Systems Management and Tivoli Manager for Retail

Steven Golberg

Retail Store Solutions Technical Marketing Support

Systems Management Discussion: Agenda

- Systems Management - why?
  - ► Networking and Platforms
  - ► Where to start?
- A quick look at what Tivoli and IBM have to offer that may provide immediate relief
- Systems Management and IBM's POS Hardware
  - ► Where are we going, what have we done, and why
- A closer look at Tivoli Manager for Retail

Systems Management: Why?

- Systems Management can bring real value to a retail environment
  - ► Eliminate/minimize down-time
  - ► Allow quicker roll-out of new applications, price changes, operating procedures
  - ► Competitive advantage or response to competition
  - ► Enable remote assistance to the store, training
  - ► Eliminate/minimize on-site support requirements
- Systems Management increases in importance with movement to open platforms (NT, UNIX)

Systems Mgmt: Networking and Platforms

- Your networking protocols, physical network, and POS platforms make a difference
  - SNA? TCP/IP?
    - Advantages in utilizng a single network protocol
- Do you have a permanent WAN connection to the stores?
  - May cost more than dial-up connections, but...
    - Enables proactive monitoring in real-time
    - Eliminates many scheduling and connection restrictions
    - You may recover some of the costs through other savings

Systems Management: Where to Start?

- No matter what your network environment, the first areas should be
  - Change Management - enables more cost-effective software and data distribution, also useful for data retrieval
  - Remote Control - enables remote assistance to personnel at the stores, unattended takeover of store controllers,...

Systems Management: Where to Start...

- Availability Management - monitoring, automated recovery/bypass, automatic paging/notification, forwarding
  - ► Distributed monitoring is always beneficial
  - ► But you need to plan what you want to accomplish
- Permanent WAN connections?
  - ► Yes
    - − Forward important information to central site in real-time - proactive monitoring and action
  - ► No
    - − Use messaging (MQSeries) to forward important information when connections are present
    - − Use logs that can be retrieved at a later time

Systems Management: Deployment

- ■ Configuration Management
  - ► NetFinity 5.2
    - – PC based
    - – Workgroup level
  - ► Tivoli Inventory
    - – Cross-platform (UNIX and PC)
    - – Enterprise level
  - ► Tivoli IT Director
    - – PC Based (NT management server)
    - – Up to 999 machines
  - ► Other possibilities:
    - – Sterling Commerce Connect:Remote (was Xcellenet RemoteWare), Microsoft's SMS, ...

Systems Management: Deployment...

- Change Management
  - NetView Distribution Manager for MVS
    - SNA, 4690 OS support
    - Useful in 3 tier architecture, highly scaleable
  - Tivoli Software Distribution
    - Software Distribution for .... (AIX, NT, HP-UX, SUN, ...)
    - Tivoli Courier - integrates with Tivoli Inventory
  - Tivoli IT Director
    - Up to 999 machines
  - Other possibilities:
    - Sterling Commerce Connect:Remote (was Xcellenet RemoteWare), Microsoft's SMS, XNET's XDS, ...

Systems Management: Remote Control

- Remote Control
  - ► NetFinity 5.2
    - – Administrator can observe/control remote PCs
    - – PC based, workgroup level
  - ► Tivoli Remote Control
    - – Administrator can observe/control remote PCs
    - – Can support multiple administrators and control sessions
    - – Cross-platform server, enterprise level
  - ► Tivoli IT Director
    - – PC Based (NT management server)
    - – Up to 999 machines
  - ► 4690 Support - Remote Operator (SNA & asynch) or Telnet/Enhanced Telnet (TCP/IP)

Systems Management: Availability

- Without a dedicated WAN connection, continuous monitoring from a central site is not really feasible
  - ► First concentrate on distributed monitoring - automatically perform recovery, bypasses, or paging
    - Tivoli Distributed Monitoring - PCs and UNIX
    - NetFinity 5.2 or Tivoli IT Director - PCs
    - Other tools such as Connect:Remote, SMS
  - ► If no WAN connection
    - Gather critical information and utilize a product like MQSeries
- Reduce the number or severity/duration of outages in the stores

Systems Management: Availability (cont'd)

- With a dedicated WAN connection
  - ► Add central notification to distributed monitoring
    - − Tivoli Event Console - capture events, interact with trouble ticket applications
    - − Tivoli NetView for OS/390 - SNA monitoring and automation of 4690 OS
    - − Tivoli IT Director - smaller environments
  - ► Add centralized automation, error recovery, bypasses
  - ► Perform event correlation
  - ► Take action centrally or on distributed node
  - ► Add centralized paging, error logging, e-mail notification

Systems Management & IBM's POS HW

- You will see IBM's new POS Hardware conforming to systems management standards
  - ► WfM = Wired for Management
  - ► DMI = Desktop Management Interface
  - ► WoL = Wake on LAN
- Why?
  - ► Simpler centralized management of POS equipment using the same tools that the retailer uses for the rest of their I/T equipment
  - ► Lower cost of ownership for unattended and powered off POS equipment

Specific Enhancements

- 4695-322, 342 and later models
  - ▶ BIOS changes to better enable LCCM
  - ▶ Wake on LAN - remote wake-up of machine so you can perform maintenance, software updates
- 4694-2x5 and xNT
  - ▶ DMI support - better inventory capability of HW and firmware
  - ▶ LCCM support - remote BIOS update, building disk images, system setup, format hard drive
    - – DHCP/PXE RPL support - simplifies use with LCCM
  - ▶ Wake on LAN - must have APM feature
  - ▶ White paper available w/more details

Specific Enhancements...

- ■ IBM SurePOS 700 Series
  - ► WfM support - better managability characteristics, supported by a wide range of industry-standard systems management tools
  - ► DMI support - better inventory capability of HW and firmware
  - ► LCCM support - remote BIOS update, building disk images, system setup, format hard drive
    - − DHCP/PXE RPL support - simplifies use with LCCM
  - ► Wake on LAN - no battery needed
  - ► White paper will be placed on intranet and BPInsider Info with further details.

Systems Managemenet Testing

- Testing with Tivoli
  - 4694-SNT and LNT are certified as Tivoli Ready
  - SurePOS 700 Series testing with Tivoli agent
    - Can't be certified as Tivoli Ready unless you can ship the Tivoli agent (i.e., Windows pre-load machines)
- Testing with LCCM
  - 4694-2x5 and SurePOS 750 will be supported by LCCM 2.51 (~2/00 maintenance package)
  - 4695-321 and later should work with LCCM
    - Won't specifically be listed
- No certification program exists for SMS, HP

A Closer Look at Tivoli Manager for Retail

Tivoli solution for today's 4690 customers

- Today's 4690 Environment
- Tivoli Architecture
- Tivoli Manager for Retail R1 - 1999
- Future Retail Solution

Current 4690 Management Environment

- Growth of the store environment
  - ► Routers
  - ► Hubs/Switches
  - ► Customer Loyalty
  - ► Kiosk
  - ► ISP
- Lack of a single cohesive systems management tool for environments with 4690 OS
  - ► NetView DM, ADCS
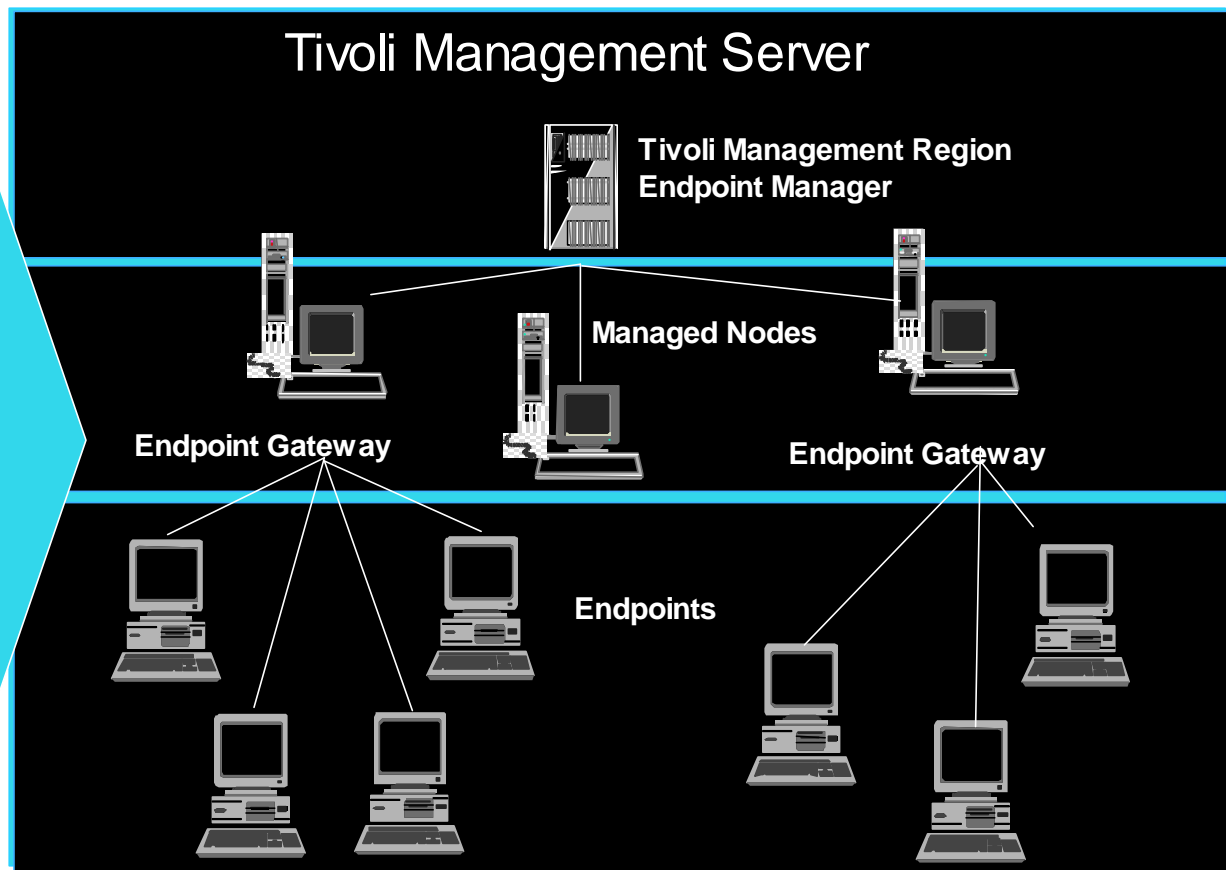 - ► NetView Alerts
  - ► Telnet/Remote Operator

Tivoli Architecture

Object Oriented Framework

3 Tier Architecture

Tivoli Modules

Tivoli Management Server

Tivoli Management Region Endpoint Manager

Managed Nodes

Endpoint Gateway

Endpoint Gateway

Endpoints

Tivoli Manager for Retail R1 - 1999

- IBM Retail and Tivoli Managed environments integrated
- Solution Flow:
  - Events are filtered at the controller by priority and message number
  - Events are sent to the Tivoli Enterprise Console (TEC)
  - TEC scripts can be invoked based on the events received
  - Controller can receive and execute commands from TEC
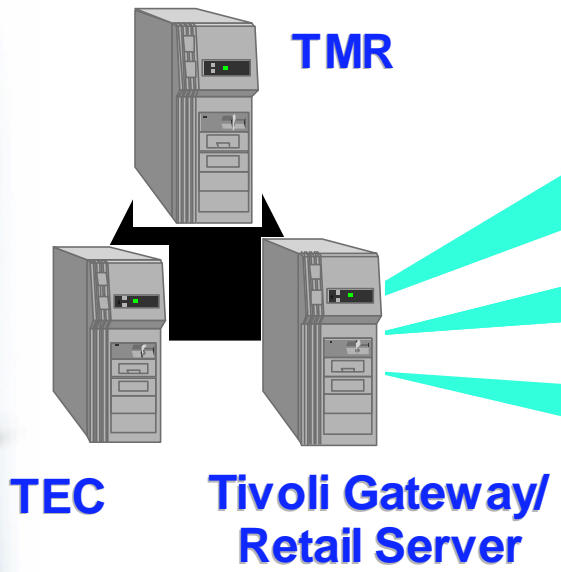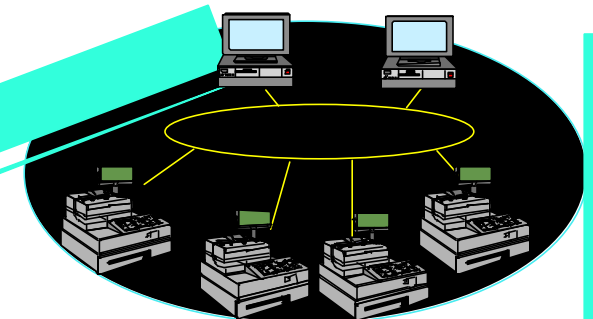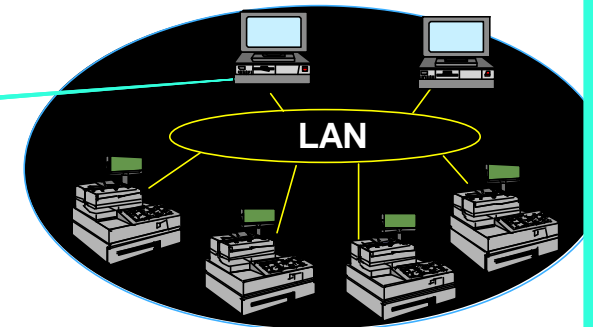- Tivoli Manager for Retail is available as of September 24, 1999

Solution Architecture

Data Center

TMR
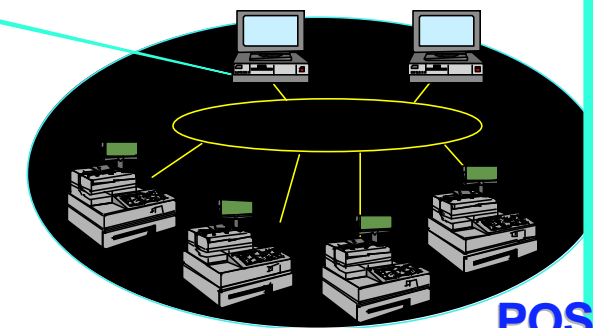
TCP/IP

4690

TCP/IP

LAN

TCP/IP

TEC   Tivoli Gateway/
Retail Server

TEC * Retail Server * 4690 w/Tivoli Agent

S T O R E S

POS

It's easy to get started

1. Install Retail Server Code
2. Define 4690s to the Retail Server
3. Install Agent on 4690s
4. Configure events to be forwarded to TEC
5. Start Monitoring

The Retail Server Administrator Console

Tivoli Manager for Retail Administrator

File   Edit   View   Help   *Tivoli*

Tivoli Manager for Retail
- Stores
  - Store_1
  - Store_2
  - Store_3
- Configurations

Controller	Machine type	Configuration file
Alternate_Controller_Store_2	4690 Controller	Default
Backup_Controller_Store_2	4690 Controller	Default
Master_Controller_Store_2	4690 Controller	Default

Use Retail Administrator to:

- Define Stores
- Define Controllers
- Configure Event Filtering

Define a Specific Controller

Link controllers to specific configurations

Controller: Master_Controller_Store_2

| General information | Protocol Information |

Controller name	●	Master_Controller_Store_2
Description		Master Controller for Store 2
Type		4690 Controller ▼
Configuration file	●	Default ▼
Store	●	Store_2 ▼

● Required field

[OK] [Cancel] [Help]

Retail Store Solutions

Define a Specific Controller...

Associate IP address with controller

Controller: Master_Controller_Store_2 ☒

| General information | Protocol Information |

Protocol type   TCP/IP ▼

● IP address   •   146.22.88.111

Port   •   2020

• Required field

[OK] [Cancel] [Help]

Create Event Configuration File

Configure common filters in groups or configure filter for each store

Tivoli Manager for Retail Administrator

File   Edit   View   Help   *Tivoli*

Tivoli Manager for Retail
  Stores
    Store_1
    Store_2
    Store_3
  Configurations

File	Description
Default	Default configuration file.
Region1	Configuration file for Region 1 Controllers
Region2	Configuration file for Region 2 Controllers
Region3	Configuration file for Region 3 Controllers

Create Event Configuration File...

Configuration: Region3 ☒

| General | Event Monitor |

Configure the event monitor application.

Startup | Automatic | ▼ |

Select event severity to monitor

☑ Severity 1

☑ Severity 2

☐ Severity 3

☐ Severity 4

☐ Severity 5

Type the numbers of messages to be monitored, separated by commas. To indicate a message group, type the group letter followed by * (wildcard character).

W*

| OK | Cancel | Help |

Events

✓ **by severity**

✓ **by message number**

✓ **with wildcard**

✓ **Samples are provided**

Tivoli Enterprise Console

- 4690 messages are sent to the Retail Server which uses the Windows NT event adapter to convert them to TEC events
- The Retail Server forwards the events to the TEC Server
- TEC rules are defined for 4690 events
- The TEC rules will determine whether the event should be displayed, automated, and/or automatically open a problem ticket
- 4690 events can be grouped into existing or new event groups
- 4690 commands such as put & run can be sent from TEC to the Retail Server for execution on the 4690 controller

Controller Failure Scenario

- Tivoli 4690 Agent code runs on each controller

- Each controller sends only messages that are created by it

- Terminal events continue when its primary loop controller fails

- Heartbeat between the 4690 controller and Retail Server so the Retail Server can see that the 4690 controller is no longer responding

S/W Prerequisites & Dependencies

Software

◆ NT V4.0 Operating System
◆ Tivoli Framework 3.6.1 or higher
◆ Tivoli Enterprise Console 3.6.1 or higher
◆ TCP/IP communication protocol on each controller
◆ 4690 OS V1 w/CD 9920 Operating System and TCP/IP Feature or 4690 OS V2R2

Hardware

◆ Any HW supported by 4690 OS and any NT platforms supported by Tivoli Framework 3.6.1 or higher

Possible Future Enhancements

- Additional platforms for Retail Server
  - ► SUN Solaris and AIX
- Event mgmt enhanced with thresholding
- Software Distribution and Data Management
  - ► Distribute file pkgs and ASM software pkgs
- Inventory
  - ► SW - name and revision number of ASM pkgs
  - ► HW - controller and terminal info (VPD+)
- Integration with other Tivoli Products
  - ► Retail Server UI launched from Tivoli Desktop

Thank You