Introducing Runtime Environment for Batches
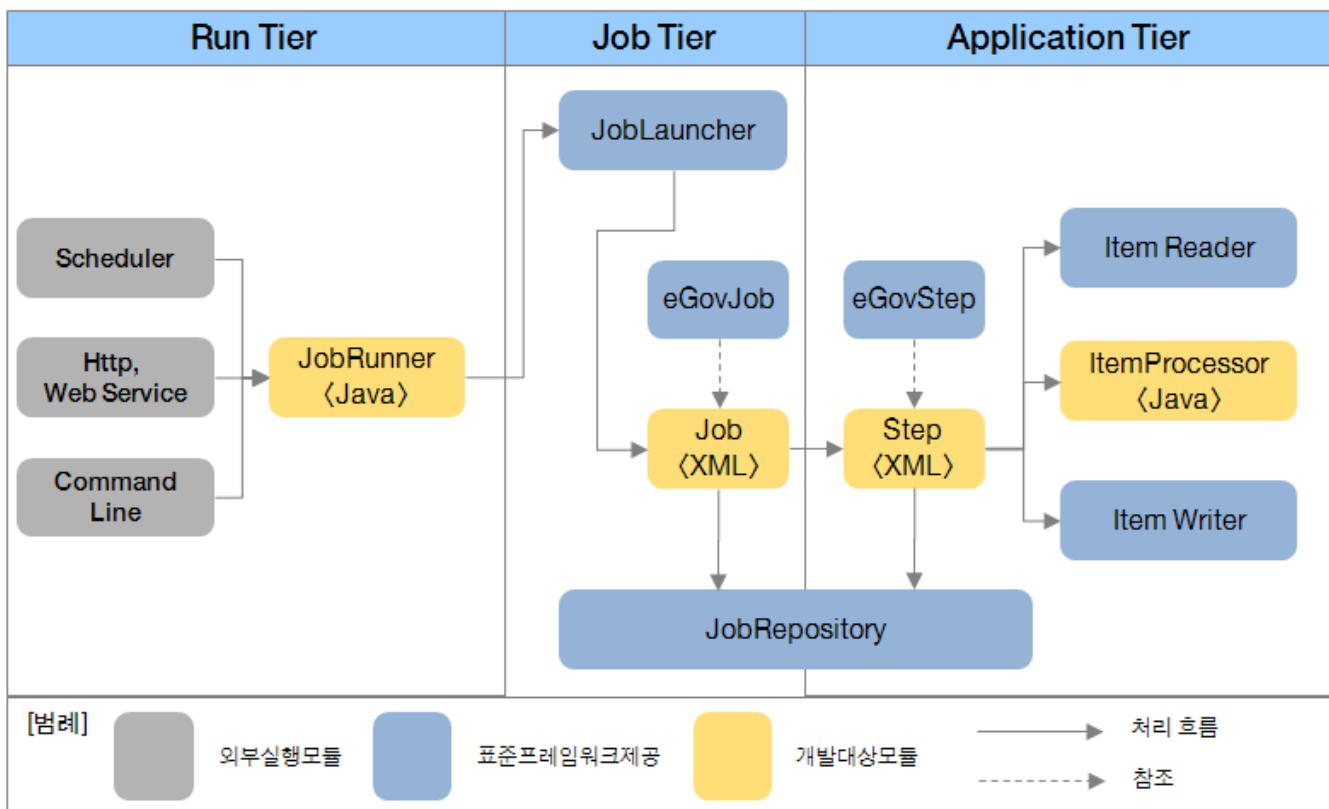
Outline

eGovFramework supports management of results and scheduling for performance of works and massive data processing.

Objectives

Runtime Environment for Batches provides the basis of the massive data processing to serve as the core of running batches.

Runtime Process for Batches

3-Tier(Run, Job, Application Tier) batch processing environment is added to the eGovFramework to help process massive data.

Run Tier

Run Tier is in charge of implementing batch execution program and can be categorized into Scheduler, Http/Web service and CommandLine by method of execution.
✔ In the Batch Spring, use of Quartz or Cron is highly recommended to implement the Scheduler.

Refer to the following sequence of Run Tier for your information:

1. Built in the form of XML, Job Configuration contains job configuration information necessary for implementing Jobs.
2. External modules such as Scheduler, Http/Web service and CommandLine calls JobRunner.
3. Referring to the definition of Application Context registered in Job Configuration by way of JobLocator(**JobExplorer**), JobRunner sends the relevant information to JobLauncher of Job Tier in implementation of Job.

Job Tier

Job Tier implements jobs as per the status and policies defined.

Refer to the following sequence of Job Tier for your information:

1. eGovJob and eGovStep have referred to Job and Step, respectively, and are described in the form of XML.
2. JobLauncher implements jobs based upon the configurations and definitions for Jobs, as per JobRunner.
3. JobRepository contains the Job information and reposits the status information of jobs that vary from time to time over the course of implementation.
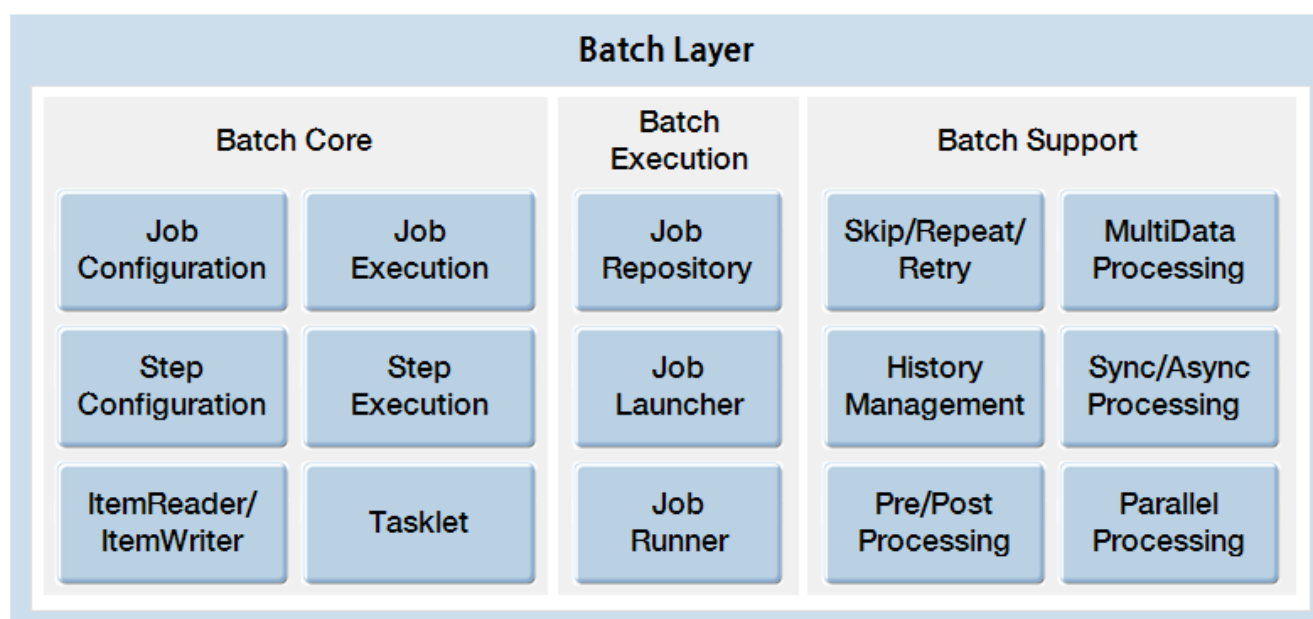
Application Tier

Application Tier comprises a variety of components necessary for implementation of jobs and steps.

Refer to the following sequence of Application Tier for your information:

1. Referring to the Step of Spring arrangement, eGovStep is described in the form of xml. Note that a job comprises one or more steps.
2. eGovStepReader / eGovStepWriter refers to ItemReader / ItemWriter of Spring Batch and is mandatory for implementation of steps.
3. In Step, you can read and load the data from File / DB, via, processing the data via ItemProcessor and writes the processed data for File / DB via ItemWriter.

Technological Element Composition of Runtime Environment

Technologically, the massive data processing layer comprised in the runtime environment of eGovFramework comprises Batch Core defining job structure, Batch Support for execution of jobs and Batch Execution supporting a variety of runtime environment. Refer to the following figure for technological element composition of runtime environment:

Batch Core

- Job Configuration & Execution
- Step Configuration & Execution
- ItemReader / ItemWriter

Batch Execution

- JobRepository
- JobLauncher
- JobRunner

Batch Support

- Skip/Retry/Repeat
- MultiData Processing
- History Management
- Sync / Async Processing
- Pre / Post Processing
- Parallel Processing