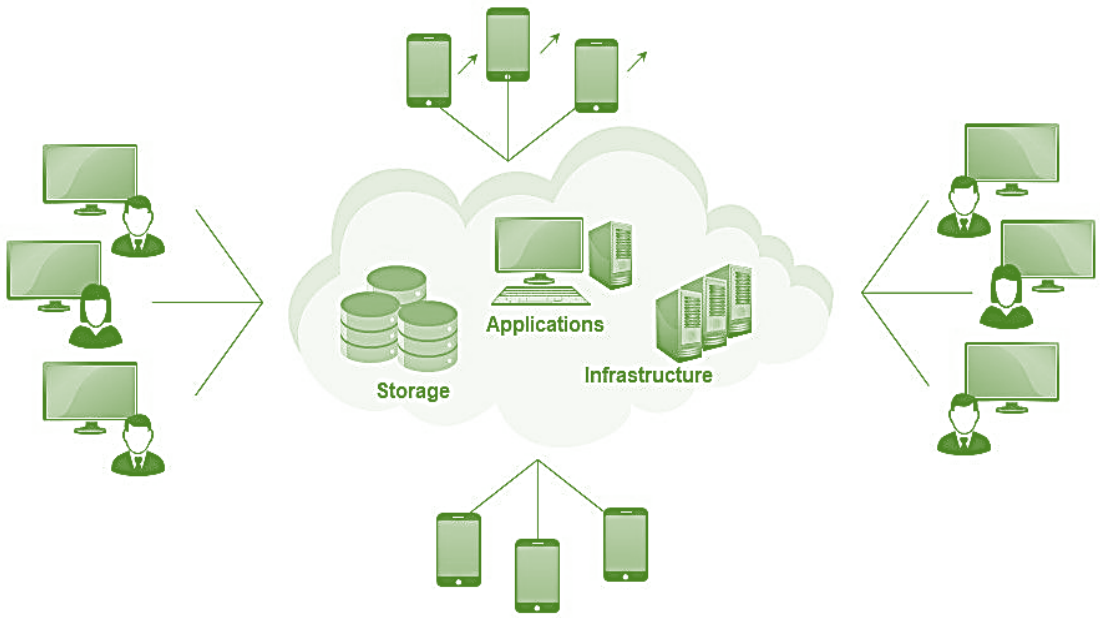
DIGITAL NETWORK ARCHITECTURE

DNA White Paper 2021

WHAT IS DNA?

Digital Network Architecture is "intent-based networking," and it is establishing the groundwork for today's and tomorrow's networks. The focus of this new network is on business objectives and how quickly and efficiently enterprises achieve them. It replaces the previous, time-consuming manual technique with one that is automated, intelligent, and extremely secure. You can interconnect billions of devices, identify them almost quickly, recognize what's credible and what isn't, and derive tremendous value from the connections using an automated network - and you can accomplish it in hours rather than weeks or months.

Computer Network Architecture showing Nodes Connected by Cloud Computing



WHY THE NEED FOR A NETWORK?

For building, maintaining, and updating infrastructures, the conventional rigid and primarily manual cycle management approach is no longer viable, and it cannot scale to meet the expanding diversity. To thrive in the globalized society, a company's network must be ready to adapt to new business needs or "intent."

The network is expected to accommodate an ever-changing and diverse group of participants, devices, apps, and services. It must guarantee quick and limited access to and between highly scattered workloads, regardless of where they are located. All of it must be conducted securely from start to finish, across users, devices, apps, and services throughout each network, for the network to function efficiently.

Campus and branch access, WAN, data center, hybrid cloud, and multi cloud are all part of the network domain. As a result, businesses must constantly align their networks — across people, gadgets, apps, and workloads — to meet application reliability and scalability demands.

BENEFITS OF DNA

A centrally located control system can be established using a decentralized network architecture, but the burden can be dispersed among multiple local sites. Although these locations are physically different, they are linked through the internet. Furthermore, if one system collapses, the others would continue to operate without interruption.

As the network grows, there is always the risk of an overrun with single processors. If a single server crashes, the entire network goes down with it. The load is spread among the numerous systems in a distributed network, making networking faster and easier.

Because the configuration is dispersed among the secondary servers, there is no degradation of data if the central server crashes.

The central system, on the other hand, does have the added benefit of being able to monitor all operations, make trading adjustments, and observe how the other locations are doing.

Modifications and upgrades done on the central server can be automatically merged with the entire dispersed network.

The dual benefit of having a centralized seat of power while also delegating judgement call to local regions results in a more convenient and effective structure.

VERSATILE

Growth is much easier with a dispersed network infrastructure than with a single network. Since the load is shared, new products can also be added to the system and setup without causing significant network disturbance.

Too many devices on a single network might cause the system to decelerate and overload the servers. With a distributed network, this will not be the case.

GREATER EFFICIENCY

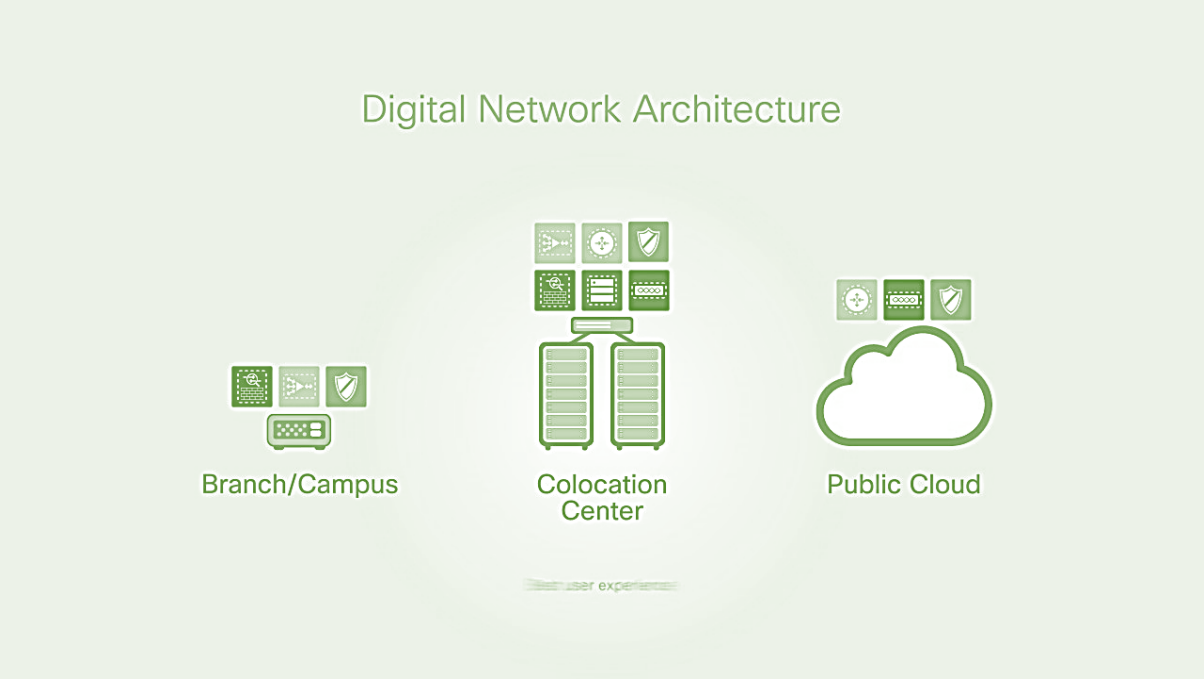
The central network administrator can exercise quite enough and as little control as is necessary at any one time. This manager can assign work to cluster managers so that he or she can focus on other matters.

The central administrator, on the other hand, can take control of the entire dispersed network if an inspection or modification is desired. The central administrator has accessibility to all the units from a single system, eliminating the need for different logins.

MORE DEPENDABLE

The system is more accurate because of how the distributed network architecture is established. It consumes lesser bandwidth and is more resilient to equipment or network faults than a unified system. Furthermore, if data on one computer becomes corrupted, the entire network is not affected.

Companies with extensive networks of devices can be more protected and resilient of failures if they use a distributed network architecture.



It can be a nightmare to keep the quality assurance of all devices in synchronization for enterprises with not just a big range of devices, but also devices in multiple locations. If your company has a dispersed network design, then employing the system as a management solution is a huge plus.

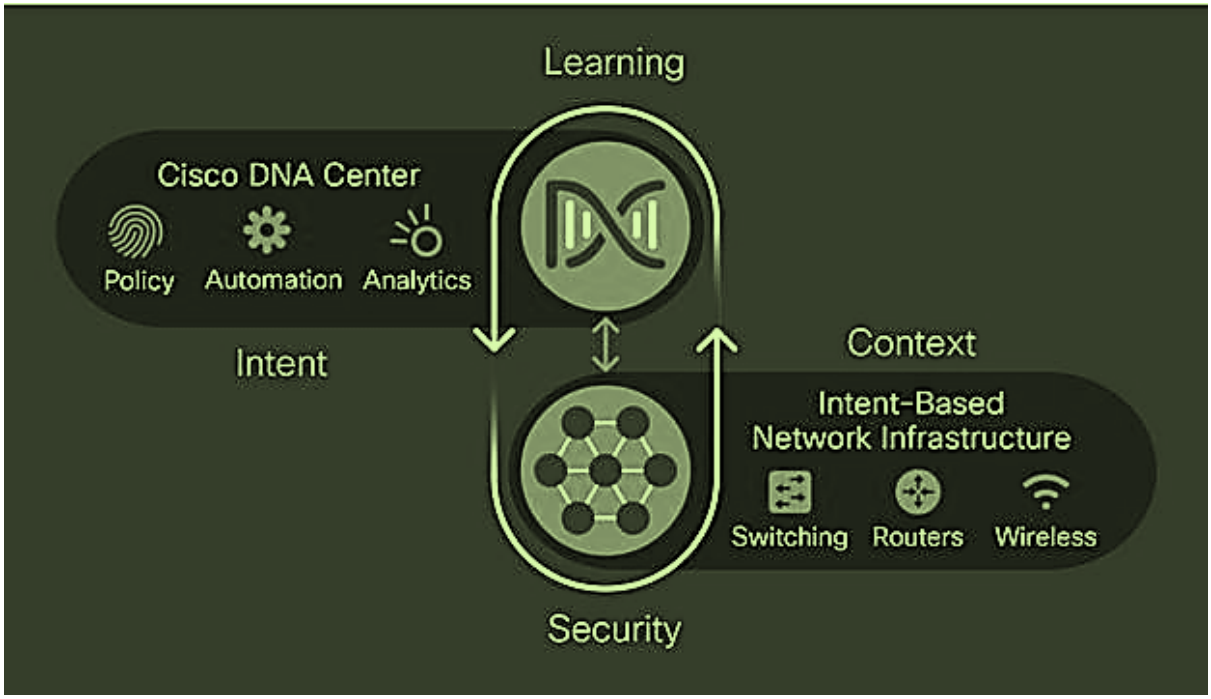
The automatic safety and computer network management solutions can be transferred to the global network's central system, from which they're delivered to the multiple networks, who then distribute them to the localized network's devices. The solution aids in the reduction of both time and cost spent on continuous delivery.

Multiple administrations can handle their networks thanks to the distributed network design. The essential operating duties can be imposed, as well as recorded data and duplicate configuration data, from these servers. After that, the data and files can be merged into a single management platform.

All automated tasks can be controlled from a central system, which can also synchronize data. While backing up wireless connections, this design avoids the need for numerous firewall rules, and it provides redundant data between the administration and operator systems, adding an extra layer of resilience.

CISCO DNA CENTRE:

The Cisco DNA (Digital Networking Architecture) Centre is a visual interface solution that gives you comprehensive command and oversight over your company's development. It's a sophisticated network controller and monitoring panel that allows you to take grip of your network, maximize the value of your Cisco investment, protect your working environment, and cut your IT costs.



WHY DO WE NEED CISCO DNA CENTER?

This all-encompassing network control system has a lot to offer which is the succeeding move in network progression. Its single, yet expanding platform comprises a wide variety of tools with a wide range of network features and techniques. Automation, virtualization, analytics, and security are just a few of them. Cisco Digital Network Architecture is the company's framework for today’s modern large enterprise connections.

CISCO AND AUTOMATION:

Cisco DNA Center's major ability to automate workflows and deploys across diverse platforms in addition to tracking activities throughout domains. There are significant benefits to automation. It relieves your employees from the monotony of normal duties, enabling them to devote their energy and resources to high-value ventures that benefits the company. Automation eliminates the possibility of human error, resulting in consistent settings. This closes safety gaps and exposes flaws that could otherwise go unnoticed.

CISCO AND VISIBILITY:

The Cisco DNA Center is the single point of contact. This entails complete insight throughout the enormous divide that exists in today's complicated hybrid infrastructures. Its all-in-one panel that gives you an easy-to-understand summary of your network's status and state.

CISCO AND ANALYTICS:

You can't give network guarantees until you can reliably forecast network efficiency for expected workload changes and circumstances. Artificial intelligence is used by Cisco DNA Center to forecast the future network efficiency. These forecasts are based on genuine relevant business and logistical knowledge, not merely active performance information.

CISCO AND SECURITY:

Cisco DNA Center's advanced technological capability identifies and eliminates risks in real time. This is accomplished by enlisting all of your wireless networks as security sensors, which provide continuous data streams on suspicious traffic conditions and behavioral abnormalities. Following risk warnings, micro segmented measures and assisted remedies are performed.

HOW IS CISCO DIFFERENT FROM OTHER NETWORKING SYSTEMS?

Cisco DNA Center is a sophisticated networking manager that helps businesses get the most out of their Cisco investment. It delivers a singular access for your workplace network, sparing your staff time and effort on routine setups and debugging while improving network experience for users and privacy. It integrates essential network managerial operations with functionalities with Cisco Umbrella, Cisco ACI etc. Allowing businesses to profit from a separate point of management for numerous software products and cross-domain integrations.

TOP 5 COMPANIES PROVIDING CISCO SOLUTIONS WORLDWIDE:

dimension data	Dimension Data is a USD 8 billion worldwide service company and service management company that builds, maintains, and optimizes today's growing technological ecosystems.
radiant networks	Radiant Network Services, established in 2006, specializes in offering high-quality wireless networking services. In hospitals, factories, and workplaces.

IGNW	IGNW, which was established in 2016, creates a strategic roadmap to help clients navigate their digital adventures.
urben	Founded in 2005, Urben specializes in design, development, and delivery of a range of collaborative meeting room solutions for enterprise clients.
Cameo Global	Cameo Global, an IT technical services and telecommunication firm, can deploy IT solutions anywhere in the world.