



Protime datacenter

Infrastructure, monitoring &
permanence

Datacenter

Facts Sheet

Operations Center

- Datacenters in Diegem and Aalst for maximum availability
- Continuous monitoring by on-site operators
- Monitoring consoles which bring insight on critical components
- Automatic notification/alarm and escalation system
- System and network engineers on watch 24/7

System and Storage Infrastructure

- Production servers on Windows operating systems and robust A-quality server hardware
- Storage systems with synchronous PPRC data replication spread over 2 distinct locations
- Backup system with automatic tape library and the newest tape drives
- Optimal usage of the latest virtualization technologies
- A motivated, well-trained and certified team of system and network engineers

Security

- Presence of security guards in the buildings
- Electronic access control system
- Video surveillance
- Racks secured with numeric access keys
- Automatic fire detection and extinguishing system

Connectivity

- High capacity fiber optic connections with physically separated paths
- High capacity internet connection via multiple providers
- Redundant and performance driven DWDM links which connect our primary datacenter (Diegem) with the backup datacenter (Aalst)

Electrical Infrastructure

- Designed to deliver a minimum of N+1 level of power supply
- Redundant power supply with a really robust and adequately protected low-voltage infrastructure
- UPS units which also monitor the line quality of the power supply by isolating the critical power paths of the public electricity grid
- Diesel generators with an autonomous power of more than 24 hours under an 85% - 90% load

Air-conditioning and Cooling

- Designed to deliver a minimum of N+1 level of air-conditioning and cooling services
- The entire infrastructure is monitored on multiple environment parameters by a Building Management System which lets us analyze trends of performance, capacity, alarms, automatic reactions and reports
- Water-cooled racks with great performance

Datacenter Infrastructure

The infrastructure of the Protime datacenter is a modern 'lights-out' datacenter which, given the ever-increasing criticality of the ICT-systems it houses, is operational 7 days a week and 24 hours a day. This doesn't just lead to saving energy, but also to better security, higher availability and faster response times.

The systems which provide electricity and cooling are specifically designed in such a way the operators can maintain them without any impact on your applications. The electricity supply is secured by an advanced UPS-system and an electricity generator which can guarantee a supply of electricity during a grid failure.

An industrial air-conditioning system in combination with really performant water-cooled racks make sure the datacenter systems can function in optimal conditions at all times. After all, water is 3500 times more efficient in transporting heat and is capable of removing extremely large amounts of it. Moreover, this system also lets us expand the datacenter without any impact on the environment's temperature. The temperature and humidity are also constantly monitored in both the entire datacenter and per individual rack by independent sensors.

Data Protection – 24/7

With such an amount of hardware, fire risks are always an important topic. Because of that, Protime has installed the most recent automatic fire detection and extinguishing system for our ICT-datacenters. In the event of a fire, a gas is released that not only extinguishes the flames within 10 seconds, but also absorbs the heat and leaves no residue.

The datacenter is being monitored 24/7 by an electronic access management system and security guards who are present on-site. Every visitor who enters the building, will be registered. Only authorized personnel are allowed in the datacenter itself and as an extra precaution the racks are secured with a numeric access key code.

Secure Connectivity

To guarantee good and fast access to the internet, the Prottime datacenter manages its own 'autonomous system' (AS) on the internet and has implemented the Border Gateway Protocol (BGP) on our routers. This gives us unprecedented freedom in routing the internet traffic and in choosing our internet service providers (ISP's). Our datacenters are connected by redundant communication lines which follow physically fully separated paths and internet access points of distinct suppliers. Even in the case of a network failure or when an internet service provider is down, the connectivity and internet access can be guaranteed.

Access to the network is also secured with proven techniques and technologies. All possible measures were taken to limit security risks and secure your data, including the use of multiple, distinct firewalls, VLAN-security, reverse proxies, strong authentication via Digipass or eID etc.

High Availability

In order to be able to offer high performance and reliability, Prottime's datacenter only works with high-quality, robust server hardware. All servers are standard equipped with distinct processors, hot-swappable components, a dual power supply etc. to achieve maximum speed and stability. In addition, our system engineers are able to manage and control all systems remotely in a safe way with advanced datacenter management software. In case of serious defect, the response times are shorter because the servers and network equipment can be managed remotely.

Our high availability setup ensures that in the event of an unexpected failure of one of the virtual machines, another VM seamlessly takes over all the services without any data loss. This allows customers to enjoy uninterrupted services without impact due to system failures or hardware problems. The automatic tape library, installed in the Prottime datacenter, has an amazing storage capacity of 45 petabytes. Thanks to this luxurious infrastructure, we are able to meet the most demanding backup requirements.

Virtualization

Virtualization includes the creation of a logical abstraction layer of the physical hardware environment and is a rapidly evolving technology. The Prottime datacenter makes use of these virtualization techniques at all possible levels. Networks are configured using VLAN technology, data storage is virtualized through an advanced and redundant SAN, and all hardware systems are setup virtually using VMWare technology. The use of such virtualization technology has clear advantages:

- More efficient use of systems and a central system management
- Hardware independence
- Flexibility in expansion of the server park and datacenter
- Easier maintenance
- Higher availability level
- Simplified and faster disaster recovery options

Disaster Recovery

In order to guarantee a quick recovery of service in the event of a major breakdown or disaster, Prottime has developed a detailed Disaster Recovery Plan (DRP). This plan describes the process and contains the necessary procedures to be able to restart our critical ICT infrastructure as soon as possible. The effectiveness of this plan is tested and evaluated annually. As part of this plan, Prottime chose to house all critical systems in physically separate datacenters, which are operating completely independently from each other and are located in separate geographical areas. This guarantees the service, even if a catastrophe would make a complete datacenter unavailable. The network connection between both data centers also run via redundant and completely separate paths so the communication between them is guaranteed at all times.

Monitoring & Permanence

Hosting Partner

The availability and correct functioning of our ICT-applications and critical components is continuously monitored by means of an automated monitoring system. This system gives us a really accurate and up-to-date picture of all elements in our infrastructure and allows us to immediately detect and locate a problem. This avoids the loss of valuable time in the event of an incident and makes a quick intervention possible.

The operations center is the central point of monitoring all alarms, the performance of the systems and reporting and scheduling all of this. The datacenter operators of our hosting partner are on-site 24 hours a day on weekdays and from 9am to 5pm during the weekend. They are responsible for the follow-up of all operational activities:

- Monitoring all the network connections and equipment
- Monitoring the operation of the server park and applications
- First diagnosis of system errors and escalation to the system and network engineers who are on watch

Our hosting partner has also developed a “on watch service” on top of the operations center that guarantees that system and network engineers are available 24/7. The system engineer who is on watch is automatically informed by the monitoring system via SMS about critical alarms and is available to support the operators in solving problems that arise.

Our hosting partner’s engineers are in no way directly accessible by customers of Protime. The Protime datacenter team has the necessary contact information to involve these people when needed.

Protime

Premium Care

The Prottime datacenter team has automated control processes that monitor the proper functioning of all various applications:

- The status of the services
- Duration of the Prottime calculations
- Logging in to the various Prottime applications
- Sending the ProNetEE e-mails
- Percentage of connection loss of the terminals
- Automated processes (Imports/Exports)

If one of these control processes reaches a certain risk parameter, we will investigate, resolve and address the cause as soon as possible.

In addition, the Prottime datacenter team ensures a continuous monitoring of the performance across the various servers. In order to guarantee optimal performance, our load-balancing parameters are evaluated and adjusted where needed on a regular basis.

During office hours there is always a pool of Prottime datacenter engineers present to continuously monitor the operation of our various Prottime components and to provide help to our support staff on the technical datacenter problems.

Outside the office hours of the Prottime Support Center there is a permanence rotation schedule between the Prottime datacenter engineers. These engineers respond to notifications from our automated control processes.

We guarantee that action will be taken within the hour to resolve general structural problems as quickly as possible. Our engineers are in close contact with the operations center of our hosting partner.