Per Resource Events

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Solid Notifications Protocol
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[Diagram showing the flow between Notification Receiver, Subscription Client, Discovery Client, Resource Server, Subscription Server, and Notification Sender.]
Solid Notifications Protocol
Per Resource Events

Application Client ➔ Resource Server

GET /foo

Send Representation

loop  [while stream open]

Send Notifications

Application Client ➔ Resource Server
Ordinary Request

GET /foo HTTP/1.1
Host: example.org
Accept: text/plain
Notifications Request

GET /foo HTTP/1.1
Host: example.org
Accept: text/plain
Accept-Events: PREP
Ordinary Response

HTTP/1.1 200 OK
Last-Modified: Sat, 1 April 2023 10:11:12 GMT
Transfer-Encoding: chunked
ETag: 1234abcd
Content-Type: text/plain

Hello World!
HTTP/1.1 200 OK
Last-Modified: Sat, 1 April 2023 10:11:12 GMT
Transfer-Encoding: chunked
ETag: 1234abcd
Content-Type: text/plain
Vary: Accept-Events
Accept-Events: PREP; accept=message/rfc822
Events: protocol=PREP, status=200
Content-Type: multipart/mixed; boundary=MAIN-SEPARATOR

Content-Type: text/plain

Hello World!
--MAIN SEPARATOR
Response/2

Content-Type: multipart/digest; boundary=MESSAGE-SEPARATOR

Method: PUT
Date: Sat, 1 April 2023 10:11:12 GMT
Event-ID: 1234
E-tag: abc123
--MESSAGE-SEPARATOR

Method: DELETE
Date: Sat, 1 April 2023 10:11:12 GMT
Event-ID: 1234
--MESSAGE-SEPARATOR--
--MAIN-SEPARATOR--
Request

Content Negotiation with PREP

GET /foo HTTP/1.1
Host: example.org
Accept: text/n3
Accept-Events: PREP; accept=application/ld+json
Request

PREP Notifications Only

GET /foo HTTP/1.1
Host: example.org
Accept: text/plain
Accept-Events: PREP
Last-Event-ID: *
Why Not: Eventsource/SSE
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You can have it in any colour as long as it is black.

- Henry Ford
Why Not: Eventsource/SSE

You can have it in any colour as long as it is black. 

- WHATWG

```
: test stream
data: first event
id: 1

data: second event
id

data: third event
```
Why not EventsourceSSE

Tieske commented on Oct 27, 2022

It seems highly unlikely we'd further extend the EventSource feature.

what is the reason for this? care to elaborate @annevk ?

annevk commented on Oct 27, 2022

It's not widely used and can easily be written in "userland" on top of fetch. We didn't have good response stream support back in the day, but we do now. There's also alternatives such as WebSockets that have somewhat broader adoption and allow for bidirectional communication, and there's even more alternatives on the horizon (WebTransport comes to mind).
Why not WebSockets/Webhooks etc.

- Protocol Hopping
- Need for Discovery
- Bespoke Semantics
- Funnelling/Filtering of Data
Implementation (Interest)

- Companion specification for Solid/Linked Data called Solid-PREP
  - https://github.com/CxRes/solid-prep
- Green Light from the Community Solid Server
  - Implementation will take some time. Maybe before IETF 119.
- Public Interest from another Solid Server vendor
- Private Interest from multiple Solid application developers
How HTTPbis can help

- Identify a better framing for notifications
  - Upgrading from multipart to frames with h2/h3
- Identify better semantics for the default case
  - (even though it is only specified for minimum interoperability)
- Alternative ideas on headers?
- Other Suggestions for improvement?