

KEEP LEARNING IS THE BEST CHOICE



PRESENTER INFORMATION



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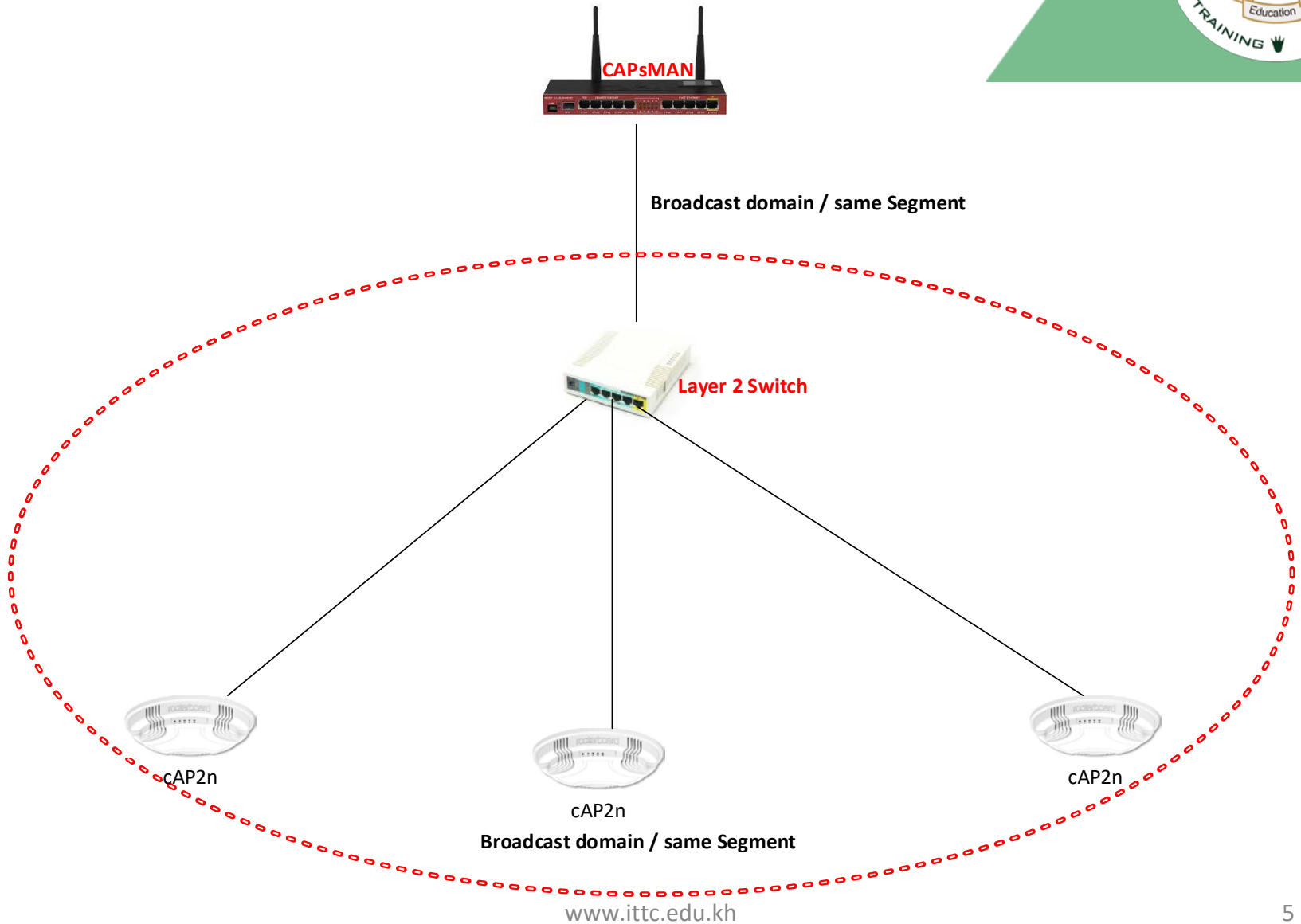
Wireless Multi Service using CAPsMAN and IP Management

OBJECTIVE

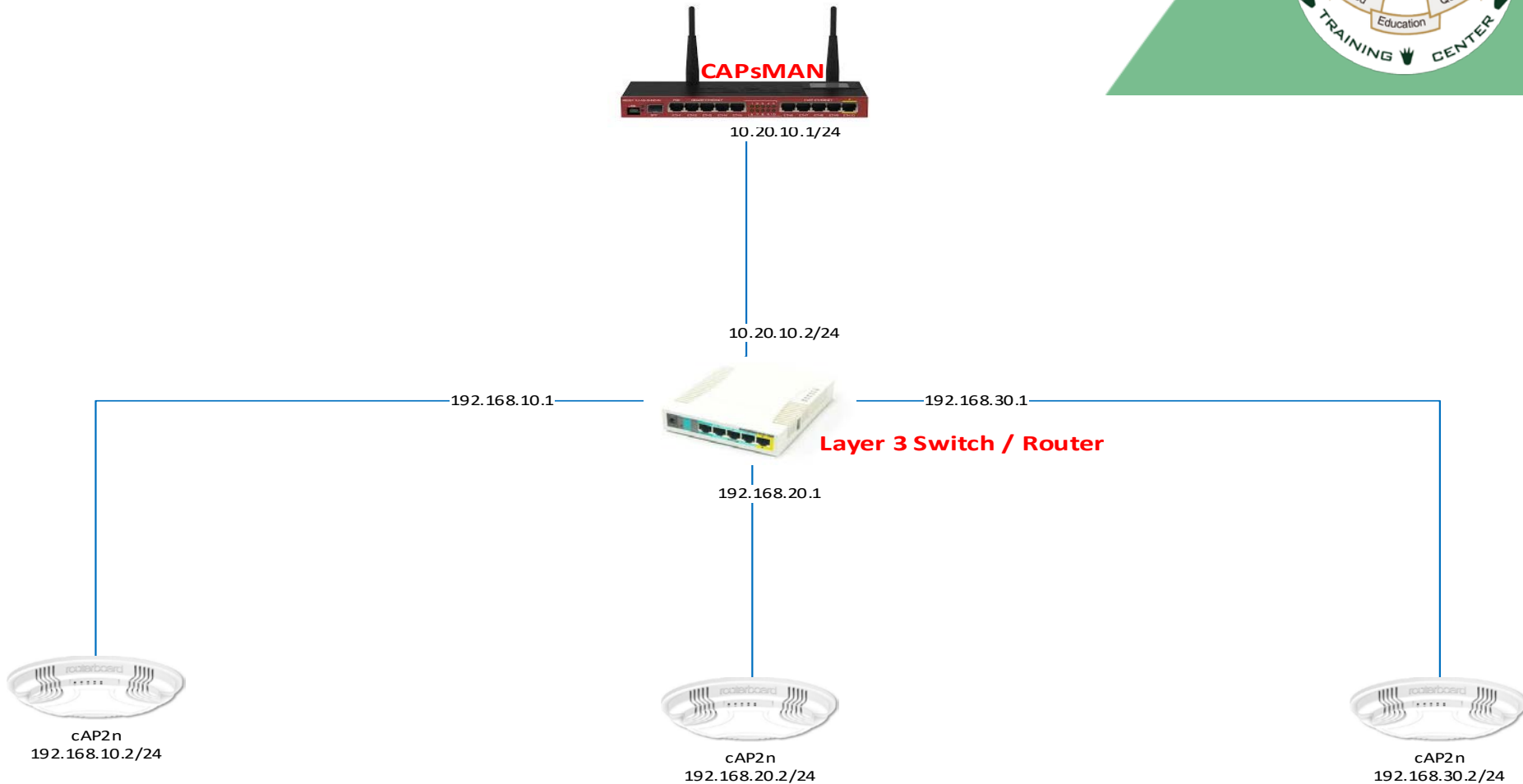


- CAP must have link between CAPsMAN
- ALL CAP must be assign management IP address to interface connected to CAPsMAN
- Create different profile services to provision base on specific MAC address (CAP radio mac address)

CAPsMAN to CAP connection via Mac address



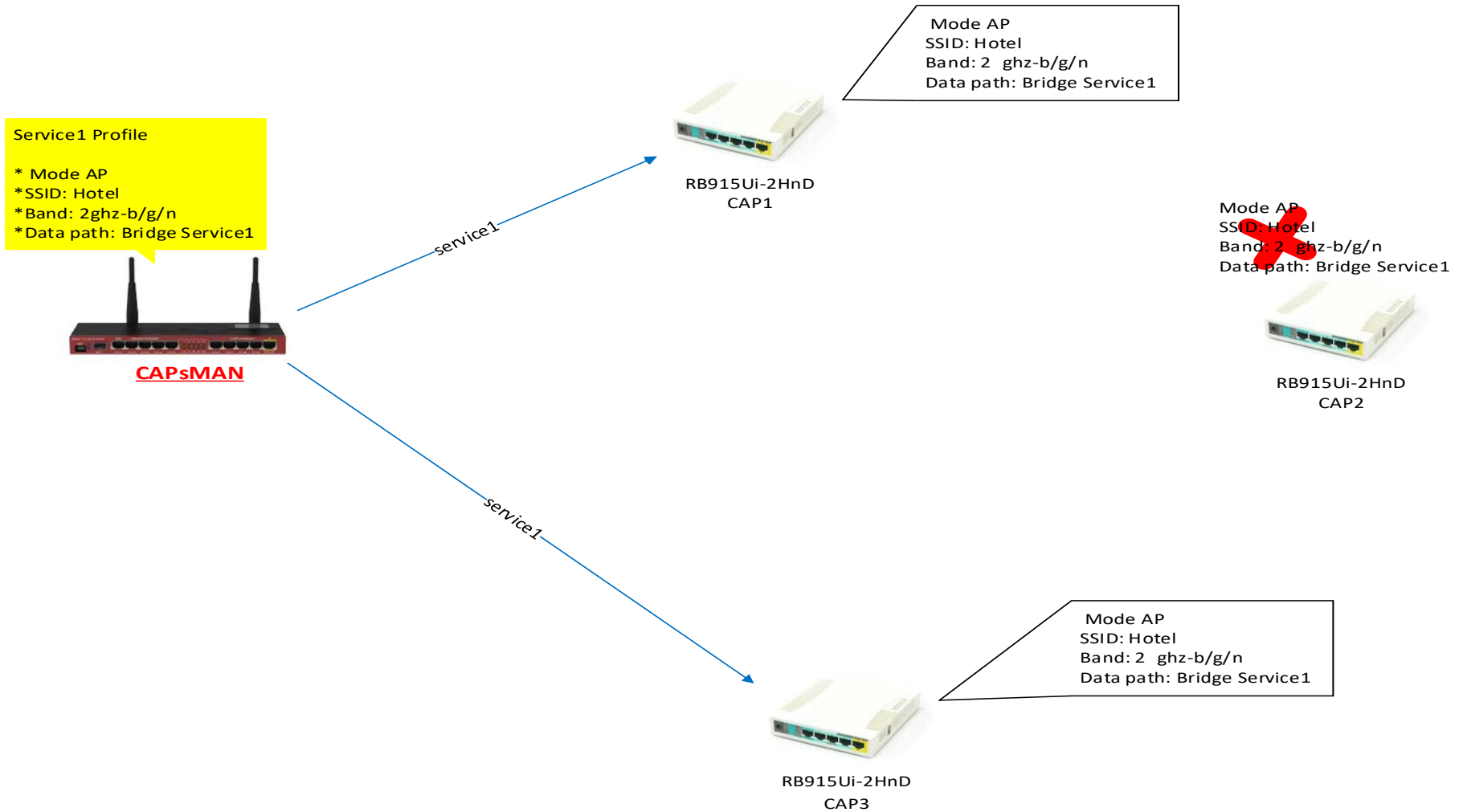
CAPsMAN to CAP connection via IP address



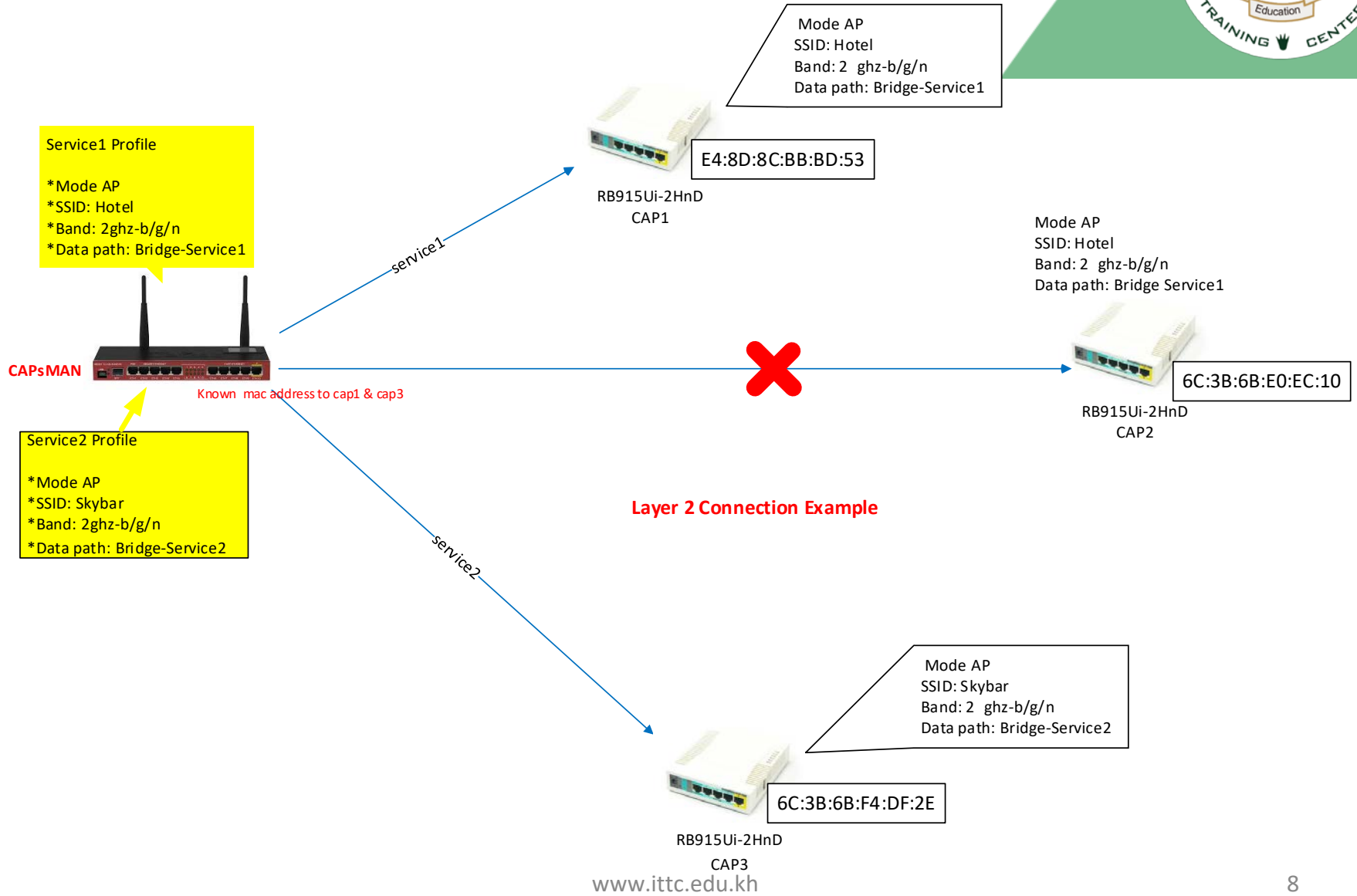
*****Cap must be ping to CAPsMan Success**

<https://wiki.mikrotik.com/wiki/Manual:CAPsMAN>

Understanding CAPsMan and CAP



Understanding CAPsMan and CAP (Cont.)



Understanding CAPsMan and CAP (Cont.)

Service1 Profile

- * Mode AP
- * SSID: Hotel
- * Band: 2ghz-b/g/n
- * Data path: Bridge-Service1

CAPsMAN



10.20.10.1/24



10.20.10.2/24

RB915Ui-2HnD
CAP1

Mode AP
SSID: Hotel
Band: 2 ghz-b/g/n
Data path: Bridge-Service1

CAPsMAN IP 10.20.10.1

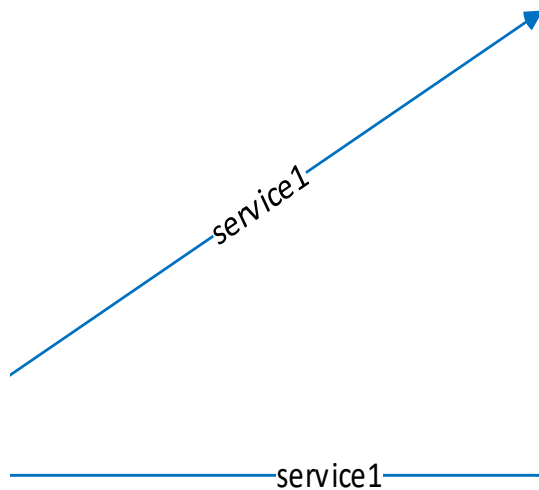


10.20.10.3/24

RB915Ui-2HnD
CAP2

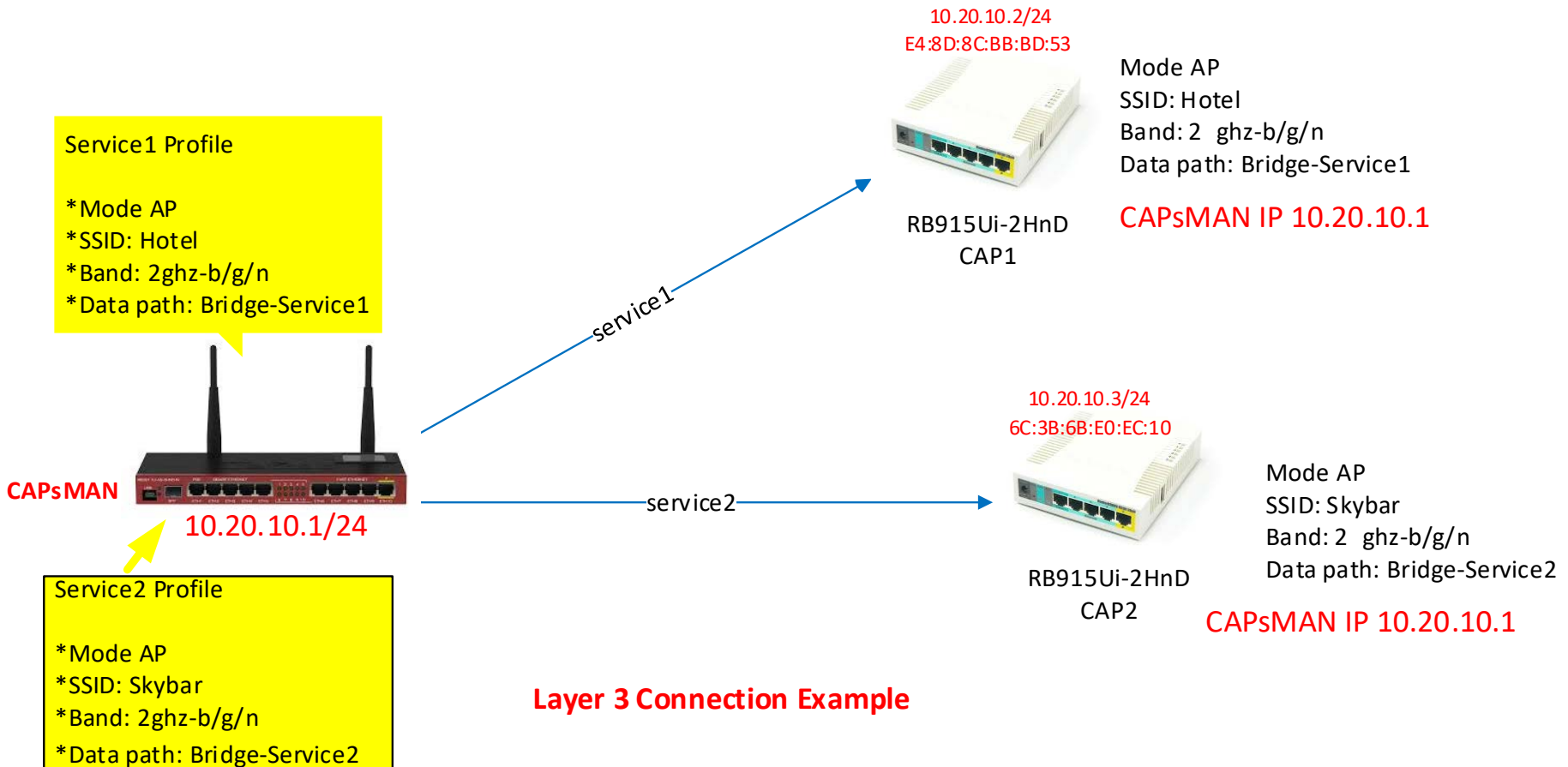
Mode AP
SSID: Hotel
Band: 2 ghz-b/g/n
Data path: Bridge-Service1

CAPsMAN IP 10.20.10.1

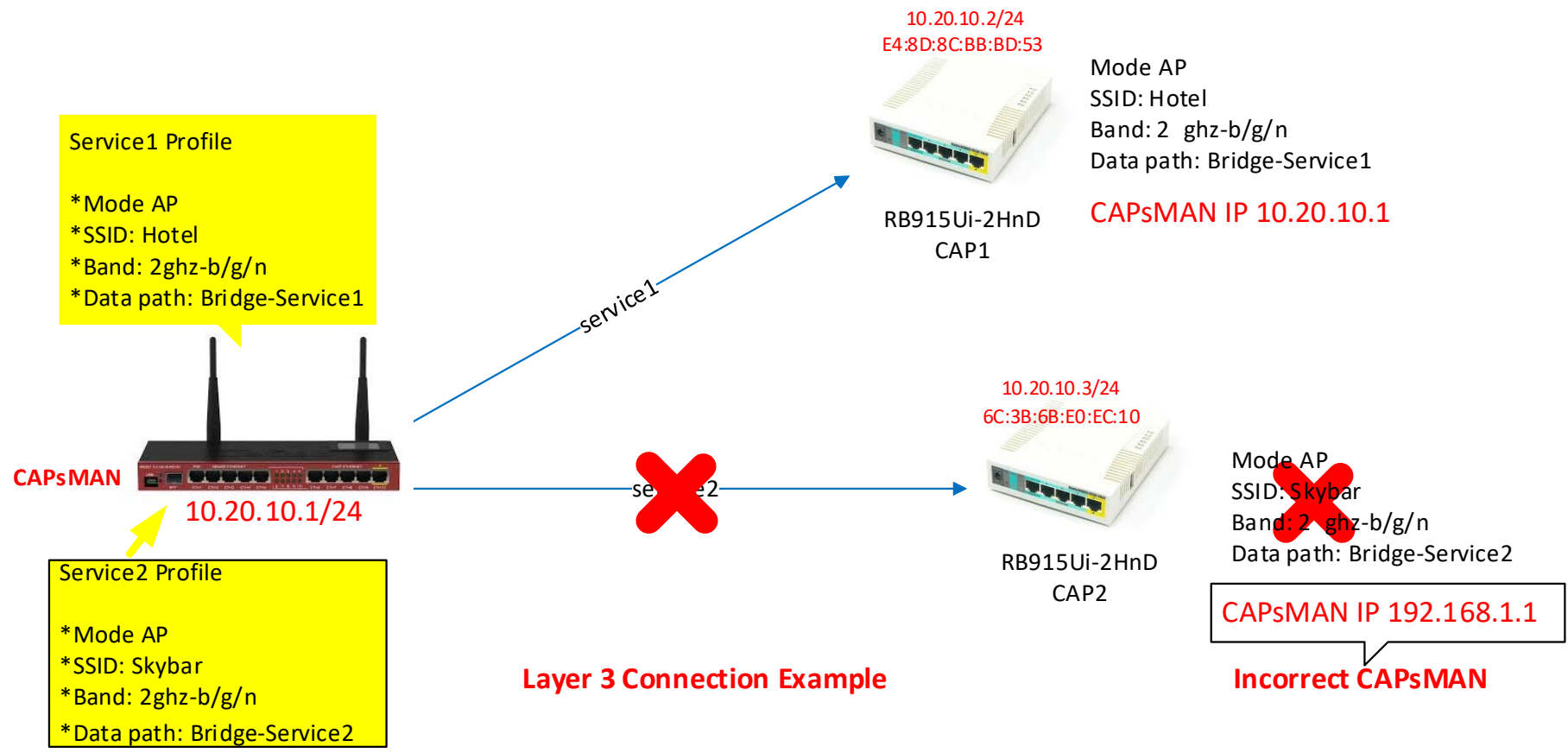


Layer 3 Connection Example

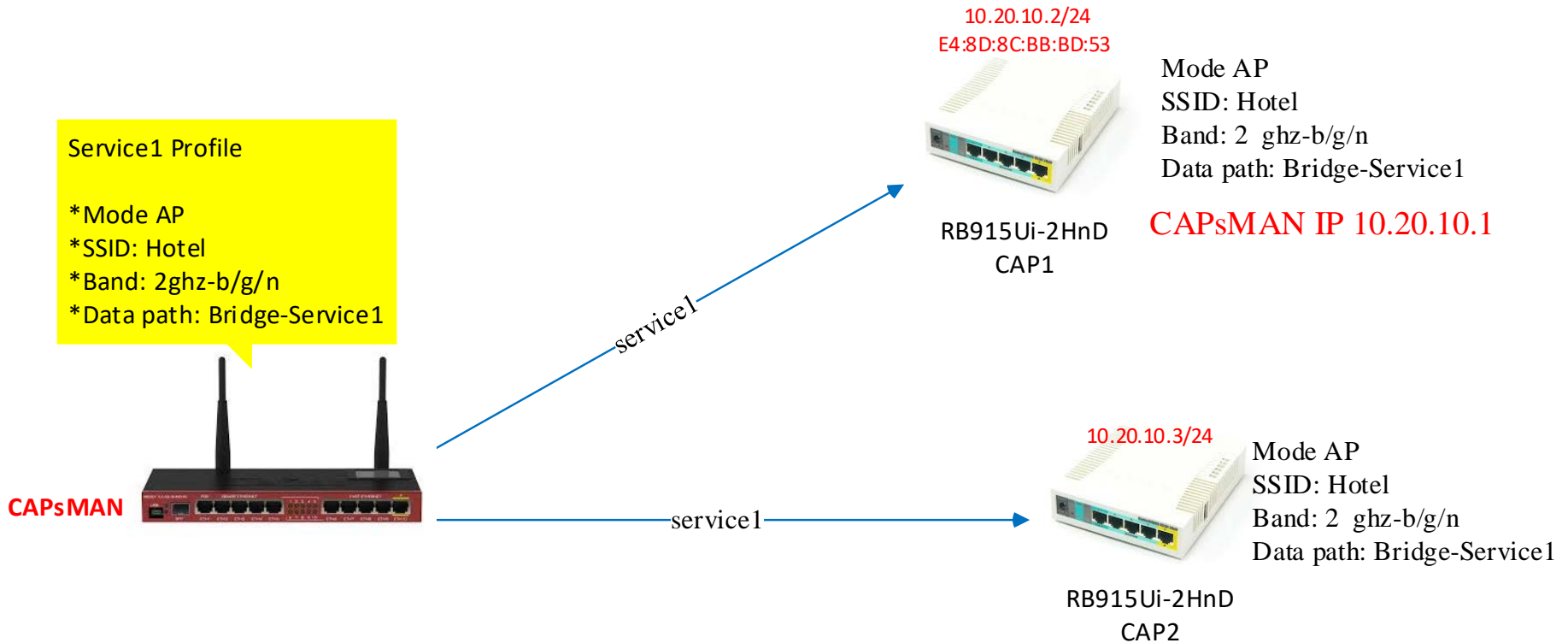
Understanding CAPsMan and CAP (Cont.)



Understanding CAPsMan and CAP (Cont.)

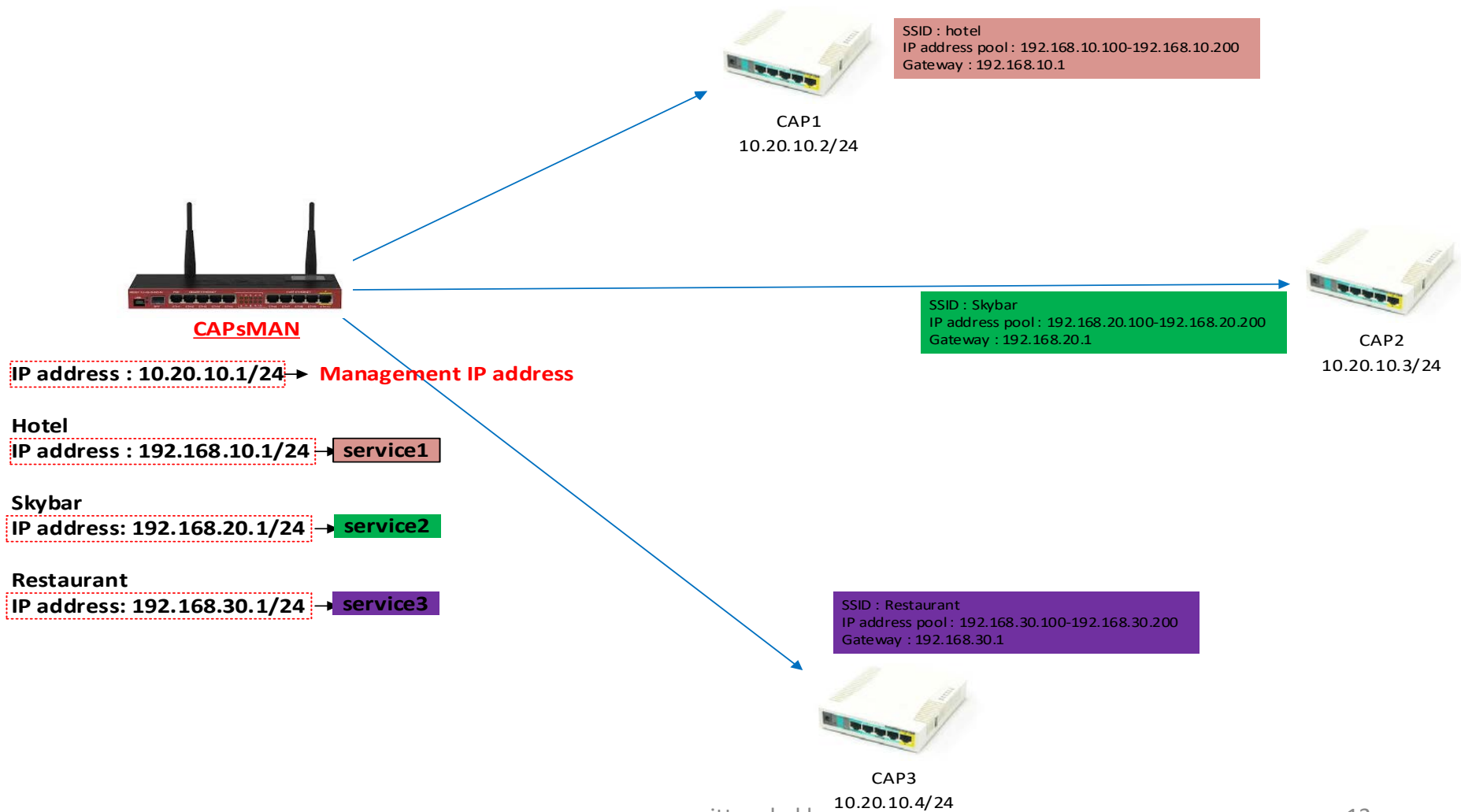


Understanding CAPsMan and CAP (Cont.)

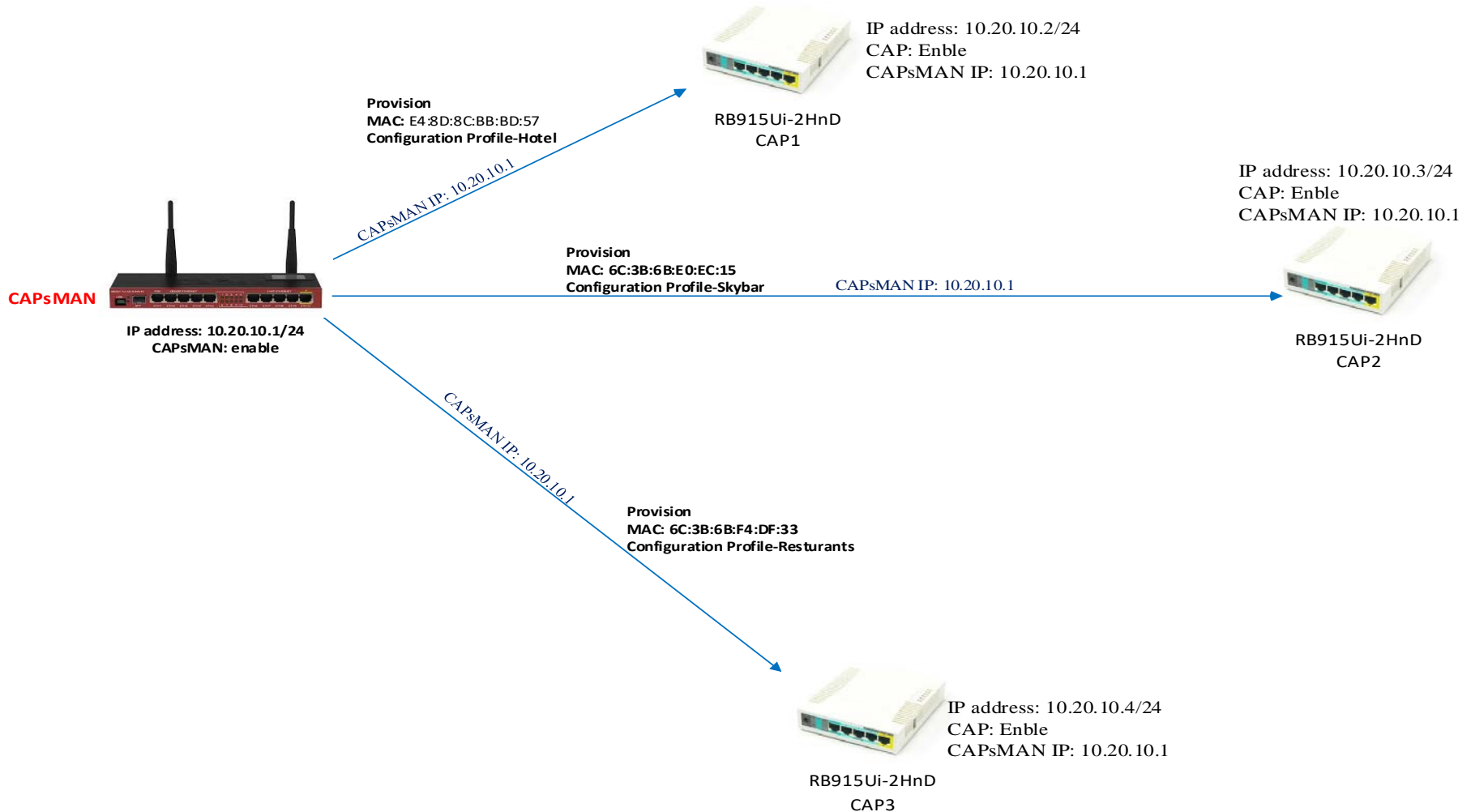


Hybrid Connection Example

CAPsMAN Physical and Logical Topology



Services via IP management diagram



Services via IP management diagram (Cont.)



CAPsMAN

Provision
MAC: E4:8D:8C:BB:BD:53
Configuration Profile-Hotel

Provision
MAC: 6C:3B:6B:E0:EC:10
Configuration Profile-Skybar

Provision
MAC: 6C:3B:6B:F4:DF:2E
Configuration Profile-
Restaurants

Management
IP address: 10.20.10.1/24
CAPsMAN: Enable
- Profile-Hotel
- Mode AP
- Band 2hgz-b/g/n
- SSID: Hotel
- Data Path: Bridge-Hotel

- Profile-Skybar
- Mode AP
- Band 2hgz-b/g/n
- SSID: Skybar
- Data Path: Bridge-Skybar

- Profile-Restaurants
- Mode AP
- Band 2hgz-b/g/n
- SSID: Hotel
- Data Path: Bridge-Restaurants

Bridge Configuration

- Bridge-Hotel
 - IP address 192.168.10.1/24
 - DHCP Server : Enable
 - IP Pool: 192.168.10.100-200
- Bridge-Skybar
 - IP address 192.168.20.1/24
 - DHCP Server : Enable
 - IP Pool: 192.168.20.100-200
- Bridge-Restaurants
 - IP address 192.168.30.1/24
 - DHCP Server : Enable
 - IP Pool: 192.168.30.100-200

CAP configuration diagram



RB915Ui-2HnD
CAP1

Management
IP address: 10.20.10.2/24
CAP: Enable
Interface: wlan1
CAPsMAN IP address: 10.20.10.1



RB915Ui-2HnD
CAP2

Management
IP address: 10.20.10.3/24
CAP: Enable
Interface: wlan1
CAPsMAN IP address: 10.20.10.1



RB915Ui-2HnD
CAP3

Management
IP address: 10.20.10.4/24
CAP: Enable
Interface: wlan1
CAPsMAN IP address: 10.20.10.1

CAPsMAN Configuration

Step 1: Add Bridge Interface
Set name example: Bridge-Hotel

- Repeat 3 time
- Bridge-Hotel
 - Bridge-Skybar
 - Bridge-Restaurants



RouterOS WinBox

Bridge

| Name | Type | L2 MTU | Tx | Rx |
|----------------|--------|--------|-------|-------|
| R Bridge-Hotel | Bridge | 65535 | 0 bps | 0 bps |

Interface <Bridge-Hotel>

General STP Status Traffic

Name: Bridge-Hotel 3

Type: Bridge

MTU: []

Actual MTU: 1500

L2 MTU: 65535

MAC Address: []

ARP: enabled

ARP Timeout: []

Admin. MAC Address: []

OK 4

Cancel

Apply

Disable

Comment

Copy

Remove

Torch

enabled running slave

CAPsMAN Configuration (Cont.)

Add Management IP address to Local Interface

RouterOS WinBox

- Quick Set
- CAPsMAN
- Interfaces
- Wireless
- Bridge
- PPP
- Switch
- Mesh
- IP 1**
- MPLS
- Routing
- System
- Queues
- Files
- Log
- Radius
- Tools
- New Terminal
- LCD
- MetaROUTER
- Partition
- Make Supout.rif
- Manual
- New WinBox
- Exit

| Address | Network | Interface |
|---------------|------------|------------|
| 10.20.10.1/24 | 10.20.10.0 | management |

Address <10.20.10.1/24>

Address: 10.20.10.1/24 3

Network: 10.20.10.0

Interface: management 4

OK 5

1 item
enabled

CAPsMAN Configuration (Cont.)

Create Profile Service IP address on Bridge Interface and enable DHCP Server



Bridge-Hotel
IP Address: 192.168.10.1/24

Bridge-Skybar
IP Address: 192.168.20.1/24

Bridge-Restaurants
IP Address: 192.168.30.1/24

| Address | Network | Interface |
|------------------|--------------|--------------------|
| 10.20.10.1/24 | 10.20.10.0 | managment |
| 192.168.10.1/... | 192.168.10.0 | Bridge-Hotel |
| 192.168.20.1/... | 192.168.20.0 | Bridge-Skybar |
| 192.168.30.1/... | 192.168.30.0 | Bridge-Restaura... |

CAPsMAN Configuration (Cont.)

Create CAPsMAN Profile 3 time, name (step 5) and Data Path (step 13) different Path

Profile name:

- Profile-Hotel
- Profile-Skybar
- Profile-Restaurants

The screenshot shows the CAPsMAN configuration interface. The 'Configurations' tab is selected. A 'New CAPs Configuration' dialog box is open, showing the following fields:

- Name:** Profile-Hotel
- Mode:** lap
- SSID:** Hotel
- Country:** cambodia

The 'OK' button is highlighted, indicating the configuration is being confirmed.



CAPsMAN Configuration (Cont.)

The screenshot shows the CAPsMAN configuration interface. The 'Channels' tab is selected and highlighted with a red box. Below the tabs, there are icons for adding (+), deleting (-), saving (floppy), and filtering (funnel). A table shows 10 channels, with the number '10' highlighted in red. A 'CAPs Channel' dialog box is open, with the 'Band' field set to '2ghz-b/g/n' and the number '13' highlighted in red. The dialog box has buttons for OK, Cancel, Apply, Comment, Copy, and Remove.

The screenshot shows the CAPsMAN configuration interface with the 'Datapaths' tab selected and highlighted with a red box. Below the tabs, there are icons for adding (+), deleting (-), saving (floppy), and filtering (funnel). A table shows 12 datapaths, with the number '12' highlighted in red. A 'New CAPs Datapath Configuration' dialog box is open, with the 'Bridge' field set to 'Bridge-Hotel' and the number '13' highlighted in red. The dialog box has buttons for OK, Cancel, Apply, Comment, Copy, and Remove.

CAPsMAN Configuration (Cont.)

Create CAPsMAN Provisioning for 3 Service, 3 time by different Master Configuration Profile and Radio MAC repeat profile step below:

- Profile-Hotel E4:8D:8C:BB:BD:57
- Profile-Skybar 6C:3B:6B:E0:EC:15
- Profile-Restaurants 6C:3B:6B:F4:DF:33



CAPsMAN Configuration (Cont.)

Enable service CAPsMAN to manage CAP

Quick Set
CAPsMAN 1
 Interfaces
 Wireless
 Bridge
 PPP
 Switch
 Mesh
 IP
 MPLS
 Routing
 System
 Queues
 Files
 Log
 Radius
 Tools

CAPsMAN
 Interfaces 2 Provisioning Configurations Channels Datapaths Security Cfg. Access List Remote CAP ...
 + - ✓ ✗ [Filter] Manager 3 AAA Find

CAPs Manager
 Enabled 4
 Certificate:
 CA Certificate:
 Require Peer Certificate
 Generated Certificate:
 Generated CA Certificate:
 Package Path:
 Upgrade Policy: suggest same version 5
 OK 6
 Cancel
 Apply

| J | Tx | Rx |
|----|----------|-------|
| 00 | 424 bps | 0 b |
| 00 | 0 bps | 0 b |
| 00 | 1088 bps | 864 b |

Quick Set
 CAPsMAN
 Interfaces
 Wireless
 Bridge
 PPP
 Switch
 Mesh

CAPsMAN
 Interfaces Provisioning Configurations Channels Datapaths Security Cfg. Access List Remote CAP Radio Registration Table
 + - ✓ ✗ [Filter]

| # | Radio MAC | Identity Regexp | Common Nam... | Action | Master Configurati... | Slave Configuration |
|---|-------------------|-----------------|---------------|----------------|-----------------------|---------------------|
| 0 | 6C:3B:6B:F4:DF:33 | | | create enabled | Profile-Restaurants | |
| 1 | E4:8D:8C:BB:BD:57 | | | create enabled | Profile-Hotel | |
| 2 | 6C:3B:6B:E0:EC:15 | | | create enabled | Profile-Skybar | |

CAP interface configuration

Add IP management to CAP in local interface

Address <10.20.10.2/24>

Address: 10.20.10.2/24

Network: 10.20.10.0

Interface: Management

Buttons: OK, Cancel, Apply, Disable, Comment, Copy, Remove

Status: enabled

Enable CAP service

Quick Set

CAPsMAN

Interfaces

Wireless

Bridge

PPP

Switch

Mesh

IP

IPv6

MPLS

OpenFlow

Routing

System

Queues

CAP

Enabled

Interfaces: wlan1

Certificate: none

Discovery Interfaces:

Lock To CAPsMAN

CAPsMAN Addresses: 10.20.10.1

CAPsMAN Names:

CAPsMAN Certificate Common Names:

Bridge: none

Requested Certificate:

Locked CAPsMAN Common Name:

Buttons: OK, Cancel, Apply

Check status CAPsMAN & CAP

CAPsMAN

Interfaces Provisioning Configurations Channels Datapaths Security Cfg. Access List Remote CAP Radio Registration Table

+ - [Icons] Manager AAA

| Name | Type | MTU | L2 MTU | Tx | Rx | Tx Packet (p/s) |
|---------------|------------|------|--------|----|----------|-----------------|
| RSMB ↔ CAP1-1 | Interfaces | 1500 | 1600 | | 0 bps | 0 bps |
| RSMB ↔ CAP2-1 | Interfaces | 1500 | 1600 | | 424 bps | 0 bps |
| RSMB ↔ CAP3-1 | Interfaces | 1500 | 1600 | | 1472 bps | 1024 bps |

Status for success provisioning

CAPsMAN

Interfaces Provisioning Configurations Channels Datapaths Security Cfg. Access List Remote CAP Radio Registration Table

[Icons] Provision Upgrade Set Identity

| Address | Name | Board | Serial | Version | Identity | Base MAC | State | Radios |
|------------|-----------------|--------------|---------------|----------|----------|--------------------|-------|--------|
| 10.20.10.2 | [E4:8D:8C:BB... | RB951Ui-2HnD | 6282054681C8 | 6.38.5 | CAP1 | E4:8D:8C:BB:BD:... | Run | 1 |
| 10.20.10.3 | [6C:3B:6B:E0... | RB951Ui-2HnD | 6BF406C6DD... | 6.36.3 | CAP2 | 6C:3B:6B:E0:EC:10 | Run | 1 |
| 10.20.10.4 | [6C:3B:6B:F4... | RB951Ui-2HnD | 6BF406B0B102 | 6.39rc51 | CAP3 | 6C:3B:6B:F4:DF:2E | Run | 1 |

Status of all CAP connection

THANK YOU!

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