Async Migration. Guideline and Performance results

PERF-212 - Test non-blocking Java migration for publicationPeriod as a separate process (CLOSED)

AsyncMigration API

An asynchronous mechanism has been added to migrate large amounts of data. Additional API has been added to the mod-inventory storage (link).

For now, this API supports "publicationPeriodMigration" and "itemShelvingOrderMigration", but it can be extended to support another kind of migrations very simply.

To retrieve a list of available migrations call GET /inventory-storage/migrations

Response

```json
{
  "asyncMigrations": [
    {
      "migrations": ["publicationPeriodMigration"],
      "affectedEntities": ["INSTANCE"]
    },
    {
      "migrations": ["itemShelvingOrderMigration"],
      "affectedEntities": ["ITEM"]
    }
  ],
  "totalRecords": 2
}
```

To start migration use POST /inventory-storage/migrations/jobs

Request

`{"migrations": ["itemShelvingOrderMigration"]}`

To start several migrations in the scope of one job it’s possible to run a job with several migrations. In this case, each migration should have its own counter, but status and progress will be tracked on job level.

Request

`{"migrations": ["itemShelvingOrderMigration", "publicationPeriodMigration"]}`

To check status or cancel job use GET | DELETE /inventory-storage/migrations/jobs/(id)
GET Response

```
{
  "id": "aa5a11b4-88c9-4372-82fb-7089b8b37c0f",
  "migrations": [
    "itemShelvingOrderMigration"
  ],
  "affectedEntities": [
    "ITEM"
  ],
  "published": [
    {
      "migrationName": "itemShelvingOrderMigration",
      "count": 20
    }
  ],
  "processed": [
    {
      "migrationName": "itemShelvingOrderMigration",
      "count": 20
    }
  ],
  "jobStatus": "Completed",
  "submittedDate": "2022-03-21T11:01:24.890+00:00",
  "finishedDate": "2022-03-21T11:01:25.311+00:00"
}
```

Performance tests results for 1 node

**Environment setup**

Env: https://falcon.ci.folio.org/

**Number of records**: 1_000_000

**Mod-Inventory-Storage setup**: 1 node, resources:

```
limits:
  cpu: 192m
  memory: 864Mi
requests:
  cpu: 128m
  memory: 536Mi
```

**Results**
Result: 2 hours, 47 minutes and 17 seconds
Performance tests results for 2 nodes

Environment setup

Env: https://falcon.ci.folio.org/

Number of records: 1,000,000

Mod-Inventory-Storage setup: 2 nodes, resources:

```plaintext
limits:
  cpu: 192m
  memory: 864Mi
requests:
  cpu: 128m
  memory: 536Mi
```

Results

```json
{
  "id": "cb210eba-4fa3-4d59-8cda-9c15640e4138",
  "name": "publicationPeriodMigration",
  "affectedEntities": [
    "INSTANCE"
  ],
  "published": 1000000,
  "processed": 1000000,
  "jobStatus": "Completed",
  "submittedDate": "2022-02-18T20:01:27.062+00:00",
  "finishedDate": "2022-02-18T21:29:54.003+00:00"
}
```

Result: 1 hour, 28 minutes, and 27 seconds