Terminology and Definitions

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Terminology and Definitions

- Ring Channel
  - A physical or logical simplex medium. The capacity of a given channel is identical within all Ring Segments.
  - Examples:
    - ✓ A transmit or a receive link on a full duplex GigaBit Ethernet link.
    - ✓ A concatenated SONET Channel.
    - ✓ An Added (Transmit) or Dropped (Receive) Wavelength in a WDM System.
- Transit Path (TP)
  - Consists of Receive Channel and Drop Paths connected to the Transmit and Insert Paths through a Transit Buffer.
  - Packets are not discarded in transit during normal MAC operation.

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- Channel Capacity (C)
  - Assigned capacity of a ring channel.
- Ring
  - A collection of Ring Channels and Transit Paths forming a loop, in such a way that the Transmit Channel of one Transit Path is connected to the Receive Channel of the adjacent Transit Path via a single Ring Channel. A ring has a direction, which can be clockwise or counterclockwise.
- Receive Channel
  - The Receive side of a Transit Path.
- Transmit Channel
  - The Transmit side of a Transit Path.

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- Insert Path
  - Packets are inserted into the transmit channel through Insert Path.
- Drop Path
  - Packets are copied (in case of multicast packets) and/or removed from the Ring Channel through the Drop Path. Not to be confused with Discard.
- Transit Buffer
  - A FIFO structure. A packet in transit waits here until a packet being inserted is transmitted. Needs to be at least 1 MTU deep.
- 802.17 MAC
  - An 802.17 MAC consists of multiple transit paths, one Drop path and one Insert path.

Terminology and Definitions

- Node
  - Same as an End Station. Consists of 802.17 MAC, and PHYs.
- Ring Segment
  - The span between two adjacent Nodes.
- Multi Ring
  - A Collection of rings.
- Destination Node
  - A node at which a 802.17 frame uses the drop path of the node's MAC to exit the multi ring.
- Dual Counter Rotating Ring
  - A special case of multi ring, where there are 2 rings, one having clockwise direction and the other counter clockwise.

Terminology and Definitions

- Virtual Media (VM)
  - Extends VLAN over MAN. VMIDs are part of the RPR header field. Provide traffic separation in public data networks.
- Time to Live (TTL)
  - A packet with TTL = 0 is discarded by TP. Ensures unclaimed packets do not circulate forever. Required field in RPR packet header.
- Protected Virtual Media
  - A service (S) has a primary VM and a backup VM. In the event of a channel failure, carrying Primary VM, the service is switched to backup VM.

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- Dynamic BW Manager
  - Mechanism that varies insertion rate per virtual media, based on Transmit Channel available capacity.
- Weighted Fair Queue (WFQ)
  - A scheduling algorithm that ensures bandwidth allocation according to reserved rate (r) and weight (w).

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- Bandwidth Allocation Factor (BAF)
  - Instantaneous value of a quotient used to calculate the insert rate for a given Virtual Media.
- Conversation
  - A set of MAC frames transmitted from one end station to another, where all of the MAC frames form an ordered sequence, and where the communicating end stations require the ordering to be maintained among the set of MAC frames exchanged.
- Channel Test Function
  - Regular channel health indicator. Failure in a channel is signaled to all nodes in a ring.

Terminology and Definitions

- Layer Management
  - Functions related to the administration of a given Open Systems Interconnection (OSI) *laye*r. These functions are performed in the layer itself according to the protocol of the layer and partly performed as a subset of *network management* or *systems managemen*t.
- Layer Management Entity (LME)
  - The entity in a *layer* that performs local management of a layer. The LME provides information about the layer, effects control over it, and indicates the occurrence of certain events within it.
- Layer Management Interface (LMI)
  - The service interface provided by the *Layer Management Entity (LME)* to the *Network Management Process (NMP*).