

# Hybrid / Intermediary Exchange IG: Approach Option Overview

Excerpts from the draft Hybrid / Intermediary Exchange IG

<http://build.fhir.org/ig/HL7/fhir-exchange-routing-ig/branches/main/index.html>

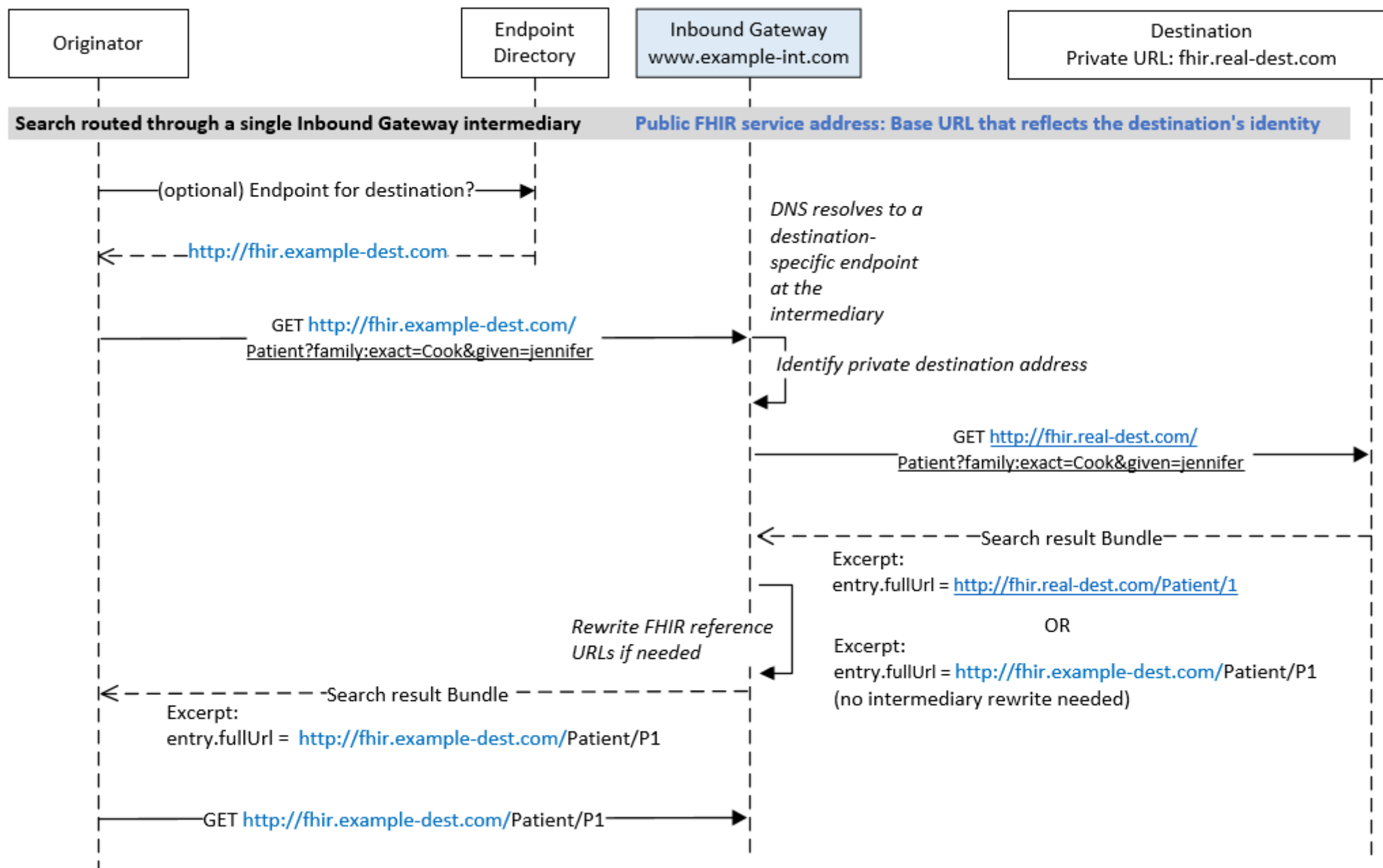
	Real world implement-ability (dev, migration, etc.) (0-4)	Ability to support multiple hops (0-4)	Ability to support async flows Yes/No	Requires FHIR resource extensions Yes/No	No extra burden on any particular actor (0-4)	No special handling by non-intermediary actors (originator and destination) (0-4)	Added: Special treatment for references (by the originator) Yes/No	Added: Enables change of intermediary w/o modifying public FHIR service URL Yes/No	Added: Use depends on all originators changing code Yes/No
<b>Options 1 and 2: URL resolves through DNS</b>  <b>Option 1: Destination-named URL resolves to an intermediary,</b> e.g., <a href="https://fhir.healthplanusa.com/r4">https://fhir.healthplanusa.com/r4</a>  <b>Option 2: Destination reflected in a subdomain of the intermediary. E.g.,</b> <a href="https://healthplanusa.intermediary1.com">healthplanusa.intermediary1.com</a>	3 to 4	3 Supports the first hop. This is the URL pointed to the Inbound Gateway intermediary.	Yes	No	3 Requires DNS maintenance  subdomain option: intermediary manages its subdomains	3 Assumes the destination manages DNS setup	No	Yes	No
<b>Option 3: Intermediary URL + destination segment</b> Destination's public URL consists of the intermediary's base URL followed by a path indicating the destination, e.g., <a href="https://fhir.intermediary.com/xdest-healthplanUSA">https://fhir.intermediary.com/xdest-healthplanUSA</a>	4	4  Destination path in URL is different in each hop	Yes	No	4	4	No	No	No
<b>Approach 4: Intermediary URL + header parameter</b> Destination' uses its intermediary's URL plus an X-Destination header parameter  <a href="https://fhir.intermediary.com">https://fhir.intermediary.com</a> <b>header X-Destination=healthplanUSA</b>	2 to 3	4  X-Destination value is different in each hop	Yes	Yes	1  Destination and originator need to support FHIR X-Destination extension on URL elements. Intermediary doesn't	1-2  Destination and originator both need to support URL extension to hold the X-Destination value (e.g., for fullURL element)	Yes  Originator needs to pull the X-Destination from URL extensions in reference fields and place them into the X-Destination header	No	Yes  Clients and Directories must support X-Destination headers if any of their partner destinations use them
<b>Approach 5: Intermediary URL + query string parameter</b> Destination' uses its intermediary's URL plus an X-Destination query string parameter  <i>Discussion in the May 2021 HL7 FHIR Connectathon determined that this approach would create URL strings that do not conform with FHIR requirements</i>	2 to 3	4  X-Destination value is different in each hop	Yes	Yes	1  Destination and originator need to support FHIR X-Destination extension on URL elements. Intermediary doesn't	1-2  Destination and originator both need to support URL extension to hold the X-Destination value (e.g., for fullURL element)	Yes  Originator needs to pull the X-Destination query parameter from URL extensions in reference fields and place them into the X-Destination query string	No	Yes  Clients and Directories must support X-Destination query string parameter

# Approach Option Examples

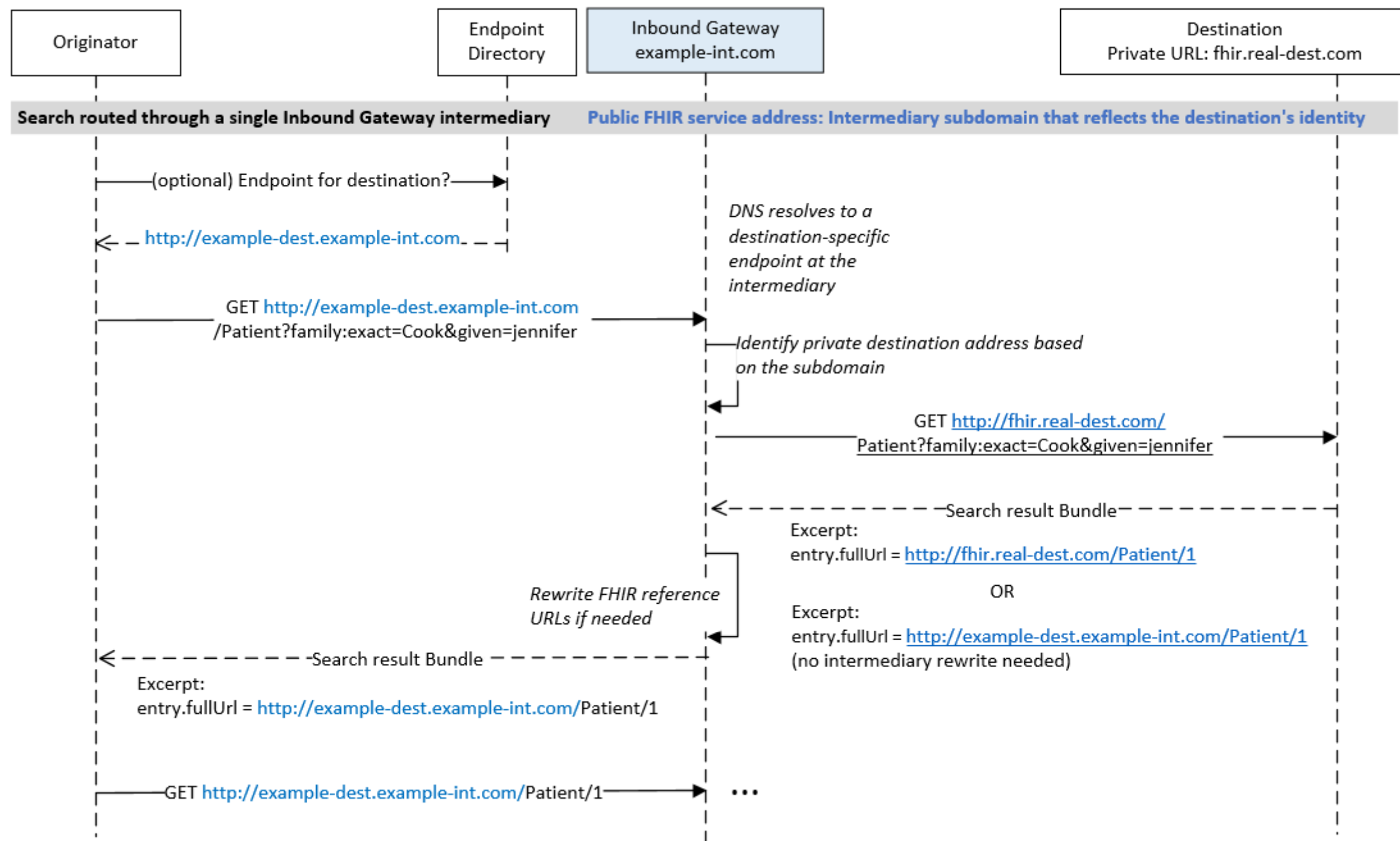
FHIR search routed through a single intermediary:

Illustrating the five URL options

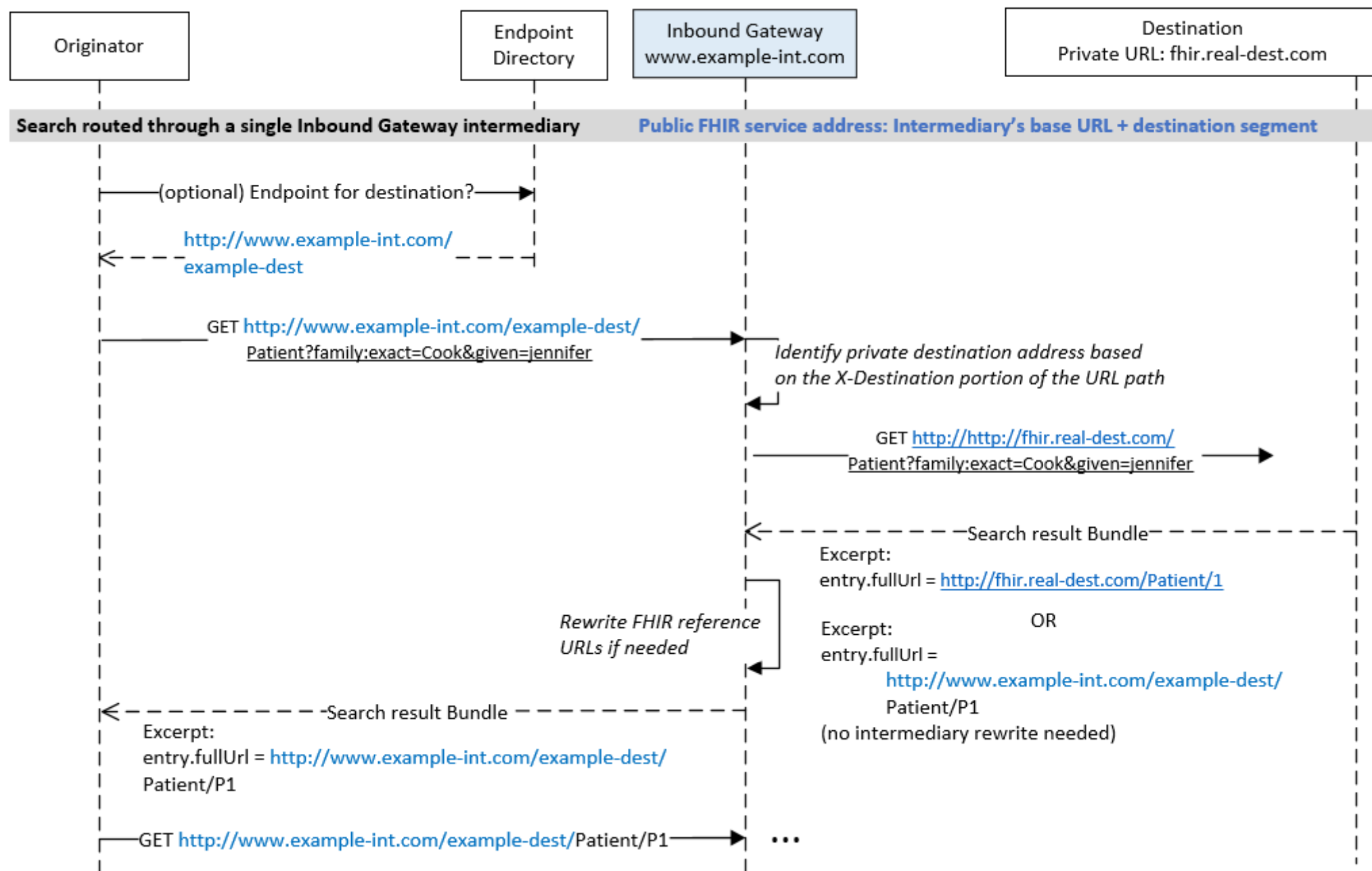
*FHIR service address option 1 - Base URL reflects the destination's identity*



*FHIR service address option 2 - Subdomain of intermediary's URL identifies the destination*



*FHIR service address option 3 - Intermediary's Base URL followed by a path indicating the destination*

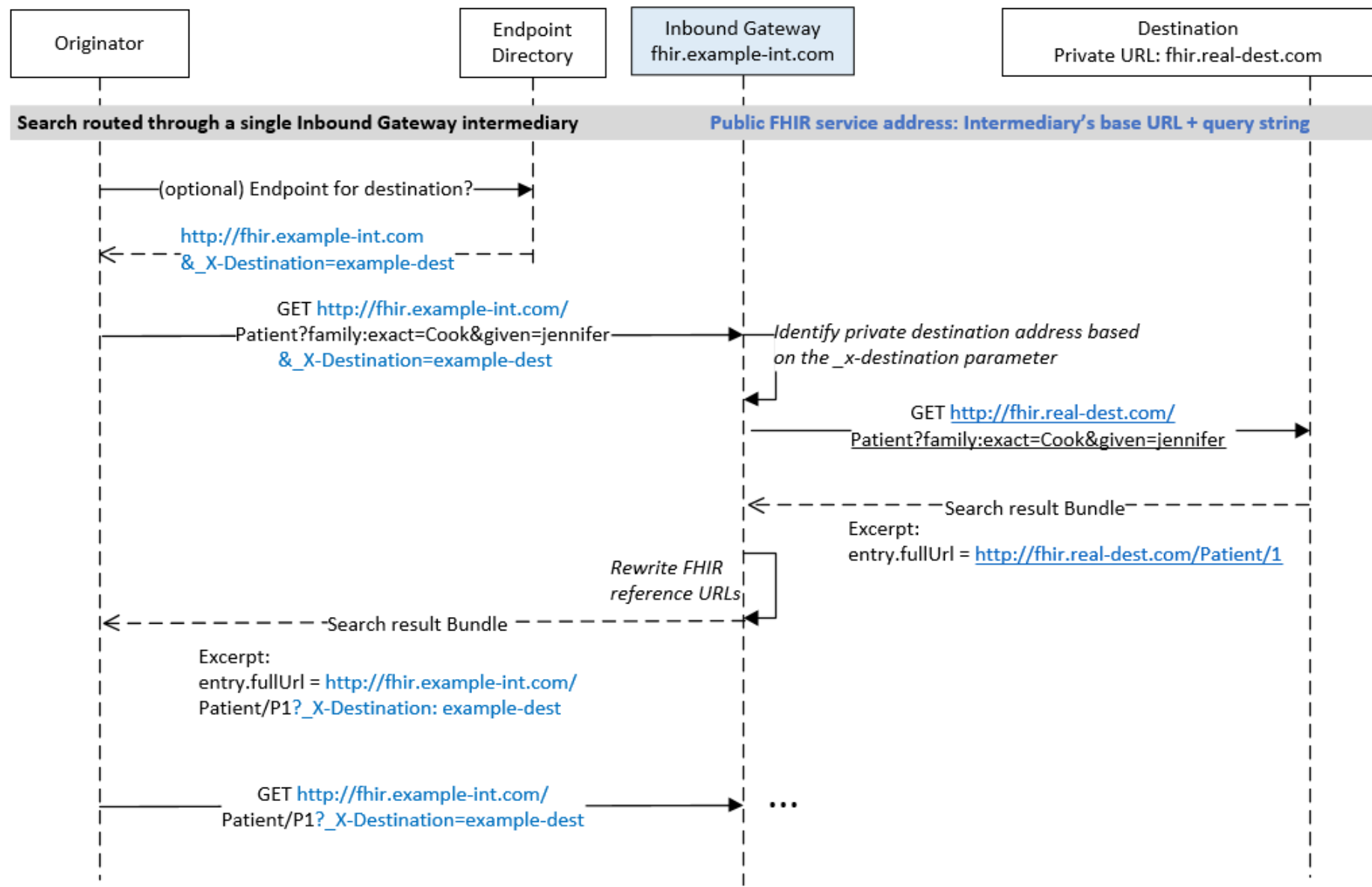


**[TO BE REMOVED] FHIR service address option - Intermediary's Base URL with routing metadata passed in a query string parameter**

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**Note:** Discussion in the May 2021 HL7 FHIR Connectathon determined that this approach would create URL strings that do not conform with FHIR requirements.

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*FHIR service address option 4 - Intermediary's Base URL with routing metadata passed in an HTTP header parameter*

