MOBILE BACKHAUL NETWORKS
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The increased use of smart devices, rich media applications, and content on the cloud is driving the demand for mobile bandwidth. Service providers with traditional TDM-based backhaul solutions are finding it difficult to cost-effectively scale up these legacy networks. In order to optimize transport costs, service providers need to upgrade to packet-based network technologies, which provide simple, cost-effective backhaul solutions to manage this increase in data traffic.

Aricent is a global provider of innovation solutions and services for packet transport and backhaul technologies. Our expertise includes development and deployment of Internet Protocol (IP) based mobile backhauls. We also have licensable protocol stacks and frameworks for Carrier and Metro Ethernet, Multi Protocol Label Switching (MPLS), Multi-Protocol Label Switching Transport Profile (MPLS-TP), and Packet Microwave.

Our software is ported and fully optimized on leading silicon platforms to further accelerate the time-to-market advantage and improve return on investment for OEMs. Supported chipsets include: Marvell, Broadcom (Katana, Saber), Wintegra (WP2, WP3), and EzChip NP-3.

The software also supports timing and frequency synchronization methods over Ethernet, like Precision Time Protocol (IEEE 1588) and Synchronous Ethernet (SyncE). These methods are highly accurate and provide a very reliable mechanism for time synchronization over packet-based networks.

Aricent’s Intelligent Switching Software (ISS) is a standards compliant IS-IS software framework enables telecom equipment manufacturers to develop a wide range of intelligent Ethernet backhaul applications that have been tried, tested, and deployed in over 100 commercial packet-transport products around the world.

Licensable Protocol Stacks and Software Frameworks

Our services in the mobile backhaul domain are complemented with a portfolio of licensable protocol stacks and software frameworks that help our clients deliver differentiated solutions with an accelerated time to market.

CARRIER AND METRO ETHERNET

Aricent is helping build the next generation of feature-rich Carrier Ethernet products by providing individual protocol stacks for Ethernet Linear Protection Switching (ELPS), Ethernet Ring Protection Switching (ERPS), Provider Backbone Bridging (PBB), and Provider Backbone Bridging Traffic Engineering (PBB-TE).

IP/MPLS

Aricent’s Multi-Protocol Label Switching (MPLS) software is an efficient and portable implementation of the label switching capability mechanism required by industry standards.

MPLS TP

Aricent’s MPLS-TP software is a portable implementation of the MPLS Transport Profile (MPLS-TP) path protection switching mechanisms as specified in the MPLS-TP linear protection switching specification by the Internet Engineering Task Force (IETF).

PACKAGE MICROAVE

Aricent’s packet microwave software allows equipment manufacturers to develop robust standards-compliant products to meet this challenge.

Feature Details

LAYER 2 FEATURES

- Point-to-Point Protocol (PPP) and Multilink Point-to-Point Protocol (MLPPP)
- Metro Ethernet Services
  - IEEE 802.3ah Ethernet in the First Mile (EFM)
  - IEEE 802.1q VLANS
  - IEEE 802.1q Tunneling (QInQ) with Layer 2 Tunneling Protocol (L2TP)
  - Ethernet over Multi Protocol Label Switching (EoMPLS) in VLAN mode
  - Ethernet Local Management Interface (ELMI)
  - IEEE 802.1ag Connectivity Fault Management (CFM) and CFM Extension for 1+1 Hot Standby
  - Ethernet Loopback (MAC Swap)
  - Layer 2 VPN (L2VPN)

Pseudowire

- Support for MPLS and User Datagram Protocol (UDP)
- Switched Network (CES/PSN)
- Pseudowire Setup and Maintenance using the Label Distribution Protocol (LDP)
- Circuit Emulation Service over Packet Switched Network (CES/PSN) over UDP/IP
- ETFC ATM Pseudowire Emulation Edge to Edge (PWE3) over MPLS
- Transparent Cell Transport Service/ATM Port Mode

LAYER 3 FEATURES

- Label Distribution Protocol (LDP) with Label Edge Router (LER)
- Label Switch Router (LSR) support
- Layer 3 VPN (L3VPN)
- Dynamic Host Configuration Protocol (DHCP) and IP Control Protocol (ICMP)
- Address and Control Field Compression (ACFC) and PPP Protocol Field Compression (PPCP) for MLPPP
- Open Shortest Path First (OSPF)
- Border Gateway Protocol (BGP)
- Intermediate System-to-Intermediate System (IS-IS)

QoS FEATURES

- IEEE 802.3p CoS
- IP Precedence Type of Service (ToS)
- Differentiated Services Code Point (DSCP) traffic shaping and policing
- Priority Queuing
- Weighted Fair Queuing (WFQ)
- Class-Based Weighted Fair Queuing (CBWFQ)
- Low Latency Queuing (LLQ)
- Weighted Round Robin (WRR)
- IP Service-Level Agreement (SLA)
- Two-Way Active Measurement Protocol (TWAMP) – RFC 3537

TIMING FEATURES

- IEEE 1588 Boundary Clock
- IEEE 1588 v2 Precision Time Protocol (TPF)
- T1/E1 line timing
- Adaptive Clock Recovery
- ITU-T Synchronous Ethernet (SyncE) with ESIMC
- Synchronization Status Messages (SSM)

SECURITY FEATURES

- Password Authentication Protocol (PAP)
- Challenge Handshake Authentication Protocol (CHAP)
- IPSEC IKEv2

Mobile Backhaul Switch for Tier-1 European OEM Vendor

Aricent worked with a leading Tier-1 European manufacturer of OEM for end-to-end development of two variants of access device: Ethernet CPE and Mobile Backhaul device. Our solution helped the customer accelerate time to market while optimizing development expenses.

Marvell-based Metro Ethernet Device Development for Major European Telecom

Aricent worked on turnkey product development of an Ethernet line-de-marcation device for a major European Telecom. We worked on complete product definition, requirements, architecture, implementation, and testing, porting Aricent’s ISS stack onto Marvell’s Link Street platform. Our solution helped the customer save CAPEX and OPEX of $1.2 Million.
The Aricent Group is a global innovation and technology services company that helps clients imagine, commercialize, and evolve products and services for the connected world. Bringing together the communications technology expertise of Aricent with the creative vision and user experience prowess of frog, the Aricent Group provides a unique portfolio of innovation capabilities that seamlessly combines consumer insights, strategy, design, software engineering, and systems integration. The client base includes communications service providers, equipment manufacturers, independent software vendors, device makers, and many other Fortune 500 brands. The company’s investors are Kohlberg Kravis Roberts & Co., Sequoia Capital, The Family Office, Delta Partners, and The Canada Pension Plan Investment Board.

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