

# Instructional Scenario

## Analyzing Data Center



## Performance and Predicting Resource Utilization

Course/Duty Area: Advanced Computer Information Systems/ Using Advanced Spreadsheet Functions

Scenario:

You are an intern at Cloud Peak, a company that operates a large data center. Using sample performance data, you will use advanced spreadsheet functions to analyze data center performance metrics and predict future resource utilization.

Big Question:

How do you organize your data in a spreadsheet so that you can analyze it and communicate your findings effectively?

Focused Questions:

- How do you enter the sample data into a workbook and organize it?
- How do you use the IF/THEN function to categorize servers based on their status?
- Where can you use absolute referencing to keep the cell reference consistent when copying formulas?
- How can you use the MAX and VLOOKUP functions to identify the servers with the highest CPU and memory utilization among servers?
- How can you use conditional formatting to communicate pertinent information?
- How can you use the forecasting tools to predict future resource utilization?
- How can you use a chart to illustrate the predicted resource demand in the next quarter?

Student Project or Outcome:

- Students should use a combination of advanced spreadsheet functions (IF/THEN, absolute referencing, VLOOKUP, MAX, forecasting tools) to analyze data center performance data.
- Students should demonstrate critical thinking and problem-solving skills by identifying performance bottlenecks, making predictions, and formulating data-driven recommendations.
- Students should create charts for data visualization and communicate their findings effectively through illustrations.

Project-Based Assessment:

Students will prepare a workbook with their data analysis, charts, forecasts, and recommendations.

Teacher Resources:

- Sample data for students to use, such as Server ID, Server Type, CPU Utilization (%), Memory Utilization (%), Network Traffic, Power Consumption, and Server Status, provided by the teacher
- [Data Center Performance Metrics: Understanding the KPIs](#), Enconnex

*Scenario submitted by Carrie Boswell, James Wood High School, Frederick County Public Schools*