

In-band Task Provisioning for DAP

draft-wang-ppm-dap-taskprov-01

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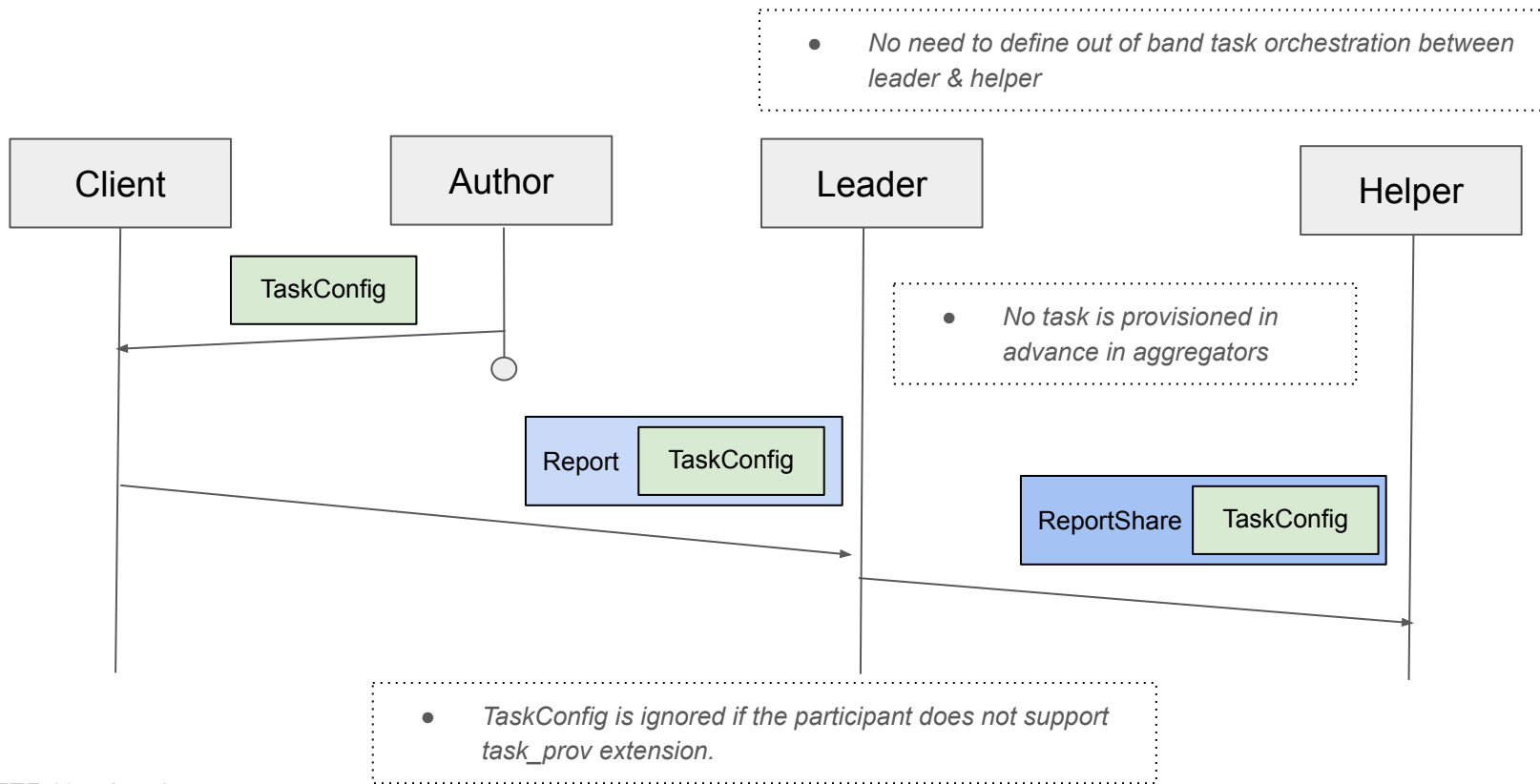
Motivation

DAP core protocol does not specify how task is configured.

- Out-of-band: Client may not know some task configuration parameters.
- Leader and Helper need a deployment specific mechanism for task provisioning.

In-band Task Provisioning: introduce a mechanism for all deployments that support the extension to provision DAP tasks in a standard way, without defining extra flows.

Protocol Architecture



TaskConfig

Configurations described in core protocol's [Task Configuration](#).

```
struct {
```

```
  opaque task_info<1..2^8-1>;
```

```
  Url aggregator_endpoints<1..2^16-1>;
```

```
  QueryConfig query_config;
```

```
  Time task_expiration;
```

```
  VdafConfig vdaf_config;
```

```
} TaskConfig;
```

User defined task specific information

Query specific, e.g. min_batch_size, max_batch_query_count

VDAF specific configurations, e.g. vdaf_type, etc.

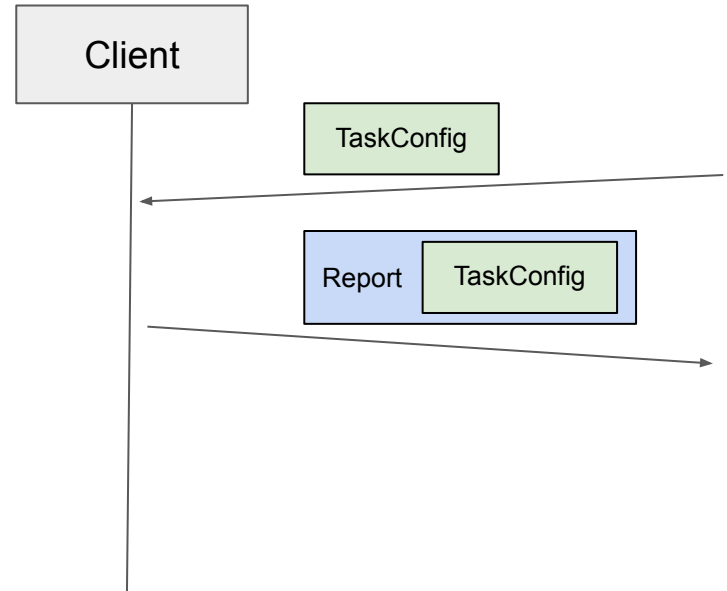
Task ID is now derived from
TaskConfig:

```
task_id = SHA-256(task_config)
```

Client

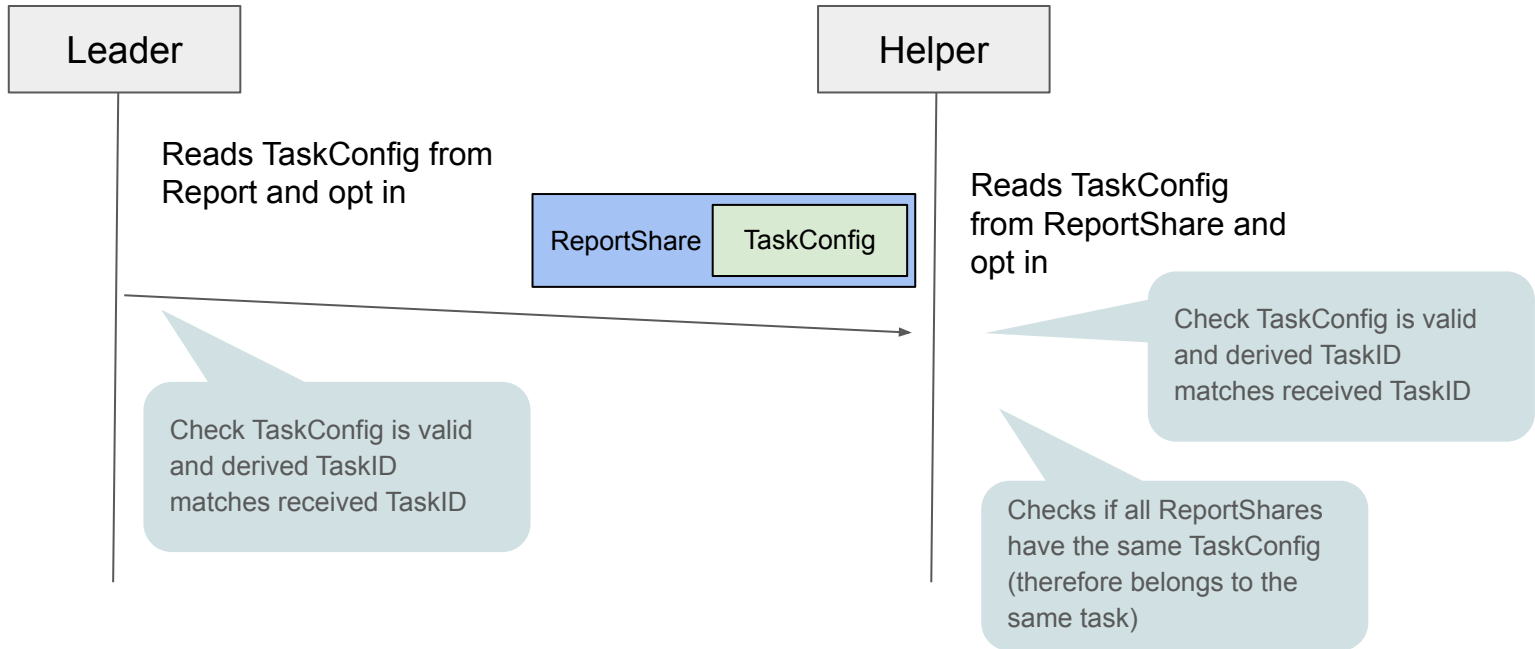
Set *extension_type* to *task_prov*

Set *extension_data* to *task_config*, as part of ReportMetadata.



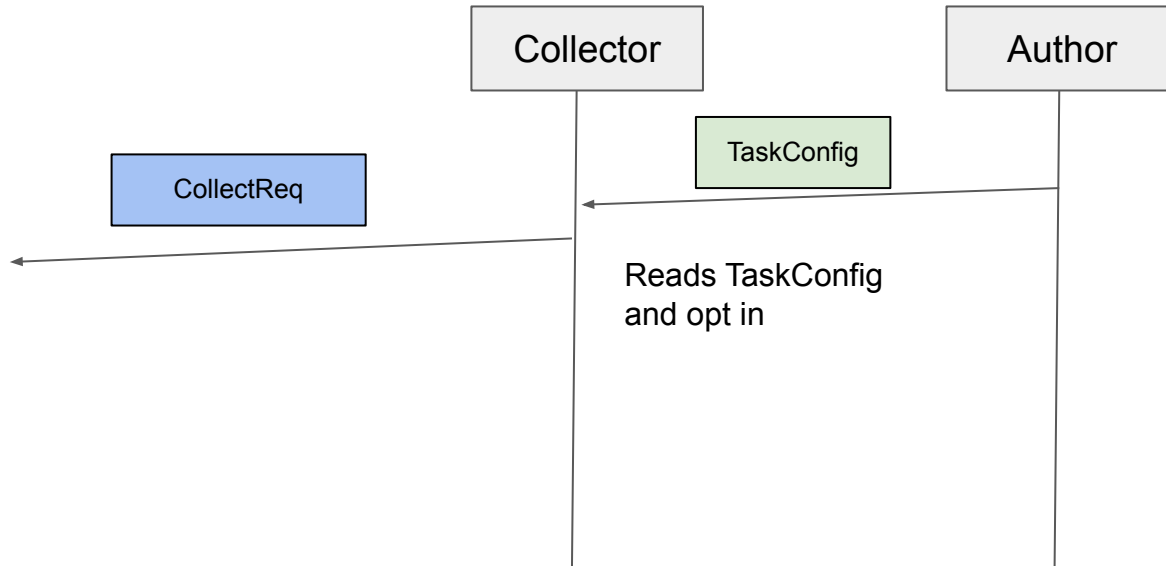
Leader & Helper

- Opt in means the Task ID corresponds to an already provisioned task, or is unrecognized (therefore corresponds to a new task).*



Collector

- *Collector is mostly oblivious to the use of task_prov*



Draft-01: <https://datatracker.ietf.org/doc/draft-wang-ppm-dap-taskprov>

Github: <https://github.com/wangshan/draft-wang-ppm-dap-taskprov/blob/main/draft-wang-ppm-dap-taskprov.md>

Reference Implementation (In progress): <https://github.com/cloudflare/daphne/issues/139>

CALL TO ACTION

- task_prov is useful for many deployment scenarios.
- It may not be suitable for all deployments.
- Ready for adoption as a working group extension?

Changes to DAP to consider

- Additional extension points would be useful
 - AggregateInitializeReq
 - Each ReportShare includes an identical extension. We could de-duplicate by promoting to the request body.
 - CollectReq
 - Allowing the Collector to indicate support for the extension could be useful