Implementing Trusted Digital Repositories

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Abstract

Trusted digital repositories manage the integrity and authenticity of records through multiple generations of technology. They provide mechanisms to validate assertions about trustworthiness and provide the preservation processes that implement the required control and management capabilities. Today there are multiple technologies that can be used to build a digital repository that is capable of maintaining the authenticity and integrity of ingested documents. The approaches range from solutions based on data grids (Storage Resource Broker), to solutions based on digital library systems (DSpace and Fedora), to solutions based on rule-oriented environments (integrated Rule-Oriented Data System). These approaches optimize management of different components of a trusted digital repository. No single system currently provides all of the required functionality. This paper examines how rule-based systems can validate assertions of trustworthiness, presents the infrastructure components provided by the integrated Rule-Oriented Data System, and explores how rule-based approaches can be used to develop a theory of preservation.