CHAPTER 1

Overview

This chapter provides an overview of the high availability and redundancy features supported on the Cisco Industrial Ethernet 2000U Series (IE2000) and Connected Grid Switches, hereafter referred to as switch. This chapter includes the following sections:

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- MAC Address Table Move Update, page 1-2
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- Hot Standby Router Protocol (HSRP), page 1-2

Flex Links

Flex Links are a pair of a Layer 2 interfaces (switchports or port channels), where one interface is configured to act as a backup to the other.

Flex Links provide an alternative solution to the Spanning Tree Protocol (STP), allowing users to turn off STP and still provide basic link redundancy. Generally, you configure Flex Links in networks where customers do not want to run STP on the switch. When the switch is running STP, it is not necessary to configure Flex Links because STP already provides link-level redundancy or backup.

Related Topics

Chapter 2, "Configuring Flex Links and MAC Address-Table Move Update"

MAC Address Table Move Update

The MAC address-table move update feature allows the switch to provide rapid bidirectional convergence when a primary (forwarding) link goes down and the standby link begins forwarding traffic.

Related Topics

Chapter 2, "Configuring Flex Links and MAC Address-Table Move Update"

EtherChannels

An EtherChannel consists of individual Fast Ethernet or Gigabit Ethernet links bundled into a single logical link.

Etherchannels provide fault-tolerant high-speed links between switches, routers, and servers.

You can use an EtherChannel to increase the bandwidth between points within the network; and, to address bottlenecks within the network.

EtherChannels provides automatic recovery for the loss of a link by redistributing the load across the remaining links. If a link fails, then the EtherChannel redirects traffic from the failed link to the remaining links in the channel without intervention.

Related Topics

Chapter 3, "Configuring EtherChannels and Link-State Tracking"

Link-state Tracking

Link-state tracking, also known as trunk failover, binds the link state of multiple interfaces. Link-state tracking provides redundancy in the network when used with Flex Links. If the link is lost on the primary interface, the router transparently switches the connectivity to the secondary interface.

Related Topics

Chapter 3, "Configuring EtherChannels and Link-State Tracking"

Chapter 2, "Configuring Flex Links and MAC Address-Table Move Update"

Hot Standby Router Protocol (HSRP)

HSRP is a standard method of providing high network availability by providing first-hop redundancy for IP hosts on an IEEE.802 LAN configured with a default gateway IP address.

HSRP routes IP traffic without relying on the availability of any single router. It enables a set of router interfaces to work together to present the appearance of a single virtual router or default gateway to the hosts on a LAN. When you configure HSRP on a network or segment, it provides a virtual Media Access Control (MAC) address and an IP address that a group of configured routers share.

HSRP allows two or more HSRP-configured routers to use the MAC address and IP network address of a virtual router. The virtual router does not exist; rather, it represents the common target for routers that are configured to provide backup to each other. One of the routers is selected to be the active router and another to be the standby router, which assumes control of the group MAC address and IP address should the designated active router fail.

Related Topics

Chapter 4, "Configuring HSRP"