

Personal Digital Agent Protocol (pdap)

HotRFC
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Enabling a shift

from

proprietary platforms **to personal agents**

- Replace forced platform association with one's choice of community.
- My agent is **interoperable** by vendors and service providers.
- I can switch the host of my agent anytime. **No lock-in.**
- My agent's **policies are portable** across host communities.
 - Swarm and federated personal AI agents can be supported.

Foundational Principle

Universal Human Right of Freedom of Association and Assembly

- Individual choice of hosting and support communities for one's digital agent.
- Self-hosting is supported for those that have the skill and interest.
- Research perspective:
<https://datatracker.ietf.org/doc/draft-irtf-hrpc-association/>

Platform Issues and Regulatory Responses

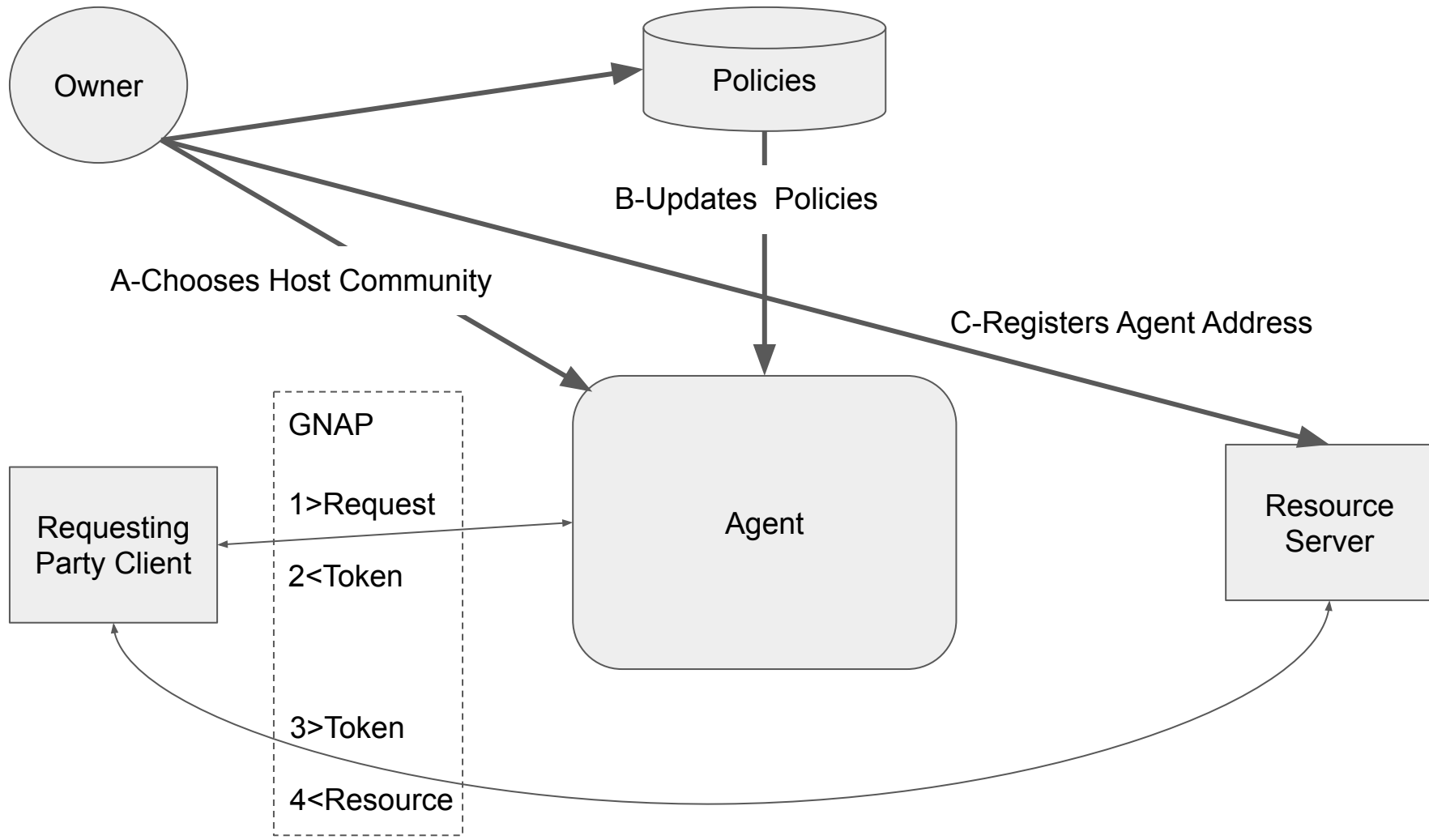
- US: FTC vs. Amazon
 - Bundling of Search and Logistics - drives up cost for vendors
 - Most-favored-pricing clauses drive up cost for customers
- EU: Payment Services Directive PSD-2
 - Opens interface between payment services and banks
 - Increased competition for both payment services and banks
- EU: Digital Services Act
 - Customer lock-in and lack of transparency and customer agency
 - Very Large Online Platforms (VLOP) and Very Large Online Search Engines (VLOSE)
- India: Aadhaar, UPI, India Stack, becn protocol
 - Avoid US / EU style platform oligopolies
 - Support essential digital tools as a public good (Aadhaar, India Stack)
 - Enable customers and vendors to choose their agents (UPI, becn protocol)

Personal Digital Agent

- Self-Sovereign (independent of any jurisdiction or federation)
- Community-Hosted (self-hosted option for pure self-sovereignty)
- Semi-autonomous
- Intelligent (adaptable, learning, context-aware, conversational)
- General across all types of vendors, service providers and jurisdictions
- Accepted by most service providers and resource servers
 - Standardized
 - Fair
 - Cost-effective
 - Secure

Scope of a Personal Digital Agent Protocol

- Separate choice of Authorization Server (as agent) from Resource Server (as vendor)
 - IETF GNAP - **Last Call** - multiple implementations available
 - <https://datatracker.ietf.org/doc/draft-ietf-gnap-core-protocol/>
- Standardize Request Presentation and Authorization Tokens
 - OAuth 2.0 Rich Authorization Requests <https://datatracker.ietf.org/doc/html/rfc9396>
 - Message Signature <https://datatracker.ietf.org/doc/draft-ietf-httpbis-message-signatures/>
 - Authorization and Revocation Capabilities - TBD - Consider <https://github.com/ucan-wg/spec>
- Standardize the Service Endpoint for a personal digital agent Authorization Server
 - Support both URIs and DIDs
- Scope of the Authorization Server Policy Management Interface
 - TBD - Consider CEDAR <https://www.cedarpolicy.com/en>



Steps toward a Personal Digital Agent Standard

- 2015-on: Kantara UMA 2 Protocol Standard
 - OAuth-based
 - “Open World” Authorization Server
- 2020-on: IETF GNAP Protocol Standard
 - Not OAuth-based
 - Open world user request state machine
- 2022: W3C Verifiable Credentials Data Model Standard
 - Validation and Verification as a commodity service
 - Supports open world, decentralized, and self-sovereign flows
- 2023: Personal Digital Agent Discussion Group
 - Define the scope of a vendor standard for interoperable personal agents
 - Excellent vendor and customer experience without platform lock-in
 - <https://docs.google.com/document/d/19GU6L1QxaVslfm9iBKg9T2qV9y0zttRmtlQuPireMMU/edit>
- 2024: IETF Standard Workgroup Established

Join our mail list

<https://www.ietf.org/mailman/listinfo/pdap>

These slides and older notes at:

<https://docs.google.com/document/d/19GU6L1QxaVsIfm9iBKq9T2qV9y0zttRmtlQuPireMMU/edit>

Suggest vendors and implementers to
participate.

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Thank you.