



Signed Start-End Links

Dynata Generic Guide

July 2023

What is Signed Start-End Link

It is an encryption of the URLs created by the industry standard [HMAC-SHA256](#) algorithm and validated both by the client and Dynata. The Start link along with all End links (Complete, Screenout and Quotafull) will have a signature appended to the end of the URLs.

Purpose

Optimize sample management, combat fraud and ensure respondents have a secure path from Dynata to the Survey Platform and back
Secure path between Dynata sample > into the Survey Platform > and back to Dynata

What you will need from Dynata

Dynata will provide you with a **keyId** and **secret key**
You can use these same keys for all projects you field with Dynata

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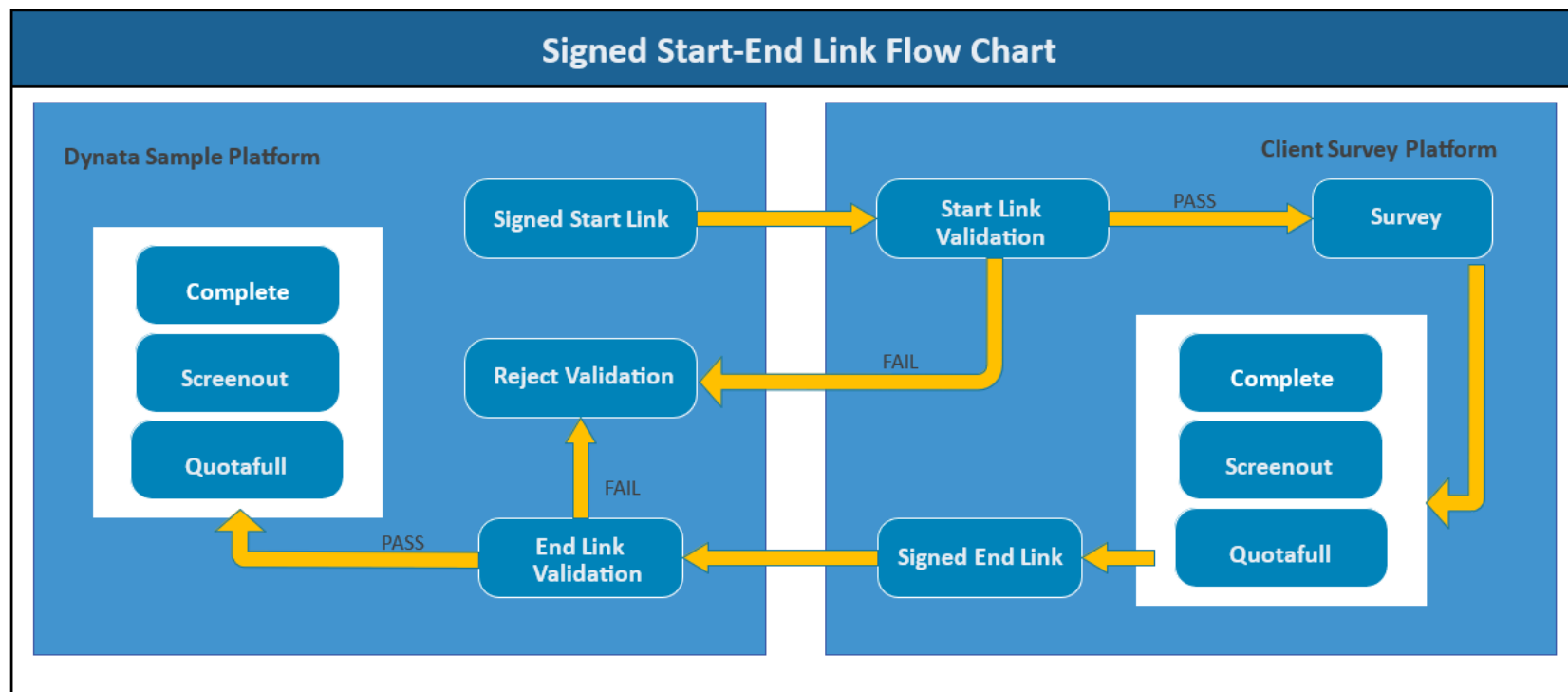
Flow Chart Example

Dynata Sample Platform to Client Survey Platform Flow:

1. [Dynata Creates Start Signature on Start Link > Signed Start Link](#)
2. [Client Validates Start Signature on Start Link > Start Link Validation](#)

Respondents either get [rejected](#) OR they enter the survey and result in any of a Complete, Screenout or Quotaful status and then sent back:

3. [Client Creates End Signature on End Link > Signed End Link](#)
4. [Dynata Validates End Signature on End Link > End Link Validation](#)



Survey Platform Requirements

The survey platform requires the following technical capabilities:

Psid parameter:

- Unique alphanumeric value for each respondent
- Client to capture this from the start link URL
- Start link: Parameter name can be **anything** (Example below: **clientparametername**)
- End links: Parameter name needs to be **psid**
- Client to append this on the end links

Example Signed Start link:

www.google.com/?psid=uniquepanelistid& k=keyId& s=startsignature

OR

www.google.com/?clientparametername=uniquepanelistid& k=keyId& s=startsignature

Example Complete Signed End link (rst=1):

<https://dkr1.ssisurveys.com/projects/end?rst=1&psid=uniquepanelistid& k=keyId& s=endsignature>

keyId (_k):

- Unique numerical value for each client provided by Dynata (Example: **_k=1234**)
- Client to capture this from the start link URL
- Client to append this on the end links
- Start link and End links: Parameter needs to be **_k**

Example Signed Start link:

www.google.com/?psid=uniquepanelistid & _k=keyId& s=startsignature

Example Screenout Signed End link (rst=2):

https://dkr1.ssisurveys.com/projects/end?rst=2&psid=uniquepanelistid& _k=keyId& s=endsignature

Signature (_s):

- Unique alphanumeric value for each respondent and each URL
- Incoming Start signature from Dynata will always be **DIFFERENT** than the outgoing End signature you create for each respondent
- Client to capture the incoming start signature from the start link URL
- **HMAC-SHA256 Encryption**
 - o Use the **secret key** (provided by Dynata) with the URL path/query string and this encryption to validate/create the signatures:
 - o The encryption should happen server-side
 - o **Step 1.** Dynata creates the start signature > **Signed Start Link**
 - o **Step 2. Client to validate the incoming start signature** > **Start Link Validation**
 - o **Step 3. Client to create the outgoing end signature** > **Signed End Link**
 - o **Step 4.** Dynata validates the end signature > **End Link Validation**
- Client to append the end signature on the end link URL
- Redirect the respondent back to Dynata with the signed end link
- Start link and End links: Parameter needs to be **_s**

Reminder: Incoming Start signature will always be **DIFFERENT** than the outgoing End signature you create for each respondent

Example Signed Start link:

www.google.com/?psid=uniquepanelistid& k=keyId& s=startsignature

Example Quotafull Signed End link (rst=3):

<https://dkr1.ssisurveys.com/projects/end?rst=3&psid=uniquepanelistid& k=keyId& s=endsignature>

Survey Platform not have these capabilities?

*Can it make **API calls**? If so, click [here](#)*

If not, reach out to your Dynata Project Manager for other alternatives

Trying this for the first time?

We **do not recommend** doing this on a **Live Project** as it may result in delays getting into field. Instead, we recommend you create a **Test Project** first and Dynata can do the same so we can test the flow on both sides. This update can be accomplished quickly if your **Survey Programming or Technical team** are already familiar with this URL security setup. If unfamiliar, we advise to **buffer a ~couple weeks** as it can take time and may require some back and forth between the teams.

Clients Ideal Test Project Setup

Please program just one question with the answer options:

1. **Complete**
2. **Screenout**
3. **Quotafull**

Where each option executes the same redirect status (Complete, Screenout and Quotafull). This will allow for an effective and quick testing experience.

What you need from Dynata – Client keys

Dynata will provide you with a unique **keyId** and **secret key** (case sensitive).

These keys are used with the [HMAC-SHA256](#) encryption to create the signatures (_s).

You can use these same keys for all projects you field with Dynata.

Type	Parameter Name	Example value
keyId	_k	1234
secret key	None – not to be exposed on the URL Should be setup on server-side Used as the secret value to create the signature	x123f0ea789d06b456fd7a39a759ad1235d789a

Signed Start Link

Step 1: Dynata Creates the Start Signature on the Start Link

Dynata will append **psid**, **keyId** (**_k**) and the **start signature** (**_s**) to the survey start URL when a respondent enters the survey.

In this example, the respondent's unique panelist id (psid) is **IM6mE1RikvPoIZZovY8ODQ****

Example Signed Start Link	https://www.clientsurveydomain.com/?project=10001&psid=IM6mE1RikvPoIZZovY8ODQ**&_k=1234&_s=ab7993ecd39ba46547561c2ee326593d87147e4fc9a3256dd0957a1564541e74
---------------------------	---

Breakdown of the Signed Start Link	
Survey Platform Domain (EXCLUDE)	https://www.clientsurveydomain.com
URL Path and Query string (INCLUDE)	/?project=10001
psid (INCLUDE)	&psid=IM6mE1RikvPoIZZovY8ODQ**
keyId (INCLUDE)	&_k=1234
Start Signature (OUTPUT)	&_s=ab7993ecd39ba46547561c2ee326593d87147e4fc9a3256dd0957a1564541e74

Start Link Validation

Step 2: Client Validates the Start Signature on the Start Link

Dynata needs you to validate the incoming start signature is **correct** doing the same **HMAC-SHA256** encryption – this verifies the respondent did in fact come from Dynata (ensures no one outside of Dynata has tampered with the survey start link).

Dynata can provide specific survey platform documentation where possible. This document outlines the steps needed to take for survey platforms where Dynata does not have documentation.

The process to do this within a survey platform will depend on the scripting language used, the platform interface, etc.

Dynata does this same step when you redirect respondents back (**[End Link Validation](#)**).

Example: How to Validate the Start Signature

From the start link URL: **Exclude the Domain**, take the **URL Path and Query string** using the **secret key** use the HMAC-SHA256 encryption to create the **Start Signature** and append it to the end of the URL.

Reminder: The incoming Start signature will always be **DIFFERENT** than the outgoing End signature you create for each respondent.

Path and Query string (the URL excluding the domain)	secret key	Start Signature for the Signed Start Link
<code>/?project=10001&psid=IM6mE1RikvPoIZZovY8ODQ**&_k=1234</code>	<code>x123f0ea789d06b456fd7a39a759ad1235d789a</code>	<code>ab7993ecd39ba46547561c2ee326593d87147e4fc9a3256dd0957a1564541e74</code>

If the start signature is **correct** > allow the respondent into the survey

If the start signature is **incorrect** > immediately reject the respondent out of the survey and back as a **Start Validation Flag** (svFlag=1)

HMAC-SHA256 Online Tool

You can use this [online tool](#) to recreate the process above for testing/validation.

Enter Plain Text to Compute Hash

`/?project=10001&psid=IM6mE1RikvPoIZZovY8ODQ**&_k=1234`

Enter the Secret Key

`x123f0ea789d06b456fd7a39a759ad1235d789a`

Select Cryptographic Hash Function

SHA-256

Output Text Format: ☒Hex ☐Base64

Compute Hash

Hashed Output:

`ab7993ecd39ba46547561c2ee326593d87147e4fc9a3256dd0957a1564541e74`

Start Validation Flag – Reject Validation

If the start signature is **incorrect** > immediately reject the respondent out of the survey and back as a Start Validation Flag:

- Redirect the respondent back with respondent status **rst=2** and **svFlag=1** with **keyId** and **end signature**
- Do not count this status towards the metrics in the survey platform – this will be flagged as a quality reject on Dynata end

<https://dkr1.ssisurveys.com/projects/end?rst=2&svFlag=1&psid=uniquepanelistid& k=keyId& s=endsignature>

Signed End Link

Step 3: Client Creates the End Signature on the End Link

Using the same HMAC-SHA256 encryption from the [Start Link Validation](#) step – do this again to create the end signature for the end links.

Redirect respondents back by appending the **respondent status (rst)**, **psid**, **keyId (_k)** and the **end signature (_s)** for all end links (Completes, Screenouts and Quotafuls). The order of the URL Query string parameters do not matter but the signature needs to be last.

Complete:

https://dkr1.ssisurveys.com/projects/end?rst=1&psid=uniquepanelistid& k=keyId& _s=endsignature

Screenout:

https://dkr1.ssisurveys.com/projects/end?rst=2&psid=uniquepanelistid& k=keyId& _s=endsignature

Quotafull:

https://dkr1.ssisurveys.com/projects/end?rst=3&psid=uniquepanelistid& k=keyId& _s=endsignature

Example: How to Create the End Signature

From the end link URLs: **Exclude the Domain**, take the **URL Path and Query string** using the **secret key** use the HMAC-SHA256 encryption to create the **End Signature** and append it to the end of the URL.

Reminder: The incoming Start signature will always be **DIFFERENT** than the outgoing End signatures you create for each respondent.

Path and Query string (the URL excluding the domain)	secret key	End Signature for the Complete Signed End Link
/projects/end?rst=1&psid=IM6mE1RikvPoIZZovY8ODQ**&_k=1234	x123f0ea789d06b456fd 7a39a759ad1235d789a	43f7c1b1875059894f2e68386e75ae9684b2e377622efb9 8afd56cc44fe1ae76

Refer to the [HMAC-SHA256 Online Tool](#) for testing and validation if needed.

Example Complete Signed End Link	https://dkr1.ssisurveys.com/projects/end?rst=1&psid=IM6mE1RikvPoIZZovY8ODQ**& k=1234& s=43f7c1b1875059894f2e68386e75ae9684b2e377622efb98afd56cc44fe1ae76
---	---

Breakdown of the Complete Signed End Link	
Dynata Redirect Domain (EXCLUDE)	https://dkr1.ssisurveys.com
URL Path (INCLUDE)	/projects/end?
Respondent status (INCLUDE)	rst=1
psid (INCLUDE)	&psid=IM6mE1RikvPoIZZovY8ODQ**
keyId (INCLUDE)	&_k=1234
End Signature (OUTPUT)	&_s=43f7c1b1875059894f2e68386e75ae9684b2e377622efb98afd56cc44fe1ae76

Example Screenout Signed End Link	https://dkr1.ssisurveys.com/projects/end?rst=2&psid=IM6mE1RikvPoIZZovY8ODQ**& k=1234& s=494751595045ba7f2e7dee3f3ce8dcf8ca14ba6cbf9ca699201e917d17eeb947
--	---

Example Quotafull Signed End Link	https://dkr1.ssisurveys.com/projects/end?rst=3&psid=IM6mE1RikvPoIZZovY8ODQ**& k=1234& s=33033fd4b3ed5b865d3ce37644251fd82a1d35ac063e7616429a39c3a16599a7
--	---

End Link Validation

Step 4: Dynata Validates the End Signature on the End Link

Dynata will do the same step as the [Start Link Validation](#) that you did to validate the end signature is correct – this ensures that only verified sample receives an incentive for their time within the survey.

Alternative – API Call Method

PostBack API that can be used to validate the start link signature and create the signed end link redirects.

API Details

POST <https://passphrase.dynata.com/v1/links/buildAndValidate>

JSON Request Body:

```
{
  "keyId": <keyId>,
  "secret": <secret>,
  "url": <survey Entry URL>
}
```

Response:

```
{
  "verification": "success", (or "failure")
  "expectedSignature": "<sig>", # for debugging purposes
  "errorMessage": "",
  "completeLink": "<signed link with rst=1>",
  "screenOutLink": "<signed link with rst=2>",
  "overQuotaLink": "<signed link with rst=3>",
  "invalidSignatureLink": "<signed link with rst=2&svFlag=1>" # use for when verification == failure
}
```

API Call – Python Example

```
import requests

#Example of entry url
#http://www.clientsurveydomain.com/?project=10001&psid=IM6mE1RikvPoIZZovY8ODQ**&_k=1234&_s=ab7
993ecd39ba46547561c2ee326593d87147e4fc9a3256dd0957a1564541e74
#implement get_entry_url() function according to your survey platform

entry_url = get_entry_url()

api_url = "https://passphrase.dynata.com/v1/links/buildAndValidate"
body = {
    "keyId": "1234",
    "secret": "x123f0ea789d06b456fd7a39a759ad1235d789a",
    "url": entry_url
}
response = requests.post(api_url, json=body)
variables = response.json()
print( variables['verification'] )
print( variables['completeLink'] ) print(
variables['screenOutLink'] ) print(
variables['overQuotaLink'] ) print(
variables['invalidSignatureLink'] )

# PN: Terminate respondents who failed entry verification
#
# if 'verification' == 'failure' then Terminate and send a respondent
to 'invalidSignatureLink' link #
# if 'verification' == 'success' then allow respondents to continue into a survey
#
```

Signed+ End Link

As an additional security measure, we can validate if the respondent came from the correct survey by using the unique **Survey ID** that is on the survey start link and append that as well onto the end links.

Signed+ Requirements

1. Survey Start link contains a unique Survey ID:

- The survey start link you send to Dynata needs to have a **unique Survey ID**
- This should be the ID that is unique for the specific project

Example Signed Start link:

www.google.com/surveyidvalue?psid=uniquepanelistid&_k=keyId&_s=startsignature

OR

www.google.com/?surveyid=surveyidvalue&psid=uniquepanelistid&_k=keyId&_s=startsignature

2. Append the Survey ID onto the End links:

- Client needs to be able to append this same unique **Survey ID** onto the end links
- Dynata validates this ID was used both on the survey start link and for all statuses on the end links
- Redirect respondents back by appending the **respondent status (rst)**, **Survey ID** (determine parameter name on the next page), **psid**, **keyId (_k)** and the **end signature (_s)** for all end links (Completes, Screenouts and Quotafuls).
- The order of the URL Query string parameters do not matter but the end signature needs to be last

Example Complete Signed End link (rst=1):

https://dkr1.ssisurveys.com/projects/end?rst=1&surveyid=surveyidvalue&psid=uniquepanelistid&_k=keyId&_s=endsignature

3. Requires a Parameter name on the End links:

Example Start Link - Domain and URL Path	Separator for URL Path from Query String	URL Query String at the end of the link
https://survey.cmix.com/40034CM6/FX034OPI/en-US	?	psid=uniquepanelistid& k=keyId& s=startsignature

OPTION 1: If the **Survey ID** is part of the **URL Path (BEFORE the ?)**:

- Name the parameter **anything** on the end link
- We recommend using **_d** as the parameter name on the end link which aligns to what Dynata uses for consistency

Example Signed Start link (same as above):

<https://survey.cmix.com/40034CM6/FX034OPI/en-US?psid=uniquepanelistid& k=keyId& s=startsignature>

Example Screenout Signed End link (rst=2):

https://dkr1.ssisurveys.com/projects/end?rst=2& _d=40034CM6/FX034OPI&psid=uniquepanelistid& k=keyId& s=endsignature

OPTION 2: If the **Survey ID** is part of the **URL Query String (AFTER the ?)**:

- Needs to use the **same parameter name** from the survey start link onto the end link
- Example below requires **exampleid** as the mandatory parameter name on both the start and end links

Example Signed Start link:

www.google.com/?exampleid=surveyidvalue&psid=uniquepanelistid& k=keyId& s=startsignature

Example Quotafull Signed End link (rst=3):

<https://dkr1.ssisurveys.com/projects/end?rst=3&exampleid=surveyidvalue&psid=uniquepanelistid& k=keyId& s=endsignature>

Turnaround time on Dynata end

Once the Signed+ Requirements are confirmed – Dynata will need to implement the same validation checks on the backend which can take some time as it depends on the current workflow at that time.

Please discuss the estimated turnaround time with the Dynata team when you get to this point.

Trying this for the first time?

We **do not recommend** doing this on a **Live Project** as it may result in delays getting into field.

Instead, we recommend you create a **Test Project** first and Dynata can do the same so we can test the flow on both sides.

This update can be accomplished quickly if your **Survey Programming or Technical team** are already familiar with this URL security setup.

If unfamiliar, we advise to **buffer a ~couple weeks** as it can take time and may require some back and forth between the teams.

Clients Ideal Test Project Setup

Please program just one question with the answer options:

1. **Complete**
2. **Screenout**
3. **Quotafull**

Where each option executes the same redirect status (Complete, Screenout and Quotafull).

This will allow for an effective and quick testing experience.

Once added, any end links without this specific Survey ID will be rejected – these will be considered fraudulent attempts to tamper with the end links to obtain rewards without doing the survey.

If any questions, feel free to reach back out to the Dynata team.