

GroomServer

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Introduction

[GroomServer](#) is a process whose main responsibility is to manage bsp tasks. In addition to task management, [GroomServer](#) collaborates with BSPMaster so that job execution can be done correctly. Works that [GroomServer](#) performs include:

1. Check local disk:
 - a. Check local disk if writable.
 - b. Delete files under local dir (**bsp.local.dir**)
2. Clear state table:
 - a. Clean up tasks (Map[TaskAttemptID -> TaskInProgress])
 - b. Initialize job (Map[BSPJobID -> RunningJob])
 - c. Cleanup running tasks (Map[TaskAttemptID -> TaskInProgress])
 - d. Configure max tasks, default to 3.
3. Start http server: An embedded http service.
4. Start task report server: Communication between [GroomServer](#) and spawned child task. See [TaskRunner.BspChildRunner](#)
5. Start worker server: RPC service listens to master's direction.
6. Register to BSPMaster: Enroll itself to BSPMaster with [GroomServerStatus](#).
7. Start message dispatcher (Instructor): (TODO: refactor needed)
8. Start monitor service: A process export metrics, task status, etc. information.

Task Management

The [GroomServer](#)

- receives instructions from [BSPMasters](#).
- spawns one or more tasks as separated jvm processes where tasks are then executed.
- monitors spawned processes via *ping*; when a task is
 - out of contact (failure/ crashed): launch a new process and restart the task with **max attempt** set to 3
 - exceeding **max attempt**: update task status/ notify [BSPMasters](#)
- sends heartbeat to [BSPMasters](#)

Scenario

Normal Case

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- A [GroomServer](#) forks a new task.
- The spawned task **ack** with metrics to [GroomServer](#).
- Upon reception of task's ack, the [GroomServer](#) exports metrics to monitor system.

Failure Case

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- A task failure event happens.
- A corresponded [GroomServer](#) detects the task failure.
- The [GroomServer](#) tries to restart the task.
- If failing restart, the [GroomServer](#) export by marking the task as failed.

Components

- Registrar: Register to [GroomManager](#)
- [TaskManager](#): Perform tasks management.
 - Launch a task.
 - Stop a task.
 - Kill a task.
 - Resume a task.
- Monitor: Report [GroomServer](#) and tasks related information.