Tivoli software

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Session Management Server for IBM Tivoli Access Manager

e business software

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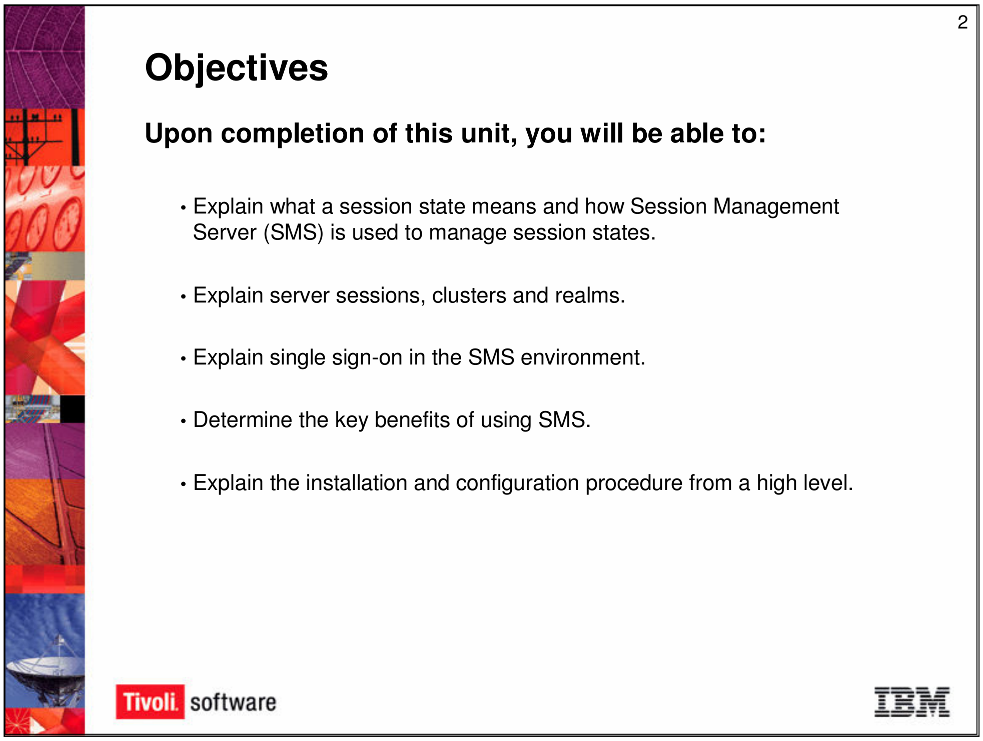

Objectives

Upon completion of this unit, you will be able to:

- Explain what a session state means and how Session Management Server (SMS) is used to manage session states.
- Explain server sessions, clusters and realms.
- Explain single sign-on in the SMS environment.
- Determine the key benefits of using SMS.
- Explain the installation and configuration procedure from a high level.

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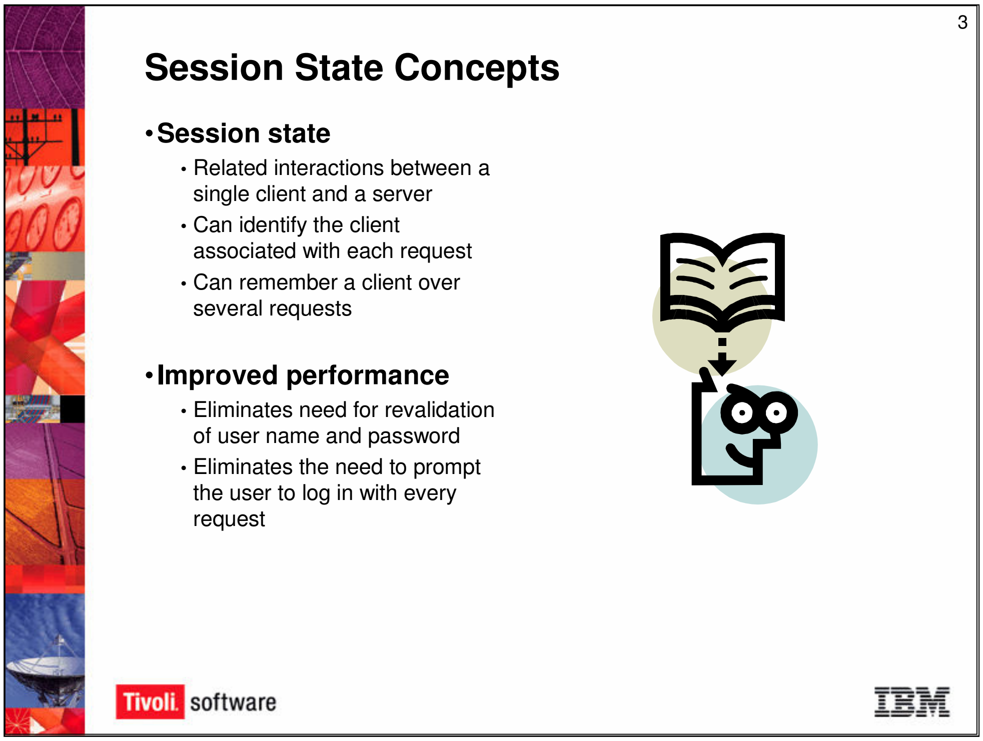
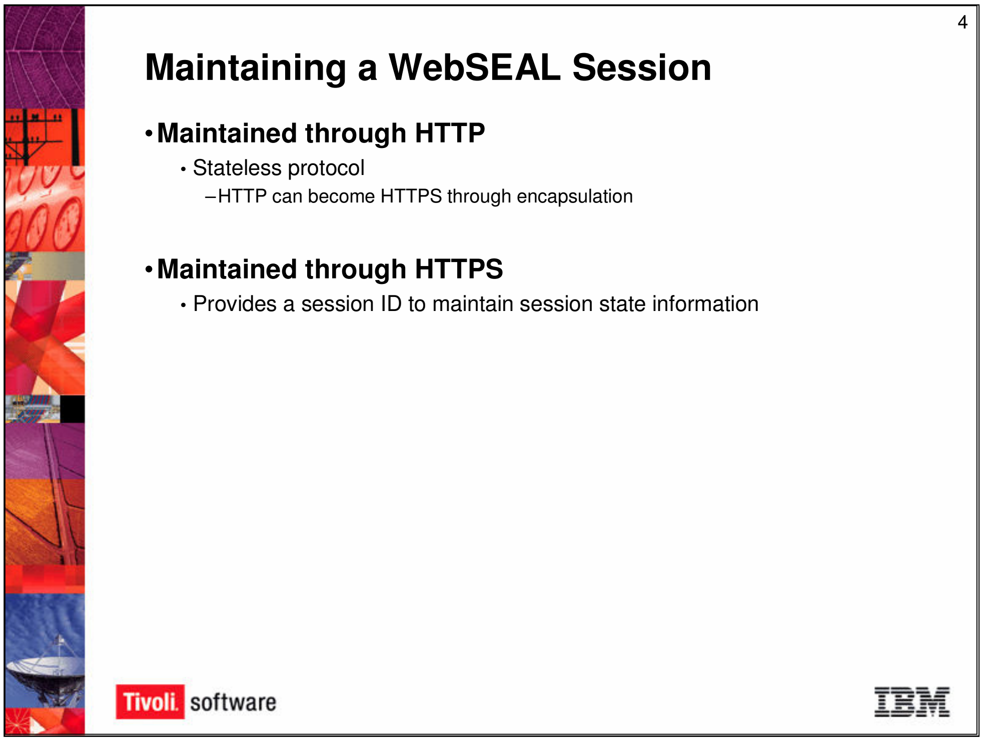


Session State Concepts

- **Session state**
  - Related interactions between a single client and a server
  - Can identify the client associated with each request
  - Can remember a client over several requests

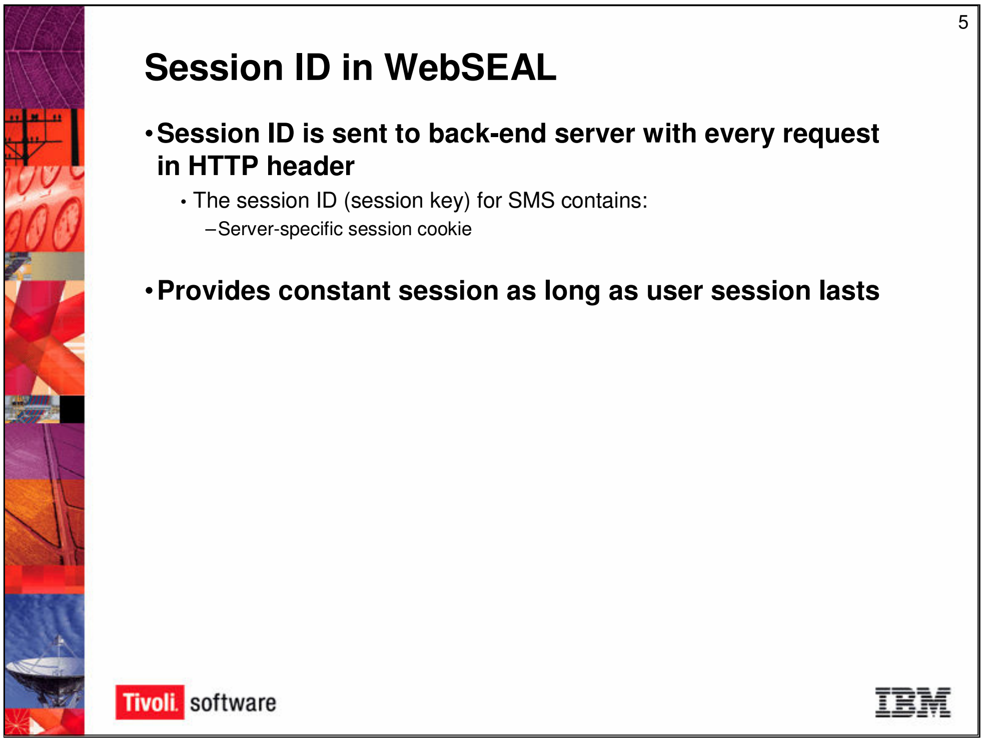
- **Improved performance**
  - Eliminates need for revalidation of user name and password
  - Eliminates the need to prompt the user to log in with every request



Maintaining a WebSEAL Session

- **Maintained through HTTP**
  - Stateless protocol
    - –HTTP can become HTTPS through encapsulation

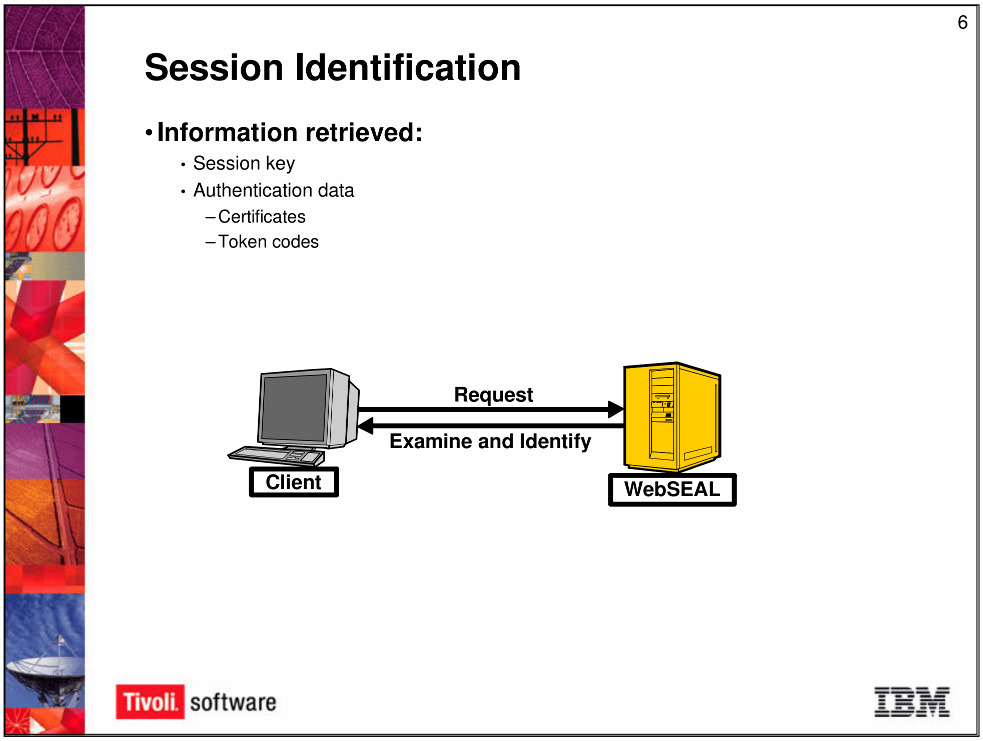
- **Maintained through HTTPS**
  - Provides a session ID to maintain session state information



Session ID in WebSEAL

- **Session ID is sent to back-end server with every request in HTTP header**
  - The session ID (session key) for SMS contains:
    - Server-specific session cookie

- **Provides constant session as long as user session lasts**



Session Identification

- **Information retrieved:**
  - Session key
  - Authentication data
    - Certificates
    - Token codes

Request

Examine and Identify

Client

WebSEAL

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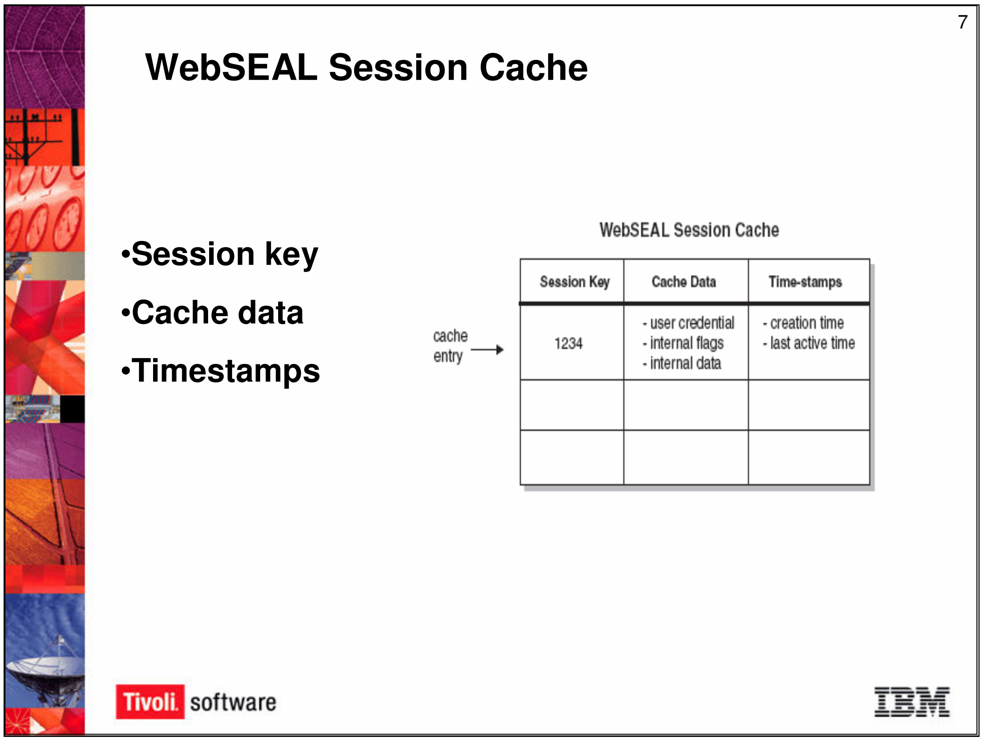


WebSEAL Session Cache

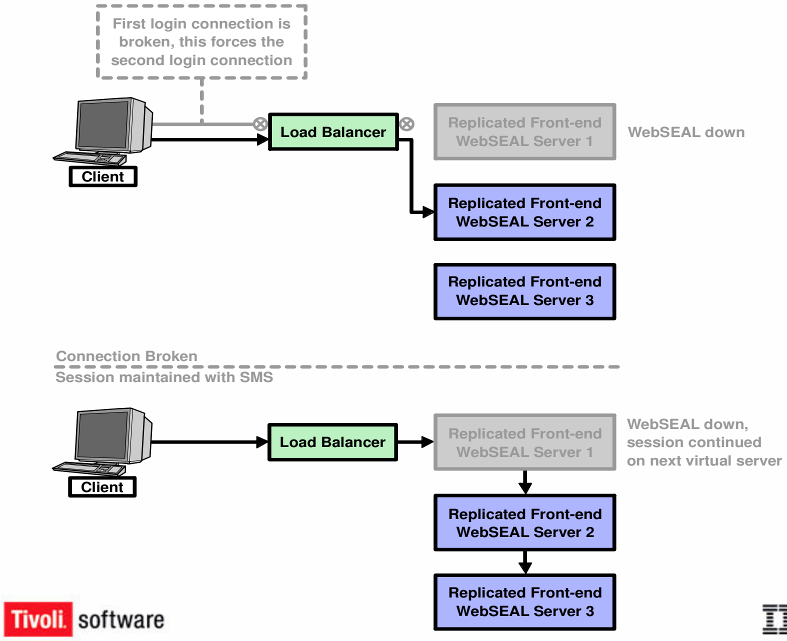
- •Session key
- •Cache data
- •Timestamps

WebSEAL Session Cache

cache entry →

Session Key	Cache Data	Time-stamps
1234	- user credential - internal flags - internal data	- creation time - last active time

Failover Scenario



First login connection is broken, this forces the second login connection

Client

Load Balancer

Replicated Front-end WebSEAL Server 1

WebSEAL down

Replicated Front-end WebSEAL Server 2

Replicated Front-end WebSEAL Server 3

Connection Broken

Session maintained with SMS

Client

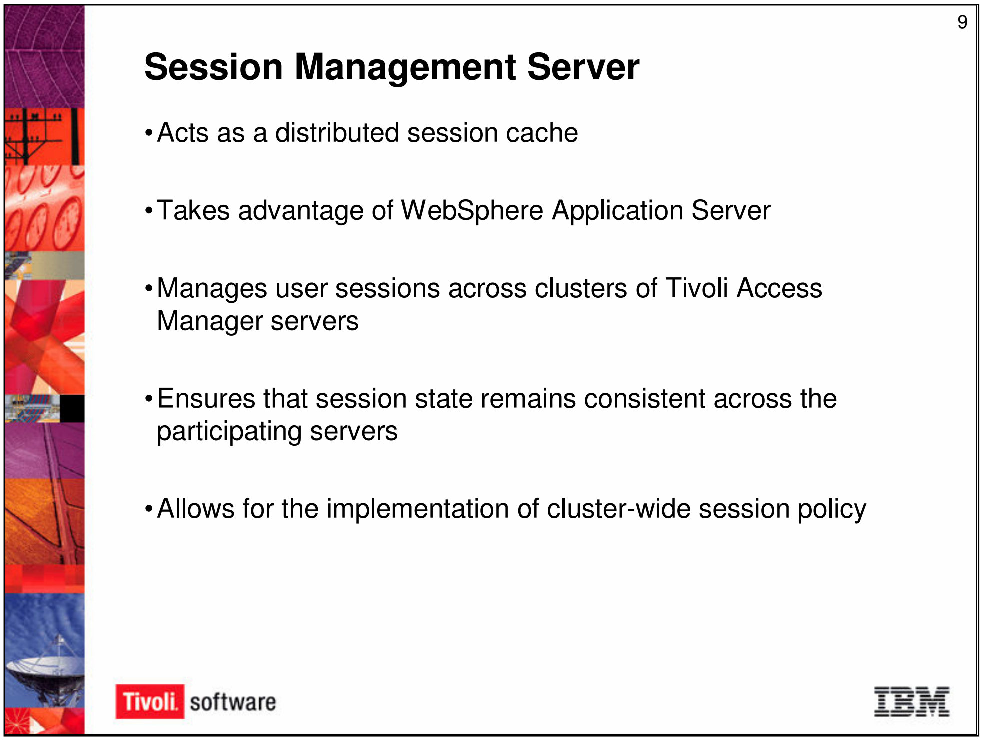
Load Balancer

Replicated Front-end WebSEAL Server 1

WebSEAL down, session continued on next virtual server

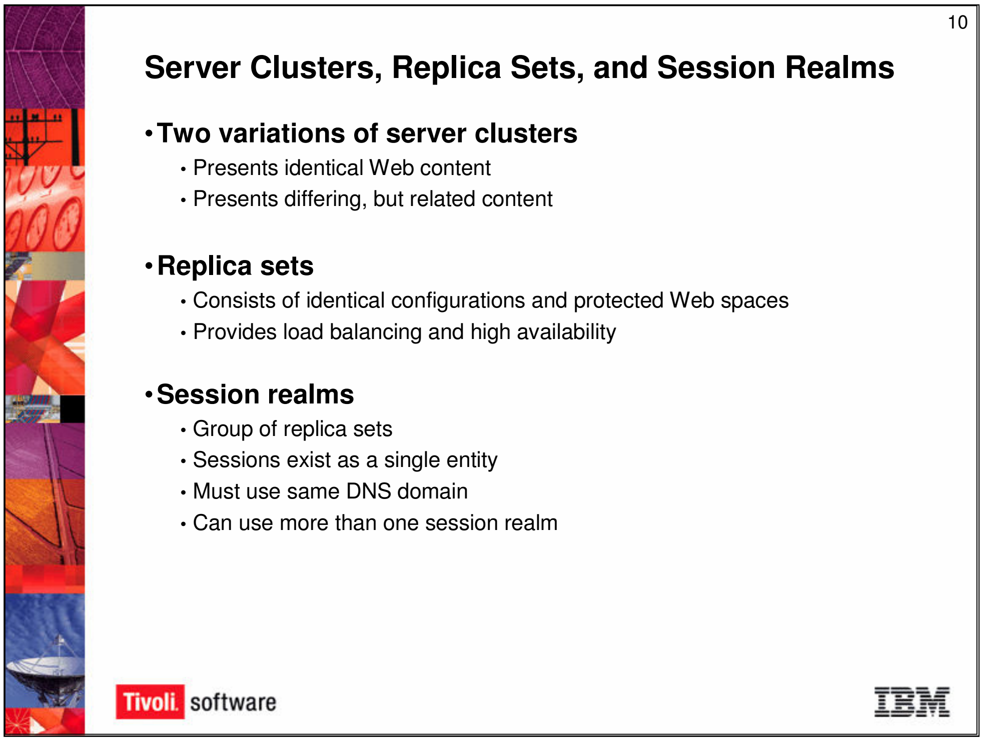
Replicated Front-end WebSEAL Server 2

Replicated Front-end WebSEAL Server 3



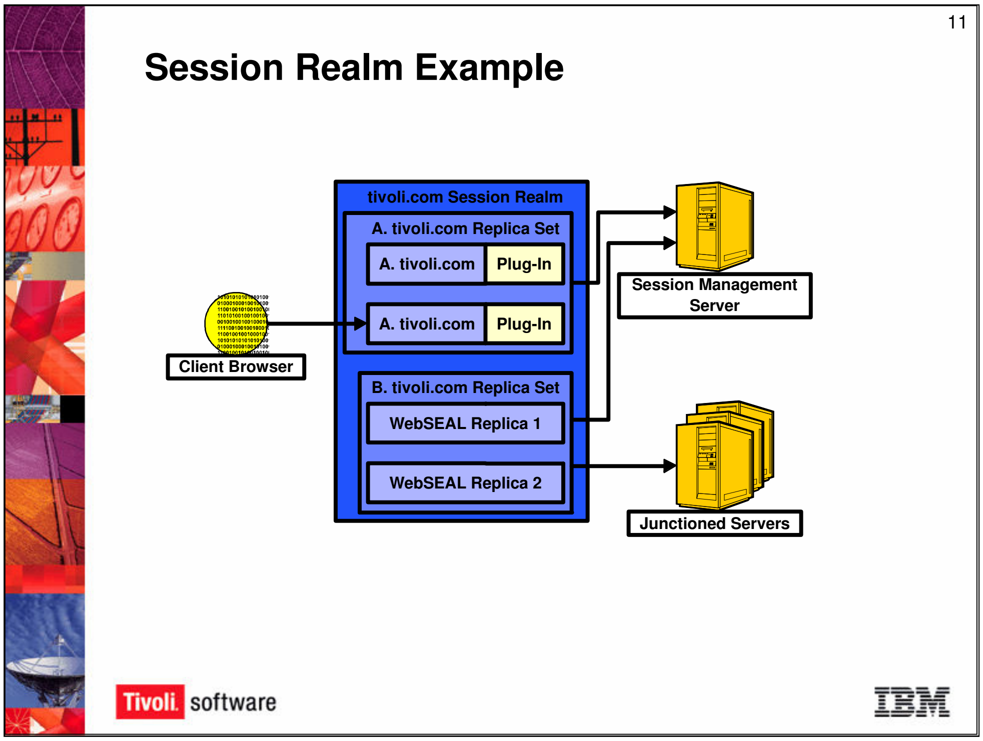
Session Management Server

- Acts as a distributed session cache
- Takes advantage of WebSphere Application Server
- Manages user sessions across clusters of Tivoli Access Manager servers
- Ensures that session state remains consistent across the participating servers
- Allows for the implementation of cluster-wide session policy



Server Clusters, Replica Sets, and Session Realms

- **Two variations of server clusters**
  - Presents identical Web content
  - Presents differing, but related content
- **Replica sets**
  - Consists of identical configurations and protected Web spaces
  - Provides load balancing and high availability
- **Session realms**
  - Group of replica sets
  - Sessions exist as a single entity
  - Must use same DNS domain
  - Can use more than one session realm



Session Realm Example

tivoli.com Session Realm

A. tivoli.com Replica Set

A. tivoli.com | Plug-In

A. tivoli.com | Plug-In

B. tivoli.com Replica Set

WebSEAL Replica 1

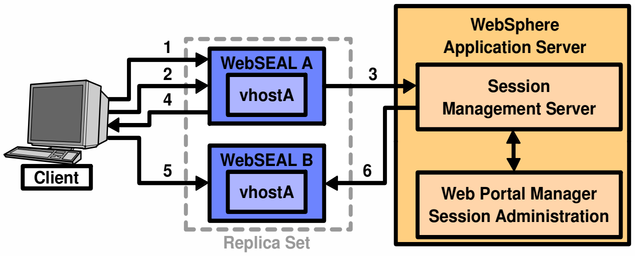
WebSEAL Replica 2

Client Browser

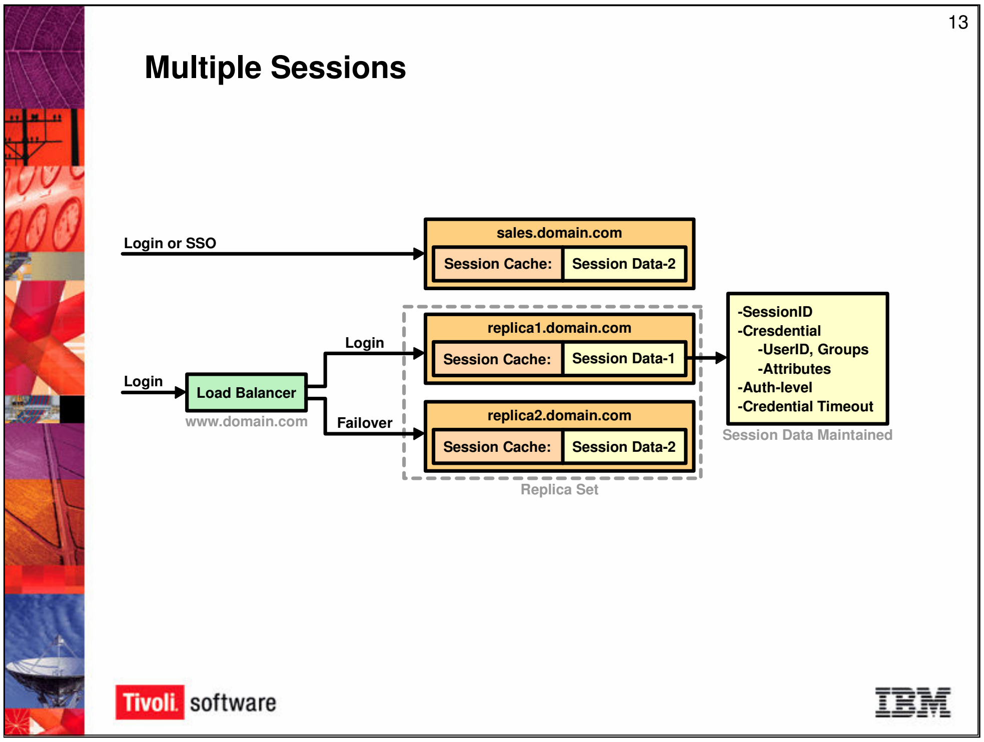
Session Management Server

Junctioned Servers

SMS Process Flow


WebSphere Application Server
Session Management Server
Web Portal Manager Session Administration
WebSEAL A
vhostA
WebSEAL B
vhostA
Replica Set
Client
1
2
3
4
5
6

Multiple Sessions



Login or SSO

sales.domain.com

Session Cache: | Session Data-2

Login

Load Balancer

www.domain.com

Login

Failover

replica1.domain.com

Session Cache: | Session Data-1

replica2.domain.com

Session Cache: | Session Data-2

Replica Set

-SessionID
-Cresdential
  -UserID, Groups
  -Attributes
-Auth-level
-Credential Timeout

Session Data Maintained

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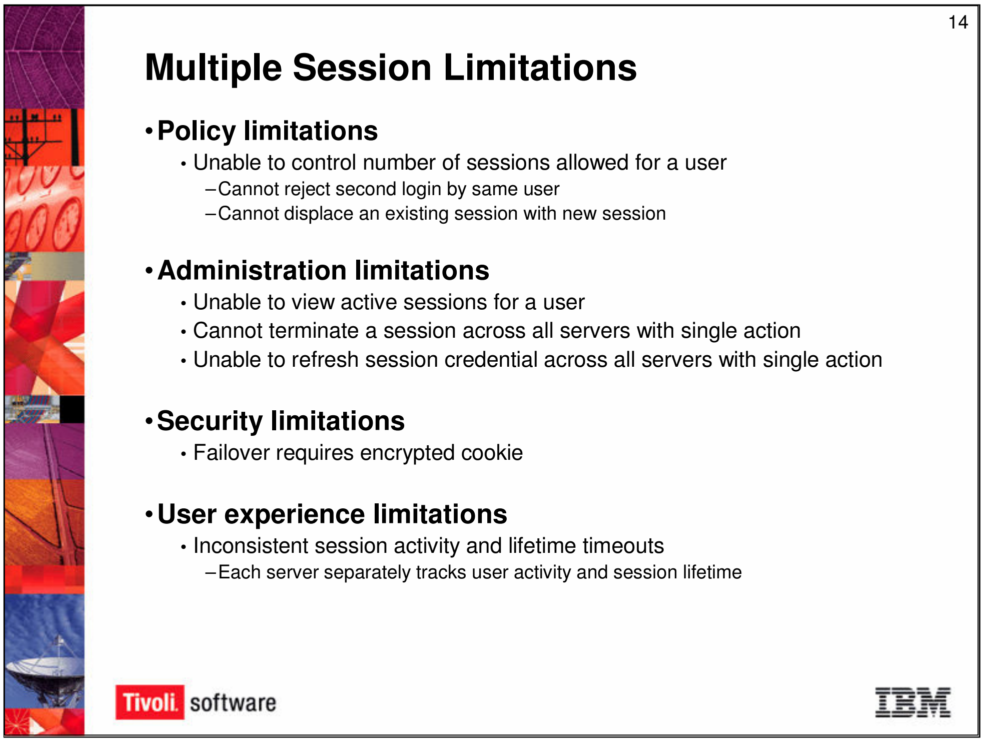


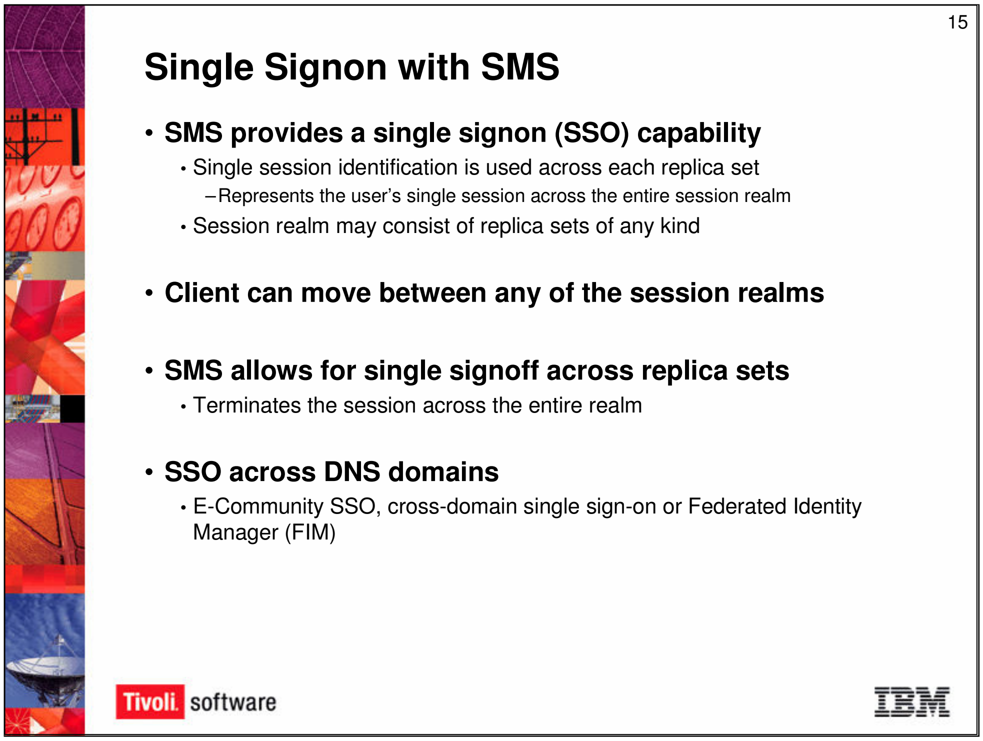
Multiple Session Limitations

- **Policy limitations**
  - Unable to control number of sessions allowed for a user
    - Cannot reject second login by same user
    - Cannot displace an existing session with new session

- **Administration limitations**
  - Unable to view active sessions for a user
  - Cannot terminate a session across all servers with single action
  - Unable to refresh session credential across all servers with single action

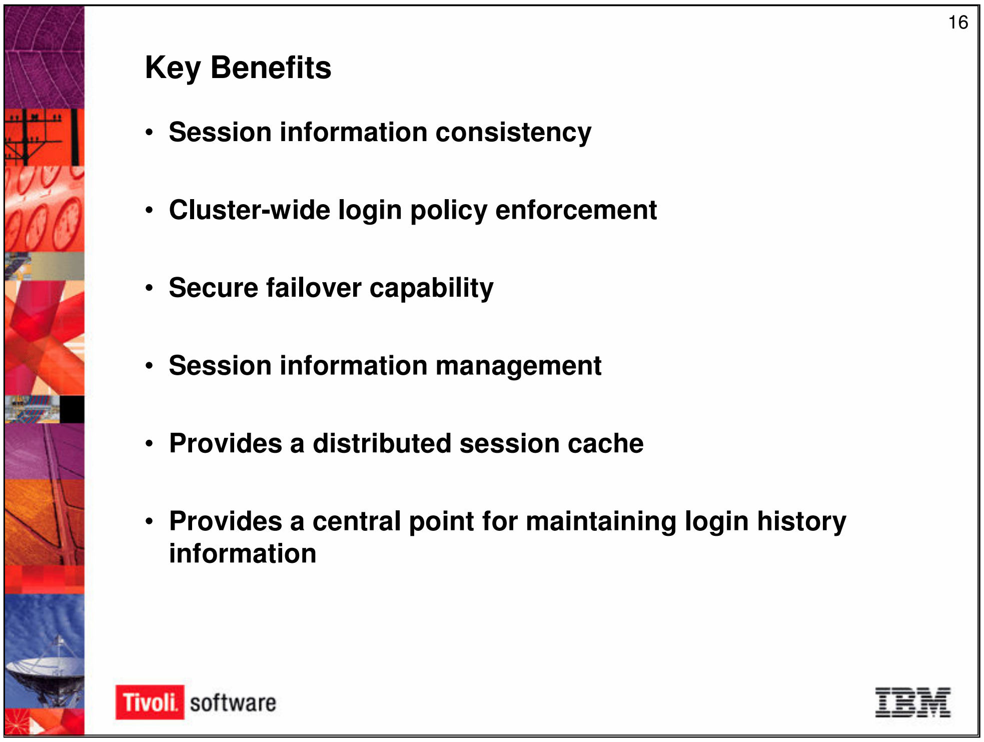
- **Security limitations**
  - Failover requires encrypted cookie

- **User experience limitations**
  - Inconsistent session activity and lifetime timeouts
    - Each server separately tracks user activity and session lifetime



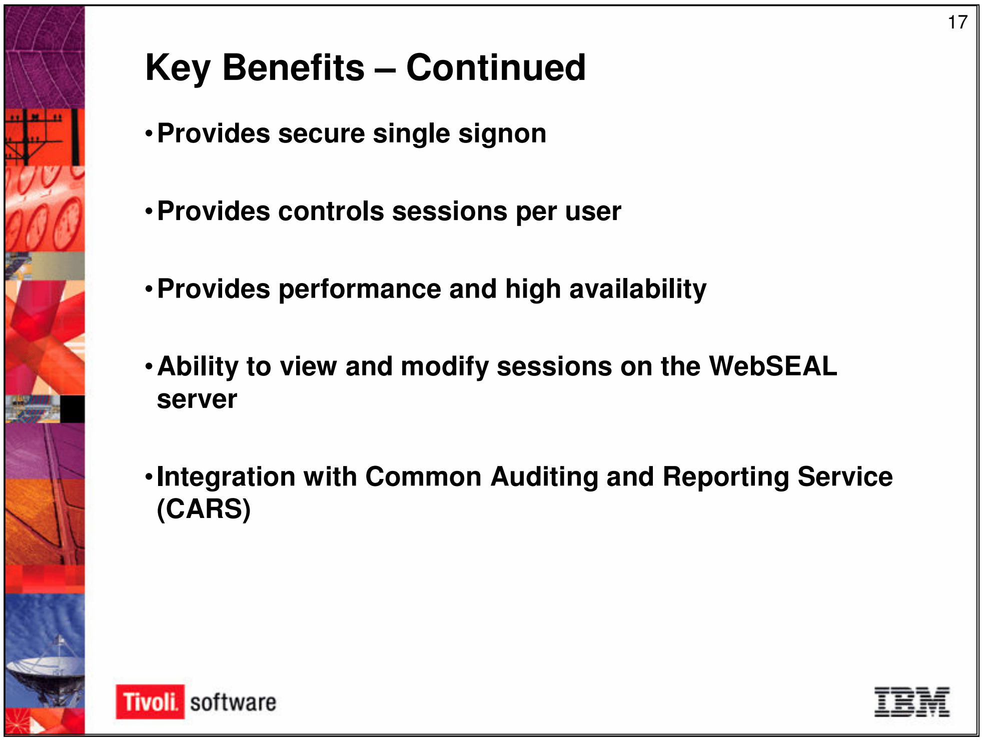
Single Signon with SMS

- **SMS provides a single signon (SSO) capability**
  - Single session identification is used across each replica set
    - Represents the user’s single session across the entire session realm
  - Session realm may consist of replica sets of any kind
- **Client can move between any of the session realms**
- **SMS allows for single signoff across replica sets**
  - Terminates the session across the entire realm
- **SSO across DNS domains**
  - E-Community SSO, cross-domain single sign-on or Federated Identity Manager (FIM)



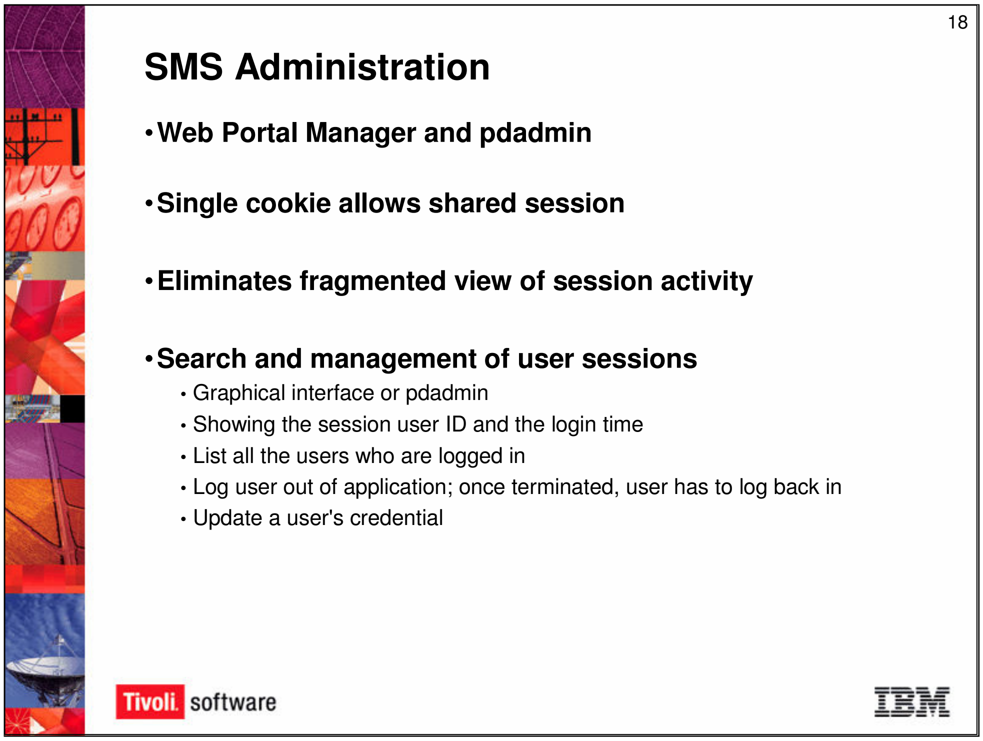
Key Benefits

- Session information consistency
- Cluster-wide login policy enforcement
- Secure failover capability
- Session information management
- Provides a distributed session cache
- Provides a central point for maintaining login history information



Key Benefits – Continued

- Provides secure single signon
- Provides controls sessions per user
- Provides performance and high availability
- Ability to view and modify sessions on the WebSEAL server
- Integration with Common Auditing and Reporting Service (CARS)



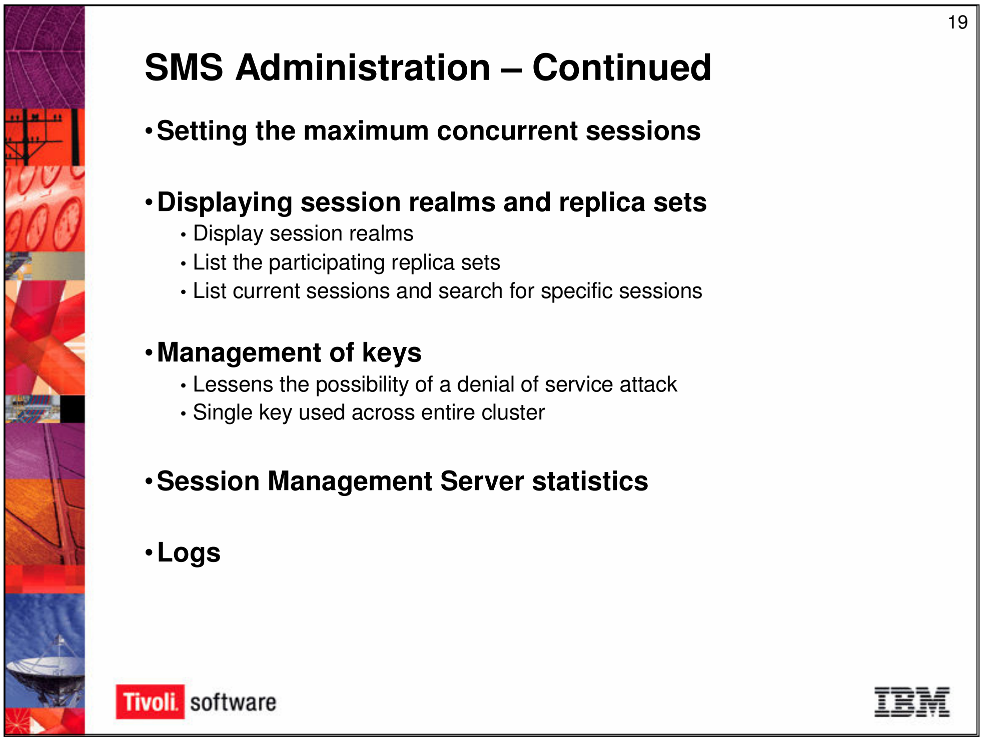
SMS Administration

- Web Portal Manager and pdadmin

- Single cookie allows shared session

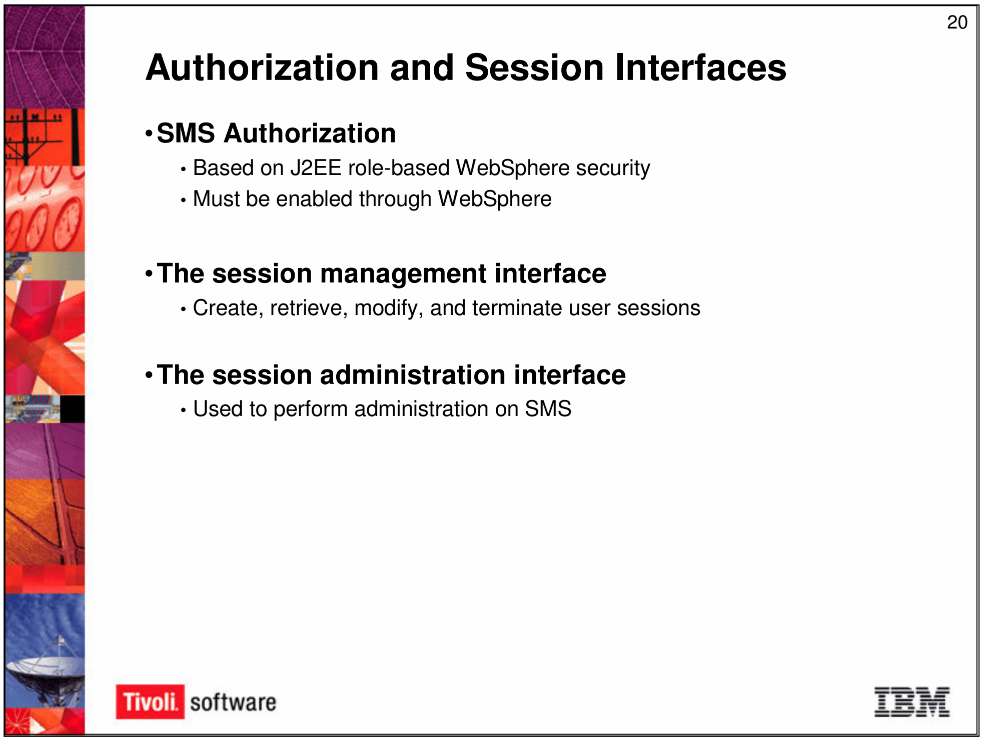
- Eliminates fragmented view of session activity

- Search and management of user sessions
  - Graphical interface or pdadmin
  - Showing the session user ID and the login time
  - List all the users who are logged in
  - Log user out of application; once terminated, user has to log back in
  - Update a user's credential



SMS Administration – Continued

- **Setting the maximum concurrent sessions**
- **Displaying session realms and replica sets**
  - Display session realms
  - List the participating replica sets
  - List current sessions and search for specific sessions
- **Management of keys**
  - Lessens the possibility of a denial of service attack
  - Single key used across entire cluster
- **Session Management Server statistics**
- **Logs**



Authorization and Session Interfaces

- **SMS Authorization**
  - Based on J2EE role-based WebSphere security
  - Must be enabled through WebSphere

- **The session management interface**
  - Create, retrieve, modify, and terminate user sessions

- **The session administration interface**
  - Used to perform administration on SMS

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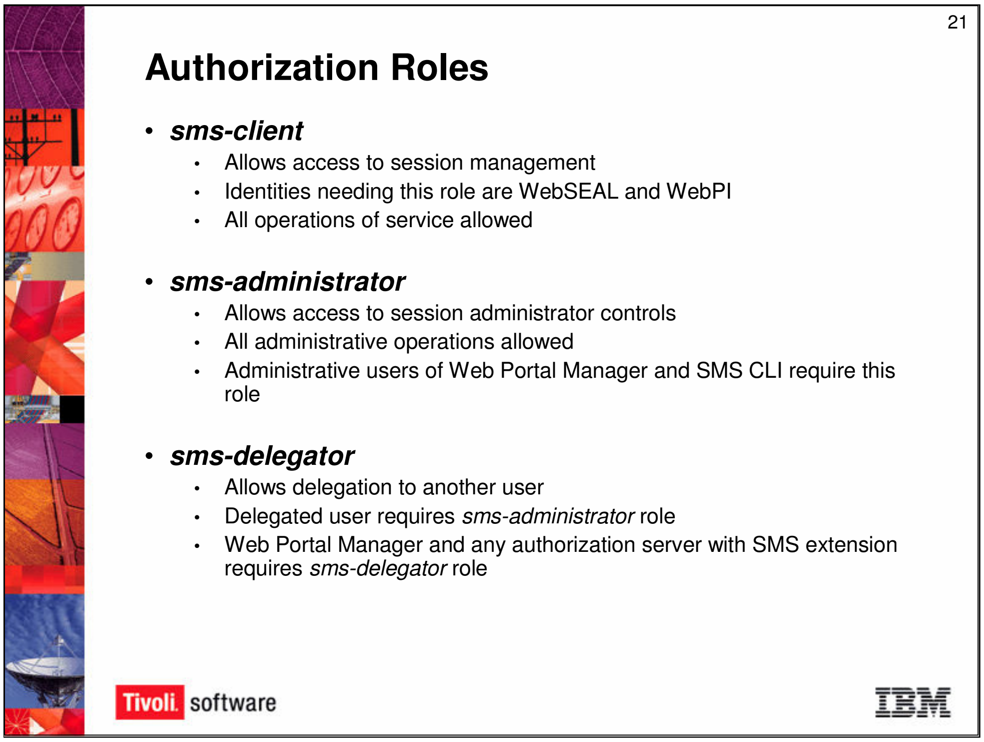
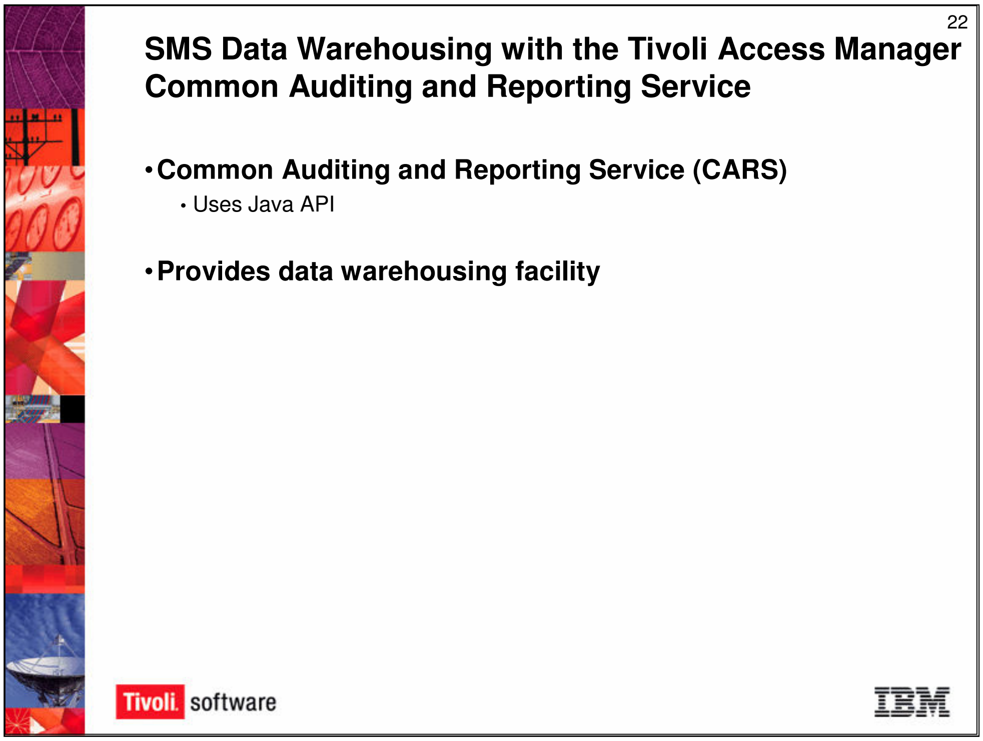


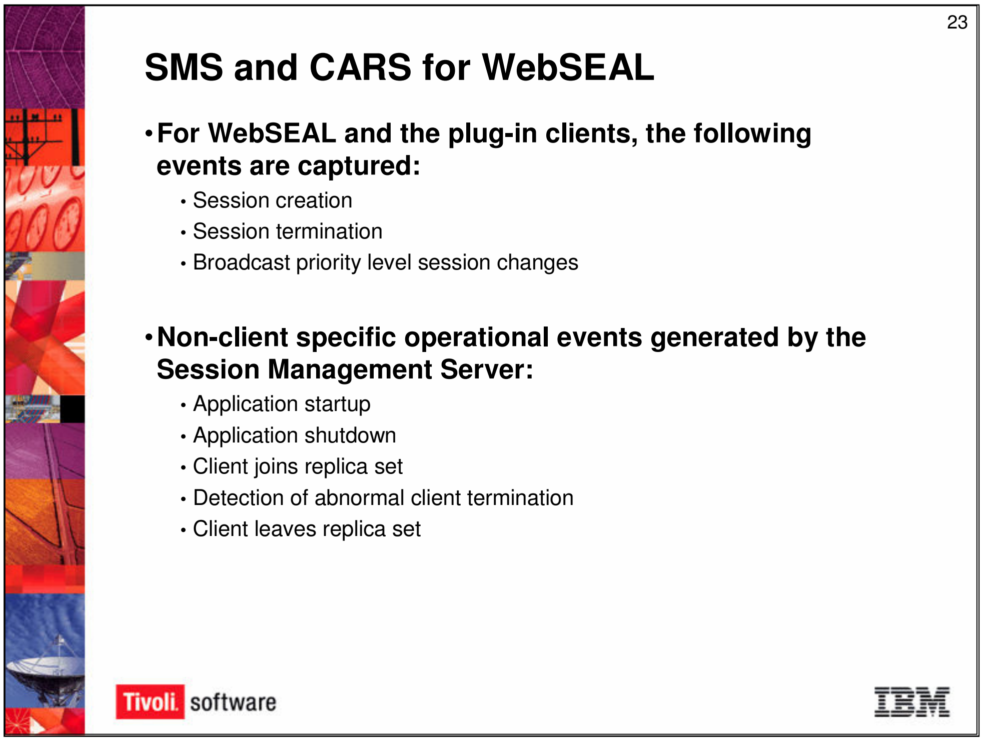
Authorization Roles

- ***sms-client***
  - Allows access to session management
  - Identities needing this role are WebSEAL and WebPI
  - All operations of service allowed
- ***sms-administrator***
  - Allows access to session administrator controls
  - All administrative operations allowed
  - Administrative users of Web Portal Manager and SMS CLI require this role
- ***sms-delegator***
  - Allows delegation to another user
  - Delegated user requires *sms-administrator* role
  - Web Portal Manager and any authorization server with SMS extension requires *sms-delegator* role



SMS Data Warehousing with the Tivoli Access Manager Common Auditing and Reporting Service

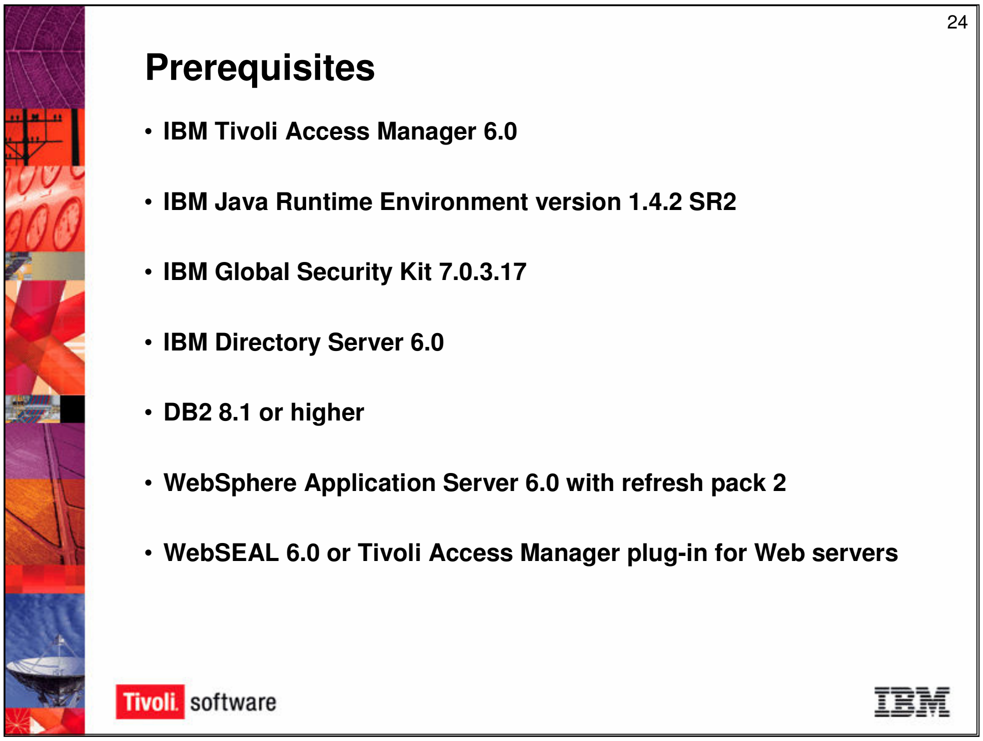
- **Common Auditing and Reporting Service (CARS)**
  - Uses Java API
- **Provides data warehousing facility**



SMS and CARS for WebSEAL

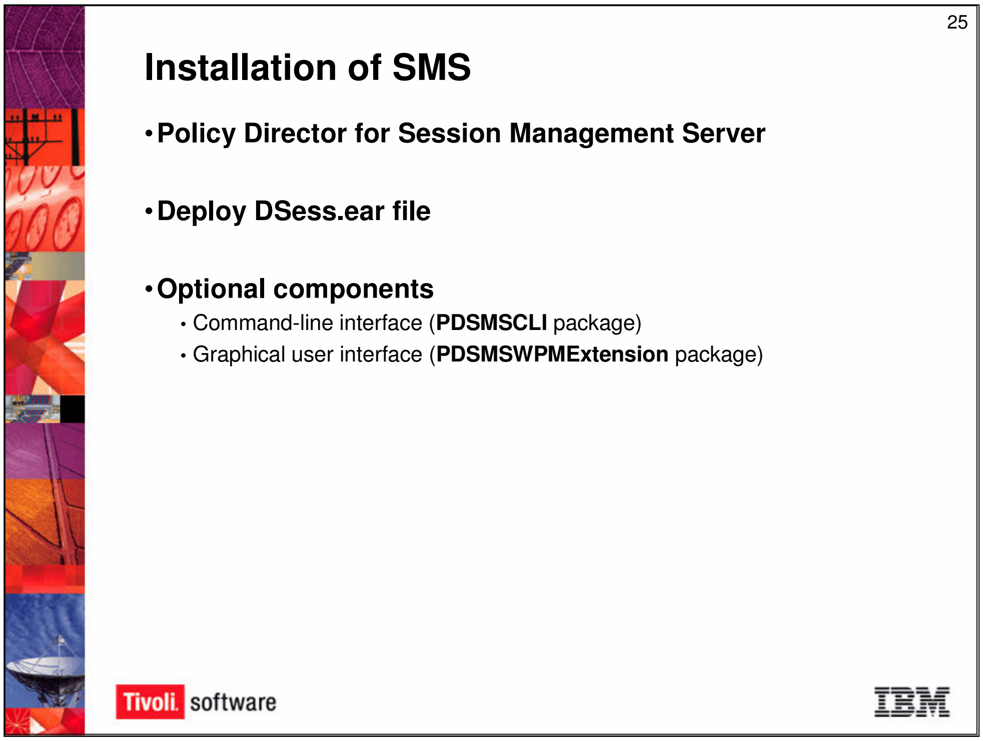
- **For WebSEAL and the plug-in clients, the following events are captured:**
  - Session creation
  - Session termination
  - Broadcast priority level session changes

- **Non-client specific operational events generated by the Session Management Server:**
  - Application startup
  - Application shutdown
  - Client joins replica set
  - Detection of abnormal client termination
  - Client leaves replica set



Prerequisites

- IBM Tivoli Access Manager 6.0
- IBM Java Runtime Environment version 1.4.2 SR2
- IBM Global Security Kit 7.0.3.17
- IBM Directory Server 6.0
- DB2 8.1 or higher
- WebSphere Application Server 6.0 with refresh pack 2
- WebSEAL 6.0 or Tivoli Access Manager plug-in for Web servers

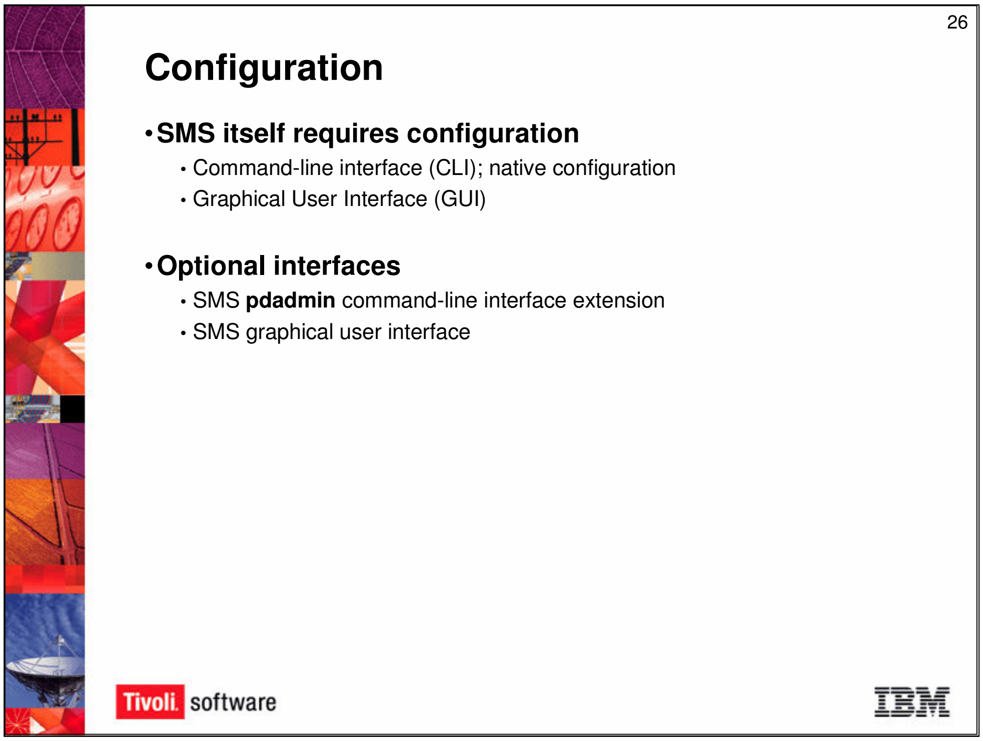


Installation of SMS

- **Policy Director for Session Management Server**

- **Deploy DSess.ear file**

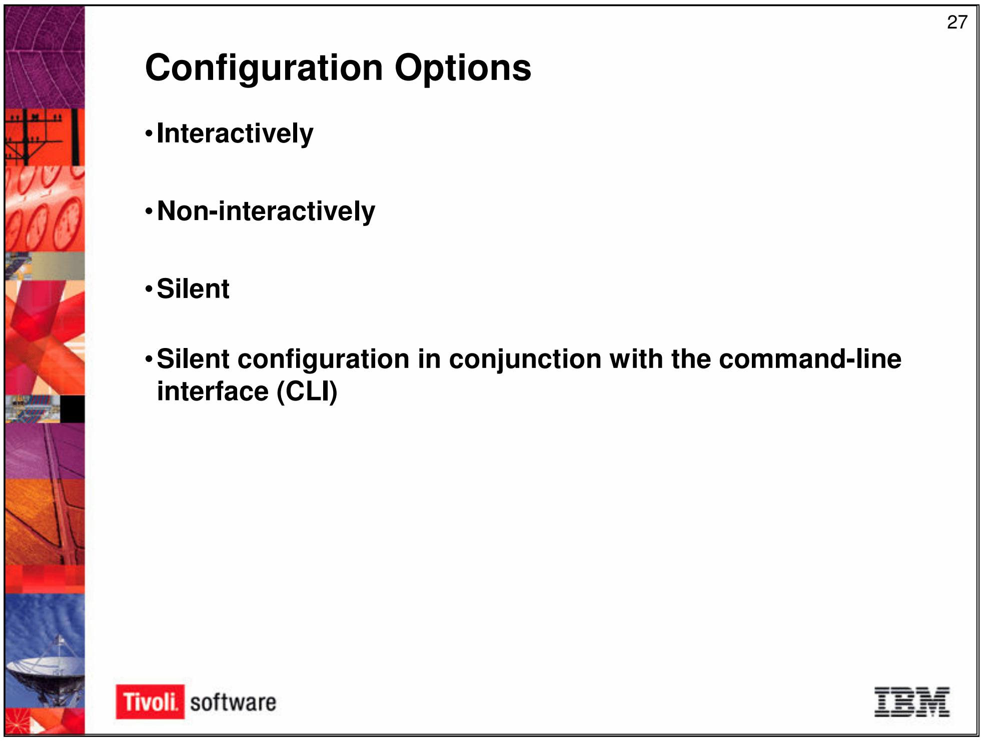
- **Optional components**
  - Command-line interface (**PDSMSCLI** package)
  - Graphical user interface (**PDSMSWPMExtension** package)



Configuration

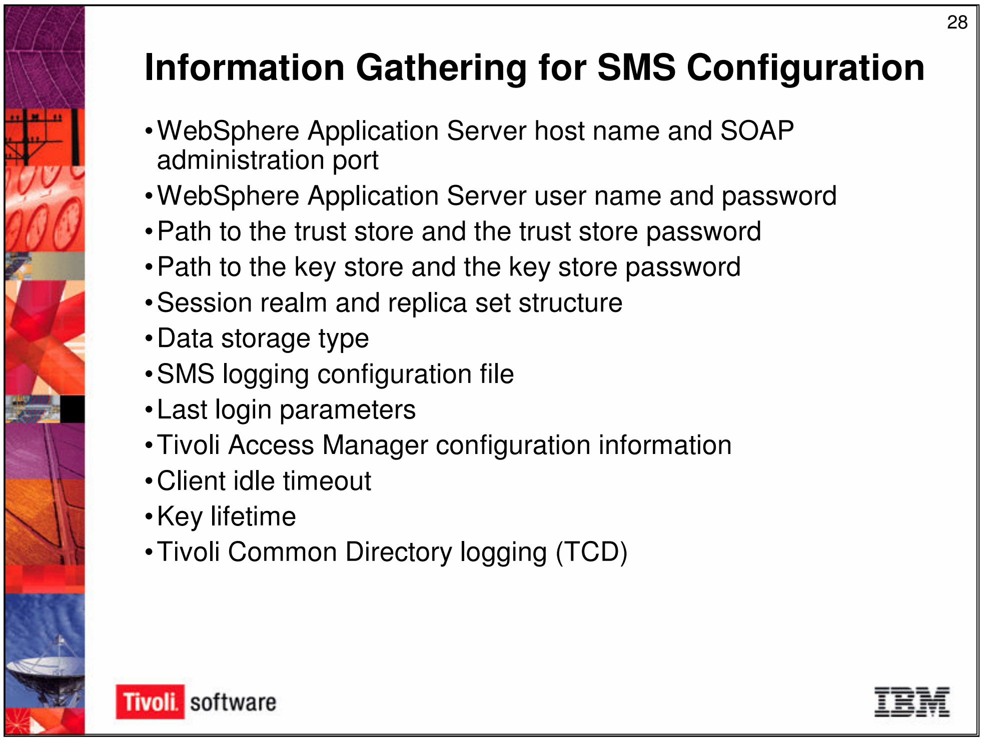
- **SMS itself requires configuration**
  - Command-line interface (CLI); native configuration
  - Graphical User Interface (GUI)

- **Optional interfaces**
  - SMS **pdadmin** command-line interface extension
  - SMS graphical user interface



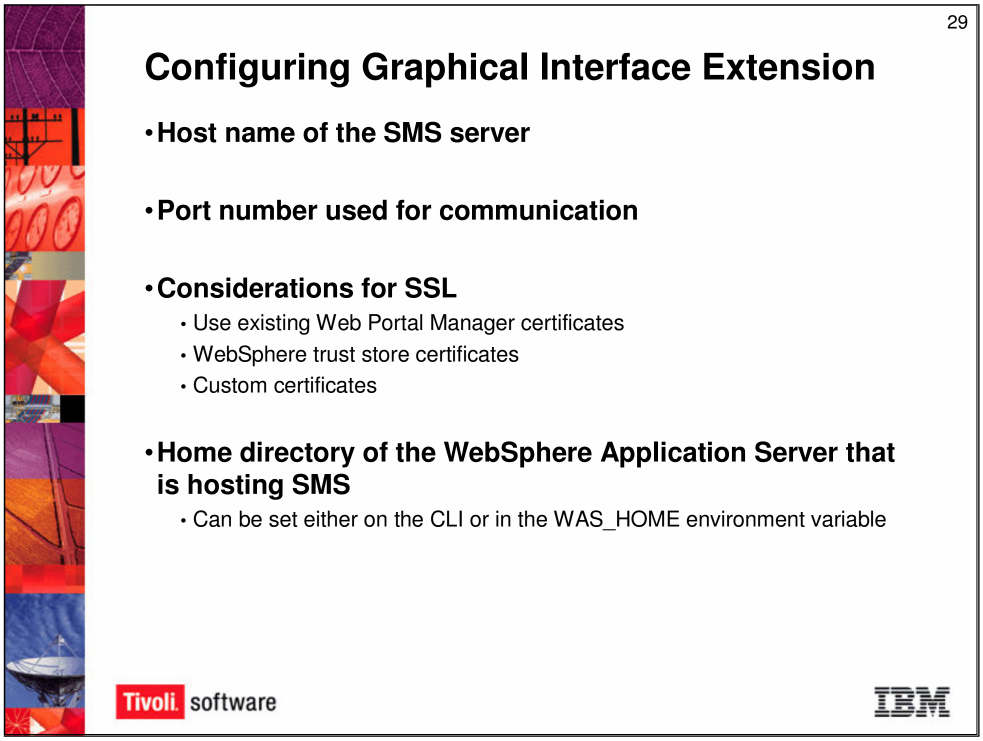
Configuration Options

- Interactively
- Non-interactively
- Silent
- Silent configuration in conjunction with the command-line interface (CLI)



Information Gathering for SMS Configuration

- WebSphere Application Server host name and SOAP administration port
- WebSphere Application Server user name and password
- Path to the trust store and the trust store password
- Path to the key store and the key store password
- Session realm and replica set structure
- Data storage type
- SMS logging configuration file
- Last login parameters
- Tivoli Access Manager configuration information
- Client idle timeout
- Key lifetime
- Tivoli Common Directory logging (TCD)



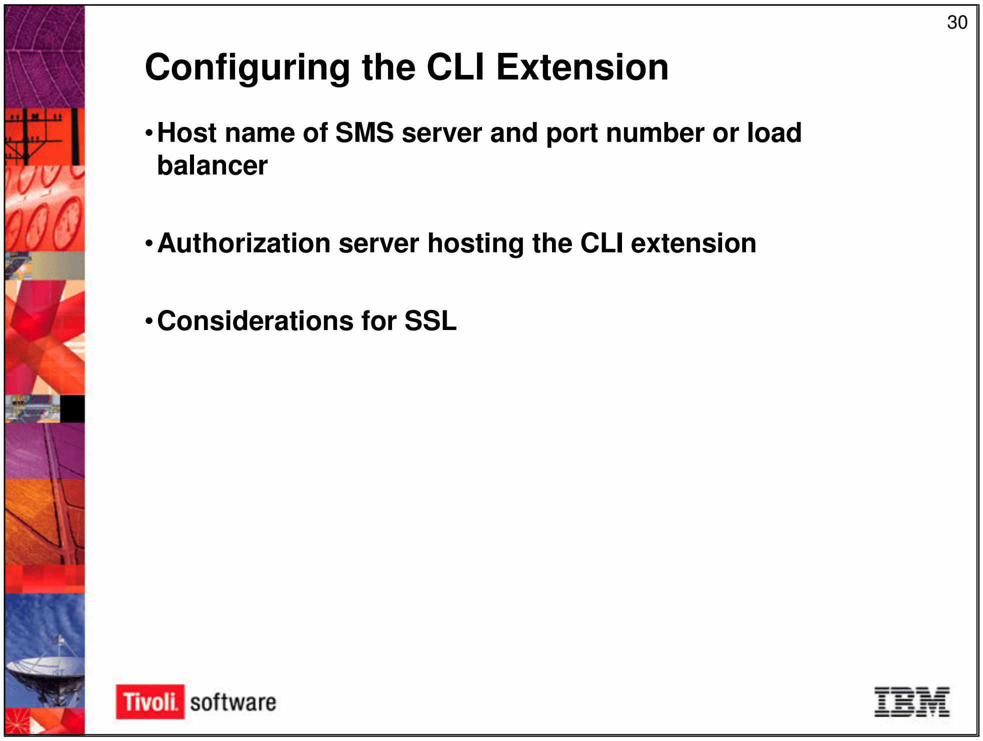
Configuring Graphical Interface Extension

- **Host name of the SMS server**

- **Port number used for communication**

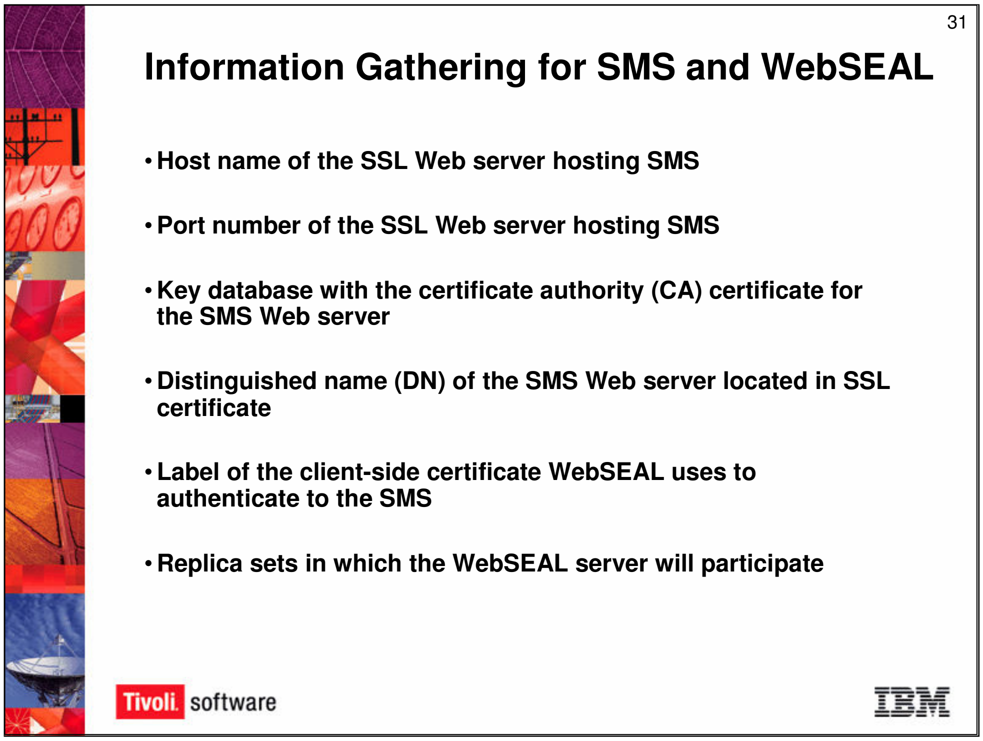
- **Considerations for SSL**
  - Use existing Web Portal Manager certificates
  - WebSphere trust store certificates
  - Custom certificates

- **Home directory of the WebSphere Application Server that is hosting SMS**
  - Can be set either on the CLI or in the WAS_HOME environment variable



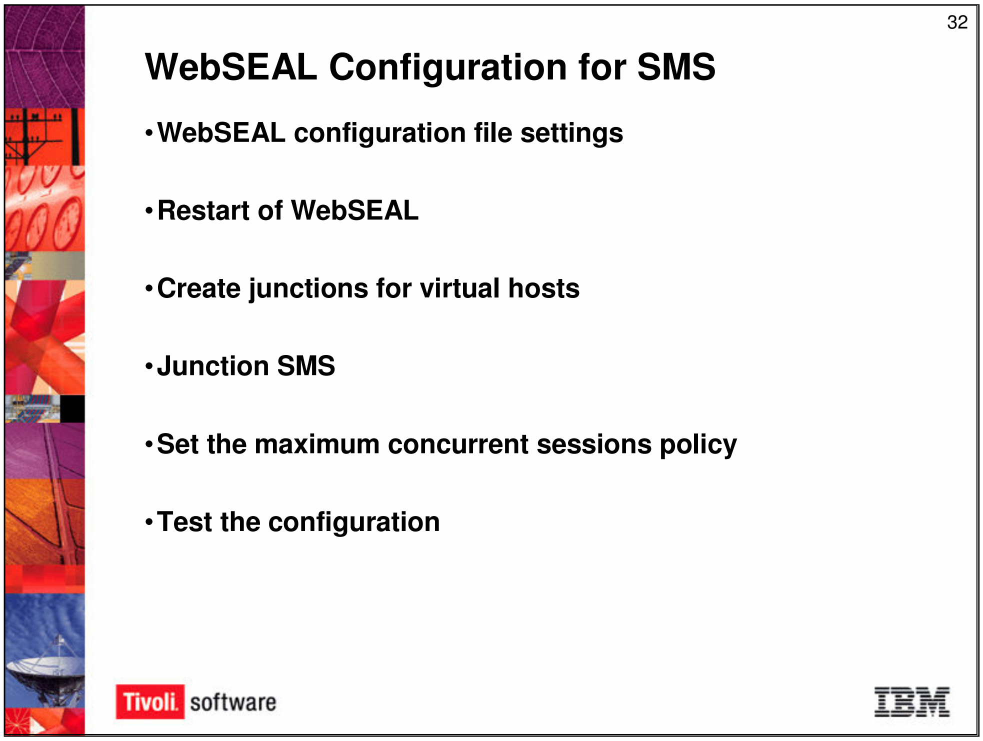
Configuring the CLI Extension

- Host name of SMS server and port number or load balancer
- Authorization server hosting the CLI extension
- Considerations for SSL



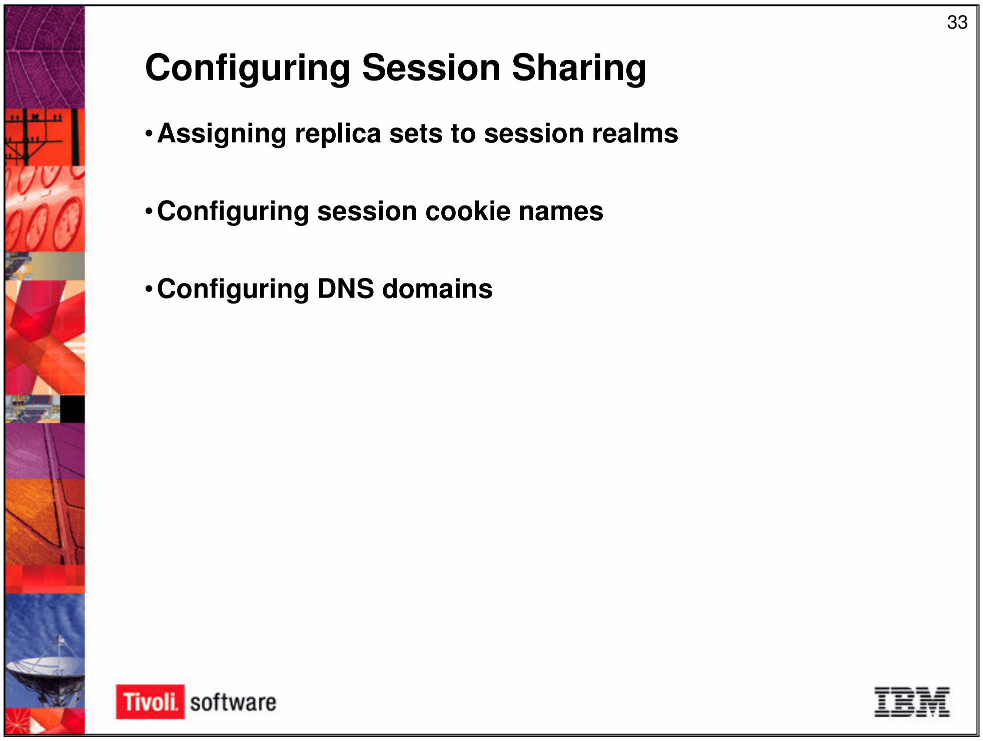
Information Gathering for SMS and WebSEAL

- Host name of the SSL Web server hosting SMS
- Port number of the SSL Web server hosting SMS
- Key database with the certificate authority (CA) certificate for the SMS Web server
- Distinguished name (DN) of the SMS Web server located in SSL certificate
- Label of the client-side certificate WebSEAL uses to authenticate to the SMS
- Replica sets in which the WebSEAL server will participate



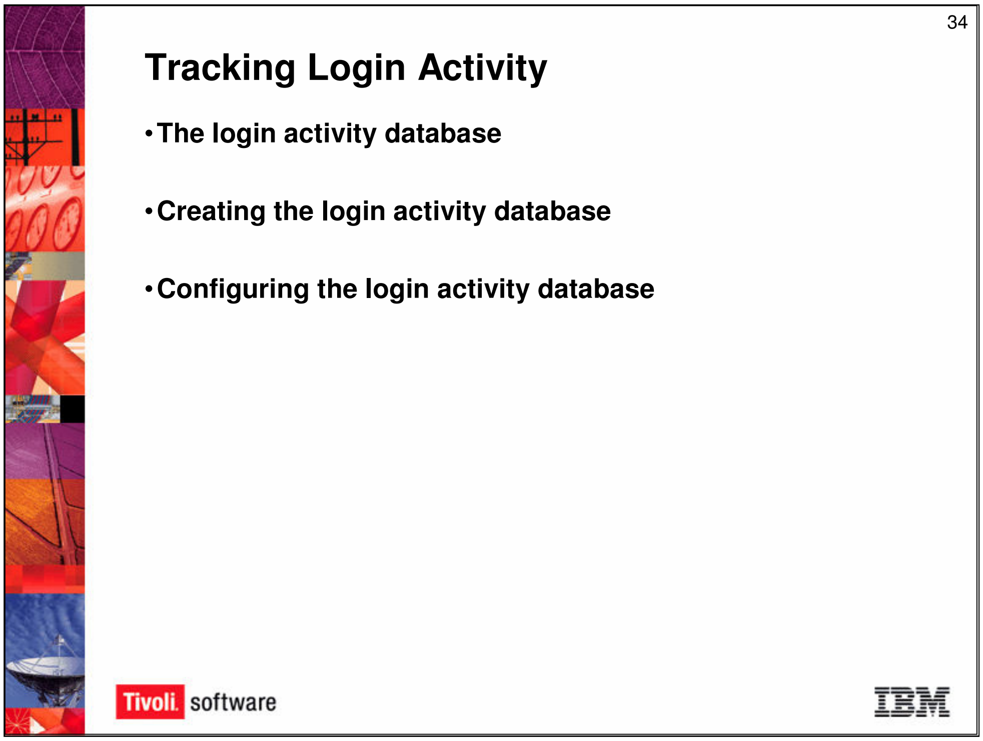
WebSEAL Configuration for SMS

- WebSEAL configuration file settings
- Restart of WebSEAL
- Create junctions for virtual hosts
- Junction SMS
- Set the maximum concurrent sessions policy
- Test the configuration



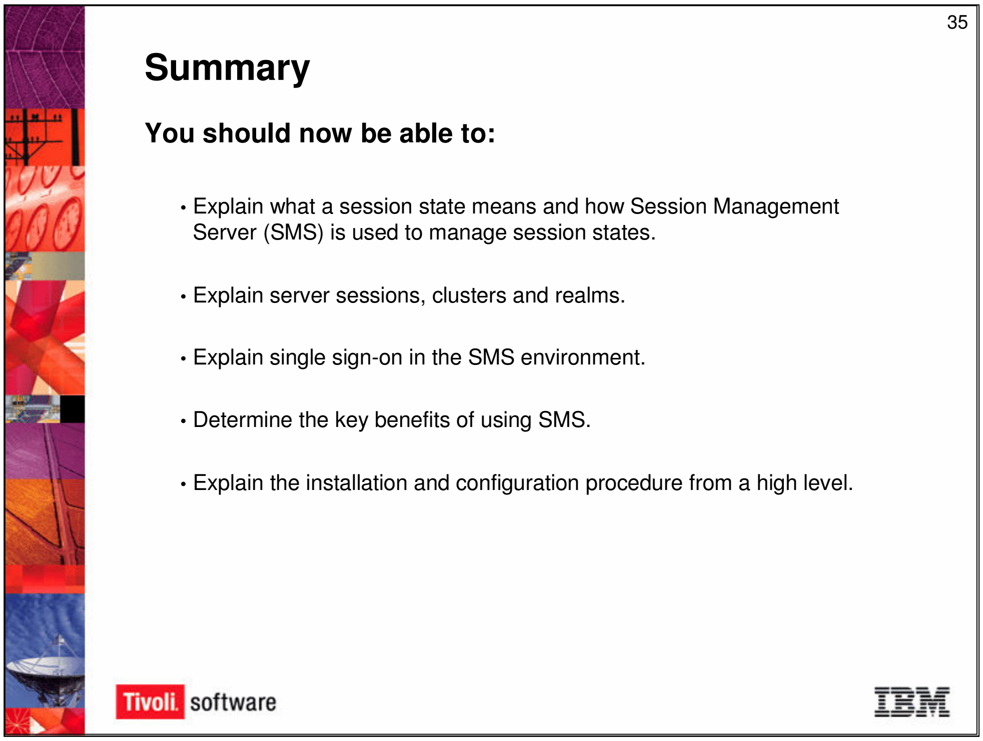
Configuring Session Sharing

- Assigning replica sets to session realms
- Configuring session cookie names
- Configuring DNS domains



Tracking Login Activity

- The login activity database
- Creating the login activity database
- Configuring the login activity database



Summary

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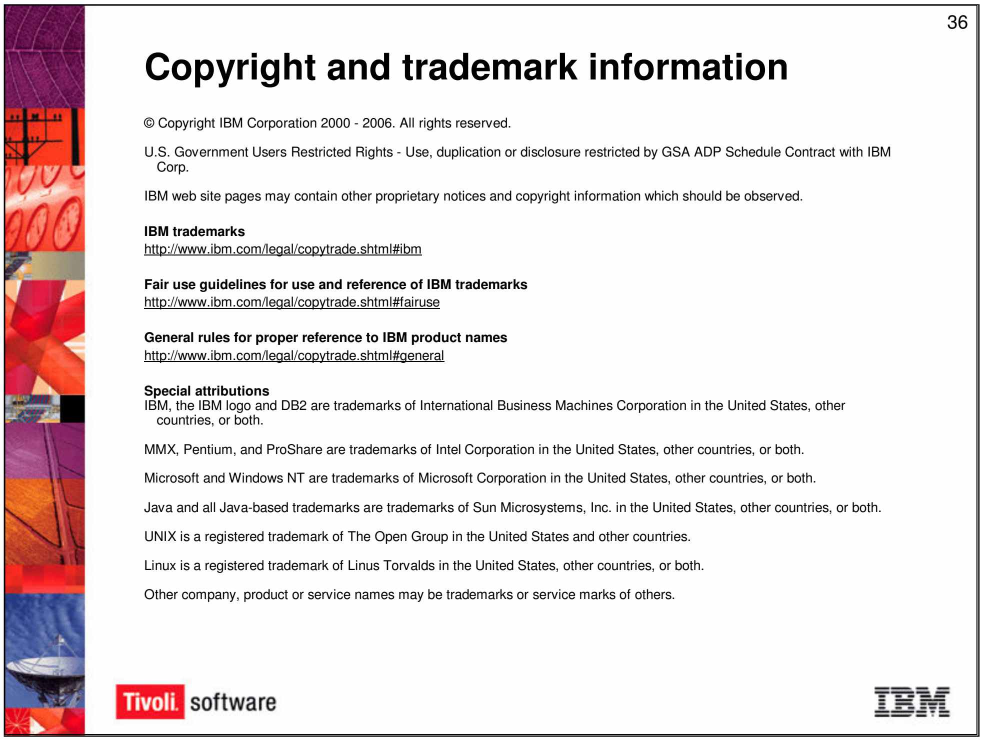
- Explain single sign-on in the SMS environment.
- Determine the key benefits of using SMS.
- Explain the installation and configuration procedure from a high level.



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