Module Overview

- Monitoring Tools
- Using Performance Monitor
- Monitoring Event Logs
Lesson 1: Monitoring Tools

• Overview of Task Manager
• Overview of Performance Monitor
• Overview of Resource Monitor
• Overview of Reliability Monitor
• Overview of Event Viewer
• Monitoring a Server With Server Manager

Overview of Task Manager

Task Manager helps you to identify and resolve performance-related issues
Overview of Performance Monitor

Performance Monitor enables you to view current performance statistics or to view historical data. Data Collector Sets have gathered.

**Primary Processor Counters:**
- Processor > % Processor Time
- Processor > Interrupts/sec
- System > Processor Queue Length

**Primary Memory Counter:**
- The Memory > Pages/sec counter

**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
Overview of Resource Monitor

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

Overview of 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
Overview of Event Viewer

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

- 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
Monitoring a Server With 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

Lesson 2: Using 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

Lesson 3: Monitoring Event Logs

• 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
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
Lab: Monitoring Windows Server 2012

- Exercise 1: Establishing a Performance Baseline
- Exercise 2: Identifying the Source of a Performance Problem
- Exercise 3: Viewing and Configuring Centralized Event Logs

Logon Information

**Virtual Machines:** 20411D-LON-DC1, 20411D-LON-SVR1

**User Name:** Adatum\Administrator

**Password:** Pa$$w0rd

Estimated Time: 60 minutes
### Lab Scenario


Because the organization has deployed new servers, it is important to establish a performance baseline with a typical load for these new servers. You have been asked to work on this project.

### Lab Scenario

Additionally, to make the process of monitoring and troubleshooting easier, you decide to perform centralized monitoring of event logs.
Lab Review

During the lab, you collected data in a data collector set. What is the advantage of collecting data in this way?

Module Review and Takeaways

- Review Question(s)
- Tools
- Best Practices