

Infinera ATN for Data Center Connectivity

OVERVIEW

Data centers provide centralized data storage, network connectivity and data processing for a range of applications in the current IT infrastructure for businesses and also consumers. Data centers support enterprise applications ranging from business continuity / disaster recovery, carrier access, consumer content storage and distribution, internet peering, and increasingly cloud computing. Data centers incorporate a wide range of networking equipment from physical layer transport through servers and storage and typically have substantial intra-facility traffic requirements.

Huge amounts of data in support of Web 2.0 and enterprise applications drives the need for high bandwidth connectivity between data centers and from data centers to major long haul and metro network PoPs. Data center equipment with Fibre Channel, Gigabit Ethernet and increasingly 10 Gigabit Ethernet interfaces requires efficient aggregation, transport, and management of service between network locations.

APPLICATION

Figure 1 shows a data center application implemented with the new Infinera ATN platform providing high bandwidth connectivity to multiple external networks and customers. Multiple co-located data center applications are shown, including Internet peering, enterprise storage, and network collocation. Typical services include Fibre Channel, Ethernet (1GbE and 10GbE), and SONET services. Multiple 10GbE Ethernet connectivity is increasingly needed for large data center connectivity applications.

As a crossroads between carriers, enterprises, and content providers, the data center must utilize its resources efficiently. The Infinera ATN is designed from the outset to provide best-in-class space and power efficiency. Compact optical modules, including optical filters, optical amplifiers and Service Interface Modules (SIMs), minimize rack space requirements and power consumption – increasingly critical requirements in the modern data center.

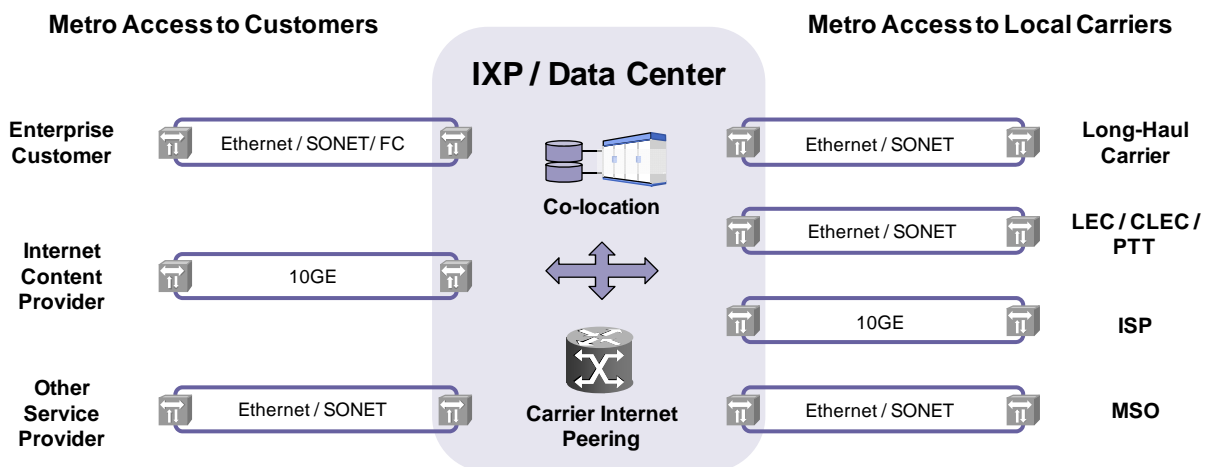


Figure 1. Data Center Connectivity.

Low latency transit is an increasingly critical attribute of many real-time applications hosted in data centers. Transaction-based processes, including synchronous SAN applications and low latency Ethernet applications, are sensitive to latencies of microseconds and require the minimum transit delay between networking equipment. Low latency ATN Service Interface Modules (SIMs) provide the optimum solution for aggregation and transport in these applications, with speed of light transit being the only significant remaining latency component.

Simplicity of use and operation is critical for data center applications. Having more in common with an IT environment than a telecommunications environment, data centers require rapid service turn-up and simplicity of service management and reconfiguration. The Infinera ATN system is optimized to deliver these attributes for data center connectivity and includes the following capabilities:

- Industry leading space and power efficiency using high density modules in a compact 19" 3RU chassis delivers 8x 10GbE transport in a single chassis.
- Redundant AC or -48V DC power options support deployment in a range of data center environments.
- Flexible optical configurations enable optimization for varying traffic demands with a scalable optical filter structure.
- Efficient wavelength and sub-wavelength aggregation maximizes transport efficiency for GbE, 10GbE and 1G/2G/4G/8G/10G Fibre Channel services.
- Multiple network protection options at the line or client level maximize network availability.
- Low latency Service Interface Modules (SIMs) minimize transit delays critical to real time applications and synchronous storage applications.
- Control plane functions for automation of optical power management.
- Integrated ATN networking with the Infinera DTN digital network delivers an end-end solution from local data center connectivity to backbone transport.

INFINERA ATN

The Infinera ATN shown in Figure 2 is a new metro-optimized CWDM and DWDM platform designed for cost-effective WDM transport and multi-service aggregation in metro networks. The ATN extends Infinera's digital optical networking benefits into the metro environment by providing a small form-factor, cost-efficient wavelength-granular add/drop system that interoperates with Infinera DTN. It is designed to support up to 40 DWDM wavelengths or up to 8 CWDM wavelengths and support a range of add/drop services ranging from 100Mb/s up to 10Gb/s. The ATN can be managed through an ATN Graphical Node Manager (GNM) and the Infinera Digital Network Administrator (DNA) to provide consistent, simple operations with other Infinera products with end-to-end service provisioning.



Figure 2. Infinera ATN Metro Edge Platform.

ABOUT INFINERA

Infinera provides Digital Optical Networking systems to network operators worldwide. Infinera's systems are unique in their use of a breakthrough semiconductor technology: the photonic integrated circuit (PIC). Infinera's systems and PIC technology are designed to provide customers with simpler and more flexible engineering and operations, faster time-to-service, lower latency, and the ability to rapidly deliver differentiated services without reengineering their optical infrastructure. For more information, please visit <http://www.infinera.com/>.