



Retail Store Solutions

# IBM Director Overview

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# IBM Director

- IBM Director is an integrated suite of tools supporting the management of a variety of hardware and operating systems
- Automates many of the processes that are required to manage systems, including capacity planning, asset tracking, preventive maintenance, diagnostic monitoring, troubleshooting, and more
- Designed to manage a complex environment of systems and devices
  - Servers
  - Workstations
  - Desktop computers
  - Mobile computers
  - Network Devices
  - Printers
- All managed systems, devices, and objects are referred to as *managed objects*.

# IBM Director

## ■ Main Director Components

### Management Server

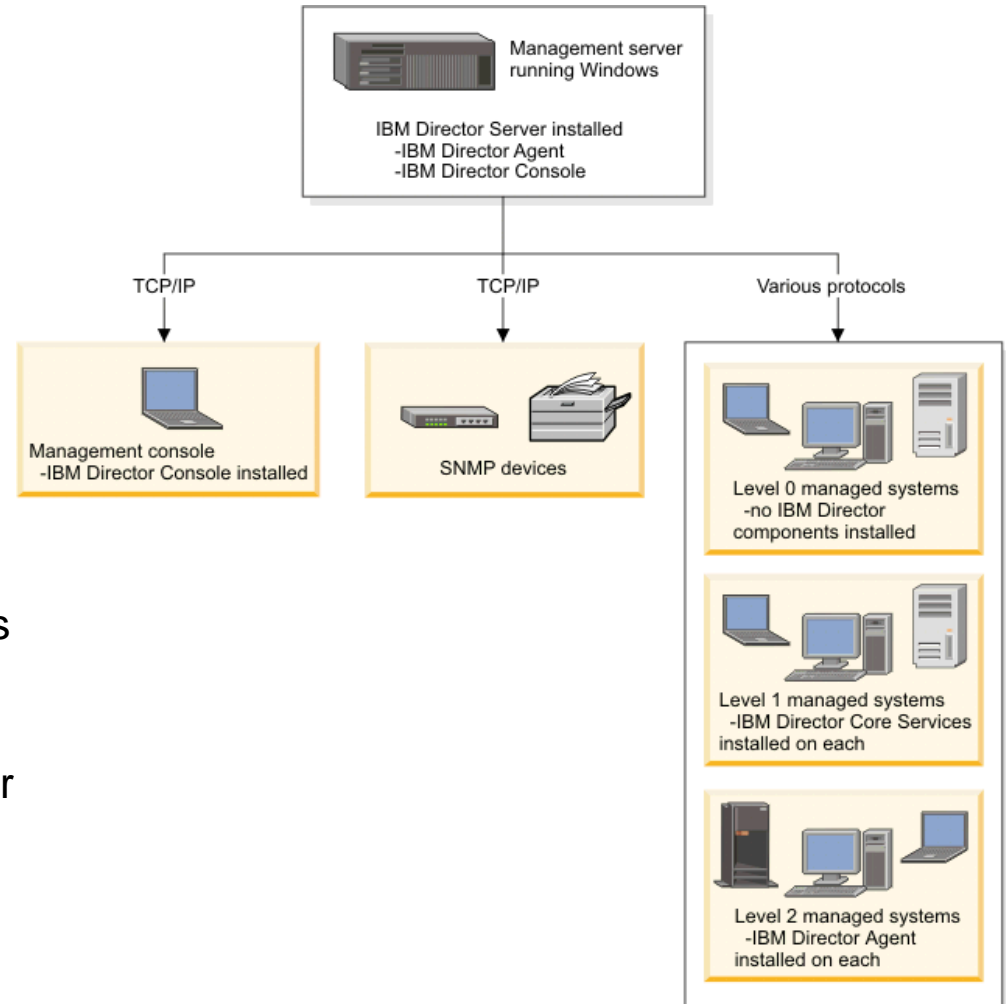
Performs main management functions, including persistent storage of data, inventory database, event listening, security, etc.

### Management Console

Provides GUI for System Administrator to perform tasks

### Management Agents

Components that IBM Director communicates with and administers the managed system through



FOM0501-0

# IBM Director Tasks

- Discovery
  - Inventory
  - Event Log
  - Event Action Plans
  - Software Distribution
  - External Application Launch
  - Scheduler
  - Remote Control
  - Remote Sessions
  - Resource Monitors
  - Process Management
  - CIM Browser
  - SNMP Browser
  - MS Cluster Browser
  - Message Browser
  - File Transfer
  - Network Configuration
  - Asset ID
  - Alert Configuration
  - SNMP Agent Configuration
  - Server Configuration
  - System Accounts
  - Director User Administration
- And more...

# IBM Director Console

The screenshot displays the IBM Director Console interface. The main window is titled "IBM Director Console" and contains a menu bar (Console, Tasks, Associations, View, Options, Window, Help) and a toolbar with various icons. The interface is divided into three main sections:

- Groups:** A tree view on the left showing a hierarchy of groups. The "Level 2: IBM Director Agents" group is selected and highlighted.
- Level 2: IBM Director Agents:** A table in the center showing details for the selected group. The table has columns for Name, TCP/IP Addresses, and a third column (partially visible as "TC").
- Tasks:** A list of tasks on the right, including Asset ID, CIM Browser, Configure Alert Standard Format, Configure SNMP Agent, Event Action Plans, Event Log, External Application Launch, File Transfer, Hardware Status, Inventory, Microsoft Cluster Browser, Network Configuration, Process Management, Remote Control, Remote Session, Resource Monitors, Scheduler, Server Configuration Manager, SNMP Browser, Software Distribution, and System Accounts.

At the bottom of the console, there is a status bar with the IBM logo, the word "Ready", the host name "Host: MountainDewGUI", the user ID "User ID: RALNTDOMIdbernath", and a notification icon showing "4 objects".

Name	TCP/IP Addresses	TC
BAWEAVER	9.44.162.150	dyn
CDATP1	9.44.162.128	cd:
MOUNTAINDEWGUI	9.44.162.168	Mo
NEGIRARD3	9.44.162.133	NE



Retail Store Solutions

# RMA Retail Extensions for IBM Director

David Bernath

## Pre-requisites for Retail Extensions for IBM Director

- IBM Director Version 5.10

# Installation

- Log on
  - as Administrator on Windows, as root on Linux
- Insert the Installation CD into the CD Drive
- Run installation program

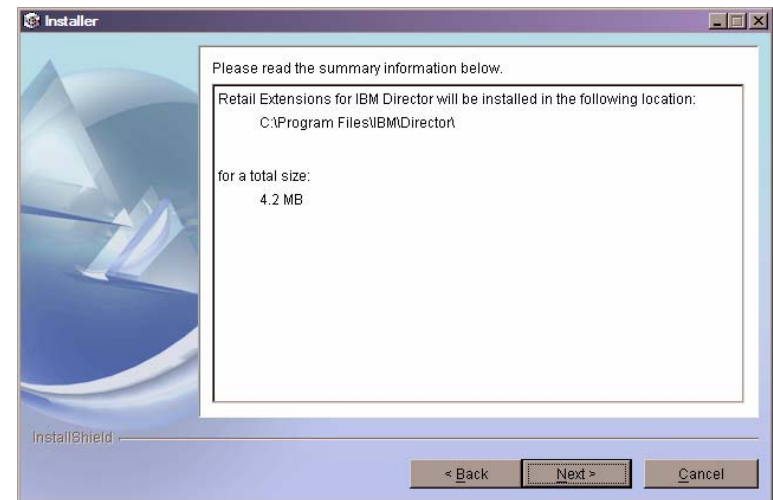
*D:\windows\rma4itd\setup.exe* on Windows

*/media/cdrom/linux/rma4itd/setup.bin* on Linux (after mounting CD)

- Hit Next on Welcome Panel
- Accept License agreement
- Hit Next on Summary Panel

Installation will:

- Detect Location of IBM Director
- Stop IBM Director (if running)
- Install Retail Extension files
- Update Director files
- Restart IBM Director (if stopped)

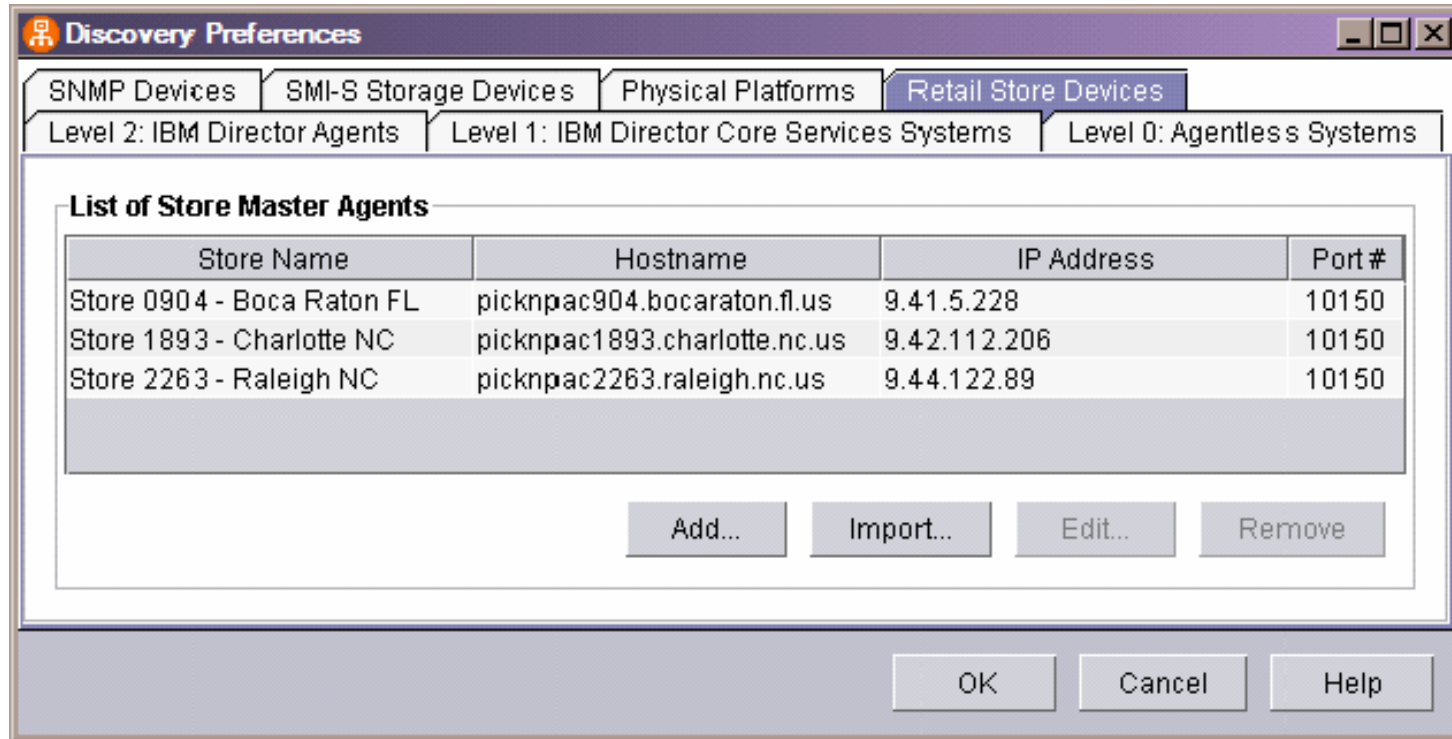




## Configure Discovery Preferences

- Select Options / Discovery Preferences from Main menu
- Select the Retail Store Devices tab

Additional tab added for Retail, integrated into Director



## Discovery Preferences cont)

- Select Add... to add a new store to manage

Enter Unique Store Name

Provide the hostname

Reverse lookup from IP

Provide the IP Address

Find IP for host

Enter the Port Number

Defaults to 10150

The screenshot shows a dialog box titled "Define Master Agent" with a close button (X) in the top right corner. The dialog contains the following text and fields:

Enter the connection information for the master agent for the store. Also provide a unique name to identify this set of information.

Store Name:

Hostname:

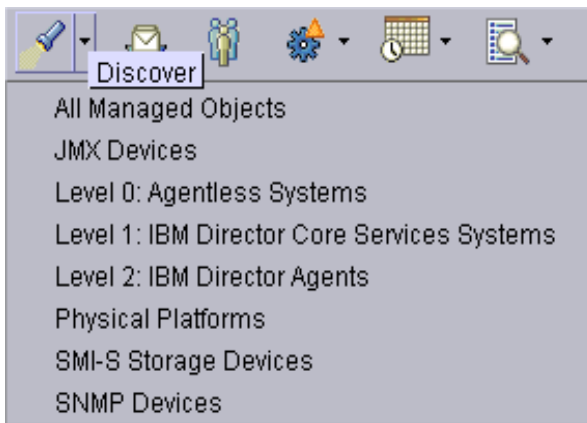
IP Address:  .  .

Port #:

- Select Import... to add a list of new stores to manage
- Select Edit... to modify a current store configuration
- Select Delete... to remove a store from the managed list

# Starting Discovery

- Integrated with IBM Director discovery function
  - Built on top of IBM Director discovery interfaces
- Press Discover toolbar button
  - Will start discovery of all devices
- Select JMX Devices from Discover toolbar
  - Will start discovery of only Retail devices



# Managed Objects

- Managed Objects appear in center panel
- Different icons for different devices



Master Agent

Includes IRES Branch Server / BOSS



Mobile Terminal for Retail



4690 Controller



4690 Terminal



IRES Terminal



Self-Checkout Lane



Anyplace Kiosk



RMA General Agent (like V1)

Retail Systems : Store Association		
Name	TCP/IP Addresses	TC
Store 12456		
baweaver (12456)	192.168.1.59	
dodger (12456)	9.44.162.136	
ibmaspe (12456)	9.44.162.221	
netvista2a9710 (12456)	9.44.162.238	
Store 182		
7054200-4110223-001...	10.10.1.52	
ANYPLACE (182)	10.10.1.227	
biscayne (182)	10.10.1.247	
CC.002 (182)	10.10.1.11	
CC (182)	10.10.1.11	
DD (182)	10.10.1.22	
DD (182)	10.10.1.22	
Hatteras2 (182)	10.10.1.230	
OD.682 (182)	9.42.228.74	
OJ.682 (182)	9.42.228.80	
SMSTXPMA (182)	9.42.230.211	
solution1 (182)	10.10.1.250	
SU (182)	10.10.1.55	
Turbo (182)	10.10.1.201	
Win2k (182)	10.10.1.223	

# Managed Object States

- Device States / Icons match Director



- Device is Online



- Device is Offline



- Device is Offline due to loss of MA connection



- Device state is unknown

# Managed Object Attributes

- Right click on system and select Open...
  - Opens the Display System Attributes window
- Standard MO attributes from Director
  - System Name
  - System Factory ID
  - System State
- Extended MO attributes from RMA
  - IP Address, Hostname, Port (for Device's Master Agent)
  - Store ID
  - Agent Type and Version
  - Device Type and ID
  - Management Protocol
  - Management IP Address and Port

## Store Association

- New association added to IBM Director for Retail Devices

Helps organize devices by Store

JMX Devices	
Name ▲	TCP/IP Addresses
Biscayne (222)	10.10.1.238
Biscayne1 (111L)	10.10.1.200
Biscayne1 (111w)	10.10.1.200
Bryce (222)	10.10.1.243
Bryce1 (111L)	10.10.1.239
Bryce1 (111w)	10.10.1.239
CC.002 (222)	10.10.1.11
CC (222)	10.10.1.11
CC (222)	10.10.1.11
DD.018 (222)	10.10.1.70
DD (222)	10.10.1.22
DD (222)	10.10.1.22
DD (222)	10.10.1.22
IBMBOSS (222)	10.10.1.193
IBMLANE (222)	10.10.1.186
IBMLANE (222)	10.10.1.186
posClient4 (111L)	9.42.231.101
posClient7 (111L)	9.42.231.101
remoteGUI (222)	10.10.1.250
SMST2003MA (111w)	9.42.228.70
smstiresma (111L)	9.42.231.101
SMSTXPMA (222)	9.42.228.207
SU (222)	10.10.1.55



JMX Devices : Store Association	
Name ▲	TCP/IP Addresses
Store 111L	
Biscayne1 (111L)	10.10.1.200
Bryce1 (111L)	10.10.1.239
posClient4 (111L)	9.42.231.101
posClient7 (111L)	9.42.231.101
smstiresma (111L)	9.42.231.101
Store 111w	
Biscayne1 (111w)	10.10.1.200
Bryce1 (111w)	10.10.1.239
SMST2003MA (111w)	9.42.228.70
Store 222	
Biscayne (222)	10.10.1.238
Bryce (222)	10.10.1.243
CC.002 (222)	10.10.1.11
CC (222)	10.10.1.11
CC (222)	10.10.1.11
DD.018 (222)	10.10.1.70
DD (222)	10.10.1.22
DD (222)	10.10.1.22
DD (222)	10.10.1.22
IBMBOSS (222)	10.10.1.193
IBMLANE (222)	10.10.1.186
IBMLANE (222)	10.10.1.186
remoteGUI (222)	10.10.1.250
SMSTXPMA (222)	9.42.228.207
SU (222)	10.10.1.55

# Retail Groups

- Groups are used to filter the managed objects displayed
- New Groups are automatically added for each unique managed object (i.e. Retail Device) discovered

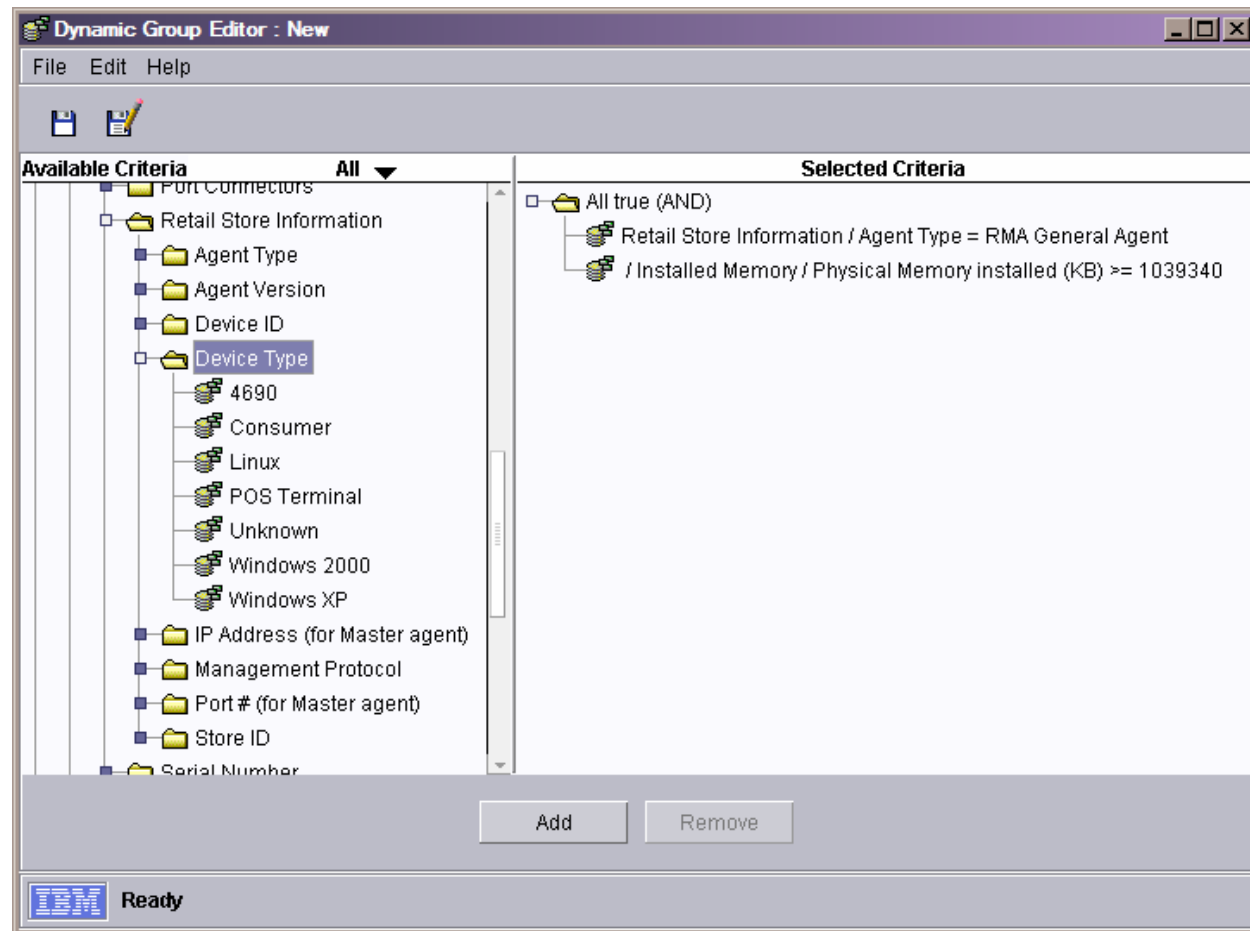
The screenshot displays the IBM Retail Store Solutions interface. On the left, a tree view titled "Groups" shows a hierarchy of managed objects. The "Mobile Terminal Devices" group is selected and highlighted. On the right, a table titled "Mobile Terminal Devices" displays the details of the selected group. The table has three columns: "Name", "TCP/IP Addresses", and "TCP/IP Hostnames". A single entry is visible in the table.

Name ▲	TCP/IP Addresses	TCP/IP Hostnames
7054200-4110223-0014A4...	10.10.1.52	



# Dynamic Groups

- Additional dynamic groups can be created
- Dynamic Group Editor  
Retail Specific information available for use

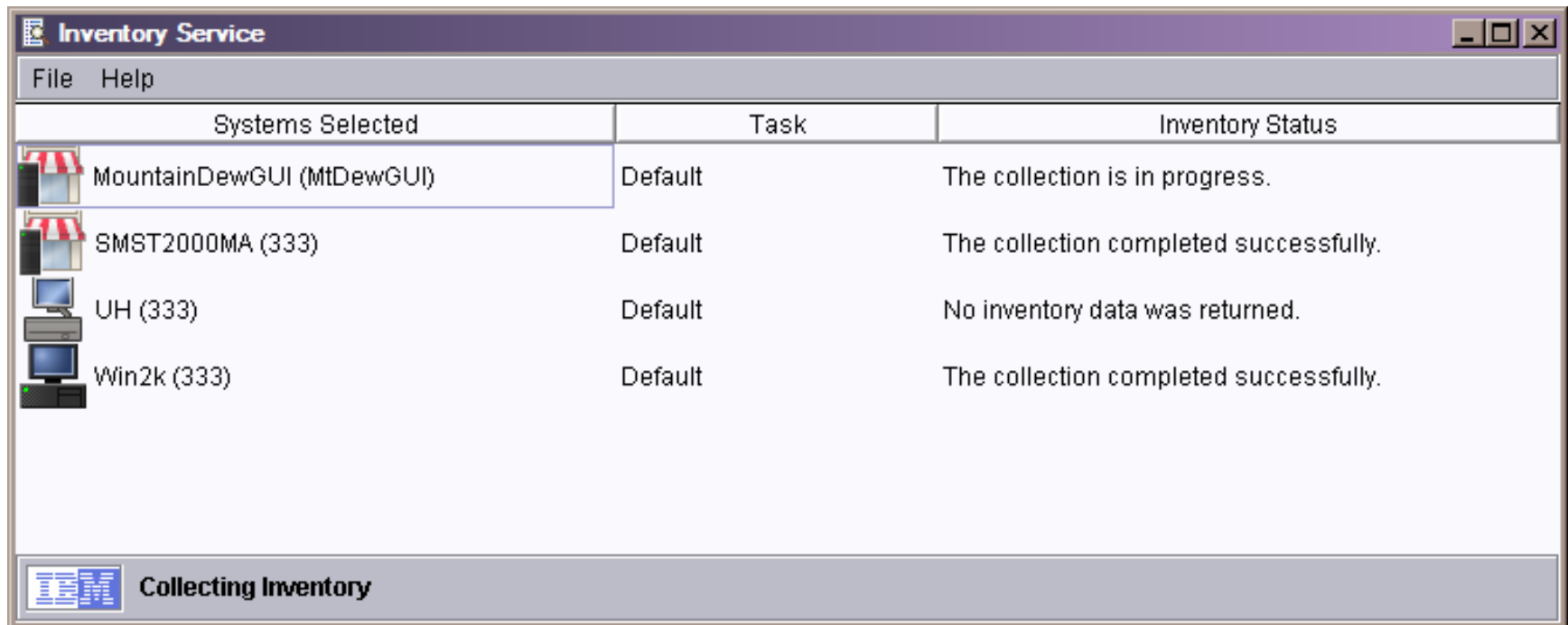


# Inventory Collection

- Uses existing IBM Director Database tables
- Uses Information from Device
  - CIM Information for Windows systems (36 Tables)
  - CIM Information for Linux systems (6 Tables)
  - MBean Information for MTR (8 Tables)
- Add new Tables as needed for special Retail attributes

## Inventory Collection cont)

- To start collection, right click on device (or devices) and select Collect Inventory from the menu



# Inventory Collection cont)

- Select View Inventory from the popup menu to see information

The screenshot shows the 'Inventory Query Browser' application window. The title bar reads 'Inventory Query Browser: Win2k (333), SMST2000MA (333), MountainDewGUI (MtDewGUI)'. The menu bar includes 'File', 'Selected', 'Options', and 'Help'. On the left, a tree view under 'Available Queries:' shows a hierarchy: Custom, Hardware, Adapter, Chassis, Cluster, Device, Memory (expanded), Cache, Installed Memory (selected), Logical Memory, Memory Modules, Network, Operating System Specific, Settings, SMBIOS, SNMP, Storage, and Software. The main area displays 'Query Results: Installed Memory(3)' in a table format.

Name (System)	Physical Memory installed (KB)...	Free Virtual Memory (KB)...	Page Size (Bytes...
SMST2000MA (333)	523732	2156172	
Win2k (333)	1014764	3689104	
MountainDewGUI (MtDewGUI)	2096048	2042996	

At the bottom left of the window, the IBM logo and the text 'Ready' are visible.

# Event Log

- Displays all of the Events for selected system(s)
- RMA forwards all events from the Master Agent to IBM Director
- RMA uses Store-And-Forward mechanism to handle connection loss
- Notifications are mapped into IBM Director Events

# Event Log

**Event Log: baweaver (12456)**

File Edit View Options Help

Events (28) - Last 48 Hours

Date	Time	Event Type	Event Text	System Name	Severity	Category	Gr...	Sender Name
6/29/2006	5:34:44 PM	Director.Topology.Online	System 'baweaver (12456)' is online	baweaver (12456)	Harmless	Resolution		MOUNTAINDEWGUI
6/29/2006	5:29:48 PM	Director.Topology.Online	System 'baweaver (12456)' is online	baweaver (12456)	Harmless	Resolution		MOUNTAINDEWGUI
6/29/2006	4:16:09 PM	Director.Topology.Online	System 'baweaver (12456)' is online	baweaver (12456)	Harmless	Resolution		MOUNTAINDEWGUI
6/29/2006	11:11:15 AM	Director.Topology.Online	System 'baweaver (12456)' is online	baweaver (12456)	Harmless	Resolution		MOUNTAINDEWGUI
6/29/2006	9:43:07 AM	Director.Topology.Online	System 'baweaver (12456)' is online	baweaver (12456)	Harmless	Resolution		MOUNTAINDEWGUI
6/29/2006	9:34:12 AM	Director.Topology.Online	System 'baweaver (12456)' is online	baweaver (12456)	Harmless	Resolution		MOUNTAINDEWGUI
6/28/2006	2:48:44 PM	JMX.Monitor.String.Matches	Monitor Id: StringMonitor11519143556...	baweaver (12456)	Harmless	Alert		
6/28/2006	2:48:41 PM	Retail.Base	TestString set to FooBar	baweaver (12456)	Critical	Alert		
6/28/2006	2:48:40 PM	Retail.Base	TestString set to FooBar	baweaver (12456)	Critical	Alert		
6/28/2006	1:26:15 PM	Director.Topology.Online	System 'baweaver (12456)' is online	baweaver (12456)	Harmless	Resolution		MOUNTAINDEWGUI
6/28/2006	12:51:35 PM	retail.Base	TestString set to FooBar234	baweaver (12456)	Critical	Alert		
6/28/2006	12:51:34 PM	retail.Base	TestString set to FooBar234	baweaver (12456)	Critical	Alert		
6/28/2006	12:51:34 PM	jmx.Monitor.String.Differs	Monitor Id: StringMonitor11519143556...	baweaver (12456)	Harmless	Alert		
6/28/2006	12:31:24 PM	retail.Base	TestString set to FooBar	baweaver (12456)	Critical	Alert		
6/28/2006	12:31:24 PM	jmx.Monitor.String.Matches	Monitor Id: StringMonitor11519143556...	baweaver (12456)	Harmless	Alert		

**Event Details**

Keywords	Values
Date	6/28/2006
Time	2:48:44 PM
Event Type	JMX.Monitor.String.Matches
Event Text	Monitor Id: StringMonitor11519143556090Observed MBean: TestObserved Attribute: TestString
System Name	baweaver (12456)
Severity	Harmless
Category	Alert
Group Name	
Sender Name	

**Extended Attributes**

Keywords	Values

IBM Ready

# Event Action Plans

- RMA Events published to allow inclusion in Event Action Plans
- Event Family and Qualifiers defined for RMA events

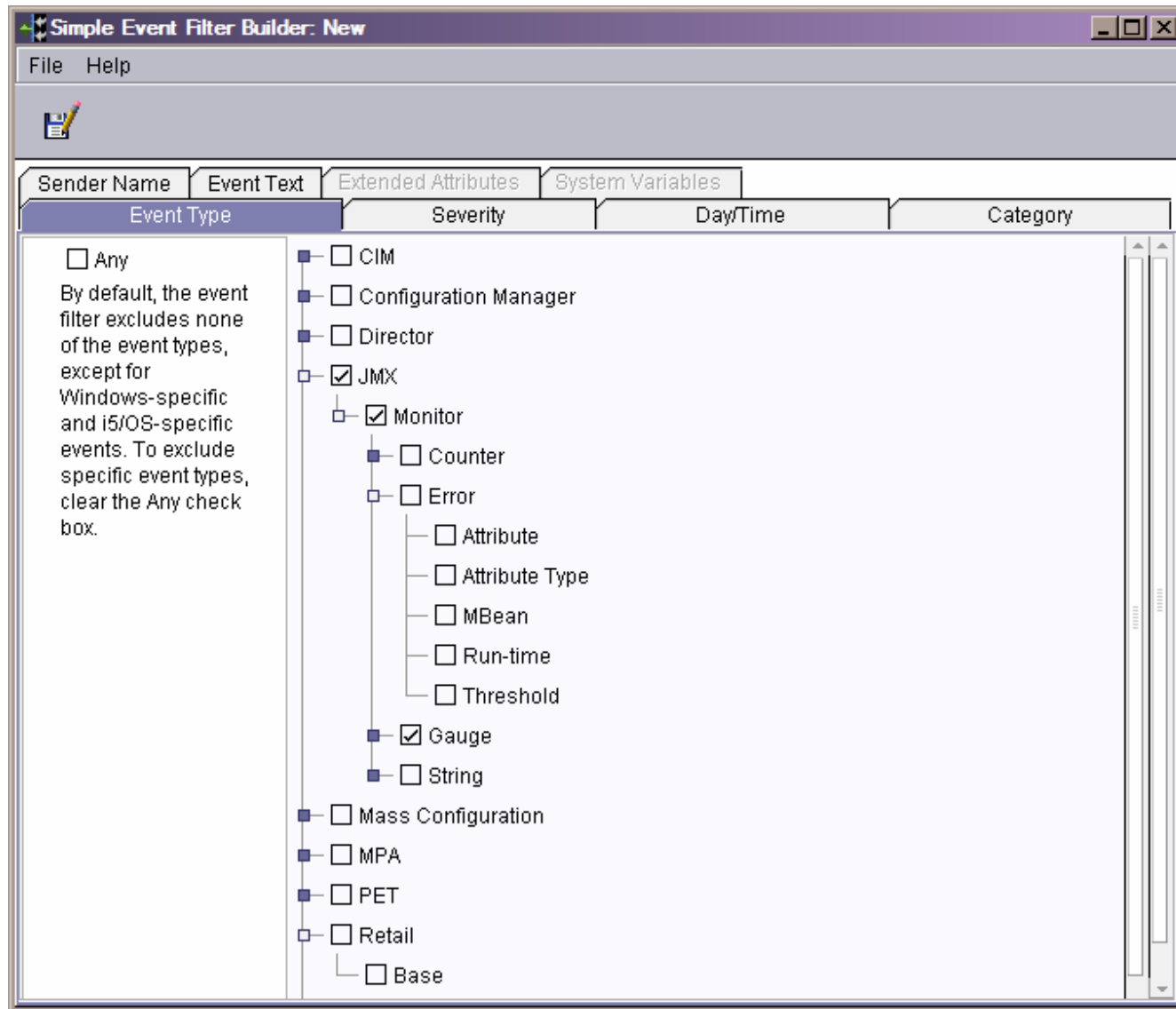
<b>Event Family</b>	<b>Qualifier 1</b>	<b>Qualifier 2</b>	<b>Qualifier 3</b>
Retail	Base		
JMX	Monitor	Error	MBean
JMX	Monitor	Error	Attribute
JMX	Monitor	Error	Attribute Type
JMX	Monitor	Error	Threshold
JMX	Monitor	Error	Runtime
JMX	Monitor	Counter	Threshold
JMX	Monitor	Gauge	High
JMX	Monitor	Gauge	Low
JMX	Monitor	String	Matches
JMX	Monitor	String	Differs

## Event Action Plans

- Launch the Event Action Plan Builder
- Select *New / Simple Event Filter* from the context menu in the Event Filters panel
- From the Simple Event Filter Builder window, click on the Event Type tab, and unselect the Any checkbox. This will enable the tree panel to the right.
- Select the checkboxes for the Retail or JMX family and qualifiers for the filter desired
- Save the event filter with a unique name

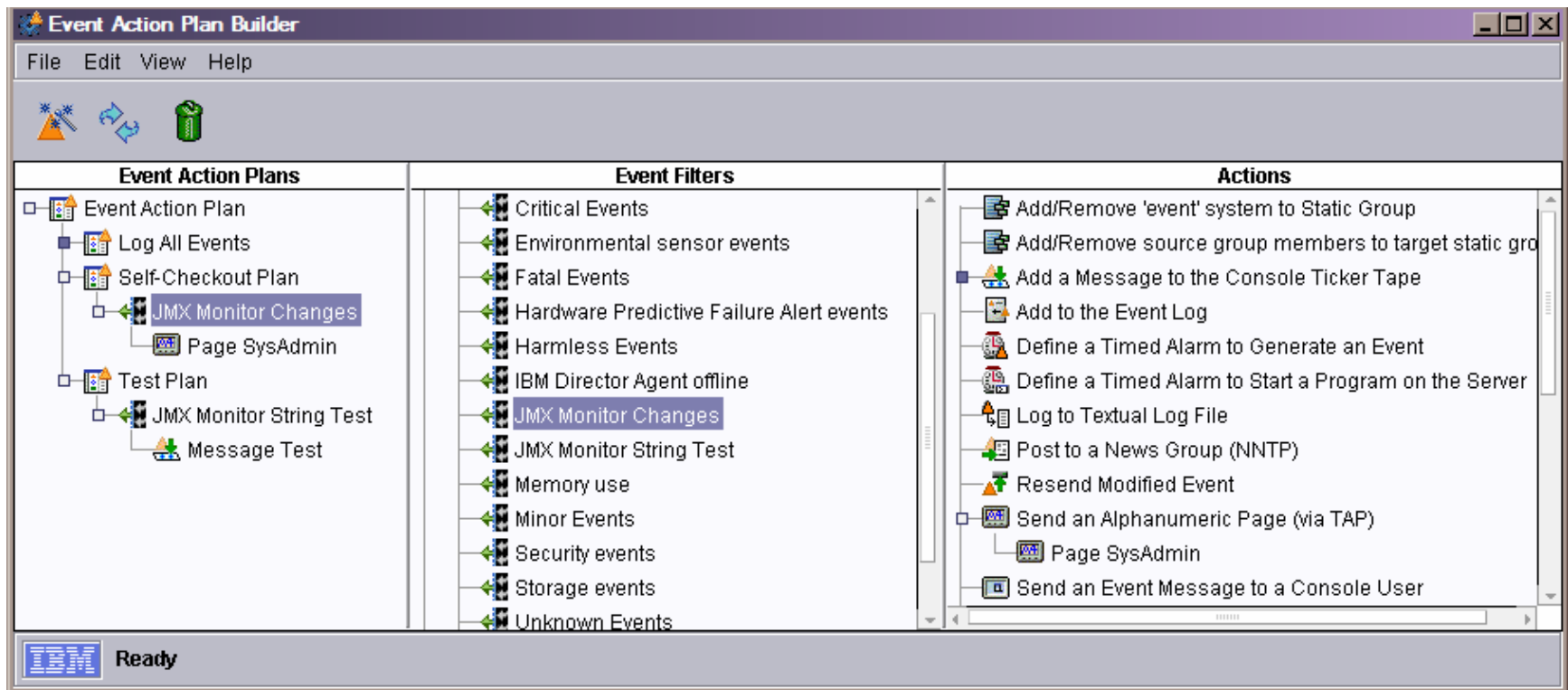


# Event Action Plans



# Event Action Plans

- JMX Event Filters can then be used in Event Action Plans



# Events

- IBM Director event severity levels are different than those provided in RMA
- Mapping is shown in the following table:

RMA Severity	Director Severity
RtICriticalNotification	Fatal
RtIEmergencyNotification	Critical
RtIAlertNotification	Critical
RtIErrorNotification	Minor
RtIWarningNotification	Warning
RtINoticeNotification	Warning
RtIInformationNotification	Harmless
RtIDebugNotification	Harmless
RtITracePointNotification	Harmless
RtIConsumerNotification	Unknown

# Resources

# Resources

- **User's guide**
  - <http://www2.clearlake.ibm.com/store/support/html/pubs.html#RMA>
  - Installation instructions
  - Programming examples
- **Javadoc**
- **Director Stuff (Add)**