

Can You Easily Deploy & Scale Your Secure Access Service Edge?

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9 a.m. PT



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Supermicro/Adtran INB Webinar

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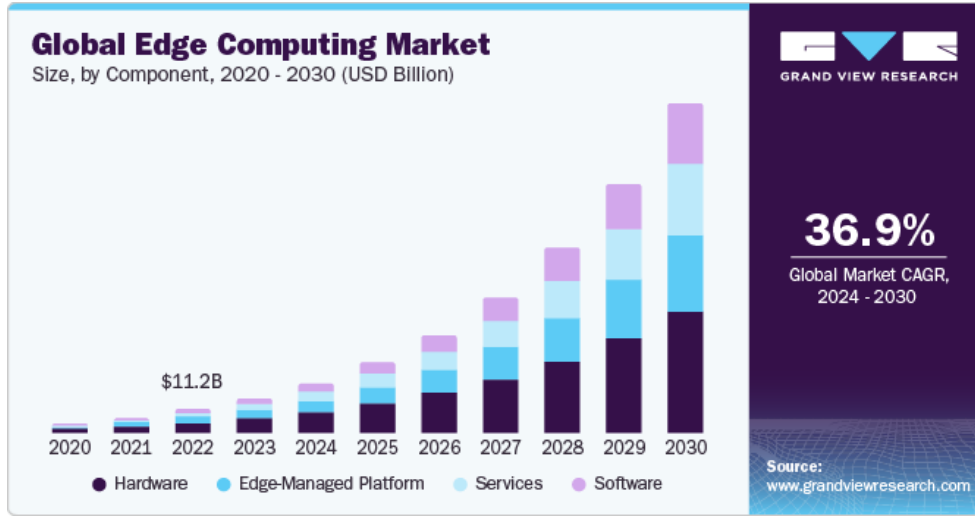
April 2, 2024

Agenda

- Edge Computing
- Three Use Case Examples
- Supermicro and Adtran Solution Description
- Solution Value Proposition
- Q&A

Edge Computing

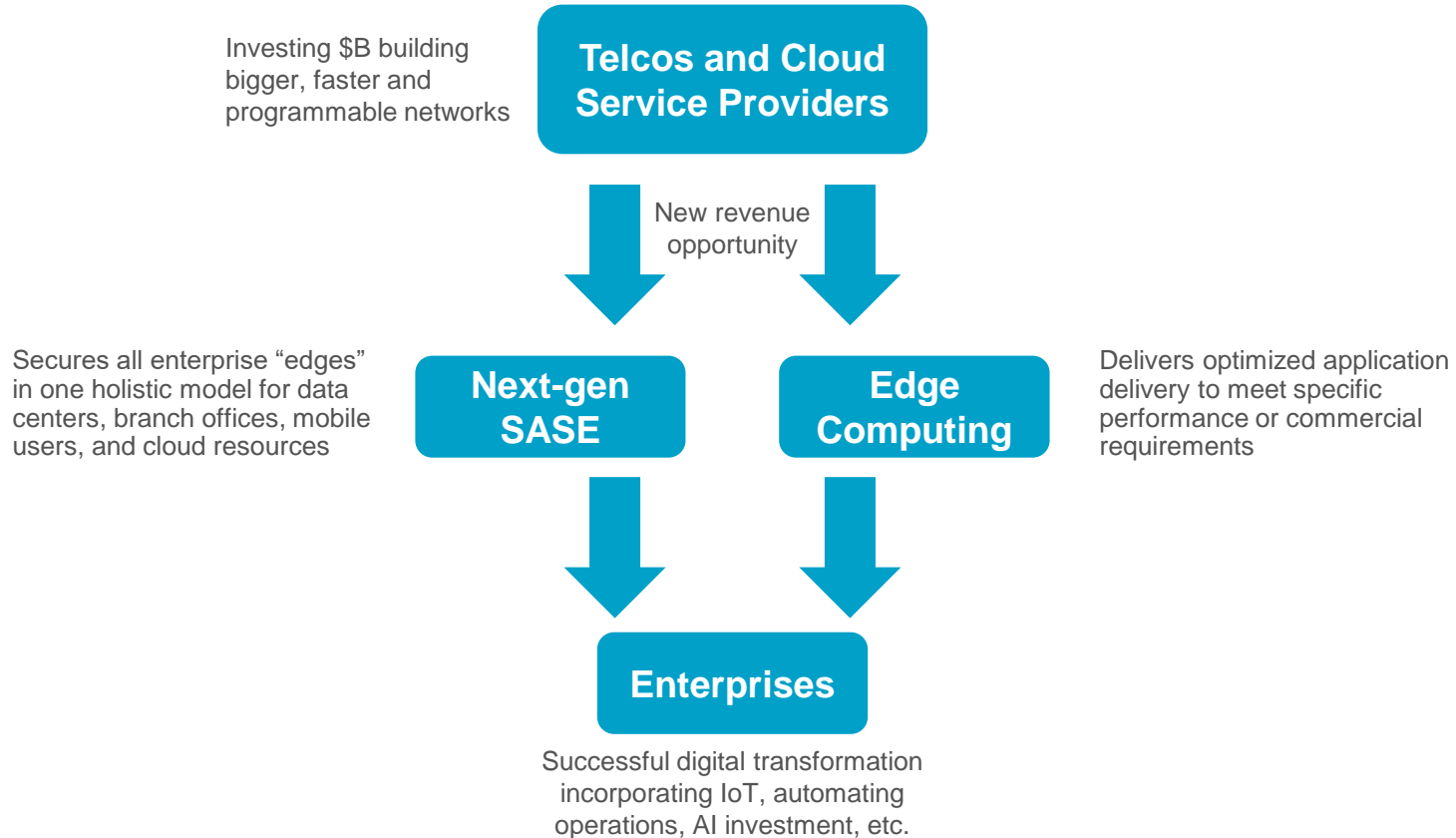
Edge Computing Market¹



1. Edge Computing Market Size, Share & Trends Analysis Report By Component, By Application, By Industry Vertical, By Organization Size, By Region, And Segment Forecasts, 2024 – 2030, Grand View Research

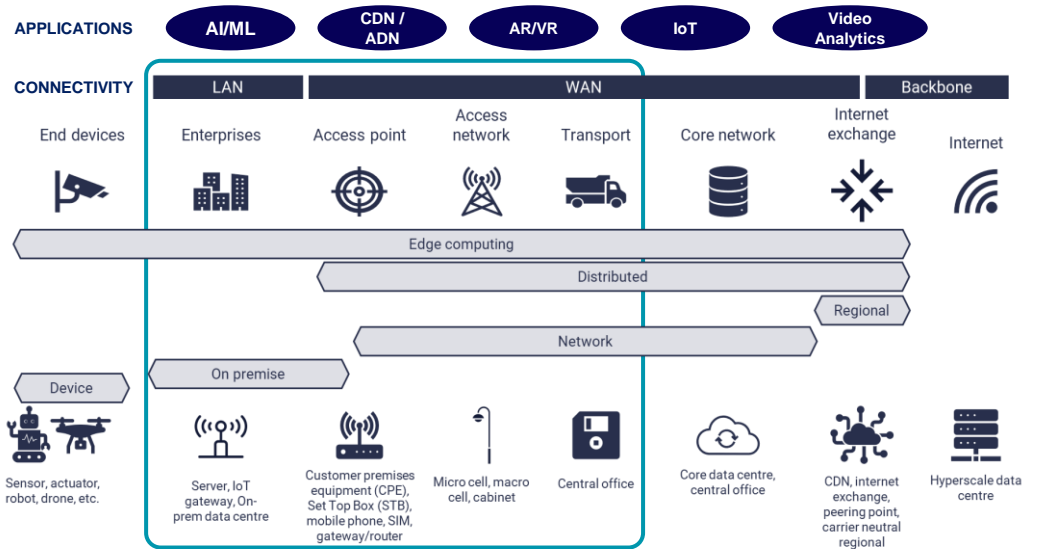
Edge computing **optimizes application delivery** to meet **specific performance or commercial requirements** by deploying all or a portion of the application, its data, or service logic outside the "core" to the "edge" of the network

Demand for Edge Computing



Edge Computing Values

- **Reduce backhaul costs** – for high bandwidth apps
- **Reduce hosting costs** – use cost effective COTS
- **Reduce latency** – AR/VR, AI inferencing & real-time decisions
- **Standalone resiliency** – local processing during network loss
- **Security and privacy** – data sovereignty requirements
- **Reduce time to market** – to implement new use cases



** Image source: STL Partners

By year-end 2026, 70% of large enterprises will have a documented strategy for edge computing, compared to fewer than 10% in 2023²

2. Data Center Resources, Research & Report | Equinix

Three Use Case Examples

Technology Solutions Cross Multiple Business Verticals

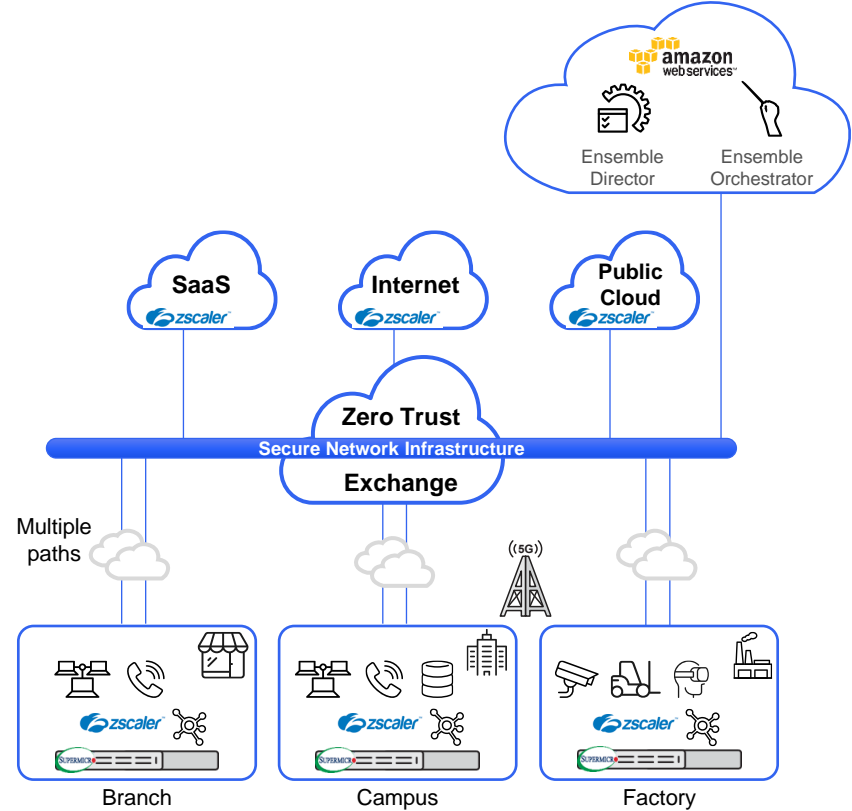
- SASE / SD-WAN (offered as part of bigger NaaS Use Case)
- Video Analytics and Computer Vision
- Edge AI

Network as a Service (NaaS)

NaaS replaces hardware-based VPNs and on-premises networking appliances with software applications that enable dynamic overlay for secure networking.

Benefits

- Enterprises can deploy “right-sized” servers to meet specific site requirements
- Rapidly deploy NaaS services based on real-time demand
- Dynamically scale networking resources based on business requirements
- Reduce capital expenditure by only paying for resources that are used
- As a managed service, NaaS allows enterprises to focus on their core business



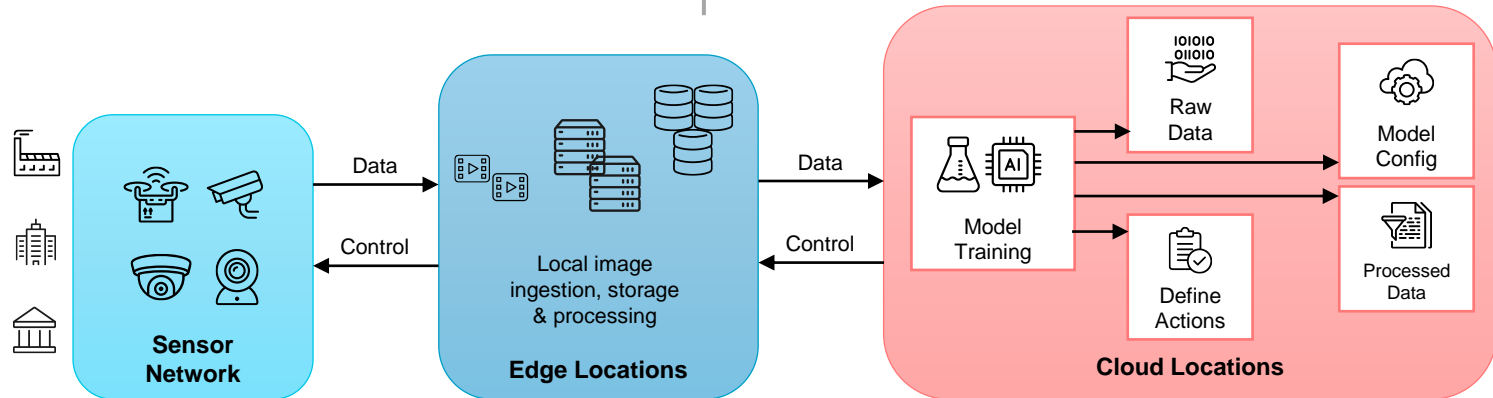
Video analytics and computer vision

Video analytics is being used to solve security, safety, flow analysis, production and maintenance issues.

- Retail outlets and public venues obtain insights where to stock goods or direct traffic.
- Video can identify warning signs of wear-and-tear of complex and expensive machinery.
- Video analytics monitors public spaces and venues to ensure the safety and security.

Benefits

- Edge processing means cameras do not need to be “smart”, making them less expensive.
- Video can be analyzed at the edge cloud in a way compliant to personal data privacy regulations.
- Eliminates need to transport high-volume data to a central cloud, reducing the cost of bandwidth.
- Automation reduces human error and increases the likelihood of mistakes being identified.



Source: STL Partners, Edge Compute Use Case Report

Edge AI – Inferencing at the Edge

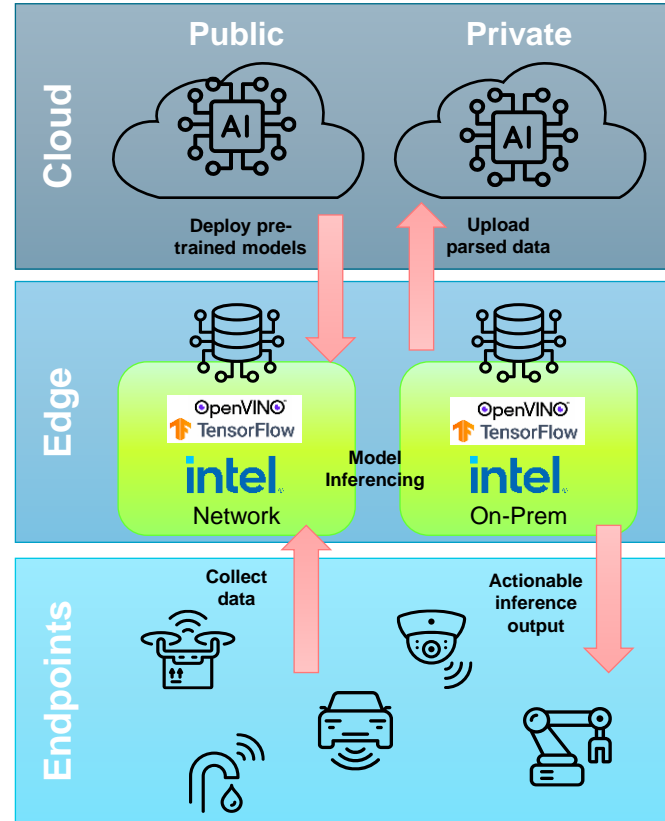
Edge compute is leveraged to apply generalized, cloud-trained AI models to enterprise-specific applications and use cases

- Model fine-tuning takes pre-trained models and further refines them with application-specific data to meet unique enterprise application requirements
- Real-time inferencing enables enterprise applications to deliver results such as business-specific recommendations or automated customer responses

Benefits

Supermicro and Adtran solution enables AI inferencing at the edge to meet application-specific requirements

- Uniform access to cost-efficient, AI-specific CPU, GPU & NPU accelerators
- Significant decrease in processing latency for mission-critical applications
- Reduces traffic load to the cloud and the associated costs
- Improves reliability by reducing dependence on the need for network connectivity between the customer premises and the cloud



Supermicro and Adtran Solution Description

Ensemble Software On Supermicro Hardware Architecture

Ensemble SaaS MANO

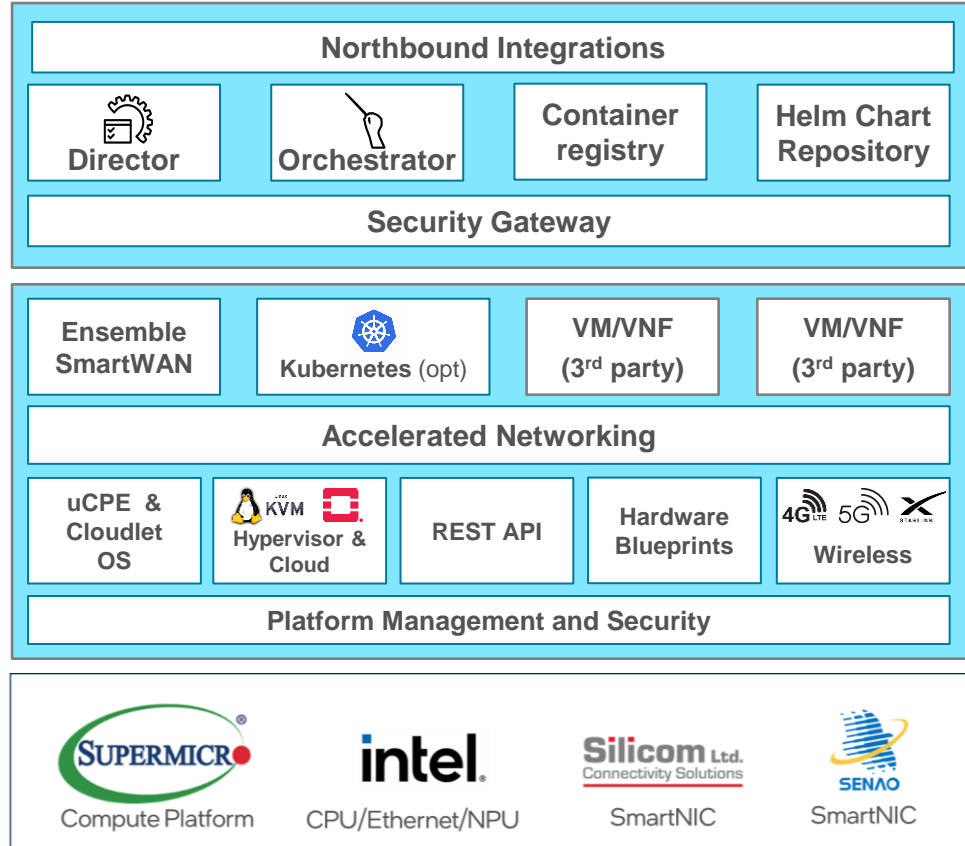
Centralized management and orchestration

Ensemble Cloud OS

Convergence layer between workloads and server hardware

Hardware Platforms

Ecosystem of key elements for enterprise edge platforms



Supermicro's Industry Leading Portfolio



Public Cloud Data Center



Data Center Mobile Core



Regional



Edge



Access Node



Endpoints

Cloud/Web Security



Rack Scale Solutions



Storage / Data Processing / Network Optimized / Appliance



GPU Server



Hyper-E & Hyper



211E-FRDN2T
5G Edge, Short Depth



Pole-Mounted IP65



MP 4-Way



Ultra & Ultra-E



GrandTwin



WIO



SuperStorage



SuperBlade



SuperEdge

IoT Gateway Control Box



SYS-E100-13AD



SYS-E300-12D
uCPE/NFV Edge



SYS-110D-FRN8TP



SYS-510D-4C/8C/10C



SYS-E302-12D



SYS-E200-12D



SYS-E300-13AD



Target Hardware Platforms for SASE

Supermicro Systems	SYS-E300-13AD	SYS-110D-(4/8/14/16/20C)-FR(A/D)N8TP	SYS-211E-FR(D)N13P	SYS-E403-13E-FRN2T	SYS-211SE-31(A/D)	SYS-221HE (Hyper-E)
Host CPU	12th generation Intel® Core™ processor	Intel® Xeon® D-1700 and D-2700 processors	5th Gen Intel® Xeon® Scalable Processors or 4th Gen Intel® Xeon® Scalable processors with vRAN Boost	5th Gen Intel® Xeon® Scalable Processors	5th Gen Intel® Xeon® Scalable Processors or 4th Gen Intel® Xeon® Scalable processors with vRAN Boost	2x 5th Gen Intel® Xeon® Scalable Processors or 2x 4th Gen Intel® Xeon® Scalable processors with vRAN Boost
Workloads & Core Count						
HW Acceleration	Enables single or multiple GPUs/NPUs to include Edge AI and improved packet traffic					
Benefits	Each system has been selected to fit workload, application, networking needs based on current and future needs					

Meeting all needs for SASE Deployment

Supported Deployment Models

Ensemble edge cloud: Product overview

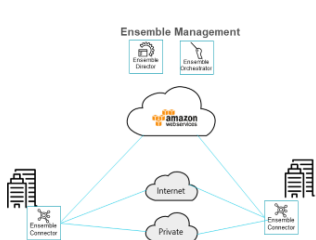
SmartWAN

- Fully integrated, high-performance routing, SD-WAN, & security, comparable to bare metal options
- Low cost & low footprint white box options improve TCO & supply chain diversity
- Leverages Ensemble deployment & management automation, improving time to market
- Supports addition 3rd party networking & security apps as required to offer new services

UCPE

- Single node, on-prem cloud that supports high availability
- Operators choose best of breed hardware & application vendors
- Broad hardware & software ecosystem ensures interoperability
- Eliminates vendor lock-in allowing customers to change workloads to meet evolving requirements
- Common management of virtualized & containerized workloads

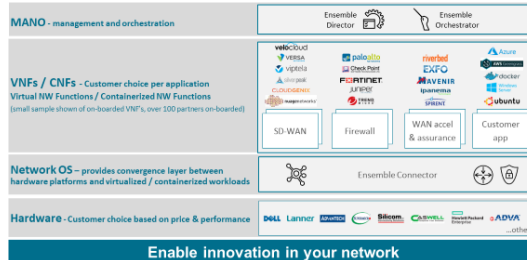
SmartWAN vRouter



Use cases

- Encrypted hybrid WANs
- Base routing decisions on
 - BFD
 - BGP
 - NHRP
 - PBR
- Terminate tunnels
 - Back-back Connector instances
 - Land on 3rd party cloud hosted security gateways

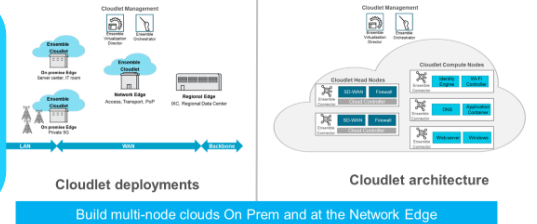
Ensemble Enables Choice



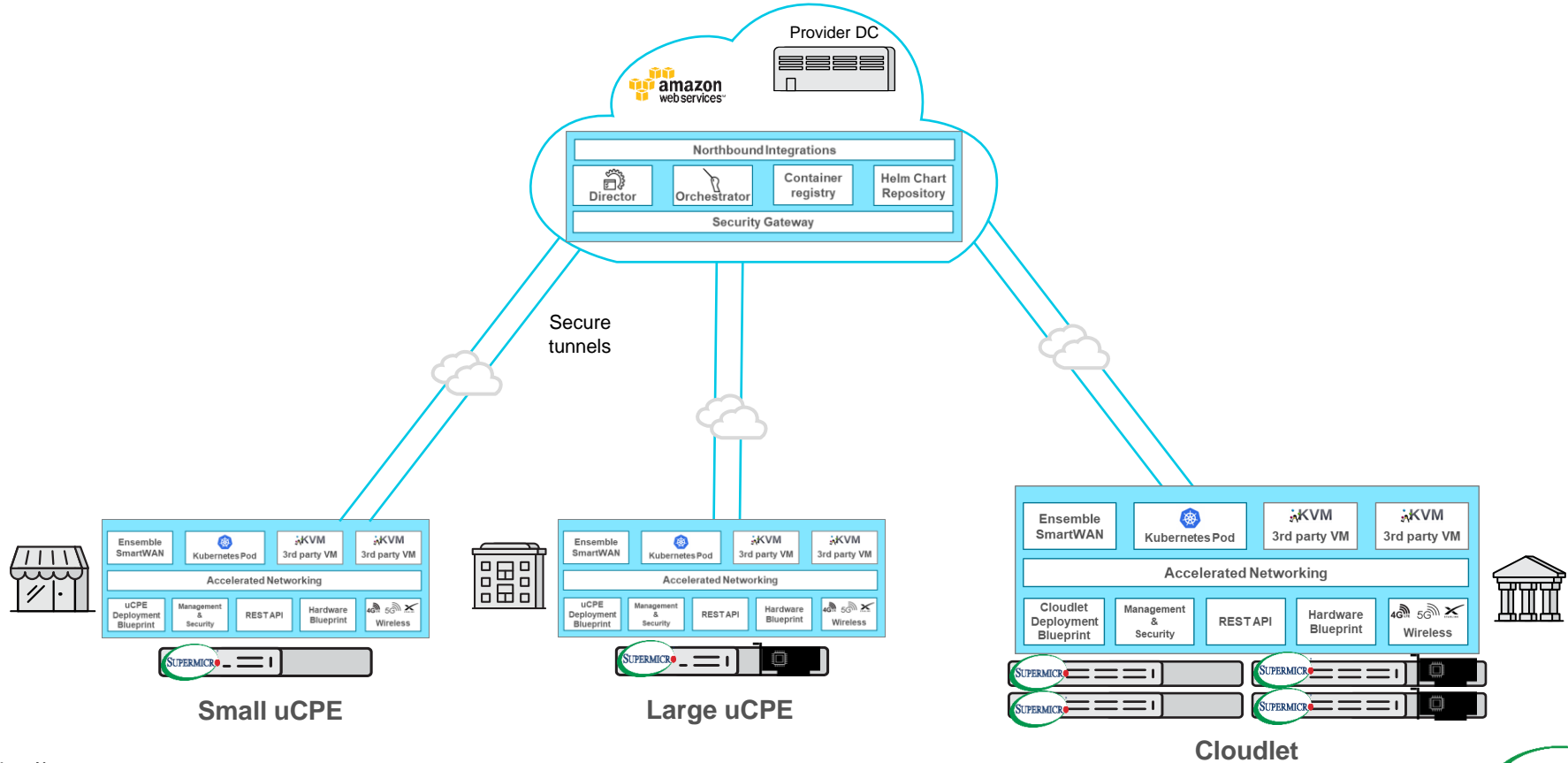
Cloudlet

- Easy to deploy & scale from single to multi-node edge compute cluster
- Common management across deployment models enables customers to start small & grow
- Platform & workload resiliency with automated recovery & migration
- Supports deployment on-prem, network edge or regional DC
- Supports hardware accelerator offload for compute intensive workloads

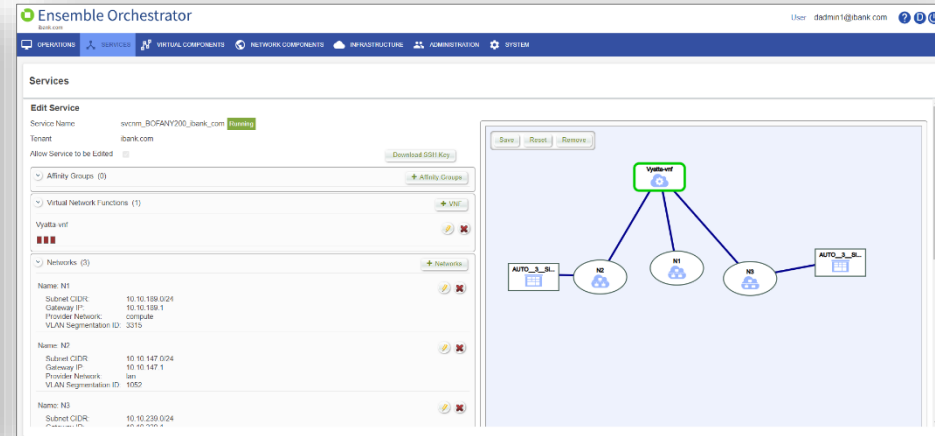
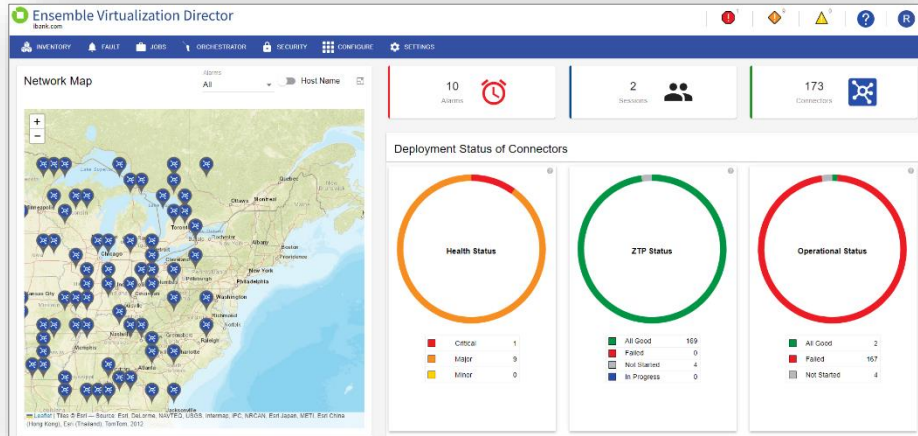
A MULTI-NODE CLOUD THAT DEPLOYS WITH ZTP Ensemble Cloudlet



Ensemble Deployment Architecture



Ensemble management and orchestration



Ensemble Director

Single pane of glass for managing NFV operations and infrastructure. Supports end-to-end ZTP, bulk config operations, platform upgrade, resiliency, monitoring & troubleshooting.



Ensemble Orchestrator

NFV orchestration and VNF management platform responsible for managing virtual resources, services and clouds. Instantiate NFV services and manage application lifecycle.

Purpose built for edge compute deployments at scale

Ensemble Edge Cloud: Partner Ecosystem Sample Workload Catalog



Other Apps



Networking



Security



Assurance



Mobile

...and many, many more

Solution Value Proposition

Unique Business Value

Operational Simplicity

Remote, secure, cloud-based management for platform and workload lifecycle across host platform and expansion cards.

Operational Flexibility

Choose from multiple platform options to align solution with requirements.
Remotely modify/update services at the push of a button.

Modular Scalability

Supplement existing host platforms with targeted compute capabilities.
Complement legacy infrastructure with new investment for Edge AI applications.



Improved Time to Market

Field-tested, pre-integrated solutions.
Broad ecosystem of networking and security partners.

Availability and Resiliency

Automated platform and workload recovery.
Workload migration between host and expansion cards.

Commercial Flexibility

Cost effective compared to public cloud.
Software licenses are portable - not “locked in” to an appliance.

Questions?