PGW VOICE SOLUTION

THE CUSTOMER:
The customer is a local Carrier in Germany. They are providing business customers, national and international carriers and ISPs with highly resilient network access to next-generation services for data, voice and Internet solutions.

THE CHALLENGE:
The Carrier has two PGW2200 for their voice services. One PGW is acting as Transfer Switch which provides the SS7 Interconnections for the different services.

The BTS10200 offers Class 5 services to cable networks. The second PGW2200 offers VoIP services for residential and business customers. VoIP PBXs, Routers and SIP Proxy Servers are connected via the second PGW.

The two tier approach was chosen to limit the risks between the two major voice services. Class 5 for cable networks provided by BTS and SIP services supported by the second PGW.

It was assumed that changes at the second PGW for SIP services is more intensive than the fist PGW which is a static construct for SS7 Interconnection.

THE ARCHITECTURE:
The PGW2200 solution is deployed in a redundant fashion using a pair of sun server hosts, one being active (handling all the calls) and the second one standby prepared to take over the traffic in case of any failure in the active host. The failover process uses keepalive messages between the hosts as the failure detection mechanism. The checkpoint process makes sure that the circuit status information for the establishedcalls is the same in both hosts. Due to check pointing mechanism the existing calls are preserved even in case of failure (when a switchover will take place) and only new calls will be rejected during few seconds until all switchover processes have completed.

The main characteristics of this architecture are:

- Gateways (CPEs) are controlled via MGCP which is a Master/Slave protocol (PGW2200=Master).
- The PGW is also referred to as the call agent, or as the Media Gateway Controller (MGC).
- Via MGCP the gateways execute all the instructions received from the PGW2000 regarding a specific end point (Create connection, Delete connection, .., codec to be used etc.).
- Centralized Call Control, dial plan and CDR creation takes place in the PGW2200.
- The Backhaul Session Manager between PGW2200 and Media Gateway assures that the Gateway is aware about which PGW2200 is active and which session to use for sending/receiving the SS7 messages.

avodaq's role:
- Voice solution design and consulting
- PGW consulting, design, implementation and support.
- Cisco Router connecton via SIP or ISDN Backhaul.