NAVFAC
Applications Technology Stacks and Hosting Services

Version 2

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1. Introduction

1.1. Purpose

This document serves as an overview description of the technology stacks and hosting services that comprise the NAVFAC Data Center hosting environments.

1.2. Scope

This document encompasses all existing hosting services and technology stacks supporting all business systems hosted at the NAVFAC Information Technology Center (NITC) located in Port Hueneme, California .

1.3. Target audience

- NAVFAC Information Technology Center Application Service Provider
- NAVFAC Acquistion
- Contractor

2. NASP Hosting Services

2.1. Big IP Service

Big IP provides PKI certificate validation, server SSL offloading, application load balancing, and HTTP acceleration for the NITC datacenter. Users access the Big IP through pre configured URL's with a HTTPS connection to the device. If a user tries to connect on a HTTP connection, the user is redirected to a HTTPS connection. The user PKI certificate is then validated. The PKI certificate validation request is forwarded to an OCSP responder on HTTP. Once the certificate is determined to be valid the user is provided a secured connection with Big IP. The Big IP device maintains a secured connection with the user and creates a HTTP session to server through a web configured port. The Big IP device monitors the web traffic and load balances the traffic across multiple servers if available. The Big IP device also provides web acceleration across the web connection.

2.2. Report Generation Service

Report Generation Services are available to all NAVFAC users and hosted Business Systems. The Report Generation Service utilizes the COGNOS Business Intelligence (BI), COGNOS TMI, Oracle Reports, Oracle Discoverer, and Business Objects Enterprise Reporting (CRYSTAL) applications. Reports are developed and customized utilizing these reporting tools. The reports are tested, and then promoted to the eDMZ to be accessed by end users across NAVFAC. Individual report specifications can be found in the Business System specific documentation.

2.3. Performance Monitoring

NITC monitors performance and availability of servers, databases and devices utilizing HP SiteScope, HP Loadrunner, HP Discovery Probe, HP Business Process Monitors (BPM) and HP Business Availability Center (BAC).

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2.4. Backup and Restoration Services

Backup Services are provided for all NITC hosted Business Systems. The backup system consists of EMC Networker servers, EMC Data Domain 880 and a Sun StorageTeck SL500 library. All servers are managed through the EMC Networker application, located on the Backup Management Servers. The Backup Management Servers schedules backup events and sends the events to a networker client installed on the eDMZCOE servers. Backup schema and schedules for follow the current NITC policy:

- Enterprise whole system backups are on a Daily Incremental schedule was well as a Weekly-Full.
- The retention period is 3 weeks.
- Application specific data that requires offsite storage is copied to tape media weekly and sent to an offsite facility.

2.5. Host Base Security System

Host Base Security System (HBSS) services are provided to all NITC Unix and Windows hosted servers. The specific protection application is mandated by the DoD. Signature Updates are retrieved from approved repositories and transferred to the NAS. Updates, also stored on the management server, are scheduled to be pushed to all managed Windows servers. The availability of updated UNIX and Linux antivirus definitions is checked weekly and manually loaded to the NAS Gateway.

2.6. Domain Administration

Domain Administration Services are provided to all NITC hosted servers. The administration of the domain for Windows servers is provided through Microsoft Active Directory Services which includes account security, encryption, group policy management, group membership and time. Domain Name Services (DNS) is also provided with uplift services to NMCI.

2.7. User Administration

User authentication is administered through the Solaris Lightweight Directory Access Protocol (LDAP) for UNIX/Linux and Microsoft Active Directory Services for Windows. The LDAP directories contain the access rights for containers and objects on the server, as well as access permissions and group memberships.

2.8. Vulnerability Assessment

A critical aspect to effective Computer Network Defense (CND) is ensuring software operating systems and applications are kept up-to-date with the latest vulnerability patches. Vulnerability compliance tracking and reporting involves having an accurate account of all network assets and their configurations. Then, identifying assets that are impacted by a given vulnerability, applying corrective actions (e.g., patch installation/reconfiguration) or developing/implementing Mitigation Action Plans where installation of a patch or configuration change is not feasible or adversely impact operations. NITC's Vulnerability Assessment Services includes:

- Maintaining a current, accurate asset inventory

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- Conducting regular vulnerability assessments
- Facilitating the correlation of detected vulnerabilities
- Verification of vulnerability remediation/solution
- Responsive and accurate compliance reporting
- Vulnerability identification, evaluation, development of steps to eliminate the vulnerability and dissemination of information about the vulnerability and associated corrective actions
- Proper execution of corrective actions both required and ad hoc
- Notification that corrective actions are completed
- Verification of compliance with the corrective action
- Periodic scans of the network to ensure continued compliance

Vulnerability Assessment Services (VA) services are provided to all NITC Unix, Linux and Windows hosted servers and appliances. This service currently encompasses vulnerability scanning, baselining, and auditing.

2.9. Shared Storage Services

Shared Storage Services are provided for all NITC hosted servers that require Network Attached Storage (NAS) or Storage Array Network (SAN) connections.

2.10. Mail Relay Services

Mail Relay Services are available for all NITC hosted Business Systems that require mail forwarding. Email generated by the Business System is sent to the NITC Mail Server and then relayed to a NMCI Mail Server. Requests are only allowed for outbound mail relaying and controlled by an ACL.

2.11. Secure File Transfer Services

Secured File Transfer Services are available for all NITC hosted Business Systems that require a secured data transfer via SFTP. The Secured File Transfer server acts as a data repository allowing endpoint connections to retrieve and deposit data in a controlled environment. As files are uploaded they are scanned for viruses. Connections are prompted for a unique logon and strong password. If the login credentials are valid, the connection is granted access to the directories and files allowed by ACL permissions.

2.12. Secure Server Access Services

Secure access to hosted servers is available via the Secured Server Access service. Connections can come from NMCI workstations using an installed Secured Server Access application or from non-NMCI workstations via a Citrix Presentation Server.

2.13. Secure Application Delivery Services

Secure Application Delivery Services are applications that are available to support Business Systems or the framework itself. Connections can come from NMCI workstations using an installed Citrix Web Interface client application or from non-NMCI workstations via a Citrix Presentation Server.

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2.14. CITRIX Infrastructure Management Service

The Citrix Infrastructure Management service monitors and maintains the frameworks on-demand application delivery solution.

2.15. Infrastructure Management Service

Infrastructure Management Service is used to monitor and maintain the framework and hosting servers. A management server for each Operating System (UNIX, Linux, and Windows) and VMWare are provided to process OS specific tools to manage their respective environment. The Oracle databases have an enterprise OEM management server for the same reason.

2.16. Enterprise Licensing Service

Enterprise Licensing Services are provided to centrally manage license requirements for applications that require shared licensing. This licensing model allows NAVFAC to take full advantage of the applications usage throughout the enterprise. The process to request a license starts when a user launches an application that resides on their workstation that is configured for the Enterprise License Server. If a license for the requested application is available, the license server "checks a license out". The license is returned to the server once the user exits the application. This service is only available to NMCI seats.

2.17. Source Code Management Service

Source Code Management Services are available for all NITC hosted applications that require Source Code to be centrally managed. Management is accomplished utilizing Microsoft Team Foundation Server.

2.18. Web and Application Hosting Service

Web and Application Hosting Service comprise of all Web base applications, including: Microsoft IIS, Adobe ColdFusion, Oracle Fusion Middleware, Oracle Application Server, Apache, Tomcat, Oracle Apex, Oracle Portal, Oracle Web Center, Oracle Discoverer, CITRIX based applications, and Microsoft Sharepoint.

2.19. Enterprise Data Services

Enterprise Data Services comprise of all database systems that support hosted applications, including: Oracle 10g, Oracle 11g, SYBASE, Microsoft SQL 2005 and Microsoft SQL 2008.

2.20. Continuity of Operation and Disaster Recovery (COOP/DR) Services

All production business systems data are replicated to the remote COOP/DR site located at Norfolk Virginia.

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3. Applications Technology Stacks

3.1. ESRI Geographic Information System (GIS)

Naval Facilities Engineering Command (NAVFAC) Information Technology Center (NITC), NAVFAC Application Services Provider (NASP), maintains the operations and sustainment of GIS applications hosted at the NITC hosting facility. The GIS environment includes three distinct environments which are inter-dependent with each other for their successful operation. These environments include the Geospatial databases using ESRI's ARCSDE and Oracle's RDBMS products, the WEB-based applications using GeoMicro and ESRI's map rendering tools, and the CITRIX-based Maintenance and Analysis for editing GeoSpatial information using ESRI's ARCGIS Server Suite of products. The GIS hosting infrastructure currently hosts major business systems configured for high-availability using F5 BigIP load balancing techniques, and interfaces with Oracle's Single Sign-on (SSO) features for its user authentication. This technology stack utilizes the following products:

- Microsoft IIS Web application servers
- Citrix application servers
- Imagery Data Stores (Raster, Vector, Files, Transactional)
- ESRI's suite of products and supporting tools

3.2. ORACLE Fusion Middleware

Naval Facilities Engineering Command (NAVFAC) Information Technology Center (NITC), NAVFAC Application Services Provider (NASP), maintains the operations and sustainment of the Oracle Applications Technology Stack and all business systems it supports. The Oracle Technology Stack environment includes multiple layers which are inter-dependent with each other for their successful operation. Its features include: middle tier clustering, web caching, OID/Single Sign-On, J2EE application integration, Enterprise Portal, Collaboration Services and Discoverer.

The Oracle Applications Technology supports major business systems. The MidTier and Infrastructure tier use Oracle's high-availability architecture using F5 BigIP's SSL and port redirection features for UTP compliance. It hosts the Oracle Identity Manager/Single Sign-on (OID/SSO), which supports all applications hosted at the NITC hosting facility. This technology stack utilizes the following software suite:

- Enterprise Oracle Fusion Middleware (OFM) suite of products:
  - Oracle Web Logic
  - Oracle Web Center
  - Oracle Universal Content Manager
  - Oracle Identity Manager
  - Oracle Access Manager

- Oracle Application Express (OAPEX)
- Oracle Discoverer
- Oracle SSO/OID

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3.3. IBM MAXIMO

Naval Facilities Engineering Command (NAVFAC) Information Technology Center (NITC), NAVFAC Application Services Provider (NASP), maintains the operations and sustainment of the IBM MAXIMO core products, its supporting components, and all enterprise business systems it supports. This technology stack utilizes the following technology:

- IBM Maximo 7.1
- IBM Websphere
- IBM Rules Manager
- IBM MQSeries

3.4. Enterprise Reporting Applications

Naval Facilities Engineering Command (NAVFAC) Information Technology Center (NITC), NAVFAC Application Services Provider (NASP), maintains the operations and sustainment of Enterprise Reporting Software, its supporting components, and all enterprise business systems it supports. This technology stack utilizes the following technology:

- IBM COGNOS BI
- IBM COGNOS TM1
- SAP Business Objects/Crystal Enterprise
- Oracle Discoverer
- Oracle Reports

3.5. Other Web/Application Servers

Naval Facilities Engineering Command (NAVFAC) Information Technology Center (NITC), NAVFAC Application Services Provider (NASP), maintains the operations and sustainment of Hosted Web Sites, its supporting components, and all enterprise business systems it supports. This technology stack utilizes the following technology:

- Microsoft IIS
- Adobe ColdFusion
- Apache
- Tomcat
- Atlassian JIRA with Grasshopper
- Outstart Evolution
- ASP.NET

3.6. Document Management Systems

Naval Facilities Engineering Command (NAVFAC) Information Technology Center (NITC), NAVFAC Application Services Provider (NASP), maintains the operations and sustainment of Document Management Software, its supporting components, and all enterprise business systems it supports. This technology stack utilizes the following technology:

- Microsoft Sharepoint Enterprise
- Oracle Universal Content Manager

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3.7. Collaboration Systems

Naval Facilities Engineering Command (NAVFAC) Information Technology Center (NITC), NAVFAC Application Services Provider (NASP), maintains the operations and sustainment of Collaboration Software, its supporting components, and all enterprise business systems it supports. This technology stack utilizes the following technology:

- Microsoft Sharepoint Enterprise
- Oracle Universal Content Manager
- Microsoft Team Foundation Server
- Microsoft Project Server

3.8. HP Enterprise Software Suite

Naval Facilities Engineering Command (NAVFAC) Information Technology Center (NITC), NAVFAC Application Services Provider (NASP), maintains the operations and sustainment of Performance Monitoring and Data Collection Software, its supporting components, and all enterprise business systems it supports. This technology stack utilizes the following technology:

- Business Technology Optimization Suite
- Business System Manager
- Business Process Monitor
- Universal CMDB
- Discovery and Dependency Mapping (DDM)
- LoadRunner
- Operations Orchestration
- Server Automation
- Quality Center
- QuickTest Professional
- Service Manager
- Sitescope

3.9. CITRIX Systems

Naval Facilities Engineering Command (NAVFAC) Information Technology Center (NITC), NAVFAC Application Services Provider (NASP), maintains the operations and sustainment of CITRIX based applications, its supporting components, and all enterprise business systems it supports. This technology stack utilizes the following software:

- XenApp Server
- XenApp Desktop

4. Enterprise Database Technology Stacks

4.1. Enterprise Database

Naval Facilities Engineering Command (NAVFAC) Information Technology Center (NITC), NAVFAC Application Services Provider (NASP), maintains the operations and sustainment of Enterprise databases using Oracle Enterprise Database Suite and its supporting components. This technology stack utilizes the following software:

- Microsoft SQL Server
- Oracle Enterprise Edition
- SYBASE

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