control

Interop with industry-leading SIP proxies/application servers, including Alcatel-Lucent, Avaya, Broadsoft, Sylantro

Full T1 voice capacity

Codec support for G.711 a-law/µ-law and G.729ab

G.168 echo cancellation and silence suppression

T.38 Fax Support on all FXS and voice trunk channels (Coming soon)

Fax/Modem Bypass

Voice Activity Detection (VAD) / Comfort Noise Generation (CNG)

RTP/RTCP Media Support

Call progress tones and ring cadence generation

10-80 ms packetization time

Jitter Buffer – max 150ms

Settable transmit/receive gains

Modem support – V.90, Fallback to G.711

Dial Plan Features

Prefix number stripping and appending

PRI Trunk Routing Table

Configurable Dial Plan

Router Performance

Wire-speed on Ethernet or T1 interfaces

VPN

IPSec Tunneling, PPTP and L2TP Support

VPN Interoperability with Cisco, FreeBSD, Netscreen, Checkpoint, SafeNet, Microsoft, FreeSwan

DES, 3DES, AES Encryption

IKE-based Key management

Digital certificates and Pre-Shared Key (PSK) Authentication

Security Features

Stateful Firewall

NAT/NAPT, NAT Bypass and NAT Pinholes

Application Layer Gateways (ALG) including VoIP

L1-L4 Flow classification

Denial of Service Filtering

Quality of Service

ToS Marking & Interpretation per IETF Std 5

VLAN Priority Queuing

Routing and Policy Management

IPv4, Static Routes

OSPF Routing

RIP v1 & v2

PPP – ACF, VJ Compression

DHCP Server/Client/Relay

DNS Relay, Resolver, and BootP Relay

PAP and CHAP Authentication

Ping Support

IPCP

Multi-Protocol Encapsulation

VLAN Tagging

Voice Line Support (via Adit 600 FXS Service Cards)

FXS Loop Start, Ground Start

DTMF Signaling per RFC 2833 and Call progress tone generation

Custom Local Area Signaling Services (LASS)

Multiple Line Appearance support

Network Standards

T1 Standards per Adit 600 Controller or Quad T1 Service Cards

FXS Standards per Adit 600 FXS Service Cards

ITU G.703, G.704

National ISDN-1 & 2

ITU-T Q.931 & Q.921

Telcordia GR-506-CORE

Regulatory Compliance

USA	UL 60950-1FCC Part 15, Class A
Canada	CSA 60950-1ICES-003, Class A

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