

The ENTICE Tandem/International Gateway Solution

Introduction

Despite the optimistic predictions of the dot-commers that told us that all existing telecommunications equipment was obsolete and should therefore be replaced, the demise of the traditional PSTN network is nowhere in sight. The industry has adopted a "don't fix it if it isn't broken" philosophy toward the existing network. They have dictated that packet based network purchases must blend in with the existing network and that new purchases for the circuit network should be "packet capable".

The ENTICE Tandem/International Gateway Solution (ETIGS) is a perfect fit for those carriers who would like to deploy equipment that is equally capable in both the existing circuit based network and the packet based network and would like to blend the capabilities of both.

The ENTICE Tandem/International Gateway Solution

In the current economy, all carriers must be focused on the bottom line. Any purchase must minimize capital expenditures, maximize profits and yet limit risk both now and in the future. The ENTICE Tandem/International Gateway (ETIGS) solution provides carrier-grade call control, translations, routing and OAM&P services for the Excel Converged Services Platform (CSP) which allows cost-effective deployment of converged solutions ranging from 384 ports to over 28,000 ports of capacity in a single non-blocking switch element. The solution can easily be expanded to over 100,000 ports using an IP core and the ETIGS ability to combine switch elements into a single entity. The ETIGS solution can interwork with any network whether the network is controlled by SS7, ISDN, CAS signaling or is an H.323 or SIP based network. In addition, because of the ETIGS's unique architecture, custom solutions can easily be created by modifying these features via the built in APIs to fulfill the exact requirements for a specific network without

the need to release new software generics. This frees carriers from the gridlock of relying only on their vendors for new applications and features and enables them to control their own destiny while at the same time providing stable and reliable software in the form of well tested and field proven software generic releases. This capability minimizes risk by providing a stable software base and maximizes opportunity by allowing new applications to be quickly deployed.

In Figure 1, the ETIG is used to provide tandem long distance and international gateway services to a carrier's network that is composed of traditional switches and IP gateways.

The ETIG has extensive capabilities to translate and interwork with the signaling protocols from different countries around the world. This is due to the incredible flexibility provided by a combination of the built in capabilities of the ETIG, its ENTICE component programmability and the programmability of the Excel CSP. A 28,000 port ETIG system can be configured with a single SS7 point code to minimize network costs, or it can be configured to have as many as 56 point codes to provide SS7 gateway services between various networks.

The ETIG also has a wide range of routing features allowing carriers to optimize their route plans for the needs of their customers.

Whether the customers are demanding the least cost route, the best quality or something in between, the ETIGS routing capabilities are flexible enough to allow them to choose. Routing features include, least cost, time of day and percentage routing features. Customized features can be added via the APIs built into all

ENTICE solutions or through available source code.

Because ENTICE pre-processes all inbound calls into an internal generic format, the ETIGS is able to treat all inbound and outbound traffic in a standardized way. This allows the Entice Tandem/International Gateway to effectively switch calls between all networks whether they are SS7, ISDN, CAS, H.323 or SIP based.

This feature also provides a unified environment for service creation allowing a carrier to deploy new

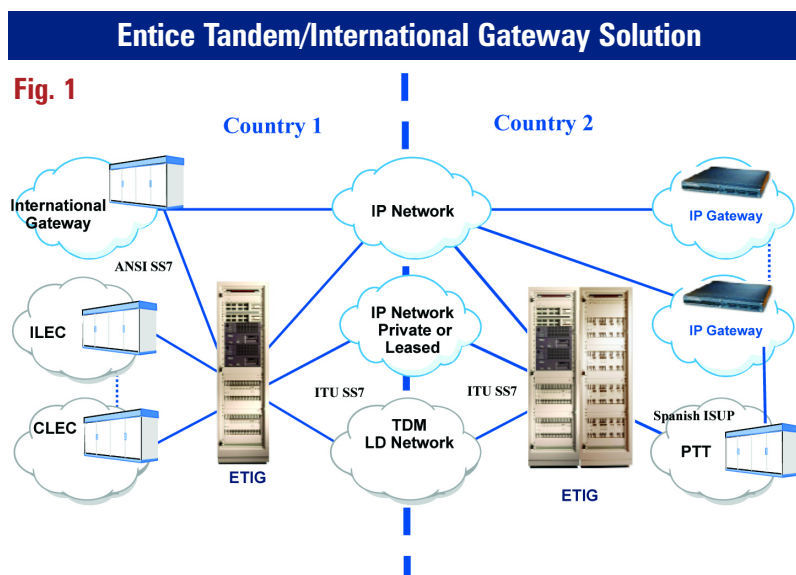


Fig. 1

services in considerably less time. Common services such as prepaid, postpaid and calling card services are available as an option.

Element management is a day to day task for every carrier. The ETIG's OAM&P interface was designed to make this task easier by allowing elements that are controlled by the ESS to also be managed and provisioned by ESS. ESS provides a WEB based user interface that simplifies the administration of network elements by centralizing their administration and providing the technician with easy to use and understand screens to configure them.

The ESS was designed with reliability in mind. Its distributed architecture allows it to run on a cluster of loosely coupled ENTICE controllers which are based on computers running the Solaris or Linux operating systems. This architecture insures that there is no single point of failure. In addition, each software component supports micro-rebooting which allows individual pieces or subsystems of software to be restarted without affecting the overall system. Finally if software updates are either desired or required, each software element supports live updates of the running software to practically eliminate the need for downtime when adding new features or fixing old ones. This architecture is shown in Figure 2.

ENTICE Tandem/International GW Architecture

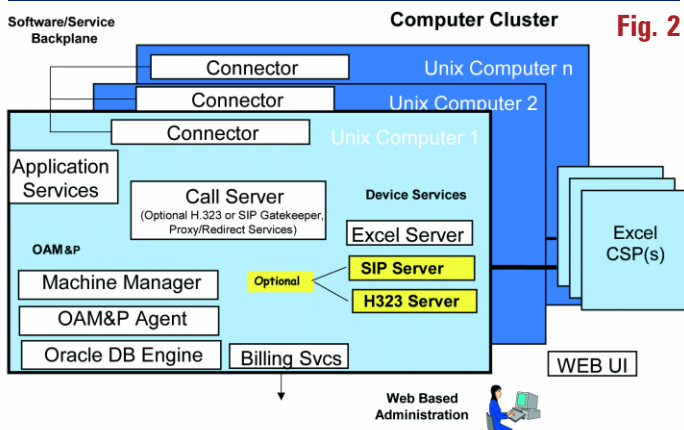


Fig. 2

Because of the distributed nature of the ENTICE ETIG architecture, additional ENTICE controllers can be added to increase the capacity of the system. A small ETIG system can start with a single ENTICE controller and a single CSP node and then it can easily be expanded to over 100,000 ports of capacity simply by adding additional ENTICE controllers and CSP nodes.

An expanded network is shown in Figure 3, where there are 3 ETIG systems deployed – one in New York, one in Dallas and one in LA. All three systems and a Cisco gateway are tied together into a cohesive system and are administered from a central point by the ENTICE software controlling the network.

In order to make a profit, carriers must generate billing information. The ETIG stores all of the call information in comma delimited, ASCII call detail records. These records provide the basis for creating customer bills and for billing mediation between carriers.

Network Architecture w/ENTICE Tandem/IGW

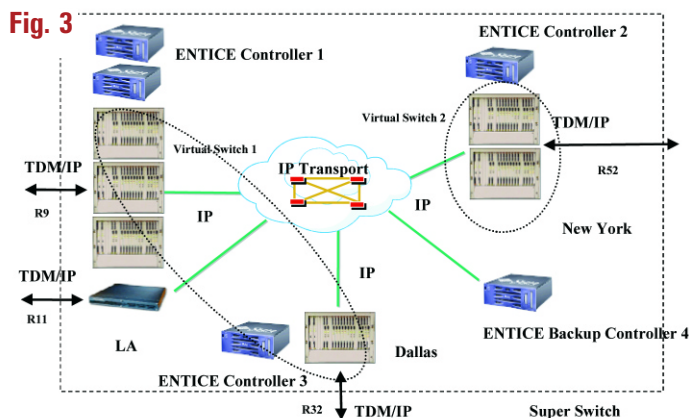


Fig. 3

Conclusion

The ENTICE Tandem/International Gateway Solution was designed to meet the needs of carriers looking to deploy a carrier quality, feature rich solution with minimal capital outlay. The rich feature set of ETIGS allows a carrier to deliver the tandem/international gateway features they need to effectively manage their network today, while the modular hardware, built-in APIs and source code availability allow them to add converged capacity, capabilities and services as the opportunities arise.

About Emergent Network Solutions

Based in the Dallas, Texas area, Emergent Network Solutions, Inc. (ENS) is a leading provider of advanced telecommunications software and services that enable carriers and service providers to integrate current and future network technologies. We assist our customers in reaching their business objectives by providing real, deliverable telecommunications software solutions and specialized consulting services for all facets of network design, analysis and management.

To learn more about ENS, our products and our services, please visit www.emergent-netsolutions.com, or contact us today.



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