Title: Globus Toolkit

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The Globus community spent 18 months on the design and engineering of version 4 of the open source Globus Toolkit. GT4, released in April 2005, represents a major advance over previous Globus versions in four regards. First, it provides dramatic improvements in usability, scalability, and reliability across the board. For example, the GT4 Web services GRAM scales to 30,000+ concurrent jobs and can achieve job submission rates of 70/minute, while the new striped GridFTP server has achieved 27 Gbit/s transfers over continential networks and sustained 1800 concurrent clients. Second, the documentation has been totally revamped and is now far more complete, consistent, and readable. Third, GT4 is compliant with emerging standards such as WS-Security, WS-Resource Framework (WSRF), WS-Notification (WSN), and SAML, allowing compliance with WS-I Basic Profiles, interoperability with other Web services, operation within a standard Axis container, and greatly simplified internals and interfaces. Third, GT4 introduces new components for telecontrol, authorization, credential repositories, data movement, C and Python Web services support, etc., and also a rich set of related software contributed by others for such things as parameter studies, portals, and metascheduling. I review these new features and explain the technical advances that have made GT4 possible.