

PiFi

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Goal

Let's build an overly complicated Wireless NIC.

Desktop → [eth] → Pi → [WiFi] → AP

- Pi
 - Ethernet
 - WiFi
 - Forwarding
- Desktop
 - Ethernet

Pi eth0

```
# Put it on an internal subnet
[Match]
Name=eth0

[Network]
Address=10.0.0.1/24
Gateway=10.0.0.0
```

Pi wlan0

```
Description="Home"  
Interface=wlan0  
Connection=wireless  
Security=wpa  
IP=dhcp  
ESSID=rosndanny  
Key=hunter2
```

Forwarding

- IP/ARP
- iptables
- routing

IP/ARP

```
net.ipv4.ip_forward=1  
net.ipv6.default.forwarding=1  
net.ipv6.conf.all.forwarding=1  
  
net.ipv4.all.proxy_arp=1
```


iptables

```
iptables -t nat -A POSTROUTING -o wlan0 -j MASQUERADE  
iptables -A FORWARD -i wlan0 -o eth0 -m state --state RELATED,EST.  
iptables -A FORWARD -i eth0 -o wlan0 -j ACCEPT
```

routing

```
ip route add 10.0.0.0/24 dev eth0
```

dnsmasq

```
interface=eth0  
listen-address=10.0.0.1  
server=8.8.8.8  
domain-needed  
bogus-priv  
dhcp-range=10.0.0.1,10.0.0.128,12h
```

Desktop WiFi

```
[Match]
```

```
Name=en*
```

```
[Network]
```

```
DHCP=yes
```

testing

```
tcpdump -i wlan0
```