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How AI-Ready Data Centers Advance Private AI

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AI Growth – Worldwide

2x Compute Power - 2 years (Moore's Law) down to 4 months

Source: OpenAI, "AI and Compute"

50% Annual Data Growth – Data Doubles every 1.4yrs

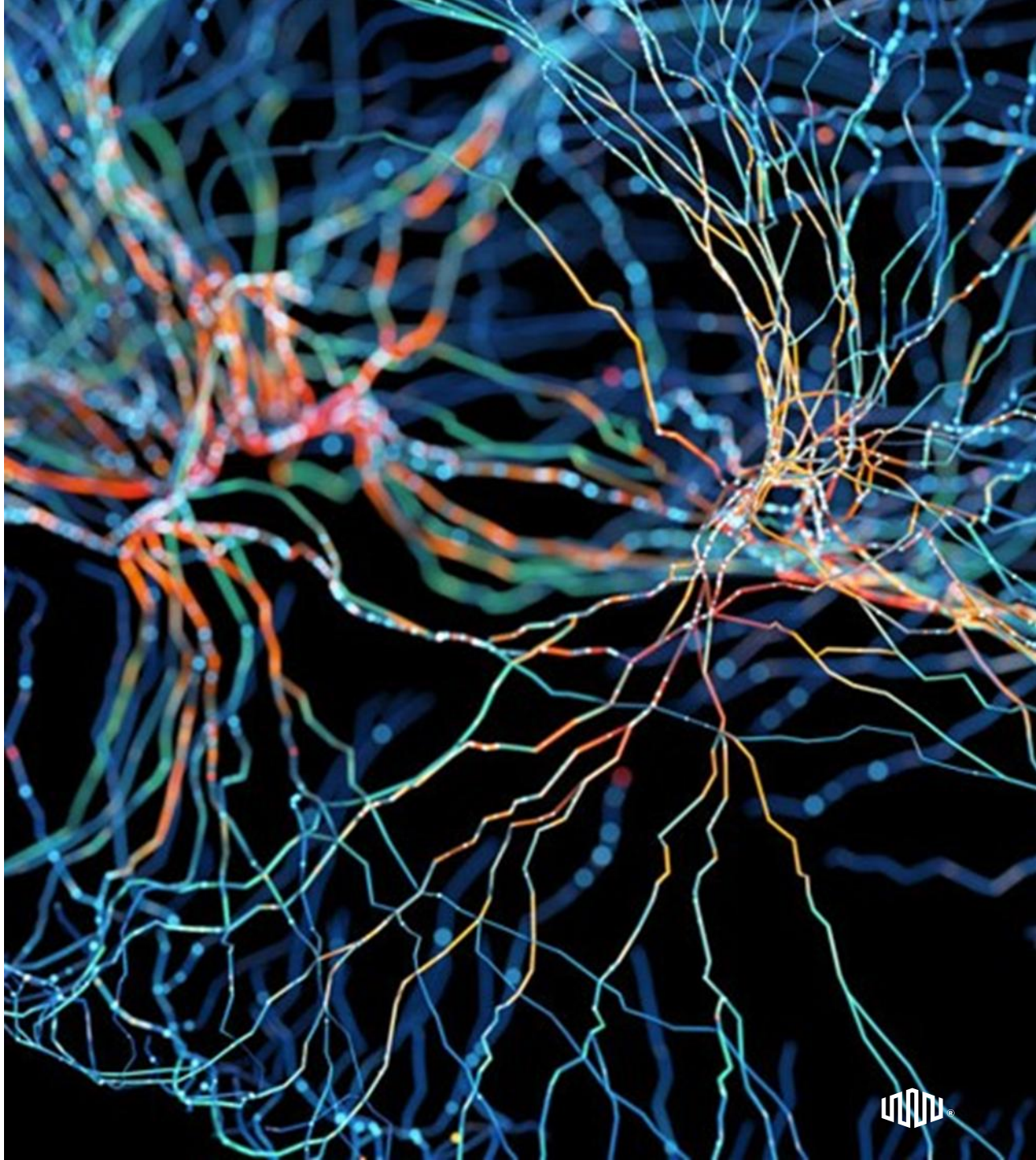
Source: International Data Corporation (IDC) and Statista report on global data growth

5x-10x more power – ChatGPT query Vs Google Search

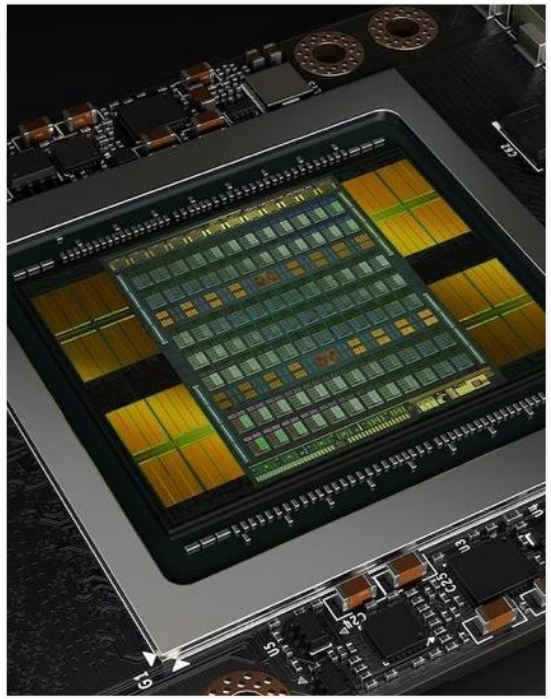
Source: MIT Technology Review and OpenAI Technical Blogs

1 second delay = 16% lower customer satisfaction

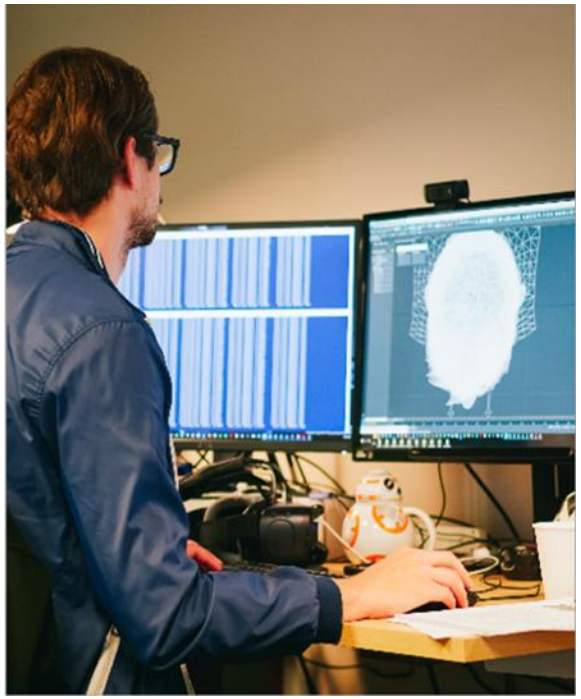
Source: Akamai's "State of Online Retail Performance" Report



Key Considerations & Challenges for AI - from customers' testimonials



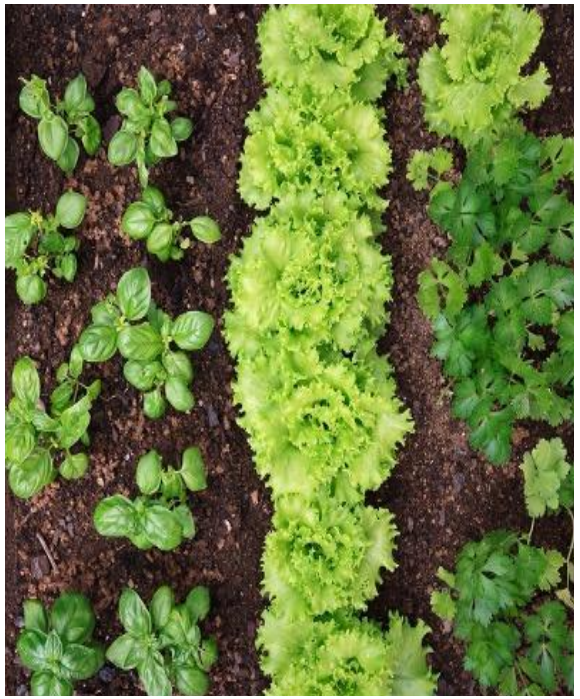
Component Scarcity



Data Privacy - Secure Connectivity



Power/Cooling

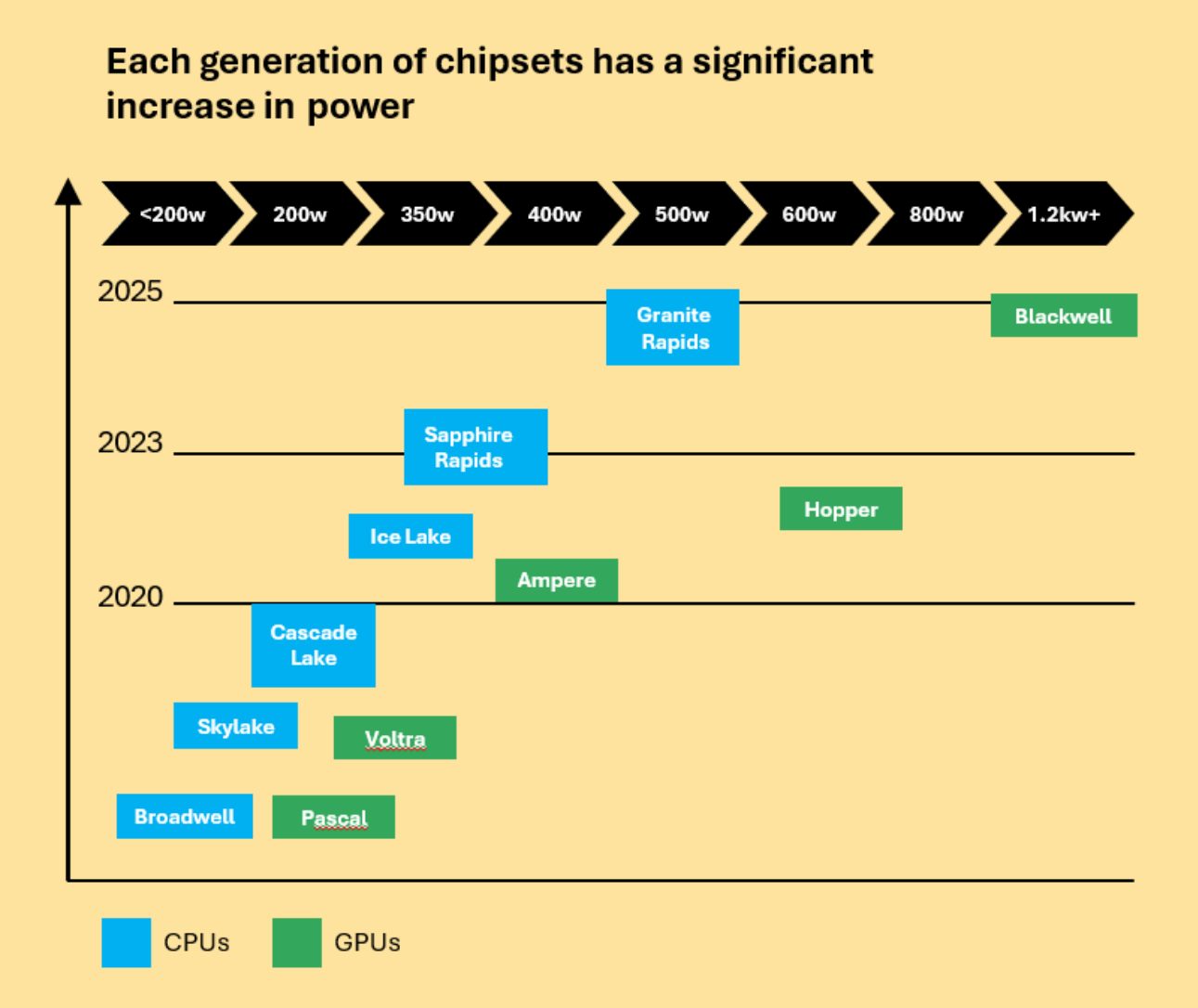


Sustainability

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More data, more heat

The next wave in computing performance requires data center innovation



160%

increase in global data center power demand by 2030

Goldman Sachs, 2024

19%

of all data center power demand will come from AI by 2028

Goldman Sachs, 2024

400

terawatt-hours of data center electricity demand in the US by 2030

McKinsey, 2024

Data "Surveyed organizations with AI in production report a median of 125 models in use and more than **1 Petabyte** of data required to train those models in aggregate."[1]

Power "The latest CPU has a TDP of **300-500w**, GPU **1.2kW** "[2]

"Enterprises cite **networking** as the top bottleneck to AI performance."[3]

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1. Tech Trend in Focus: AI Infrastructure and the GPU Explosion 2. NVIDIA H100 Tensor Core GPU 3. What is an 'AI data center'?

How Platform Equinix enables data-intensive workloads

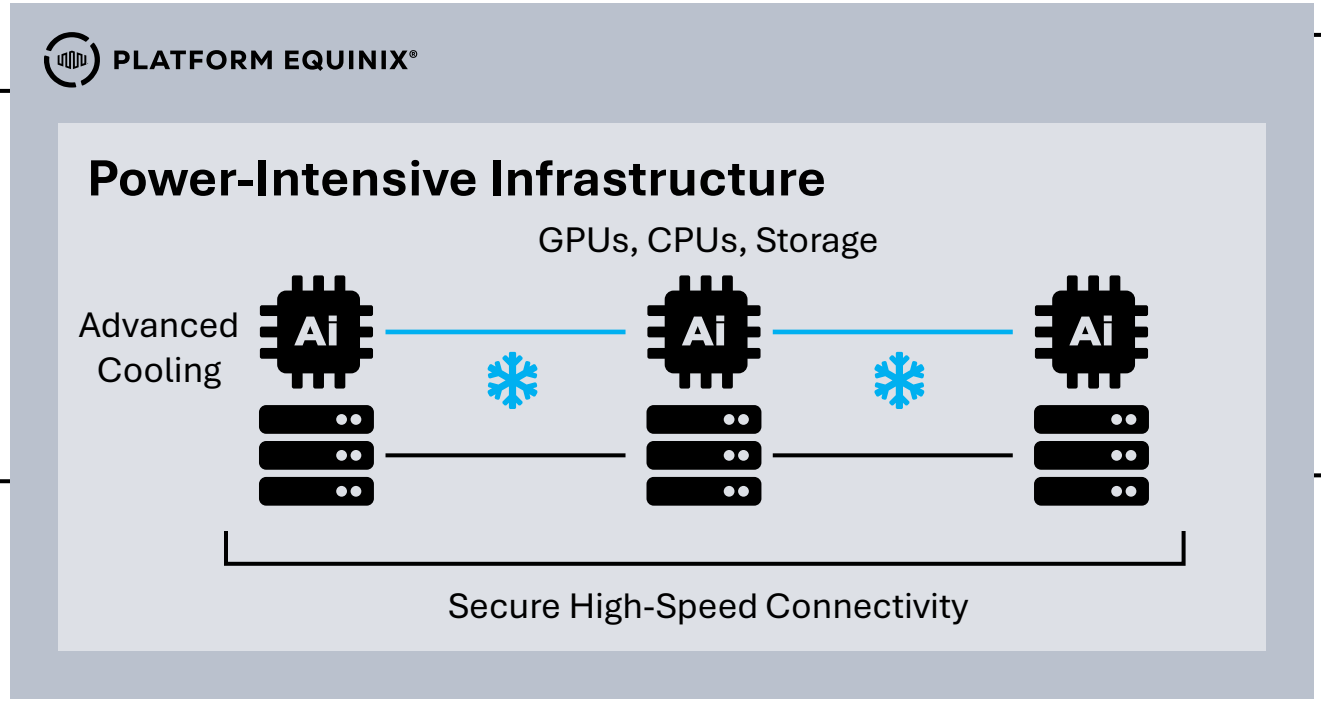
The best place to harness the power of big-data is at the nexus of data flows

Digital Ecosystem

- Business partners
- SaaS partners
- Data procurement ecosystem
- Data marketplaces

Digital Edge

- Customers
- End users
- Employees
- Field locations
- IoT devices



Cloud Infrastructure

- AWS
- Microsoft Azure
- Google Cloud
- Oracle
- IBM

WAN Backbone & NSP Ecosystem

- Equinix Fabric
- WAN services
- CDN services
- Internet exchanges
- Performant internet access

Deploy liquid cooled Colocation at the crossroads of your clouds, backbone, digital ecosystems and edge. Unlock your data-driven advantage with direct interconnection between your data, end-points, and IT resources.

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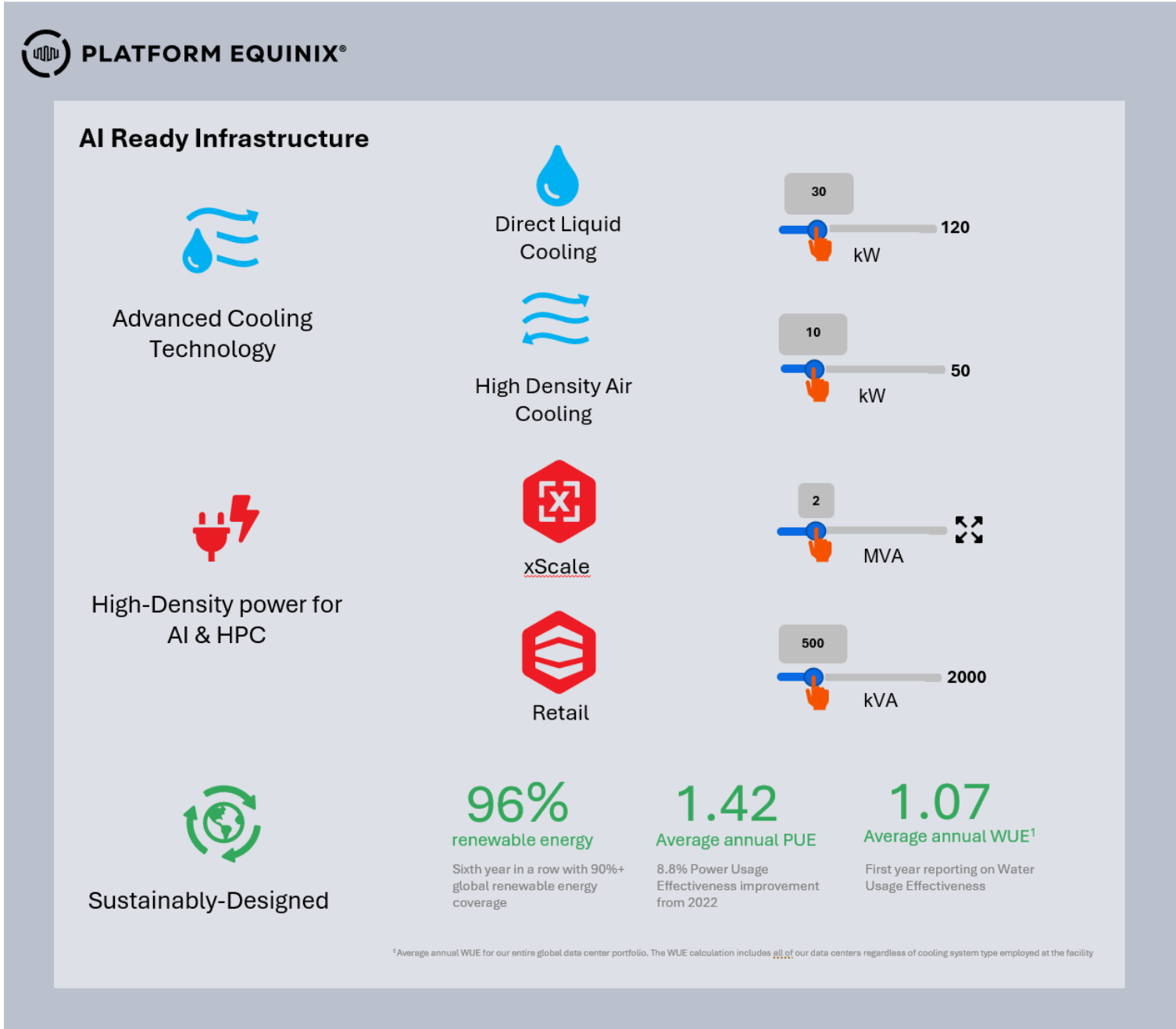
Liquid Cooling AI-Ready Data Center

Build production-ready liquid-cooled environments

Ensure your most power-intensive applications never go down. Build mission-critical liquid-cooled infrastructure on the world's most trusted and reliable data center platform.

Renewable energy coverage for your most power-intensive workloads

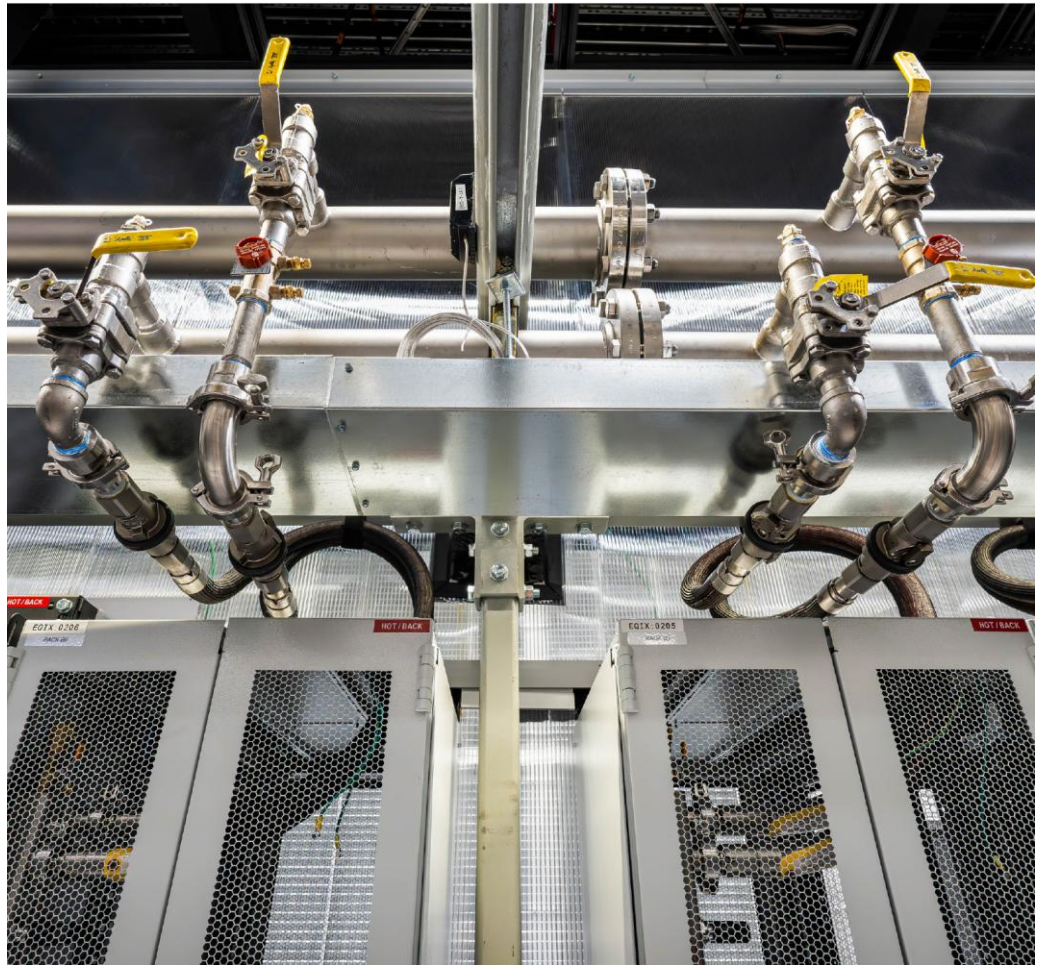
96%+ renewable energy coverage globally to ensure renewables back your most power-intensive workloads.



Futureproof at global scale

Build your most compute-intensive workloads with confidence – knowing you can scale them globally with liquid-cooled colocation capacity available wherever you need it.

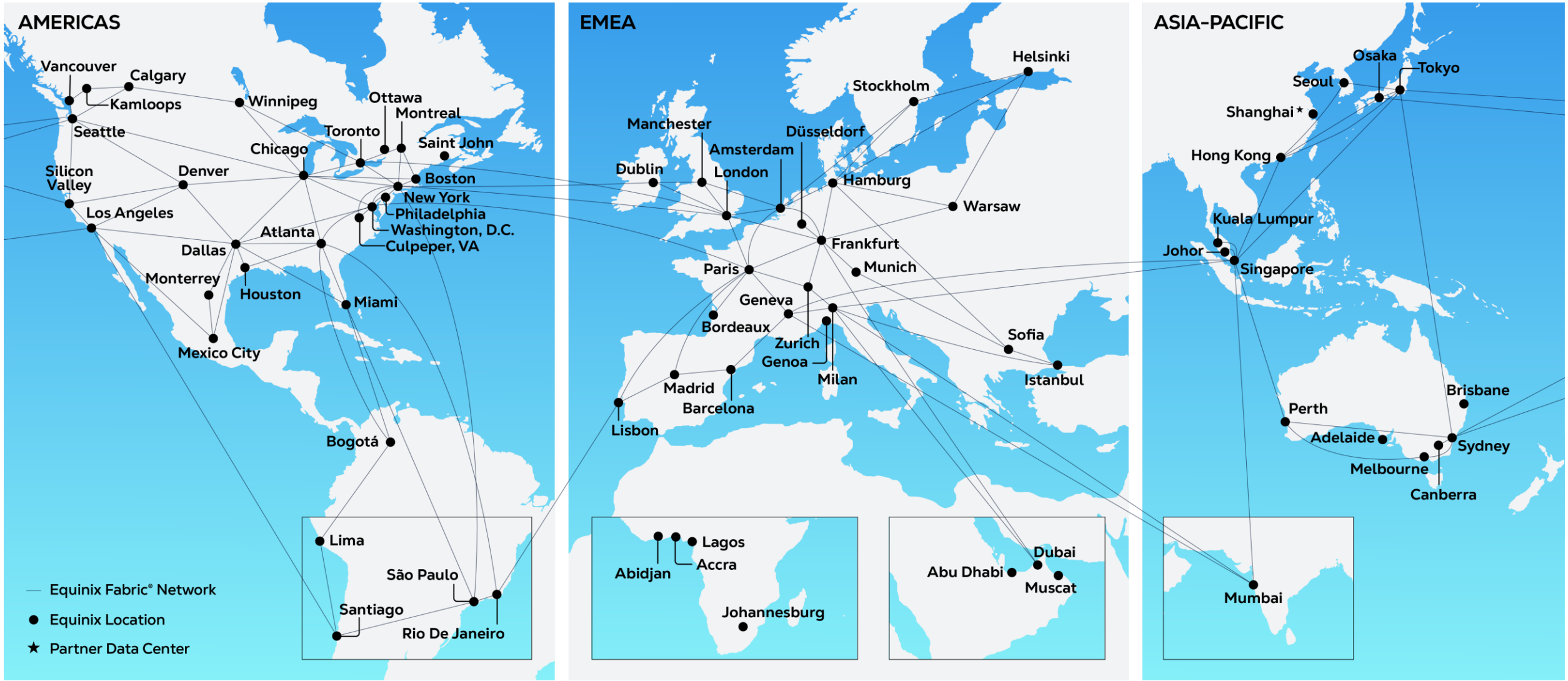
100+ Liquid-Ready IBXs, 28 Metros, 5 Continents



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Location Availability

99.9999% uptime, globally – Trusted by 10,000+ customers

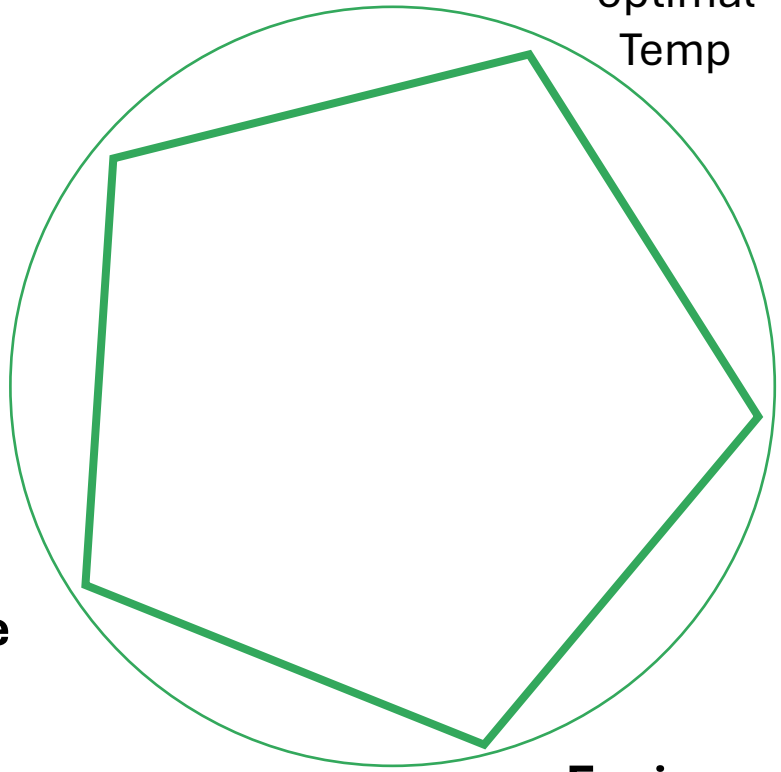


Why Direct Liquid Cooling?

Higher Performance, Efficiency, Cooling, Density, Environment

Cooling
Maintain optimal Temp

Efficiency
More effect heat capture
Reduce cooling power

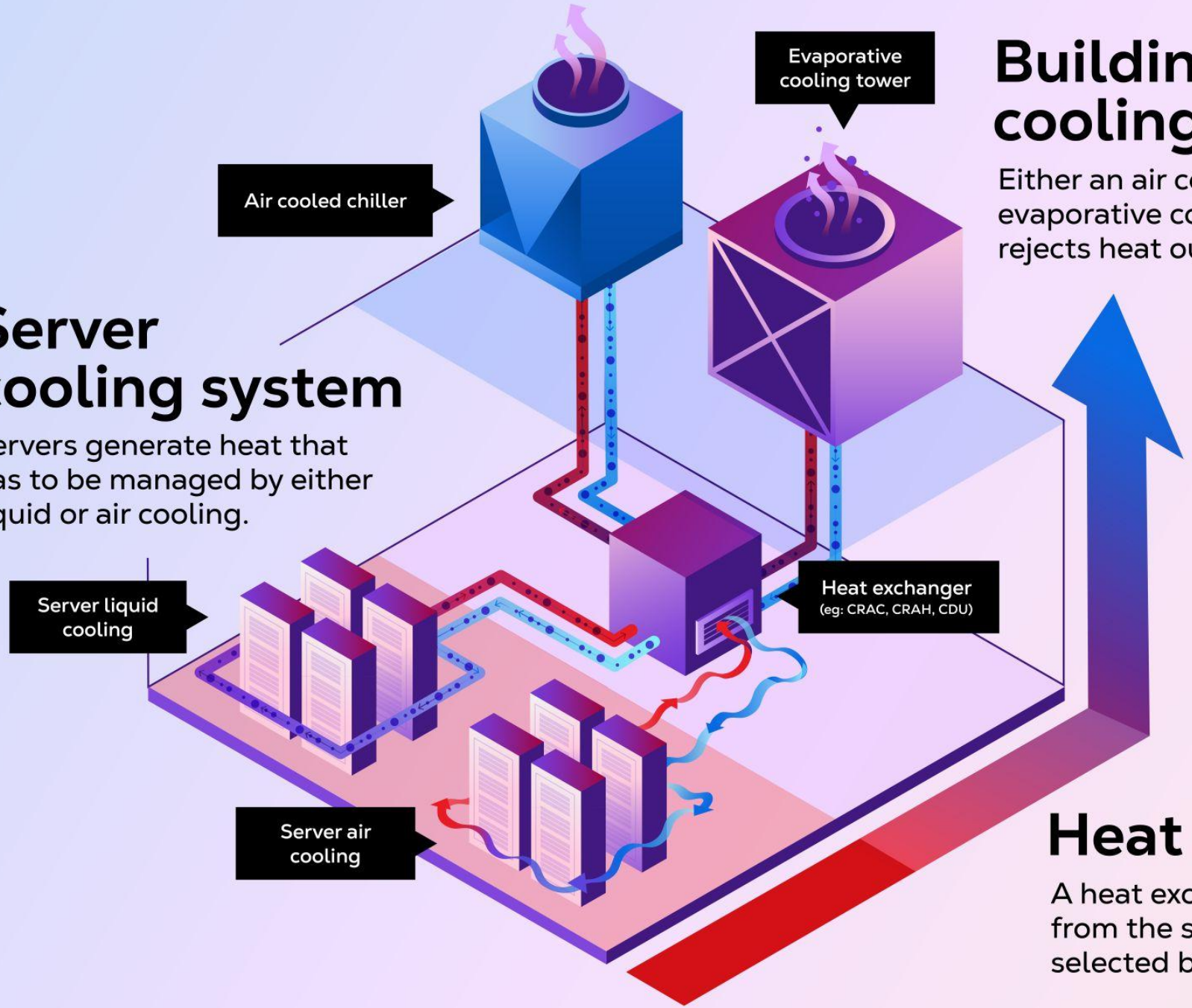


Density
More Server per rack
Fewer racks require
Lower latency

Performance
Enhance CPU/GPU performance

Environment
Reduce Noise
Fewer Fans & lower airflow

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Building cooling system

Either an air cooling or evaporative cooling system rejects heat outside the building.

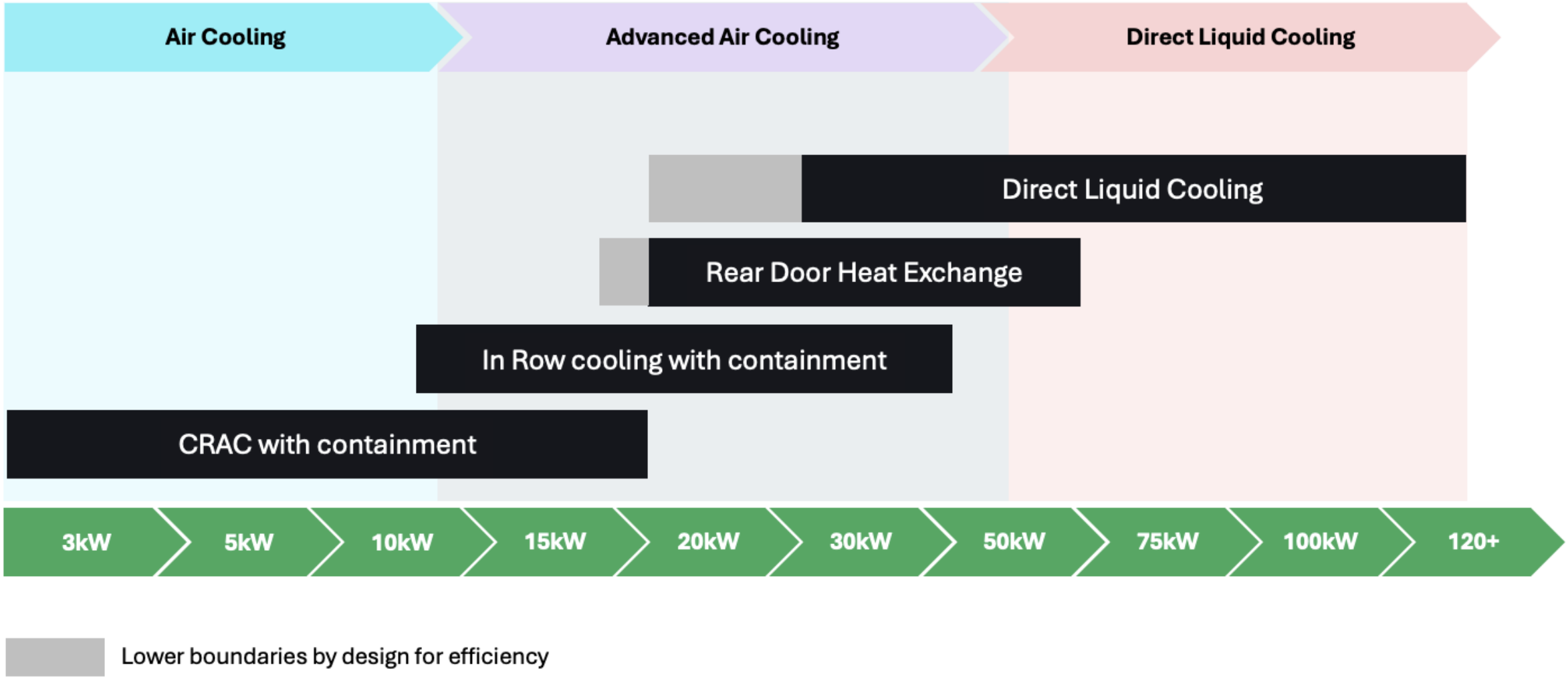
Server cooling system

Servers generate heat that has to be managed by either liquid or air cooling.

Heat exchange

A heat exchanger transfers heat from the server room to the selected building cooling system.

Choosing between Advanced Air and Liquid Cooling

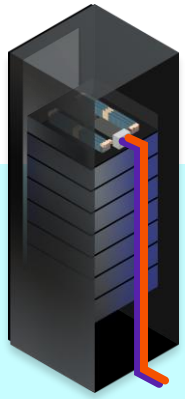


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High Density cooling solutions

Enabling the next generation of data center cooling innovation for AI workload

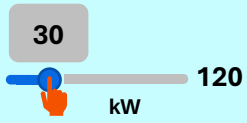
Direct Liquid Cooling



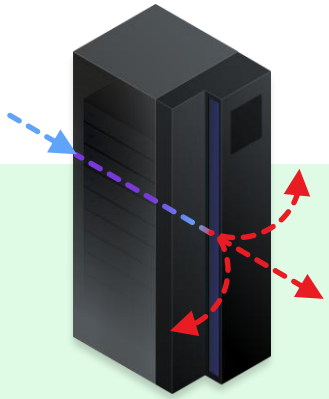
Direct-to-chip

- Most efficient heat transfer
- True liquid cooling
- Enables highest power densities
- Bring your own cooling distribution unit (can be purchased from Equinix)

*Shared Space & Private Cage



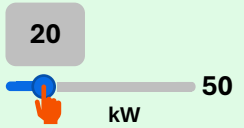
Advanced Air Cooling

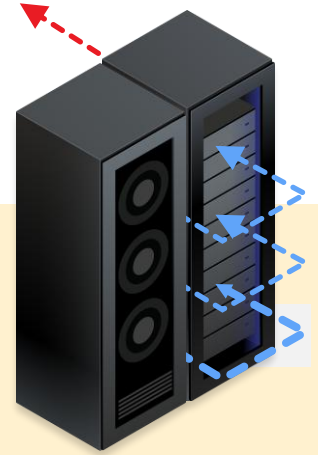


Rear-door heat exchangers

- Enhanced air cooling
- Does not require server-level retrofit
- Bring your own cooling distribution unit (can be purchased from Equinix)

*Private Cage

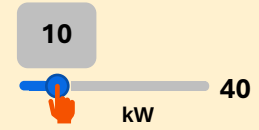




In-row coolers

- Enhanced air cooling
- Does not require server-level retrofit
- Only available in cage environments

*Private Cage



Build your preferred solution — enabled by a controlled water flow from Equinix-provided water loop at a demarcation point within your cage or cabinet.

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Entertainment & Video Games

Streamline planning and product development

Product design proposal improves100x on GenAI at Platform Equinix

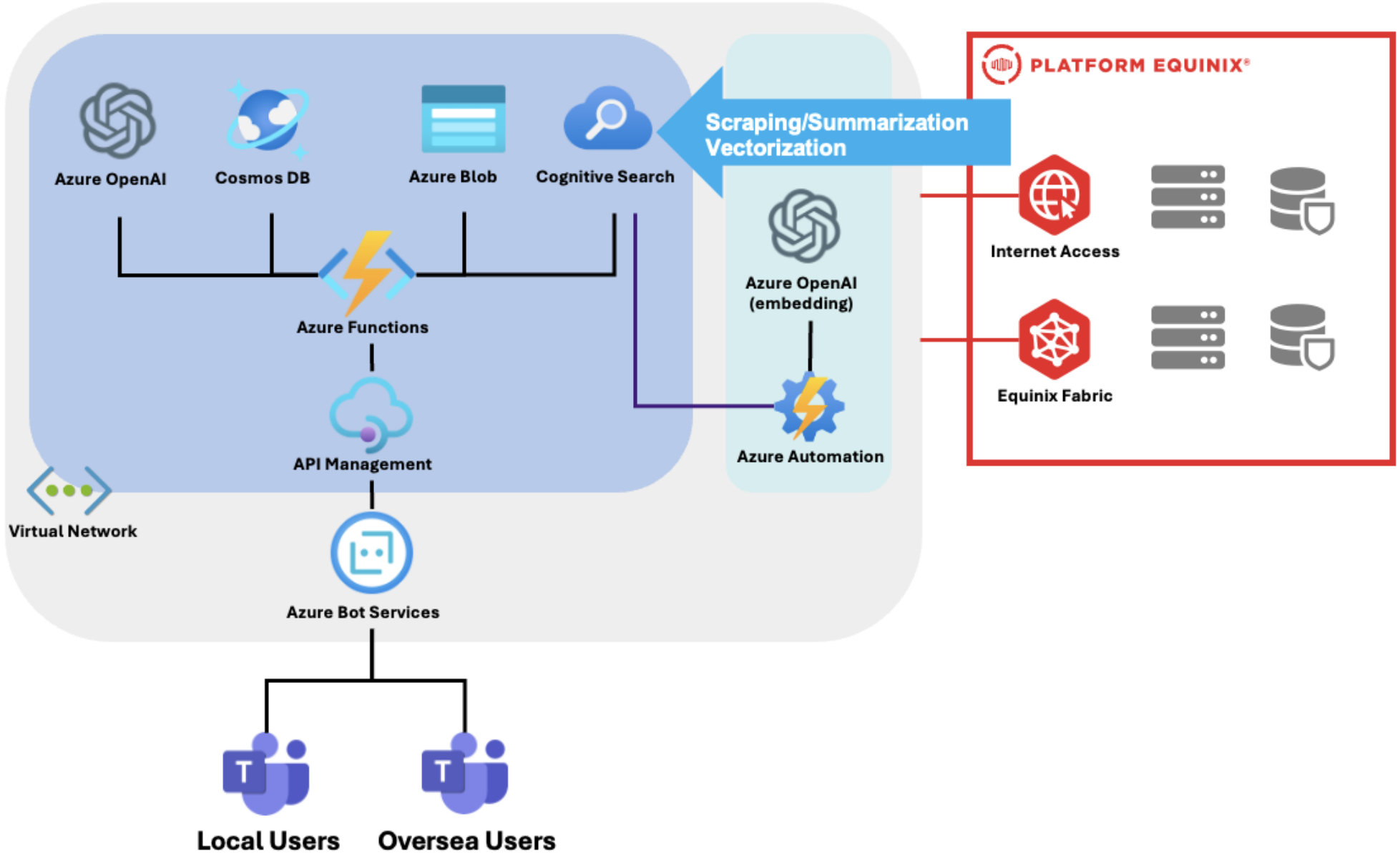
Low Latency – Seamless Global Network

Largest Global Cloud on-ramp footprint

EQUINIX

SEGASammy

Azure Regions



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Automotive manufacturing

Continental speeds AI learning for safer vehicles

Auto parts manufacturer improves AI training time by 70% on Platform Equinix

Global Coverage – endpoint data ingestion

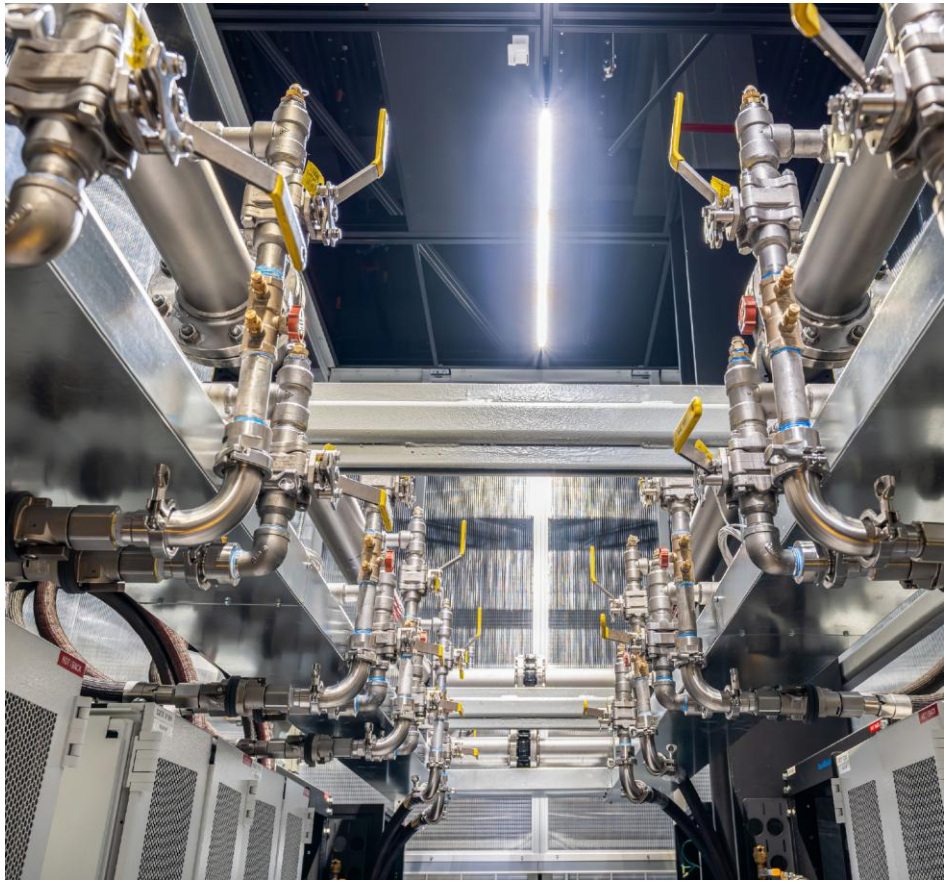
Advanced cooling – global availability

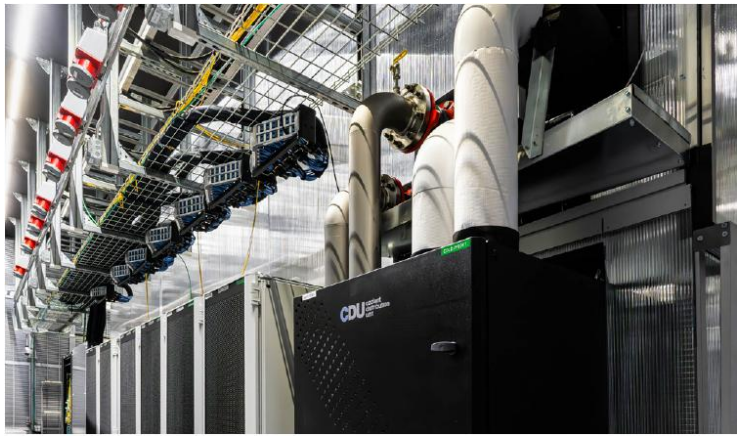
Smart Vehicle Global Ecosystems

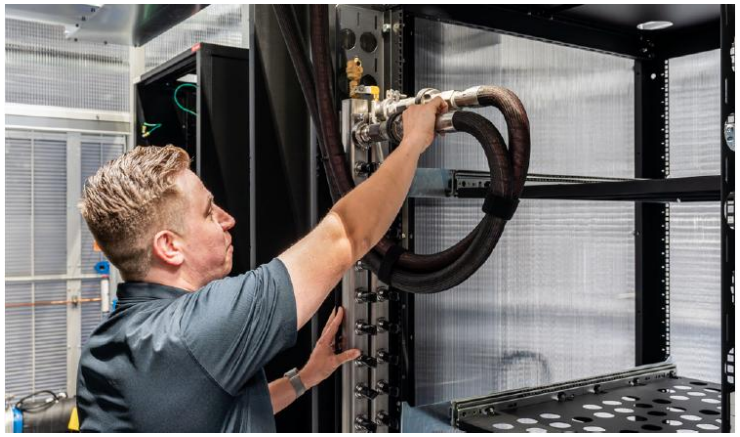
EQUINIX Continental NVIDIA IBM

Build with trusted data center experts on your team

Equinix offers the expertise and support required for an end-to-end liquid-cooled solution. Our trusted experts can collaborate with you and your technology partners to design and build your liquid-cooled cage design.







Our experts can build and deliver Direct Liquid Cooling to your secure cabinet and private cage environment

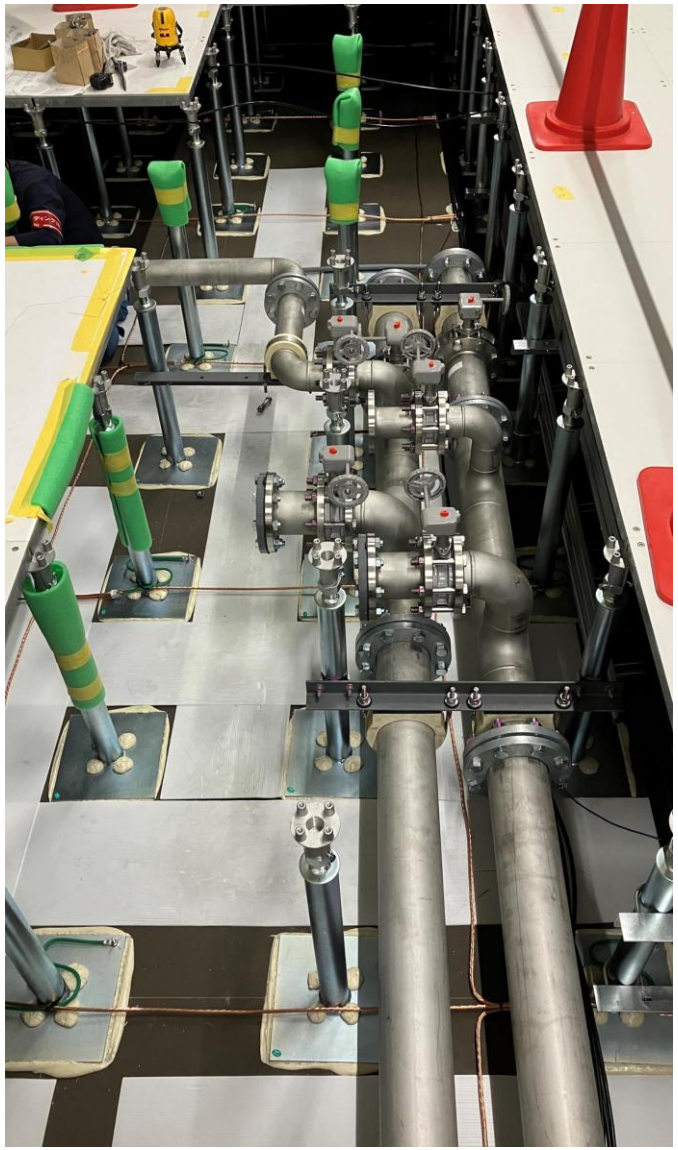


The inside of a CDU

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Regional Liquid Cooling Expansion







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Liquid Cooling AI Ready Data Center

99.9999% uptime, globally – Trusted by 10,000+ customers

AI Ready Networking

- Fiber Connect
- Fabric

Advanced Cooling Technology

- Direct Liquid Cooling: 30 kW – 120 kW
- High Density Air Cooling: 10 kW – 50 kW

High-Density power for AI & HPC

- xScale: 2 MVA
- Retail: 500 kVA – 2000 kVA

Cloud Services Providers with AI

aws, Microsoft, Google Cloud, ORACLE CLOUD

Digital/AI Ecosystem

Alembic, NVIDIA, salesforce, SESTERCE

Network Services Providers

AT&T, BT, orange, KDDI, verizon, TATA COMMUNICATIONS

Thermal Management

motivair COOLING SOLUTIONS, VERTIV., legrand, nVent, Schneider Electric, CoolIT systems

Sustainably-Designed

96%	1.42	1.07
renewable energy	Average annual PUE	Average annual WUE[1]
Sixth year in a row with 90%+ global renewable energy coverage	8.8% Power Usage Effectiveness improvement from 2022	First year reporting on Water Usage Effectiveness

Choosing the right cooling solution for your AI & HPC workload

Liquid Cooling

Higher Density Deployment, Improved energy efficiency, Improve Performance

Air Cooling

Lower upfront costs, established infrastructure, simpler maintenance.



	Advanced Air Cooling & Direct Liquid Cooling
Decks	• Liquid Cooling Pitch Deck • Liquid Cooling Solution Brief
Blogs	• The Liquid Cooling Imperative • 3 Trends Driving Liquid Cooling for Data Centers • Exploring Liquid Cooling for Next-gen Business Applications • Data Center Cooling Continues to Evolve for Density and Efficiency • Top 3 Liquid Cooling Myths Debunked • Building a Sustainable Infrastructure Foundation: Migrate to Efficient Data Centers • Liquid Cooling In Action—On Our Own Production Servers

Equinix Korea

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