Performance Evaluation of Mobile Applications with Deactivation & Decommissioning (D&D) Technology Services

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Introduction
The Deactivation and Decommissioning Knowledge Management Information Tool (D&D KM-IT) is a web-based tool custom built for the D&D user community. This system is being developed by the Applied Research Center at Florida International University in collaboration with the Department of Energy (DOE HQ).

The D&D KM-IT mobile application is published at m.dndkm.org. In this mobile app, all of the data processing is done at the server, resulting in a high performance impact on the web server and less from the client.

Technology Module
- Technology module provides comprehensive information on D&D related technologies, including demonstrations and commercial vendors.
- Technology Server middle tier is being replaced with Microsoft Windows Communication Foundation (WCF) services.
- Microsoft WCF is a framework for building applications that communicate across the web.

www.dndkm.org
Mobile: m.dndkm.org

Objectives
- Service Oriented Architecture (SOA) is a software design pattern based on the concept of service. Individual services provide easy code reuse and interoperable application functionality.
- Development of mobile web services to access application data.
- To study the performance of mobile apps consuming WCF technology services, three mobile apps will be developed on different platforms to compare the performance of each solution.
- Mobile apps will interact with D&D KM-IT’s SOA based web service to publish technology information.

Results
- Performance metrics that were studied are server throughput, response time / latency and resource utilization.
- Server load utilization and database backend server performance was also studied for analysis.

Path Forward
- Performance evaluation of mobile apps interacting with D&D KM-IT technology module.
- Performance testing software will be used to test the mobile apps by simulating many potential users and also by emulating the environment where multiple users work concurrently on the applications.

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