

# KIP-181: DescribeGroups Protocol Enhancement

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## Status

**Current state:** *"Draft"*

**Discussion thread:** [here](#)

**JIRA:** [KAFKA-5639](#)

Please keep the discussion on the mailing list rather than commenting on the wiki (wiki discussions get unwieldy fast).

## Motivation

The [DescribeGroups](#) protocol v1 currently returns this information for each consumer group:

- `error_code`
- `group_id`
- `state`
- `protocol_type`
- `protocol`
- `members` (only a member summary is returned per member that misses some useful member info too)

Additional info exist or can be derived in a `GroupMetadata` object on the server side, some of which could be useful if exposed via the `DescribeGroups` protocol. Here are some examples:

- `generationId`
- `leaderId`
- `supportedProtocols` per member
- `subscribed topics` per member

Enhancing the protocol with some of this additional info means improving the existing tools that make use of it. For example, using this additional info, the consumer group command's `--describe` output will provide more information about each consumer group to help with understanding the group behavior, its monitoring, troubleshooting, etc.

## Public Interfaces

This is the latest version (v1) of `DescribeGroups` protocol:

```
DescribeGroups Request (Version: 1) => [group_ids]
  group_ids => STRING

DescribeGroups Response (Version: 1) => throttle_time_ms [groups]
  throttle_time_ms => INT32
  groups => error_code group_id state protocol_type protocol [members]
    error_code => INT16
    group_id => STRING
    state => STRING
    protocol_type => STRING
    protocol => STRING
    members => member_id client_id client_host member_metadata member_assignment
      member_id => STRING
      client_id => STRING
      client_host => STRING
      member_metadata => BYTES
      member_assignment => BYTES
```

The suggestion is to enhance the protocol to version 2 and add some of these currently missing information (\* indicates suggested fields to be added to the protocol):

```
DescribeGroups Request (Version: 2) => [group_ids]
  group_ids => STRING

DescribeGroups Response (Version: 2) => throttle_time_ms [groups]
  throttle_time_ms => INT32
  groups => error_code group_id state protocol_type protocol generation_id leader_id new_member_added
received_consumer_offset_commits received_transactional_offset_commits [members]
  error_code => INT16
  group_id => STRING
  state => STRING
  protocol_type => STRING
  protocol => STRING
  * generation_id => INT32
  * leader_id => STRING
  members => member_id client_id client_host member_metadata member_assignment member_subscription
[member_protocols]
  member_id => STRING
  client_id => STRING
  client_host => STRING
  member_metadata => BYTES
  member_assignment => BYTES
  * member_subscription => BYTE
  * member_protocols => STRING
```

## Proposed Changes

The proposal is to

1. Create version 2 of `DescribeGroups` protocol to include additional information about the consumer group and also each group member for the API clients.
2. Update the consumer group command to provide the added information in the command output (where applicable). Note that this KIP will improve upon [KIP-175](#) where group state and detailed member information will also be returned by the consumer group command using additional command line options. Therefore, the output of some of the sub-options introduced in [KIP-175](#) will improve to include the newly available information by this KIP. Suggested changes are:
  - a. Updating the `--state` option to also include a `GENERATION-ID` and `LEADER-ID` column.
  - b. Providing the missing member `ASSIGNMENT-STRATEGY` value for `--members` option.
  - c. Providing the missing member `SUBSCRIPTION` value for `--members --verbose` option.
3. On a related subject but perhaps unrelated to the protocol enhancement, also update the consumer group command to provide filtering by topic as well (similar to how the old consumer offset checker tool supported this filtering).

## Compatibility, Deprecation, and Migration Plan

Since this KIP follows [KIP-175](#), the output for sub-options `--members` and `--state` that are introduced in that KIP will be modified to also include the newly added fields. Therefore, clients who rely on the output for those sub-options may need to be adjusted. It also helps the `consumer group --describe` command to fill some of the newly added columns introduced by [KIP-175](#) (i.e. `ASSIGNMENT-STRATEGY` for `--members` options, and `SUBSCRIPTION` for `--members --verbose` option).

## Rejected Alternatives

- Providing this additional information in the server logs: It is much more convenient to look up this new pieces of information via the consumer group command tool. Plus, these fields and their underlying concepts are not likely to disappear in the future. So we would not have to worry about making a protocol change that will likely become obsolete in the future.