



# Aggregation Router

## Our Client

A global network equipment manufacturer based in the Asia pacific region.

## Why they needed us

They wanted to implement MPLS technology for their routers and they approached us due to our extensive knowledge, expertise and experience in MPLS technology.

## What we did

We built firmware to implement the following features and capabilities.

### Product Features

- Small footprint as Cell Site Router product
- MPLS-TP, IP/MPLS based network topology
- RADIUS, TACACS+ Authentication
- Real-time network traffic monitoring and analysing
- Modules: 10GE2/GE8/GT8/CWDMFilter
- End to End configuration through EMS
- Zero Touch Provisioning
- Redundant Power Source: 2 PSU (-48/24VDC or 110V - 220V AC)

### Product Capabilities

- Small footprint as Cell Site Router product
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Layer 2	<ul style="list-style-type: none"> <li>• Standard Ethernet Bridging</li> <li>• Port/Subnet/Protocol-based VLAN</li> <li>• 64K MAC Address Entries</li> <li>• Spanning Tree: STP, RSTP, MSTP</li> <li>• 802.3ad Link Aggregation</li> </ul>
Layer 3	<ul style="list-style-type: none"> <li>• IPv4 Routing</li> <li>• IPv6 Routing</li> <li>• RIPv1/v2, OSPFv2, BGPv4</li> <li>• VRRP Support</li> </ul>
Multicast	<ul style="list-style-type: none"> <li>• IGMP v1/v2/v3</li> <li>• L2(4K)/L3(4K) multicast Entries</li> <li>• IGMP Snooping</li> <li>• PIM-SM/SSM</li> </ul>

QoS	<ul style="list-style-type: none"> <li>• 8 Queue Management</li> <li>• Ethernet type / L4-based ACL</li> <li>• QoS and Marking : SP, WRR, DWRR</li> <li>• Port rate limit with the ingress/egress shaping</li> </ul>
MPLS	<ul style="list-style-type: none"> <li>• Fully compliant with IP/MPLS Function</li> <li>• Fully compliant with MPLS OAM (BHH, BFD)</li> <li>• RSVP-TE, BFD Support</li> </ul>
OAM	<ul style="list-style-type: none"> <li>• Fully compliant with IEEE 802.1ag (CFM)</li> <li>• Fully compliant with ITU-T Y.1731</li> <li>• Ethernet Ring Protection (G.8032)</li> </ul>
Clock Function	<ul style="list-style-type: none"> <li>• IEEE 1588v2 TC</li> <li>• IEEE 1588v2 TC/BC</li> <li>• Synchronous Ethernet(SyncE) 1PPS, 10MHz, TOD, BITS</li> </ul>
Management	<ul style="list-style-type: none"> <li>• Serial / Telnet (CLI)</li> <li>• RMON</li> <li>• SNMPv1/v2/v3</li> <li>• Zero Touch Provisioning</li> </ul>

## How they benefited

- They were able to provide better traffic engineering due to MPLS implementation.
- Their routers were now able to handle Fast Re-Routing (FRR) for IP (OSPF-FRR, ISIS-FRR) and MPLS (LPD-FRR),
- They were able to better handle QoS due to implementation of HQoS & DiffServ (MPLS-TP) and IntServ, DiffServ & RSVP (IP/MPLS).

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### About Redeem Systems

*Redeem Systems is a pure-play Engineering and Digital Services Company with focus on mission critical highly engineered + high availability systems. Our global presence spans Asia-Pacific, Middle-east, Europe and North-America.*

*Our focus verticals include – Tele-communications, Medical Electronics and Aerospace & Strategic Electronics.*

*Our Product Engineering competencies include Product Design and Development, Verification & Validation, Emerging Markets Strategy and Product Life-Cycle Extension through Value Analysis and Value Engineering*

*Our Digital competencies are focused on Industrial Internet-of-Things (IIoT), Engineering Big Data Analytics and Software Defined Networking (SDN)/ Network Functions Virtualization (NFV).*