Dutch-Bangla Bank Limited (DBBL), the first bank in Bangladesh to be fully automated, offers a wide range of financial products and services to businesses and consumers. It introduced “plastic money” and digital banking services to the Bangladeshi masses in 2003, and now operates the nation’s largest fleet of ATMs. Because its technology-driven services are unrivaled in the country, most local banks have joined DBBL’s banking infrastructure instead of pursuing their own.

**Results**
- Improved service availability with infrastructure and application redundancy
- Increased capacity with automated traffic management and load balancing
- Boosted network operations efficiency through centralized management
- Bolstered security and disaster recovery with multiple fault zones

**Products**
- Cisco Application Centric Infrastructure (Cisco ACI®)
- F5 BIG-IP Application Delivery Controller
- Cisco Unified Contact Center Enterprise

**More information**
- For more information, visit: cisco.com/go/aci
Challenge: Improve application and service availability

DBBL has always been on the forefront of technological innovation, and is the first bank in Bangladesh to modernize and digitize its services. Customers flocked to its growing network of point-of-sale (POS) systems and ATMs, the largest in the nation, as did smaller banks that wanted to take advantage of the expansive footprint of consumer touchpoints.

But this rapid growth—in customers, partners, touchpoints, and services delivered—placed a significant strain on DBBL’s data center and, more specifically, the power grid supporting it.

“We are the most advanced, innovative, technology-focused bank in Bangladesh,” says Sk. Shakil Ahmed, head of security and senior assistant vice president at DBBL. “But we had four blackouts in two years because the power grid couldn’t handle the load.”

Service disruptions can be detrimental when supporting the banking needs of more than 20 million people. And they can be debilitating when they persist for six hours as an entire data center is rebooted.

DBBL needed to find a way to maintain service availability despite its reliance on an aging power grid. The bank also wanted to improve traffic management, load balancing, security, and disaster recovery in the event of future outages.

“Network operations have become much easier. We can see the entire network and the health of our server farms from the APIC (Application Policy Infrastructure Controller). It gives us very good visibility, so there’s no need for third-party monitoring tools in these zones.”

Sk. Shakil Ahmed
Head of security and senior assistant vice president, DBBL
From reactive to active/active

DBBL could no longer deliver its banking services from a single data center powered by a single grid. The bank’s IT leaders decided to build a second data center 30 kilometers from the first, which is supported by a different power grid. They didn’t want to configure and manage the two data centers separately, however, or deal with application and security fragmentation.

“We can’t have any downtime, no matter what is happening in the background,” Ahmed explains. “Application patches, data center maintenance, and power outages cannot come at the expense of service availability.”

DBBL elected to establish an active/active framework for its two data centers using Cisco ACI. With this industry-leading software-defined networking (SDN) solution, both data centers can be managed as a single infrastructure environment.

Full redundancy with automated traffic management

With full infrastructure redundancy, DBBL’s applications and services can withstand both scheduled and unexpected downtime. Using Cisco ACI Multi-Site capability and a dense wavelength-division multiplexing (DWDM) optical link, the two data centers mirror each other and run the same applications. If one data center experiences an outage, the applications and extra load are shifted to the active data center.

F5 BIG-IP is used for traffic management and load balancing, automatically routing incoming traffic to the appropriate data center. This includes traffic from ATMs, POS systems, branch offices, and the bank’s mobile app. If a link goes down, F5 BIG-IP reroutes it without manual intervention.

“For the first time, we can see the traffic between applications,” says Ahmed. “In the past, the firewall was always the chokepoint of the network, but with F5 managing the traffic, we have less burden on our firewalls and better capacity.”

“Having the same switch in multiple locations and managing them as one should be very hard, but with Cisco ACI, it’s easy.”

Sk. Shakil Ahmed
Head of security and senior assistant vice president, DBBL
Fault isolation with centralized control

Cisco ACI enables granular segmentation, fault isolation, and control, and DBBL’s two data centers are maintained as isolated availability zones, or fault domains. If one zone is compromised or goes down—because of a power outage, for example—it can’t affect the other. This has improved not only DBBL’s service availability, but also its security posture.

The two availability zones are glued together into one logical data center, providing a singular view and centralized management of DBBL’s IT resources and applications. Device configuration, security policies, access control lists (ACLs), firewall rules, and traffic protocols can all be managed from a single site.

“Network operations have become much easier,” says Ahmed. “We can see the entire network and the health of our server farms from the APIC (Application Policy Infrastructure Controller). It gives us very good visibility, so there’s no need for third-party monitoring tools in these zones.”

Looking ahead

With Cisco ACI and F5 BIG-IP as the foundation of an active/active infrastructure, DBBL intends to continue migrating its 40 to 50 applications to the new data center. Full application redundancy will further protect the bank—and its customers—from outages that are beyond its control.

“Migrating applications from one data center to the other is fast and painless,” Ahmed explains. “We just have to change the subnet address. Everything else is the same.”

Because Cisco ACI stretches across computing environments and availability zones, DBBL plans to extend its new SDN capabilities to its disaster recovery site in the near future.

“Having the same switch in multiple locations and managing them as one should be very hard,” says Ahmed, “but with Cisco ACI, it’s easy.”