CISCO

Cisco DNA Licensing in a nutshell

Wireless, Switching and Routing

Two years!

As of January 2021

Overview

- Quick example of Cisco DNA Licensing from January 28, 2021

- Details of specifics in bands may have changed since January 28, 2021

- Cisco is continuing to evolve our licensing to meet the needs of industry, as such details in these slides may have changed with respect to the included features of a license band, notably the addition of new features through Cisco innovation and acquisition.

- The GEMSS Agreements included the Advantage level software on all new purchases, and upgrading of existing, eligible hardware to the DNA Advantage

- The cancelation of not extending the subscription, features included in the subscription are no longer valid to use.

- Software maintenance cost is provided for the subscription features, in that subscription, and in SmartNet for the perpetual software.

- Hardware maintenance cost is a separate contract inside GEMSS

Example

- C9300-NW-A-48
  - The perpetual license on a Catalyst 9300 for Network Advantage.

- C9300-DNA-A-48
  - The subscription to DNA Advantage for the switch

- C3650_24_lpbase
  - The perpetual license on a Catalyst 3650.

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How this shows in MCE

- Not included in this deck

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Cisco DNA Licensing Overview

Wireless	Switching	SD-WAN and Routing

Replaced with Expansion Packs

Cisco DNA Premier	**Cisco DNA Premier**	**Cisco DNA Premier**
ISE Base + ISE Plus, Cisco DNA Spaces Extend, Cisco DNA Advantage	StealthWatch, ISE Base + ISE Plus, Cisco DNA Advantage	Cisco Umbrella Insights, Cisco Threat Grid, Cisco DNA Advantage
Cisco DNA Advantage	**Cisco DNA Advantage**	**Cisco DNA Advantage**
Assurance and Analytics, Advanced Automation, Cisco DNA Spaces See, aWIPS, Cisco DNA Essentials	SD-Access, Assurance, Analytics, Security, IoT, Telemetry, Visibility, Cisco DNA Essentials, Cisco Prime Infrastructure	Cloud OnRamp for IaaS & SaaS, vAnalytics, Cisco Advanced Malware Protection, DNA Essentials
Cisco DNA Essentials	**Cisco DNA Essentials**	**Cisco DNA Essentials**
Base automation and management, Cisco Prime Infrastructure	Centralized management, Base automation and monitoring	Simplified management and security protection, up to a 50 devices overlay
WLCs 3504, 5520, 8540, 9800s and Access Points	Cisco Catalyst 2000, 3000, 4000, 6000, 9000, CDB, IE 3300, IE 3400(H), IE 4000, IE 5000	Integrated Services Routers, ASR 1000, vEdge, ENCS, C8000
Access		WAN

Wireless

Wireless (IOS-XE/AireOS): Advantage vs. Essentials

Exclusive features for C9800s and/or C9100s APs

*Beta
**Future (originally 17.3.1)

Advantage

Cisco DNA Advantage (Inclusive of Essentials)
IOS XE/AireOS

3 to 7 Years Term

Advanced Automation
- Location Plug and Play
- Automated ISE integration for guest
- SD-Access
- Policy-based Automation
- Guest Shell *

Enhanced Security & IoT
- Encrypted Traffic Analytics
- Advanced wIPS
- 3rd Party integration
- Programmability

Policy Based Workflows
- EasyQoS configuration
- EasyQoS monitoring

Element Management
- Patch Lifecycle Management

Advanced Features
- Layer 1 Fingerprinting**
- Docker Container Support**
- User Defined Network

Assurance and Analytics
- Proactive Issue Detection and Guided Remediation
- Apple and Samsung Insights
- Aironet Active Sensor Tests
- Application performance (Packet Loss, Latency and Jitter)
- AI Network Analytics
- App 360, AP 360, Client 360 and WLC 360
- SD-Access (Policy-based) Assurance
- Client Location Heatmaps*
- Custom Reports**
- Intelligent capture
- Spectrum Analyzer

Network Advantage (Inclusive of Essentials)
IOS XE/AireOS

Perpetual

High Availability & Resiliency
- ISSU*, Process Restart,
- Rolling AP Upgrades,
- Patching (CLI)
- AP service pack/AP device pack

Flexible Network Segmentation
- VXLAN

Essentials

Cisco DNA Essentials
IOS XE/AireOS

3 to 7 Years Term

Basic Automation
- PnP Application
- Network Site Design and Device Provisioning

Element Management
- Software Image Management
- Discovery, Network Topology
- AVC

Telemetry
- Flexible NetFlow

Basic Assurance
- Health dashboard (Network, Client and Application)
- AP floormap and Coverage map
- Pre-defined Reports
- PSIRT Compliance

Base Security
- Rogue Detection on DNA-Center

Support for public cloud

Network Essentials
IOS XE/AireOS

Perpetual

Essential Capabilities
802.1x authentications, Guest access, device onboarding, Infra and client IPv6, ACLs, QoS, Videostream, PnP, Smart defaults, RRM, Spectrum intelligence, BLE, Zigbee, USB, TrustSec SXP, SSO, N+1, WPA3, 802.11ax

Advanced Features
Dynamic QoS, AVC, VXLAN (AireOS only), Analytics, APeX, Umbrella Connector, TrustSec, Rogue management and detection on controller, Apple and Samsung Innovations, FRA, ClientLink, ClearAir Advanced, NG-HDX, Predictive/Proactive RRM , Airtime Fairness

DevOps Integration
- PnP Agent
- NETCONF, RESTCONF**, gNMI,
- Yang Data Models
- GuestShell (On-Box Python)

Federal Certifications
- FIPS, CC, UCAPL, USGV6

Open Programmability
- Embedded Event Management (EEM)

IoT Optimized and Security
Identity PSK, Enhanced Device profilers, mDNS, IPsec, wIPS

▪ Entitlement for the underlined features includes management through Cisco DNA Center and on-box use of them

Switching

Catalyst 9000 Switches – C9200 to C9600

Advantage

Cisco DNA Advantage (Inclusive of Essentials) — IOS XE

3 to 7 Years Term

Advanced Automation
- SD-Access
- Application Policy
- Encrypted Traffic Analytics*/++
- Cisco DNA Service for Bonjour*
- Third-party App Hosting*
- Guest Shell~
- Full LAN Automation
- Embedded Wireless Controller for non-SDA

Element Management
- Patch Lifecycle Management

Assurance & Analytics
- Global Insights, Trends, Compliance, Custom Reports
- Switch 360 & Wired Client 360
- SD-Access and Switch Insights
- Application Health*, Application 360*, Performance (Loss, Latency, Jitter)
- AI Network Analytics

Telemetry & Visibility
- ERSPAN*
- AVC (NBAR2)***/++
- Wireshark~

Essentials**

Cisco DNA Essentials — IOS XE

3 to 7 Years Term

Basic Automation
- PnP Application
- Basic LAN Automation
- Embedded Event Manager

Element Management
- Software Image Management
- Discovery, Inventory, Topology

Basic Assurance
- Health Dashboards – Network, Client, Application
- Basic Switch & Wired Client Health Monitoring
- PSIRT Compliance

Telemetry
- Full Flexible NetFlow

Network Advantage (Inclusive of Essentials) — IOS XE

Perpetual

Enhanced Security Controls
- MACsec-256*, Umbrella Connector

IoT & Mobility
- CoAP*, AVB*/+++, PTP*

Full Routing Functionality
- BGP*, HSRP, OSPF, IS-IS, EIGRP, GLBP*

Network Segmentation
- VRF, VXLAN, LISP, SGT, MPLS*, NAT

High Availability & Resiliency
- NSF*, GIR, StackWise Virtual+, Quad Supervisors+++, ISSU++/eFSU*/xFSU*, Patching (SMUs)*
- Breakout interfaces (C9600)

Multicast
- MSDP, mVPN*, AutoRP, PIM-BIDIR

Network Essentials — IOS XE

Perpetual

Essential Switch Capabilities
- Layer 2, REP
- Routed Access (RIP, EIGRP Stub, OSPF [1000 routes])
- PBR, PIM Stub Multicast (1000 routes)
- PVLAN, VRRP, PBR, CDP, QoS,
- FHS, 802.1x, CoPP, SXP, IP SLA Responder, SSO*, MACSec-128
- Cleartag MACSec, Fast Software Upgrade
- Flexlink plus**/***
- StackWise physical stacking (9200[L]/9300[L])

DevOps Integration
- NETCONF, RESTCONF, gRPC
- Yang Data Models
- Guest Shell (On-Box Python)~
- PnP Agent, ZTP*
- OpenFlow

Telemetry & Visibility
- Model-driven Telemetry
- Sampled NetFlow
- SPAN, RSPAN

- Catalyst 9000 switching HW **includes** the **Perpetual** Network Stack - **Network Essentials** or **Network Advantage**
- **Mandatory** to **attach Cisco DNA License** when ordering Catalyst 9000 switches
- The Catalyst 9600 **is only available with Cisco DNA Advantage or Premier.**
- Quad Sup for **Catalyst 9400**s is EFT in 17.2.1 and GA 17.4.1. **AVC + ETA** to work together from 17.3.1.
- The **Catalyst 9300B**s will double their Lookup Table scalability with Cisco DNA Advantage
- Entitlement for the underlined features includes management through Cisco DNA Center and on-box use of them. Check "Switching III" Q&A

* Not available on Catalyst 9200/L Series Switches
** Not available on Catalyst 9600 Series Switches
*** Not available on Catalyst 9200L, nor 9500H
\+ Catalyst 9400/9500/9600 Series switches only
++ Roadmap for Catalyst 9600 Series Switches
+++ Not available on Catalyst 9400 Series Switches
~ Not available on Catalyst 9200L Series Switches

Routing

Capabilities for Management through Cisco DNA Center

Only for IOS-XE software. Network stack capabilities apply also if the routers are used without Cisco DNA Center for management

* WAAS RTU for both SD-WAN & IOS-XE Image

Advantage

Cisco DNA Advantage (Inclusive of Essentials)   IOS XE

3 to 7 Years Term

Automation
Application Policy, Policy based QoS Automation, SWIM (Patching), SD Bonjour, Reporting (Tableau), ETA

Optimized Telemetry & Visibility
AVC (NBAR2)

IWAN
IWAN Application

Branch Virtualization
3rd party VNF orchestration, Backup/Snapshot/Restore, Stateful High Availability, Clustering

Assurance
Router 360, ENFV 360, Router underlay insights, ENFV Insights, 360 pages, Health score, Time Travel, Correlated Insights, Neighbor topology, Path trace, KPIs, Baselining, Trends, Application Experience and Performance, SDA, WiFi KPIs etc.)

Network Advantage (Inclusive of Essentials)   IOS XE

Perpetual

Overlay Technologies
MPLS, VPLS, LISP, VXLAN, LNS, OTV, EVC, OAM, multicast

Security
MACSEC-256, ALG for ZBFW, VASI, TrustSec (SGT, SGACL), SDA border, SDA Control Plane, VRF segmentation, DMVPN (Hub & Spoke, Full Mesh), L2TP

Unified Communication
SRST, Support for Voice Modules

WAN Optimization
Cisco WAAS RTU (2500 ISR-WAAS & 6000 vWAAS RTU)*

Cisco Innovation
SMU Patching, SGTs, ETA, ISSU, mDNS Bonjour, EPC

Essentials

Cisco DNA Essentials   IOS XE

3 to 5 Years Term

Automation
Inventory, Discovery, Topology, Software Image Management, Site Automation, Network Settings, Device Credential Update, Integrity Verification, Template Programmer, Pre-Defined Reports, PnP Application

Application Visibility
name, throughput

Advanced Telemetry and Visibility
Full Flexible NetFlow, Embedded Event Management

Branch Virtualization
NFV provisioning on ENCS and UCS-E, Cisco VNF orchestration (ISRv, vEdge, vASA, NGFW and vWAAS)

Router Deployment
Day 0 and Day 2 Changes

Assurance
Router Monitoring (Basic)
VNF monitoring (ISRv, vWAAS), ENFV (ENCS, UCSE), Dashboards (Overall Health, Network Health, Client Health), topology, pre- canned Reports, custom Thresholds, PSIRT Compliance

Network Essentials   IOS XE

Perpetual

Routing Essentials
BGP, OSPF, EIGRP, IGMP, IGRP, ISIS, RIP, VRF-lite, Basic QoS, NAT, LACP

Security
MACSEC-128, ZBFW, PKI, ACLs, Umbrella Connector, Snort IPS, IKE, IPSec, ALG, SSLVPN, TrustSec SXP, GetVPN, FlexVPN, GRE, DMVPN (Hub & Spoke), SSLVPN

Unified Communication
Cube Connector

Router Management
TACACS+, NETCONF, AAA, DNS, DHCP, EEM

Application Experience
HQOS, PfR, PBR, AVC, NBAR, IPSLA, Full Flexible NetFlow

Platforms Supported: ISR 1K (except 1100-4G/-4GLTE/-6G), ISR 4K, ASR 1K, ENCS (ISRv), C8000

Capabilities for vManage or Cisco DNA Center for CSR1000v

For SD-WAN, only XE SDWAN capabilities. For management through Cisco DNA Center or standalone, only IOS XE capabilities

Advantage

Cisco DNA Advantage (Inclusive of Essentials) `XE SDWAN`

3,5,7 Year Terms

SD-WAN Cloud/Analytics
- Cloud OnRamp for IaaS and SaaS
- Automated Service Stitching
- Encrypted Traffic Analytics
- WAN Analytics & Assurance

X-domain Innovations
- Integrated Border for Campus (SD-Access)
- Integration with ACI for Application SLA

SD-WAN Security[1]
- Segmentation (Unlimited VPNs)
- URL Filtering
- AMP and Threat Grid Connector
- Umbrella – Cloud App Discovery
- SSL Proxy
- zScaler API integration

SD-WAN Services
- Web Caching, DRE (inc. SSL proxy)
- Voice Module Integration
- Multicast

Cisco DNA Advantage (Inclusive of Essentials) `IOS XE`

3,5,7 Year Terms

Automation
Application Policy, Policy based QoS Automation, SWIM (Patching), SD Bonjour, Reporting (Tableau)

Optimized Telemetry & Visibility
AVC (NBAR2)

IWAN
IWAN Application

Branch Virtualization
3rd party VNF orchestration, Backup / Snapshot / Restore, Stateful High Availability, Clustering

Assurance
Router 360, ENFV 360, Router underlay insights, ENFV Insights, 360 pages, Health score, Time Travel, Correlated Insights, Neighbor topology, Path trace, KPIs, Baselining, Trends, Application Experience and Performance, SDA, WiFi KPIs etc.)

Network Advantage (Inclusive of Essentials) `IOS XE`

3,5,7 Year Terms

Overlay Technologies
MPLS, VPLS, LISP, VXLAN, LNS, OTV, EVC, OAM, multicast

Security
MACSEC-256, ALG for ZBFW, VASI, VRF segmentation, DMVPN (Hub & Spoke, Full Mesh), L2TPv3, TrustSec (SGT, SGACL), SDA border, SDA Control Plane

Cisco Innovation
SGTs, ETA, EPC, SMU Patching, ISSU, mDNS Bonjour

WAN Optimization
Cisco WAAS RTU[2]

Essentials

Cisco DNA Essentials `XE SDWAN`

3,5,7 Year Terms

SD-WAN Connectivity/Mgmt.
- Cloud or On-Prem Management[2]
- Flexible Topology
  - Hub and Spoke
  - Full Mesh
- App and SLA based policy
- Dynamic Routing(BGP, OSPF)
- VNF Lifecycle Management
- 2 Service VPNs

SD-WAN Security[1]
- Application-Firewall Policy
- Snort IPS with signature updates
- Automated Umbrella DNS Monitoring

SD-WAN Services
- FEC & Packet Duplication
- TCP Optimization

Cisco DNA Essentials `IOS XE`

3, 5, 7 Year Terms

Automation
Inventory, Discovery, Topology, Software Image Management, Site Automation, Network Settings, Device Credential Update, Integrity Verification, Template Programmer, Pre-Defined Reports, PnP Application

Application Visibility
name, throughput

Branch Virtualization
NFV provisioning on ENCS and UCS-E, Cisco VNF orchestration (ISRv, vEdge, vASA, NGFW and vWAAS)

Router Deployment
Day 0 and Day 2 Changes

Advanced Telemetry and Visibility
Full Flexible NetFlow, EM, PSIRT Compliance

Network Essentials `IOS XE`

3,5,7 Year Terms

Routing Essentials
BGP, OSPF, EIGRP, IGMP, IGRP, ISIS, RIP, VRF-lite, Basic QoS, NAT

Security
MACSEC-128, ZBFW, PKI, ACLs, Umbrella Connector, Snort IPS, IKE, IPsec, ALG, SSLVPN, TrustSec SXP, GetVPN, FlexVPN, GRE, DMVPN (Hub & Spoke), SSLVPN

Unified Communication
Cube Connector

Router Management
TACACS+, NETCONF, AAA, DNS, DHCP, EEM

Application Experience
HQOS, PfR, PBR, AVC, NBAR, IPSLA, Flexible NetFlow

[1] SD-WAN Security is not available in Public Cloud deployments
[2] WAAS RTU for both SD-WAN & IOS-XE Image

! 7-years terms options have not been confirmed