Welcome to the
DISA Cloud Symposium
milcloud 2.0 Breakout Session

*Vendors named within are approved or under contract to provide specified services to DISA or DOD*
1315 - What is milCloud 2.0?
1330 - milCloud 2.0 Operations
  - Technical / Architecture
  - Onboarding
1400 - Break
1415 - m2 Portal Demonstration
1500 - milCloud 2.0 Support
  - Migration / Consulting Services
  - Other Services / Security
1530 - Roadmap and Next Steps
1545 - Q&A
1600 - End of Session
What is milCloud 2.0?

Caroline Bean (DISA)
Dan Liggins (CSRA)
Program IPT Co-Leads

December 12, 2017

Agile, Secure, Cost Effective

Enabling a more Lethal Fighting Force

Vendors named within are approved or under contract to provide specified services to DISA or DOD.
milCloud 2.0 Phase 1 (m2P1) Contract

Overview

• m2P1 will be accredited in accordance with the DoD Cloud Computing Security Requirement Guide (CC SRG) for Impact Level 5 workloads and data with Privacy overlay. Mission partner will be required to obtain ATOs via the RMF process for their applications/environments within milCloud 2.0.

• DISA holds the contract with the Cloud Service Provider (CSP)

• The Mission Partner will purchase and manage services through the CSP portal, but will supply funding through DISA
  ▪ MIPR (448 or 7600)
  ▪ Credit Card via PAY GOV

• CSP will generate monthly billing, and DISA will manage invoicing via the Financial Management Liaison Office (FMLO)
Features of MilCloud 2.0

Overview

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Agile, Secure, and Cost-Effective Technology

- Orchestration and Business Management capabilities provide a rich and fully capable IaaS customer experience

"Easy to Use" Infrastructure Management

- Continuous monitoring, updates, and upgrades with a “pay-as-you-go” catalog of IaaS and extended services.

Operational Resilience and Security

- Designed to meet FedRAMP HIGH and DoD Impact Level 5/6 baselines of security control requirements

Pool Resources Create Value

- Reduced facility and infrastructure costs
- Certified engineering and administration labor
- Reduce the impact of nonrecoverable downtime
- Maintain government security policy
- Inherited asset and vendor management
- Elastic and scalable server, storage, network
What is milCloud 2.0?

Overview

- Meets DoD requirement for cloud infrastructure services in its data center facilities
- Connects commercial cloud service offerings to DoD networks in a private deployment model
- Provides DISA mission partners the latest cloud technology at competitive prices without compromising performance
- Flexible infrastructure hosting services tailored for sensitive government systems
- On-demand applications and self-service technology that eliminate cost and complexity.

Initial Capabilities

- Pay for usage
- FedRAMP High, DoD Impact Level 5
- IaaS Solution on DoD premises
- Service availability: 99.9%
- Incident reporting and management system
- Workload transition into and out of commercial IaaS
- Fully supports CAC authentication
- Role-based account provisioning
- Self-management tools support billing, monitoring, reporting
- Metrics-based usage metering
- “Out of the box” reports, dashboards, and alarms
- Customizable to meet mission requirements

Provides Non-classified Internet Protocol Router Network (NIPR) infrastructure services as well as other services (to include enhanced features and transition services)
What’s New With milCloud 2.0?

**Metered Billing**
- Only pay when it is in a billable state
  - Servers - only when allocated and powered on
  - Storage - only when allocated to a server or shared pool
- Finer billing units
  - Servers - by the hour
  - Storage - by the GB per day
- Monitoring and alerting
  - Always know how much you are spending, and how much you have left

**Flexible funds utilization – Purchase Cloud “Units”**
- Provide funds based on your initial estimate
- Configure and reconfigure as needed – Servers, Storage, Core Services

**Funding**
- Mission Partner must provide funds before receiving service
- Mission Partner is responsible to ensure that sufficient funds are available
- Service may be terminated if available funds are exhausted
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Technical / Architecture

Dan Brimer (DISA)
Frank Sandau (CSRA)
NTS IPT Co-Leads

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IaaS Architecture Overview
Technical / Architecture

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DISA provided
- Two (2) Data Center locations (power, cooling, and floor space)
- Physical security and resilient facility infrastructure
- DODIN boundary protection (ICAP)
- Network Services (Replication Circuit and NIPR access)

CSRA provided
- Capitalized Infrastructure
- Remote management circuits
- Virtual Private Cloud and Virtual Machine capabilities
- Capacity Management
- Cloud Service Management

Diagram:
- MilCloud 2 Site A
- DISA Data Center
- ICAP
- NIPR
- data replication
- milCloud 2 Site B
- DISA Data Center
- ICAP
Technical /Architecture

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Solution Elements
Technical / Architecture

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**Orchestration & Business Management**
- Fully supported version of Apache CloudStack in Accelerite CloudPlatform
- CloudPortal Business Manager for rich and fully capable IaaS customer experience
- Kernel-based Virtual Machine (KVM) hypervisor

**Monitoring & Security Tools**
- Trusted suite of security tools
  - Tenable, McAfee ePolicy Orchestrator
- Robust infrastructure monitoring
- Dashboard integration
- Reporting visible to DISA auditors

**Physical Architecture**
- Full replication between two DECC sites enabling true HA / DR
- Separate compute for core, management, and customer VPCs
- Guaranteed 2Ghz vCPUs, 500+ IOPS for Tier 1, and 40+ IOPS for Tier 2/3 storage
- DECC proven, and accredited hardware components
- Xeon E5-2690v2 3GHz, 10 Core Processors

**KVM Hypervisor**
- Hypervisor and below operations are controlled by the milCloud 2.0 team and are generally transparent to customers
- Proven tools and processes provided for to import VMWare or other virtual machine image formats

**DR / COOP**
- milCloud 2.0 has an active/active two zone architecture allowing customers to build applications with HA, DR, and COOP capabilities
- milCloud 2.0 has Active/Active replication for infrastructure services and customer data natively enabled

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**Solution Elements**
**Technical / Architecture**

**ServiceNow:** Business Portal / Orchestration
**CloudPlatform:** Provisioning Portal
**KVM:** Kernel-based Virtual Machine
**Infrastructure Service Portal**

**Tenable:** Vulnerability / Config Scanner
**McAfee:** End Point Protection
**Nagios:** Network Traffic / Security Monitoring

**Physical Architecture**

**DISA DECC**
Tinker AFB

ARC-P Customer (IOC)
- 60 3GHz pCPU cores
- 1152 GB of DDR3 RAM
- 37.5TB of Storage

ARC-P Management
ARC-P Core

**DISA DECC**
Maxwell AFB

ARC-P Customer (IOC)
- 60 3GHz pCPU cores
- 1152 GB of DDR3 RAM
- 37.5TB of Storage

ARC-P Management
ARC-P Core

Active/Active Replication
99.9% availability & 99% DR capability
On-Boarding

Gillian Busick (DISA)
Amy Firestone (CSRA)
Business IPT Co-Leads

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Acquiring Cloud Services
Onboarding

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**Review Options and Estimate Costs**
- milCloud 2.0 Service Catalog
- Estimator

**Obtain Funding in your Organization**
- Identify Primary POCs for Your Project
- Choose Your Funding Option
- Opt for Engineering Assistance in Transition if desired

**Submit an Order**
- Once processed milCloud 2.0 service team will provide access and instructions for provisioning

**Before Provisioning, Register in SNAP**
(see slide 16)
### Funding Mechanisms

- Credit Card: Quickest Method
- Funding Document (MIPR): milCloud provides tools to complete

### Allowable Types of DoD Funding or LOAs

- Operations and Maintenance (O&M)
- Research, Development, Test and Evaluation (RDT&E)
- Procurement
- Defense Working Capital

For current rates or a complete services catalog, contact **milCloud@csra.com**

<table>
<thead>
<tr>
<th>Orderable Item*</th>
<th>vCPU</th>
<th>Mem GB / Bundled Tier 1 Disk GB</th>
<th>Hourly Rate**</th>
<th>Monthly Rate**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compute: Medium VM - Windows</td>
<td>2</td>
<td>4 / 75</td>
<td>$0.07</td>
<td>$54.4</td>
</tr>
<tr>
<td>Compute: Micro VM - Windows</td>
<td>1</td>
<td>1 / 75</td>
<td>$0.05</td>
<td>$34.5</td>
</tr>
<tr>
<td>Compute: Medium VM - Red Hat</td>
<td>2</td>
<td>4 / 75</td>
<td>$0.11</td>
<td>$81.3</td>
</tr>
<tr>
<td>Compute: Micro VM - Red Hat</td>
<td>1</td>
<td>1 / 75</td>
<td>$0.06</td>
<td>$48.0</td>
</tr>
<tr>
<td>Security: Patch Management - Windows</td>
<td>1</td>
<td>1 / 75</td>
<td>$3.9</td>
<td></td>
</tr>
<tr>
<td>Security: Patch Management - Red Hat</td>
<td>1</td>
<td>1 / 75</td>
<td>$3.8</td>
<td></td>
</tr>
</tbody>
</table>

* This is a subset of orderable items

** These rates have been rounded and are based on Nov 2017 rates. Rates subject to change

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For less than $2,000, consumers could buy:
- 8 hours of consulting to support migration
- 12-months of hosting two medium-sized virtual machines
- patch management services add-on

When you consider that virtual machines can be scaled up or down with hourly billing available, the value of hosting solutions with milCloud 2.0 is significant.
Service Catalog and Getting Assistance

Onboarding

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<table>
<thead>
<tr>
<th>Product Family</th>
<th>Description</th>
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<tbody>
<tr>
<td>Compute</td>
<td>Virtual Machine (NIPR) Services</td>
</tr>
<tr>
<td>Storage</td>
<td>Block / Object Storage and Backup Services</td>
</tr>
<tr>
<td>Network</td>
<td>Routable IP and VPN</td>
</tr>
<tr>
<td>Security</td>
<td>Patch Management, Logging, and Vulnerability Management</td>
</tr>
<tr>
<td>Other Services*</td>
<td>Security, Systems Administration, Platform-as-a-Service and Software-as-a-Service</td>
</tr>
<tr>
<td>Transition Services</td>
<td>Migration, application rationalization, agile development, and infrastructure strategy support</td>
</tr>
</tbody>
</table>

*Other Services are planned in the milCloud2 roadmap, and many will be offered when milCloud2 is publicly available.

The milCloud 2.0 Service Catalog is available as part of our Business Portal and Cost Calculator

https://csra.com/milcloud

http://disa.mil/Computing/Cloud-Services/MilCloud
SNAP Registration
Onboarding

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- Register for account outside milCloud at https://snap.dod.mil/gcap/home.do
- Complete 2875 for SNAP access (IA training must be current)
- Submit request for SCCA (ICAP) Service at https://disa.deps.mil/ORG/SD/SD8/SCCA/MissionPartners/SitePages/Home.aspx
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Onboarding Overview

1. Planning & Estimation
2. Secure Funding with ease
3. Payment Submission & Approval
4. Self Service Provisioning

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**Demonstration**

**Business Portal**
Pricing Calculator, Financial Management, Service Procurement

**Provisioning Portal**
Infrastructure Management & Administration
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Migration / Consulting

Clinton Carr (DISA)
Charles Sheridan (CSRA)
Transition IPT Co-Leads
Damon Bramble (CSRA)

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### Considerations

#### Migration / Consulting

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<table>
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<tr>
<th>Network Traffic Flow</th>
<th>Applications or Infrastructure Not Ready</th>
<th>Service Desk Operations</th>
<th>Network Scaling</th>
</tr>
</thead>
<tbody>
<tr>
<td>• East/West and North/South network traffic within the cloud environment(s) need to be considered and architected for each tenant and workload to avoid potential latency and maintain consistent security boundaries</td>
<td>• Attempting to migrate applications or architectures that are not optimized or consistent with the desired cloud environment can cause unexpected problems</td>
<td>• Transforming to cloud hosting may involve changes to helpdesk operations and personnel to ensure issues are rapidly resolved across application and infrastructure tiers</td>
<td>• Servers and network devices may not be properly configured to handle large data transfer traffic that is typically related to cloud migrations</td>
</tr>
<tr>
<td>• Customers should consider impacts of network traffic flows and the introduction of additional security boundaries to their architectures</td>
<td>• Customers should be conducting design reviews and application rationalization prior to cloud migration</td>
<td>• Customers should be prepared for potential customer service calls and begin any migration process with customer outreach</td>
<td>• When migrating large workloads to the cloud, these should be planned during off-peak hours and planning should be conducted to minimize potential network impact</td>
</tr>
</tbody>
</table>
### Migration Support

**Migration / Consulting**

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<table>
<thead>
<tr>
<th>Planning for Success</th>
<th>Application Rationalization</th>
<th>Design &amp; Development</th>
<th>Change Management</th>
<th>Security &amp; Validation</th>
<th>Migration</th>
<th>Operationalizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>We build strategies to help match consumer needs to on-premise or hybrid cloud strategies that account for a wide range of constraints typical among government consumers.</td>
<td>Often the benefit of migrating to milCloud 2.0 can be augmented by ensuring consumers manage a standardized application portfolio focused on the mission outcomes.</td>
<td>With CMMI certified agile development teams, we can support performance optimization, scalability, interoperability, and management of cloud-based solutions and host development environments for continuous innovation.</td>
<td>Our OCM experts help people planning and process changes to better focus the workforce on an organization’s cloud future.</td>
<td>The enhancement security of the milCloud 2.0 environment includes ensuring sensitive systems maintain data integrity and protect information – our certified security experts can work with security teams to ensure applications are resilient in both architecture and operations.</td>
<td>Our migration experts will plan and execute the inventory, transfer and validation of data and systems.</td>
<td>With proven set of tailorable standard operating procedures for replication, backup, disaster recovery, continuity of operations, information assurance, and helpdesk, we ensure the management of milCloud 2.0 services aligns with the specific needs of consumers.</td>
</tr>
</tbody>
</table>

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Other Services

Dan Brimer (DISA)
Other Services IPT Co-Lead
Damon Bramble (CSRA)
Matt McFadden (CSRA)

December 12, 2017

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milCloud 2.0 – Other Services

• IOC Offerings Jan 2018
  ▪ milCloud+ (provided by DISA)
    • DISA offering similar to milCloud 1.0
    • System Administration and OS maintenance
    • Optional fee for App and DB support
  ▪ Engineering Services (provided by CSRA)
  ▪ CSSP Services (provided by DISA)
    • Endpoint Security and asset scanning (HBSS, ACAS)

• On the Horizon
  ▪ PaaS
    • Red Hat OpenShift by CSRA
  ▪ Security as a Service
### Other Services – CSRA provided

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<table>
<thead>
<tr>
<th>Product Families</th>
<th>High-Level Description</th>
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</thead>
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<tr>
<td>IA Operations</td>
<td>Regulatory / STIG</td>
</tr>
<tr>
<td>Identity Management</td>
<td>Application Identity Management and Provisioning (IAM, PKI, Provisioning)</td>
</tr>
<tr>
<td>Configuration Management Service</td>
<td>By Endpoint, By Sensor, By Network</td>
</tr>
<tr>
<td>Systems Administration</td>
<td>Supporting CENTOS, Linux, Windows Server, Windows 10</td>
</tr>
<tr>
<td>Database Administration</td>
<td>Supporting SQL, Oracle, and NOSQL</td>
</tr>
<tr>
<td>Web Server Administration</td>
<td>Supporting Apache, IIS, and Tomcat</td>
</tr>
<tr>
<td>Future Services</td>
<td>Additional services will be provided over time to meet customer demand</td>
</tr>
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Roadmap / Next Steps

Caroline Bean (DISA)
Dan Liggins (CSRA)
Program IPT Co-Leads

December 12, 2017

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Roadmap / Schedule

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**Baseline**
- NIPR IaaS
- Other Services
- Consulting
- Portal R1 (Agile)

**Innovation Cycle 1**
- Expanded IaaS
- PaaS
- SaaS
- Modernization / Scale
- Expanded Other Services

**Innovation Cycle 2**
- Expanded IaaS
- Expanded PaaS
- Expanded SaaS
- Modernization / Scale
- Expanded Other Services

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**Scale with NexGen Compute / Storage Solutions**

**Expand PaaS, SaaS Offerings**

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**Continuous Innovation**
- Development Environments
- Nutanix
- BMC Remedy
- Salesforce
- AWS
- Oracle Cloud
- Machine Learning
- ServiceNow

Microsoft Azure
- Human Capital Systems
- Business Intelligence
- Microsoft Hype-V
- Red Hat

NetApp
- DELL EMC
- SAP HANA

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**Note:** Schedule and Offerings subject to change based on Consumer Demand
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UNITED IN SERVICE TO OUR NATION

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