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Author:	I. Alustiza
	<i>Near One</i>

NEAR Intents Charge Intent for HTTP Payment Authentication

Abstract

This document defines the "charge" intent for the "nearintents" payment method in the Payment HTTP Authentication Scheme [I-D.httpauth-payment]. It specifies how clients and servers exchange one-time, cross-chain payments settled through the NEAR Intents 1Click Swap API [ONECLICK-API], in which a client pays a specified amount of a source asset on any supported origin chain and the resource server (merchant) receives an exact amount of a destination asset on any supported destination chain, with the NEAR Intents solver network executing the cross-chain swap in between.

One credential type is supported: type="hash" (push mode), where the client broadcasts the deposit transaction to the origin chain itself and presents the confirmed transaction hash for server verification. Because the 1Click backend issues a unique, single-use deposit address for each challenge, the recipient address is itself challenge-specific, which strengthens the challenge binding relative to generic hash-based credentials.

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1. Introduction

HTTP Payment Authentication [[I-D.httpauth-payment](#)] defines a challenge-response mechanism that gates access to resources behind payments. This document registers the "charge" intent for the "nearintents" payment method.

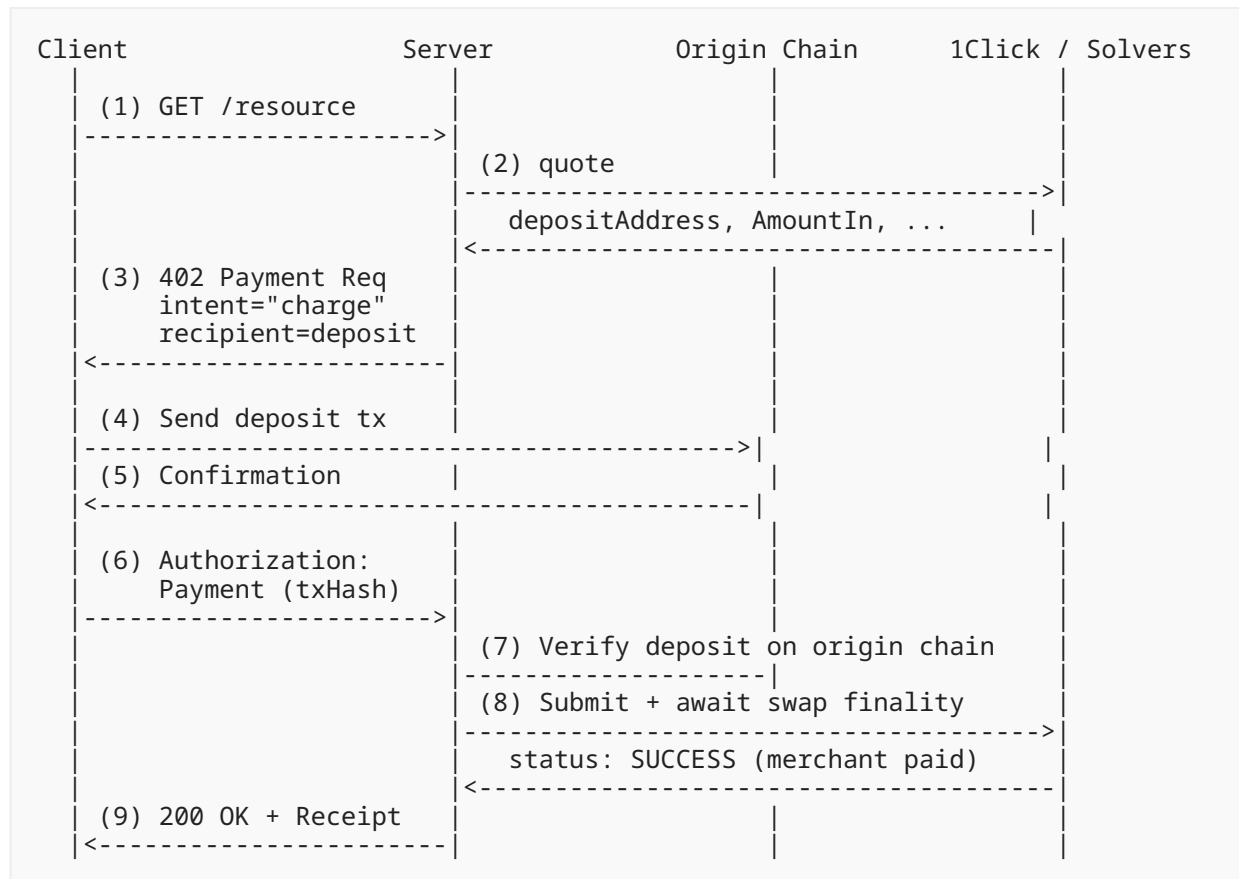
NEAR Intents is an intent-based settlement system in which a network of competing solvers fulfills user-expressed swap intents. The 1Click Swap API [\[ONECLICK-API\]](#) is a hosted interface to this system: a caller requests a quote for converting a source asset into a destination asset, receives a unique deposit address on the origin chain, sends the source asset to that address, and the solver network delivers the destination asset to a specified recipient — potentially on a different chain. A list of supported origin and destination chains is maintained at [\[NEAR-INTENTS-CHAINS\]](#).

This document specifies how to use that settlement system to fulfill the "charge" intent: a one-time payment of a specified amount, as defined in [\[I-D.payment-intent-charge\]](#). The server may settle the payment any time before the challenge expires auth-param timestamp.

This specification inherits the shared request semantics of the "charge" intent from [\[I-D.payment-intent-charge\]](#). It defines only the NEAR Intents-specific methodDetails, payload, verification, and settlement procedures for the "nearintents" payment method.

1.1. Push Mode

This method uses a single settlement flow, called "push mode", which uses type="hash" credentials. The client "pushes" the deposit transaction to the origin chain itself and presents the confirmed transaction hash; the server verifies the deposit and then drives the cross-chain swap to completion.



Unlike methods that offer a server-submitted ("pull") flow for fee sponsorship, this method has no pull mode: the source asset must be deposited to the 1Click address before settlement can begin, and the client therefore always pays its own origin-chain network fee. A future revision **MAY** define an additional credential type for clients that hold balances on the NEAR Intents settlement layer and wish to delegate submission of a signed intent; such a credential is out of scope for this document.

1.2. Cross-Chain Settlement Model

Single-chain charge methods describe one transfer: the client sends amount of currency to recipient, and the recipient receives exactly that. This method describes a payment whose two sides may diverge across chains and assets.

To remain compatible with the shared "charge" request schema and with push-mode verification, the standard fields describe the **payment the client makes on the origin chain**, and the **merchant's destination leg** is carried in methodDetails:

- **recipient** is the 1Click **deposit address** on the origin chain. It is the payee of the client's on-chain transfer and the address whose receipt of funds the server verifies from the transaction hash. It is controlled by the NEAR Intents settlement system for the duration of the swap, not by the merchant.

- currency and amount describe the **source asset** and the **deposit amount** the client sends to recipient.
- `methodDetails.originNetwork` is the **origin chain** where recipient lives and where the transaction hash is anchored.
- `methodDetails.destinationNetwork`, `methodDetails.destinationAsset`, `methodDetails.destinationRecipient`, and `methodDetails.amountOut` describe the asset, chain, beneficiary, and exact amount the **merchant** receives once the swap completes.

This mapping keeps push-mode verification — confirm an on-chain transfer to recipient of the currency the client was asked to send — directly applicable: the verified deposit is the payment, and the cross-chain swap is an extension that executes afterward and delivers to the merchant.

1.3. Relationship to the Charge Intent

This document inherits the shared request semantics of the "charge" intent from [\[I-D.payment-intent-charge\]](#). It defines only the NEAR Intents-specific `methodDetails`, payload, and verification procedures for the "nearintents" payment method.

2. Requirements Language

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14 [\[RFC2119\]](#) [\[RFC8174\]](#) when, and only when, they appear in all capitals, as shown here.

3. Terminology

1Click Swap API A hosted interface to the NEAR Intents settlement system [\[ONECLICK-API\]](#). Exposes quote generation, deposit notification, and status endpoints used by this method.

Deposit Address A unique address generated by the 1Click backend for a single quote. The client sends the source asset to this address. Each address corresponds to exactly one quote and is single-use.

Solver Network The set of competing agents that fulfill NEAR Intents swap intents by sourcing the destination asset and delivering it to the recipient.

EXACT_OUTPUT A 1Click quote mode in which the destination output amount is fixed and the maximum source input amount required to guarantee it is computed by the quote. This method uses EXACT_OUTPUT so the merchant receives a deterministic amount.

Origin Chain The chain on which the client holds the source asset and broadcasts the deposit transaction. Identified by a CAIP-2 [\[CAIP-2\]](#) network identifier.

Destination Chain The chain on which the merchant receives the destination asset. Identified by a CAIP-2 [\[CAIP-2\]](#) network identifier.

Settlement Finality For this method, the point at which the merchant has received the destination asset, signalled by the 1Click terminal status SUCCESS. See [Section 10](#).

Base Units The smallest transferable unit of an asset, determined by its decimal precision (e.g., USDC with 6 decimals uses 1,000,000 base units per 1 USDC).

4. Request Schema

The request parameter in the WWW-Authenticate challenge contains a base64url-encoded [\[RFC4648\]](#) JSON [\[RFC8259\]](#) object. The JSON **MUST** be serialized using JSON Canonicalization Scheme (JCS) [\[RFC8785\]](#) before base64url encoding, per [\[I-D.httpauth-payment\]](#).

This specification implements the shared request fields defined in [\[I-D.payment-intent-charge\]](#).

4.1. Shared Fields

Field	Type	Presence	Description
amount	string	REQUIRED	Deposit amount the client is asked to send, in base units of currency (the 1Click quote AmountIn): the upper bound that guarantees the merchant receives <code>methodDetails.amountOut</code> . A requested/display value — the verifier actually requires <code>methodDetails.minAmountIn</code> , not amount (see Section 8).
currency	string	REQUIRED	Source asset the client pays with, as a CAIP-19 [CAIP-19] asset identifier (see Section 4.2); chain component MUST equal <code>methodDetails.originNetwork</code> .
recipient	string	REQUIRED	1Click deposit address on the origin chain. The payee of the client's on-chain transfer.
description	string	OPTIONAL	Human-readable payment description. MUST NOT be relied upon for verification per [I-D.httpauth-payment] .
externalId	string	OPTIONAL	Merchant reference (order ID, invoice number, etc.).

Table 1

Challenge expiry is conveyed by the `expires` auth-param in WWW-Authenticate per [\[I-D.httpauth-payment\]](#) (see [Section 6](#)).

4.2. Asset Identifiers

Both `currency` and `methodDetails.destinationAsset` **MUST** be CAIP-19 [CAIP-19] asset identifiers. CAIP-19 encodes the chain and the asset in one self-describing string, so both legs of the swap use the same convention and either side can be parsed without external context:

Chain type	CAIP-19 form	Example
EVM chains	eip155:<chainId>/erc20:<address>	eip155:42161/erc20:0xaf88d065e77c8cC2239327C5EDb3A432268e
Solana	solana:<genesisHash>/token:<mint>	solana:5eykt4UsFv8P8NJdTREpY1vzqKqZKvdp/token:EPjFWdd5AufqSSqeM2qN1xzybapC8G4wEGGkZwyTDt1v
NEAR (NEP-141)	near:mainnet/nep141:<account>	near:mainnet/nep141:17208628f84f5d6ad33f0da3bbbeb27ffcb398eac501a31bd6
Native assets (no contract)	<caip2>/slip44:<coinType>	bip122:0000000000019d6689c085ae165831e93/slip44:0 (BTC)

Table 2

Implementations **MUST NOT** use informal short identifiers (e.g., "arb", "BTC") or bare contract addresses without the CAIP-19 chain prefix in `currency` or `destinationAsset`. The chain component of `currency` **MUST** equal `methodDetails.originNetwork`, and the chain component of `destinationAsset` **MUST** equal `methodDetails.destinationNetwork`. CAIP-19 identifiers **MUST** be compared by their parsed components, with the address or reference component compared in the relevant chain's canonical form (for example, EVM addresses compared case-insensitively).

4.3. Method Details

Field	Type	Presence	Description
<code>methodDetails.originNetwork</code>	string	REQUIRED	CAIP-2 [CAIP-2] identifier of the origin chain (where recipient lives and the deposit tx is anchored).
<code>methodDetails.destinationNetwork</code>	string	REQUIRED	CAIP-2 [CAIP-2] identifier of the chain where the merchant receives the destination asset.

Field	Type	Presence	Description
<code>methodDetails.destinationAsset</code>	string	REQUIRED	Destination asset the merchant receives, as a CAIP-19 [CAIP-19] asset identifier (see Section 4.2); chain component MUST equal <code>methodDetails.destinationNetwork</code> .
<code>methodDetails.destinationRecipient</code>	string	REQUIRED	Merchant address on the destination chain that receives <code>amountOut</code> .
<code>methodDetails.amountOut</code>	string	REQUIRED	Exact amount the merchant receives, in base units of <code>destinationAsset</code> . Guaranteed via EXACT_OUTPUT.
<code>methodDetails.minAmountIn</code>	string	REQUIRED	Minimum deposit the backend accepts, in base units of currency. Threshold checked at verification (Section 8 , step 3): a confirmed deposit MUST be at least <code>minAmountIn</code> . Deposits below it yield INCOMPLETE_DEPOSIT and are refunded to <code>refundTo</code> .
<code>methodDetails.depositMemo</code>	string null	OPTIONAL	Deposit memo required by some origin chains (e.g., Stellar). Absent or null when not required.
<code>methodDetails.slippageTolerance</code>	number	OPTIONAL	Slippage tolerance in basis points (e.g., 100 = 1%).
<code>methodDetails.timeEstimate</code>	number	OPTIONAL	Estimated swap completion time in seconds, from the 1Click quote.
<code>methodDetails.refundTo</code>	string	REQUIRED	Address on the origin chain to which the backend refunds the deposit if the swap fails or excess exists.
<code>methodDetails.settlementBackend</code>	string	OPTIONAL	Discloses the settlement backend. Value "near-intents" for this method.
<code>methodDetails.credentialTypes</code>	array	OPTIONAL	Ordered list of accepted credential types. For this method, the only valid value is "hash".

Table 3

If `methodDetails.credentialTypes` is omitted, servers **MUST** accept "hash". Servers **MUST NOT** advertise credential types other than "hash" for this method.

The server **MUST** determine `methodDetails.refundTo` before requesting the executable 1Click quote from the NEAR Intents 1Click Swap API: the quote that returns the single-use deposit address and can actually be paid. It **SHOULD** resolve an origin-chain address controlled by the payer from authenticated request context. If it instead uses a fixed merchant address, it **MUST** disclose the resulting off-band refund-recovery policy. Transport-specific payer-hint negotiation is outside this document. Regardless of how the address is obtained, it is carried in the challenge-bound request, and the client **MUST** verify that it is an acceptable refund destination before paying.

Example (decoded request):

```
{
  "amount": "1005000",
  "currency": "eip155:42161/erc20:0xaf88d065e77c8cC2239327C5EDb3A432268e5831",
  "recipient": "0x76b4c56085ED136a8744D52bE956396624a730E8",
  "description": "Cross-chain premium data access",
  "externalId": "order_12345",
  "methodDetails": {
    "originNetwork": "eip155:42161",
    "destinationNetwork": "near:mainnet",
    "destinationAsset": "near:mainnet/nep141:17208628f84f5d6ad33f0da3bbbeb27ffcb398eac501a31bd6ad2011e36133a1",
    "destinationRecipient": "merchant.near",
    "amountOut": "1000000",
    "minAmountIn": "1000000",
    "depositMemo": null,
    "slippageTolerance": 100,
    "timeEstimate": 120,
    "refundTo": "0x2527D02599Ba641c19FEa793cD0F9a6e8457C317",
    "settlementBackend": "near-intents",
    "credentialTypes": ["hash"]
  }
}
```

This requests a deposit of 1.005 USDC on Arbitrum (eip155:42161) so that the merchant receives exactly 1.00 of the destination asset on NEAR (near:mainnet).

5. Credential Schema

The credential in the Authorization header contains a base64url-encoded JSON object per [\[I-D.httpauth-payment\]](#).

5.1. Credential Structure

Field	Type	Presence	Description
challenge	object	REQUIRED	Echo of the challenge auth-params from WWW-Authenticate per [I-D.httpauth-payment].
payload	object	REQUIRED	NEAR Intents-specific payload (see Section 5.2).
source	string	OPTIONAL	Payer DID.

Table 4

The source field, if present, **SHOULD** use the did:pkh method [DID-PKH] with the CAIP-2 origin network identifier and the payer's origin-chain address (e.g., did:pkh:eip155:42161:0x2527...).

5.2. Hash Payload — Push Mode (type="hash")

In push mode, the client has already broadcast the deposit transaction to the origin chain. The hash field contains the transaction hash for the server to verify.

Field	Type	Presence	Description
type	string	REQUIRED	"hash"
hash	string	REQUIRED	Transaction hash of the client's deposit on the origin chain (methodDetails.originNetwork). Format is origin-chain-native.

Table 5

The address the deposit must pay is not repeated in the payload: it is the challenge recipient, which is bound into the challenge id (see [Section 7](#)). The server resolves which deposit to verify from the echoed challenge.

Example:

```
{
  "challenge": {
    "id": "qB3wErTyU7iOpAsD9fGhJk",
    "realm": "api.example.com",
    "method": "nearintents",
    "intent": "charge",
    "request": "eyJ...",
    "expires": "2026-06-25T15:10:00Z"
  },
  "payload": {
    "type": "hash",
    "hash":
    "0x9bcff372aee89b648c922b850573b22387c31d693079f5e37cd255814e2d615a"
  },
  "source": "did:pkh:eip155:42161:0x2527D02599Ba641c19FEa793cD0F9a6e8457C317"
}
```

6. Challenge Expiry and Deposit Deadline

The challenge expires auth-param ([I-D.httpauth-payment]) **MUST** be set to the 1Click quote deadline, or to a slightly earlier time, so that a deposit made before expires is still within the quote's validity window.

Clients **MUST NOT** broadcast a deposit transaction after the challenge expires timestamp. A deposit that arrives at the deposit address after the quote deadline may be refunded to `methodDetails.refundTo` rather than swapped.

Servers **SHOULD** set expires such that the remaining window before the quote deadline accommodates origin-chain confirmation plus `methodDetails.timeEstimate`. Because the deposit address is time-limited, servers **SHOULD** cache the challenge for a given resource and refund destination until the quote deadline and reissue the same challenge (including the same recipient) for repeated requests, regenerating when either the deadline or `methodDetails.refundTo` changes.

7. Challenge Binding

The challenge id binds the challenge parameters per [I-D.httpauth-payment], including request, which carries recipient (the deposit address), amount, and currency. Servers **MUST** verify that the credential echoes a challenge whose recomputed binding matches the id they issued (for example, via the HMAC-SHA256 mechanism in [I-D.httpauth-payment]), and **MUST** reject credentials presenting an unknown, expired, modified, or already-settled id.

Because the 1Click backend issues a **unique deposit address per quote**, the recipient in each challenge is challenge-specific. A deposit transaction observed at that address is therefore implicitly bound to the single challenge that advertised it — an attacker cannot present the same deposit against a different challenge, because a different challenge has a different recipient. This gives push mode under this method a stronger practical binding than hash credentials whose recipient is a static merchant address shared across many challenges. See [Section 13.3](#).

8. Verification

Upon receiving a request with a credential, the server **MUST** first validate that `payload.type` is "hash", then perform the following checks. If any check fails, the server **MUST** return a `verification-failed` error per [I-D.httpauth-payment] (or a more specific code from [Section 9](#)).

If the origin-chain RPC or the 1Click status endpoint is unavailable for a required check, servers **MUST** treat this as a server error (HTTP 5xx) rather than a `verification-failed` response, and **MUST NOT** settle the credential.

1. The challenge id matches an outstanding, unsettled challenge issued by this server, the recomputed challenge binding matches id ([Section 7](#)), and the current time is before the challenge expires `auth-param`.
2. `payload.hash` has not been previously consumed (see [Section 12](#)).
3. The transaction identified by `payload.hash` exists on `methodDetails.originNetwork`, is confirmed to that chain's policy (see [Section 10](#)), and transfers at least `methodDetails.minAmountIn` of currency to the challenge recipient (the deposit address), including `methodDetails.depositMemo` when non-null. This confirmation **MUST** be performed either by querying the origin chain directly, or by querying the 1Click status endpoint and observing that the backend has detected a qualifying deposit at recipient. Relying solely on client-asserted payload fields does not satisfy this requirement.
4. The deposit address (recipient) corresponds to an active, non-expired, non-settled quote in the server's state.
5. Claim `payload.hash` as **in-flight** for this challenge, rejecting any concurrent or later submission of the same hash while settlement runs. The hash is **permanently consumed only on a terminal settlement state** (see [Section 10](#) and [Section 12](#)); verification alone does not burn the credential. On a non-success terminal state the client recovers with a fresh challenge (see [Section 10.1](#)).

Verification confirms that the client has paid the origin-chain leg. The cross-chain swap that delivers the destination asset to the merchant is driven during settlement ([Section 10](#)); a `Payment-Receipt` is issued only after that delivery completes.

9. Error Codes

This specification defines the following additional error code beyond those in [I-D.httpauth-payment]:

Code	HTTP	Description
settlement-failed	402	The deposit was verified but the cross-chain swap did not complete (1Click terminal status FAILED or REFUNDED); the deposit is refunded to refundTo.

Table 6

Other failure conditions map to the standard problem types of [I-D.httpauth-payment]:

Condition	Problem type
Challenge unknown, modified, already settled	invalid-challenge
Challenge or quote deadline passed	payment-expired
Deposit not found, wrong recipient, wrong asset/memo	verification-failed
Deposit below <code>methodDetails.minAmountIn</code>	payment-insufficient
Swap failed or refunded after a verified deposit	settlement-failed
Credential malformed (bad base64url or JSON)	malformed-credential

Table 7

Payment verification failures return HTTP 402 with a fresh WWW-Authenticate: Payment challenge and a Problem Details [RFC9457] body with Content-Type: application/problem+json, as required by [I-D.httpauth-payment]. A non-success terminal settlement response follows the additional challenge-recovery rules in Section 10.1.

10. Settlement Procedure

After successful verification, the server drives the swap to finality before granting access. The server:

1. Notifies the 1Click backend of the deposit (optional but recommended, as it accelerates processing; the backend also detects deposits automatically). This corresponds to the 1Click deposit-notification endpoint, supplying the transaction hash and deposit address.
2. Polls the 1Click status endpoint for the deposit address until a terminal status is reached, or until the time implied by the challenge expires window is exceeded. Terminal statuses are SUCCESS, FAILED, REFUNDED, and INCOMPLETE_DEPOSIT.
3. The server **MUST** confirm, using the origin chain's canonical transaction identifier rules (Section 12), that `payload.hash` is among the origin-chain transactions reported for the deposit address. An unrelated presented hash **MUST NOT** be consumed, and the quote **MUST** remain available for an observed origin-chain transaction.

4. On SUCCESS — the merchant has received `methodDetails.amountOut` of `methodDetails.destinationAsset` on `methodDetails.destinationNetwork` — returns the resource with a Payment-Receipt header per [Section 11](#).
5. On FAILED or REFUNDED, returns a settlement-failed error per [Section 9](#). On INCOMPLETE_DEPOSIT, returns payment-insufficient. In all non-success terminal cases the backend refunds the deposit to `methodDetails.refundTo`; the server **MUST NOT** grant access.
6. After a terminal status has been matched to `payload.hash`, permanently consume that hash (see [Section 12](#)). The quote and its deposit address are spent — the deposit was either delivered (SUCCESS) or refunded — so the same hash **MUST NOT** be accepted again.

10.1. Client Recovery

A non-success terminal state (FAILED, REFUNDED, or INCOMPLETE_DEPOSIT) is terminal for this credential: the deposit is refunded to `methodDetails.refundTo`, and because the quote and deposit address are single-use, the same `payload.hash` cannot be retried. To pay again, the client **MUST** obtain a **fresh challenge** (a new quote, hence a new deposit address) before sending a new deposit. It **MUST NOT** send another deposit against the spent challenge. A server **MAY** include the fresh challenge in the terminal 402 response. If the server prepares WWW-Authenticate before settlement retires the quote, the terminal 402 **MAY** instead repeat the spent challenge. When the terminal 402 repeats the original challenge id or recipient, the client **MUST** re-request the resource without the spent credential to obtain a fresh challenge, then send a new deposit and submit a new credential. Burning the original hash is therefore safe: it can never deliver the resource, and the funds it represents have been refunded.

A transport failure or settlement polling timeout is not a terminal backend state. The server **MUST** release the in-flight claim without consuming the hash, and the client **MAY** re-present the same credential after the backend recovers or settlement progresses, provided the challenge remains valid.

10.2. Settlement Finality

This method has two candidate finality boundaries: (a) confirmation of the client's deposit on the origin chain, and (b) delivery of the destination asset to the merchant. This method defines finality as **(b) destination delivery** (1Click terminal status SUCCESS). The server **MUST NOT** return a Payment-Receipt before SUCCESS.

Per-origin-chain confirmation depth (boundary a) is a policy of the settlement backend: the 1Click backend applies chain-appropriate confirmation depth before executing a swap, including on chains with probabilistic finality (e.g., Bitcoin block depth, Solana commitment levels). Servers **MUST NOT** treat a deposit observed below the backend's confirmation threshold as final; in practice this is automatic, since SUCCESS cannot be reached before the backend confirms the deposit.

The time from deposit to SUCCESS varies by origin chain and current conditions and is approximated by `methodDetails.timeEstimate`. Servers **SHOULD NOT** assume a fixed latency, and **SHOULD** calibrate the challenge expires window per origin chain (short for fast chains, substantially longer for slow-finality origins such as Bitcoin). For long-running settlements,

servers **MAY** return 202 Accepted with a retry location or offer webhook notification instead of holding the connection open; specifying such an asynchronous delivery mechanism is otherwise out of scope for this document.

11. Receipt

Upon successful settlement, servers **MUST** return a Payment-Receipt header per [I-D.httpauth-payment]. Servers **MUST NOT** include a Payment-Receipt header on error responses.

The receipt payload fields:

Field	Type	Presence	Description
method	string	REQUIRED	"nearintents"
challengeId	string	REQUIRED	The id from the original challenge.
reference	string	REQUIRED	Settlement reference: the destination-chain transaction hash of the merchant delivery.
status	string	REQUIRED	"success"
timestamp	string	REQUIRED	[RFC3339] settlement time.
originTxHash	string	REQUIRED	The client's origin-chain deposit transaction hash (payload.hash).
destinationNetwork	string	OPTIONAL	CAIP-2 identifier of the chain where the merchant was paid.
externalId	string	OPTIONAL	Echoed from the challenge request.

Table 8

Example (decoded):

```
{
  "method": "nearintents",
  "challengeId": "qB3wErTyU7iOpAsD9fGhJk",
  "reference": "FtChYxxQh1k6vKjQ9wq5q1f8s2n3p4r5t6u7v8w9x0yz",
  "status": "success",
  "timestamp": "2026-06-25T15:12:11Z",
  "originTxHash":
    "0x9bcff372aee89b648c922b850573b22387c31d693079f5e37cd255814e2d615a",
  "destinationNetwork": "near:mainnet",
  "externalId": "order_12345"
}
```


12. Replay Protection

Per [I-D.httpauth-payment], payment proofs **MUST** be single-use. This method enforces replay protection on two layers:

- **Deposit address as nonce:** each quote yields a unique deposit address, and the 1Click backend processes at most one swap per address. The server **MUST** reject any credential whose recipient (deposit address) does not correspond to an active, non-expired, non-settled quote in its state.
- **Single-use transaction hashes:** the server **MUST** track each `payload.hash` and reject any hash that is already in-flight or consumed. At verification the hash is claimed as in-flight (atomically, satisfying the concurrency requirement below); it is **permanently consumed only when settlement reaches a terminal state** — SUCCESS or any failure/refund — so a credential is never burned before its outcome is known and is never reusable afterward. On a non-success terminal state the client obtains a fresh challenge to retry (see [Section 10.1](#)). Store-key canonicalization and equality comparison **MUST** follow the origin chain's canonical transaction identifier rules; implementations **MUST NOT** blindly lowercase identifiers. For `eip155` and `bip122`, implementations compare the hexadecimal value case-insensitively and ignore an optional `0x` prefix. For NEAR and Solana, base58 transaction identifiers are case-sensitive and **MUST** be compared exactly. Other namespaces **MUST** apply their own canonical rules.

When a single origin transaction is one of several deposits aggregated by the backend to one address (e.g., a top-up after an under-deposit), each individual transaction hash remains single-use; the server **MAY** accept any one qualifying hash provided the aggregate meets `methodDetails.minAmountIn`.

Servers **MUST** also satisfy the concurrency requirement of [I-D.httpauth-payment]: concurrent requests bearing the same credential **MUST** result in at most one settlement and one resource delivery.

13. Security Considerations

13.1. Transport Security

All communication **MUST** use TLS 1.2 or higher per [I-D.httpauth-payment]. Credentials and receipts **MUST** only be transmitted over HTTPS connections.

13.2. Amount and Asset Verification

Before broadcasting a deposit, clients **MUST** decode and verify the challenge request per [I-D.httpauth-payment]: that amount, currency, and recipient (the deposit address) are as expected, that `methodDetails.originNetwork` is the intended origin chain, and that the destination leg (`destinationNetwork`, `destinationAsset`, `destinationRecipient`, `amountOut`)

matches what the client intends the merchant to receive. Clients **MUST** also verify that `methodDetails.refundTo` is controlled by the payer or is otherwise acceptable under an explicit merchant recovery policy. Clients **MUST NOT** rely on description.

13.3. Hash Credential Binding

Hash credentials generally provide weaker challenge binding than signature-based credentials: the server confirms a matching on-chain payment exists but, for a static recipient, cannot prove the payment was created for a specific challenge instance. Under this method that gap is narrowed by the unique-per-quote deposit address: the recipient is itself challenge-specific and is bound into the challenge id (Section 7), so a deposit observed at that address is bound to the one challenge that advertised it. Servers nonetheless **MUST** enforce consumed-hash tracking (Section 12) and **MUST** reject credentials referencing an unknown, expired, or settled challenge, and **SHOULD** use unique `externalId` values per challenge.

13.4. Deposit Address Authenticity

Servers **MUST** only advertise deposit addresses obtained from authenticated calls to the 1Click API, and **MUST NOT** relay deposit addresses from untrusted sources. Because the client pays before learning whether the resource will be delivered, clients **SHOULD** apply heightened scrutiny to the server's identity (origin, TLS certificate) before depositing, and browser-based wallets **SHOULD** require explicit user confirmation per [I-D.httpauth-payment].

13.5. Trust Model

Settlement in this method is **not trustless**. For the duration of the swap, the deposited funds are custodied by the NEAR Intents settlement system, which is trusted to either deliver the destination asset to the merchant or refund the deposit to `methodDetails.refundTo`. The recipient (deposit address) ↔ merchant pairing is fixed in the quote and is enforced by the backend, not by an on-chain contract that the client co-signs. This is comparable to entrusting a payment processor with a transfer. The automatic refund path bounds the client's downside: every non-success terminal state refunds the deposit, provided the client verified that `methodDetails.refundTo` is an acceptable destination. Clients and autonomous agents applying per-method risk policies can identify this trust model from the method (`nearintents`) and `methodDetails.settlementBackend`.

13.6. Idempotency and Side Effects

Per [I-D.httpauth-payment], servers **MUST NOT** perform side effects for unpaid requests, and **SHOULD** honour Idempotency-Key for non-idempotent methods so that transport retries do not repeat protected application side effects. Payment replay protection and application response idempotency are separate responsibilities; rejecting a consumed payment hash does not by itself replay the original protected response.

14. IANA Considerations

14.1. Payment Method Registration

This document registers the following payment method in the "HTTP Payment Methods" registry established by [I-D.httpauth-payment]:

Method Identifier	Description	Reference
nearintents	Cross-chain payment settled via the NEAR Intents 1Click Swap API	This document

Table 9

Contact: Iker Alustiza (iker.alustiza@nearone.org).

14.2. Payment Intent Registration

This document registers the following payment intent usage in the "HTTP Payment Intents" registry established by [I-D.httpauth-payment]:

Intent	Applicable Methods	Description	Reference
charge	nearintents	One-time cross-chain payment delivered to the merchant	This document

Table 10

15. References

15.1. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, DOI 10.17487/RFC2119, March 1997, <<https://www.rfc-editor.org/info/rfc2119>>.
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- [CAIP-19] Chain Agnostic Standards Alliance, "CAIP-19: Asset Type and Asset ID Specification", 2021, <<https://chainagnostic.org/CAIPs/caip-19>>.
- [I-D.httpauth-payment] Ryan, B. and J. Moxey, "The 'Payment' HTTP Authentication Scheme", January 2026, <<https://datatracker.ietf.org/doc/draft-ryan-httpauth-payment/>>.
- [I-D.payment-intent-charge] Moxey, J., Ryan, B., and T. Meagher, "'charge' Intent for HTTP Payment Authentication", 2026, <<https://datatracker.ietf.org/doc/draft-payment-intent-charge/>>.

15.2. Informative References

- [DID-PKH] W3C CCG, "did:pkh Method Specification", n.d., <<https://github.com/w3c-ccg/did-pkh>>.
- [ONECLICK-API] NEAR Intents, "NEAR Intents 1Click Swap API", n.d., <<https://docs.near-intents.org/integration/distribution-channels/1click-api/about-1click-api>>.
- [NEAR-INTENTS-CHAINS] NEAR Intents, "NEAR Intents Supported Chains", n.d., <<https://docs.near-intents.org/resources/chain-support>>.

Appendix A. ABNF Collected

```
nearintents-charge-challenge = "Payment" 1*SP
    "id=" quoted-string ","
    "realm=" quoted-string ","
    "method=" DQUOTE "nearintents" DQUOTE ","
    "intent=" DQUOTE "charge" DQUOTE ","
    "request=" base64url-nopad
    [ "," "expires=" quoted-string ]

nearintents-charge-credential = "Payment" 1*SP base64url-nopad

; Base64url encoding without padding per RFC 4648 Section 5
base64url-nopad = 1*( ALPHA / DIGIT / "-" / "_" )
```

Appendix B. Examples

B.1. Cross-Chain Charge — USDC on Arbitrum to merchant on NEAR

1. Challenge (402 response):

```
HTTP/1.1 402 Payment Required
Cache-Control: no-store
Content-Type: application/problem+json
WWW-Authenticate: Payment id="qB3wErTyU7iOpAsD9fGhJk",
    realm="api.example.com",
    method="nearintents",
    intent="charge",
    request="eyJ...",
    expires="2026-06-25T15:10:00Z"

{
  "type": "https://paymentauth.org/problems/payment-required",
  "title": "Payment Required",
  "status": 402,
  "detail": "Payment required for access."
}
```

Decoded request:

```
{
  "amount": "1005000",
  "currency": "eip155:42161/
erc20:0xaf88d065e77c8cC2239327C5EDb3A432268e5831",
  "recipient": "0x76b4c56085ED136a8744D52bE956396624a730E8",
  "description": "Cross-chain premium data access",
  "externalId": "order_12345",
  "methodDetails": {
    "originNetwork": "eip155:42161",
    "destinationNetwork": "near:mainnet",
    "destinationAsset": "near:mainnet/
nep141:17208628f84f5d6ad33f0da3bbbeb27ffcb398eac501a31bd6ad2011e36133a1",
    "destinationRecipient": "merchant.near",
    "amountOut": "1000000",
    "minAmountIn": "1000000",
    "depositMemo": null,
    "slippageTolerance": 100,
    "timeEstimate": 120,
    "refundTo": "0x2527D02599Ba641c19FEa793cD0F9a6e8457C317",
    "settlementBackend": "near-intents",
    "credentialTypes": ["hash"]
  }
}
```

The client sends 1.005 USDC to 0x76b4c560... on Arbitrum, then presents the deposit hash.

2. Credential:

```
GET /resource HTTP/1.1
Host: api.example.com
Authorization: Payment eyJ...
```

Decoded credential:

```
{
  "challenge": {
    "id": "qB3wErTyU7iOpAsD9fGhJk",
    "realm": "api.example.com",
    "method": "nearintents",
    "intent": "charge",
    "request": "eyJ...",
    "expires": "2026-06-25T15:10:00Z"
  },
  "payload": {
    "type": "hash",
    "hash":
    "0x9bcff372aee89b648c922b850573b22387c31d693079f5e37cd255814e2d615a"
  },
  "source": "did:pkh:eip155:42161:0x2527D02599Ba641c19FEa793cD0F9a6e8457C317"
}
```

3. Response (after swap reaches SUCCESS):

```
HTTP/1.1 200 OK
Cache-Control: private
Payment-Receipt: eyJ...
Content-Type: application/json

{"data": "..."}

```

Decoded receipt:

```
{
  "method": "nearintents",
  "challengeId": "qB3wErTyU7iOpAsD9fGhJk",
  "reference": "FtChYxxQh1k6vKjQ9wq5q1f8s2n3p4r5t6u7v8w9x0yz",
  "status": "success",
  "timestamp": "2026-06-25T15:12:11Z",
  "originTxHash":
    "0x9bcff372aee89b648c922b850573b22387c31d693079f5e37cd255814e2d615a",
  "destinationNetwork": "near:mainnet",
  "externalId": "order_12345"
}
```

B.2. Native BTC origin

A challenge advertising a Bitcoin-origin deposit. The longer `expires` window accommodates Bitcoin confirmation plus swap time.

Decoded request:

```
{
  "amount": "38000",
  "currency": "bip122:0000000000019d6689c085ae165831e93/slip44:0",
  "recipient": "bc1qxy2kgdygjrsgtzq2n0yrf2493p83kkfjhx0wlh",
  "methodDetails": {
    "originNetwork": "bip122:0000000000019d6689c085ae165831e93",
    "destinationNetwork": "near:mainnet",
    "destinationAsset": "near:mainnet/
nep141:17208628f84f5d6ad33f0da3bbbeb27ffcb398eac501a31bd6ad2011e36133a1",
    "destinationRecipient": "merchant.near",
    "amountOut": "1000000",
    "minAmountIn": "37500",
    "depositMemo": null,
    "slippageTolerance": 150,
    "timeEstimate": 1800,
    "refundTo": "bc1qm34lsc65zpw79lxes69zkqmk6ee3ewf0j77s3h",
    "settlementBackend": "near-intents",
    "credentialTypes": ["hash"]
  }
}
```

B.3. Multiple origin chains via Accept-Payment

A client declares it can pay on Arbitrum or Bitcoin and prefers Arbitrum:

```
GET /resource HTTP/1.1
Host: api.example.com
Accept-Payment: nearintents/charge
```

The server **MAY** return several nearintents/charge challenges, each on a different origin methodDetails.originNetwork with its own recipient deposit address, allowing the client to choose:

```
HTTP/1.1 402 Payment Required
Cache-Control: no-store
WWW-Authenticate: Payment id="qB3wErTyU7iOpAsD9fGhJk",
realm="api.example.com", method="nearintents", intent="charge",
request="eyJ...arbitrum...", expires="2026-06-25T15:10:00Z"
WWW-Authenticate: Payment id="nH6xJkLp03qRtYsA6wDcVb",
realm="api.example.com", method="nearintents", intent="charge",
request="eyJ...bitcoin...", expires="2026-06-25T15:40:00Z"
```

Each challenge corresponds to a distinct 1Click quote and deposit address. The client selects one and returns a single Authorization: Payment credential per [\[I-D.httpauth-payment\]](#).

Appendix C. Acknowledgements

The author thanks the Tempo Labs and Stripe teams for the Machine Payments Protocol framework, and the NEAR Intents and Near One teams for the 1Click Swap settlement system.

Author's Address

Iker Alustiza

Near One

Email: iker.alustiza@nearone.org