

Increased efficiency with comprehensive management and process automation tools

Energy Efficiency for your data center – Application Sheet.
Data center solutions from Siemens for the factories of the 21st century.

From single discipline to an integrated and process based management approach

Increased efficiency with comprehensive management process automation tools (Focus on data center facility infrastructure)

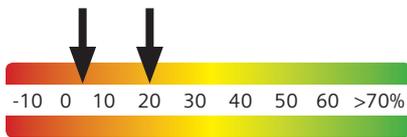
An efficient operation is a basic interest of all data center operators, from a monetary as well as from a process perspective. Nowadays, many data centers operate with different applications for different areas/disciplines without the benefit of a comprehensive and holistic view of all related operational processes. An isolated decision in one area may cause an unexpected impact in another, especially when different teams/people are in place. According to the Uptime Institute, around 70% of all data center issues are caused by human error. Obviously more comprehensive and especially more automated operations have much to offer. The technical possibilities today are extensive and often used only to a very limited degree. Systems and applications today can easily communicate and function interconnectedly or even be integrated across different disciplines, including from different vendors. In many cases the biggest challenge is the missing end-to-end process consideration and responsibility, which creates the foundation for integrated management in a comprehensive and holistic approach.

From a holistic standpoint, design, planning and manufacturing become a single, integrated, end-to-end process. At the bottom line, it requires close interaction between a PLM (product lifecycle management) system and an automation system,

such as in automobile manufacture. The same applies for data centers, where DCIM (data center infrastructure management) has to closely interact with the BMS (building management system).

Normally more than one management application is in place to monitor and manage the data center operations across the different disciplines such as power, cooling and others. Full transparency can only be achieved by aggregating all the information from the different tools and by simultaneously building the foundation for an integrated and automated process. DCIM applications (e.g., Clarity LC) are excellent for complete supervision, comprehensive DC management and retrieval of a comprehensive overview across all areas of the data center facility infrastructure. But, when it comes to the automation and control of processes, an appropriate BMS (e.g. Desigo CC) is indispensable. Desigo CC is a fully integrated BMS system that offers native support for the following facility infrastructure areas: power, HVAC, fire safety, security and lightning control. The southbound communications channels allow the integration of different types of controllers, whereas the northbound communication channel is able to communicate with other applications via open protocols. An ideal setup is the combination of all BMS & DCIM system functionalities, where the full range of technical possibilities would be possible. For example, hot spots in a white space area could be identified, visualized in a

Estimated Savings Potential



These values are guidelines only based on data from actual Siemens projects. The energy savings potential must be calculated individually for each project.



Process reliability through asset management

DCIM system, and shared automatically with the BMS for a faster response. Finally, as is often the case, the real questions are what is really required and what makes operation easier, not more complex.

A more efficient process operation can increase quality of operation, ensure uptime and reduce energy consumption.

Customer benefits

Automation technologies support continuous data center operation. Fewer human manual interactions across the systems reduce the number of errors. Continuous environmental monitoring combined with automated processes throughout the entire facility infrastructure can also increase operational efficiency through consistent operation in optimal mode. Thanks to the systems integration capabilities, customers have centralized transparency over the entire facility infrastructure and its status. With full transparency and history, the customer can stay ahead of alarms and act proactively rather than

waiting until something goes wrong. In order to benefit from such technologies, one of the most important and elementary key success factors is an end-to-end process view.

Challenges

On the other hand, a more integrated application landscape with integrated and automated processes requires serious knowledge and management of the related processes. A minor issue or adjustment can have an even greater impact. In addition to all the technical considerations, the cultural aspects of teams and people should not be underestimated, since such elements can erode any benefits gained.

Conclusion

Analyze and plan carefully, incorporate all relevant stakeholders, and implement with sustainability and reliability in mind. Siemens is able to support and guide you through all project phases, and offers applications and systems to realize an automated data center.

Highlights

- Increased efficiency
- Increase quality of operation
- Fewer manual interactions required, which potentially cause less human errors
- Safeguard uptime