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CATEGORY: Performance

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Performance diagnostics directly affect system stability, capacity planning, and incident response. These SOPs ensure every performance-related action performed through RDAM Script Wizard is **controlled**, **auditable**, and aligned with **enterprise operational standards**.

SOP 1 – Get CPU Usage

Script Name: Get CPU Usage **Category:** Performance **Version:** 1.0 **Approved By:** IT Operations / Engineering

1. Purpose

This script retrieves real-time CPU utilization metrics from the local system, supporting troubleshooting, performance analysis, and capacity planning.

2. Scope

- Windows servers and workstations
- All logical processors
- Used by operations, engineering, and incident response teams

3. Definitions

- **CPU Utilization:** Percentage of processor time in use.
- **Logical Processor:** A CPU core or hyper-thread.

4. Preconditions

- Operator must have permission to query performance counters.
- Performance counter subsystem must be operational.

5. Required Inputs

- Optional: Sampling interval

- Optional: Number of samples

6. Procedure Steps

1. **Input Collection**
    - Wizard prompts for optional sampling parameters.
2. **Counter Initialization**
    - Load CPU performance counters.
    - Validate availability.
3. **Sampling Operation**
    - Collect CPU usage for each logical processor.
    - Calculate overall average.
4. **Output Formatting**
    - Present:
        - Per-core usage
        - Total CPU usage
        - Timestamp
5. **Logging**
    - Log operator, sampling parameters, timestamp.

7. Expected Output

- Real-time CPU usage metrics.

8. Post-Execution Validation

- Operator may verify using Task Manager or `Get-Counter`.

9. Error Handling

- Counter unavailable
- Access denied
- Invalid sampling parameters

10. Security Considerations

- CPU data may reveal workload patterns; restrict access.

11. Audit Logging Requirements

- Operator ID
- Sampling parameters
- Timestamp

12. Organizational Benefit Statement

This script provides a consistent, auditable method for retrieving CPU metrics, supporting troubleshooting and performance optimization.

SOP 2 – Get Memory Usage

Script Name: Get Memory Usage **Category:** Performance

1. Purpose

This script retrieves real-time memory utilization metrics, supporting troubleshooting, capacity planning, and performance diagnostics.

2. Scope

- Windows servers and workstations
- Physical and virtual memory

3. Definitions

- **Committed Memory:** Memory allocated by processes.
- **Available Memory:** Free memory available to the system.

4. Preconditions

- Operator must have permission to query memory counters.

5. Required Inputs

- None (full memory snapshot)

6. Procedure Steps

1. **Initialize Counters**
    - Load memory performance counters.
2. **Retrieve Metrics**
    - Collect:

- Total physical memory
- Used memory
- Available memory
- Page file usage
- Memory pressure indicators

3. **Output Formatting**
    - Present structured memory snapshot.
4. **Logging**
    - Log operator and timestamp.

7. Expected Output

- Real-time memory usage metrics.

8. Post-Execution Validation

- Operator may verify using Task Manager or Resource Monitor.

9. Error Handling

- Counter unavailable
- Access denied

10. Security Considerations

- Memory usage may reveal workload patterns.

11. Audit Logging Requirements

- Operator ID
- Timestamp

12. Organizational Benefit Statement

This script provides a reliable, auditable method for retrieving memory metrics, supporting troubleshooting and capacity planning.

SOP 3 – Get Disk Performance Stats

Script Name: Get Disk Performance Stats **Category:** Performance

1. Purpose

This script retrieves disk performance metrics, including IOPS, latency, and throughput. It supports troubleshooting, capacity planning, and storage performance analysis.

2. Scope

- Local disks
- Physical and virtual storage
- Used by operations, engineering, and storage teams

3. Definitions

- **IOPS:** Input/output operations per second.
- **Latency:** Time required to complete an I/O operation.
- **Throughput:** Data transferred per second.

4. Preconditions

- Operator must have permission to query disk counters.
- Disk performance counters must be enabled.

5. Required Inputs

- Optional: Disk filter
- Optional: Sampling interval and count

6. Procedure Steps

1. **Input Collection**
    - Wizard prompts for optional disk filter and sampling parameters.
2. **Counter Initialization**
    - Load disk performance counters.
3. **Sampling Operation**
    - Collect:
        - Read IOPS
        - Write IOPS
        - Read latency
        - Write latency

        - Throughput

4. **Output Formatting**
    - Present structured disk performance summary.
5. **Logging**
    - Log disk filter, operator, timestamp.

7. Expected Output

- Disk performance metrics per disk.

8. Post-Execution Validation

- Operator may verify using Resource Monitor or `Get-Counter`.

9. Error Handling

- Counter unavailable
- Disk not found
- Access denied

10. Security Considerations

- Disk metrics may reveal workload patterns.

11. Audit Logging Requirements

- Operator ID
- Disk filter
- Timestamp

12. Organizational Benefit Statement

This script provides a consistent, auditable method for retrieving disk performance metrics, supporting troubleshooting and storage optimization.

SOP 4 – Get Network Throughput

Script Name: Get Network Throughput **Category:** Performance

1. Purpose

This script retrieves real-time network throughput metrics for system interfaces, supporting troubleshooting, capacity planning, and performance diagnostics.

2. Scope

- Windows servers and workstations
- Physical and virtual NICs

3. Definitions

- **Throughput:** Amount of data transmitted/received per second.
- **NIC:** Network Interface Card.

4. Preconditions

- Operator must have permission to query network counters.
- Network stack must be operational.

5. Required Inputs

- Optional: Interface filter
- Optional: Sampling interval and count

6. Procedure Steps

1. **Input Collection**
    - Wizard prompts for interface filter and sampling parameters.
2. **Counter Initialization**
    - Load network performance counters.
3. **Sampling Operation**
    - Collect:
        - Bytes sent/sec
        - Bytes received/sec
        - Packets sent/sec
        - Packets received/sec
4. **Output Formatting**
    - Present structured throughput summary.
5. **Logging**
    - Log interface filter, operator, timestamp.

7. Expected Output

- Real-time network throughput metrics.

8. Post-Execution Validation

- Operator may verify using Resource Monitor or `Get-NetAdapterStatistics`.

9. Error Handling

- Counter unavailable
- Interface not found
- Access denied

10. Security Considerations

- Throughput data may reveal sensitive workload patterns.

11. Audit Logging Requirements

- Operator ID
- Interface filter
- Timestamp

12. Organizational Benefit Statement

This script provides a controlled, auditable method for retrieving network throughput metrics, supporting troubleshooting and performance optimization.