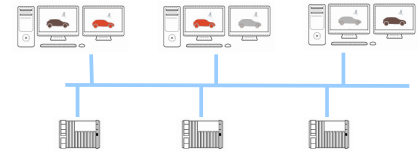


Seamless redundancy and circular redundancy[©]

Ergonomics in the zenon network [3/4]

Full data security, maximum availability without downtimes and no loss of data is guaranteed. zenon network technology with seamless redundancy and circular redundancy makes it possible. zenon is impressive not just technically, but also economically. This is because the patented circular redundancy needs less than half of the hardware from conventional redundancy systems. The ROI from a network with zenon is unbeatable!



SEAMLESS REDUNDANCY

zenon leads the field in terms of data security. The software not only provides for the usual redundancy, but guarantees seamless redundancy. This means that no data is lost, even in the time period between the breakdown of one processor and the take over by the back-up. This feature has already been in use with zenon since 1996 in hundreds of thousands of projects. Seamless redundancy can be created with zenon in a cost-effective manner with two simple, conventional PCs:

- ▶ A server and a standby-server are jointly in charge of a project.
- ▶ The server has data sovereignty, like in a normal client/server network.
- ▶ The standby server acts very much like a client. It receives data from the server and keeps its own autonomous buffer at the same time. In contrast to a normal client, the standby server records all historical data such as alarms, CEL and archives. Recipes, users, etc. are also synchronized.
- ▶ Because the information always comes from the server, all data is guaranteed to be up-to-date and consistent.
- ▶ If the server breaks down, the standby server upgrades itself and takes over all tasks. With the help of an intelligent mechanism, even in the time during the breakdown until the breakdown is detected, no data loss occurs - "Seamless Redundancy".

- ▶ All linked clients are informed of the server breakdown and connect fully automatically to the new server.
- ▶ Once the original server is back online, it connects to the standby server, aligns all data and upgrades itself to be the server again. No data is lost. All linked clients including the standby server reconnect to the server.

zenon redundancy is just as easy to configure as the zenon network: Define the server and standby server with a mouse click. Further settings are not necessary.

A special feature of zenon is the rated redundancy: The roles of Server/Standby Server are given on the basis of an evaluation matrix. The current Primary Server is then the computer that has the higher evaluation.

ZENON CIRCULAR REDUNDANCY[©]

Circular Redundancy is the logical connection of seamless redundancy and multiple project administration. An ideal solution for saving costs with maximum safety. Circular Redundancy requires one project standby server in addition to each project server. zenon exploits the existing resource in full here with possibilities of multiple-project administration and horizontal transparency: A neighboring project server simultaneously serves as a standby server and viceversa. So the safety is increased with less hardware and the risk of failure is reduced. Using zenon circular redundancy, you reduce the number of servers needed for a redundant system. With three redundant systems, for example, only three servers are needed with zenon circular redundancy, instead of six servers.

FAST FACTS

- ▶ Seamlessness: No loss of data
- ▶ Special form: Rated redundancy
- ▶ Quality control: Constant mutual monitoring, including the drivers
- ▶ Automatic project synchronization
- ▶ Watchdog monitoring
- ▶ High level of security with low costs
- ▶ Dynamic standby server

Seamless redundancy and circular redundancy©

Ergonomics in the zenon network [3/4]

Platform Independent	Yes
Implementation	The parameters of all functions can be set easily - no programming is necessary.
Operation on the server	Server and standby server can be used in the plant as operator workspaces.
Automatic synchronization	The standby server and the connected clients automatically create an online data alignment. This way, all computers including web clients, have the same project status.