

# Stratus ztC for Microgrids and smart energy

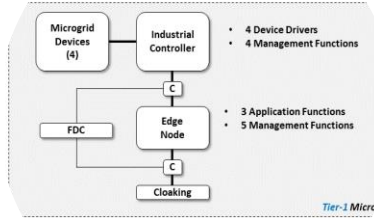
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# The Energy Problem

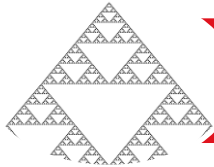
- Climate change impact is looming.
- Great drive for renewable energy is here.
- Cyber security and energy independence is driving Decentralization of Generation, Distribution and Control.



Planning, designing, integrating and commissioning of Secure and Highly Reliable components, with no or minimal on-site customization



Real-time control and distributed Edge Computing, to deliver a resilient integrated infrastructure for quality power.



Extremely reliable and available coordination inside the infrastructure and with other infrastructures

# Requirements for Edge Computing to do Control, Analysis and Communication

## Fault-Tolerance

- With automatic repair and recovery with zero data loss

## Virtualization

- For maximum ability to optimize hardware, for hardware migration and for platform independence.

## Secure

- Platform security.

## Minimal operational involvement

- No IT requirements for deployment.

## Ruggedized

- Platform capable of being installed with other automation and communication equipment.

## Solution for:

The Edge

Simple

Protected

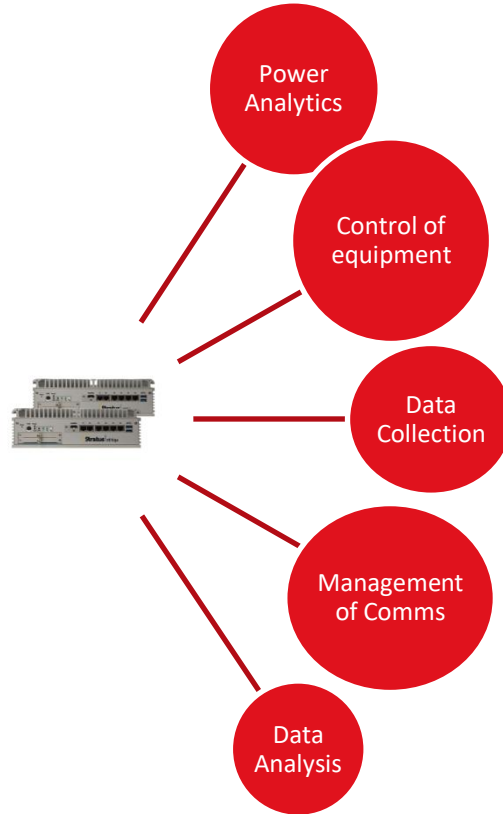
Autonomous



**Stratus** | ztC Edge

Ideal for running business-critical industrial applications quickly, easily and reliably, in decentralized locations with limited to no IT resources.

## Running virtual machines on a redundant pair of servers



**ztC Edge**

**Architecture and Capabilities**

# Fault-Tolerant edge computing with ztC Edge

Fault-Tolerance through virtualization, with automatic recovery

Simple interface to set up multiple VMs

Ruggedized - installed with other controllers, sensors, etc.

Can be mounted anywhere, incl on DIN rail

Can be installed by operational personnel, much like other IoT devices.

Hot swappable components

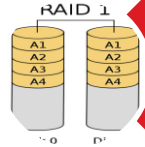




# ztc redundant server solution: the concept



The ztc software makes two servers look like a single server to Windows, applications, clients and devices on the network.



ztc software does for servers what a RAID controller does for disks.

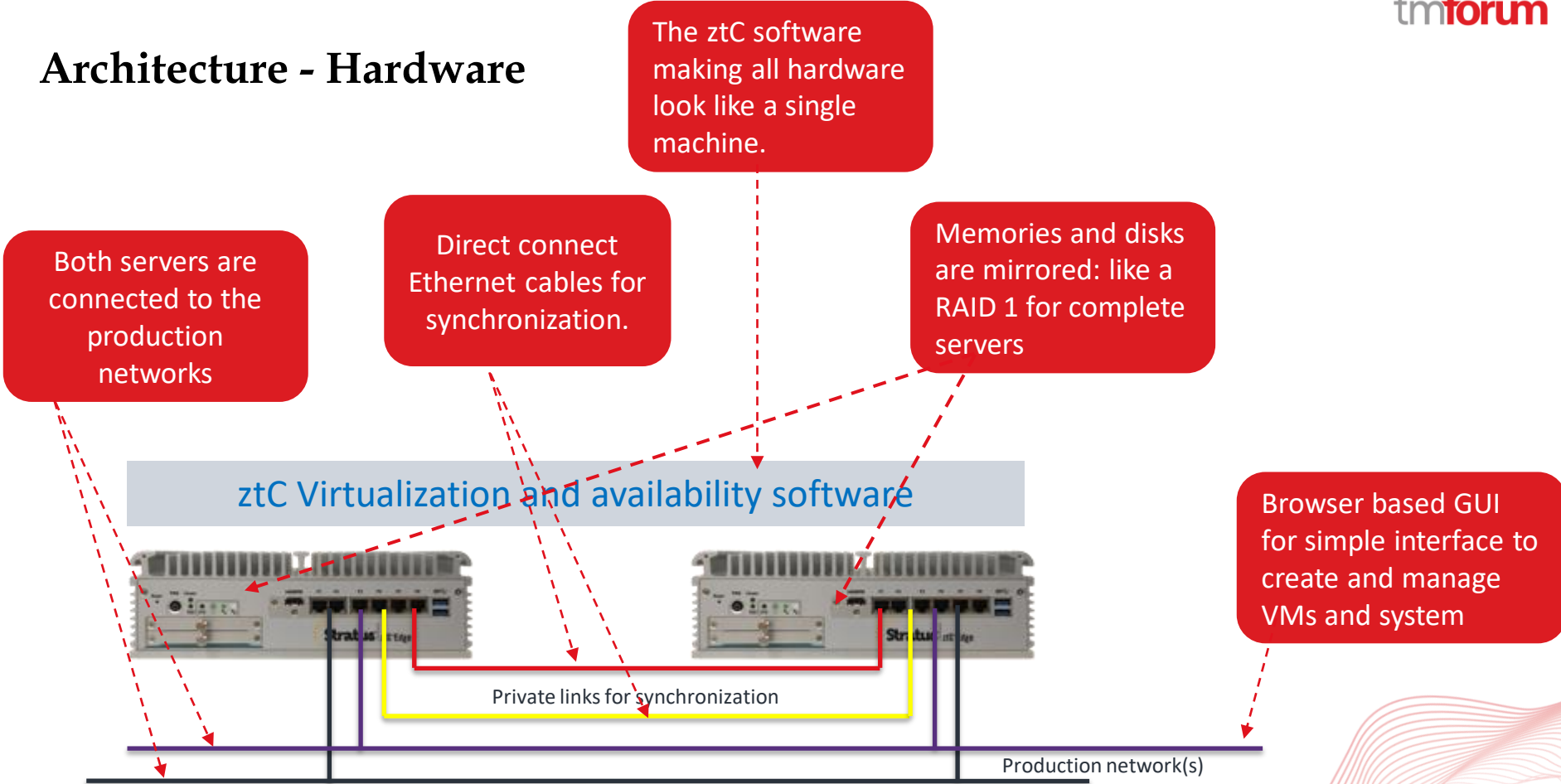


No single point of failure: anything can fail and the software and clients on the network, cannot tell that anything has happened.

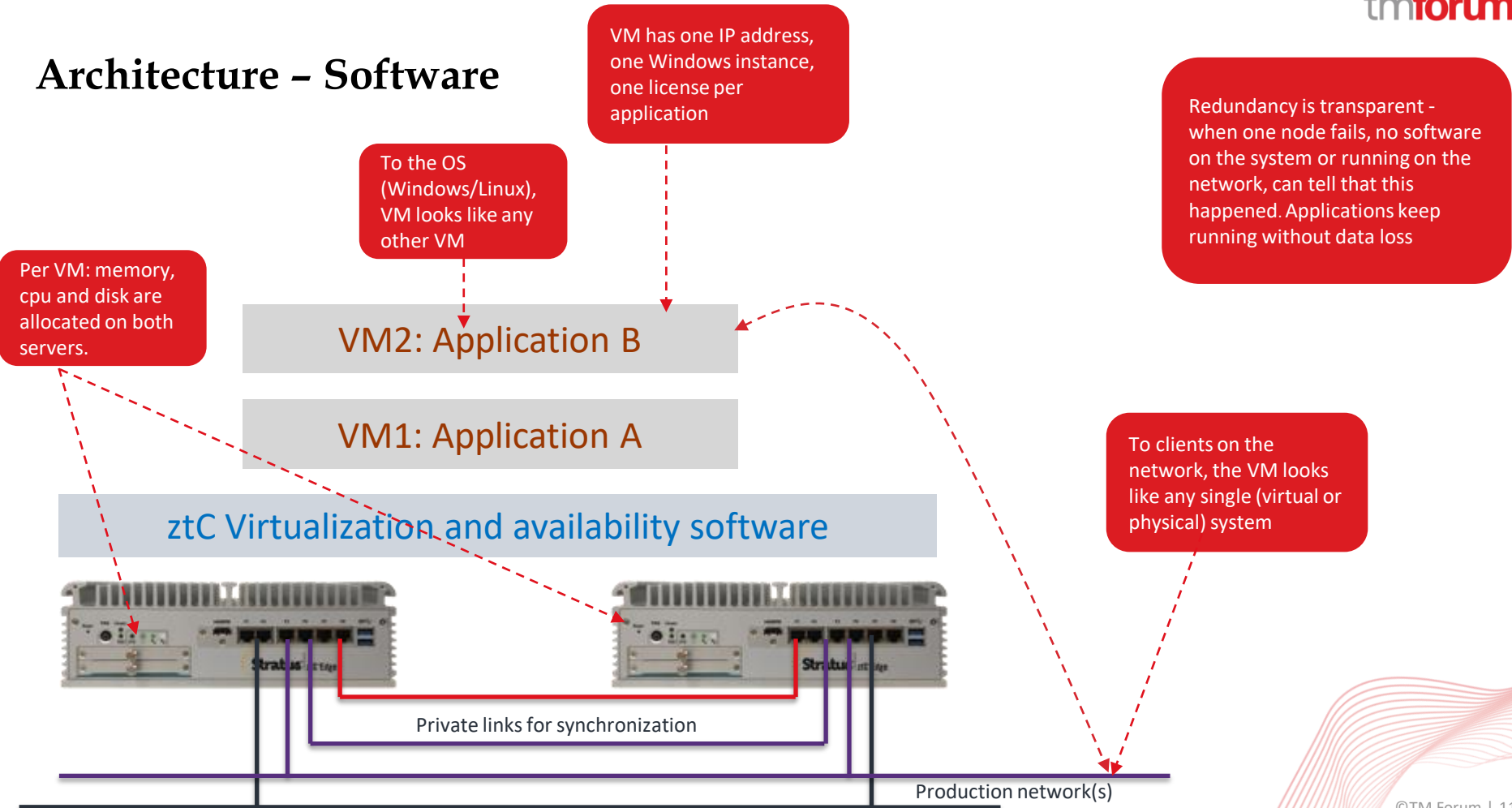


When the failed component is repaired and joins back in, it does so transparently.

# Architecture - Hardware



# Architecture – Software



# The ztC Management Interface

**Stratus** ztC Edge

ztc\_poc\_sysip.ps.stratus.com  
IP: 204.79.142.118 | Asset ID: ze-d-4618  
Version: 2.1.0-283

System is Healthy

admin | Logout

**SYSTEM**

- Dashboard
- System
- Preferences

**ALERTS & LOGS**

- Alert History
- Audit Logs
- Support Logs

**RESOURCES**

- Physical Machines
- Virtual Machines
- Volumes
- Networks
- Virtual CDs

**LIBRARY**

- Upgrade Kits

**DASHBOARD**

Virtual Machines

System

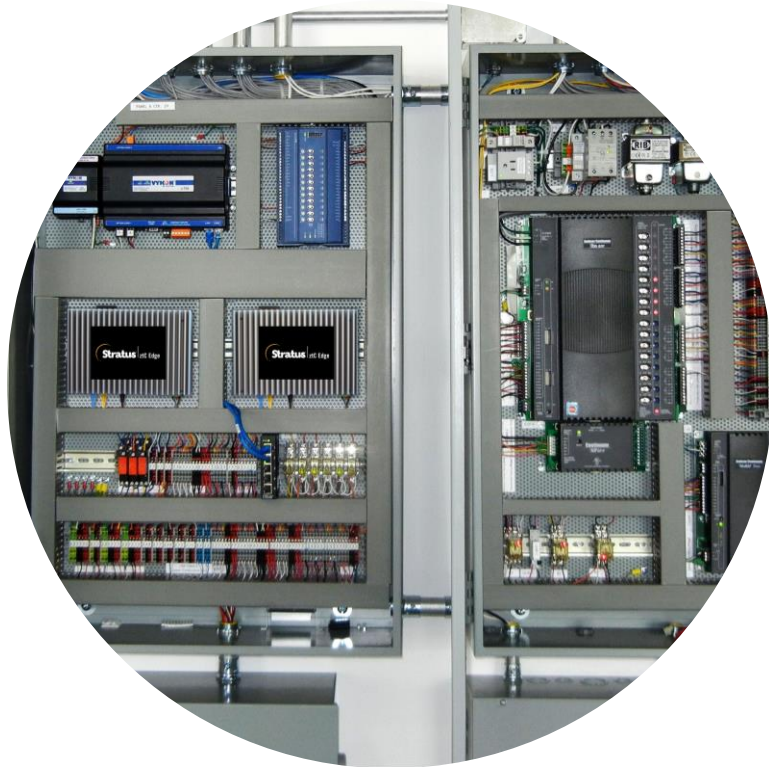
- node0
- node1

No outstanding issues at this time.

All Ignored

Component	Description	Action
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# Rugged, hot-swappable nodes



## Simplify service

- Compact, fan-less, wall or DIN rail mountable
- Industrial rated
  - ✓ -40 to +60 degrees C
  - ✓ 10 to 95% humidity
  - ✓ 3 Grms (5-500 Hz)
- Self-recognizing and auto synchronizing

# Technical Specs

	ztC Edge 100i	ztC Edge 110i
<b>Compute</b>	Intel i7-6700TE, 2.4 GHz, 8 MB cache, 4 HT cores	Intel i7-8700T, 2.4 GHz, 12 MB cache, 6 HT cores
<b>Memory</b>	32 GB DDR4 2400	64 GB DDR4 2400
<b>Storage</b>	512 GB SSD	2 TB SSD
<b>Networking</b>	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 network)
<b>Temperature</b>	-40 – 140 °F	-4 – 140 °F
<b>Humidity</b>	10 – 95% (non-condensing)	10 – 95% (non-condensing)
<b>Shock and vibration</b>	50G, 11 ms3 Grms @ 5 – 500 Hz	50G, 11 ms3 Grms @ 5 – 500 Hz
<b>Input power</b>	9 – 36V (DC) 24 Vdc 5A 120W (AC)	24V (DC) 24 Vdc 5A 120W (AC)
<b>Dimensions</b>	11.02 in x 7.48 in x 2.99 in	11.02 in x 8.26 in x 3.42 in
<b>Weight</b>	10.1 lbs (20.2 lbs for system)	13.5 lbs (27 lbs for system)
<b>Certification</b>	<a href="#">FCC, CE, and others</a>	<a href="#">FCC, CE, and others</a>
<b>Host OS support</b>	<a href="#">Stratus Redundant Linux</a>	<a href="#">Stratus Redundant Linux</a>
<b>Guest OS support</b>	<a href="#">Windows and Linux</a>	<a href="#">Windows and Linux</a>
<b>Availability support</b>	High availability	Fault tolerance and high availability

- The two ztC models, the 100i and 110i are IP40 rated and can be wall or DIN rail mounted
- Guest OS's supported: Windows Server, Windows Desktop, CentOS, Red Hat, Ubuntu

**FOR QUESTIONS, SUCCESS STORIES OR A DEMO:**

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