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Choosing between Cloud Tasks and Pub/Sub

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Both Cloud Tasks and Pub/Sub can be used to implement message passing and asynchronous integration. Although they are conceptually similar, each is designed for different set of use cases. This page helps you choose the right product for your use case.

Key Differences

The core difference between Pub/Sub and Cloud Tasks is in the notion of implicit vs. explicit invocation.

Pub/Sub aims to decouple publishers of events and subscribers to those events. Publishers do not need to know anything about their subscribers. Therefore, Pub/Sub gives publishers no control over the delivery of the messages save for the guarantee of delivery. In this way, Pub/Sub supports **implicit** invocation: a publisher implicitly causes the subscribers to execute by publishing an event.

By contrast, Cloud Tasks is aimed at **explicit** invocation where the publisher retains full control of execution. In particular, a publisher specifies an endpoint where each message is to be delivered.

Overall Cloud Tasks are appropriate for use cases where a task producer needs to defer or control the execution timing of a specific webhook or remote procedure call. Pub/Sub is optimal for more general event data ingestion and distribution patterns where some degree of control over execution can be sacrificed.

Detailed feature comparison

Feature	Cloud Tasks	Cloud Pub/Sub
Push via webhooks	**Yes**	**Yes**
At least once delivery guarantee	**Yes**	**Yes**
Task creation deduplication	**Yes**	No
Configurable retries	**Yes**	No
Scheduled delivery	**Yes**	No
Explicit rate controls	**Yes**	No (Subscriber clients can implement flow control)
Pull via API	No	**Yes**
Batch insert	No	**Yes**
Multiple handlers/subscribers per message	No	**Yes**
Task/message retention	30 days	Up to 7 days
Max size of task/message	100KB	10MB
Max delivery rate	500 qps/queue	No upper limit
Geographic availability	Regional	Global
Maximum push handler/subscriber processing duration	30 minutes (HTTP) 10 minutes (App Engine Standard automatic scaling) 24 hours (App Engine Standard manual or basic scaling) 60 minutes (App Engine Flexible)	10 minutes for push operations
Number of queues/subscriptions per project	1,000/project, more available via quota increase request	10,000/project

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