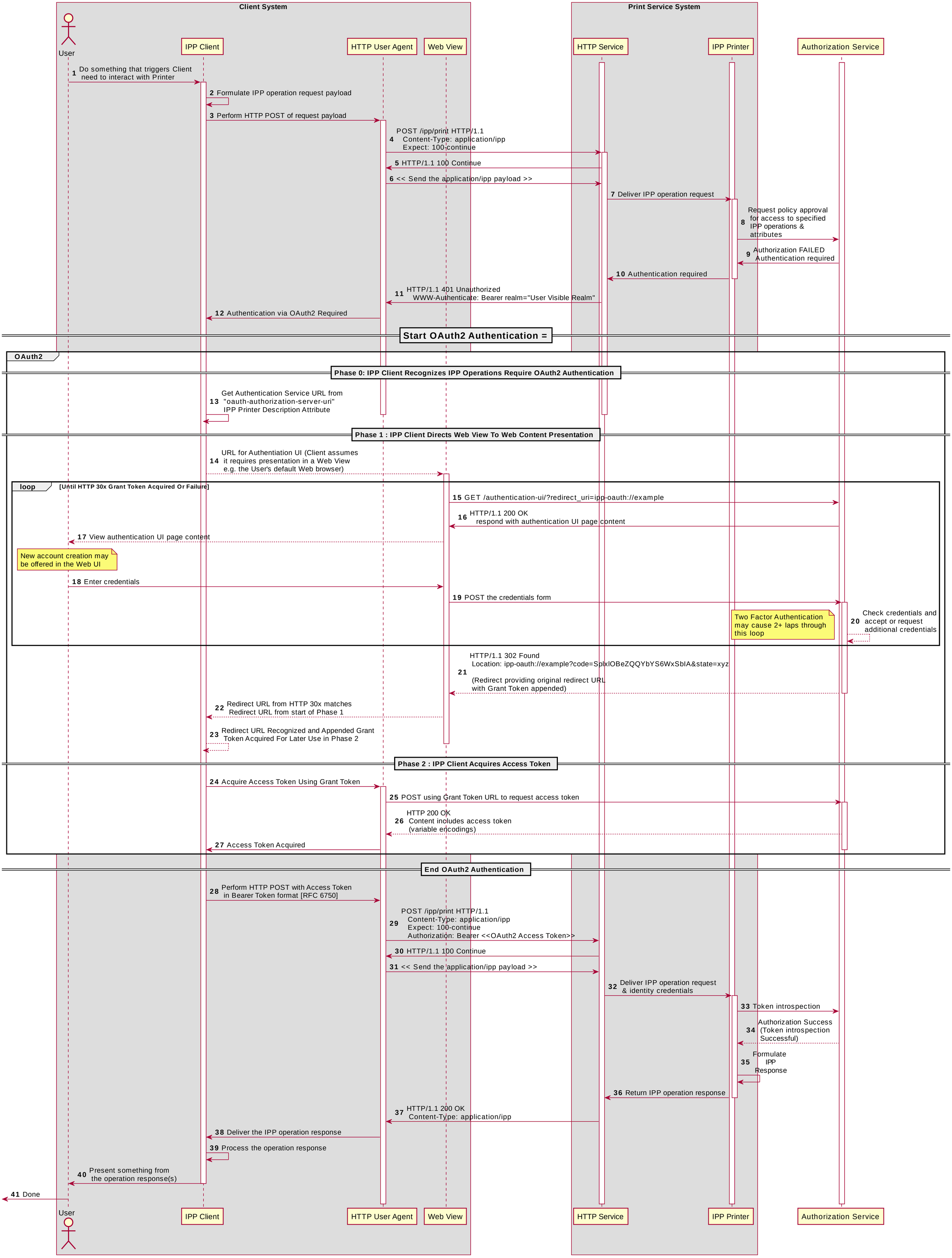
Client System
Print Service System
User
IPP Client
HTTP User Agent
Web View
HTTP Service
IPP Printer
Authorization Service
1 Do something that triggers Client need to interact with Printer
2 Formulate IPP operation request payload
3 Perform HTTP POST of request payload
4 POST /ipp/print HTTP/1.1 Content-Type: application/ipp Expect: 100-continue
5 HTTP/1.1 100 Continue
6 << Send the application/ipp payload >>
7 Deliver IPP operation request
8 Request policy approval for access to specified IPP operations & attributes
9 Authorization FAILED Authentication required
10 Authentication required
11 HTTP/1.1 401 Unauthorized WWW-Authenticate: Bearer realm="User Visible Realm"
12 Authentication via OAuth2 Required
Start OAuth2 Authentication =
OAuth2
Phase 0: IPP Client Recognizes IPP Operations Require OAuth2 Authentication
13 Get Authentication Service URL from "oauth-authorization-server-uri" IPP Printer Description Attribute
Phase 1 : IPP Client Directs Web View To Web Content Presentation
14 URL for Authentiation UI (Client assumes it requires presentation in a Web View e.g. the User's default Web browser)
loop [Until HTTP 30x Grant Token Acquired Or Failure]
15 GET /authentication-ui/?redirect_uri=ipp-oauth://example
16 HTTP/1.1 200 OK respond with authentication UI page content
17 View authentication UI page content
New account creation may be offered in the Web UI
18 Enter credentials
19 POST the credentials form
Two Factor Authentication may cause 2+ laps through this loop
20 Check credentials and accept or request additional credentials
21 HTTP/1.1 302 Found Location: ipp-oauth://example?code=SplxlOBeZQQYbYS6WxSbIA&state=xyz (Redirect providing original redirect URL with Grant Token appended)
22 Redirect URL from HTTP 30x matches Redirect URL from start of Phase 1
23 Redirect URL Recognized and Appended Grant Token Acquired For Later Use in Phase 2
Phase 2 : IPP Client Acquires Access Token
24 Acquire Access Token Using Grant Token
25 POST using Grant Token URL to request access token
26 HTTP 200 OK Content includes access token (variable encodings)
27 Access Token Acquired
End OAuth2 Authentication
28 Perform HTTP POST with Access Token in Bearer Token format [RFC 6750]
29 POST /ipp/print HTTP/1.1 Content-Type: application/ipp Expect: 100-continue Authorization: Bearer <<OAuth2 Access Token>>
30 HTTP/1.1 100 Continue
31 << Send the application/ipp payload >>
32 Deliver IPP operation request & identity credentials
33 Token introspection
34 Authorization Success (Token introspection Successful)
35 Formulate IPP Response
36 Return IPP operation response
37 HTTP/1.1 200 OK Content-Type: application/ipp
38 Deliver the IPP operation response
39 Process the operation response
40 Present something from the operation response(s)
41 Done