

prf command



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Description

The command allows to control pseudo-radio interfaces. [MINT](#) architecture protocol can work not only via radio interfaces but through wired Ethernet interfaces. For this purpose, "prf" interface is used which can be attached to the physical interface.

The "prf" driver allows sending network frames of a proprietary format through Ethernet network. When sending frames to Ethernet, the driver encapsulates them into IEEE802.3 frames. If the driver settings allow the frames transmission longer than 1514 bytes, then encapsulation can also be performed in "Jumbo frame" in accordance with the document IETF "Extended Ethernet Frame Size Support". If specified maximal length of Ethernet frame is not enough to send a fully encapsulated original frame, this frame will be fragmented and then assembled at the remote side. Fragmentation algorithm uses the feature of Ethernet to avoid a delivery of frames out of turn.

There is a possibility to create up to four isolated pseudo-radio networks within one Ethernet segment. Each prf interface can be assigned a number from 0 to 3. Frames sent to Ethernet with a specific channel number can be received on other nodes only by prf interfaces with the same channel number.

To activate the pseudo-radio interface, the following command must be entered:

```
ifconfig prfN up
```

Syntax:

```
prf N parent IFNAME [hwmtu N] [channel N]
prf N clear
```

Parameters

Parameter	Description
parent IFNAME	Sets parent interface through which encapsulated (fragmented) packets will be sent. Only Ethernet-type interfaces can be configured. <ul style="list-style-type: none">• "IFNAME" – interface identifier.
hwmtu N	The radio frames are often longer than the standard Ethernet frame size, PRF interfaces using Ethernet as the transmission medium must split the jumbo frames into multiple pieces and reassemble them at their destination. To calculate the maximum frame size that can be transmitted over Ethernet, the system performs a range of measurements by sending special test packets with different lengths and determines the maximum length (hwmtu) that was successfully received by the destination device. The "hwmtu" parameter is measured for each neighbor, to display this value use the " <i>mint map detail</i> " command. Thus, when MINT based switching is activated, the "hwmtu" parameter is calculated automatically by the system, the value set manually will be overwritten.
channel N	Sets channel number (0-3) with which the frames are sent and received by parent interface. By default channel number is 0.
clear	Removes prf with a specified number.

Examples

Create pseudo-radio interface 5. Set the "eth0" interface as parent, and assign channel number 3.

```
ifconfig prf5 up
prf5 link administratively up
prf 5 parent eth0
prf 5 channel 3
```

By using the "ifconfig" command display an information about the created prf interface

```
ifconfig -a
prf5: flags=8003<UP,BROADCAST,MULTICAST> mtu 1500
inet 0.0.0.0 netmask 0x0
ether 00:04:35:03:5e:4e
Parent interface eth0
Hardware MTU 1514
-----
Transmitted packets 0
Transmit fragmentation 0 packets in 0 fragments
Load (pps) 0
Load (kbps) 0
-----
Received packets 0
Receive fragmentation 0 packets in 0 fragments
Load (pps) 0
Load (kbps) 0
-----
Scattered fragments 0
Corrupted packets 0
Double encapsulated packets 0
Out of fragbufs 0
Out of mbufs 0
```

- "Scattered fragments" – number of frames where one or several fragments were lost, the frame cannot be restored.
- "Corrupted packets" – number of frames with the wrong length or structure.
- "Double encapsulated packets" – number of frames with double encapsulation.
- "Out of fragbufs" – the number of errors as a result of frame assembly buffer overflow due to too many fragments (neighbors) sources.
- "Out of mbufs" – the number of errors as a result of system buffers overflow.