SP Logout Support

Possibilities and Limitations

SWITCH

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Single Logout: Is it possible?

Single Logout will work reliably in some cases only!

Currently, Single Logout is not well supported in SWITCHaai, because...

- The Shibboleth Identity Provider software doesn't yet provide full-featured support.
  - This might change in the near future with IdPv3.
- Most Identity Providers in SWITCHaai don't yet support Single Logout

Single Logout: Is it possible?

Limited logout may be better than no logout at all!

You may want to support Single Logout for critical applications of your own organization.

- The organization's Identity Providers needs some configuration changes.
- The Identity Provider needs to publish the service locations for Single Logout.

Agenda

- Single Logout in Federation
- Single Logout Issues
- Single Logout for SP
- Support Resources

Single Logout in Federation

- Users access multiple services, but need to login once only
- They might be logged in to multiple services
- ... but how do they logout again from all services?
- The solution seems to be easy:
  - The user initiates the single logout process
  - The user is logged out from all services and the IdP in turn
- But:
  - Where does the user start the single logout process?
  - Who knows all of the services the user is currently logged in?
  - Should the user be logged out from all services in the federation, or also from Google Mail, Facebook, etc.?
  - What happens if an error occurs during the whole logout process?
- Logout will be possible but it has a lot of limitations!

SAML 2 SLO Messages and Flow

- SAML 2 SLO may be initiated by either the Identity Provider (IdP) or the Service Provider (SP)
- SP-initiated SLO:
  - An SP sends a logout request to the IdP
  - At the IdP, for each SP to which the user has authenticated:
    - The IdP sends a logout request to the SP
    - The SP attempts to destroy its session for the user and sends back a logout response indicating if this was successful
  - The IdP destroys its session for the user
  - The IdP sends a logout response to the initiating service provider, which then destroys its session
- It is the responsibility of the SLO initiator to provide the user with information about whether SLO has succeeded or failed.

SLO Issues: User Experience

What does a user expect when clicking on logout?

- Logout only from this single application?
  - Is of little use because of Single Sign On
- Logout from all applications where logged in? Which?
  - Also from Google Mail, eBay and other non AAI applications?

Therefore:

- Users must understand the consequences of logout
  - Must know that they currently are signed in to a single sign-on (SSO) system and what will result from clicking on logout
- Users must always know if logout has completely succeeded
  - Otherwise they may assume that it has and leave the computer, allowing someone else to erroneously access a service

SLO Issues: Logged in vs. Logged out

What defines if a user is logged in via AAI/application?

- 🍪 Shibboleth session cookie
- 🍪 Application session cookie (optional)
  - Some applications only check if user was authenticated via AAI

What is necessary to log out a user?

- Delete Shibboleth and application cookies (front-channel)
  - Only possible when user’s browser is involved
    → Administrative logout not possible
- Or delete session information on server (back-channel)
  - Only possible if user’s Shibboleth sessionID is known in application
    → Implies adaptation of application

SLO Issues: Technical Difficulties

Front-Channel vs. Back-Channel problems

- Front-Channel: Protocol flow via browser
  - Process might break
  - User might get confused
- Back-Channel: Direct communication between SP and IdP
  - User's session cookie is not available

SP session vs. application session

- The SP and the web application often manage separate sessions
- SLO must make sure that both sessions are destroyed

The two flavors of logout

Local logout

- User’s session is deleted only for one Service Provider
  - Not of much use due to Single Sign-On (SSO)
  - Or "egoistic" if IdP session also is bilaterally deleted but all other SP’s session are still intact.

Global logout = Single Log Out (SLO)

- User’s SSO session deleted on IdP and **all** SPs
  - For authentication methods like HTTP Basic Auth or some external authentication systems, the IdP cannot destroy the SSO session!
    - Only safe way for logout is to cleanly exit the web browser or even to logout from the system!

Current state of SLO in Shibboleth

Shibboleth Service Provider 2.5.x

- Supports local and global logout

Shibboleth Identity Provider 2.4.x

- Supports local and global logout
- Doesn't support "full" SAML 2 logout, i.e. doesn't support logout from multiple Service Providers

Shibboleth Identity Provider 3.x

- Currently, same limited support as 2.4.x.
- Full support should get available in the near future.

Current state of SLO in applications

Adapted Applications:

- Some well-known applications (less than 10) are ready to support SAML 2 logout (incl. Moodle, ILIAS, Resource Registry)
- Custom applications need to be adapted.

Enabling Single Logout on the SP

Enable SLO for SP to support global logout:

- Add "SAML2" to the existing <Logout> element in the Shibboleth SP configuration in `/etc/shibboleth/shibboleth2.xml`

```
<Logout>SAML2 Local</Logout>
```

- SAML 2 logout is initiated by accessing the following URL: `https://ilias.example.com/Shibboleth.sso/Logout`
  - If the IdP supports SAML 2 logout, too, then SAML 2 logout starts.
  - Else, local logout is done (and local logout page is shown).
- By default, the IdP doesn't return to the SP
  - SP can be configured to force returning
    (IdP possibly returns with "partial logout" status)

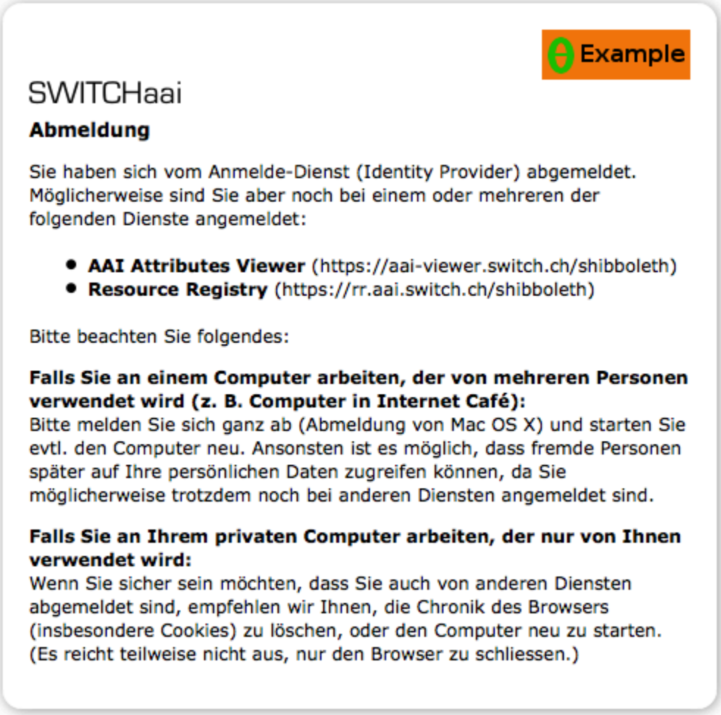
Enabling Single Logout in the web application

If the application manages its own session, it needs to be adapted or configured to support single logout

- The application needs to implement a "logout notification handler"
  https://wiki.shibboleth.net/confluence/display/SHIB2/SLOWebappAdaptation
  - SP notifies the application about logout through a "back-channel"
  - Application needs to destroy the session
- Some applications, like Moodle and ILIAS, have built-in support (see documentation)
- Notification must be enabled in the Shibboleth SP configuration in `/etc/shibboleth/shibboleth2.xml`

```
<Notify
    Channel="back"
    Location="https://ilias.example.org/.../shib_logout.php/>
```

Example Landing Page on IdP



Example

SWITCHaai

Abmeldung

Sie haben sich vom Anmelde-Dienst (Identity Provider) abgemeldet. Möglicherweise sind Sie aber noch bei einem oder mehreren der folgenden Dienste angemeldet:

- **AAI Attributes Viewer** (https://aai-viewer.switch.ch/shibboleth)
- **Resource Registry** (https://rr.aai.switch.ch/shibboleth)

Bitte beachten Sie folgendes:

Falls Sie an einem Computer arbeiten, der von mehreren Personen verwendet wird (z. B. Computer in Internet Café):
Bitte melden Sie sich ganz ab (Abmeldung von Mac OS X) und starten Sie evtl. den Computer neu. Ansonsten ist es möglich, dass fremde Personen später auf Ihre persönlichen Daten zugreifen können, da Sie möglicherweise trotzdem noch bei anderen Diensten angemeldet sind.

Falls Sie an Ihrem privaten Computer arbeiten, der nur von Ihnen verwendet wird:
Wenn Sie sicher sein möchten, dass Sie auch von anderen Diensten abgemeldet sind, empfehlen wir Ihnen, die Chronik des Browsers (insbesondere Cookies) zu löschen, oder den Computer neu zu starten. (Es reicht teilweise nicht aus, nur den Browser zu schliessen.)

Conclusion

- Single Logout is partially possible
- Works well if user is logged in to one application only
- It's still better to get logged out from the IdP than not to log out at all

Support Resources

- Single Logout Issues
  - https://wiki.shibboleth.net/confluence/display/SHIB2/SLOIssues
- Single Logout for Shibboleth SP
  - Configuration of SP Logout Initiator
    https://wiki.shibboleth.net/confluence/display/SHIB2/NativeSPLogoutInitiator
  - Adaptation of Web Application
    https://wiki.shibboleth.net/confluence/display/SHIB2/SLOWebappAdaptation
  - Logout notification to application
    https://wiki.shibboleth.net/confluence/display/SHIB2/NativeSPNotify
- Single Logout for Shibboleth IdP
  - https://wiki.shibboleth.net/confluence/display/SHIB2/IdPEnableSLO