

# Netzwerkconfiguration für Roaming Devices

Linux Workshop Köln

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Harald Weidner <hweidner@gmx.net>

# Ziel

- Unterschiedliche Konfigurationen für Netzwerk-Interfaces verwalten
- Verwendung des ifupdown Mechanismus [Debian GNU/Linux und Derivate]
- Manuelle und automatische Auswahl der Konfiguration

# ifupdown

- Debians Mechanismus zur Netzwerkkonfiguration
- /etc/network/interfaces

```
auto lo
iface lo inet loopback
```

```
allow-auto eth0
iface eth0 inet static
    address 192.168.10.25
    netmask 255.255.255.0
    network 192.168.10.0
    broadcast 192.168.10.255
    gateway 192.168.10.1
```

```
allow-hotplug eth1
iface eth1 inet dhcp
```

- Kommandos

```
# ifup -a
# ifdown eth1
```

# Alternative Konfigurationen

- /etc/network/interfaces:

```
iface eth0-customer inet static
    address    10.12.140.65
    netmask    255.255.255.0
    broadcast  10.12.140.255
    gateway    10.12.140.1

iface eth0-office inet static
    address    172.15.31.210
    netmask    255.255.240.0
    broadcast  172.15.0.0

iface eth0-home inet static
    address    192.168.10.45
    netmask    255.255.255.0
    broadcast  192.168.10.255
    gateway    192.168.10.1

iface eth0-dhcp inet dhcp
```

- Kommandos für manuelle Auswahl:

```
# ifup eth0=eth0-customer

# ifdown eth0
# ifup eth0=eth0-home
```

# Automatische Netzwerk-Wahl

- /etc/network/interfaces:

```
auto eth0
```

```
mapping eth0
    script /root/scripts/netprobe.sh
    map 10.12.140.65/24 10.12.140.1 eth0-customer
    map 172.15.31.210/20 172.15.18.95 eth0-office
    map 192.168.10.45/24 192.168.10.1 eth0-home
    map - - eth0-dhcp
```

```
iface eth0-customer inet static
    address 10.12.140.65
```

```
[...]
```

```
iface eth0-office inet static
```

```
[...]
```

```
iface eth0-home inet static
```

```
[...]
```

```
iface eth0-dhcp inet dhcp
```

- Mapping-Skript:

- Interface-Name eth0 als Argument
- Jede „map“ Zeile auf Standardeingabe
- Netzwerkname auf Standardausgabe

# Mapping-Skript (Beispiel, vereinfacht)

```
iface="$1"
which=""
ip addr flush dev $iface
ip link set $iface up
sleep 1

while read addr pingme scheme; do
    test "$which" && continue
    echo "    Trying $addr $pingme ($scheme)" >&2
    if test "$addr" != "-" -a "$pingme" != "-"; then
        ip addr add $addr dev $iface
        ping -c 2 $pingme && which="$scheme"
        ip addr del $addr dev $iface
    else
        which="$scheme";
    fi
done
ip link set $iface down
if test "$which"; then
    echo "    Deciding for $which" >&2
    echo $which; exit 0
fi
exit 1
```

[Vorlage: /usr/share/doc/ifupdown/examples/ping-places.sh]

# DNS-Konfiguration

- Debian-Paket resolvconf
- /etc/network/interfaces

```
auto lo
iface lo inet loopback
```

```
allow-auto eth0
iface eth0 inet static
    address 192.168.10.25
    netmask 255.255.255.0
    network 192.168.10.0
    broadcast 192.168.10.255
    gateway 192.168.10.1
    dns-nameservers 192.168.10.1 192.168.10.5
    dns-search example.com
```

```
allow-hotplug eth1
iface eth1 inet dhcp
```

# Konfiguration mit guessnet

- Standalone und ifupdown Modus
- /etc/network/interfaces:

```
auto eth0
```

```
mapping eth0
    script guessnet-ifupdown
    map-default: eth0-dhcp
```

```
iface eth0-customer inet static
    address    10.12.140.65
    [...]
    test peer address 10.12.140.1 mac 01:02:03:04:05:06
```

```
iface eth0-office inet static
[...]  
iface eth0-home inet static
[...]  
iface eth0-dhcp inet dhcp
```