

Expertise to drive a successful cloud journey

Redefine the possibilities with Cisco's new multicloud vision

Cisco's new multicloud vision delivers cloud acceleration, enhances customer and employee experiences, and reduces costs

Application experience is now more important than ever. It's a sentiment we're all familiar with. We know that if customers don't receive the experience they require – in fact, demand – they will look elsewhere. And if your app isn't performing as it should and as expected by your users, you're on the first step to losing them. We're also all familiar with the fact that applications are no longer simply an app but instead a mesh of microservices. These microservices may sit in a public cloud or in a different data center, but they need to be brought together to operate effectively for the customer. The question is—how do you deliver this experience without your costs spiraling out of control?

This brings us to your journey to the cloud. Every organization's cloud objectives and path are unique. What unites them is a shared desire to accelerate to the cloud to derive more value and reduce costs, while managing risk at every stage of the journey. In this paper, we detail how the Cisco® enables you to do this by providing expertise and best-practice guidance along your multicloud path.

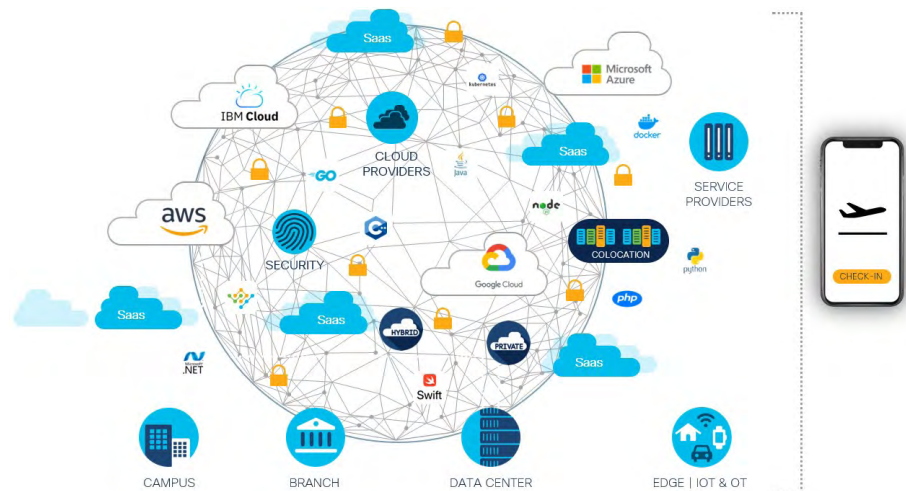
Expertise to drive a successful cloud journey

Cisco's cloud experts are ready to help you:

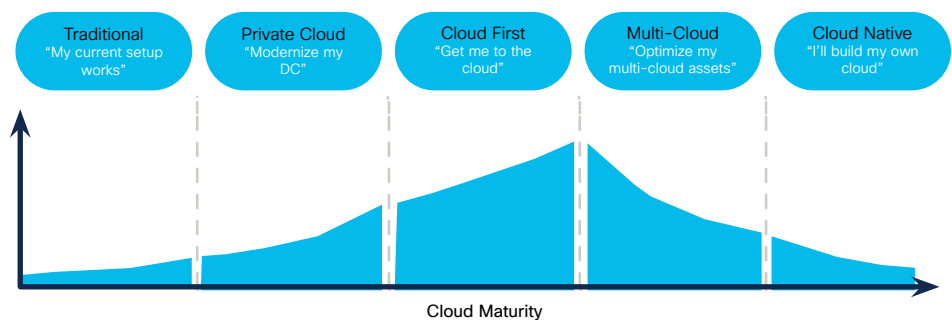
- Navigate your unique path to cloud success while maintaining business continuity.
- Make the most of your existing resources, no matter where they sit, with operations insights.
- Provide ultimate cloud security and breach defense.
- Connect any device and any application to any cloud.
- Deliver a consistent app experience across any network.

Microservices and the complexity conundrum

Let's return to the notion of an app being a mesh of microservices. The below diagram shows just how complex this can be using the example of a flight app that has expanded over time to link to the reservation, loyalty, and billing systems to deliver the visibility and convenience demanded by customers. When you also factor in external data points such as the temperature at a particular destination, it becomes increasingly complex.



You need full visibility of all your microservices to know they're working effectively. Now consider your organization's cloud objectives and cloud maturity, as shown in the diagram below.



For many organizations, the ambition might be to be "cloud only," but if they continue to provide exceptional experiences to their users, the reality is a little different. If all resources are moved into one hyperscaler, it's far too easy to run into experience issues. Fixing these often means having to overprovision your network environment to make sure you can continue to provide the desired experience.

Hybrid, multicloud, app-centric infrastructure is now the de facto way of operating, but it isn't always straightforward to achieve.

Navigate your unique path to cloud success while maintaining business continuity.

Your path to cloud success is unique to your organization. In today's world, you of course face questions around where your workforce is based and where your applications should be based. Location and access must underpin your cloud strategy. And you must maintain business continuity while enabling a secure, distributed workforce using your multicloud. So, how do you cut through the complexity to build a path to where users should connect and where your resources sit?

Aligning your cloud strategy to your business objectives

Cloud Journey Advisory (Powered by Cisco CX) is designed to align your cloud strategy to your business objectives. Through this process, we confirm your maturity and readiness before speeding up your cloud transformation. This is done by building security into your business operations, learning the best ways to monitor and respond to advanced threats, and meeting compliance standards.

We use several tools to deliver this:

- **Cloud Journey Assessment:** Create a strong foundation for your cloud strategy, so you can achieve the benefits of cloud adoption by creating a prioritized roadmap of strategic initiatives, improving cloud maturity and accelerating your journey to cloud.
- **Cloud Service Catalogue:** Create a cloud service catalogue, maximizing usage of new cloud capabilities and functionality, tuned to user needs and aligned to business objectives.
- **Operating Model Assessment:** Establish if your IT organization is cloud-ready with Cisco assessment of your IT structure, people and their skills, processes, tools, and approach to IT governance.
- **Cloud Security Assessment:** Identify areas of improvement to help secure your cloud journey, as security is a foundational component for business expansion.
- **Zero Trust Assessment:** Identify critical assets and their relationships to internal and external entities to help secure your business. Zero Trust allows for assets including microservices to be protected with a meaningful trust model that can help expand to cloud.
- **SOC Assessment:** Gain the early visibility that is essential to any organization, with proactive detection that can prevent a breach caused by script kiddies to nation state hackers who are trying to disrupt your business.

Focusing your investment in the areas that matter

We help you assess where you are today and define the approach that should be taken by focusing on both your cloud journey and security. Crucially, there's no need to cut ties with your existing vendors. Our approach complements your current portfolio and means you can focus your investment in the areas that matter most when it comes to meeting your organizational objectives.

Make the most of your existing resources, no matter where they sit, with operations insights.

When applications are deployed into the cloud, speed, consistency, and agility are fundamental. But when you consider potential time constraints coupled with evolving user experience requirements, it begs the question of how best to optimize your existing resources, no matter where they sit. This could be private data centers, SaaS, or public and private clouds. Cisco's Unified Cloud Operating Model means that you can optimize resources, use any tools, and deploy anywhere.

Let's focus on the technology in more detail.

Cisco's Cloud Operations Platform

Our Cloud Operations Platform is powered by the Intersight™ cloud delivery platform. It offers intelligent visualization, optimization, and orchestration for applications and infrastructure across public cloud and on-premises environments. It's technology agnostic and can manage any virtual machine (VM), hyperscaler, or cloud environment. This provides you with a consistent way of deploying any application across any cloud environment.

We tap into the following tools to deliver this:

- **Intersight Kubernetes Service:** Simplify Kubernetes deployment with automated lifecycle management of Kubernetes across your multicloud environment.
- **Intersight Cloud Orchestrator:** Automate and coordinate the deployment of applications across the many systems in your multicloud infrastructure.
- **Intersight Terraform Services:** Boost DevOps agility by integrating your Infrastructure as Code pipeline into a single view.
- **Intersight Virtualization Services:** Deploy and manage VMs on premises or in your multicloud environment.
- **Intersight Workload Optimizer:** Revolutionize how to manage resources in real time across any environment by rightsizing workloads to meet application performance needs for the business, while intelligently managing cost.
- **Intersight Infrastructure Services:** Leverage cloud-delivered management to simplify lifecycle management for Cisco data center products.

Technology-agnostic: A consistent way of deploying across any cloud environment

So, what does this mean for you? First and foremost, it means that you don't need to make radical tech changes. Our Cloud Operations Platform doesn't just manage our hardware, because the platform is technology-agnostic and thus can manage anyone's. This includes VMs and any hyperscaler or cloud environment. It provides a consistent way of deploying across any cloud environment.

Consider how you're working with your app developer. They want to build your applications in as easy a way as possible, deploy them onto the network, and manage their lifecycle. Kubernetes and containers are essential for this.

The challenge has always been that, once they're deployed onto the network, the network itself poses questions around security, storage, or connectivity. Too often, this results in a bottleneck due to a lack of connection. Through our Kubernetes Service, Cloud Orchestrator, and Terraform Services, your developer can now build all the capabilities through Kubernetes and containers and deploy the applications seamlessly through to the infrastructure.

This one vision ties together the application, VMs, and network with storage and security. Now you can automate, build more simply, and have everything provisioned together. You also have the choice to deploy how and where you want.

Provide ultimate cloud security and breach defense.

Today, security starts with securing the workforce. This is at the heart of giving people access to the cloud. But it can't be done through a one-size-fits-all approach. Consider each person's job role, device, the application they are using, or even the time of day that they access the network. These are all essential factors for a secure cloud environment.

A holistic view across your environment is therefore at the crux of good cloud security. And while it sounds complex, it is essential, and when done well, it is central to robust security.

Securing a holistic view of your cloud environment

At Cisco, we utilize correlating data from many different Cisco security products to secure this holistic view of your environment. And through this approach, we've seen 95% improvement in time to detect security issues and 85% improvement in time to resolve.

We use the following tech to achieve this:

- **Secure Workplace:** Enables users to securely connect to your network from any device, anywhere, while restricting access from non-compliant devices.
- **Secure Network Access:** Provides identity and device authorization validation for network access, powered by Identity Services Engine (ISE).
- **Secure Access Service Edge (SASE):** Provides cloud-delivered security in a single platform to extend protection to devices, remote users, and locations anywhere, powered by Umbrella® Secure Internet Gateway (SIG).
- **Secure Workforce:** Provides solutions that establish trust in users and devices through authentication and continuous monitoring of each access attempt.
- **Secure Access:** Enables verification of user identity with two-factor authentication before granting access to applications, powered by Duo.
- **Secure Endpoint:** Provides Advanced Malware Protection (AMP) to prevent, detect, and remediate threats on computer systems, powered by AMP for Endpoints.
- **Secure Workload:** Secures connections for all APIs, microservices, and containers that access your applications, whether in the cloud, data center, or other virtualized environment.
- **Secure Network Analytics:** Identifies threats faster with the network as a sensor leveraging behavior analysis, powered by Stealthwatch®.
- **Workload Protection:** Reduces the application attack surface anywhere, identifying workload behavior anomalies and remediating threats faster, powered by Tetration

The benefits of a tailored and secure approach

We view each job role, device, the applications being used, and the time of day each employee is accessing the network. In addition to this, we secure the workplace to ensure that people are accessing resources securely and appropriately, whether at home or from the branch. And while that request is in transit, the WAN makes sure it stays secure with our SASE product.

The final aspect applies to managing the workload by understanding network behavior to make sure the requests of the application and the resources we are sending to the user are appropriate.

By bringing all these elements together, we provide a Zero Trust approach to your cloud security requirements—a comprehensive approach to securing all access across your networks, applications, and environments.

Connect any device and any application to any cloud, wherever they may be

The capability to connect any device and any application to any cloud, regardless of location, is just the beginning. It must also be effective. And to ensure this, you require full end-to-end visibility as well as effective security and automation, agility, and cost-effectiveness.

Multi-domain architecture

Cisco's multi-domain intent-based networking intelligently exchanges operational information, allowing you to express intent in one domain and then exchange, enforce, and monitor it across all of them. We use the following technology to do this:

- **Campus and branch:** SD-Access, powered by Cisco DNA Center™ or Meraki® dashboard, identifies, authenticates, authorizes, and onboards users and devices.
- **WAN mass scale infrastructure:** SD-WAN, powered by Cisco vManage or Meraki dashboard, offers the flexibility to connect via any transport and deliver superior application experience with secure Internet and cloud access.
- **Data center/cloud:** Cisco ACI®, powered by Cisco APIC, offers consistent networking and security policy for applications in clouds anywhere, delivering operational simplification and deployment agility.

First, this reliable and scalable solution allows you to connect from anywhere. But it's when you connect these domains together into a multi-domain, intent-based networking architecture that you get real advantages.

By connecting the campus and branch, the home users, the WAN, the data center infrastructure, and the cloud infrastructure into one multi-architectural domain, you gain full end-to-end visibility. Plus, security and automation are more efficient, enabling you to manage costs and agility much more effectively.

Deliver a consistent app experience across any network

When it comes to app experience, consistency is key. It must be consistent for each and every user, every time. But to keep them coming back, it must also be world-class too—no matter where they are and what device they're using.

Continual innovation and optimization underpin this, as does the need for agility and the use of data and insights to inform better decision making.

Visibility, insights, action

At Cisco, we use an architectural solution called V-I-A Architecture (Visibility-Insights-Action) which enables real-time decision making. And we do so through the following key technologies:

- **Application visibility:** Powered by AppDynamics® to create significant business insight by understanding your customer's individual application experience, which is foundational for the digital experience.
- **Infrastructure visibility:** Powered by Intersight Workload Optimizer (IWO) to revolutionize how to manage resources across any environment in real time by rightsizing workloads to meet application performance needs for the business, while also intelligently managing cost.
- **Network visibility:** Powered by ThousandEyes to enable you to thrive in a multicloud connected world by making visible that which was previously not visible.

Visibility of application and infrastructure is central to our solutions. When we correlate the data lakes of applications, infrastructure, and network, we're able to deliver experience in an unparalleled way. By being agnostic across all environments in which we operate, you can best manage the experience you provide while also controlling costs.

The integration of AppDynamics with ThousandEyes delivers unmatched visibility across the public Internet for all applications. And integrated with IWO, it gives infrastructure teams correlated data and a shared view of infrastructure dependencies that affect application performance, user experience, and business impact.

The Cisco difference

To maximize your investment return, it's essential to build a structured approach around how you optimize your resources, connect easily, make sure everything is secure, and implement all these resources in any cloud with consistency.

By working in partnership with you, we help build a strong roadmap that is tailored to the needs of your organization. Crucially, this also builds in the flexibility to scale quickly to address the needs of tomorrow without starting again and increasing your investment.

When we execute our unique approach to cloud experience, you can:

- Deliver a delightful experience to every device for every user.
- Gain end-to-end visibility to ensure you are fully compliant.
- Mitigate risk by tying together workload, workforce, and workplace.
- Enable essential agility from application through to infrastructure.
- Manage costs in a technology-agnostic environment.

To learn more about Cisco's unique cloud experience, speak to your account manager or visit https://www.cisco.com/c/en_uk/solutions/cloud/index.html.

To learn about the services that Cisco CX can provide to assist in your multicloud journey, visit cisco.com/go/cxmulticloud.