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Rationalize, Centralize, Externalize: Identity Management in Oracle Fusion Architecture

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Consulting Member of Technical Staff

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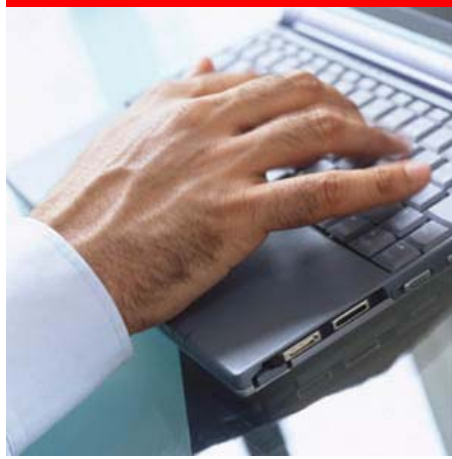
The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

Agenda



- Oracle Fusion
- Identity Management in Fusion Architecture
- Fusion Identity Services

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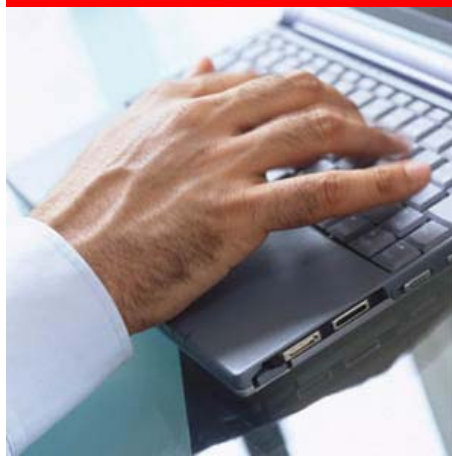

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Oracle’s Fusion Strategy

- Fusion Architecture
  - Blueprint for SOA-based Enterprise Solutions
  - http://www.oracle.com/applications/fusion.html
- Fusion Middleware
  - Technology Infrastructure for SOA Applications
- Fusion Applications
  - Unify best-of-business capabilities from all Oracle Applications in a complete suite delivered on Oracle's open technology
  - Protect, Extend, Evolve through Fusion Architecture

ORACLE FUSION

Security in Fusion

One Integrated Security Solution

- Rationalize, Centralize, and Externalize
  - Authentication policies / services
  - Authorization policies / decisions
  - User registration / provisioning / administration
- Built on Fusion Middleware
  - Enforced uniformly at all parts of technology infrastructure
  - IAM Suite will be basis for Identity Services
- Based on Standards
  - NIST RBAC
  - JAAS

Guiding Principles of Fusion Security

- Secure By Design
  - Security must be designed into the application, not added as an afterthought
  - Security is difficult & costly to add later
- Secure By Default
  - Restrict access out of the box
  - Many systems don’t get locked down
- Principle of Least Privilege
  - By default, no one should have access to anything
  - Users are explicitly granted access to the minimum set of resources they need, for the minimum set of time
  - Do not design application based on denies / negative grants

Our Challenges

- Each application collects its own user (identity) data during custom registration processes
  - No uniformity in data collection
  - No sharing of data
  - Multiple places for user to manage data
- Complex Authorization model
  - No role style abstraction models
  - Determining who has what privileges extremely complex
- Inconsistent Administration Experience
  - Difficult to enforce consistent set of policies
  - Difficult to measure compliance with those policies

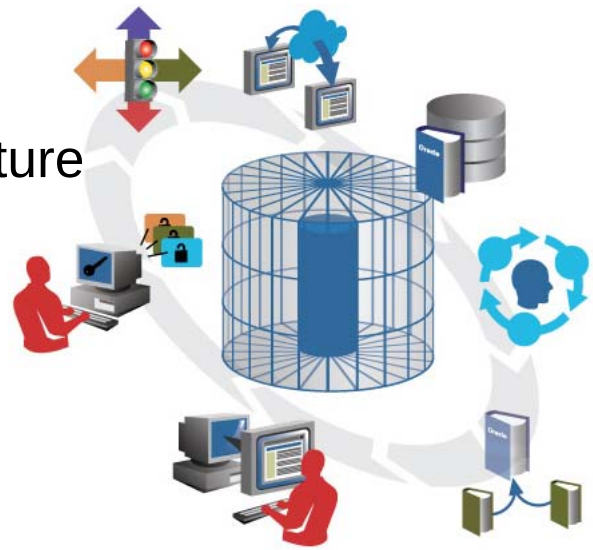
The Applications

- **Oracle eBusiness Suite**
  - Multiple user management modules (CRM user mgmt, UMX)
  - Role management limited to UMX
  - Directory integration requires OID + DIP
- **PeopleSoft**
  - No provisioning or role management support
  - Multiple integration interfaces
  - Component Interface, Integration Broker / Application Messaging
- **Siebel**
  - No provisioning or role management support, relies on 3rd party tools
  - No directory integration tools

How Identity Management Helps Today

Security And Control For Enterprise Applications

- Deploying Oracle IAM can help alleviate some of the issues for your applications deployment by:
  - Establishing an Enterprise Identity & Roles
  - Enforcing Strong And Granular Security Policies
  - Automating Security Related Processes
  - Defining an Audit And Control Framework
  - Deploying A Scalable Integration Architecture



How Identity Management Helps Today

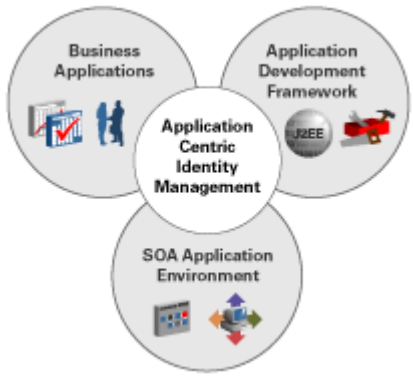
Security And Control For Enterprise Applications

- Enable SSO, federated access, mutual authentication and fraud prevention
- Automate user management, manage entitlements, enforce segregation of duties
- Link HR employee data and CRM customer data to user accounts
- Integrate application to enterprise directories and portals
- Enforce appropriate and granular level of access control based on application and data being accessed
- Automate compliance and fraud management
- Deploy self-service and self registration to reduce administration cost

But Where's The 2.0 Stuff?

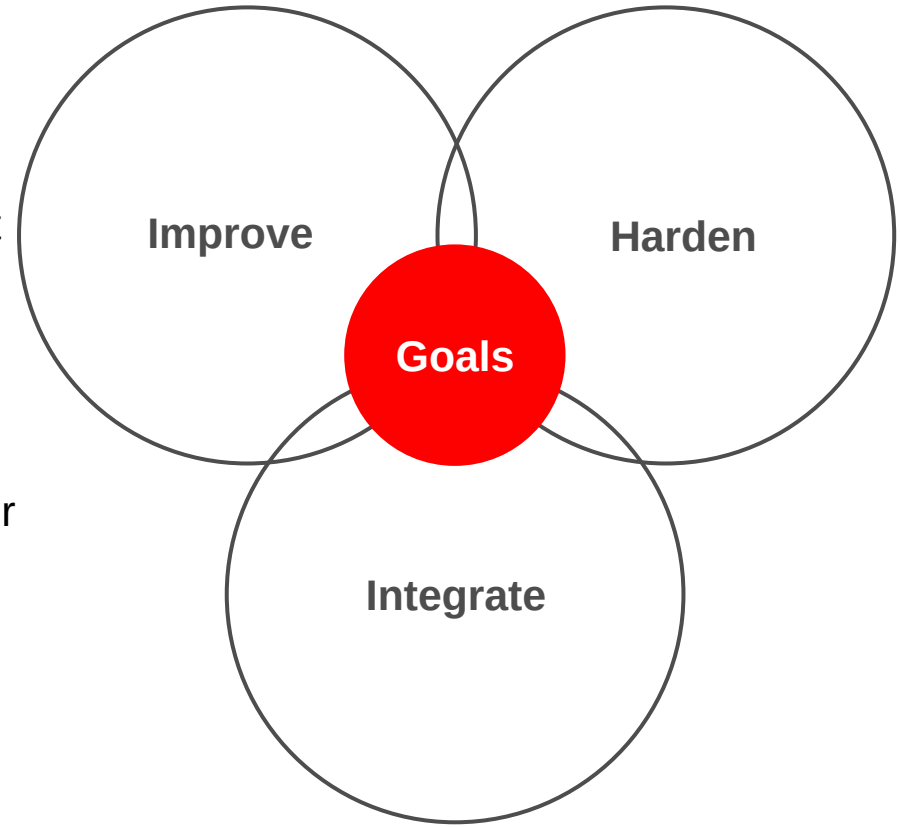
Last Year at OpenWorld

- S281669: Application-Centric Identity Management: Identity-enabled applications made easy
  - Introduced the concept of **Application-Centric Identity Management**
  - Talked about how identity is central of application design
  - Talked about evolving IdM from **System Management** tool to **Platform Infrastructure**



The Goals

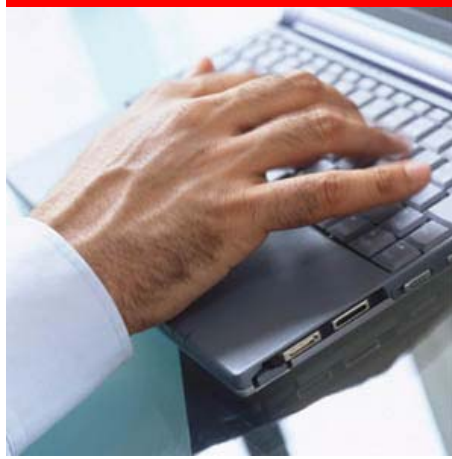
- Establish “One Human ↔ One Identity” for the entire deployment
- Simplify the administration experience
- Reduce cost
- Improve developer experience & productivity



- Reduce # of points of failure
- Reduce # of modules with potential for security holes
- Enforce security regardless of entry point
- Customers and Auditors must be able to setup, change, audit, and review security policies in a single place

- Integrated & understood across all components / tiers
- Single integration point to 3rd party solutions & future technologies

Agenda



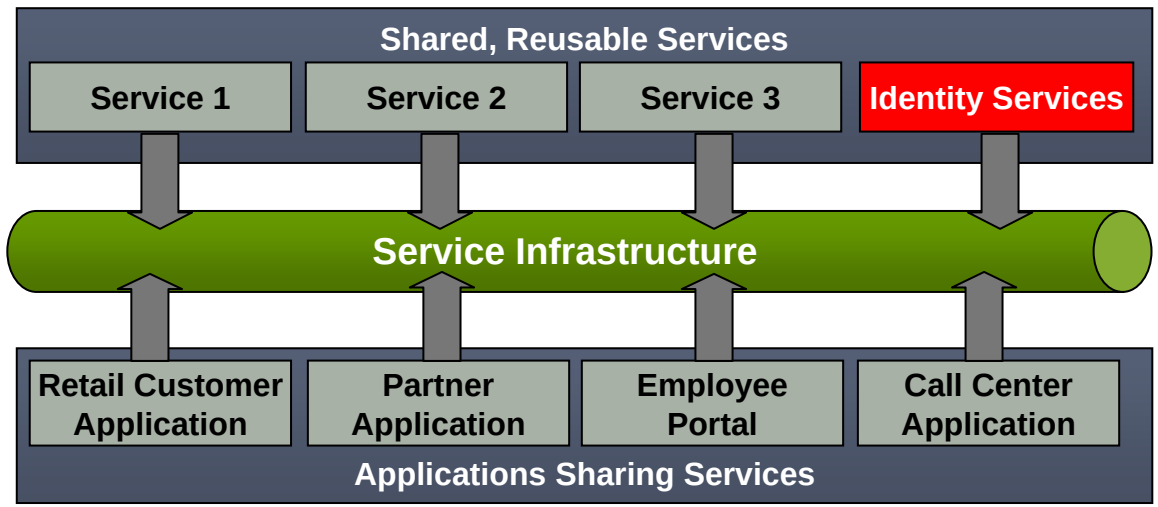
- Oracle Fusion
- Identity Management in Fusion Architecture
- Fusion Identity Services

Identity Management in Fusion

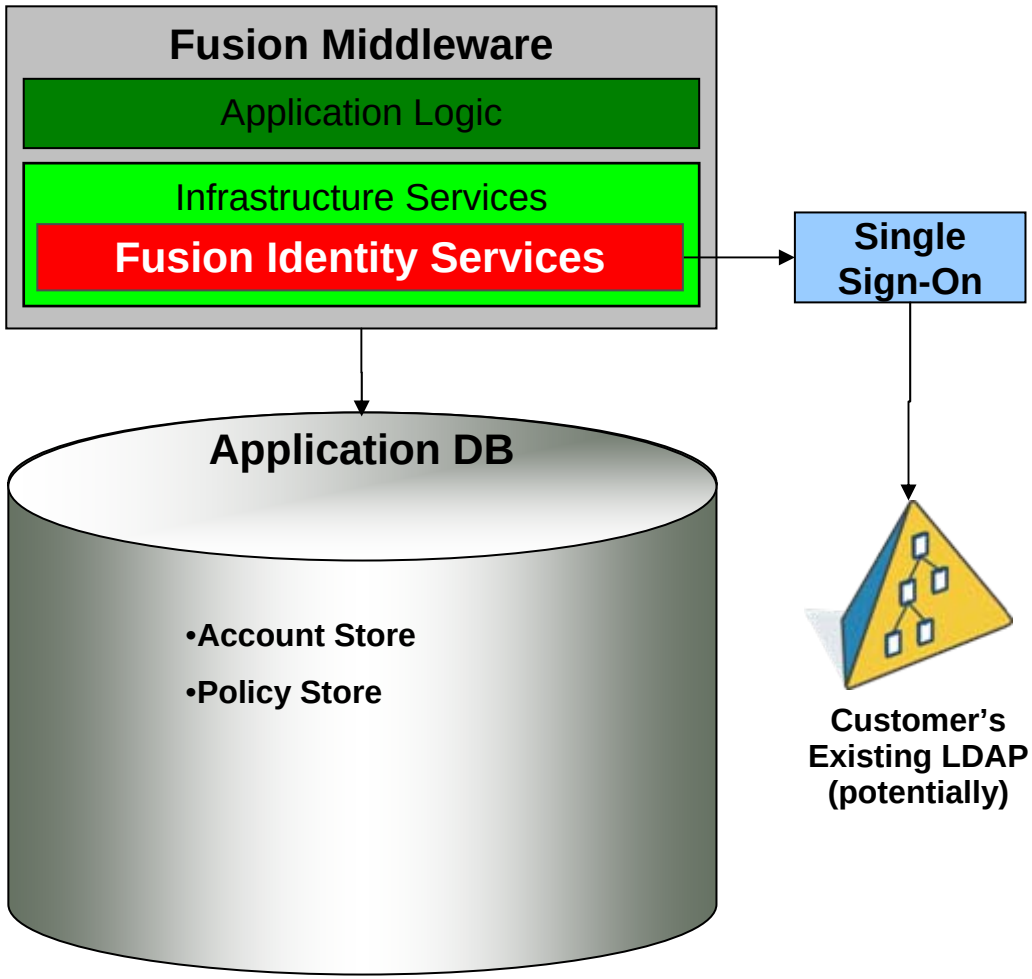
- Unified Identity Management services (both self-service and administrative) across all Oracle applications
- Complete and integrated lifecycle management with person (employee, partner, customer) on-boarding
  - Standards-based
  - J2EE, SAML, WS-*, …
- Superior Ownership Experience
  - Lower Cost Deployment, Operations, Compliance
- Unbreakable Security
  - RBAC model
  - GRC Framework

Builds on Vision of Identity Services

- As organizations move towards SOA, identity components and management capabilities must be made available as a service in that architecture



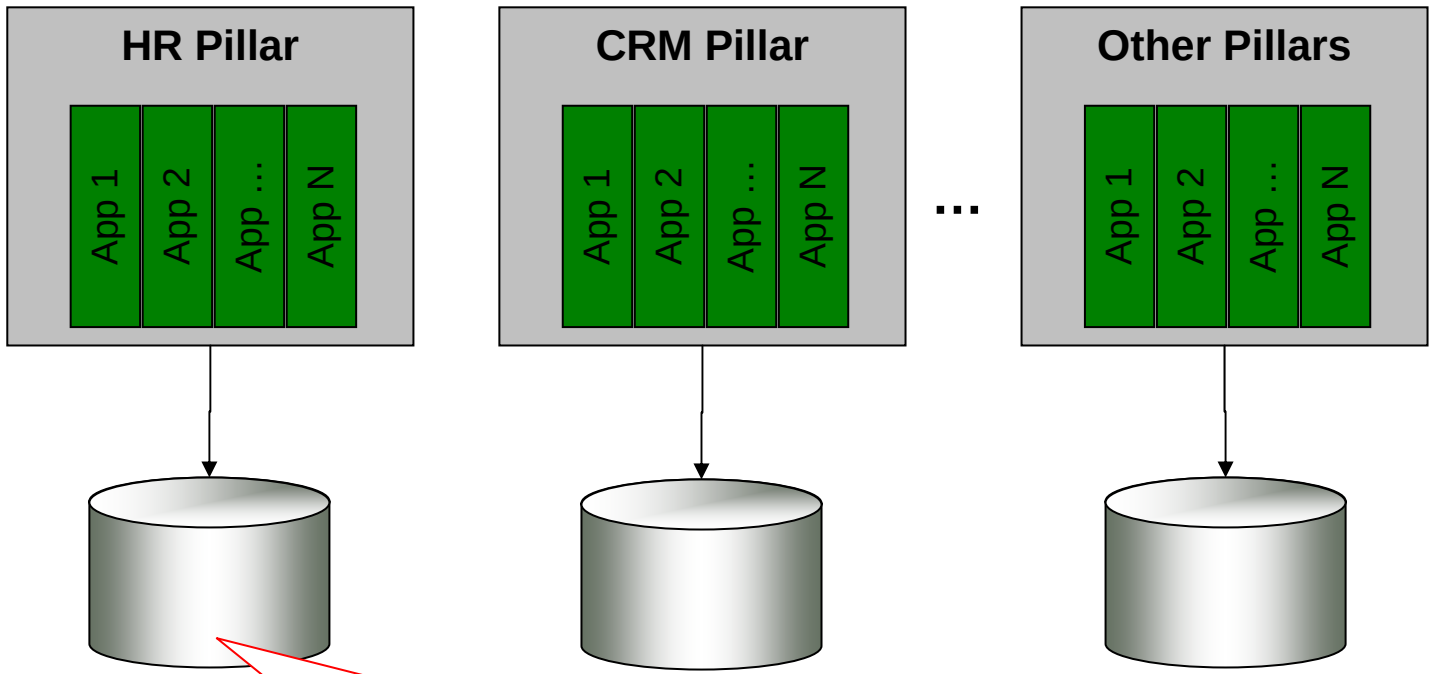
Fusion Application Architecture



Functional Architecture

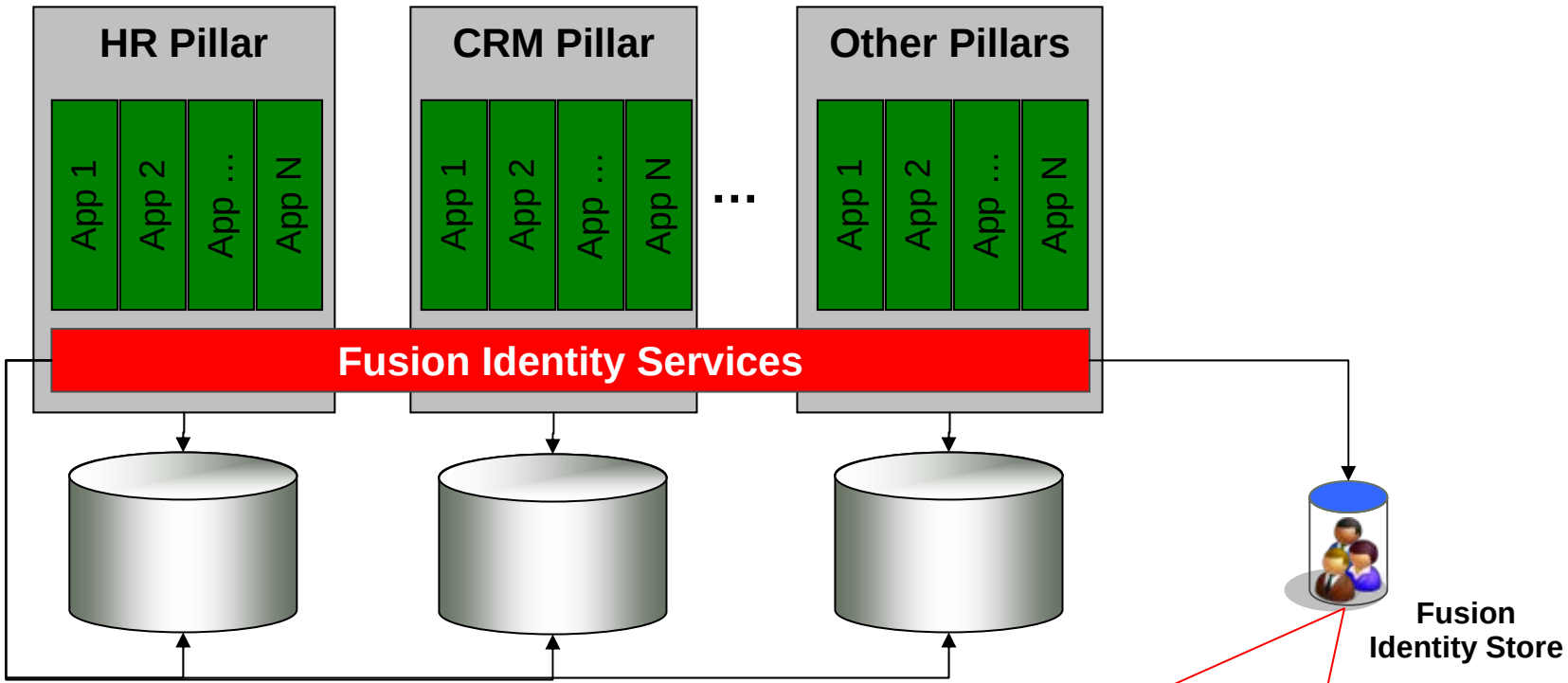
- An Identity has an "Account" in an application if it is represented in the LUS
- Account has privileges based on Roles assigned to it
- XS Policy Store maps the Roles to Privileges (Function, Data) in the Application
- XS Decision Point in DB ensures consistency in security no matter how user is connecting (through App or directly to DB)
- Authentication is managed via a Single Sign-On product (Oracle or Customer's existing)
- For existing SSO deployment, an LDAP system may exist as SSO credential store
- Foundation Identity Data stores identity data in Fusion data tables for fast transactional computations

Pillar Deployment



- Having entry in a particular Account Store means “having” an account in all applications in the pillar (access rights depends on roles assigned)
- In a Global Single Instance (GSI) deployment, all the pillars share a single DB (and therefore single Account Store)

Identity Management in Fusion



- Implements a single view of identities across entire Fusion deployment
- Either a Physical Store or a Virtualized Store depending on nature of deployment

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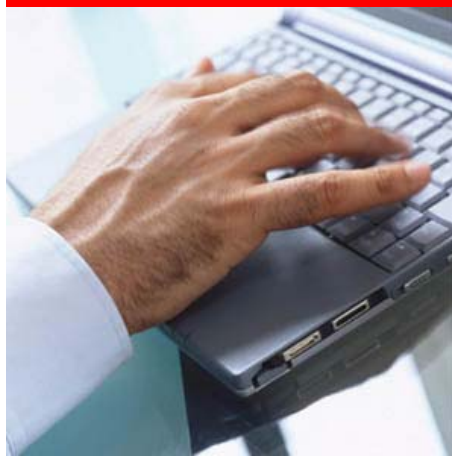

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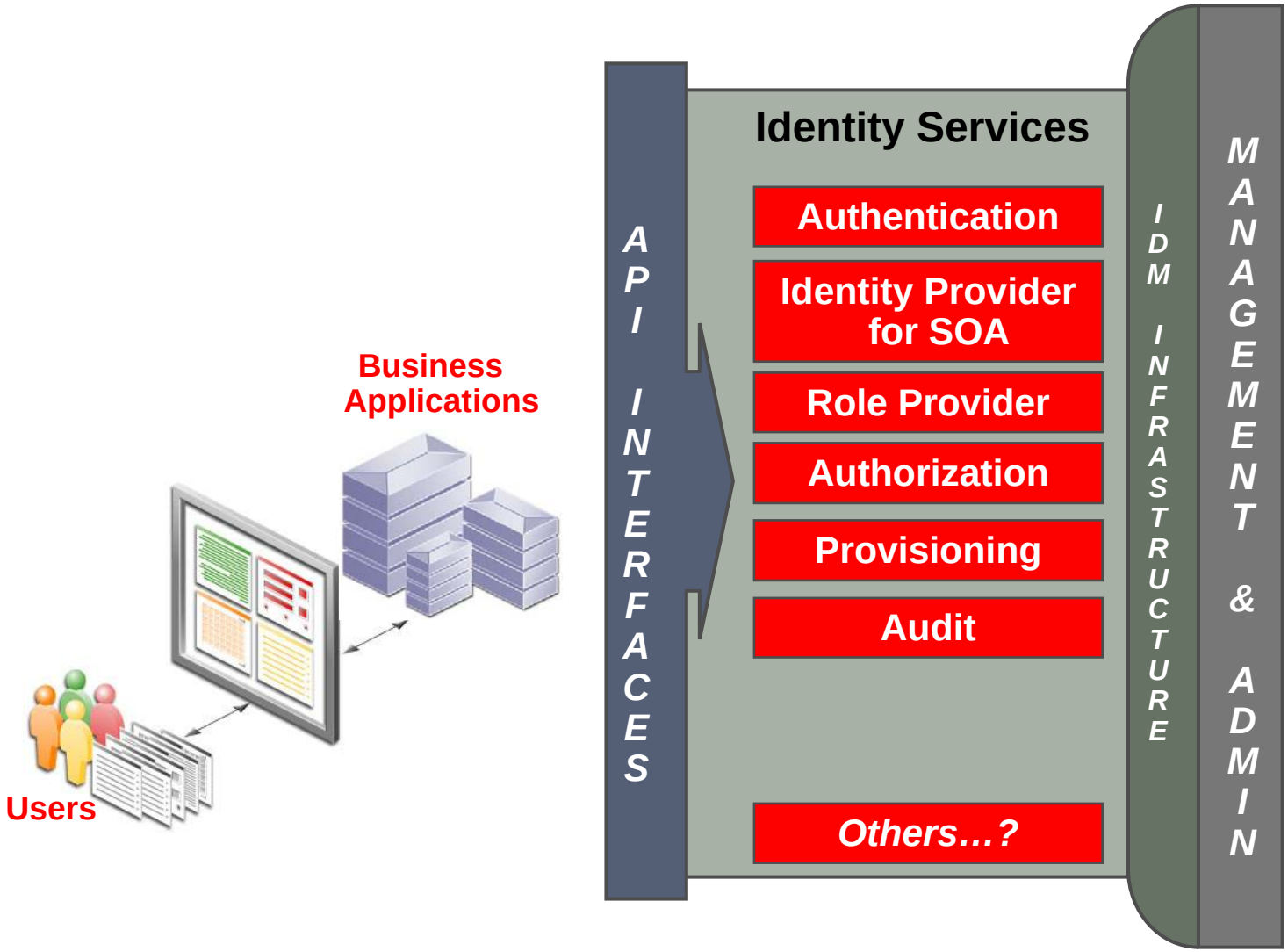
The Identity Services Layer



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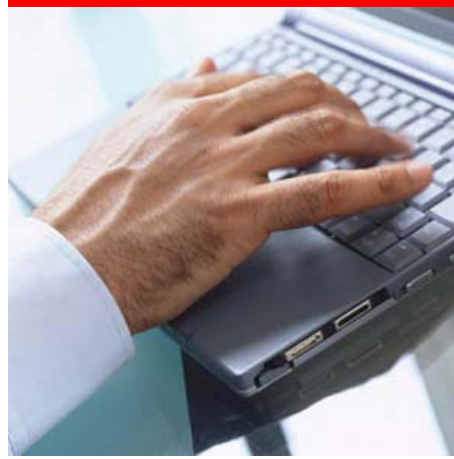

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  - Authentication Service
  - Identity Provider for SOA
  - Role Provider
  - Authorization Service
  - Provisioning

Authentication Service

Externalize User Identification

- Authentication Service provides the right level of assurance to the application regarding the identity of the interacting user
- Integrate with existing SSO infrastructure via a plug-in model
- Support risk-based identity assurance levels
  - Beyond username-password
  - Beyond binary authenticated/unauthenticated
- Mutual Authentication
- Evolve for the future
  - User-Centric Technologies (CardSpace, OpenID)
  - Multi-Token authentication support

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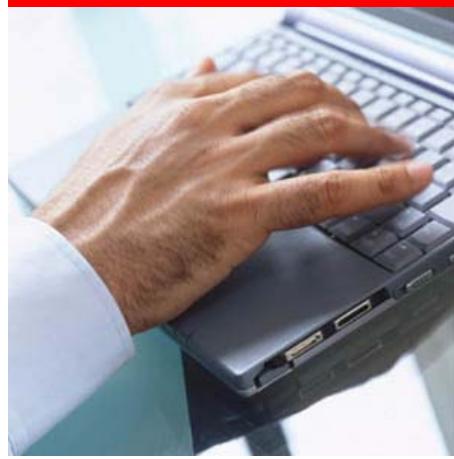

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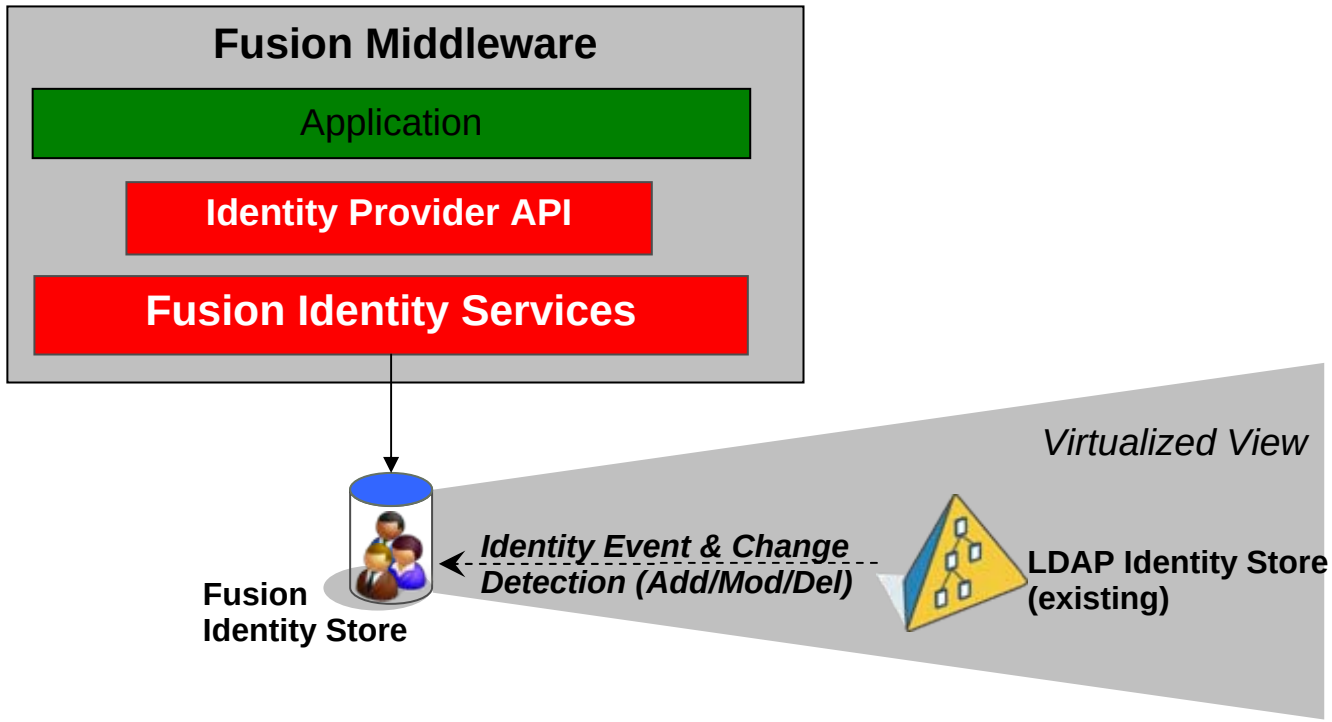
Identity Provider for SOA

Externalize Identity Data

- Identity Service that provides access to Identity Data
- The Goal: Get away from User tables that store identity information
- Support multiple sources of Identity Data in the Enterprise
  - HR, CRM, Custom Databases/Directories
- Create complete identity profile across
  - Identity Applications, Identity Stores, Cloud Identity Providers, User-Centric Identity
- Provide developer friendly API
  - Avoid application developers having to learn and code to LDAP
  - Support rich identity data

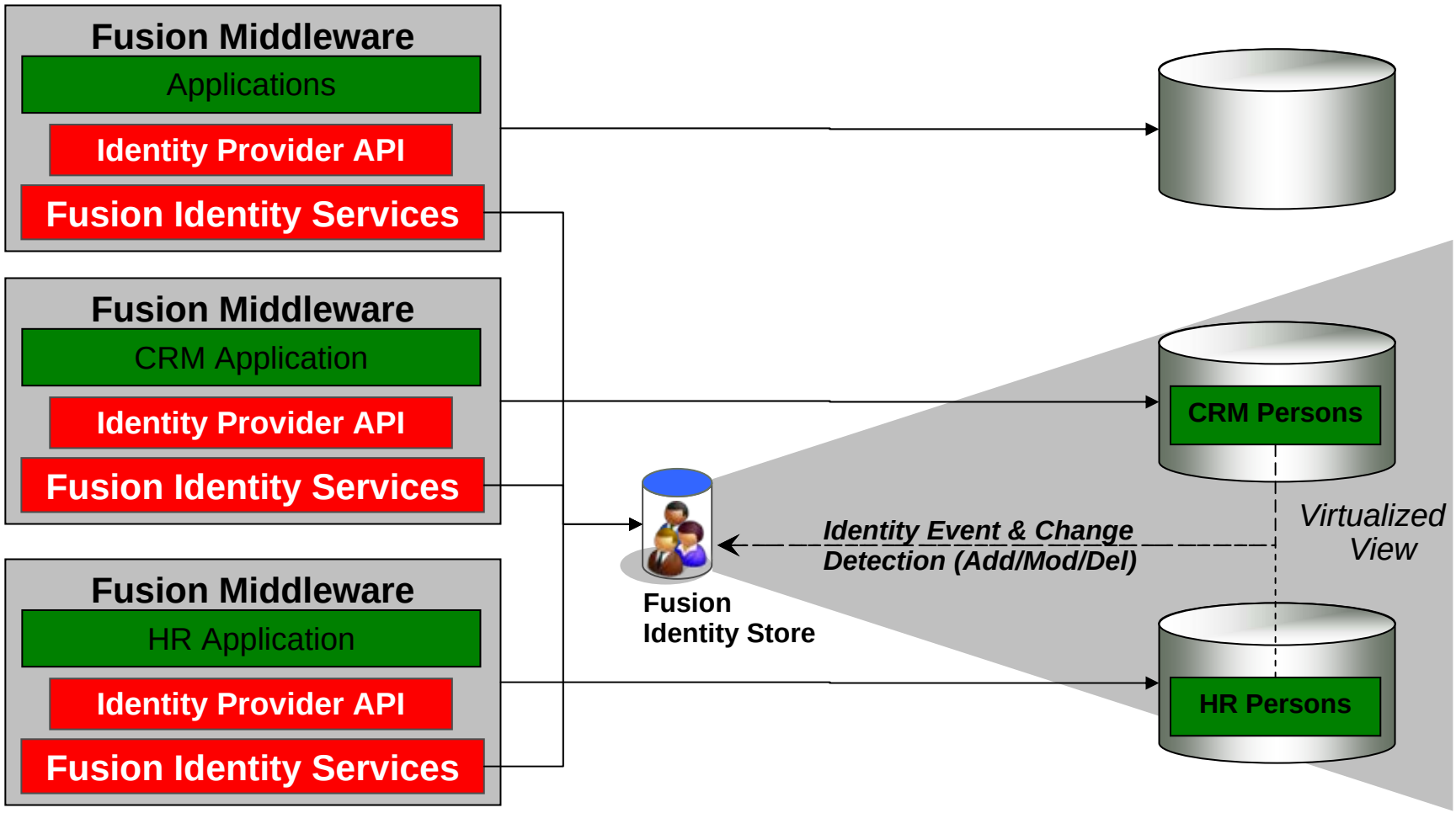
Identity Provider for SOA

Virtualized LDAP Identity Store



Identity Provider for SOA

Virtualized HR, CRM Identity Store



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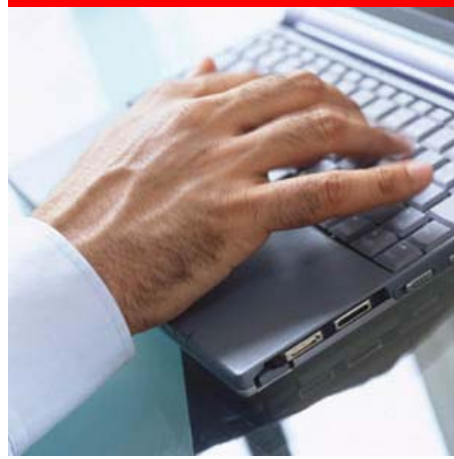

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Role Provider

Centralize Role Management

- Service that provides information on roles and role memberships
  - Roles are necessary abstraction to make management of users manageable
- Fusion Security is based on NIST RBAC standard
  - ANSI INCITS 359-2004
  - Authorization policies built on role membership
    - Function Security
    - Data Security
  - One-To-Many Relationships
    - User can be assigned several roles
    - Role can be assigned to several users

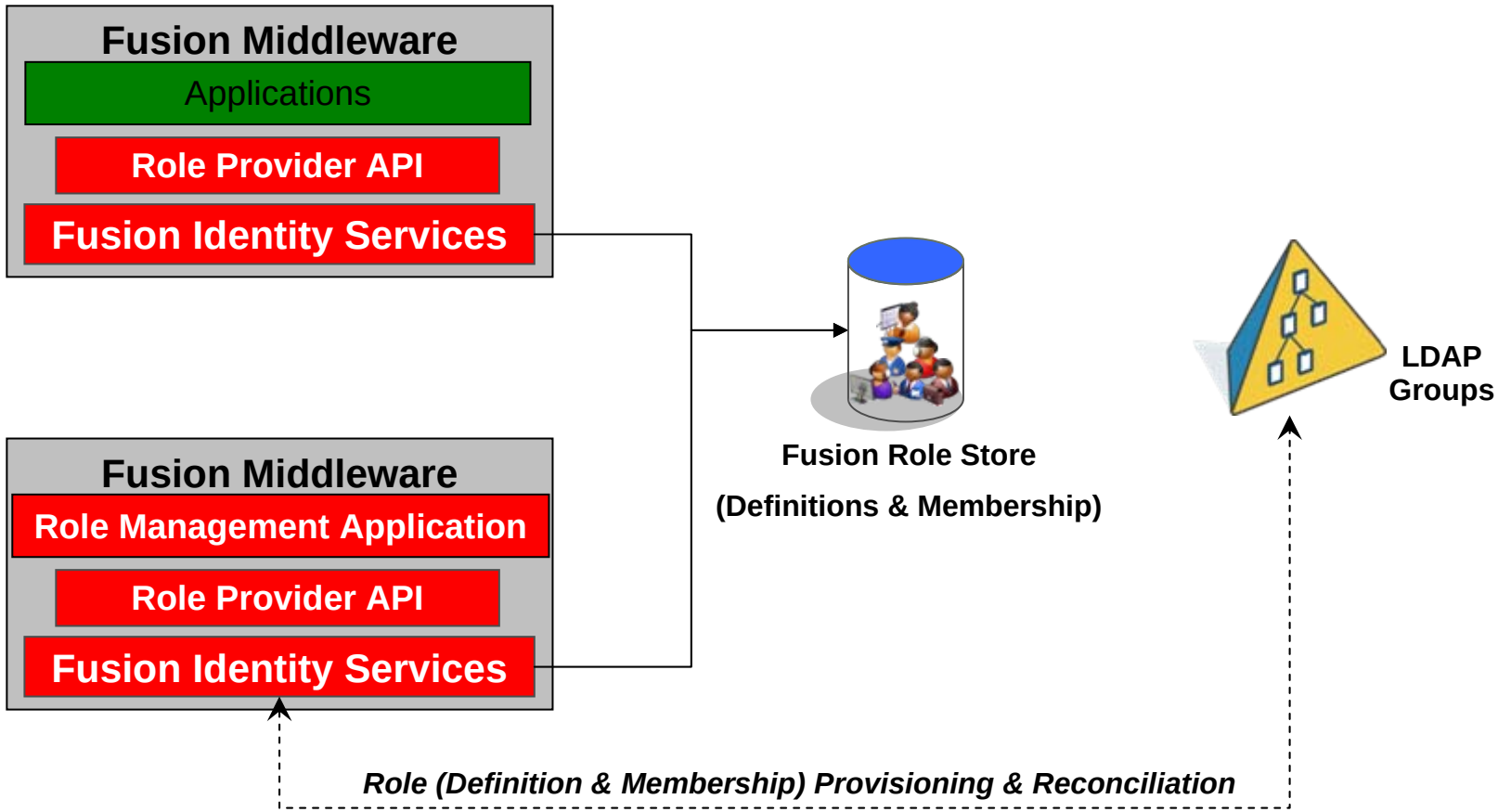
Role Provider

Centralize Role Management

- Role Definition Management
  - Role Definition, including types, tags, catalogs and other attributes
  - Support effective dates
  - Role Inheritance Hierarchies
  - Enterprise and Application Roles
  - Import LDAP Groups as Enterprise Roles
- Role Membership management
- Role Controls
  - Membership approval
  - Membership rules
  - SoD Policies
- Automatic Role Assignment based on Policies

Role Provider

Centralize Role Management



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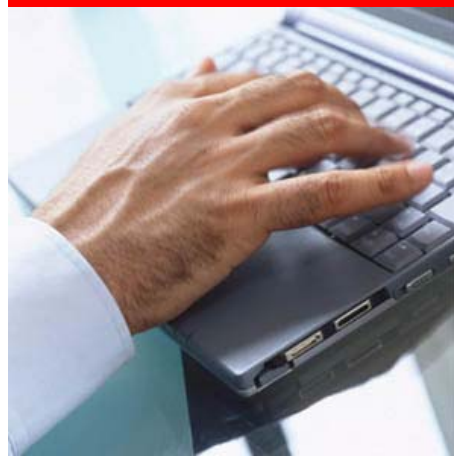

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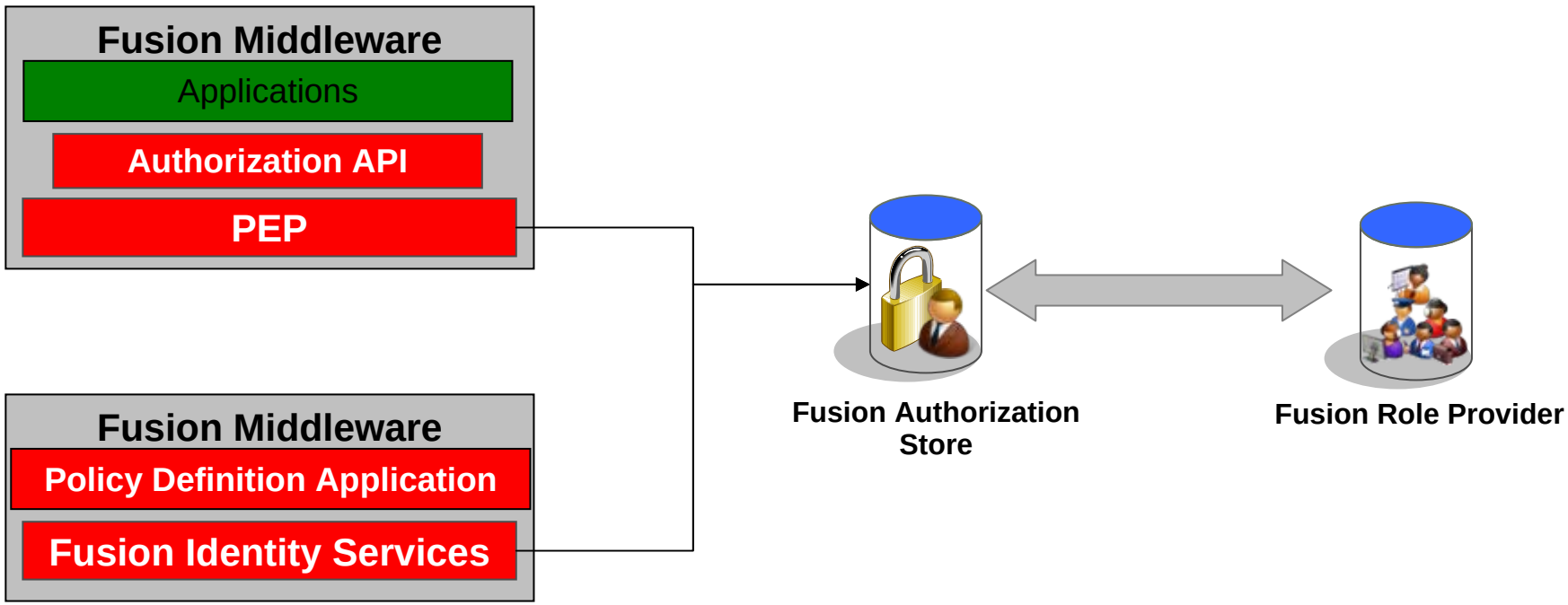
Authorization Service

Externalize, Centralize Authorization Policies

- As authorization needs got more complex, drove more identity data into the application domain
- Centralized Authorization Service external from applications that supports entitlement modeling & fine-grained authorization
  - Fine-grained entitlement modeling
  - Integration with Role Management
- Distributed, real-time, high performance Policy Enforcement Points
- Future support for incoming assertions

Authorization Service

Externalize, Centralize Authorization Policies



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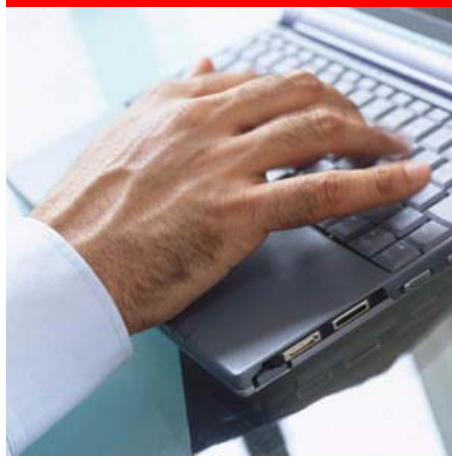

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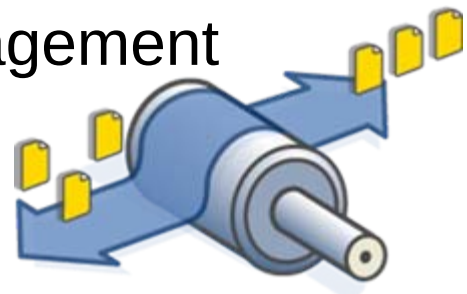
Provisioning

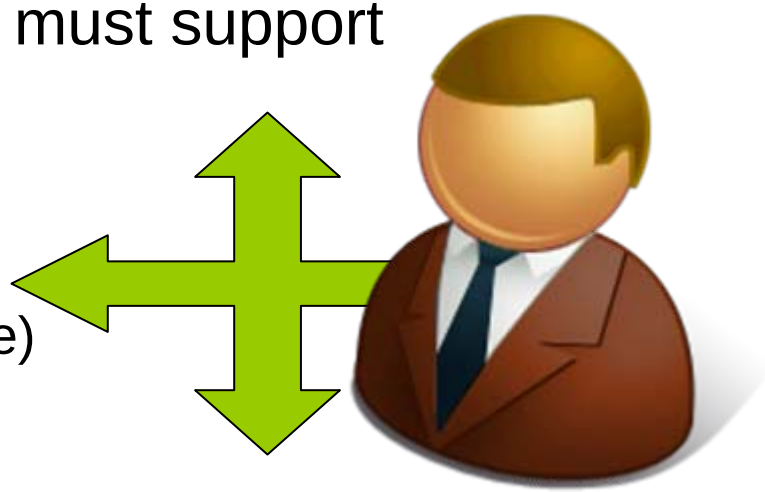
Centralize Identity Administration & Processes

- Service that supports administration of the IAM context
- Provides Identity and Account Provisioning
- Provides centralized policy administration and controls
  - Approval-based administration
  - Centralized policy enforcement (Auto-Provisioning, SoD)
  - Change notification mechanism
- Provides centralized self-service management
  - Profile Management
  - Password Management

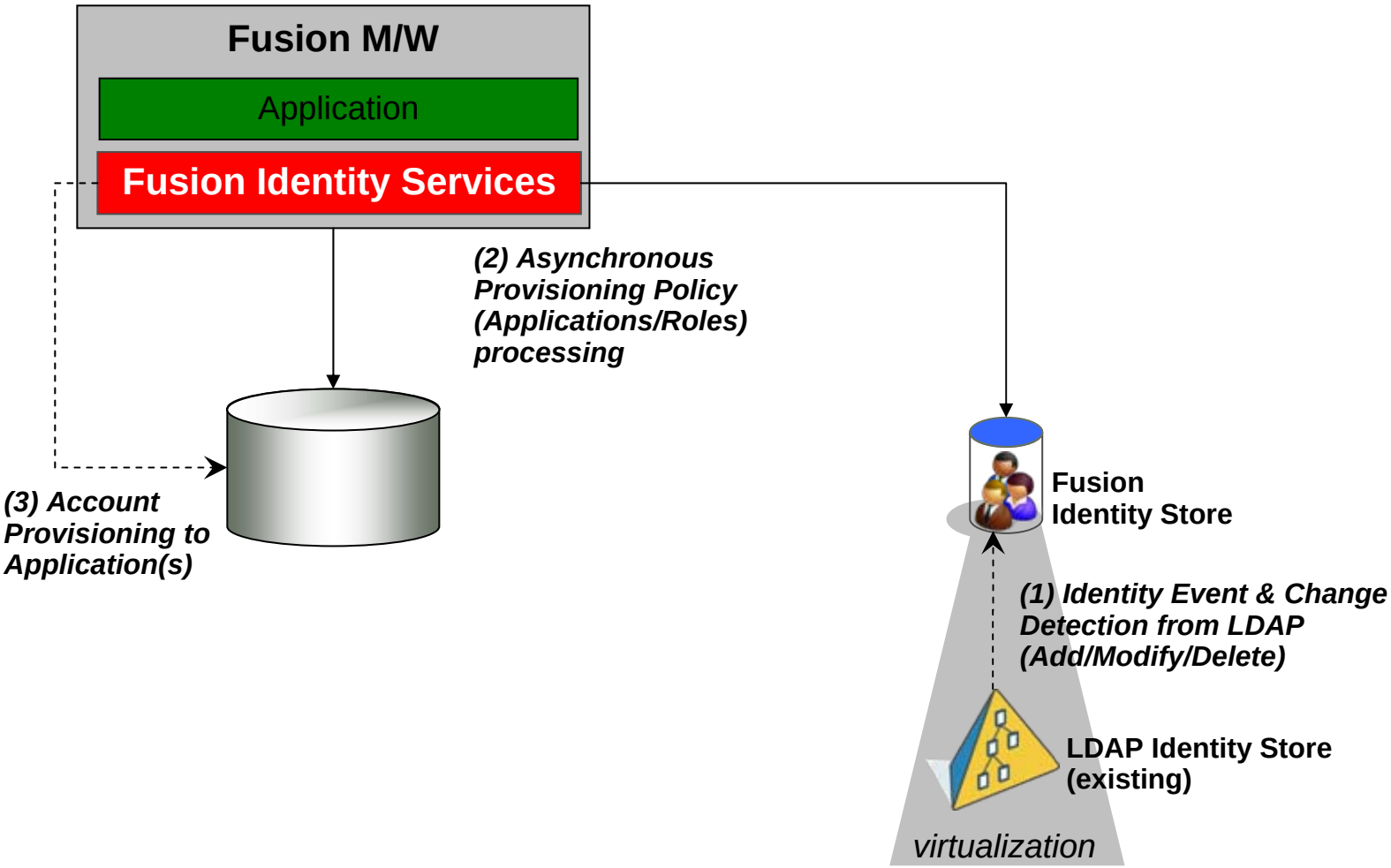


Identity Provisioning

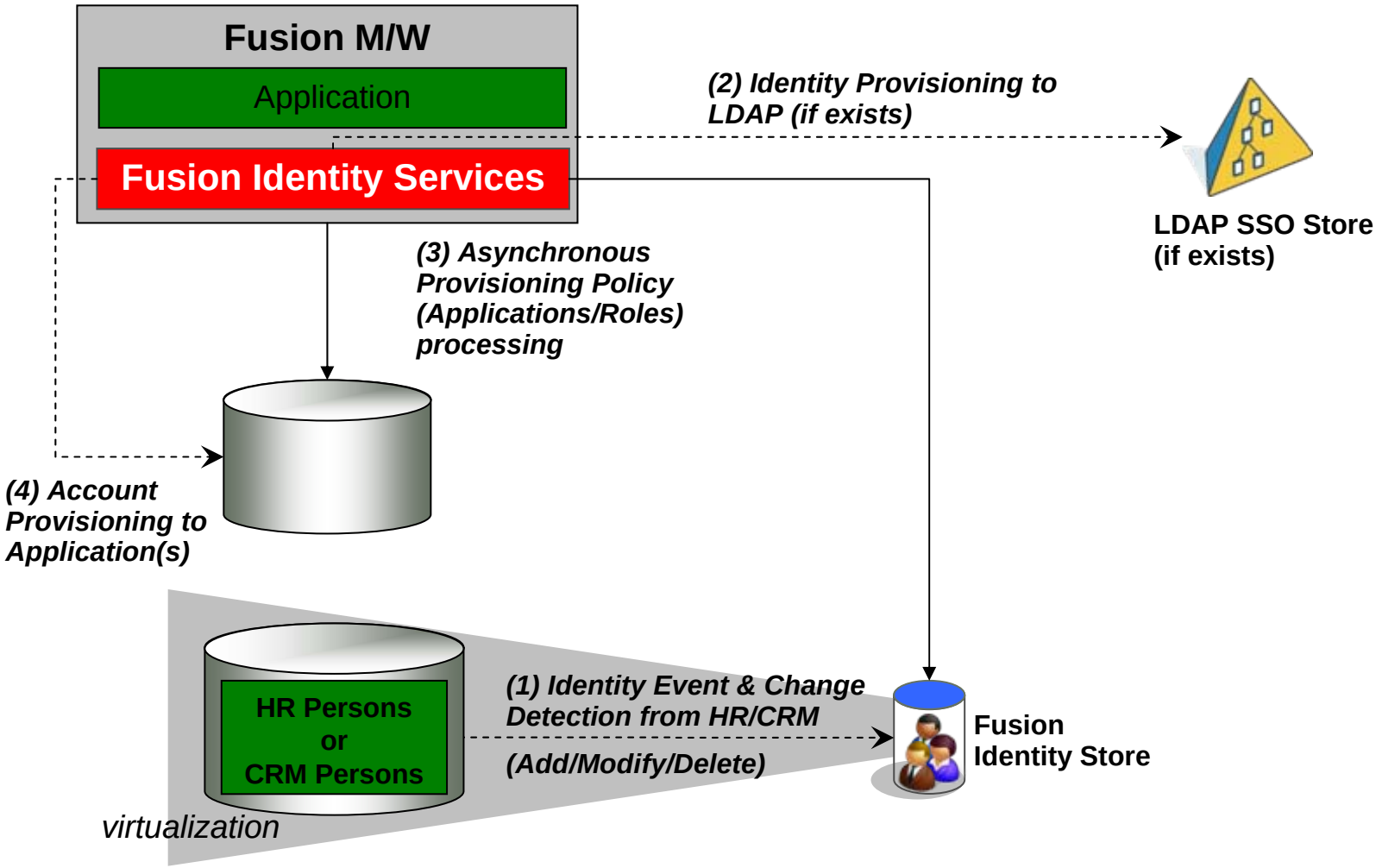
- Identity Provisioning Service ensures that identity information is properly set up in the environment, based on various authoritative sources
- The exact provisioning flows depend on the authoritative source of the identity in the deployment
- There are 5 sources that FIDM must support
  - LDAP
  - Fusion HR
  - Fusion CRM
  - Registration (Self or Administrative)
  - Enterprise IAM System



LDAP-Driven Identity Provisioning

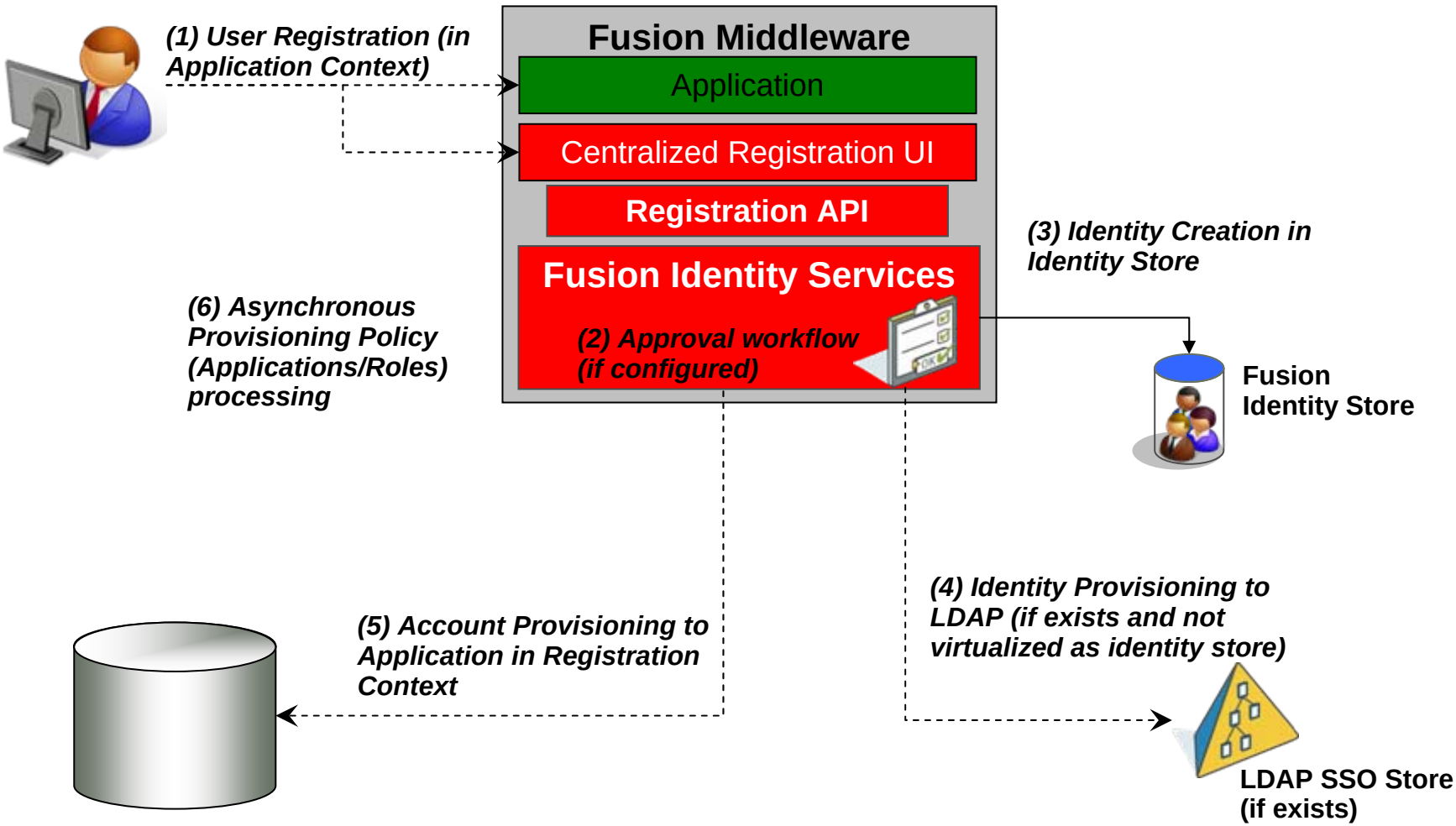


HR/CRM-Driven Identity Provisioning



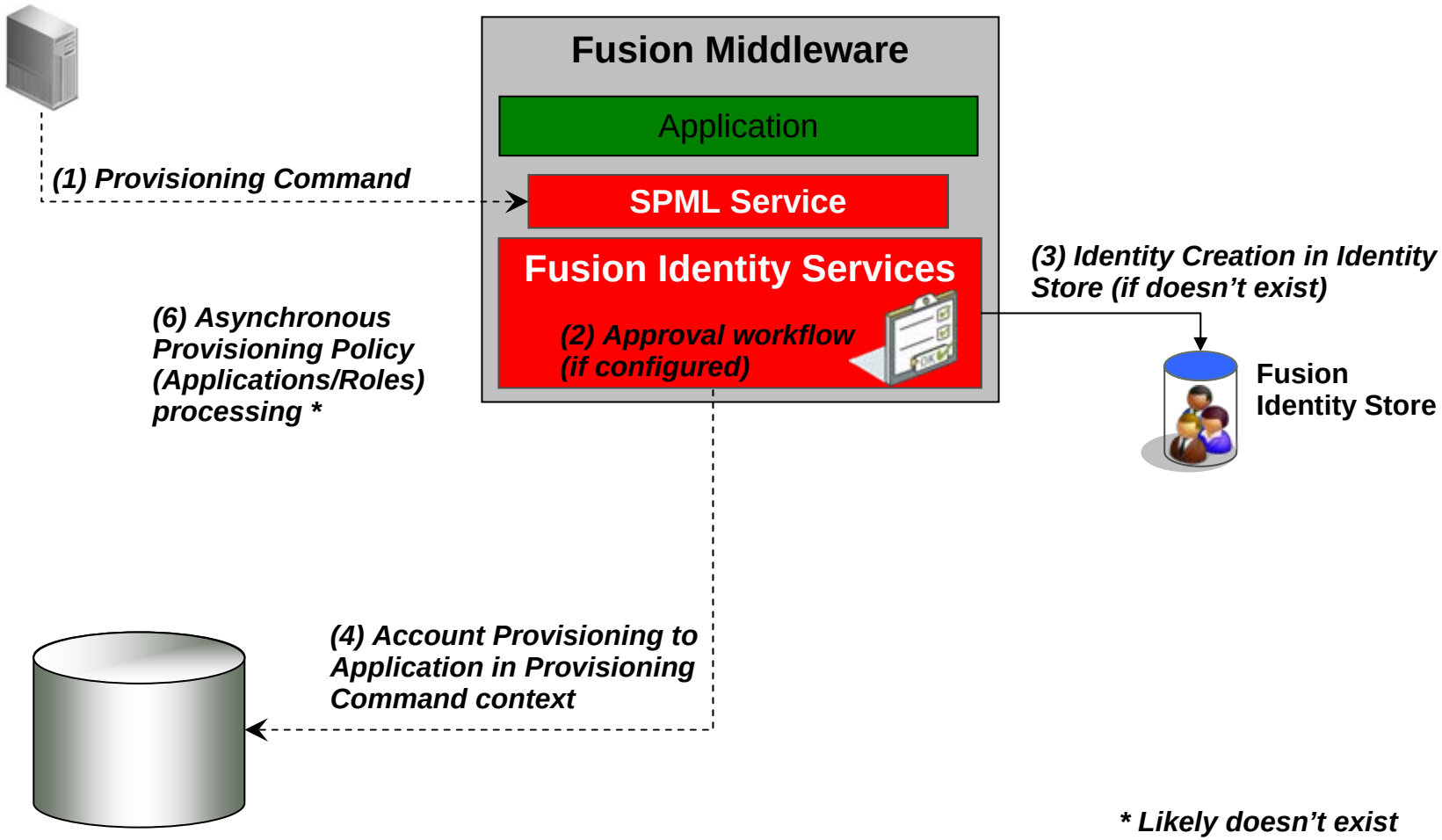
Identity Registration

Self or Delegated Administration

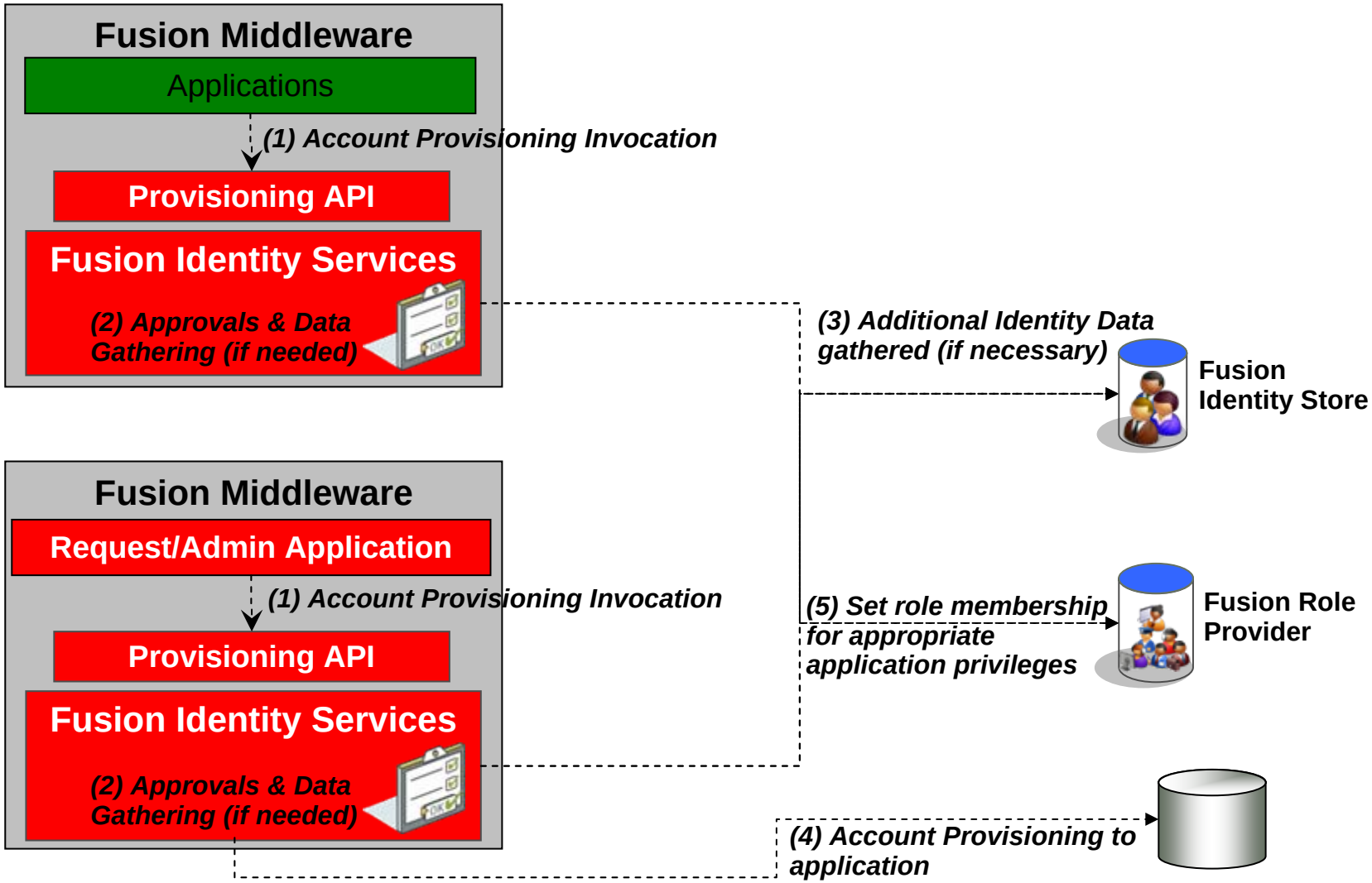


IAM-Driven Identity Provisioning

Excludes LDAP Identity Store Scenario



Account Provisioning



Self-Service Capabilities

Centralize Self-Service User Management

- Password Management
  - Single place to manage Single-Sign On password
  - Forgotten Password retrieval
    - Based on Challenge Response identification
  - Password Policies for strong passwords
    - Password History
- Profile Management
  - Maintain profile information
  - Primarily for Non HR/CRM led deployments
- Preferences Management

Self-Service Capabilities

Centralize Self-Service User Management

- Self-Service Request for Access
  - In new RBAC model, requesting access translates into a request for role membership
  - If user does not have an account (LUS entry) yet, implicit provisioning of account will take place
    - Supported by Just-In-Time gathering of profile data if not already available
    - Minimizes unnecessary data gathering

Policy-based Account Provisioning

- Rules based on Identity Attributes and Role Memberships
  - Determine accounts to provision
  - Determine roles to provision
- Automated
- Approval-based
- SoD compliant

In Conclusion

- Identity Services in Fusion Architecture will…
  - …reduce complexity through increased ability to leverage critical identity data while removing the management and replication challenges
  - …increase security by providing centralized policy management and a controls framework that can dynamically mitigate risks
  - …create a flexible, adaptable, integrated platform on which to build applications

Continue the Dialogue On My Blog

http://www.talkingidentity.com

For More Information

Join us tomorrow:

Tuesday, November 13, 2007

12:-15 p.m. – 01:15 p.m.

Innovations in Identity Management and Fraud Prevention

Amit Jasuja, Vice President, Oracle

Location: Yerba Buena Center Auditorium

For More Information

ADDITIONAL SESSIONS

Other sessions of interest

- S291877 – Enterprise role management and identity management in practice
  - Tue, Nov 13, 4:45pm, Moscone West Rm 3006 – L3
- S292034 – Brokering of Trust and Fine Grained Authorization
  - Thu, Nov 15, 10:00am, Moscone West Rm 3006 – L3
- S292075 – Using Identity Management Standards to solve Business Problems
  - Thu, Nov 15, 1:00pm, Moscone West Rm 3006 – L3

PRODUCTS IN ACTION

Visit our demos in Moscone South

- Oracle Access Manager and Oracle Identity Federation
- Oracle Identity Manager
- Identity Audit and Compliance
- Oracle Enterprise Single Sign-On
- Oracle Directory Services
- Oracle Role Manager
- Oracle Adaptive Access Manager
- Oracle Identity Management Suite Manageability

The No Slide Zone

- Innovations in Identity Management & Fraud Prevention
  - Tuesday, 12.15PM, Yerba Buena Center Auditorium

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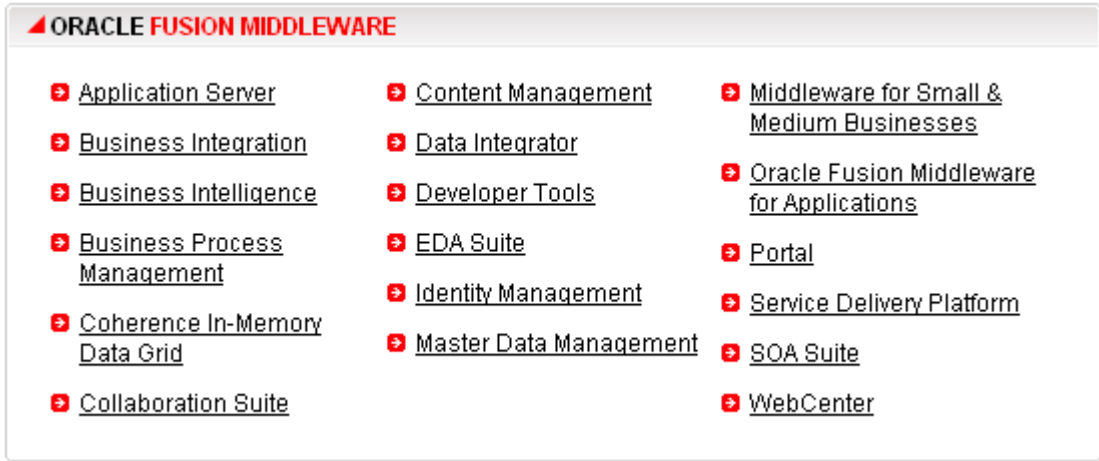

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