Case Study: Georgia Fiber Provider Resilient DCI Application

Vertical: Service Provider / Datacenter operator
Region: North America
Solution: Resilient DCI Application using Ribbon Apollo 9608

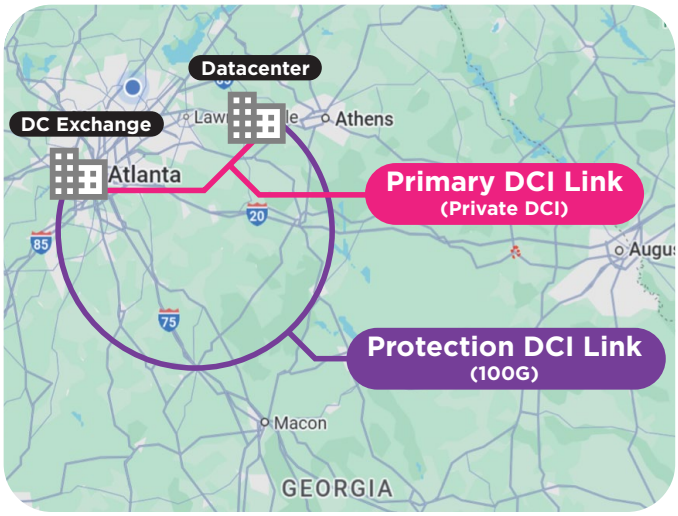
Challenge

There's a growing trend for data center operators to establish new facilities in rural areas driven by several factors:

1. **Lower Costs:** Rural areas typically offer lower-cost land and operational costs compared to urban centers
2. **Power Availability:** These areas often have more available power, which is crucial for data centers that require significant amounts of electricity
3. **Space for Expansion:** Rural locations provide ample space for large-scale data centers and future expansion

Georgia is seeing a significant influx of investment in data center projects with $20B+ of new datacenter projects being announced. One such example is a data-center operator that decided to build a new hyperscale-ready data center campus in Rockdale County, Georgia, in Conyers, Georgia approximately 24 miles to the east of downtown Atlanta. The facility will consist of over 1 million square feet of data center space at full build-out, with up to 216MW total load for the campus.

Rural DCs need high speed (N x 100G/400G) connectivity back to the cloud exchanges which are typically in downtown metros such as Atlanta in this case. They are also in need of resiliency in their DC connectivity to ensure connections to the cloud are maintained even in case of failure of the main DCI link. These secondary DCI paths need to be on totally diverse fiber paths to the main DCI link to ensure physical diversity.



Solution

The DC operator procured a private DCI solution for their primary DCI path back to the cloud exchange in down-town Atlanta. For the secondary resilient DCI path, the customer needed a partner that offered diverse fiber access. Enter a Georgia service provider with extensive fiber access throughout the state of Georgia that was able to provide the DC operator with a managed 100G wave service for their secondary DCI service over a diverse fiber path.

This managed DCI service offers the following benefits to the DC operator:

- 100G DCI service using Ribbon's Apollo 9608 with scalability for additional 100G /400G waves with 800G waves possible in the future
- The DCI service was delivered over an extensive diverse fiber path offering the customer physical resiliency for their DCI service

Ribbon's DCI Solution

- This DCI solution was delivered using Ribbon's 9608 which extends the power and versatility of Apollo optical networking solutions to data centers accommodating the entire range of Apollo transponder, muxponder, ROADM, and amplification blades. Each of its eight slots supports dual 400G density-power-cost-optimized blades, for a total client plus line platform capacity of 12.8T
- Ribbon also offers the 9408 which has a market leading 400G/800G density (25.6T in 2 RU). Apollo 9408 is the industry's highest capacity and highest density platform for 100GbE, 400GbE, and future 800GbE transport. It is designed to provide datacenter operators with the lowest cost per bit for long haul and high traffic density metro DCI applications
- Network management is delivered through the Muse Multilayer Automation Platform which delivers real-time control over Ribbon IP and Optical networks, providing datacenter operators and service providers with the capabilities they need to maximize the value of their DCI network investment. To this end, Muse integrates network planning with equipment commissioning, continually analyzing the use of DCI network resources, and sectionalizing outages rapidly when they do occur.

Moving Forward

With the significant growth of datacenter projects growing due to AI, many of them in rural and suburban locations connecting to major metros, a secondary diverse DCI service will be key for resiliency for these projects. Rural providers have the advantage of having fiber assets that will offer DC operators significant diversity for their DCI connections to the cloud exchanges in Metro Atlanta or other DC cloud hubs in the USA.

This is a significant revenue opportunity for service providers to capitalize on the rapid growth of AI and datacenters being built in rural areas.

Ribbon is here to help our customers capitalize on this opportunity by determining the SLAs required for these new types of services and where existing and future DCs are being planned and where these services can be positioned.

To learn more about Ribbon's DCI solutions, check out our DCI page.

Contact Us Contact us to learn more about Ribbon solutions.