



## Q&A

# Cisco Transport Manager 5.0

### SERVER AND CLIENT

**Q.** When is Cisco® Transport Manager 5.0 orderable?

**A.** The planned date for offering Cisco Transport Manager 5.0 is February 11, 2005.

**Q.** When is first customer shipment (FCS) of Cisco Transport Manager 5.0?

**A.** Cisco Transport Manager 5.0 FCS is scheduled for February 14, 2005.

**Q.** Are all the hard copy manuals shipped with Cisco Transport Manager 5.0?

**A.** The manuals are shipped with Cisco Transport Manager 5.0, except The Cisco Transport Manager 5.0 User Guide, which can be ordered separately (DOC-7816348=) at <http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/optnet/ctm/index.htm>.

**Q.** What is the current positioning of Cisco Transport Manager?

**A.** Cisco Transport Manager provides comprehensive carrier-class management capabilities, enabling network operators to manage their Cisco optical and core routers devices (Cisco CRS-1 Carrier Routing System) efficiently. Cisco Transport Manager increases network operations productivity and maximizes the revenue-generating capacity of the network. Total cost of ownership (TCO) is lowered by reducing operational and systems costs, potentially resulting in increased profitability.

**Q.** What are the major enhancements for Cisco Transport Manager 5.0?

**A.** New features for Cisco Transport Manager 5.0 include:

- Operations, administration, management, and provisioning (OAM&P) for Cisco CRS-1; in the context of managing Cisco CRS-1, support also is added for fault and inventory management of Cisco Catalyst® 6509 Switch
- Expanded support for the Cisco ONS 15000 series products to include OAM&P for the Cisco ONS 15310-CL
- Cisco Transport Manager database upgrade to Oracle9i
- Support for real-time performance management collection and display for Cisco Transport Controller (CTC)-based –network elements (Cisco ONS 15310, ONS 15327, ONS 15454 SONET, ONS 15454 SDH, ONS 15600 SONET, and ONS 15600 SDH) and allow users to set independent pruning intervals for 15-minute and one-day performance management data. This feature provides a fine level of control over the pruning of performance data from the system.
- Automatic identification indicating if a network element is a GateWay network element (GNE) (this automatic identification handles changes made while the server was down or connectivity to a network element was lost). Cisco Transport Manager 5.0 supports GNEs, end network elements (ENEs), and LAN-connected network elements (LNEs). Each object has a unique icon in the Domain Explorer tree.)
- A mechanism to archive log files to facilitate long-term collection of logging information
- Security Enhancements such as:
  - Ability to disable inactive user accounts automatically
  - User configuration of the number of days of nonuse that will prompt a user account to be disabled automatically
  - Ability to configure password complexity
  - Control of simultaneous active sessions for the same user profile
- Enhancements on Layer 2 management and support of virtual concatenation (VCAT) provisioning

- Link support between network elements at compatible layer rates; extension to manual link provisioning between network elements of different types
- GUI configuration of Cisco Transport Manager GateWay/Common Object Request Broker Architecture (CORBA) parameters

Refer to the Cisco Transport Manager 5.0 Product Bulletin at [http://www.cisco.com/en/US/products/sw/opticsw/ps2204/prod\\_bulletins\\_list.html](http://www.cisco.com/en/US/products/sw/opticsw/ps2204/prod_bulletins_list.html) for further details about new functions in Cisco Transport Manager 5.0.

**Q.** Does Cisco Transport Manager 5.0 support further enhancements on the ML-Series card for the Cisco ONS 15454 SONET/SDH and Cisco ONS 15310 SONET Multiservice Platform?

**A.** Yes. In addition to Fault Management, Performance Management, Circuit Configuration, and Layer 2 Topology and Service Provisioning, along with launch of the command-line interface (CLI) console, Cisco Transport Manager 5.0 provides the following new features on ML-Series provisioning:

- Ability to create, modify, and delete quality of service (QoS) profiles; a QoS profile is a set of user-defined QoS parameters that can be saved in the Cisco Transport Manager database and used during Layer 2 service provisioning
- Ability to create, modify, and delete Cisco IOS® CLI users on ML cards
- Ability to create VCAT circuits for Layer 2 Resilient Packet Ring (RPR) or Layer 2 point-to-point topologies
- Ability to view bandwidth utilization reports for Layer 2 topologies based on the number of Layer 2 services with User-Network Interface (UNI) (QinQ, dot1Q, Untagged) drop ports; a warning is reported if bandwidth is not available during Layer 2 service creation
- Ability to enable or disable performance management collection on the front Ethernet interfaces on ML and Layer 2/Layer 3 cards
- Ability to launch performance management and fault management tables for selected Layer 2 services or drop ports

**Q.** Does Cisco Transport Manager 5.0 Transaction Language One (TL1) gateway support all the network elements?

**A.** No, in fact it supports only the ones having native TL1 protocol for the communication with Cisco Transport Manager. The following network element types have a native TL1 protocol:

- Cisco ONS 15216 (EDFA2)
- Cisco ONS 15216
- Cisco ONS 15310 SONET
- Cisco ONS 15327 SONET
- Cisco ONS 15454 SONET
- Cisco ONS 15454 SDH (release 5.0 and later)
- Cisco ONS 15530
- Cisco ONS 15540
- Cisco ONS 15600
- Cisco ONS 15800
- Cisco ONS 15801
- Cisco ONS 15808

**Q.** Is the GateWay/CORBA northbound interface available for all network element types?

**A.** Yes. Cisco Transport Manager 5.0 supports fault and inventory using the CORBA interface for all network element types. In addition, the CORBA interface can be used for equipment and circuit provisioning on Cisco ONS 15327, ONS 15310, ONS 15454 SONET, ONS 15454 SDH, ONS 15600, and ONS 15600 SDH products. The CORBA interface can be used for performance monitoring for Cisco ONS 15302, ONS 15305, ONS 15327, ONS 15454 SONET, ONS 15454 SDH, ONS 15600, and ONS 15600 SDH products.

For further coverage details, refer to the Cisco Transport Manager GateWay/CORBA Release 5.0 User Guide and Programmer Manual at [http://www.cisco.com/en/US/products/sw/opticsw/ps2204/products\\_programming\\_reference\\_guides\\_list.html](http://www.cisco.com/en/US/products/sw/opticsw/ps2204/products_programming_reference_guides_list.html).

**Q.** Is the GateWay/CORBA interface based on an industry standard?

**A.** Yes, GateWay/CORBA is based on and compliant with TeleManagement Forum (TMF) 814 (version 2) as published by the TMF.

**Q.** Can Cisco Transport Manager 5.0 support a network with mixed releases of the same network element?

**A.** Yes it can, but all must run a release that is supported by Cisco Transport Manager 5.0. Cisco Transport Manager 5.0 supports the following network element releases:

- Cisco ONS 15200 1.1(2) and 1.1(3)
- Cisco ONS 15216 100 GHz optical add/drop multiplexer (OADM) 2.2.2
- Cisco ONS 15216 EDFA2 2.2.1, 2.3, and 2.4
- Cisco ONS 15216 EDFA3 1.1
- Cisco ONS 15216 200 GHz OADM, EDFA1, DWDM Filters, optical supervisory channel (OSC), and dispersion compensation unit (DCU)
- Cisco ONS 15302 1.0.1 and 2.0
- Cisco ONS 15305 1.1.1 and 2.0
- Cisco ONS 15327 3.4.1, 4.1.3, 4.1.4, 4.1.5, 4.1.6, 4.6.2, and 5.0
- Cisco ONS 15454 SONET 3.2.1, 3.3, 3.4.1, 4.0.1, 4.0.3, 4.1.1, 4.1.3, 4.1.4, 4.1.5, 4.1.6, 4.6.2, 4.7, and 5.0
- Cisco ONS 15454 SDH 4.1.3, 4.1.4, 4.6.2, 4.6.3, 4.7, and 5.0
- Cisco ONS 15501 EDFA Optical Amplifier DC 4.1
- Cisco ONS 15501 EDFA Optical Amplifier AC 4.1
- Cisco ONS 15530 12.2(22)S2 and 12.2(25)SV
- Cisco ONS 15540 ESP 12.2(22)S2 and 12.2(25)SV
- Cisco ONS 15540 ESPx 12.2(22)S2 and 12.2(25)SV
- Cisco ONS 15600 R1.1.2, R1.1.3, R1.3.1, R5.0
- Cisco ONS 15600 SDH R1.4
- Cisco ONS 15800 2.0 and 2.1
- Cisco ONS 15801 2.0 and 2.1
- Cisco ONS 15808 R2.1 and 2.2
- Cisco CRS-1 2.0 and 3.0
- Cisco Catalyst 6509 Switch Cat OS 6.3(7) (used with CRS-1)

**Q.** Does Cisco Transport Manager manage other Cisco products with optical interfaces, such as the Cisco 12000 Series Router, Cisco 7600 Series Router, and Cisco MGX switches?

**A.** No. Currently Cisco Transport Manager is the Element management system (EMS) for the Cisco ONS Family of products and CRS-1. Through Cisco Transport Manager, it is possible to add Other Vendor/Third Party network elements for inventory purpose. The information manually entered by the user is stored in the database and reported through the GateWay/CORBA.

**Q.** Does Cisco Transport Manager product include the required hardware?

**A.** No. Cisco Transport Manager is a software-only product that is based on industry-standard, off-the-shelf Sun and PC hardware platforms.

**Q.** Does Cisco Transport Manager 5.0 support a high availability configuration?

**A.** Yes, Cisco Transport Manager 5.0 can be installed on redundant servers in a failover configuration. The redundant servers may be colocated or geographically separated. Information on the high availability solution can be found at [http://www.cisco.com/en/US/products/sw/opticsw/ps2204/prod\\_white\\_papers\\_list.html](http://www.cisco.com/en/US/products/sw/opticsw/ps2204/prod_white_papers_list.html) and later in this document.

**Q.** Will Cisco Transport Manager 5.0 be downloadable from Cisco.com?

**A.** No, customers must order the software, which is delivered on a CD. Documentation is available for download through [Cisco.com](http://www.cisco.com).

- Q.** Is Cisco Transport Manager 5.0 compatible with earlier releases of the Cisco Transport Manager Client, such as 3.0 or 4.7?
- A.** No, all Cisco Transport Manager Clients must be upgraded to the new Cisco Transport Manager 5.0 client.
- Q.** Can the same Cisco Transport Manager licenses obtained for use with earlier versions of Cisco Transport Manager, including 2.x be used with 5.0?
- A.** Yes, all right-to-use (RTU) licenses that have been purchased in the past are valid for Cisco Transport Manager 5.0 with no upgrade charge.
- Q.** Does Cisco Transport Manager 5.0 require license keys?
- A.** No license keys are required for Cisco Transport Manager 5.0.
- Q.** What warranty is included with Cisco Transport Manager 5.0?
- A.** Cisco Transport Manager 5.0 includes the Cisco Standard Software Warranty, which warrants for 90 days from the date of delivery to the customer that the media on which the software is furnished will be free of defects in materials and workmanship under normal use, and the software substantially conforms to its published specifications.
- Q.** Is a service contract available for Cisco Transport Manager 5.0?
- A.** Yes, customers must purchase a Cisco Software Application Support Plus Upgrades (SASU) contract to receive access to technical assistance through the Cisco Technical Assistance Center (TAC) or Cisco.com. Cisco SASU provides customers with the Cisco Transport Manager Software updates (maintenance, minor, and major) as they are made available for the duration of the customer's contract.
- Q.** Does Cisco Transport Manager 5.0 support all the configuration and provisioning features provided in Cisco Transport Controller?
- A.** No, there are some feature differences between Cisco Transport Manager 5.0 and Cisco Transport Controller for the Cisco ONS 15310, ONS 15327, ONS 15454 SONET, ONS 15454 SDH, ONS 15600 SONET, and ONS 15600 SDH products. These differences are identified in the Cisco Transport Manager Release 5.0 User Guide, Section 5.7.1.
- Q.** What TCP ports does Cisco Transport Manager use?
- A.** This information is documented in the Cisco Transport Manage 5.0 User Guide, Section 13.1.
- Q.** Is the Cisco Transport Manager Database schema published?
- A.** Yes, the database schema is published for each Cisco Transport Manager Release and is at [http://www.cisco.com/en/US/products/sw/opticsw/ps2204/prod\\_technical\\_reference\\_list.html](http://www.cisco.com/en/US/products/sw/opticsw/ps2204/prod_technical_reference_list.html).

## HIGH AVAILABILITY

- Q.** What are the differences between Cisco Transport Manager 5.0 and Cisco Transport Manager High Availability 5.0 software?
- A.** The Cisco Transport Manager 5.0 software used in the standalone and high availability configurations is the same. There is no special Cisco Transport Manager high availability version. For the Cisco Transport Manager High Availability Agent 2.2, both third-party VERITAS high availability clustering software, and third-party hardware are needed to set up a high availability environment.
- Q.** Is the function of the Cisco Transport Manager clients, network element access, or operations support system (OSS) impacted with a high availability design?
- A.** All services and features are designed to operate identically to a standalone configuration.
- Q.** Does Cisco Transport Manager support redundant router connectivity to the Data Communication Network (DCN)?
- A.** Customers may wish to set up redundant routers from their UNIX servers to the DCN.

**Q.** Can the high availability solution be installed on an existing standalone server?

**A.** No. There is no migration path from a standalone Cisco Transport Manager configuration to high availability. The VERITAS File System and Volume Manager software technologies (included in VERITAS Database Edition/High Availability for Oracle) must be installed immediately after the Solaris 8 operating system is installed.

**Q.** Where can I obtain the Cisco Transport Manager High Availability Agent 2.2?

**A.** That agent is included on the installation CD with Cisco Transport Manager 5.0 and also is available for evaluation from your Cisco sales representative. The product numbers are CTM-5.0-HA and CTM-5.0-HA-UPG.

**Q.** What licenses will customers need with Cisco Transport Manager in a high availability environment?

**A.** A customer needs to purchase the Cisco Transport Manager High Availability Agent 2.2 license, which allows them the RTU of the High Availability Agent.

**Q.** How do I order the license that includes the documentation?

**A.** All Cisco Transport Manager products can be ordered from your Cisco sales representative.

**Q.** Is any other Cisco software necessary other than Cisco Transport Manager 5.0 and the Cisco Transport Manager High Availability Agent 2.2?

**A.** No.

**Q.** What customization is needed in the high availability environment?

**A.** Customers may wish to modify specific aspects of the high availability configuration to fit their environment, such as adding more Ethernet modules, not mirroring internal disks, and modifying steps from what is documented in the Cisco Transport Manager High Availability Installation Guide.

**Q.** What does the High Availability Agent do?

**A.** It is a complex software module that monitors processes and assesses the status of the primary server to ensure that Cisco Transport Manager, Oracle, and the hardware are operating correctly.

**Q.** Will Cisco provide information on how to back up the Cisco Transport Manager in a high availability solution?

**A.** Cisco provides an application note document similar to what is provided for Cisco Transport Manager standalone servers.

**Q.** What options does a customer have for backing up data?

**A.** Cisco publishes a reference document, "Cisco Transport Manager Application Note" for "Backing Up and Restoring Cisco Transport Manager Data" on Cisco.com at [http://www.cisco.com/en/US/products/sw/opticsw/ps2204/prod\\_technical\\_reference\\_list.html](http://www.cisco.com/en/US/products/sw/opticsw/ps2204/prod_technical_reference_list.html), which outlines how the customer can back up data in a high availability infrastructure. Customers can refer to this or implement their own backup solution based on their infrastructure.

**Q.** What information is covered in the Cisco Transport Manager High Availability Installation Guide?

**A.** The document covers all the reference hardware, part numbers, diagrams, and the complete installation instructions for all the software (Solaris, all patches—hardware and software, VERITAS, Oracle, Cisco Transport Manager 5.0, and Cisco Transport Manager High Availability Agent 2.2).

**Q.** Where can I find collateral documentation about the Cisco Transport Manager and high availability?

**A.** The complete high availability package—all documentation on Cisco Transport Manager High Availability Agent—is available on [Cisco.com](http://www.cisco.com) at a password-protected location. After customers have purchased a license to operate the High Availability Agent, they receive a complete hard copy of all high availability documents and a password to access Cisco.com. This site also contains the most up-to-date Cisco Transport Manager release notes.

**Q.** Is there any high availability material that is not password-protected?

**A.** Yes. The latest Cisco Transport Manager release notes and Cisco Transport Manager Application Notes for “Backing Up and Restoring Cisco Transport Manager Data” are available at [http://www.cisco.com/en/US/products/sw/opticsw/ps2204/prod\\_technical\\_reference\\_list.html](http://www.cisco.com/en/US/products/sw/opticsw/ps2204/prod_technical_reference_list.html).

## **HARDWARE CONFIGURATION**

**Q.** Can customers deviate from this reference architecture?

**A.** Absolutely. In fact, we anticipate that most customers will use their own disk arrays, fiber channel adapter cards, or Sun servers. Customers who deviate from the Cisco referenced architecture, however, need to establish their own high availability support infrastructure and ensure that the hardware they plan to deploy (such as disk arrays and Sun servers) is supported by VERITAS.

**Q.** If the customer deploys high availability hardware infrastructure exactly as referenced, does this ensure qualification for high availability support from Cisco?

**A.** The purpose of the reference architecture is to provide customers a template from which to build their own high availability infrastructure. Customers are responsible for establishing their own high availability support from Cisco, as well as for the third-party vendor components that they deploy.

**Q.** What is RAID?

**A.** RAID stands for Redundant Array of Independent Disks. Essentially, it allows customers to use a combination of hardware and software to configure a multitude of disk drives in various configurations (for example, RAID 0, 1, 1+0, 5, and so on). Each numeric value represents mirroring, striping, parity striping, or a combination of both (“+”).

**Q.** What RAID configuration can the customer use?

**A.** Customers may select any RAID configuration that they would like to deploy. The reference configuration used with the Sun E450 and T3 disk arrays have been setup as RAID 5+0 in the Cisco Transport Manager High Availability Installation Guide.

## **INSTALLATION AND SUPPORT**

**Q.** What maintenance contracts are required in a high availability configuration?

**A.** The maintenance contracts required in a high availability configuration are:

- External high availability support from third-party vendors (consists of support for Sun servers, VERITAS software, and Oracle)
- Annual Cisco Transport Manager maintenance contract from Cisco
- Disk array support (EMC, Hitachi, etc)
- Tape or system backup support

**Q.** What are customers' options for external high availability support?

**A.** Customers can obtain support from individual third-party vendors, through joint support alliances, or they may rely on their own in-house expertise.

**Q.** Does the annual Cisco Transport Manager maintenance contract differ for standalone Cisco Transport Manager servers and Cisco Transport Manager installed on high availability servers?

**A.** Yes. Customers need to purchase the standard Cisco Transport Manager maintenance support (SASU), along with the high availability support (SASU). The minimum baseline joint support alliance contract also is required, but customers can purchase higher levels of support—such as two-hour hardware replacement, fly-to-site, priority queuing, and more—from each vendor.

**Q.** Because the Cisco Transport Manager high availability solution consists of two Sun servers, does this require customers to purchase two copies of Cisco Transport Manager and two maintenance contracts?

**A.** No. Only the Cisco Transport Manager software and a single maintenance contract are required.

**Q.** Why has Cisco chosen to recommend outsourced support for customers' high availability infrastructure?

**A.** At Cisco, our core competency is not in VERITAS, Oracle, and Sun products. Issues such as the capability to reproduce the problem across a multitude of disk arrays (EMC, Hitachi, A5200, and so on), Sun servers (v280, v480, v1280, and so on), validation that all software components have been correctly installed, global 24-hour support, for example, are issues that Cisco is not in a position to contend with. Timely resolution of critical problems is best handled through the customer's high availability support infrastructure, because Cisco TAC representatives do not have the training nor the expertise to assist with problems that may occur with these products.

### THIRD-PARTY HARDWARE AND SOFTWARE

**Q.** Can a customer deviate from the specified Sun Solaris and Oracle release with Cisco Transport Manager in a high availability environment?

**A.** No. Cisco Transport Manager 5.0 has been validated on specific Solaris (8) and Oracle (8.1.7) releases, which is specified in the installation guide. Deviation from the specified Solaris or Oracle release in the standalone or high availability architecture may cause problems that the Cisco TAC team would be unable to reproduce.

**Q.** Can a customer deploy Oracle Standard Edition 9i (verses Oracle Enterprise Edition) in a high availability environment?

**A.** Yes. Oracle Standard Edition 9i (Oracle9i) may be used for Cisco Transport Manager high availability installations with fewer than 200 network elements.

**Q.** What hardware release of Solaris is used in the high availability and standalone Cisco Transport Manager configurations?

**A.** Both have been validated with Solaris 8 Hardware Release 02/04.

**Q.** What is Hardware Release XX/YY from Sun?

**A.** This is Sun's OS release naming convention that identifies specific patches that are included in a particular release of the Solaris Operating System.

**Q.** What happens when Sun introduces a new hardware release for Solaris 8?

**A.** Customers can anticipate new Solaris 8 patches from Sun. When a new patch is introduced, it overrides the existing patch release. Any applicable patches identified in the Cisco Transport Manager high availability and standalone installation guides may be discarded or new ones may be introduced to correct any hardware problems.

**Q.** What software is required to run on the high availability configuration?

**A.** The software requirements for the high availability configurations are:

- Sun Microsystems Solaris administration (Solaris 8 02/04)
- Cisco Transport Manager 5.0
- Cisco Transport Manager High Availability Agent Release 2.2
- Oracle Enterprise Database Edition 9i Release 2 64-bit production (Oracle9i) for Sun Solaris 8
- VERITAS Database Edition/High Availability 4.0 for Oracle on Solaris
- VERITAS Volume Manager (VxVM ) 4.0
- VERITAS File System (VxFS ) 4.0
- VERITAS Cluster Server (VCS ) 4.0
- VERITAS Cluster Server Oracle Agent 4.0

For Geographic Redundancy, add:

- VERITAS Volume Replicator 4.0
- VERITAS Cluster Server Veritas Volume Replicator (VVR) Agent 4.0
- VERITAS Global Cluster Manager 4.0 (with DR option)

In addition, all software patches for Solaris, VERITAS, PCI adapters, and Oracle are required.

**Q.** How many licenses are required?

**A.** Table 1 is a list of required software licenses for the Cisco Transport Manager high availability configuration.

**Table 1.** Required Software Licenses

Software	Quantity
Cisco Transport Manager 5.0	One License
Cisco Transport Manager High AvailabilityAgent 2.1	One License
Oracle Database 9i	See vendor for options
VERITAS Database Edition/High Availability 4.0 for Oracle on Solaris	One License per server
VERITAS Volume Replicator 4.0	One License per server
VERITAS Cluster Server VVR Agent 4.0	One License per server
VERITAS Global Cluster Manager 4.0	One License (with DR option) per site

Contact your VERITAS sales representative for more details on configurations and pricing of the VERITAS Global Clustering solutions.

**Q.** What are customers' options for licenses with Oracle?

**A.** Customers can choose to pay Oracle based on the number of CPUs installed in their system or they have the option to pay by named users. The Cisco Transport Manager 5.0 Standalone Installation Guide provides detailed information on the number of named users required. Full Oracle licensing is required for the Primary Sun Server and no additional Oracle licenses are required for the Secondary Sun Server. An Oracle sales representative can offer advice on exact licensing fees, based on the customer's hardware configuration.

**Q.** Does the customer require extra Oracle named users in a high availability environment?

**A.** As specified earlier, the Cisco Transport Manager 5.0 software used in the high availability environment is identical to the standalone Cisco Transport Manager 5.0 software. No extra named users or licenses are needed to operate in a high availability configuration.

**Q.** What is included in VERITAS Database Edition/High Availability 4.0 for Oracle on Solaris?

**A.** The VERITAS Database Edition/High Availability 4.0 for Oracle on Solaris includes the following:

- VERITAS Volume Manager (VxVM) 4.0
- VERITAS File System (VxFS) 4.0
- VERITAS Cluster Server (VCS) 4.0
- VERITAS Cluster Server Oracle Agent 4.0

**Q.** Will the high availability agent work with any Sun hardware?

**A.** Yes, providing the Sun hardware is configured with Solaris 8. Customers should ensure the hardware that they plan to deploy (servers and disk arrays) have been validated and will be supported by VERITAS. Confirmation of this can be found at <http://www.veritas.com>.

**Q.** Is Sun Cluster Server or Oracle Parallel Server part of the high availability configuration?

**A.** No. High availability can be deployed in a variety of ways using a multitude of vendor software and hardware. The goal is to provide customers with an architecture that has been tested using our Cisco Transport Manager High Availability Agent 2.2. VERITAS was selected because it is one of the top software high availability solution integrators using the best in class Sun hardware and Oracle relational database management system (RDBMS).

## **FAILOVER**

**Q.** What causes the secondary server to assume the role of the primary server?

**A.** The secondary server assumes the load of the primary server in the event of primary server failure. Essentially, a number of criteria parameters must be met for the high availability agent to determine that the primary server has failed. After the high availability agent has detected a failure, the primary system is shut down in an orderly sequence (assuming no system failures—CPU, motherboard, etc.), and the secondary server activates all appropriate daemons, launches Oracle, activates the virtual IP, and restarts the Cisco Transport Manager.

**Q.** What is the impact on the customer's network of primary server failure?

**A.** Any alarms sent to the primary server when the systems are switching to the secondary server (which assumes virtual IP address identity) will be lost until the Cisco Transport Manager resynchronizes with the network element and gets an updated alarm status. After the secondary Cisco Transport Manager server “comes on line” and has assumed the virtual IP address, the Cisco Transport Manager can synchronize either manually or automatically to every network element to obtain the latest alarm status.

**Q.** Will the secondary server toggle back to the primary server if the high availability agent detects a failure in the secondary server?

**A.** No. This requires a platform manager intervention, and ensures the systems are not toggling back and forth until someone investigates what caused the initial failover situation.

## **FOR MORE INFORMATION**

For additional product information, visit [www.cisco.com/go/ctm](http://www.cisco.com/go/ctm) or contact your local Cisco account representative.

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