

# 40th Cray User Group Conference

## Toward an Integrated Monitoring Scheme

by

Tom Roney

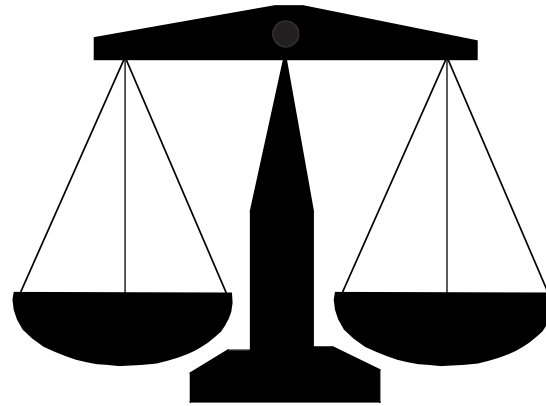
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# The Alliance National Technology Grid - Prototyping the 21st Century Infrastructure



# Development of Monitoring Tools

**System  
Operators**



**Monitoring  
Tasks**

**Sophisticated monitoring  
tools are balancing the  
scale for system  
operators.**

# Everyone Gets Involved

**FIRE !**



# OS-Log (*Operating System Log*)

- **Online journal of system changes**
- **Checked three times a day for appended entries**
- **New entries e-mailed to those who need to know**

# Benefits of Repository

- **Keeps everyone involved**
- **Diagnostics tool**
- **Training for novice**
- **Reference for professional**

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[HTTP://scv.bu.edu/SCV/Origin2000](http://scv.bu.edu/SCV/Origin2000)

# Bulk of Ad Hoc Script

- **Environment**
- **Declarations**
- **Error Checks**
- **Alarm Mechanism**
- **Record Keeping**

**FIRE !**



**FIRE !**



**FIRE !**



**NCSA**<sup>TM</sup>



# V-Oper (*Virtual Operator*)

- Think of HAL in:  
2001: A Space Odyssey
- A single “voice” reporting on the status of system resources
- Instrumentation for navigation
- Provides possible course of action
- Interactive with operator

# Other Monitoring Tools

- **Tripwire (long and short version)**
- **Swatch (Monitors a syslog host for messages from Kerberos, TCP\_Wrapper, and other tools)**
- **SunNet Manager**
- **Performance Co-Pilot**
- **Action Request Software**

# Grid Monitoring

- **Business sector seriously involved in monitoring software**
- **Exemplified by Airline Industry:  
“zero tolerance for error”**
- **More a matter of porting our industry to the monitoring software than vice versa**

# Computer Associates (CA)



# Communication Protocol

## Common Communication Interface (CCI)

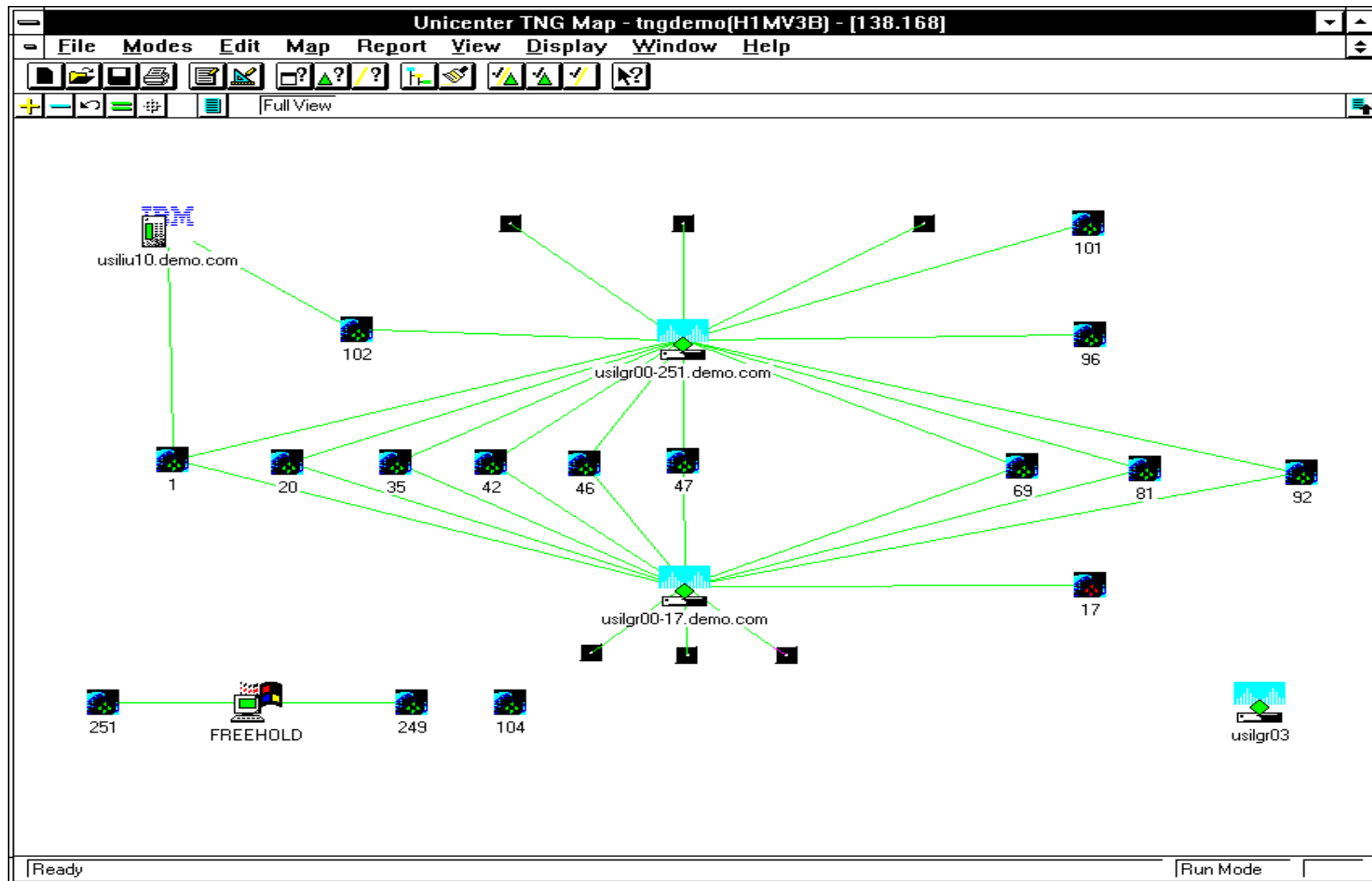
- **TCP/IP sockets**
- **remote procedure calls**
- **SQL named pipes**
- **SNMP**
- **encryption of message traffic**

# CA-Unicenter TNG

## Architecture

- **WorldView Graphical Interface**
- **Common Object Repository**
- **Agents**
- **Enterprise Management**

# WorldView

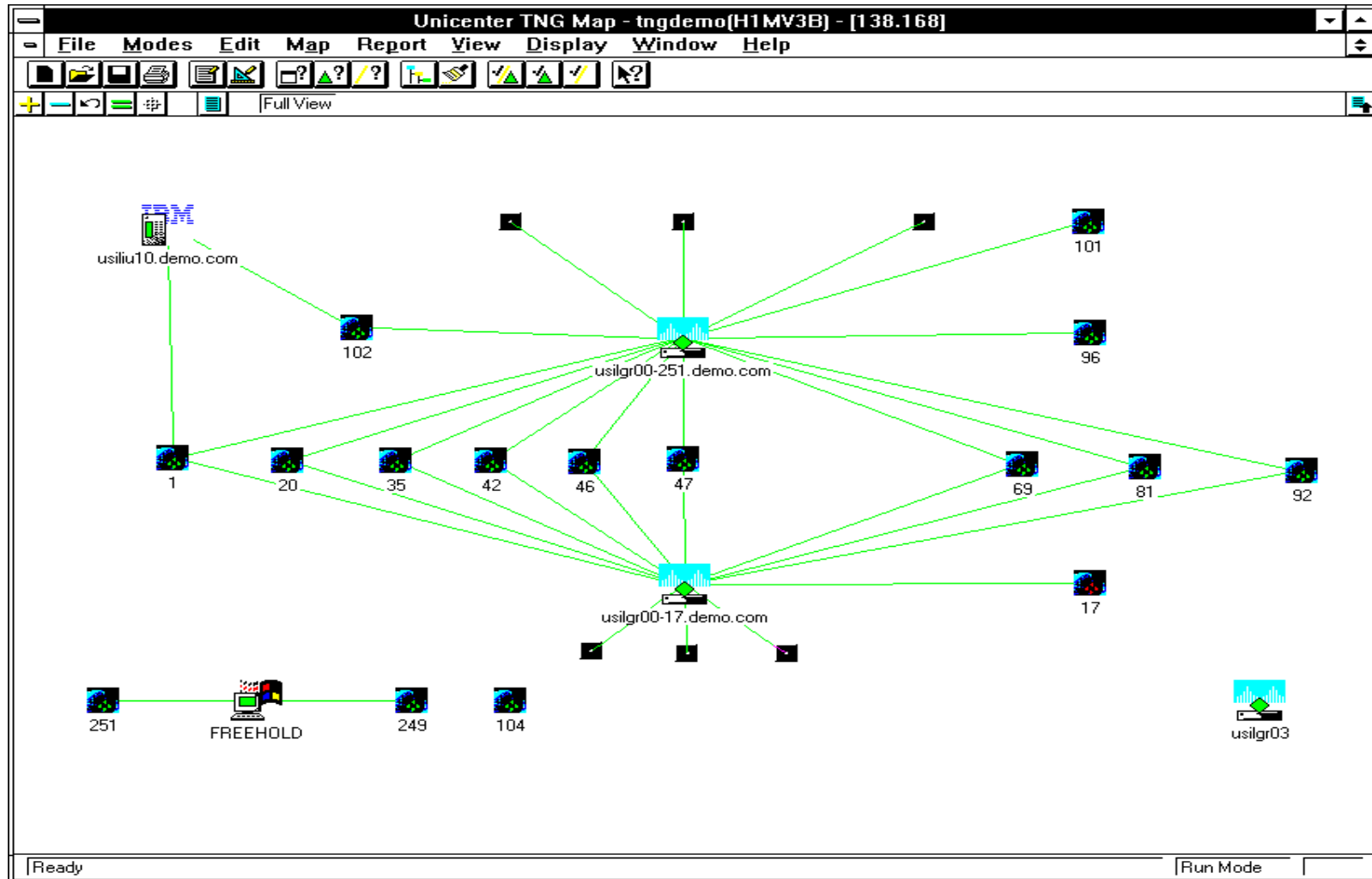


# Common Object Repository

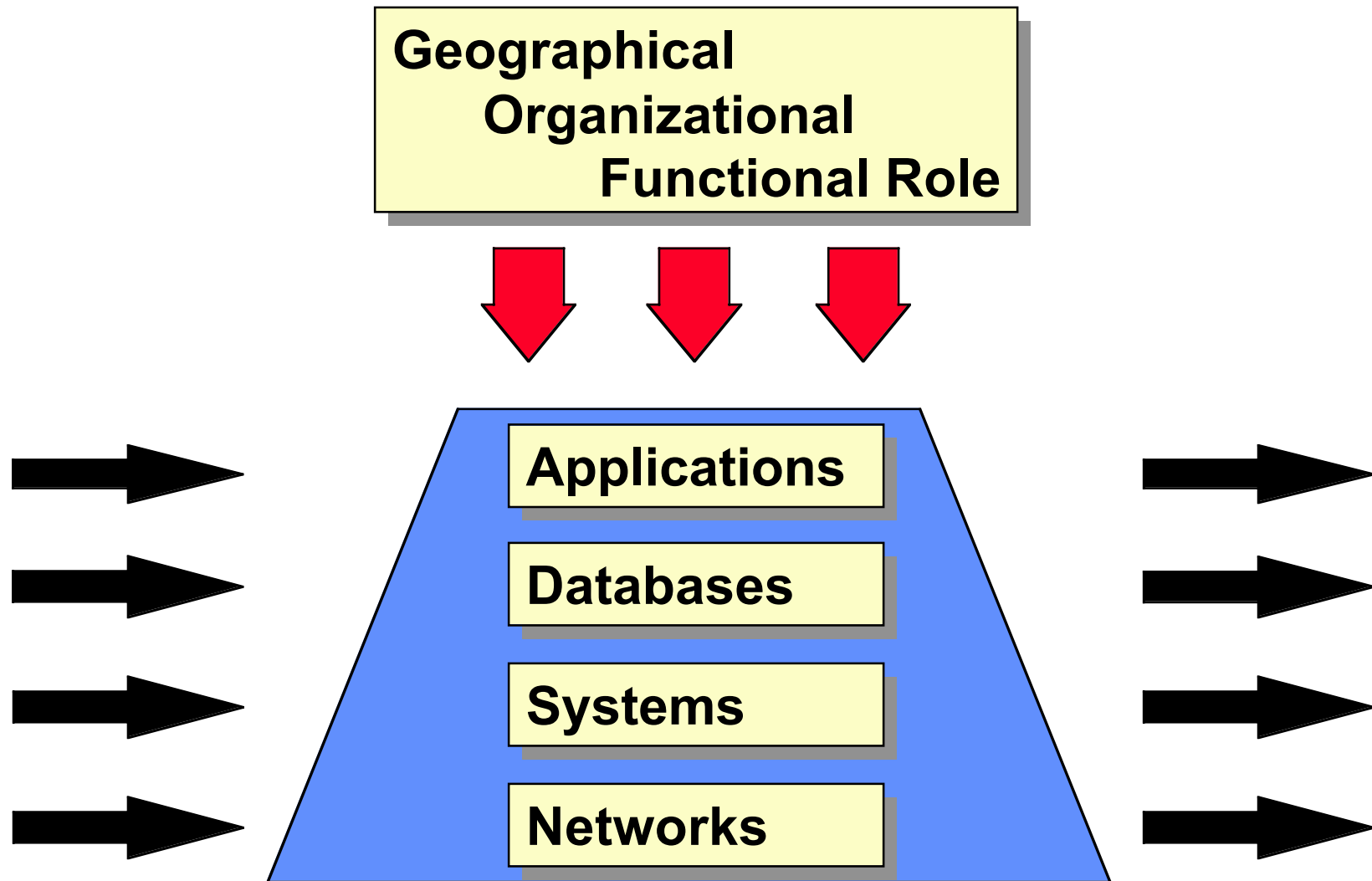
- **Describes the structure of information**
- **Explains object relationships and interaction rules**
- **Maps instance data to an underlying database**
- **Synchronizes information on events**



# Auto Discovery



# Business Process Views



# Agents

- **Operating System Agents**
- **Log Agents**
- **Process Agents**
- **Performance Agents**
- **Other Agents (Application Specific)**

# Enterprise Management

- **Event Management**
- **Problem Management**
- **Workload Management**
- **Performance Management**
- **Automated Storage Management**
- **Security Management**
- **Print / Spool Management**
- **Report Management**

# Event Management

**Events, commands, & messages can be:**

- **Enhanced and/or displayed in a separate window to draw attention**
- **Used to execute programs automatically on a local or remote server in response to an event**
- **Used to trigger the automatic opening of problem incidents via MGPT**

# Problem Management

## Three Major Areas:

- **Component Definitions**
- **Problem Definitions**
- **Machine-Generated Problem Tracking**

# Performance Management

## Four Graphical Applications:

- Performance Scope
- Performance Trend
- Performance Configuration
- Chargeback

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