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z/OS Health Check and Troubleshooting
Information

Length: 3.0 Days
Ref: ESD2G-X
Delivery method: Classroom
Price: EUR

Overview

IBM mainframes are a complex environment. In any system there is the potential for failure. Systems are more complex and more integrated than ever:

- Errors can occur anywhere in a complex system
- Difficult to detect, difficult to diagnose, symptoms / problems can manifest hours/ days later
- Problem can grow, cascade, snowball
- Volume of data is unmanageable - you need information and insight
- Systematic 'soft failures' (sick but not dead) are much harder to detect - several anomalies can build up over time

The job of the System Programmer is to deal with failures.

The complexity and rate of change of today's IT infrastructures stress the limits of IT to resolve problems quickly and accurately--while preserving SLAs. The challenge lies in IT ability to identify the causes of system anomalies and other problems and repair them quickly.

z/OS now provides an integrated solution approach to avoiding, detecting, diagnosing soft failures, and managing problem data.

- Detection: z/OS components
- Avoidance: Health Checks
- Detection and diagnosis: PFA, Runtime Diagnostics, zAware
- Problem data management: IBM z/OS Management Facility (z/OSMF) and systems management products

In this course, you will learn how z/OS now integrates problem determination simplification, built on z/OS's robust and continually evolving RAS technology.

You will learn how all elements work together for an integrated IBM soft failure solution.

The lectures will be reinforced by labs where you will implement and use the following soft failure Detect/Diagnose/Avoid capabilities in z/OS:

- Analysis/Diagnosis: Predictive Failure Analysis + Runtime Diagnostics + IBM zAware
- Avoidance: z/OS Health Checker
- First point of defense: z/OS components
- Problem data management: IBM z/OS Management Facility (z/OSMF)

In the labs, you will set up those components and learn how they interact.

In the last unit, we will discuss at a high level, the steps to identify and resolve problems in a z/OS environment.

Public

This intermediate course is for anyone who has to diagnose software problems that occur while running the operating system. This person is typically a system programmer for the installation.

Information Technology (IT) professionals responsible for z/OS problem determination and diagnosis and subsystem programmers will also benefit from this class.

Prerequisites

The prerequisites can be met through on the job training **or** completion of *z/OS Facilities (ES150)*.

You should also have practical experience with logging on to TSO **and** working with JCL. This experience can be obtained by attending *Fundamental System Skills for z/OS (ES100)*.

Objective

- Describe how z/OS now integrates problem determination simplification
- Understand how all elements work together for an integrated IBM soft failure solution
- Implement and use the following soft failure Detect/Diagnose/Avoid capabilities in z/OS, and learn how they interact:
 - Analysis/Diagnosis: Predictive Failure Analysis + Runtime Diagnostics + IBM zAware
 - Avoidance: Health Checker
 - First point of defense: z/OS components
 - Problem data management: IBM z/OS Management Facility (z/OSMF)
- Identify and resolve problems in a z/OS environment
- Know the procedures to properly collect problem data, avoid potential problems, and diagnose failures
- Implement the basic diagnostic approaches for various problems such as abends, loops, hangs, overlays
- Describe the various kinds of problem documentation available in z/OS debugging
- Use the common tools for problem determination, and the main sources of diagnostic data (logs, dumps, tracing, performance documentation helpers)

Topics

Day 1

- Welcome
- Unit 1: z/OS problem shooting and health check introduction
- Unit 2: IBM Health Checker for z/OS
- Unit 3: Runtime Diagnostics
- Exercise 1: Health Checker (Part 1)

Day 2

- Exercise 1: Health Checker (Part 2)
- Exercise 2: Runtime Diagnostics
- Unit 4: Predictive Failure Analysis
- Unit 5: IBM zAware

Day 3

- Exercise 3: Predictive Failure Analysis
- Unit 6: z/OSMF
- Exercise 4: z/OS Management Facility Incident Log
- Exercise 5: zAware (optional)
- Unit 7: z/OS diagnostic procedures
- Exercise 5: z/OS diagnostic procedures (optional)

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