IndustryWeek

TOP TIPS

8 Tips for Successful Edge Computing Platform Selection:

What to consider when selecting an Edge Computing platform

Edge Computing was initially designed to reduce bandwidth, latency requirements, and the cost of taking raw data from the machine level and uploading it for processing, either to an enterprise data center or the cloud. As a form of distributed computing, Edge Computing handles application-specific functionality at the machine level. Edge Computing platforms are also able to increase the use of real-time applications by managing critical data through storing, processing, analyzing, and taking action.

1. **Focus on ease of installation, operation, and maintenance.**

Not all edge devices with high amounts of computing capabilities are easy to deploy and manage. The goal is to install your edge system quickly, have it integrate with your present systems, and then provide independent operations. Edge Computing platforms should offer all the necessary local operations easily and efficiently. Maintenance should be equally as simple and time-sensitive.

2. **Eliminate the latency problems.**

Eliminate the latency challenges when dealing with critical decision-making applications by processing the data generated locally at the edge and not in the data center or cloud. The closer to the actual process or machine operation your Edge Computing platform resides, the faster data can be turned into action and deliver results. Computer centers and cloud services can easily get bogged down with volumes of data being processed at one time. If operations become slow due to a bottleneck in your network, you may fail to act on your insights or worse, cause operation shutdowns.

3. Consider the cost benefits of Edge Computing.

Cost savings is an important part of most system upgrades. This alone can be a major driver to incorporate Edge Computing into your operation. The cloud often requires higher than expected bandwidths and capacity, which can become expensive for process and machine applications, where data is generated on-site. Unlike gateways, edge systems can eliminate the need to create and pay for higher-cost capacity in the cloud or data center.

4. Look for an Edge Computing system with redundancy and self-diagnostics.

To increase the life of your Edge Computing platform, be sure your selection offers several levels of availability and diagnostics. For example, an edge system with redundant nodes that acts as a single system creates a more rugged and robust solution, supporting the continuous availability of your critical applications. Self-diagnostics makes sure your edge solution continually measures its health and performance. If it detects a potential CPU, memory, or disk failure, the system should automatically shift the load from one node to another without disrupting production. This capability maintains application and data continuity. The redundant nodes allow maintenance to hot-swap a node without downtime. For additional levels of insurance, Edge Computing systems are available that offer cloud-based health monitoring and management services.

5. Understand the working environment of your edge system.

Industrial environments such as oil and gas, water and wastewater, chemical processing, and manufacturing require quick decision-making to prevent critical mistakes that can produce dangerous situations and costly downtime. Each of these applications would expose an edge system to a different environment. Your Edge Computing platform should be rugged enough to handle harsh environments, including wide temperature swings, exposure to dust and moisture, and resistance to shock and vibration. Also, check the local and national certifications you'll need to comply with to ensure your Edge Computing system meets those requirements.

6. Select an edge solution that can adapt to a wide variety of applications.

When researching Edge Computing platforms, consider those that support the Open Platform Communications (OPC) standard to ensure that your industrial automation infrastructure provides a high level of interoperability for the secure exchange of data. OPC is supported by every major human-machine interface (HMI) software, control system, and industrial automation software package.

7. Select an edge system that can perform multiple operations.

An Edge Computing platform should have the processing power to provide fast data collection and processing, real-time analysis, monitoring, and reporting for multiple applications. A scalable system is also beneficial when considering future growth for your company. The beauty of a new edge system is that it may help discover insights you have not considered, and it is critical to have the capacity to act on those insights. The speed and agility to perform local processing—as well as self-diagnostics and the ability to repair itself under most circumstances—can help keep all operations online.

Multiple applications are not enough; an edge system should also offer self-protecting and self-monitoring features. This drastically reduces unplanned downtime and ensures the continuous availability of business-critical applications. Built-in redundancies make this possible. For example, the ztC Edge solution from Stratus is a zero-touch, secure, and highly automated Edge Computing platform purpose-built for edge environments. The platform provides automated data protection and local site recovery.

8. Make sure all your data and operations are secure.

Cybersecurity is a key function in all Edge Computing systems. A wide number of Edge Computing platforms are either still using older security protocols, or incapable of supporting modern cybersecurity best practices, which makes them vulnerable to hacking. When your edge solution is tasked with highly critical and sensitive operations, you must be sure that all security precautions are taken to keep your company safe.

Learn more: https://www.stratus.com/edge-computing/