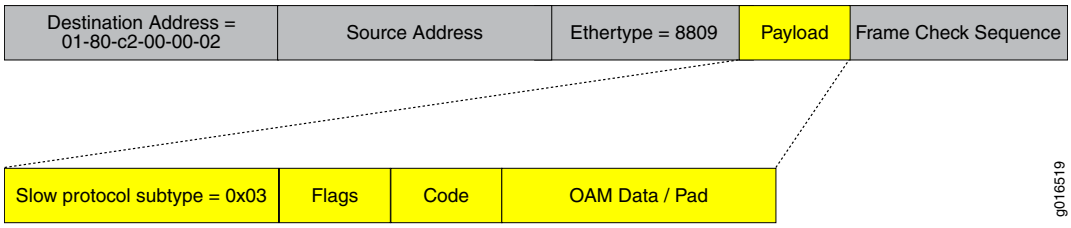
OAM Messages

Because 802.3ah is an optional component and not all functionalities of OAM might be supported on a particular system, discovery mechanisms are used to ascertain the presence and capabilities of the remote peer.

Transmitted Ethernet OAM messages or OAM PDUs are of standard length, untagged Ethernet frames within the normal frame length limits in the range 64–1518 bytes. The maximum OAM PDU frame size exchanged between two peers is determined during the discovery phase. OAM PDUs contain the destination MAC address of the slow protocols multicast (0180.c200.0002) and an Ethertype of 8809. In a slow protocol environment, the bandwidth required is minimal and the frame transmission rate is limited to a maximum of 10 frames per second. The first octet of the frame payload is the slow protocol subtype field and is set to 0x03. OAM PDUs do not travel beyond a single hop and are transmitted at a rate limited to a maximum of 10 OAM messages per second. Certain OAM PDU types might be transmitted multiple times to improve the probability of their successful receipt on degrading, lossy links. Figure 1 shows the OAM PDU format.

Figure 1: OAM PDU Format



The Flags field is used to inform the local state to the peer. This state is used in discovery and in remote failure detection. The Code field denotes the type of OAM packet. The format of the OAM Data/Pad field consists of TLV elements.

Four types of OAM messages are supported:

- Information OAM PDU—A variable-length OAM PDU that is used for the discovery process. This OAM PDU contains local, remote, and organization-specific information.
- Event notification OAM PDU—A variable-length OAM PDU that is used for link monitoring. This type of OAM PDU might be transmitted multiple times to improve the probability of a successful receipt, such as in environments that result in high-bit errors. Event notification OAM PDUs also include a timestamp to signify the time at which they are triggered.
- Loopback control OAM PDU—An OAM PDU predefined with a length of 64 bytes to enable or disable the remote loopback command.
- Vendor-specific OAM PDU—A variable-length OAM PDU that enables the addition of vendor-specific extensions to OAM.

Related Topics

- OAM Feature Overview
- Configuring 802.3ah OAM Link-Fault Management
- ethernet oam lfm
- ethernet oam lfm remote-loopback
- ethernet oam lfm remote-loopback supported

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