Delivering reliable diagnostics for efficient patient care

Medizinisches Labor Nord strengthens operational resilience, enables faster diagnostics, and supports future growth

MEDIZINISCHES LABOR NORD

Customer: Medizinisches Labor Nord
Industry: Healthcare
Country: Germany

Delays in diagnostic services can compromise patient care and disrupt healthcare operations. To meet the growing demand for faster, more accurate, and seamless services, diagnostic provider Medizinisches Labor Nord implemented a georedundant IT architecture to support continuous operations. The upgrade is enabling the laboratory to process 30% more samples and deliver results faster while protecting patient data. This leads to better patient care and a new capacity for growth.

Ensuring continuity of crucial diagnostics

Operational continuity is vital in medical diagnostics, where uninterrupted service is essential for delivering timely and accurate test results. As workflows increasingly rely on digital platforms for data processing and storage, laboratories like Medizinisches Labor Nord face risks from disruptions that can delay results and medical decisions.

This reliability is especially important for Medizinisches Labor Nord because it handles high volumes of diagnostic samples and serves as a regional hub for its parent organization, laboratory diagnostics provider Sonic Healthcare Germany.

"Digitalization is very important in laboratory diagnostics right now to provide faster diagnoses and improve accuracy of results," says Stefan Schmidt, head of IT at Medizinisches Labor Nord.

Recognizing the need for modernization, the laboratory identified opportunities to transform its operations. By implementing a georedundant IT infrastructure supported by a secondary data center, it has achieved 100% system availability and now processes up to 10,000 diagnostic samples daily while ensuring robust disaster recovery and secure data backups.

"We have a very high-performance system, and we're now prepared for growth," shares Stefan Schmidt. "We're no longer focused on what systems to use but instead on expansion and management."
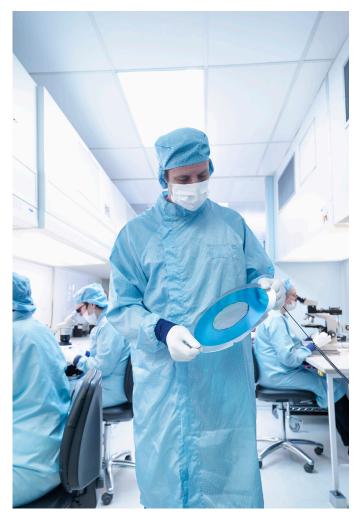
Vision
Ensure reliable and efficient operations that accelerate results and support the growing diagnostic needs of healthcare services

Strategy
Implement a unified and georedundant IT infrastructure to improve service continuity, increase capacity, and secure patient data

Outcomes

— Increases throughput by up to 30%, processing 8,000 to 10,000 diagnostic samples daily

— Delivers uninterrupted service with 100% system availability

— Enables faster decision-making and external collaboration through improved diagnostic capacity and speed

— Strengthens data security and compliance to protect patient information

Future-proofing operations

With an aging IT infrastructure, including outdated firewalls and fragmented storage, Medizinisches Labor Nord was increasingly vulnerable to disruptions. This made it difficult to manage growing volumes of data, adopt new digital healthcare technologies, and ensure continuous service delivery.

"The risks were very high, especially in the firewall environment," says Stefan Schmidt. "We were constantly facing new requirements, often daily, that were difficult to implement within such an outdated setup."

To safeguard operations and ensure future readiness, the laboratory worked with Hewlett Packard Enterprise and channel partner enthus Group to implement a centralized IT infrastructure at a dedicated facility. This overhaul combined operations from two smaller data centers into a hub equipped with modern disaster recovery capabilities and scalable systems.

Strengthening service resilience

The new infrastructure is enabling Medizinisches Labor Nord to manage current diagnostic workloads more efficiently while supporting future growth. Powered by HPE Alletra Storage MP B10000, HPE ProLiant DL380 Gen11 Servers, HPE ProLiant DL360 Gen11 Servers, and HPE Apollo 4510 Gen10 Systems — with HPE Aruba Networking CX Switch Series enhancing network connectivity, it provides scalable computing power and storage capacity. Important applications such as the laboratory information system and imaging software now run on the infrastructure, supporting uninterrupted workflows.

"Our users are very happy about the 100% availability of our systems and services," says Stefan Schmidt. "Since we moved to the new architecture, they no longer experience delays or interruptions."

By addressing critical vulnerabilities, the laboratory has built a strong foundation for operational resilience. "We're now in a much better position, especially with our backup and recovery processes. We can switch to our secondary data center when carrying out updates on our primary storage, which guarantees continuity for the lab and our services."

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Stefan Schmidt, Head of IT, Medizinisches Labor Nord

Accelerating diagnostics

The updated infrastructure has improved performance in critical areas such as laboratory diagnostics, where digitalization is progressing rapidly.

With an upgraded IT environment, Medizinisches Labor Nord has integrated imaging systems capable of handling large tissue samples and storing terabyte-sized files while providing quick access to data. This supports faster diagnostics, easier external collaboration with healthcare providers, and higher-resolution imaging.

"A single laboratory diagnostic file can be around one terabyte," explains Stefan Schmidt. "These files contain sectional samples that must be visualized with precise zoom and macro functionality, which requires substantial processing power. If we can't deliver data fast enough, it becomes a bottleneck."

Improving efficiency and capacity

With increased speed and capacity, the laboratory can now process large files while maintaining high standards of service. It handles 8,000 to 10,000 diagnostic samples daily and has achieved up to 30% more throughput compared to its previous systems.

Stefan Schmidt attributes this improvement largely to the new infrastructure, which is instrumental in accelerating the laboratory's automation efforts. The upgraded networking architecture ensures fast and reliable data access, supporting the lab's automation systems.

"Our Roche (cobas) infinity system — the largest ever setup in Germany — relies on our new technology platform to manage complex diagnostic tasks," he says. "This software solution coordinates workflows for automated diagnostic lines and helps us process large volumes of samples without any issues."

He stresses the importance of speed and performance in controlling these workflows. "With our current IT environment, we have the capacity and flexibility to scale as we need."

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Streamlining operations

By consolidating fragmented systems into a unified architecture, Medizinisches Labor Nord has simplified its IT environment and reduced inefficiencies. This allows IT teams to focus on higher-value tasks instead of troubleshooting disparate systems.

The new centralized management system also helps streamline operations and improves overall performance with HPE Aruba Networking Central offering unified network oversight to deliver reliable and secure connectivity.

"We don't have to worry about the infrastructure, and that's the most important point in IT," notes Stefan Schmidt. "The system just runs continuously and performs without any major issues."

Securing patient data

Data security was another focus of Medizinisches Labor Nord's modernization, given the sensitivity of patient information and diagnostic results. The laboratory upgraded its storage and switch equipment, deploying advanced encryption, secure access controls, and real-time monitoring.

These measures not only protect data but also ensure compliance with industry regulations and data protection standards.

"I no longer worry about security since we upgraded to HPE Alletra Storage MP," says Stefan Schmidt. "Its features secure our data, and we've eliminated concerns about service disruptions that used to affect our workflows."

Building a scalable hub for future growth

Looking ahead, Medizinisches Labor Nord plans to build on its centralized IT infrastructure to support the continued expansion of Sonic Healthcare Germany's network and improve operational efficiency. The scalability of its network architecture will be crucial in handling ever-increasing data demands, particularly as laboratory diagnostics drives the need for higher storage and processing capacities.

With the addition of a new laboratory to the data center at its new facility — along with future integrations of other labs — Medizinisches Labor Nord is positioning itself as a central IT hub for the organization's northern region.

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Stefan Schmidt, Head of IT, Medizinisches Labor Nord

Solution

Hardware
— HPE Alletra Storage MP
  B10000

— HPE ProLiant DL360 Gen11
  Server

— HPE ProLiant DL380 Gen11
  Server

— HPE Apollo 4510 Gen10
  System

— HPE Storage Fibre Channel
  Switch B-series

— HPE Aruba Networking CX
  6200M 24G Switch Series

— HPE Aruba Networking CX
  6200F 48G Switch Series

— HPE Aruba Networking
  Central

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"This is just the beginning," says Stefan Schmidt. "Laboratory diagnostics alone is driving demand for 40 terabytes of additional storage, and we're ready to scale. Our focus is on structured growth, supported by clear planning and step-by-step implementation to make sure everything's running smoothly."

"With our HPE Alletra's flexible and modular architecture, we can scale as needed while keeping costs under control," he adds.

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