

Software Defined Edge WAN (SDEWAN)

Overview and Roadmap

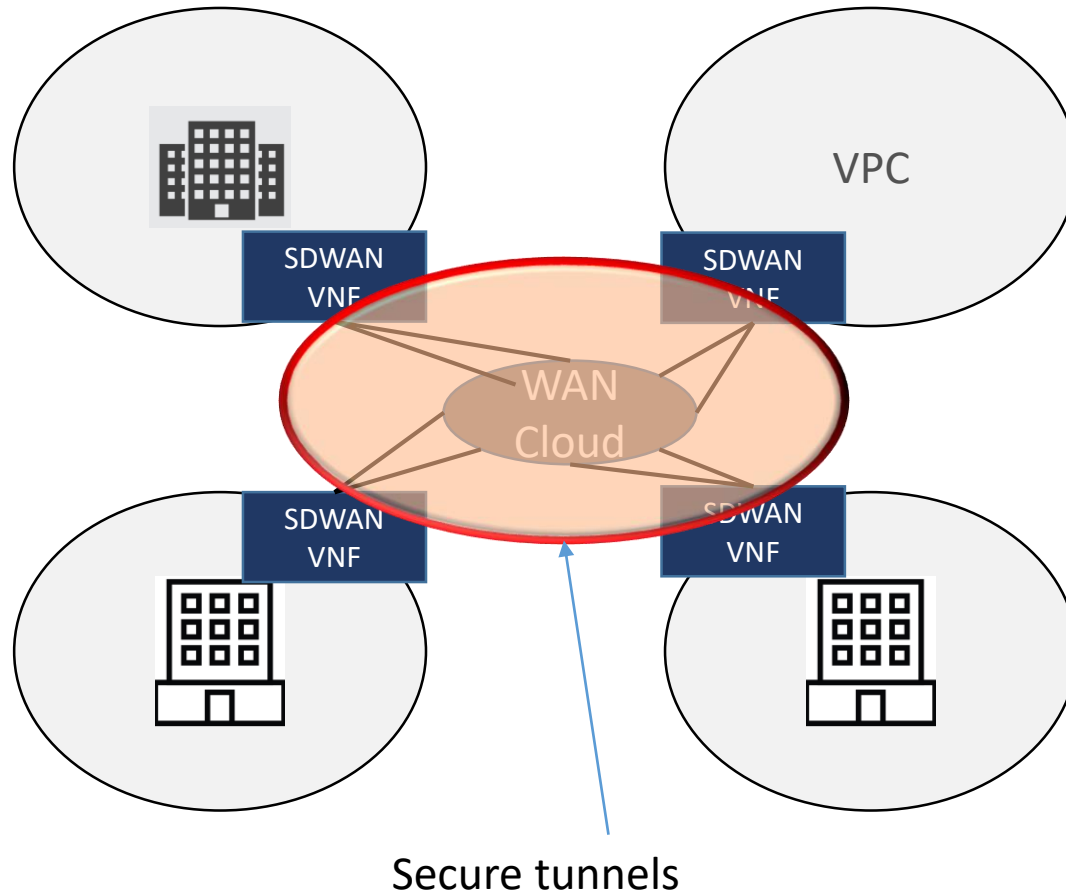
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Agenda

- Background
- Needs
- SD-EWAN overview
- Current status and roadmap

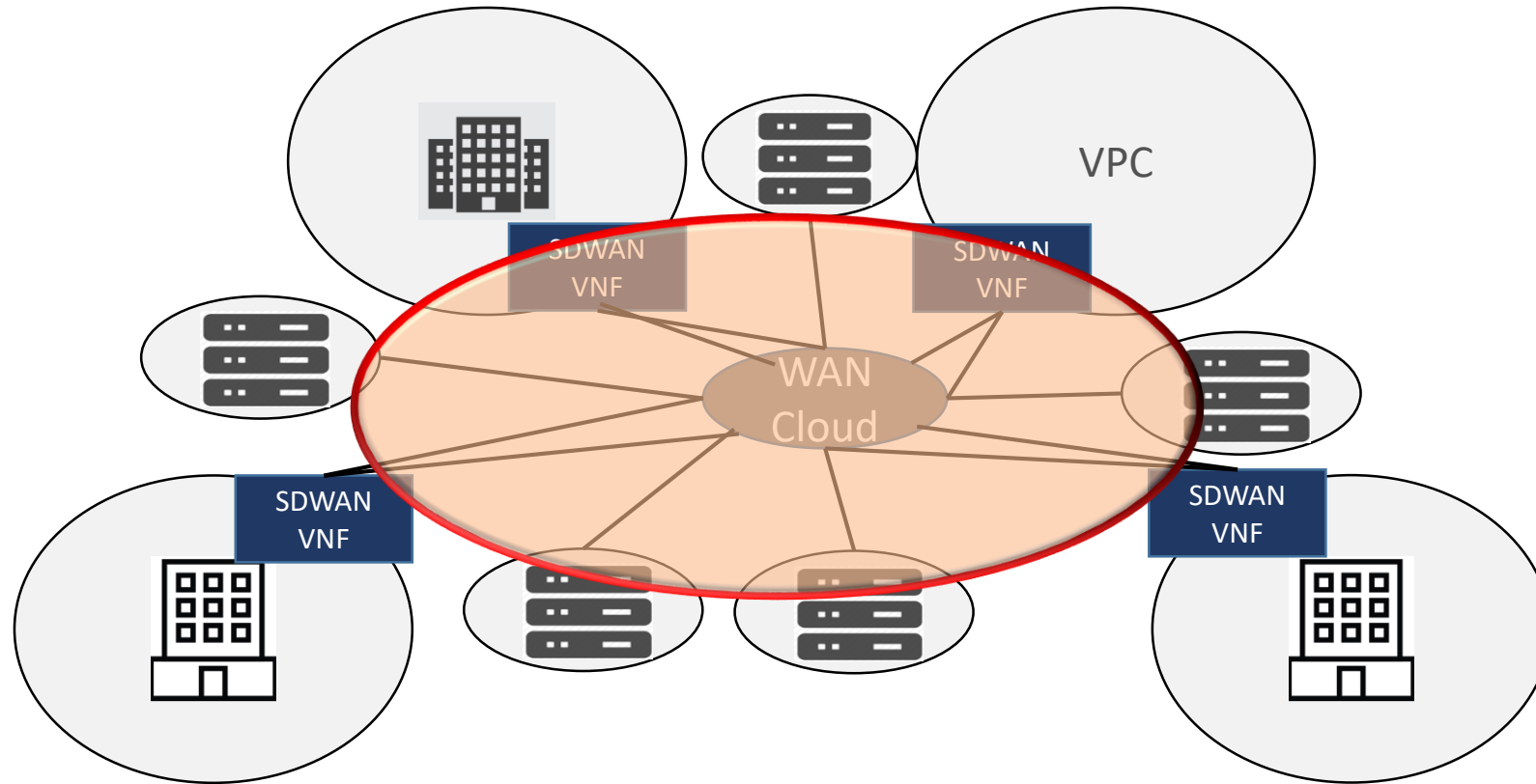
Traditional SDWAN



To Connect multiple office security over public WAN links.

- Multiple WAN Links
- WAN traffic management
- Stateful inspection firewall
- Source and Destination NAT
- Ipv6 based security

Enterprise Edge sites are like any private office But.. With some unique challenges



- Edges are resource constrained
- Edges are cost sensitive
- Edges may not get either static or dynamic public IP addresses
- Edge POD Subnet & Cluster subnet could be overlapping with other Edges
- Edge applications & K8s API server is expected to be reachable from outside (inbound connections)
- WAN links to Edges are bandwidth constrained and susceptible to simple DDOS attacks from Internet

SD-EWAN (Edge first SDWAN) Requirements

Legacy functionality of SDWAN

Multiple WAN link support

WAN traffic management

SNAT and DNAT

Firewall

IPsec

Traffic Shaping

Edge first functionality

Edge Overlays and Overlay IPs : Inbound connection support even with no public IP address

Cloud Native : SDEWAN as CNFs, K8s CRs for configuration

Traffic Sanitization via traffic Hubs : To avoid simple DDOS attacks

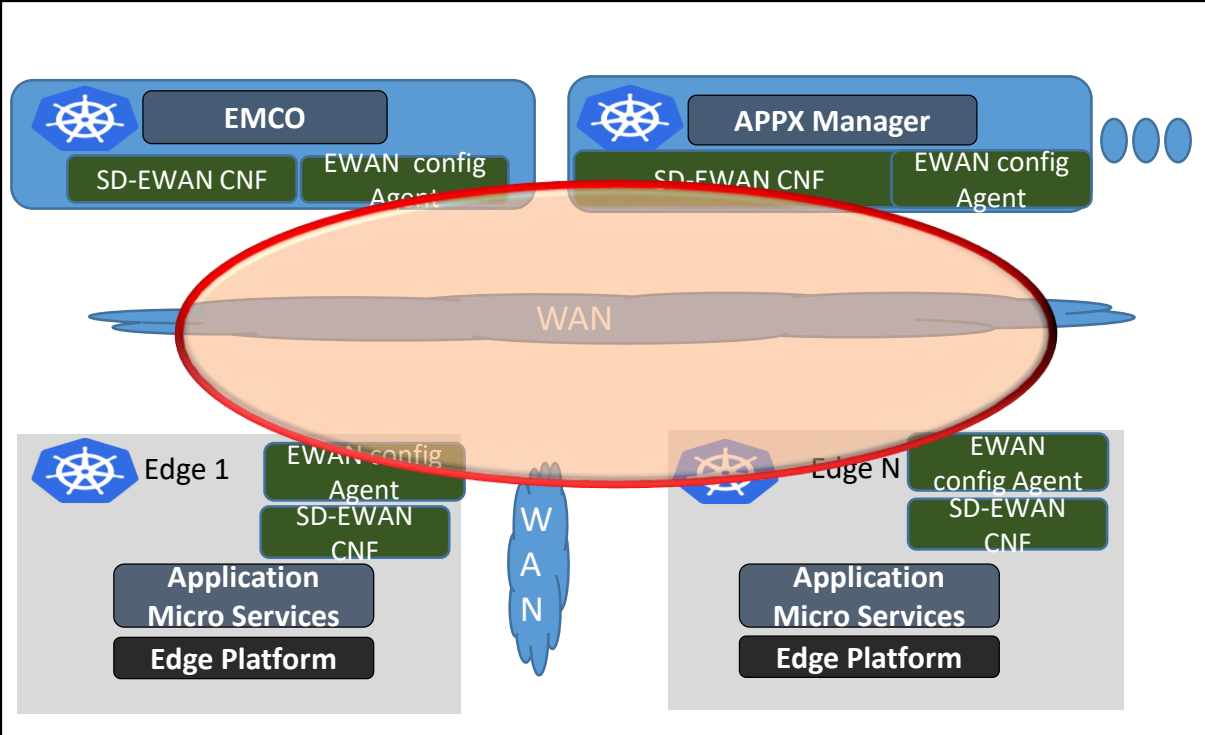
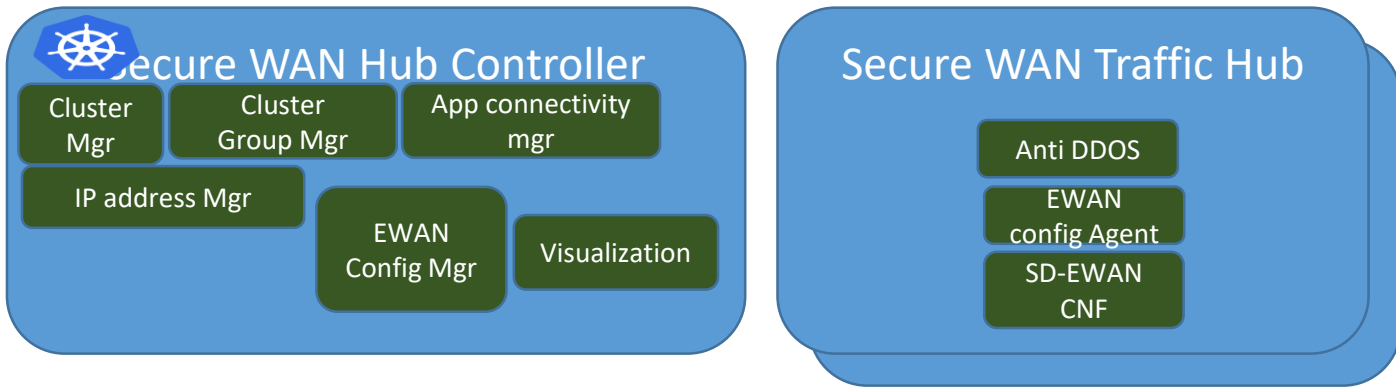
Higher Automation : Automation of overlays, Automation of policies to support dynamic apps

Democratization & Cost : Open source based

Acceleration and Security : Key Security, Crypto and other acceleration for edges

Software Defined Edge WAN

SD-EWAN Solution Proposal (All green items)



SD-EWAN Solution

- OpenWrt user space packages
- Cloud Native
- Zero touch automation
- Solution to all Edge challenges identified
- Centralized controller for configuration
- Traffic Hub for sanitization
- Optimization with Intel IA accelerators and HW RoT.
- No changes to applications
- Supporting both green field and brownfield requirements
- Work with third party SD-WAN VNFs (future)

SD-EWAN Current Status and Roadmap

(Subject to resources availability from Intel & community)

Q2, 2020 (Planned and Resourced)

- Containerization of OpenWrt
- RESTful API
- Cloud Native configuration via K8s CRs for Mwan3, Firewall, SNAT/DNAT and Ipsec
- Optimization with Intel IA accelerators (QAT, AES-NI)
- A platform feature of ICN

Q4, 2020

- Cloud Native configuration for Traffic Control
- Centralized Management for automation (Overlay IP address Management, Restful API)
- Traffic Hub Controller
- Acceleration for private key operations

Yet to planned

- IPv6 support
- Robustness
- Integration controllers with EMCO for supporting dynamic application deployment
- Certificate private key confidentiality via HW root-of-trust
- Making it Smart-NIC/OVS ready
- Third party security tools in Traffic Hub

Q&A