



Michael Lundsgaard Sørensen, North Denmark Region

## The North Denmark Region has laid the foundation for the data center of the future

**With a fiber-based infrastructure from Cisco, the North Denmark Region has laid the foundation for the data center of the future for the benefit of the whole Region and, particularly, the Region’s patients and health workers. The additional price of the advanced switch solution was balanced by savings on copper cables.**

OVERVIEW	
<b>CHALLENGE</b>	Need of the ideal network foundation for the data center of the future since servers and storage must be consolidated in one data center.
<b>SOLUTION</b>	WAN and LAN solution from Cisco based on: <ul style="list-style-type: none"> <li>• Two Cisco Catalyst 7600 that handle the Core Switching layer</li> <li>• Two Cisco Catalyst 6500 that handle the Distribution layer</li> <li>• Four Cisco Nexus 5000 that – along with 22 Cisco Nexus 2000 – constitute the Access layer towards the server farm</li> </ul>
<b>RESULT</b>	Future-proof fiber solution that supports good patient treatment and is prepared for a new EMR. At the same time it has become easier to manage the data center.
<b>PARTNER</b>	Access A/S

The North Denmark Region with a population of 580,000 is the result of a merger of the [North Jutland County](#) and parts of [Viborg](#) and [Århus counties](#). In connection with the merger, the new region brought a major part of the existing IT systems together in the data center of the administration head office. But the data center was soon filled to bursting point and lacked space as well as cooling and electricity. As a result, the IT department has gone through lengthy considerations with the intention of consolidating and gathering the old data center and the Region’s other servers and storage facilities, currently spread over more than ten hospitals, in one new, large data center at Hadsundvej in Aalborg. The North Denmark Region is working towards a data center strategy with more than one data center so if, contrary to

expectations, a breakdown should happen then a copy of the data center will be ready to continue operations from the Region’s other data center at Aalborg Hospital Section South.

The North Denmark Region, however, did not simply want to transfer the whole operation, but to build a brand new data center.

“We mainly wanted to get the foundation of the data center in place before we would embark on the proper server consolidation. All the critical features were to be based on an infrastructure with

sufficient capacity, and it just *must* work before we began to virtualize our hundreds of servers. The future virtualization will mean major savings on operating costs and make our IT greener,” says Michael Lundsgaard Sørensen, team coordinator of infrastructural operation in the North Denmark Region.

### **For the benefit of the citizens and ready for a new EMR**

The solution supports the IT department’s portfolio of applications that give citizens in the region a better patient process, and at the same time the IT department can more rapidly meet the demands of health authorities and staff for instance in the form of roll-out of new types of hospital applications. When, in the future, doctors want to start using new applications, the IT department can react quickly thanks to a thoroughly modernized infrastructure.

“Our network is so reliable that operations at the hospitals, for instance, will not be postponed in case of an IT breakdown. At the same time we have a much higher level of security since patient data and administrative data do not appear in the same data flow, but are strictly separated. That also makes it easier for us to implement a new electronic medical record system, EMR, with all clinical applications in one single system which we expect will be the primary tool of all health personnel,” says Michael Lundsgaard Sørensen.

### **Lower cable expenses**

The IT department of the North Denmark Region is operating as many applications as a larger bank. This complexity is highly demanding in terms of infrastructure, accessibility and operating reliability. As a result, the entire underlying network that is central for the quality of the patient treatment had to be restructured to become an extremely reliable infrastructure based on fiber switch technology. The advanced switches were “paid for” by the major savings that resulted from using fewer copper cables:

“The basics securing the reliability of everything are much better with this fiber switch solution. In the future we will always be able to guarantee our users high speeds on the network. And with the Nexus 2000 Series we didn’t have to shoulder major expenses for cabling. This means that it has been cost-neutral to invest in this advanced solution,” says Michael Lundsgaard Sørensen.

“We will be able to guarantee long uptimes and clearly specify how much bandwidth and backup time we want to allocate to the individual applications. It will be much more transparent. And if we have an error we will be far quicker to discover where in the system it has occurred,” says Michael Lundsgaard Sørensen.

### **Most important data first**

With Cisco Catalyst 7600 and 6500, the North Denmark Region is now able to classify the traffic in the data center.

“This means that we can assign very precise priorities to the data in the network and advance the most important data. The top priority goes to our many users of IP telephony while X-rays and video traffic are assigned the second highest priority. After this there are other critical applications,” Michael Lundsgaard Sørensen explains.

With the new data center solution, the North Denmark Region has achieved a much higher degree of security:

“Our information security has been significantly improved. At the same time, we have achieved administrative benefits since, for example, the documentation of servers has become easier. We

only need one tool for monitoring switches and ports, and we don't need decentralized monitoring of servers," Michael Lundsgaard Sørensen says.

The North Denmark Region also considers Unified Computing, which is the next generation of data centers. Unified Computing supports massive virtualization and with all elements in the data center running on the same platform.

"Unified Computing can make our data center even more efficient, and we will consider this the next time we have to make bigger changes," Michael Lundsgaard Sørensen says.



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