SMG 3230.4

FDA STAFF MANUAL GUIDES, VOLUME III - GENERAL ADMINISTRATION

INFORMATION RESOURCES MANAGEMENT

INFORMATION SYSTEMS ARCHITECTURE (ISA)

SERVER VIRTUALIZATION POLICY

Effective Date: March 3, 2017

1. PURPOSE.

The purpose of the FDA's Server Virtualization policy is to outline requirements for server virtualization within the FDA's Information Technology (IT) environment. FDA primarily hosts servers in either a Data Center or Data Center services area such as cloud services, in which the FDA has been granted the Authority to Operate (ATO).

This policy establishes server virtualization requirements that define the acquisition, use, and management of server virtualization technologies within the FDA. This policy provides controls that ensure that Enterprise issues are considered along with business objectives when making server virtualization related decisions.

Architecture standards, the FDA Master Approved Technology (MAT) list and guidelines will be used to help acquire, design, implement and manage all server virtualization technologies.

2. BACKGROUND.

The FDA has standardized on VMware as the server virtualization platform and Citrix for the virtual desktop environment. This effectively reduces the cost of manpower, licenses and infrastructure needed to support the FDA's operational applications. This policy sets forth the requirements for building and maintaining FDA virtual servers and services.

3. POLICY.

Server virtualization software allows the consolidation of new and existing applications and workloads onto high capacity servers. Consolidating multiple server workloads onto single hardware platforms allows FDA to reduce server hardware inventory, which in turn decreases licensing costs, hardware maintenance costs, the data center footprint and data center power consumption and environmental impact.

FDA will continue migration of all new and existing server application workloads from single physical servers to virtual machines. Any exceptions to the policy of running a server on a virtual instance will require waiver approval from the Chief Information Officer's (CIO) office or Office of Information Management and Technology (OIMT) Senior Leadership Team (SLT).

FDA is working toward fully virtualized environment as directed by the Data Center Optimization Initiative (DCOI).

FDA, by default, will provide virtual server redundancy by providing additional server platform and storage resources to allow for server failovers. This supports applications and workloads hosted in Production, unless this requirement is waived by the Business Owner in writing.

Any hardware or software technology to be implemented must also be preapproved for this usage.

A. Server Virtualization Software Requirements:

1) Support industry-wide open-standards as laid out in the US Government Cloud Computing Technology Roadmap, Volumes I and II

2) Embedded system security involving a conscientious approach to hardware design and coding as well as added security software, with adherence to best practices

3) Centralized management console

4) Support industry standard management tools

5) Support industry standard backup and recovery tools

6) Interoperate with other platform technologies

7) Support industry standard hardware and software identified on FDA's MAT List

8) Support industry standard storage such as Storage Area Networks (SAN)

9) Support unmodified guest operating systems

10) Migrate running guests without interruption in cases of hardware failure

11) Add disks to a running guest

12) Snapshot running guests

13) Revert to a previous snapshot on a running guest

14) Automatically detect a hardware failure then failover to & restart guests on another physical server

15) Role based access for the administrative console

16) Support LDAP for authentication and authorization for administrative console

17) Encrypt all intra host and administrative console traffic

18) Integrated graphical CPU, memory, disk and network performance monitoring, alerting, and historical reporting for hosts and guests.

19) Capture and forwarding of performance data

20) Manage host & guest CPU, memory, storage and network resource allocation

21) Create, stop, start, pause, migrate, clone and provision guests

22) Ability to automatically load balance guests across multiple hosts

23) Logging for hosts and guests that log date and time of all administrative user actions for forwarding to log capture servers

24) Functionality to convert physical servers to virtual machines

25) Encrypted remote administrative console access

26) Ability to import and export virtual machines

27) Ability to migrate virtual machines between cloud and on premise data center

B. Review Cycle

1) This policy is subject to annual review, updates and approval.

C. Compliance

1) All IT investments shall conform to existing FDA policies and standards in order to ensure the integrity and interoperability of computing technologies, applications, services and workloads.

2) Exceptions such as purpose built application appliances require waiver approval from the Chief Information Officer's (CIO) office or OIMT Senior Leadership Team (SLT).

D. Related Policies/Guides

1) Division of Infrastructure Operations Services Guide

4. RESPONSIBILITIES.

A. Chief Information Officer (CIO).

The CIO provides leadership and direction regarding all aspects of the Agency's IT programs and initiatives including operations, records management, systems management, information security, strategic portfolio, and executive coordination and communication activities. Any exceptions to the policy of running a server on a virtual instance will require explicit approval from the CIO office or OIMT Senior Leadership Team (SLT).

B. Chief Technology Officer (CTO).

The CTO is responsible for the execution and implementation of Server Virtualization Policy and procedures throughout the FDA enterprise.

5. PROCEDURES.

A. RQST-IT

Acquisition procedures can be found through RQST, which is accessible from the FDA Intranet.

B. Server Provisioning Procedures

Server provisioning procedures can be found on the FDA OIMT Delivery Lead Support Services SharePoint site.

6. REFERENCES.

Data Center Optimization Initiative (DCOI) established in OMB Memorandum M-16-19

US Government Cloud Computing Technology Roadmap, Volumes I and II (National Institutes of Standards and Technology)

Guide to Security for Full Virtualization Technologies, National Institute of Standards and Technology Special Publication 800-125, 2011

OIMT Standard Operating Procedure (SOP) - Server_Provisioning Approve Provision Requests

7. EFFECTIVE DATE.

The effective date of this guide is March 3, 2017.

8. Document History - SMG 3230.4, Server Virtualization Policy

STATUS (I, R, C)	DATE APPROVED	LOCATION OF CHANGE HISTORY	CONTACT	APPROVING OFFICIAL
Initial	03/03/2017	N/a	OO/OIMT/OIM/OTD/ DIO/EIOS/SOBR	FDA Chief Information Officer Todd Simpson

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