SAP Single Sign-On 3.0

International Focus Groups Webinar July 2016

Christian Cohrs
Area Product Owner, SAP SE

Public

Trust. Security. SAP.

Agenda

Overview

Main capabilities and 3.0 news

Summary

SAP Single Sign-On

Market Success

- SAP Single Sign-On has become the Best-Practice for secure authentication
- Around the world
- Across all industries
- From small & medium enterprises to large corporations
- On-Premise & Private Cloud

SAP Single Sign-On

Benefits in detail

Security

- Secure authentication with one strong password, optionally with additionally factors
- No more need for password reminders on post-it notes
- All passwords kept in one protected, central place

Cost saving

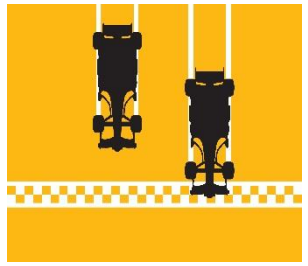
- Efficiency gains for users that only need to remember one password
- Higher productivity due to reduced efforts for manual authentication, password reset, helpdesk interaction,…
- Functions to efficiently set up and manage server-side security capabilities

Simplicity

- Lean product, fast implementation project, quick ROI
- No more need to provision, protect and reset passwords across many systems
- No more efforts to manage password policies across many systems

SAP Single Sign-On

Supported authentication modes



Single sign-on

- Authenticate once to an authentication server (Active Directory, AS ABAP,..)
- Received security token confirms identity for each subsequent login to business applications

Multiple sign-on

- User authenticates each time when accessing a business application
- Authentication is performed against a central authentication server, not the business application itself

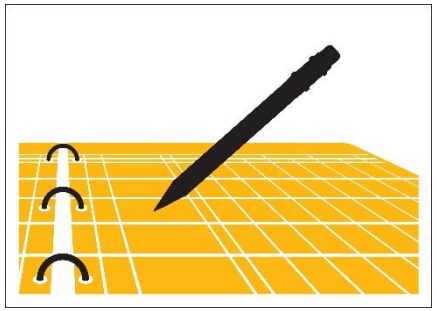
Multi-factor authentication

- In addition to knowledge of information (password), authentication requires a physical element (possession of mobile phone, RSA SecurID card, etc.)
- Implementation option for both single and multiple sign-on

SAP Single Sign-On 3.0

Secure, low TCO access to SAP business applications using Kerberos

- Users authenticate to Microsoft Windows domain during desktop login
- Active Directory provides a Kerberos security token that SAP business applications accept as proof of identity



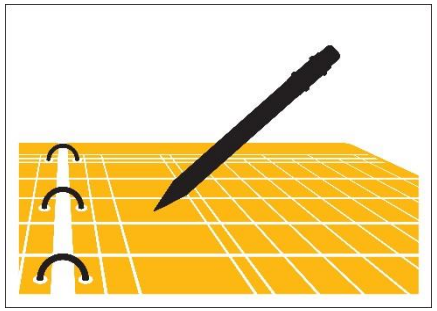
- Supported on desktop systems (Windows, OS X) and mobile devices (iOS) that are part of a Windows domain
- Requires access to the corporate network
- Users need to have an account in an Active Directory

- Very fast implementation, very low TCO, no additional server required
- Single sign-on for AS ABAP and AS Java, covering web-based and desktop clients such as SAP GUI, Business Client, RFC client applications like Analysis for Office, HANA database, Business Intelligence platform, and many more
- Network encryption for SAP GUI and RFC clients using the SNC protocol

SAP Single Sign-On 3.0

Highly interoperable single sign-on to SAP and non-SAP with X.509 certificates

- Users authenticate to SAP Secure Login Server to retrieve a short-lived X.509 certificate, or re-use available certificates, e.g. from corporate smart cards
- SAP business applications accept the certificate as proof of identity
- Validity of the user certificate (hours, days, weeks) can be configured based on security and usability requirements



- Supported on desktop systems and mobile scenarios
- Secure Login Server requires an AS Java to run. If certificates are already available to users, e.g. through smart cards, then no additional server is required.

- Secure Login Server is a lean alternative to introducing a full-blown PKI
- Secure Login Server supports two-factor and risk-based authentication, against different user stores (LDAP, ABAP, ..)
- X.509 certificates are accepted by a broad range of both SAP and 3rd party web applications and clients, including many legacy systems
- Network encryption for SAP GUI and RFC clients using the SNC protocol

SAP Single Sign-On 3.0

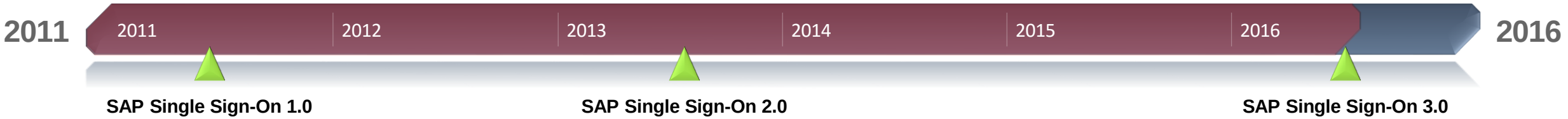
Continuous innovation on a stable core

Building on a stable core

- SAP released SAP Single Sign-On in 2011 after acquiring the secure login solution, which had been used by SAP internally and by many customers for years
- Since 2011, we have continuously extended the product, shipping enhancements in support packages
- The stability of the core and the simplicity of the product remain our key objectives

SAP Single Sign-On 3.0, a non-disruptive, evolutionary release

- Extending the coverage and integration capabilities towards mobile and cloud
- Modernization of the X.509 certificate-based scenario, beyond single sign-on
- Simplified implementation with immediate benefits through close platform integration
- Continuous improvement of security protocols based on market requirements



SAP Single Sign-On

From release 2.0 to 3.0

SAP Single Sign-On provides efficient and easy-to-use security capabilities. It is our goal to keep implementation efforts and TCO as low as possible. This includes the update scenario from version 2.0 to 3.0

Compatible functionality set

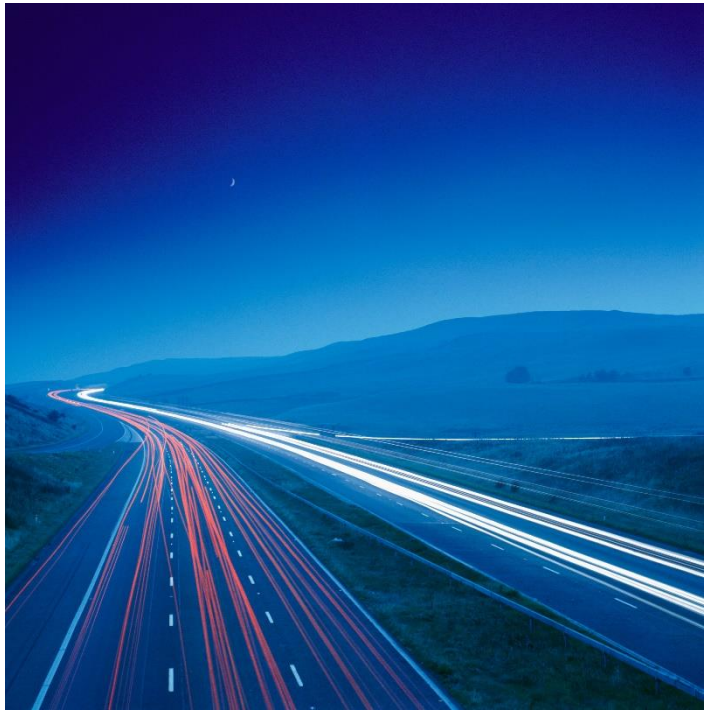
- Version 3.0 continues to support all capabilities of version 2.0
- The fundamentals of the main scenarios remain unchanged; an implementation started on 2.0 does not need to be repeated or adapted on 3.0

Extended functionality optional

- Version 3.0 allows customers to extend the coverage of their existing implementation to additional scenarios
- The new capabilities are optional and can be enabled any time

Lean update process

- Updating product components from 2.0 to 3.0 is as easy as a patch
- Versions 2.0 and 3.0 are interoperable: As long as no 3.0 specific functionality is required, components can be updated in any order



SAP Single Sign-On 3.0

Components

Secure Login Client

- Frontend application, managing Kerberos tokens and certificates

Secure Login Server

- Central service providing X.509 certificates

SAP Common Cryptographic Library

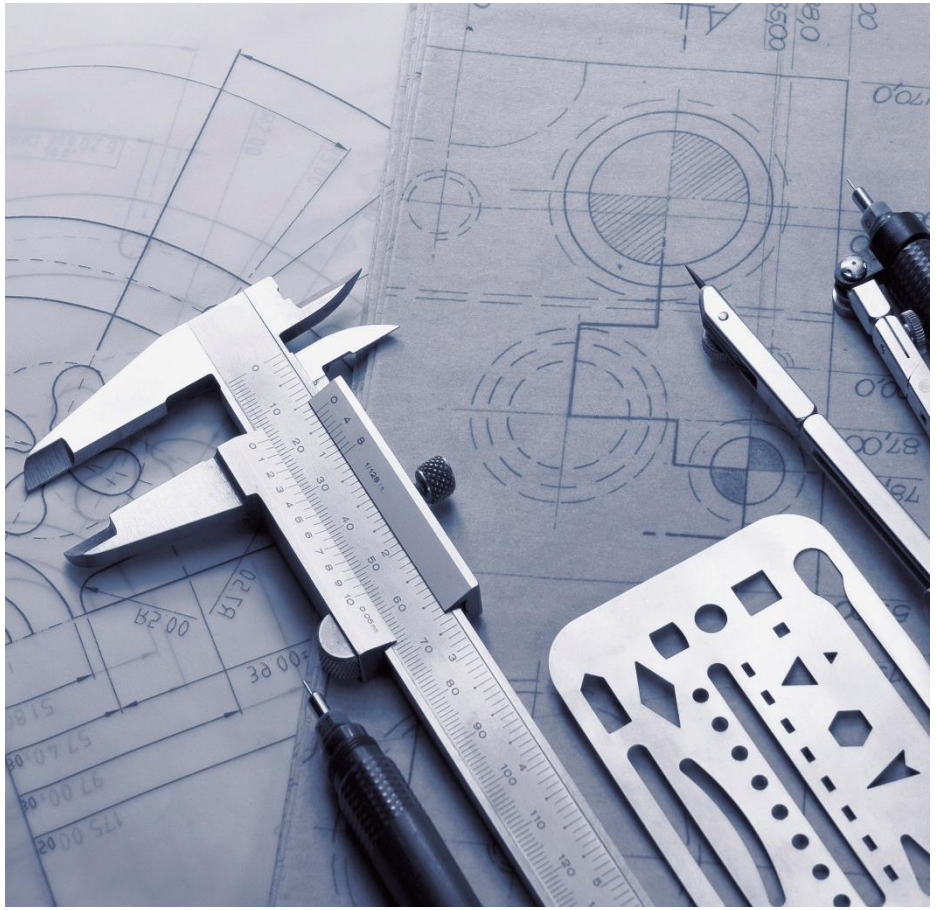
- Cryptography and security library for SAP applications
- As of 3.0, this is the only required cryptographic library
- Shipped with SAP Kernel

SSO Authentication Library

- Support for two-factor and risk-based authentication

Identity Provider

- Provides SAML 2.0 assertions for web-based SSO



SAP Single Sign-On 3.0

Enhancements for SSO based on Kerberos and X.509 certificates

New

- **Encryption Only Mode: Data privacy, always**
  - Enables network encryption for SNC even if a user-specific security token is not available or not configured
  - Allows customers to protect data communication immediately during an implementation project, before user-specific configuration is in place
  - Data privacy still ensured if the end user‘s security token is temporarily unavailable, for example if the user loses the smart card holding the certificate

New

SAP Single Sign-On 3.0

Certificate lifecycle management for SAP NetWeaver AS ABAP

The security capabilities of the SAP NetWeaver Application Server ABAP are often based on certificates. When customers have a security policy that defines a short certificate validity, certificates expire on a regular basis and need to be updated. Certificate lifecycle management helps manage the renewal of certificates, reduces manual efforts, and prevents downtime.

Process

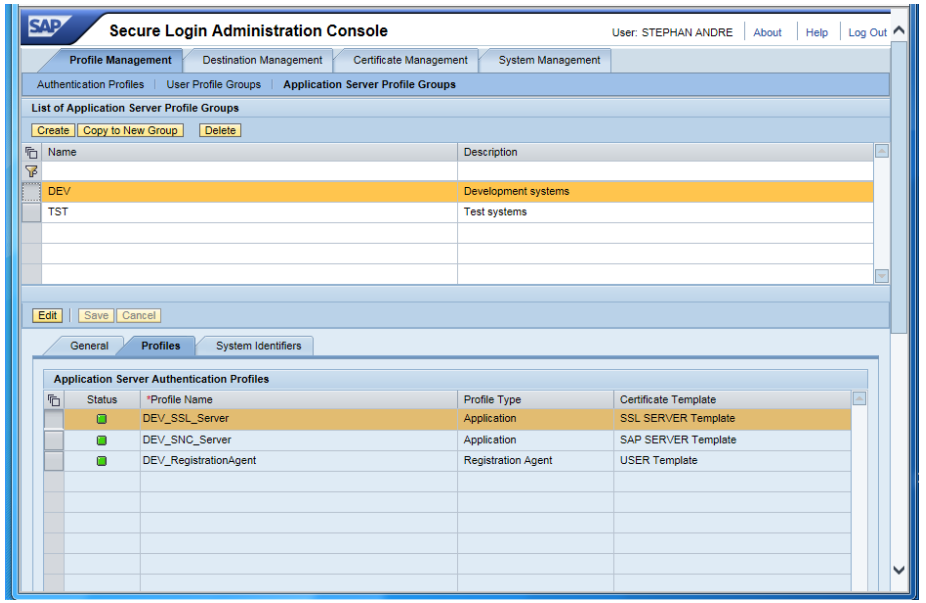
- Trust relationship between AS ABAP and Secure Login Server is configured once
- AS ABAP subsequently checks in regular intervals for expiring certificates and automatically renews them

Benefits

- No more manual steps required
- SAP-supported solution
- Mitigate risk of unexpected downtime

Latest enhancements

- Command line tool that automates the certificate renewal for all components using file-based PSEs
- Automated central roll-out of trusted root certificates to facilitate the transition from self-signed certificates to a PKI-based approach
- Secure Login Server can act as Registration Authority of an existing enterprise PKI



SAP Single Sign-On 3.0

Secure Login Server as Registration Authority of an existing enterprise PKI

New

Business User

Provision user certificates

Forward request

Return certificate

Secure Login Server

Enterprise PKI
(ADCS* or CMC** compatible)

Renew server certificates

SAP NetWeaver
Application Server ABAP

Scenario

- Customers that already have an enterprise PKI do not want to establish a second one
- Secure Login Server (SLS) integrates with existing enterprise PKI both for user and server certificates
- Benefits
  - Certificate signing based on established PKI and security policy
  - Storage and revocation processes remain valid
  - SAP component integration decoupled, managed inside SLS

*Active Directory Certificate Services

** Certificate management over CMS, RFC 5272

New

SAP Single Sign-On 3.0

Integrating cloud and on-premise, browser and native clients

SAP Single Sign-On 3.0 comes with a new version of the Secure Login Web Client, based on a renovated architecture and more integration options

Secure Login Web Client (SLWC)

- The Secure Login Web Client allows a web page to trigger and monitor the certificate enrollment for Secure Login Server profiles
- Using Secure Login Web Client, a business process that is running in a browser session (cloud or on-premise) can trigger a seamless authentication for a native client on the user desktop
- For example, SLWC can accept a SAML 2.0 assertion as security token and in return provision an X.509 certificate for single sign-on of desktop applications such as SAP GUI. This is a major benefit for customers that run a SAML 2.0 Identity Provider or Portal as the central authentication server.

Architecture Renewal

- The previous version of SLWC was based on a Java applet and for some capabilities on an ActiveX control
- The 3.0 version of SLWC no longer depends on Java or ActiveX, relying instead on the Secure Login Client
- As a result, SLWC 3.0 is no longer limited to browsers that (still) support Java applets or even ActiveX, which significantly increases the number of supported browsers

New

SAP Single Sign-On 3.0

Comprehensive solution for single sign-on on mobile devices

SAP Single Sign-On 3.0 extends the capabilities for mobile single sign-on, covering a broad range of customer scenarios with proven technologies and seamless integration into the existing landscape

Secure Login Server (SLS)

- X.509 certificates can be provisioned to mobile devices in multiple ways
  - Using the SCEP protocol support of iOS
  - Using the SAP Authenticator app on iOS
  - Calling the new REST API of Secure Login Server from a custom app
- X.509 certificates are highly interoperable and support single sign-on for on-premise and cloud, SAP and non-SAP, app- as well as browser-based applications
- Optionally, customers can integrate Secure Login Server and the SAP Mobile Platform, and benefit from a seamless user experience for mobile applications

Other options

- Kerberos: Kerberos-based single sign-on is only possible on some mobile device types; it does not provide many customization options. On the other hand, it is easy to set up and operate.
- SAML 2.0: SAML assertions provided by the SAP Identity Provider are also supported by mobile web browsers
- SAP Authenticator: One-time password generated by SAP Authenticator require few prerequisites and can be an attractive solution for single sign-on in custom scenarios

SAP Single Sign-On 3.0

Two-factor authentication

Authentication requires two means of identification

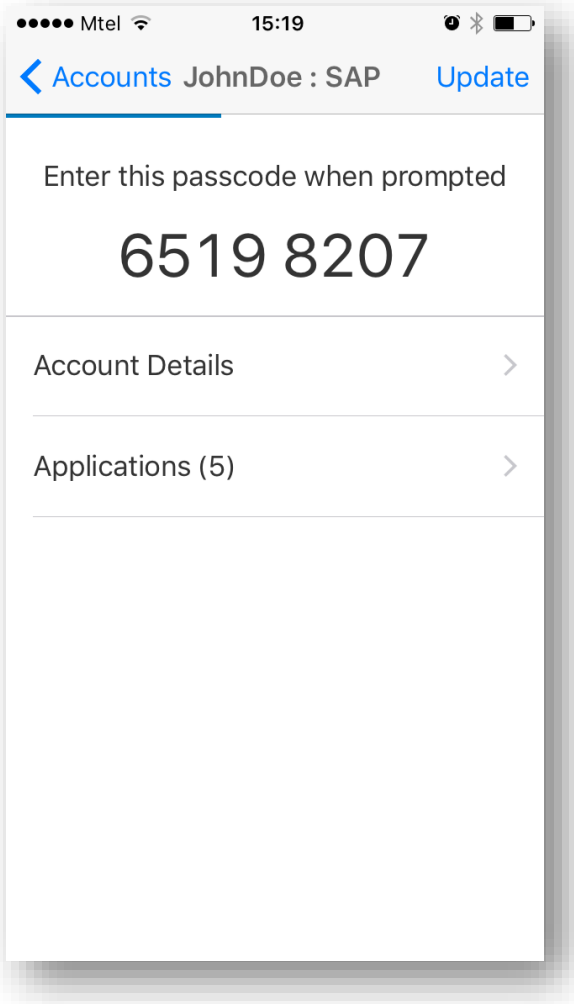
- Knowledge of a password
- Possession of a physical device, such as a cell phone

Options for the second factor

- SAP Authenticator mobile app
  - Generates one-time passwords (RFC 6238 compatible)
  - Available for iOS, Android and Windows (universal app)
- One-time password sent using SMS
- One-time password sent using e-mail
- RSA / RADIUS

Usage scenarios

- Recommended for scenarios with special security requirements
- Web and SAP GUI applications

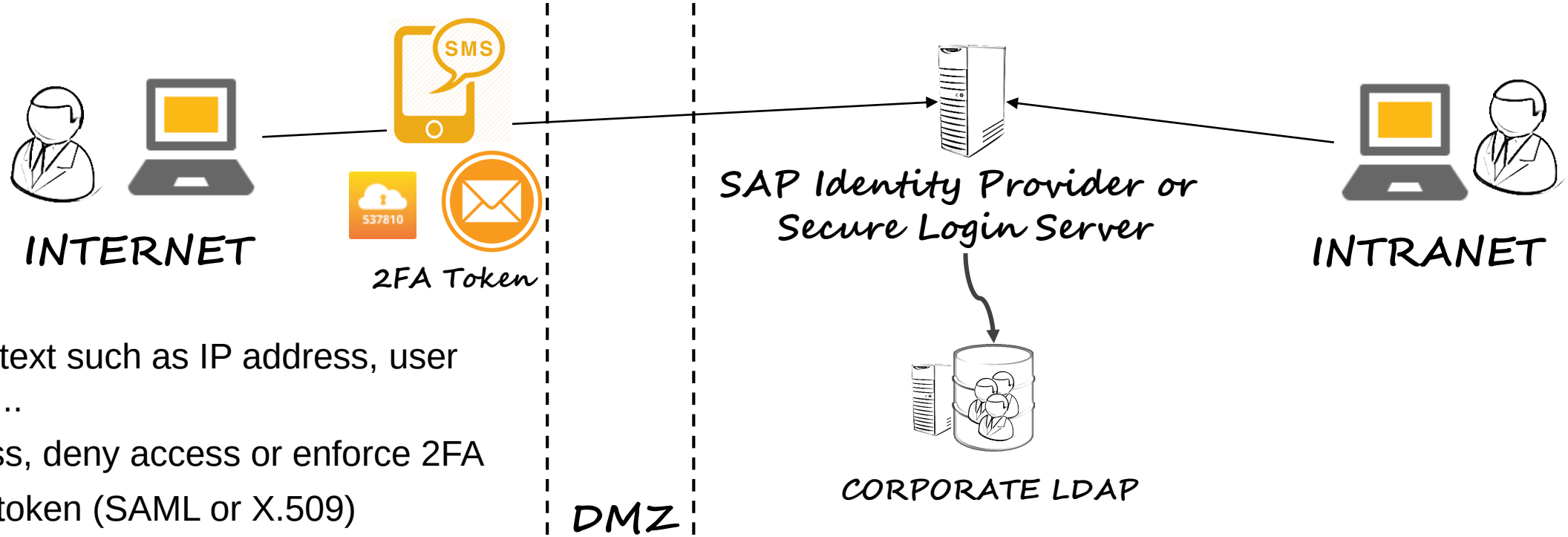


SAP Single Sign-On 3.0

Risk-based authentication based on context

Risk-based authentication

- Risk-based enforcement of stronger authentication
- Example: User access from outside the corporate network ➔ Two-factor authentication is required



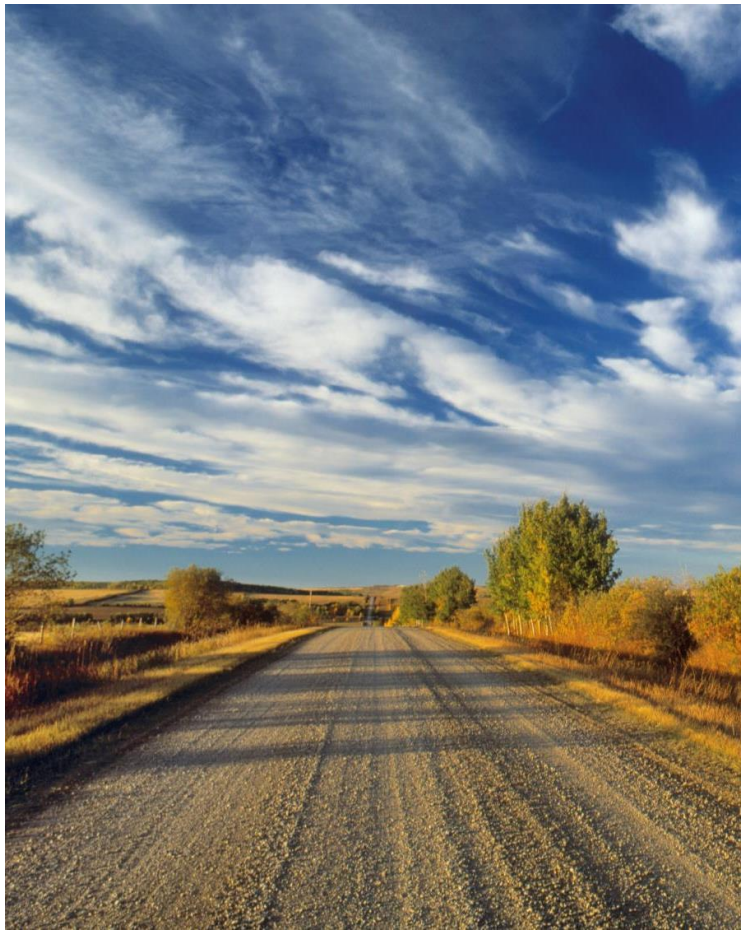
- Evaluate context such as IP address, user roles, device,..
- Accept access, deny access or enforce 2FA
- Return SSO token (SAML or X.509)

Summary

Summary

Trust.Security.SAP.

SAP Single Sign-On is SAP's solution for efficient and secure authentication and data handling



Security

- Secure authentication and FIPS-certified cryptographic functions
- Risk-based authentication and two-factor authentication
- Digital signatures

Productivity

- Single sign-on to SAP and non-SAP applications
- Fast return on investment

Ready for the future

- Based on industry standards such as Kerberos, X.509, SAML
- State-of-the-art security functions
- Cloud and mobile integration

Get more information

Information

- Overview presentation
- Roadmap
- Release blog
- SAP Single Sign-On community

Features

- Certificate Lifecycle Management training video (part 1, part 2)
- Secure Login Web Client
- Enterprise PKI integration
- Secure Login Server REST API
- SAP Single Sign-On and SAP Mobile Platform

Software

- Download
- Product Availability Matrix

TechEd 2016, planned sessions

- SEC103, Lecture
  Simple Steps Toward Increased Security with the New SAP Single Sign-On 3.0
- SEC163, Hands-On Workshop
  Protect your SAP Landscape with X.509 Certificates Using SAP Single Sign-On
- MOB360, Hands-On Workshop
  Enable SAP Single Sign-On for SAP Fiori Apps
- SEC819, Road Map Q&A, SAP Single Sign-On

© 2016 SAP SE or an SAP affiliate company. All rights reserved.