



Multi-Site High-Bandwidth Connectivity Services

DATASHEET

SuperInternet provides customized high-bandwidth communications services ranging from Fully Managed IP layer connectivity to the Civil Engineering Works for Trenching and Ducting of Dark Fiber between sites.

Established in 1998, SuperInternet today holds and a Facilities Based Operator (FBO) Licence from the IDA. Through the right-of-way provided by the FBO Licence, SuperInternet is progressively expanding the sites served by our own fiber cabling. This independent fiber network allows for path diversity and therefore resiliency as required for critical applications. Island-wide reachability is however already achieved by augmenting our own rollout with fiber from existing operators including the NGNBN NetCo. In this way, SuperInternet is able to provide a seamless network provisioned in an optimal manner to cater for all bandwidth requirements and transport types.

The direct access to fiber allows SuperInternet to provide wavelength-based services over DWDM. This caters for up to 100Gbps signaling directly from Customer-owned equipment. For 10G Metro Ethernet services, E-LAN, E-LINE and E-Tree topologies are supported. In the case of an IP based network, SuperInternet also offers a fully managed deployment where all necessary LAN switches and WAN routers are provided on a leased basis. This is especially useful for short term projects where large capacity connectivity is required. In these cases, the complete SuperInternet portfolio of Video and Video Telephony along with a Virtual Server Infrastructure and industry standard application servers are usually integrated thereby creating a complete solution.

A further application enabled by SuperInternet's own fiber rollout is service to outdoor locations almost anywhere to which cabling can be laid. This

includes rooftops, street-side Over-Ground boxes and into Parks. Particularly useful for high-resolution, high frame-rate requirements, SuperInternet removes the usual conflict between cost of bandwidth and desired video quality. This is achieved by packaging the Cameras along with the necessary installation together with the communications links, Video Management Software, Servers and Storage platform into a complete monitoring system where there is no longer an issue of the data transmission vendor having to co-ordinate with the video surveillance vendor for network parameters and configuration such as that required to support IPv6 multicast enabling multiple viewers without overloading the cameras.

For customers operating data center infrastructure, SuperInternet's High-Bandwidth Connectivity services finally allow for affordable real-time offsite SAN replication, VM failover to offsite, geo-stretched clusters and easy data center migration via Layer 2 domains stretched over a WAN cloud. The secondary data center could be the customer's own site, a public/virtual private cloud operator, or SuperInternet's own Data Center. By having 10GE connectivity between either of these sites, VMs can be provisioned to automatically move in the event of any failure and data is preserved through real-time SAN replication.

All Systems Integration is executed using in-house expertise and SuperInternet maintains a team of Singaporean engineers who have been cleared for work in several sensitive sites and are familiar with the handling of sensitive information and site access clearance required by some projects.



TECHNICAL BRIEF

TOPOLOGIES

- E-LINE Point to point
- E-TREE Point to Multipoint
- ELAN Any to Any
- IP Any-to-Any with Gateway

AVAILABLE SPEEDS (FDX)

- 1Gbps to 10Gbps (1Gbps Increments)
- 100Mbps to 1Gbps (100Mbps Increments)
- 20Mbps to 100Mbps (10Mbps Increments)
- 1Mbps to 10Mbps (1Mbps Increments)

TRANSPORT TYPES

- IP over Ethernet (IPv6 and IPv4)
- Layer 2 Ethernet
- Wavelength
- Dark (Selected Locations)

ADDITIONAL IP SUPPORT

- Multicast (PIMv2)
- QoS: IP DSCP / CoS
- BGP Exchange within VRF

SLA

- Standard: 99.95% / HA: 99.999%
- 8x5x4hr On-Site/ 7x24x4hr On-Site

GATEWAY SERVICES

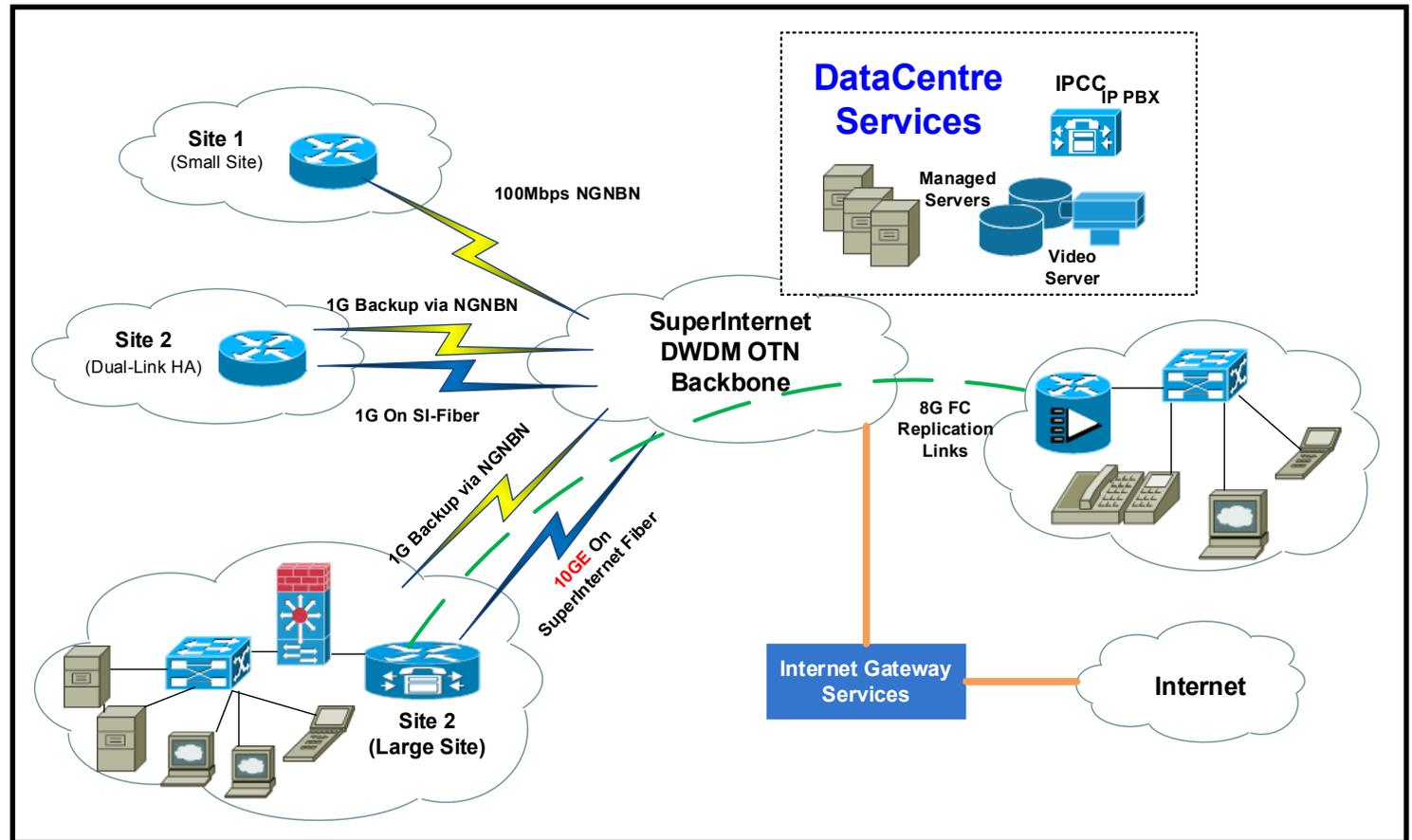
- Public Internet
- Protected Extranet

UNIFIED COMMUNICATIONS SERVICES

- Cisco Unified Communications Manager based Collaboration 10.0 Services
- Cisco Unified Contact Center
- Cisco WebEx
- Cisco Video Conferencing
- Fully Interconnected PSTN services

MANAGED DATACENTER SERVICES

- Dedicated Servers
- Virtual Machines: MS HyperV / VMWare with DRS and HA.
- DVR: Milestone Xprotect Enterprise
- Storage: iSCSI, FTP, CIFS/SMB, FC, FCoE
- MS Servers: Exchange, SharePoint, SQL, Remote Desktop Services.



This illustrates a typical hybrid multisite rollout where the large sites are connected via 10GE links and 8G FC links for SAN replication. Other critical sites are also provisioned with dual fiber links and redundant paths. Optimal network cost is achieved by connecting the smaller, less critical sites via 100Mbps NGNBN links. All sites appear as one network even though the underlying connectivity is different.

Also illustrated are the additional datacenter and Internet gateway services which can be linked into the network. This allows for shared services among the sites while maintaining central control of a single ingress/egress point to the Internet.



**High-Bandwidth
Connectivity Services**

**10
GE**