

Introduction

The MorethanIP Switch solution implements a highly programmable and flexible platform with an embedded RISC processor. The Spanning Tree Protocol (STP) and its newer variant the Rapid Spanning Tree Protocol (RSTP) is a high level networking protocol, which can be implemented as a Firmware for the switch.

Objective of Spanning Tree Protocol

The active topology of a Bridged Local Area Network at any time is the set of communication paths formed by interconnecting LANs and Bridges by the Bridge's forwarding ports.

The function of the Spanning Tree Protocol is to assign port states to construct an active topology preventing temporary loops and reduce excessive traffic in the network. The forwarding and learning performed by each Bridge port is dynamically managed.

Brief Description of STP

STP computes the active (tree) topology by using Bridge Protocol Data Unit (*BPDU*) frames exchanged between the bridges.

Every port is assigned a priority data which is transported by the corresponding *BPDU*s and which is the base of establishing the STP hierarchy in the bridged LAN.

After the exchange of *BPDU*s for each port, the port role (discarding, learning, forwarding) is defined according to its determined position and priority in the topology of the network.

*BPDU*s are broadcasted regularly throughout the network, enabling automatic topology detection and automatic reaction on topology changes.

RSTP Performance

A port is allowed to transmit a maximum of five *BPDU*s in one second, introducing only very low overhead traffic within the network. In RSTP a port state transition (discarding to learning or learning to forwarding) takes place without waiting for port timers to expire, which is not the case for STP, decreasing the network's reaction time on topology changes.

Interoperability

RSTP is compatible and interoperable with switches implementing STP. This means that a port operating the RSTP mode will transition to the STP mode if this port is connected to a port operating the STP mode.

Features Summary

- Supports STP (IEEE802.1d, 1998) and RSTP (IEEE802.1d, 2004)
- Backward compatible and interoperable with STP as well as RSTP supporting switches in the same network
- Generic C implementation with system API for migration to any switch firmware
- Optimized for MorethanIP Switch Firmware integration
- Low processing requirements and memory footprint

Development Boards

- MorethanIP Ethernet Switch development and prototyping board

Ordering Code

MTIP-SW-RSTP

Contact

MorethanIP GmbH

Muenchner Strasse 199

D-85757 Karlsfeld

Germany

Tel : +49 (0) 81313339390

FAX : +49 (0) 81313339391

E-Mail : info@morethanip.com

www.morethanip.com