



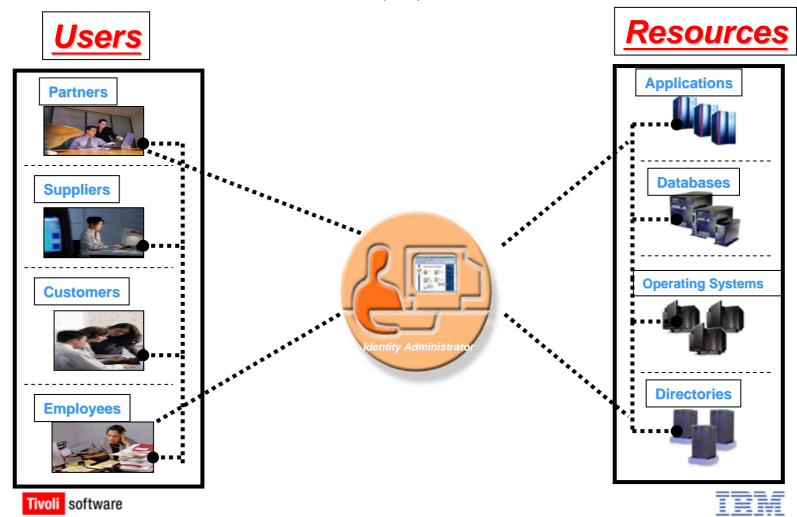
## Tivoli Single Sign-on Solution

- Why Single Sign-on?
- How Single Sign-on works?
- → IBM Tivoli Single Sign-on Solution
  - → TAMeB Web Based SSO
  - → TAMESSO Legacy SSO
- Backup Identity Management
- Backup Case Study



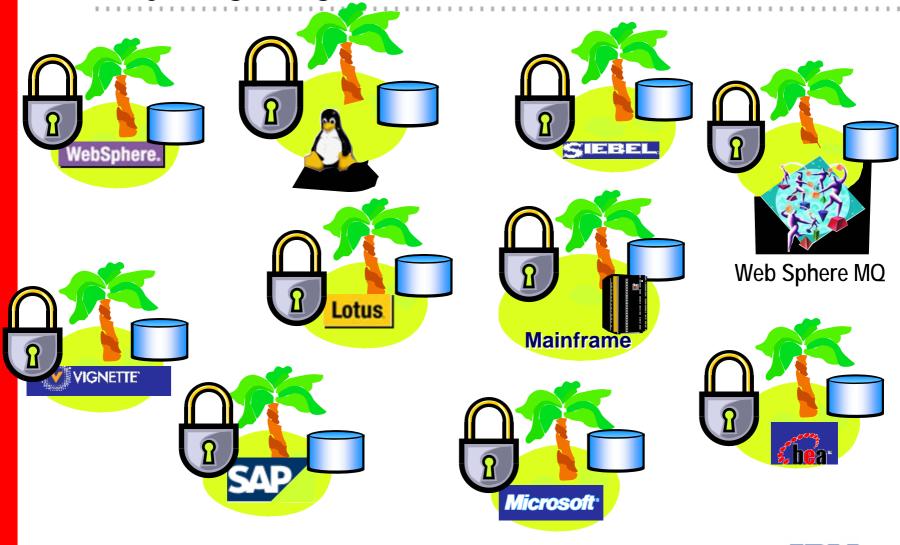
### **Security Basic**

Authentication & Authorization (AA)



## Why Single Sign-On

Tivoli software



- Why Single Sign-on?
- How Single Sign-on works?
- → IBM Tivoli Single Sign-on Solution
  - → TAMeB Web Based SSO
  - → TAMES Legacy SSO
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- Backup Case Study



#### How Single Sign-on Works

- Legacy Single Sign-on
  - ✓IBM Tivoli Access Manager for ESSO
- Web-Base Single Sign-on
  - ✓ IBM Tivoli Access Manager for e-Business
- Federal Identity
  - ✓ IBM Tivoli Federated Identity Manager



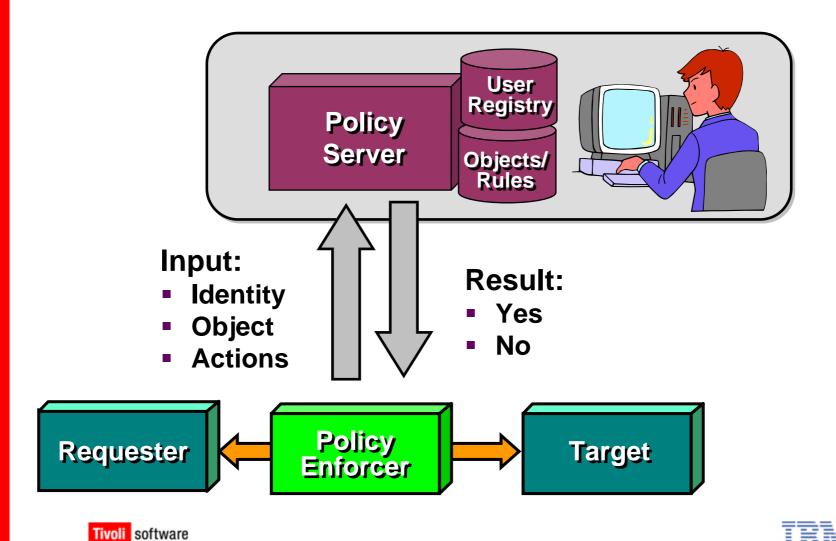


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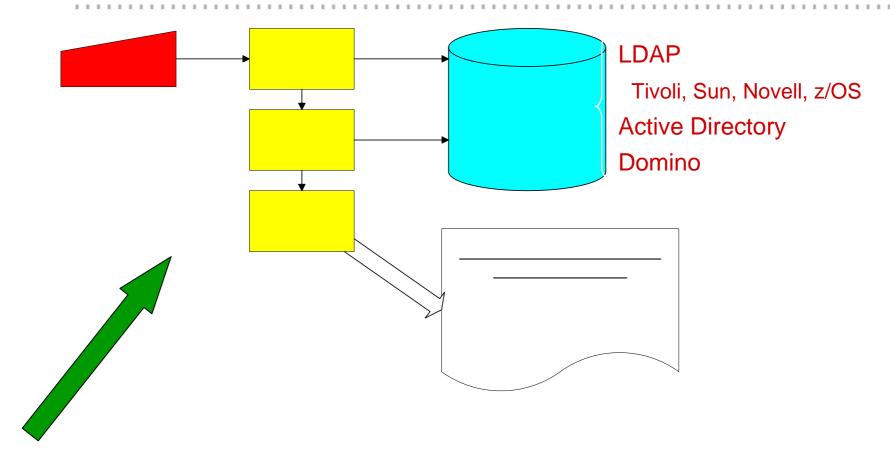




#### **Authorization Decision Model**



#### Tivoli Access Manager authentication service

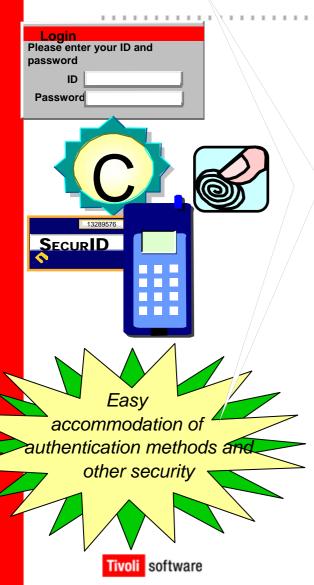


The <u>credential</u> is the end result of authentication. It contains the <u>user's identity</u>, the <u>identities of the groups (roles)</u> that he belongs to, and other information about the user that will be used by TAM to determine his access rights. **information** 





#### How does TAM authenticate users?





- Prove incoming users identity
  - Basic authentication
  - Forms-based authentication
  - X.509 Certificate
  - Kerberos ticket
  - RSA SecurID Token
  - Mobile device
  - Others via Pluggable External Authentication
- Acquire credentials for user Build a credential/EPAC





#### TAMeb Web enforcer: WebSEAL

- Reverse proxy server
  - All inbound Web traffic passes through WebSEAL
  - Authenticates all access to protected resources (against directory server)
  - Communicates with policy server to make authorization decisions (aznAPI)
  - Typically located in Internet DMZ
- Connection to each backend server is called a junction
- Backend selection based on junction name in request
  - Junction name is part of the requested URL path, WebSEAL filters URLs
- Creates a unified Web space for all back-end Web servers /page1 O I Junction: /brand1 www.company.com/brand1/page1 **WebSEAL** www.company.com/brand2/page2

Tivoli software

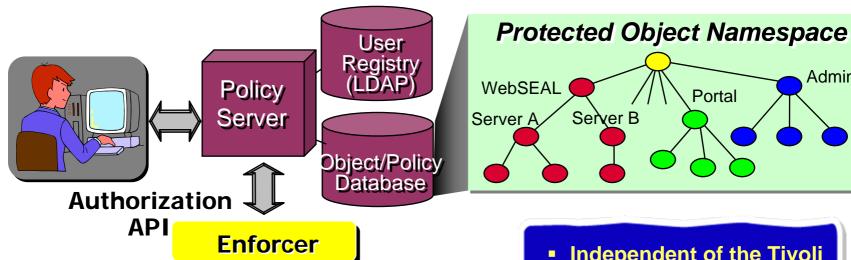
Junction: /brand2

/page2



#### **Administration**

**Unified identity control is more** efficient/effective than managing discipline by discipline



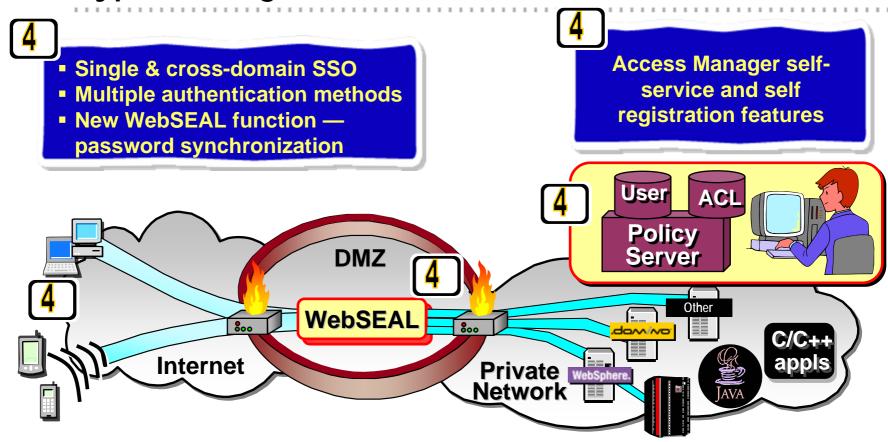
**Independent of the Tivoli Enterprise Framework.** No DCE!





Admin

#### Typical Usage—User Focus



- Higher customer satisfaction
- Lower help desk costs





#### Web Single Sign-On Options

- > iv-user HTTP Header, basicauth HTTP Header
- Forms-based SSO
- Trust Association Interceptor
  - Code that runs on WebSphere
  - Reads iv-user and converts to WebSphere token



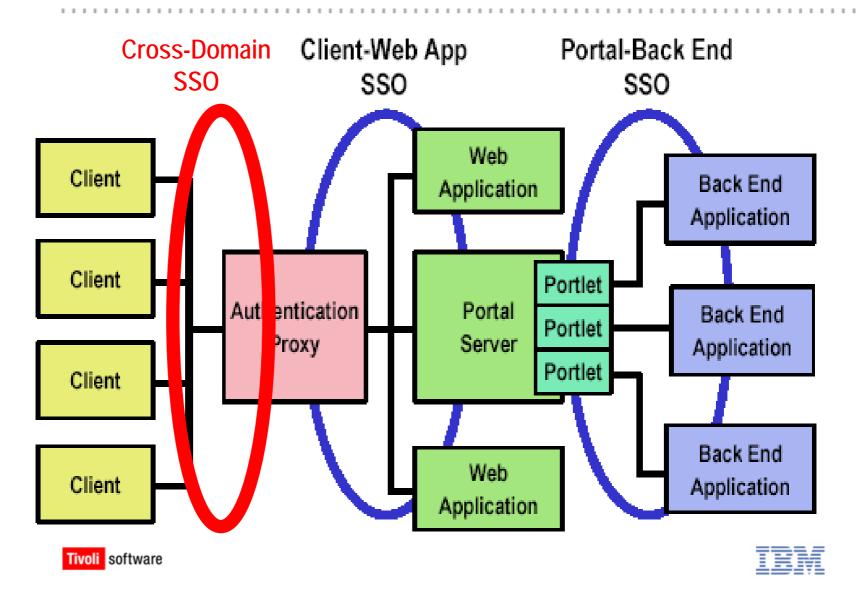
- Like TAI, TAM credential data passed to WAS applications including EJBs
- Improves performance, as WAS calls to LDAP are eliminated, reducing LDAP sever reads by fifty percent.
- Lightweight Third-Party Authentication (LTPA)
  - WebSphere and Domino proprietary SSO approach
  - LTPA server authenticates user; uses session cookie maintains state
  - WebSEAL can act as LTPA server
    - WebSEAL and WebSphere share the same user repository
    - LTPA cookie doesn't reach the client
- GSO Junction
  - Secure password lockbox (required uid/pw supplied)
- Desktop SSO



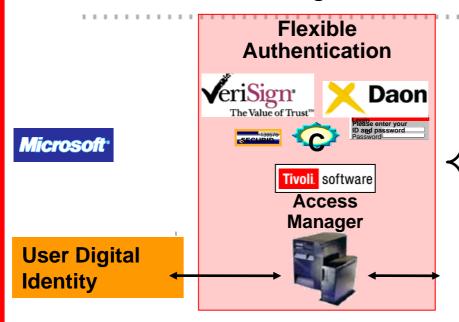




#### Multiple Realms of Single Sign-On



### Tivoli Access Manager: Shared security



- Layered authentication
- Enforce user entitlements
- Web Single Sign-on



- Active Directory
- Tivoli Directory Server
- z/OS LDAP Server
- Sun ONE Directory
- Novell eDirectory
- Lotus Domino Server



**Web Application Servers** 



Any other via J2EE, JAAS, and/or aznAPI



Desktop SSO Active Directory integration



Linux, UNIX, RACF Systems

Lotus Domino, iNotes, Sametime, Team Workplace



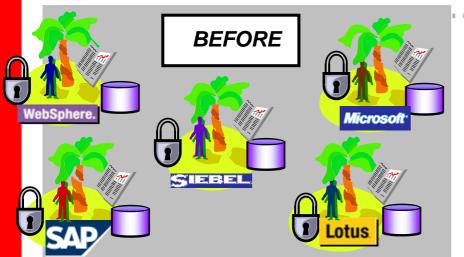
WebSphere MQ

Secure Clients Biometric, Proximity Tokens

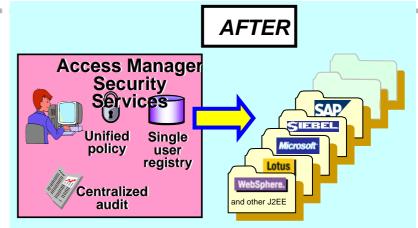




Tivoli Access Manager for e-business



- Uncoordinated application access
- Too many passwords to remember
- Multiple admins with multiple access control tools
- User and access control information everywhere
- Compliance? To what?



- Single point of entry to Web appls
- Web SSO
- Single admin or delegated admins with a single tool
- User and security info centralized/ understandable
- Policy + audit = compliance



= Security policy



= User & group info

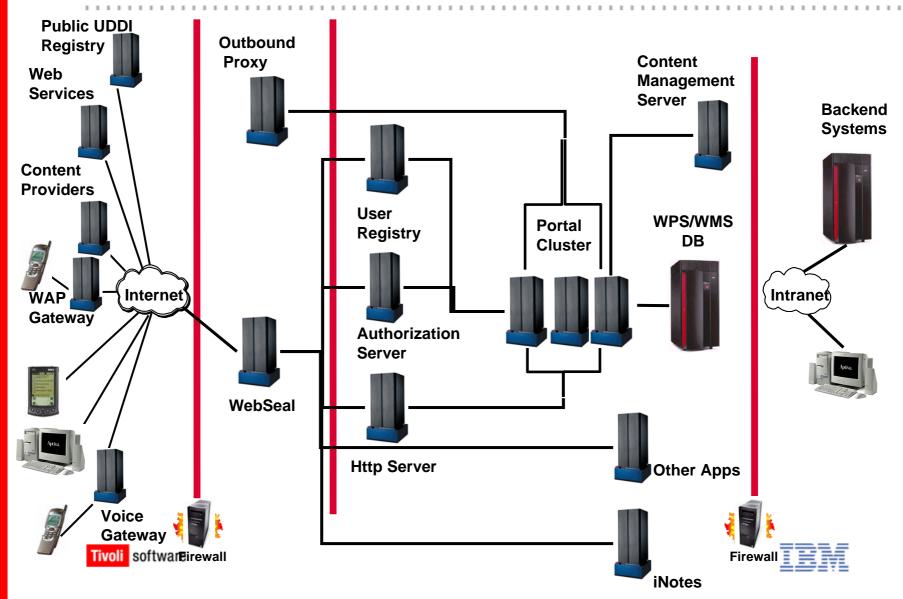


= Audit





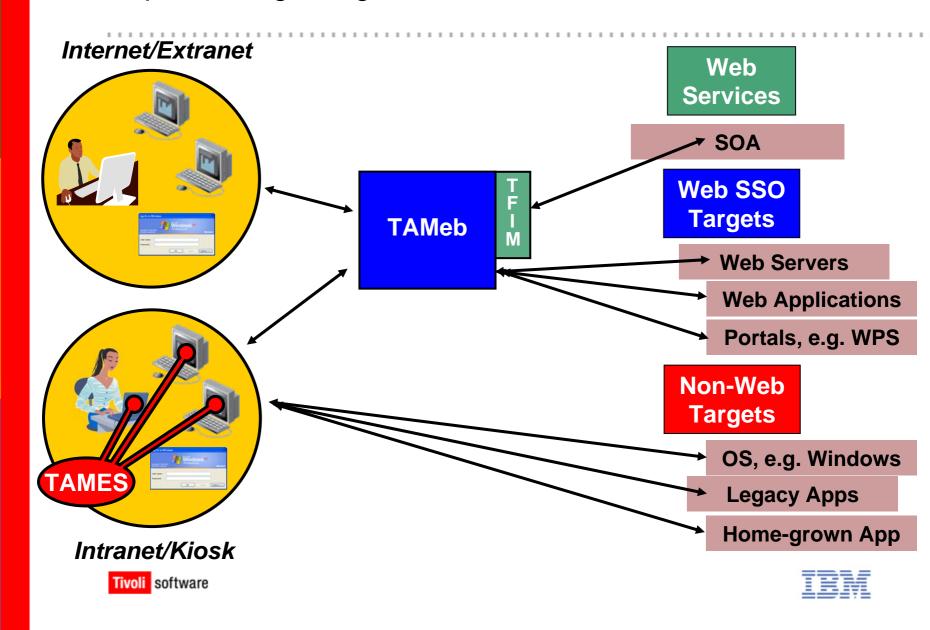
#### Example WPS/WebSeal Topology



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### Complete Single Sign-On Solution



#### 身份管理所面臨的挑戰

- 1. 跨平台、跨系統,符合安全政策要求的使用者帳號建立
- 2. 帳號生命週期維護工作(職位變動,系統更改…)
- 3. 幽靈帳號的存在
- 4. 密碼原則不一致
- 5. 密碼重設成本
- 6. 密碼同步
- 7. 單一簽入需求

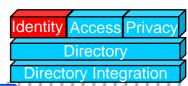
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### **Tivoli Identity Manager**



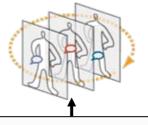
Identity change requested

Access policy evaluated

Approvals gathered

Accounts updated

#### **Detect and correct local privilege settings**



**Tivoli Identity Manager** 

Workflow Diagram

Workflow Name | songt |
Service Type | NT40Profile |
Save | Relayout | Exit |
Approval |
Supervisor 1 |
Supervisor 2 |
Approval |
Approv

Industry's most comprehensive list of supported agents, and toolkit to create more



**Databases** 

**Applications** 

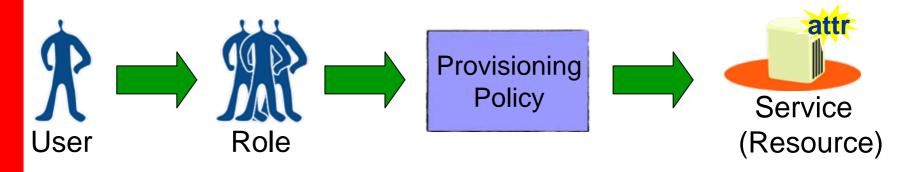




Tivoli software



#### The TIM Provisioning Model

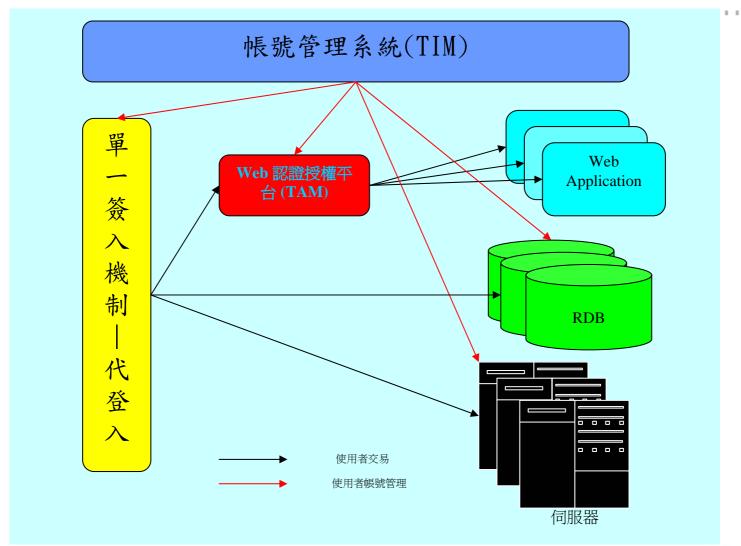


- Users assigned to roles based on responsibilities
- Role members are provisioned to resource(s) via a Provisioning Policy
- Provisioning Policies can also define attributes for a user





#### **IBM Total SSO Solution**



Why Single Sign-on?

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# **Questions?**



Tivoli software



business software

#### Thank You!!



#### **IBM Software Group**

# IBM 整合式的身份管理 & SSO Solution



J. Calvin Wang SWG / IBM Taiwan calvincj@tw.ibm.com







# Agenda

- Customers' Pains
- IBM Total Solution on Integrated Solutions
- Single Sign-on Integration



#### Common Thread and Cost is Identity Management

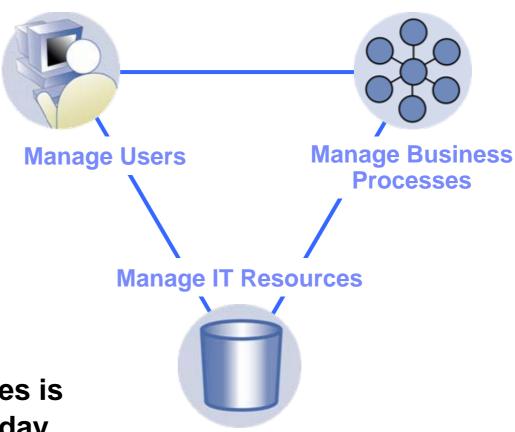
#### **Today's Complexity:**

- Multiple Accounts per User
- Administrators
- Business Processes
- IT Resources
- Linkage via Transactions

# Identity management requires a mix of:

- Business Goals
- Level of Desired Risk
- Resources

Where to apply resources is difficult to determine today



#### 身份管理所面臨的挑戰

- 1. 跨平台、跨系統,符合安全政策要求的使用者帳號建立
- 2. 帳號生命週期維護工作(職位變動,系統更改…)
- 3. 幽靈帳號的存在
- 4. 密碼原則不一致
- 5. 密碼重設成本
- 6. 密碼同步
- 7. 單一簽入需求



#### **Tivoli Identity Manager**

Identity Access Privacy
Directory
Directory Integration

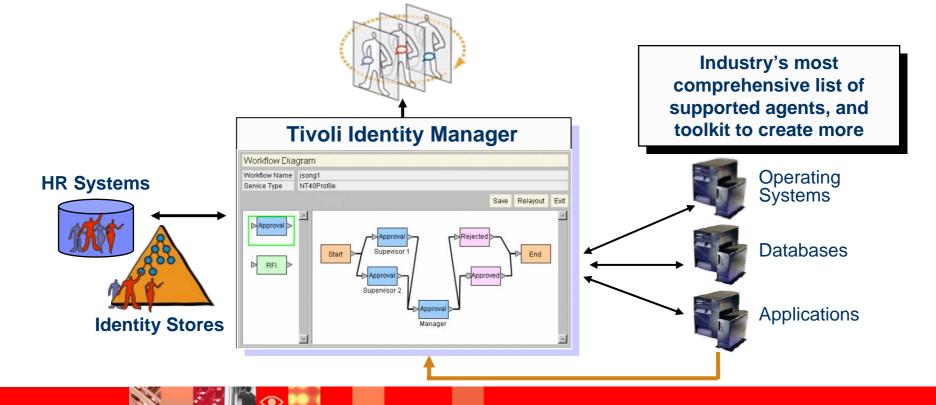
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Access policy evaluated

Approvals gathered

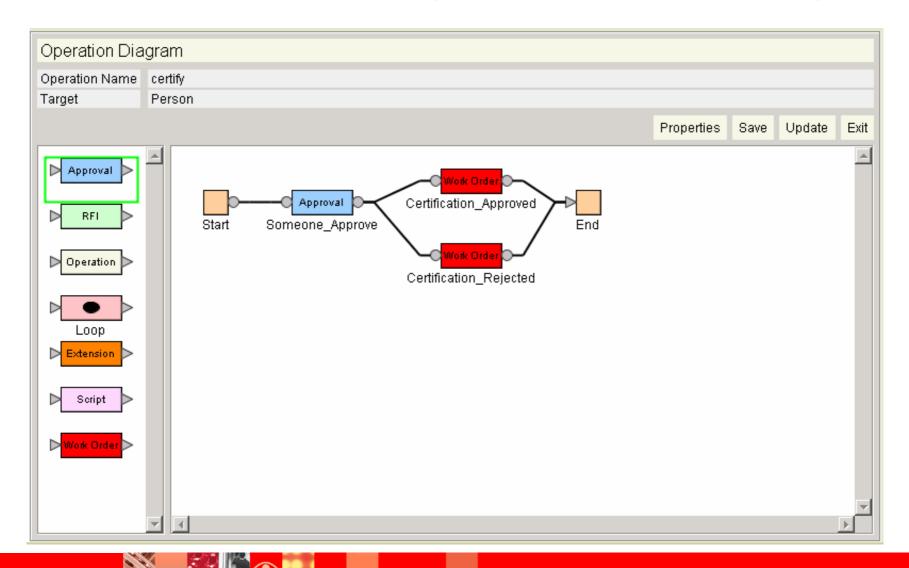
Accounts updated

#### **Detect and correct local privilege settings**

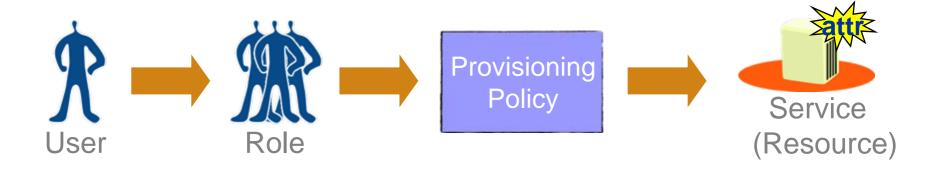




#### TIM's Graphical Lifecycle Management and Workflow Design Tool



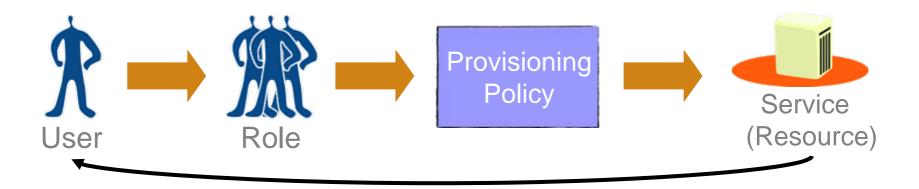
#### The TIM Provisioning Model



- Users assigned to roles based on responsibilities
- Role members are provisioned to resource(s) via a Provisioning Policy
- Provisioning Policies can also define attributes for a user



#### Reconciliation Compares "What Is" to "What Should Be"



- Policy enforced during reconciliation (I.e. permissions on resource)
  - TIM can "roll back" unauthorized changes made by local admin
- Reconciliation identifies orphan accounts
  - Adopted, suspended, restored or de-provisioned

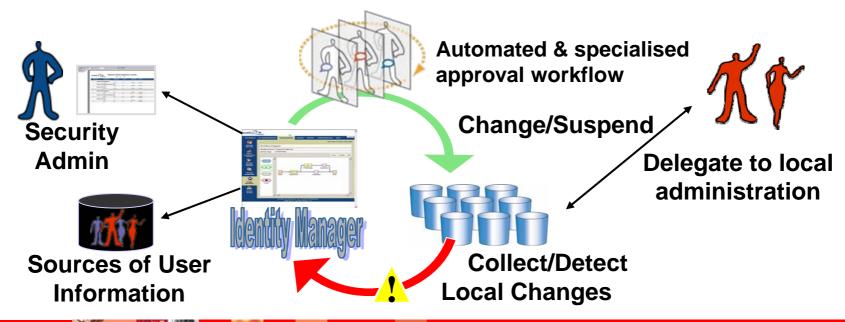




## 機動化的帳號生命週期管理



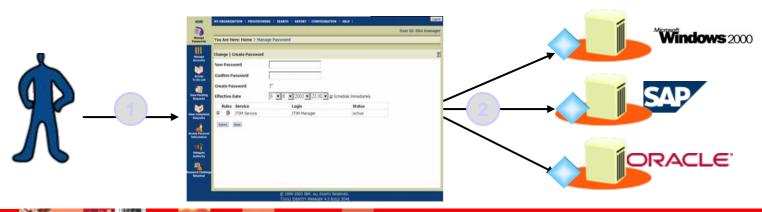
- Automatically provision of user access rights
- Enable user self-service password management
- Delegate administrative responsibility as needed
- Automate identity change management and approval process





## Self Service Reduces Help Desk Calls

- Users may service all of their own attributes (address, title, etc)
  - Challenge response for password reset
- Changes can be reviewed and approved through workflow
- Password Pickup
- Password sync for TIM services
- Reverse password sync for Windows and/or Access Manager users





## Password self-service



- Users can reset their own passwords through Web Interface
  - Passwords can be synchronized
  - Password rules can be specified for each account type
- Challenge Response supported for password reset
  - Supports forced CHAL/RESP
  - Supports customizing answers
  - Supports easy configuration via tab on TIM 4.x GUI
  - Can choose 3 modes: Pre-Defined, User-Selected, Random-Selected





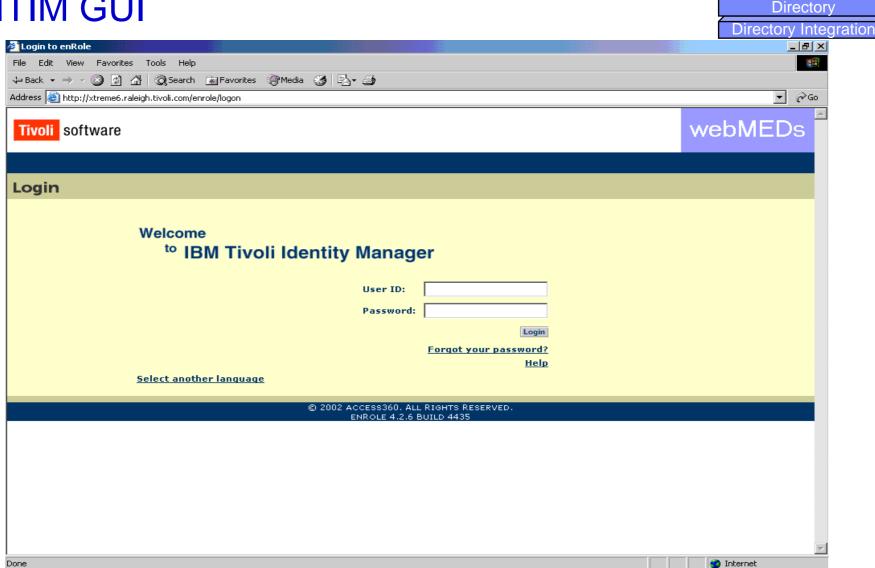
Identity

Access

## **ITIM GUI**

Show Desktop Login to enRole

**Start** 

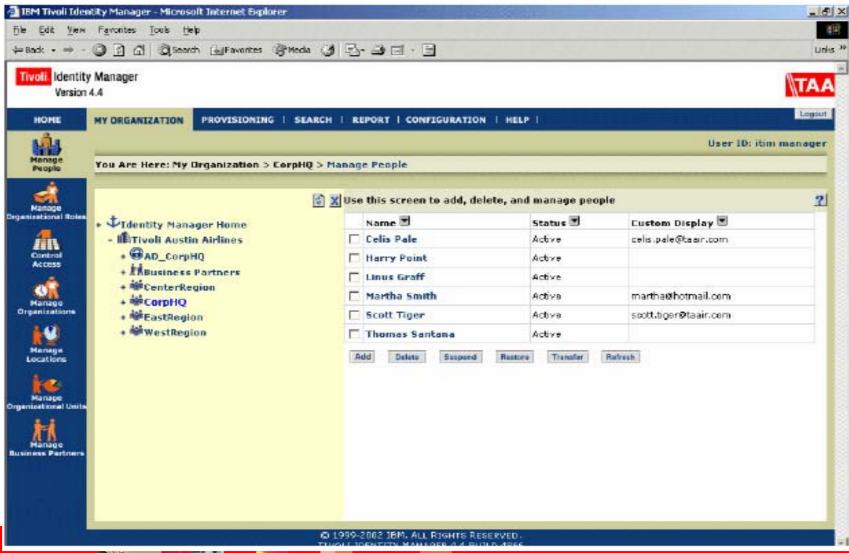


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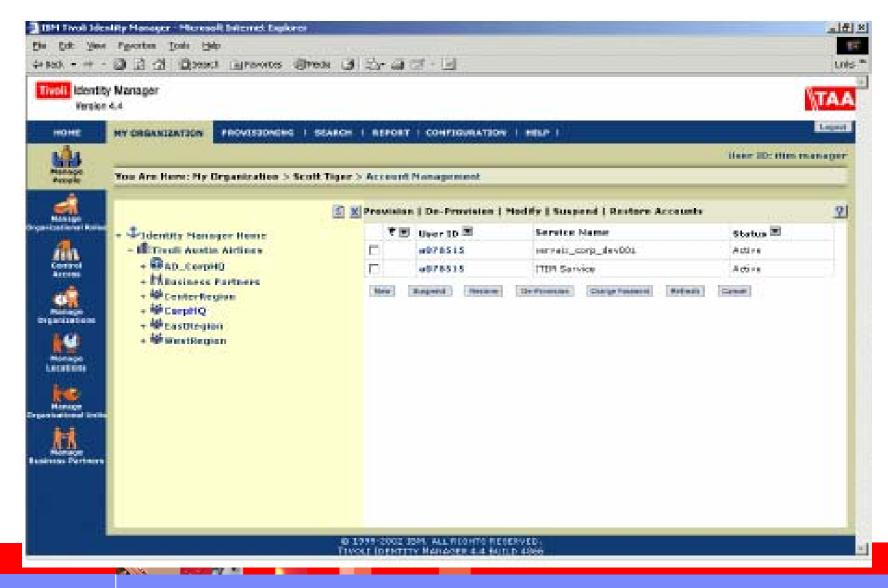
## **GUI Common Features**







## **GUI Common Features**



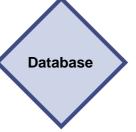
## **Identity Manager Agents**



CA - ACF2 CA - Top Secret Entrust PKI Entrust getAccess **MVS RACF Netegrity SiteMinder** Oblix NetPoint Remedy\* RSA ACE/Server RSA Securant ClearTrust Tandem Safeguard Guardian Tivoli Access Manager\*



Clarify eFrontOffice\* Oracle E-Business Suite **PeopleSoft** Peregrine ServiceCenter **SAP R/3\*** Siebel



IBM DB2/UDB\* Informix\* Oracle 7/8/8i/9i\* SQL Server\* SQL Server 2000\* Sybase\* Teradata DBMS\*



MS-Exchange 5.5\* MS-Exchange 2000\* Lotus Notes\* Novell GroupWise\*

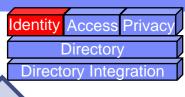


### CLI-X LDAP-X\*

- Critical Path Injoin
- IBM Directory Server
- Novell Directory Services
- Oracle OID
- Sun iPlanet Directory

RDBMS-X\*

Universal Provisioning Agent\*



Operating Systems

HP/Compaq Tru64 HP-UX **IBM AIX IBM AS/400 OpenVMS** RedHat Linux Sun Solaris SUSe Linux Windows 2000\* Windows NT\*

### Design **Characteristics:**

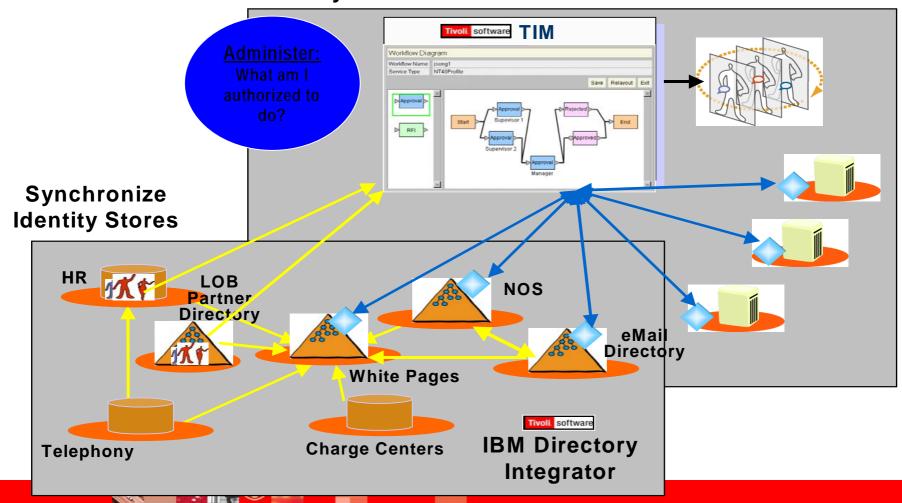
- Secure
- Bi-directional
- Firewall friendly
- \* Offers remote operation



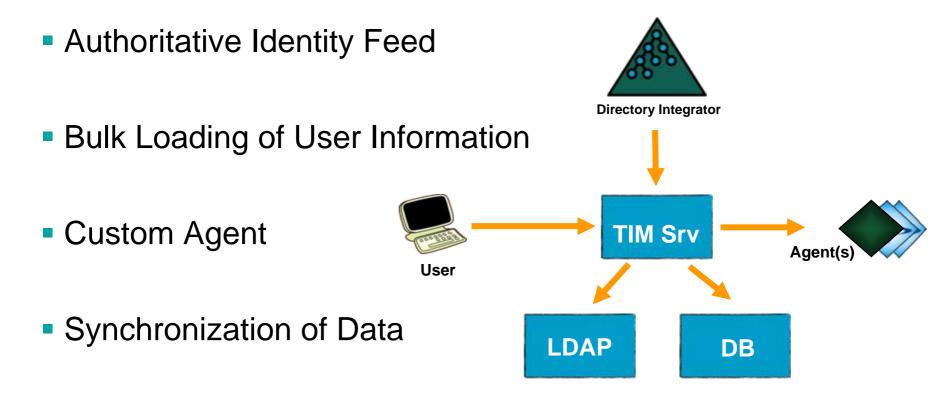


## TIM and IDI Together

### **Identity-Driven User Accounts**



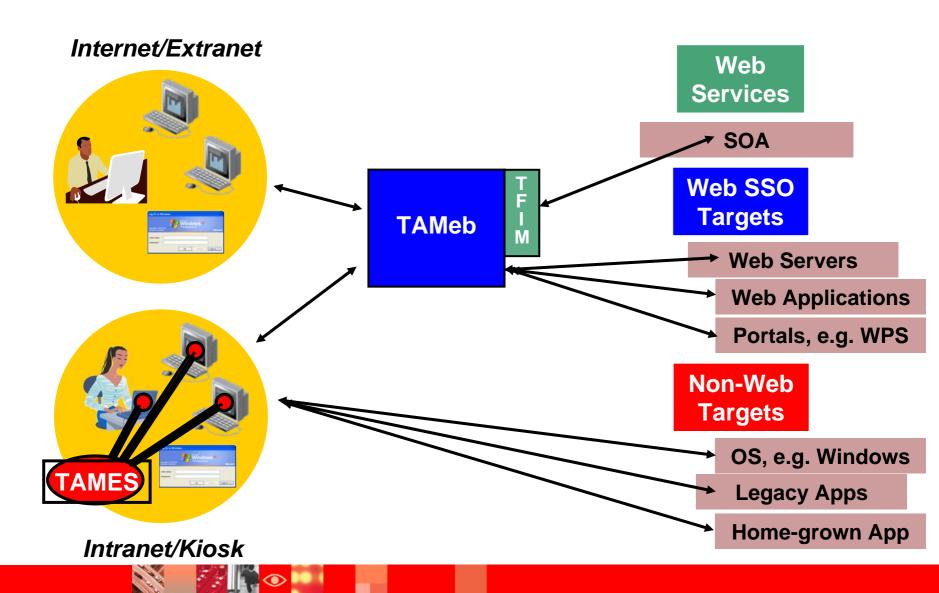
## IDI Simplifies Integration with Existing Environments



IDI Included, but not required



## Complete Single Sign-On Solution

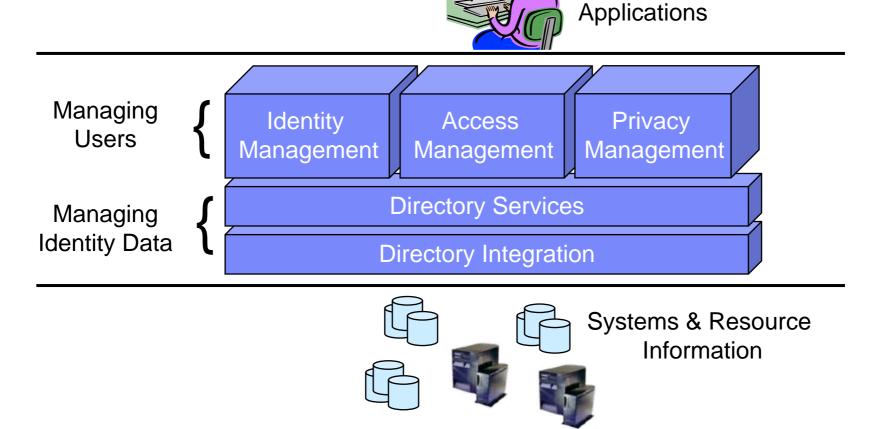


## Benefit for Customer

- Easy to use, Easy to maintain SSO solution.
  - Mature and ready to use.
  - Very thin client, easy to install for just a few step.
  - Cover both Web SSO and Legacy SSO. (Web, Windows, Host Emulator)
- Enterprise centralized Identity Management
  - Account Accountability (No more Ghost Accounts)
  - Password Management (Self-Service, Password) Policy, Password Sync.....)
  - Total Solution for Identity Management



## IBM's 整合式的身份管理解決方案



Users &

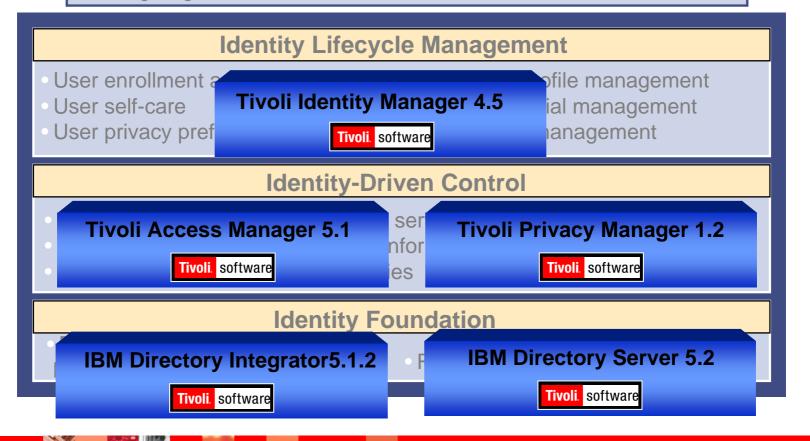


## Identity Management Blueprint Today

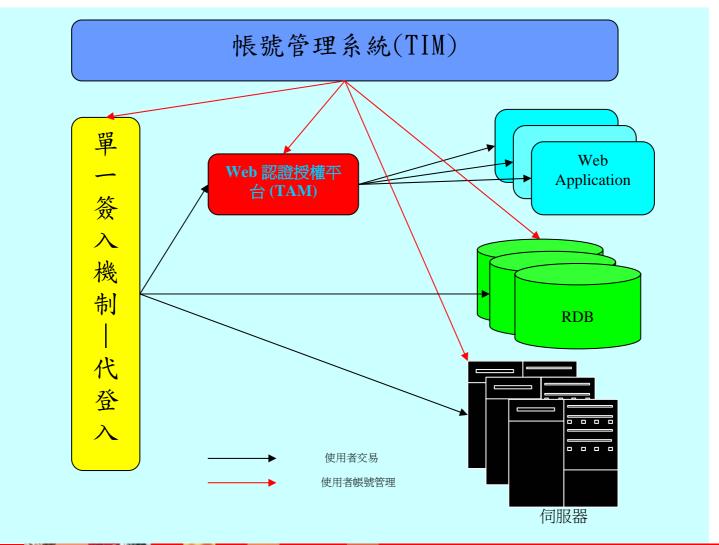
### **Identity Federation**

- Trust Management
- Trust Brokering
- Single sign-off

- Cross-enterprise identity mapping
- Cross-enterprise provisioning



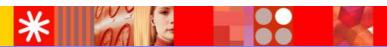
## **IBM Total SSO Solution**



### **IBM Software Group**

## Thank You!!

Tivoli software







## **IBM Encentuate Technical Enablement**

March 19, 2008

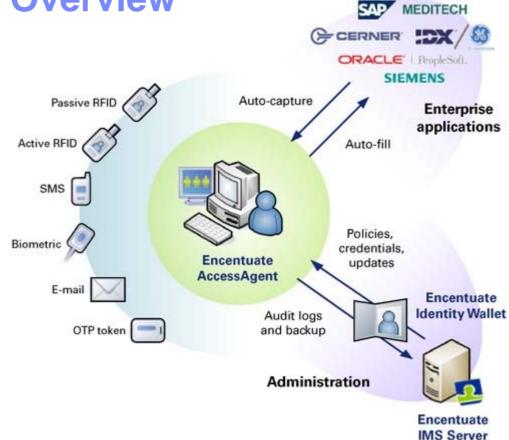
## **Agenda**

- Encentuate Solution Overview
- Architecture
- Value to Customer
  - Differences with TAM ESSO 6.0
- Functional Details
  - Deployment
  - Application support
  - Session Management
  - Client Platform Coverage
  - Centralized Administration
  - Self-service and support
  - Strong Authentication
  - Integration
- Competitive Assessment

## **Encentuate Solution Overview**



- ESSO, Workflow Automation & Context Management
- Two-Factor Authentication & User Access Tracking
- Fast user switching
- Centralized Identity & Policy Management & Audit
- No Modifications Required
- Out-of-Box Compliance



## **Encentuate Alleviates Customer Challenges**

### **Customer Challenges**

- Poor user productivity
- Weak user password security
- Escalating Help Desk costs
- Insecure heterogeneous infrastructure that includes custom and legacy applications
- Inefficient user access log collection
- Difficulty managing security in a shared desktop environment

### **Encentuate Value**

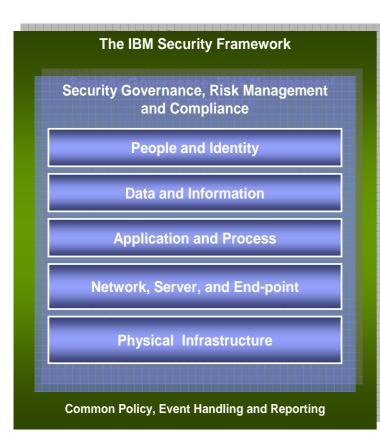
- Automated ESSO to help enhance user productivity, improve security, implement and document compliance efforts, and reduce support costs
- Broad support for common applications and flexible toolkit to extend to applications across the enterprise
- Extensive integration with strong authentication form factors
- Centralized auditing and reporting for visibility into user access
- Controlled session management for shared desktops

Encentuate enables visibility into user activity, control over access to business assets, and automation of the sign-on process in order to drive value for our clients.



# **Encentuate Strengthens the IBM Security Framework**

## **IBM Security Solutions**





### SECURITY COMPLIANCE

 Demonstrable policy enforcement aligned to regulations, standards, laws, agreements (PCI, FISMA, etc..)



### IDENTITY & ACCESS

 Enable secure collaboration with internal and external users with controlled and secure access to information, applications and assets



#### DATA SECURITY

Protect and secure your data and information assets



### APPLICATION SECURITY

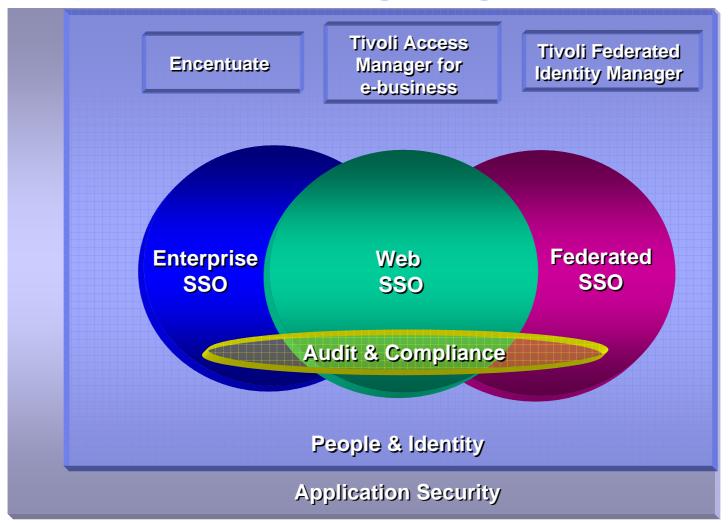
Continuously manage, monitor and audit application security



### INFRASTRUCTURE SECURITY

 Comprehensive threat and vulnerability management across networks, servers and end-points

## **Encentuate Helps Secure People and Applications** to Complete the IBM Single Sign-On Solution Set

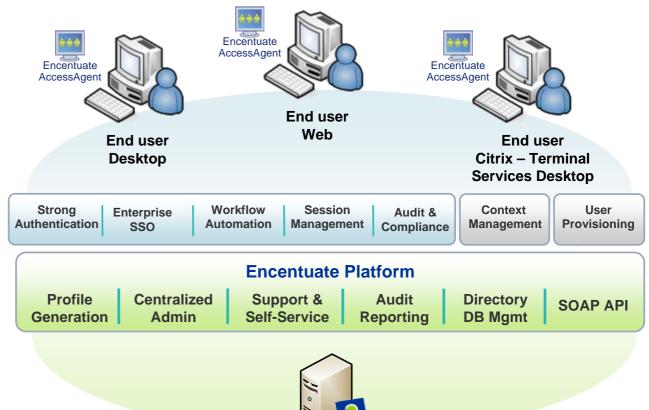




# **Encentuate Provides Extensive ESSO across all end-points**

### **Encentuate ESSO:**

- Simplifies the end user experience and improves time-to-information by eliminating the need to remember multiple user names and passwords
- Facilitates compliance by tracking and collating user access
- Enhances security by eliminating poor end user password behavior and seamlessly integrating strong authentication form factors
- Reduces Help Desk costs by lowering the number of password reset calls

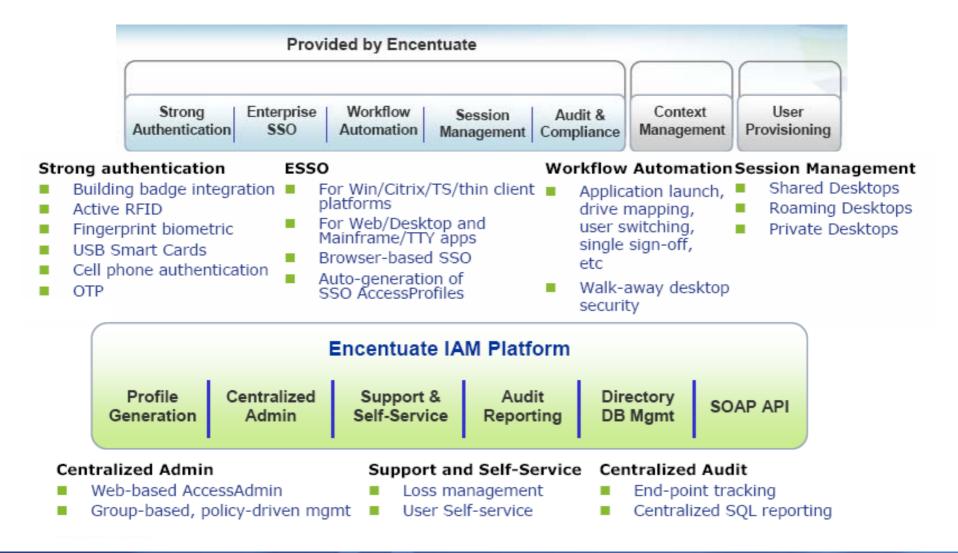


Encentuate

**IMS\* Server** 

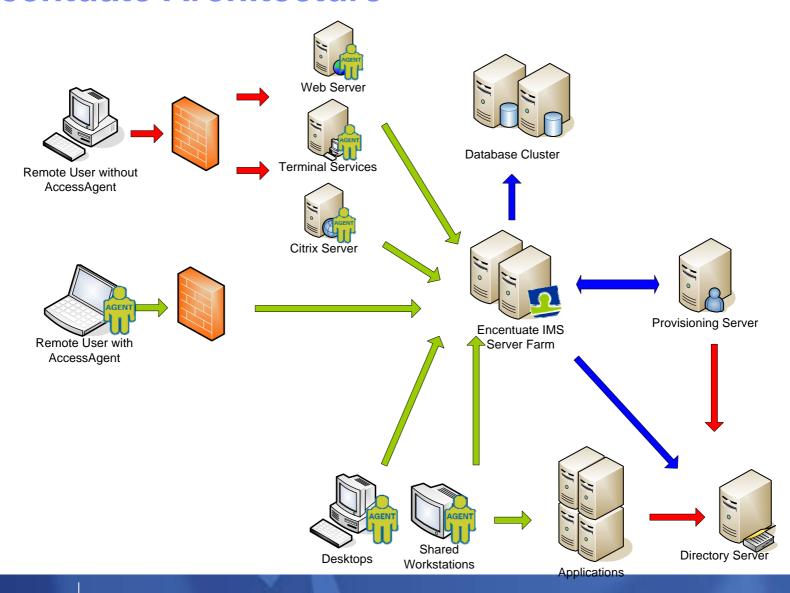
<sup>\*</sup> Integrated Management System

## **Encentuate SSO Suite**





## **Encentuate Architecture**



## **Encentuate Business Benefits**

### **Encentuate ESSO:**

- Simplifies the end user experience and improves time-to-information by eliminating the need to remember multiple user names and passwords
- Facilitates compliance by tracking and collating user access
- Enhances security by eliminating poor end user password behavior and seamlessly integrating strong authentication form factors
- Reduces Help Desk costs by lowering the number of password reset calls

| User productivity       | More than 85% reduction in time-to-information  |
|-------------------------|---|
| Security                | Improved identity assurance and 100% sign-off   |
| Compliance reporting    | More than 75% reduction in audit tracking costs |
| Helpdesk cost reduction | 35-45% reduction in IT helpdesk costs           |

Encentuate automates, strengthens, and tracks access across all enterprise end-points



## The industry praises Encentuate's Business Value



"The 20 physician members of my IT advisory committee applaud Encentuate's system..." - Community Medical Centers

"We have been studying the (IAM) vendors and are impressed with the vision and product offering from Encentuate" – Martin Butler





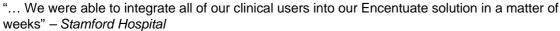
- "... Ensures secure access to patient information while allowing caregivers to work effectively from anywhere..." Barry Runyon, Gartner
  - "...We are able to increase employee productivity and meet the security mandate"
  - Chee-Yuen Yap, Group CIO and Chief Knowledge Officer





"Encentuate ... stood out from the pack ... Encentuate IAM will secure and speed up access to critical information and help with compliance, allowing us to focus on providing financial protection to customers across the globe"

Wei-Lee Loh, AXA







"... Given the dollar investment that I made, my ROI is already met. And how do you put a price tag on protecting information?..." – Moses Cesario VP, Information Systems

"Implementing Encentuate with IBM has allowed us to unite myriad agencies and ministries under a single system, enabling greatly streamlined processes and increased return-on-investments." – IDA



"Best Identity and Access Management Solution for 2007"

- Ileana Armstrong, SC Magazine Editor-in-Chief



## **Satisfied Customers**









































The Regional for Health































Central Provident Fund Board





## **Gartner Validation**

- "Encentuate's price-for-value proposition is very good, providing shared workstation support, self service password reset and stronger authentication integration for a low price relative to competitors..."
- "The Encentuate product set integrates with a good set of stronger authentication options and includes a unique product called iTag ... that can be affixed to anything the user carries and can be used as a form of authentication for the ESSO tool"
- "... the only vendor to provide access to all types of applications through a web browser and without requiring the SSO client to be implemented on the workstation..."
- "Overall they have a very good product set that customers like and has a high rate of out of the box integration with target systems..."
- "They have excellent shared workstation support and have the ability to provide each user with their own private desktop not just share applications with a common desktop as other vendors do..."



## **Encentuate vs TAM ESSO v6**







- Encentuate is acknowledged as the Best Idm, SSO and 2FA solution in the industry
- Better session management
  - Personal, Shared, Private, Roaming.
- Better support for strong authentication
  - Supports cellphone/email authentication, building access badges.
- Comprehensive end-point coverage
  - Supports Windows 2000, XP, XPe, Ce, TS, Citrix, Web Workplace
- High degree of out of box integration
  - Passlogix: Some target systems are hard to integrate with [Gartner]
- Centralized reporting and auditing
  - Passlogix: Reporting and Auditing not built in [Gartner]
  - Encentuate tracks all events at each end point and collates them centrally into an integrated SQL reporting database
  - Tracking can be customized

# Plans for IBM Tivoli Access Manager for Enterprise Single Sign-on Packaging and Pricing

## Standard License

- Core ESSO functionality
- Self-service password reset
- Centralized logging
- \$69 per user



**Suite License** 

- Standard license plus...
- Strong authentication and user provisioning support
- Session management and workflow automation
- Customized tracking
- \$99 per user

### **QuickStart Services**

- 500 user license, 1 year support, 10 days of services, limited set of applications
- Standard QuickStart \$35k, Suite QuickStart \$50k
- Availability TBD based on skill ramp up

## **Encentuate Product Guides – Technical Resources**

- Administrator Guide
  - For administrator's day-to-day activities and basic system setup (using configuration wizard)
- Helpdesk Guide
  - For helpdesk's day-to-day activities
- User Guide
  - For users
- AccessStudio Guide
  - For AccessProfile authors
- USB Key Utility Guide
  - For USB Key administrators
- Enterprise Deployment Guide
  - For technical consultant's advanced understanding of Encentuate IAM and configuration of advanced features
- Remote Access Integration Guide
- Provisioning Integration Guide
- Context Management Integration Guide



## **Functionality Coverage**

## **Key Feature Summary**

### Deployment

- AD GPO support
- Auto- & 2-Phase Registration
- Setup assistants

### Application Support

AccessStudio

### Session Management

- Personal Desktop
- Shared Desktop
- Private Desktop
- Roaming Desktop

### Platform Coverage

- Windows
- Citrix Support
- TS
- Thin Client
- Web Workplace
- Application Virtualization

#### Centralized Admin

- AccessStudio
- AccessAdmin with group-based policies
- Centralized audit log & reporting
- Customized tracking
- Leverage existing infrastructure

### Self services and support

- Authorization Code bypass
- Offline Reset
- Self-service
- AccessAssistant

### Choice of 2<sup>nd</sup> Factors

- Building Access Badge
- Active RFID
- Sonar Support
- Biometric Support
- USB Key
- Mobile ActiveCode
- OATH/Vasco OTP token support

### IAM Integration

- User Provisioning
- Context Management

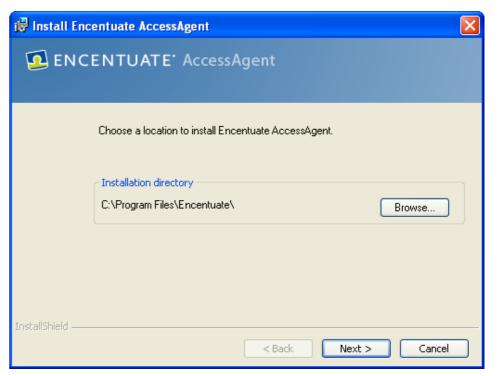


## **Easy to Deploy**



## Centralized Install thru AD GPO

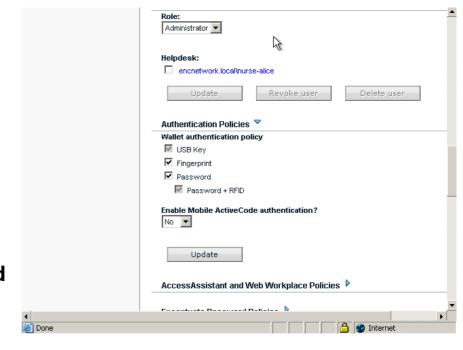
- AccessAgent installation can be pushed through AD GPO.
- Other push software supported through MSI installer on a case by case basis
- Customer Impact:
  - Centralized installation and setup





## **Auto-and 2-phase Registration**

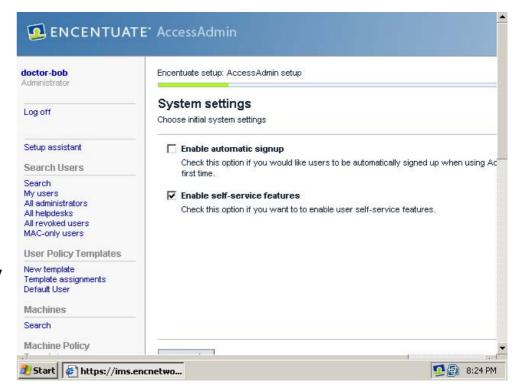
- Auto-registration using AD credentials
- Register first, bind with 2<sup>nd</sup> factor anytime during grace period.
- Customer Impact:
  - Rapid registration of Encentuate.
  - Facilitates distribution and adoption of 2ndfactor
- Limitations:
  - Auto-registration only for AD password sync
  - Auto-registration => no user-defined secret => security implications





# **Setup Assistants**

- Setup assistants offer wizardbased configuration for:
  - AD setup
  - Personal/Shared workstation setup
  - Authentication policies
- Set up typical workflows without the need to understand individual policies
- No need to tweak Windows registry settings
- Customer Impact:
  - Rapid deployment of Encentuate
  - Centralized management of machine policies
  - One install package for all end-points





# **Comprehensive Application Support**

# **Encentuate Application Support**

- Encentuate provides out-of-the-box integration with hundreds of applications (> 300 proven), either with the "web auto-learn" capability, or with 22 prebundled application profiles:
  - Windows Logon, Meditech, AOL Instant Messenger, Cisco VPN, Eudora,
     Windows Explorer, GoldMine, iPass, Intellisync, MSN Messenger, Lotus Notes,
     Outlook, Outlook Express, PuTTY, Windows RDP Client, Reflection, SecureCRT,
     Skype, VNC Client, Yahoo Messenger, Novell Logon, Citrix ICA Client,
- Capability to logon, change password, and logoff from applications using the following methods
  - Web interfaces (form based, pop up sign-on, dropdown lists, radio buttons, pop up dialogs, and checkboxes)
  - Windows screens
  - Java
  - Mainframe and Hosts through Emulators (EHLLAPI 3270, 5250, telnet)

# **Encentuate Application Support**

- The initial logon to Encentuate can be integrated with the following main authenticators:
  - Windows Log On, Windows 2000/XP/Server 2003, Active Directory Login, NT Domain, Novell Client, Kerberos/NTLM, Option to enhance Microsoft's GINA
- Encentuate provides accessibility to intranet applications driving SSO through Dialup,
   Networking and VPN Support, like:
  - Cisco, Checkpoint, Nortel, Microsoft VPN, Microsoft dial-up networking, iPass, GRIC,
     Fibrelink, Citrix Nfuse
- Encentuate connects to hosts (TTY) and mainframe applications using:
  - Pre-configured for commercial and custom terminal emulators such as Putty, Secure CRT, Reflections, Rhumba, etc.
  - Support for commercial and custom mainframe applications such as Care Manager and Meditech
  - Supports multiple log on and password screens

| <ul> <li>A4 HealthMatics</li> </ul>                    | Centricity RIS Scheduling                    | <ul> <li>Cpusermonitor</li> </ul>                   | • FRX Designer                          | <ul><li>iTelecash</li></ul>               | <ul> <li>Novell Client</li> </ul>         | <ul> <li>Reflection</li> </ul>              | <ul> <li>Trendcare</li> </ul>         |
|--|--|---|---|---|---|---|---------------------------------------|
| • ABS  | Centricity RIS Supply                        | <ul><li>Craneware</li></ul>                         | • rkx keport                            | <ul> <li>JCRAccreditation</li> </ul>      | <ul><li>Novius</li></ul>                  | • REG                                       | <ul> <li>Trendstar</li> </ul>         |
| <ul> <li>AccessLine</li> </ul>                         | Management                                   | - CRM   | • FusionServer                          | ■ Jre                                     | <ul><li>Ntracts</li></ul>                 | <ul><li>Remedy</li></ul>                    | • TTPLS                               |
| <ul> <li>AccessMyCMC</li> </ul>                        | <ul><li>Centricity-PACS</li></ul>            | <ul><li>CWEB</li></ul>                              | - rwpolicy                              | <ul> <li>Keppel Webmail</li> </ul>        | <ul><li>Obix</li></ul>                    | <ul> <li>Remote Desktop Client</li> </ul>   | <ul> <li>TullyWihr</li> </ul>         |
| <ul> <li>Activconsole</li> </ul>                       | <ul> <li>Centricity-Portal</li> </ul>        | <ul><li>DBS.com</li></ul>                           | GeBiZ                                   | <ul><li>Kinwin32</li></ul>                | <ul><li>oexplore</li></ul>                | <ul><li>ReportXpress</li></ul>              | <ul> <li>United Healthcare</li> </ul> |
| <ul> <li>ActiveX Test App</li> </ul>                   | <ul><li>Centricity-RIS</li></ul>             | <ul> <li>DCHS Access</li> </ul>                     | • GEHA                                  | • Kml                                     | <ul><li>OneStaff</li></ul>                | <ul><li>RiskMonitor</li></ul>               | Online                                |
| <ul> <li>AdminPass</li> </ul>                          | <ul> <li>Centricity-Web</li> </ul>           | <ul><li>Dchsnet</li></ul>                           | • Global Request System                 | <ul><li>Kronos</li></ul>                  | <ul> <li>Oracle Financials</li> </ul>     | <ul> <li>RMReport</li> </ul>                | • UPS                                 |
| • AH INTRANET  | • CERME                                      | • DDE   | GW Supply Power                         | <ul><li>KronosWeb</li></ul>               | <ul><li>Outlook</li></ul>                 | ■ RR5                                       | • VES                                 |
| • AION   | Cerner Millennium                            | <ul><li>Designer</li></ul>                          | • Gmail                                 | <ul><li>Lab Monitor</li></ul>             | <ul> <li>Outlook Express</li> </ul>       | <ul><li>Rumba</li></ul>                     | <ul><li>VI_Client</li></ul>           |
| - Alert32  | <ul> <li>Certified Mail</li> </ul>           | <ul> <li>DSG Support</li> </ul>                     | • Goldivine                             | <ul> <li>LabTracker</li> </ul>            | <ul> <li>Outlook Web Access</li> </ul>    | ■ RunAs                                     | <ul><li>Visual DX</li></ul>           |
| <ul> <li>AlertMonitor</li> </ul>                       | <ul> <li>Chargemaster</li> </ul>             | DSG-GUI   | GOTOCIVIC                               | <ul> <li>Lastword</li> </ul>              | <ul> <li>PacifiCare</li> </ul>            | <ul> <li>Santa Clara IPA</li> </ul>         | • VNC                                 |
| • Am nt  | <ul> <li>Chart Review</li> </ul>             | ■ Eaadmin32   | <ul> <li>Great-west</li> </ul>          | Launch32                                  | • PACS                                    | ■ SAP                                       | <ul> <li>VNC Viewer</li> </ul>        |
| API Software   | <ul><li>ChartMaxx</li></ul>                  | ■ e-Claims  | <ul> <li>Hb.stcu.org</li> </ul>         | <ul><li>Learn</li></ul>                   | <ul><li>Pacwin</li></ul>                  | SAP - Ver 6                                 | <ul><li>VoiceWave</li></ul>           |
| API-Report Express                                     | <ul> <li>CHB Network Drives</li> </ul>       | ■ Econolink2000                                     | - HBOWEW (Star)                         | ■ Learn iT                                | <ul><li>Passport</li></ul>                | <ul> <li>SAP Enterprise Portal</li> </ul>   | <ul><li>VolunteerWorks</li></ul>      |
| • ASK IT   | <ul> <li>CHB Web Application</li> </ul>      | ■ ED Tracking Board                                 | ■ Health Fusion                         | <ul> <li>Legal Billing System</li> </ul>  | <ul> <li>Pathways Reports</li> </ul>      | <ul><li>Schwab.com</li></ul>                | <ul> <li>WebConnect</li> </ul>        |
| • Aurora   | <ul> <li>Chemotherapy Order Entry</li> </ul> | (PCView)  | ■ Health Net                            | <ul><li>Loginw32</li></ul>                | <ul><li>Pcsws</li></ul>                   | <ul><li>SecureCRT</li></ul>                 | <ul><li>WebMD</li></ul>               |
| • Bcscons  | CHMenu Web                                   | <ul> <li>EDOC Writer</li> </ul>                     | <ul> <li>HealthcareEducation</li> </ul> | <ul><li>Lotus Notes</li></ul>             | <ul><li>PensionExpress</li></ul>          | • SERS                                      | <ul><li>WebMedicityProA</li></ul>     |
| Blue Cross CA  | Cigna  | <ul> <li>EDWeb</li> </ul>                           | • HealthStream                          | <ul><li>Lotus Notes - Ver 6</li></ul>     | <ul><li>PeopleSoft</li></ul>              | <ul> <li>Siebel CRM OnDemand</li> </ul>     | ccess                                 |
| Blue Shield  | Cigna Subscriber                             | ■ eGate   | ■ HealthStream-Admin                    | • LRTS                                    | <ul> <li>PeopleSoft Financials</li> </ul> | <ul><li>Skype</li></ul>                     | • WIINGS                              |
| Blue Shield Subscriber                                 | • Cirius                                     |   | • HLV                                   | <ul><li>MagicWeb</li></ul>                | <ul> <li>PeopleSoft HR</li> </ul>         | <ul><li>SmarTerm</li></ul>                  | • Windows Logon                       |
| BudgetAdvisor  | <ul><li>Cirius_Reports</li></ul>             | Folder  | • HMS                                   | <ul> <li>Mainframe Application</li> </ul> | ■ PFM                                     | <ul><li>SMS Invision</li></ul>              | • Winnetuse                           |
| Busobj   | Cisco VPN Client                             |   | <ul> <li>Homecare</li> </ul>            | <ul><li>MaterialsMgmt</li></ul>           | ■ PGP                                     | <ul> <li>Soarian_Clinicals</li> </ul>       | • WinSCP                              |
| • Caliber RM   | <ul> <li>Cisco VPN eToken</li> </ul>         | <ul><li>Empower</li></ul>                           | ■ Horizon Meds Manager                  | • MAX                                     | • PHS                                     | <ul><li>Soarian_Scheduling</li></ul>        | • Winspool                            |
| • CallLog  | • Citrix                                     | • EMR   | • (HMM)                                 | <ul> <li>McKesson Care Manager</li> </ul> | <ul> <li>Physician Portal</li> </ul>      | <ul> <li>Socrates</li> </ul>                | • Winspool400                         |
| • Calllog32  | Citrix ICA Client                            | • EMR_IWS   | ■ HRS-D                                 | <ul> <li>Mckesson Star</li> </ul>         | ■ PMM                                     | <ul> <li>Socrates Proxy</li> </ul>          | • WS Comets                           |
| CapitalAdvisor   | Citrix Nfuse                                 | <ul> <li>EncoderPro</li> </ul>                      | <ul> <li>Hyperion Planning</li> </ul>   | <ul><li>MckessonSupply</li></ul>          | ■ PMPA                                    | Authentication                              | Yahoo Messenger                       |
| Captura  | <ul> <li>Clinical Workstation</li> </ul>     | <ul><li>ePayslip</li></ul>                          | Hyperion Reports                        | ■ Md2001                                  | ■ Pom                                     | ■ SoftLab                                   | <ul><li>Yahoo web</li></ul>           |
| Careman  | <ul> <li>ClinicalBrowser</li> </ul>          | • Epic  | • IDEX                                  | <ul><li>Mdiapp</li></ul>                  | <ul> <li>Powerscribe</li> </ul>           | ■ SoftMed                                   |                                       |
| CareManager  | CMS Supervisor                               | <ul><li>e-Premis</li></ul>                          | • IBM_personal_communica                | • Medgician                               | <ul> <li>PrecyseEdit</li> </ul>           | • SOS                                       | 4.0                                   |
| CBISA-WebEntry   | <ul> <li>CodeCorrect</li> </ul>              | - Esp   | ons                                     | <ul><li>Medi-Cal</li></ul>                | <ul><li>PrecyseNet</li></ul>              | Spacelabs - ICS                             | S                                     |
| Centicity RIS  | <ul><li>Cognos</li></ul>                     | <ul><li>ESP+Desktop</li></ul>                       | ■ icChart                               | <ul><li>Meditech</li></ul>                | <ul> <li>Privilegelnquiry</li> </ul>      | Sqaman32                                    |                                       |
| Technologist   | Cognos Impromptu                             | • ESS   | <ul><li>IEConnect</li></ul>             | <ul> <li>Meditech Web</li> </ul>          | ■ PROCOMM PLUS Workpla                    | ice gui                                     | 0                                     |
| <ul> <li>Centricity RIS Equipment</li> </ul>           | <ul> <li>Computrition</li> </ul>             | <ul> <li>Essbase Application<br/>Manager</li> </ul> |   | <ul><li>MedSeries4</li></ul>              | <ul><li>Putty</li></ul>                   | Ssadmin                                     |                                       |
| Manager  | Connect32                                    | Essbase Excel Add-                                  |   | • MISP                                    | • QCI                                     | ■ Ssexp                                     | 4-                                    |
| <ul> <li>Centricity RIS Key Word<br/>Search</li> </ul> | Content Manager                              | in  |   | <ul><li>Misys</li></ul>                   | <ul> <li>Quadramed</li> </ul>             | <ul> <li>Staffware Process Clien</li> </ul> | י ת                                   |
| Centricity RIS   | • Cplgv                                      | • FAS   | • iHR                                   | ■ Mp2                                     | <ul> <li>Quality Edge</li> </ul>          | ■ StaplesLink                               | Ö                                     |
| Mammography Tracking                                   | • CPRS                                       | <ul><li>Faxsrvr</li></ul>                           | ■ IMaCS                                 | <ul> <li>Mplus-Patient-Lookup</li> </ul>  | <ul><li>Quantim</li></ul>                 | • STAR                                      |                                       |
| Centricity RIS Order                                   | - Cprtm                                      | <ul> <li>FeedbackMonitor</li> </ul>                 | <ul><li>ImageCast</li></ul>             | • MRMS                                    | <ul><li>Quantros</li></ul>                | Stentor                                     |                                       |
| Management   | Cpsecuremotepw                               | • FISH  | <ul><li>Intellisync</li></ul>           | • MRS                                     | <ul> <li>Radiology Monitor</li> </ul>     | • Stix                                      |                                       |
| <ul> <li>Centricity RIS Radiology</li> </ul>           | CPSS Enquiry                                 | <ul> <li>FMReport</li> </ul>                        | ■ iPharm                                | <ul> <li>MS Access Database</li> </ul>    | • RAS                                     | <ul><li>T4_Scheduling</li></ul>             |                                       |
| Centricity RIS Repotr                                  |  | F F 4   | IRSS Web                                | MS4 Data Transfor                         | - DCA                                     | <ul> <li>TDWeb</li> </ul>                   |                                       |

MS4 Data Transfer

MSN Messenger

Muse CV

MS4 Data Transfer Excel

• RCA

RedDot

Reflection

ReDoc Application

IRSS Web

• iSite\_radiology

iSeries

iTelecash

FormFast

Formsengine

FRx Designer

 Centricity RIS Repotr Browser

 Centricity RIS Scheduling CPSS Production

Cpusermonitor

Cpstat

TDWeb

TimePC

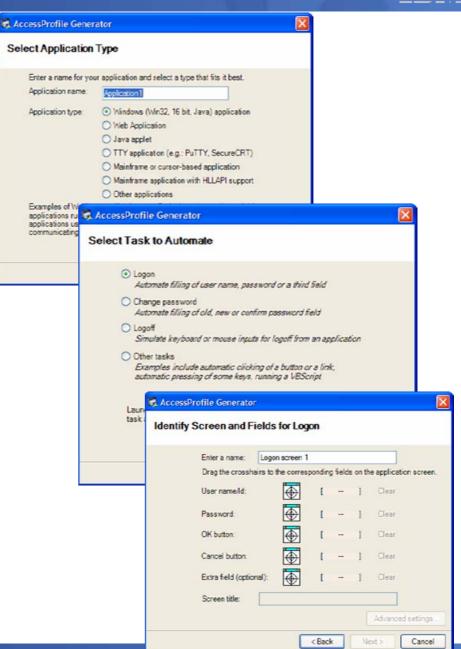
Track-It

■ TraceMasterVue



## **AccessStudio**

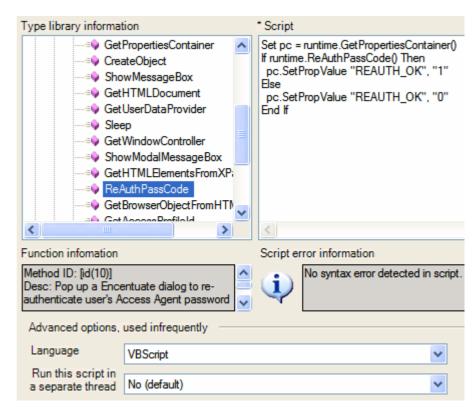
- Creates and manages application AccessProfiles for E-SSO.
- Support for Wizard-based generation and Form-based generation
- Customer Impact:
  - Speeds up deployment of E-SSO
  - Simplifies support for E-SSO





# **AccessAgent Plug-ins**

- Create custom triggers and actions for AccessAgent automation
- Using JScript and VBScript
- Customer Impact:
  - Customizable Agent behavior
  - Ability to handle complex automation sequences





# **Application Virtualization**

- Enables E-SSO for applications virtualized through
  - Microsoft SoftGrid, or
  - Thinstall
- Customer Impact:
  - More application coverage.





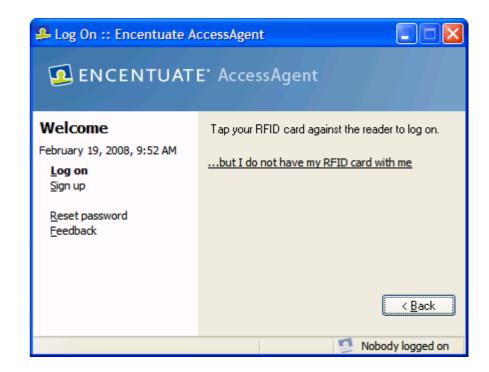


# **Complete Session Management**



## **Personal Desktop**

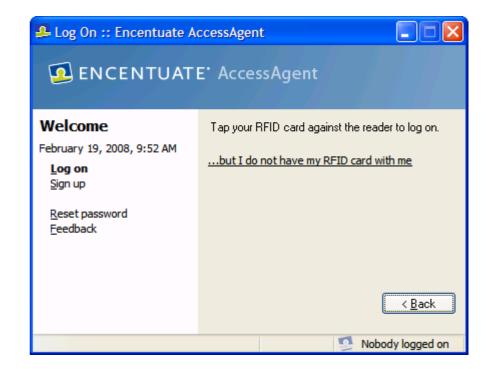
- Login to Encentuate with choice of strong authentication factors
- Encentuate single signs on to Windows
- Enforce walk-off security policies
  - Sonar presence detector
  - Active proximity badge
- Adaptive authentication
  - Tap and go: authenticate once, tap to unlock other workstations
- Customer Impact:
  - Secure your personal desktop
  - Track access





## Fast User Switching with Shared Desktop

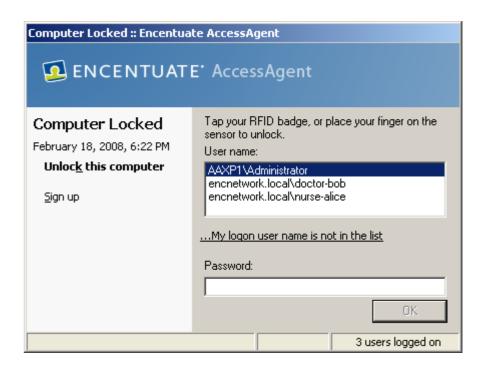
- Login from shared win session to Encentuate
- Run login and logout scripts to customize environment
- Centrally configured policies
  - Inactivity policy
  - Lock Screen Bypass policy
  - Detection policy
  - Non-detection policy
- Adaptive authentication
  - Tap and go: authenticate once, tap to unlock other workstations
- Customer Impact:
  - Supports frequent login/logout shared scenarios
  - Map drives
  - Launch and close select apps
- Limitations:
  - New user may get a transient view of the previous user's apps as they are being logged off





# Fast User Switching through Private Desktop

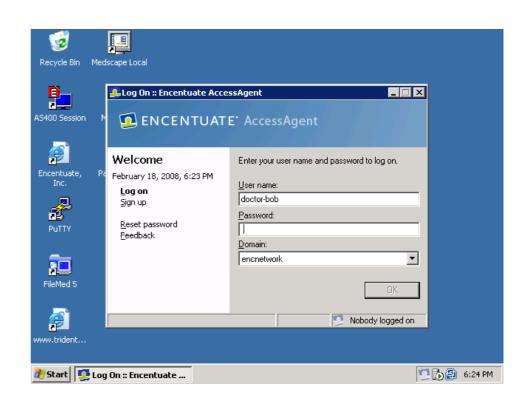
- Maintain your private desktop while sharing the workstation
- Multiple desktops are kept per workstation for user convenience
- Support for single instance applications
- Adaptive authentication
  - Tap and go: authenticate once, tap to unlock other workstations
- Customer Impact:
  - Consistent desktop per user per workstation.
  - Lower cost than roaming desktops
- Limitations:
  - Must use AD password sync
  - Does not support USB Key
  - Does not support transparent screen lock
  - Limited AD GPO support
  - Single-instance apps need to be specially handled





# Fast User Switching through Roaming Desktop

- Roam from PC to PC while accessing the same desktop
- Requires Citrix Metaframe
   Presentation Server 4.0, Metaframe
   Presentation Server 3.0, Metaframe
   XP Presentation Server (Feature
   Release 3) or Windows 2000/2003 TS
   server
- Passthrough authentication only 1 login needed
- Adaptive authentication
  - Tap and go: authenticate once, tap to unlock other workstations
- Customer Impact:
  - Consistent desktop for shared environment

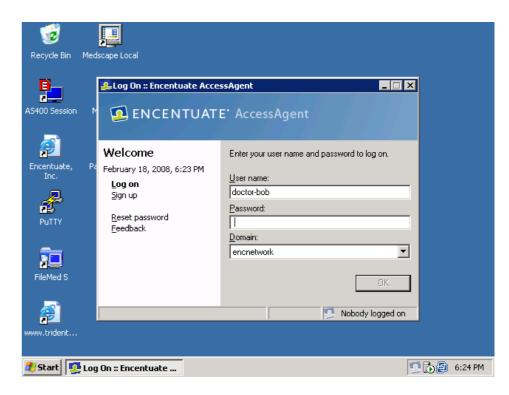




# The Widest Client Platform Coverage

## **TS/Citrix Support**

- Enables E-SSO for applications running through
  - Terminal Services,
  - Citrix Web Interface for Metaframe Presentation Server or
  - Citrix Desktop (ICA Client 9.x, ICA Client 7.x)
- Supports Citrix follow-me feature
- Customer Impact:
  - Enables E-SSO to Citrix/TS applications.
- Limitations:
  - If AD password sync is not used, remote access (i.e., no local AA) may require double logon



# **Thin Client Support**

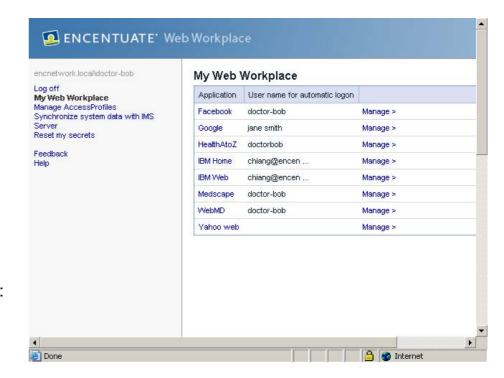
- Enables E-SSO for applications running through
  - Terminal Services
  - Citrix Desktop
- Supports Neoware, Wyse
- Supports XPe and CE clients
- Supports HID badge
- Customer Impact:
  - More access point coverage.
- Limitations:
  - For roaming with RFID as 2ndfactor, no. of concurrent sessions on terminal server is increased by the no. of thin clients
  - Unsupported 2ndfactors: ARFID, fingerprint, and USB Key
  - Installation of AA on thin client is only supported on XPe





## **Encentuate Web Workplace**

- Enables E-SSO for published web and desktop applications through browsers
- Integrated with leading SSLVPN
- No local client software required.
- Complements TAMeb
- Customer Impact:
  - Thin client approach for remote and mobile users.
- Limitations:
  - 2<sup>nd</sup> factor can only be MAC or OTP tokens
  - Some classes of Web apps are not supported: multi-page logon, complex JavaScript, Java applet or ActiveX logon prompt, client-side cert authentication



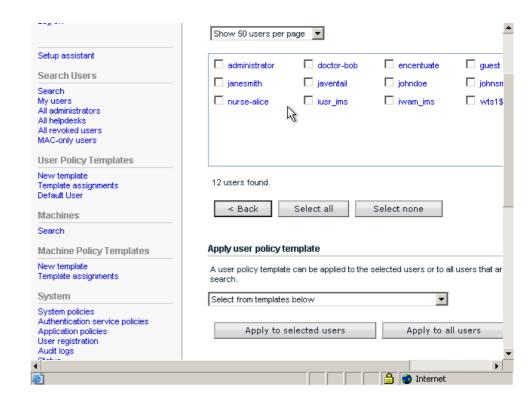


## Powerful centralized administration



## **Group-based Policies**

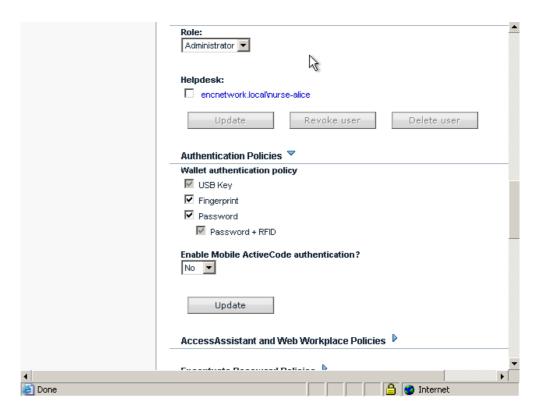
- Policies may be applied to any group of users or machines
- Policy templates may be preassigned to default user or machine groups
- Helpdesk manages pre-assigned user groups
- Customer Impact:
  - Enables centralized management of user and machine groups
  - Flexible configuration for different users and machines
- Limitations:
  - Groups are not the same as AD security groups





#### More on AccessAdmin and Policies

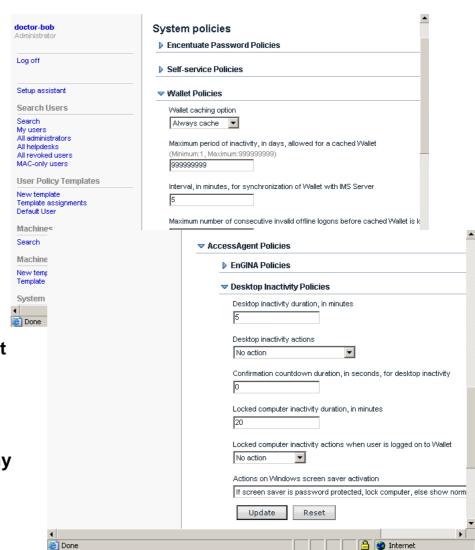
- 2 Roles:
  - Administrator
  - Helpdesk
- Policies may be applied to any group of users or machines
- Authentication Policies
  - Factors required for login
  - Enable AccessAssistant
  - Enable use of ActiveCode





## More on AccessAdmin and Policies

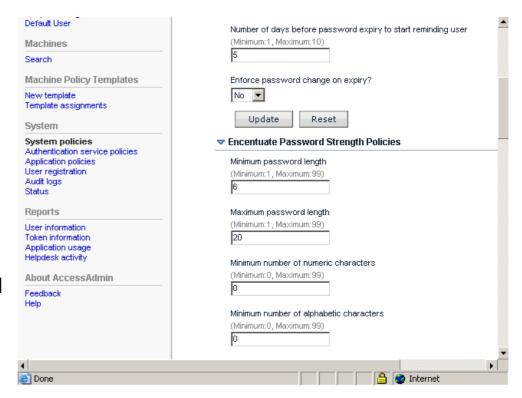
- Caching Policies
  - Enable caching
  - Duration when wallet can be cached
  - Expiry of cached wallet
- AccessAgent Policies
  - Token removal policy
  - Inactivity Policy
    - Important for shared workstation
    - Logout win session, Logout AA, Logout apps, Screen Lock
  - Lockscreen bypass policy
    - Important for shared workstation
    - User with same token, User, Admin, Any user





#### More on AccessAdmin and Policies

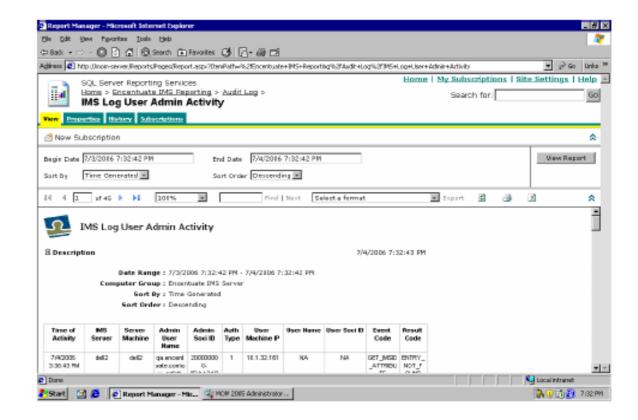
- Encentuate Password Policies
  - Change password policies
  - Password strength policies
- Application Policies
  - Application fortification policies
- Machine Policies
  - Private desktop policies
  - Authentication factors supported on machine
  - Screen lock policies





# **Centralized Audit Logs and Reporting**

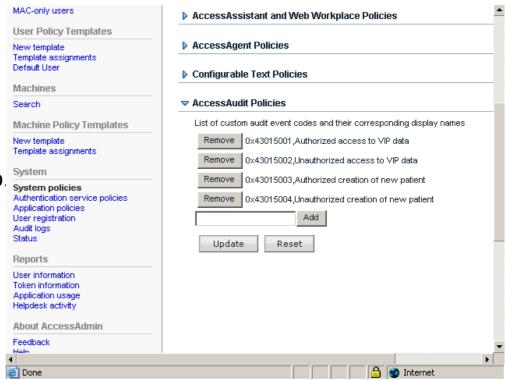
- Tamper-evident audit logs
- Reporting templates in AccessAdmin
- MOM 2005 support
- SNMP support





## **Customized Tracking**

- Enables creation of custom audit events.
- Custom audit log display text specified through AccessAdmin.
- Audit log actions specified in AccessProfiles using AccessStudio
- View audit logs in AccessAdmin.
- Customer Impact:
  - Enhances audit capabilities of existing applications





# Leverage Existing Infrastructure

- Leverage existing directories
- No schema extension
- No replication of existing data store
- Leverage existing data tier for logging and policies
- Choice of
  - MS SQL 2000/2005, or
  - Oracle 10g
- Customer Impact
  - Low risk implementation
  - Use of existing data tier leverages existing data maintenance and recovery procedures







# Comprehensive Self Service & Support



# **Authorization Code Bypass**

- Replace 2<sup>nd</sup> factor required for AccessAgent login with temporary authorization code.
- Validity of code is configurable.
- Customer Impact:
  - Simplifies support of loss tokens.
  - Fast workaround for users,
     maintaining user productivity
  - Alternative 2<sup>nd</sup> factor for temp staff



#### **Offline Reset**

- Reset Encentuate password or form factors online or offline
- Offline support essential for remote/mobile users who may not have timely network access
- Customer Impact:
  - Extends timely support to remote users and mobile users.
  - Improves user experience and peace of mind.
- Limitations:
  - Not supported for locked screen (which serves as logon screen for shared workstation)





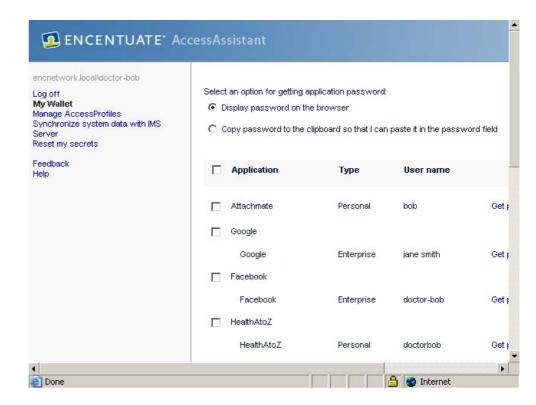
# Self-service Reset and 2<sup>nd</sup> Factor Bypass

- Self-service password reset or bypass of 2<sup>nd</sup> factor using M of N secrets.
- Customer Impact:
  - Reduce helpdesk calls.
  - 24/7 support without need for 24/7 helpdesk staff.
- Limitations:
  - Password reset supported in lock screen via a URL link to AccessAssistant
  - Workstation needs to be online



## **AccessAssistant**

- Web-based self help.
- Multiple ways to log on
  - Password
  - Password + MAC
  - Password + OTP
- Multiple ways to Reset password
  - Authorization Code + Question
  - M of N (self-service)
- Provides application passwords for login
- Delivery channels
  - Browser display
  - Clipboard
- Customer Impact:
  - Reduce helpdesk calls
  - Enable fortification with no lockouts





# **Extensive Support for Strong Authentication Factors**

# **Building Access Badge**

- Use your existing HID Prox/ HID iClass/ Indala badge as 2<sup>nd</sup> factor
- Supported as 2<sup>nd</sup> factor to Encentuate Wallet
- RFID-only logon and unlock
- Customer Impact:
  - Convenient sign on and sign off.
  - Low TCO





## Sonar

- Automatically lock the workstation when user leaves the workstation
- Augments inactivity policy
- Customer Impact:
  - Convenient sign off.
  - Enhances walk-off security
  - Lower TCO compared to Active RFID



## **Active RFID**

- Active proximity triggers sign on and sign off without need for "tapping" RFID card
- Supported as 2<sup>nd</sup> factor to Encentuate Wallet
- Customer Impact:
  - Convenient sign on and sign off.
  - Automate walk-away security





## **USB Smart Cards**

- Insert USB Smart card into any USB port as 2<sup>nd</sup> factor.
- Wallet cached on smart card
- Customer Impact:
  - Highest level of security
- Limitations:
  - Does not support AD password sync





# **Biometric Support**

- Fingerprint as single factor.
- No password needed
- Support for Thinkpad UPEK readers,
   DigitalPersona UareU devices
- Customer Impact:
  - Secure access without need for password entry
- Limitations:
  - False acceptance rate may be high if too many Wallets are cached on a single machine
  - User has to enter user name if his cached wallet is not available on the machine







SECURITY MADE SIMPLE







#### Mobile ActiveCode and OTP

- One-time password delivered via SMS to mobile devices.
- Support for VASCO and OATH tokens
- Supported as 2<sup>nd</sup> Factor to AccessAssistant login.
- Customer Impact:
  - Secure access to web-based password self-help system
  - Secure remote access
- Limitations:
  - Not supported for AA logon
  - Does not support multiple AD domains
  - Does not as yet support RSA







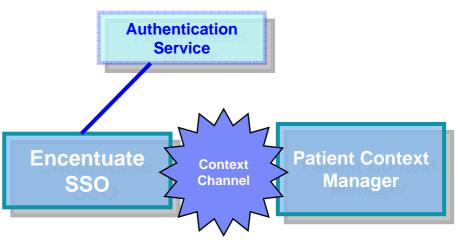


# **Flexible Integration**



# Patient Context Management Integration

- Enables patient context management.
- Synchronizes sign on and sign off with context manager
- Context Manager handles all contextenabled apps; Encentuate automates sign on to the rest.
- Customer Impact:
  - Faster access to ePHI
  - Reduce physician errors
- Limitations:
  - Does not work with Private Desktop since Fusionfx is a single-instance app

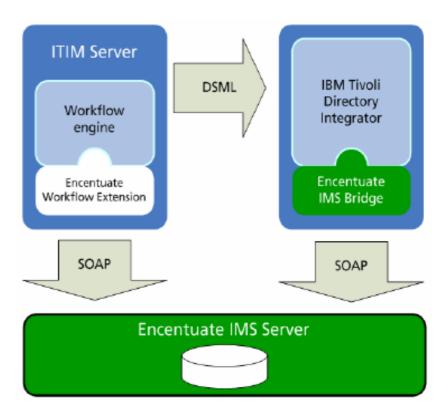




# **User Provisioning API**

- User Provisioning API enables automatic provisioning of Encentuate accounts
- API enables automatic update of Encentuate Wallet
- Support for
  - Tivoli Identity Manager 4.5.1, 4.6
- Customer Impact:
  - Integrated IAM solution
  - Simplified account management: users only need to know Encentuate sign on!







# **Competitive Landscape**



# **Encentuate – Key Strengths**

- SC Magazine's best SSO & 2fA award at RSA 2006/2007 and Finalist for SC and Codie Awards 2008
  - Best Identity Management Solution
  - Best Single Sign On Solution
  - Best 2-Factor Solution
  - Judges included CIOs, thought leaders, and readers of SC magazine
- Most complete end-point coverage [Gartner]
- More comprehensive session management [Gartner]
  - Access workflow policies including private desktop.
- Widest choice of 2 factor authentication [Gartner]
  - "Leverage what you have, already": cellphone/email MAC
- Compelling price-for-value proposition [Gartner]
  - Price includes all major capabilities





Winner! Two Years In A Row

Best Identity Management
Best Single Sign-On
Best Two-Factor Authentication





# **Competitive Landscape**

Encentuate - more complete support for user interfaces, such as private desktop and cellphone/email MAC

| Competitor                                | Key Differentiators   |
|---|---|
| CA<br>(eTrust SSO)                        | <ul> <li>Enable sign-on via TCL-based script; costly to develop and maintain</li> <li>Low R&amp;D focus on ESSO; lacking basic features</li> <li>Incomplete end-point support: no Web Workplace</li> <li>Poor consumability</li> </ul>  |
| Citrix<br>(Metaframe Password<br>Manager) | <ul> <li>Secondary solution. Sold as a complement for Citrix deals.</li> <li>Difficulty integrating target systems [Gartner]</li> <li>Lack of Reporting and Auditing [Gartner]</li> <li>Small range of strong authentication support (only smart cards)</li> <li>Limited graceful app shutdown</li> <li>Lack of integration with provisioning vendors</li> </ul>  |
| Actividentity (SecureLogin)               | <ul> <li>Requires schema extension [Gartner]</li> <li>A significant number of apps must be scripted, not autogenerated [Gartner]</li> <li>Requires a new end user process to initiate some applications; required training adversely impacts adoption</li> <li>Incomplete kiosk support: no private desktop</li> <li>Requires proprietary authentication module</li> <li>Incomplete end-point support: no Web Workplace</li> </ul>                  |
| Sentillion                                | <ul> <li>Require cumbersome distribution of VM images [for remote access solution vs web workplace which is browser based]</li> <li>Proprietary technology with poor support for other / existing IAM solutions</li> <li>Incomplete kiosk support: no private desktop</li> <li>Hard to integrate and deploy [Gartner]</li> </ul>  |
| Imprivata                                 | <ul> <li>Closed architecture which requires directories to be replicated at the appliance</li> <li>Proprietary hardware architecture</li> <li>Incomplete kiosk support: no private desktop</li> <li>Incomplete end-point support: no Web Workplace</li> <li>Difficult to scale for large enterprises. Fail over is limited to each appliance pair, but does not apply across pairs [Gartner]</li> <li>Lack of support for Virtualization</li> </ul> |

# Where to go for Assistance & Information

#### IBM.

- > Encentuate Collateral:
  - •Lotus Notes DB: Tivoli Security Notesbook (also known as the Tivoli Security Solution Selling Database). Contact Michael Campbell/Poughkeepsie/IBM if you need link information.
  - •W3 site:

http://w3.ibm.com/software/xl/portal/viewcontent?type=doc&srcID=T9&docID=I923592D49180W45

- **≻**Code/Images:
  - http://ausgsa.ibm.com/gsa/projects/d/delaware/
- ➤ Transition of Existing ESSO Customers to Encentuate
  - •Mike Hahn (Mike Hahn/Austin/IBM)
- >Sales Enablement
  - Collateral Michael Campbell/Poughkeepsie/IBM
  - Workshops/images Christopher R Ehrsam/Schaumburg/IBM

## **Business Partners**

- **▶**Tivoli Knowledge Center for Business Partners
  - http://www-306.ibm.com/software/tivoli/partners/public.jsp?tab=sales-tools&content=st-index-c2
- **≻**Encentuate Collateral:
  - http://www.ibm.com/software/tivoli/partners/secure.jsp?tab=events&content=encentuate
- ➤ Transition of Existing ESSO Customers to Encentuate
  - ■Mike Hahn (hahnm@us.ibm.com) or talk to your IBM Channel Rep
- > Business Partner Questions
  - Liz Merrell LizMerrell@us.ibm.com