
Data#3
cisco
Partner
The renaissance of the data centre
The why and how of modernising your data centre for digital transformation

Contents

The future of the modern data centre

As traditional data centres grapple with increasingly sophisticated security threats, data proliferation, the rise of cloud computing, and ballooning costs, organisations must explore new, agile and hybrid architectures to stay in control and maintain a competitive edge.

Currently, about 10-15% of data is created and processed outside a centralised data centre or cloud, but the number is expected to reach 60-70% by 2025, a global trend that is reflected in Australia[1].

These challenges are enough to give any IT team a headache. Add into the mix digital transformation, a drive to create operational efficiency while simultaneously reducing costs, and the need for scalability. The adoption of emerging technologies such as blockchain, IoT, AI and machine learning add further pressure, leading to questions like *"can my data centre handle this?"* and *"where should my data centre be?"*

For most, the short answer to the first question is no, but the second question isn't so easy. It may be the cloud in some form, or it could be a hybrid of on-premises and cloud. Regardless, the breakneck speed of technological innovation and organisational change means disruption is becoming the new normal, so what worked yesterday is unlikely to work tomorrow. The ability to successfully ride the wave of disruption is the foundation of a successful business today and must be at the heart of every organisation's corporate strategy. The harsh reality, though, is that most organisations are not ready for the scale of this change.

Organisations that don't prepare for tomorrow's opportunities today will be left behind. Understanding multi-cloud and its impact on data centres and networks is an important first step on what can be a daunting journey.

This discussion paper explores the shift to a multi-cloud architecture, how to achieve it, and what it means for the future of your business.

By 2023, 86% of organisations will be using a multi-cloud architecture[2].

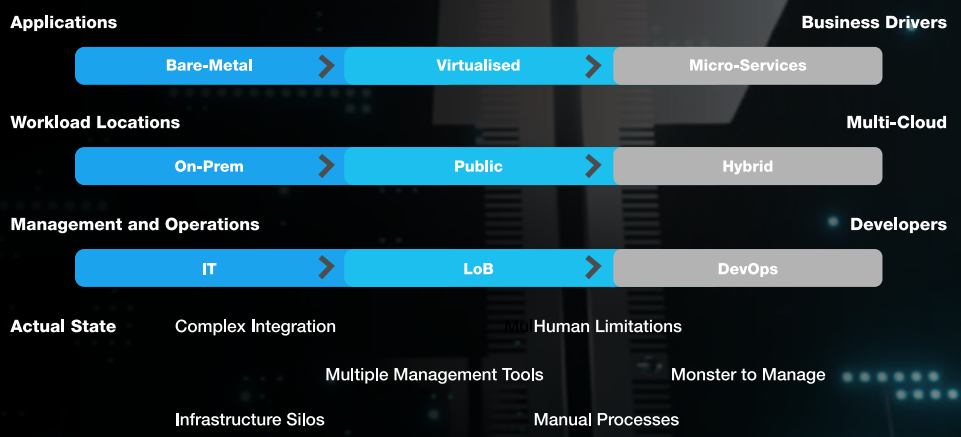
“Enterprises should be able to deploy applications based on the needs of their business, not the limitations of their technology. Customers want to deploy applications and manage data across a range of diverse platforms, from on-premises to cloud-based. That is why we are taking the ‘centre’ out of the data centre.”

Roland Acra – Senior Vice President,
Chief Technology Officer, Cisco.

Modernisation of the data centre

What is essential for a data centre has changed. A modern data centre needs to be where the data is – whether it's in the cloud, or at the edge.

IoT devices will generate 79.4 zettabytes of data by 2025[3].



Wherever data is created, processed, and used is where today's data centre now resides, extending out across multiple public and private clouds to the edge of the network.

Commonly, organisations are using distributed systems and even applications that reside across multiple clouds. Developers are challenging the organisation, seeking the benefits of microservices and pushing for the cloud experience – everywhere – so they can build the apps that the business needs.

This new architecture delivers the speed, agility, and scalability needed to embrace innovation in the enterprise. With modernisation comes the ability to:

- Respond quickly to demands
- Provide visibility across all applications, wherever the location
- Secure your data without on-premises costs, maintenance, and physical limitations
- Embrace IoT, SaaS, blockchain, and machine learning
- Vastly improve customer experiences
- Conquer big data
- Reduce the unthinkable risk of downtime
- Achieve operational efficiency
- Deliver powerful new layers of security, intelligence and automation

Automation

Because of the complexity of previous technologies, traditional data centres have fallen short when it comes to automation and orchestration. However, full-scale IT automation is incredibly transformative and is possible through a contemporary data centre that includes back-end validation. Assessing and automating workloads allows IT teams to eliminate repeatable manual tasks up and down the IT stack, ensuring predictable outcomes and freeing up resources to focus on higher value projects.

Security

Legacy infrastructure is vulnerable to cyberattack, and with the average data breach costing $3.6 million, the outcomes of a breach are potentially crippling. Modernising IT infrastructure further improves an organisation's cybersecurity posture by aligning security policies to data and applications rather than location or devices. Monolithic policies can be broken down into manageable sizes, while layered policies can be consolidated into one that moves with business-critical workloads.

IDC forecasts worldwide spending on cloud services, will surpass US$1.3 trillion by 2025[5].

Visibility & Management

Delivering applications across multiple clouds requires an architecture focused on connecting users to applications securely regardless of location and access type. This in turn requires visibility from the application down and through multiple infrastructure environments. AI and automation are a necessity here to proactively identify and resolve issues, but this still requires some way to validate the automation in the backend to maintain visibility of changes and actions for overall governance. This is where SD-WAN solutions come in, providing full automation and visibility of connectivity management via native integrations with CoLo and cloud provider networks.

Learn how Cisco can help you unlock data centre agility to drive digital disruption

EXPLORE NOW

The traditional data centre

Once playing a central role, rapid digital transformation is turning these monolithic IT infrastructures into dinosaurs that impede enterprises as they compete in today's marketplaces. A heavy reliance on hardware and on-premises servers often leads to time-consuming and expensive maintenance. Furthermore, rapid provisioning is obstructed by complicated timelines and higher TCOs. Not to mention, as the volume of data increases, the real time processing of data is becoming increasingly tricky.

Leave behind:

- Costly maintenance of ageing equipment
- Slow servers and outdated switches
- Siloed approaches to server, storage and network management
- Difficulty supporting new applications without network redesign
- Server expansion requiring manually moving workloads and provisioning new servers
- Complex reconfiguration of network and security policies required for workload mobility
- Expensive power and maintenance
- Separately managed security policies
- Lack of visibility into Shadow IT applications on the network, increasing corporate security and compliance risks

VERSUS

The cloud-based data centre

Using a cloud-based data centre does not mean that you lose control. Rather it is less about the infrastructure, and more about what can be controlled from a software perspective.

Multiple clouds, sites, and automated processes can be used to enable application portability for business continuity. And with intent-based networking added to the mix, you can bring in automation and AI for better control, management, and troubleshooting while also reducing the manual configuration burden.

These data centres enable flexible deployment, management, storage, computing, and networking applications for the private, hybrid or multi-cloud environment. Organisations gain a highly elastic and scalable IT architecture able to accelerate delivery of services, retain control over IT, minimise complexity, and reduce costs.

It is important to note that the cloud operating model is what's important, not the location. The data centre may be located in the cloud or on-premises in this scenario.

Look forward to:

- Single point of management that enforces operational policies
- Leveraging the power of AI
- Consistent security policies across your on-premises and cloud environments
- Seamlessly supporting multi-site and multi-cloud environments
- Rapid provisioning
- Reduced TCO and advanced cost controls
- Cloud-level speed and agility, and efficient use of IT infrastructure, with applications hosted anywhere
- Highly scalable environments

On intent-based networking from Cisco CEO:

“The new network delivers a world where you can connect billions of devices, identify them almost instantly, know what’s trustworthy and what isn’t, and draw exponential value from the connections – and you can do it in hours instead of weeks and months. This capability is so new and so vital that, in our view, it will free up businesses to pursue new opportunities - because big changes will seem less daunting and less risky.”

Chuck Robbins, CEO,
Cisco Systems.

Infrastructure in a multi-cloud world

While organisations start to harness the benefits of multi-cloud and embrace the idea of a 'data centre anywhere', legacy on-premises architectures are causing performance and complexity issues that prevent unlocking the full value of applications. Cloud Management Platforms now drive the ability to deploy, manage, and operate the data centre in public cloud (Azure and AWS), or on physical hardware, using Hyper-Converged Infrastructure (HCI) and Converged Infrastructure (CI) to operate the hybrid cloud model. IT departments enhance the experience by deploying applications into the right location for users and operational spend.

It's better, though, to think of HCI and CI as a platform with a focus on managing your converged infrastructure as entities to consume within your multi-cloud environment.

69% of companies using a hybrid cloud architecture have deployed, or are in the process of deploying, HCI, compared to 50% of those using a traditional data centre only[6].

What does HCI bring to the data centre journey?

Lowering the cost of technology investments. By combining all components into a single platform, the storage footprint, power output, maintenance, and TCO are all reduced. Scaling the data centre to accommodate growth no longer requires over-provisioning.

Reducing deployment timelines and resourcing burdens. With HCI, deployment takes minutes, rather than the days and weeks of traditional data centre infrastructure. These deployments don't require specialist skills, and everything is cloud-connected and cloud-controlled, meaning automation frees up administrators to focus on strategic initiatives.

Empowering networks to keep up with demands. HCI helps organisations deploy any workload while experiencing high levels of performance – even for the most intensive workloads such as enterprise apps and SQL Server.

Avoiding the high cost of scaling legacy networks. HCI is easy to scale. For additional resources, simply connect a new compute, storage, or full-featured node to the cluster, and the new resources are automatically identified and integrated.

Impressive multi-cloud support. The time and cost when transitioning to a hybrid cloud environment is greatly reduced with HCI. Plus, moving data and applications between on-premises servers and the public cloud is quick, flexible, and secure.

Improved network security and data protection. With HCI, security is part of the fabric. Self-encrypting drives, visibility tools, and backup and disaster recovery are all built-in.

68% of enterprises say the top responsibility of central IT is managing and optimising cloud costs[8].

20% of business processes have moved to the cloud, yet 80% of mission-critical workloads and sensitive data are still running on-premises due to performance and regulatory concerns[7].

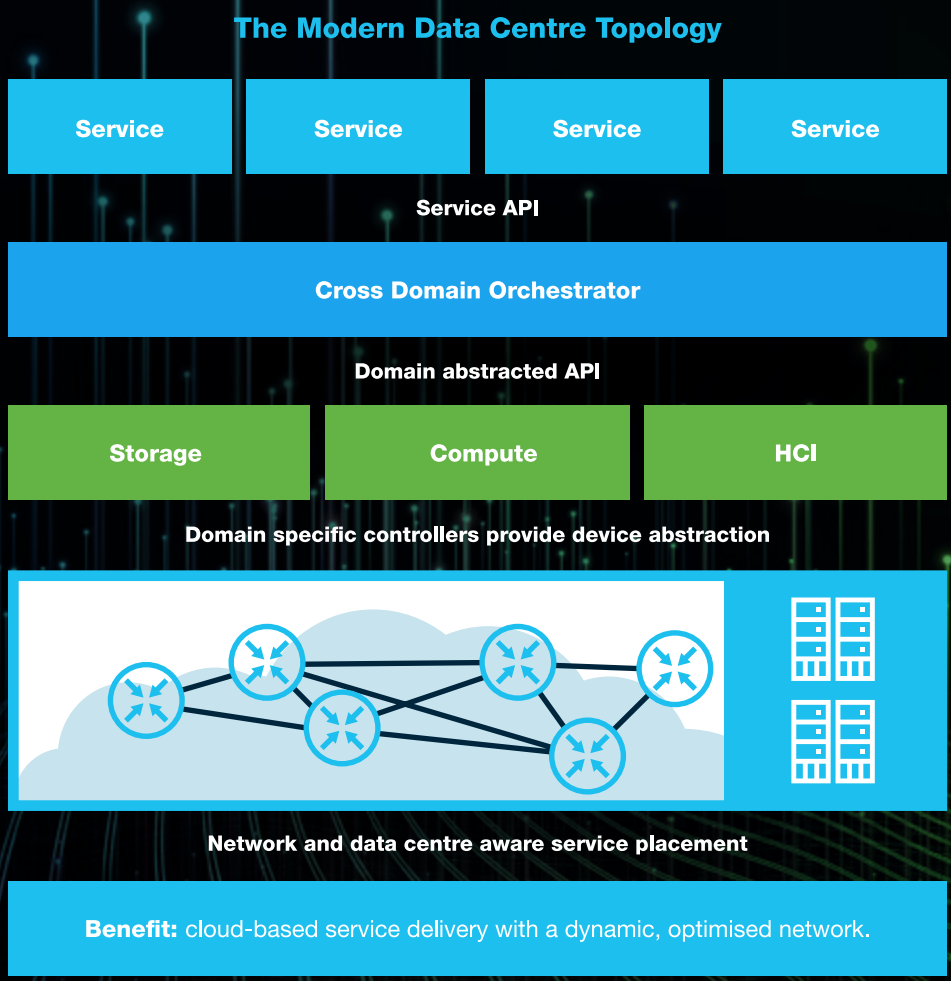
The rise of the software-defined network

The traditional infrastructure model features closed environments, applications managed on-premises, and everything tightly controlled by IT. However, as technology and disruption advanced, control turned to chaos. The software-defined network (SD-WAN) – and intent-based network (IBN) – abstracts control and data planes from the underlying hardware to offer an antidote to the complexity challenge.

90% of all the data that exists today was created by users, apps, and devices in the last two years[9].

Cisco Solutions:

- Management with Cisco Intersight
- Compute with Cisco and Pure Storage
- Networking with Application Centric Infrastructure (ACI)
- Security with Cisco Secure Workload
- Backup with Veeam and Cohesity



Why organisations are turning to SD-WANs on their data modernisation journey:

Managing multiple production environments across cloud and on-premises has become inefficient and expensive:

With SD-WANs, network intelligence is logically centralised, enabling a global view of the network topology, applications, and network policies.

Scaling traditional infrastructure incurs high costs and extended timelines:

SD-WAN provides the ability to programmatically automate network configurations, making it easier to design, deploy, manage, and scale when needed.

Implementing SD-WAN was once deemed complex and expensive:

Thanks to leading vendors like Cisco, this is no longer true. Maturing IT teams and dramatically simplified implementation has put SD-WAN within reach of organisations across the board. SD-WANs also support changing business requirements with quick and secure deployment of new applications, services and business models to generate new revenue streams.

The network can no longer keep up with escalating demands:

Whether tackling a seemingly unmanageable variety of devices and applications or confronting blockchain and machine learning for the first time, SD-WANs enable organisations to manage new challenges with ease. All while producing meaningful insights through contextual data interpretation.

Physical hardware adds economic burden:

SD-WANs can reduce the possibility of over or under-provisioning resources, allowing you to take advantage of pay-as-you-grow models that ensure you're paying for only what you need – wherever your organisation is on your journey.

Securing the network is increasingly challenging:

Automated provisioning and policy-based network resource management allows IT operations to deliver consistent security policies across on-premises and cloud environments. Because SD-WANs take an application-down approach, policies are linked to applications and their data, not the network or locations.

The complex demands of mobility and IoT require a simplified and centralised approach to network management:

Intent-based networking enables network administrators to define policies governing every device, application, user, and network connection. These policies are then automatically put into effect by SD-WAN, reducing manual operations and the costs associated with human error.

Data centre strategies under the microsope

Hydro Tasmania

With their existing data centre nearing end of life, Hydro Tasmania wanted to reduce risk, improve connectivity, and simplify management.

To achieve this, the team turned to Cisco core network equipment based on application-centric infrastructure (ACI), allowing for seamless, secure connectivity to any workload from anywhere, with software-defined networking (SD-WAN) for easy management.

Hydro Tasmania achieved up to 80% faster data processing, reporting, and access.

READ CASE STUDY

Engineering company uses Cicso ACI

When an ageing network infrastructure approached end of life, an engineering organisation sought to replace it with a more intuitive and easily managed alternative. Not only did they want to reduce ongoing costs, they also wanted to deliver new capabilities to the business while reducing risk.

To meet growing capacity needs, Data#3 leveraged Cisco ACI to dynamically provision network, security, and infrastructure services. Performing well in multi-site situations, the solution suited their business structure perfectly. It centralised network management and visibility, with real-time network health monitoring allowing near-zero downtime.

ACI automated 75% of core networking tasks, and enabled connection across 100 sites worldwide.

READ CASE STUDY

“I wanted to have confidence that backups would be done, that everything would work as it should. I wanted IT that we really could trust. Even though the technology is complicated, the team at Data#3 used clear language, and explained everything in layman’s terms. This stopped IT from being a mystery and allowed us to take control.”

Frances Williams, Operations Manager,
Eastside Lutheran College.

READ CASE STUDY

Next steps for new thinking

Data#3 is the safe pair of hands you need for modernising your data centre. As a proud Cisco Master Partner and Networking Partner of the Year, our experienced team is in the best position to help you achieve your unique business objectives.

- Deep knowledge in data centre modernisation
- Cross-industry experience
- A worldwide network of tools and resources
- Globally recognised expertise with Cisco products
- Proactive and world-class service.

Ready to start the modernisation journey?

Whether you want to start with a **Shadow Data Audit** to quickly identify your data risks and cloud applications or are ready to take the first steps on your modernisation journey, **reach out to our expert team today.**

GET IN TOUCH

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“The entire process was incredibly seamless thanks to the expertise and professionalism of the Data#3 team. Due to the complexity of the project, I expected problems and issues, but there were none. We couldn’t be happier with the outcome.”

Frank van der Wijngaart, IT Network and Systems Administrator, Town of Gawler Council.

READ CASE STUDY

A Leading and award-winning Australian IT services and solutions provider, Data#3, is focused on helping customers to harness the power of people and technology for a better future.

Built on a foundation of over 40 years' experience, combined with world-leading vendor technologies, Data#3 is constantly evolving its solutions and services to enable its customers' success.

Leveraging solutions such as cloud, modern workplace, security, data & analytics and connectivity, combined with Data#3's services across consulting, project services and managed services, Data#3 is delivering the digital future.

Data#3 | **Delivering the Digital Future**

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