

How to set up a ring network for a TP industrial switch



Article Overview

To set up a ring network for a TP Industrial switch, configure one switch as the ring master or redundancy manager, connect all switches in a closed loop, and enable the appropriate ring protocol (X-Ring, DLR, or MRP) to ensure fast failover.

Step 1: Choose the Ring Protocol

Industrial Ethernet switches support several redundancy protocols:

- X-Ring: Single-ring network with fast recovery (~10 ms), suitable for TP Industrial switches .
- Device Level Ring (DLR): Layer 2 Ethernet/IP protocol for single-ring topologies with a ring supervisor and normal nodes .
- Media Redundancy Protocol (MRP): Single-ring with predictable switchover, often used in factory automation . Select the protocol based on your network requirements, such as recovery time, number of nodes, and compatibility with existing devices.

Step 2: Assign the Ring Master / Redundancy Manager

- Manual configuration: Use the switch's web interface to designate one switch as the master or redundancy manager .
- Auto-selection: If multiple switches are set as master, the switch with the smallest MAC address becomes the master after a listening period during boot-up .
- The master switch monitors the ring and blocks one port to prevent loops under normal operation.

Article Content

Ring Redundancy Protocols for Industrial Ethernet Networks

In industrial automation, network reliability is critical to ensuring uninterrupted operations. Redundancy ring protocols provide fault

Chain and Ring Topologies on the SG550XG and SG350XG Switches

Setting Up Chain and Ring Topologies To physically set up the two stack topologies in this demonstration, we will use 4 SG550XG

Redundancy Protocol Configuration Guide, Cisco Catalyst IE3x00,

The Cisco Network Plug and Play (PnP) and Autoinstall Day Zero solutions provide a simple, secure, unified, and integrated offering

Ethernet Ring Redundancy

It will explore the N-Tron proprietary protocol N-Ring and how it is a step up from IEEE

Key Industrial Redundant Ring Protocols You Need to Know

Discover key industrial switch ring protocols, including STP, RSTP, MRP, and ERPS. Build a redundant industrial

Ethernet Ring Redundancy

This document provides basic background information regarding adding ring redundancy in your wired Ethernet

X-Ring Ethernet Industrial Ring Technology

The diagram above shows the start-up sequence of an X-Ring network, where all the units are set to be a "Master" switch. Notice

Rapid Spanning Tree Protocol in Ring Network Topology

RSTP is a protocol that most automation industrial switch vendors have implemented for ensuring the availability of their industrial

How to configure MOXA Turbo Ring redundancy protocol?

In Redundancy Protocol field specify Turbo Ring V2 protocol type. In Redundant Ports field specify numbers of ports used in the ring.

Step-by-Step Configuration Guide for Industrial Lte Router Ring

Industrial Lte router ring redundancy technology was born precisely to solve such "life-or-death" challenges—it enables networks to

Industrial Ring Networks | ERPS | Antaira Technologies

The Ethernet Ring Protection Switching (ERPS) protocol is a powerful technology and service that can be used on industrial switches

Ring Redundancy Protocols for Industrial Ethernet Networks

Proprietary Redundancy Ring Protocols by Major Vendors Many industrial network equipment manufacturers offer proprietary

How do I set up STP/RSTP/MSTP and Alpha Ring on an EtherWAN Switch?

How do I set up STP/RSTP/MSTP and Alpha Ring on an EtherWAN Switch? Choosing the Spanning Tree Protocols The Spanning

Redundancy Protocol Configuration Guide, Cisco Catalyst IE3x00,

Device Level Ring (DLR) is a Layer 2 protocol that enables redundancy in a ring topology, providing fast network fault

Ethernet Ring Redundancy – HMS Support Portal

It will explore the N-Tron proprietary protocol N-Ring and how it is a step up from IEEE Spanning Tree and Rapid Spanning Tree

Setting a Ring Network

Actually i would like to set a loop network in my factory. But i found that when i plug in 2 connector (A & B) to a switch

Setup of a Ring Topology based on “MRPD”

Security information Siemens provides products and solutions with industrial security functions that support the secure operation of

Ring network structure – Visiotech

For a ring network topology it is required to use Spanning Tree Protocol (STP) to avoid network loops. This protocol is only present in

Building Fault-Tolerant Industrial Ring Networks with Ethernet Ring ...

How Ethernet Ring Protection Switching Works ERPS works by first creating a topology of interconnected nodes forming a ring. Each

Redundancy Protocol Configuration Guide, Cisco Catalyst IE3x00,

Device Level Ring Device Level Ring Components of DLR DLR Topology Multiple Rings Redundant Gateways Cisco

Setting a Ring Network

Other connection topologies are possible; too many variables to describe without seeing your existing topology. As to

ISW RING CONFIGURATIONS

When 2 link path are in link up status, the Backup of Ring Coupling switch will set it's Backup port to Blocked state. Ring Port -

X-Ring Plus Ethernet Industrial Ring Technology

X-Ring Plus resilient ring technology is provided with network operating system 2.0 & is an enhanced version of Case

Proprietary Ring Topologies in Automation Networks | DigiKey

In fact, select manufacturers claim much better recovery times for their proprietary ring networks sometimes to

Network Switch

This example shows administrators how to set up RSTP (Rapid Spanning Tree Protocol) in the ring topology to implement network

Fiber Optic Ring Network Design Explained:

Learn how to design a fiber optic ring network with practical diagrams, topologies, and

Ring topology

Double redundant ring topology The double redundant ring topology can increase protection against failure and exceeds the

Hardware Configuration Siemens PLC

□□□□ Learn how to easily set up your hardware configuration and resolve ring port errors when

How to Create a 10G Fast Ring Network?

ERPS offers sub-50ms failover times, ensuring minimal disruption in case of a link or node failure. If one link in the

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