

# Empower Intelligent Enterprises with Modernized SAP Environments





Enterprise business imperative

# Enterprise business imperative

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SAP is the largest cloud landscape in the world<sup>1</sup> today, involved in almost 80 percent of worldwide business transactions and accessed by more than 150 million cloud users. Continued use of traditional data centers for SAP applications creates siloes, inhibits the speed and flow of data across an organization, and interferes with innovation and functionality. As a result, enterprise businesses are looking for ways to lay the foundation for new innovation while maximizing the value of existing SAP environments.

This eBook details the role and benefits of AppDynamics® and ThousandEyes® Full Stack Observability (FSO) and Cisco® data center solutions when an SAP solution runs on a hyperscale Infrastructure as a Service (IaaS) and is implemented by Global Service Integrator (GSI) organizations.

<sup>1</sup> [SAP at a Glance, Investor Relations Fact Sheet – April 2018](#)



## Value of the Cisco and SAP partnership

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Cisco and SAP have worked together strategically for more than 20 years, always with the objective of benefiting our mutual customers.

Dependable infrastructure, adaptable platforms, and continuous innovation have always been at the core of Cisco's strategic partnership with SAP, empowering intelligent enterprises everywhere to do more with their SAP environments.



# Our partnership today

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Cisco and SAP support our mutual customers in each core area:

- **Dependable infrastructure**

Connecting SAP applications and users across the enterprise with the best foundation for a modern, flexible, and efficient SAP environment.

- **Adaptable platforms**

Ensuring SAP environments are deployed, managed, and optimized easily for enhanced functionality across the entire data management suite.

- **Continuous innovation**

Taking advantage of world-class R&D that consistently finds new ways to innovate, drive business agility, and do more with your data.



The Cisco and SAP portfolios complement each other. For example, a key SAP mission is to help its customers become intelligent enterprises, which requires robust connectivity at all customer touchpoints. Of course, SAP's mission meshes with Cisco's core competency as the world's leading network solution provider.

Cisco is an exceptional choice for deploying the complete SAP solution with infrastructure that is built in concert with SAP. This includes world-class hardware and software solutions within data centers, cloud, and collaboration. Cisco helps you maximize the value of your existing SAP investment and add valuable new cloud-native capabilities to help your business thrive now and into the future. As we continue to innovate, Cisco and SAP will continue our laser focus on co-engineering innovations that deliver the value our mutual customers require in their evolving business environments.



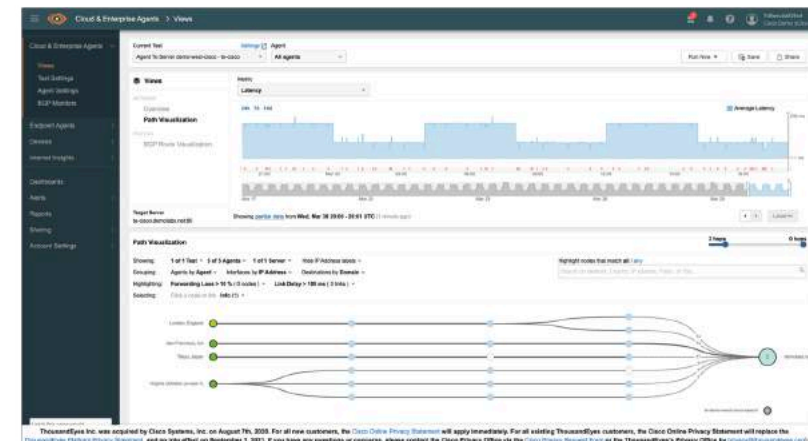
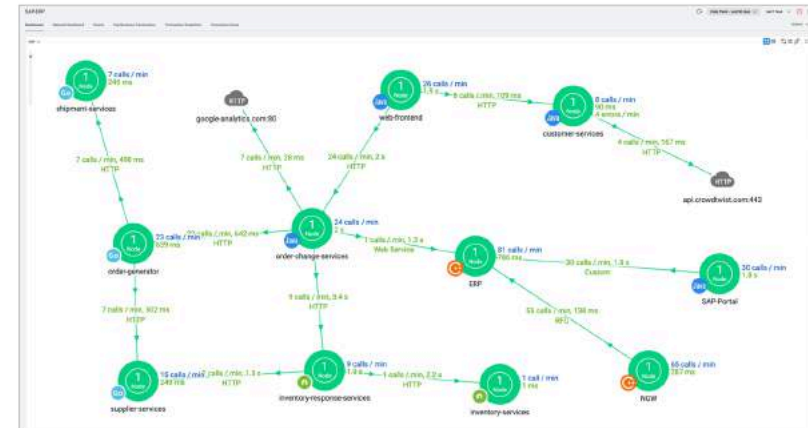
# Full Stack Observability (FSO)

# Overview

AppDynamics SAP Monitoring enables enterprises to achieve operational excellence through industry-leading full-stack observability and business performance intelligence. The consolidated view of SAP and non-SAP performance metrics identifies system bottleneck and performance anomalies in real time for resolution before they impact the SAP processes businesses rely on. Our FSO solutions enable delivery of exceptional application and customer experiences as well as streamlined operations while accelerating digital transformation.

FSO visibility is achieved through dozens of out-of-the-box dashboards and other visuals customized to your SAP landscapes. This visibility helps you evaluate the overall health of your entire system—application server, HANA database, key background jobs, IDocs, PI systems, and more—with access to real-time mapping of business transactions across distributed SAP systems. Visuals include the Application Flow Map and dashboards. (Sample visuals are shown in Figure 1.)

**Figure 1 SAP-ERP Application Flow Map and dashboards from AppDynamics and ThousandEyes**



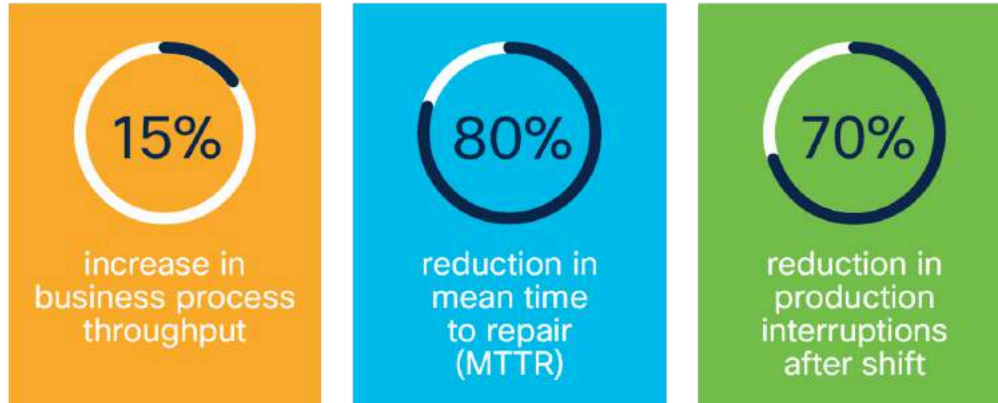


# Benefits

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FSO brings the following benefits to the SAP landscape:

- Break down operational silos with comprehensive visibility across your entire SAP landscape.
- Provide real-time visibility into the full stack of available data across the digital experience for your IT teams. Shifting to real-time proactive monitoring and management has achieved:
  - Improve SAP resiliency by removing system bottlenecks and proactively resolving issues impacting performance.
  - Achieve operational excellence by maximizing the performance of your critical SAP business processes.
  - Deliver exceptional experiences, optimize for cost and performance, and maximize digital business revenue for your digital business.
  - Contextualize data, system interactions and interdependencies, and business metrics to gain actionable insights into applications and digital experiences and prioritize next steps across your teams.



# Solution features

The FSO architecture features components developed by AppDynamics and ThousandEyes, which together contribute to world-class SAP monitoring with:

## **Deep, end-to-end, unified visibility—on-premises, hybrid cloud, or cloud only**

With AppDynamics, you get comprehensive topography of your entire IT landscape, including both SAP and non-SAP applications, providing you with:

- Visibility into application server, HANA database, infrastructure, cloud, and end user management software
- Dynamic baselining of all SAP and non-SAP performance metrics, providing better visualization of performance anomalies
- Advanced business application programming (ABAP) code-level visibility, expediting code-level issues occurring in your environment's SAP components
- Ability to see and understand both upstream service dependencies and user experience within SAP



# Solution features

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## **Unsurpassed, real-time insight into service availability**

The AppDynamics solution can ingest large volumes of data from today's complex business environments and decipher its meaning with the help of artificial intelligence and machine learning, so you can:

- Eliminate the need to update static thresholds manually as priorities change and environments evolve
- Pinpoint the root cause of business process issues quickly—both inside and outside of SAP—through its cognitive engine
- Pinpoint the root cause of SAP-specific issues such as configuration change, IDoc, lock, and ABAP dump monitoring
- Monitor dozens of dashboards that highlight critical SAP metrics
- Leverage intelligent error profiling to set dynamic alert thresholds based on performance baseline

## **Powerful business context and process visibility**

AppDynamics provides exceptional connection with and insight into the health of your business so you can focus efforts and deploy resources where most needed through:

- Visualization of, alerting on, and dashboarding for core business metrics to provide visibility into the core business processes running on SAP
- Real-time monitoring of SAP health metrics alongside critical business KPIs such as transactions (order to cash, for example), customer, user journeys, and more

## **360-degree view of your new hybrid digital ecosystem—Internet and WAN, browser synthetics, end-user monitoring, and Internet insights**

Whether you're moving to the cloud, delivering a customer-facing application, or supporting a distributed workforce, the ThousandEyes comprehensive view into digital experience ensures your network, application, and cloud teams have a common operating language to quickly identify issues and optimize performance.

# Use cases

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Multiple use cases were developed, based on customer requirements for performance, optimization, and security.

Performance use cases	
Modern application monitoring	Monitor the performance of your cloud-native applications that are often microservices-based, distributed, and leveraging cloud technologies hosted on public or private clouds.
Hybrid application monitoring	Monitor the performance of your traditional and hybrid applications that are often monolithic, hosted, and leveraging traditional infrastructure and hybrid cloud.
Customer digital experience monitoring	Gain actionable, end-to-end insights into your application experiences and their underlying dependencies and business impacts.
Application dependency monitoring	Assure the performance of your managed and unmanaged (third party) application services and APIs, including their Internet and cloud network performance.

Optimization use cases	
Hybrid cost optimization	Lower costs by paying for only what you need in the public cloud and by safely increasing utilization of on-premises assets.
Application resource optimization	Improve and ensure application performance by taking the guesswork out of resource allocation for workloads on-premises and in the public cloud.

Security use case	
Application security	Actively identify and block vulnerabilities found in your application run times in production.

A portrait of a man with short dark hair, wearing a light-colored, vertically striped polo shirt. He is looking slightly to the right of the camera with a neutral expression. The background is a server room with racks of equipment and blurred lights.

Hyperscalers

# Overview

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Due to the growing speed and changing scope of business operations today, enterprise digital platforms running on SAP are increasingly deployed on hyperscale cloud computing systems able to scale quickly and exponentially. Automation enabled by AI is key to managing today's dynamic data center environments. Hyperscalers are defining the future of IT—a future in which AI is embedded in every IT component to create self-healing infrastructures, databases that can recover from failure quickly, and networks that configure and re-configure automatically.

Many enterprises require new business models to avoid disruption, gain efficiencies to fund innovation, and transform mission-critical systems without business risk. RISE with SAP is a comprehensive offering that helps enterprises achieve these goals. Major hyperscalers such as Microsoft Azure, Amazon Web Services (AWS), Google Cloud Platform (GCP), and Alibaba Cloud enable cloud-native business offerings to be migrated or deployed in a hyperscaler IaaS. The AppDynamics SAP Monitoring solution can be purchased through the Microsoft Azure and AWS marketplaces.

The increasing demand for hyperscalers is driven by these rapidly developing customer needs:

- Ability to scale quickly, both horizontally and vertically
- Infrastructures certified to run the mission-critical SAP applications, offering performance and business continuity enterprises can count on
- High performance energy efficiency standards, provided through technologies like liquid cooling and through the use of AI to optimize energy usage
- Increased automation, powered by AI, to manage today's dynamic IT environments
- Security and compliance backed by cybersecurity teams and large compliance portfolios



# Benefits

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By running SAP on hyperscalers and using AppDynamics to monitor SAP applications at enterprise scale, companies can:

- Quickly and easily deploy agents and configure them at the transaction, application, tier, node, or infrastructure level
- Visualize all of your business transactions and zoom in and out to view granular details or the bigger picture
- Manage thousands of instances with no impact on production due to diagnostics that pinpoint the right code, so you don't have to review every log file





Global System Integrator (GSI)



# Overview

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GSI take a proactive approach to business process performance management. This approach ensures that customers can prioritize performance fixes based on potential business impact. In doing so, you can make sure your SAP and related systems deliver the business outcomes you need as you migrate to S/4HANA or move operations to the cloud. Leveraging the BiQ SAP Data Collector and Transaction Analytics, GSIs can build industry-specific solutions—Oil and Gas, for example—through dashboards that alert and take action based on operational KPIs in relation to core SAP transactional data. These implementations are done by GSIs such as Atos, Accenture, Wipro, Tata Consultancy Services (TCS), HCL Technologies, and DXL.

# Benefits

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- Business process discovery and performance optimization pre-transformation, enabling a 15 percent business process throughput increase
- Troubleshooting of business process performance during transformation, reducing MTTR by 80 percent
- Proactive application management post transformation, reducing production interruptions by 70 percent
- Real-time proactive SAP monitoring to provide revenue growth through fewer incidents, an end to the War Room scenario, and happy business stakeholders

# Use cases

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Multiple use cases were developed, based on customer requirements for performance.

## Performance use cases

**Proactive SAP monitoring and management**

Monitor end-to-end performance of SAP applications across all your platforms, including legacy applications.

**Shift from reactive to proactive SAP monitoring**

Identify, isolate, and fix the root cause of problems before users are impacted.





Data center

# Overview

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Today, applications are critical to your business. They drive improved customer engagement, operational efficiency, competitiveness, and new revenue streams. Applications are also becoming more virtualized and distributed across multi-cloud infrastructures. This requires more memory to hold larger data sets, faster processors to perform queries and analyze data more quickly, and always-on availability for round-the-clock access by customers. Achieving reliability, availability, and predictability of applications and data requires a modern, end-to-end data center infrastructure.

Many customers are migrating to SAP HANA—an in-memory database that provides real-time, advanced analytics on multi-model data both on premises and in the cloud. With these migrations, they have a great opportunity to expand, modernize, and upgrade their enterprise environments to maximize their overall investment and help ensure a performant SAP landscape.



# Benefits

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Benefits provided by the Cisco data center solutions include:

- Combined Cisco hardware and software components optimized for SAP HANA workloads as preconfigured and validated architectures
- Optimized appliance and Tailored Data Center Integration (TDI) deployments to ideally fit your SAP HANA requirements
- Cisco UCS® X-Series for SAP HANA, which provides a future-forward platform with the flexibility to incorporate advantageous new technologies as they become available
- Cisco Intersight®, a Software-as-a-Service (SaaS) platform that provides simplified configuration, deployment, maintenance, support, and lifecycle management for data center infrastructure
- Cisco Intersight's automatic security preventive action helps to ensure compliance with legal, industry, and company policies
- Pre-validated data center architectures incorporating the best practices from Cisco computing, networking, and enterprise storage from Cisco's converged infrastructure partners simplify and accelerate deployment while reducing risk



# Solution features

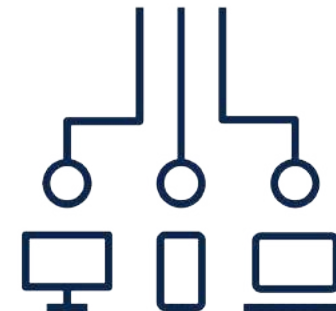
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## **Cisco data center solutions modernized for SAP HANA**

combine Cisco hardware and software components optimized for SAP HANA workloads as preconfigured and validated architectures. The Cisco UCS X-Series with Cisco Intersight is a modular system designed to improve operational efficiency, agility, and scale through an adaptable, future-ready design.

**Cisco UCS X-Series for SAP HANA** combines the best features of both Cisco UCS blade and rack servers, melding them into a single system to simplify IT, innovate at the speed of software, and consolidate your full SAP landscape. X-series can be offered as a SAP HANA scale-up certified appliance, appropriate for customers who want a turnkey solution that provides an easy and effective approach to their SAP HANA needs. X-Series is the first modular compute system managed exclusively through the Cisco Intersight platform, making your SAP HANA infrastructure cloud operated by management from a single interface, regardless of location.

The **Cisco Intersight** platform is a SaaS infrastructure lifecycle management solution that provides dramatically simplified configuration, deployment, maintenance, and support. You can always use the most up-to-date management software with a SaaS model. Cisco Intersight is modular, so customers can adopt services based on individual requirements. In addition, Cisco Intersight provides an always-on connection to the Cisco Technical Assistance Center (TAC) so that your environment is constantly monitored to help identify configuration issues before they become problems.



# Solution features

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## Choice of deployment model

Cisco Validated Designs (CVDs) for SAP HANA and technical white papers are available to help ensure flawless execution regardless of your chosen deployment model—the appliance model or the TDI model. The appliance model comes prebuilt with pre-installed SAP HANA software and all necessary components fully certified by SAP according to their most stringent requirements. With the TDI model, a wider array of solution options will allow customers to balance cost with performance targets. TDI-based solutions can also reduce costs by pairing existing and newer SAP HANA TDI certified hardware. Regardless of which deployment model you choose, Cisco can provide a SAP HANA solution that aligns with your data center goals.

## Data center converged infrastructures for SAP HANA TDI

Because many customers have a defined enterprise storage approach established in their data centers, converged infrastructure options for SAP HANA TDI deployment are well aligned and can optimize the customer investment. Pre-validated data center architectures incorporating the best practices from Cisco computing and networking—along with the best practices from our converged infrastructure enterprise storage partners—simplify and accelerate deployment while reducing risk.

- **FlexPod**, developed jointly by Cisco and NetApp, enables hybrid cloud operations, increases IT responsiveness, and accelerates the delivery and management of modern applications and data.
- **FlashStack**, developed jointly by Cisco and Pure Storage, provides the advantage of having the compute, storage, and network stack integrated with the programmability of Cisco UCS and the on-demand growth and expandability of Evergreen storage from Pure Storage.

# Solution features

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## **Cisco Plus as-a-service consumption model**

With Cisco Plus, you can build your own private cloud in which you can pay per use with the ability to scale up and down, pay as you grow, or fully reserve capacity depending on your needs. This consumption model simplifies IT deployments with a cloud-first approach, provides highly secure and predictable services, and uses insights and automation to optimize use and resolve issues quickly.



# Use cases

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Use cases were developed, based on customer requirements for performance.

## Performance use cases

**Transition diverse applications into a single platform**

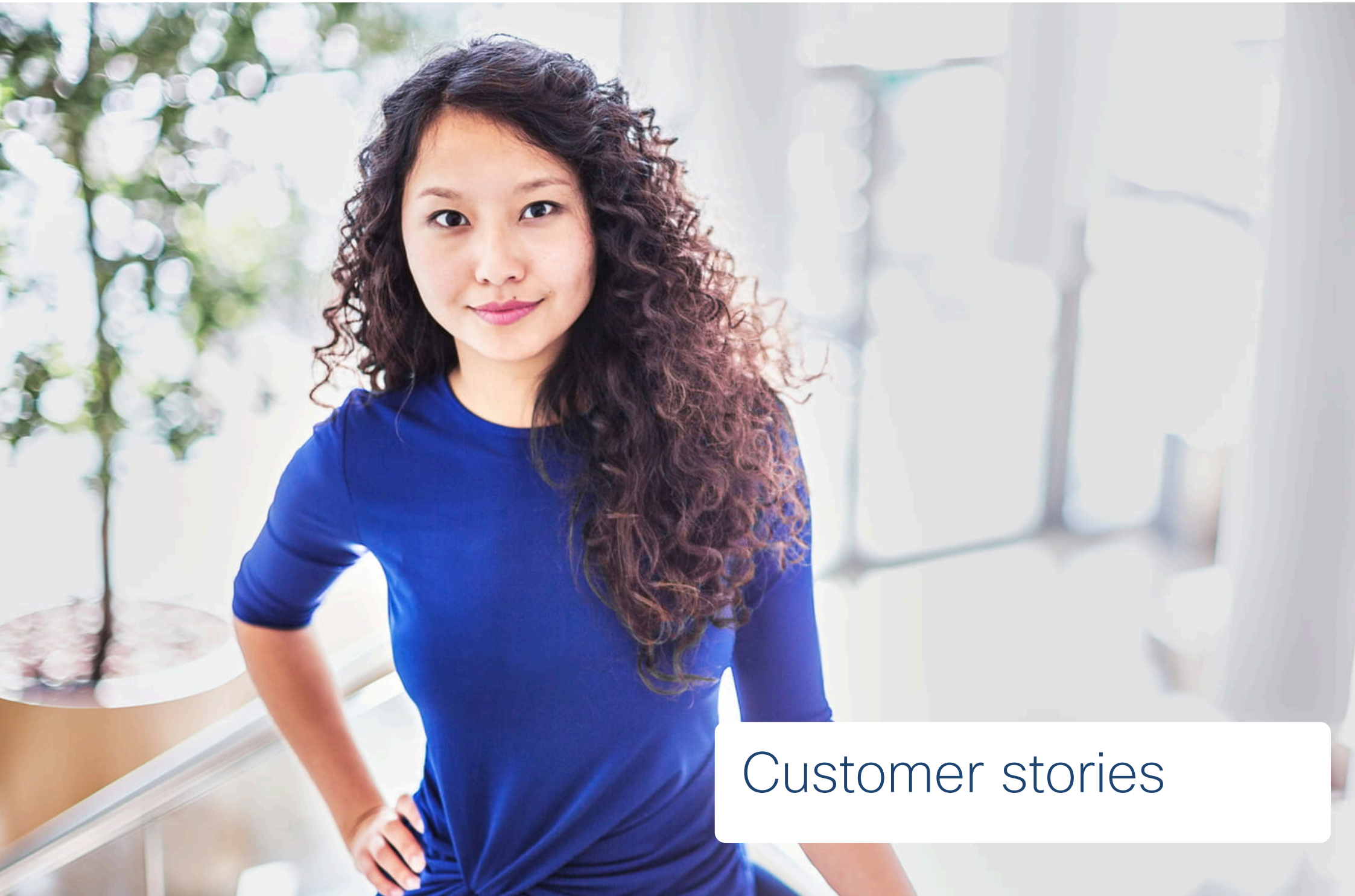
Achieve a seamless, integrated platform with employee self-service through FlexPod converged infrastructure deployment.

**Improve performance for business-critical SAP environment**

Transform business and IT operations through FlashStack converged infrastructure deployment.

**Improve performance, reliability, and future-proofed operations**

Replace existing storage environment with the FlashStack converged infrastructure solution.



Customer stories

# Carhartt

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Carhartt manufactures premium work clothing known for exceptional durability, comfort, quality of construction, and fit.

## Customer challenge

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Carhartt faced the challenge of keeping systems running continually without compromising service availability or performance as their business moves to more flexible, agile, and scalable cloud systems.

## Core products and solutions

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Carhartt adopted AppDynamics to gain greater operational insights and help ensure the long-term success of its aggressive digital transformation initiative.

Products used in the solution include:

- Application Performance Monitoring
- Business Performance Monitoring
- End User Monitoring
- Infrastructure Monitoring

## Customer benefits

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Carhartt has recognized the following benefits, enhancing customers' trust in the purchasing process:

- Reduced overhead and operating expenses by more than US\$500,000
- Prevented service outages, saving millions of dollars
- Gained complete, real-time 360-degree visibility of systems across all platforms

To learn more, visit the [Carhartt customer story](#) page.



# Cepheid

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Based in Sunnyvale, California, Cepheid is a leading molecular diagnostics company dedicated to improving healthcare by developing, manufacturing, and marketing accurate yet easy-to-use molecular systems and tests.

## Customer challenge

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For years, Cepheid's operations team was required to monitor and support the operational maintenance of its SAP applications. To ensure SAP uptime and performance, Cepheid needed to transition from disparate monitoring tools to a comprehensive full-stack solution.

## Core products and solutions

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AppDynamics for SAP enabled Cepheid to quickly understand all dependencies across its systems, allowing them to automatically baseline, identify, and isolate the root cause of problems before users are impacted. When an issue does arise, finding and remediating the problem is faster than ever so that mission-critical applications—and the business—keep running. AppDynamics provides proactive real-time monitoring of all the company's SAP resources and applications instead of reacting when a user files a trouble ticket. The solution also delivers alerts when Cepheid needs to take action to fix issues before they become problems.

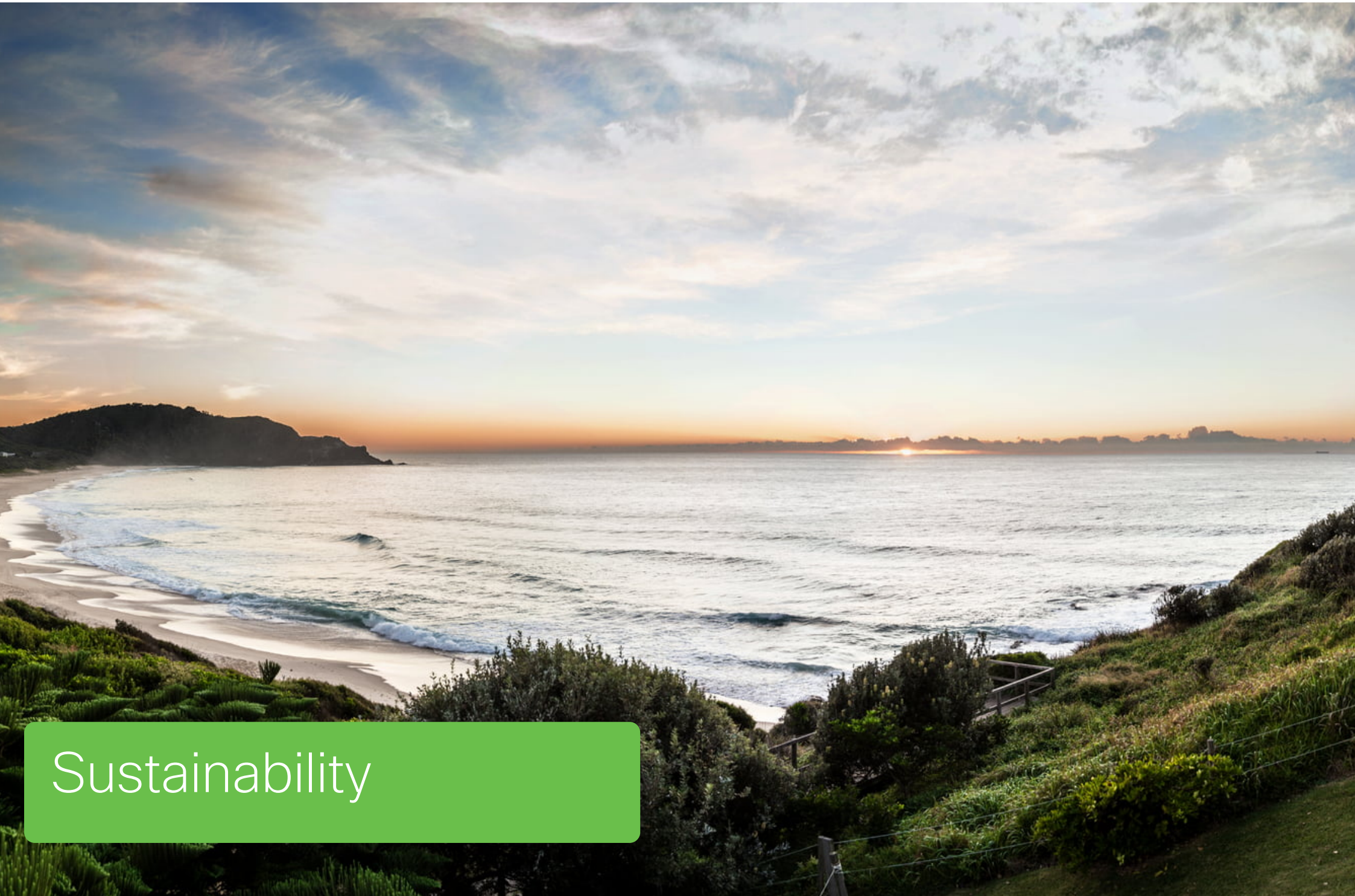
## Customer benefits

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- Real-time SAP monitoring of mission critical applications ensures seamless business operations
- Dynamic baselines of key metrics help Cepheid reduce alert storm and act swiftly on anomalous conditions
- Operational shift from reactive to proactive monitoring

To learn more, visit the [Cepheid customer story](#) page.





Sustainability

# Cisco's commitment to environmental sustainability

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Cisco believes environmental sustainability is critical for economies and for all global citizens. These actions are factored into every aspect of our business. We look for opportunities to minimize our impact on the environment in every corner of our business and supply chain, and we seek ways in which technology can reduce energy use and greenhouse gas (GHG) emissions. For example, we achieved:

- Reduction of 60 percent in Scope 1 and 2 GHG emissions in FY21 (FY07 base year)
- Increase to 85 percent of energy coming from renewable sources in FY21



## Net zero commitments

An inclusive future takes everyone, including future generations, into account. Cisco has set long-term goals to address the environmental impacts from our products and business operations:

- Cisco commits to reaching net zero across all scopes of emissions by 2040, which includes our product use, operations, and supply chain.
- Cisco also commits to reaching net zero for all global Scope 1 and Scope 2 emissions by 2025.
- Cisco will establish other near-term emissions-reduction targets for its key emissions sources in support of our 2040 net zero goal.

Cisco's strategies for reaching net zero include:

- Continuing to increase the energy efficiency of our products through innovative product design
- Accelerating use of renewable energy
- Embracing hybrid work
- Investing in carbon removal solutions
- Further embedding sustainability and circular economy principles across our business

# SAP's commitment to environmental sustainability

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Together, we can enable a future with zero emissions, zero waste, and zero inequality. Enterprise solutions from SAP deliver company-wide functionality and industry-specific sustainability features that can help you drive sustainability at scale by embedding operations, experience, and financial insights into your core business processes.



Enterprise solutions from SAP include:

- **Sustainability and Environmental, Social, and Governance (ESG) reporting solutions**  
Connect your environmental, social, and financial data holistically to steer your business toward better decisions.
- **Climate change solutions**  
Minimize the greenhouse gas (GHG) emissions of your products and operations along your value chain with embedded analytics and transactional capabilities, built to take climate action. Together, we can enable a future with zero emissions.
- **Circular economy solutions**  
Move to circular processes across your entire supply and value chain to eliminate waste, protect our planet, and save our planet's species.
- **Social responsibility solutions**  
Enable equality and social equity across your entire workforce and business networks.



Call to action and resources



# Call to action and resources

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To learn how Cisco solutions for SAP can help your business, contact your local Cisco account manager or authorized Cisco reseller. For more information on how Cisco delivers a seamless SAP experience, visit the [Cisco and SAP partner site](#) or [AppDynamics SAP Monitoring site](#).



## Resources:

- [Cisco and SAP AAG](#)
- [Full-Stack Observability from Cisco site](#)
- [Full-Stack Observability by Cisco video](#)
- [AppDynamics to SAP demo video](#)
- [See more. Solve more. Your journey to Full-Stack Observability infographic](#)
- [Cisco SAP Full-Stack Observability \(FSO\) At a glance](#)
- [Cisco Full-Stack Observability Solutions Solution overview](#)
- [What is Observability site](#)
- [What is Full-Stack Observability](#) (AppDynamics site)
- [AppDynamics SAP Monitoring eBook](#)
- [Cisco SAP Hyperscaler At a glance](#)
- [Cisco Data Center site](#)
- [Cisco SAP Data Center At a glance](#)
- [Compute Solutions for SAP HANA and Applications site](#)
- [SAP blogs](#)
- [Carhartt customer story page](#)
- [Cephpeid customer story page](#)

Thank you for reading

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