



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

August 10, 2009

BUDGET DATA REQUEST NO. 09-41

MEMORANDUM FOR: PROGRAM DEPUTY ASSOCIATE DIRECTORS

FROM: Courtney Timberlake
Deputy Assistant Director for Budget

SUBJECT: Inventory of Federal Data Center Activity

Affected Divisions: All Resource Management Offices (RMOs) **This BDR can be shared with the agencies.**

Due Date: COB Monday, September 14, 2009

BDR Contacts: Gary Washington (x5-0368, rm. 4013)
Gary Stofko (x5-3650, rm 6025)
Cynthia Vallina (x5-4544, rm. 8025)

Purpose: To establish a comprehensive, government-wide inventory of data center activity by federal agency to identify comparative characteristics such as:

- facility location,
- whether the data center activity is co-located with other mission execution activities or stand-alone,
- square footage allocated,
- legal ownership interest,
- energy consumption,
- data center utilization, and
- cost related information

Reporting information on these and other data elements by federal agencies will allow us to identify key performance related information on a government-wide basis at the constructed asset level. The inventory will be used to inform coordinated, government-wide efforts to right size the Federal data center inventory and potentially improve efficiency, performance, and environmental footprint of Federal data center activities.

Background:

This initiative is driven in part by the following factors:

- The Federal government does not have an up-to-date inventory of Federal data centers. Previous efforts to identify an inventory of data centers were undertaken at least 10 years ago.
- It is estimated that the Federal government possesses data centers housing over 150,000 servers. The average utilization rate for servers ranges from 5% to 15%. However, many agencies are paying the energy costs to run data centers at 100% capacity.
- Data centers consume a growing portion of the Nation's energy/electricity supply due to growing demand for the services they provide. Data centers used 61 billion kWh of electricity in 2006, representing 1.5% of all U.S. electricity consumption and double the amount consumed in 2000. The existence of best practices and advanced technologies for energy management, digital information processing (i.e., energy efficient computer servers and virtualization server software), delivery and conditioning of electrical power to computers, and removal of heat rejected from data center information technology (IT) equipment in an energy efficient manner provide opportunities to significantly improve data center energy efficiency and performance.

This BDR applies to all Executive Branch Agencies. Agencies are required to respond to this request in a timely manner with complete and accurate information (in alignment with the definitions provided in paragraph 4).

Definitions: As used in this BDR:

- a. *Agency*—The term agency means any executive department, military department, or any independent regulatory agency.
- b. *Agency Data Center*—A data center is a repository (room or building) for the storage, management, and dissemination of data and information. This repository houses computer systems and associated components, such as telecommunications and storage systems. It generally includes redundant or backup power supplies, redundant data communications connections, environmental controls (air conditioning, fire suppression, etc.), and special security devices housed in leased, owned, collocated, or standalone facilities.

In the context of modernization, an agency data center is defined as any automated information processing and data storage operation that performs one or more of the following functions: processes agency-approved automated applications systems, affords time-sharing services to agency personnel, provides office automation and records management services through a centralized processor, and/or provides network management support for agency wide area networks.

Actions Required:

1. The head of each agency must develop an inventory of agency data centers in the format provided in [Attachment 1](#). Chief Information Officers, Chief Financial Officers, and Senior Real Property Officers (or equivalent) should all provide data into a consolidated Agency reporting.
2. By COB September 14, 2009, agencies should provide the required summary and progress reports to <https://max.omb.gov/community/x/NwC4F>

Contacts:

Specific agency concerns should be directed to the agency's program examiner. General Information Technology questions can be directed to OMB/EGov Office, Gary Washington, 202-395-0369, gwashington@omb.eop.gov. Classified information regarding the data center inventory should be directed to Kimberly Johnson, KAJohnson@whmo.smil.mil (on SIPRNET for SECRET level information), JAJohnson@whmo.ic.gov (on JWICS for TS and TS/SCI level info). Energy related questions should be directed to Cynthia Vallina, CVallina@omb.eop.gov, 202-395-4544, Facilities related questions should be directed to Gary Stofko, gstofko@omb.eop.gov, 202-395-3650.

[Attachment 1 – Agency Data Center Inventory](#)

Attachment 1 Inventory of Agency Data Centers

Agencies will provide for OMB compilation and review, an inventory of all agency data centers containing the elements identified in section 1.2. In order to develop the aggregate information, agency Senior Real Property Officers or Facility Managers will work with Chief Information Officers and Chief Financial Officers to reconcile physical building data, information technology capacity data, and cost data prior to submitting the reconciled data to OMB.

1.1 Individual Data Center Inventory. Agencies will collect the following site-level technical, facility, efficiency, and cost data for each data center:

(a) General data center information used for identification and categorization purposes. This information includes data center name, data center location, predominant use code, facility legal interest, tier classification, and storage capacity.

- Location, Predominant Use Code, Legal Interest definitions are consistent with the Federal Real Property Council definitions which can be found at http://www.gsa.gov/graphics/ogp/2009_Guidance_for_Real_Property_Inventory_Reporting.pdf
- Data Center Tier Classification (Tiers 1-4) are based on the Uptime Institute's standards and will be used for classifying functionality, capacity, and infrastructure design topologies.

(b) Efficiency measurements, including power capacity, Power Usage Effectiveness (PUE), CPU and bandwidth measurements.

(c) Facility costs, including both the total operating costs for the facility and the utility costs and BTU consumption for the facility. Definition of operating costs is also consistent with the Federal Real Property Council definitions which can be found at http://www.gsa.gov/graphics/ogp/2009_Guidance_for_Real_Property_Inventory_Reporting.pdf.

Information must be reported on each data center. The format the individual data center inventory is provided below.

Individual Data Center Inventory

Department _____ Bureau _____

General Information

Data center name	
Data center location, city, state, zip code	
Building Predominance Use Codes (identify primary and secondary uses, if applicable)	
Facility Legal Interest	(Owned, Leased, Otherwise Managed)
Lease Expiration Date, if applicable	
Tier Classification	<ul style="list-style-type: none"> • Tier I: composed of a single path for power and cooling distribution, without redundant components, providing 99.671% availability. • Tier II: composed of a single path for power and cooling distribution, with redundant components, providing 99.741% availability • Tier III: composed of multiple active power and cooling distribution paths, but only one path active, has redundant components, and is concurrently maintainable, providing 99.982% availability • Tier IV: composed of multiple active power and cooling distribution paths, has redundant components, and is fault tolerant, providing 99.995% availability.
Gross Square Feet (GSF)	
Total Storage Capacity	(terabytes)
Total Storage Capacity Utilization	% of total storage capacity
FY2009 Efficiency Measures	
Total Power Capacity	
Power Usage Effectiveness	(Total Power Power/IT Equipment Power). The total facility power is the power delivered to operate the data center, including power for operating the IT equipment and all of the power and cooling infrastructure. This includes the power for the

	IT equipment, switch gear, Uninterruptible Power Supply (UPS), chiller, cooling tower, air conditioners, liquid conditioners, etc. The IT equipment power is defined as the actual line cord power drawn by all the IT equipment in the data center
Total Server CPU Capacity	
Average Server CPU Utilization	
Peak Server CPU Utilization	
Average Percentage of Data Center Bandwidth Utilization	
Investment Costs	
Building Operational Cost	
Total FY2008 Utility Costs	