

**NAME**

**ng\_rfc1490** - RFC 1490 netgraph node type

**SYNOPSIS**

```
#include <netgraph/ng_rfc1490.h>
```

**DESCRIPTION**

The **rfc1490** node type performs protocol encapsulation, de-encapsulation, and multiplexing according to RFC 1490 (which has since been updated by RFC 2427). This particular type of encapsulation is often used on top of frame relay DLCI channels.

The downstream hook is used to transmit and receive encapsulated frames. On the other side of the node, the *inet* and *ppp* hooks are used to transmit and receive raw IP frames and PPP frames, respectively. PPP frames are transmitted and received according to RFC 1973; in particular, frames appearing on the *ppp* hook begin with the PPP protocol number. The *ethernet* hook can be used to transmit and receive Ethernet frames (without a checksum) in RFC 1490's bridging format.

Typically the *inet* hook is connected to the *inet* hook of an *ng\_iface(4)* node.

**HOOKS**

This node type supports the following hooks:

*downstream* Connects to the RFC 1490 peer entity.

*ethernet* Transmits and receives bridged raw Ethernet frames, without a checksum.

*inet* Transmits and receives raw IP frames.

*ppp* Transmits and receives PPP frames.

**CONTROL MESSAGES**

This node type supports the generic control messages, plus the following:

**NGM\_RFC1490\_SET\_ENCAP (*setencap*)**

This command sets encapsulation method for the node. The desired method must be passed as a string message argument, and must be one of the following supported encapsulation modes:

"*ietf-ip*" IP packets are sent using simple RFC1490/2427 encapsulation.

"*ietf-snap*" IP packets are sent inside SNAP frames. Also conforms to RFC1490/2427.

"cisco" IP packets are sent and received using proprietary Cisco encapsulation method.

#### NGM\_RFC1490\_GET\_ENCAP (**getencap**)

This command returns current encapsulation method on the node.

### SHUTDOWN

This node shuts down upon receipt of a NGM\_SHUTDOWN control message, or when all hooks have been disconnected.

### SEE ALSO

netgraph(4), ng\_frame\_relay(4), ng\_iface(4), ngctl(8)

C. Brown and A. Malis, *Multiprotocol Interconnect over Frame Relay*, RFC 2427.

W. Simpson, *PPP in Frame Relay*, RFC 1973.

<http://www.cisco.com/warp/public/121/frf8modes.pdf>

### HISTORY

The **ng\_rfc1490** node type was implemented in FreeBSD 4.0.

### AUTHORS

Julian Elischer <[julian@FreeBSD.org](mailto:julian@FreeBSD.org)>

### BUGS

Not all of RFC 1490 is implemented.