CISCO

SOFTWARE DEFINED ACCESS

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SD-ACCESS WHITE PAPER 2021

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BRIEF INTRODUCTION TO SD-ACCESS

Resting under the wing of Cisco Digital Network Architecture, Cisco SD- Access is the ultimate solution to all networking calls.

Relying on what is commonly known as an intent-based network, where the administrators define an outcome or business objective, the SD-Access is built to take networking to a whole new level be it establishing new or managing existing networks, be it the security or operating of networks, or be it the improving their efficiency to make them faster and easier.

The technology basically creates a virtual bubble on the physical networking infrastructure by disintegrating the hardware from the network functions.

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Along with ensuring a relatively faster way to launch startups, it helps develop consistency in policies by enforcing and defining them by preventing breaches and unauthorized access.

SD-Access has remarkably improved issue solving by being easily accessible and helping cut down operational costs.

To move along with this fast pacing world, enterprises are forced to adopt newer and improved transformations digitally, therefore, these modern problems require a modern network.

SD-Access Fundamentals
Fabric Roles & Terminology
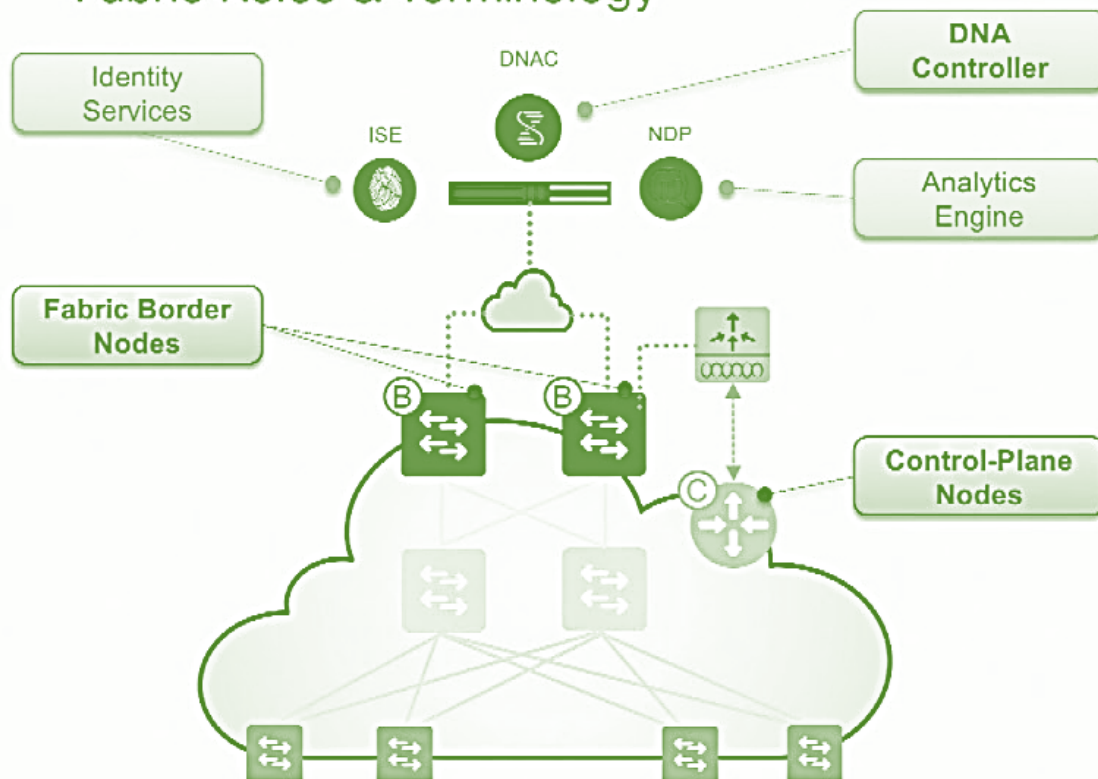
❖ **DNA Controller**

Enterprise SON Controller (e.g. DNA Center) provides GUI management and abstraction via Apps that share context

❖ **Identity Services**

External ID System(s) (e.g. ISE) are leveraged for dynamic Endpoint to Group mapping and Policy definition

❖ **Analytics Engine**

External Data Collector(s) (e.g. NOP) are leveraged to analyze Endpoint to App flows and monitor fabric status

❖ **Control-Plane Nodes**

Map System that manages Endpoint to Device relationships

❖ **Fabric Border Nodes**

A Fabric device (e.g. Core) that connects External L3 network(s) to the SDA Fabric.

WHY SD-ACCESS?

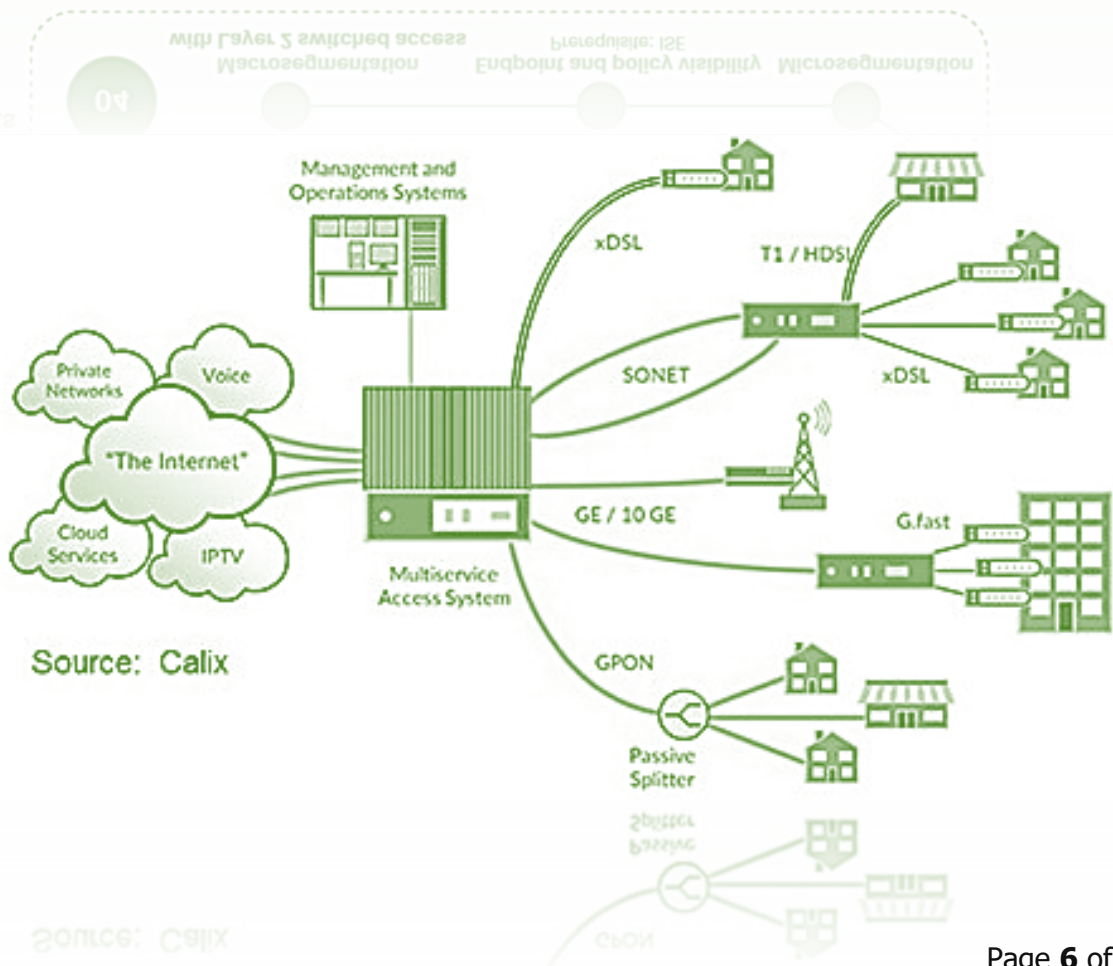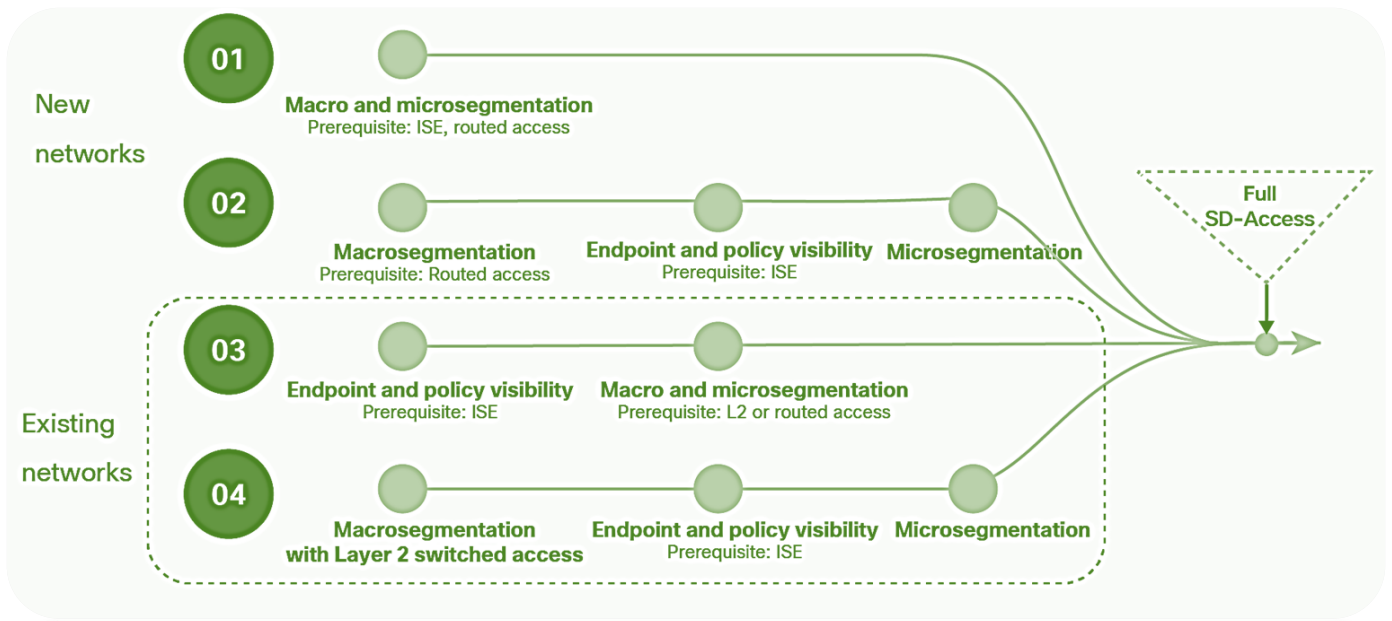## DEPENDENCY INCREASE ON IT AND A FLOWLESS SOLUTION

With the constant need to survive in the digital age, there is a rapid increase in the shifts to digital platforms. Along with a huge shift comes a growing dependency on IT and the networks are expected to be vigorous by coming up with faster solutions to bugs faced by the rapidly pacing businesses.

Unfortunately, it has now become a problem for the traditional networks to keep up. The growing urge to adapt clouds, the growing number of users and a constant need to use IoT devices have resulted in major struggles for them.

The only solution that seems possible is to define a set of policies for the networks that are high level so that they can work and problem solve effectively without any sort of interruption by the humans.

The key to securing an enterprise is to develop logical access policies, this is where SD-Access comes in. With the help of SD-Access, it becomes so much easier to make such policies and ensure their working through the precise configuration of network devices, therewith scaling the network and secure the onboarding automation of endpoints.

AN OVERVIEW OF THE NEW ERA IN THE NETWORKING SOLUTION BY CISCO SOFTWARE DEFINED ACCESS SERVICES

New networks

01 — Macro and microsegmentation
Prerequisite: ISE, routed access

02 — Macrosegmentation
Prerequisite: Routed access — Endpoint and policy visibility
Prerequisite: ISE — Microsegmentation

Existing networks

03 — Endpoint and policy visibility
Prerequisite: ISE — Macro and microsegmentation
Prerequisite: L2 or routed access

04 — Macrosegmentation
with Layer 2 switched access — Endpoint and policy visibility
Prerequisite: ISE — Microsegmentation

Full SD-Access

Management and Operations Systems

Private Networks

Voice

"The Internet"

Cloud Services

IPTV

Multiservice Access System

xDSL

T1 / HDSL

SONET

xDSL

GE / 10 GE

G.fast

GPON

Passive Splitter

Source: Calix

WHAT SD ACCESS HAS TO OFFER

TRAFFIC PATTERNS AND THE ENHANCEMENT OF VISIBILITY INTO ENDPOINTS:

To group, identify and profile endpoints AI/ML techniques telemetry sources and Deep Packet Inspection are used by Al endpoint analytics.

To invigilate the flow of traffic among several groups and help fine-tune and drawdown policies, group-based analytics are available.

## A CONTINUAL AUTHENTICATION OF TRUST:

SD-Access promises the insurance of trust that is established throughout the time frame of endpoint connections by the original tenets, unlike the traditional approaches that trust everything in the corporate network.

GRANULAR SEGMENTATION; MULTILEVEL:

With the help of Cisco DNA Center, SD-Access at a higher level can create a digital shield over the physical infrastructure that lays beneath. Also, without regard to its topology, it segments the network.

SOFTWARE DEFINED NETWORKING
THE THREE MAIN COMPONENTS

Application Layer

Control Layer

Infrastructure Layer
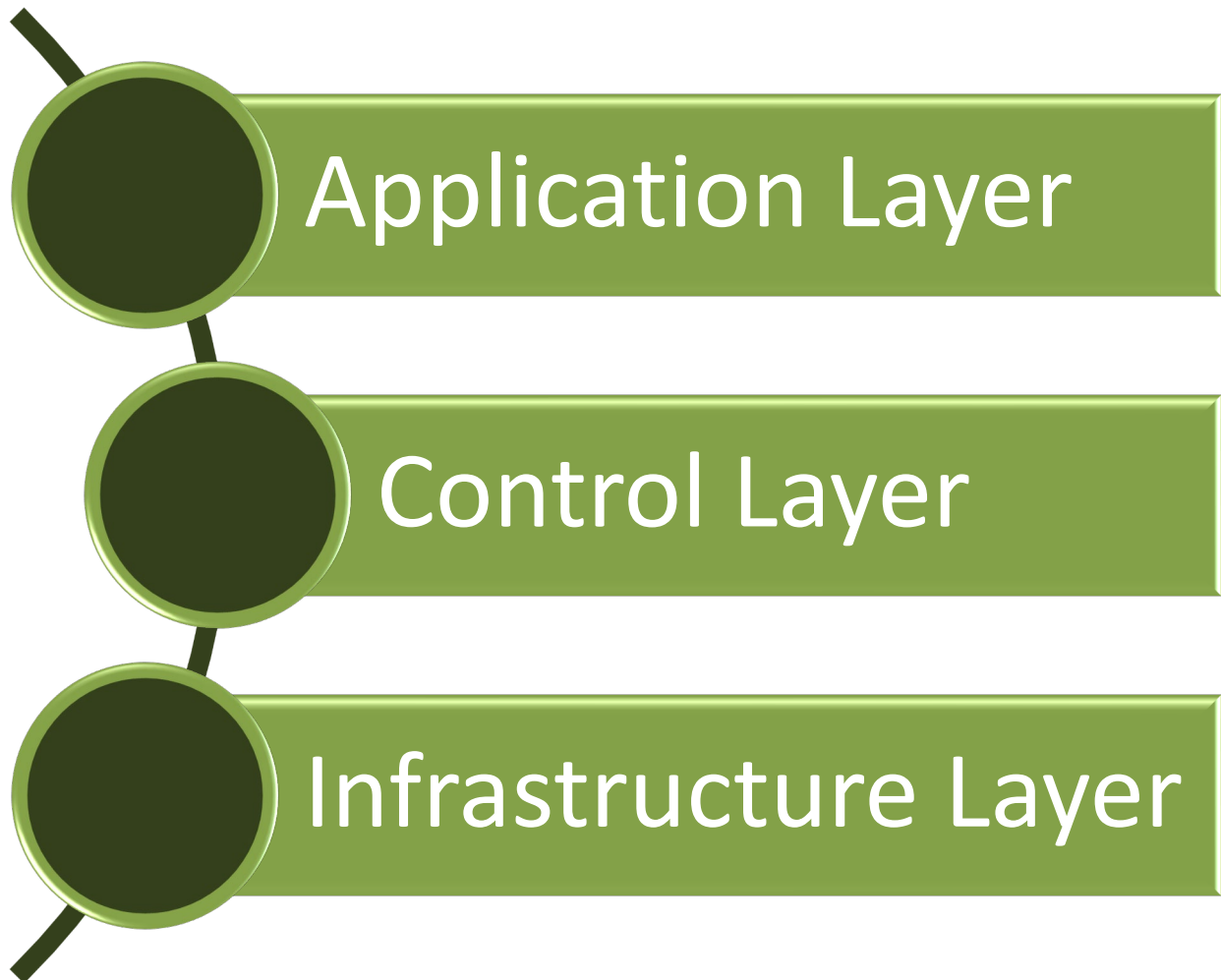
Software-defined networking (SDN) is a network architectural model that allows programmatic management, control, and optimization of network resources

SDN decouples network configuration and traffic engineering from the underlying hardware infrastructure, to ensure holistic and consistent control of the network using open APIs

BENEFITS OF SD ACCESS

GROUPING, IDENTIFYING, AND PROFILING ENDPOINTS:

SD Access inspects the traffic flow between groups and suggests effectual access policies. It also uses Al- and ML-based advanced analytics for grouping and identification of endpoints.

VERIFYING TRUST AND ANALYZING ENDPOINT BEHAVIOR:

SD-Access constantly inspects endpoint behavior, scans for weaknesses, and keeps on verifying their worth of trust for continuous access

THREAT SOLVING AND PREVENTION OF DATA BREACH:

SD-Access gets rid of a louse or compromised endpoints, amplifies regulatory regime, and lessens the zone of trust

SEGMENTED NETWORKS BASED ON DEFINED POLICIES:

For a more constructive multilevel segmentation, SD-Access applies group- based policies. These policies lead to zero-trust security.

WHAT WE HAVE TO GIVE?

Kick start your trip to a digital-ready network by availing of Cisco Software Access Network Services.

To help you achieve a modernized operational model over all wired and wireless environments, Cisco services present to you with professional guidance from the expertise and that too at a very low cost.

Cisco services work along with you on your Cisco SD-Access solutions so it becomes easier for you to manage, secure, and scale by using upgraded tools, years of experience, and best practices.

Very confidently and with great ease you can shift to a very safe and automated unified network by picking up from a vast variety of services that include implementation, optimization, technical and advisory services