

Migration from IBM 3172 to CIP

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Introduction

Prerequisites

Requirements

Conventions

Configurations

Single Host and Single IBM 3172 with No Backup Capabilities

Single Host and Single Cisco 7000 with No Backup Capabilities

Single Host and Single IBM 3172 with Redundant Rings

Single Host and Single Cisco 7000 with Redundant Rings

Single Host and Dual IBM 3172s Backup with Redundant Rings

Single Host and Dual Cisco 7000s Backup with Redundant Rings

Dual Hosts and Dual IBM 3172s with Dual Apex Rings For Full Backup

Dual Hosts and Dual Cisco 7000s with Dual Apex Rings For Full Backup

Single Host and Single Cisco 7000 with Dual CIPs and Redundant Rings

Dual Host and Single Cisco 7000 with Dual CIPs and Redundant Rings: Example 1

Dual Hosts and a Single Cisco 7000 with a Single CIP and Redundant Rings: Example 2

Related Information

Introduction

The switched major node is standard for migration from the IBM 3172 to a Channel Interface Processor (CIP), but any External Communication Adapter (XCA) major node configuration for an IBM 3172 also works for the Cisco 7000/7500 or 7200 router, provided that the router configuration matches the virtual telecommunications access method (VTAM) configuration. Additionally, an Input/Output Configuration Program generation (IOCP GEN) or Hardware Configuration Definition (HCD) that works for an IBM 3172 also works for a channel-attached Cisco 7000/7500 or 7200 router.

IBM publication GG66-3210 3172 Interconnect Controller Technical Overview/Installation Guide suggests configurations that provide non-backup and backup capabilities. The backup topologies include redundant rings, redundant IBM 3172s, and redundant host topologies.

Note:

Prerequisites

Requirements

There are no specific requirements for this document.

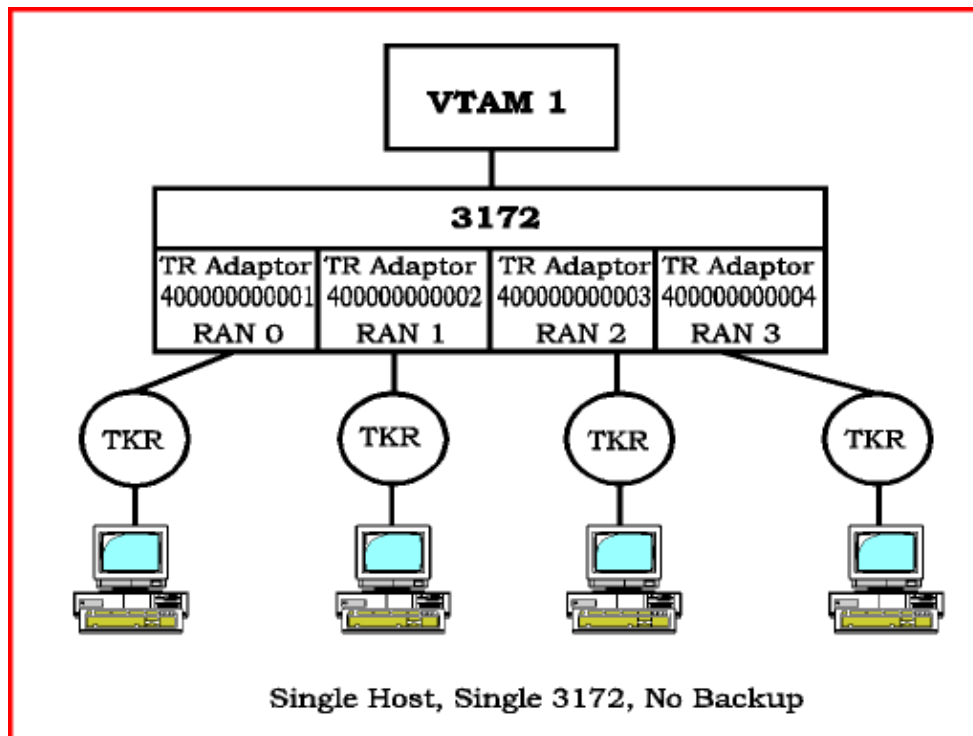
Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Configurations

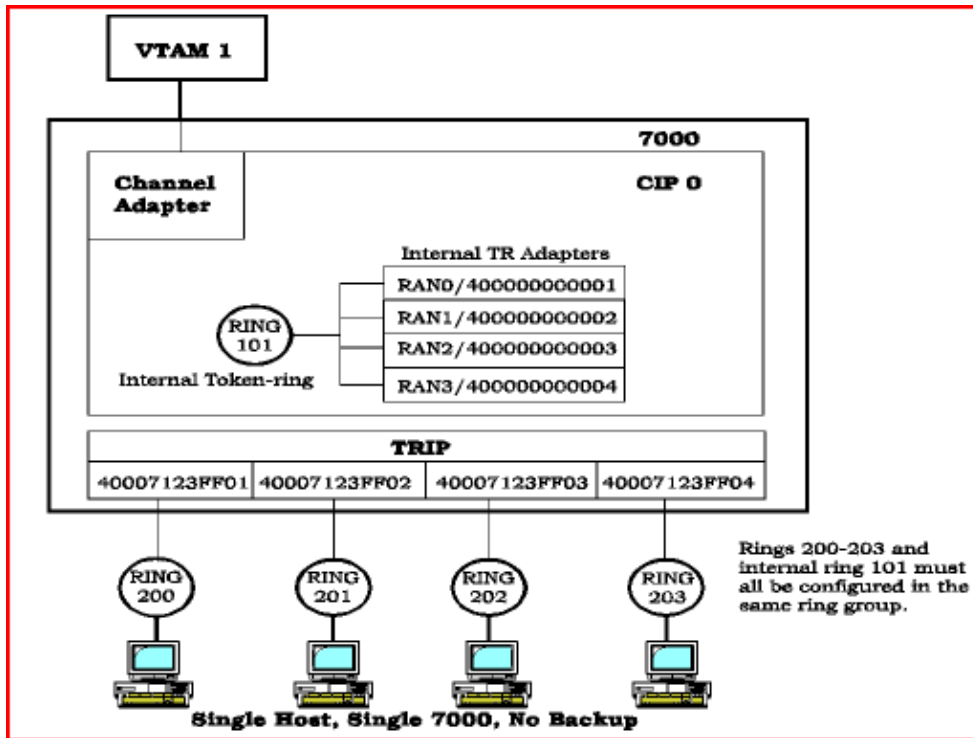
Single Host and Single IBM 3172 with No Backup Capabilities

This is an illustration of an IBM 3172 connected to one VTAM and configured with four Token Ring LAN adapters, each connected to a separate ring. This configuration provides a single host, single 3172 with no backup capabilities.



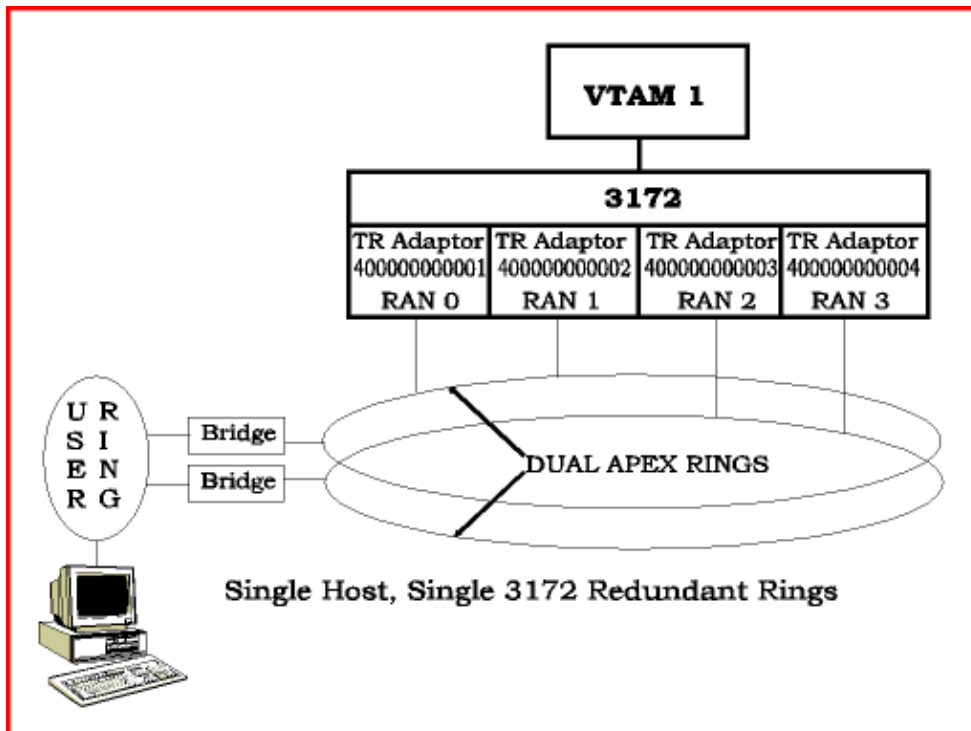
Single Host and Single Cisco 7000 with No Backup Capabilities

This is an illustration of how a Cisco 7000 router configuration can directly replace the previous IBM 3172 configuration. The four internal Token Ring adapters are configured with the MAC addresses of the IBM 3172 physical adapters. All four internal Token Ring adapters are on the same internal Token Ring LAN. Note that the MAC addresses assigned to the (Token Ring Interface Processor) TRIP have no relationship to the internal adapter MAC addresses and do not play a role in the Cisco Systems Network Administration (CSNA) feature. Frames reach the CIP internal LAN from the physical Token Rings, and vice versa, through the source-route bridging (SRB) configuration.



Single Host and Single IBM 3172 with Redundant Rings

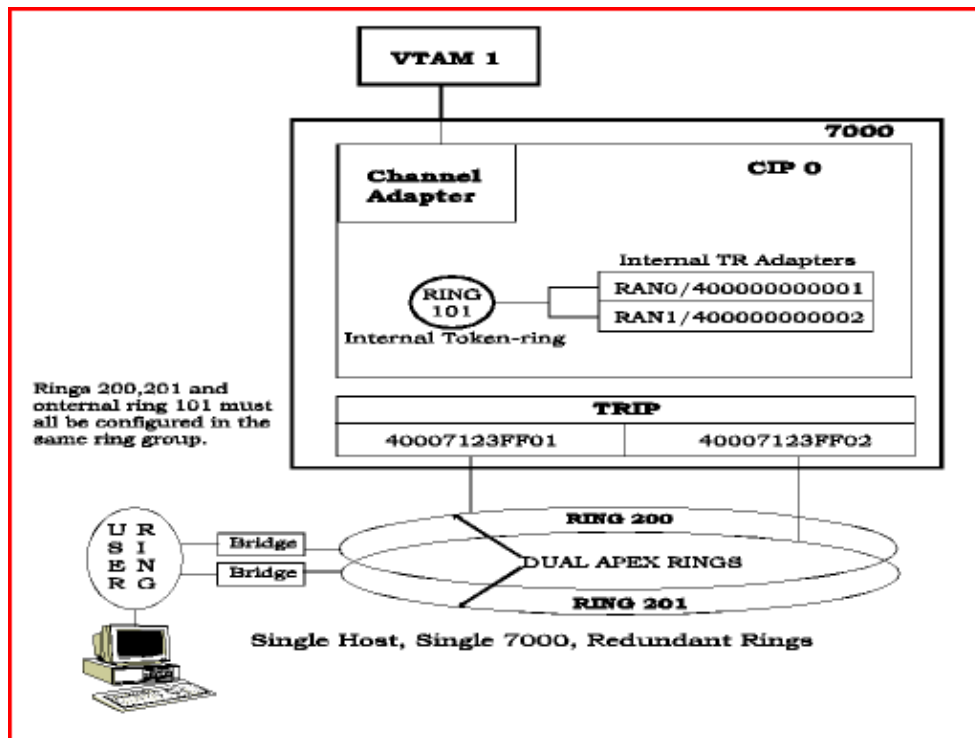
This is an illustration of an IBM 3172 connected to one VTAM and configured with four Token Ring LAN adapters connected to dual apex rings. This configuration provides a single host, single 3172 with redundant rings.



Single Host and Single Cisco 7000 with Redundant Rings

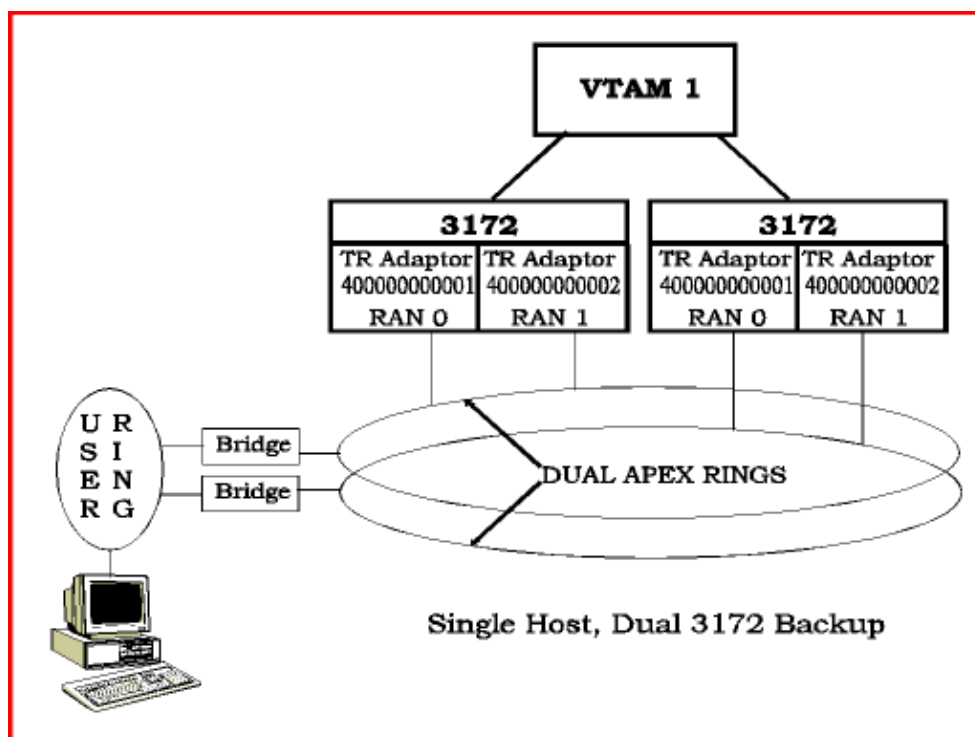
This is an illustration that shows how a Cisco 7000 router configuration can directly replace the redundant IBM 3172 configuration. One pair of internal Token Ring adapters on a single internal Token Ring LAN

replaces the two pairs of redundantly-addressed physical adapters. Reliability is not improved by redundant internal rings. The redundant physical rings are connected to two TRIP ports. If you attach two ports on another TRIP to the redundant rings, it eliminates the TRIP as a single point of failure.



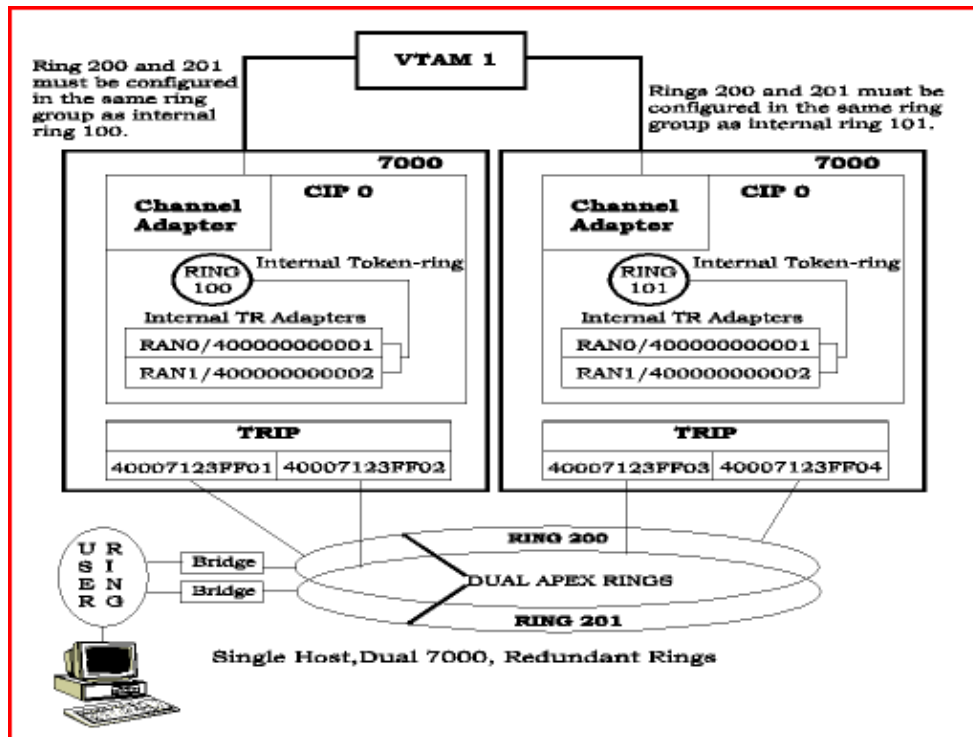
Single Host and Dual IBM 3172s Backup with Redundant Rings

This is an illustration of dual IBM 3172s connected to one VTAM and configured with two Token Ring LAN adapters that are each connected to dual apex rings. This configuration provides a single host, dual IBM 3172 backup with redundant rings.



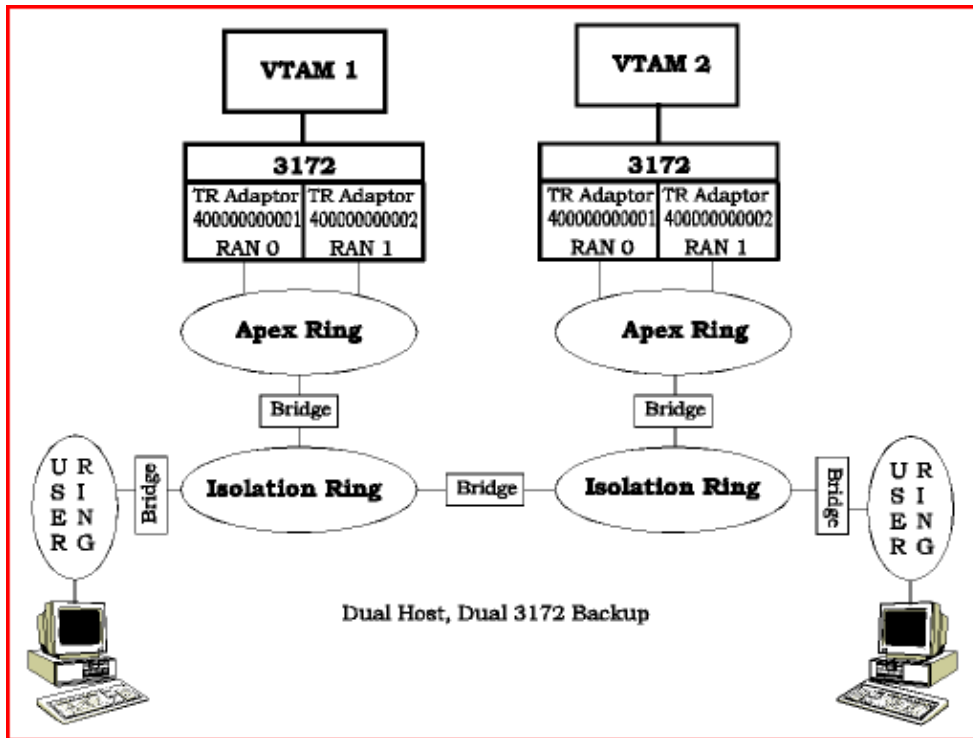
Single Host and Dual Cisco 7000s Backup with Redundant Rings

This is an illustration of how a Cisco 7000 router configuration can directly replace the dual IBM 3172 configuration. The two Cisco 7000 routers directly correspond to the two IBM 3172s. TEST frames that contain an internal adapter MAC address reach both internal Token Rings, and there is a response to both. The remote station decides which Routing Information Field (RIF) to use.



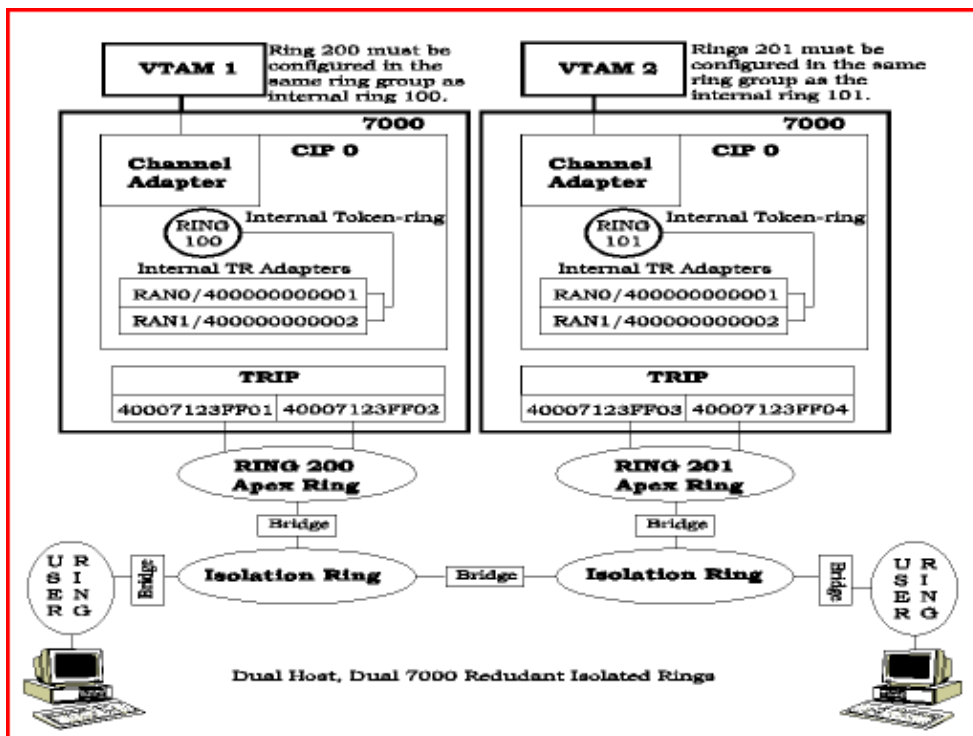
Dual Hosts and Dual IBM 3172s with Dual Apex Rings For Full Backup

This is an illustration of dual IBM 3172s, each connected to a different VTAM, configured with two Token Ring LAN adapters and connected to an apex ring. This configuration provides dual hosts, dual 3172s, and dual apex rings for full backup capabilities.



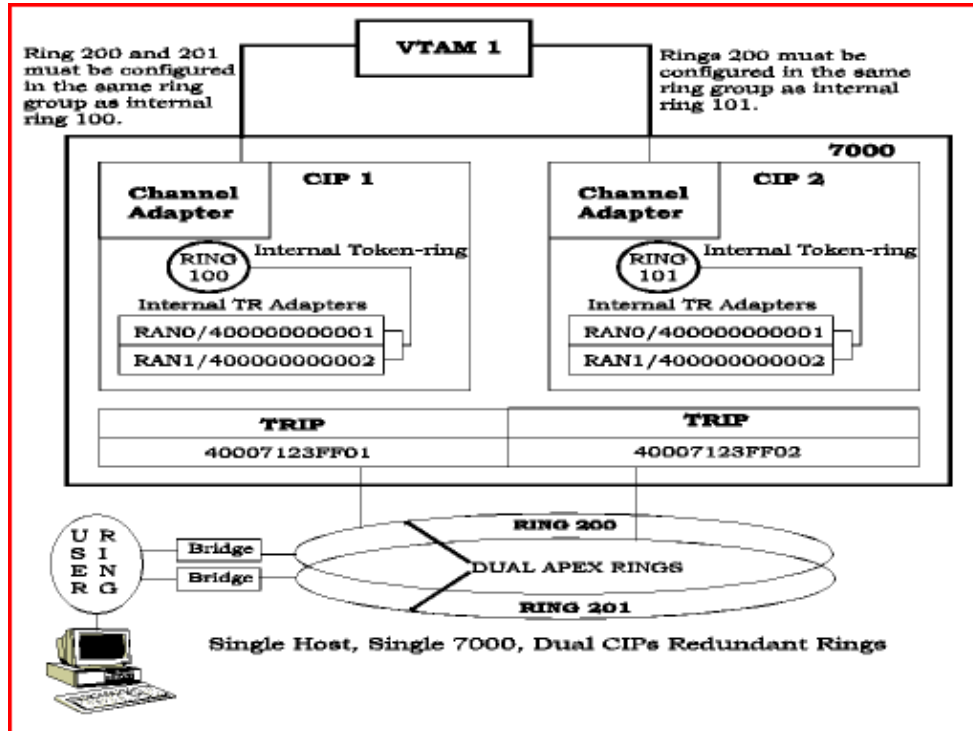
Dual Hosts and Dual Cisco 7000s with Dual Apex Rings For Full Backup

This is an illustration of how a Cisco 7000 router configuration can directly replace the previous IBM 3172 configuration shown. The two 7000 routers directly correspond to the two IBM 3172s. If you attach the routers to different hosts, the addition of external isolation rings has no effect on the internal ring/adaptor configuration.



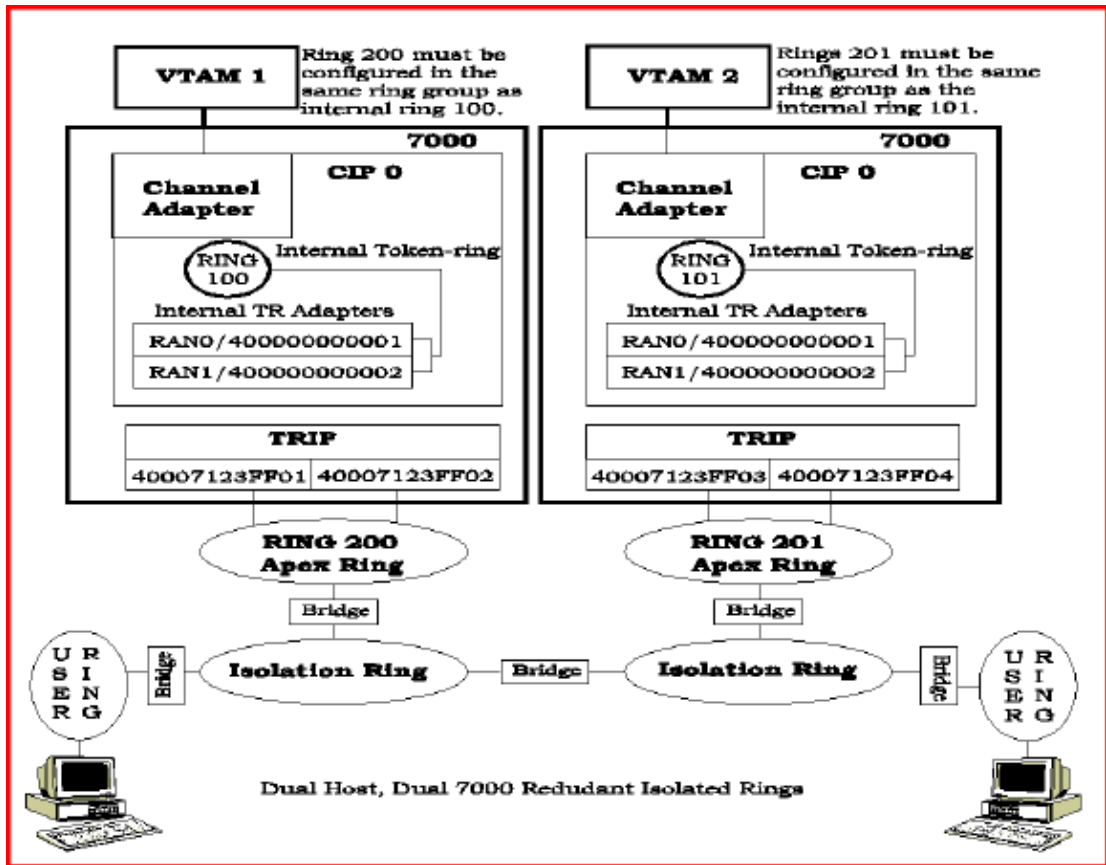
Single Host and Single Cisco 7000 with Dual CIPs and Redundant Rings

This is an illustration of a single host, single 7000, dual CIPs, and redundant rings. Internal adapters with duplicate MAC addresses on the two CIPs eliminate the CIP as single point of failure. Because of the duplicate MAC addresses, the internal rings on the two CIPs must have different ring numbers. As in the case of dual routers, TEST frames that contain an internal adapter MAC address reach both internal rings, and there is a response to both. The remote station decides which RIF to use.



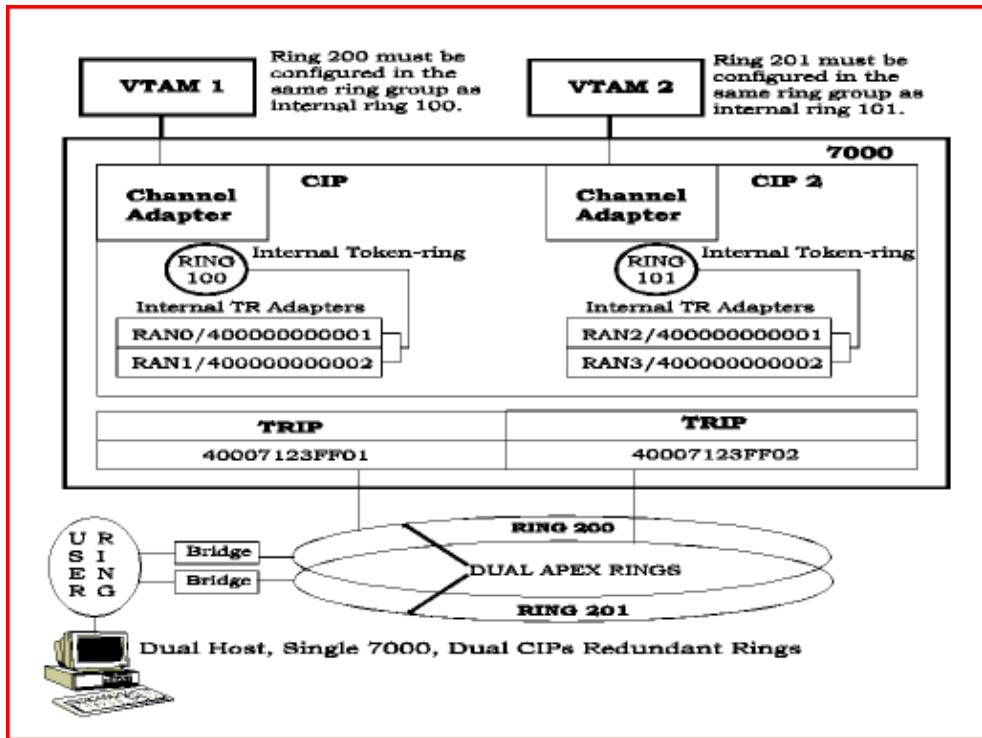
Dual Host and Single Cisco 7000 with Dual CIPs and Redundant Rings: Example 1

This is an illustration of dual hosts and a single Cisco 7000 with dual CIPs and redundant rings. Note that the two CIPs are attached to different hosts. The internal adapter/ring configurations do not change.



Dual Hosts and a Single Cisco 7000 with a Single CIP and Redundant Rings: Example 2

This is an illustration of dual hosts and a single Cisco 7000 with a single CIP and redundant rings. When both channel adapters on a CIP are used, and internal adapters are assigned duplicate MAC addresses for backup purposes, there must be two internal rings to avoid duplicate MAC addresses on the same ring. As in the case of dual routers or dual CIPs, TEST frames that contain an internal adapter MAC address reach both internal rings and there is a response to both. The remote station decides which RIF to use.



If you attach two hosts through different subchannel adapters (port 0 and port 1) on one CIP, it eliminates the channel adapter as the single point of failure. While this configuration can be used for other reasons, it has limited value for backup purposes.

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