

## Airline Achieves 99.99 Percent Network Availability



*KLM uses Cisco Prime to keep vital network and customer services at peak performance.*

### EXECUTIVE SUMMARY

**Customer Name:** KLM Royal Dutch Airlines



**Industry:** Aviation

**Location:** Netherlands

**Number of Employees:** 33,000

#### BUSINESS CHALLENGE

- Reducing unanticipated downtime and meeting SLA for network availability
- Streamlining IT administration by improved visibility and fast problem-solving
- Deploying new services by simplifying network operations and managing risk

#### NETWORK SOLUTION

- Implemented Cisco Prime LMS and Prime NAM to provide reliable management, experience-centric visibility, and rapid troubleshooting

#### BUSINESS RESULTS

- Maintained 99.99 percent network availability through monitoring and proactive problem-resolution
- Reduced time required for day-to-day management of software and networks
- Reduced time required to resolve problems by 800 percent

### Business Challenge

Offering a broad array of passenger services, KLM, one of the world's oldest airlines, has long positioned itself as the customer's first choice for airline travel. Its flexible bookings, ticketing, and check-in options provide customization and convenience, while its extensive route system, alliances, and partnerships expand access to more global destinations. The company also promotes sustainable travel with programs such as KLM AirCares, placing it in a leadership role in corporate social responsibility within the transportation industry and building a strong reputation for giving back to the communities, particularly those less fortunate, that it serves. Because KLM's values are centered on the customer experience, a top priority of the company's IT team is to maintain a highly available network to ensure the timely and consistent delivery of services to passengers, employees, and program recipients alike.

The IT team operates two data centers that help carry 25 million passengers and 500 tons of freight each year and that provide services to 33,000 employees located in offices and in airports where the company has a presence. "We have more than 200 specialized applications," says Martijn Veldhuizen, IT specialist at KLM. "Everything from check-in to baggage management runs through these data centers; we literally could not run our business effectively without them."

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Any disturbance in network availability has the potential to affect users by inhibiting their access to key applications and services, ultimately resulting in poor customer experiences. “We know that network availability is critical for our employees and for our passengers. That is why we adhere to an internal service-level agreement (SLA) of 99.99% network availability,” says Veldhuizen.

In the 1990s, KLM decided to standardize its network infrastructure on Cisco after a disappointing experience with a multivendor network that proved unreliable and difficult to manage. The company deployed Cisco Catalyst® 5000 Series switches, migrating to the Cisco® Catalyst 6500 Series once introduced. Today, KLM has 29 Catalyst 6500 switches in both the core and access layers with Cisco Prime LAN Management Solution (LMS) and Cisco Prime Network Analysis Module (NAM) managing their Cisco network. The IT team has never yet failed to meet the SLA, helped by the switches delivering high scalability, rich services, and hardened reliability and Prime network management solutions simplifying network operations.

“We have seen positive results in our business by working with Cisco, so with KLM's desire to accelerate the roll-out of new applications and technologies to drive new customer services, it was an easy choice to continue with Cisco solutions,” says Veldhuizen. With only a staff of six working full time to support the data centers, KLM's IT team relies on the capabilities and workflows of Cisco Prime to help them further streamline network management and continue to provide high-quality user experiences in an environment with constantly changing and ever growing network demands.



## Network Solution

KLM's IT team uses Prime LMS, now a part of Cisco Prime Infrastructure, to monitor the health of the network. A single dashboard displays performance and fault information for the networked devices. With alerts for disruptions and errors, the IT team is able to solve problems fast and keep the network running smoothly. Veldhuizen says, “Prime LMS has been instrumental in helping us proactively respond to incidents, permitting our team to act quickly and, as a result, prevent impact on our operations.”

Prime LMS also provides KLM with excellent visibility into how its network resources are being used. Trends showing high usage can indicate that KLM needs to make adjustments to help safeguard network performance. It can also let the team know when resources are being underutilized. “We have some older equipment running at locations around the company. Sometimes, that equipment is simply gathering dust,” says Veldhuizen. “We can save KLM money by using Prime LMS to locate the equipment, check its usage, and shut down or redeploy anything that is underutilized.”

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In addition to monitoring and alerts, Prime LMS offers powerful management tools that streamline day-to-day operations. Configuration management tools help KLM archive configurations and keep track of updates, while compliance reports alert the IT team to discrepancies with selected configuration policies, helping optimize configurations and more easily fix any problems caused by new configurations. With less time devoted to tactical network management, the IT staff can focus on helping ensure excellent network performance for existing and new advanced services.

**“We’ve seen a large return on our investment in Cisco Prime NAM by reducing system downtime and greatly streamlining IT administration. We have more than 5000 connections to servers, and we rely upon Prime NAM to find the source of any problem.”**

**— Ron van Vliet, IT Specialist, KLM**

KLM also runs a major implementation of NAM, with 29 NAMs integrated in each Cisco Catalyst 6500 switch and two Cisco Prime NAM 2200 Series Appliances analyzing traffic flowing through a new deployment of Cisco Nexus® 7000 Series switches. “We’ve seen a large return on our investment in Cisco Prime NAM by reducing system downtime and greatly streamlining IT administration,” says Ron van Vliet, IT specialist at KLM. “We have more than 5000 connections to servers, and we rely upon Prime NAM to find the source of any problem.”

In addition to the IT team running the data center, the security, operations, and wide area network teams also access the Cisco Prime NAMs to analyze traffic, from finding the root cause of network issues to identifying virus-infected or bot PCs. “We can even use Prime NAM to track down individual users,” says van Vliet. “We were phasing out the old internal DNS interface, so I would check the IP addresses of users still accessing the old interface and remind them about the change. This helps reduce the number of technical support requests later on when we eliminate the old interface completely.”

For KLM, a critical benefit of Prime NAM is the ability to monitor traffic remotely on a local desktop for anywhere, anytime access, helping enable the IT and other network teams to perform detailed root cause analysis quickly without physically travelling to the sites. This capability not only saves KLM in terms of manpower and time required for travel, but it also allows teams to act quickly to catch and fix problems early on.

The use of Prime NAM also significantly improves visibility into overall network operations by making it possible for the IT team to produce reports that highlight short- and long-term network trends. For instance, detailed Prime NAM reporting provides information about application usage and response times on both the client- and server-sides, helping the team gain insights, such as when busy hours occur, and to establish and improve policies to help ensure that business-critical applications are always readily accessible to users.

## Business Results

Cisco Prime LMS and Prime NAM allow the IT staff at KLM to efficiently keep the company’s high-demand, high-performance network up and running. One of the keys to achieving the 99.99 percent network availability SLA is the device-monitoring capabilities of Prime LMS. “Alerts from Cisco Prime LMS help us find and solve problems before they affect the entire network,” says Veldhuizen. “This greatly reduces network downtime and helps us achieve 99.99 percent network availability.”

In addition to helping KLM achieve high network availability, LMS has helped the small IT team save time. For example, KLM uses PSIRT reports in Prime LMS to check for vulnerabilities in system software. "We run many versions of many different types of Cisco system software," says Veldhuizen. "Cisco Prime LMS is an incredible time-saver, automatically doing what might take us days manually."

Before Prime NAM, troubleshooting complex problems was solely based on portable packet analysis tools, but with a lack of contextual analytics to help pinpoint the source of the problem, along with a number of key sites being located in different countries, the team tried to avoid it. Since deploying NAMs, the ability to remotely track down and solve the problems has saved the company both time and labor. "Cisco Prime NAM enables us to remotely connect to the network instead of driving to the site and connecting physically," says van Vliet. "A potentially eight-hour job can now be performed in an hour with NAM."

As KLM has been a long-time user of Prime LMS and Prime NAM, the IT team has developed well-vetted IT processes with the help of these solutions. These processes have enabled the IT team to rapidly respond to both strategic business changes as well as random issues that are a normal part of running a large, complex network. "Cisco Prime has hugely benefitted our IT team," says van Vliet. "With smooth network operations, we know our customers can receive the services they need when they need it. This builds trust in our airline, and makes it easier for customers to want to choose us first."

## PRODUCT LIST

### Routing and Switching

- Cisco Catalyst 6500 Series Switches
- Cisco Nexus 7000 Series Switches
- Cisco Nexus 5000 Series Switches
- Cisco Nexus 2000 Series Switches

### Network Management

- Cisco Prime LAN Management Solution (LMS)
- Cisco Catalyst 6500 Series Network Analysis Module (NAM)
- Cisco Prime NAM 2220 Appliance
- Cisco Prime NAM 2204 Appliance

## For More Information

To find out more about the Cisco Prime LMS, go to:

<http://www.cisco.com/go/lms>.

To find out more about the Cisco Prime NAM, go to:

<http://www.cisco.com/go/nam>.

To find out more about KLM, go to: <http://www.klm.com>.



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