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*Klaus Larsen
IT Operations and Support Manager
Region Nord*



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Denmark's Region Nord Transforms Healthcare With Cost- and Energy-Efficient Technology Innovations

Region Nordjylland (Region Nord) is the regional council that governs the northern district of Denmark. To meet the complex and diverse requirements of its perpetually growing public healthcare sector, Region Nord turned to Hitachi Data Systems and Brocade for unified IT infrastructure. A progressive strategy and advanced technologies provide exceptional mobility, healthcare and energy efficiencies, and important new capabilities.

Denmark is among the world's leaders in using healthcare technology, which is imperative for the country that averages 1 physician per every 300 citizens. In this era of e-health, almost everything is digital, from patient records and billing information to medical images and monitors.

Hospitals throughout Denmark are mainly owned and run by administrative regions. Region Nordjylland has a population of nearly 600,000 and a coverage area spanning 7,800 square kilometers. This region manages several hospitals, including a renowned university hospital, and 14,000 employees across 11 sites and 76 physical addresses. Region Nord also has a fast-growing IT network of 15,000 end users, who are primarily medical practitioners and staff, as well as council administrators. These end users want to

access hospital data from anywhere, at any time and on any device to provide the best care for their constituents.

To deliver on the promise of modern healthcare, the IT department at Region Nord has a clear mission. “Our main goal in IT is to align with the business: our hospitals,” says Klaus Larsen, the IT operations and support manager for Region Nord. “The better the technology platform and availability, the better the systems we can build on top. This means faster access of records and images for hospital staff, which in turn can lead to earlier diagnoses and treatment. It means new capabilities to capture and analyze sensor data and media streams, so we can be poised for the next big bang of healthcare,” he explains.



NORTH DENMARK REGION

Region Nordjylland

INDUSTRY

Healthcare, Government

SOLUTION

Converged, Enterprise Platform, Virtualization

HARDWARE

Hitachi Virtual Storage Platform, Hitachi Virtual Storage Platform G1000 and global-active device feature, Hitachi Compute Blade, Hitachi NAS Platform 4080 and universal migrator feature

SOFTWARE

Hitachi Storage Virtualization Operating System, Hitachi Accelerated Flash, Hitachi Command Suite, Hitachi High Availability Manager

SERVICES

Provided by Hitachi TrueNorth Partner KMD and Hitachi Data Systems Global Solution Services

Benefits at a Glance

- Fast data availability and accessibility.
- Increased data security.
- Reduced IT costs and carbon footprint.

The Challenge: Clear Complicated IT Hurdles

When lives are on the line, every decision and every moment counts. Being able to support the region's mission-critical medical applications is vital. Three years ago, Region Nord chose to move toward converged IT infrastructure to expedite value and results across the healthcare enterprise. It made this move just in time.

Hospital data growth and subsequent backup requirements increased each year by 44% across a distributed and often disparate IT estate. Data centers were becoming rife with inefficiencies and limitations because of siloed systems and countless components, technologies and tools to manage dynamic workloads. In its attempt to keep pace with relentless data growth, IT continually deployed new physical servers but then faced a shortage of floor space to house them. Despite efforts to harness growth and manage the existing infrastructure, IT costs and complexities continued to increase.

Pressures continued as Region Nord IT looked to the future. Imminent projects included massive consolidation of disparate storage, virtualization of servers, and a virtual desktop infrastructure (VDI) implementation that would eventually extend to personal devices. Always focused on an improved future, Larsen had a vision and a plan.

"Running an IT infrastructure for hospitals is a big responsibility. We believe we must always be in front of what the market offers, to be seeking out what is possible, not just what is available. Sometimes, the hospitals want or need a new system or program right away, so I must always be prepared to clear those hurdles and meet those business needs," says Larsen.

By unifying compute, storage and networking technologies into a more integrated package, or a converged infrastructure, Region Nord would indeed be able to meet its obligations. Converged infrastructure fosters rapid deployment of new applications, greater flexibility and availability of data, and better business innovation.

The IT team originally worked with Hitachi TrueNorth Partner KMD to evaluate potential solutions and vendors. Among Region Nord's top priorities were being able to scale without sacrificing performance or availability, and gaining greater operational efficiency and simplicity to lower costs and risks. The top 2 contenders were Hewlett Packard and Hitachi Data Systems.

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The Solution: Transition to a Virtualized Enterprise

To map out its journey to a converged infrastructure, Region Nord began with a pair of Hitachi Virtual Storage Platforms (VSP) and Hitachi NAS Platform (HNAS).

Pool Resources

Designed for massive storage consolidation and pooling virtualized resources, VSP delivers a 3-D scaling storage platform for all data types. VSP is a high-capacity, high-performance system capable of sweeping efficiencies, with enterprise-class virtualization, dynamic provisioning and tiering, and unified data replication across heterogeneous

storage. Hitachi Accelerated Flash (HAF) boosts performance and virtualization efficiency, thanks to unique flash technology that

reduces energy costs and increases application service levels. Highest availability also reigns supreme across VSP to ensure that all Region Nord's applications and data are always accessible and safe. Hitachi High Availability Manager provides unmatched continuous availability while Hitachi Command Suite supplies ease of administration and visibility with central management of virtualized storage pools.

HNAS 4000 series handles file server consolidation and mission-critical NAS workloads. HNAS uses intelligent file tiering, automated migration, primary data deduplication and hardware-accelerated network protocols to support the intense file sharing demands of Region Nord medical staffers. HNAS offers 3 types of snapshot capabilities, including point-in-time, directory cloning, and Hitachi NAS File Clone for quick, space-efficient cloning of writeable snapshots, which is ideal for VDI environments. Enhanced enterprise features include VMware and Microsoft® Windows® integration and universal migrator feature.

Retool Power

Next, Region Nord brought in Hitachi Compute Blades and Brocade SAN infrastructure. With a goal to virtualize the IT environment and launch VDI, Larsen saw the advantages of adding cost-efficient power.

"It is very difficult to consolidate and virtualize without the right infrastructure. The average healthcare organization might reach 60% virtualization because of legacy system challenges. With our Hitachi blade

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With HAF
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“Our Hitachi Compute Blade infrastructure is pure power to fuel our mobility innovation. We've cut login time by half, we've virtualized over 85% of servers via the blades, and we expect to be at 95% in a few months.”

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Region Nord

strategy, we saw an opportunity to virtualize almost everything. We no longer need to buy physical servers. We just buy blades with SSDs (solid-state disks) and run VMware on top. We also upgraded to a Brocade enterprise SAN infrastructure for greater speed and performance. Moving toward this unified, converged infrastructure with Hitachi and Brocade technologies will give us greater peace of mind to build what we need," Larsen says.

Hitachi blade technology uses flexible architecture and high-compute density to fit the dynamic virtualization and logical portioning demands of mission-critical data centers. Hitachi Compute Blades allow configurations to exactly match application needs and multiple applications to seamlessly coexist in the same chassis. Brocade Network Advisor provides end-to-end network visibility and control.

Region Nord employed Hitachi Data Systems Global Solution Services (GSS) for the implementation of VSP G1000 with global-active device, HNAS and Brocade. After the successful implementation, Region Nord continued to use Hitachi GSS remote service for all aspects of the infrastructure, including server, SAN and storage.

The Benefits

Innovations

With the Hitachi blade infrastructure fully ramped up, the VDI implementation became a quick success. "In the first year of our VDI implementation, 75% of clinicians were on the platform. Now it's the main platform for most everyone to access health-critical data and records from terminals, iPads, TVs, any device they wish, wherever and whenever," Larsen details. "Our Hitachi Compute Blade infrastructure is pure power to fuel our mobility innovation: We've cut login time by half, we've virtualized over 85% of servers via the blades, and expect to be at 95% in a few months."

Denmark uses an energy rebate program, which provides cash incentives to companies installing new, energy-efficient technologies. Region Nord has been able to calculate its "credits for kilowatts" to achieve impressive cost savings.

"In 2014, we used Hitachi hardware and virtualization to reduce the number of physical servers, commission 451 new virtual servers, and customize the storage environment for annual energy savings of over 1.2 million kWh and corresponding cooling savings of over 450 kWh. These tallied to substantial savings," Larsen describes. "We take the energy efficiency into account with each purchasing decision. Thinking green can forge a new argument for obtaining funding for better technology that can do more and save more. Hitachi Accelerated Flash is strategic for us in this way: We get more performance and it saves us 30% in energy consumption compared to SAS drives."

Poised for the Future

Region Nord now has 2 data centers located within an enclosed fiber-optic ring, with redundancy everywhere. The sites were designed as active-active to ensure they remain up and running no matter what. The next phase of Region Nord's converged infrastructure strategy is deployment of 2 Hitachi Virtual Storage Platform G1000s (VSP G1000) to complete virtualization across the enterprise.

With unprecedented performance, availability and scale, plus zero downtime, Virtual Storage Platform G1000 is truly an evolution in superior storage architecture. Software-centric for native functionality and in-system scalability for seamless growth, VSP G1000 allows organizations to grow system capacity, connectivity and competencies with the business need. Hitachi Storage Virtualization Operating System (SVOS) uses ubiquitous software intelligence to power enterprise capabilities in VSP G1000. SVOS supports 100% availability

demands, and stimulates better cost performance and true unified system management.

Region Nord chose the optional global-active device feature of VSP G1000 for built-in active-active volume clustering of storage over multiple sites. It allows read/write copies of the same data to reside in 2 places at the same time, which is ideal for running concurrent applications at multiple sites. Global-active device volumes are automatically protected, do not require appliances, and support simplified high-availability server configurations.

"Hitachi enables us to be prepared not just today but for the future. What we hope to accomplish with this converged build-out is the ability to capitalize on any new healthcare opportunities important for our region. We've already gained easier administration and user mobility and substantial cost savings. Now we're on the cusp of being able to capture and analyze new sources of data and extend our capabilities for providing better care. Now the real fun starts," Larsen finishes.

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