



**OX2OX Migration Framework Scheduler Technical  
Documentation for  
2.1.0-rev14**

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# 1 General Information

## 1.1 Warnings



### Warning

This preview delivery is not for productive usage and not affected by service-level agreements.



### Warning

Custom configuration or template files are potentially not updated automatically. After the update, please always check for files with a **.dpkg-new** or **.rpmnew** suffix and merge the changes manually. Configuration file changes are listed in their own respective section below but don't include changes to template files. For details about all the configuration files and templates shipped as part of this delivery, please read the relevant section of each package.

## 1.2 Delivery Comment

This delivery was requested with following comment:

*OMF Scheduler 2.1.0 Preview Delivery 14*

## 1.3 Install Package Repository

This delivery is part of a restricted preview software repository:

<https://software.open-xchange.com/components/omf-scheduler/preview/2.1.0/RHEL7>  
<https://software.open-xchange.com/components/omf-scheduler/preview/2.1.0/DebianStretch>  
<https://software.open-xchange.com/components/omf-scheduler/preview/2.1.0/DebianBuster>

## 1.4 Build Dependencies

This delivery was build with following dependencies:

RedHat:RHEL-7,Debian:Stretch,Debian:Buster

# 2 Shipped Version

## 2.1 Package open-xchange-omf-orchestrator

OMF Orchestrator CLI to interoperate with the OX2OX Migration Framework.

Version: 2.1.0-14

Type: Other

### 2.1.1 Installation

Install on nodes with package installer **apt-get** or **yum**:

```
<package installer> install open-xchange-omf-orchestrator
```

### 2.1.2 Configuration

For details, please see appendix [A](#)  
`/opt/open-xchange/omf/orchestrator/etc/omf-orchestrator.yml` (page [5](#))

## 2.2 Package open-xchange-omf-scheduler

OMF Scheduler OX2OX Migration Framework Scheduler.

Version: 2.1.0-14

Type: Other

### 2.2.1 Installation

Install on nodes with package installer **apt-get** or **yum**:

```
<package installer> install open-xchange-omf-scheduler
```

### 2.2.2 Configuration

For details, please see appendix [A](#)

/opt/open-xchange/omf/scheduler/etc/omf-scheduler.yml (page [10](#))

## A Configuration Files

### File 1 /opt/open-xchange/omf/orchestrator/etc/omf-orchestrator.yml

```

1 micronaut:
2   application:
3     name: omf
4   http:
5     services:
6       # The OMF Scheduler HTTP REST API service configuration
7       scheduler-admin-source:
8         url: "${omf.scheduler.url}/omf/scheduler/admin/source/"
9         read-timeout: ${omf.http.read-timeout}
10        connect-timeout: ${omf.http.connect-timeout}
11        ssl:
12          enabled: ${omf.http.ssl.enabled}
13          trust-store:
14            path: ${omf.http.ssl.trust-store.path}
15            password: ${omf.http.ssl.trust-store.password}
16            type: ${omf.http.ssl.trust-store.type}
17
18       scheduler-admin-target:
19         url: "${omf.scheduler.url}/omf/scheduler/admin/target/"
20         read-timeout: ${omf.http.read-timeout}
21         connect-timeout: ${omf.http.connect-timeout}
22         ssl:
23           enabled: ${omf.http.ssl.enabled}
24           trust-store:
25             path: ${omf.http.ssl.trust-store.path}
26             password: ${omf.http.ssl.trust-store.password}
27             type: ${omf.http.ssl.trust-store.type}
28
29       # The OMF Scheduler Migration HTTP REST API service configuration
30       scheduler-migration:
31         url: "${omf.scheduler.url}/omf/scheduler/migration/"
32         read-timeout: ${omf.http.read-timeout}
33         connect-timeout: ${omf.http.connect-timeout}
34         ssl:
35           enabled: ${omf.http.ssl.enabled}
36           trust-store:
37             path: ${omf.http.ssl.trust-store.path}
38             password: ${omf.http.ssl.trust-store.password}
39             type: ${omf.http.ssl.trust-store.type}
40
41       # The OMF Scheduler Migration HTTP REST API service configuration
42       scheduler-userinfo:
43         url: "${omf.scheduler.url}/omf/scheduler/user/"

```

```

44     read-timeout: ${omf.http.read-timeout}
45     connect-timeout: ${omf.http.connect-timeout}
46     ssl:
47         enabled: ${omf.http.ssl.enabled}
48         trust-store:
49             path: ${omf.http.ssl.trust-store.path}
50             password: ${omf.http.ssl.trust-store.password}
51             type: ${omf.http.ssl.trust-store.type}
52
53     # The OMF Scheduler Monitoring HTTP REST API service configuration
54     scheduler-monitoring:
55         url: "${omf.scheduler.url}/ws/omf/scheduler/workers/monitor/"
56         read-timeout: ${omf.http.read-timeout}
57         connect-timeout: ${omf.http.connect-timeout}
58         ssl:
59             enabled: ${omf.http.ssl.enabled}
60             trust-store:
61                 path: ${omf.http.ssl.trust-store.path}
62                 password: ${omf.http.ssl.trust-store.password}
63                 type: ${omf.http.ssl.trust-store.type}
64
65 omf:
66     http:
67         read-timeout: 30s
68         connect-timeout: 10s
69         ssl:
70             enabled: true
71             # If the scheduler does not have a valid public certificate
72             # (e.g. uses a self-signed certificate), then its certificate can be
73             # configured here.
74             trust-store:
75                 path: file:/opt/open-xchange/omf/certs/scheduler.p12
76                 password: secret
77                 type: PKCS12
78     readonly: false
79     shell:
80         start.dir:
81         config:
82             user.dir: ${user.dir}/.omf/config
83             app.dir: /opt/open-xchange/omf/lib/scripts
84     scheduler:
85         # Credentials for the scheduler
86         # On multi-user systems, specifying the password in a configuration file
87         # with proper file system permissions is preferred to specifying it on
88         # the command line, since the command line is visible to all local users.
89         #
90         # Example:
91         # username: admin
92         # password: secret
93
94         # Location of the scheduler. Only the protocol and host name need to be
95         # specified.
96         url: "https://localhost:8443"
97     ui:
98         color: true
99         color.theme: DARK
100        unicode: true
101        expandIds: false
102        tz: UTC
103        showTz: false
104        showAgo: false
105        prettyJson: false
106        highlightJson: false
107        shell:
108            prettyJson: true
109            highlightJson: true
110            fancyPrompt: true
111            rightHandPrompt: true
112        history.file: ${user.dir}/.omf_history
113
114     logger:
115         levels:

```

```

116 # change this to TRACE to see a detailed log of the HTTP traffic between the
117 # Orchestrator and the Scheduler
118 io.micronaut.http.client: INFO

```

## File 2 /opt/open-xchange/omf/scheduler/etc/omf-scheduler.yml

```

1  # https://docs.micronaut.io/latest/guide/config.html#configurationProperties
2  ---
3  micronaut:
4    # SSL configuration
5    # Required for production environments.
6    # See https://docs.micronaut.io/latest/guide/index.html#https for details.
7    ssl:
8      enabled: true
9      port: 8443
10     key-store:
11       path: file:/opt/open-xchange/omf/certs/keystore.p12
12       type: PKCS12
13       password: secret
14     server:
15       dual-protocol: true
16       port: 8080
17
18     http:
19       services:
20         # The omf-source service is use to collect health status and metrics from the Source
21         # OMF nodes. The HTTP client can be configured (ex: ssl) here by referencing
22         # https://docs.micronaut.io/latest/guide/configurationreference.html#io.micronaut.
23         # http.client.ServiceHttpClientConfiguration
24         # and the subsequent sections related to micronaut.http.services.*
25         omf-source:
26           connect-timeout: 30s
27           read-timeout: 120s
28           # Example SSL configuration in case a source uses a private certificate
29           # ssl:
30           #   trust-store:
31           #     path: file:/opt/open-xchange/omf/certs/source.p12
32           #     type: PKCS12
33           #     password: secret
34         omf-target:
35           connect-timeout: 30s
36           read-timeout: 120s
37
38     application:
39       name: omf-scheduler
40     # Configure security including basic auth: https://micronaut-projects.github.io/
41     # micronaut-security/latest/guide/#basicAuth
42     # Must be set to true or the Source Controller is not secure
43     security:
44       enabled: true
45       # Change the security of the open api views to anonymous so that they can be viewed
46       # without credentials
47       intercept-url-map:
48         - pattern: /swagger/**
49           access:
50             - isAnonymous()
51         - pattern: /swagger-ui/**
52           access:
53             - isAnonymous()
54         - pattern: /rapidoc/**
55           access:
56             - isAnonymous()
57         - pattern: /redoc/**
58           access:
59             - isAnonymous()
60
61     # https://docs.micronaut.io/latest/guide/index.html#_configuring_caches
62     #caches:
63       #example:
64         #charset: UTF-8

```

```

60     #expire-after-access: 1h
61 metrics:
62   enabled: true
63   export:
64     # Creates an endpoint like http://host/prometheus - uses basic auth from
65     # credentials under scheduler.http.admin
66     prometheus:
67       enabled: true
68       step: PT1M
69       descriptions: true
70   router:
71     # Adds api versioning: https://docs.micronaut.io/latest/guide/index.html#apiVersioning
72     versioning:
73       enabled: true
74       parameter:
75         enabled: true
76         names: 'v'
77       header:
78         enabled: true
79         names: 'X-API-VERSION'
80     # Allows the openapi views to be seen
81   static-resources:
82     swagger:
83       paths: classpath:META-INF/swagger
84       mapping: /swagger/**
85     redoc:
86       paths: classpath:META-INF/swagger/views/redoc
87       mapping: /redoc/**
88     rapidoc:
89       paths: classpath:META-INF/swagger/views/rapidoc
90       mapping: /rapidoc/**
91     swagger-ui:
92       paths: classpath:META-INF/swagger/views/swagger-ui
93       mapping: /swagger-ui/**
94 ---
95 scheduler:
96   # Must be unique for each Scheduler instance.
97   # Be very careful when changing this value, as it is also used to determine the
98   # transactional ID for writing
99   # batches into Kafka topics for each Scheduler node.
100   id: 'scheduler-0'
101   hostname: ''
102   window:
103     # If more than this many batches are created as part of a new Window, don't return the
104     # list of
105     # Batch IDs as part of the Window creation result DTO, as they would just be too many
106     # to display
107     # in the first place (also affects the debug logging):
108     batch.id.threshold: 50
109     # If more than this many context IDs are assigned as part of a new Window, don't
110     # return the list of
111     # context IDs as part of the Window creation result DTO, as they would just be too
112     # many to display
113     # in the first place:
114     context.id.threshold: 50
115   batch:
116     presync:
117       # Max number of contexts in a batch
118       size: 10
119       # Strategy to use when creating batches.
120       # Current supported strategies:
121       #   - fill-first: create batches up to the batch size then create the next batch
122       #   - fill-equal: create batches of equal size
123       strategy: fill-equal
124     cutover:
125       size: 10
126       strategy: fill-equal
127     preprovisioning:
128       size: 10
129       strategy: fill-equal
130   kafka:
131     wait: false

```



```

127     queues:
128         batch: "omf-batch"
129         response: "omf-response"
130     resize:
131         batch: true
132         response: true
133     record.header.enhance: true
134     topic:
135         list:
136             timeout: -1s
137     describe:
138         timeout: -1s
139         retry:
140             attempts: 3
141             wait: 3s
142     create:
143         # whether topics should be created when a source is created or synced (true) or
144         # whether we make use of auto-creation instead (old behaviour prior to 2.1.0-6):
145         enabled: true
146         timeout: -1s
147         partitions: 2
148         replication.factor: 0
149         config:
150             retention.ms: 432000000
151     workers:
152         allow:
153             # allow Worker shutdown via the REST API
154             shutdown: false
155             # allow overriding the Sources Workers subscribe to via the REST API
156             changeSources: false
157     http:
158         users:
159             # Users defined here can have roles OMF_ADMIN or OMF_USER. Users without a role
160             # automatically have role OMF_USER
161             # assigned. Users with the role OMF_ADMIN have access to every REST API method.
162             # OMF_USER role is restricted to
163             # a subset of the REST API.
164             admin:
165                 password: secret
166                 role: OMF_ADMIN
167             omfuser:
168                 password: secret
169                 role: OMF_USER
170             admin.controller.path: /omf/scheduler/admin
171             migration.controller.path: /omf/scheduler/migration
172             user.controller.path: /omf/scheduler/user
173     metrics:
174         migration:
175             enabled: true
176         leadership:
177             enabled: true
178         batchresponse:
179             enabled: true
180             percentiles: true
181         schedulers:
182             enabled: true
183         source:
184             enabled: true
185         target:
186             enabled: true
187         monitor:
188             windows:
189                 enabled: true
190                 interval: 5m
191                 delay: 30s
192             batches:
193                 enabled: true
194                 interval: 5m
195                 delay: 30s
196         sources:
197             enabled: true
198             interval: 5m

```

```

197         delay: 30s
198     targets:
199         enabled: true
200         interval: 5m
201         delay: 30s
202     contextmappings:
203         enabled: true
204         interval: 5m
205         delay: 30s
206     usermappings:
207         enabled: true
208         interval: 60m
209         delay: 5m
210     migrationevents:
211         enabled: true
212         interval: 5m
213         delay: 30s
214     workers:
215         enabled: true
216         idle.since: [5m, 10m, 30m]
217     orphan-check:
218         context.batch.size: 50
219 ---
220 jackson:
221     bean-introspection-module: true
222     serialization:
223         indent-output: true
224         writeDatesAsTimestamps: false
225 ---
226 datasources:
227     # Used to persist scheduling data
228     scheduler:
229         # url should use createDatabaseIfNotExist=true if the database will not
230         # already exist: https://dev.mysql.com/doc/connector-j/8.0/en/connector-j-reference-
231         # configuration-properties.html
232         url: jdbc:mysql://localhost:3306/scheduler?createDatabaseIfNotExist=true
233         username: root
234         password: my-secret-pw
235         driverClassName: org.mariadb.jdbc.Driver
236         dialect: MYSQL
237         maximumPoolSize: 10
238         maxLifetime: 180000
239     # Used to create/drop databases for sources. This is not really the "default" data
240     # source
241     # but we need to use default because of bug https://github.com/micronaut-projects/
242     # micronaut-data/issues/598s
243     default:
244         url: jdbc:mysql://localhost:3306/
245         username: root
246         password: my-secret-pw
247         driverClassName: org.mariadb.jdbc.Driver
248         dialect: MYSQL
249         maximumPoolSize: 5
250         maxLifetime: 180000
251 ---
252 endpoints:
253     loggers:
254         enabled: true
255         sensitive: true
256     health:
257         discovery-client:
258             enabled: false
259         sources:
260             enabled: false
261         targets:
262             enabled: false
263     liquibase:
264         # fails with missing transition, might be fixed in later Micronaut releases
265         enabled: false
266     info:
267         enabled: true
268         sensitive: true

```

```

266     sourceCodeOrigin:
267         enabled: true
268         location: file:/opt/open-xchange/omf/scheduler/share/SourceCodeOrigin.txt
269 ---
270 zookeeper:
271     server: zookeeper:2181
272     blockUntilConnected: true
273     maxConnectedWaitTime: 30s
274     sessionTimeout: 1m
275     connectionTimeout: 15s
276     maxCloseWait: 15s
277     waitForShutdownTimeout: 15s
278     connectionRetry:
279         baseSleepTime: 5s
280         maxSleepTime: 30s
281         maxRetries: 50
282 ---
283 kafka:
284     bootstrap:
285         servers: kafka-1:9092, kafka-2:9092, kafka-3:9092
286     producers:
287         batch-producer:
288             enable.idempotence: true
289             # This enables transactions for the Batch Producer
290             # The value must be unique per application, but should
291             # not change for the same app after a crash, etc.
292             # Note that if you only want to allow a single Scheduler instance to be capable of
293             # writing Batches into the Kafka topics, then change this to be the same value
294             # across
295             # all Scheduler instances as Kafka will fence them (see PRODUCER_FENCED).
296             # But if you want all Scheduler instances to be able to write batches into Kafka
297             # topics,
298             # use a unique value for each Scheduler instance:
299             transactional.id: ${scheduler.id}
300     #consumers:
301     #response-consumer:
302 ---
303 mail:
304     # whether to send emails
305     enabled: false
306     window:
307         # whether to send emails when a Window succeeds:
308         success: false
309         # whether to send emails when a Window fails:
310         failure: true
311     # mandatory, must be set to be able to send emails and it
312     # must be a valid email address in the form localpart@domain, or sending will fail:
313     from: ${scheduler.id}@example.com
314     # whom to send those mails to (can be a comma separated list):
315     to:
316     cc:
317     bcc:
318     # text to include in the subject line, wrapped in []:
319     subject.id:
320     smtp:
321         host: localhost
322         port: 25
323         # leave empty for no authentication:
324         username:
325         password:
326         # SMTP, SMTPS or SMTP_TLS (SMTP with mandatory StartTLS):
327         transport: SMTP
328         # whether to allow SMTP without StartTLS:
329         smtp.plain: true
330         tls:
331             # whether to trust all SMTP server keys
332             trustall: false
333             # whether to verify SMTP server keys
334             verify: true
335 ---
336 liquibase:
337     datasources:

```

```
336     scheduler:
337         change-log: 'classpath:liquibase/scheduler/liquibase-changelog.xml'
338     ---
339     logger:
340         levels:
341             ROOT: INFO
342             com.openxchange: INFO
343             omf: INFO
344             omf.scheduler.admin.AuthenticationProviderUserPassword: WARN
345             org.apache.kafka.clients.consumer.ConsumerConfig: WARN
346     ---
```