

Business & Enterprise Systems



DAFITC 2023

Scaled Multi-Tenant Low Code Application Platforms (LCAPs) in Cloud One



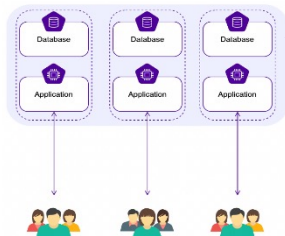
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AFLCMC/GBQD

28 – 30 August 2023

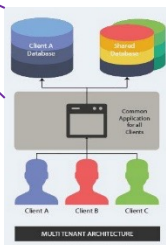


Conceptual Vision

Multi-Platform, Multi-Tenant Environments w/Integrated Services



- Multiple Vendors



- Managed Platforms in Cloud One

Rapid Acquisition Pathways

- Development
- Cloud Support
- Licensing



- Multi-Award IDIQs
- A&AS Resources

Enterprise Governance



- Strategic Alignment
- Risk Management



- Resource Management
- Performance Management
- BCAC Optimization

Centralized Support Services



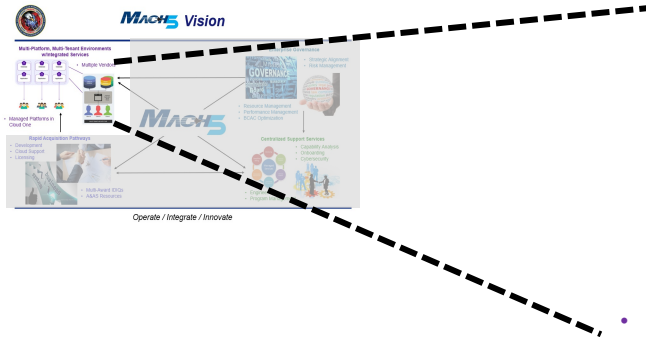
- Engineering
- Program Management



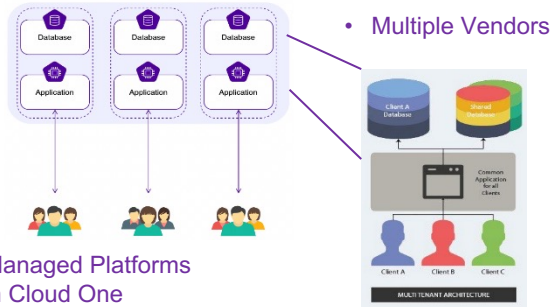
MACHS



Standardized Enterprise LCAPs



Multi-Platform, Multi-Tenant Environments w/Integrated Services



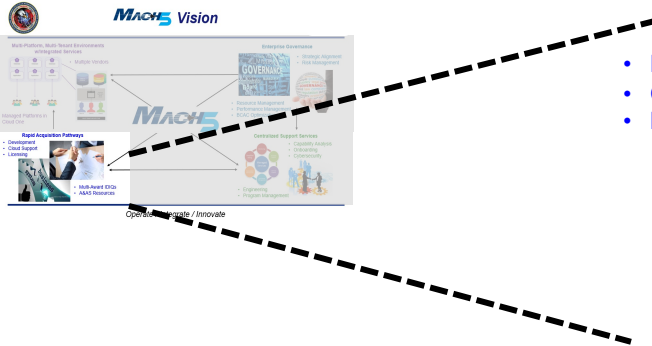
PRIMARY SERVICE

Implement standard LCAP platforms in Cloud One; assist functional customers in targeting, delivering and integrating capabilities on enterprise LCAP platforms using standard engagement processes.

- **Multi-Platform and Multi-Tenant Environments in Cloud One – DEV (IL2), NIPR (IL4 / IL5) and SIPR (IL6)**
 - Web Application Firewall (WAF) protection / DISA Global Content Delivery Service (GCDS) boundary protection
 - Multiple vendor offerings based on customer demand
- **Fully accredited platforms w/Continuous ATO**
 - Customers accredit application vs. entire platform; massive security control inheritance
- **Native and Common Service integration between AWS and Mach5 LCAPs at the enterprise level**
- **Reusable Component Library (code reuse)**



Rapid Acquisition Pathways



Rapid Acquisition Pathways

- Development
- Cloud Support
- Licensing



- Multi-Award IDIQs
- A&AS Resources

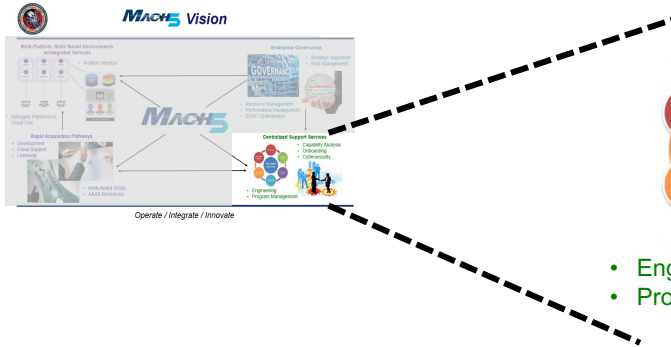
PRIMARY SERVICE

Deliver standardized contract vehicles that allow for rapid acquisition of services supporting LCAP platform and functional customer capability needs

- **Standardized contracting vehicles – rapid task order awards vs. new contract actions**
 - Conduct extensive market research to exploit existing A&AS (EPASS), SB (SBEAS) and DMS SME vehicles
 - Implement new IDIQ vehicles, like NASA SEWP, for development, sustainment, operations and support, licensing, help desk support, etc.
 - May include SME support for BCAC processes/early acquisition services
- **Build service catalog of all contract services available to customers; automate service request process**
- **Develop implementation model and marketing/strategic communication program**



Full-Spectrum Customer Support



Centralized Support Services



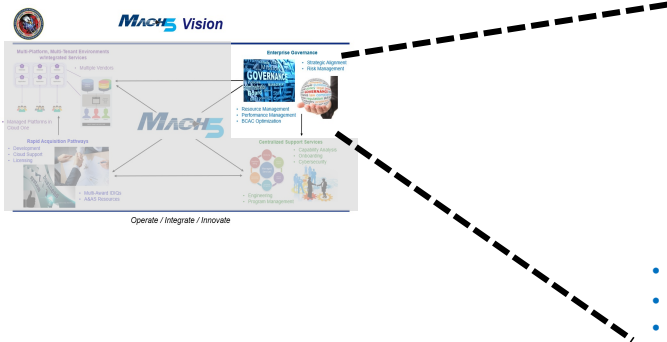
PRIMARY SERVICE

Provide a wide range of customer support services to assist customers in planning for and deploying capabilities to LCAP solutions.

- Centralized and standardized customer support functions supporting LCAP implementation and sustainment
 - SMEs supporting many disciplines including PM, engineering, finance/cost estimation, cybersecurity, etc.
 - SME support for BCAC processes/early acquisition services and compliance actions (CCA, etc.)
 - Operations and Support (O&S) / sustainment planning (help desks, support tools, financial support, etc.)
- New low code capability analysis / evaluation / suitability assessments
- Build service catalog of all services available to customers; automate service request process



Enterprise Governance



Enterprise Governance



- Strategic Alignment
- Risk Management



- Resource Management
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- BCAC Optimization

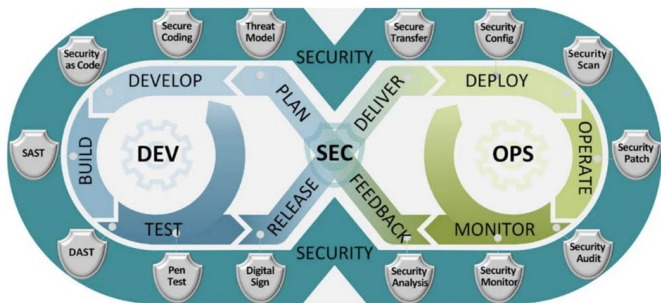
PRIMARY SERVICE

Implement policy and governance practices for the management of enterprise LCAP capabilities; alignment with BMA strategies and driving adoption across the AF enterprise (where it makes sense).

- **Early Acquisition Services:** BCAC Phase activities, deliverables and Authority to Proceed (ATP) decision points; BCAC tailoring and process optimization to fit each need
 - BMA Future State alignment and enterprise capability adoption; integrated with Portfolio Boards
- **Optimized BCAC Execution:** Streamlined/tailored policy, compliance and procurement activities for LCAPs
- **Enterprise Platform Governance:** Platform configuration guardrails, change control, product integration, master configuration management, etc.
 - Risk identification and mitigation planning
- **Policy Implementation and Executive Oversight – Resource and Performance Management**
 - Clear lines of authority; fully vetted roles and responsibilities



ATO Inheritance Approach



ATO Level 1



USAF GovCloud - Cloud One IaaS

- Cloud Infrastructure as a Service
- AWS, Azure, AFNET, DODIN
- Inheritable IaaS-level controls
- No mission data or logic
- AO: Rapid Cyber

ATO Level 2

Cloud One / TPF: PaaS

- AWS Platform Service
- Appian COTS Solution
- Targeted AWS services
- Inheritable PaaS-level controls
- No mission data or logic
- AO: tbd

ATO Level 3

App Residing on TPF w/ data:
Mission App 1
AO: tbd

App Residing on TPF w/ data:
Mission App 2
AO: tbd

App Residing on TPF w/ data:
Mission App 3
AO: tbd

- Business logic
- Mission data
- Functional AOs
- App-unique controls

This approach would include three tiers of certification:

1. The Cloud One Tier: inheritable controls that are not business-specific.
2. The Mach5 Tier inherits the C1 controls above and adds an additional layer of platform level controls – also not business-specific
3. The Application Tier: Inherits both 1 & 2 controls, then adds the functional ATO

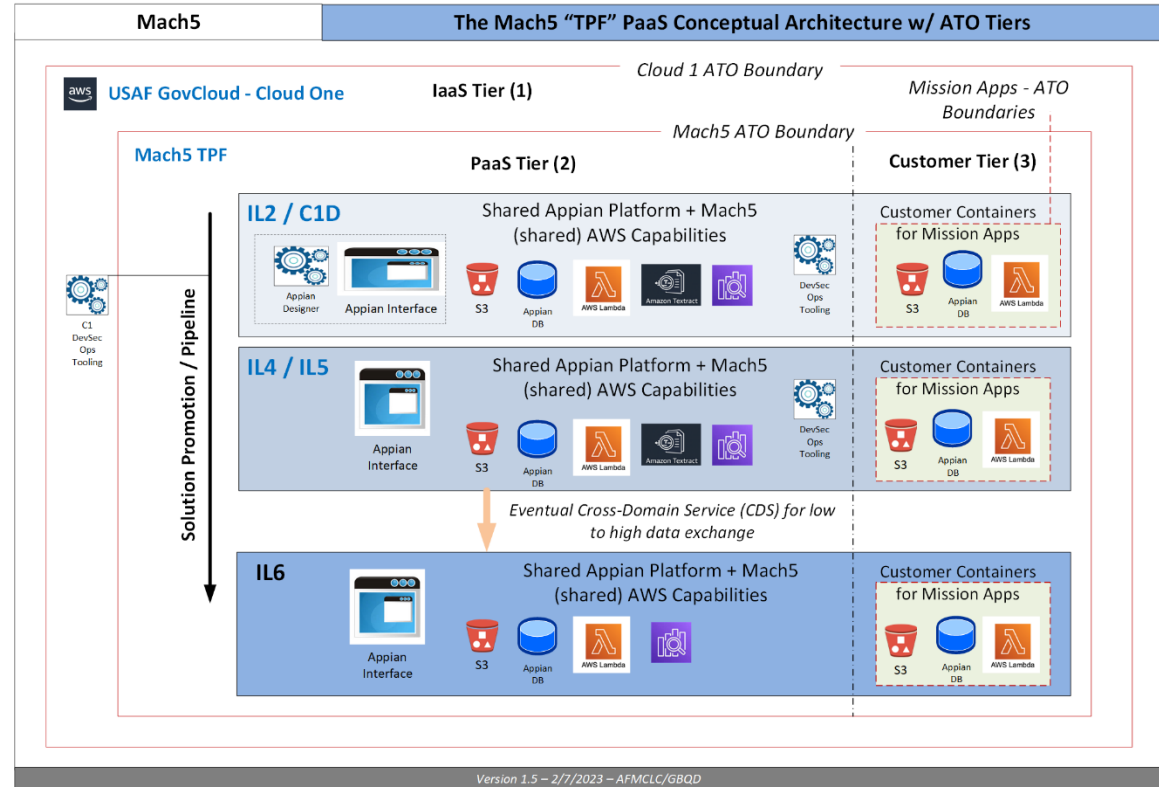
AWS Hosted Program 1 – Mission Application
(level 2 & 3 combined, additional ATO complexity)

Azure Hosted Program 1 – Mission Application
(level 2 & 3 combined, additional ATO complexity)



Simplified Architecture

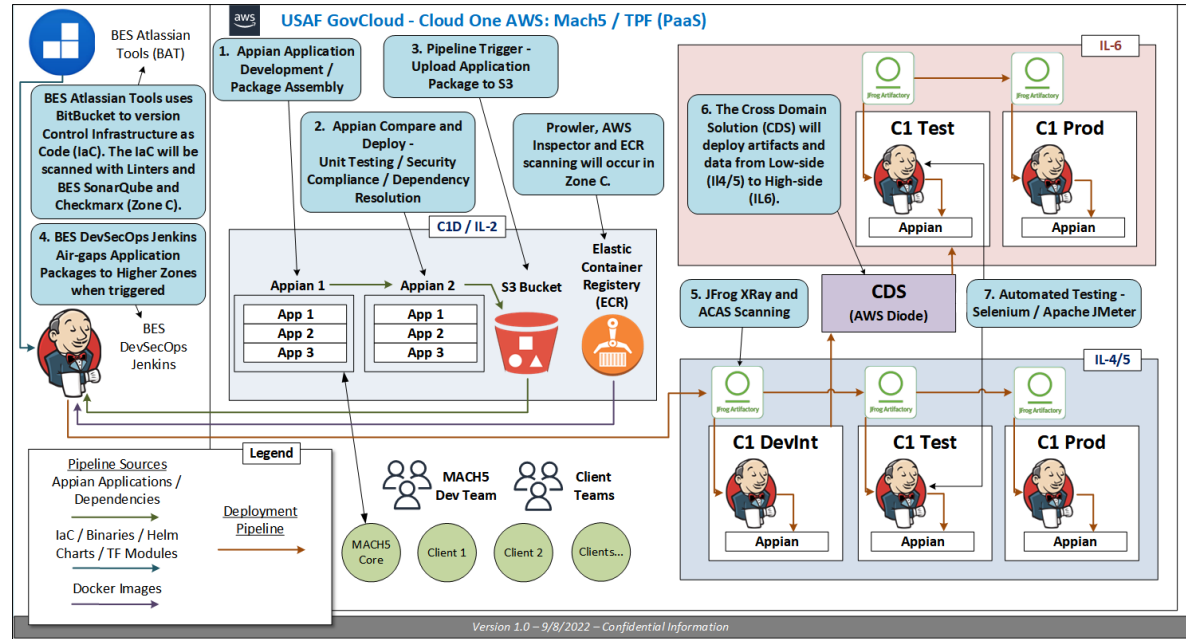
This simplified architectural view shows the conceptual separation between PaaS Tier (2) services and both Cloud One IaaS Tier (1) and Mission Application Tier (3) services





DevSecOps Pipeline

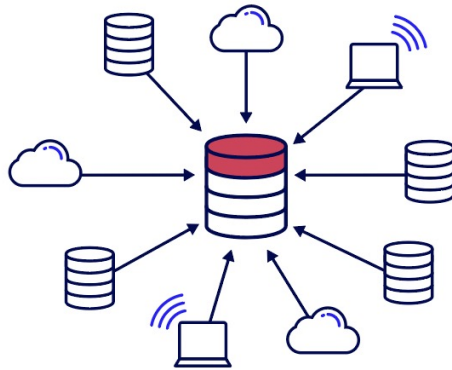
This simplified view shows the DevSecOps Pipeline being utilized to facilitate automation of code promotion to the development, integration and production environments in Cloud One



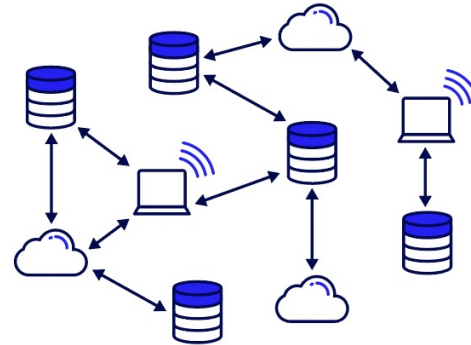


Data Fabric Capabilities

- Utilizing the Appian data fabric, Mach5 will be able to connect and integrate disconnected databases & datasets
- Example connections would be AF Data lakes, Oracle Databases or any API capable site
- Benefit: single common language to interact with data once integrated



Stop Collecting

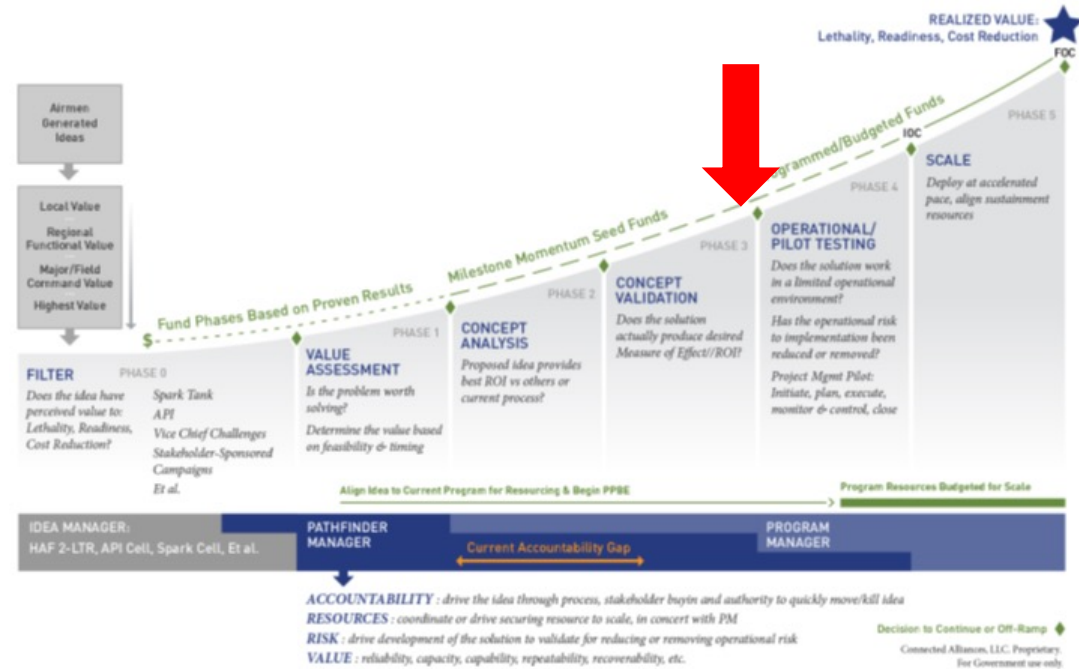


Start Connecting



Citizen Development: any Airman can code

- Mach5 Platform would bridge the gap between Automation and SaaS/Custom solutions
 - Not everything can be accomplished with a bot or requires a stand-alone system
- The intent of the Citizen Development capability in Mach5 is to put innovation in the hands of the Airman closest to the problem.
- Currently in validation phase (3/5); funding required to move into pilot phase





Mach5's Holodeck Concept

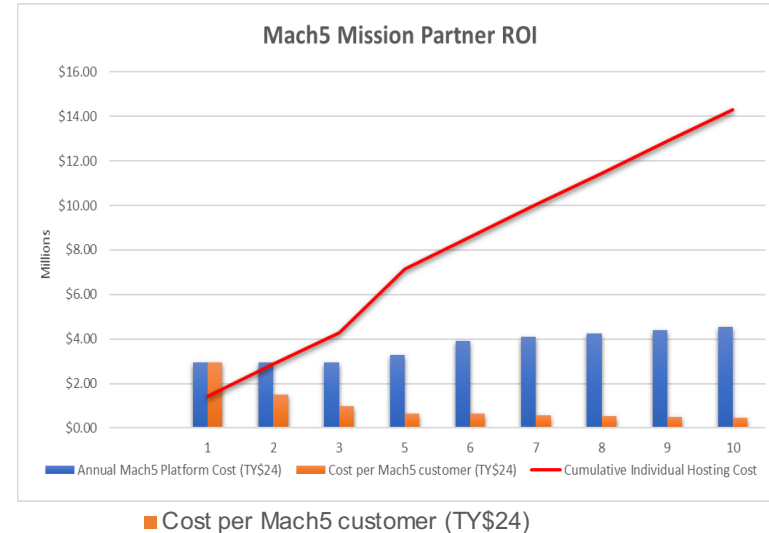
- **Mach5's proposal targets 5 initial customers**
- **Proposal is currently unfunded, but if the 5 Holodeck initiative partners are identified then the efficiencies will improve everyone's likelihood of funding**
- **Customer Benefits:**
 - **Access to Appian developer licenses**
 - **Access to Appian developer training**
 - **Appian professional development support**
 - **Production deployment to a fully accredited Appian platform on Cloud One**



Benefits



- Mach5 is a cost-effective solution for application modernization – aligns with Operational Imperative 7
- Mach5 meets AFMC strategy to deliver integrated capabilities via DAF Enterprise Solutions (LOE 1, Objective 3)
- Centralized government managed cloud hosting vs. one off customer hosted solutions
- Provides inheritable controls to significantly streamline the process of obtaining an Authority To Operate (ATO) for mission capabilities
- Containerized code facilitates rapid implementation of new cloud environments in days vs. months



Total cost savings for 10 small to medium applications ~\$9.7M/yr



Is your Requirement A Good Fit For Mach5?



■ Critical Solution Requirements:

- **Deliver Functionality Rapidly**
- **Automate Complex Business Processes (Case Management)**
- **Support Business Processes that cut across Organizational Groups, Teams**
- **Create Unified User Experience Across Systems**
- **Enable Target Users to Access Multiple Systems**
- **Access Data From or Send Data to Legacy Systems**
- **Engage or Inform Multiple Stakeholders Across Workflows Lifecycles**
- **Ability to Perform Mobile Data Entry, Review, or Approval**

■ Contact the Mach5 Team for a fit gap analysis of your requirements



Wrap-Up



- Mach5 is poised to become the initial enterprise LCAP of choice on Cloud One
 - Modernizes IT capabilities in support of Operational Imperative #7
 - Fully integrated in DAF Cloud One
 - Centralized enterprise platform management
 - Enables Airman Citizen Development
 - Time/cost to deliver capability could be reduced ~50% compared to conventional development

- Mach5 is ready to on-board new customers today; contact us to set up and engagement!
 - AFLCMC.GBQ.WP-Mach-5@us.af.mil
 - Business and Enterprise Systems Booth (366)





QUESTIONS?