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# Yubico FIDO Pre-reg with Okta

**Yubico**

**Sep 08, 2025**



# INTEGRATION GUIDE

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>About Yubico FIDO Pre-reg with Okta</b>	<b>3</b>
2.1	Process Flow . . . . .	3
2.2	Workflow integration . . . . .	4
2.2.1	Action: Create Shipment Request . . . . .	5
2.2.2	Action: Get Shipment Details . . . . .	7
2.2.3	Action: Build Shipment Item . . . . .	9
2.2.4	Action: Get Public Transport Keys and Signing Certificate . . . . .	11
<b>3</b>	<b>Integration Procedure</b>	<b>13</b>
3.1	Prerequisites . . . . .	13
3.2	Integration Steps . . . . .	14
<b>4</b>	<b>Configuring Okta Policies</b>	<b>15</b>
4.1	Creating User Groups . . . . .	15
4.2	Configuring Global Session Policy . . . . .	15
4.3	Configuring Authenticator Enrollment Policy . . . . .	15
<b>5</b>	<b>Adding the Workflow Template</b>	<b>17</b>
<b>6</b>	<b>Configuring Workflow Connections</b>	<b>19</b>
6.1	Generating an Authorization Token . . . . .	19
6.2	Creating Connection from Okta Org . . . . .	19
6.3	Creating Connection from Yubico Org . . . . .	20
6.4	Updating the Create Shipment - Group Add Flow . . . . .	21
<b>7</b>	<b>Creating Shipment Requests</b>	<b>25</b>
7.1	Adding New Users to Directory . . . . .	25
7.2	Creating the Shipment Request . . . . .	26
<b>8</b>	<b>Copyright</b>	<b>31</b>
8.1	Trademarks . . . . .	31
8.2	Disclaimer . . . . .	31
8.3	Contact Information . . . . .	31
8.4	Document Updated . . . . .	32



## INTRODUCTION

With Yubico FIDO Pre-reg the IT administrator (IT admin) for an organization can use the YubiEnterprise API together with the WebAuthn API of an Identity Provider (IDP) and automated workflows to order pre-registered YubiKeys for end users. The YubiKeys are pre-registered and shipped directly to the specific end user who received a randomly generated PIN separately.

The following sections describe how to integrate Yubico FIDO Pre-reg with Okta. The instructions are intended for IT admins who are setting up shipments of pre-registered YubiKeys for their organization's end users in an environment using SSO and Okta as IDP.

The instructions assume you have IT administration skills and knowledge of YubiEnterprise Delivery API and Okta. Listed tasks include steps performed both in the YubiEnterprise Console and Okta. Refer to the Okta documentation for more details.

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**Important:** Before you start implementing Yubico FIDO Pre-reg, ensure you have the Customization IDs and Product IDs for the YubiKey models you will be shipping to end users. These IDs are provided by Yubico during onboarding of your organization. For more information, see [Prerequisites](#).

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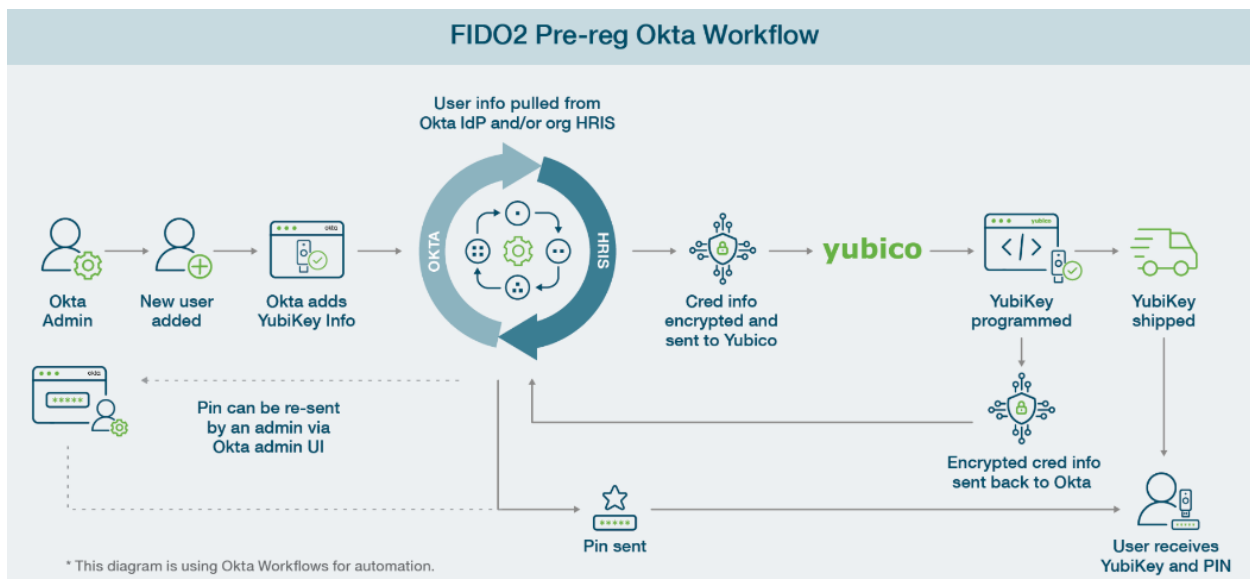
## ABOUT YUBICO FIDO PRE-REG WITH OKTA

The Yubico FIDO Pre-reg integration streamlines the deployment process with improved ease of use and enhanced security. The diagram below illustrates the process.

The Yubico FIDO Pre-reg template developed specifically for Okta Workflows in this case, helps orchestrate the process steps. The Yubico Connector and the Yubico FIDO Pre-reg Workflow templates are both integrated with the Okta Workflows console.

### 2.1 Process Flow

The workflows are designed to ensure each request via Okta to Yubico contains all information needed to have the keys shipped to the end user. A secure and encrypted transfer process mitigates any risk of exposing sensitive information.



#### Workflow: IT Admin and End User

1. The IT admin initiates a shipment request for a pre-registered key from the IDP (Okta) tenant. This triggers the Yubico FIDO Pre-reg Okta Workflows template. All information needed to program and ship a key for an individual user is sent to Yubico through a YubiEnterprise Delivery API request. Note that only one key per shipment can be requested.
2. The IT admin receives updates based on the shipping status, and can monitor shipments of pre-registered keys using the YubiEnterprise Console.

3. The end user receives an email containing their YubiKey PIN and their FIDO Pre-reg YubiKey is shipped to them directly. No IDP password or IDP registration is required. The YubiKey PIN is only communicated to the end user and is encrypted and obscured from Okta, the IT admin, and Yubico.
4. The end user can immediately use the YubiKey and PIN to authenticate into Okta where they have Single Sign-On (SSO) access to applications to which they have access provided through the Okta.

### **Workflow: Credential and PIN Provisioning**

1. The IT admin initiates a shipment request for a pre-registered YubiKey from the Okta tenant.
2. Yubico receives the shipment request from Okta through the YubiEnterprise API. Yubico programs a YubiKey with the information provided in the request. The information contains the credential and PIN requests, end user shipping information, and YubiKey form factor.
3. After the YubiKey is programmed, a response is sent back to the YubiEnterprise API including the randomly generated PIN, serial number, and firmware version. This response is retrieved by the Okta workflows.
4. When the Okta workflows receive the response from the YubiEnterprise API, the YubiKey is enabled for usage. This triggers an email to the end user containing the PIN for the YubiKey.
5. After the programming of the YubiKey the credential data, including the PIN, is purged from Yubico systems.

Additionally, the YubiKey can be used as a recovery tool for the IDP's complementary passwordless feature such as Okta FastPass. For example, if an end user loses their phone and gets a replacement one, they can re-enroll in the IDP service using the YubiKey without needing to call their support services.

## **2.2 Workflow integration**

The following describes the integration between the Yubico Connector in Okta and the Okta Workflows. The integration provides the Yubico action cards used to set up the workflows in Okta for requesting shipments and retrieving shipment information. The Yubico workflow integration includes the action cards described below.



Action	Description
Create Shipment Request	Create a new shipment request to provision a YubiKey that will contain a pre-registered WebAuthn credential.
Get Shipment Details	Get details about a specific shipment request, including the shipment state, and shipment items used for the pre-registration of a WebAuthn credential.
Build Shipment Item	Helper action card that builds a “shipment item” used in the “Create shipment request” action card.
Get Public Transport Keys and Signing Certificate	Pull the current public Yubico transport and signing keys used to encrypt the PIN and credential request payloads.

The input and output parameters for each action card are described in more detail in the following. For more information, see [Configuring Workflow Connections](#).

When you add a Yubico card to a flow for the first time, you will be prompted to authorize the connection. This requires an API token generated from the YubiEnterprise Console. Once you have configured this connection and saved the API token information to it, you can reuse the connection for other YubiEnterprise-related actions. For more information, see [Generating an Authorization Token](#).

### 2.2.1 Action: Create Shipment Request

Action card to create a new shipment request to provision a YubiKey that contains a pre-registered WebAuthn credential.

**Note:** Product ID and Inventory Product list can be found in the [Product inventory type mapping table](#).

#### Input - Create Shipment Request

Field	Definition	Type	Req'd
Company	Company name of shipment recipient	Text	TRUE
Email	Email address of shipment recipient	Text	FALSE
First Name	First name of shipment recipient	Text	FALSE
Last Name	Last name of shipment recipient	Text	FALSE
Phone Number	<p>Telephone number of shipment recipient</p> <p>The limit is 40 of the alphanumeric characters "0-9+-( )" unless the country code is IN, in which case the limit is 255.</p> <p>Any format is acceptable, with or without spaces.</p>	Text	TRUE
Address	<p>Street address of shipment recipient</p> <p>Note: This field can also include the apartment or unit number.</p>	Text	TRUE
Apt or Unit Number	The apartment or suite or unit number or designation of shipment recipient.	Text	FALSE
City	City of shipment recipient	Text	TRUE
Region	<p>2-letter region or state code of shipment recipient. Mandatory for recipients in the US or Canada.</p>	Text	FALSE
Postal Code		Text	TRUE
6	Zip code or postal code of shipment recipient.		
Country Code		Text	TRUE

**Output - Create Shipment Request**

Field	Definition	Type
Shipment ID	<p>The shipment ID of the newly created shipment.</p> <p>Value is null for non-successful API response.</p>	Text
Shipment State ID	<p>The shipment state of the newly created shipment. For values, see Shipment State Codes.</p> <p>Value is null for non-successful API responses.</p>	Number

**2.2.2 Action: Get Shipment Details**

Action card to get details about a specific shipment including the shipment state and the shipment items used for the pre-registration of a WebAuthn credential.

**Input - Get Shipment Details**

Field	Definition	Type	Req'd
Shipment ID	ID for a specific shipment.	Text	TRUE

**Output - Getting Shipment Details**

Field	Definition	Type
Shipment State ID	The shipment state of the newly created shipment. For values, see Shipment Status Codes in the YubiEnterprise Services User Guide. Value is null for non-successful API responses	Number
Shipment Items	List of items included in the shipment. Underlying objects include details for each item.	List of objects
	product_data: Details about a shipment item. Includes: <ul style="list-style-type: none"><li>- serial</li><li>- version</li><li>- fido_pin_response</li><li>- fido_credential_response</li></ul>	List of objects
	serial: Serial number of the item	Text
	version: Firmware version of the item	Text
	fido_pin_response: PIN for the item. Is encrypted as a JWE string.  This string should be provided to Okta's WebAuthn pre-registration activate endpoint.	Text
	fido_credential_response: List of FIDO credentials for the item. Is encrypted as a JWE string.	List of strings

### 2.2.3 Action: Build Shipment Item

Action card that builds a shipment item used in the Create shipment request action card.

**Input - Build Shipment Item**

Field	Definition	Type	Req'd
Customization ID	ID associated with the specific Yubico customization assigned to an organization.	Text	TRUE
Product ID	ID associated with the specific YubiKey format.	Number	TRUE
Inventory Product ID	ID for the “bucket” containing credits for YubiKey ordering.	Number	TRUE
Quantity	Number of keys to include in this shipment (current limitation is 1).	Number	TRUE
PIN Request - Encrypted	Customization options for YubiKey PIN generation, wrapped as a JWE string. This string is the output provided by Okta’s WebAuthn pre-registration enroll endpoint.	Text	TRUE
Credential Requests - Encrypted	PublicKeyCredentialCreationOptions for WebAuthn credential creation, wrapped as a JWE string. This string is the output provided by Okta’s WebAuthn pre-registration enroll endpoint.	List of strings	TRUE
10	Note: This input item is noted as a as list. This is due to YubiEnterprise’s API	Chapter 2. About Yubico FIDO Pre-reg with Okta	

**Output - Build Shipment Items**

Field	Definition	Type
Shipment Item	Object that contains configuration details for an item to include in a shipment.	Object

**2.2.4 Action: Get Public Transport Keys and Signing Certificate**

Action card to pull the current public Yubico transport and signing keys used to encrypt the PIN and credential request payloads.

**Input - Get Public Transport Keys and Signing Certificate**

No input required.

**Output - Get Public Transport Keys and Signing Certificate**

Field	Definition	Type
Transport Keys - JWKS	Yubico JWKS (JSON Web Key Set) used for deriving an ECDH shared secret. Primarily used for encrypting the PIN and credential requests for the YubiEnterprise API.	Object
Signing Public Keys - JWKS	Yubico JWKS (JSON Web Key Set) containing signing certificates used for signing PIN and credential responses from the YubiEnterprise API.	Object





## INTEGRATION PROCEDURE

The following provides an overview of the integration steps to get started using Yubico FIDO Pre-reg with Okta and Okta Workflows.

### 3.1 Prerequisites

Ensure you have the following before starting the implementation procedure:

- [Enterprise Plus plan](#) subscription. For questions about Yubico subscription services, contact [Yubico Support](#).
- [YubiEnterprise Console](#) access with FIDO Pre-reg enabled. This is provided by Yubico during onboarding of your organization.
- [Customization IDs \(CID\)](#), Product IDs, and Subscription IDs for the YubiKey models you will be shipping to end users. Provided by Yubico.
- A YubiEnterprise API token, see [Generating an Authorization Token](#).
- An Okta Identity Engine (OIE) tenant with Adaptive MFA and Okta Workflows entitlements.
- For an understanding of the Yubico FIDO Pre-reg integration, see [Workflow integration](#).
- For an overview of Okta's recommended policies, see [Require phishing-resistant authentication with pre-enrolled YubiKey](#) (Okta documentation).
- In order for users to be able to authenticate with a security key, ensure that FIDO2 WebAuthn is enabled in your Okta tenant. In the **Okta Admin Console**, configure **User verification** to use the **Preferred** option as described in [Add the FIDO2 \(WebAuthn\) authenticator](#) section (Okta documentation).

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**Note:** The FIDO Alliance recommends UV=Required. However, you will need to assess the impact of UV=Required based on your organization's current settings, as it may impact users across operating systems and browser types if a PIN is not set. Preferred is an option, if you are concerned about blocking other users.

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### 3.2 Integration Steps

The Yubico FIDO Pre-reg workflow template for Okta is flexible and you can request a pre-registered YubiKey using the following methods:

- **MFA initiated** - trigger shipments using Pre-enrolled authenticators in Okta Workflows console (for an individual user).
- **Group Add** - trigger shipments using the Group Add flow in the Okta Workflows console (for an individual user or multiple users).
- **Batch requests** - use the API to order YubiKeys for multiple users. For more information, see [Order pre-enrolled YubiKeys in a batch \(Okta documentation\)](#).

The following steps lets you set up the Yubico FIDO Pre-reg integration and create a first shipment of a pre-registered YubiKey:

1. *Create user groups and configure Okta policies*
2. *Add the Yubico FIDO Pre-reg Workflow template*
3. *Configure the workflow connections*
4. *Create a shipment request*

The sections in the following describe each step in detail.

## CONFIGURING OKTA POLICIES

This section describes how to create user groups and configure phishing-resistant authentication policies in Okta to support the Yubico FIDO Pre-reg integration.

### 4.1 Creating User Groups

Create groups for new and existing users in Okta. For information on how to do this, see [Create groups for new and existing users \(Okta documentation\)](#).

### 4.2 Configuring Global Session Policy

Create a Global Session Policy that is configured to establish the user session with any factor that is *not a password*. For information on how to do this, see [Configure a global session policy \(Okta documentation\)](#).

### 4.3 Configuring Authenticator Enrollment Policy

Authenticator enrollment policies let you manage how and when your end users enroll authenticators, for example to use “WebAuthn Only”. For more information, see [Configure an authenticator enrollment policy \(Okta documentation\)](#).



## **ADDING THE WORKFLOW TEMPLATE**

The Yubico FIDO Pre-reg Okta workflow template includes flows for example for shipment triggers, shipment processing, and credential mapping.

To add the workflow templates to your Okta instance, do the following:

1. Go to the **Okta Workflows Template** catalog.
2. Locate the **Yubico FIDO Pre-reg Workflow** template by searching for “Yubico FIDO Pre-reg” in the search bar within the Okta Workflows console.
3. Click **Add Template**.



## CONFIGURING WORKFLOW CONNECTIONS

In this step you will authorize and configure the **Create shipment** workflow connections.

### 6.1 Generating an Authorization Token


When you add a Yubico card to a flow the first time you are prompted to authorize the connection. This requires an API token for your organization, generated in the YubiEnterprise Console. Once you have configured the connection and saved the API token, you can reuse it for other YubiEnterprise-related actions. To generate the token if not already done, see [Generating API Tokens](#)

### 6.2 Creating Connection from Okta Org

Do the following to create the connection from the *Okta org*:

1. In the **Okta Admin** console, open **Workflows** and click **Connections > New Connection**.
2. Locate and select the **Okta** connector icon.
3. Add a display name for the connection in the **Name** field, and provide a description.

**New Connection**



GeneralPermissions

Name

Okta Devices

Description

Client ID

Client Secret

Domain - without 'https://' or '-admin'. E.g. - 'atko.okta.com'

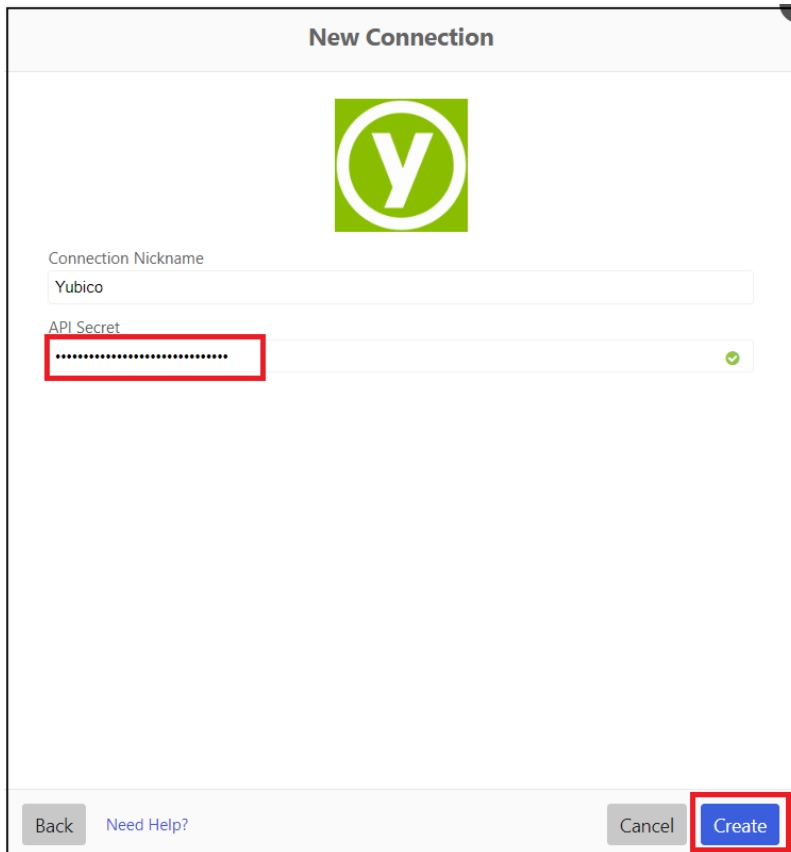
4. Enter the **Client ID** and **Client Secret** values provided in Okta Workflows OAuth.
5. In the **Domain** field, enter your Okta org domain without `https://`, for example, `company.okta.com`. If your org uses a custom domain, enter the custom domain.
6. Click **Create**.

### 6.3 Creating Connection from Yubico Org


Do the following to create a connection from the *Yubico org*:

1. If not already done, generate an API token as described in [Generating an Authorization Token](#). Save the API token in a location from where you can easily copy and paste it.
2. In the **Okta Admin** console, open **Workflows** and click **Connections > New Connection**.
3. Locate and select the **Yubico** connector icon.
4. Provide a display name for the connection in the **Connection Nickname** field, paste the previously generated API token into the **API Secret** field.





New Connection



Connection Nickname  
Yubico

API Secret  
.....

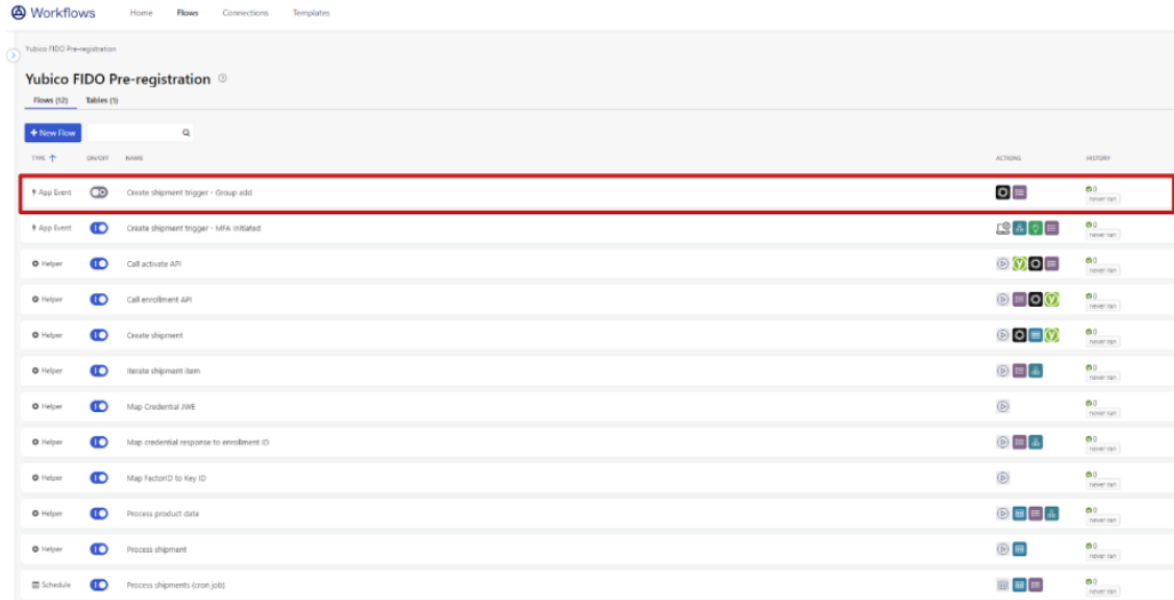
Back Need Help? Cancel Create

5. Click **Create**.

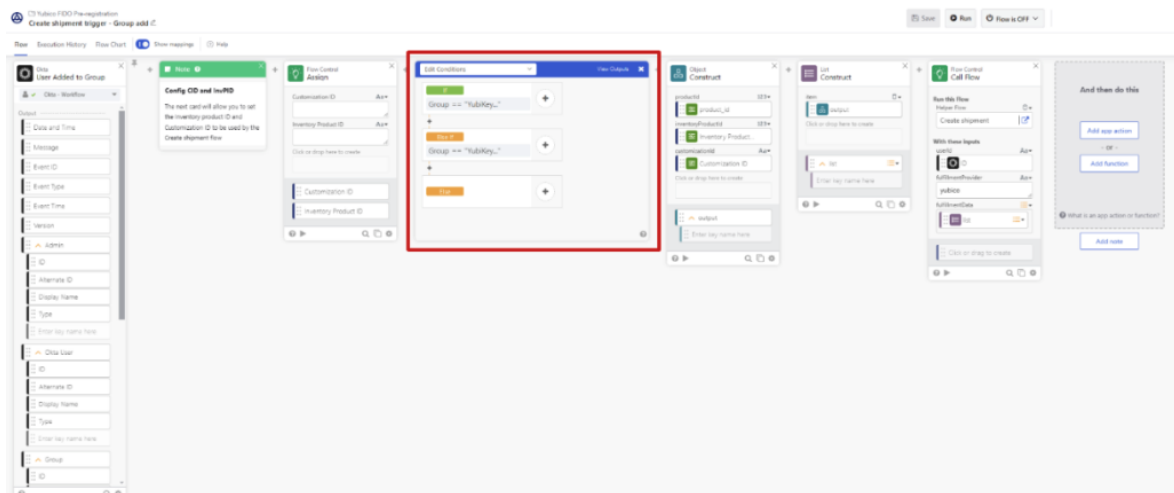
## 6.4 Updating the Create Shipment - Group Add Flow

If requesting a pre-registered YubiKey via the *Group Add* flow, you will need to add customization and product IDs to the Create shipment - Group Add flow as described in the following:

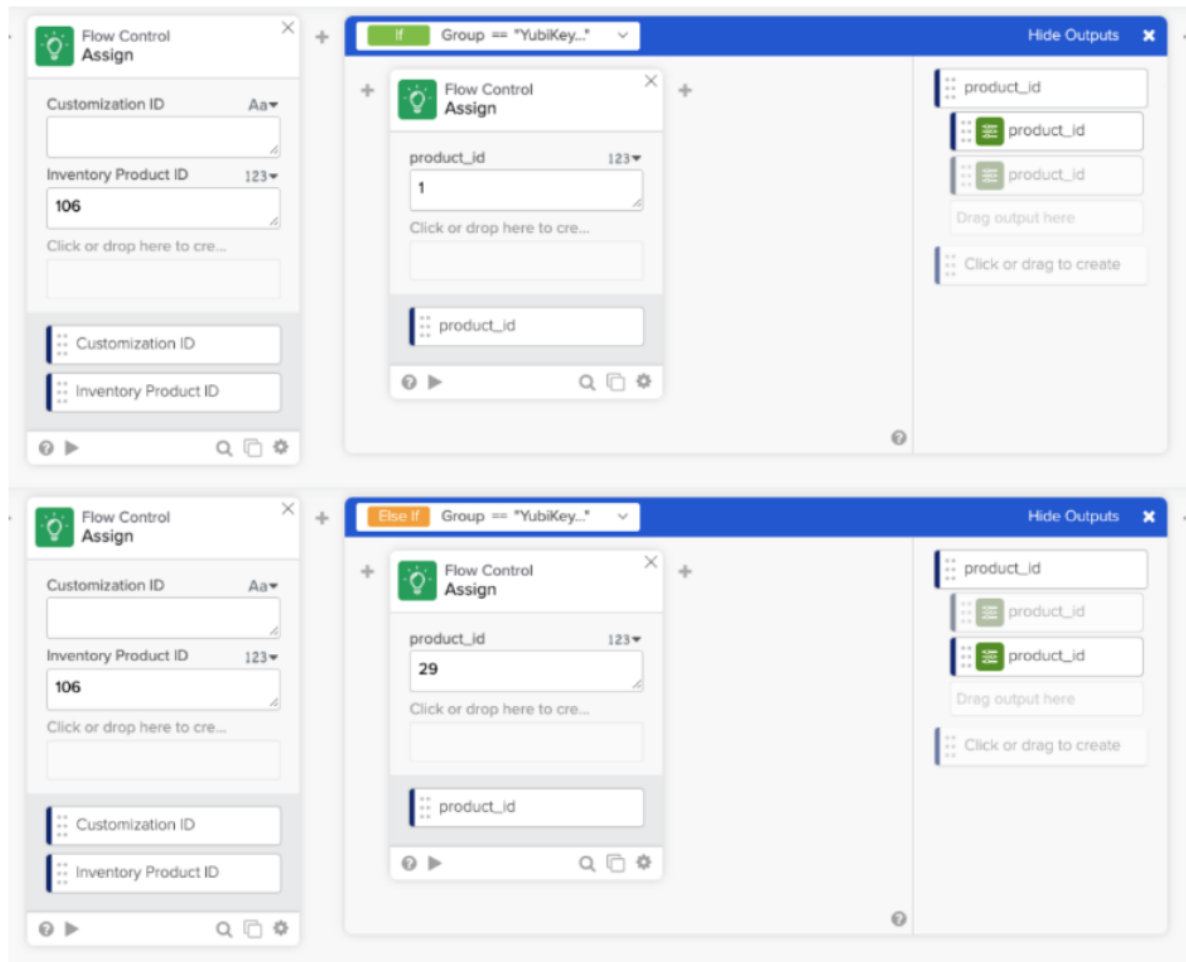
1. In the **Okta Admin** console, open **Workflows**, select **Flows** and open the **Create shipment trigger - Group add** workflow.



2. In the **Create shipment** page, open the dropdown menu on the **Edit Conditions** card.



3. Update the fields as described below using input values provided by Yubico during onboarding of your organization. Note that in this example, the `product_id` is "1" for key model *YubiKey 5 NFC* and "29" for key model *YubiKey 5C NFC*. For more information, see [LINK](#).
  - a. **If `product_id`** (for *YubiKey 5 NFC*): Your Customization ID.
  - b. **If `inventory_product_id`**: Your Subscription ID.
  - c. **Else if `product_id`** (for *YubiKey 5C NFC*): Your Customization ID.
  - d. **Else if `inventory_product_id`**: Your Subscription ID.



4. Click **Save**.



## CREATING SHIPMENT REQUESTS

In this step you will add new users for shipments and create a shipment request. In order to make a shipment request, the following information is required for the user, either from the Okta Universal Directory (UD) or from your organization's HRIS (Human Resources Information System):

- First Name
- Last Name
- Street Address
- City
- State/Province/Territory (2-letter format codes)
- Postal Code
- Country Code
- Primary email
- Secondary email (for onboarding *new* users to receive a PIN)
- Primary phone number
- Organization

### 7.1 Adding New Users to Directory

The following describes how to add a *new* user with status “Staged” in Okta. For more information, see [Create staged user \(Okta documentation\)](#).

To add a new user, do the following:

1. In the **Okta Admin** console, go to **Directory > People** and click **Add person**.
2. In the **Add Person** dialog, enter information as follows:
  - **First name**, **Last name**, and **Username**.
  - **Primary email** (work email) for active users.
  - **Secondary email** (personal email used prior to activation for new users).
  - Do not assign the user to any YubiKey groups, this is done later.
  - Set **Activation** to “Activate later”. This creates the user in status “Staged”.
3. Click **Save**.
4. On the **People** page, go to **Staged > User > Profile > Edit**.

5. Enter the following information required for key shipment: **Primary phone, Street address, City, State, Zip code, Country code, and Organization.**
6. Click **Save**.

## 7.2 Creating the Shipment Request

You can create shipment requests either through the Okta Admin console using Okta Groups, or using the API for batch shipment requests, see [Integration Procedure](#).

In this example we will use the **Pre-enrolled authenticators** option in the **Okta Workflows** console to create a shipment request.

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**Note:** Only one FIDO Pre-reg YubiKey at a time can be requested for an Okta tenant.

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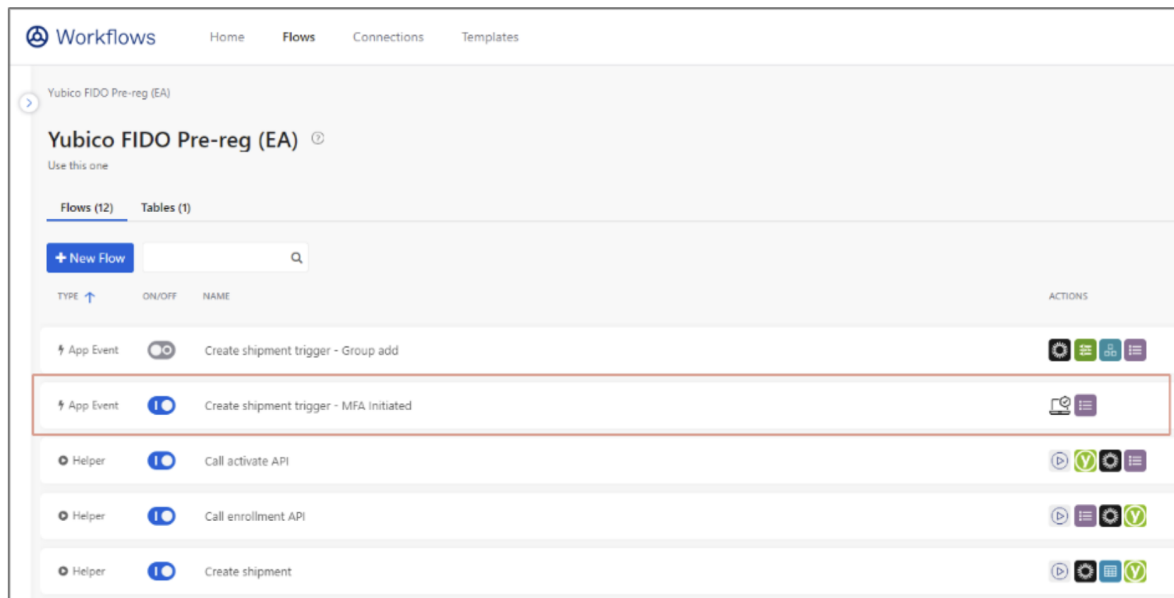
To create a shipment request, do the following:

1. In the **Okta Workflows** console, ensure the **Create shipment trigger - MFA initiated** flow is *enabled*.

---

**Note:** It is recommended that only one flow at a time be enabled: either the **Group Add** or the **MFA Initiated** flow.

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2. In the **Okta Admin** console, ensure the user to whom you want to ship the key has a profile in the user directory. If not, create a new user as described in [Adding New Users to Directory](#).
3. Click the profile of the desired user and do the following:
  - If using the Okta Universal Directory (UD) to source the shipping information, ensure this is populated in the user profile.
  - Alternatively, confirm the user's shipping information is being sourced from an HRIS or other source of truth.
4. In the user profile, click **Pre-enrolled authenticators** and then click **+ Add**.

Reset or Remove password More Actions ▾

User Active View Logs

Applications Groups Profile Devices Admin roles **Pre-enrolled authenticators**

### Security Key

NAME	STATUS
<p><b>Add a pre-enrolled security key</b></p> <p>Use your YubiEnterprise Delivery account to send this user a pre-enrolled YubiKey for phishing-resistant authentication.</p> <p>Learn more <b>+ Add</b></p>	

- On the **YubiKey enrollment and delivery** page, enter the **Product ID**, **Inventory ID**, and **Customization ID** provided by Yubico during onboarding. See *Prerequisites*.

## YubiKey enrollment and delivery

Enroll the user with a WebAuthn authenticator for security keys and provide delivery information for the user to receive a YubiKey with credentials preloaded from your Yubico Enterprise Delivery inventory.

### Security key details

Enter details for the key this user should receive. Reference your YubiEnterprise Console for this information.

Product ID

Inventory Product ID

Customization ID

- On the **Yubikey enrollment and delivery** page, ensure all required fields are populated: Primary and secondary **Email address** (PIN will be sent to both), primary **Phone number**, **Organization**, and **Shipping address**.

### Security key delivery

Confirm the user's information is correct. Changes can be made by editing the user's profile.

<b>Email address to receive security key PIN</b> Secondary personal email	yubikey.tester@myemail.com
--	----------------------------

Note: The user's security key PIN will be sent to their personal email address. The primary email address won't be accessible until after the user activates their account using the PIN.


<b>Phone number</b> Primary phone number	5555555555
---	------------

<b>Organization</b> Organization name	Yubico
--	--------

<b>Shipping address</b> Street address City State Zip Code Country Code	5432 Some Street Name Santa Clara CA 95054 US
--	---

Note: Shipping address formats aren't validated. Check your Yubico Enterprise Delivery terms for supported shipping regions' format requirements.

7. If the user's shipping information is being sourced elsewhere, you will receive a message stating that it is missing. Ensure that the information is retrieved from another endpoint or update the profile values before continuing.

**Delivery details missing from user profile**

To submit the form, the user's profile needs to have:

- Primary phone number
- Organization
- Street address
- City
- State
- Zip Code
- Country Code

Or, **Continue** if these values will be imported from an HRIS integration.

[Update profile values](#)

8. Click **Continue**.
9. The Yubico FIDO Pre-reg workflow is triggered and the fulfillment starts.

ApplicationsGroupsProfileDevicesPre-enrolled authenticators

### Security Key

+ Add

NAME	STATUS
YubiKey	<div>FULFILLMENT STARTED</div>

Yubico receives a request for a pre-registered YubiKey. The request contains all information needed to program and ship the key. When the request is fulfilled and the credential is activated by Okta, the randomly generated PIN associated



with the YubiKey is emailed to the user's secondary email address (new user). For existing users, it will be sent to their primary email address.

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**Note:** Once the credential is programmed onto the YubiKey, the challenge and credential data, including PIN, is purged from Yubico systems.

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### 8.3 Contact Information

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More options for getting touch with us are available on the [Contact page](#) of Yubico's website.

## 8.4 Document Updated

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