HTTPS Token Binding with TLS Terminating Reverse Proxies (TTRP)

draft-ietf-tokbind-ttrp

Problem Statement

- HTTPS application deployments often have TLS ‘terminated’ by a reverse proxy in front of the actual application
  - products, open source, services
- For applications in such deployments to take advantage of token binding, some information needs to be communicated from the TLS layer to the application
  - in the general case anyway
- In the absence of a standard means of doing this, different implementations will do it differently (or not do it at all)
Solution Overview
draft-ietf-tokbind-ttrp-03

- Define HTTP headers that enable a TTRP and backend server to function together as a single logical server side deployment of HTTPS Token Binding
- TTRP validates the TokenBindingMessage from the Sec-Token-Binding header and removes it from dispatched request
- Sec-Provided-Token-Binding-ID header with base64url encoded provided TokenBindingID added to dispatched request
- Sec-Referred-Token-Binding-ID header with encoded referred TokenBindingID added to dispatched request (if applicable)
- [new] Sec-Other-Token-Binding-ID header with additional Token Bindings type and ID added to dispatched request (if applicable)
- Trust between the TTRP and backend server
- TTRP required to sanitize headers
Different view of the Overview

Old fashioned Token Binding over HTTPS

(Negotiates)
Validates Token Binding message
Sanitize headers

Binds/verifies using token binding ID(s)

Client

GET /stuff HTTP/1.1
Host: example.com
Sec-Token-Binding: AIkAAgBBQKzyIrmyY_Yct
HVoSHBut69vrGffdy1_YKZfFJv6BjrZsKD9b9F
RzSBxDs1twTqnAS71M1RBumihihI9xqxXKkQEt
xe4jeUJU0Wezx1QxwSVBFexFMdXRBIH_LKOSAu
SMOJ0Xw1Q8DE248qk0iRKzw3KdSNYuKYP
mO21bQi3YYAAA
Changes since Singapore

- Drafts -02 & -03
- Use RFC 8174 boilerplate
- Add to acknowledgements
- Update references
- Minor editorial / formatting updates
- Reword the Abstract somewhat for (hopefully) improved readability
- Reformat the "HTTP Header Fields and Processing Rules" section to make header names more prominent and move the encoding definitions earlier
- Add a new header to allow for additional token binding types (other than provided and referred) to be conveyed
  - Comma-separated list
  - Concatenation of base16 encoded Token Binding Type, a period ("."), and the base64url encoded Token Binding ID
Next Steps

- Consensus on Sec-Other-Token-Binding-ID?
- WGLC?