

KEEP LEARNING IS THE BEST CHOICE



PRESENTER INFORMATION



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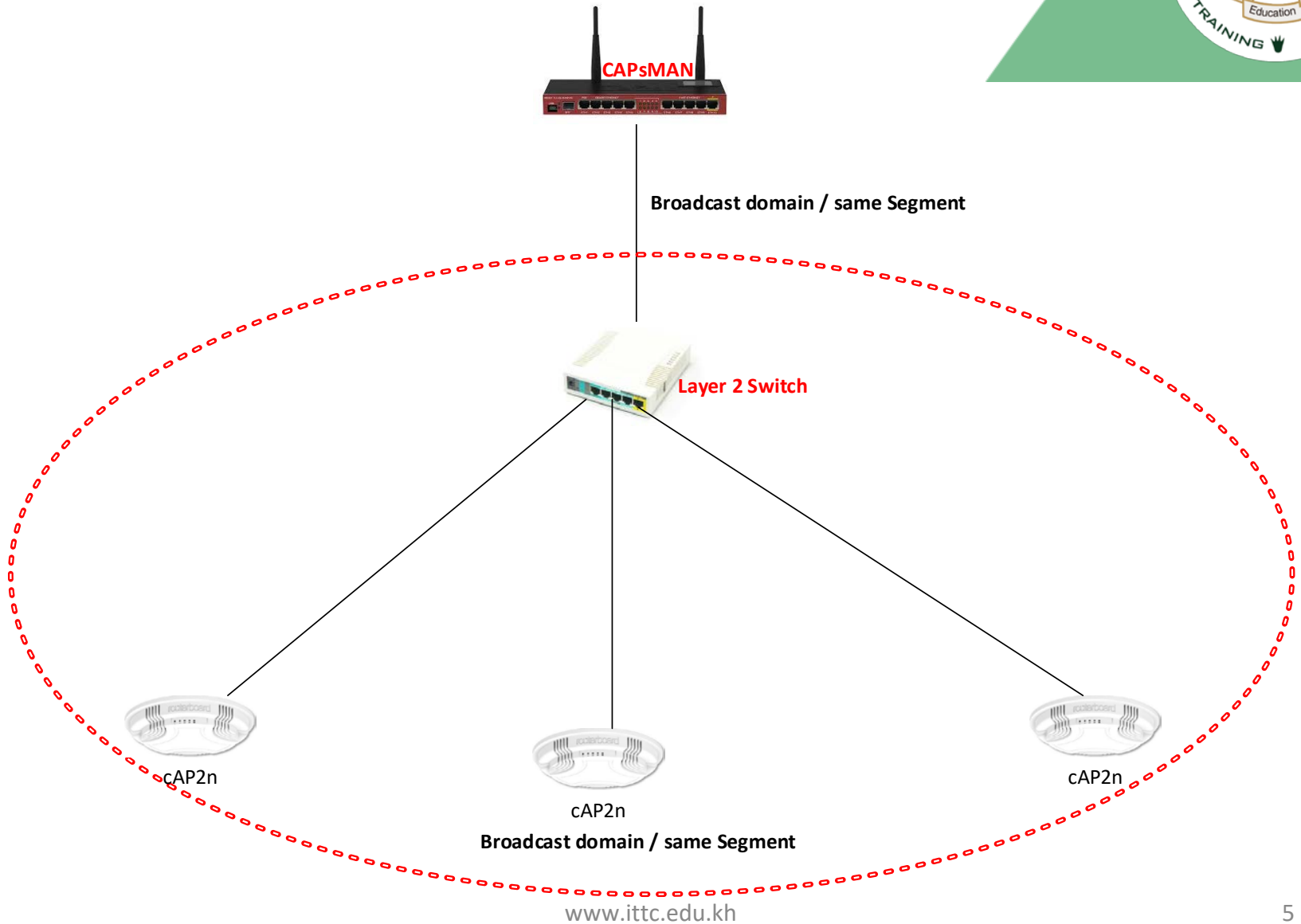
Wireless Multi Service using CAPsMAN and IP Management

OBJECTIVE

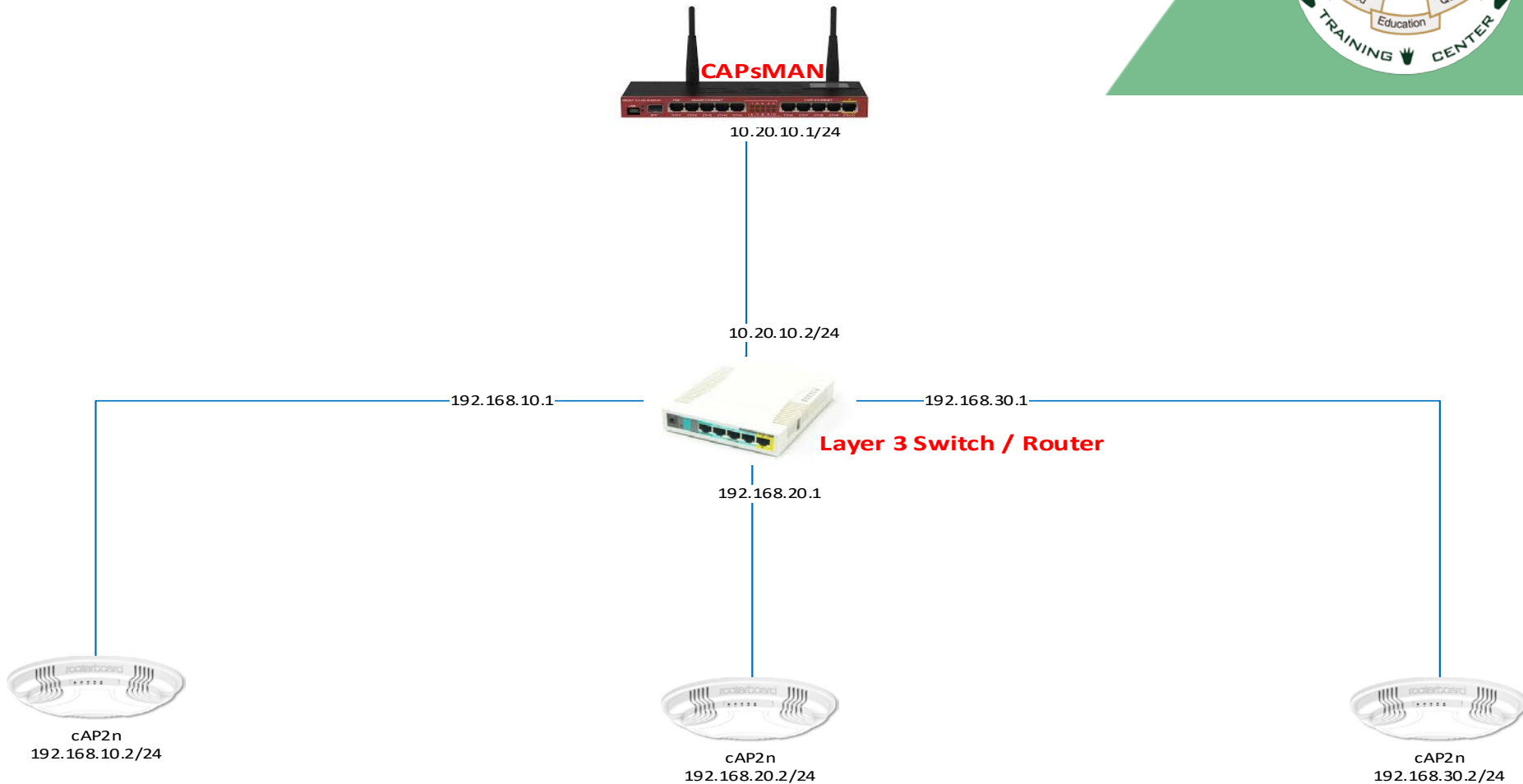


- CAP must have link between CAPsMAN
- ALL CAP must be assign management IP address to interface connected to CAPsMAN
- Create different profile services to provision base on specific MAC address (CAP radio mac address)

CAPsMAN to CAP connection via Mac address



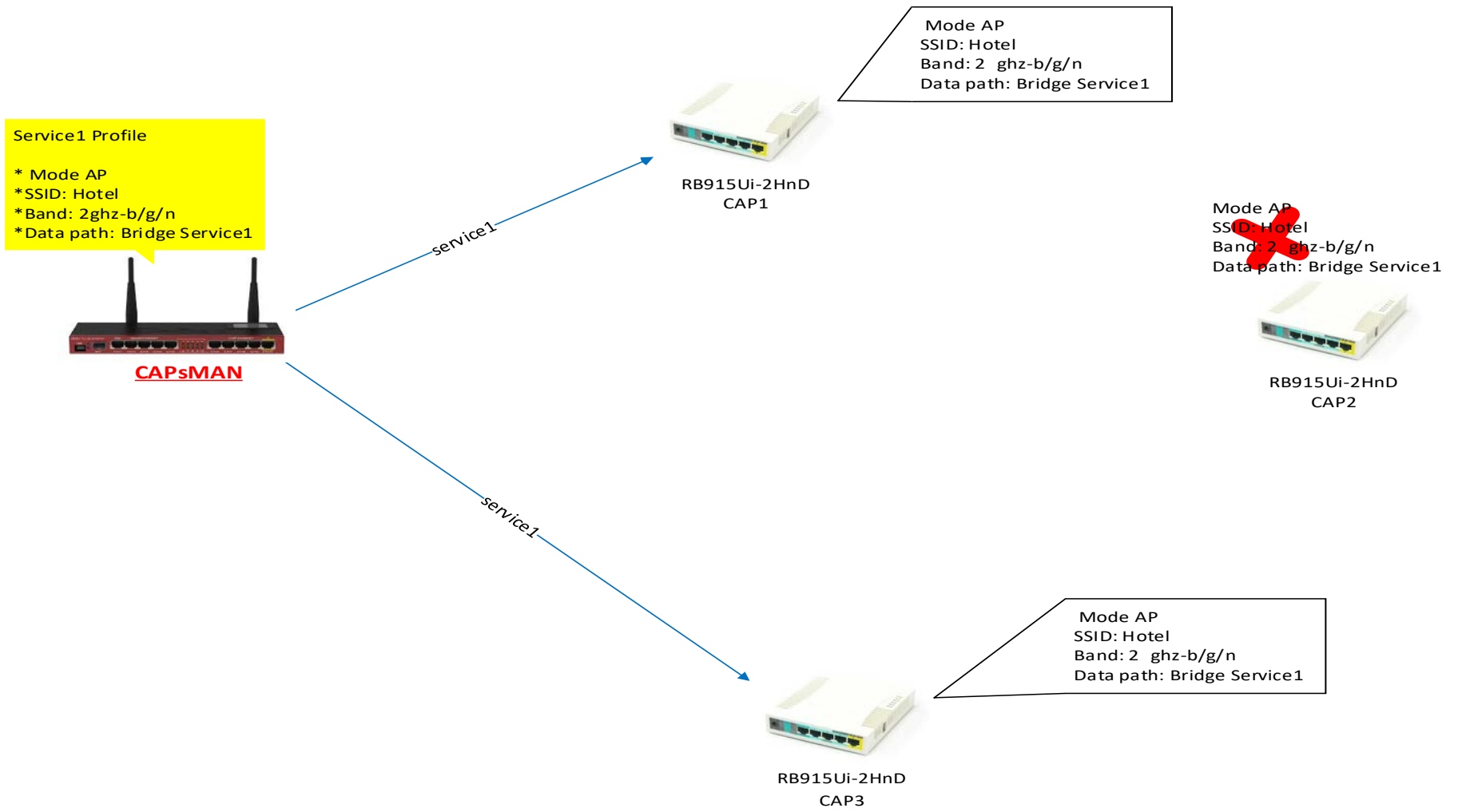
CAPsMAN to CAP connection via IP address



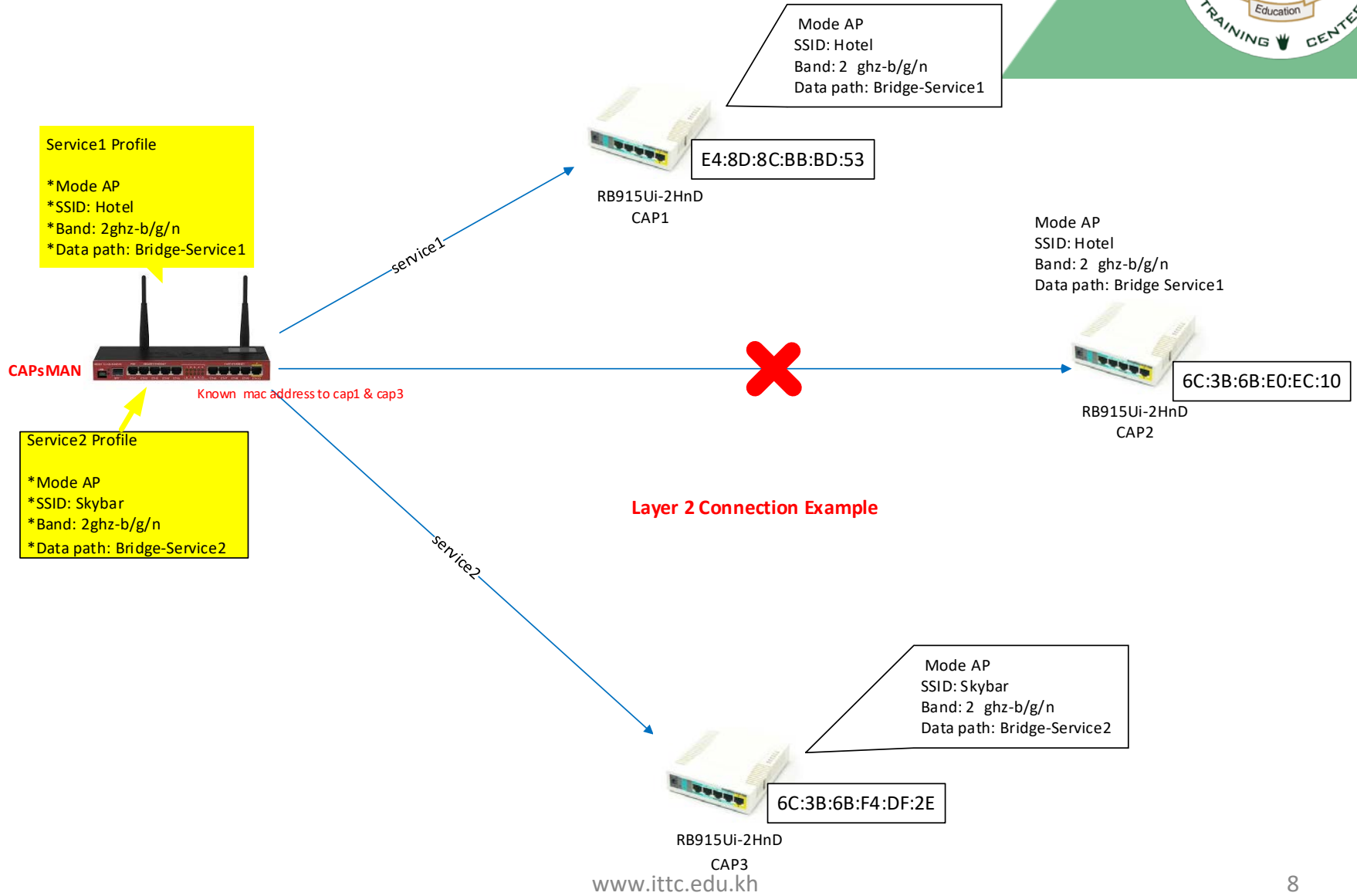
***Cap must be ping to CAPsMan Success

<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

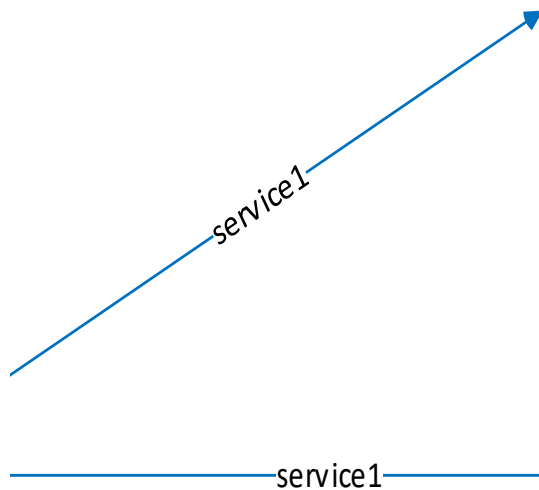


10.20.10.3/24

RB915Ui-2HnD
CAP2

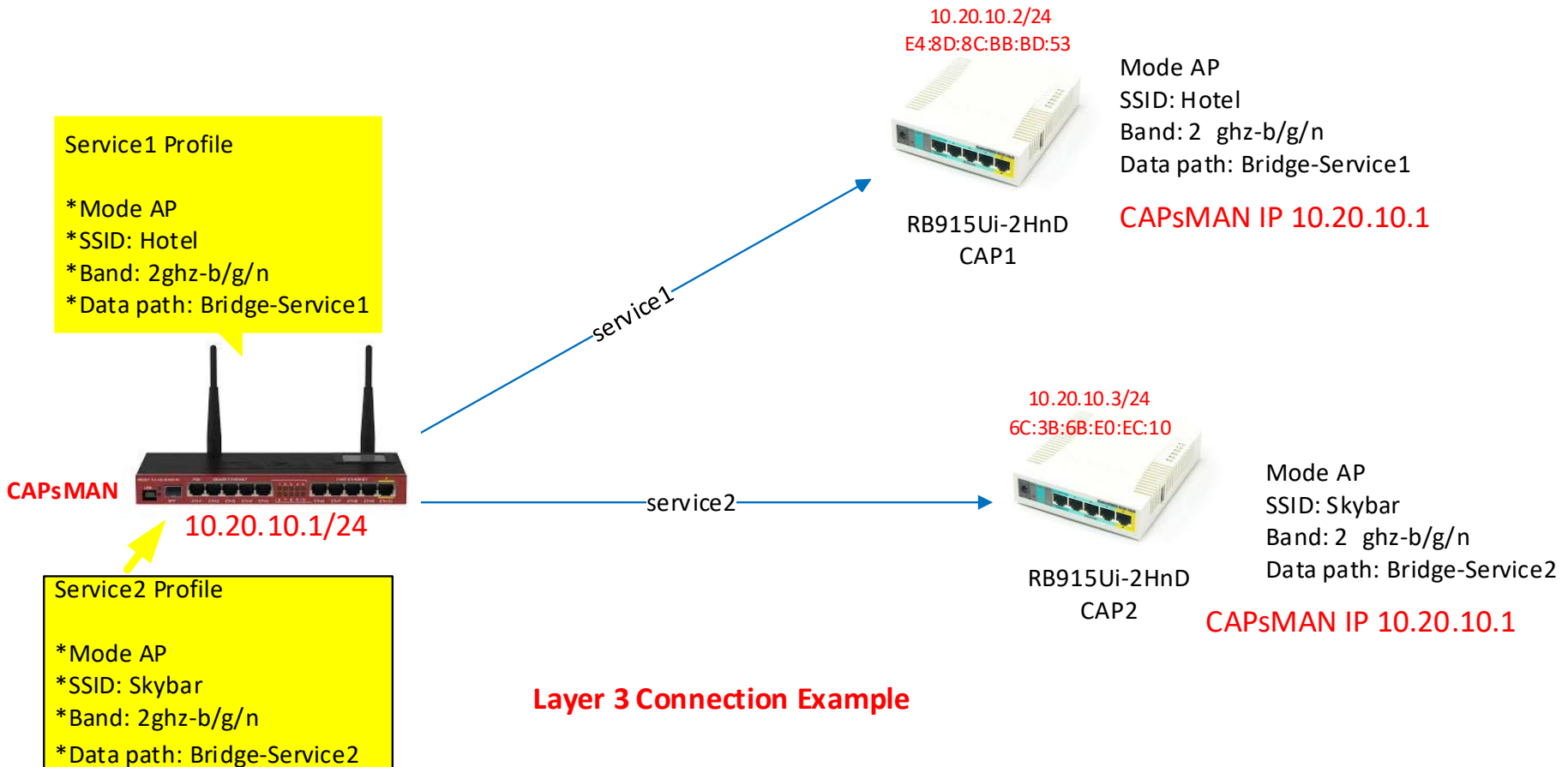
Mode AP
SSID: Hotel
Band: 2 ghz-b/g/n
Data path: Bridge-Service1

CAPsMAN IP 10.20.10.1

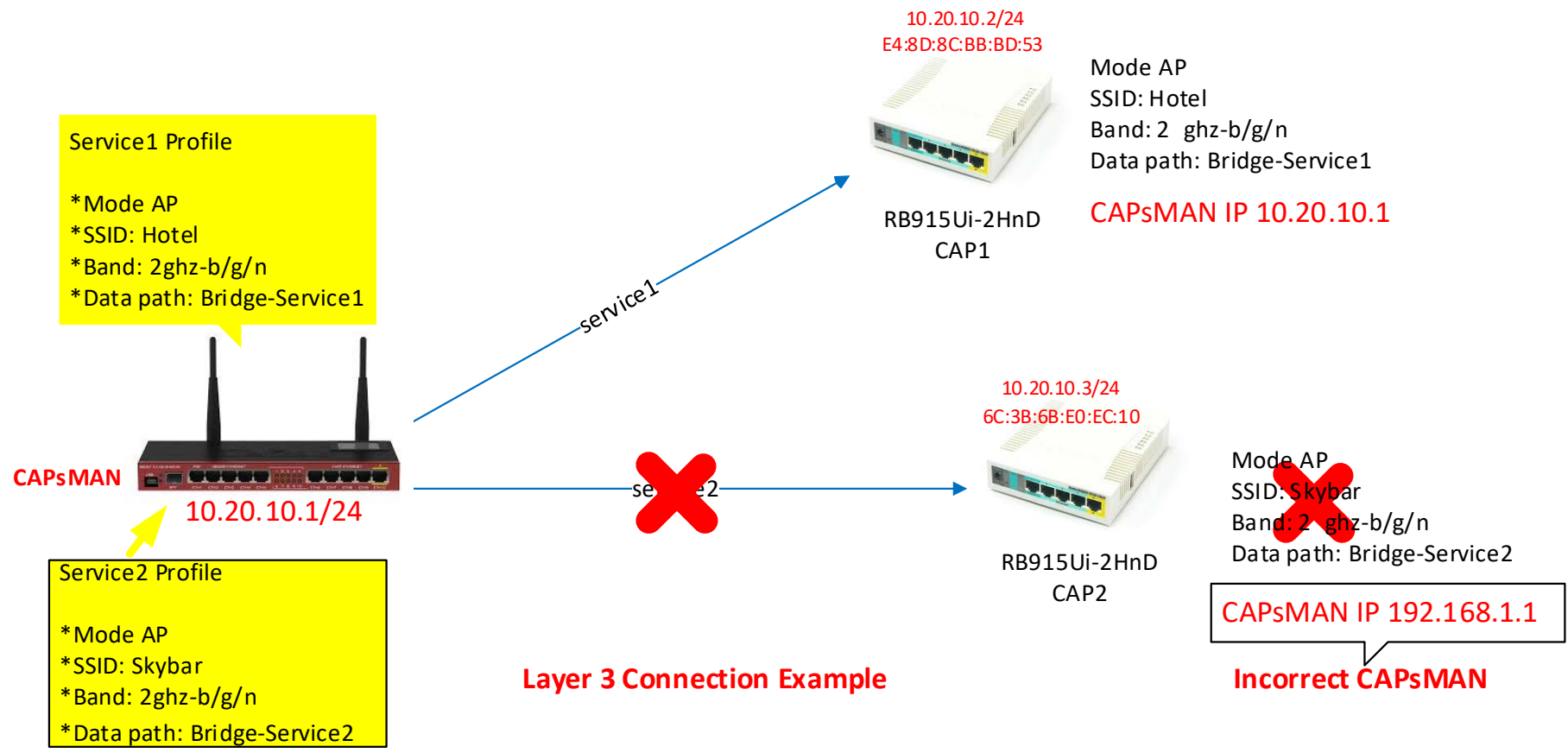


Layer 3 Connection Example

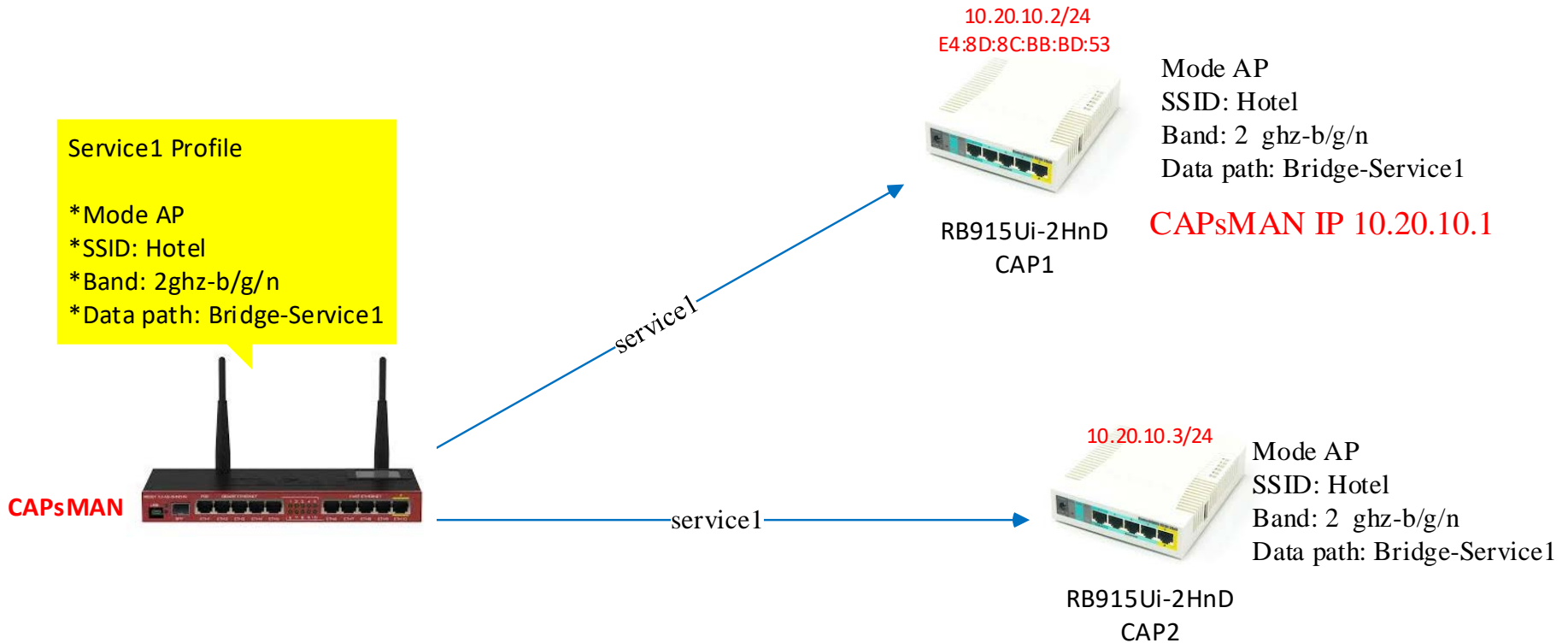
Understanding CAPsMan and CAP (Cont.)



Understanding CAPsMan and CAP (Cont.)

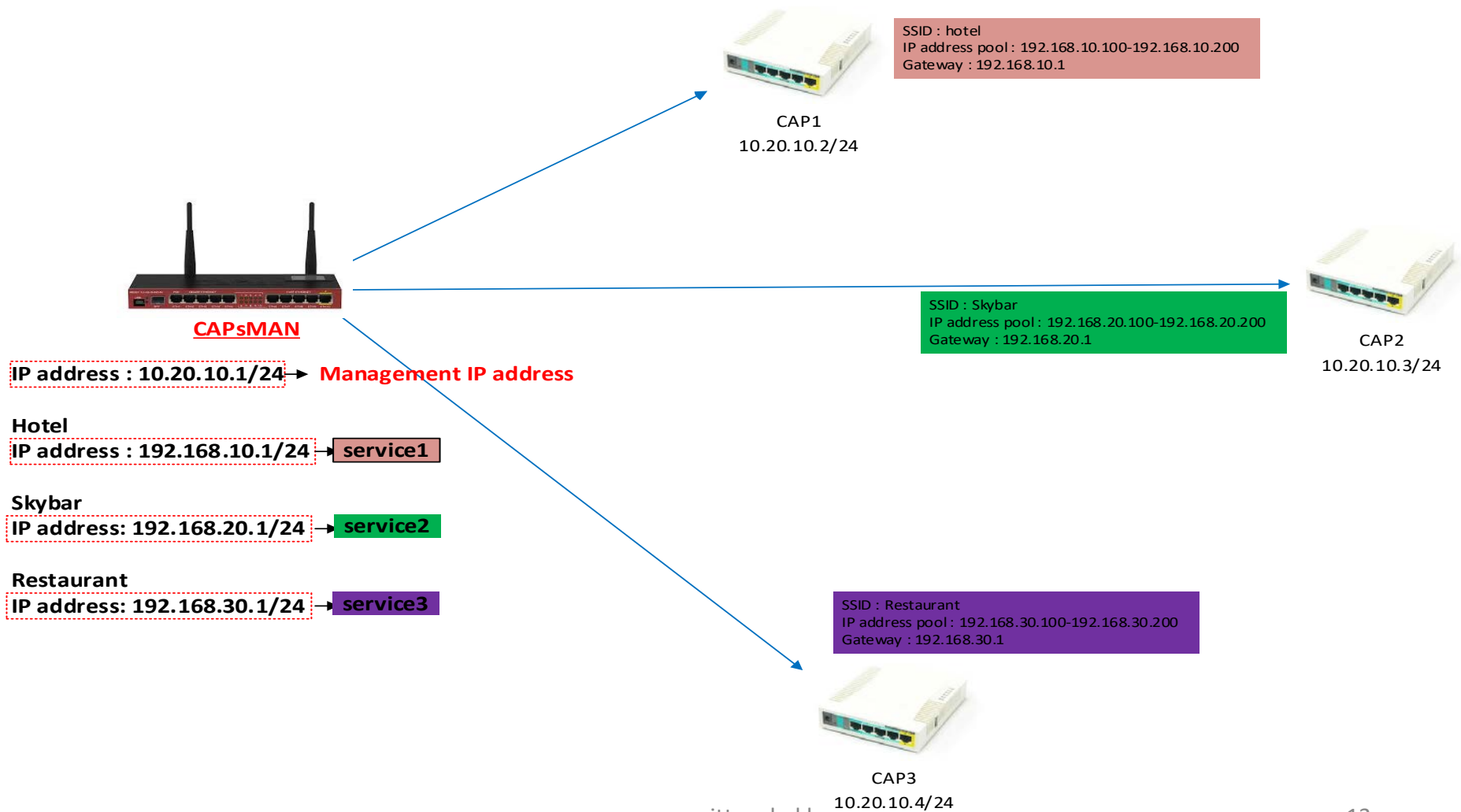


Understanding CAPsMan and CAP (Cont.)

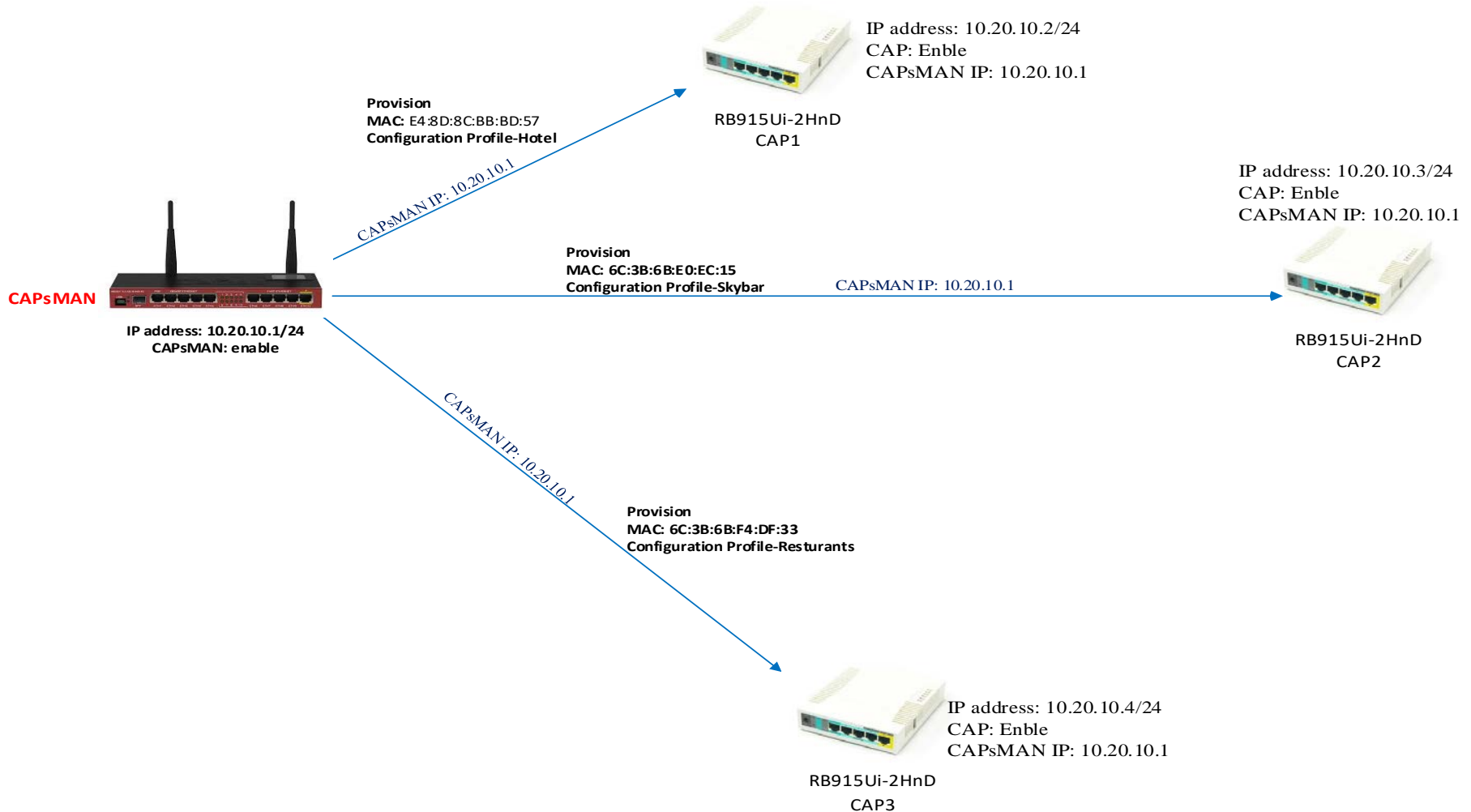


Hybrid Connection Example

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: []

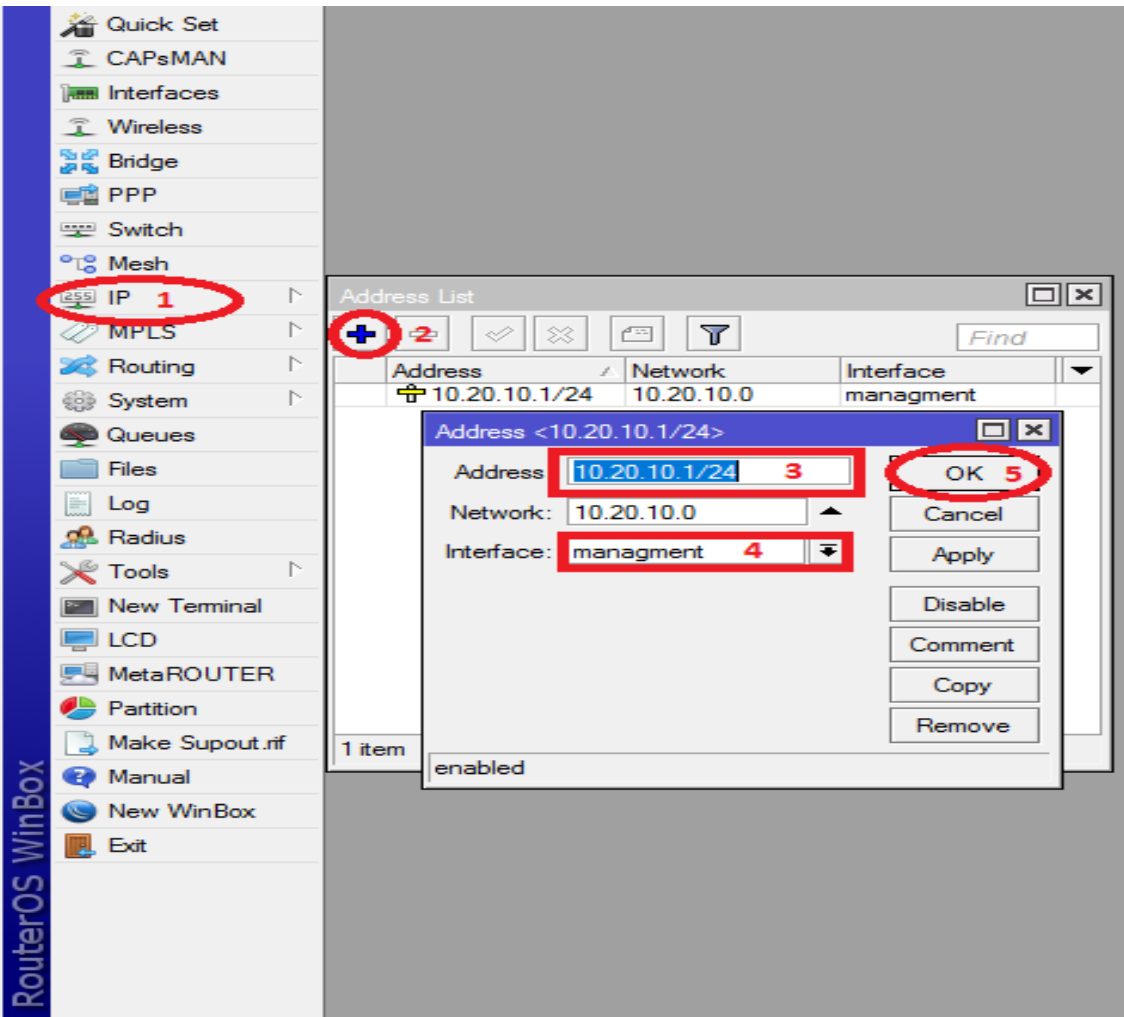
Admin. MAC Address: []

OK 4

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. The interface also shows a sidebar with various configuration options like Interfaces, Wireless, Bridge, PPP, Switch, Mesh, IP, MPLS, Routing, System, Queues, Files, Log, Radius, Tools, New Terminal, LCD, MetaROUTER, Partition, Make Supout.tif, and Manual.



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. A 'CAPs Channel' dialog box is open, with the 'Band' field set to '2ghz-b/g/n' and '1F', both highlighted with red boxes. The dialog also includes fields for Name, Frequency, Width, Extension Channel, and Tx. Power, along with OK, Cancel, Apply, Comment, Copy, and Remove buttons.

The screenshot shows the CAPsMAN configuration interface with the 'Datapaths' tab selected and highlighted with a red box. A 'New CAPs Datapath Configuration' dialog box is open. The 'Bridge' dropdown menu is set to 'Bridge-Hotel' and is highlighted with a red box. The 'OK' button is also highlighted with a red box. The dialog includes fields for Name, Bridge, Bridge Cost, Bridge Horizon, Local Forwarding, Client To Client Forwarding, VLAN Mode, and VLAN ID, along with OK, Cancel, Apply, Comment, Copy, and Remove buttons.

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

#	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

This screenshot shows the Mikrotik WinBox interface configuration window. The left sidebar has 'IP' selected and highlighted with a red box and the number '1'. The main window shows the configuration for the 'Management' interface. The 'Address' field is set to '10.20.10.2/24' and is highlighted with a red box and the number '2'. The 'Interface' dropdown menu is set to 'Management' and is highlighted with a red box and the number '3'. The 'OK' button is highlighted with a red box and the number '4'. The status at the bottom of the window is 'enabled'.

Enable CAP service

This screenshot shows the Mikrotik WinBox CAP configuration window. The left sidebar has 'Wireless' selected and highlighted with a red box and the number '1'. The main window shows the CAP service configuration. The 'Enabled' checkbox is checked and highlighted with a red box and the number '2'. The 'Interfaces' dropdown menu is set to 'wlan1' and is highlighted with a red box and the number '3'. The 'CAPsMAN Addresses' field is set to '10.20.10.1' and is highlighted with a red box and the number '4'. The 'OK' button is highlighted with a red box and the number '5'.

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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