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Product Implementation Training (PIT)

IBM FileNet Content Manager 5.2.0
Offline GCD Support

Introduction

- Course Overview
  - Describes expected behaviors when the GCD database is unavailable
- Target Audience:
  - P8 Administrators, Support Personnel
- Prerequisites:
  - P8 Administration
- Version Release Date March 15, 2013

Course Objectives

After this course you will be able to:

- Describe the expected behavior when the GCD database is unavailable
- Perform the appropriate diagnostics to determine the GCD is online or offline

Course Roadmap

- ➔ Offline GCD Support Fundamentals
  - History/Background
  - File Fallback Mode
  - Support Tips
- – Demonstration
- – Course Summary

Offline GCD Support Fundamentals: History/Background

- The GCD (Global Configuration Database) holds object information that spans ObjectStores. This includes AddOns, Fixed Content Devices, Marking Sets, Isolated Regions, Sites. Etc.
  - This information is mostly read-only and cached in the Content Platform Engine's memory and updated when changed.

- In 4.0, Content Engine multi-platform support was introduced and support for geographically distributed configurations was improved.
  - In support of these features, the GCD was moved into the database.
  - However, CE servers in geographically distributed environments quickly failed if this central database became unavailable.

Offline GCD Support Fundamentals: History/Background

- The CE 4.5.1 release introduced the ability for CE servers to run in "read-only GCD mode" from an in-memory copy of the GCD data, so that servers would continue to run if the GCD database became unavailable.
  - However, this still required the GCD be available in order to start a server, so if the server was stopped during these scenarios, it couldn't be started.

- More and more customers are building widely distributed configurations where GCD availability can be a problem.

Offline GCD Support Fundamentals: File Fallback Mode

- In 5.2.0, CPE introduces Offline GCD Support
  - GCDMonitor task (on each server instance) writes out GCD data into file system – at startup or if change is detected at 30 second intervals (GCDTTL default)
  - Location of the file is in sub-folder named 'GCD' in the same folder as p8 logs, Content sub-folder, etc. (i.e., the JVM's working directory)
  - The file is named gcdDBFile.nnn where nnn is the epoch of the GCD
  - Upon server startup and beyond, if the GCD database is unavailable, the server will look for this file and read its content into memory
  - The server's switch to the file-based copy is referred to as File Fallback Mode

Offline GCD Support Fundamentals: File Fallback Mode

- File Fallback Mode (FFM)
  - While in FFM, no writes are permitted to any GCD objects and the following exception will be thrown...

GCD_DATABASE_UNAVAILABLE - The GCD database is currently not available. A file-based, read-only, image of the GCD will be used. All update operations will be disallowed until database availability has been restored.

  - When entering FFM (i.e., when the CPE detects the GCD DB is unavailable), the following warning message will be produced...

The GCD database is not available. A file-based copy of the GCD will be used but updates to GCD objects will not be allowed.

  - When exiting FFM (i.e., when the CPE detects the GCD DB is available), having been in file fallback mode, the following informational message should be produced...

The GCD database is now available and normal operations have been restored.

- FFM is not supported in Verity-based configurations

Offline GCD Support Fundamentals: Support Tips

- To determine or confirm a GCD is in File Fallback Mode when its too difficult or time consuming to look for the messages in the log – “tickle” the GCD
  - This is best accomplished by toggling tracing – which produces an update to the GCD. If in FFM, `GCD_DATABASE_UNAVAILABLE` exception will be raised
  - If not in FFM, be sure to return tracing back to its original setting
- A great benefit of FFM is that we finally have easy access to the GCD contents
  - Simply copy the gcdDBFile to another name with an XML suffix and view the content
  - Collections can be collapsed for better browsing. Firefox seems better than IE; I prefer Notepad++

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Course Roadmap

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  - Support Tips
- ➔ Demonstration
- Course Summary

Demonstration

- P8 domain with object stores on one database server, GCD on another and application server started with GCD DB unavailable
  - attempt to modify GCD – show failure
  - create instance of a document in OS – show success
- Start GCD DB server – making it available
  - attempt to modify GCD – show success
  - show log informational message
  - confirm gcdDBFile epoch update
- Stop GCD DB server – making it unavailable
  - attempt to modify GCD – show failure
  - show log warning message

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Course Summary

You have completed this course and can:

- Describe the expected behavior of the Content Engine when the GCD database is unavailable
  - *Attempts to update will raise* `GCD_DATABASE_UNAVAILABLE` *exception*
  - *Otherwise nothing will appear different – just reading from cached copy*
- Perform the appropriate diagnostics to determine the GCD is online or offline
  - *"Tickle" the GCD or check for messages (warning when unavailable, info when available)*