

AI 驅動的數位轉型：從基礎設施到應用的全方位解決方案

Grant Hsu
台灣思科技術經理

2025/04/25



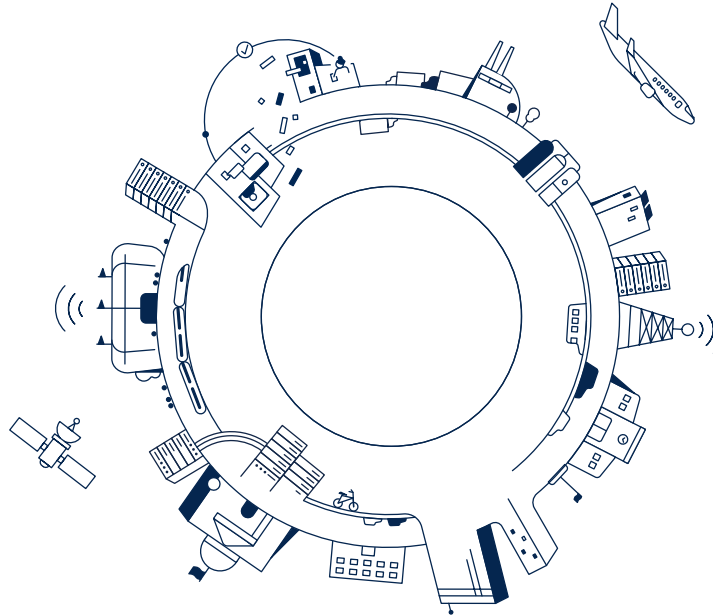
AI的預期影響

15.7T

AI is expected to contribute to the global economy by 2030

75%

of enterprise-generated data will be created and processed at the edge by 2025



90%

of AI workloads will run on Ethernet by 2025

29.3B

networked devices in 2023 – up from 18.4B in 2018

97%

of business owners believe that Generative AI will benefit their businesses

40%

Increase in productivity from utilizing AI by 2035

The Rise of AI: Why Now?

- 演算法取得容易
- 數據爆發性增長
- 價格合理的數據儲存成本
- 民眾使用興趣增加與AI 使用便利性提升
- 運算能力大幅提升
- 消費者需求的持續演變

Cisco AI

AI **IN** Cisco

提升 Cisco 解決方案，並推動整個產品組合的創新

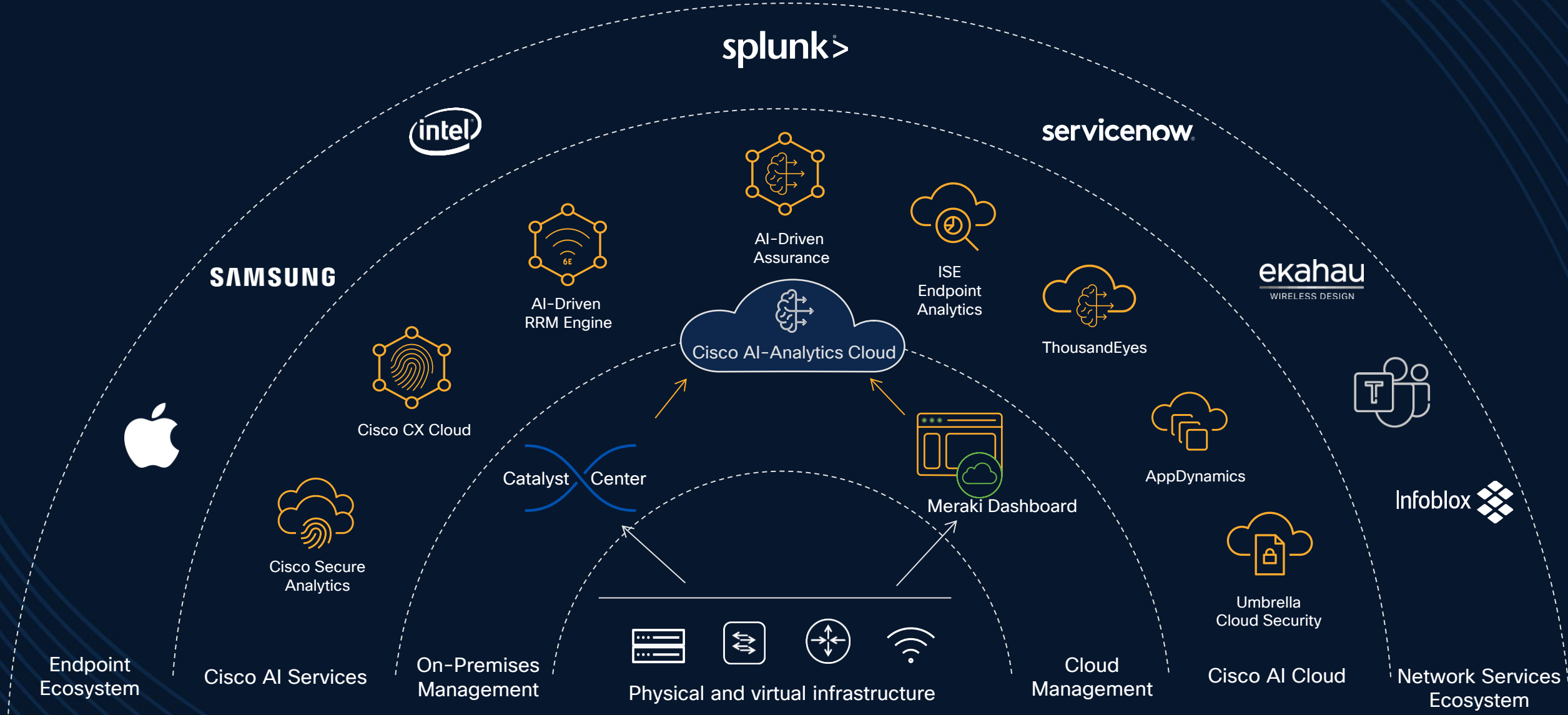
- 將 AI 整合到產品與服務中，為客戶提供嵌入尖端 AI 技術的多種解決方案
- 為整個產品組合帶來更準確且可靠的成果

AI **ON** Cisco

提供計算與網路基礎設施，支援客戶部署自有的 AI 應用

- 頂尖的網路解決方案，廣泛應用於超大規模網路業者與企業

AIOps: Full-Stack Network Intelligence



Cisco Building Blocks



**Cisco Optics and
Silicon One**



**Cisco Data Center
Networking**



Cisco Unified Compute

Cisco AI Infrastructure Solutions

AI PODs

Available Q2 FY25

Data Center Networking Blueprint for AI

CVD Available NOW

Cisco Nexus HyperFabric AI Cluster

Coming Soon

Cisco AI-Ready Infrastructure Stacks

Cisco AI PODs

通過預配置的產品組合加速AI
價值實現

AVAILABLE THIS QUARTER

確保有效性的佈建 AI
Infrastructure

可輕鬆訂購、經過驗證
的 AI-Ready 基礎架構
整體套件

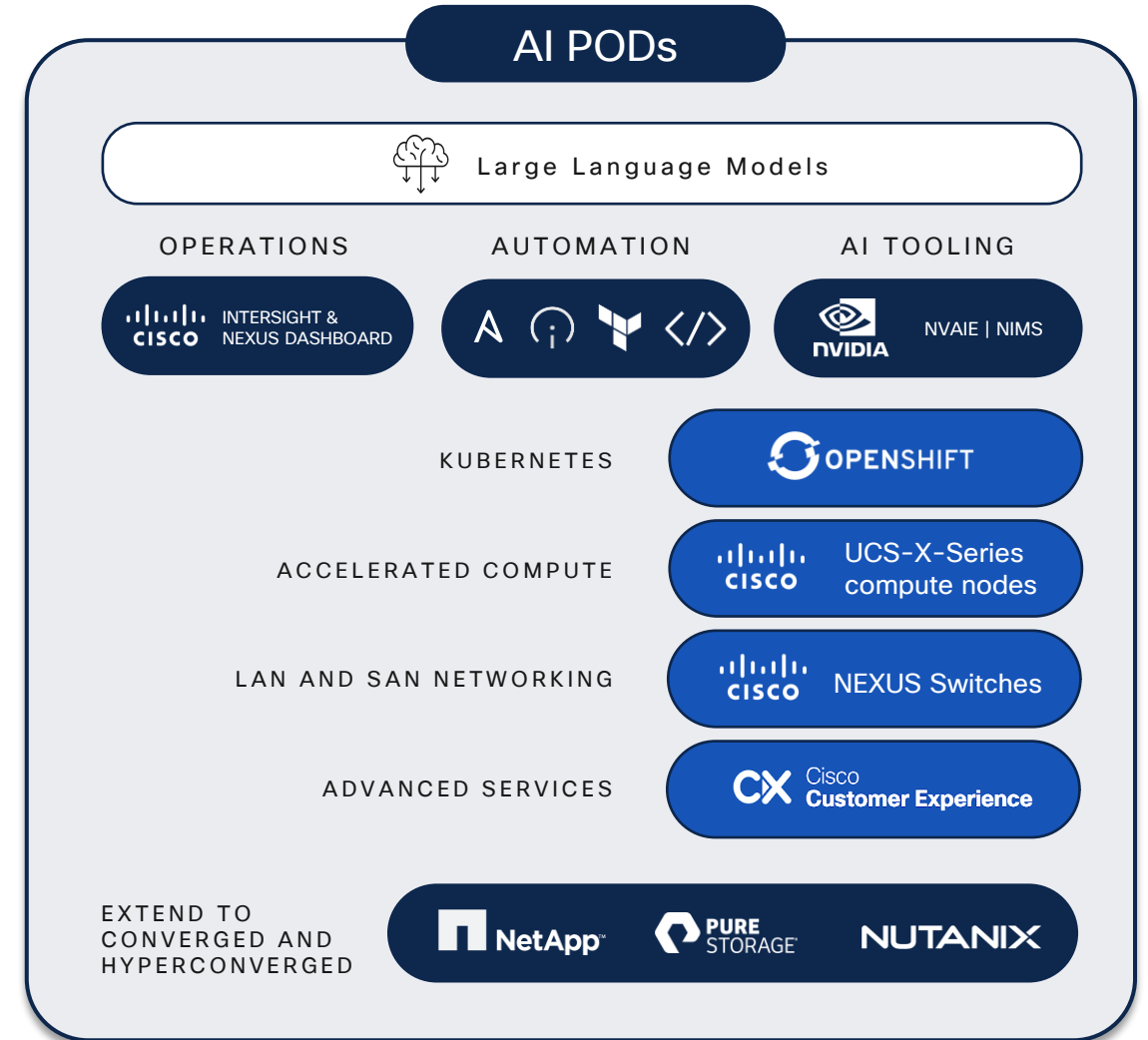
對思科及協力廠商產品的
統一技術支援服務

提供配置指導的 AI
Advisor 工具

COMING SOON



© 2023 Cisco and/or its affiliates. All rights reserved. Cisco Confidential



Cisco Confidential

Cisco Nexus Hyperfabric AI Cluster

in partnership with NVIDIA

Orderable in 2H FY25

Nvidia AI 企業級軟體與推理微服務

AI 基礎架構大眾化

完整 AI 技術架構
可視化

整合的一站式技術
架構 (包括 NVAIE)

AI 原生運維模式

800G Ethernet
400G SuperNIC

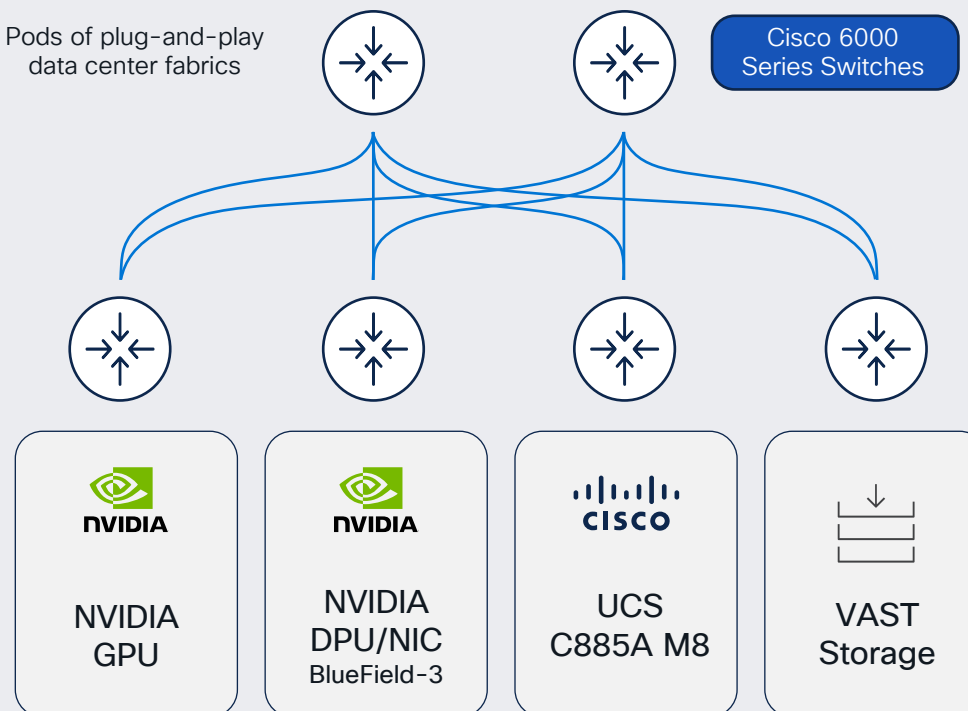
雲端管理維運

On-prem AI Infrastructure

Nexus Hyperfabric AI Cluster

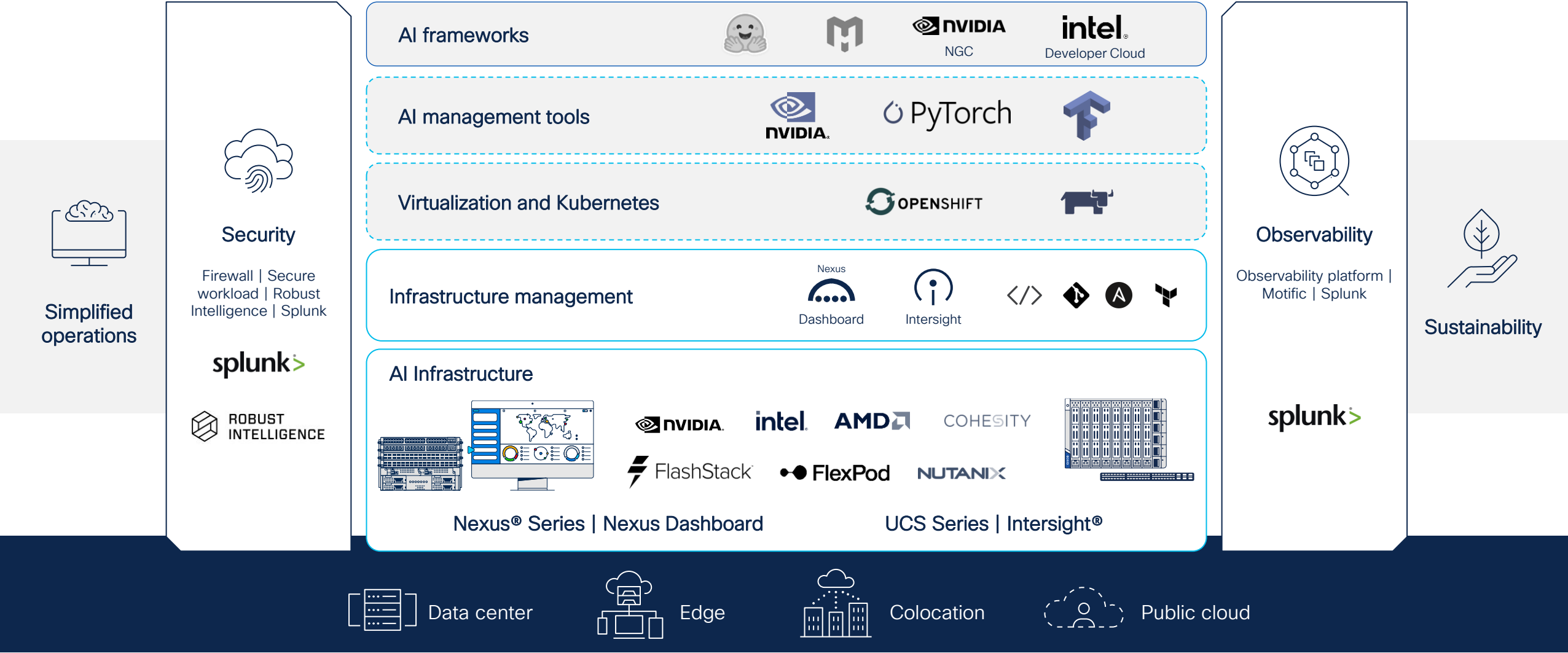
Pods of plug-and-play
data center fabrics

Cisco 6000
Series Switches



Built on Cisco Silicon One and Optics innovations

Cisco AI ecosystem stack



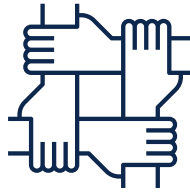
2024 Worldwide IT Transformation Trends



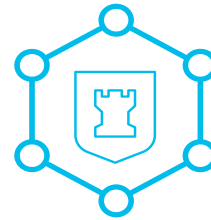
Digital
Transformation
(數位轉型)



Cybersecurity &
Compliance
(網路安全與法規遵循)



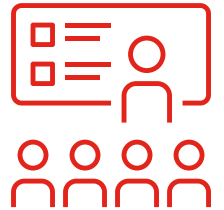
Inclusive &
Equitable Access
(包容性與公平存取)



Resilient
Infrastructure
(韌性基礎建設)

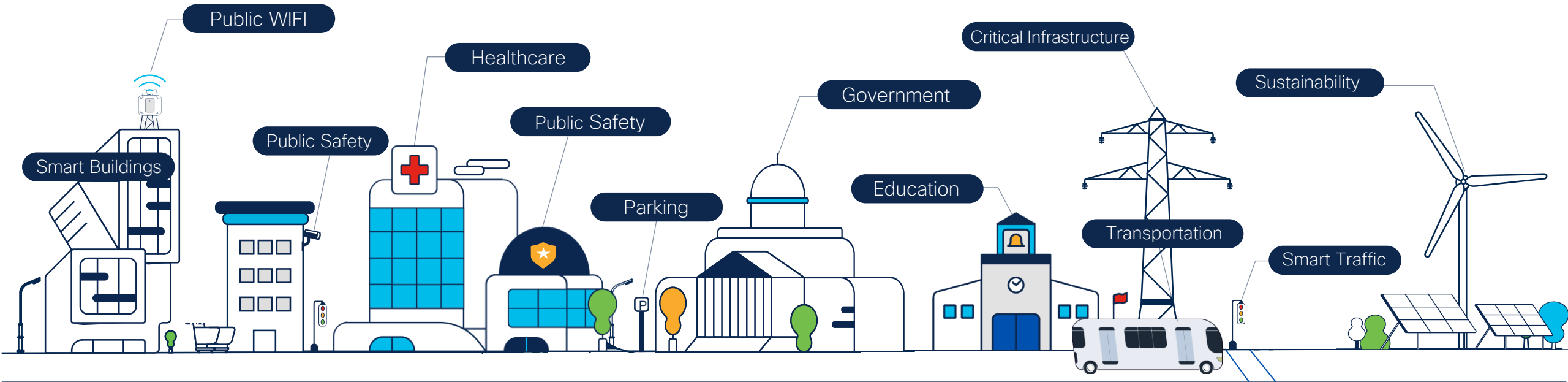


AI / ML
(人工智慧/機器學習)



Workforce
Development
(人才發展)

Technology drives Transformation...



...But also drives more complexity

Government AI Benefits



提供更優質的公民服務



AI 強化政策制定



現代化並精簡行政作業



優化基礎設施管理



智慧化交通管理與公共安全系統

Education AI Use Cases

Personalized Experiences

Education AI Use Case 個人化學習體驗 (Personalized Experiences)

Challenge 需要根據學生的個人需求和學習進度來定制化內容

Solution

- Adaptive Learning Platform:** AI-powered system that adjusts content and difficulty based on individual student performance and learning style.
- Personalized Learning Paths:** AI-generated learning paths tailored to each student's strengths and weaknesses.
- Real-time Feedback:** AI provides instant feedback on student progress, identifying areas for improvement and offering personalized recommendations.
- Learning Path Optimization:** AI analyzes student performance data to optimize learning paths, ensuring students receive the most relevant and challenging content.
- Personalized Content Delivery:** AI tailors content delivery to individual students, ensuring they receive the most relevant and engaging learning materials.

Outcomes

- Improved Student Performance
- Personalized Learning Paths
- Real-time Feedback
- Personalized Content Delivery
- Enhanced Learning Experience

Partners

- EDUCA
- EDUCA
- AIAD

Student Data / Analytics / Learning Programs

Class	Teacher	Student	Score	Progress	Feedback
Math	Mr. Smith	John	85	75%	Good
Science	Ms. Jones	Jane	90	80%	Excellent
History	Mr. Brown	Mike	78	60%	Needs Improvement
Art	Ms. Davis	Sarah	92	90%	Outstanding

Partners EDUCA / AIAD / AIAD / AIAD

Smart & Secure Facilities

Education AI Use Case 智慧化安全校園 (Smart and Secure Facilities)

Challenge 確保校園安全，並提升整體學生體驗

Solution

- AI-Powered Surveillance and Security:** AI-powered cameras and sensors that monitor campus security, detect anomalies, and alert authorities in real-time.
- Advanced Access Management:** AI-powered system that manages campus access, ensuring only authorized personnel and students can enter restricted areas.
- AI-Powered Facility Management:** AI-powered system that monitors campus facilities, including energy usage, equipment maintenance, and environmental conditions.
- Emergency Response Optimization:** AI-powered system that optimizes emergency response, including evacuation routes, resource allocation, and communication.

Outcomes

- Enhanced Campus Security
- Optimized Energy Efficiency
- Improved Facility Management and Maintenance
- Enhanced Access Management
- Optimized Emergency Response
- Enhanced Operational Costs
- Enhanced Student and Staff Safety

Partners

- EDUCA
- EDUCA
- AIAD
- AIAD

IoT Data / Analytics / Control Systems

Class	Teacher	Student	Score	Progress	Feedback
Math	Mr. Smith	John	85	75%	Good
Science	Ms. Jones	Jane	90	80%	Excellent
History	Mr. Brown	Mike	78	60%	Needs Improvement
Art	Ms. Davis	Sarah	92	90%	Outstanding

Partners EDUCA / AIAD / AIAD / AIAD

Hybrid Teaching

Education AI Use Case 混合式教學與輔助系統 (Hybrid Teaching and Support)

Challenge 在正常課堂時間以外，獲得一對一支援和輔助的機會

Solution

- AI-Powered Tutoring System:** AI-powered system that provides personalized tutoring and support to students outside of regular classroom hours.
- Adaptive Learning Platform:** AI-powered system that adjusts content and difficulty based on individual student performance and learning style.
- Real-time Feedback:** AI provides instant feedback on student progress, identifying areas for improvement and offering personalized recommendations.
- Learning Path Optimization:** AI analyzes student performance data to optimize learning paths, ensuring students receive the most relevant and challenging content.
- Personalized Content Delivery:** AI tailors content delivery to individual students, ensuring they receive the most relevant and engaging learning materials.

Outcomes

- Improved Student Performance
- Personalized Learning Paths
- Real-time Feedback
- Personalized Content Delivery
- Enhanced Learning Experience

Partners

- EDUCA
- EDUCA
- AIAD

Student Data / Analytics / Learning Programs

Class	Teacher	Student	Score	Progress	Feedback
Math	Mr. Smith	John	85	75%	Good
Science	Ms. Jones	Jane	90	80%	Excellent
History	Mr. Brown	Mike	78	60%	Needs Improvement
Art	Ms. Davis	Sarah	92	90%	Outstanding

Partners EDUCA / AIAD / AIAD / AIAD

Research Computing

Education AI Use Case 學術研究運算 (Research Computing)

Challenge 滿足學術研究中對高性能運算資源日益增長的需求，促進快速數據分析以及跨機構的合作

Solution

- High-Performance Computing (HPC):** AI-powered system that provides high-performance computing resources for research and development.
- AI-Powered Data Analysis:** AI-powered system that analyzes large datasets, identifying patterns and trends.
- AI-Powered Simulation:** AI-powered system that simulates complex systems, enabling researchers to test hypotheses and optimize designs.
- AI-Powered Collaboration:** AI-powered system that facilitates collaboration between researchers, enabling them to share data and insights.

Outcomes

- Accelerated Research and Development
- Improved Collaboration Between Researchers
- Enhanced Data Analysis Capabilities
- Reduced Time for Data Processing and Analysis
- Enhanced Access to High-Performance Computing Resources

Partners

- EDUCA
- EDUCA
- AIAD

Applications / Research Data / Patient Data

Class	Teacher	Student	Score	Progress	Feedback
Math	Mr. Smith	John	85	75%	Good
Science	Ms. Jones	Jane	90	80%	Excellent
History	Mr. Brown	Mike	78	60%	Needs Improvement
Art	Ms. Davis	Sarah	92	90%	Outstanding

Partners EDUCA / AIAD / AIAD / AIAD

Education AI Use Case

個人化學習體驗 (Personalized Experiences)

Challenge

需要根據學生的個人需求和學習速度來客製化內容

Solution

- **Adaptive Learning Platforms:** AI-powered systems that adjust content based on student performance and learning pace.
- **AI-Driven Recommendations:** Suggests tailored learning resources like videos, articles, and exercises to meet individual needs.
- **Learning Path Customization:** AI creates individualized learning paths for each student, ensuring they focus on areas that need improvement.
- **Real-Time Progress Tracking:** AI provides real-time insights into student progress, helping educators identify when intervention is needed.
- **Automated Skill Assessment:** AI regularly assesses students' skills and adjusts difficulty levels to challenge or support them accordingly.

Outcomes

- Improved Student Performance
- Personalized Learning Path
- Higher Engagement
- Increased Retention Rates
- Greater Learning Efficiency
- Scalable Learning Solutions

Partners

- NVIDIA
- INTEL
- AMD



Student Data / Analytics / Learning Programs

Cisco Comprehensive Security

Splunk Observability

AI/ML
Software Stack

Thousand
Eyes

Splunk
Intelligence

Cisco
XDR

Cisco
AI Pod

Cisco
Switching

Cisco
Routing

Cisco
Wi-Fi

Webex
Suite

Cisco
Spaces

Optimization

Predictive
Maintenance

Real Time
Analytics

Applications

Partners:

NVIDIA / INTEL / WWT / AMD

Education AI Use Case

智慧化安全校園 (Smart and Secure Facilities)

Challenge

確保校園安全，並提升整體學生體驗

Solution

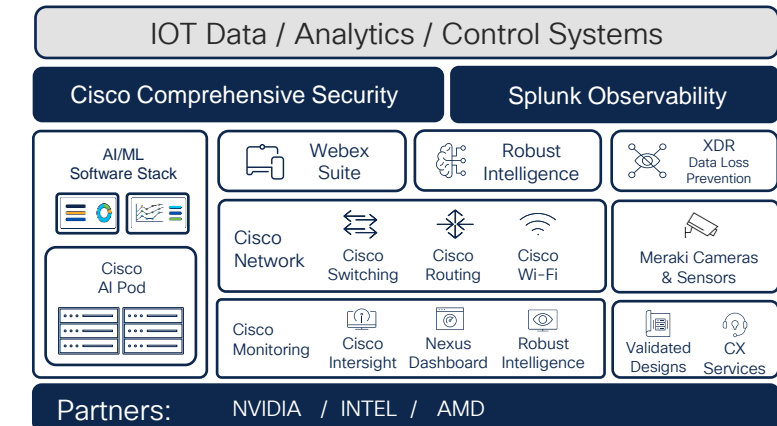
- **AI-Powered Surveillance and Security:**
Uses AI to monitor campus security through video analytics, detecting suspicious behavior or unauthorized access in real-time.
- **Automated Energy Management:**
AI systems optimize energy use in buildings, adjusting heating, lighting, and cooling based on occupancy and environmental conditions.
- **IoT-Driven Facility Monitoring:**
AI analyzes data from IoT sensors to monitor building conditions, such as air quality, temperature, and occupancy, improving maintenance efficiency.
- **Emergency Response Systems:**
AI helps coordinate emergency responses by detecting fires, medical emergencies, or security breaches and providing real-time notifications to campus security teams.

Outcomes

- Enhanced Campus Security
- Optimized Energy Efficiency
- Improved Facility Management and Maintenance
- Faster Response to Security and Emergency Situations
- Reduced Operational Costs
- Increased Comfort and Safety for Students and Staff

Partners

- NVIDIA
- INTEL
- AMD
- Singlewire



Education AI Use Case

混合式教學與輔助系統 (Hybrid Teaching and Support)

Challenge

在正常課堂時間以外，獲得一對一支援和輔導的機會有限

Solution

- **AI-Powered Virtual Tutors:** Provides 24/7 support, helping students with difficult concepts through personalized tutoring sessions.
- **Instant Answer Systems:** AI responds to student queries with accurate, real-time answers, supporting continuous learning outside the classroom.
- **Concept Reinforcement:** AI tailors review sessions based on student weaknesses, helping reinforce concepts and enhance understanding.
- **Gamification:** AI incorporates gamified elements into tutoring sessions to keep students engaged and motivated to learn.
- **Learning Behavior Analytics:** AI monitors student learning patterns to adjust tutoring methods and provide adaptive help.

Outcomes

- Improved Learning Outcomes
- 24/7 Support
- Increased Student Confidence
- Greater Self-Paced Learning
- Cost-Effective Learning Assistance
- Higher Engagement

Partners

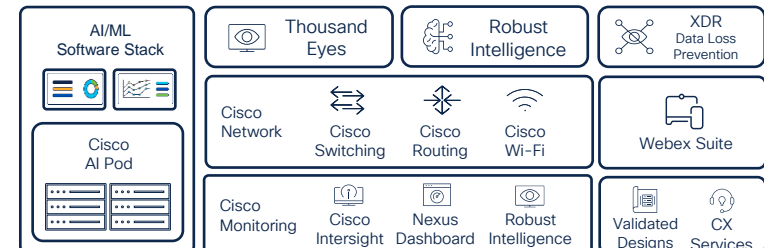
- NVIDIA
- INTEL
- AMD



Student Data / Analytics / Learning Programs

Cisco Comprehensive Security

Splunk Observability



Partners: NVIDIA / INTEL / AMD

Education AI Use Case

學術研究運算 (Research Computing)

Challenge

滿足學術研究中對高效能運算資源日益增長的需求，促進更快速的數據分析以及跨機構的合作

Solution

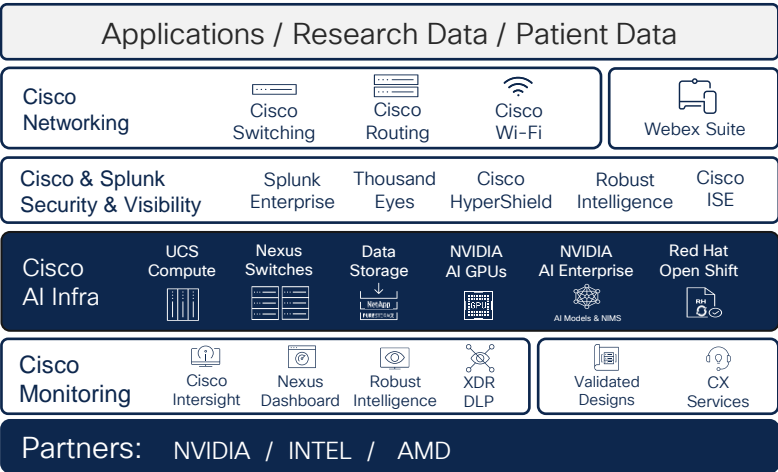
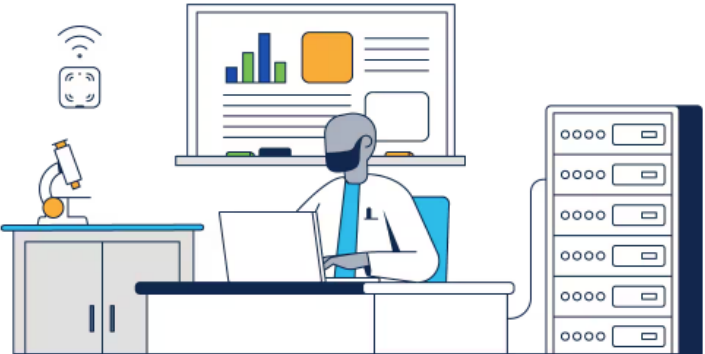
- High-Performance AI Computing:**
Provides the computational power needed to run complex simulations, large-scale data analysis, and AI model training for academic research.
- Data Storage and Management:**
Offers scalable and secure storage solutions for large research datasets, ensuring quick access and seamless data management.
- Collaborative Research Environments:**
AI infrastructure supports collaboration between researchers by providing shared, cloud-based environments for running joint simulations and experiments.
- Hybrid Cloud for Research:**
Leverages hybrid cloud infrastructure to dynamically scale research computing resources, enabling universities to handle peak research demands.

Outcomes

- Accelerated Research and Discovery
- Improved Collaboration Among Researchers
- Access to Scalable Computing Resources
- Reduced Time for Data Processing and Analysis
- Increased Capacity for AI Model Training
- Optimized Resource Utilization

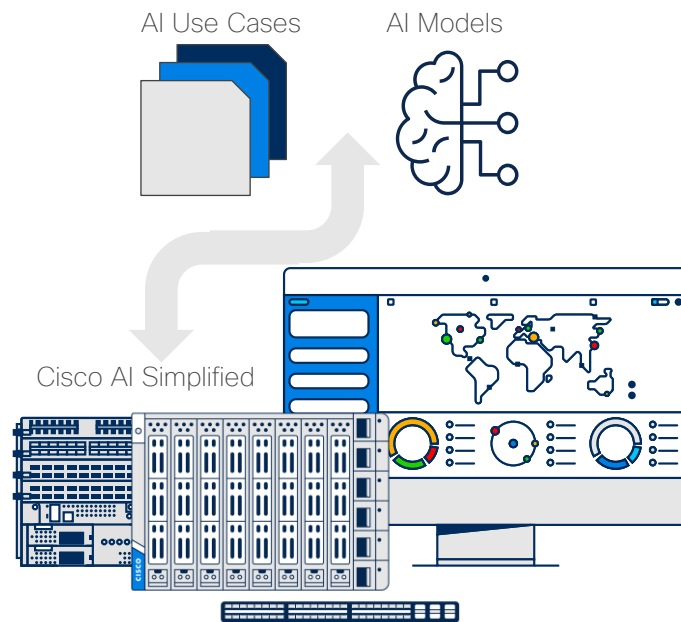
Partners

- NVIDIA
- INTEL
- AMD



Cisco AI infrastructure

Optimized for performance, security and sustainability



Infrastructure to power AI



Security for AI, AI for security



Data to drive insights and context



Software to unlock productivity



Services to accelerate value of AI



一個安全、韌性強且靈活的基礎建設，奠定了將創新構想化為現實的堅實根基



The bridge to possible