Enhanced Wireless Point to Point

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PH16-MUM

Profile:

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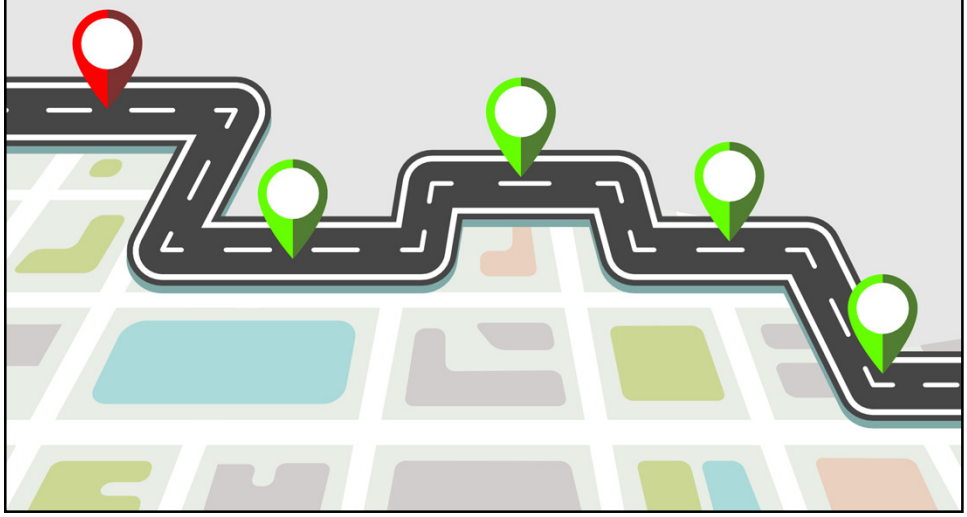
MTCRE - 1403RE066
MTCWE - 1403WE045
MTCTCE- 1504TCE023
MTCINE - 1504INE021
MTCUME-1511UME014

What do we have for today?

- **Basic Wireless Point to Point.**
- **Wireless Point to Point plus:**
  - **A. VLAN & Dual WAN.**
  - **B. VRRP.**
  - **C. POE-out Router & Netwatch.**

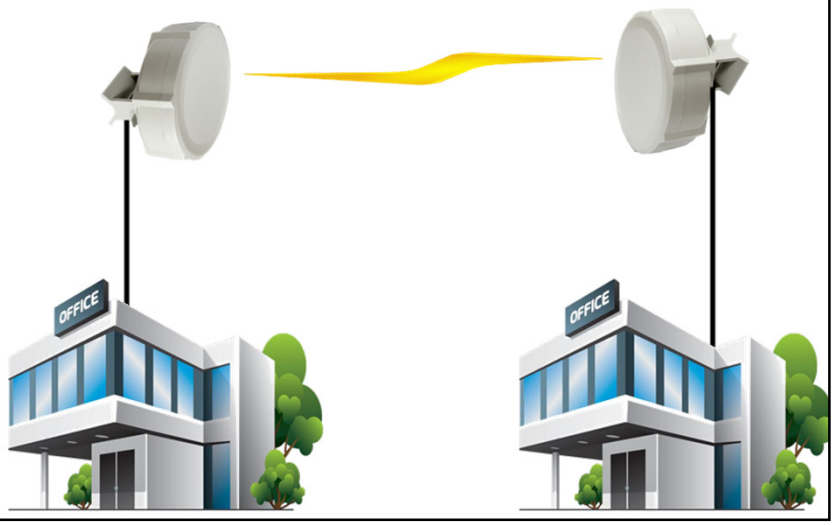
Wireless Point to Point

A practical way to connect 2 or more locations
(0 to 70km or more) *line-of-site



Application of Wireless Point to Point

- Office to Office connection.



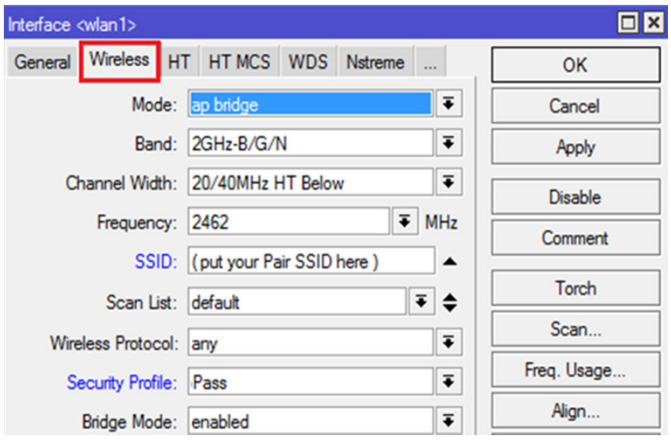
Application of Wireless Point to Point

- Office to Home connection.

Wireless Point to Point

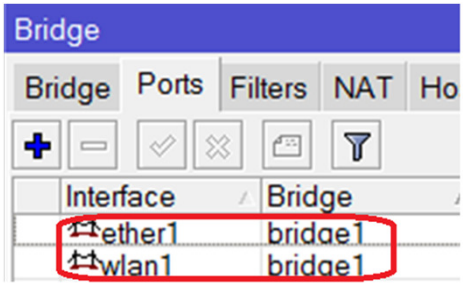
Configuration on AP Side

- **Configure Wireless as (AP-Bridge or Bridge)**



Configuration on AP Side

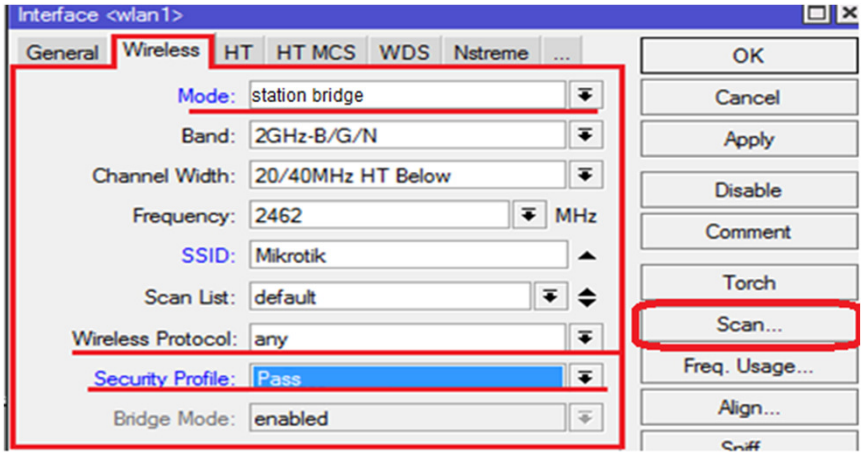
- **Bridge ports (Ether1, Wlan1)**



Wireless Point to Point (AP)

Configuration on Client Side

- **Configure Wireless as (Station Bridge) call password profile, Scan & Connect.**



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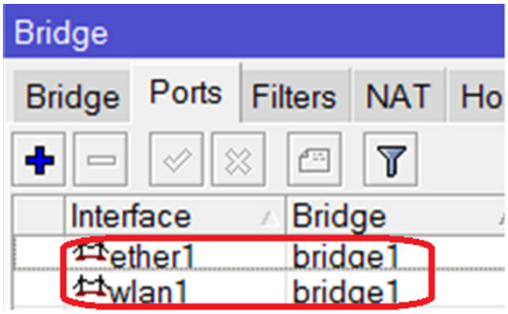


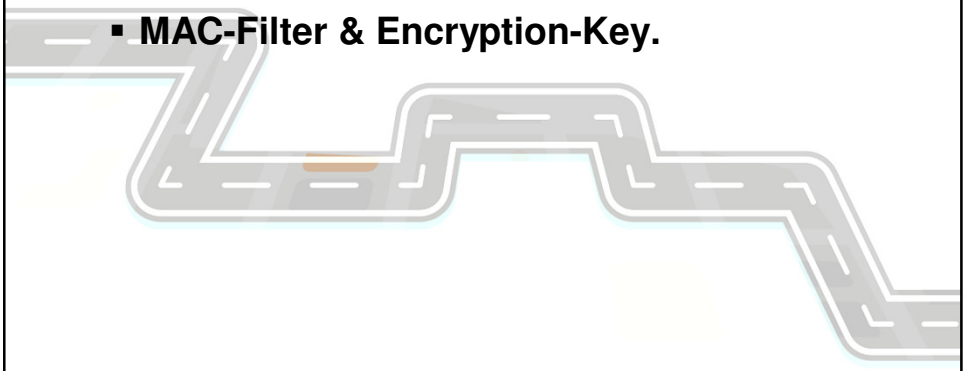
Wireless Point to Point (AP-Client)

Configuration benefits?

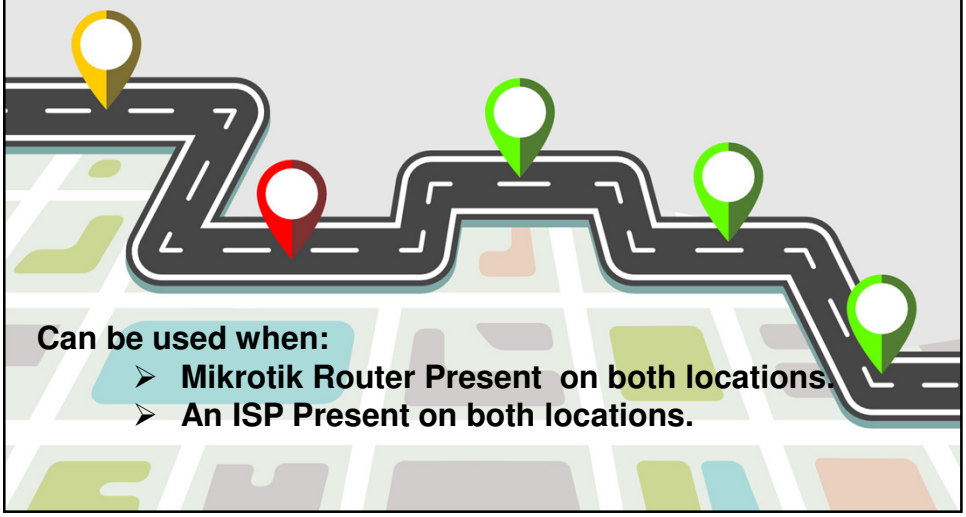
- Have 2 or more sites running on a single Network segment.
- Easy resources sharing between sites.

Improvements & Security

- HT, TX-power, Wireless chain & Alignment.
- MAC-Filter & Encryption-Key.



Wireless Point to Point setup with VLAN & Dual WAN



Can be used when:

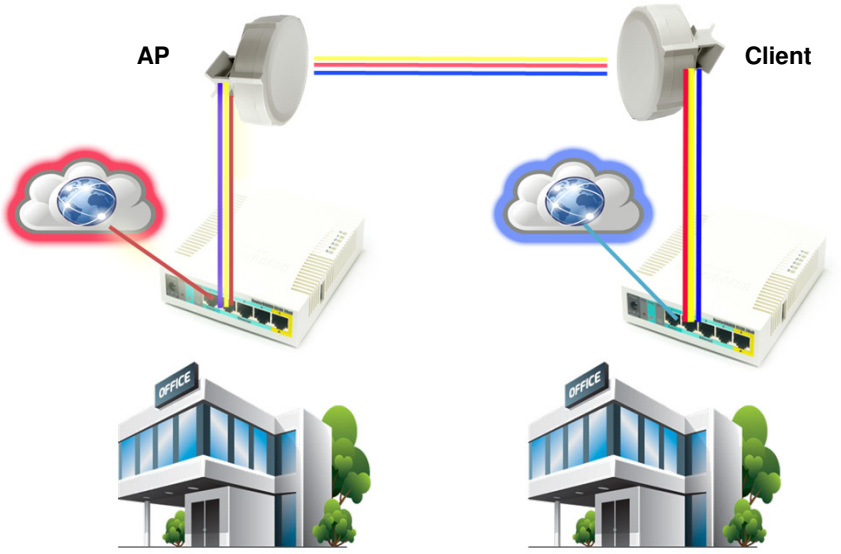
- Mikrotik Router Present on both locations.
- An ISP Present on both locations.

Configuration benefits?

- **Maximize usage of both ISP.**
- **Avoid possible internet down time.**
  (Multi-WAN & Multi-Site Internet Source)
- **Optimized use of Point to Point Link.**
  (Share-WAN & Maintain being in a single LAN segment)

ISP available on both site

Set-up Suggested



Configuration of RB on AP. (RB951)

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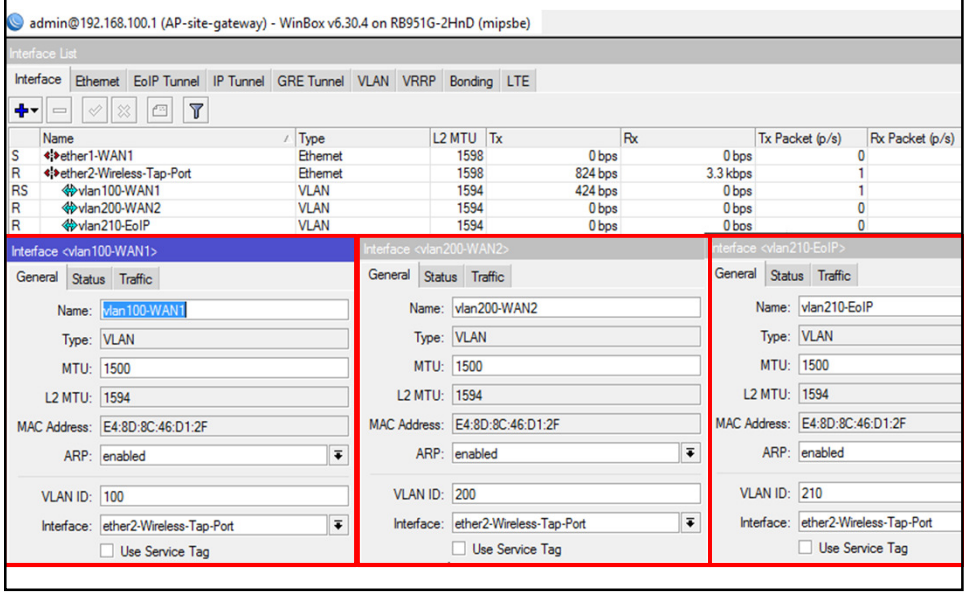
- **VLAN's**



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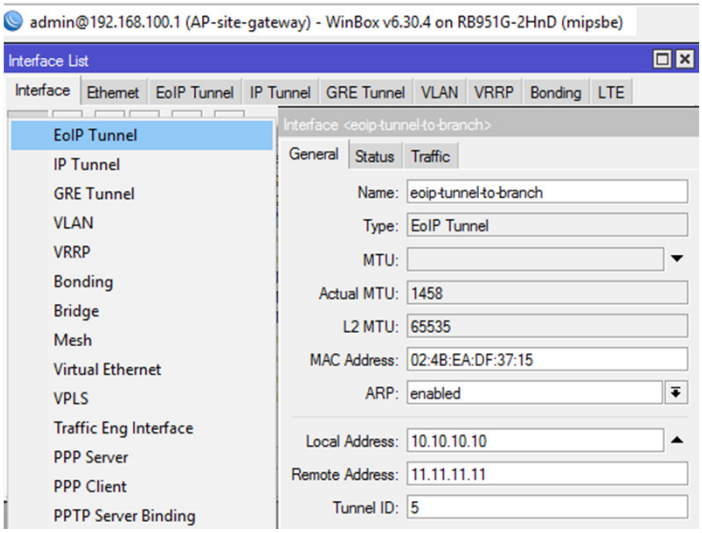
- **EoIP Tunnel**



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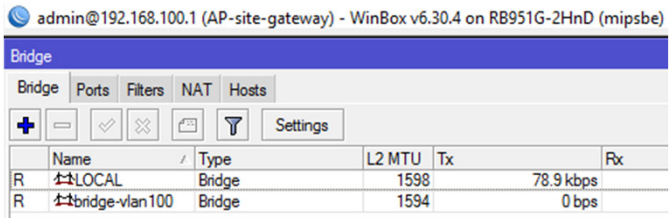
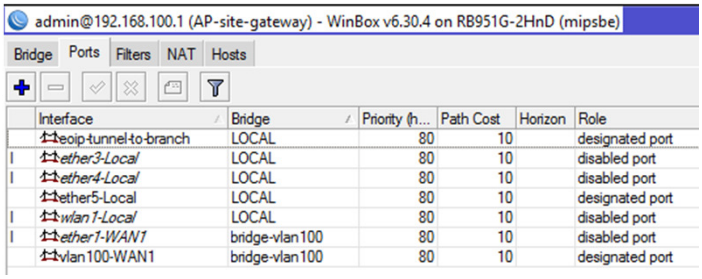
- **Bridge**



- **Bridge-Ports**



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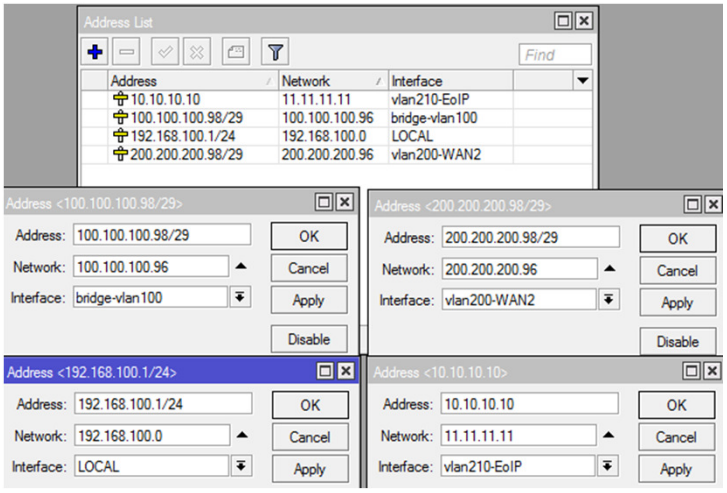
- **IP's (for Static)**



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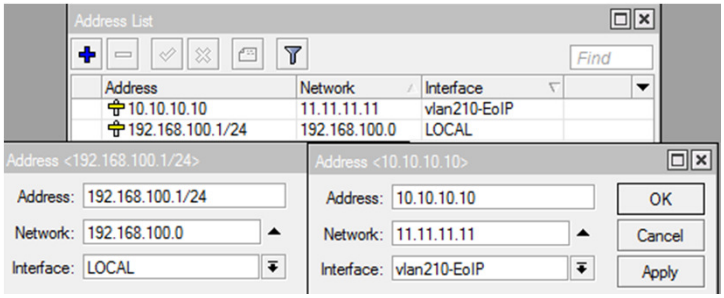

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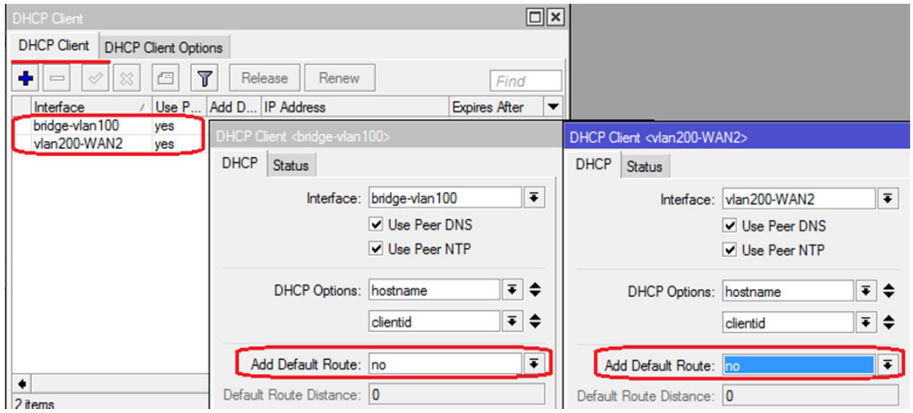
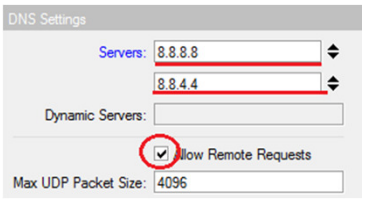
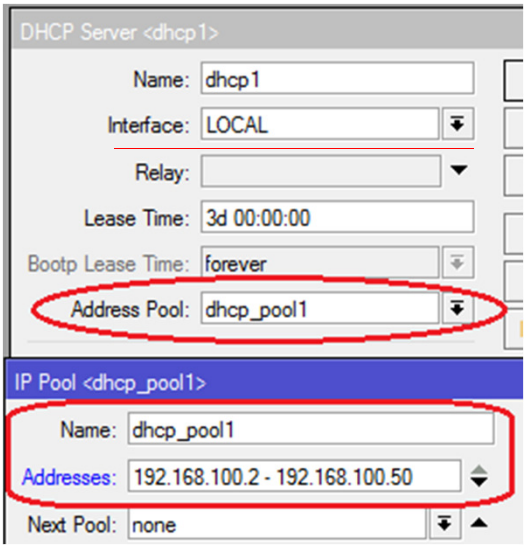


Configuration of RB on AP. (RB951)

- **DNS**



- **DHCP; DHCP-Pool**



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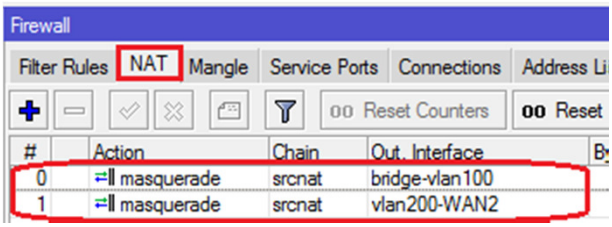
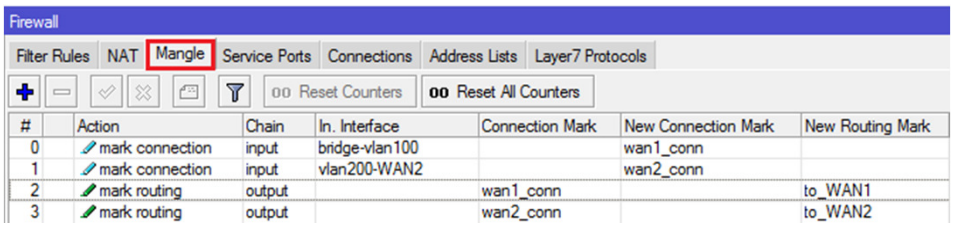
- **Firewall-NAT**



- **Firewall-Mangle**



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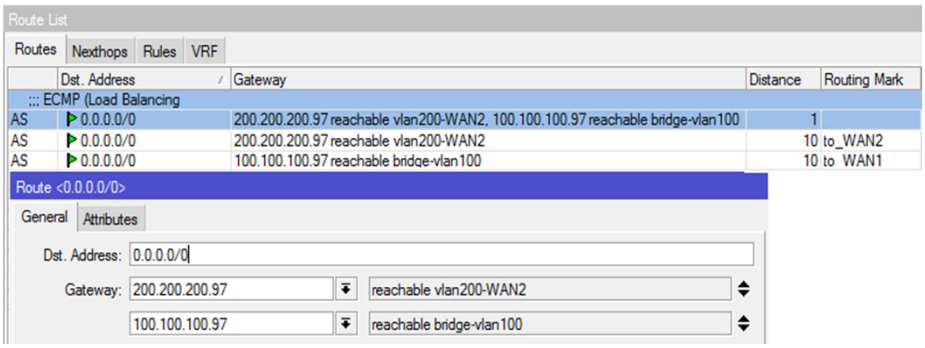
- **Routes (ECMP Load Balance & Fail-over)**



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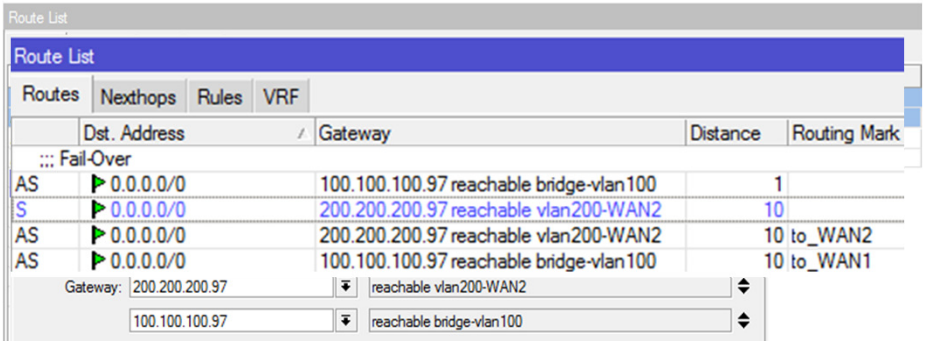

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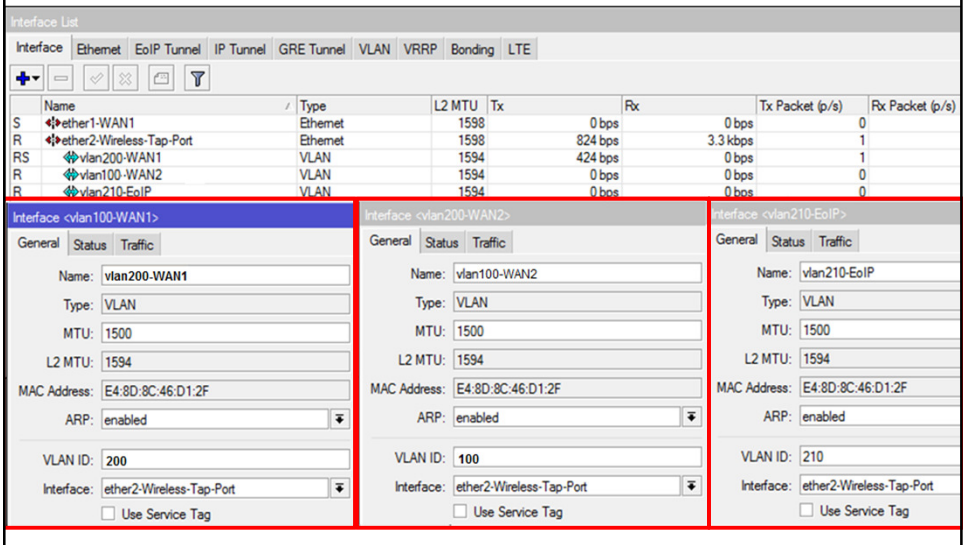

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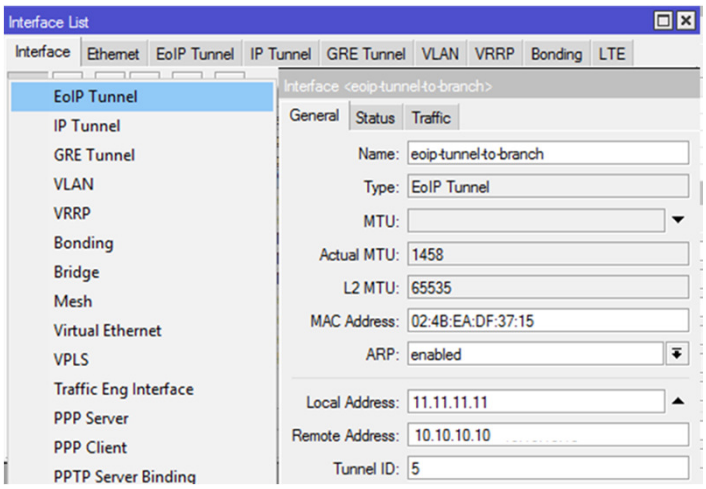

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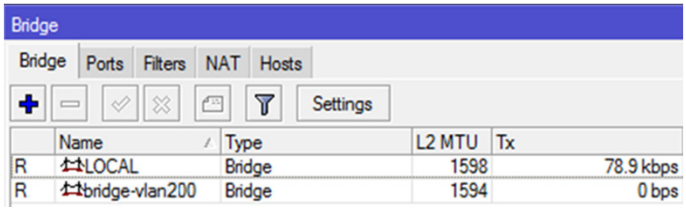

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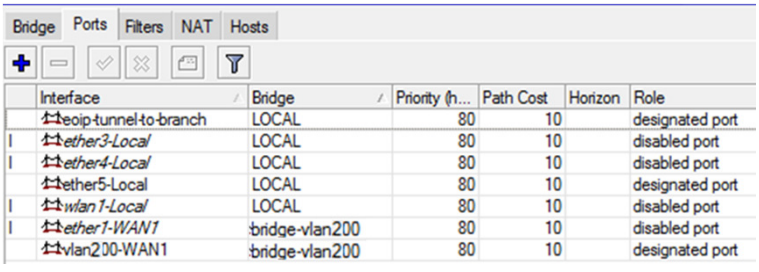

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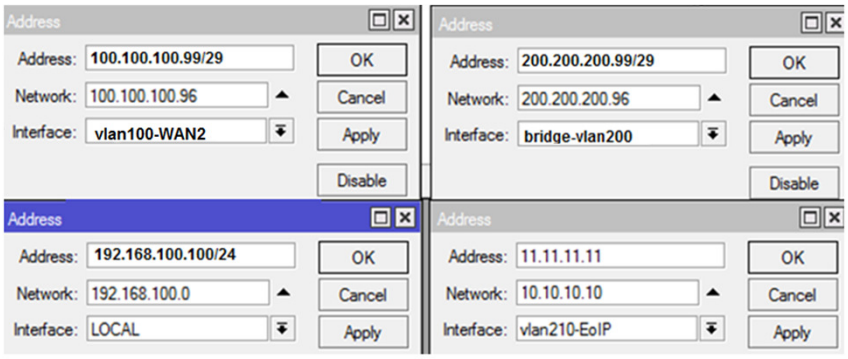

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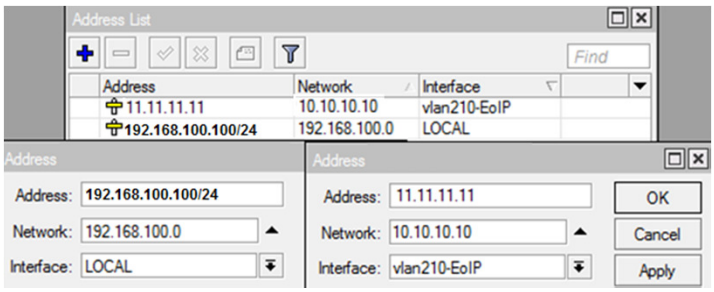

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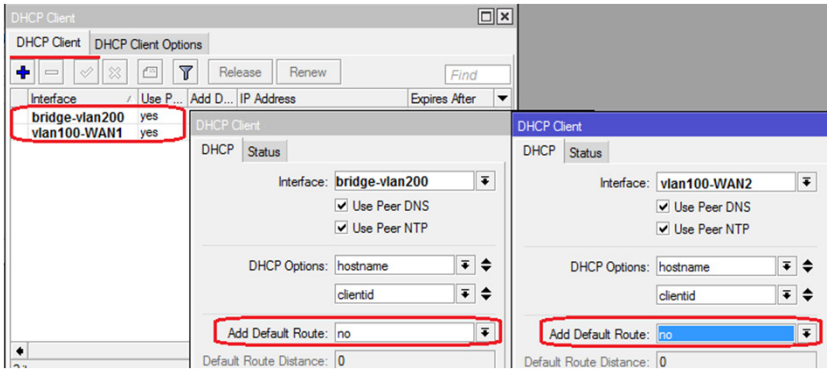

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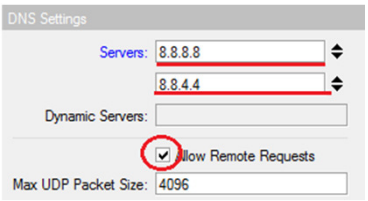

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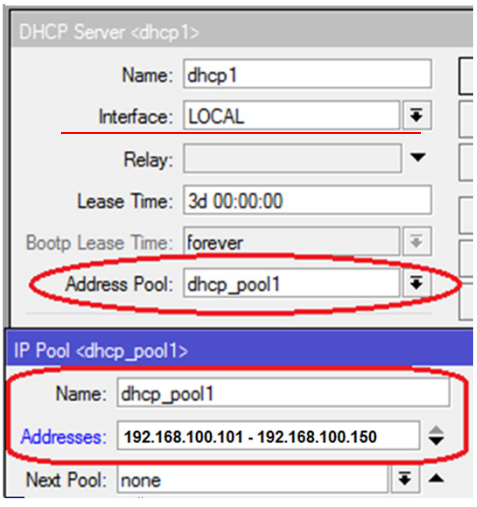

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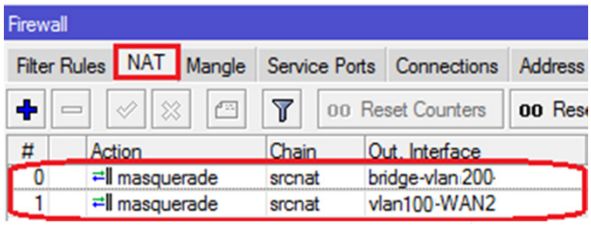

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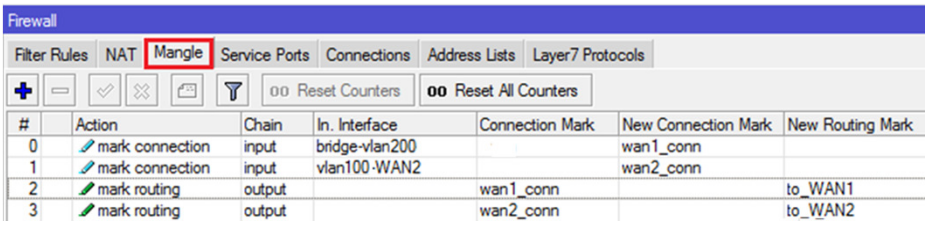

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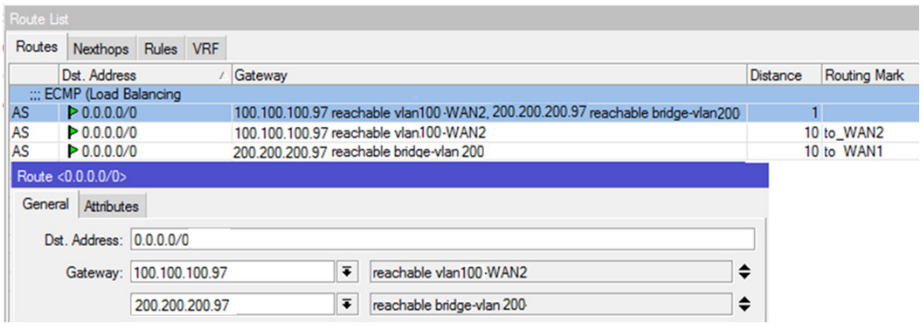

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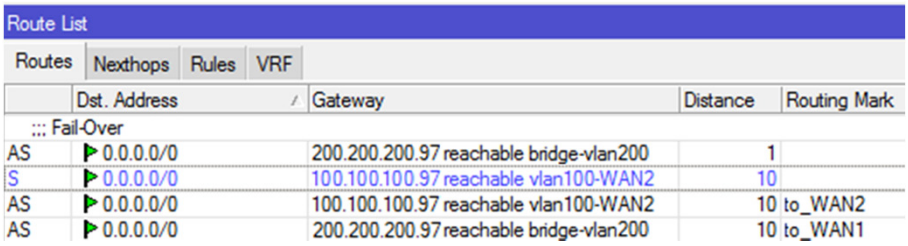

Configuration benefits?

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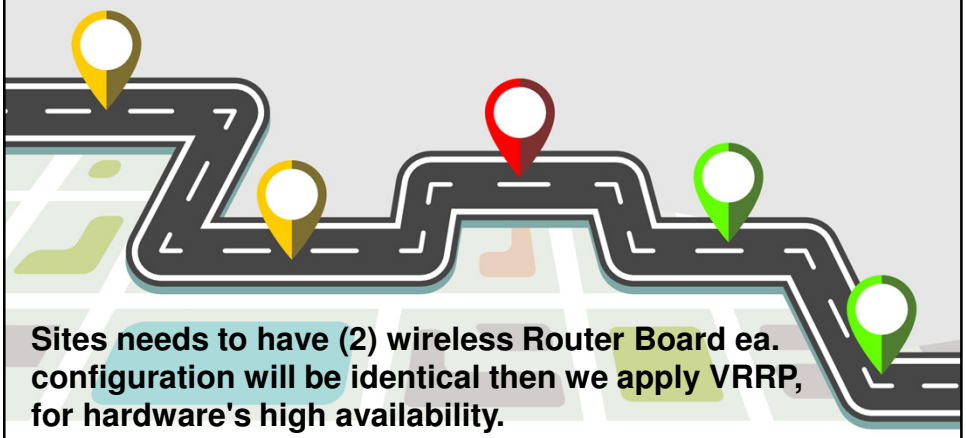
- **Avoid possible internet down time.**
  (Multi-WAN & Multi-Site Internet Source)
- **Optimized use of Point to Point Link.**
  (Share-WAN & Maintain being in a single LAN segment)

Wireless Point to Point setup with Hardware Redundnacy

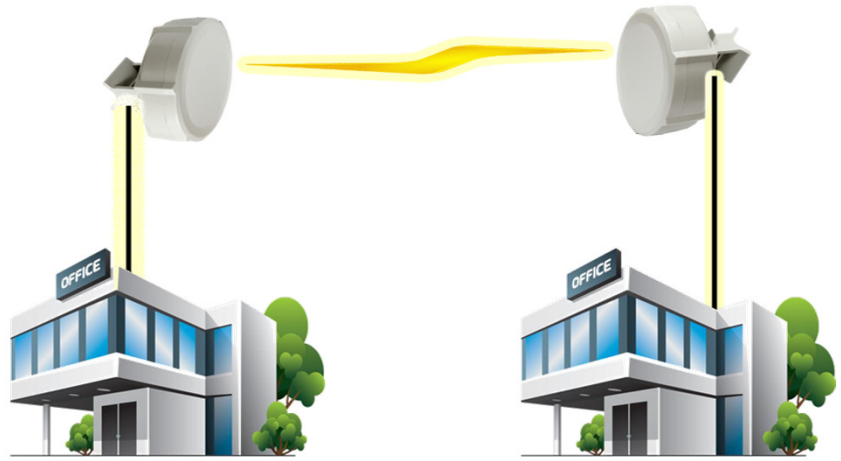


Sites needs to have (2) wireless Router Board ea. configuration will be identical then we apply VRRP, for hardware's high availability.

Configuration benefits?

- Having available backup without having wireless interference.
- Avoid wireless down time.
- Automated Wireless Backup.

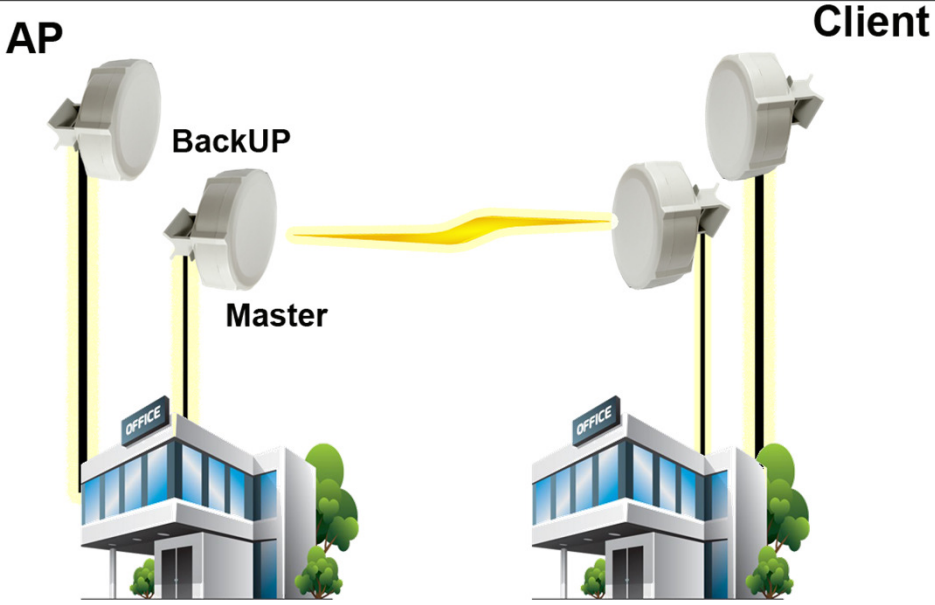
Initial Point to Point



Busted Router =

Link Disconnection

Typical Setup



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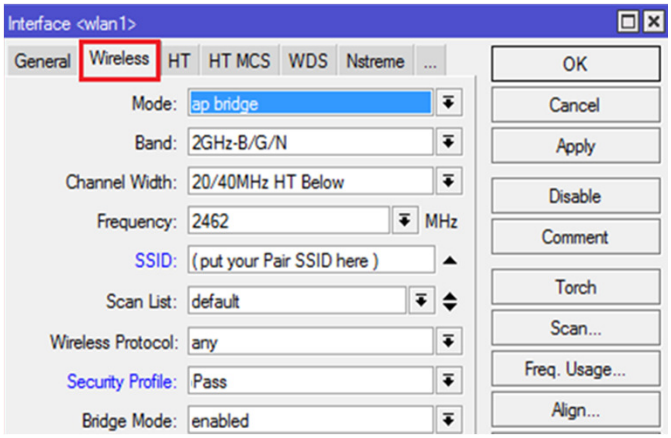

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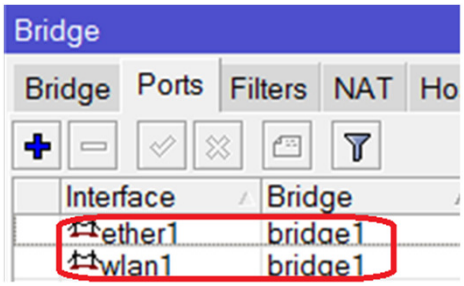
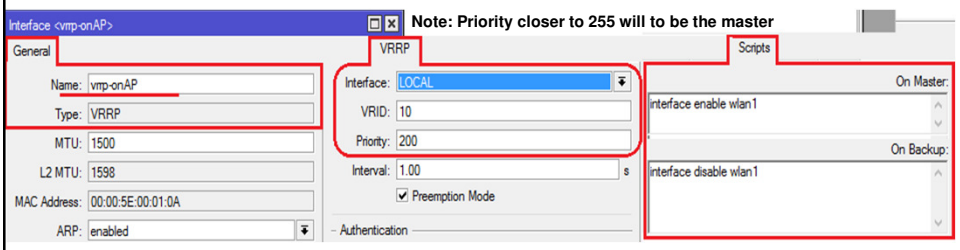


Additional configuration on AP SXT's

VRRP role: Master

- **VRRP Configuration**

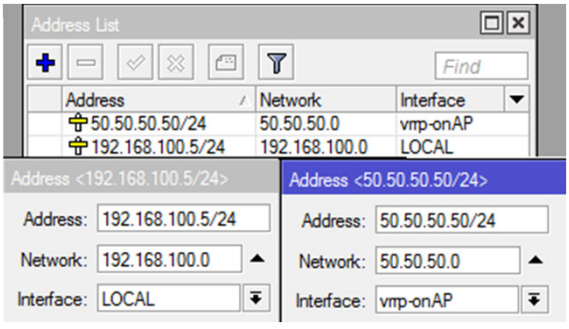


Note: Priority closer to 255 will to be the master

Additional configuration on AP SXT's

VRRP role: Master

- **Router IP & VRRP IP**



Additional configuration on AP SXT's

VRRP role: Backup

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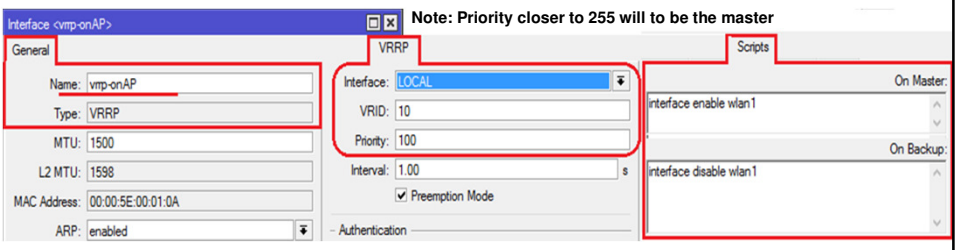

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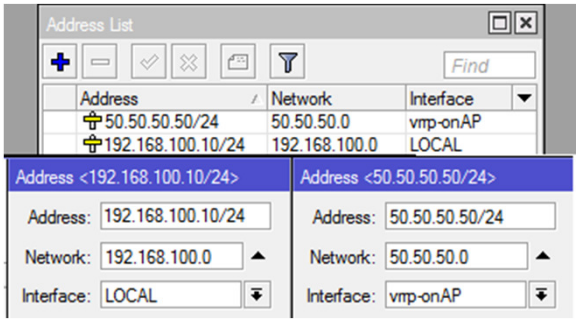

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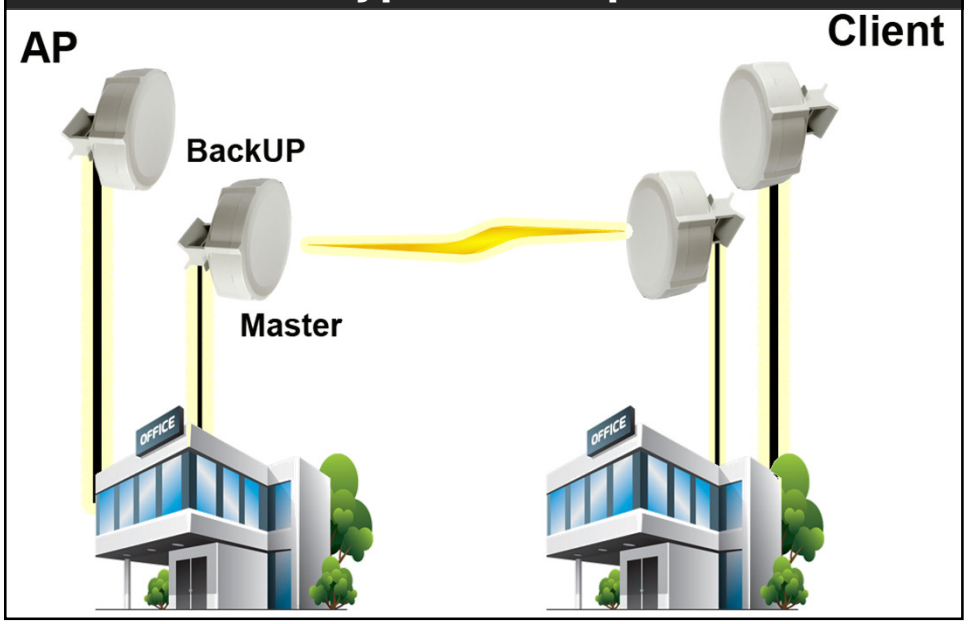

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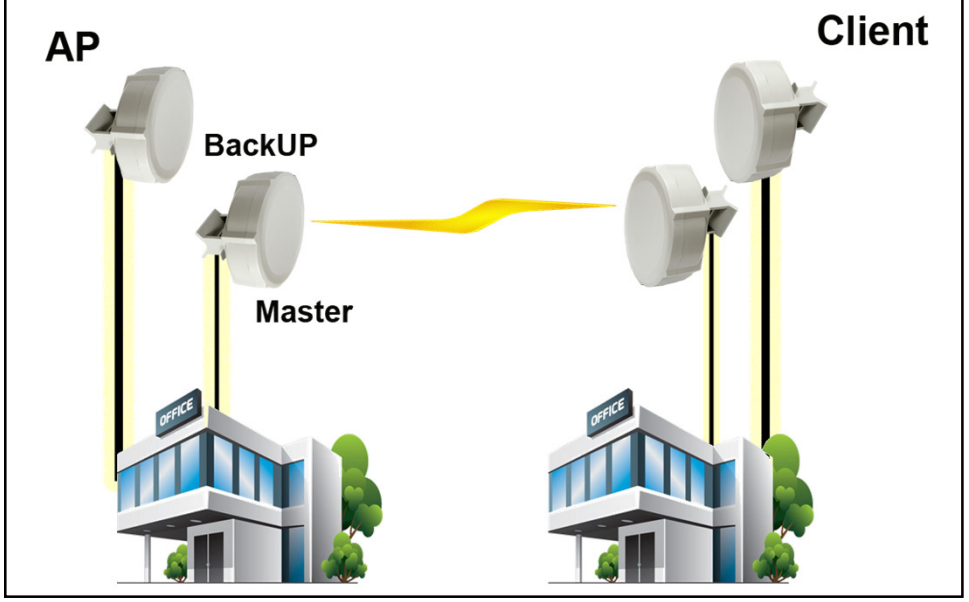
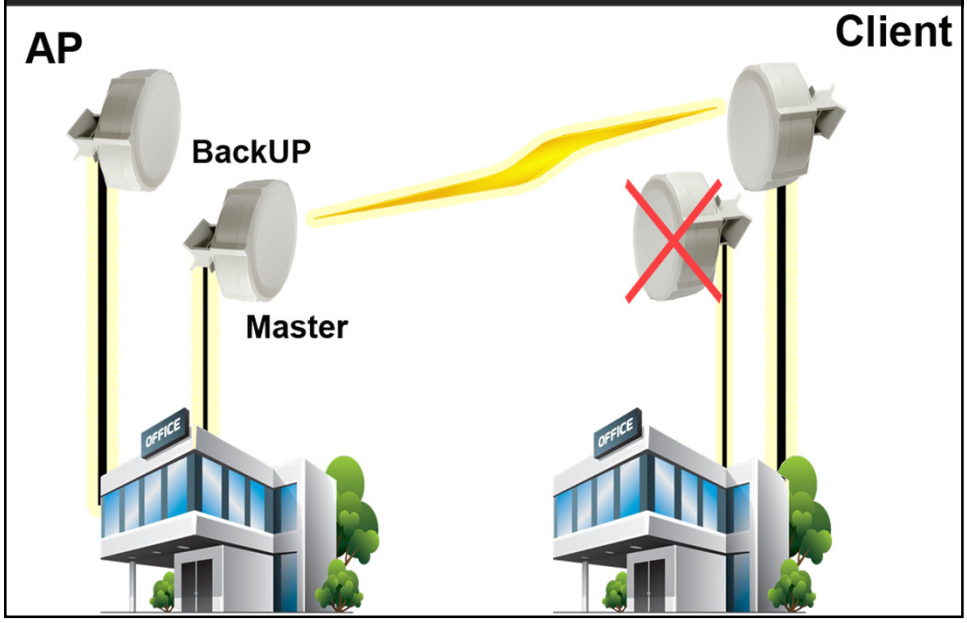
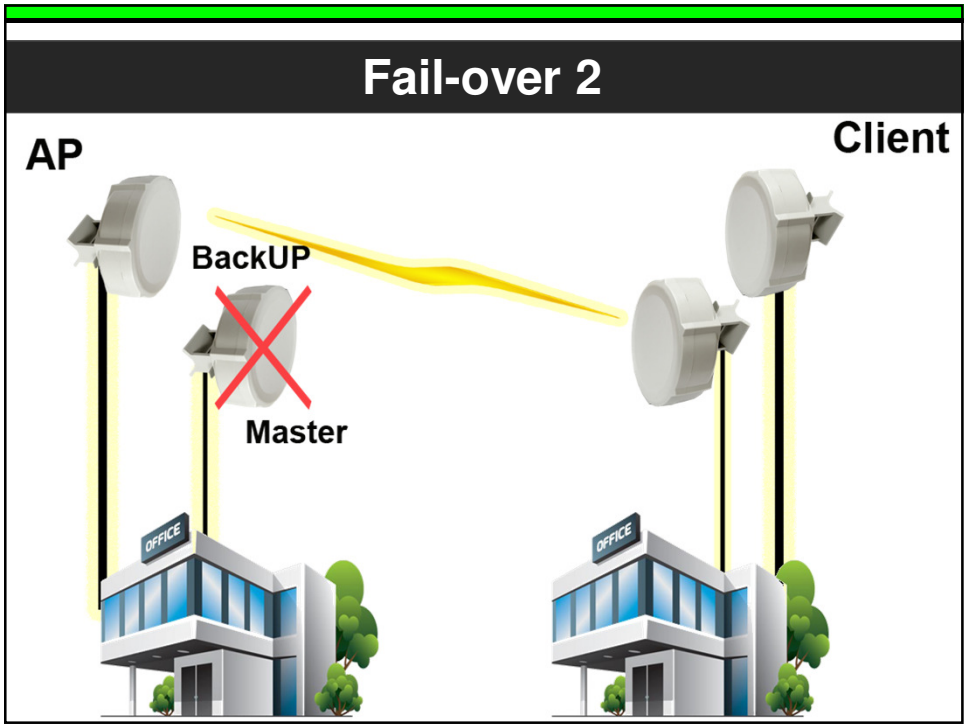


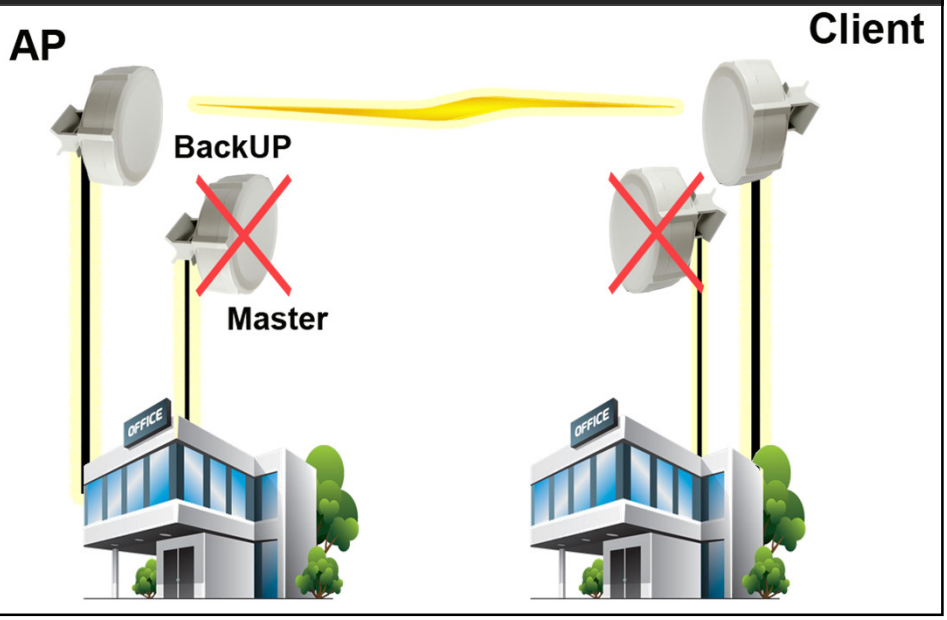
Fail-over 1



Fail-over 2



Fail-over 3



Configuration benefits?

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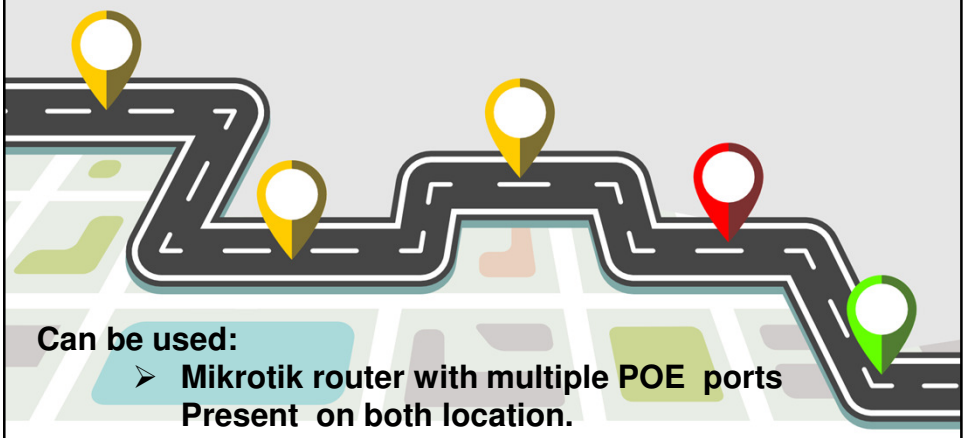
Wireless Point to Point setup with Net-watch



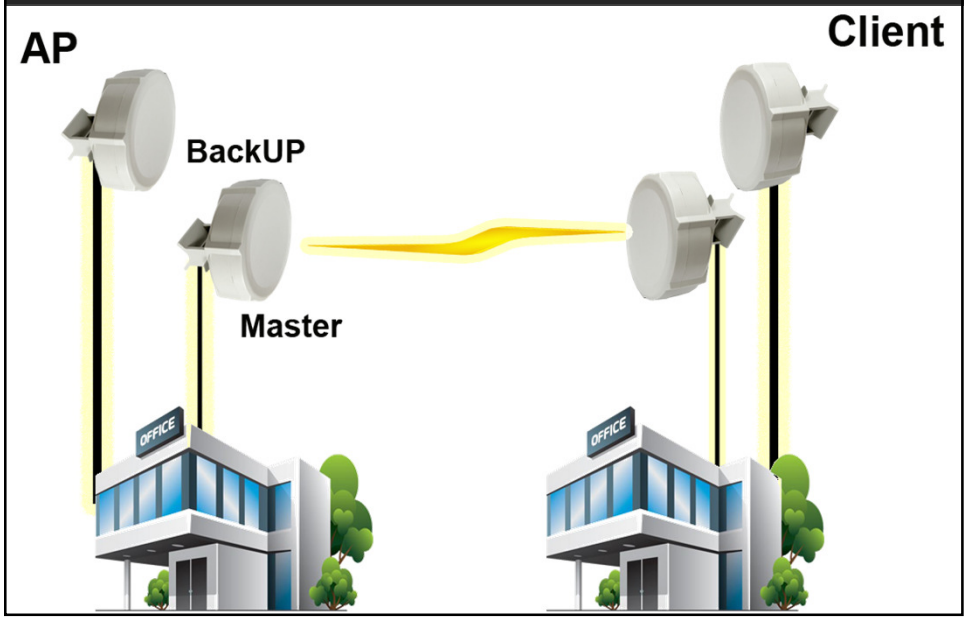
Can be used:

- Mikrotik router with multiple POE ports Present on both location.

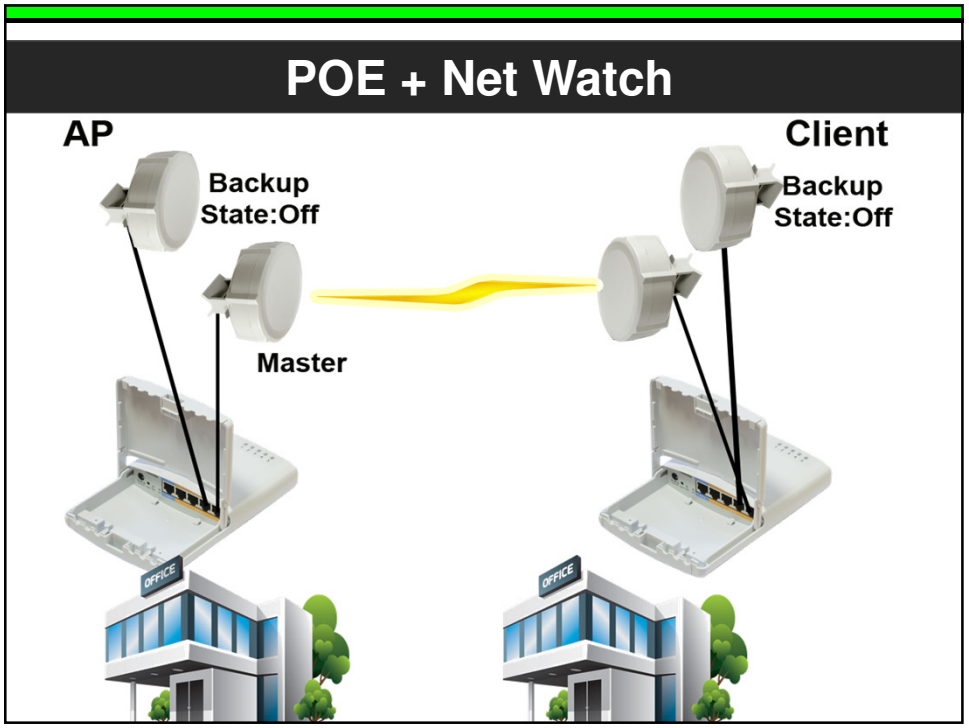
Configuration benefits?

- Having available backup without having wireless interference.
- Avoid wireless down time.
- Automated Wireless Backup.
- Save the backup router from wear and tear of circuit components.
- Power saving for the backup on off state.

VRRP Setup

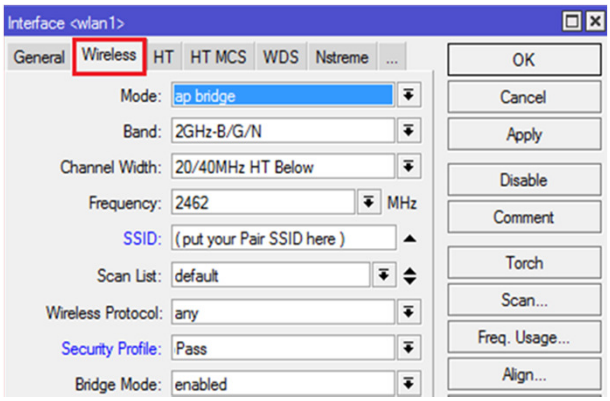


POE + Net Watch



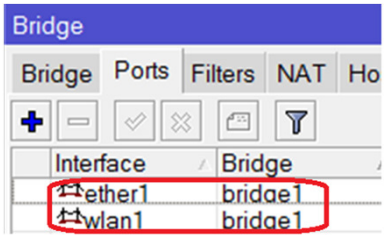
Configuration on AP Side

- **Configure Wireless as (AP-Bridge or Bridge)**



Configuration on AP Side

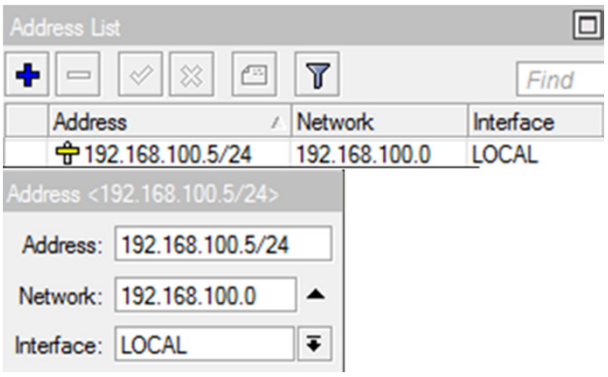
- **Bridge ports (Ether1, Wlan1)**



Additional configuration on AP SXT's

Master

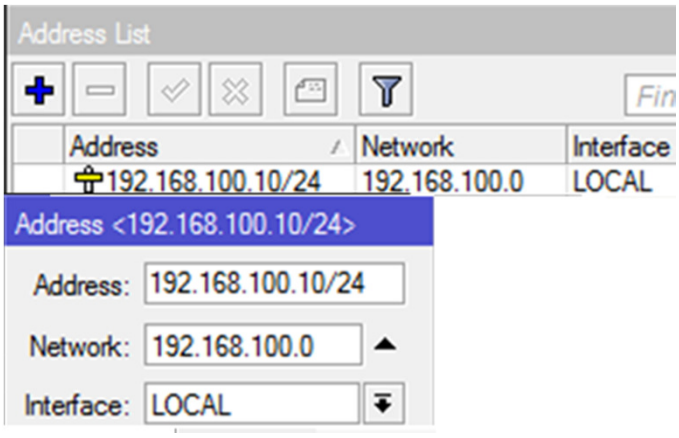
- **Router IP**



Additional configuration on AP SXT's

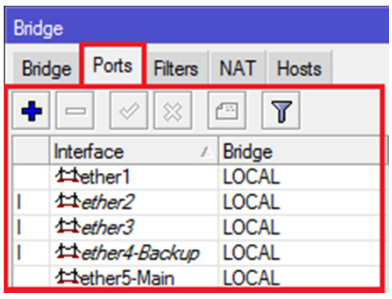
Backup

- **Router IP**

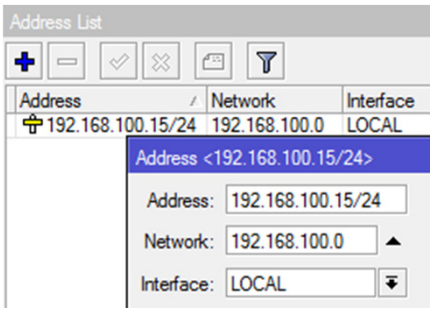


POE-Router (RB750P) Config

- **Bridge**

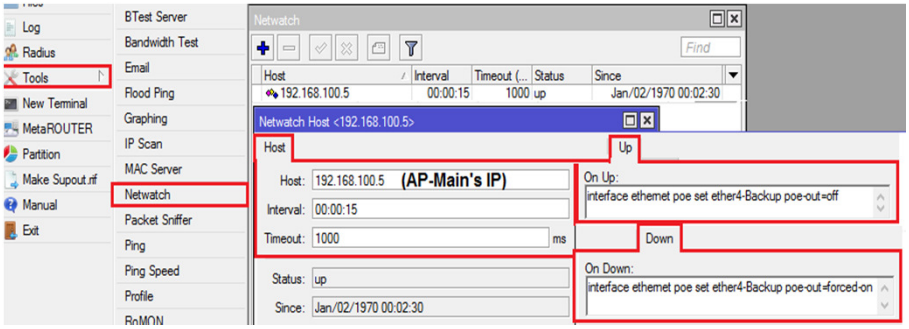


- **Router IP**

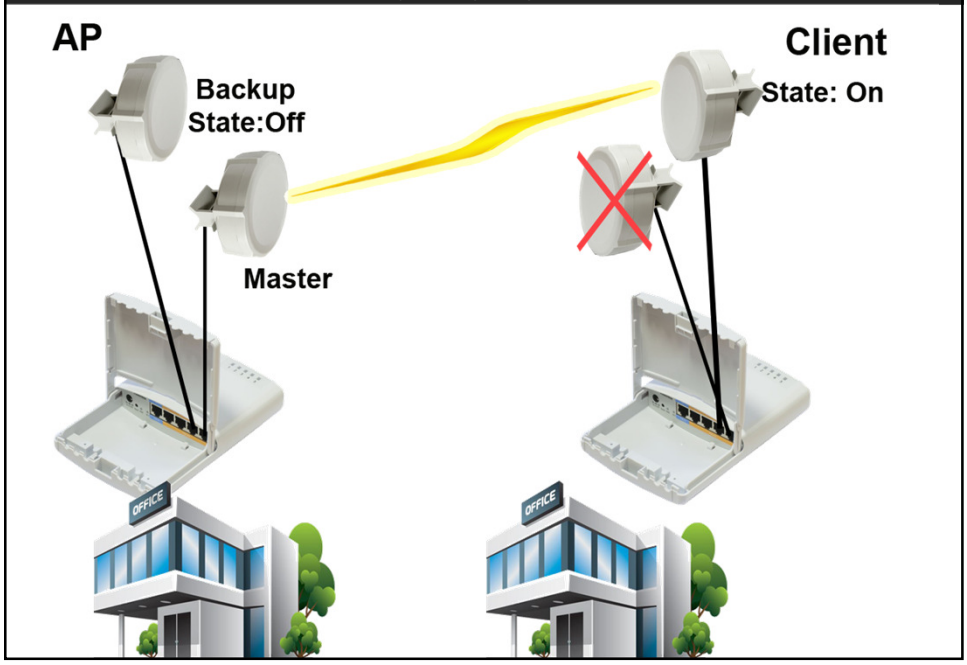


POE-Router (RB750P) Config

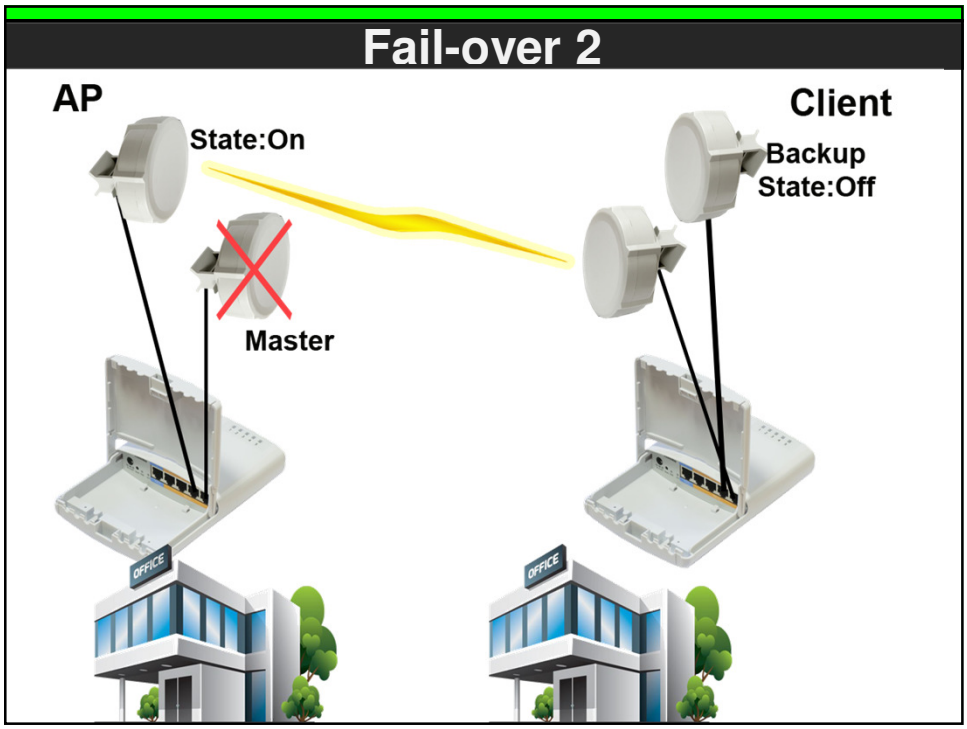
- **Netwatch**



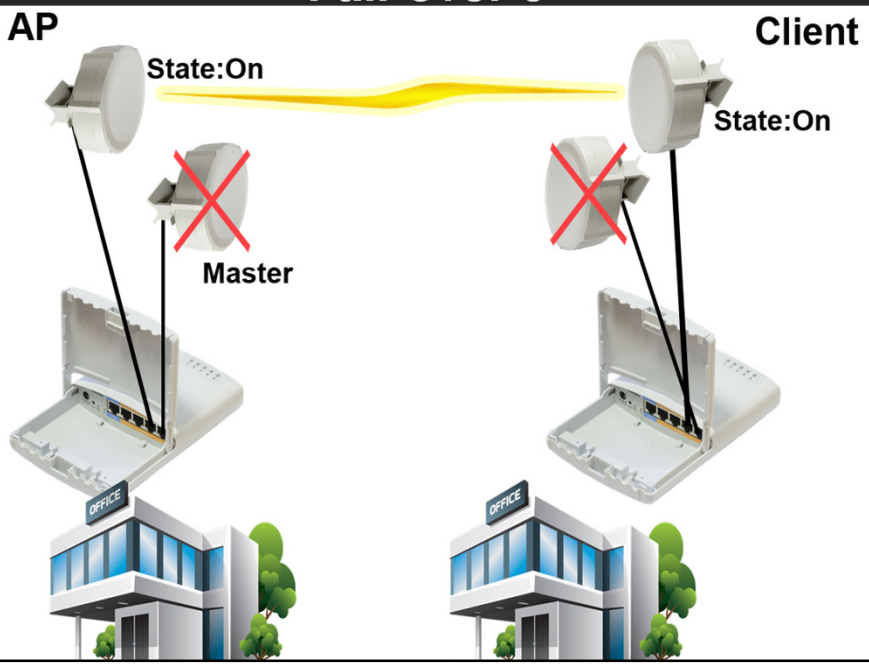
Fail-over 1



Fail-over 2



Fail-over 3



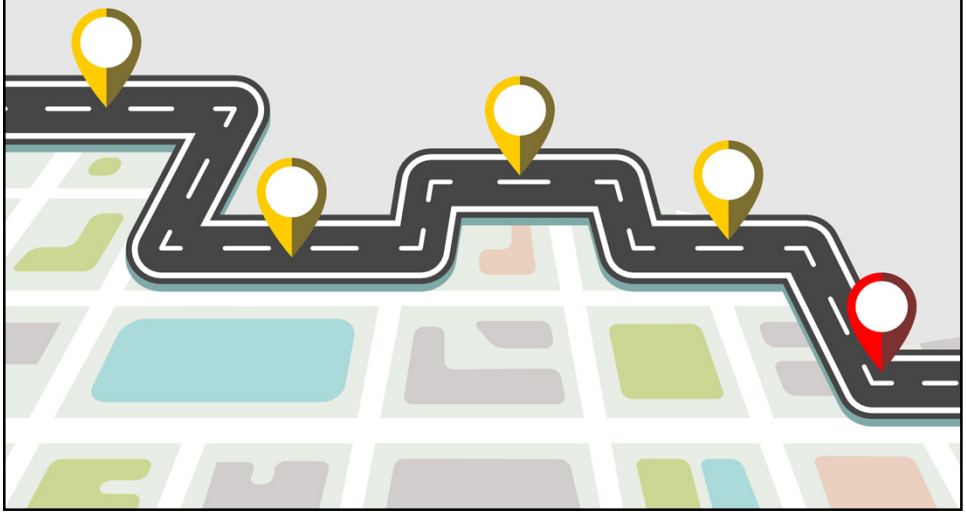
Configuration benefits?

- Having available backup without having wireless interference.
- Avoid wireless down time.
- Automated Wireless Backup.
- Save the backup router from wear and tear of circuit components.
- Power saving for the backup on off state.

Conclusions

- MikroTik's Wireless can be combined with different feature's
- MikroTik's multiple features compact in a single router board is a great advantage.
- As long as you doesn't violate any networking rule, your creativity to can create new solutions using combined MikroTik features.

Thank You



The End

- **Questions and Answers**

To get in touch with me:
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