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## 2016 Defense Health Information Technology Symposium

# Defining and Implementing the DHA Standard Desktop

# DHA Vision



**"A joint, integrated, premier system of health, supporting those who serve in the defense of our country."**

# Learning Objectives



- Describe the Defense Health Agency (DHA) Standard Desktop and how it is modeled
- Prepare users on the steps for migrating to Desktop as a Service (DaaS)
- Communicate expectations for future sustainment services

# Agenda



- Business drivers for standardizing the desktop
- Defining the DHA Standard Desktop
- Transitioning to the DHA Standard Desktop
- Customer experience / lessons learned from the Pacific Northwest (PNW)
- Future evolutions of the DHA Standard Desktop
  - Published Desktop
  - Windows 10
- Challenges
- Site takeaways

# Business Drivers for Standardizing the Desktop



**Problem Statement**

- As medical providers and staff move between patient rooms and MTFs, they experience inconsistent computing configurations and performance.
- The non-standard, decentralized desktop environment is difficult to manage, costly, less secure, unpredictable and inflexible causing an adverse impact on health care providers' performance to meet the healthcare mission

**Future Vision**

- Provide a standard desktop across the MHS to support clinical systems and the MHS GENESIS
  - Consolidate Application and Desktop Virtualization efforts into a single DHA Desktop service offering
  - Establish a centrally managed and maintained standard image and baseline configuration for all medical EUDs
  - Expand life-cycle management of EUDs to cover all Medical EUDs
  - Centralize and standardize essential desktop support functions maintained through an enterprise management framework
- Facilitate a predictable and reliable deployment of the new EHR and present an opportunity to drive reductions in IT lifecycle costs, rationalize application portfolios and improve clinical business practices through a standardized user experience

# Defining the DHA Standard Desktop – EUD Specifications



## DESKTOP

**CPU**
- Intel 64 Bit

**Memory**
- 8GB

**Storage**
- SSD/HDD
- 240GB/500GB

**Network**
- 802.11a/b/g/n/ac
- RJ-45 Ethernet

**Form Factor**
- Micro/Small Form Factor
- Computer on Wheels

## LAPTOP

**CPU**
- Intel 64 Bit

**Memory**
- 8GB

**Storage**
- SSD/HDD
- 240GB/500GB

**Network**
- 802.11a/b/g/n/ac
- RJ-45 Ethernet

**Form Factor**
- Laptop
- Computer on Wheels

## MOBILE



**CPU**
- Intel 64 Bit

**Memory**
- 8GB

**Storage**
- SSD
- 128GB

**Network**
- 802.11a/b/g/n/ac

**Form Factor**
- Tablet

## ZERO CLIENT

**CPU**
- x86 32/64 Bit
- ARM 32/64 Bit

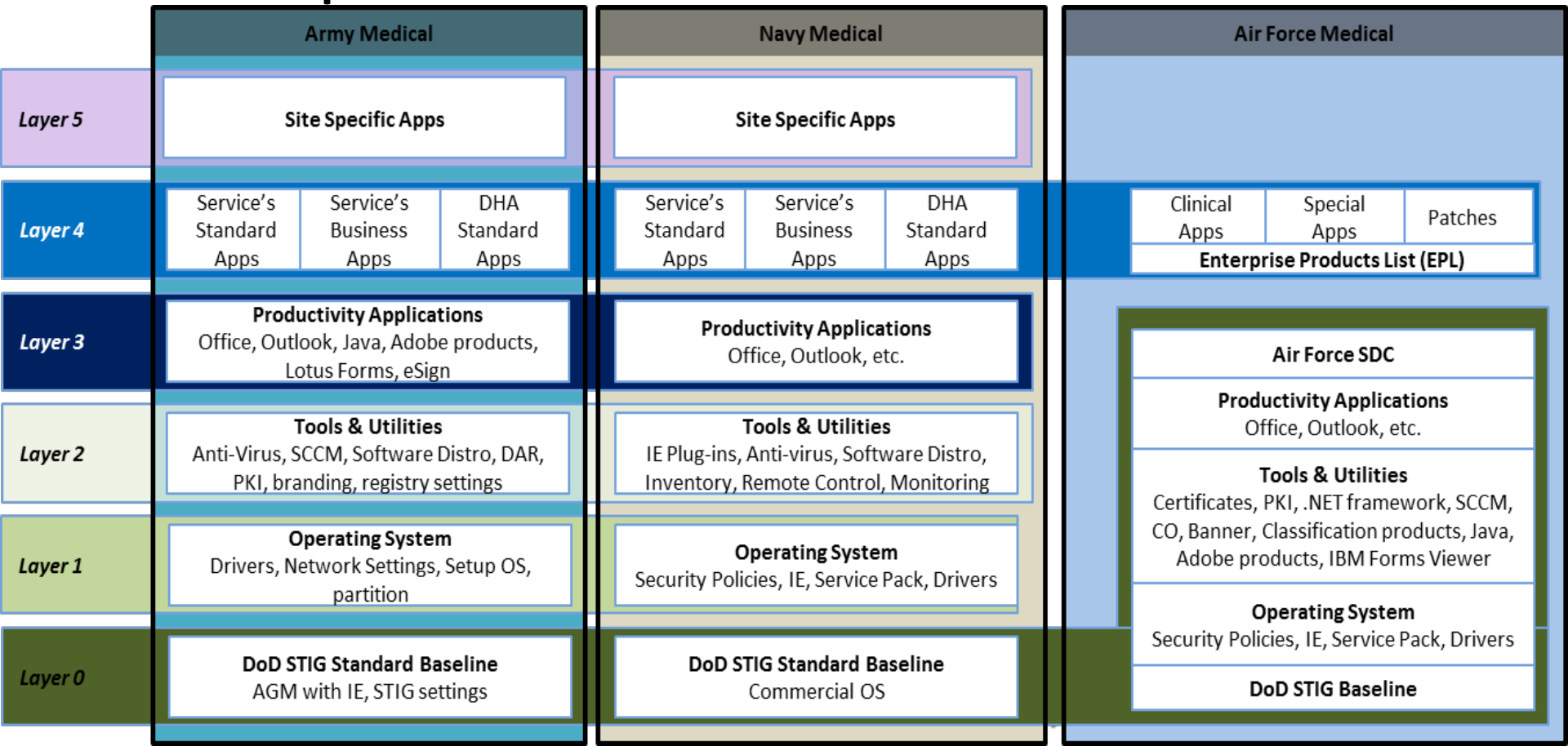
**Memory**
- 1GB

**Storage**
- SSD/Flash
- 1GB

**Network**
- RJ-45 Ethernet

**Form Factor**
- Small Form Factor

# Defining the DHA Standard Desktop – As-Is Desktop Models



# Defining the DHA Standard Desktop – To-Be DHA Standard Desktop Model

Defense Health Agency

Common Enterprise Service Desk | Common Network Infrastructure | Common Directory Service | Common E-Mail Service

*Target "To Be" DHA Layer Definitions*

DHA Managed

DHA IA Authorization

OLAs & SLAs

| | | | |
|---|---|---|---|
| External | Use Case Customization | GPOs & Login Scripts | **Desktop Support Infrastructure**<br>User Data Storage, File Servers, Print Servers |
| Layer 4 | | | **Medical Applications** \| **Business Applications** \| **Services Standard Applications** \| **Facility Specific Applications** |
| Layer 3 | | | **Office Productivity Applications**<br>MS Office, Java, Adobe, QuickTime<br>3B Other Approved Office Productivity Applications<br>3A Standard Office Productivity Applications |
| Layer 2 | Common Baseline ATO Layers 0 – 3a | | **Tools & Utilities**<br>PKI, Anti-virus, HBSS, DAR, Citrix Receiver, VPN, SCCM Client, Drivers, .NET, EMET, Email Classification Banner, Image/SW Updates, Naming Standards, Domain Joined |
| Layer 1 | | | **Image Customization**<br>STIG settings, Local Policies, Registry Settings, Branding |
| Layer 0 | | | **Operating System: DOD Secure Host Baseline (SHB)**<br>OS (SP), Web Browser, Root Certs |
| Physical | | | **EUD Hardware**<br>Desktop, Laptop, Convertible Laptop, Zero-Client, Mobility Device, Computer on Wheels |

**Enterprise Products List (Applications)**

**DHA Gold Master Image**
Version x.x.x.x

**DHCP**

# Defining the DHA Standard Desktop – Layered model



## Benefits of the DHA desktop model

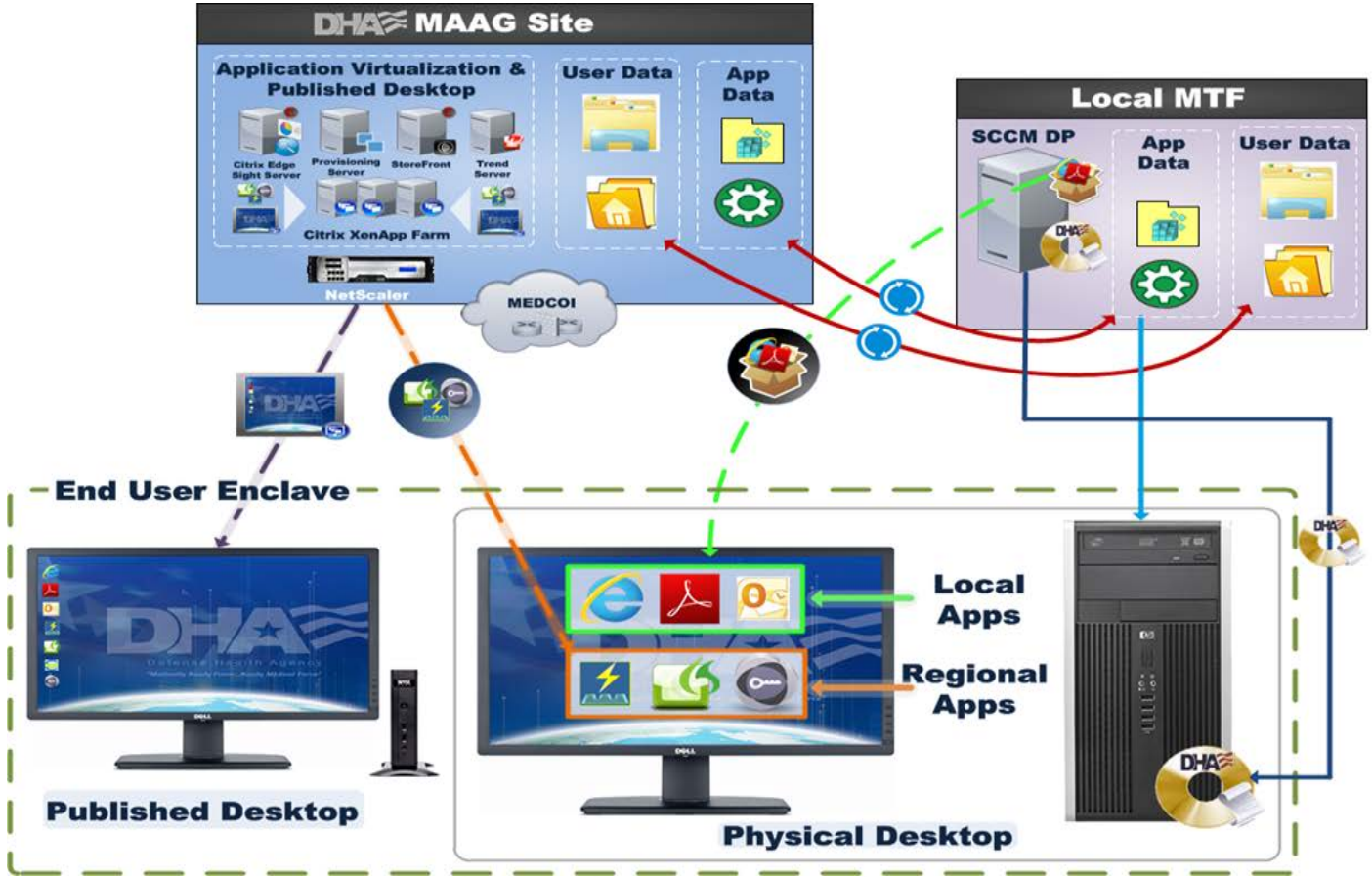
- Provides a common lexicon across DHA
- Provides a common core set of services on all desktops across DHA
- Standardize Enterprise applications for economies of scale
- Allows for diversity to support diverse missions where needed
- Allows for selective component upgrades
- Externalizes and consolidates common services such as file storage and print management

# Defining the DHA Standard Desktop – DHA Common Baseline (Layers 0-3a)



| Layer | Applications |
|---|---|
| 3A | MS Office Professional Plus, Adobe Acrobat Professional, Java, MS Silverlight, MS Visio Viewer |
| 2 | ActivClient, AppSense Application Manager, AppSense Client Communications Agent, AppSense Environment Manager, AppSense Performance Manager, Axway Desktop Validator, Citrix Receiver<br>Connection Monitor, McAfee Agent, McAfee Asset Baseline Monitor Agent, McAfee DLP Endpoint, McAfee Host Intrusion Prevention<br>McAfee Policy Auditor Agent, McAfee VirusScan Enterprise<br>Microsoft Windows Management Framework, Splunk, Sysmon, Triumfant |
| 1 | STIGS, Local Policies, Registry settings, Branding |
| 0 | Windows 7 Enterprise Edition (32/64), Internet Explorer 11, root certificates |

# Defining the DHA Standard Desktop – Desktop delivery flows



# Defining the DHA Standard Desktop – Kiosks



Kiosks are an evolving capability that require coordination across a diverse group of clinical and technical stakeholders

- Multiple different kiosk configurations across the MTFs and Services due to the lack of standardization in the enterprise
- Kiosk technology is evolving
  - Current: PNW kiosk configurations are physical desktops secured by Group Policy Objectives (GPOs)
  - Future: DHA kiosk offering will include Published Desktop or Applications technologies
- DaaS initial focus has concentrated on the physical desktop

Due to these factors, the short-term goal in PNW is to standardize kiosk configurations across the sites as much as possible while longer-term technology capabilities are integrated into the enterprise offering

# Defining the DHA Standard Desktop – Kiosk use cases



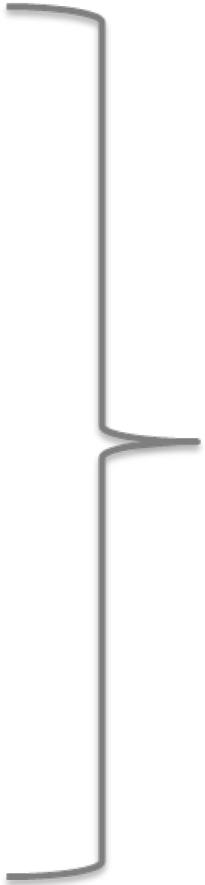
**Based on data collected in the PNW, there are four general kiosk use cases**

- High workflow areas
  - Multiple clinicians and workstations
  - Fast-paced environment
- Users without a Common Access Card (CAC)
  - Users do not possess a CAC but are granted access to EHR systems
- Patient access
  - Patient access to specific systems
- Unmonitored display boards
  - Real-time status information at a glance

# Transitioning to the DHA Standard Desktop – Hidden Complexity

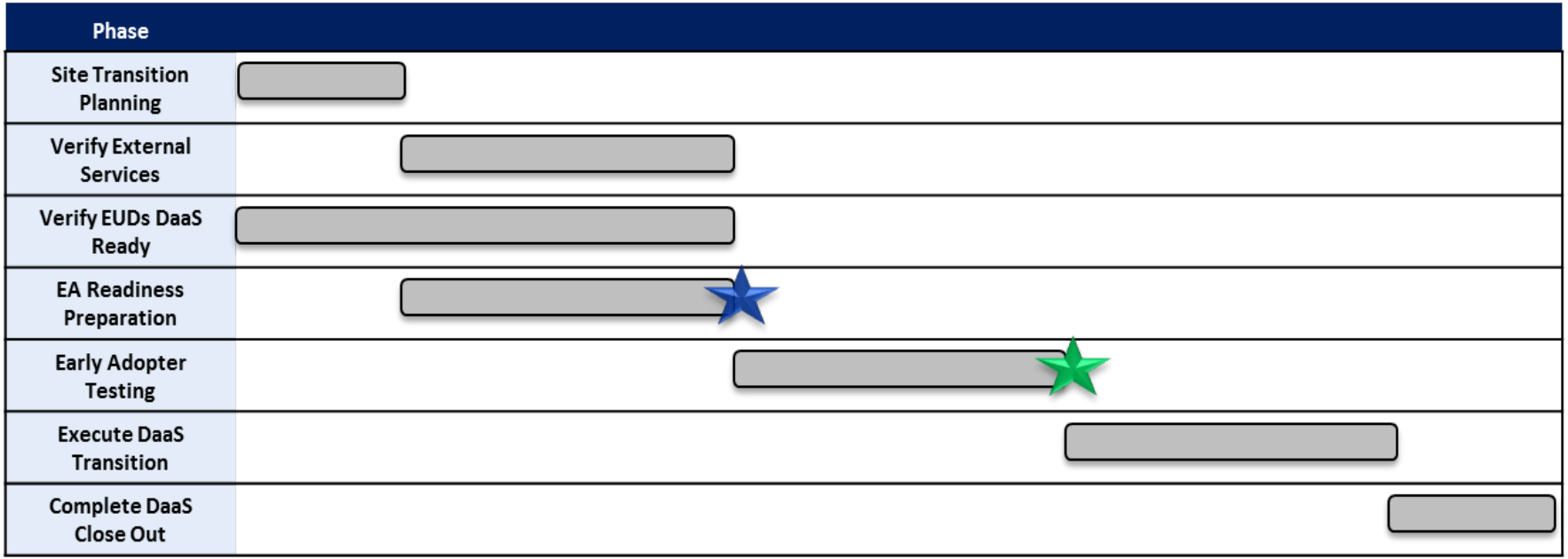
- Site/User D2D Expectations
- AVHE
- IT Staff #/Skill
- User Knowledge
- Training
- GSC Use Cases
- Service Design
- DHCP
- Network Print
- Peripherals
- Routing & PPS
- Releases
- IMS
- DNS
- Websites
- PKI
- ACAS
- Dependency Training

- Reporting
- Communication
- Persona Management
- Applications
- SCCM
- mJAD
- STIG
- HBSS
- Encase
- DAR
- Splunk
- IV&V
- Migration Process
- Governance
- Remote Access
- Image
- GPO
- D2D IA Strategy
- CND-SP Ops



| User Perception | | |
|---|---|---|
| | **IT Staff Desktop to Datacenter (D2D) Experience** | **Operational Process Evolution** |
| | **Technology and Configuration Reconciliation Expectations** | **User Expectations** |

# Transitioning to the DHA Standard Desktop – GANTT View




★ Go/No Go Decision Point #1
- – Initiate Early Adopter Testing
- – Ensures Quality to reduce issues during Early Adopters
- – Verifies that functionality of current services is acceptable
- – Verifies EUD and DaaS ready compliance are acceptable

★ Go/No Go Decision Point #2
- – Initiate Site Wide Transition
- – Ensures Quality to reduce issues during Full Transition
- – Leads to End User Training, Data Migration, Full Reconfiguration
- – Verifies Early Adopter Testing was successful

# Transitioning to the DHA Standard Desktop – Prerequisites



- Network Security Monitoring Service (NSMS)
  - Medical Community of Interest, Wide Area Network, Security Suite, and remote access in use
  - Computer Network Defense (CND) back-end services are available
    - Host Based Security Service (HBSS), Splunk, Encase, Assured Compliance Assessment Solution (ACAS), Triumfant
- Directory Services / Enterprise Management (DS/EM)
  - Desktops are migrated to medical joint active directory (mJAD)
  - Domain Name Server (DNS) is functional under mJAD
  - mJAD Organizational Unit (OU), groups, and permissions structure is in place
  - Legacy Group Policy Objects are replicated to DaaSi OU
  - Users/computers objects are in the DaaSi OU
  - System Center Configuration Manager (SCCM) 2012 is in place to patch operating system and applications
  - Public Key Infrastructure (PKI) is in place

# Transitioning to the DHA Standard Desktop – Prerequisites (continued)



- Compute and Storage Management Services
  - Local Core Infrastructure (LCI) storage is available
  - LCI services are available
    - Print, file, DHCP, and AppSense
  - Printer drivers are available

- Operation and Sustainment Branch (OSB)
  - CND tools are on the desktop
    - HBSS, Splunk, Encase, Triumfant, sysmon
  - Data-at-Rest DAR solution is functional
  - Users call GSC for desktop support
  - Transition team has required permissions
  - OSB is operationally ready to provide support for DaaS
  - Enteprise and site GPOs are in the mJAD OU structure
  - Applications and drivers are available
  - Licensing is available

# Transitioning to the DHA Standard Desktop – Early Adopter Activities



- Includes testing by DHA Information Management Division (IMD) and clinical staff
- Technical validation includes:
  - User data migration process and tools
  - EUD reconfiguration
  - OS and applications
  - CND tools are functional and not hindering user experience
  - Enterprise desktop management tools functionality
  - Website, peripheral, and printing functionality
  - Persona management capabilities
- Operational validation includes:
  - Login and application performance metrics
  - Use case execution
  - User training experience
- Lessons learned and process improvement for full transition

# Transitioning to the DHA Standard Desktop – Transition Activities



- Standardize EUD applications with approved Enterprise Approved Product List
- Migrate to DHA managed DHCP services
- Standardize Outlook PST location
- Migrate network printers to DHA managed print services
- Migrate user data/home drives to DHA managed file services
- Migrate user data/files from legacy location into CSMS platforms
- Virtualize user persona with AppSense and store in CSMS platforms
- Migrate users to enterprise and site specific DHA GPOs

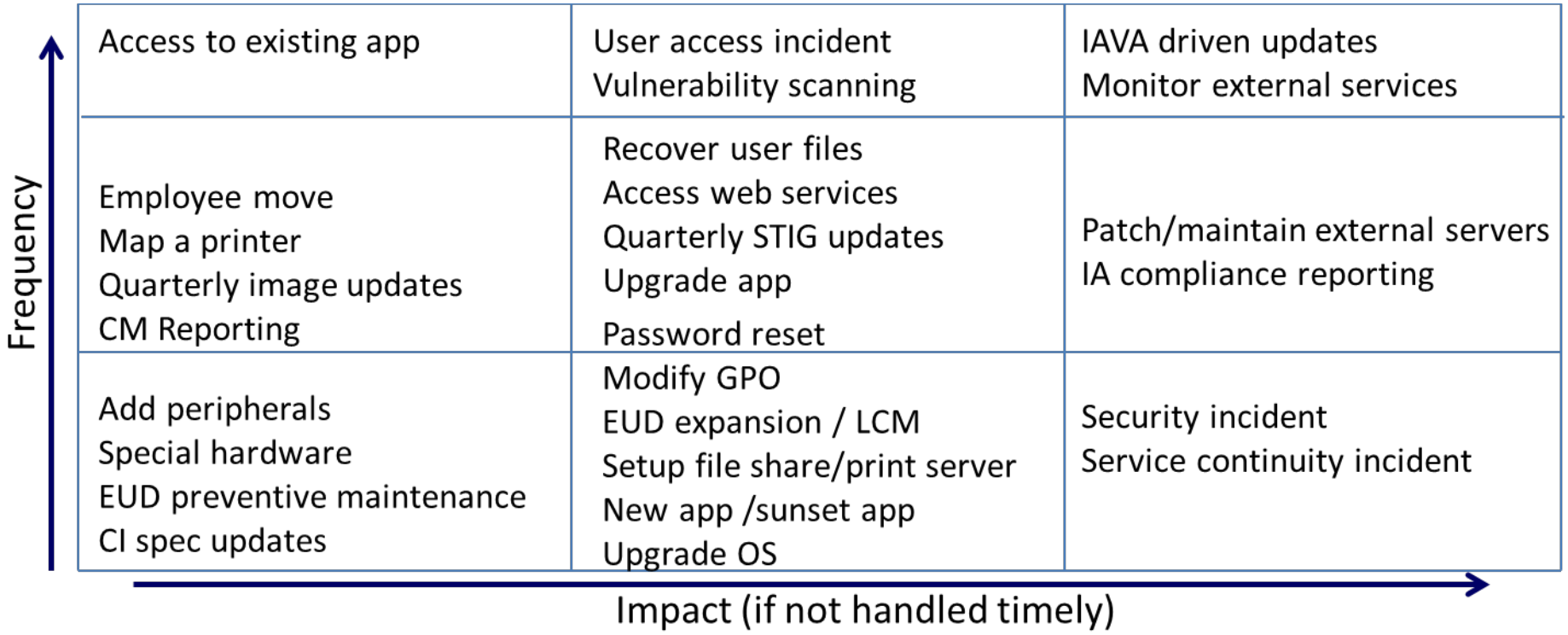
# Transitioning to the DHA Standard Desktop – End-state



- User and EUD transition is complete when:
  - DHCP, file, print, and CND tools are provided and managed by DHA
  - EUDs comply with DaaS Common Baseline
  - User data has migrated and persona is being managed by infrastructure services
  - User has validated their data and desktop functionality
- EUDs are being managed by DHA Enterprise desktop management tools
- Local IT knowledge transfer has occurred
- DaaS operational support is implemented in accordance with DaaS operational use cases
- CND capabilities are provided by Network Security Operations Center (NSOC)/DHA Network Operations Center (DNOC)

# Standardized Desktop Operational Model – Use cases





# Customer Experience / Lessons Learned from the Pacific Northwest



- DHA onsite presence is critical to success
- Daily communication and education is key
- The cultural change is bigger than technical change
- Need more integration across the programs
- Existing EUDs are hard to standardize – its easier to reimage them
- Quality assurance of change is paramount – don't affect the mission

# Future of the Standardized Desktop – Win10



- Win10 is mandated by DoD by Jan 2017 with waiver extension to Jan 2018
- Users and IMD are very interested in deploying Win10
- Upgrading the OS across all MTFs is a significant challenge
  - Drivers
  - Application compatibility
- Upgrades must be integrated with mJAD and DaaS evolutions
  - Multiple upgrade paths must be planned

# Challenges



- Current application portfolio is unsustainable
  - Application rationalization is a significant task that must be championed by the business community
  - In PNW there are over 600 applications;  80% of them exist on <1% of EUDs
  - Many more will be identified across the enterprise
- Centralized management of the desktop is a significant culture change that must be championed by the Services and accepted by the sites
  - Will take time and leadership commitment for sites to buy into the operational model
  - Without this the standardized desktop will devolve and benefits will not be achieved
- There is significant standardization debt accumulated through years of decentralized management
  - It will take time to converge on standardized applications and GPOs that best meet the diversity in medical mission

# Key takeaways



- The standardized desktop is essential to achieving medical IT mission
- There are activities that sites can undertake now to prepare for DaaS transition
  - Understand the DaaS architecture and operating model and help shape and refine it
  - Train site personnel on SCCM 2012
  - Identify and prioritize all site software
  - Provide site licensing information for all site procured software
  - Leverage opportunities such as EUD refresh or Milcons to coordinate with DaaS
- Once Initial Operational Capability is complete, sites can leverage enterprise CIs to prepare for DaaS transition
  - Deploy DHA enterprise image
  - Deploy DHA common enterprise applications
  - Rationalize site GPOs and adopt DHA enterprise GPOs

# Questions?

# Evaluations



Please complete your evaluations

# Contact Information



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# Backup

# Acronyms



| Acronym | Description |
|---|---|
| ACAS | Assured Compliance Assessment Solution |
| AVHE | Application Virtualization Hosting Environment |
| CAC | Common Access Card |
| CI | configurable items |
| CIO | Chief Information Officer |
| CM | configuration management |
| CND | Computer Network Defense |
| CNDSP | Computer Network Defense Service Provider |
| CONOPS | concept of operations |
| CPU | central processing unit |

# Acronyms (continued)



| Acronym | Description |
|---|---|
| CSMS | Compute and Storage Management Services |
| CSSP | Cybersecurity Service Provider |
| DaaS | Desktop-as-a-Service |
| DAR | data at rest |
| DHA | Defense Health Agency |
| DoD | Department of Defense |
| DNS | domain name server |
| DS/EM | Directory Services / Enterprise Management |
| EAPL | Enterprise Approved Product List |
| EUD | end user device |

# Acronyms (continued)



| Acronym | Description |
|---|---|
| GPO | Group Policy Object |
| GSC | Global Service Center |
| HBSS | Host Based Security Service |
| IAVA | Information Assurance Vulnerability Alert |
| IE | Internet Explorer |
| IMD | Information Management Division |
| IT | information technology |
| IV&V | Independent Verification and Validation |
| HDD | hard disk drive |
| LCI | Local Core Infrastructure |

# Acronyms (continued)



| Acronym | Description |
|---|---|
| Med-COI | Medical Community of Interest |
| MHS | Military Health System |
| mJAD | medical joint active directory |
| MS | Microsoft |
| MTF | military treatment facility |
| NPS | Network Protection Suite |
| NSMS | Network Security Monitoring Services |
| NSOC | Network Security Operations Center |
| OS | operating system |
| OSB | Operations and Sustainment Branch |

# Acronyms (continued)



| Acronym | Description |
|---|---|
| OU | organizational unit |
| PKI | public key infrastructure |
| PNW | Pacific Northwest |
| PST | Personal STore |
| SCCM | System Center Configuration Manager |
| SNAP | System/Network Approval Process |
| SSD | solid state drive |
| STIG | Security Technical Implementation Guide |
| VPN | virtual private network |