

WEB SERVICES FOR APS CONTROL SYSTEMS RELATIONAL DATABASE SOFTWARE: TYING IT ALL TOGETHER

D. E.R. Quock, ANL, Argonne

Abstract

The use of relational databases at Argonne National Laboratory's Advanced Photon Source (APS) for managing extensive and diverse control systems content is found in several different applications that are built with various types of software technology. Two heavily used, operations-mission-critical database applications at APS are the Integrated Content Management System (ICMS), an Oracle commercial product that is used primarily at APS for document management, and the Integrated Relational Model of Installed Systems (IRMIS), originally designed and developed by APS controls scientists and engineers with open source software for capturing as-built information about the particle accelerator control systems. To meet the objectives of minimizing data redundancy, automating data transfer, and providing efficient and accurate data mining among database applications, Web Services technologies options have been explored as a means of tying IRMIS and ICMS together. This paper describes the use of Simple Object Access Protocol (SOAP), an XML-based messaging protocol for executing code on remote systems, as a means for seamlessly interfacing two different types of database technologies.

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