# JobAndTask

## Fields

A job, derived from JobInProgress, in general holds some basic information, including:

- jobId: BSPJobID. The id of this job.
- jobName: String. The name of this job.
- user: String. See BSPJobContext.getUser() wherein configures via conf.get("user.name")
- jobFile: Path. job.xml. See BSPJobClient.submitJobInternal()
- localJobFile: Path. A local copied jobFile.
- localJarFile: Path. A local copied jar file.
- numBSPTasks: int. The number of BSP tasks to be
- master: String. The name of master server that is responsible for this job.
- maxTaskAttempts: int. default to 2.
- MAX_TASK_EXEC: int. bound to 1.
- inputPath: Path. Dir where split files are stored. i/o.
- State: RUNNING(1), SUCCEEDED(2), FAILED(3), PREP(4), KILLED(5)
- progress: long. % of bsp(). job status.
- setupProgress: long. % of setup() job status.
- cleanupProgress: long. % of cleanup() job status.
- startTime: long. The time this job is started. job status.
- finishTime: long. The time this job is finished. job status.
- superstepCount: long. This job's superstep count. job satus.
- conf: Configuration. Specific setting for this job.
- Tasks: TaskTable. See TaskInProgress and Job Task Relation section.
    - attemptId: TaskAttemptID. A task attempt id in which a TaskID, containing BSPJobID, is embedded.
    - failed: Boolean. If a task fails or not. default to false.
    - NUM_ATTEMPTS_PER_RESTART: int. Set to 1000.
    - partition: The _i_th numBSPTasks.
    - Phase: SETUP, COMPUTE, BARRIER_SYNC, CLEANUP
    - State: RUNNING, SUCCEEDED, FAILED, KILLED
    - completed: Boolean. if a task is completed/ succeed. default to false.
    - groom: String. On which groom a task runs.
    - startTime: System.currentTimeMillis(). default -1.
    - RawSplit: The _i_th RawSplit if RawSplit is not null

## State

A job status contains:

- PREP: This status is started when a job is created until all tasks are dispatched to groom servers.
    - SetUp a job
    - Scheding
- RUNNING: When tasks are executed in GroomServers.
- SUCCEEDED: When **all** tasks are in the **SUCCEEDED** state.
- FAILED: When one or more tasks exceed its **max attempt**
- CANCELLED: User/ Admin issues a cancel command.

? Unknown Attachment