



Defense Information Systems Agency

A Combat Support Agency

DISA Cloud: RACE (IaaS) and Platform as a Service (PaaS)

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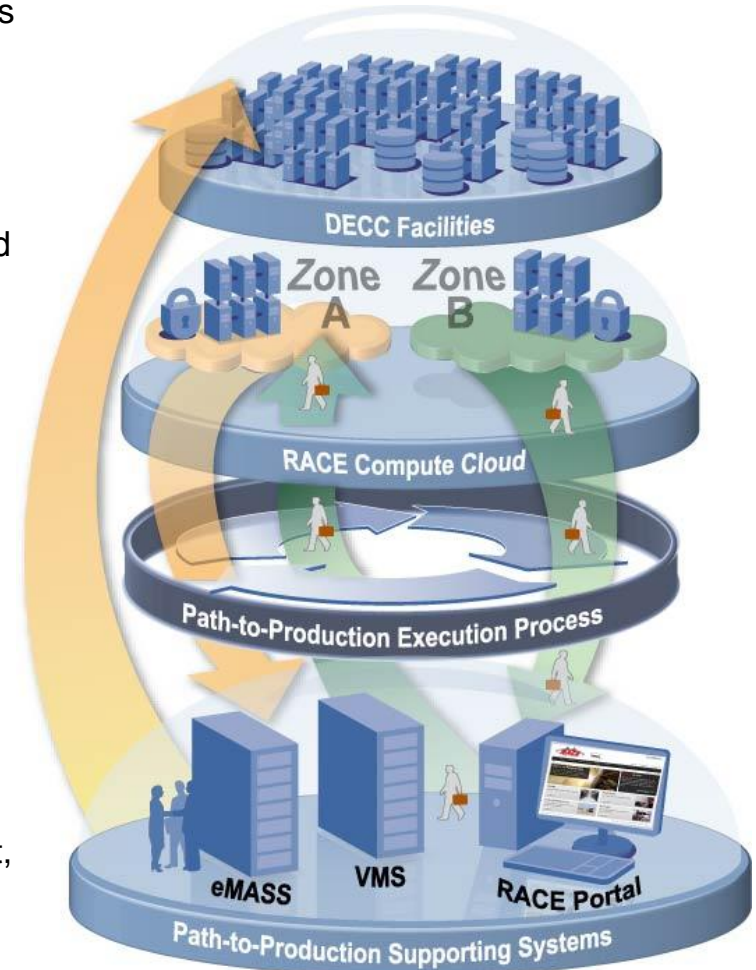
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RACE Overview

- **Infrastructure as a Service (IaaS)**
- **NIPRNet and SIPRNet Networks**
- **PKI Authenticated Access Control**
- **Test and Development environments**
- **Virtual Servers with Developer/Application STIG settings**
- **Accelerated Path to Production**
- **Self-service Portal for Ordering and Project Management**
- **Fund with MIPR or Credit Card**
- **Virtual Servers**
- **Variable CPU/RAM/Storage**

RACE P-T-P Solution Summary

- **Path-to-Production Execution Process:** The execution process is a re-engineered and optimized workflow
 - Specified Entrance Criteria must be met to ensure compatibility with the process, such as standard ports
 - A DISA CIO approved consolidated workflow.
 - The 'new' process still retains existing supporting systems and practices to minimize organizational change
 - Governance and oversight built into processes and workflow
- **eMASS:** The Enterprise Mission Assurance Support Service (eMASS) is deployed to inject optimization:
 - Provides an advanced workflow management tool, streamlining the C&A process for RACE Customers
 - Supports inheritance of DIACAP controls from RACE computing environment
 - Automates the distribution of select DIACAP artifacts
- **Enhanced RACE Portal:** A re-designed RACE portal is implemented providing the ability to purchase Development, Test, or production systems and request promotion of RACE environments, while following the P-T-P process flow
 - Deploys pre-STIG'd, IAVA compliant VOEs for Development and Test operating environments



PaaS Overview

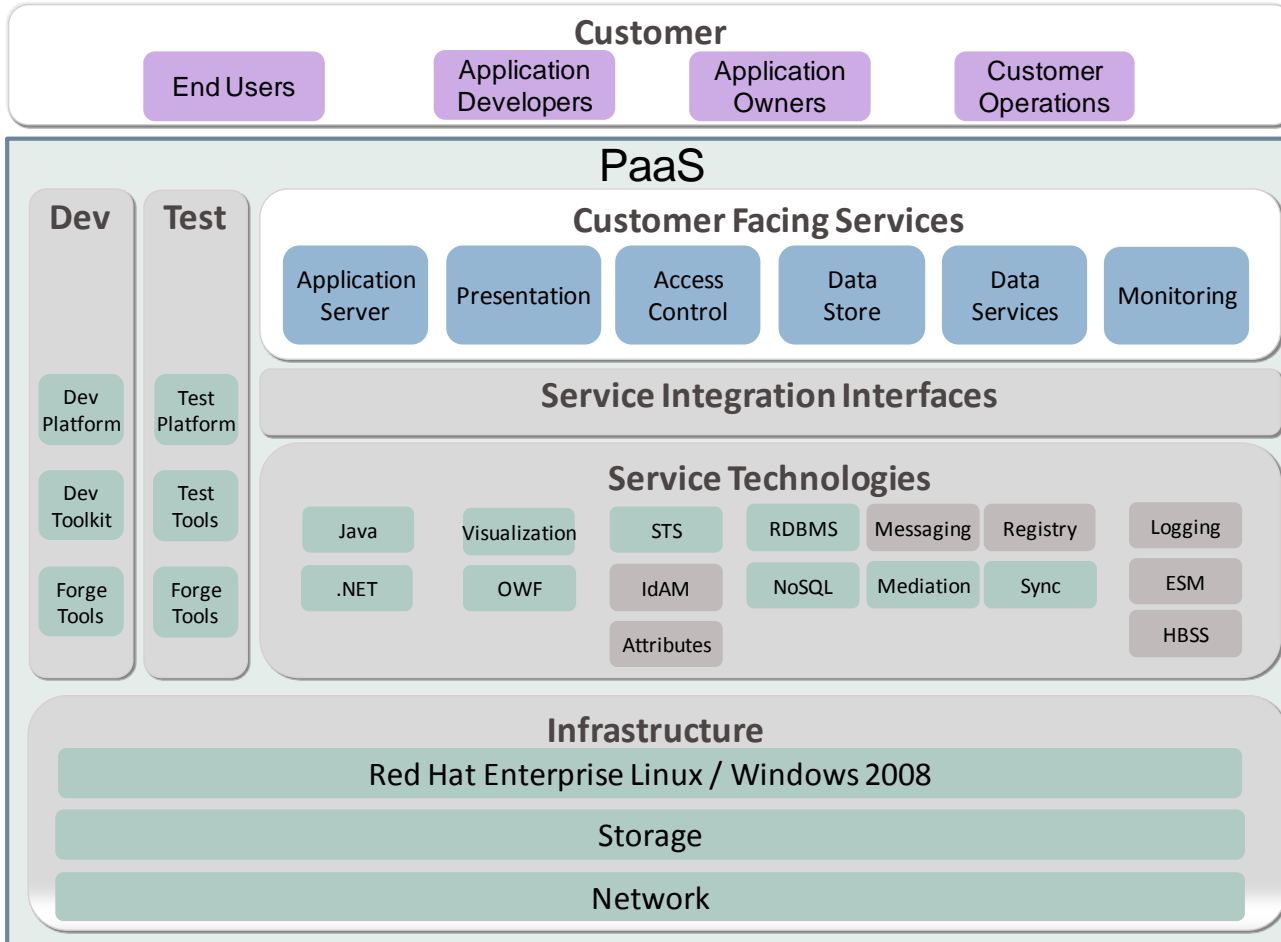
- **DISA's Platform as a Service (PaaS) is a transformational approach to delivering web application and service support under a commercial-style cloud services model to all of DoD**
- **Customers of this service will only be responsible for providing fully developed and tested code in compliance with the PaaS standards**
- **Sustainment of the PaaS service will rest solely upon DISA**
- **Currently operating under an IATT, with (I)ATO expected by March 2012**
- **PaaS:**
 - **Facilitates DoD's transition to a net-centric, service-oriented information environment**
 - **Provides a robust set of features and SOA services to enrich the customer's application**
 - **Provides secure standardized development test and production environments**
 - **Enables application developers to write and deploy applications into a cloud-based platform with greater agility and effectiveness**
 - **Implements a streamlined path to production process to speed the delivery of new mission capabilities**



PaaS requirements are converging

- **The Navy has developed a portable platform service based on JBoss, and is interested in DISA providing a hosting environment**
- **Teaming with Army to develop a single PaaS (recent development)**
 - **Accelerate delivery of .NET capability in PaaS**
 - **Accelerate Army datacenter consolidation and modernization efforts**
- **Teaming with USTRANSCOM to accelerate capability delivery (recent development)**
- **Implement “Cloud Computing” Platform as a Service (PaaS) is an initial capability of the DoD Cloud Computing Strategy and is in alignment with 5 near-term DoD IT Enterprise Strategy and Roadmap priorities**

Web PaaS Framework



Tenets

- Standards-based
- Maximize Open Source Software
- Vendor Neutrality
- Maximize Enterprise Services
- Portable
- Elastic and Scalable
- Customer Focused

Features

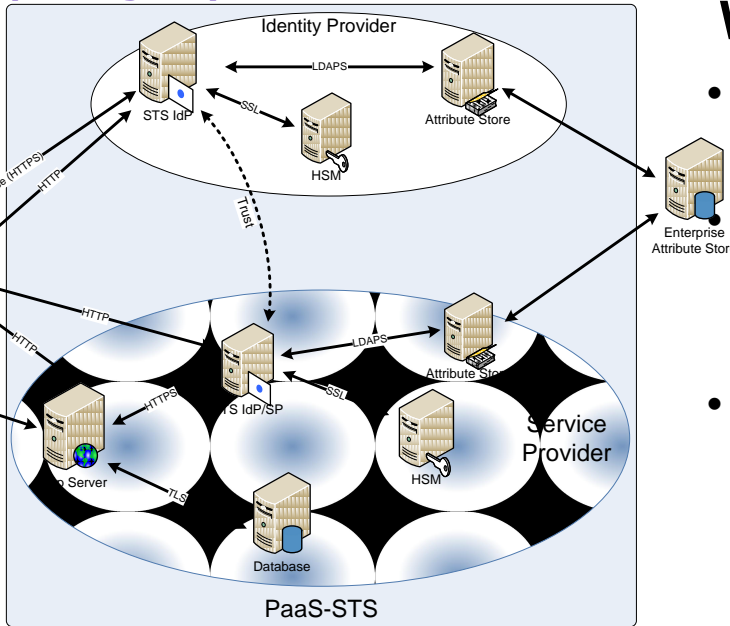
- Continuity of Operations baked in
- Shared situational awareness
- Self-service
- Utility billing
- Rapid path to production
- Pre-integrated Enterprise Services
- Conforms to DOD security standards
- Type accredited



Web PaaS vs Web PaaS-STS

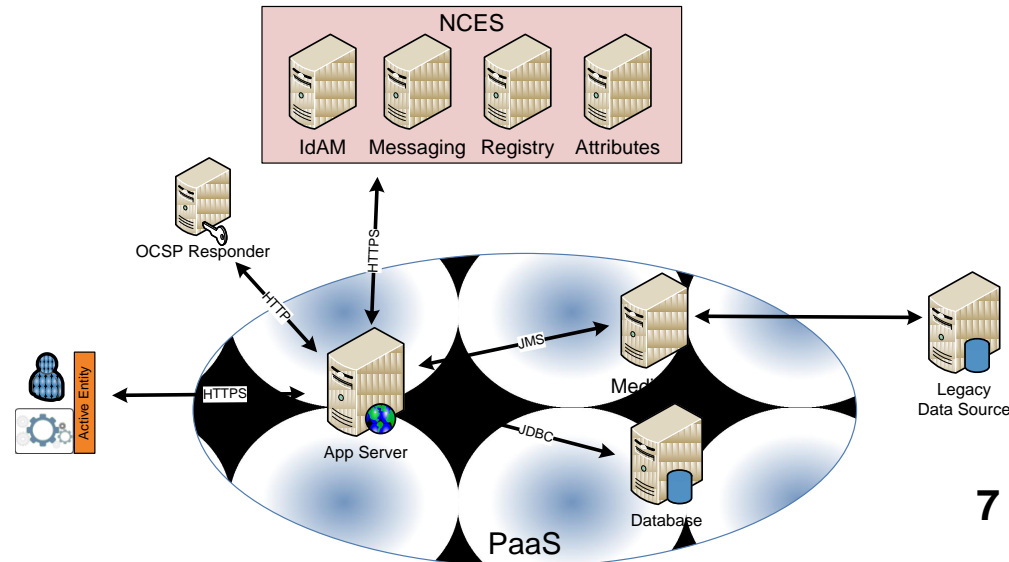
Web PaaS-STS

- Provides execution environment for web apps and services
- Requires end-to-end, bi-directional digital cert authentication and SSL/TLS for all communications
- Uses Security Token Services (STS) for authorization



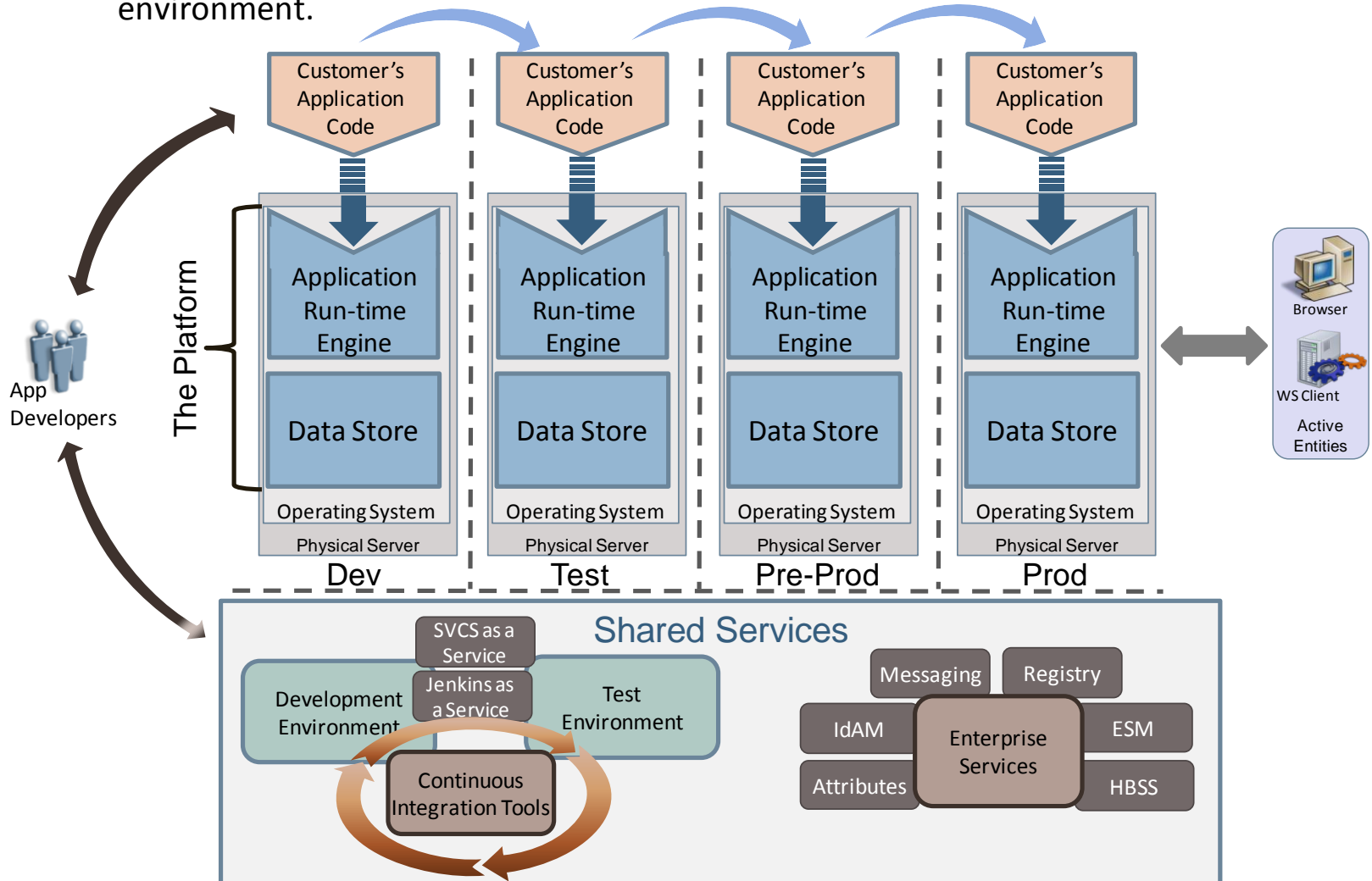
Web PaaS

- Provides execution environment for web apps and services
- Integrates with NCES for enterprise SOA services
- Includes protocol mediation services to legacy data sources



PaaS Path to Production

DISA's Web PaaS provides a cost effective and secure DoD enterprise capability for customers to develop, test, deploy, and manage the applications in a cloud environment.



How to get started with PaaS

- Download the PaaS SDK to start development
- PaaS SDK available under “File Releases”
 - <https://software.forge.mil/sf/projects/javapaas>
- PaaS Dev environment in RACE available Mar 2012
- Web PaaS Test environment available Mar 2012
- To take advantage of this service, contact PaaS@disa.mil
- PaaS Team will be at the AFCEA conference today thru Thursday. Please let us know if you would like to schedule some time to discuss PaaS.



RACE Pricing

Configurations	CPU	Mem	Monthly Fee
1 virtual core / 1 GB virtual RAM	1	1	\$ 467
1 virtual core / 2 GB virtual RAM	1	2	\$ 519
1 virtual core / 3 GB virtual RAM	1	3	\$ 804
1 virtual core / 4 GB virtual RAM	1	4	\$ 1,557
2 virtual cores / 2 GB virtual RAM	2	2	\$ 1,557
2 virtual cores / 3 GB virtual RAM	2	3	\$ 1,790
2 virtual cores / 4 GB virtual RAM	2	4	\$ 2,179
4 virtual cores / 4 GB virtual RAM	4	4	\$ 2,838
4 virtual cores / 8 GB virtual RAM	4	8	\$ 3,225
Optional Storage : 10 GB increments up to 1 TB total storage per server	\$1.759 per GB / month		\$ 17.59/ 10 GB/mo

Base configuration includes:

- Base Storage (60GB system / 40GB data)
- 1 – 4 virtual CPUs
- 1 – 8 GB RAM
- Operating systems
 - Linux Red Hat – v5.x or 6.x *
 - Windows 2003 – 32 or 64 bit
 - Windows 2008 – R2 64-bit
- Additional optional storage available up to 1 TB per server

* RPMs for Apache, MySQL, Perl included but not installed



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PaaS Catalog

PaaS Connection Charge	\$ 1,277.11
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PaaS Development and Test services	
Item	Fee per Month
Web PaaS Development - Java	\$ 324
Web PaaS Development - .NET	\$ 324
Web PaaS Test - Java	\$ 324
Web PaaS Test - .NET	\$ 324
Web PaaS Additional JVM / App	\$ 118
Web PaaS Test Server	RACE rates
Web PaaS Mediation Server	RACE rates

PaaS Services - Java and .NET	
Item	Fee per Month
Small	\$ 1,306
2 core x 2 GB memory	
2 core x 4 GB memory DB	
Medium	\$ 2,424
4 core x 4 GB memory	
4 core x 8 GB memory DB	
Large	\$ 5,041
4 core x 8 GB memory	
8 core x 16 GB memory DB	

Usage Fees		
Resource	Unit	Fee
Content Delivery	1000 Transactions	\$ 0.10
Content Delivery - STS	1000 Transactions	\$ 0.19

Optional Add-on Services	
Item	Fee per Month
App Server Cluster	
Additional Small	\$ 512
Additional Medium	\$ 512
Additional Large	\$ 1,281
High availability	
Small	\$ 1,306
Medium	\$ 2,424
Large	\$ 5,041
Pre-production	
Small	\$ 1,306
Medium	\$ 2,424
Large	\$ 5,041
Oracle 11g Database	
2 cores	\$ 1,901
4 cores	\$ 3,802
8 cores	\$ 7,603
Microsoft SQLServer Enterprise 2008	
2 cores	\$ 676
4 cores	\$ 1,352
8 cores	\$ 2,704
Protocol Mediation	\$ 539
Storage	
L1 Storage Prod - 1GB	\$ 30
R2 Storage COOP	\$ 30

Pricing should be used for planning purposes only. Subject to change due to final approval by the DISA Director and customer adoption rate.

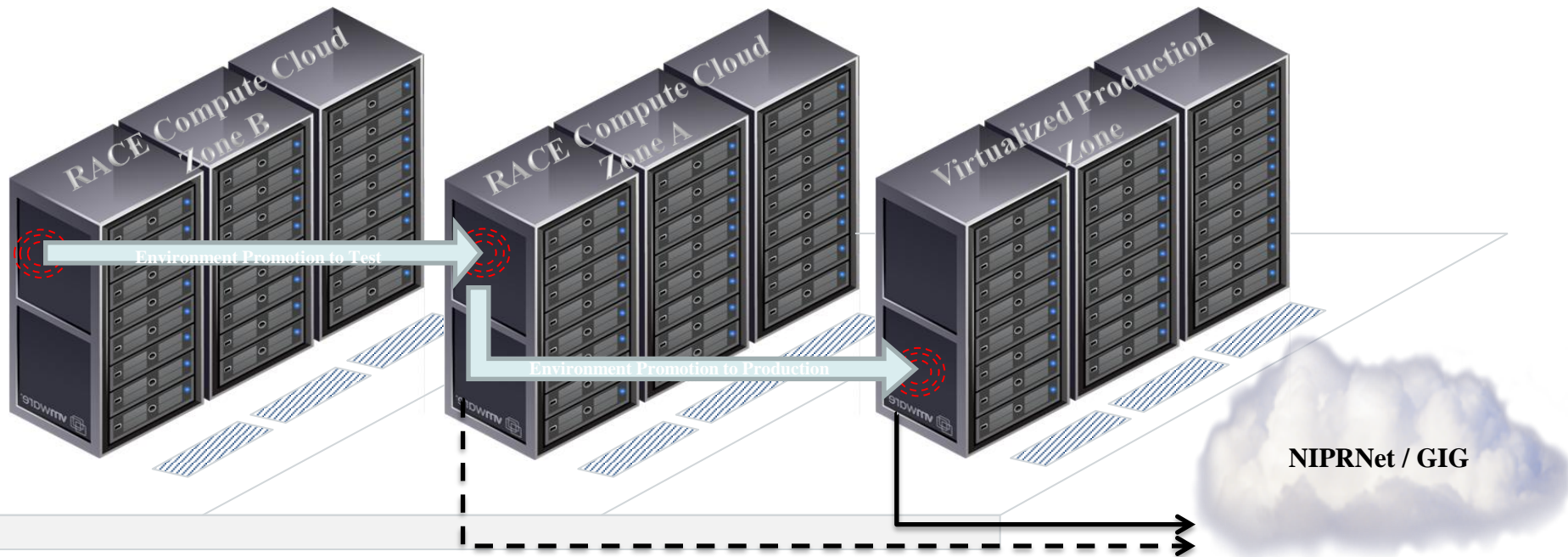
The Pathway To Production offers RACE Customers a migration to production environments and an accelerated C&A process

Virtual Operating Environment Migration

- The Path-to-Production allows users to migrate their Development (Zone B) environments to Limited User Testing (Zone A) environments
- When Limited User Testing is completed, the customers are able to seamlessly transition to a DECC production environment

Accelerated C&A Process Execution

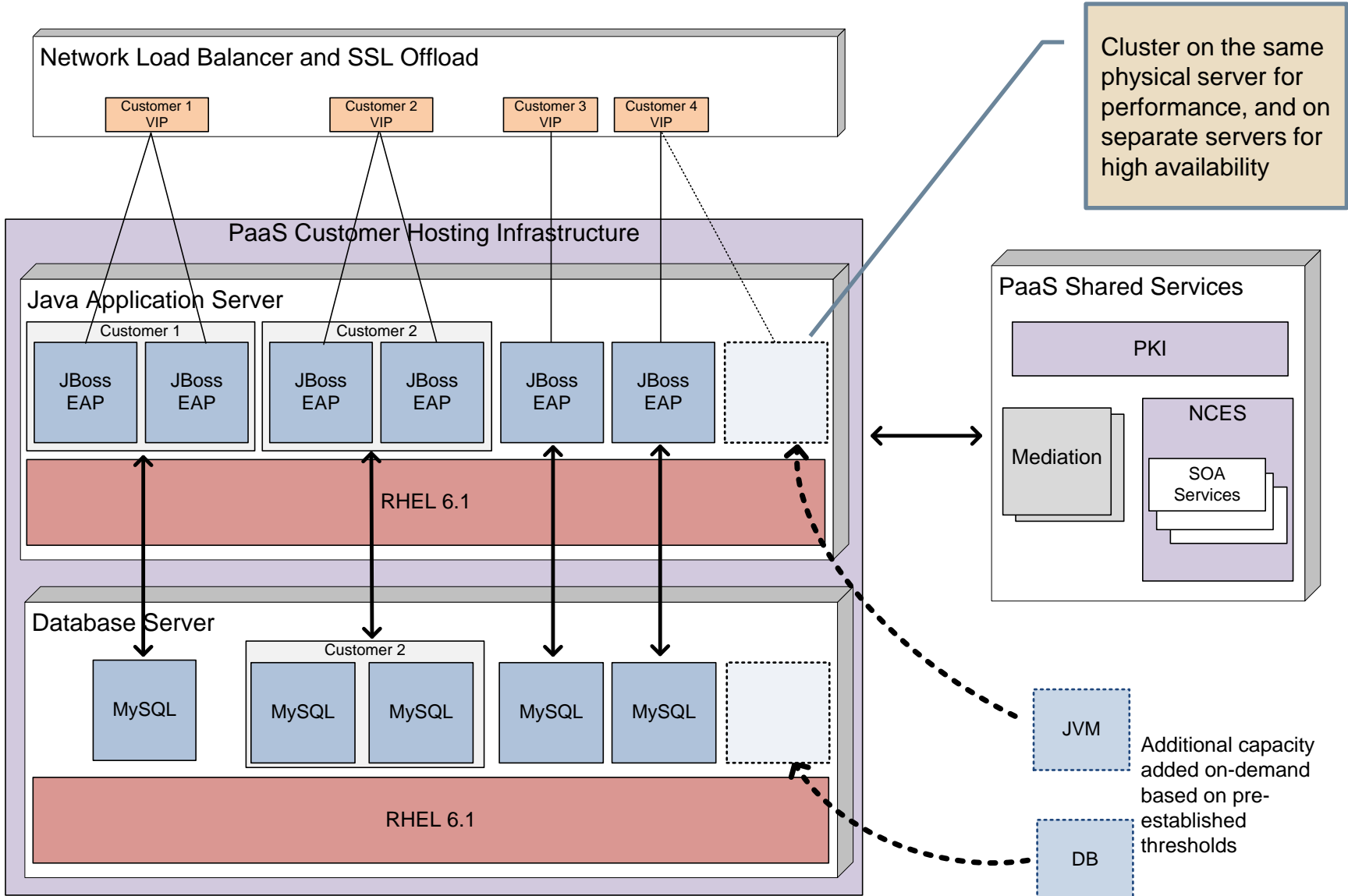
- Inheritance of the RACE cloud and DECC facility is leveraged to implement IA controls in the VOEs
- Virtual Operating Environments that are purchased from RACE are pre-hardened, and Developer Friendly
- Tools that facilitate automation and workflow management of the C&A process such as eMASS are implemented



Web PaaS Software List

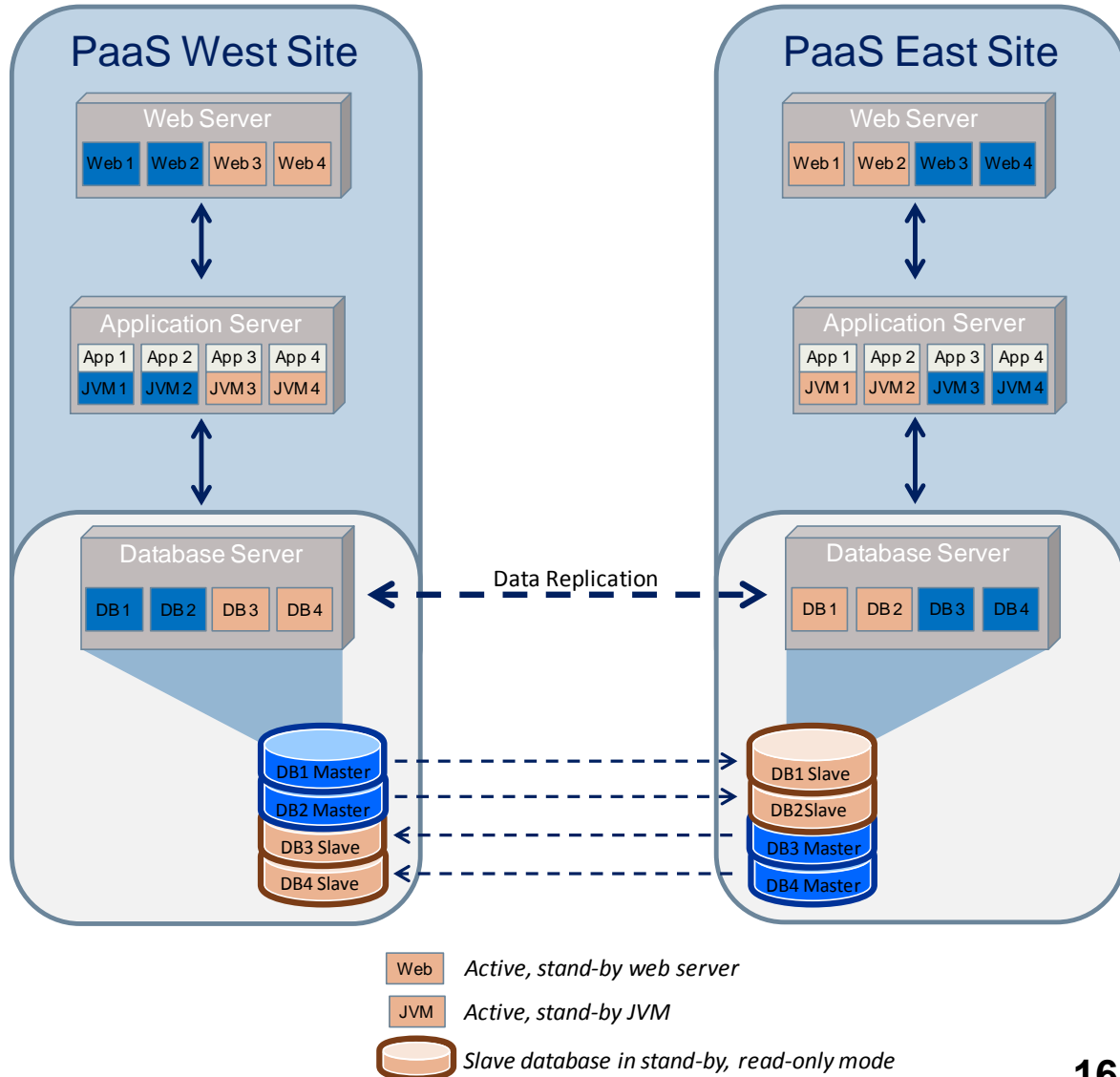
PaaS Component	Purpose	Solution
Web Platform	Run-time execution environment for web application and web services code	JBoss Enterprise Application Platform Microsoft .NET
Presentation	Visualization engine for managing user interface layout	Apache HTTP Server Microsoft IIS Ozone Widget Framework
Security Token Service	Web Service that issues security tokens. Converts a security token into a standard SAML 2.0 security token containing selected user identity attributes that is shared with web applications and services.	Ping Federate
Data Store	Persistent data storage	Oracle MySQL Enterprise Oracle Enterprise Server 11g Microsoft SQL Server 2008
Protocol Mediation	Protocol mediation services to allow web applications and services to access legacy data sources using exposed services	Talend ESB
Service Integration Interfaces	Integration web services to abstract underlying service technologies to avoid vendor lock-in	Hibernate NCES clients
Management	Monitor health and status of web platform and data store, and provision new instances	JBoss Operations Network MySQL Enterprise Manager

Standard Web PaaS Multitenancy



COOP Strategy

- Baked into service
- 24-hour RTO/RPO
- Supports MAC III and MAC II applications
- Dedicated JVM, & DB instances pre-provisioned at remote COOP site
- Customer data is replicated to slave DB at remote COOP site
- Remote COOP site in stand-by mode
- Failover sequence is manual
 - The global load balancer is updated to point to the COOP site



Fee Definitions

- **One-time Connection Fee**
 - Recovers the core implementation charge for provisioning the hosting infrastructure, connectivity, DNS registration, and user account configuration
- **Monthly Reoccurring Fixed Charge**
 - Recovers the cost for processing resources and licensing required to provision a PaaS instance.
- **Transaction Charge**
 - Recovers the cost for the Shared Services infrastructure, management infrastructure, sustainment labor, and technology support and maintenance
 - Transaction is defined as any HTTP(S) GET or HTTP(S) POST