

TRANSFORMING NETWORK INFRASTRUCTURE WITH SOFTWARE DEFINITION



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THE CURRENT STATE OF SDN

Software Defined Networks (SDN) were first developed a decade ago as part of OpenFlow protocol, a collaboration between Stanford University and the University of California at Berkeley, in 2008. This protocol allowed network traffic to flow between switchers and routers, regardless of the hardware's manufacturer. In a little more than a decade SDN has gone from hype to reality.

The advantages of SDN are that it separates the control of the hardware from the hardware itself, allowing a network to be programmed from software that is independent of the vendor network or hardware. Given this freedom, applications can now be deployed from almost anywhere, providing flexibility not previously known in networking.

SDN is now a proven architecture, with an expected global market of nearly \$133B by 2022, reflecting a growth rate of 47% since 2015. Enterprise level organizations are expected to be the biggest market for SDN, followed by telecom and cloud service providers. Industry segments from IT, government, healthcare, consumer goods and other industries are rapidly looking to SDN as a viable solution.

Why are these industries looking to SDN as a solution? SDN helps manage complex, quickly changing networks and provides a centralized point of control. From the vantage point, network managers can make more effective decisions, more easily deploy their rapidly growing suite of applications, and customize networks down to the customer level. Overall, SDN helps increase operational efficiency while decreasing the cost of maintaining the network.

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SDN AND INTENT-BASED NETWORKING

While SDN centralizes network operations, AI and ML assist in automating routine tasks of network maintenance that include administrative tasks and efficiencies. But these technologies are part of a larger effort called Intent-Based Networking. This approach recognizes that networks are becoming more complex on a daily basis as threats and ability to scale the network are imperatives.

SDNs provide a cloud-based management approach to network management. AI and ML help the network to become more efficient. Intent-based network brings these capabilities together to create a fundamentally new approach that is focused on translation, activation, and assurance.

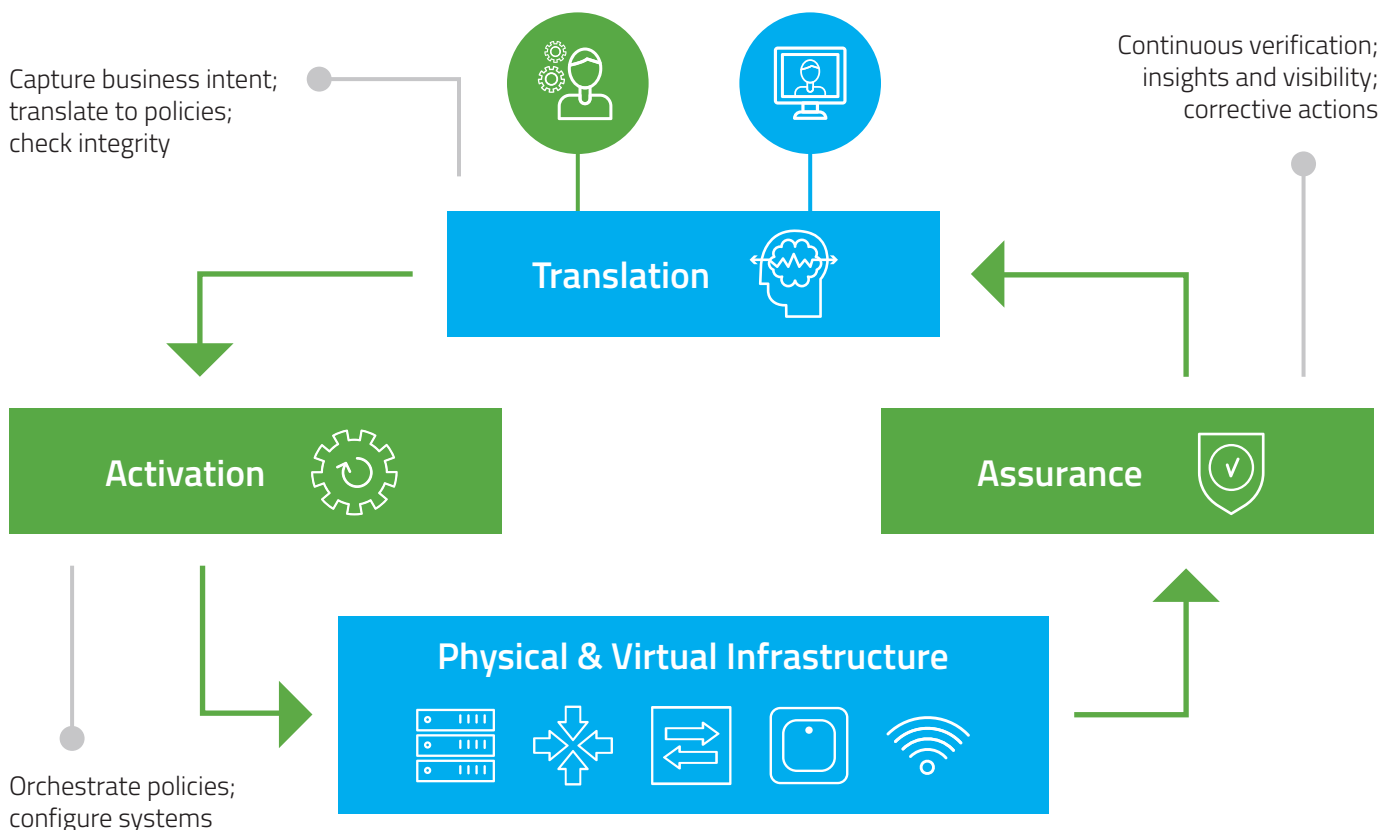
Translation is the process of capturing the business' intent for the network (requirements, expected

workload) translating these requirements into defined policies and network integrity.

Activation then takes these policies and puts them into place within the network and includes cloud infrastructure and the applications used to run the network, like SDN.

Assurance includes continuous verification and network reporting to ensure the network is performing as intended.

Intent based networking builds upon SDN's ability to build a scalable network while providing the digital transformation that organizations find vital to their future growth.



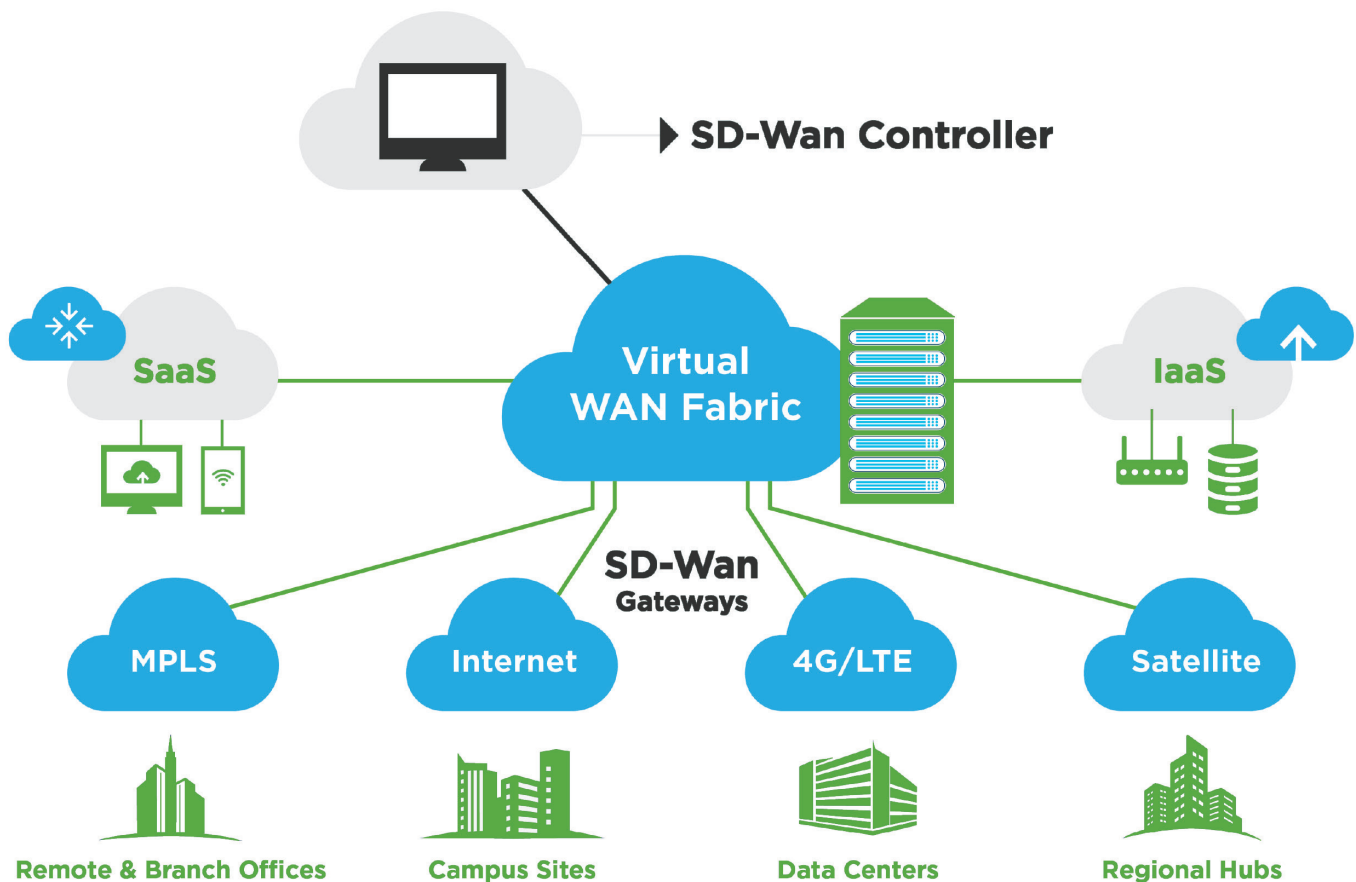
SDN AND SD-WAN

SD-WAN allows organizations to deploy applications, video, transactions and other data from a centralized location. If an organization with 1,000 stores or have to broadcast a nationwide televised program, SD-WAN will take SDN to a new level of operational and cost efficiency. Think Monday night football or Black Friday transactions across a nationwide network and you'll understand the power of SD-WAN.

Previously, large organizations with multiple branches or locations may have required Multiprotocol Label Switching (MPLS) circuits to relay information across dispersed geographical

areas. SD-WAN is an emerging, cost-effective solution for these organizations. Gartner Research forecasts 30% of enterprises will be using SD-WAN, so the market for this technology is growing.

CISCO **recently** expanded the capabilities of SD-WAN allowing customers to run direct Internet access to enterprise applications such as Office 365 and other Azure Cloud services. This will let customers extend their WAN to Microsoft Azure Cloud and, in parallel, deliver optimized, secure Office 365 communications, according to Sachin Gupta, senior vice president, product management with Cisco's Enterprise Networking Business.



CHOOSING THE RIGHT VENDOR PARTNER

SDN and SD-WAN are exciting developments that allow organizations to rise to a new level of network optimization. These CISCO applications allow IT professionals, network administrators, and corporate leaders gain the efficiencies that make their network more productive, but also achieve business goals that allow companies to maintain their competitive edge.

Deploying a software defined solution requires partnering with a vendor who has the expertise in proven CISCO solutions and who can customize them for your business. CORE BTS has the expertise required to assist you in evaluating your current network and the SDN solution that supports your business objectives and optimization goals.

Core's subject matter experts can help determine how the benefits of adding software definition to your network solutions can transform your business. Contact Core today to schedule a SDN and/or SD-WAN demonstration.



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