SHIFT4

API Specifications

Immediate Setup

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Introduction

The Shift4 Payment Facilitator Immediate Setup API is a unique tool that allows PFs (Payment Facilitators) to setup new sub-merchants, POS devices and payment channels using an API call. With the Shift4 Immediate Setup API, your sub-merchants' setup time takes minutes instead of days.

This document supplements the Shift4 Payment API specifications, and it provides detailed information on the use of the Payment API for initiating immediate setup requests. The service supports setup of both card present and card not present sub-merchants.

Useful Documents

The following additional documents may be helpful in understanding the implementation of the Immediate Setup functionality:

Shift4 Payment API	An in-depth description of the Shift4 Payment Gateway API. The API operates on a basic request-response method where the client instructs the gateway to perform an operation and the gateway replies with the status of the operation.
Card Present Addendum	A supplement to the Shift4 Payment Gateway API specification, providing detailed information on processing Card Present transactions via the Shift4 Payment API.
Data Open API Specification	Refer to the Immediate Setup notification mechanism which provides information on how to receive notifications from Shift4's notification engine

These documents can be found on the Shift4 Developer Portal.

Intended Audience

This document is intended for Payment Facilitators who wish to implement the Immediate Setup functionality.

Publication Identification

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Immediate Setup Overview

Supported Immediate Setup Scenarios

PF Immediate Setup supports the following business functions:

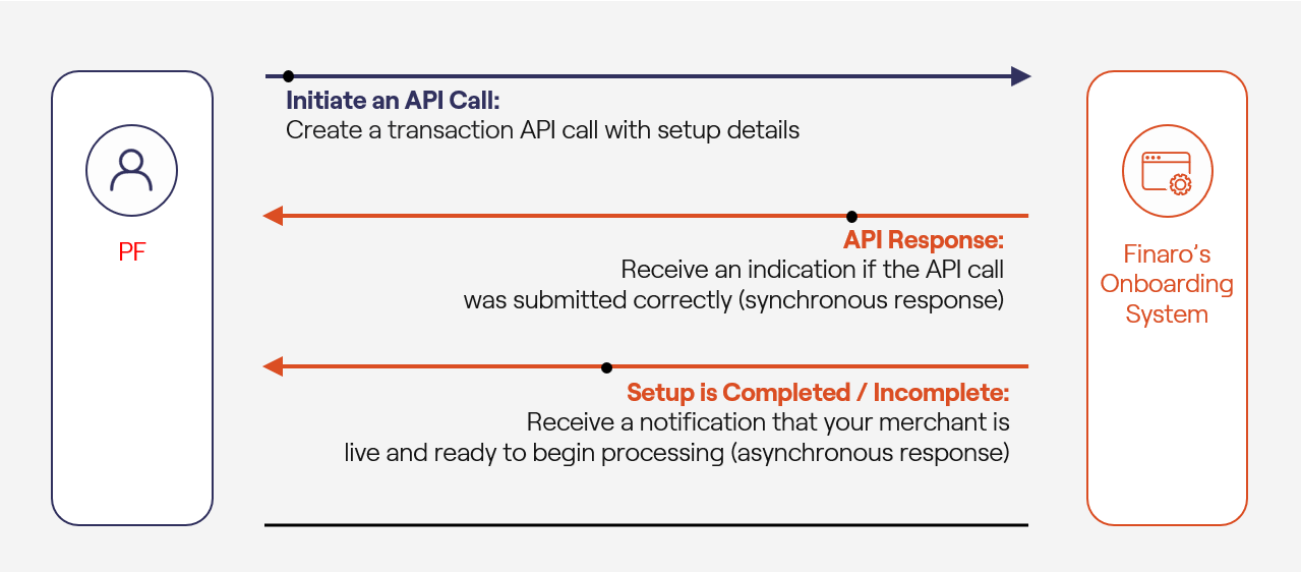
- Creating a new sub-merchant.
- Adding a new POS/mPOS device to an existing sub-merchant.
- Adding a new payment channel – either Card Present (CP) or Card Not Present (CNP) – to an existing sub-merchant.

Immediate Setup Flow

The immediate setup is comprised of 3 steps:

1. Immediate Setup Request
2. Synchronous response, acknowledging the request was received correctly.
3. Asynchronous notification on the result of the setup

1 - Immediate Setup Flow



See a detailed description of each step in Immediate Setup Specifications

Scheduled System Maintenance and Availability

The Immediate Setup functionality has a scheduled weekly maintenance every Sunday. Any setup requests sent on Sunday will be declined.

Load management

The immediate setup system SLA is five immediate setup requests per minute per PF. You may send as many requests as you need, but the system may handle them according to the SLA above.

Note:

The immediate setup functionality is intended for standard daily operations. If you want to migrate a large number of merchants or devices, coordinate it in advance with your Solution Architect.

Prerequisites for using Immediate Setup

The following conditions are prerequisites for using the Immediate Setup service:

- You are a Payment Facilitator, and you are authorized by the Shift4 team to use the immediate setup functionality.
- A list of authorized MCC was approved by the Shift4 team for you. You can perform immediate setup to sub-merchants under these MCC only.
- You must implement the Shift4 payment API (refer to Shift4 Payment API specs on Shift4 Developer Portal).
- Other technical prerequisites:
- You must have a gateway MID for each combination of MCC and payment channel (card present/card- not-present).
- You must implement operation codes 1 and 2 of the Shift4 Payment API.
- You must implement the dynamic descriptor functionality.
- If your sub-merchants process card present transactions (POS) you should get a card acceptor ID prefix for each one of them prior to setting them up.

Immediate Setup Specifications

This chapter describes the requirements for each step of the immediate setup flow.

Setup Request

Send a transaction with operation code [1] - Sale or [2] – Authorization. Refer to Shift4 Payments Platform API specification for more information on how to send transactions.

1. Make sure you send the transaction using the correct gateway MID (parameter [M]) assigned to the combination of MCC and payment channel (card present / card-not-present) suitable for your sub-merchant.
2. Include the following parameters in your transaction and make sure they are unique for the sub-merchant you are setting up (see a detailed description of these API parameters in Immediate Setup Parameters – Field Descriptions.

Parameter name	Description	Required for payment channel
h3	Sub-merchant ID	Card present & card-not-present
i2	Cardholder statement descriptor	Card present & card-not-present
h11	Sub-merchant business information	Card present & card-not-present
b17	Card acceptor terminal ID (TID)	Card present only
h5	Device address	Card present only
h12	Website URL	Card-not-present only

Note:

- The transaction that triggers Immediate Setup is not processed as a financial transaction. The amount (parameter [a4]) is ignored.
- You can send additional setup requests to add more POS devices or add another payment channel to an existing sub-merchant business activity.

Setup Response

The Immediate Setup functionality supports 2 types of responses:

1. Synchronous response is sent from Shift4 payments platform when the setup is initiated. The response confirms the request was received successfully and it is technically correct or incorrect. This response does not indicate the status of the setup.
2. An additional, asynchronous response is sent from Shift4 notification engine when the setup is complete. This response indicates whether the setup was completed successfully or failed (for example due to business logic). For more information about the notification engine response refer to the Data Open API Specifications on Shift4 Developer Portal.

Synchronous Response

A response is sent to your system: [z2 =8], indicating "Setup initiated, transaction amount will not be processed".

Name	Type	Min-Max	Description
z2	[0-9]	1-3	Operation result code A value of '8' indicates that immediate setup has been initiated
z3	text	5-256	Operation result description – 'Immediate setup initiated, transaction amount will not be processed'

Asynchronous Response

When the setup is complete you will receive a notification. The following are the common notification engine asynchronous responses for an immediate setup request.

Response Code	Description
00	Setup completed successfully. You can now start processing.
-1	Setup failed. Please contact Credorax support for more information.
-2	Setup failed. A retry will be initiated by Shift4. A Credonote notification will be sent when the request has been successfully completed.
14	Setup failed. The h5 parameter is missing: <Street>/<Zip code>/<City>/<Country>. Please complete and retry setup.
15	Setup failed. The i2 parameter includes more than one asterisk (*). Please complete and retry setup.
22	Setup failed. The Street field included in the h5 parameter is too long. Make sure it includes no more than 40 characters and retry setup.

Response Code	Description
25	Setup failed. The Sub Merchant DBA Name field included in the i2 parameter is longer than 22 characters. Check and retry setup.
31	Setup failed. The country code included in the h5 parameter is not supported. Check and retry setup.
53	Setup failed. b17 is not unique for this sub Merchant. Please contact Credorax support for more information.
62	Setup failed. The b17 parameter already exists in our systems. Contact Credorax Support for more information.
3009	Setup failed. The 6-digit prefix included in the h3 parameter does not match the PF ID. Check and retry setup.

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Immediate Setup Parameters – Field Descriptions

This chapter describes the fields that are specifically required for the immediate setup functionality. When sending the request, you must also include all the other mandatory request fields as well as defined in the Shift4 Payment API Specifications on the Shift4 Developer Portal.

Request Fields

The following fields are specifically required when sending a request for immediate setup. Note that the mandatory/optional indication refers only to the immediate setup functionality, and these parameters may have different requirements in the regular payment processing flow.

Name	Description	Type	Min-max	Format	Immediate setup functionality	M/O/C
M	Merchant ID	[A-Z0-9_]	3-8	Refer to Shift4 Payment API Specifications on the Shift4 Developer Portal	Shift4-assigned gateway MID. Each gateway MID specifies an approved MCC and an approved payment channel (either Card Present or Card Not Present)	M
O	Operation Code	[1-2]	1-1	[1] or [2]	Only operation code [1] or [2] identify the transaction as an immediate setup initiation request.	M
h3	Sub-Merchant ID	[0-9]	15-15	First 6 digits – PF ID as provided by Shift4 during the on-boarding phase. Last 9 digits – A unique sub-merchant identifier generated by you, must be unique across all sub-merchants processing under the PF	For a new Sub-merchant this is a unique identifier that triggers the immediate setup request of a new sub-merchant. If this is a request for a new POS device or a Card Present channel for an already processing sub-merchant, specify the existing sub-merchant ID.	M

Name	Description	Type	Min-max	Format	Immediate setup functionality	M/O/C
h5	POS device registered address	[A-Z a-z 0-9 .< (+ & *) - , % _ ? : ' =]	5-128	street + street number|zip code|city|country code Field character limits: • street+street number - up to 40 characters, restricted to [A-Z a-z][0-9], '-' , '.', ',' • zip code - up to 10 characters, restricted to [A-Z a-z][0-9], '-' , '.', ',' • city - up to 13 characters, restricted to [A-Z a-z] • country code - 2 characters, according to ISO 31661-1 alpha 2	Note: all the address fields are mandatory.	C: Required for Card Present only

Name	Description	Type	Min-max	Format	Immediate setup functionality	M/O/C
i2	Dynamic Billing Descriptor The descriptor that appears on the cardholder's statement.	Sub-merchant DBA Name: [A-Z a-z 0-9 - _.();:&=< +,%?'] City/Customer support number: [.< (+ &) - , % _ ? : ' = 0-9A-Z a-z]	1-39	The descriptor must follow this format: "Merchant DBA Name" + "*" + "City" • Merchant DBA Name: Up to 22 characters; must not include any asterisks. • Asterisk (*): Serves as a separator. • Valid City Name: Must be a recognized city name. Note: • All three parts are mandatory. • The DBA name cannot be overridden in future transactions. •	• If the sub-merchant is already processing, provide the existing descriptor. • If you are setting up a new sub-merchant, provide a new descriptor. The descriptor provided in the first transaction becomes the permanent descriptor.	M

Name	Description	Type	Min-max	Format	Immediate setup functionality	M/O/C
b17	Card acceptor terminal ID	[A-Z0-9]	8-8	Identifies a terminal, unique to an acquirer. Mandatory for all Card Present transactions. • First 2 characters are a prefix assigned by Shift4. • Last 6 digits are managed by the PF and should uniquely identify the POS device across all devices of all sub-merchants processing under the PF.	A new value in this field triggers immediate setup of a new terminal if the merchant has a Card Present channel. If the merchant does not have a Card Present channel, a new value triggers both the immediate setup of a new Card Present channel as well as the setup of a new terminal device.	C: Required for Card Present only
h11	Sub-merchant business information	Refer to Sub-merchant business information		Sub-merchant name|WEB|MOTO| Card Present|Primary contact name|Primary contact email|Street|City|State|Zip code|Country|Business model description|Monthly turnover target|Primary contact phone number • The description of each component is detailed in Appendix B: Parameter Detailed Description - Sub-merchant business information. • All components are mandatory.	The parameter must be included in every new sub-merchant setup scenario, both Card Present and Card Not Present. Do not include the parameter in a new TID or add-channel setup scenarios.	C: Required for a new sub-merchant only

Name	Description	Type	Min-max	Format	Immediate setup functionality	M/O/C
h12	Website URL	[A-Za-z0-9.< (+ & *) ; - , % _ > ? : ' =]	1-500	Website URL for accepting payments via Shift4. You can submit up to 5 URLs for a new CNP sub-merchant. If you are submitting multiple URLs separate them with a pipe character. Example: www.url1.com|www.url2.com| If you are submitting one URL, include 4 pipe characters following the URL. Example: www.url1.com||||	The parameter must be included in the following scenarios: • New Card Not Present (CNP) sub-merchant. • New Card Not Present (CNP) payment channel Do not include the parameter in Card Present setup scenarios.	C: Required for card-not-present only
h13	Card present device code	[0-9]	3-3	The 3-digit code associated with the device make and model, as provided by Shift4	The parameter must be included in all Card Present scenarios. Make sure you send the device code of the actual device being set up.	C: Required for Card Present only
pricing_id	Pricing ID	[A-Z ,a-z "-"]	10-10	A pre-defined pricing ID assigned by Shift4. In case this parameter isn't sent, the default pricing on the gateway MID will be assigned.	Enables PFs with multiple pricing to dynamically assign a value.	O

Dynamic Terminal

Certain business models require the setup of a large number of POS devices. To support such business models, we enable Payment Facilitators to use a dynamic terminal approach to add new devices as part of the financial transaction, without setting them up in advance. To use this functionality, you must be authorized by the Shift4 team. Contact your Solution Architect for more details.

In this chapter we describe the differences between the standard immediate setup process, and the process required when using the dynamic terminal functionality.

Changes to the Setup Flow

The setup of a new sub-merchant is the same, except that the following parameters are optional:

Name	Description	Note
h5	POS device address	Optional
b17	Card acceptor terminal ID	Optional
h11	Sub-merchant business information	Required
h13	Card present device code	Required for PF using multiple device types

Note:

You are no longer required to send additional device setup requests, and you can start sending financial transactions as soon as the setup of the sub-merchant is completed successfully.

Changes to the Financial Transaction Flow

When the sub-merchant setup is completed, you can start processing transactions immediately. With each financial transaction you must submit the unique details of the device used for the transaction.

This means that in addition to [b17] that you are already sending as part of the financial transaction today, you will also have to include [h5] and [h13].

Note:

	The device parameters values sent on the financial transaction must match the device used to perform the transaction

Appendix A: Accepted merchant country of incorporation

Merchants must be incorporated in one of the following countries:

Andorra	Guernsey	Norway
Austria	Hungary	Poland
Belgium	Iceland	Portugal
Bulgaria	Ireland	Romania
Croatia	Isle of Man	San Marino
Cyprus	Italy	Slovakia
Czech Republic	Jersey	Slovenia
Denmark	Latvia	Spain
Estonia	Liechtenstein	Sweden
Finland	Lithuania	Switzerland
France	Luxembourg	United Kingdom
Germany	Malta	
Gibraltar	Monaco	
Greece	Netherlands	

Appendix B: Parameters Detailed Description

Sub-merchant ID

Must be provided on the transaction in the h3 parameter:

- First 6 digits – PF ID as provided by Shift4 during the PF on-boarding phase.
- Last 9 digits – A unique sub-merchant identifier generated by the PF, must be unique across all sub-merchants processing under the PF.

Statement Descriptor

Using the Immediate Setup functionality, only one descriptor is supported per sub-merchant, whether they are Card Present or Card Not Present sub merchants. The descriptor which is sent in the 1st transaction will be set as the permanent descriptor. The City or Customer support number can be overridden using the i2 parameter.

POS device address

Must be provided on the transaction in the h5 parameter. Structure:

- Format: street + street number|zip code|city|country code. All parts are mandatory.
- The h5 value must refer to the physical address of the device itself. h5 must be sent as part of two setup scenarios:
- New sub-merchant – CP channel only
- A new POS/mPOS device
- Note that the country code must be supported by Shift4, as specified in Appendix A.

MCC

The MCC will be assigned to the sub merchant according to the Gateway MID that received the transaction. Using the Immediate Setup functionality, only one MCC is supported per sub merchant.

Card acceptor terminal ID – Card present only

Must be provided on the transaction in the b17 parameter for Card Present only. Structure:

- Fixed 2-character prefix assigned by Shift4 (e.g., ‘AB’)
- 6 digits assigned by the PF, uniquely identifying the POS device.
- Format and range: AB000001 – AB999999 when ‘AB’ is the assigned prefix.

Sub-merchant business information

Must be provided on the transaction in the h11 parameter, in the following structure:

Sub-merchant name|WEB|MOTO|Card Present|Primary contact name|Primary contact email|Street|City|State|Zip code|Country|Business model description|Monthly turnover target|Primary contact phone number

The following table describes each of the h11 parameter components.

Table 1 h11 parameter components

Component name	Type	Min – Max	Description	Example
sub-merchant name	[A-Z a-z 0-9 -='':?_%,()&+.<>;*]	0-120	Sub-merchant registered name	My Store
Web	TRUE/FALSE	4-5	Send 'TRUE' if sub-merchant accepts Card Not Present payments with Shift4, otherwise 'FALSE'	TRUE
MOTO	TRUE/FALSE	4-5	Send 'TRUE' if sub-merchant accepts Mail Order or Telephone Order payments with Shift4, otherwise 'FALSE'	FALSE
Card Present	TRUE/FALSE	4-5	Send 'TRUE' if sub-merchant accepts Card Present payments with Shift4, otherwise 'FALSE'	FALSE
Primary contact name	[A-Z a-z – ']	2-50	Full name of sub-merchant primary contact	John Smith
Primary contact email	[A-Z a-z 0-9%&@*()_+-=:;?>.<,']	2-100	Email address of sub-merchant primary contact	John.smith@gmail.com
Street	[A-Z a-z 0-9 -_.*():&<='?%,+]	2-40	Street component of sub-merchant registered address	Main street
City	[A-Z a-z 0-9 -_.():&/*<='?%,+]	2-13	City component of sub-merchant registered address	Main City
State	[A-Z a-z]	2-50	State component of sub-merchant registered address	Main State

Component name	Type	Min – Max	Description	Example
Zip code	[A-Z a-z 0-9 - _.*():&/<='?%,+]	2-10	Zip code component of sub-merchant registered address	758945621
Country	[A-Z a-z]	2	Country component of sub-merchant registered address, in ISO 31661-1 alpha-2 (2-character country code) format	MT
Business model description	[A-Z a-z 0-9 %&* ()_+-=:;?>.<,']	400	Short description of the sub-merchant business model	Online store for retail goods
Monthly turnover target	[0-9]	1-7	Turnover target in EUR only	2000
Primary contact phone number	[0-9 + - .]	1-20	Phone number of sub-merchant primary contact	+442033228355

Website URL

Must be provided on the transaction in the h12 parameter. The parameter holds the URL of the sub-merchant's website that accepts payments via Shift4. The parameter must be sent for every new Card Not Present sub-merchant, and when adding a Card Not Present channel to an existing sub-merchant. The parameter can hold up to 5 URLs, pipe (|) separated.

Card present device code

Must be provided on the transaction in the h13 parameter. The parameter holds a 3-digit code that Shift4 maps to a POS device certified by the payment facilitator. The device must be certified and setup for the partner prior to sending the setup transaction.

Note:

In cases where the code is padded with '0' to make it a 3-digit value, please include the leading zero in the sent value.

Example: '003'

Change History

Version	Date	Description
1.8 rev 3	October 2025	• Changed the description of h5 • Removed Supported POS devices appendix • Updated the instructions of h12 and h13 • Changed the format of i2 – only valid city name is allowed after the DBA name
1.8 rev 2	April 2024	• Updated dynamic terminal parameters • Updated Supported POS devices lists and codes
1.8 rev 1	December 2023	• Rebranding to Shift4 • Minor fixes (links)
1.8	September 2023	• Added pricing parameter to support dynamic pricing. • Added Dynamic terminal functionality. • Refresh of the specifications content for clarity and consistency
1.7	February 2023	• Added setup load management information. • Added information on synchronous and asynchronous responses. • Updated supported POS devices list
1.6	November 2021	Updated Parameter h11 components: • Primary contact name • Primary phone number
1.5	February 2021	Added parameter h13 to fields table, detailed description chapter, and new appendix B
1.4	July 2020	• Added Primary contact phone number to h11 parameter. • Service not available on Sunday
1.3	February 2020	• Updated allowed characters for parameters i2, h5 and h11
1.2	July 2019	• Added request parameters h11and h12. • Request parameter h5 now indicates the device address only
1.1	October 2017	• Updated Product Functional Overview • Added functional flow chart. • Updated Request Fields table • Added i2 to mandatory fields. • Added appendix A

Version	Date	Description
1.0	July 2017	• First Release

Need Support?

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