

Job lifecycle

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```
-m yarn-cluster \  
-ynm <job_name_in_yarn> \  
-p <job_parallelism> \  
-ys <slots_per_task_manager> \  
-ytm <memory_per_container_in_mb> \  
<job_jar_file> <job_parameters> ...
```

Session mode

- a. Start a Flink session cluster.

```
flink-yarn-session \  
-d \  
-nm <job_name_in_yarn> \  
-s <slots_per_task_manager> \  
-tm <memory_per_container_in_mb>
```

The `flink-yarn-session` command outputs the ID of the corresponding YARN application. You need to add the YARN application ID to the `flink run` command.

```
YARN ApplicationID: application_1616633166424_0024
```

- b. Submit the Flink job.

```
flink run \  
-d \  
-m yarn-cluster \  
-e yarn-session \  
-yid <application_id> \  
-p <parallelism> \  
<job_jar_file> <job_parameters>
```



Note:

To run a Flink job, your HDFS Home Directory has to exist. If it does not exist, you receive an error message similar to:

```
Permission denied: user=$USER_NAME, access=WRITE, inode="/user"
```

Related Information

[Setting up your HDFS Home directory](#)

[Simple Tutorial: Running the application from IntelliJ](#)

[Simple Tutorial: Running the application on a Cloudera cluster](#)

[Stateful Tutorial: Deploy and monitor the application](#)

Using Flink CLI

You can use the Flink command line interface to operate, configure and maintain your Flink applications.

The Flink CLI works without requiring the user to always specify the YARN application ID when submitting commands to Flink jobs. Instead, the jobs are identified uniquely on the YARN cluster by their job IDs.

The following improvements are implemented for Flink CLI:

- `flink list`: This command lists all the jobs on the YARN cluster by default, instead of listing the jobs of a single Flink cluster.
- `flink savepoint <jobId>` and `flink cancel <jobId>`: The `savepoint` and `cancel` commands, along with the other single job commands, no longer require the `-yId` parameter, and work if you provide only the ID of the job.

- `flink run`: You do not need to specify `-m yarn-cluster`, as it is included in the run command by default.

Enabling savepoints for Flink applications

Beside checkpointing, you are also able to create a savepoint of your executed Flink jobs. Savepoints are not automatically created, so you need to trigger them in case of upgrade or maintenance. You can also resume your applications from savepoint.

You can set the default savepoint directory in `flink-conf.yaml` under `state.savepoints.dir` property.

The following command lines can be used to maintain savepoints:

Trigger savepoint	<code>\$ bin/flink savepoint -yid <yarnAppID> <jobId> [targetDirectory]</code>
Stop job with savepoint	<code>\$ bin/flink stop -yid <yarnAppID> <jobId></code>
Resume from savepoint	<code>\$ bin/flink run -s <savepointPath> [runArgs]</code>
Deleting savepoint	<code>\$ bin/flink savepoint -d <savepointPath></code>