Shared Signals Framework

SSF to the future!

Joel Rennich, May 29, 2025

Sharing Signals

The Problem

- No standard way to message events or “signals” between disparate systems
- Many ways have been proposed (single sign out, web hooks) but none have caught on to any appreciable amount
- More services than ever have a need to share events than ever before

The Solution

At least maybe…

- Shared Signals Framework
- Supported by the OpenID Foundation
- Focused on security events (Zero Trust to be specific), but extensible to pretty much anything

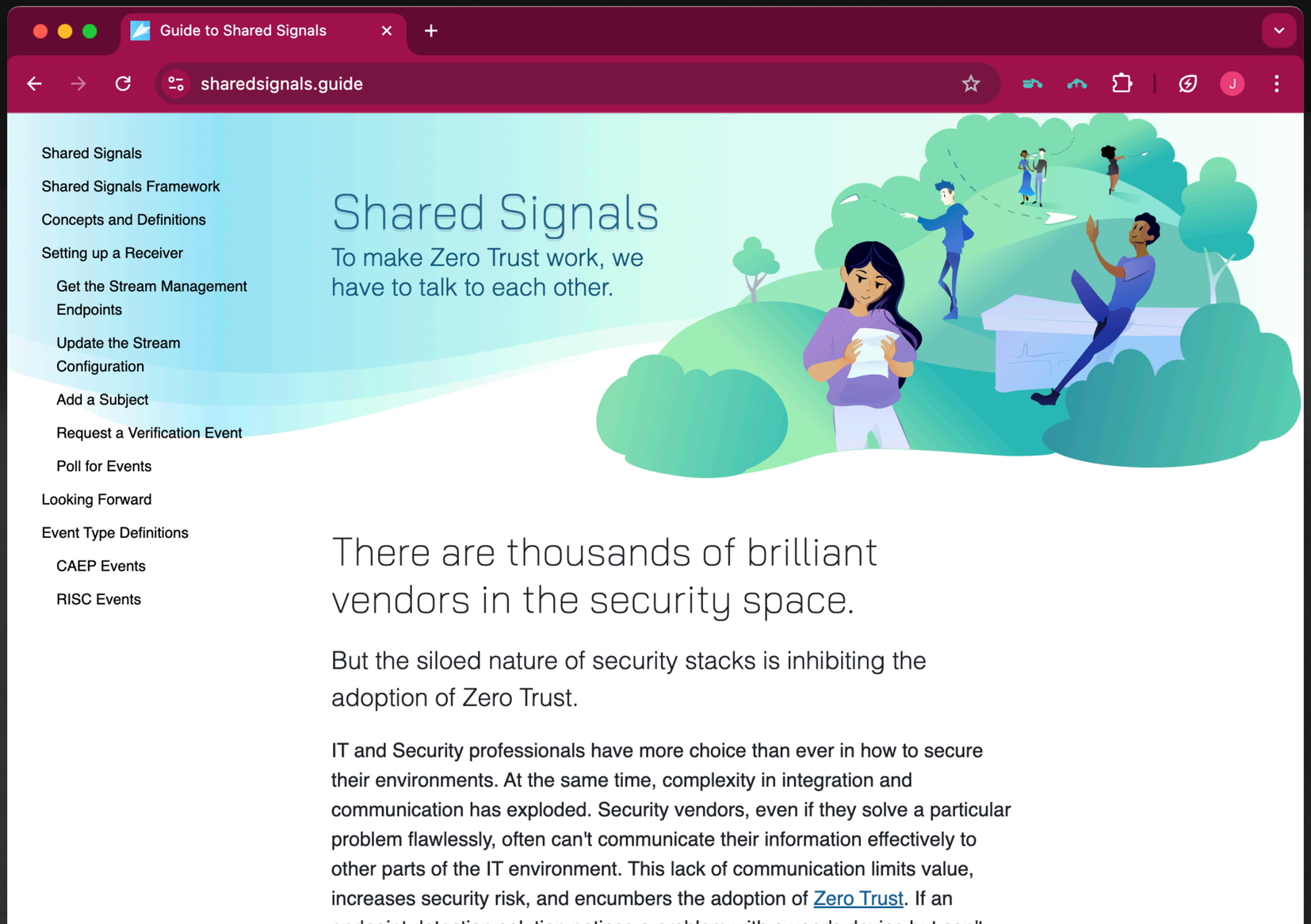
omnissa™

okta

jamf

jumpcloud™

https://sharedsignals.guide/



SSF for non-AI viewers

Just the facts

- Can be either Push or Poll - but very few things use Poll
- Events are sent from Transmitter to Receiver
- Most existing services are supporting just 2-3 events
  - Credential Changed
  - Session Revoked
  - Compliance Changed

SSF Components

Nomenclature

- **Transmitter** - the service sending the signals
- **Receiver** - the service receiving the signals
- **SET** - Security Event Token, a JWT with a different type in the header that has a CAEP or RISC event
- **Stream** - not really a “stream” in the sense of a WebSocket or something like that, just a collection of SETs

Push SSF

Sending Signals

- Transmitter sends a signed SET to an Endpoint designated by the Receiver
- Receiver validates the signature back to the Transmitter’s JWKs file
- Receiver processes the event

It’s really just…

Fancy webhooks

Poll SSF

Checking in for Signals

- Receiver checks in every so often
- Transmitter delivers some amount of SETs
- Receiver checks in again to confirm what they received

SET

eyJhbGciOiJSUzI1NiIsImtpZCI6IjM2NmI5NjhmLTJiMGUtNDMwMC04OTYxLTU4ODE2YmQzYjAzOSIsInR5cCI6InNlY2V2ZW50K2p3dCJ9.eyJhdWQiOiJodHRwczovL3RyaWFsLTU4OTg2MTEub2t0YS5jb20iLCJldmVudHMiOnsiaHR0cHM6Ly9zY2hlbWFzLm9wZW5pZC5uZXQvc2VjZXZlbnQvY2FlcC9ldmVudC10eXBlL2NyZWRlbnRpYWwtY2hhbmdlIjp7ImV2ZW50X3RpbWVzdGFtcCI6MTc0ODQ4NjUyOSwic3ViamVjdCI6eyJmb3JtYXQiOiJpc3Nfc3ViIiwiaXNzIjoiaHR0cHM6Ly9zc2YuamNsYWJzLmRldi8iLCJzdWIiOiIwMHUxYWVyMDI0N21JWnJnUjFkNyJ9fX0sImV4cCI6MTc0ODQ5MDEzMSwiaWF0IjoxNzQ4NDg2NTMxLCJpc3MiOiJodHRwczovL3NzZi5qY2xhYnMuZGV2LyIsImp0aSI6ImNjZWViNDhjLWIzZTgtNDJkZS05ZmVhLTVjOTk3ZTQ1YTJiZCIsInR4biI6ImYzYjliNzFmLTBmMjUtNDllZC04ZmFmLTk5NWY3NGE0NDY0OCJ9.kTbmbWxa-PuO4J70dwMInurIuOXPIRFjunq8CRIb23DfyrJS9Ii4G0e6wCBV8WsUToXvmF9xIlryMB1nbiKXe0q3dbE7rbwHYSxMWPiSp7elFr-yOhdPKI0VoqWnWE7v7cx8vH1IssElFM87ZcKTKz9M3ulqTzjqgHfOWksvORfVWN-tsii0HZ8MEfUPIXOg03FAxzT4svd3LGHH_rZzFcejHbjG6hv5wUY_0elq5z0gPklqq-1lgRT4wDvMK83-laJM6jO2pEfxG1mf1aX2Xfbtrk1BbcRZRqui2WF4AltVtFyNRsxxr3zolAj4JRIJ3HqZeNjqG9KgX0fHBuW2Iw

SET

eyJhbGciOiJSUzI1NiIsImtpZCI6IjM2NmI5NjhmLTJiMGUtNDMwMC04OTYxLTU4ODE2YmQzYjAzOSIsInR5cCI6InNlY2V2ZW50K2p3dCJ9.eyJhdWQiOiJodHRwczovL3RyaWFsLTU4OTg2MTEub2t0YS5jb20iLCJldmVudHMiOnsiaHR0cHM6Ly9zY2hlbWFzLm9wZW5pZC5uZXQvc2VjZXZlbnQvY2FlcC9ldmVudC10eXBlL2NyZWRlbnRpYWwtY2hhbmdlIjp7ImV2ZW50X3RpbWVzdGFtcCI6MTc0ODQ4NjUyOSwic3ViamVjdCI6eyJmb3JtYXQiOiJpc3Nfc3ViamVjdF91cmkiLCJzdWIiOiIwMHUxYWVyMDI0N21JWnJnUjFkNyJ9fX0sImV4cCI6MTc0ODQ5MDEzMSwiaWF0IjoxNzQ4NDg2NTMxLCJpc3MiOiJodHRwczovL3NzZi5qY2xhYnMuZGV2LyIsImp0aSI6ImNjZWViNDhjLWIzZTgtNDJkZS05ZmVhLTVjOTk3ZTQ1YTJiZCIsInR4biI6ImYzYjliNzFmLTBmMjUtNDIlZC04ZmFmLTk5NWY3NGE0NDY0OCJ9.kTbmbWxa-PuO4J70dwMlnurIuOXPIRFjunq8CRlb23DfyrJS9li4G0e6wCBV8WsUToXvmF9xIlryMB1nbiKXe0q3dbE7rbwHYSxMWPiSp7elFr-yOhdPKI0VoqWnWE7v7cx8vH1IssElFM87ZcKTKz9M3ulqTzjqgHfOWksvORfVWN-tsii0HZ8MEfUPIXOg03FAxzT4svd3LGHH_rZzFcejHbjG6hv5wUY_0elq5z0gPklqq-1lgRT4wDvMK83-laJM6jO2pEfxG1mf1aX2Xfbtrk1BbcRZRqui2WF4AltVtFyNRsxxr3zolAj4JRIJ3HqZeNjqG9KgX0fHBuW2Iw

SET

Header:


```
{
  "alg": "RS256",
  "kid": "366b968f-2b0e-4300-8961-58816bd3b039",
  "typ": "secevent+jwt"
}
```


Payload:


```
{
  "aud": "https://trial-5898611.okta.com",
  "events": {
    "https://schemas.openid.net/secevent/caep/event-type/credential-change": {
      "event_timestamp": 1748486529,
      "subject": {
        "format": "iss_sub",
        "iss": "https://ssf.jclabs.dev/",
        "sub": "00u1aer09t7mIZrgR1d7"
      }
    }
  },
  "exp": 1748490131,
  "iat": 1748486531,
  "iss": "https://ssf.jclabs.dev/",
  "jti": "cceeb48c-b3e8-42de-9fea-5c997e45a2bd",
  "txn": "f3b9b71f-0f25-49ed-8faf-995f74a44648"
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Demo!

Congrats on 10 years!

Thanks!