

Headers



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Message headers are used in a variety of JetStream contexts, such de-duplication, auto-purging of messages, metadata from republished messages, and more.

`Nats-` is a reserved namespace. Please use a different prefix for your own headers. This list may not be complete. Additional headers may be used for API internal messages or messages used for monitoring and control.

Publish

Headers that can be set by a client when a message being published. These headers are recognized by the server.

Name	Description	Example	Version
<code>Nats-Msg-Id</code>	Client-defined unique identifier for a message that will be used by the server apply de-duplication within the configured <code>Duplicate Window</code> .	<code>9f01ccf0-8c34-4789-8688-231a2538a98b</code>	2.2.0

Name	Description	Example	Version
Nats-Expected-Stream	Used to assert the published message is received by some expected stream.	my-stream	2.2.0
Nats-Expected-Last-Msg-Id	Used to apply optimistic concurrency control at the stream-level. The value is the last expected Nats-Msg-Id and the server will reject a publish if the current ID does not match.	9f01ccf0-8c34-4789-8688-231a2538a98b	2.2.0
Nats-Expected-Last-Sequence	Used to apply optimistic concurrency control at the stream-level. The value is the last expected sequence and the server will reject a publish if the current sequence does not match.	328	2.2.0
Nats-Expected-Last-Subject-Sequence	Used to apply optimistic concurrency control at the subject-level. The value is the last expected sequence and the server will reject a publish if the current sequence does not match for the message's subject.	38	2.3.1
Nats-Expected-Last-Subject-Sequence-Subject	A subject which may include wildcards. Used with Nats-Expected-Last-Subject-Sequence. Server will enforce last sequence against the given subject rather than the one being published.	events.orders.1.>	2.11.0
Nats-Rollup	Used to apply a purge of all prior messages in a stream or at the subject-level. The rollup message will stay in the stream. Requires the allow rollups to be set on the stream.	all purges the full stream, sub purges the subject on which this messages was sent. Wildcards subjects are not allowed and will result in undefined behavior.	2.6.2
Nats-TTL	Used to set a per message TTL. Requires the per message ttl flag to be set on the stream.	1h, 10s (go duration string format)	2.11

RePublish or direct get

When messages are being re-published (must be configured in stream settings) from a stream or retrieved with a direct get operation from stream these headers are being set.

Do not set these headers on client published messages.

Name	Description	Example	Version
Nats-Stream	Name of the stream the message was republished from.	Nats-Stream: my-stream	2.8.3
Nats-Subject	The original subject of the message.	events.mouse_clicked	2.8.3
Nats-Sequence	The original sequence of the message.	193	2.8.3
Nats-Last-Sequence	The last sequence of the message having the same subject, otherwise zero if this is the first message for the subject.	190	2.8.3
Nats-Time-Stamp	The original timestamp of the message.	2023-08-23T19:53:05.762416Z	2.10.0
Nats-Num-Pending	Number of messages pending in the multi/batched get response. or details see: ADR-31	5	2.10.0
Nats-UpTo-Sequence	On the last messages of multi/batched get response. The <code>up-to-seq</code> value of the original request. Helps the client to continue incomplete batch requests. For details see: ADR-31		2.11.0

Sources

Headers that are implicitly added to messages sourced from other streams.

The format of the header content may change in the future. Please parse conservatively and assume that additional fields may be added or that older nats-server version have fewer fields.

Name	Description	Example	Version
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Nats-Stream-Source	Contains space delimited: <ul style="list-style-type: none"> - Origin stream name (disambiguated with domain hash if cross domain sourced) - The original sequence number - The list of subject filters - The list of destination transforms - The original subject 	ORDERS:vSF0EC06 17 foo.* bar.\$1 foo.abc	2.2.0
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Key-Value-Store

The KV-store API adds marker headers for some delete and purge operations.

Name	Description	Example	Version
KV-Operation	Marks a delete or a purge. Neither has immediate functional impact on the stream. The delete marker marks the key as delete even if the version history is kept intact. The purge MUST be combined with Nats-Rollup to actually purge the subject. Since 2.14 PURGE can also be combined with Nats-TTL to auto delete the purge marker and bypass the need for KV nats kv compact	DEL or PURGE	2.2.0

Tracing

When tracing is activated every subsystem that touches a message will produce Trace Events. These Events are aggregated per server and published to a destination subject.

Note that two variants exist. traceparent as per the trace context standard and ad hoc tracing through Nats-Trace-Dest.

Introduced in version 2.11 - see [ADR-41](#)

Name	Description	Example	Version
<code>traceparent</code>	Triggers tracing as per the https://www.w3.org/TR/trace-context/ standard. Requires tracing destination and sampling rate to be configured in the <code>msg_trace</code> section on the account level. See Tracing open telemetry style	trace-ID-1234	2.11
<code>Nats-Trace-Dest</code>	The subject that will receive the Trace messages	trace.receiver.all	2.11
<code>Nats-Trace-Only</code>	Optional. Defaults to <code>false</code> . Set to <code>true</code> to skip message delivery. If true only traces will be produced, but the messages is not sent to a subscribing client or stored in JetStream.	<code>true</code>	2.11
<code>Accept-Encoding</code>	Optional. Enables compression of the payload of the trace messages.	<code>gzip</code> , <code>snappy</code>	2.11
<code>Nats-Trace-Hop</code>	Internal. Do not set. Set by the server to count hops.	<code><hop count></code>	2.11
<code>Nats-Trace-Origin-Account</code>	Internal. Do not set. Set by the server when an account boundary is crossed	<code><account name></code>	2.11

Scheduler

Message scheduling in streams. Needs to be enabled on the stream with "allow schedules" flag.

Introduced in version 2.12 with extensions in 2.14 - see [ADR-51](#)

Name	Description	Example	Version
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Nats-Schedule	When the message will be sent to the target subject. Several formats are supported: A timestamp for sending a messages once. Crontab format for repeated messages and simple alias for common crontab formats.	0 30 14 * * *, @hourly, @daily, @every 5m, @at 2009-11-10T23:00:00Z (RFC3339 format)	2.12 (repeating schedules: 2.14)
Nats-Schedule-TTL	Optional. The TTL to be set on the final message on the target subject.	1h, 10s (valid go duration string)	2.12
Nats-Schedule-Target	The target subject the final message will be sent to. Note that this must be distinct from the scheduling subject the message arrived in.	orders	2.12
Nats-Schedule-Rollup	Optional. The rollup to be set on the final message on the target subject.	all, sub	2.14
Nats-Schedule-Source	Optional. Instructs the schedule to read the last message on the given subject and publish it. If the Subject is empty, the schedule message's content is the same as the schedule's content. Wildcards are not supported.	orders.customer_acme	2.14
Nats-Schedule-Time-Zone	Optional. The time zone used for the Cron schedule. If not specified, the Cron schedule will be in UTC. Not allowed to be used if the schedule is not a Cron schedule.	CET	2.14

The final scheduled message will contain the following headers.

Name	Description	Example	Version
Nats-Scheduler	The subject holding the schedule	orders.schedule.1234	2.12
Nats-Schedule-Next	Timestamp for next invocation for cron schedule messages or <code>purge</code> for delayed messages	2009-11-10T23:00:00Z, purge	2.12

Name	Description	Example	Version
Nats-TTL	The TTL value when Nats-Schedule-TTL was set	1h, 10s	2.12
Nats-Rollup	The rollup value when Nats-Schedule-Rollup was set	all, sub	2.14

Atomic batch publish

Introduced in version 2.12 with optimizations in 2.14 - see [ADR-50](#)

Atomic batch publish will use the following headers. A client may reconstruct a batch using the headers below.

Name	Description	Example	Version
Nats-Batch-Id	Unique identifier for the batch.	<uuid> (<=64 characters)	2.12
Nats-Batch-Sequence	Monotonically increasing sequence number, starting at 1	1, 2	2.12
Nats-Batch-Commit	Only on last message. 1 commit the batch including this message. eob commit the batch excluding this message. Any other value will terminate the batch.	1, eob	2.12 (eob: 2.14)

Fast-ingest batch publishing

Introduced in version 2.14 - see [ADR-50](#)

Note that fast-ingest is mentioned for completeness sake. Unlike atomic batches, fast-ingest is not controlled by headers, but rather by reply-subject format (ending with \$.FI). All common headers can be combined with fast-ingest (e.g. de-duplication - see), but it MUST NOT be combined with atomic batch publish.

Name	Description	Example	Version
N/A	N/A	N/A	2.14

Internal

Headers used internally by API clients and the server. Should not be set by user.

This list is not exhaustive. Headers used in error replies may not be documented.

Name	Description	Example	Version
<code>Nats-Required-API-Level</code>	Optional. The required API level for the JetStream request. Servers from version 2.11 will return an error if larger than the support API level.	<code>2</code> (Integer value)	2.12
<code>Nats-Request-Info</code>	When messages cross account boundaries a header with origin information (account, user etc) may be added.		2.2.0
<code>Nats-Marker-Reason</code>	When messages are removed from a KV where subject delete markers are supported, a delete marker will be placed. And notifications are sent to interested watchers. The message payload is empty and the removal reason is indicated through this header. See ADR-48	<code>MaxAge</code> , <code>Remove</code> , <code>Purge</code>	2.11
<code>Nats-Incr</code>	Used in KV stores to atomically increment counter. Any valid integer (including 0) starting with a sign.. See ADR-49	<code>+1</code> , <code>+42</code> , <code>-1</code> , <code>+0</code>	2.12
<code>Nats-Counter-Sources</code>	Tracking <code>Nats-Incr</code> when messages are sourced. For details see: ADR-49		2.12

Mirror

Headers used for internal flow-control messages for a mirror.

This is for information only and may change without notice.

Name	Description	Example	Version
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Nats-Last-Consumer			2.2.1
Nats-Last-Stream			2.2.1
Nats-Consumer-Stalled			2.4.0
Nats-Response-Type			2.6.4

#3
cocobook-sync ### 2026-10-28 11:10:33 UTC
cocobook-sync ### 2026-10-29 01:42:34 UTC