EoIP: bridge LANs over the Internet

Easy solution for connect LAN between Work and Home.

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# EoIP

Ethernet over IP (EoIP) Tunneling is a MikroTik RouterOS protocol that creates an Ethernet tunnel between two routers on top of an IP connection. The EoIP tunnel may run over IPIP tunnel, PPTP tunnel or any other connection capable of transporting IP.

When the bridging function of the router is enabled, all Ethernet traffic (all Ethernet protocols) will be bridged just as if there where a physical Ethernet interface and cable between the two routers (with bridging enabled). This protocol makes multiple network schemes possible.
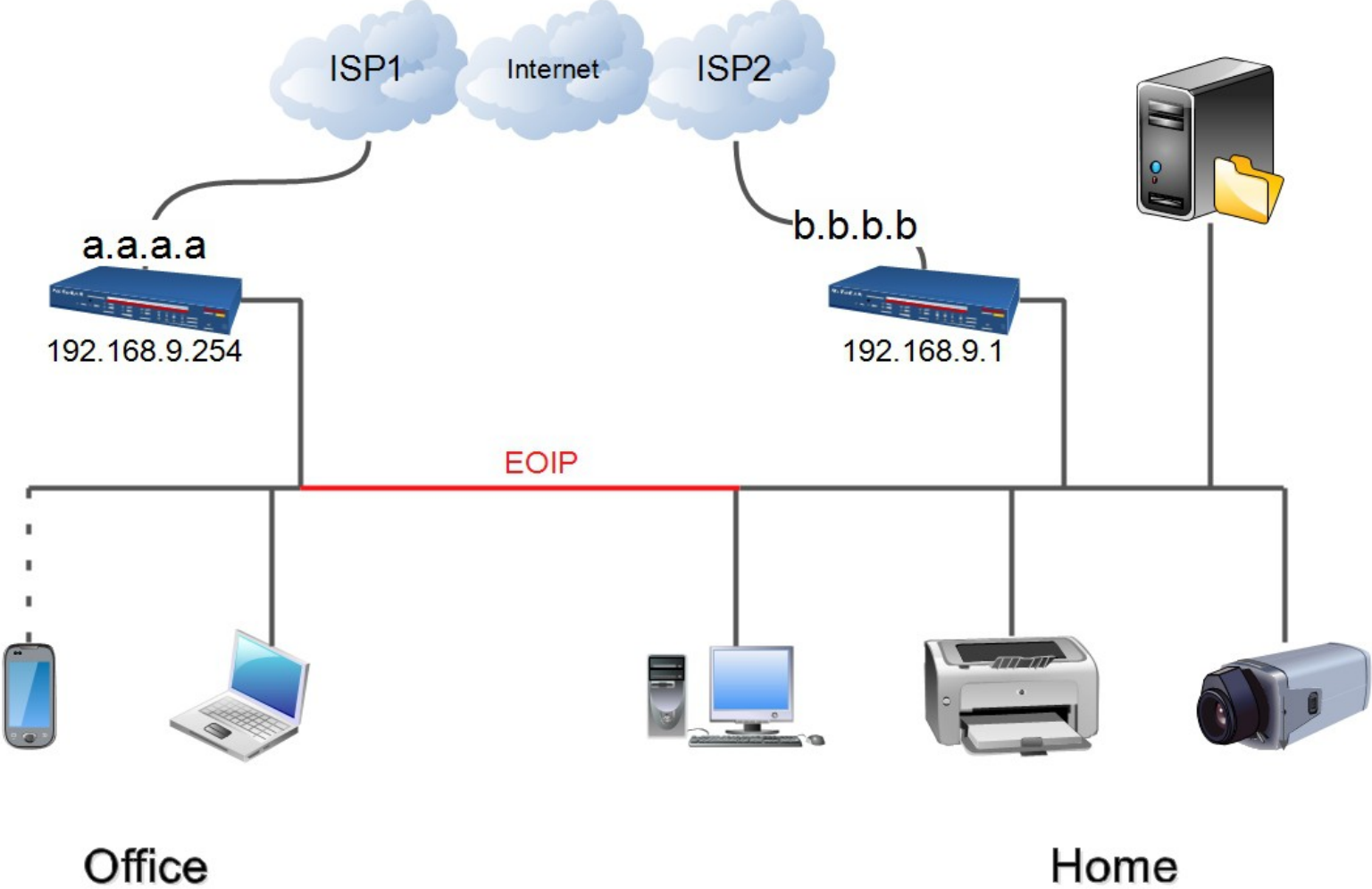
Network setups with EoIP interfaces

- Possibility to bridge LANs over the Internet

- Possibility to bridge LANs over encrypted tunnels

- Possibility to bridge LANs over 802.11b 'ad-hoc' wireless networks

Example

ISP1   Internet   ISP2

a.a.a.a

192.168.9.254

b.b.b.b

192.168.9.1

Office
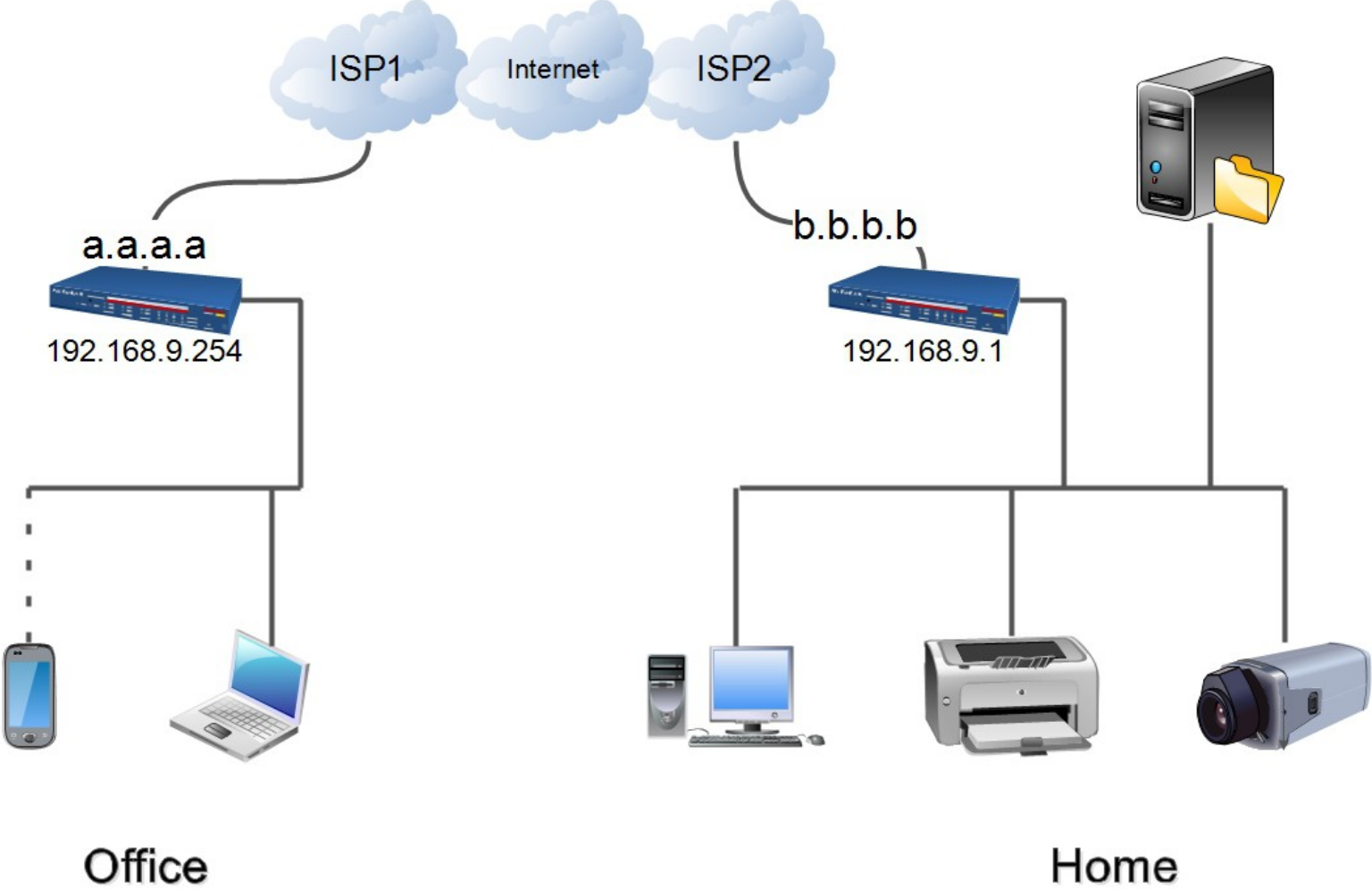
Home

Example

Application

- Access Home resource from work
  - NAS
  - Printer / Scanner
  - IP camera
  - Remote desktop
  - Internet
  - Other

Advantages and Disadvantages

Advantages

- Easy to setup
    - Port forwarding
    - Access lists
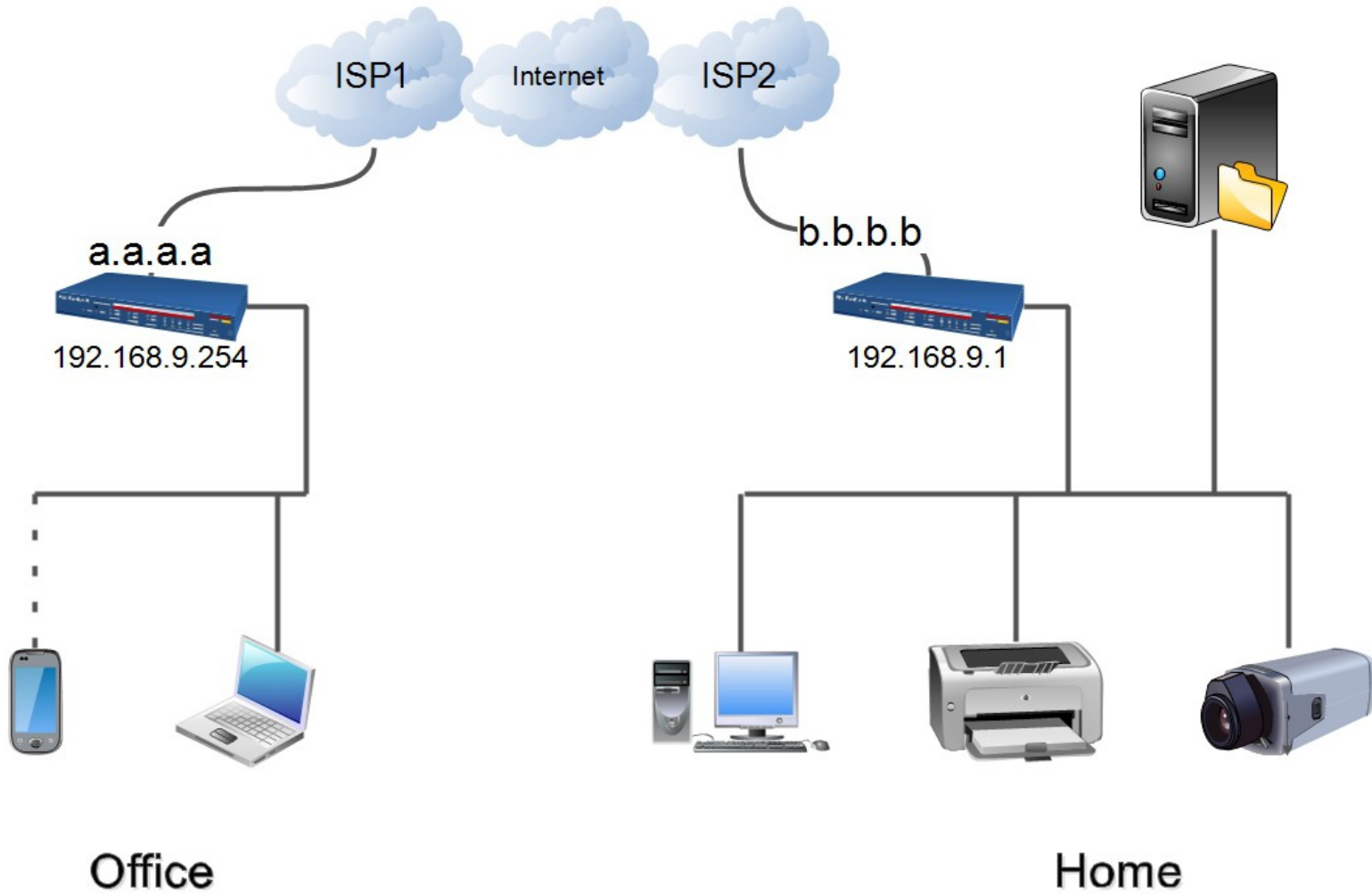
- Portability

- Security

Disadvantages

- RouterOS only

Setup step

- Create EoIP tunnel

- Bridge local interfaces with EoIP tunnel

- Filter DHCP requests over EoIP

Configuration

Create EoIP tunnel

Office

Interface <eoip-tunnel1>

General | Traffic

Field	Value
Name:	eoip-tunnel1
Type:	EoIP Tunnel
MTU:	1500
L2 MTU:	65535
MAC Address:	00:00:5E:80:00:FE
ARP:	enabled
Local Address:	
Remote Address:	b.b.b.b
Tunnel ID:	9
Keepalive Interval:	

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

enabled | running | slave

Home

Interface <eoip-tunnel1>

General | Traffic

Field	Value
Name:	eoip-tunnel1
Type:	EoIP Tunnel
MTU:	1500
L2 MTU:	65535
MAC Address:	00:00:5E:80:00:01
ARP:	enabled
Local Address:	
Remote Address:	a.a.a.a
Tunnel ID:	9
Keepalive Interval:	

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

enabled | running | slave

MAC Address: 00:00:5E:80:00:00 - 00:00:5E:FF:FF:FF

Create EoIP tunnel

- Office

```
/interface eoip
    add mac-address=00:00:5E:80:00:FE name=eoip-tunnel1\
    remote-address=b.b.b.b tunnel-id=9
```

- Home

```
/interface eoip
    add mac-address=00:00:5E:80:00:01 name=eoip-tunnel1\
    remote-address=a.a.a.a tunnel-id=9
```

Bridge local interfaces with EoIP tunnel

/interface bridge port

add bridge=bridge-\
local interface=eoip-\
tunnel1

Filter DHCP request over EoIP

Filter DHCP requests over EoIP

```
/interface bridge filter
    add action=drop chain=forward comment=\
    "Drop all DHCP requests over EoIP bridge"\
    dst-port=67 ip-protocol=udp \
    mac-protocol=ip
```

Things to Consider

- IP address management
    - Static leases for DHCP
    - Separate range for DHCP pool
- Firewall

Thank You