OpenID Connect Working Group

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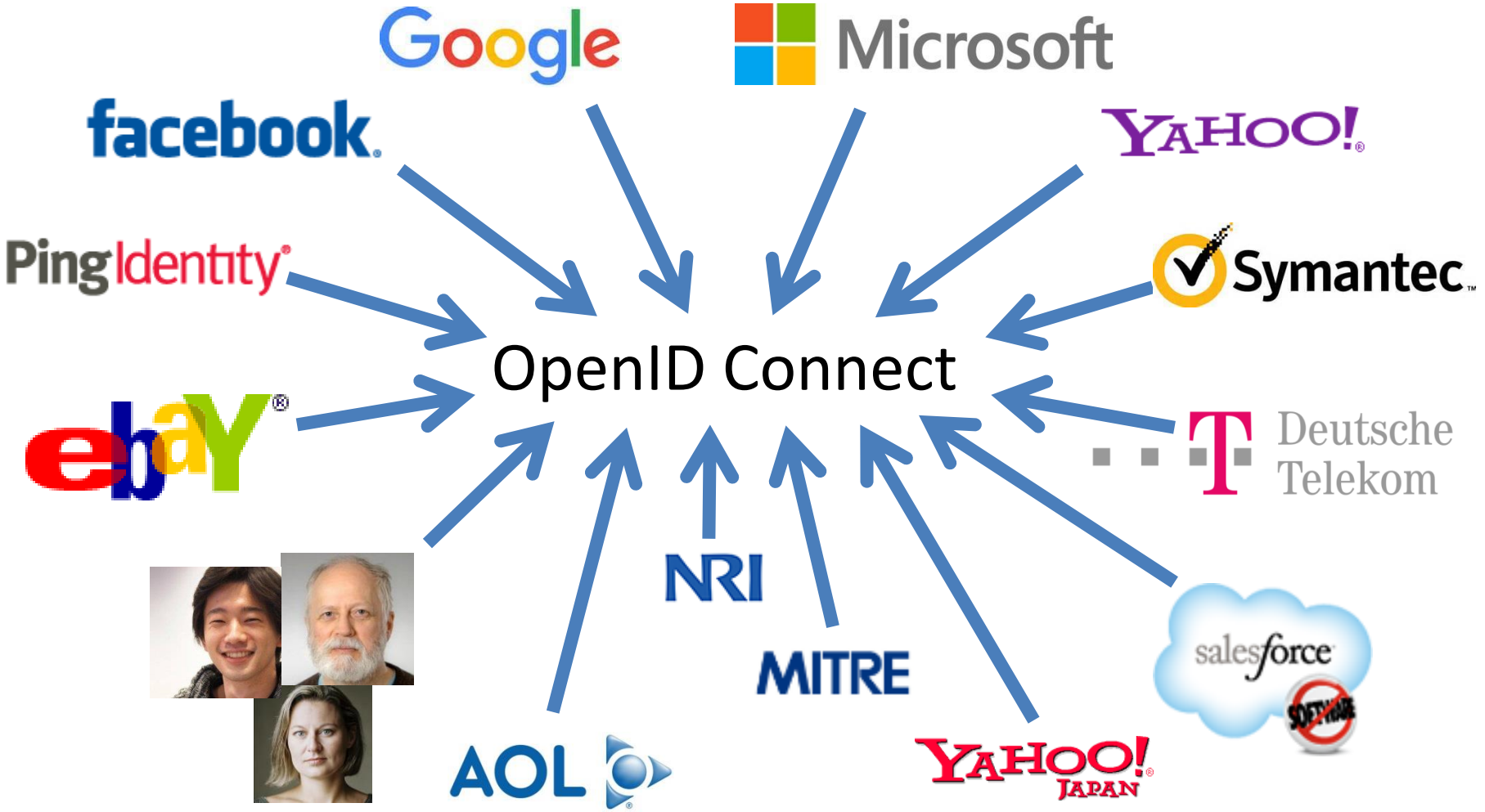
Working Together

OpenID



You're Probably Already Using OpenID Connect!

- If you have an Android phone or log in at AOL, Deutsche Telekom, Google, Microsoft, NEC, NTT, Salesforce, Softbank, Symantec, Verizon, or Yahoo! Japan, you're already using OpenID Connect
  - Many other sites and apps large and small also use OpenID Connect

What is OpenID Connect?

- Simple identity layer on top of OAuth 2.0
- Enables RPs to verify identity of end-user
- Enables RPs to obtain basic profile info
- REST/JSON interfaces → low barrier to entry
- Described at https://openid.net/connect/

OpenID Connect Range

- Spans use cases, scenarios
  - Internet, Enterprise, Mobile, Cloud
- Spans security & privacy requirements
  - From non-sensitive information to highly secure
- Spans sophistication of claims usage
  - From basic default claims to specific requested claims to collecting claims from multiple sources
- Maximizes simplicity of implementations
  - Uses existing IETF specs: OAuth 2.0, JWT, etc.
  - Lets you build only the pieces you need

Numerous Awards

- OpenID Connect won 2012 European Identity Award for Best Innovation/New Standard
  - http://openid.net/2012/04/18/openid-connect-wins-2012-european-identity-and-cloud-award/
- OAuth 2.0 won in 2013
- JWT/JOSE won in 2014
- OpenID Certification program won 2018 Identity Innovation Award and 2018 European Identity Award

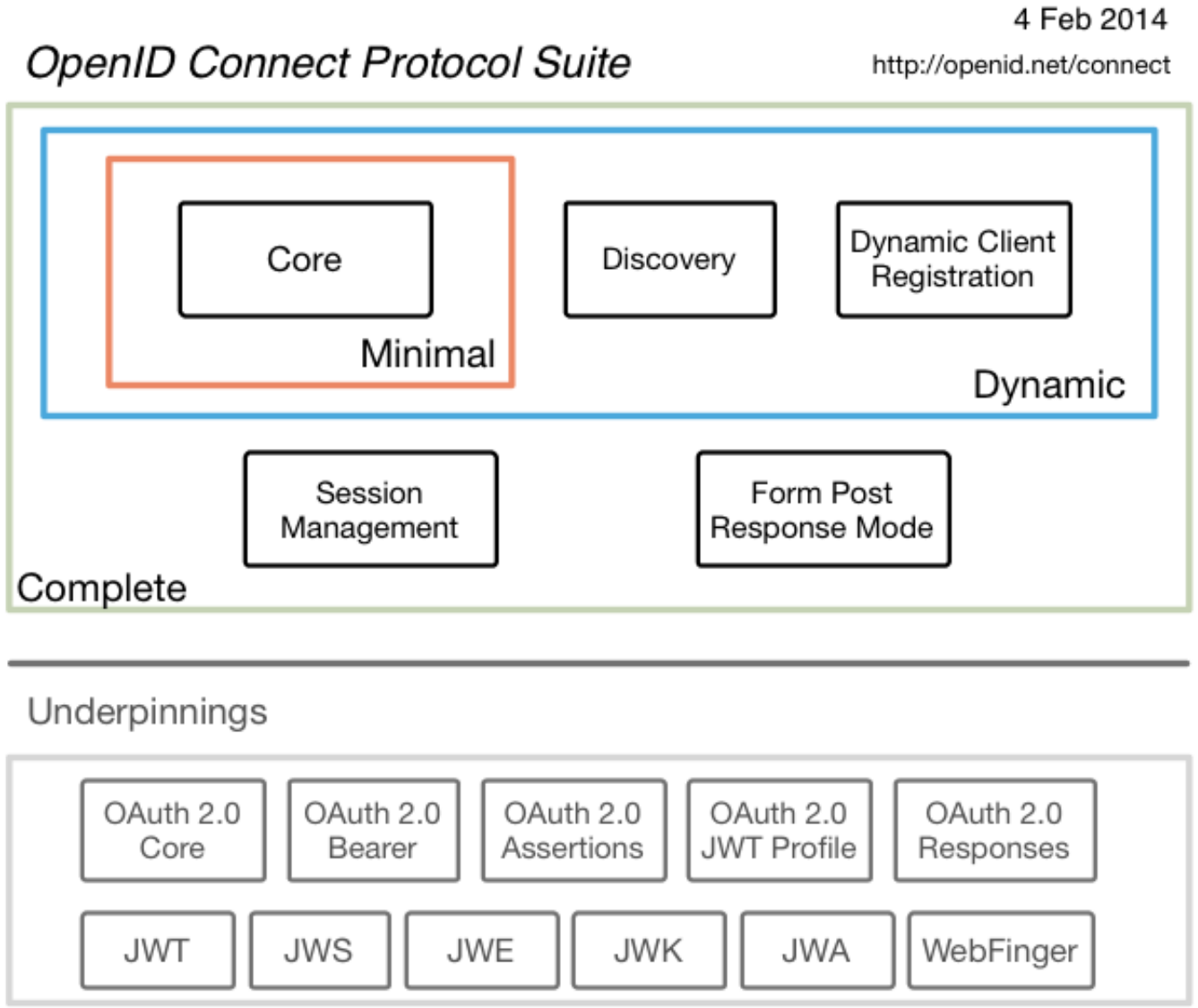
Open Letters to Apple

- OpenID Foundation wrote open letter to Apple about problems with Sign In with Apple in June
  - https://openid.net/2019/06/27/open-letter-from-the-openid-foundation-to-apple-regarding-sign-in-with-apple/
- Apple has since fixed security and interop problems identified!
  - Standard OpenID Connect libraries can now be used in many cases
- We're about to post a second open letter commending the improvements made
  - And asking them to fix some of the remaining peculiarities

Related Working Groups

- International Government Profile (iGov) WG
  - Developing OpenID Connect profile for government & high-value commercial applications
- Enhanced Authentication Profile (EAP) WG
  - Enables Token Bound ID Tokens
  - Enables integration with FIDO and other phishing-resistant authentication solutions
- **M**obile **O**perator **D**iscovery, **R**egistration & authe**N**tic**A**tion (MODRNA) WG
  - Mobile operator profiles for OpenID Connect
- Financial-grade API (FAPI) WG
  - Enables secure API access to high-value services
- Research and Education (R&E) WG
  - Profiles OpenID Connect to ease adoption in the Research and Education (R&E) sector

Original Overview of Specifications



OAuth 2.0 Form Post Response Mode (additional Final Specification)

- Defines how to return OAuth 2.0 Authorization Response parameters (including OpenID Connect Authentication Response parameters) using HTML form values auto-submitted by the User Agent using HTTP POST
- A “form post” binding, like SAML and WS-Federation
  - An alternative to fragment encoding
- https://openid.net/specs/oauth-v2-form-post-response-mode-1_0.html
- Completed April 2015
- In production use by Microsoft, Ping Identity

OpenID 2.0 to OpenID Connect Migration (additional Final Specification)

- Defines how to migrate from OpenID 2.0 to OpenID Connect
  - Has OpenID Connect identity provider also return OpenID 2.0 identifier, enabling account migration
- https://openid.net/specs/openid-connect-migration-1_0.html
- Completed April 2015
- Google shut down OpenID 2.0 support in April 2015
- Yahoo, AOL, others also plan to replace OpenID 2.0 with OpenID Connect

Current Work

- Current OpenID Connect Specification Work:
  - Session Management / Logout
  - Federation Specification
  - Identity Assurance Specification
  - `unmet_authentication_requirements` Specification
  - Native SSO Specification
  - `prompt=create` Specification
  - Second Errata Set
- Related Working Groups
- OpenID Certification

Session Management / Logout

- Three approaches being pursued by the working group:
  - Session Management
    - https://openid.net/specs/openid-connect-session-1_0.html
    - Uses HTML5 postMessage to communicate state change messages between OP and RP iframes
  - Front-Channel Logout
    - https://openid.net/specs/openid-connect-frontchannel-1_0.html
    - Uses HTTP GET to load image or iframe, triggering logout
    - Similar to options in SAML, WS-Federation
  - Back-Channel Logout
    - https://openid.net/specs/openid-connect-backchannel-1_0.html
    - Server-to-communication not using the browser
    - Can be used by native applications, which have no active browser
- All support multiple logged in sessions from OP at RP
- Unfortunately, no one approach best for all use cases
- Certification tests being developed
  - WG plans to test multiple implementations before making specs Final

Federation Specification

- OpenID Connect Federation specification
  - https://openid.net/specs/openid-connect-federation-1_0.html
- Enables establishment and maintenance of multi-party federations using OpenID Connect
- Defines hierarchical JSON-based metadata structures for federation participants
- Implementer's Draft status reached
- Substantial changes since then
  - ***Come work on the spec with us this week at IIW!***

Identity Assurance Specification

- OpenID Connect for Identity Assurance
  - https://openid.net/specs/openid-connect-4-identity-assurance.html
- Representation for verified person data
  - Enables legal compliance for some use cases
- Currently in Implementer's Draft review period
  - ***Please review!***

`unmet_authentication_requirements` Specification

- Defines new error code `unmet_authentication_requirements`
  - https://openid.net/specs/openid-connect-unmet-authentication-requirements-1_0.html
- Enables OP to signal that it failed to authenticate the End-User per the RP's requirements
- New specification written being by Torsten Lodderstedt
  - *Please review!*

Native SSO Specification

- OpenID Connect Native SSO for Mobile Apps specification
  - https://openid.net/specs/openid-connect-native-sso-1_0.html
- Enables Single Sign-On across apps by the same vendor
- Assigns a device secret issued by the AS
- New specification written by George Fletcher
  - *Please review!*

`prompt=create` Specification

- Initiating User Registration via OpenID Connect specification
  - https://openid.net/specs/openid-connect-prompt-create-1_0.html
- Requests enabling account creation during authentication
- Active discussion of relationships between account creation and use of existing accounts
- New specification written being by George Fletcher
  - *Please review!*

Second Errata Set

- Errata process corrects typos, etc. discovered
  - Makes no normative changes
- Edits under way for second errata set
- https://openid.net/specs/openid-connect-core-1_0-24.html is current Core errata draft

OpenID Certification

- Enables OpenID Connect and FAPI implementations to be certified as meeting requirements of defined conformance profiles
- Now OpenID Connect certification profiles for:
  - Basic OP and Basic RP
  - Implicit OP and Implicit RP
  - Hybrid OP and Hybrid RP
  - OP Publishing and RP Using Configuration Information
  - Dynamic OP and Dynamic RP
  - Form Post Response Mode for OP and RP
  - ***New:*** *Third party-initiated login for OP and RP*
  - ***New:*** *Logout OP tests in pilot mode*
- FAPI OP certification launched April 2019
- Financial-grade API Client Initiated Backchannel Authentication Profile (FAP September 2019
- See https://openid.net/certification/
  - And accompanying certification presentation!

Open Conversation

- How are you using OpenID Connect?
- What would you like the working group to know and do?

OpenID Connect Resources

- OpenID Connect
  - https://openid.net/connect/
- Frequently Asked Questions
  - https://openid.net/connect/faq/
- Working Group Mailing List
  - http://lists.openid.net/mailman/listinfo/openid-specs-ab
- OpenID Certification Program
  - https://openid.net/certification/
- Certified OpenID Connect Implementations Featured for Developers
  - https://openid.net/developers/certified/
- Mike Jones' Blog
  - http://self-issued.info/
- Nat Sakimura's Blog
  - http://nat.sakimura.org/
- John Bradley's Blog
  - http://www.thread-safe.com/