

# Основы системного администрирования. Часть 2.



## Глава 20

### Мониторинг производительности и устранение неполадок

- Инструменты мониторинга  
Использование Performance Monitor  
Мониторинг журналов событий

## 20.1. Инструменты мониторинга

- Обзор Task Manager
- Обзор Performance Monitor
- Обзор Resource Monitor
- Обзор Reliability Monitor
- Обзор Event Viewer
- Мониторинг сервера с помощью Server Manager

# Обзор Task Manager

Task Manager helps you to identify and resolve performance-related issues

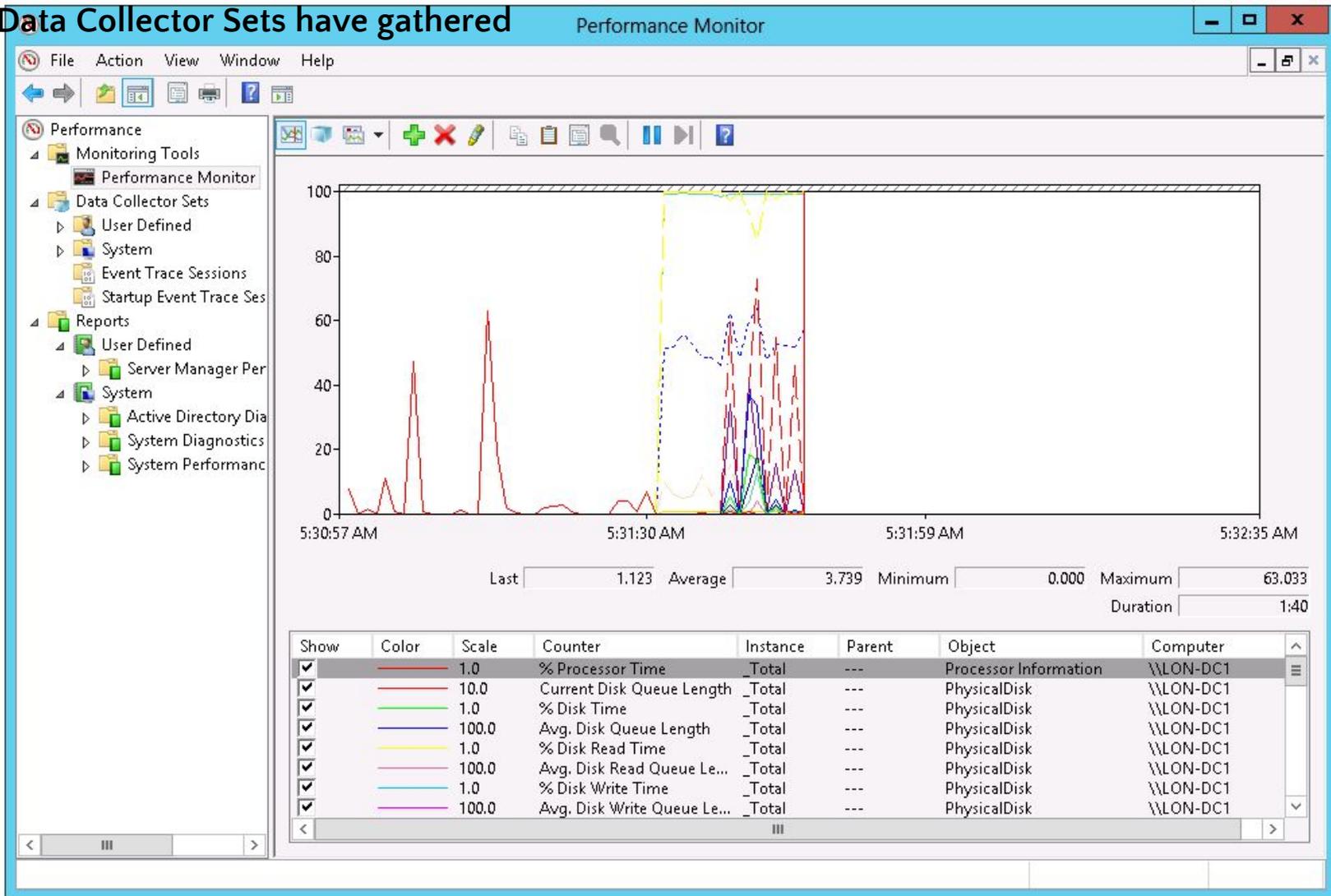
The screenshot shows the Windows Task Manager application window with the 'Performance' tab selected. The window title is 'Task Manager'. The menu bar includes 'File', 'Options', and 'View'. Below the menu bar are tabs for 'Processes', 'Performance', 'Users', 'Details', and 'Services'. The main area displays a table of system performance metrics. The table has columns for 'Name', 'Status', 'CPU', and 'Memory'. The 'CPU' column shows 0% usage, and the 'Memory' column shows 27% usage. The table is divided into three sections: 'Apps (1)', 'Background processes (8)', and 'Windows processes (22)'. The 'Apps (1)' section lists 'Task Manager' with 0% CPU and 7.2 MB memory. The 'Background processes (8)' section lists various services like 'Distributed File System Replicati...', 'Domain Name System (DNS) Se...', 'Microsoft Distributed Transacti...', 'Microsoft.ActiveDirectory.WebS...', 'Spooler SubSystem App', 'Virtual Disk Service', 'Windows NT Distributed File Sy...', and 'Windows NT Intersite Messagin...'. The 'Windows processes (22)' section lists 'Client Server Runtime Process', 'Desktop Window Manager', and 'Host Process for Windows Task...'. At the bottom left, there is a 'Fewer details' button with an upward arrow icon. At the bottom right, there is an 'End task' button.

Name	Status	0% CPU	27% Memory
<b>Apps (1)</b>			
Task Manager		0%	7.2 MB
<b>Background processes (8)</b>			
Distributed File System Replicati...		0%	6.7 MB
Domain Name System (DNS) Se...		0%	79.3 MB
Microsoft Distributed Transacti...		0%	2.3 MB
Microsoft.ActiveDirectory.WebS...		0%	9.3 MB
Spooler SubSystem App		0%	1.9 MB
Virtual Disk Service		0%	1.6 MB
Windows NT Distributed File Sy...		0%	0.9 MB
Windows NT Intersite Messagin...		0%	0.9 MB
<b>Windows processes (22)</b>			
Client Server Runtime Process		0%	1.0 MB
Client Server Runtime Process		0%	0.9 MB
Desktop Window Manager		0%	16.3 MB
Host Process for Windows Task...		0%	1.2 MB

# Обзор Performance Monitor

Performance Monitor enables you to view current performance statistics or to view historical data

Data Collector Sets have gathered



# Обзор Performance Monitor

## Primary Processor Counters:

- Processor > % Processor Time
- Processor > Interrupts/sec
- System > Processor Queue Length

## Primary Disk Counters:

- Physical Disk > % Disk Time
- Physical Disk > Avg. Disk Queue Length

## Primary Network Counters:

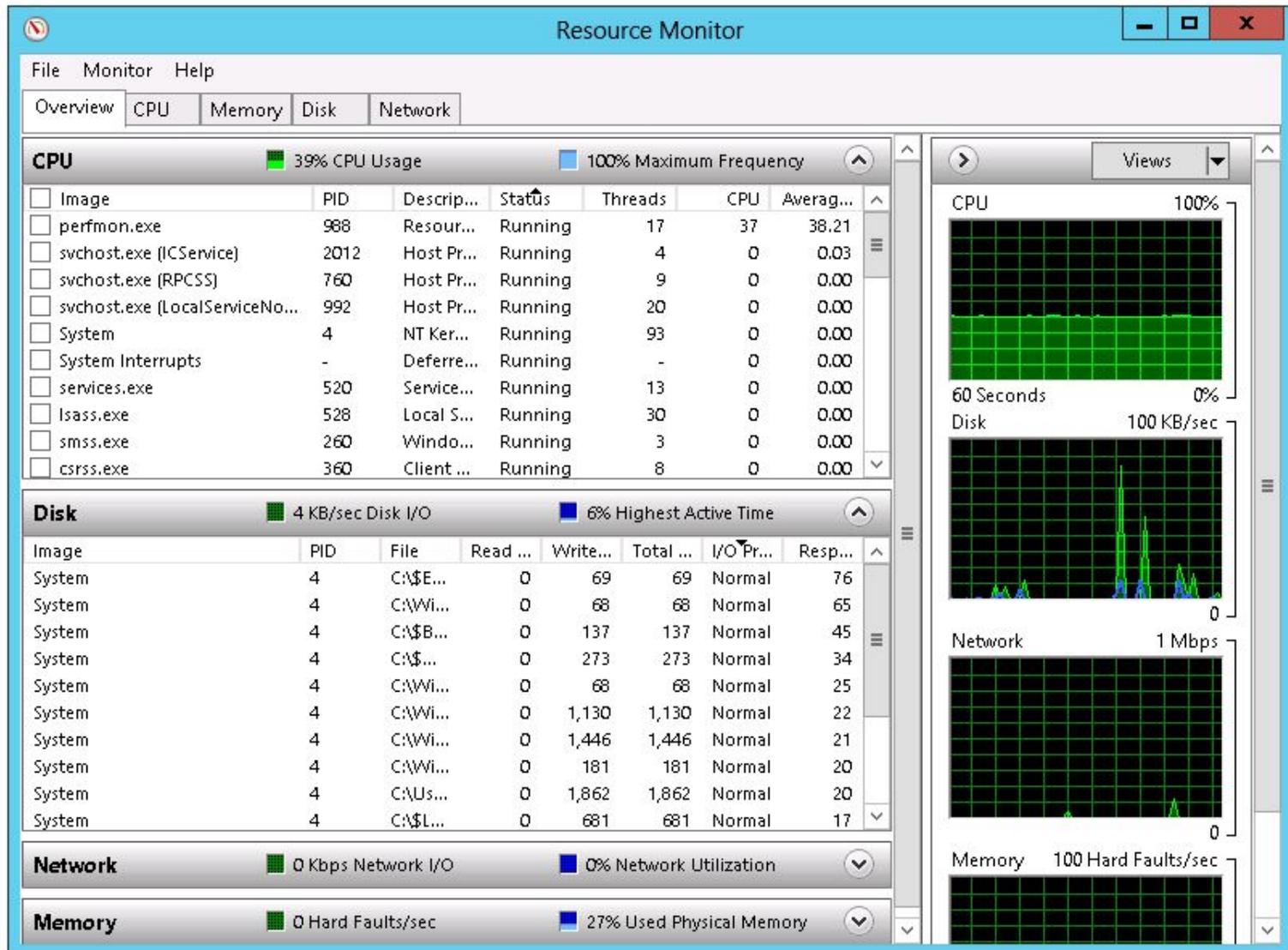
- Network Interface > Current Bandwidth
- Network Interface > Output Queue Length
- Network Interface > Bytes Total/sec

## Primary Memory Counter:

- The Memory > Pages/sec counter

# Обзор Resource Monitor

Resource Monitor provides an in-depth look at the real-time performance of your server

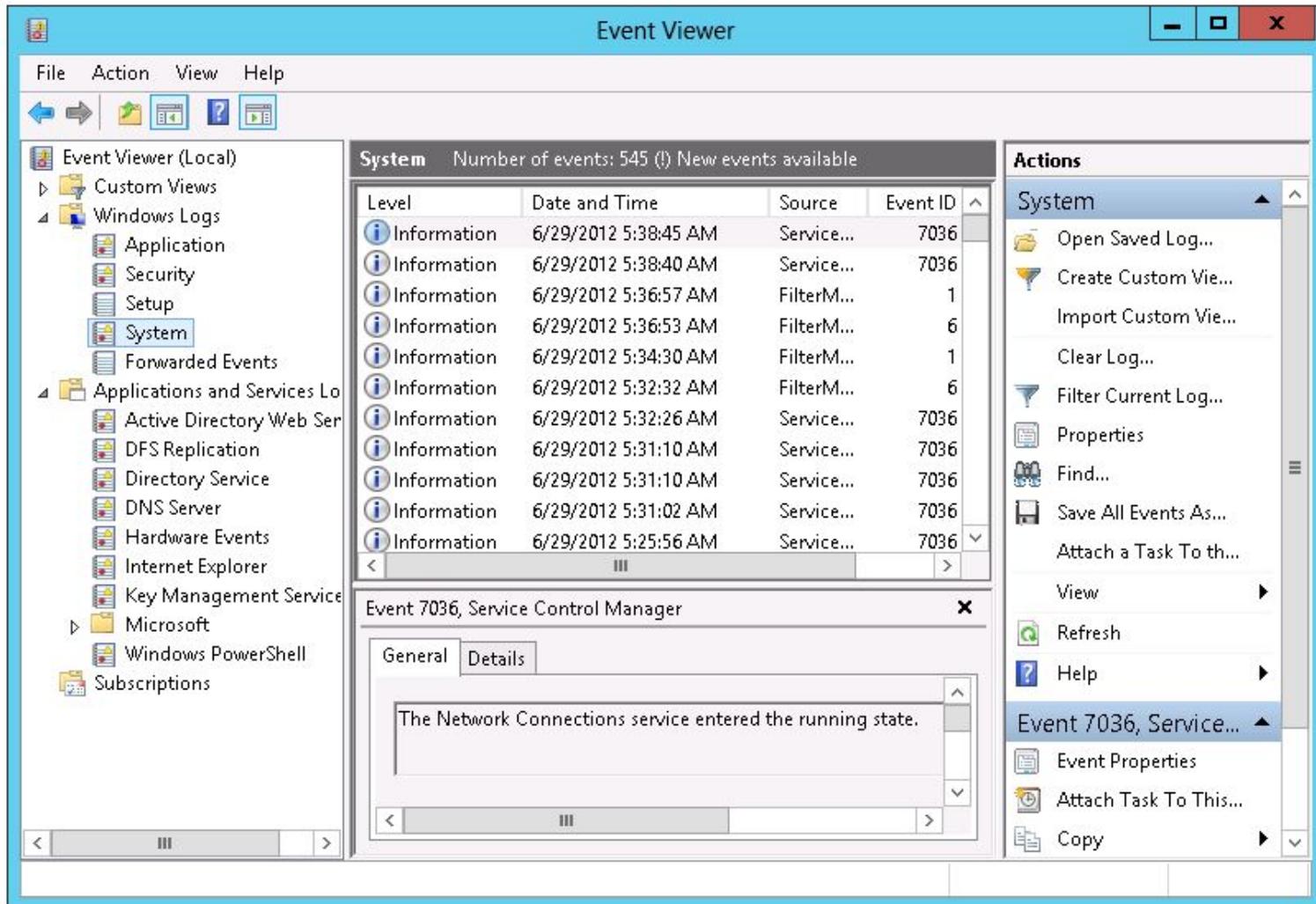


# Обзор Reliability Monitor

- Monitors hardware and software issues
- Provides Stability Index number (from 1 to 10)
  - 1 represents lowest stability
  - 10 represents highest stability
- Reliability monitor window components include:
  - Historical reports on stability index
  - Reliability details
  - Action to be performed: saving historical data, starting Problem Reports console, checking online for a solution to specific problem

# Обзор Event Viewer

Event Viewer provides categorized lists of essential Windows log events, and log groupings for individual installed applications and specific Windows component categories



# Обзор Event Viewer

- Event Viewer provides the ability to
  - View multiple logs
  - Create customized views
  - Configure tasks scheduled to run in response to events
  - Create and manage event subscriptions
- Event Viewer has many built-in logs such as
  - Application log
  - Security log
  - Setup log
  - System log
  - Forwarded events

# Мониторинг сервера с помощью Server Manager

Server Manager console:

- Installed by default on Windows Server 2012, can be installed on Windows 8
- Supports monitoring of Windows Server operating systems
- Provides a centralized monitoring dashboard
- Analyzes or troubleshoots different types of issues
- Identifies critical events
- Monitors the status of Best Practices Analyzer tool

## 20.2. Использование Performance Monitor

- Performance Baselines, Trends, and Capacity Planning

What Are Data Collector Sets?

Demonstration: Capturing Counter Data with a Data Collector Set

What Are Alerts?

Demonstration: Configuring an Alert

Demonstration: Viewing Reports in Performance Monitor

Monitoring Network Infrastructure Services

Considerations for Monitoring Virtual Machines

# Performance Baselines, Trends, and Capacity Planning

- By calculating performance baselines for your server environment, you can more accurately interpret real-time monitoring information
- By establishing a baseline, you can:
  - Interpret performance trends
  - Perform capacity planning
  - Identify bottlenecks
- Analyze performance trends to predict when existing capacity is likely to be exhausted
- Plan the capacity for the key hardware components: processor, disk, memory and network

# What Are Data Collector Sets?

- Data collector sets enable you to gather performance-related and other system statistics for analysis
- Data collector sets can contain the following types of data collectors:
  - Performance counters
  - Event trace data
  - System configuration information

# Demonstration: Capturing Counter Data with a Data Collector Set

In this demonstration, you will see how to:

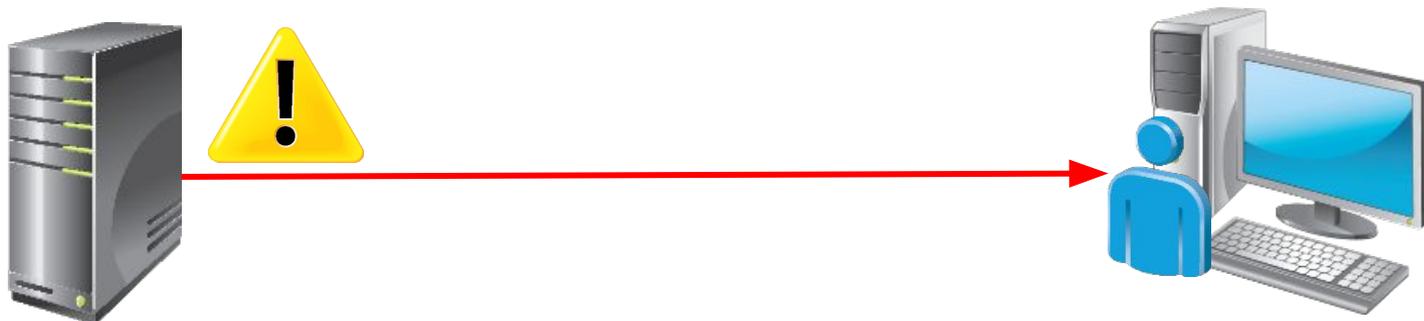
- Create a data collector set
- Create a disk load on the server
- Analyze the resulting data in a report





# What Are Alerts?

- An alert notifies the administrator of events that have occurred or performance thresholds that have been reached
- When creating an alert, configure the following settings:
  - Alert when
  - Alert Action
  - Alert Task



# Demonstration: Configuring an Alert

In this demonstration, you will see how to:

- Create a data collector set with an alert counter
- Generate a server load that exceeds the configured threshold
- Examine the event log for the resulting event



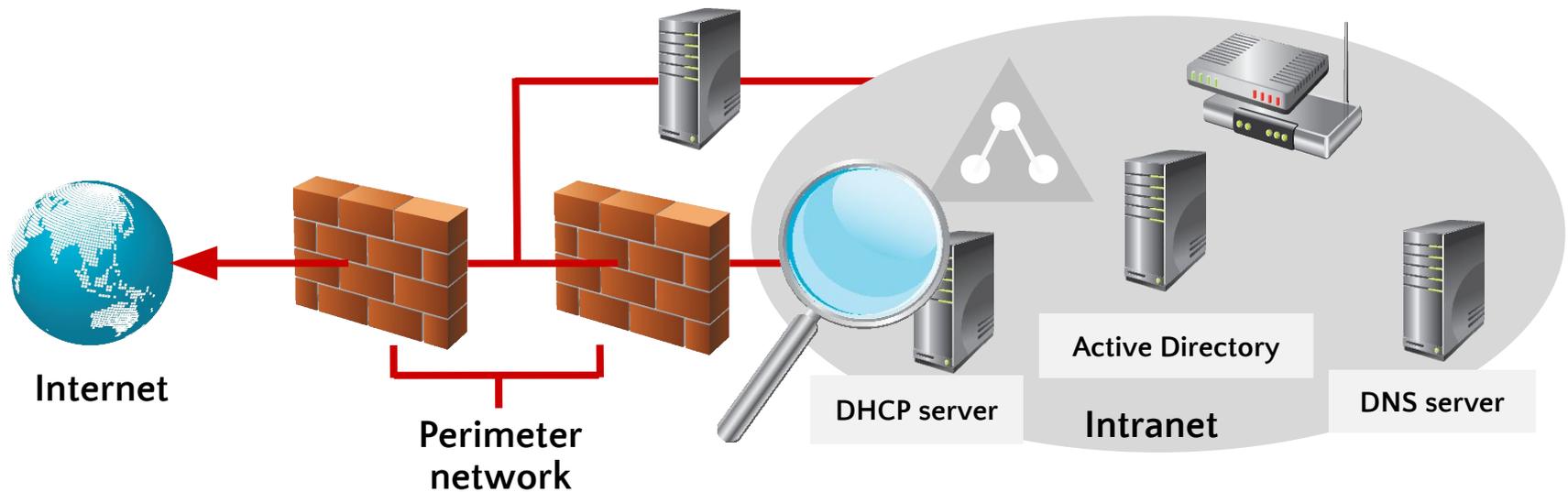
# Demonstration: Viewing Reports in Performance Monitor

In this demonstration, you will see how to view a performance report

# Monitoring Network Infrastructure Services

Monitoring is essential for:

- Optimizing network infrastructure server performance
- Troubleshooting servers



# Considerations for Monitoring Virtual Machines

Considerations for monitoring virtual machines:

- Virtual machines must be assigned sufficient resources for their workload
- If multiple virtual machines run on a host, ensure the host has enough resources
- Resources are shared, so performance of one virtual machine can affect the performance of others
- You must remember to monitor the resource utilization on the host as well as the guests

## 20.3. Мониторинг журналов событий

- Using Server Manager to View Event Logs

What Is a Custom View?

Demonstration: Creating a Custom View

What Are Event Subscriptions?

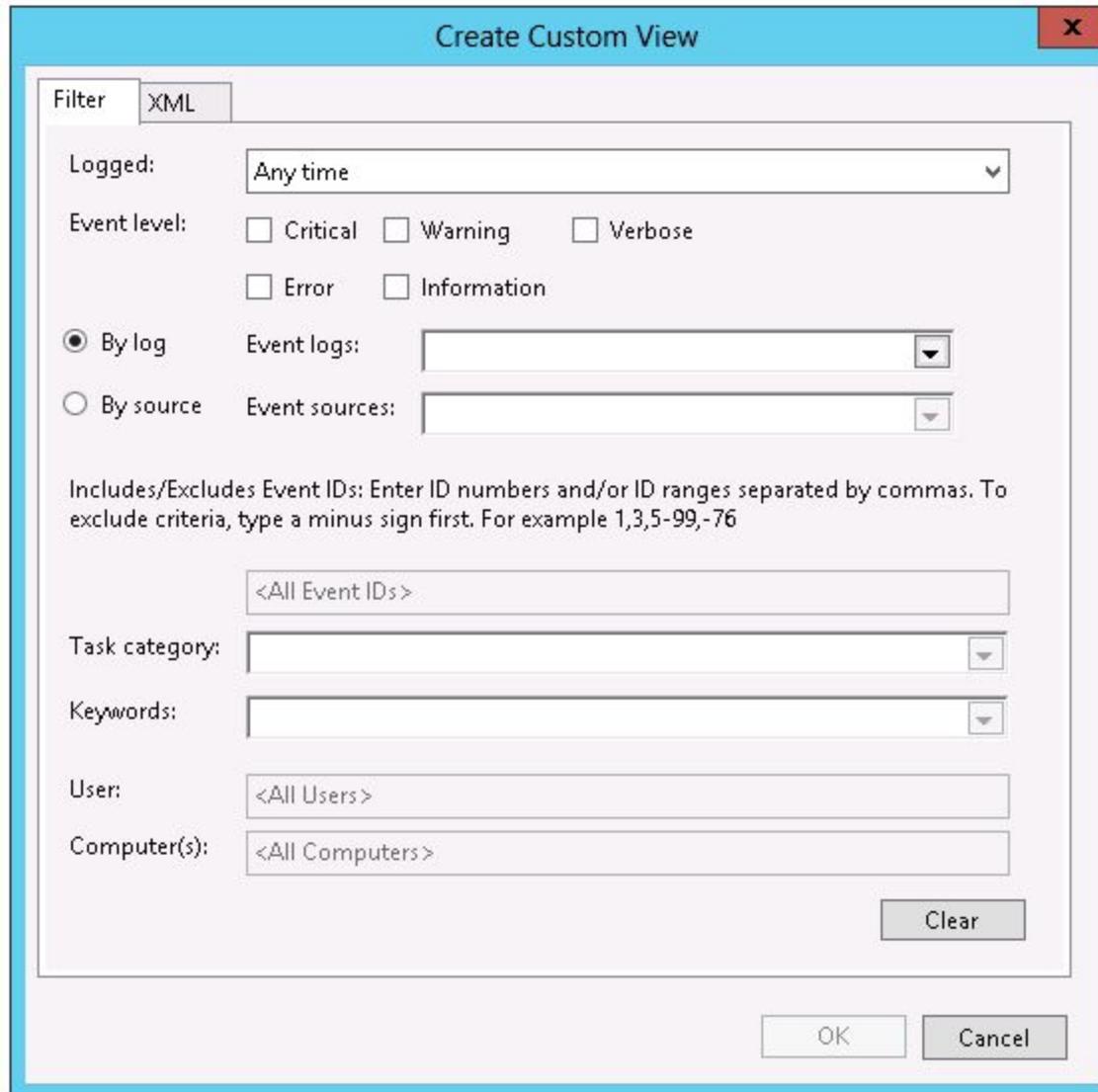
Demonstration: Configuring an Event Subscription

# Using Server Manager to View Event Logs

- Server Manager provides a centralized location for event logs from remote servers
- Event logging
  - Enabled by default
  - Categorized by technology: AD DS, DNS, Remote Access
- Customized views
  - Create queries for specific types of events that need to be displayed
  - Configure event data that needs to be displayed

# What Is a Custom View?

Custom views allow you to query and sort just the events that you want to analyze



The screenshot shows the 'Create Custom View' dialog box with the following fields and options:

- Filter** (selected) and **XML** tabs.
- Logged:** A dropdown menu set to 'Any time'.
- Event level:** Checkboxes for  Critical,  Warning,  Verbose,  Error, and  Information.
- By log:** A radio button that is selected, with an adjacent 'Event logs:' dropdown menu.
- By source:** A radio button that is unselected, with an adjacent 'Event sources:' dropdown menu.
- Includes/Excludes Event IDs:** A text box containing '<All Event IDs>' with a small instruction below it: 'Enter ID numbers and/or ID ranges separated by commas. To exclude criteria, type a minus sign first. For example 1,3,5-99,-76'.
- Task category:** A dropdown menu.
- Keywords:** A dropdown menu.
- User:** A text box containing '<All Users>'.
- Computer(s):** A text box containing '<All Computers>'.
- Buttons:** 'Clear', 'OK', and 'Cancel' buttons are located at the bottom of the dialog.

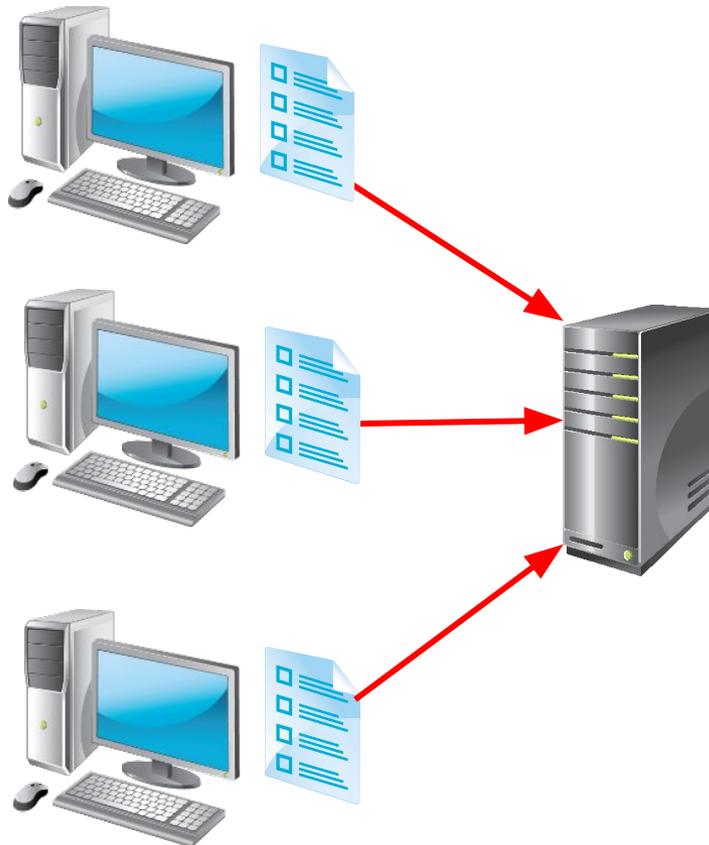
# Demonstration: Creating a Custom View

In this demonstration, you will see how to:

- View Server Roles custom views
- Create a custom view

# What Are Event Subscriptions?

Event subscriptions allow you to collect event logs from multiple servers, and then store them locally



# Demonstration: Configuring an Event Subscription

In this demonstration, you will see how to:

- Configure the source computer
- Configure the collector computer
- Create and view the subscribed log



