MAIPU SDN

BD-LAN SOLUTION INTRODUCTION

Maipu Communication Technology Co., Ltd.

CONTENTS

01 | MAIPU BD-LAN SOLUTION HIGHLIGHTS

o **Automation**

o **Network Security**

o **Network Insights**

Automation

AUTOMATION: ZERO TOUCH PROVISIONING

Startup file (encrypted)

BD-LAN DHCP Server

BD-LAN Controller

Intranet

1. Connect a cable
2. Power on the device
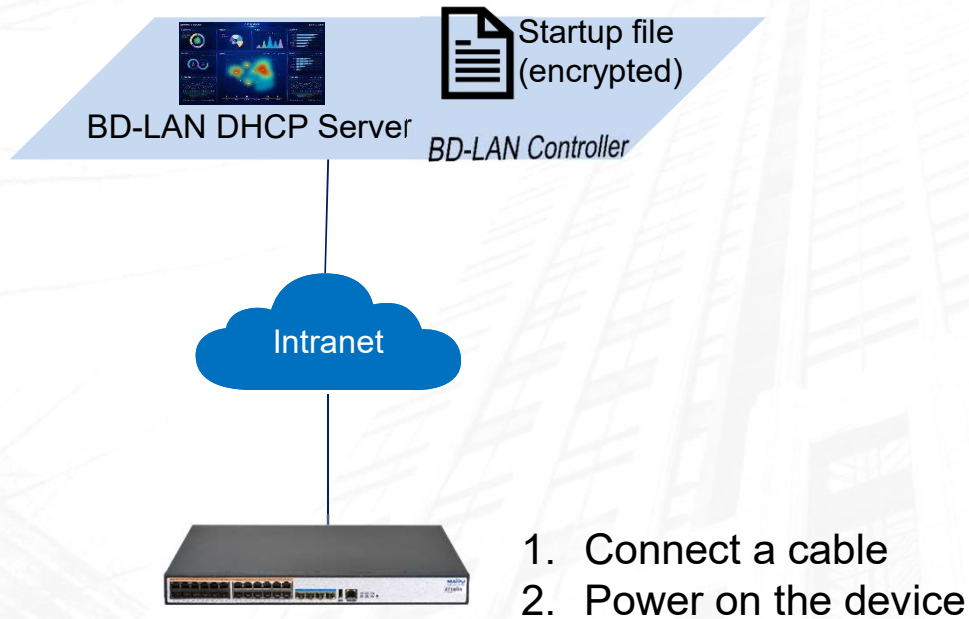
Method 1: ZTP with DHCP Server

copy

Startup file (encrypted)
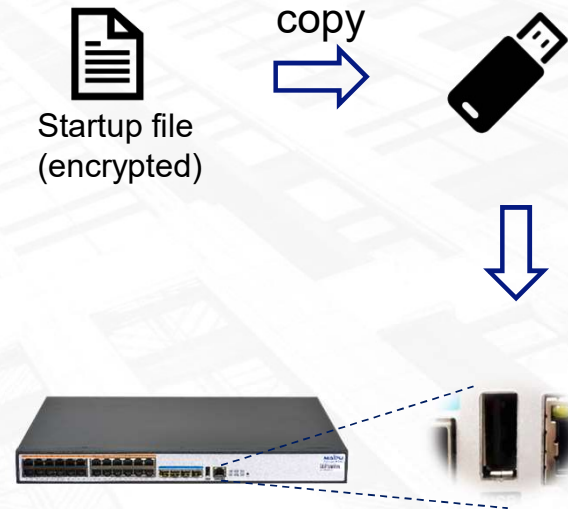
1. Plug in the USB flash driver
2. Power on the device

Method 2: ZTP with USB Flash Driver

AUTOMATION: SERVICE AUTO IMPLEMENTATION

MAIPU MAKE IT INTELLIGENT

1 **Define your services on BD-LAN Controller**

What   **W**here   **W**ho   **W**hen   **H**ow

4W1H

2 **Combination(Auto)**

Services

User Groups

3 **Auto Deployed**

Policies

Locations

Southbound
(NETCONF)

BD-LAN Controller

Spine

Leaf
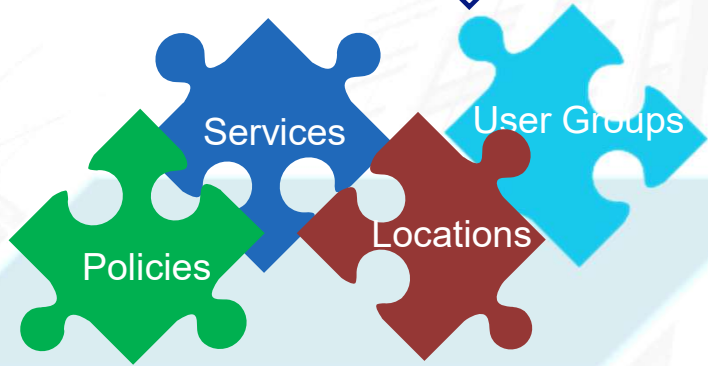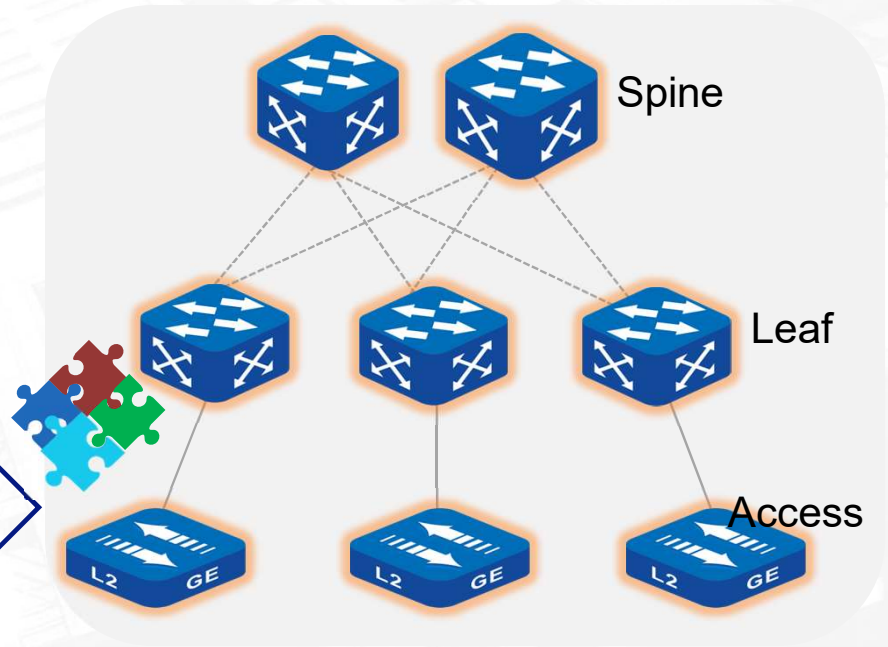
Access

Devices on Sites

AUTOMATION: ONE-CLICK REPLACEMENT

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Spine

Leaf

Access

BD-LAN Controller

✓	Hardware Version Check
✓	Software Version Check
✓	Authorization Check
✓	Replacement Check
✓	Configuration Copy
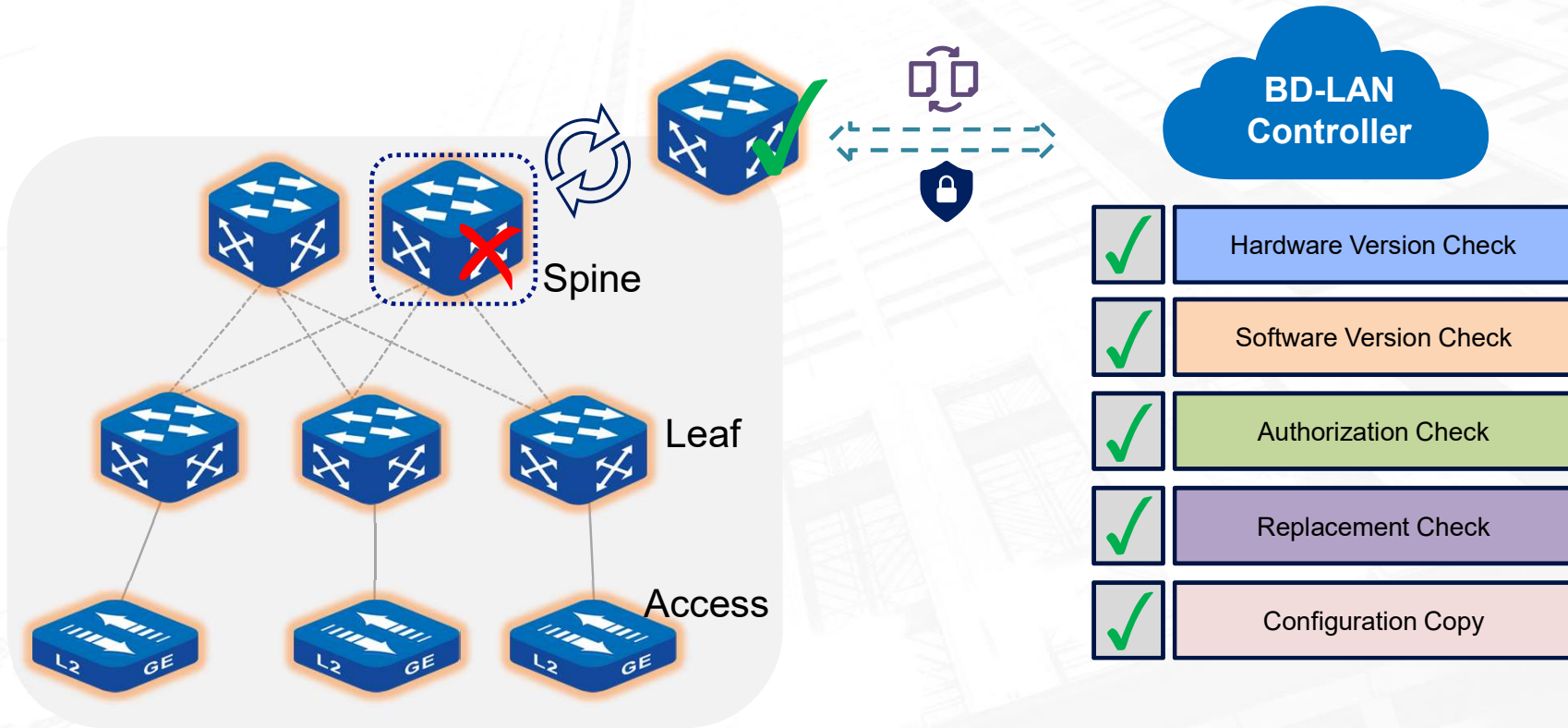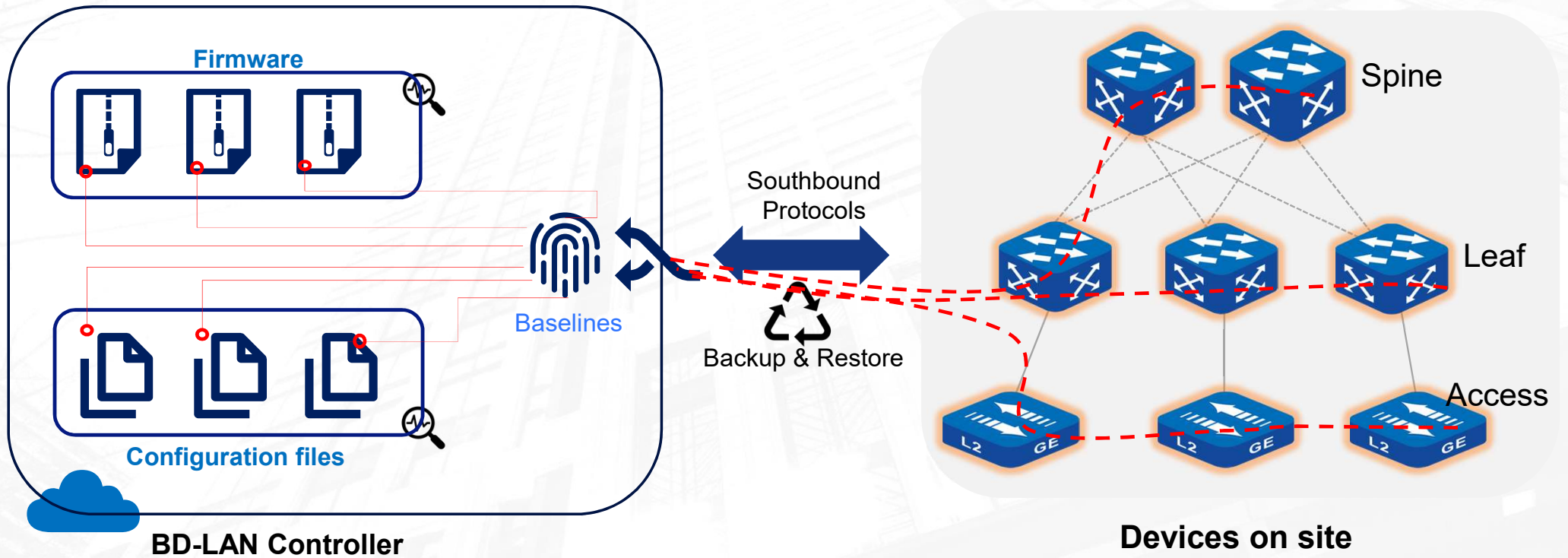
○ **Network Security
(Zero Trust Access)**

Resource Access

BD-LAN Controller

What?

⑥ Successful terminals info are saved into library as baseline.

Who?

When?

Where?

Baseline Library

③ Verify the credential info on Controller Database

ID Card   ID Card   ID Card   ...

Floor 5-6

Floor 3-4

Floor 1-2

Authentication& Authorization

② Sending Auth Request to BD-LAN Controller

④ Send Result back to Access SW.

Location Access

Terminal Access

With ?

How?

① All connected terminals are Un-trusted.

⑤ Network is accessible for the successful terminals.

X   X   X

After Auth Succeeded

V   V

Trusted

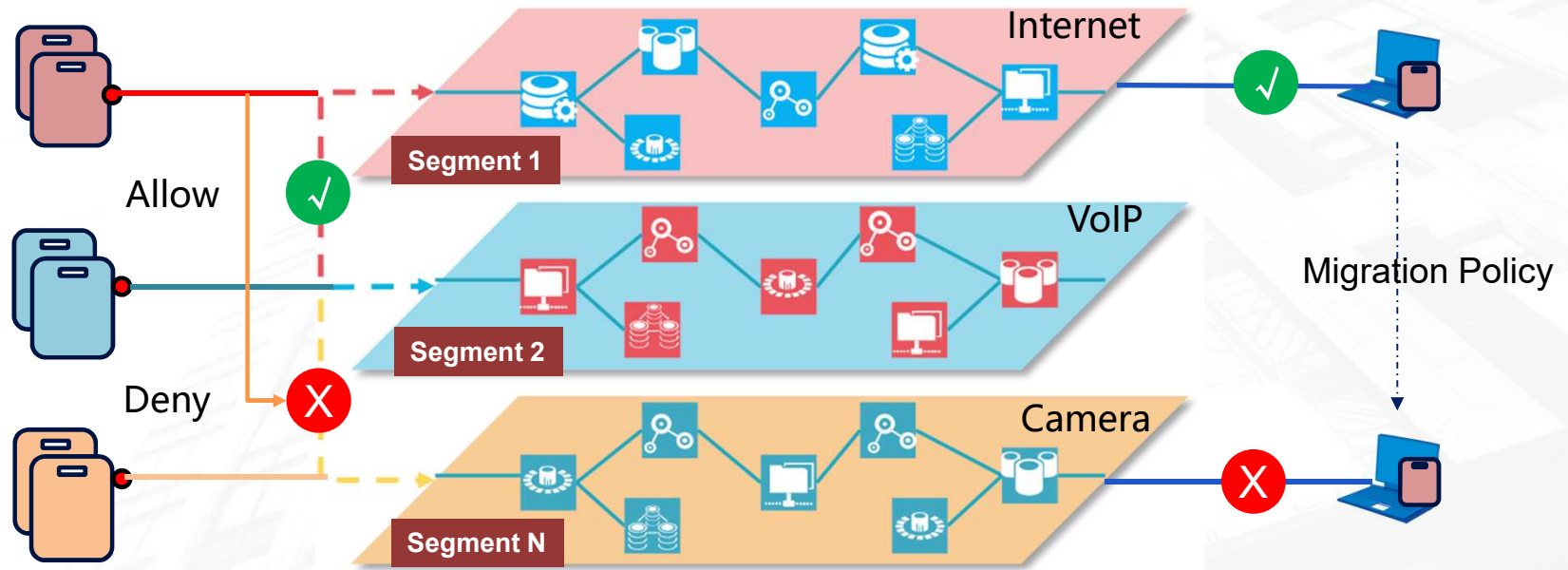# NETWORK SECURITY: ZERO TRUST NETWORK
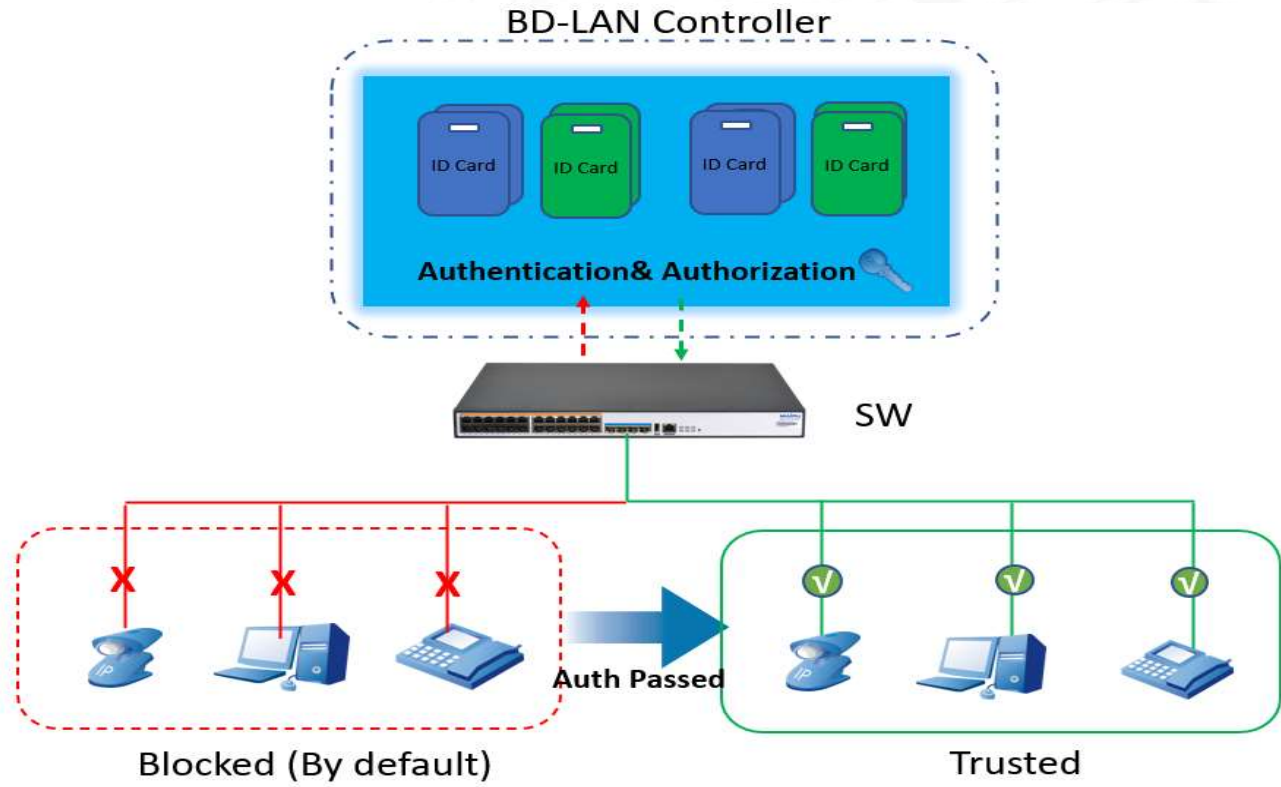
NETWORK SECURITY: SEGMENT NETWORKS

Internet

Segment 1

Allow

VoIP

Segment 2

Deny

Camera

Segment N

Migration Policy

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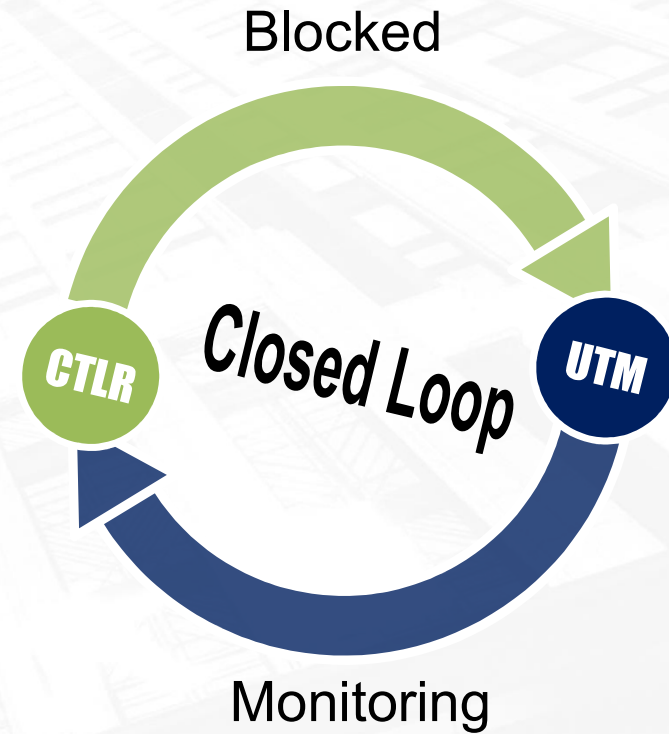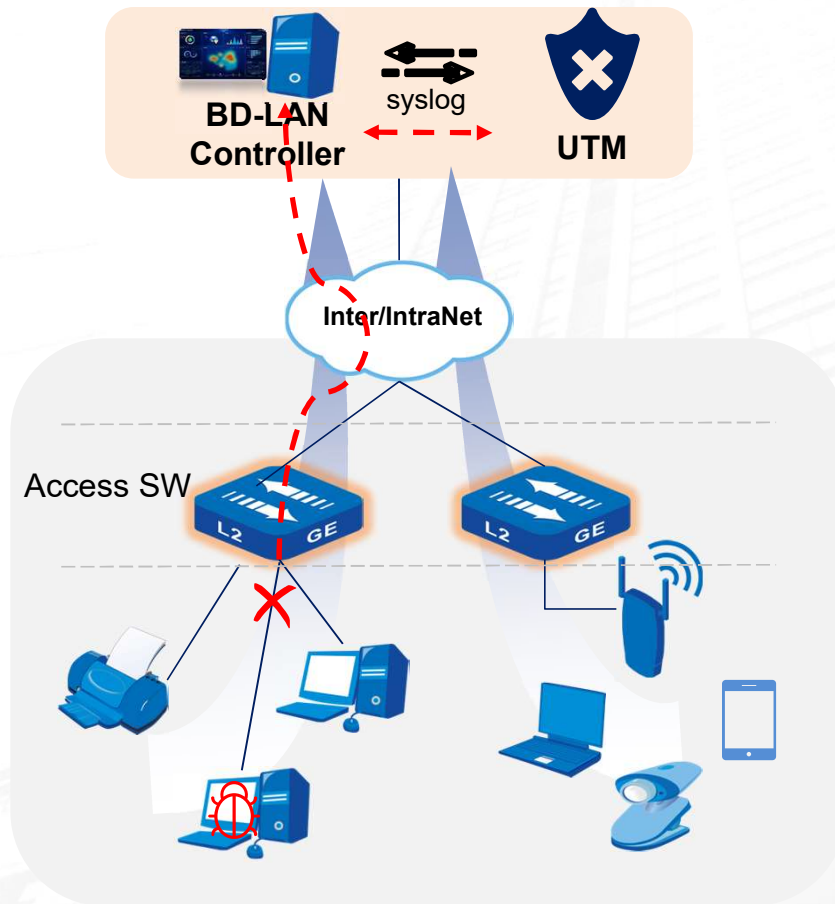
NETWORK SECURITY: FAST WHITE-LIST ACCESS

Controller

WhiteList

3 Add to Whitelist Access

Intranet

Access SW

L2   GE

L2   GE

2 Choose the valid devices

1 All connected terminals will be scanned and listed

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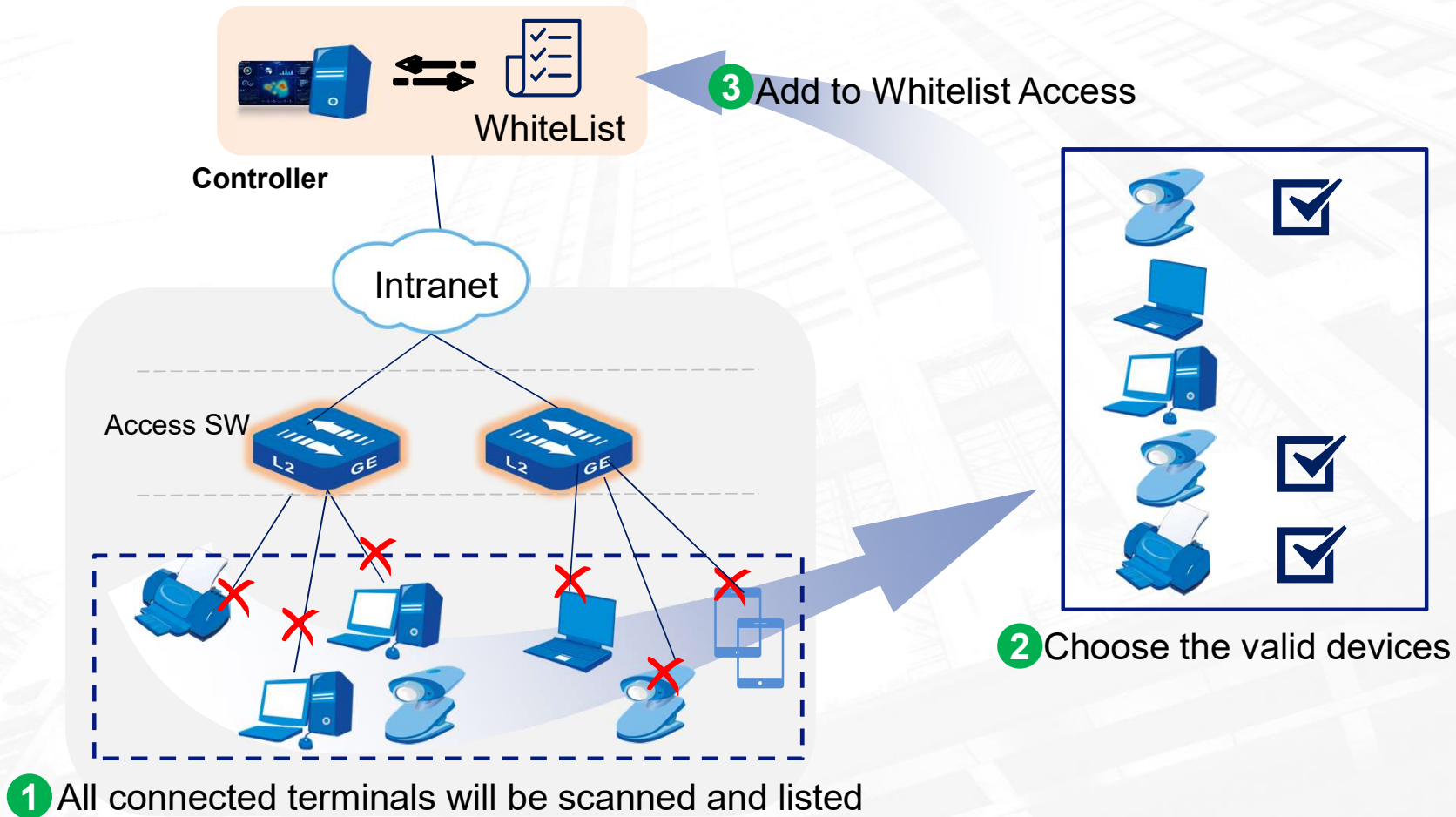
○ **Network Insights**

NETWORK INSIGHTS： FULL-DIMENSION REPORTS

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Dashboard

Dashboard

Time Range | Last Hour ▼ | Query

Applications
13

Terminals
90

Devices
1

Interfaces
4

Flow Alarm
0

Interface Bandwidth Occupied TOP 10

Interface BW Usage

S3330-LAN-VST
127.08KB(2.63%)
S3330-LAN-VST
236.54KB(4.89%)

S3330-LAN-VST
1.46MB(30.97%)

Terminals

Terminal TOP 10

More >>

10.11.12.124
762B(0.12%)
113.96.202.105
762B(0.12%)
199.193.124.172
805B(0.13%)
10.11.12.179
853B(0.13%)
17.57.145.166
1.21KB(0.19%)
10.11.12.112
1.21KB(0.19%)
101.89.15.106
2.93KB(0.47%)
10.11.12.132
3.07KB(0.49%)

172-17.0.10
307.64KB(49.08%)

Terminal

10.11.12.67
307.64KB(49.08%)

S3330-LAN-VST
2.9MB(61.51%)

NETWORK INSIGHTS: SMART MANAGEMENT

IP Management

Network Segment ❓ 45	Total Quantity Of IP 6856	Occupied IP 0	Utilization Rate 0%

Batch Modify

Network Segment/description | Query

	Network Segment ⇕	Total Quantity Of IP ⇕	Occupied IP ⇕	Illegel IP ⇕	Auto Assign IP ⇕	Under Control ⇕	Utilization Rate ⇕	Description ⇕	Operation ☰
☐	10.0.0.0/24	256	0	0	No	Yes	0%		📄 ✎
☐	10.1.1.0/24	256	0	0	No	Yes	0%		📄 ✎

Assets Management

Total Assets 22	Online Assets 7	Offline Assets 15	Stock Quantity 0

Add | Import | Export | Custom Properties | Terminal MAC Merging | Cancel Terminal MAC Merging

Asset Type All ▼ Status All ▼ Name/IP/MAC/User/Asset Number | Query

☐	MAC ⇕	IP ⇕	Asset Number ⇕	Manufacturer ⇕	Type ⇕	Model ⇕	Name ⇕	User ⇕	Location	Access Device	Access IP ⇕	Access Port ⇕	St☰

NETWORK INSIGHTS: MONITORING AND TRACKING

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Alarm Statistics

Alarm Statistics

Creator: admin   Time: 2021-10-26 14:45:39

Alarm Statistics By Type

- VLAN adds port
- OSPF generates new LSA
- Interface link is up
- Interface link down
- OSPF LSA reaches maximu
- Device online
- Device offline
- Cannot access SNMP
- VLAN deletes port
- Others

Others 2(3.28%)
VLAN deletes port 1(1.64%)
Cannot access SNMP 1(1.64%)
Device offline 1(1.64%)
Device online 1(1.64%)
OSPF LSA reaches maximum lifet... 5(8.2%)
Interface link down 6(9.84%)
Interface link is up 8(13.11%)
OSPF generates new LSA 8(13.11%)
VLAN adds port 28(45.9%)

Interface Performance

Interface Performance

Creator: admin   Time: 2021-10-26 14:44:55

Ingress Flow

- Maximum
- Average

KB
1,500 — 1374.09
1,200
900
690.38
600
300 — 276.22 264.1
100.74 97.61 52.09 50.86 49.57 48.42 42.38 41.36 26.38 25.69 1.28 1.28 0 0 0 0
Interface

172.17.0.10/link.a... 172.17.0.11/gigabi... 172.18.0.2/gigabi... 172.17.0.11/gigabi... 172.17.0.10/vlan99... 172.17.9.250/GE0/1 172.18.0.21/vlan10... 172.17.0.10/tengig... 172.17.0.10/null0 172.18.0.21/vlan200

Syslog Tracking

admin	10.11.12.177	user login	2021-10-29 19:21:20	Details	user admin login.
admin	10.11.12.177	delete report task	2021-10-29 11:32:26	Details	user admin deletes the report task,task name：【Wireless User Report】
admin	10.11.12.177	add report task	2021-10-29 11:28:18	Details	user admin adds a report task,task info：task name is 【Wireless User Report】，report type is
admin	10.11.12.177	delete report task	2021-10-29 11:27:52	Details	user admin deletes the report task,task name：【linkcheck】
admin	10.11.12.177	delete report task	2021-10-29 11:27:52	Details	user admin deletes the report task,task name：【traffic monitor】

COMPARISON: BD-LAN VS. CISCO DNA

Features	Maipu BD-LAN*	Cisco DNA
ZTP	✓	✓
Network Design	✓	✓
Device Provisioning	✓	✓
Centralized management	✓	✓
Auto Config file Installation	✓	✓
Auto Firmware Upgrade	✓	✓
End-to-End Segmentation	✓	✓
Terminal Security	✓	✓
Visibility	✓	✓
NetFlow Monitoring	✓	✓

*Maipu BD-LAN solution only requires software license on the controller side;
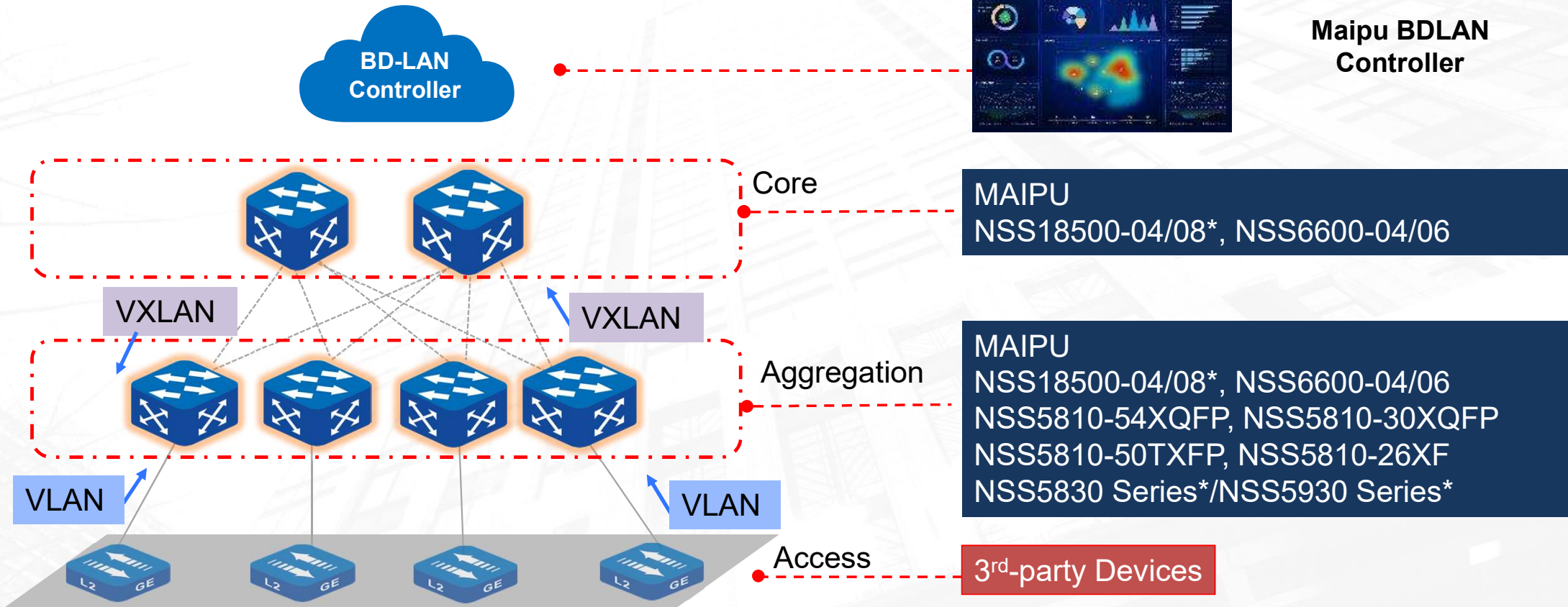
02 | MAIPU BD-LAN PRODUCTS PACKAGES

MAIPU 3-TIER NETWORK STRUCTURE

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BD-LAN Controller

Maipu BDLAN Controller

Core

MAIPU
NSS18500-04/08*, NSS6600-04/06

Aggregation

MAIPU
NSS18500-04/08*, NSS6600-04/06
NSS5810-54XQFP, NSS5810-30XQFP
NSS5810-50TXFP, NSS5810-26XF
NSS5830 Series*/NSS5930 Series*

Access

MAIPU
S4330/S4230/S3330/S3230
NSS4330/NSS3330

L2   GE

* The related models will be supported soon

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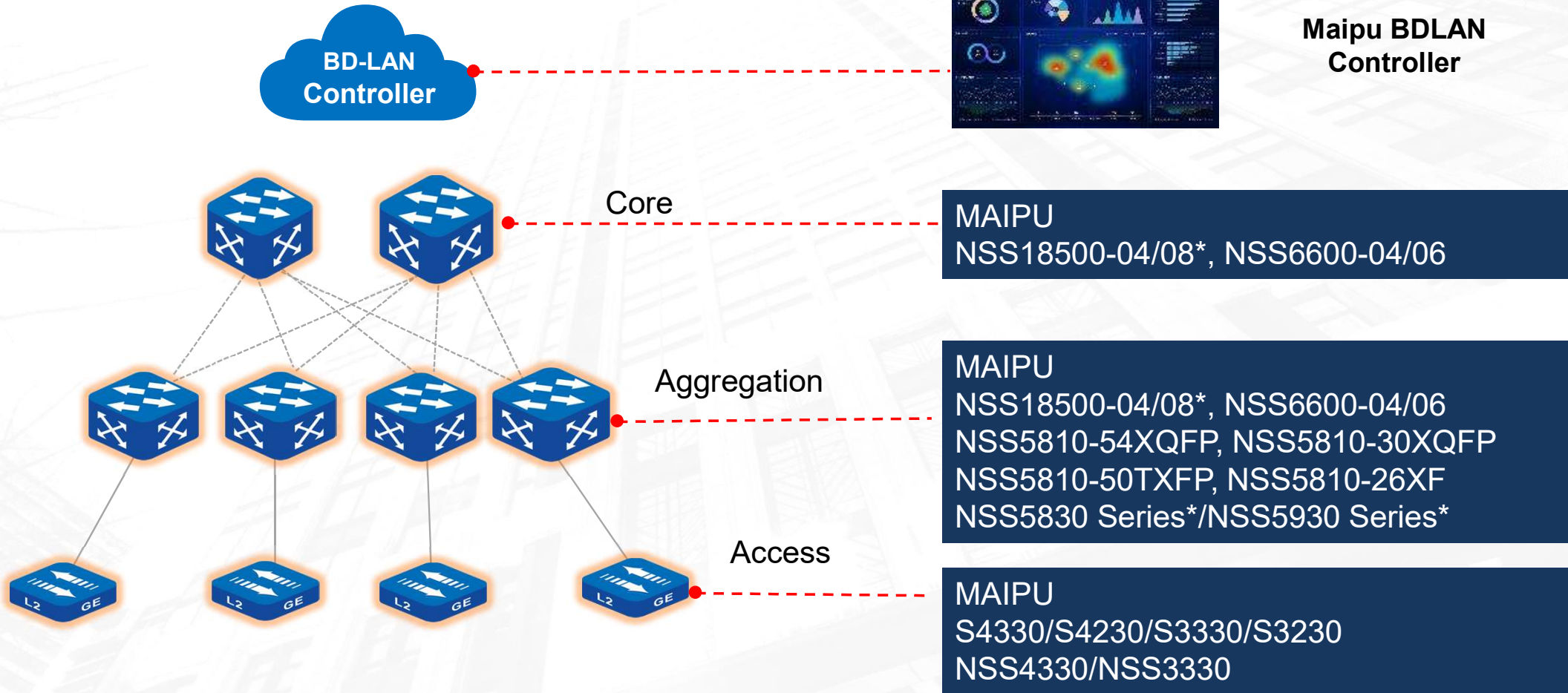
MAIPU CORE & AGGR + 3RD-PARTY ACCESS

BD-LAN Controller

Maipu BDLAN Controller

Core

MAIPU
NSS18500-04/08*, NSS6600-04/06

VXLAN

VXLAN

Aggregation

MAIPU
NSS18500-04/08*, NSS6600-04/06
NSS5810-54XQFP, NSS5810-30XQFP
NSS5810-50TXFP, NSS5810-26XF
NSS5830 Series*/NSS5930 Series*

VLAN

VLAN

Access

3rd-party Devices

* The related models will be supported soon

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MAIPU CONTROLLER & ACCESS SW + 3RD-PARTY

BD-LAN Controller

Maipu BDLAN Controller

Core

3rd-party Devices

(not managed by BD-LAN Controller)

Aggregation

3rd-party Devices

(not managed by BD-LAN Controller)

Access

MAIPU S4330/S4230/S3330/S3230
NSS4330/NSS3330
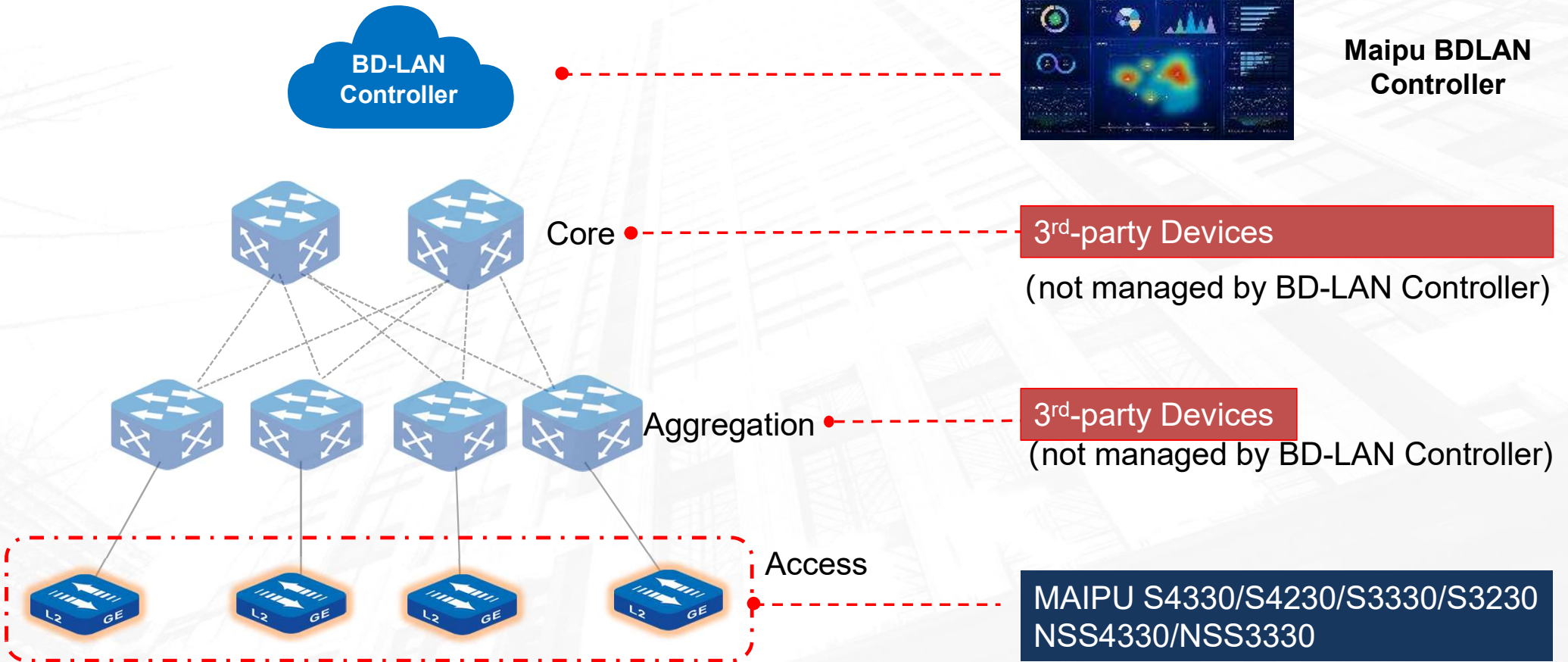
03 | MAIPU BD-LAN TYPICAL SCENARIOS ANALYSIS

SCHOOL NETWORK ANALYSIS
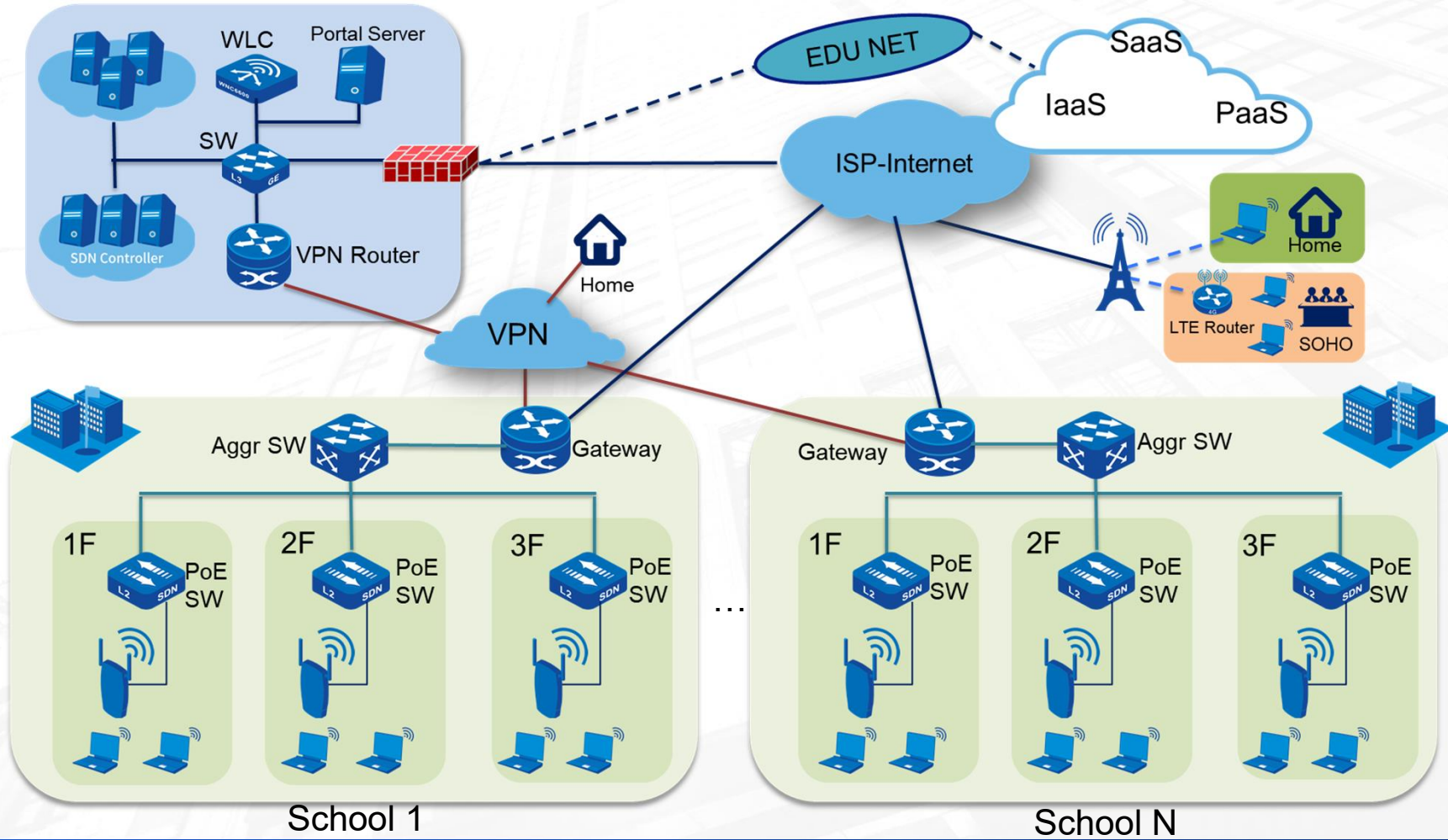
Challenges

- **High OPEX** for Installation

- Long-lasting Deployment Period

- Difficult for **Terminal Monitor** and Management

- **Troubleshooting** Difficulties

Solution with BD-LAN

- **ZTP** for any one to start installation
  - Save OPEX
  - Fast deployment

- **Zero-Trust Access**
  - Auto Segment Networks for Terminals
  - No Access until Authenticated

- Monitor any network changes including network devices and terminals

UNIVERSITY NETWORK ANALYSIS
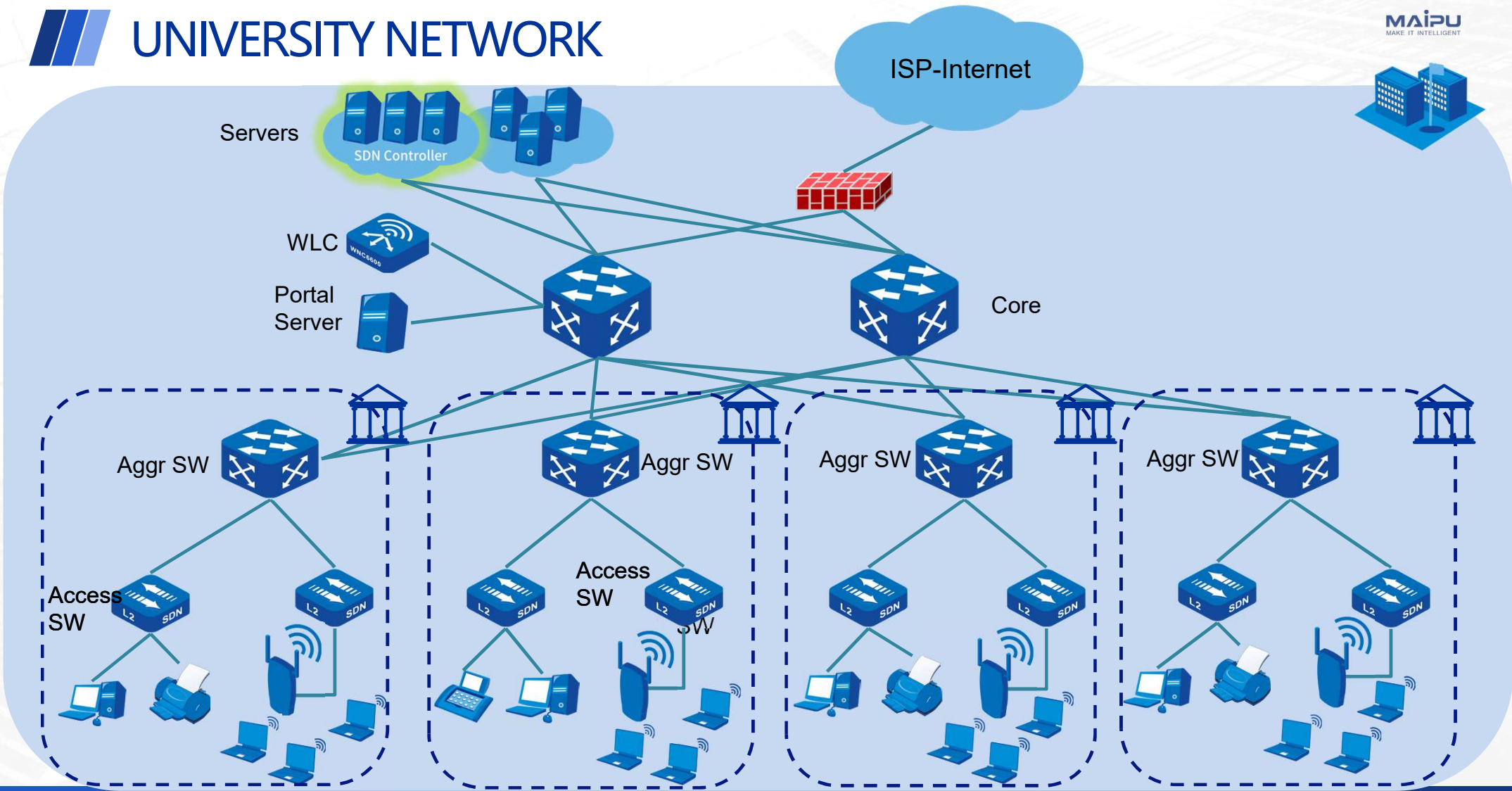
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Challenges

o Users' privilege should **roam easily** wherever they are connected to

o **Huge Mount of Terminals** need to be managed everywhere

o **Network Security** is always a headache for diverse types of terminals

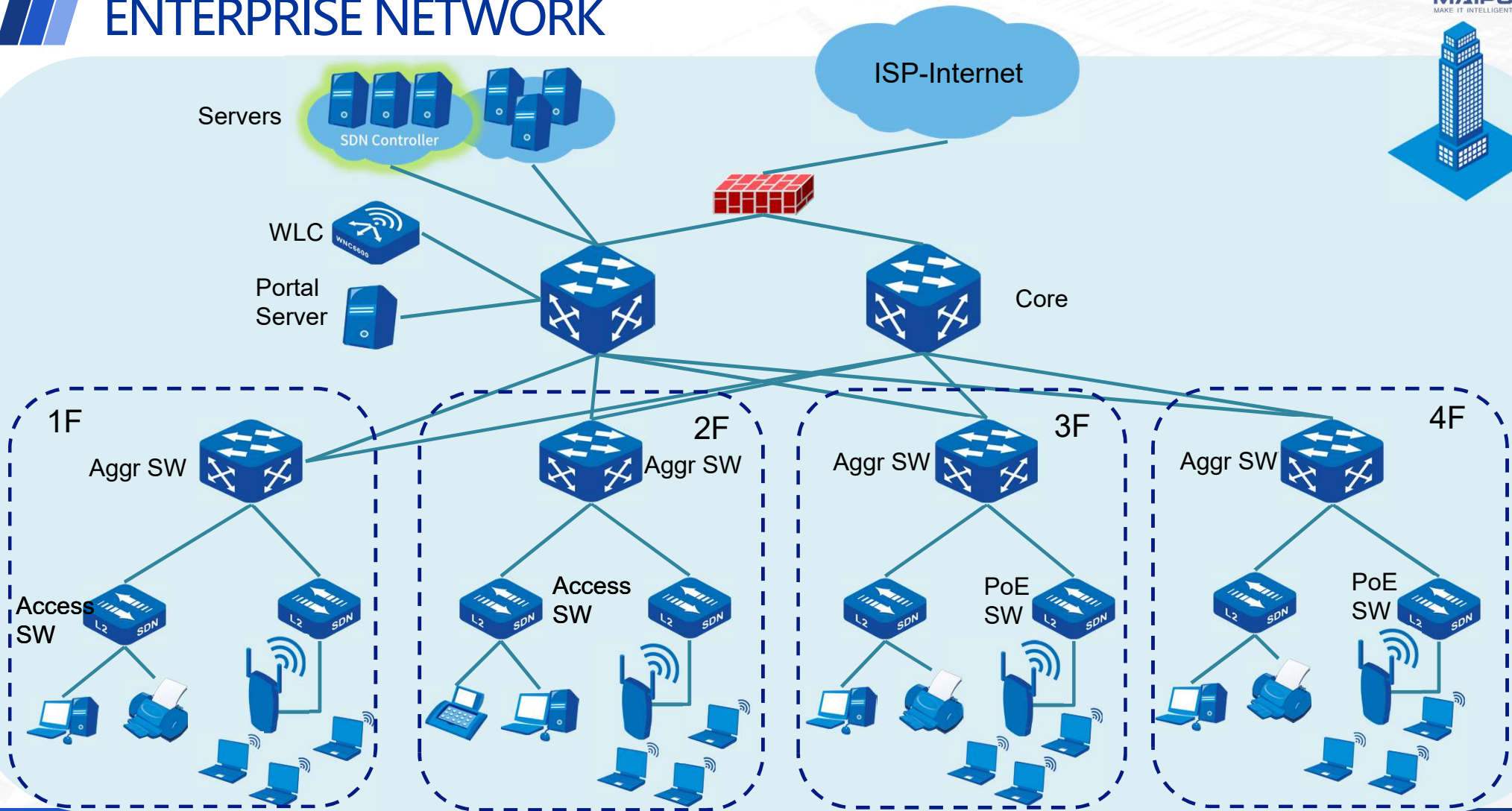o Hard for **Issue Tracing** and Troubleshooting

Solution with BD-LAN

o Flexible **Zero-Trust Auth** to guarantee privileged access anywhere at any time

o **Continuous Security Monitoring** and **auto-block** to those mal-behaved terminals

o Detailed Logs for issue tracing even after long time

ENTERPRISE NETWORK ANALYSIS

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Challenges

o Must wait for **long time** before service can be online

o Employees' **migration control** is always a headache

o **Weak defense** for Enterprise network when attacked internally

o **High OPEX** for maintenance

Solution with BD-LAN

o **Auto Service Provisioning** for fast service online

o **Close-loop security** monitoring and auto-block

o **One-click replacement** and auto firmware/configs management

BANK NETWORK ANALYSIS
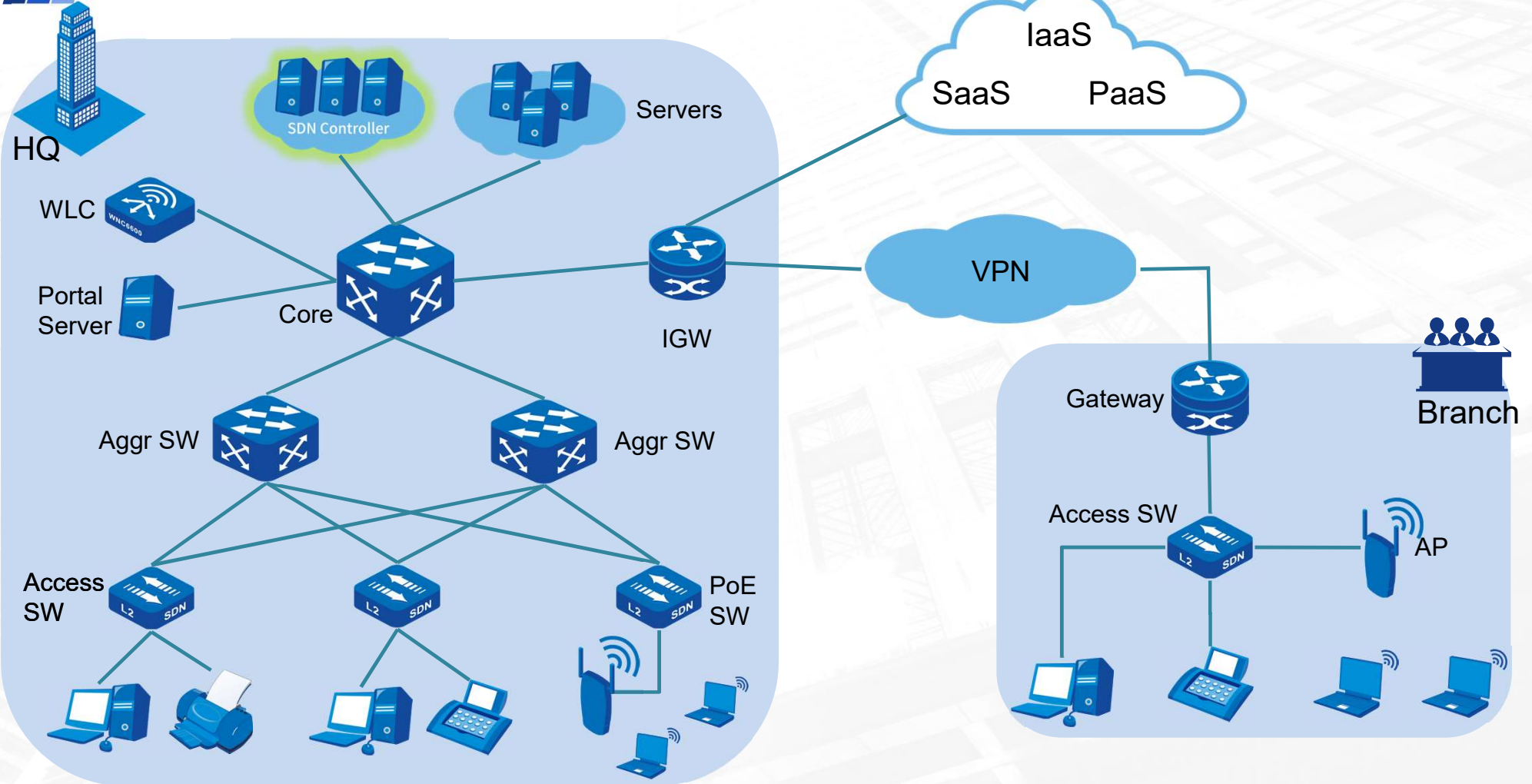
Challenges

- Network **Security** is always the top concern

- Multiple services influence each other when running on the same network

- Unauthorized **terminal mobility** is hard to be recognized or prohibited

- **Fast Recovery** time is essential for bank business

Solution with BD-LAN

- **Continuously network monitoring** and auto-blocking for mis-behaved terminals

- Automatically segment service network with **Zero-Trust Segmenting**

- **Zero-Trust Auth** prevents the devices' unauthorized mobility and gives warning

- Rich Dashboard modules for quick issue recognition at early stage and fast troubleshooting with Detailed logs

THANK YOU!

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