

Secure. Simple. Diverse  
Networking.



HughesNet<sup>®</sup>  
Backup Service



# High Availability Networks


A concrete network infrastructure is the epicenter for every business today, which acts as a key business enabler as Companies reach out to their customers across geographies. But there lies beneath one factor which can deter the growth and development - the 'network downtime'. Network downtime has far reaching implications than it meets the eye. A small downtime on the network can snowball into loss of productivity, loss of sales/profits, loss of customer satisfaction resulting in possible stagnation of the whole business procedure.

With such a magnified impact on business profitability, it is a dream of every CTO/CIO to have a downtime free network service for their business. But this goal however remains seldom achieved due to the lack of diversity in the network. Moreover, the traditionally employed methods to tackle network downtime like negotiating better SLAs from service providers, proactive measures like networking monitoring and management or thinking of redundancy don't provide a fool-proof solution.

Hence, only a fully diverse network can ensure zero downtime. At the same time with businesses facing a lot of pressure for reducing operating expenses, the challenge is to find a service that can provide the required diversity at an affordable cost.

The answer lies with Hughes in its specially designed backup service that provides a fully diverse network solution. This service provides the requisite diversity, not only in the media, but in every component of the network including the customer premises equipment (CPE).

This backup service provides diversity through an unparalleled media - Satellite. With its attributes of quick deployment, no dependencies on last-mile connectivity, high reliability and centrally managed service, satellite is the right answer for providing diversity in a network. This is now delivered through the HughesNet Network Backup Service.



HughesNet.

# The solution

The solution comprises of a Hughes hardware platform and attractively priced service plans.

## **Hardware Platform**

Christened as Hughes HX, the product delivers a leased line across the sky with low link latency and is configured to latch on to a pool of channels once the primary media fails. The channel size can increase in steps of 64 Kbps as the need may be.

This product includes of an indoor unit, 10/100 Base T Ethernet LAN Port and feature rich software (refer list for details)

- Indoor Unit—Fully Self Hosted, Software / Configuration Stored in Non-Volatile Memory—Easy Installation and Commissioning with Web Browser, Satellite Based Commissioning —Fully Controlled / Configured via a state of the art NMS at NOC—Small Footprint with Advanced Packaging—ASIC powered—Special DC power brick design to eliminate field burnouts
- 10/100 Base T Ethernet LAN Port
- Feature Rich Software—PEP, HTTP Acceleration, DNS Caching—DSCP Prioritization— SCPC Bandwidth assignment—DHCP, ACL, NAT, IGMP, V.44 compression—PBR, BGP, RIPv2, VRRP

# HX Features

## Quality of service/security

- “Leased Circuit Across the Sky”
- 3-DES encryption
- IP Sec two-way encryption (Optional)

## Network Performance

- PEP –Bi-directional TCP Spoofing
- Self Tuning with Traffic
- AckReduction
- Persistent Backbones with TCP Connection multiplexing
- TCP Classes of Service
- Content pre-fetch
- DNS Caching
- VPN and GRE acceleration

## IP Centric and Routing Features

- NAT, PAT
- DSCP prioritization
- ACL, V.44 compression
- RIP v2, BGP
- PBR, VRRP

In addition to this, even in backup mode the HX satellite router is always on and is fully managed in order to avoid un-detected backup failures (prior to primary failure).

The HX satellite router is configured with VRRP feature that helps in backing up the primary router (CPE) during a failure situation with the objective of eliminating any single point of failure.



## The way it works

Automated implementation of the stages cited below makes it possible for the remotest of the sites to stay connected even at times of CPE failure.

**Stage 1:** Both Terrestrial CPE & Satellite CPE negotiates;  
Terrestrial CPE & MPLS link becomes primary

**Stage 2:** Terrestrial CPE crashes, Satellite CPE takes over

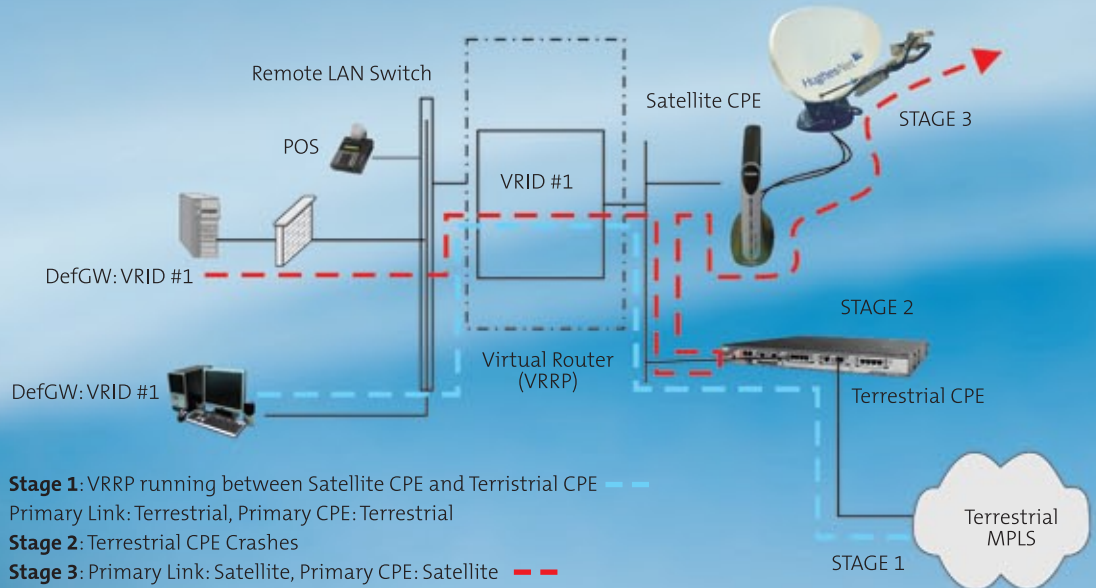
**Stage 3:** Satellite CPE & Satellite link becomes primary

The networking convergence is fast as VRRP and the Routing Protocol decides the switching mechanism of these stages and accordingly ensures that the Satellite Backup Media is 'Always ON', to use for sending traffic to HO at remote locations.

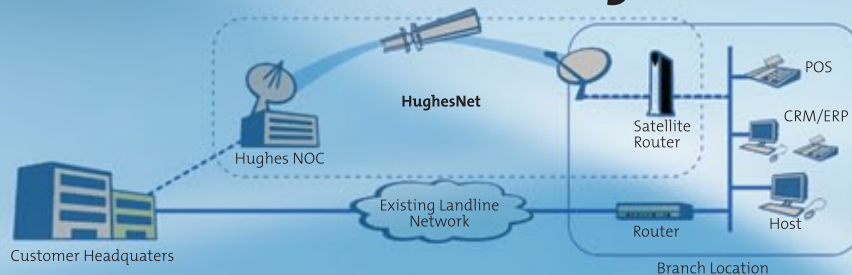


# CPE Diversity

HUGHES BACKUP Service showing Terrestrial CPE failure and Satellite CPE takes over



# Media Diversity



**Hughes Designed Backup Plans are engineered to meet every need:**

Primary Media	Existing Backup Options Available	Proposed HX Backup Plans
MPLS / LL 64K	ISDN	HX Backup 64Kbps
MPLS / LL 128K	ISDN	HX Backup 128Kbps
MPLS / LL 256K	DSL / MPLS 256K	HX Backup 256Kbps
MPLS / LL 512K	DSL / MPLS 512K	HX Backup 512Kbps

Hughes follows the fully managed policy for its backup service and has all fault, configuration, accounting, performance with security being centrally monitored.

**Benefits of HughesNet Network Backup Service Plan in a Nutshell:**

- **Always ON** : Routing Protocol to decide which media to use
- **Fully Diverse Network** : CPE, Media, Backhaul, DC all redundant
- **Reach** : Any where in India
- **Highly Reliable** : Enhanced ACM Satellite Uptimes
- **Fully Managed** : FCAPS Enabled
- **SLA driven** : All these plans ensures 5% backup of primary media downtime
- **Cost-effective** : Comparable cost to other back options like ISDN, secondary leased circuit or MPLS

**HUGHES**®

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