Request for Information (RFI): Strategic Partnerships for NASA Data Center Infrastructure

Introduction

THIS IS A REQUEST FOR INFORMATION (RFI) ONLY. This RFI is issued solely for research and strategic planning purposes as part of NASA's strategic IT and infrastructure planning to consider potential partnerships and engagements between NASA and Industry; it does not constitute a Request for Proposal (RFP) nor a promise to issue an RFP in the future. This RFI does not commit the Government to contract for any supply or service whatsoever. Further, NASA is not at this time seeking proposals and will not accept unsolicited proposals for any specific data management related activities discussed in the following. Responders are advised that the U.S. Government will not pay for any information or administrative costs incurred in response to this RFI; all costs associated with responding to this RFI will be solely at the interested party's expense. Not responding to this RFI does not preclude participation in any future competitive announcement, if any is issued. If NASA elects to issue a solicitation, it will be released in accordance with the requirements applicable to the authority ultimately used. Depending on that authority, a synopsis may or may not be required. All interested parties are responsible for monitoring SAM.gov for any announcements or solicitation postings.

Purpose

This Request for Information (RFI) invites industry, academia, and other potential partners to help NASA explore innovative, forward-looking concepts for current, modern, and affordable data center infrastructure. For purposes of this RFI, the term "partnership" is used generically and does not imply the use of any specific statutory authority at this time.

This RFI is for market research purposes only and does not represent specific requirements, evaluation criteria, or selection factors for any future procurement or partnership activity. Instead, this RFI is intended to:

- Surface new ideas, partnership models, and emerging capabilities
- Understand how industry is thinking about modern on-premise infrastructure, hybrid and Cloud, AI-driven operations, and high-density computing
- Explore mutually beneficial approaches to utilizing federal assets

Why Partner with NASA

NASA operates and maintains some of the world's most mission-critical and technically advanced environments. These facilities support human spaceflight, lunar exploration, and advanced scientific research and modeling, all in service of national space infrastructure and security priorities.

As mission needs continue to evolve, NASA is exploring concepts to modernize aging data center facilities and strengthen the digital infrastructure that underpins these activities. Through this RFI, the Agency seeks perspectives from organizations interested in helping shape approaches for resilient, efficient, secure, cost effective, and scalable environments that can support growing compute demands and hybrid architectures.

NASA is particularly interested in ideas that highlight mutual value. Respondents have the opportunity to share concepts that could improve mission continuity, and advance infrastructure sustainability, while also identifying ways that collaboration could inform commercial capabilities, support research and development, or demonstrate new models and technologies at broader scale. The Agency aims to understand approaches that create benefits for both NASA and potential partners as it considers future pathways for modernizing data center infrastructure in support of national exploration and research objectives.

NASA has a need to right size and modernize its aging Data Center facilities and IT infrastructure footprint to ensure mission execution, data access, connectivity, and continuous operations while being fiscally responsible.

Data Center Infrastructure

NASA's data center infrastructure is in a steady state of decline due to constrained budgets and needs to be modernized to ensure safe, continuous, and efficient mission operations. In addition, NASA data centers need to meet critical compute and storage demands and transition toward a more hybrid, scalable, and mission-aligned architecture while reducing (right-sizing) the footprint and to achieve greater cost-effectiveness and overall efficiency.

The aging infrastructure includes things such as backup generators, HVAC systems, chilled water pumps/piping, Uninterruptable Power Supplies (UPS), and structural (e.g. floors, roofs, etc.) that varies by data center facility. NASA also has construction limitations for power and water upgrades. With increasing demand for high-density compute and secure, resilient environments NASA must address these current obstacles to ensure continued mission support and maintain the capability required for future operational needs.

Questions and Instructions for Respondents

NASA is seeking ideas, approaches and perspectives for:

1. Partnership Models & Value Creation

- What partnership models could unlock value for both NASA and its partners for data center capability?
- How might risk, investment, and operational responsibility be shared?
- What would make NASA a uniquely attractive partner—and what would our partners and service providers need to succeed?

2. Future Data Center Concepts

- What does a next-generation data center look like in a mission-critical, hybrid environment (hybrid meaning having the capacity to utilize cloud and on-premise computing resources together as a unified system)?
- How you are approaching:
    - High-density computing
    - Hybrid cloud + on-prem integration
    - Edge or distributed architectures

3. Modernization of Legacy Data Center Facilities

- How would you approach transforming aging infrastructure into modern, scalable environments?
- What innovative approaches (modular, phased, software-defined, etc.) could accelerate this?

4. Reliability, Resilience & Security

- What emerging practices are improving infrastructure resilience, operational reliability, cyber and physical security in shared environments?
- How do you balance automation (including AI) with human oversight in critical systems?
- How do you typically address Federal Information Security Modernization Act (FISMA) aligned controls when applicable, recognizing that applicability may vary depending on whether future activity is structured as a procurement or a non-procurement partnership?
- How would NASA tenants, data and networks be protected/isolated from commercial tenants; assuming different levels of data sensitivity from Controlled Unclassified Information (CUI) up to classified?

5. Operational & Service Models

- What operating models are most effective for Mission-critical environments, mixed-use (government + commercial) infrastructure?
- How do you ensure flexibility during high-priority mission periods?

6. Scalability & Future Demand

- How should infrastructure evolve to support rapid growth in compute demand, increasing rack densities, and emerging technologies not yet fully defined?

7. Sustainability & Efficiency

- What innovations are driving meaningful improvements in energy efficiency, water usage, and sustainable operations at scale?
- Please describe your strategies for cost-Efficient Modernization with a focus on long-term operational sustainment, balancing energy efficiency with strict cost controls to navigate shrinking budgets.
- Please describe your strategies for designing cloud and hybrid storage architectures that minimize the risk of vendor lock-in and prevent cost models from compounding exponentially over time.

You may include concept diagrams, case studies or prior experience, strategic business models, and links to additional material (instead of attachments where possible). Detailed technical specifications, pricing, and full engineering designs are not required.

NASA is considering multiple potential pathways for follow on activity. These may include a FAR based procurement or non-procurement partnership instruments (such as Space Act Agreements). No determination has been made regarding the appropriate authority. This RFI is for market research only

Notes & Submission Guidance

- Do not include pricing information.
- Initial notification of interest and questions should be submitted via email to, Michelle Downs michelle.m.downs@nasa.gov and Kimberly Sandoz Kimberly.r.sandoz@nasa.gov, within ten (10) business days of RFI release in order to permit Government coordination and responses. Requested information includes general business name, business division, and preferred point of contact(s) to include corporate address, phone number(s), and e- mail address(es)

- RFI responses are due no later than July 17, 2026. Responses should use visuals where helpful, and focus on key ideas and differentiators, real-world examples or analogs, as well as lessons learned and emerging trends.
- Responses are preferred to be limited to 20 pages in combined length (including illustrations, graphs, etc.) and shall be either Portable Document Format (PDF) (with copy and paste enabled) or Microsoft Word format. The information provided shall be formatted to 8.5" x 11" (letter size) paper with type no smaller than 11-point font. The page limit and format is for administrative simplicity and does not reflect any evaluation criteria or selection process.
- Proprietary information, if any, should be minimized and SHALL BE CLEARLY MARKED. Please be advised that all submissions become Government property and will not be returned.
- Indicate any deviations or exceptions in your response.
- Where multiple options are offered (retrofit, modular, co-lo/edge), provide differentiated responses per option.
- Respondents are not required to answer every question in this RFI.