


CPS-526 : Send Data-updated event asynchronously

 **CPS-526** - Avoid response time potential impact of CPS Data Updated Event publication process CLOSED

Overview

CPS core sends the data updated event to Kafka synchronously which increases the Data node API response time. To avoid the impact, the cps-core notification feature will process the events asynchronously using spring async.

Solution

Spring async method is well documented and more details can be found at <https://spring.io/guides/gs/async-method/>

In the proposed implementation, we need to

- Enable async processing

```
@EnableAsync
public class AsyncConfig {
    ...
}
```

- Define the thread pool which will execute the async method. The thread pool setup properties are configurable.

AsyncConfig

```
@ConfigurationProperties("notification.async-executor")
@Validated
public class AsyncConfig {

    @Min(0)
    private int corePoolSize = 2;
    @Min(2)
    private int maxPoolSize = 10;
    @Min(0)
    private int queueCapacity = 2147483647;
    private boolean waitForTasksToCompleteOnShutdown = true;
    private String threadNamePrefix = "Async-";

    @Bean("notificationExecutor")
    public TaskExecutor getThreadAsyncExecutorForNotification() {
        final ThreadPoolTaskExecutor executor = new ThreadPoolTaskExecutor();
        executor.setCorePoolSize(corePoolSize);
        executor.setMaxPoolSize(maxPoolSize);
        executor.setQueueCapacity(queueCapacity);
        executor.setWaitForTasksToCompleteOnShutdown(waitForTasksToCompleteOnShutdown);
        executor.setThreadNamePrefix(threadNamePrefix);
        return executor;
    }
}
```

application.yml

```
notification:
  async-executor:
    core-pool-size: 2
    max-pool-size: 10
    queue-capacity: 500
    wait-for-tasks-to-complete-on-shutdown: true
    thread-name-prefix: Async-
```

- Mark the method async and mention the thread-pool name

NotificationService

```
@Async("notificationExecutor")
public Future<Void> processDataUpdatedEvent(final String dataspaceName, final String anchorName) {
    ...
}
```