
XVRP VLAN Registration Protocol Modules

Overview

The ZebOS® Network Platform XVRP VLAN Registration Protocol Module contains both the GARP VLAN Registration Protocol (GVRP) and the Multiple VLAN Registration Protocol (MVRP) software. Both are Layer 2 protocols that leverage the command line interface and the kernel management capabilities of the ZebOS Network Services Module (NSM).

Both MVRP and GVRP provide mechanisms for the dynamic maintenance of the contents of registration entries for each VLAN, so that they can propagate the information they contain to other bridges. This information allows GVRP- or MVRP-aware devices to dynamically establish and update their knowledge of the set of VLANs that currently have active members, and through which ports those members can reach.

MVRP and GVRP both allow end stations and bridges in a bridged LAN to issue and revoke declarations relating to membership of VLANs. In this manner, each MVRP or GVRP participant that receives a declaration creates or updates an entry in the filtering database to indicate that the VLAN is registered on that port. Whenever MVRP or GVRP participants on a segment that had an interest in a given VID subsequently revoke their declarations, the port attached to that segment is set to unregistered in the dynamic VLAN registration entry for that VLAN by each respective participant attached to that segment.

GARP VLAN Registration Protocol

GVRP is a GARP application that provides the VLAN registration service. GVRP makes use of GARP Information Declaration (GID) and GARP Information Propagation (GIP), which provide the common state machine descriptions and the common information propagation mechanisms defined for use in GARP-based applications.

Multiple VLAN Registration Protocol

MVRP is an MRP (Multiple Registration Protocol) application that supports dynamic VLAN registration services. MVRP makes use of the MRP Attribute Declaration (MAD) and MRP Attribute Propagation (MAP), which provide the common state machine descriptions and the common attribute propagation mechanisms defined for use in MRP-based applications.

Features

- Reliable and robust implementation of GVRP and MVRP that both support dynamic registration and de-registration of VLAN participants
- Conformance to IEEE Standards
- GVRP supports dynamic VLAN creation and the pruning of unnecessary broadcast or unknown traffic
- MVRP manages VLANs and improves the convergence of GVRP
- MVRP allows rapid healing of network failures without interrupting service on unaffected VLANs
- MVRP reduces the number of frames transmitted for propagating VLAN registration information

Requirements

- ZebOS Network Services Module

- ZebOS Layer 2 VLAN
- ZebOS GARP
- ZebOS Spanning Tree Protocol

Standards Support

- IEEE 802.1Q (2003) — Virtual Bridged Local Area Networks
- IEEE 802.1ak/D4-0 — Virtual Bridged LANs: Multiple Registration Protocol

Standard Deliverables

- Source code (written in ANSI-compliant C)
- Installation Guide
- Configuration Guide
- Command Reference Guide
- Developer Guide