

# Stratus® ztC™ Edge

## Zero touch computing for your critical edge ICS

Each year the expectations increase—higher output, better quality, less scrap. What makes it harder is that your budgets aren't also increasing.

Updating your aging, standalone computer equipment, and virtualizing your industrial control applications, is one way to increase reliability and efficiency. But who has the spare time, resources, or skills to do this?

What would be ideal is a turnkey computing platform—one with virtualization and reliability already built-in—so that you can deploy a redundant SCADA/HMI system quickly and easily. A secure, highly automated platform that's specifically designed for the unique requirements of industrial edge computing. One that's easy to set up, manage and maintain, and reduces your dependence on IT, allowing you to focus on running your plant—not your computers.

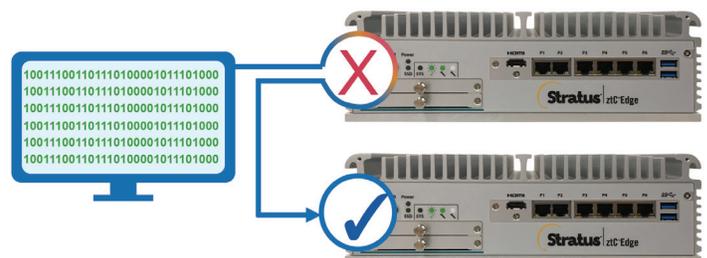
### ztC Edge is the answer

Ready to use in under 30 minutes, ztC Edge can instantly improve the reliability of your SCADA environment and reduce unplanned downtime. ztC Edge is a versatile, secure, highly automated industrial computing platform that helps understaffed manufacturers increase productivity and reduce risk. A redundant pair of rugged hot-swappable nodes, with built-in virtualization, automated recovery, and cloud-based systems health management services, ztC Edge helps plant engineers deliver industrialized IoT and control applications quickly, easily, and reliably.

Stratus ztC Edge systems include many integrated and automated capabilities and eliminates the need for specialized IT skills.

### Key benefits

- **Greater efficiency:** With virtualization host pre-loaded, automated VM and data protection, and hot swappable nodes that synchronize themselves, ztC Edge simplifies and shortens the time it takes to deploy, manage and maintain your critical applications, saving you time and effort.
- **Improved security:** With restricted USB ports, secure communication settings, trusted boot<sup>1</sup>, active directory integration, and easy-to-configure host-based firewall, you don't need to be a security expert to secure your ztC Edge system.
- **Less downtime:** ztC Edge's self-monitoring and self-protecting features help reduce unplanned downtime. Because its virtualization host software can be updated while the system is still running (without requiring a system reboot), customers experience less planned downtime also.
- **More flexibility:** ztC Edge's rugged, compact, industrial form factor performs equally well in the control room, control panel, or shop floor, giving customers more choice. Its automated capabilities make it suitable for unmanned stations, or remote, decentralized locations with limited resources.



Automated recovery



### Key features

Stratus ztC Edge systems include many integrated and automated capabilities, designed to help save customers time and effort, and eliminate the need for specialized IT skills.

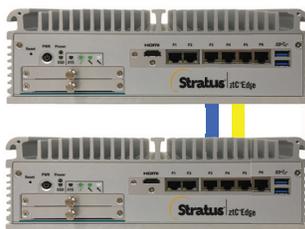
**Built in virtualization:** ztC Edge ships with an integrated virtualization layer and availability engine called Stratus Redundant Linux. As a virtualization host, it supports both Windows and Linux guest operating systems, and OVF appliances, including vSphere images. An intuitive management console makes it easy for plant staff to set up, configure, import and manage their virtual machines.

**Redundant solid state nodes:** ztC Edge is comprised of two compact, rugged, redundant nodes that act as a single system. Designed for harsh, industrial environmental conditions, ztC Edge nodes can be deployed in the control room, control panel, or on the shop floor.

**Automated restart and data protection:** With live migration and data replication, ztC Edge provides instant protection for your VMs and data. The system can proactively move VMs from one node to the other, to help ensure applications are available. If it detects a networking or disk failure on one node, it automatically re-routes traffic or uses data on the other node, without any operator intervention.

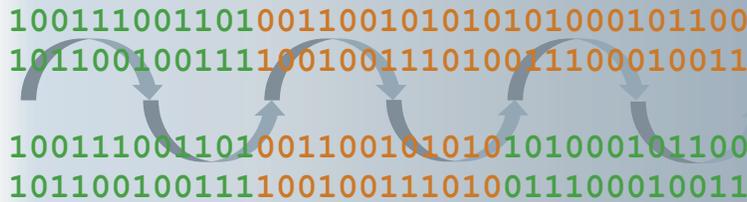
**Automated local site recovery:** Individual ztC Edge nodes can be deployed in different physical locations, as long as there's a direct network connection between them. In the event of a catastrophic node failure, VMs that are running in one room, floor, or building, can resume in another location, with minimal interruption of service, and without operator intervention, providing local site area disaster recovery.

### High Availability



All data written to disk is mirrored

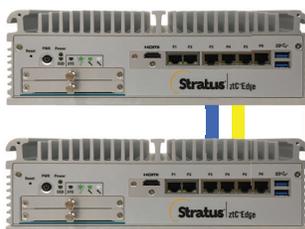
Failure



In memory data may be lost if not cached while node is recovering

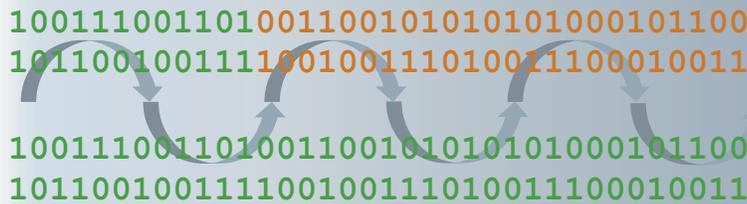
Restart

### Fault Tolerance



All data written to disk is mirrored

Failure



In memory data and CPU states are also replicated

Resume

Data protection



**Simplified security:** ztC Edge is designed to help plant engineers more easily secure their edge computing environment. A host-based firewall, restricted USB ports, role-based access controls with active directory integration, and trusted boot<sup>1</sup>, all work together to minimize your security exposure.

**Customizable availability:** ztC Edge systems can be configured to support both fault tolerant<sup>1</sup> (FT) or highly available (HA) workloads, giving customers more choice, and allowing them to match the level of availability to the criticality of their application.

**Industrial interoperability:** ztC Edge supports common industrial protocols, making integration into existing industrial automation environments easier. SNMP requests and traps can be used to configure notifications and alarms. Customers can use OPC UA attributes, or a REST API, to present relevant system data within most third party systems management tools and dashboards.

**OT maintainability:** ztC Edge nodes are hot swappable, auto-detecting, and auto-synchronizing, making repairs quick and easy. Maintenance or repairs on individual nodes can be done to a running system (without a system reboot) to help ensure service continuity. This allows system repair to be planned and completed by plant staff when its convenient for them, without having to depend on skilled IT resources.

The screenshot displays the Stratus ztC Edge web management interface. At the top, the header shows the system IP (192.168.1.25), license expiration (24 days, 3 hours), and user information (admin). The left sidebar contains navigation menus for SYSTEM, ALERTS & LOGS, RESOURCES, and LIBRARY. The main area is titled 'PREFERENCES' and is currently on the 'System' tab. Under 'System', the 'Enable Port Management' checkbox is checked. Below this, there is a table of firewall rules with columns for Rule ID, Shared Net, Type, Protocol, Target, Port (starting), Port (ending), Destination IP (starting), Destination IP (ending), Destination IPv6 (starting), and Destination (ending). The 'OUTPUT Chain' section contains another table with columns for Rule ID, Shared Net, Type, Protocol, Target, Port (starting), Port (ending), Destination IP (starting), Destination IP (ending), Destination IPv6 (starting), and Destination (ending). At the bottom of the configuration area, there are buttons for 'Save', 'Reset', 'Load Default Settings', 'Import', and 'Export'.

*Simplified security*

### Optional system health monitoring and managed support services

Available with ztC Edge are optional system health monitoring and managed support services. These services help ensure that critical workloads continue to run with minimal customer effort. Stratus takes care of your ztC Edge systems so that you don't have to, letting you focus on more value-added activities.

Service level	Feature
System Support	24/7/365 web or phone support with 30 minute critical response SLA
	3-day advance parts exchange
	Root cause problem determination
	Security patches and updates
	Access to service history and knowledgebase through secure self-service portal
System Health	Everything in System Support
	24/7/365 health monitoring
	Alert triage
	System log file review
	Predictive failure analysis
	Media retention



ztC Edge 110i system

### Other edge computing solutions

In addition to ztC Edge, Stratus offers ftServer, a rack mount fault tolerant server that's designed to run larger scale tier 1 mission critical workloads. Supporting 30+ VMs, ftServer delivers continuously available manufacturing operations and centralized control applications. For more information about ftServer, please visit [www.stratus.com/ftserver](http://www.stratus.com/ftserver)

### Technical specifications

ztC Edge is available in two models, the 100i and 110i. Both systems are IP40 rated, can be wall or DIN rail mounted, and offer a solid state design. The 110i is a more powerful system, to support FT workloads, trusted boot, and those applications requiring more storage.

	ztC Edge 100i	ztC Edge 110i
Compute	Intel i7-6700TE, 2.4 GHz, 8 MB cache, 4 HT cores	Intel i7-8700T, 2.4 GHz, 12 MB cache, 6 HT cores
Memory	32 GB DDR4 2400	32 GB DDR4 2400
Storage	512 GB SSD	2 TB SSD
Networking	2 x 1 GbE (for a-links) 2 x 1 GbE (for plant networks)	2 x 10 GbE (for a-links) 6 x 1 GbE (for plant networks)
Temperature	-40 – 140 °F	-4 – 140 °F
Humidity	10 – 95% (non-condensing)	10 – 95% (non-condensing)
Shock and vibration	50G, 11 ms 3 Grms @ 5 – 500 Hz	50G, 11 ms 3 Grms @ 5 – 500 Hz
Input power	9 – 36V (DC) 24 Vdc 5A 120W (AC)	24V (DC) 24 Vdc 5A 120W (AC)
Dimensions	11.02 in x 7.48 in x 2.99 in	11.02 in x 8.26 in x 3.42 in
Weight	10.1 lbs (20.2 lbs for system)	13.5 lbs (27 lbs for system)
Availability support	High availability	Fault tolerance <sup>1</sup> and high availability
Certifications	FCC, CE and others <sup>2</sup>	FCC, CE and others <sup>2</sup>
Host OS support	Stratus Redundant Linux <sup>3</sup>	Stratus Redundant Linux <sup>3</sup>
Guest OS support	Windows and Linux <sup>4</sup>	Windows and Linux <sup>4</sup>

<sup>1</sup>Trusted boot and fault tolerant workloads are only supported on ztC Edge 110i systems

<sup>2</sup><https://www.stratus.com/services-support/customer-support/platform-support/ztc-edge-certification>

<sup>3</sup><https://www.stratus.com/services-support/customer-support/platform-support/ztc-edge-host-operating-system-support/>

<sup>4</sup><https://www.stratus.com/services-support/customer-support/platform-support/ztc-edge-guest-operating-system-support/>

### For more information

For more information about ztC Edge, and other reliable industrial computing solutions from Stratus, please contact your local sales representative, or visit [www.stratus.com/ztc-edge](http://www.stratus.com/ztc-edge)