The evolution of cloud computing gives service providers the opportunity to add value to their traditional role of providing connectivity. The financial and technical analyst community continually emphasizes the need for service providers to expand beyond “dumb pipes” and earn higher revenue and margins through the delivery of new services. Unfortunately, that has been easier said than done. Now with the advent of cloud computing and Carrier Ethernet, service providers have the tools to increase revenue and margins while differentiating their service offerings. To meet that goal, MRV created the OptiSwitch 606 Cloud NID (OS606) for delivering Carrier Ethernet-based cloud services to SOHO and SMB subscribers.

MRV’s new OptiSwitch 606 has the features that enable service providers to cost effectively offer high margin, cloud-based services that customers need for mission critical applications. Web conferencing, distributed imaging, multi-site LAN and SAAS are a few examples of the valuable new applications that service providers can offer more efficiently on a large scale than their subscribers can support individually. The OptiSwitch 606 is a cost optimized CPE designed to deliver Carrier Ethernet and cloud services.

**BANDWIDTH ON DEMAND**

Using the OS606 bandwidth can easily be added or subtracted as needs change and this flexibility encourages experimentation with new business models that substitute software and bandwidth for legacy business processes and procedures. New business models based on cloud computing can be vastly more efficient and profitable than legacy models. Therefore, customers using the OS606 and Carrier Ethernet services can justify higher overall telecommunications spending. The OS606 customer facing ports are 10/100Mbps and 1Gbps and are commonly found on all Ethernet equipment used in the SOHO and SMB environment. The actual bandwidth delivered to the customer can be precisely controlled by the service provider or the subscriber at any rate from a few Mbps to the full 1Gbps.
The OS606 bandwidth is controlled with the Bandwidth Profile, a standardized mechanism that defines a committed information rate, an excess information rate and a peak burst size. It also defines parameters for delay, delay variation (jitter) and packet loss. With these six attributes, services can be created to meet the requirements of diverse applications. MRV’s OptiSwitch 606 enables you to create multiple Ethernet Virtual Circuits and Bandwidth Profiles within one Ethernet port.

DIFFERENTIATED SERVICES BASED ON APPLICATION REQUIREMENTS

Historically, services were based on the physical connection without regard to the data passing through them. However, with Carrier Ethernet, services can be based upon characteristics of the data on the network. Cloud service providers can now tailor unique SLAs for each application even if they reside on the same physical port. For example, a live interactive voice call and webcast might get more bandwidth and very low delay and delay variation compared to a data backup occurring at the same time on the same port. Because the OS606 is application aware the data backup could be permitted to consume all the bandwidth if the video broadcast is absent.

The OptiSwitch 606 enables this granular control by classifying traffic on L2, L3 and L4 header information. When L4 is used service providers can inspect TCP/UDP fields that detect voice, video, peering and other application types. As a result, service providers can tailor service performance and pricing structures to the needs of the applications and the value of the information to their customers.

SERVICE LEVEL PERFORMANCE MONITORING

Standards developed by the ITU and IEEE over the past decade enable precise measurement of service performance on an end-to-end basis and help insure continuity of services. The OS606 supports standards designed to increase service availability and manageability. Support for OAM at the service, connectivity and link layers insures maximum service availability. Discovery, VLAN loopback, link trace, connectivity check messages and other performance monitoring and management tools keep subscribers connected to mission critical applications.

Using ProVision, MRV’s sophisticated management software, both service providers and subscribers can see, in real time, graphs and statistics that chart the performance of an individual service. The ProVision tools provide customers with the ability to track the performance of their service by application, by VLAN, by port or by any variable used to create a service. ProVision also provides a portal where customers can view the performance of their service.

ZERO TOUCH PROVISIONING

When deploying cloud services automation is the key to reducing OpEx. ProVision is designed to reduce ongoing costs associated with maintaining CPE. MRV’s plug and go, zero-touch features minimize truck-rolls and network operations labor needed to deploy and provision services. Zero-touch saves critical time in fault identification and significantly reduces network “trouble shooting” and MTTR. Fault correlation improves the accuracy of fault identification and helps isolate issues for repair.

The OS606 supports fully automated service turn-up and enables validation and auto-download of current software versions, device configurations and database synchronization. Offline service provisioning enables devices to be configured and added to the network prior to service turn-up.
SECURITY
Providing SOHO and SMB customs with enhanced security gives service providers an additional source of service differentiation. The OS606 supports security on L1, L2, L3, and L4. This prevents denial of service attacks and other security breaches that smaller businesses are unequipped to prevent.

CONCLUSION
MRV has a 10 year history of supplying the most sophisticated and reliable Carrier Ethernet access devices. The new OS606 entry-level NID for cloud computing services is the latest example of our commitment to leadership in the evolving Carrier Ethernet services market.