

# HYPERCONVERGENCE

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Jon Rich

Jasper County REMC

# Jasper County REMC

~ 9,000 meters

31 Employees

1 – IT (recently added a 3<sup>rd</sup> party to handle Antivirus, patching, monitoring, some remote support)

Rackspace Exchange (hosted)

NISC (Dec 2016) (hosted – CIS, ABS, E&O (Mapping, Staking, OMS, mobile workforce)

TS1 / Cannon / deploying Sensus RF (hosted)

# Process

research, 3 quotes, decision

Went to Tipmont REMC to discuss options. (10/22/2012)

Budget (started with three nodes and added two)

Purchased 3 nodes in 2013, added two more in 2014

Went all Server 2012

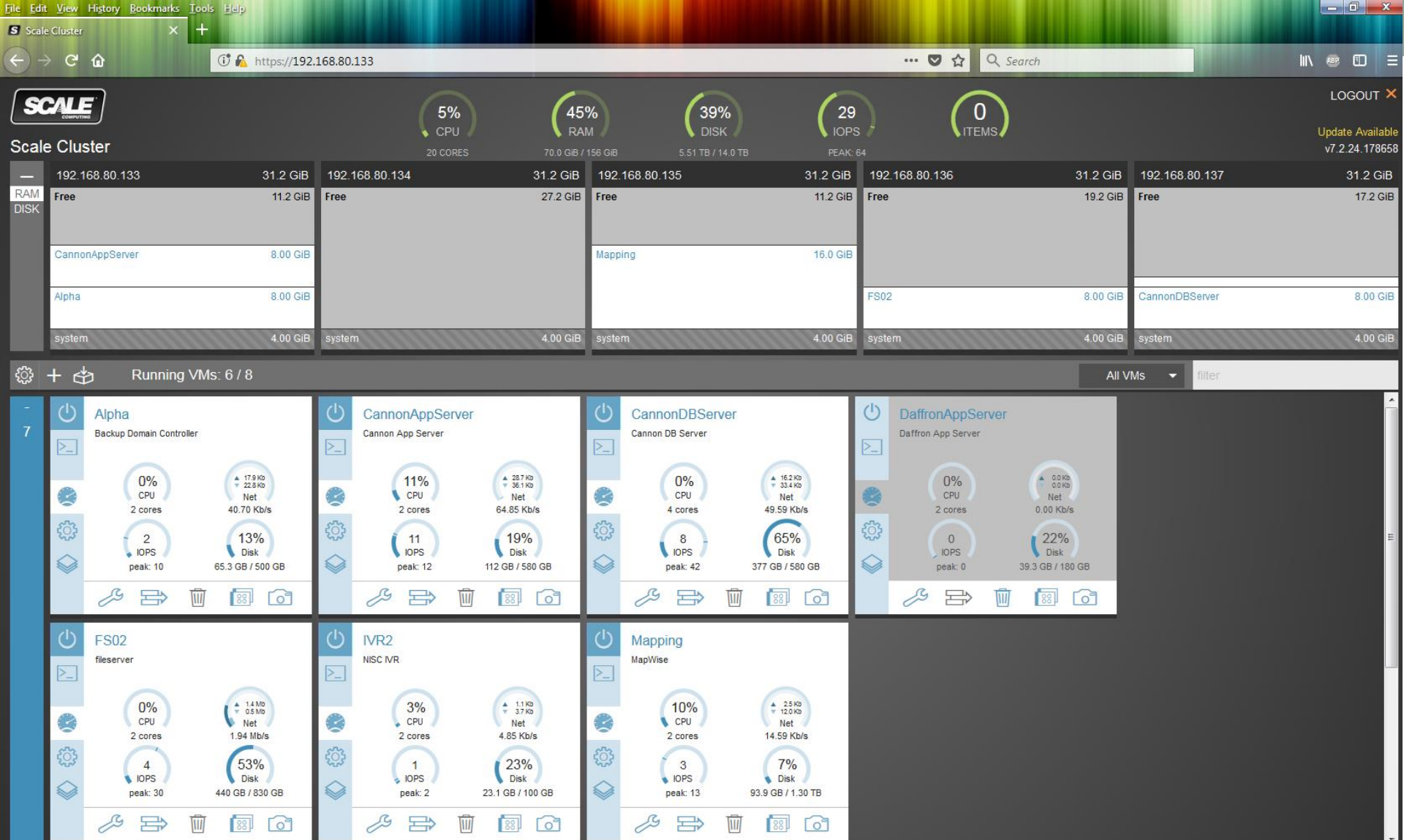
All still being used today.

# What is Hyperconvergence?



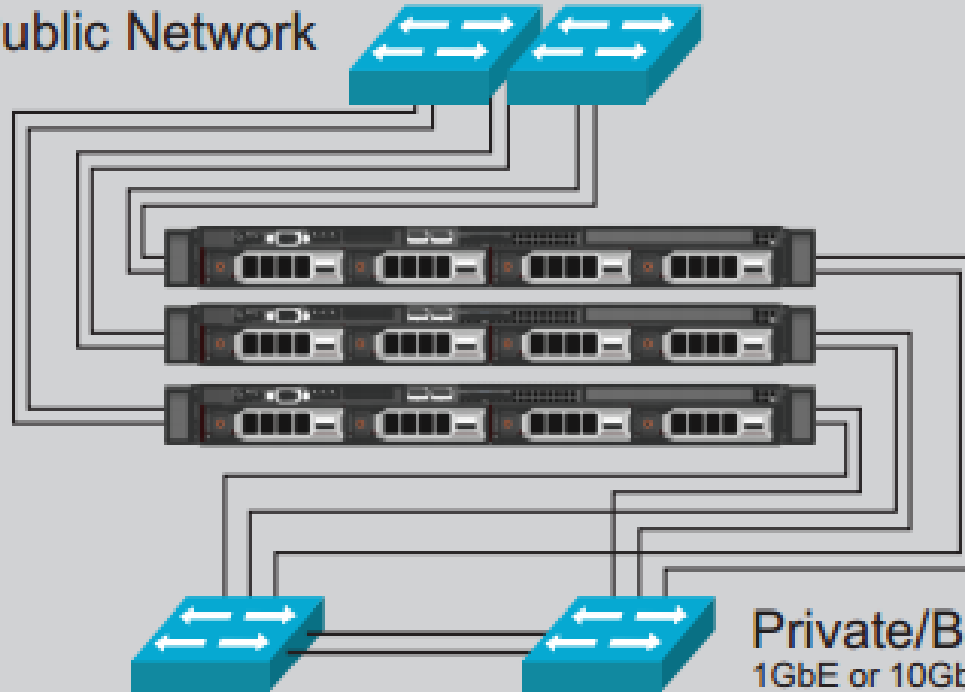
**Hyperconvergence** or **Hyperconverged Infrastructure**: *Noun* - The integration of the storage, compute, and virtualization layers of infrastructure into a single solution architecture.





- Redundant Power Supplies
- Redundant 1Gb LAN and backplane NIC ports
- 24/7/365 support (phone and remote)
- RAID 10
- Snapshots

Public Network



Private/Backplane Network -  
1GbE or 10GbE

# HyperCore Operating System update

The screenshot displays the Scale Cluster management interface. At the top, there are system metrics: CPU (4%), RAM (45%), DISK (39%), IOPS (22), and ITEMS (0). Below these is a table of cluster nodes with their IP addresses, RAM, and disk usage. The 'Available Updates' section is highlighted, showing a notification for a new release (v7.4.22) and an 'Apply Update' button. The left sidebar contains navigation options like 'Control Center', 'Cluster Log', and 'Update'.

IP	RAM	Disk	IP	RAM	Disk	IP	RAM	Disk	IP	RAM	Disk
192.168.80.133	31.2 GiB	Free	192.168.80.134	31.2 GiB	Free	192.168.80.135	31.2 GiB	Free	192.168.80.136	31.2 GiB	Free
	11.2 GiB			27.2 GiB			11.2 GiB			19.2 GiB	
		CannonAppServer 8.00 GiB						Mapping 16.0 GiB			
		Alpha 8.00 GiB						FS02 8.00 GiB			CannonDBServer 8.00 GiB
		system 4.00 GiB			system 4.00 GiB			system 4.00 GiB			system 4.00 GiB

**Available Updates**

Release: 7.4.22 General Release (v7.4.22.183736)

Scale Computing has announced General Availability on an update to the HyperCore Operating System™ (HCOS) firmware.

ALERT: When updating to 7.4.22, the progress of the update may not appear correctly in the UI.

Variables that affect the time to update are:

- The speed of your internet connection
- The number of nodes in the cluster
- The number and load factor of currently running Virtual Machines

While the update itself usually takes 20 minutes per-node, the number of VMs on the cluster can increase the amount of time it takes to perform the rolling update. If the update does not appear to have completed when refreshing the browser after two hours, please contact technical support for assistance.

A full version of the HyperCore 7.4 Release Notes can be found here: [Release Notes](#)

Impact on Cluster:  
Refresh Browser After Firmware Update. When update completes, refresh your browser, otherwise the User Interface may not appear correctly. If the update does not appear to be progressing in the browser after 45 minutes, please contact technical support for assistance.

**Apply Update**



# Disk view

The screenshot displays a web-based management interface for a Scale Cluster. At the top, a navigation bar includes 'File', 'Edit', 'View', 'History', 'Bookmarks', 'Tools', and 'Help'. Below this is a browser address bar showing 'https://192.168.80.133'. The main dashboard features a 'SCALE' logo and five circular gauges representing system metrics: CPU (5%), RAM (45%), DISK (39%), IOPS (26), and ITEMS (0). Below the gauges, a table lists four nodes with their IP addresses and total storage capacity. Each node's storage is broken down into four slots (SLOT.0 to SLOT.3), showing the percentage of usage and the type of storage (SATA). A bottom status bar indicates 'Running VMs: 6 / 8' and includes a search filter for 'All VMs'.

Node IP	Total Storage	SLOT.0	SLOT.1	SLOT.2	SLOT.3
192.168.80.133	2.00 TB	41% / 500 GB SATA	43% / 500 GB SATA	42% / 500 GB SATA	43% / 500 GB SATA
192.168.80.134	2.00 TB	43% / 500 GB SATA	42% / 500 GB SATA	42% / 500 GB SATA	43% / 500 GB SATA
192.168.80.135	2.00 TB	43% / 500 GB SATA	43% / 500 GB SATA	42% / 500 GB SATA	44% / 500 GB SATA
192.168.80.136	4.00 TB	37% / 1.00 TB SATA	36% / 1.00 TB SATA	36% / 1.00 TB SATA	36% / 1.00 TB SATA
192.168.80.137	4.00 TB	36% / 1.00 TB SATA	38% / 1.00 TB SATA	38% / 1.00 TB SATA	37% / 1.00 TB SATA

# Support portal



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Welcome to the Scale Computing Customer Portal!

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Jasper County REMC

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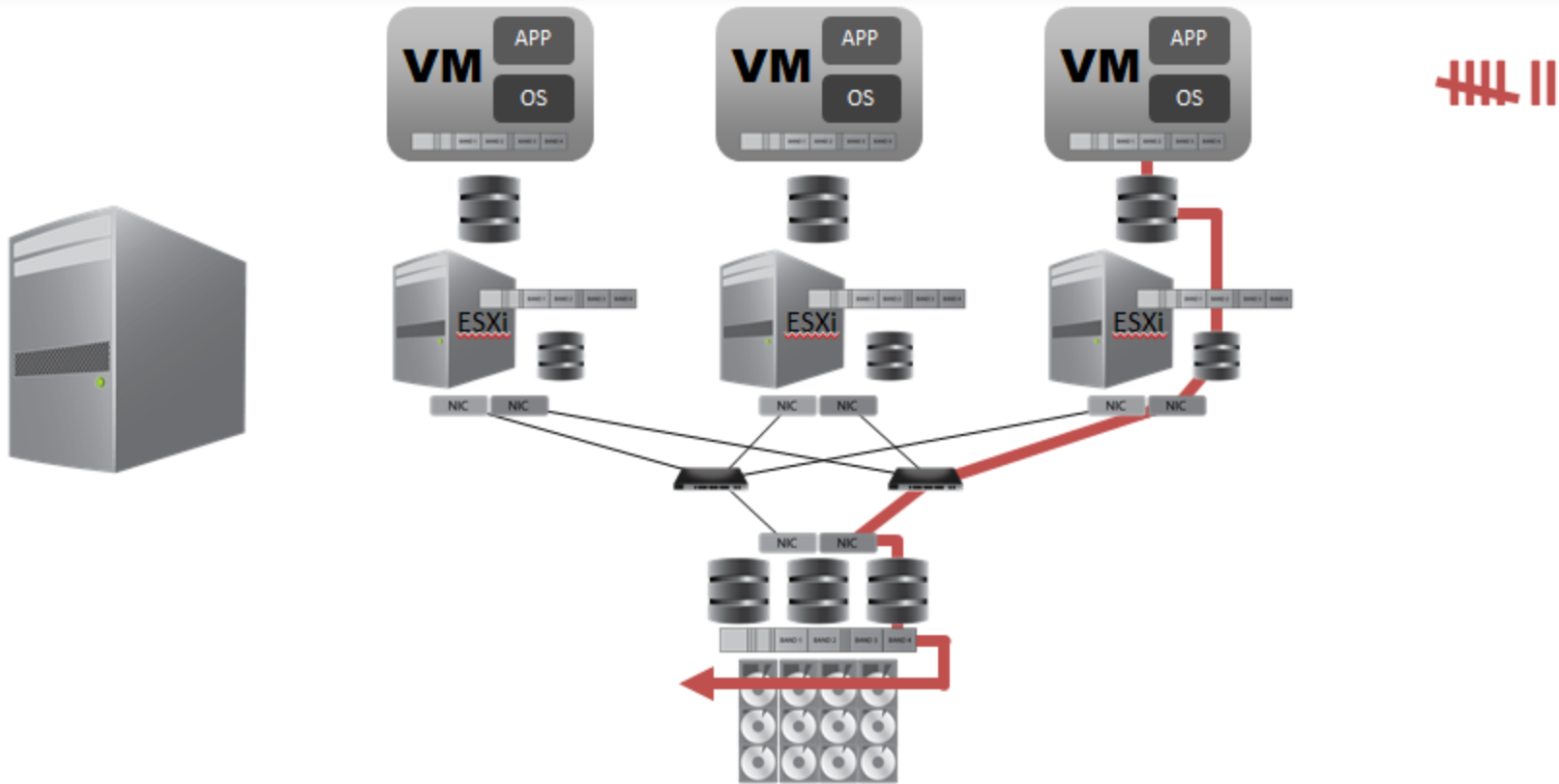
Open Support Case

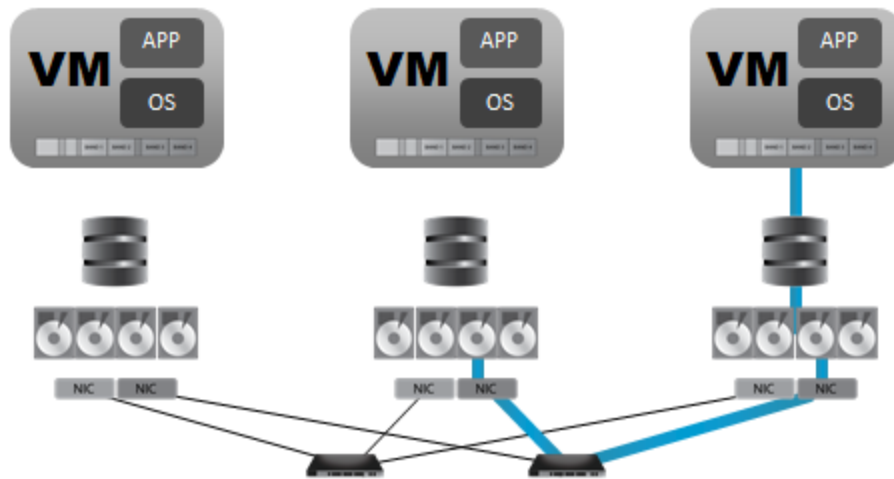
Account Messages

Expiring Contracts (0)  
Past Due Hardware Returns (0)  
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Assets





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## Virtualization

Virtualization is a technique for enabling multiple instances of operating systems and applications to run on a single physical host.

## Hypervisor

This is a software program used to enable virtualization by allowing multiple operating systems and applications to run simultaneously on a single host computer.

## Virtual Machine (VM)

A VM is a software implementation of a physical computer: abstracted operating system and applications that run on top of another system's OS (Operating System) to be presented to users on demand.