

Managing AI Fabrics

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Exponential growth of AI Networking

One private AI factory in 2028 will move a thousand times more data traffic within its walls than all global Internet links on Earth carry today.

1600 Petabits/second in 2028 Cluster

Vs

1.8 Petabits/second global internet BW today

Initially led by Cloud Giants
estimated 2025 CAPEX - \$335B

 Microsoft

\$80B

 Google

\$85B

 Meta

\$70B

 amazon

\$100B

And will apply to every industry



Government

- Enhancing citizen services
- Data-driven policy decisions and creation
- Modernization and streamline operations
- Optimizing infrastructure management
- AI-powered traffic design and public safety



Manufacturing

- Intelligent quality control
- Proactive machine maintenance
- Digital twin creation
- Supply-chain optimization and tracking
- Optimizing production processes



Finance

- Predictive trading algorithms
- Fraud detection and prevention
- Personalized financial advice
- Investment portfolio optimization
- Virtual assistants, and seamless transaction experiences



Healthcare

- Medical imaging analysis
- Enhance diagnosis and treatment
- Patient management through predictive analytics
- Improved access to healthcare with remote monitoring tools
- Drug research and development

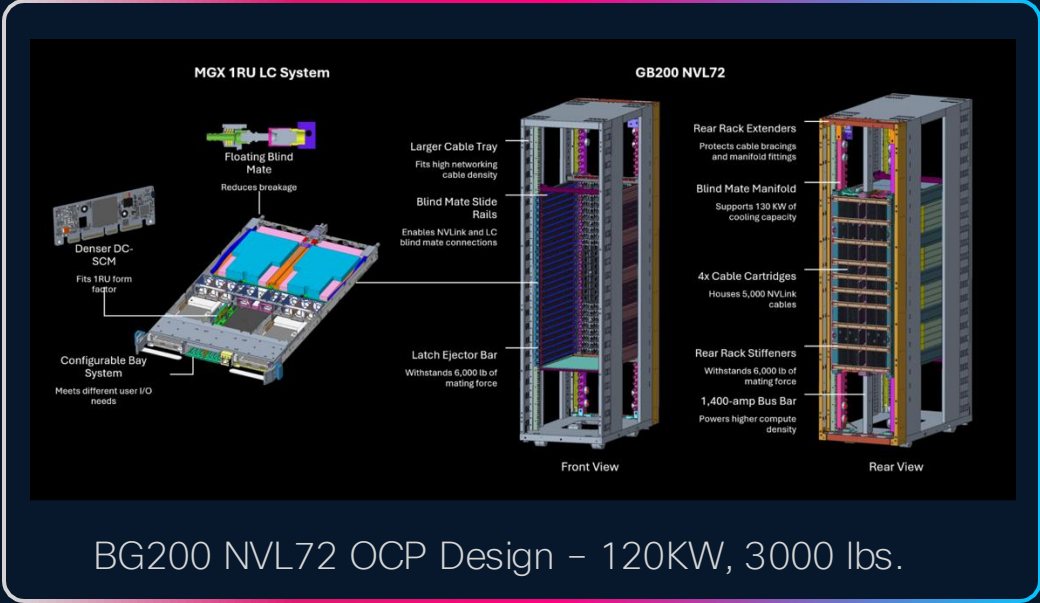


Retail

- Consumer behavior analytics
- Enhanced customer experiences
- Personalized product recommendations
- Dynamic virtual shopping experience
- Demand analysis and prediction

Build the Model | Train & Optimize the Model | Fine-tune & RAG | Use the Model | Do Inferencing

Driven by ever larger infrastructure with multiple complex networks



BG200 NVL72 OCP Design – 120KW, 3000 lbs.

Networks

Front End

Ethernet

Scale Out

Ethernet, IB, UEC

Scale Up

NVLink, Ethernet,
ULN(SUE), UAL

Storage

NVME-oF, ROCE,
FC, NAS

Creating challenges

Investment protection

- Inter generational support
- Pay as you grow

Power and Cooling

- Total power and power density
- Retrofitting for liquid cooling

Network management

- Converged network management
- Congestion control/reconvergence (sec/msec/usec)
- Failure blast radius

Security

- Common security policies
- Segmentation and access control

ENT IT integration

- Cross domain integration (campus, DCI, WAN)
- Agent Identity

Visibility, assurance and analytics

- Deployment assistance
- Analytics, audit and compliance
- Trouble shooting

Common Network OS and Controller



Network Controller
(F/E, Scale Out, Scale up)

- Unified network controller across all connectivity
- Common network OS on all network elements



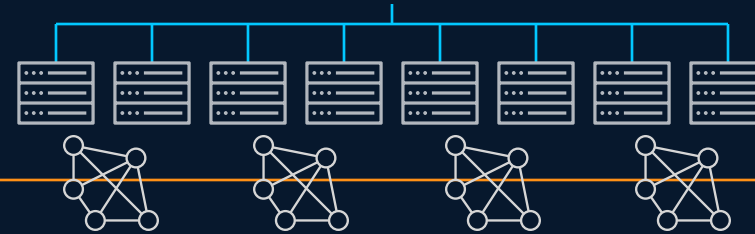
Front End Network



Scale Out Network



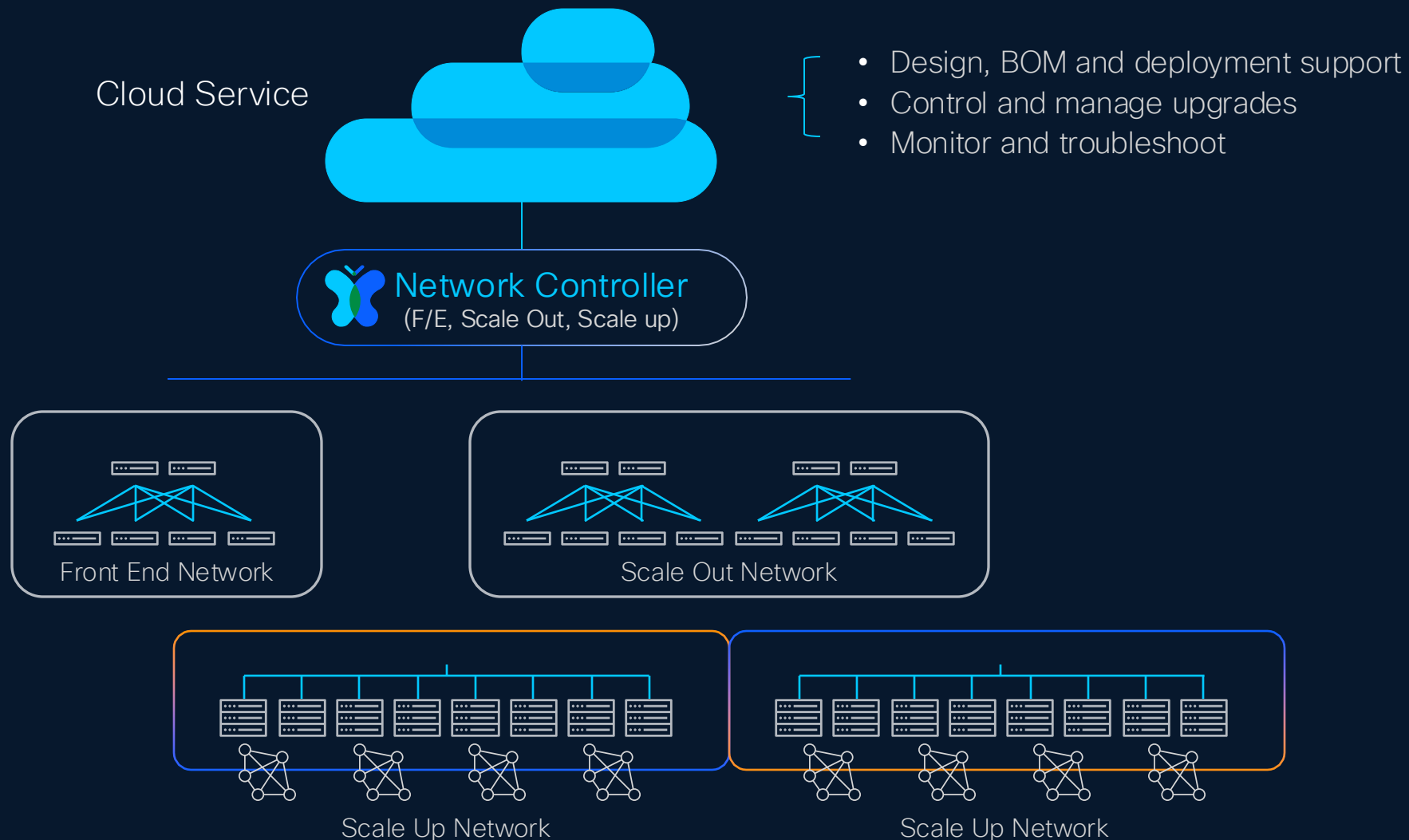
Scale Up Network



Scale Up Network

Cloud based Deployment

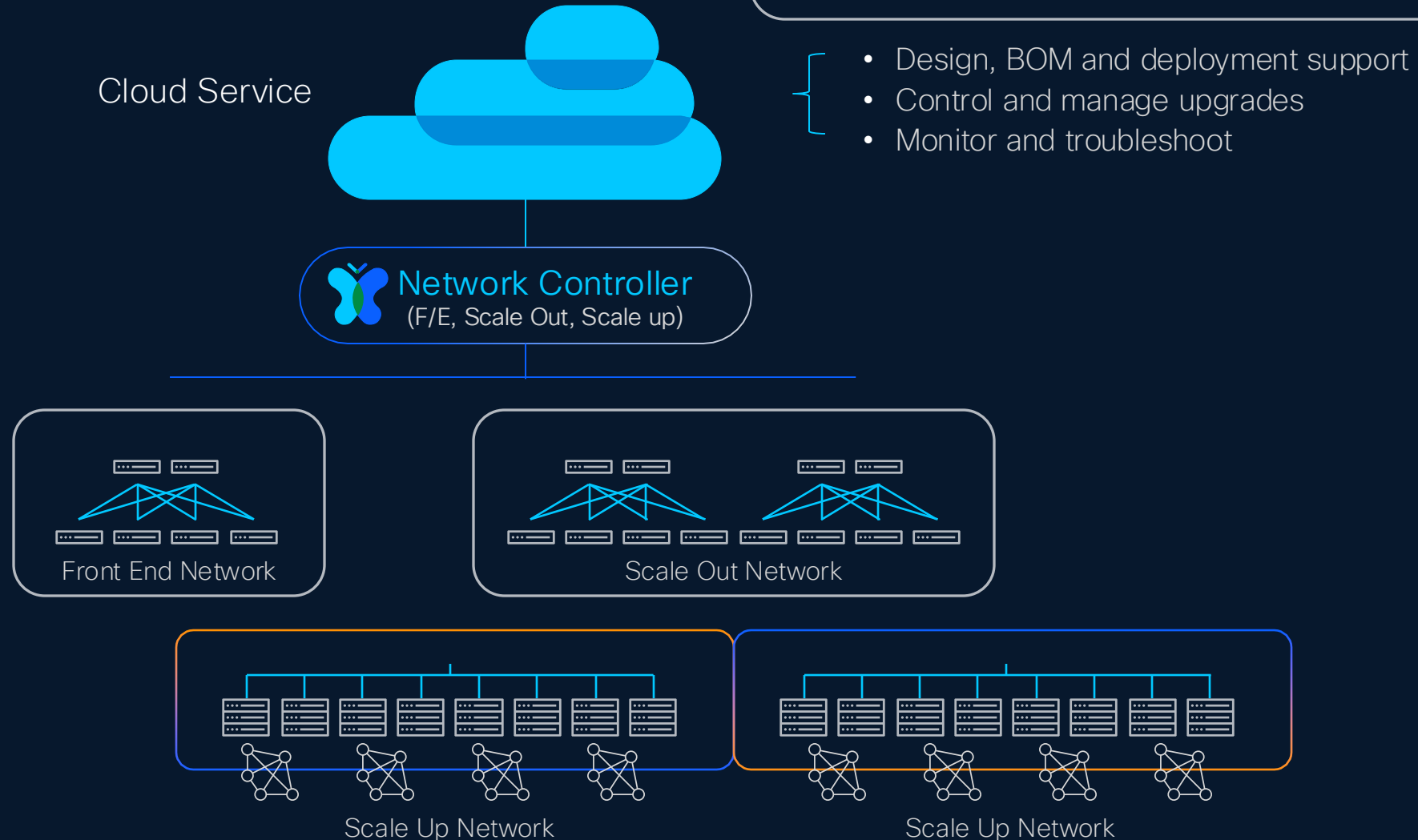
Analytics, Assurance and Troubleshooting



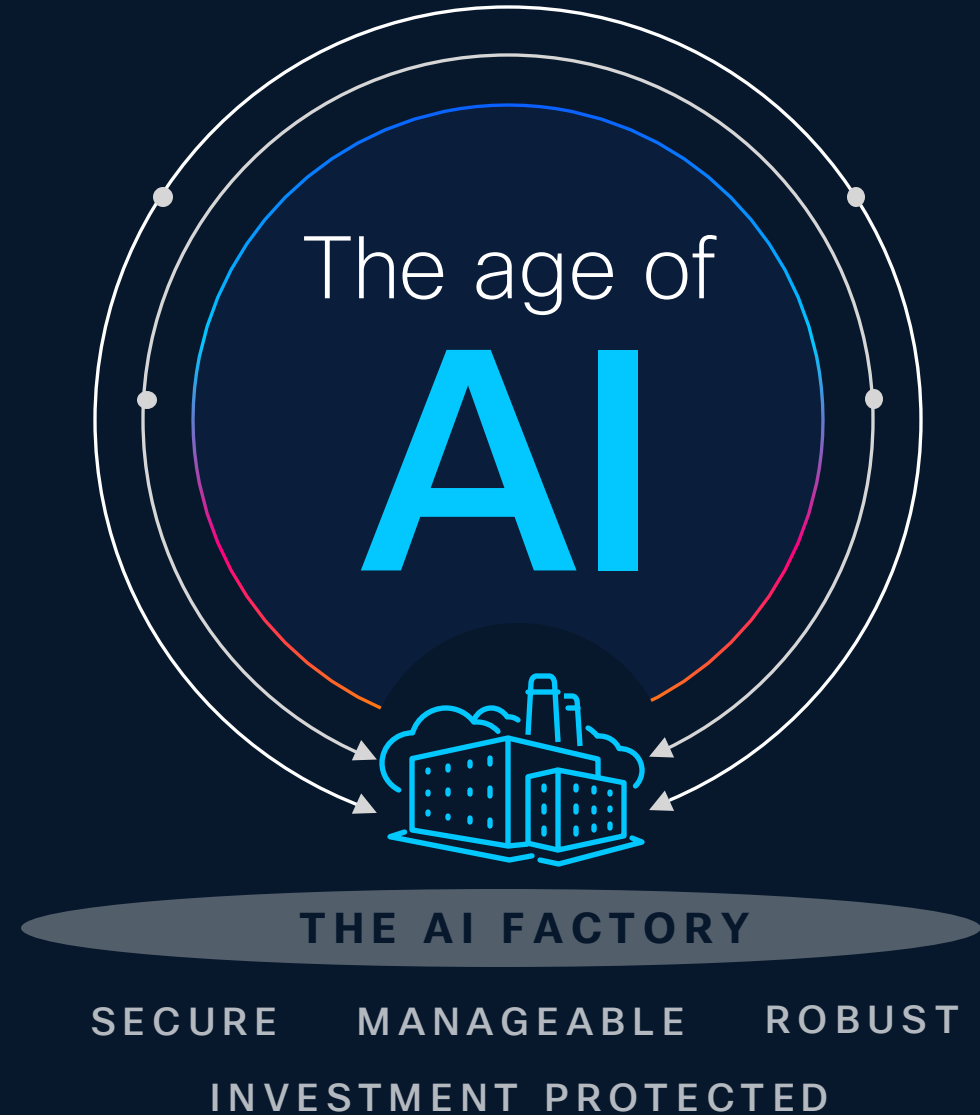
Cloud based Deployment

Analytics, Assurance and Troubleshooting

Intent based AI Cluster Management



Network management for AI factory operations and IT integration



Thank you!!

