

NIST's Cloud Computing Roadmap details research requirements and action plans

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The National Institute of Standards and Technology has published the final version of the US Government Cloud Computing Technology Roadmap, Volumes I and II. The roadmap focuses on strategic and tactical objectives to support the federal government's accelerated adoption of cloud computing. This final document reflects the input from more than 200 comments on the initial draft received from around the world.

The roadmap leverages the strengths and resources of government, industry, academia and standards development organizations to support technology innovation in [cloud computing](#).

The first volume, High-Priority Requirements to Further USG Agency Cloud Computing Adoption, describes the roadmap's purpose and scope. The draft focused on three priorities: security, interoperability (the ability for systems to work together) and portability (enabling data to be moved from one cloud system to another). The final version adds two priorities: performance and accessibility. The document lays out 10 requirements necessary for the federal government cloud adoption, including developing international standards, security solutions, and clear and consistent categories of [cloud services](#).

Each requirement is described and features a list of "Priority Action Plans" with target completion dates. Research teams from government, industry and academia are working on these plans and report their findings via publications and presentations at meetings such as the Cloud

Computing Forum and Workshop series. The document also provides information about future plans, collaborations, and how cloud work fits with other developing information technologies and national initiatives.

The second volume, Useful Information for Cloud Adopters, introduces a conceptual model, the NIST Cloud Computing Reference Architecture and Taxonomy and presents U.S. government cloud target business and technical use cases.

Volume II also identifies existing interoperability, portability and security standards that apply to the cloud model and specifies high-priority gaps that need new or revised standards, guidance and technology. It also covers security challenges in cloud computing adoption. The document provides insight into the choice of the 10 requirements and the Priority Action Plans listed in Volume I.

Previous NIST work in cloud computing includes an internationally accepted definition of cloud computing, a cloud computing reference architecture (a model) and a security reference architecture draft. NIST scientists are involved in cloud-related international standards committees and lead a number of public working groups to solve cloud-related challenges.

NIST has recently established three new public working groups on Cloud Service, Federated Community Cloud, and Cloud Interoperability and Portability. Current work in the Cloud Computing Metrics group addresses the gaps in metrics and metrology in cloud computing under Requirement 10 from Volume 1.

The cloud community's work with NIST is critical to U.S. government's adoption of cloud computing but can be used by all interested in the field.

More information: The two volume set:

L. Badger, D. Bernstein, R. Bohn, F. de Vault, M. Hogan, M. Iorga, J. Mao, J. Messina, K. Mills, E. Simmon, A. Sokol, J. Tong, F. Whiteside and D. Leaf. US Government Cloud Computing Technology Roadmap Volume I: High-Priority Requirements to Further USG Agency Cloud Computing Adoption (NIST Special Publication 500-293), October, 2014.

L. Badger, R. Bohn, S. Chu, F. de Vault, M. Hogan, M. Iorga, V. Kauffman, F. Liu, J. Mao, J. Messina, K. Mills, E. Simmon, A. Sokol, J. Tong, F. Whiteside and D. Leaf. US Government Cloud Computing Technology Roadmap Volume II: Useful Information for Cloud Adopters (NIST Special Publication 500-293), October, 2014.

Available as a single pdf document at www.nist.gov/manuscript-public...ch.cfm?pub_id=915112.

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