HUGHES
An EchoStar Company

HX 5.0 — Building on the Success of HX 4.0

HX 5.0 brings a host of technology enhancements that enable operators to achieve greater scalability, higher performance, higher efficiency and higher availability. Building on the foundation of HX 4.0, which brought to market a new set of powerful routers and a host of enhanced features, the capabilities of HX 5.0 further reinforce the HX System as the leading choice of satellite platform for the VSAT market place.

HX System

The HX System from Hughes, the world leader in broadband satellite networks and services, is designed to scale cost effectively from very small networks to very large. The HX System employs the key features needed for a wide range of applications, such as Internet access, IP trunking, cellular backhaul, Virtual Network Operator (VNO) hosting, and communications on-the-move (COTM).

Scales to Thousands of Sites

With HX 5.0 comes the ability for HX operators to scale their networks to support many thousands of remote terminals. An HX System can be cost effectively configured for very small networks, less than 50 sites, yet able to grow to support very large networks. Coupled with the cost effective family of Hughes terminals, the ability to scale to large networks makes the HX System an effective solution for such applications as Internet access and universal service programs.

High-Capacity Gateway

Related to the ability to effectively scale to very large networks, HX 5.0 includes a new and more powerful set of IP servers for the hub station. The HX 5.0 IPGW (IP Gateway) is able to support up to 40 Mbps of IP throughput, a significant expansion when compared to the earlier version of IPGWs versions. The additional capacity per server enables operators to achieve more capacity in a smaller footprint at a hub station.

Performance Boost

A key feature of HX 5.0 is enhanced remote router software which significantly improves the throughput achievable by an individual remote terminal. Routers running HX 5.0 software will be able to support throughput rates of 20 Mbps for spoofed TCP processed traffic, a 30% boost in throughput performance, and over 40 Mbps for unspoofed TCP or UDP traffic

Higher Efficiency

To better optimize network efficiency HX 5.0 introduces byte level compression (BLC) for the return channel traffic. BLC is a long range compression scheme that utilizes data caching capabilities along with powerful algorithms to identify blocks of data repetition at the byte level on a data flow. Once identified the blocks are not transmitted but instead a code is used to represent the block.

Enhanced Quality

To enhance the quality of service (QoS) capabilities HX 5.0 includes two new features. With the introduction of Weight Fair Queuing (WFQ), each priority queue can be configured with a weighted percentage, and in the event of congestion or demand the allocation of bandwidth will be based on the weighted percentages. WFQ enables operators to ensure that no one user or application is starved of bandwidth. The second QoS feature is support for Differentiated Service Plans (DSPs). DSP enables operator to define how service plans will be treated in congestion. A service plan configured for high value will receive a higher service availability than a low value service plan.

Gateway Diversity

HX 5.0 brings more robust operational capabilities focused on gateway availability. With the HX System increasingly being deployed on Ka-band systems HX 5.0 includes full support for RFT (radio frequency transmission) diversity. Gateway RFT diversity allows an operator to overcome rain fade at a gateway station by enabling the traffic to be instantly routed to a secondary RFT facility located 30 to 100 kms away from the primary station. The routing of traffic between gateways can be done automatically and the impact for traffic operations is only a momentary interruption of data flow for the end user. In addition, HX 5.0 supports gateway diversity that enables a remote to automatically move to a second network in the event that the first network is unavailable.

Availability

HX 5.0 is available as a software upgrade for existing customers in 2014. Certain features, such as the higher throughput IPGW, may require hardware upgrades as well.

Proprietary Statement