

## Solution Note

# Carrier Ethernet Service & Network Management

## Redcell™ Service Provider Solutions

## Key Features of Redcell

## Service Provisioning

- E-line, E-LAN, E-Tree
- QoS for Voice, Video, Data

## Ethernet OAM

- Connectivity verification, fault detection, diagnostics, performance monitoring, and alarm indication for end-to-end monitoring

## Health &amp; Performance Monitoring

- Real-time device & service
- Pre-seeded monitors
- Dashboards
- Netflow, Jflow

## Deep Discovery &amp; Inventory

- Single database & GUI for consistent service configuration & activation
- All H/W, S/W, physical & logical sub components

## Topology

- Hierarchical visual mapping with alarm propagation

## Configuration Management

- Real-time configuration changes
- Detailed configuration of next gen technologies

## File, OS Management

- Backup, restoration, archiving, deployment & comparison

## Comprehensive Reporting

- Inventory: By Device, Sub component, Service
- Change /Compliance: Who, What, When, How

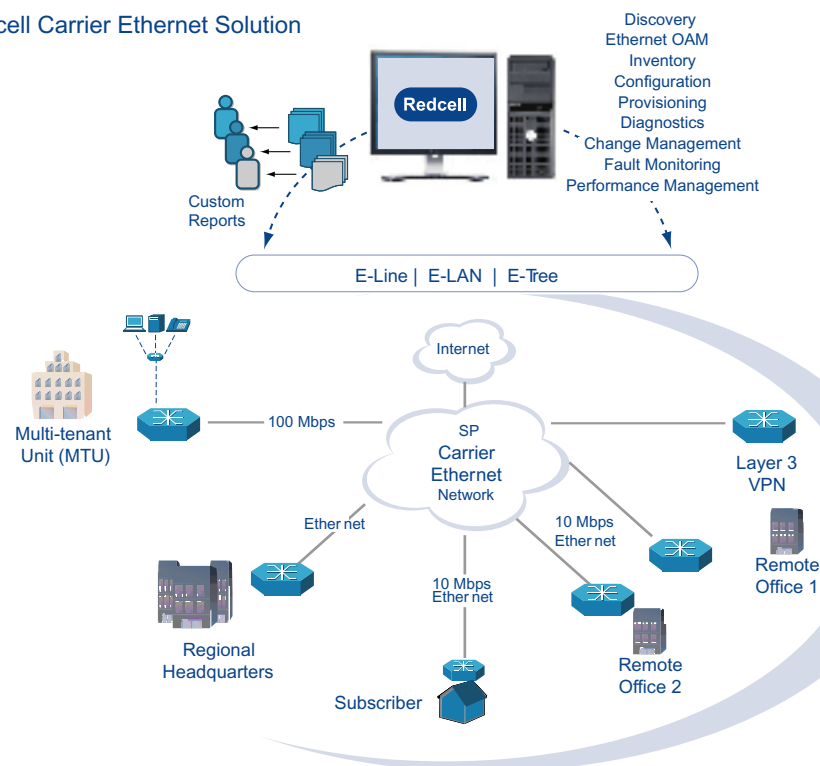
From a single console, effectively provision, monitor, diagnose multi-vendor Carrier Ethernet networks.

The Redcell Carrier Ethernet solution provides a solid foundation for Service Providers to build successful, flexible and scalable offerings for E-Line, E-LAN and E-Tree services. This includes UNI as well as EVC activation and management, providing Ethernet connectivity to subscribers and offering multiple options for data transport. The system supports Quality of Service provisioning allowing Triple Play Communication (Voice, Video and Data) to run successfully over a converged network and offers a range of options to enforce their deterministic behavior.

Service Level Agreements (SLAs) are the cornerstone of carriers' differentiated service offerings. With deep visibility across the network, and powerful management tools, Redcell enables you to guarantee availability and performance—and when SLAs are not being met, Redcell alerts you to proactively solve problems before they impact end-users.

Redcell Carrier Ethernet solution also offers complete lifecycle management with OAM capabilities for delivering and supporting next-generation applications and services such as IPTV, Video-on-Demand, Storage extension, Disaster Recovery, and others with a high level of quality to customers while controlling your operational expenditures as demand scales.

## Redcell Carrier Ethernet Solution



**Technical Specifications****Services****Core/Aggregated**

- MPLS L2 E-line Ckts (P2P)
- MPLS L2 E-LAN (Multipoint)
- MPLS L3 E-LAN/E-Tree/IPVPNs

**Integrated**

- Carrier Ethernet end-to-end (EVC)

**Core MPLS**

- MPLS Traffic Engineering LSPs (RSVP-TE)
- TE Tunnel & Named Paths

**Edge/CPE**

- Uni-service
- NNI Service
- CPE Configs, VLANs

**Service Examples:**

- Mobile backhaul
- IPTV
- VoIP
- VOD
- Broadband
- Cable

**Vendor Specific Line Card Support**

- Fast Ethernet
- Ten Gigabit Ethernet
- Gigabit Ethernet
- Ethernet Services

**Operating Environments**

- Windows 2000, XP, 2003
- Solaris
- Red Hat / SUSE Linux

**Database**

- Embedded database or Oracle

**Interface Support**

- SNMPv1/v2/v3; Proprietary Device CLI, XML, SSH SOAP/ Web services, RMI/IIOP, TL1

**Device Support Examples**

- Cisco
- Juniper
- Alcatel
- Siemens

**Key Product Components****Service Provisioning & Policies**

Service provisioning of UNI, EVC, E-Line, E-LAN and E-Tree services

Centralized service allocation and provisioning for service policies for ACLs, Quality of Service, NAT/PAT

**Device & Link Discovery & Resync**

Flexibility to discover your environment many different ways including via subnet, IP range, IP address or host name

**Operation, Administration, Maintenance (OAM)**

Configure administration for Ethernet network resources

Configure ports in conjunction with assigned VLANs and associated security levels such as MEPs and MIPs

**Diagnosis for Ethernet Link & Service OAM**

- Loopback testing
- Remote failure indication
- Link performance monitoring
- Continuity Checks (CC)
- Linktrace

Advanced fault monitoring for processing of continuity check and cross-check traps

Correlation of MEP Down alarms with MEP Up traps

Determine impacted service points (UNI or specific EVC) based upon MEP Alarms

Performance Management for frame loss/delay/variation measurements

**Equipment Group Management**

Create Static, Dynamic, Nested and Mixed groups for applying one-to-many changes to disparate network devices and group reporting

One-to-many capabilities execute operations or configuration changes against many devices with a single operation, reducing the effort associated with time-consuming and repetitive tasks

**Advanced Performance Monitoring**

Proactively monitor key system performance metrics to identify bottle necks and performance trouble spots

Advanced pre-seeded monitors: ICMP, SNMP, Interface, IPSLA, Netflow, Jflow, key metric, VRF, composite, aggregation, plus ability to customize monitors

SNMP data collection & graphing, event/alarm monitoring, and service monitoring (correlates SNMP & Syslog events to defined services for service monitoring, as service-affecting alarms)

**Configuration File Backup/Restore**

Backup configuration files on a pre-defined schedule and restore configuration files when needed

Simple visual comparison between configuration files with changes, deletions and additions between the files will be highlighted

**Proactive Configuration File Scanning**

Detect configuration changes through event-based change monitoring and proactive scanning

Define a compliant or last known certified state (including the ability to look for very specific parameters and attributes such as access control/firewall entries, routing parameters, etc.) and proactively scan the selected device groups for non-compliance

**Topology**

Quickly view the geography of large networks and drill down into each region with a simple click down operation, in addition to view the logical interconnections between network elements

Visual color-coded indicators provide quick and easy process for viewing where network problems are occurring

**User Security Management**

Multi-level security for individual user and group administration