Clarent® Class 5 Call Manager

The Scalable, Robust, Centralized Call Management Server.

The **Clarent Class 5 Call Manager** delivers central office switch features, scalability and ease of management in the Clarent softswitch architecture.

Advanced features. Offers business phone and CLASS features.

Flexibility and control. Allows seamless scalability when you want it – minimizing up-front capital expenditure

Unsurpassed ROI. Delivers advanced IP features and value-added services for increase revenue opportunities.

Ease of Deployment & Management. Deploy and manage from anywhere in network.

Class 5 Call Manager for the Clarent Local Access Solution

The Clarent Class 5 Call Manager is a softswitch that serves as the central call control and supplementary service management engine to distributed or centralized media gateways. It's a feature-rich, standards-based Media Gateway Controller that provides all business phone features, basic CLASS and Centrex features for use in consumer and enterprise applications. It provides call control functionality to MGCP-based edge devices including customer premises media gateways and SIP-enabled gateways.

Clarent offers service providers a true end-to-end VoIP solution. The Class 5 Call Manager can interface with SS7 networks through the Clarent Class 4 Call Manager and the Clarent MPSS; with SIP-enabled gateways (e.g. Clarent NetPerformer® EG) through the Clarent SIP Proxy Server or with other partners' IP networks and global clearinghouses through the Clarent Connect server. Additionally, Clarent gives service providers flexibility and choice by interoperating with standards-based products from other vendors.

As shown in Figure 1, the Clarent network architecture distributes call processing, call control and network intelligence in separate layers. Specifically, the Clarent Class 5 Call Manager assumes the call set up and teardown function, leaving the processing of individual voice packets to the customer premises media gateways (Ethernet, ADSL and cable). This enables the Class 5 Call Manager to scale massively as needed. Unlike legacy circuit switches where service providers are forced to make huge up-front investments for capacity they may not need immediately, the Clarent Class 5 Call Manager offers seamless scalability on demand. This means service providers can now provision as many ports as they want initially, and easily scale when additional capacity is needed. Further, within a network,

multiple Clarent Class 5 Call Managers can be added incrementally to support hundreds of thousands of customer premises gateways or IP phones by simply updating the centralized database. The Clarent Class 5 Call Manager can be distributed anywhere in the Clarent network providing the flexibility and geographic diversity that next generation service providers need.

All basic and most advanced call features reside in the core of the Clarent network (see below for details), rather than at the edge. This allows easy feature upgrades and service enhancements and therefore quicker time to market. The Clarent Class 5 Call Manager provides the most popular CLASS features including 3-way calling, call transfer, call forwarding, call waiting, caller ID, call return, speed dial, and others. It also interoperates with a number of standards-based voicemail products. The Clarent Class 5 Call Manager works with the Clarent Command Center to authenticate subscribers, establish call rates for billing and provide call routing. The Clarent Class 5 Call Manager is managed easily from anywhere through a Web-based management interface. With this level of fea-
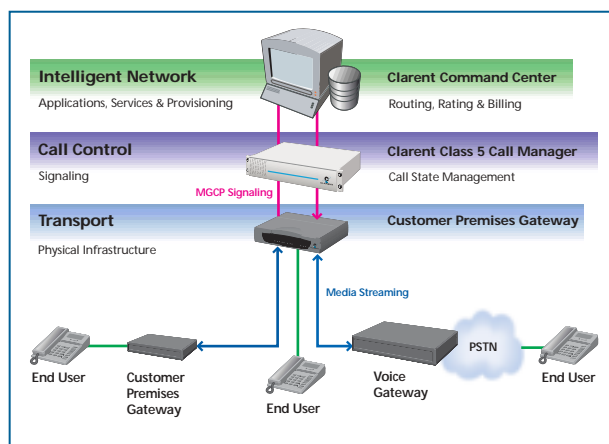

Figure 1. Functional separation in the Clarent network architecture.

tures and flexibility available on the Class 5 Call Manager, service providers can now offer basic as well as advanced telephony features to their residential and business subscribers.

The Clarent Class 5 Call Manager runs on the Sun Solaris platform.

The Clarent Local Access Solution

The Clarent Local Access Solution shown in the network diagram below is based on the 3-tiered Clarent network architecture, which distributes the transport layer, call control layer and the intelligent network layer in separate servers and gateways thus eliminating a single point of failure while retaining scalability and ease of management.

The Clarent Command Center™ provides the rating, routing and subscriber management services; the Clarent Class 5 Call Manager provides Class 5 switch (central or public exchange switch) features and call control; the Clarent Element Management System (CEMS) provides network management and control for all the softswitch elements; Clarent Gateways interface with the public switched telephone network (PSTN) while Clarent Connect servers enable connectivity among Clarent-powered networks by providing traffic sharing, real-time account settlement and least cost routing. Customer premises gateways complete this end-to-end VoIP solution by supporting advanced features and services in the network core and extending these to the end-user. The Clarent Local Access Solution delivers the promise of the telecommunications revolution to the residential and business market by facilitating end-to-end access to advanced Internet-based communication services.
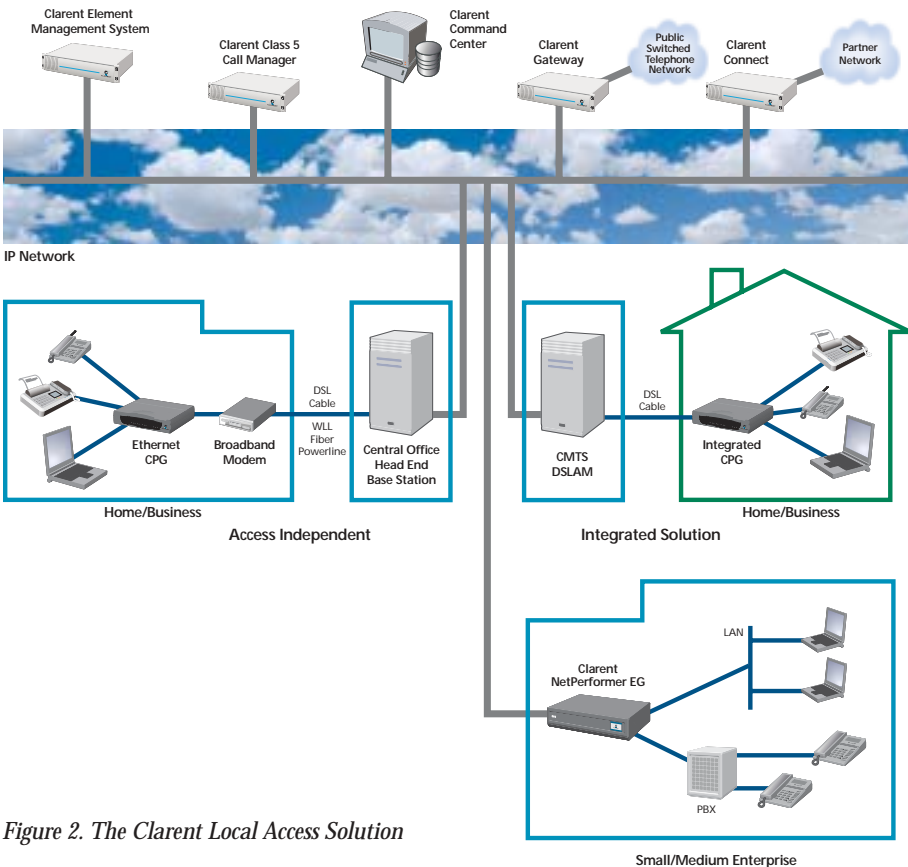

Figure 2. The Clarent Local Access Solution

System Features
- LNP
- E911
- CALEA/LI
- High availability architecture

Call Features (Telcordia compliant)
- Supports CLASS features including:
  - Call Transfer
  - 3-way Calling
  - Speed Dial
  - Call Forward All
  - Call Forward Busy
  - Call Forward No Answer
  - Call Waiting
  - Caller ID
  - Caller ID Blocking
  - Selective Caller ID Blocking
  - Call Return
  - Call Trace
  - Distinctive ringing
  - Selective Call Reject (Call Blocking or Call Screening)
- Abbreviated dialing for emergency & directory services
- Supports codec negotiation
- T.38 fax and G.711 fax / modem support

Standards Compliance
- Supports Internet protocols: TCP/IP, UDP, ARP, TFTP, ICMP
- Support voice codecs: G.711, G.723, G.729a/b
- Supports MGCP 1.0 & PacketCableNCS
- Supports SIP – SIP proxy registrar server leverages Clarent Command Center/database features
  - SIP v2 (RFC 2543)
  - SIP INFO method (RFC 2976)
  - Session Description Protocol (RFC 2327)
  - Transparent SIP-T support for QSIG between two NetPerformer EG gateways

Management
- Remote via Telnet, SNMP or Clarent Element Management System (CEMS)

Minimum Requirements for Operating Platform
Unix Platform
- 1U Sun Netra T1 AC200/DC200 chassis
- Solaris 8 O/S
- UltraSPARC IIe 500 MHz processor with 2GB RAM

Ethernet Connectivity
- 10/100 Base T RJ 45 network interface

Other Products Required for Operation
- Clarent Command Center
- Clarent Element Management System (CEMS)
- Database server (requires Oracle™ Server, MS SQL Server™, or other ODBC compliant database)
- MGCP-based customer premises media gateways or IP Phones or Clarent NetPerformer EG multi-service access device

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