

# Banking IT Services Provider Transforms Operations

Customer Case Study



JN Data in Denmark accommodates rapid changes in financial services industry using Cisco Unified Data Center solutions.

## EXECUTIVE SUMMARY

**Customer Name:** JN Data (incorporating Bankdata)

**Industry:** Information Technology

**Location:** Denmark

**Number of Employees:** 500

### Challenge

- Meet demand for “always on” service
- Strengthen business continuity
- Improve operational efficiency

### Solution

- Updated network infrastructure to support 24-hour business model

### Results

- Scheduled downtime eliminated by in-service software upgrades
- Risk of downtime for clients greatly reduced using Overlay Transport Virtualization
- Multi-tenant services using MPLS
- Productivity improved and operating costs lowered

## Challenge

As technology becomes ever more important to financial services providers, it is increasingly difficult for smaller organizations to fulfill all their IT needs in-house. Many banks in Denmark have solved this problem by outsourcing their IT requirements to JN Data, which recently merged with Bankdata’s IT services department to become the country’s largest data center and IT services provider to the banking industry.

Business is growing, but success brings its own challenges. Jyske Bank, the third largest in Denmark, is outsourcing the development of its IT systems to Bankdata, a move that will increase data capacity requirements by 70 percent. At the same time, JN Data is experiencing higher demand from all its clients for “always on” services that match the 24-hour nature of modern retail and investment banking. Demand for mobile services is also growing exponentially as more and more consumers interact with their banks on devices such as smart phones and iPads.

“Banks want their customers to be able to go online anytime, from anywhere in the world, to access information and complete transactions,” says Claus Piessenberger, head of network and security operations. “In the past, we would look to carry out maintenance tasks overnight, but now our service windows are getting fewer and shorter.”

JN Data regularly implements network software upgrades and security fixes that are essential to safeguard the banks’ confidential information and to comply with stringent regulations governing financial services. Intensifying demand for 24-hour services was making it harder to carry out those upgrades, which were also very resource-intensive: depending on the size of an upgrade, projects could last three to six months and involve 30 to 70 people.

Another concern was the outcome of any application downtime during upgrades. “We couldn’t do any upgrades without the risk of our clients experiencing a little bit of downtime,” says Piessenberger. “Problems can arise when applications stop working even for just two minutes, and then you have to solve those problems manually, which is expensive, time consuming, and risky.”



**“Our productivity has improved significantly, which is obviously good for our clients and for our bottom line. We have also greatly reduced our risk, and potential threats to our clients’ businesses, by eliminating the issue of problems arising from application downtime.”**

Claus Piessenberger  
Head of network and security operations  
JN Data

In addition, JN Data wanted to minimize the danger of spanning-tree loops, an operational problem that occurs when Layer 2 connectivity is extended from a primary data center to a secondary site beyond the limits of a traditional LAN. Unfortunately, problems in the primary site are transferred to the secondary site, leading to downtime in both data centers. In spite of these risks, this type of data center interconnect is essential for many operating systems and applications, because they can only “see” each other and synchronize their operations in Layer 2.

“We knew that, in a worst-case scenario, spanning tree loops could shut down our data centers and render the failover and redundancy we have built completely worthless,” says Piessenberger. “We didn’t want to have to live with that risk, so we were looking for ways of removing it.”

JN Data also needed to find a way of optimizing Multiprotocol Label Switching (MPLS) functionality, which it relies on to segment different customers’ networks, prioritize WAN and LAN traffic, and allocate network resources.

### Solution

JN Data decided that the time was right to replace its legacy network with a next-generation infrastructure that would offer new levels of scalability and performance, while enabling the company to transform into an “always on” provider.

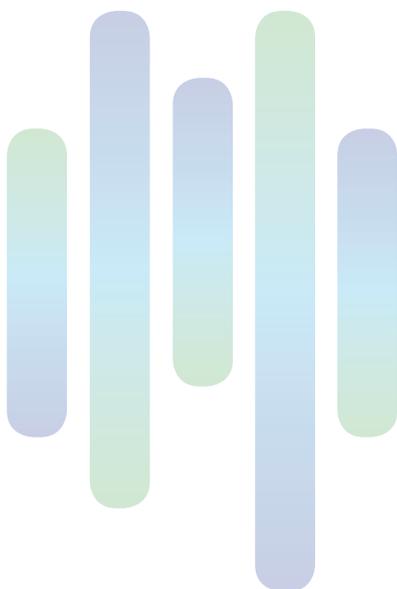
JN Data selected Cisco Nexus® 7000 10-Slot Switches as the platform for its new infrastructure, deploying six switches in two of its five data centers. One of the main business drivers behind this choice was the high availability of the Cisco® Nexus 7000, which supports in-service software upgrades. Cisco Nexus 7000 Series Switches are one of the core solutions in the [Cisco Unified Data Center](#), a framework and architecture that help organizations transform their data centers to meet evolving business needs.

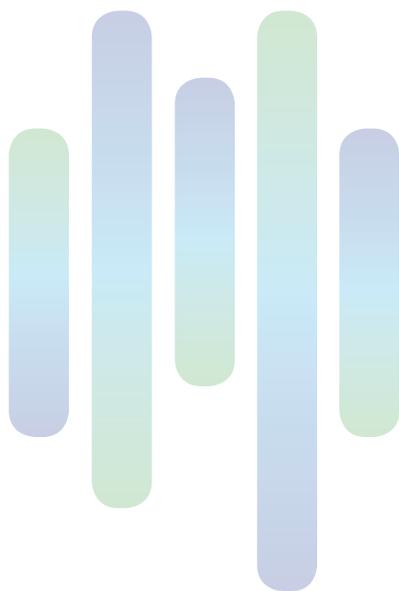
The ability to configure the Cisco Nexus 7000 switches for MPLS with Provider Edge (PE) routing allowed JN Data to continue using MPLS VPNs to separate different customers’ services. “We could transfer all our segmentations of customers’ networks on to the new Nexus 7000 platform without having to make any changes to the existing configurations,” says Piessenberger.

Out of 70 MPLS VPNs that have so far been deployed, the first service to go live was the home-banking application that JN Data provides to the customers of its member banks; this service is especially critical, because it requires 24-hour availability.

JN Data is also using the overlay transport virtualization (OTV) function in Cisco Nexus 7000 Series Switches for Layer 2 interconnect of remote data centers. OTV will allow JN Data to extend Layer 2 between data centers across a wide area network without extending data center failure domains and without adding the complexity of maintaining tunnels or pseudowires.

The virtual port channel (VPC) capability of the Cisco Nexus 7000 increases Layer 2 stability by allowing all links to be in “forwarding mode” and reducing the complexity of spanning tree. Because all links are forwarding, no service disruption, caused by ports changing state, can occur, which eliminates the problems associated with spanning tree in traditional networks.





Another potentially valuable function of the Cisco Nexus 7000 is its virtual device context (VDC) capability. In addition to other network virtualization technologies such as VLANs and VRFs, VDC can be used for separating networks on a shared infrastructure. JN Data is looking into using VDCs to administratively separate its production, development, and test networks.

The high density of cost-effective 10 GB ports in the Cisco Nexus 7000 also appealed to JN Data. "Overall, the Nexus 7000 offered excellent scalability and performance, together with a lot of new technical functionality that would enable us to move our business forward by resolving some pressing strategic and operational issues," says Piessenberger.

### Results

By moving to the Cisco Nexus 7000 platform, JN Data has protected investment in MPLS feature sets and configurations, while introducing the latest advances for maximizing data center uptime and productivity. Moreover, these improvements were achieved without the cost of a major network redesign or an extensive re-skilling exercise.

The in-service software upgrades capability has revolutionized JN Data's operations by enabling the company to carry out software upgrades quickly and easily without disrupting its 24-hour services. "We can now do upgrades at almost any time without affecting service to customers in any way," says Piessenberger. "It works perfectly; it's a dream come true."

Software upgrades now require about one hour of one network engineer's time, whereas previously they might have needed 30 to 70 different people and taken three to six months. Even more importantly, zero downtime now occurs, compared with two to eight hours of scheduled downtime for each maintenance window previously. Combined with the fact that problems no longer occur as a direct result of applications being turned off, this capability has enabled JN Data to further enhance the level of services to clients and make better use of skilled engineers' time.

"Our productivity has improved significantly, which is obviously good for our clients and for our bottom line," says Piessenberger. "We have also greatly reduced our risk, and potential threats to our clients' businesses, by eliminating the issue of problems arising from application downtime."

The company is also benefiting from MPLS VPN functionality, which makes it simpler to segment a common network supporting multiple customers. "When we integrate new customers into our environment, they often come with the same types of VLAN and VLAN numbers as other existing customers," says Piessenberger. "Now that we are using MPLS VRF on the Nexus 7000, these overlaps won't occur, and it will be much easier to mitigate that problem."

JN Data hosts more than 40,000 business-critical applications, including online banking and ATM networks, and many applications rely on data from other applications to function, meaning that a problem in one system can affect others. In such a sensitive environment, reducing the risk of security breaches or service interruptions is infinitely valuable, providing JN Data with greater peace of mind and confidence in its ability to offer customers high levels of availability and stability for their applications.



Another significant area of risk that has been removed is that of a spanning tree loop causing system failure and subsequent interruption to business-critical services. The new platform has greatly improved the redundancy of the data centers, reinforcing the company's own business continuity and that of its clients.

JN Data believes that the scalability, availability, and high performance of the Cisco Nexus 7000 Switches make them an ideal strategic choice of platform for the company's changing business needs. The Cisco solutions also represent an excellent investment for the long term, having replaced another Cisco infrastructure that served JN Data well for more than nine years.

### For More Information

Further details about the Cisco Unified Data Center are available at:

[www.cisco.com/go/datacenter](http://www.cisco.com/go/datacenter)

For more information about Cisco Nexus 7000 Series Switches, please visit

[www.cisco.com/go/nexus7000](http://www.cisco.com/go/nexus7000)

### Product List

#### Data Center

- Cisco Nexus 7000 10-Slot Switches



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