Cloud Computing
Cloud computing provides a way for projects to scalably store and manage their data in a secure online environment. New projects can be deployed and managed without a large investment of time, cost, or infrastructure. Cloud resources can be tailored to the individual project's computing needs while leveraging economies of scale and shared expertise.

SDSC Sherlock Cloud Overview
The Sherlock Cloud infrastructure was established as means to provide secure data storage and computing to academic and government partners. Sherlock Cloud is both HIPAA- and FISMA-compliant and was developed in accordance with hundreds of NIST controls governing system access, information control, and management processes. Sherlock Cloud addresses federal Cloud First requirements and is undergoing FedRAMP certification, a requirement for many new and existing federal contracts and grants. Sherlock Cloud currently supports National Institutes of Health (NIH) and Centers for Medicare & Medicaid Services (CMS) initiatives and complies with the specific requirements of each agency. Sherlock Cloud offers a flexible and scalable compute and storage platform for a variety of research and data projects requiring a secure, access-controlled environment.

Sherlock Cloud for Researchers
Sherlock Cloud was built to support researchers and their projects. SDSC staff understand the requirements of research computing, and how the needs of professors and investigators may differ from those of the typical end users of commercial cloud platforms. Sherlock Cloud offers the ability to partner on a project basis, improving economies-of-scale based on shared infrastructure, processes, and documentation, and providing expertise in supporting FISMA, HIPAA, and more agile environments. Sherlock Cloud provides researchers a competitive advantage in their proposals, in the execution of their awards, and in the ongoing enhancement of their capabilities.

Sherlock Cloud for IT Organizations
SDSC prides itself in the ability to provide a full suite of services. Sometimes, however, partners can be better accommodated by IT staff institutionally closer to the project. For this reason, SDSC partners with IT organizations to develop a custom framework for supporting projects. Together, we develop a comprehensive joint service model that defines roles, responsibilities and processes that will be used to support projects. Permutations can range from Sherlock Cloud operating as a service ‘island’ to integration with in-house account provisioning and de-provisioning systems and institutional branding. SDSC is flexible to support the needs of partner institutions within security compliance requirements.

Technology
SDSC provides a cloud-based hosting environment with an agile yet secure complement of computing options. The SDSC Sherlock Cloud uses virtualization technologies to achieve hardware economies of scale and increased system utilization through the secure sharing of hardware and storage devices. These virtualization technologies also increase resource reliability and “up time,” as applications can be easily migrated from one physical server to another.

Sherlock Cloud services are physically located within the SDSC Data Center, and, where needed for redundancy, in a secure data center in Northern California. The SDSC Data Center is a physically secure facility that is staffed 24x7 and is environmentally protected with backup generator power, controlled access, fire suppression systems, and various other safety measures. Sherlock Cloud systems interconnect with a 10 Gb/s network fabric within the SDSC Data Center. Wide-area networking utilizes more than 100 Gb/s of high-bandwidth connections to the Internet and research networks such as Internet2, National Lambda Rail (NLR), and the Corporation for Education Network Initiatives in California (CENIC).

For More Information
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