On-Site Managed Services (OMS)

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OMS Program Management Office

December 12, 2017

Vendors named within are approved or under contract to provide specified services to DISA or DOD.

Background

OMS is a DoD CIO Task Order (TO) awarded on 30 Sep 2016 to a Smartronix, Small Business, under the NIH Chief Information Officer Solutions and Partners 3 (CIO-SP3)

- Government-Wide Acquisition Contract (GWAC)
- Contracting Officer Representative (COR) is located at DLA
- One (1) year base and four (4) option years.
- Dell EMC, Pivital, VirtuStream, Stigian, and VMware are partners with Smartronix.
- 30 Sept 2017 OY 1 exercised and contract task Program Management is fully funded.
- 1 Oct 2017 DISA assumed the responsibilities to implement and sustain OMS
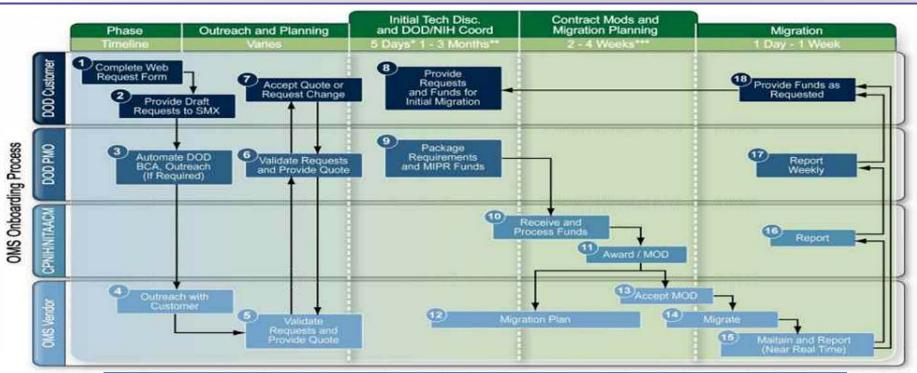
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Contract Optional CLINs

	IaaS	PaaS	Engineering Services
OPTIONS	NIPR 1st Site NIPR 2nd Site	NIPR	SMEs
	SIPR 1st Site SIPR 2nd Site	SIPR	Engineering Planning: *Discovery, Design, Migration, and Support*
	Federal Data Center NIPR & SIPR		Catalog Services

OMS is a commercially owned and operated information technology services

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Contract Specified Business Process

Removing barriers to improve onboarding process

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NIPRnet IaaS Schedule & Way Ahead

✓ Production ATO Assessment

✓ Production ATO Approval

✓ NIPRnet IaaS 1st Site ready for production

❑ Integrate Vendor's Onboarding/Business Process   Q2 FY18

❑ Establish a CSSP agreement (Management Zone)   Q2 FY18

❑ Migrate 1st App (DISA IRIS)   Q2 FY18

❑ General service availability for mission partner apps   Q2 FY18

❑ Approval of 2nd site NIPRnet IaaS   6 months after decision

❑ Approval of NIPR PaaS   3 to 5 months after decision

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OMS Contract

Smartronix

DELLEMC, VmWare, Virtustream, Pivotal, and Stigian

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DISA

DOD Challenges

In 2016, DoD CIO Terry Halvorsen sought a commercial partnership to deliver secure cloud services from within a Federal data center that could achieve 25-30% specific measured savings over legacy IT, in order to fund war fighting systems. DoD requires a secure, on prem cloud solution to rapidly consolidate legacy systems into a shared services environment that delivers mission and business value to DoD and Mission Partners (Allies: NATO and Five Eyes, Systems Integrators.)

- Must reduce IT costs by 25-30%
- Must maximize value of VMWare investment
- Demand secure cloud solution from within DOD networks and security (SDN)
- Require place to create new applications that can run in any cloud architecture (PaaS)
- Seeking a Partnership with Commercial Industry and opportunity to accelerate Innovation and Cloud adoption

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Agenda

- **What is On-Site Managed Services (OMS)**

- **What Makes OMS Different From Other Could Offerings**

- **Portal Overview**

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Awarded Team

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OMS Addressing DoD Cloud Migration Challenges
Technology and Services To Support the Warfighter and Its Mission

Mission Critical

On DoD-premise cloud solution built for mission-critical workloads

Performance

MicroVM (µVM) resource allocation model enables granular measurement of Application Resource Consumption

Cost Efficiency

MicroVM (µVM) technology eliminates overprovisioning, enables true consumption based billing

Service Catalogue v2

Agility

Migrate and run the applications of today and build the applications of tomorrow

Security & Compliance

Architected to the highest security and compliance standards accredited to IL/5 and option for IL/6

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Ease of Acquisition - OMS

Contract Availability

- **Contract #: HHSN316201200047W**
- **Order #: HHSN31600001**

Becoming an OMS Customer

- **www.oms.mil**
- **Services offering descriptions, rate cards and ordering information**
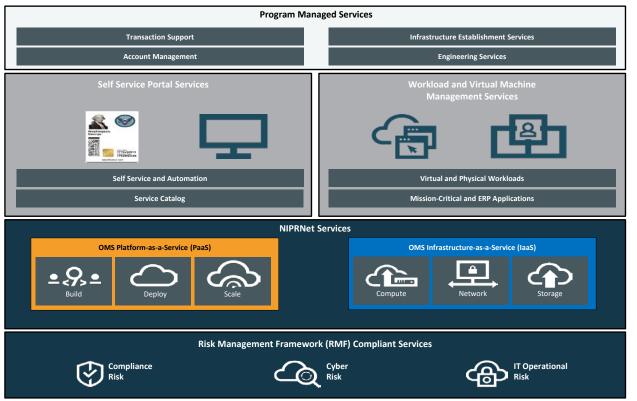- **OMS support staff is available to assist**

Defined On-Boarding Process

- **Defined on-boarding service with FFP CLINS**
- **BCA tool available to optimize procurement**

Defined Off-Boarding Process

- **Defined off-boarding service, eliminates vendor lock-in**
- **CLIN 6 close out ensures agencies can leave OMS when required**

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OMS Program View

Program Managed Services

| Transaction Support | Infrastructure Establishment Services |
| Account Management | Engineering Services |

Self Service Portal Services

Self Service and Automation

Service Catalog

Workload and Virtual Machine Management Services

Virtual and Physical Workloads

Mission-Critical and ERP Applications

NIPRNet Services

OMS Platform-as-a-Service (PaaS)

Build | Deploy | Scale

OMS Infrastructure-as-a-Service (IaaS)

Compute | Network | Storage

Risk Management Framework (RMF) Compliant Services

Compliance Risk

Cyber Risk

IT Operational Risk

NIPR IaaS
- Robust computing capabilities
- Flexible tiered storage options
- Scalable services

NIPR PaaS
- Application foundry services
- Complete development and operation lifecycle
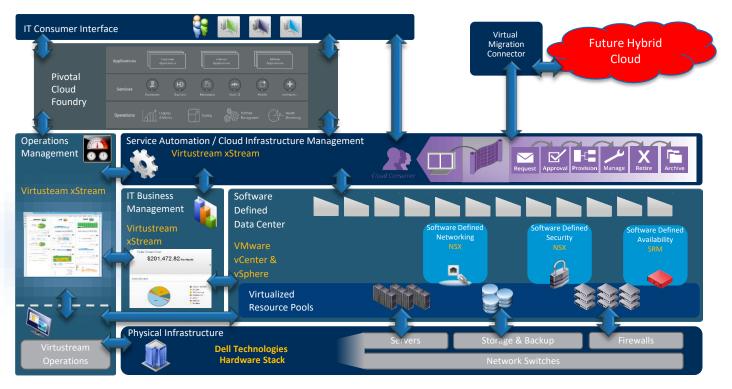- Next generation services as code

Secure Compliance Services
- Risk management framework (RMF) enabled
- Designed to support IL5 workloads and data

SIPR IL6 Capability (Future Option)
- Notional timeline established
- Awaiting CLIN execution

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AV-1 Architecture

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Hardened Security Posture
Trusted Cloud Environment for DoD Workloads

Access Control
- Role based access control
- Multi-factor authentication
- Data encryption
- Continuous logging

Network Security
- Dedicated VLANs
- Carrier class firewalls
- Intrusion prevention system
- Intrusion detection system
- Customizable security zones

Intel TXT
- Silicon level security
- Attested OS and platforms
- Attested authentic workloads
- Geo-fencing
- Geo-tagging

Risk and Compliance Management
- Managed security services
- Continuous risk and compliance monitoring
- Vulnerability scans and risk protection
- Customized governance
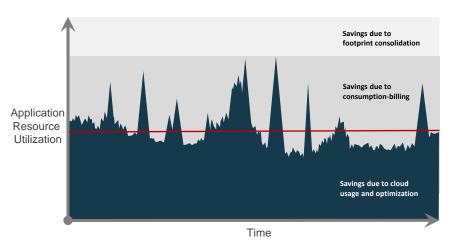- Gov't and Industry regulatory compliances

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Production Applications Running on Virtustream

Productivity	CRM	ERP	Databases	Operating systems	Backup
Microsoft Exchange Microsoft SharePoint Drupal CMS IBM Notes Microsoft Lync	Microsoft Dynamics(SL/GP) Interaction CRM Blackbaud	SAP ECC6.0 SAP Solution Manager SAP BI SAP Business Objects SAP PI SAP Business One SAP Services Oracle Microsoft Navision	HANA Hadoop Oracle MySQL Microsoft SQL Server Mozy PostgreSQL DB2	Microsoft Windows Server Windows (2003, 2008) Linux (Red Hat, Centos, Ubuntu, SUSE)	Avamar Asigra NetBackup
Accounting	**Applications**			**Monitoring**	
ADP Taxware MarkView Alteryx Deltek Budgeting and Planning Deltek T&E Deltek GCS	Microsoft Office OpenOffice Microsoft TMG Symantec AV DNS IIS Apache	RDS Farms OpenLDAP Subversion Apache Tomcat Citrix VMware Horizon	Red5 Git Trac	Nimsoft	

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Consumption Based Billing – Increased Economics
Enabled by µVM Technology in Service Catalogue 2.0

Benefit Stream of µVM Architecture

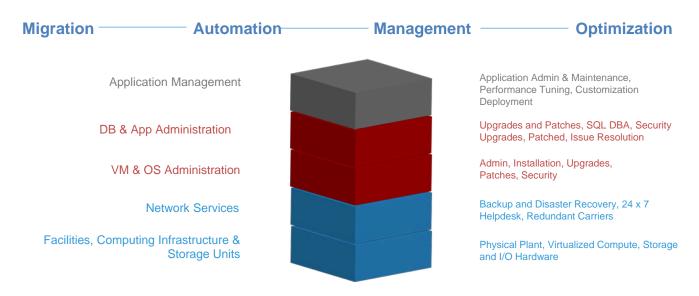| 1 µVM	
200MHz CPU	40 IOPs
768MB RAM	2MBps Bandwidth

- Resource utilization of systems of record can significantly vary over time

- µVM eliminates overprovisioning of allocated resources for handling peak workloads without impacting performance

- Optimized and better utilization of cloud resources lead to significant cost savings

uVM consumption measurement can be used to reduce infrastructure costs by 20-60% when enabled in Service Catalogue v2.0
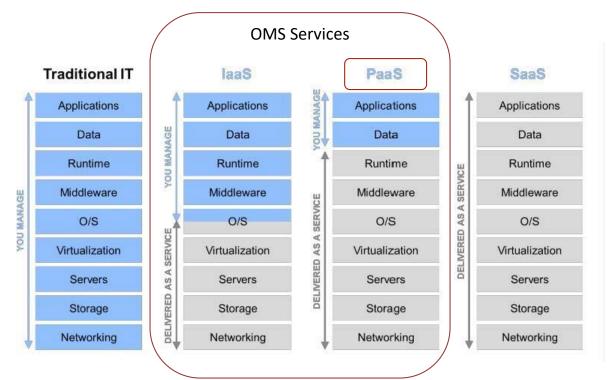
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Supporting The Entire Services Stack

Experts On Demand

Migration ———— **Automation** ———— **Management** ———— **Optimization**

Application Management

DB & App Administration

VM & OS Administration

Network Services

Facilities, Computing Infrastructure & Storage Units

Application Admin & Maintenance, Performance Tuning, Customization Deployment

Upgrades and Patches, SQL DBA, Security Upgrades, Patched, Issue Resolution

Admin, Installation, Upgrades, Patches, Security

Backup and Disaster Recovery, 24 x 7 Helpdesk, Redundant Carriers

Physical Plant, Virtualized Compute, Storage and I/O Hardware

We can typically lower maintenance costs of applications by **20%-40%**

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Pivotal Cloud Foundry is an OMS Platform

OMS Services

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Cloud Foundry Provides Application <u>Dial-Tone</u>

1. Enables application owners to focus exclusively on their apps and mission.

2. Application owners offload the complexity of deploying and managing apps and other essential capabilities needed by the application to the platform.

Application health management

Sleep soundly as PCF delivers high availability at four different levels: application, process, VM, and zone

Dynamic routing

Scale applications and have direct access in seconds

Log aggregation

Never have to search for logs and metrics; they are all aggregated by PCF

Roles and policy

Built to fit enterprise use-cases with role and policy-based access

Security and isolation

Based on advanced container mgmt. technology
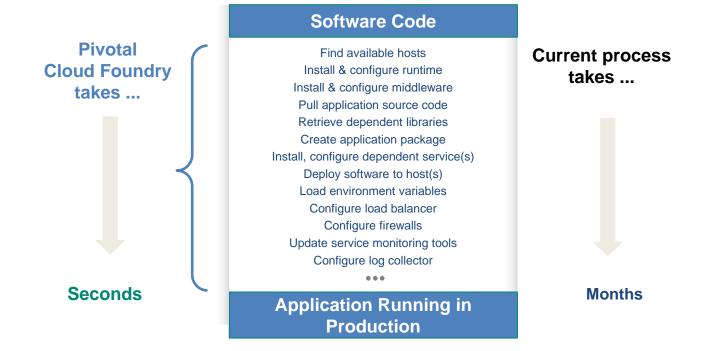
Scale

Rapid, automated scaling for your apps

Blue-green deployments

Never take an outage for application deployments or platform updates

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Accelerate the Deployment of Applications

Pivotal Cloud Foundry takes ...

Seconds

Software Code

Find available hosts
Install & configure runtime
Install & configure middleware
Pull application source code
Retrieve dependent libraries
Create application package
Install, configure dependent service(s)
Deploy software to host(s)
Load environment variables
Configure load balancer
Configure firewalls
Update service monitoring tools
Configure log collector

● ● ●

Application Running in Production

Current process takes ...

Months

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Onboarding Services
Proven Transition Methodology

Staffing & Onboarding

- **Staff service startup & steady-state roles**
- **Provide staff access & resources**
- **Train staff and perform Delivery Assurance Assessment**

Process Integration

- **Integrate mission policies and processes with best practices delivery model**
- **Implement best practices, process readiness, measurements, and controls to meet service performance standards**

Service & Technology Reporting

- **Implement reporting measurements for service & technology management controls**
- **Publish service and technology reports demonstrating service delivery meets performance standards**

Technology Management Integration

- **Integrated mission technology operating methods with best practices delivery model**
- **Implement technology management infrastructure, operational readiness, measurements and controls to meet service performance standards**

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Migration and Implementation

Planning phase   -YES

- Technical preparation: project team with operating system and database migration consultant

Migration phases - YES

- Test runs for the migration

- Tuning and optimization in the target system

- Improvement of data transfer and flow of migration

- Further test runs until the production downtime requirements are met
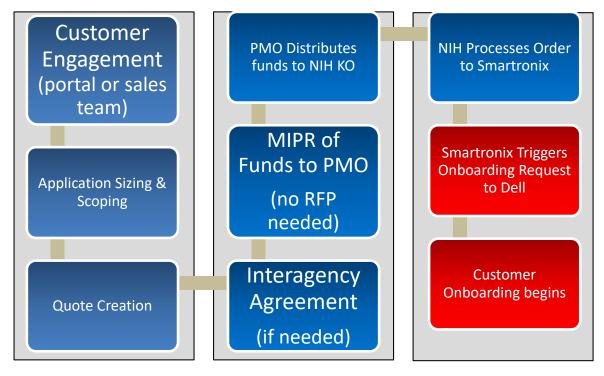
Cutover and go-live - PARTIAL

- Migration of the production system

- Technical check of data consistency and performance

- Conversion of production operation to the target system

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OMS Onboarding Process Flow

Customer Engagement (portal or sales team)

Application Sizing & Scoping

Quote Creation

PMO Distributes funds to NIH KO

MIPR of Funds to PMO (no RFP needed)

Interagency Agreement (if needed)

NIH Processes Order to Smartronix

Smartronix Triggers Onboarding Request to Dell

Customer Onboarding begins

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OMS Service Catalog

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Service Catalog
Service CLIN Overview

CLIN 3: Infrastructure Services (IaaS)

CLIN 4: Platform as a Service (PaaS)

- **CLIN 4A: Pivotal Cloud Foundry (PCF)**

- **CLIN 4B: SAP (vHANA)**

CLIN 5: Engineering, Migration and Additional Services

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Service Catalog
CLIN 3: Infrastructure Services Overview

Compute

- **T-Shirt Size VMs**
- **Established using Micro VMs (μVM)**

Storage

- **Tiered Service Levels**
- **Local and Replicated**
- **Block, File, Object and Archive**

Backup

- **Standard Daily**
- **Self Service**

Network

- **Virtual Private Network (VPN)**
- **VPN Gateway**
- **Application Gateway**
- **Load Balancer**

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Service Catalog
IaaS Compute

T-Shirt Size VMs

- **Options for XS, Small, Medium, Large, XL or Custom Size**

- **Range from 1vCPU – 16vCPU and 2GB – 32 GB of RAM**

- **Includes 75 GB of local block storage**

- **Allocation based**

Micro VMs (µVM)

- **Consumption based on CPU, Memory, Storage, IOPS and Network Bandwidth**

- **Usage measured at 5 minute intervals**

- **µVM Monthly usage averages highest CPU, Memory, Storage, Bandwidth per Hour**

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Service Catalog
IaaS Storage

Block Storage

- Option for Tier 0 – Tier III ranging from High – Low latency
- Second site replication with RPO of 15 minutes
- Billed at 5 minutes per GB allocated

File Storage

- Hierarchal structure accessed via NFS or SMB
- Billed at 30 minutes per GB allocated

Object Storage

- Designed for files accessed less frequently
- Billed at 30 minutes per GB allocated

Archive Storage

- Lower cost alternative for infrequently accessed data

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Service Catalog
IaaS Backup

Standard Daily

- Managed service including setup, monitoring and restoration

Self Service

- Customer initiated backups, restoration and schedules

- Address deleted files, database corruption, viruses

Backup Policy

- Production Storage: Full weekly backup with daily incremental and a 30-day retention

- Non-Production Storage: Full weekly backup with daily incremental and 14-day retention

- Database Logs: Backups every two to four hours

- Non-standard backup policies and retention requirements \on an individual customer basis

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Service Catalog
IaaS Network

Virtual Private Network (VPN)

- Secure site-to-site IPSec connection between the Customer's site and the Tenant Edge Gateway in the DoD data center

- Billed Monthly, at the 95th percentile of measured monthly Mbps usage, with no maximum

VPN Gateway

- Monitoring and maintenance of the VPN appliance that terminates the VPN tunnel between the OMS data center and the customer's facility

Application Gateway

- Enables Network Address Translation (NAT), Reverse Proxy services, and application-level data connectivity and access to Tenant services and systems

Load Balancer

- Support customer workloads or VMs that require Load Balancing of services via an IP address or registered domain name servers (DNS) service

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Service Catalog
CLIN 4: Pivotal Cloud Foundry (PCF) Services

Managed PCF

- Installation/setup of the multitenant PCF instance and associated core components

- Service configuration, monitoring and updates

- Service desk support and incident resolution

- Security and compliance support up to application

  - OMS provides inheritance via eMASS to PCF tenants

  - RMF controls support tenant ATO

- Capacity management

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Service Catalog

CLIN 5: OMS Engineering, Migration and Additional Services

- Migration services, managed services, and other optional services may be optionally added in support of consumption of Infrastructure and Platform services.

- Through OMS, providing an Inheritance Relationship via eMASS to OMS Tenants. RMF controls and the related documentation will support the Tenant ATOs

Migration Services Overview

- Full system migration [virtual to virtual (V2V) or physical to virtual (P2V)]

- Planning, engineering, and executing the transition of workloads

- Lift and Shift of applications that meet the criteria for such a process

- Virtualizing workloads for operation in this IaaS environment

- Ensure performance optimization of workloads in the target environment

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OMS Portal Walkthrough

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OMS Support Services

- 24 Hour Technical Support
- 24 Hour Service Desk available for questions
- Continuous Monitoring
- Infrastructure Monitoring
- Interactive Ticketing System
- Integrated ITIL Processes

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Value Summary

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Recap - Value Proposition and Unique Program Features

- **Hosted in DOD facilities and directly on the NIPRNet (& option: SIPRNet)**
  - Removes the need for a Cloud Access Point because it's "inside the wire"
  - Significantly reduced latencies for global communications and time sensitive processing
  - Provides the highest level of cyber and physical security controls

- **Low price, consumption based pricing model**
  - Consumption based pricing aligns with actual resource usage
  - Alternative to "tee shirt" size pricing

- **Secure and highly available enterprise class Infrastructure as s Service (IaaS)**
  - DIARMF accredited to Impact Level 5
  - Option to deploy Impact Level 6 environment

- **Cloud Foundry Platform as a Service (PaaS)**
  - Accreditation timeline for apps in weeks not months
  - Re-use across DOD

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Recap - Value Proposition and Unique Program Features

- **Leverages existing footprint for DoD workloads and knowledgebase of staff trained and familiar with VMWare**
  - Non-proprietary architecture
  - Easy migration for on-boarding
  - Easy migration for off-boarding

- **Faster onboarding when compared to other available DoD programs or CSPs**
  - Reduced time to ATO
  - VMware Compatible
  - Within DoDIN

- **Compute-level SLAs ensure mission success at the lowest TCO**

- **Only Cloud platform capable of running non-cloud native legacy applications, Crown Jewels, and National Security Systems**

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Q&A

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Backup Slides

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UNITED IN SERVICE TO OUR NATION

OMS.MIL Portal

- ## OMS Executive Overview

- ## OMS Business Flow and Onboarding Process

- ## OMS Service Catalog

- ## OMS Pricing

About On-Site Managed Services

Smartronix, in collaboration with its partners in the Dell Technologies family of businesses—including Dell EMC, Virtustream, and VMware have developed and delivered this uniquely dedicated solution, which includes Cloud Foundry, the industry-standard platform for cloud native applications. Dell EMC has provided essential compute, storage, and networking solutions. Virtustream has provided private on-premises enterprise-class IaaS technology, and VMware has integrated its infrastructure solutions into the service.

Smartronix's OMS solution, developed by the team, offers the DoD a major leap forward in application modernization while driving efficiencies and cost savings via a secure, fully managed, on-premises, cloud infrastructure. This DoD community cloud is capable of hosting Impact-Level 4/5 (IL4/5) NIPRNet workloads from within DoD datacenters; and it will eventually include Impact Level 6 (IL6) (SIPRNet), eliminating the need for a Cloud Access Point (CAP) and reducing latency for mission-critical workloads.

In a departure from traditional models, OMS provides "true" consumption-based billing IaaS via the Virtustream platform. OMS is built upon industry standards that leverage the existing knowledge base of the DoD cyber workforce. OMS also includes Cloud Foundry PaaS with the goal of application accreditation within weeks for re-use throughout the DoD. OMS has inherent physical security and cyber defenses provided by the DoD as well as enterprise-grade service level agreements (SLAs).

Authorized Users Links   **OMS Web Links**

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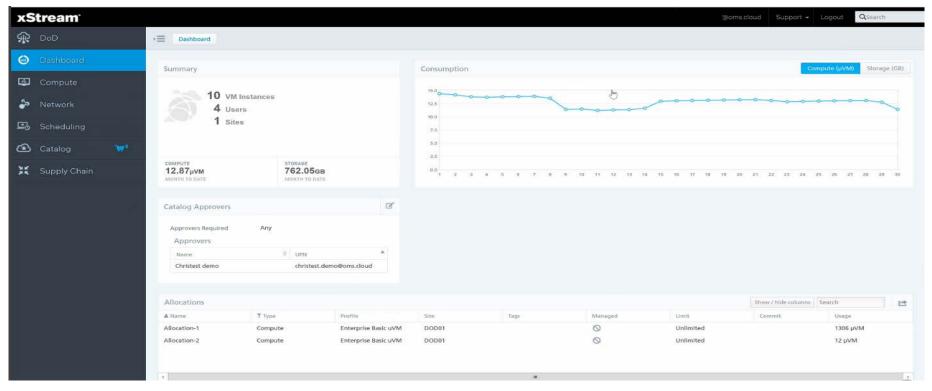
OMS Services Pricing

OMS Pricing

● Team Smartronix will provide OMS Infrastructure Services for the NIPRNet and the SIPRNet. The specifications for each Workload/Virtual Machine (VM) type are shown below. Prices for Infrastructure Services are based on a dual-site design with 99.95% availability.

● When SIPRNet becomes available, there will be a 35% uplift in cost per billing unit above the NIPRNet rate due to the security requirements necessary to deliver the SIPRNet service.

● While each table includes an individual reoccurring price, it will only be used for the determination of individual user's OMS configuration and for individual user billing purposes.

● The OMS ordering unit is composed of a user defined combination of Workload/VM, Storage, and Connectivity & Data Transfer.

● These tables provide the Recurring Costs for "Persistent" Workload/VM operating in the two designed data centers in five minute increments. Billing begins when a Workload/VM is created and ends when the Workload/VM is released. These tables will be utilized for the determination of the development of the detailed monthly invoice.

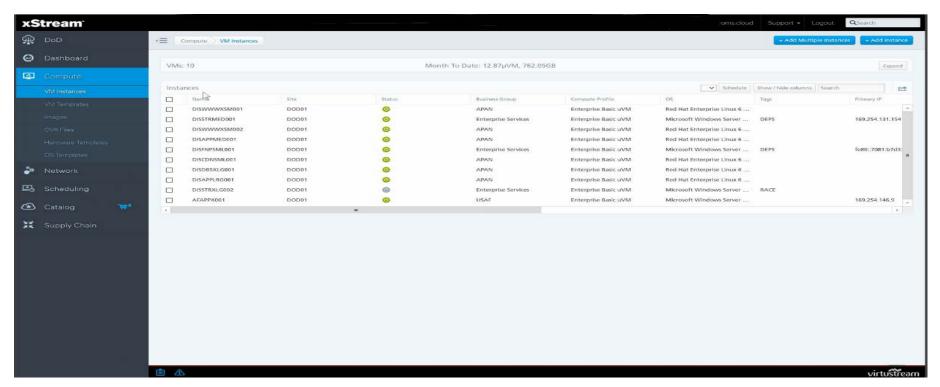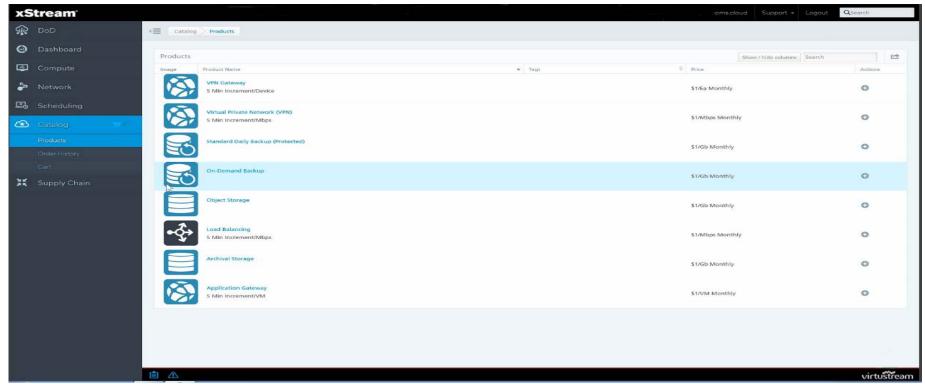| |
|---|
| CLIN 3 Infrastructure Services/NIPRNet/Base Year |
| CLIN 3 Infrastructure Services/NIPRNet/Opt Year1 |
| CLIN 3 Infrastructure Services/NIPRNet/Opt Year2 |
| CLIN 3 Infrastructure Services/NIPRNet/Opt Year3 |
| CLIN 3 Infrastructure Services/NIPRNet/Opt Year4 |
| CLIN 3 Infrastructure Services/SIPRNet/Base Year   - When Available |
| CLIN 3 Infrastructure Services/SIPRNet/Opt Year1   - When Available |
| CLIN 3 Infrastructure Services/SIPRNet/Opt Year2   - When Available |
| CLIN 3 Infrastructure Services/SIPRNet/Opt Year3   - When Available |
| CLIN 3 Infrastructure Services/SIPRNet/Opt Year4   - When Available |
| CLIN 4: PLATFORM AS A SERVICE (PaaS) |
| CLIN 5: MIGRATION SERVICES |

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OMS xStream Dashboard

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OMS xStream Environment

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OMS Services Catalog

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OMS Support Portal

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