Advanced installation topics

- Modifying the default domain
  - Step 1: edit the global configuration file
  - Step 2: update load balancer configuration
  - Step 3: generate new certificates
  - Step 4: complete your installation
  - Step 5: update your DNS or hosts files
- Modifying access protocols
  - Step 1: configure Apache load balancer access protocol
  - Step 2: configure Kiuwan front instances access protocol
  - Step 3: configure client access protocol for URL generation
  - Step 4: restart your servers
- Modifying exposed ports
  - Modifying exposed ports in Apache load balancer
    - Step 1: modify globalConfig.properties file
    - Step 2: modify httpd.conf file
  - Modifying exposed ports in Kiuwan front instances
  - Modifying exposed ports in MySQL
  - Setting which ports Kiuwan should use
  - Configuration examples
    - Example 1
    - Example 2
- Configure a password in Redis
  - Step 1: Stop Kiuwan
  - Step 2: Edit the global configuration file
  - Step 3: Activate authentication in Redis
  - Step 4: Propagate the changes in Kiuwan
  - Step 5: Start kiuwan
- Externalizing services
  - Configuring services to externalize
  - Externalizing Apache
  - Externalizing Redis
  - Externalizing MySQL
    - Step 1: create Kiuwan On-Premises schemas
    - Step 2: create Kiuwan On-Premises user
    - Step 3: configure your installation
- Using Amazon S3 as file repository
- Automatic data purge
- Configuration options reference
- Supported timezones reference

This guide covers most of the advanced installation procedures that you may need to implement.

Modifying the default domain

The default configuration sets "kiuwan.onpremise.local" as the default domain to access Kiuwan On-Premises.

We encourage you to change the default domain, but take into account that this means updating the provided certificates to keep your installation connections secure.

Step 1: edit the global configuration file

Using your preferred editor, open the default configuration file located in your config-shared volume:

```
sudo vim [VOLUMES_DIR]/config-shared/globalConfig/globalConfig.properties
```

Edit these properties (kiuwan.port is only needed if you want to use https under a different port than the default 443):

- kiuwan.domain
- kiuwan.port

Step 2: update load balancer configuration

Once you have selected your new domain and if you are using the provided Apache load balancer, you should edit the main Apache configuration file:

```
sudo vim [VOLUMES_DIR]/config-shared/ApacheLoadBalancer/conf/httpd.conf
```

Edit this line and change the default domain (kiuwan.onpremise.local) to your new domain:

```
Define kiuwanDomain kiuwan.onpremise.local
```

If you have externalized the provided Apache load balancer, you should edit the equivalent configuration file to set the new domain.

Step 3: generate new certificates

Please refer to the Managing certificates guide and follow the needed steps depending on your needs.

Once this is done, you should have these files under the [INSTALLER_DIR]/user-content/certs folder:

- cacert.pem
- domainkey.pem
- domaincert.pem
- domainkeystore.jks
- truststore.jks

Step 4: complete your installation

If you are performing a new Kiuwan On-Premises installation, please refer to the steps indicated in the following sections, depending on your installation needs:

- Installation: single-host and minimum configuration
- Installation: advanced configuration

If you have already installed Kiuwan On-Premises, you will need to stop your containers, update the deployed configuration, and restart them. To do so, execute these commands:

```
cd [INSTALLER_DIR]
sudo ./stop-all.sh
cd [INSTALLER_DIR]/docker
sudo ./update.sh
cd [INSTALLER_DIR]
sudo ./start-all.sh
```

Step 5: update your DNS or hosts files

If you are modifying an existing Kiuwan On-Premises installation, you will need to update your DNS or hosts files.

Note that if you have generated new certificates signed by a different CA than the one that signed the previous ones, you should update your Kiuwan On-Premises clients' certificates or truststores.

Please refer to Accessing your Kiuwan On-Premises installation for details on these topics.

Modifying access protocols

Kiuwan On-Premises installation supports configuring access protocols for:

- Apache load balancer: HTTPS (default protocol) or HTTP.
- Kiuwan front instances: HTTPS (default protocol), HTTP, or AJP.

If you need to change the default access protocols, please take into account:

- Apache load balancer configuration must be manually modified, both when using the provided services or when externalizing it.
- Plaintext connections are not secure.

Step 1: configure Apache load balancer access protocol

In case you are using the provided Apache service for load balancing or your own Apache as a front-end server, you should manually configure how it accesses Kiuwan, by editing its configuration file. For the provided services you can edit the file like this:

```
sudo vim [VOLUMES_DIR]/config-shared/ApacheLoadBalancer/conf/httpd.conf
```

Look for the balancer proxy definition (<Proxy "balancer://mycluster">) and make sure the used protocol matches your needs.

The following example show the needed configuration for accessing two Kiuwan On-Premises front instances through AJP protocol:

```
BalancerMember "ajp://wildflykiuwan-f1:8443" route=kwf1 loadfactor=1
connectiontimeout=5 timeout=600 retry=60 hcmethod=TCP hcpasses=2
hcinterval=15 hcfails=1
BalancerMember "ajp://wildflykiuwan-f2:8443" route=kwf2 loadfactor=1
connectiontimeout=5 timeout=600 retry=60 hcmethod=TCP hcpasses=2
hcinterval=15 hcfails=1
```

The following example show the needed configuration for accessing two Kiuwan On-Premises front instances through HTTP protocol:

```
BalancerMember "http://wildflykiuwan-f1:8443" route=kwf1 loadfactor=1
connectiontimeout=5 timeout=600 retry=60 hcmethod=GET hcexpr=ok200 hcuri=
/saas/rest/health hcpasses=1 hcinterval=15 hcfails=2
BalancerMember "http://wildflykiuwan-f2:8443" route=kwf2 loadfactor=1
connectiontimeout=5 timeout=600 retry=60 hcmethod=GET hcexpr=ok200 hcuri=
/saas/rest/health hcpasses=1 hcinterval=15 hcfails=2
```

Note that if you are not using a front-end server because you want to access directly to a single Kiuwan front instance, you will be forced to use either HTTPS or HTTP protocols to be able to access Kiuwan On-Premises from a web browser.



If you are combining HTTPS access to the Apache load balancer service with HTTP access to Kiuwan front instances, make sure the following directive is turned off in your httpd.conf file, just like this:

```
ProxyPreserveHost Off
```

Step 2: configure Kiuwan front instances access protocol

Kiuwan On-Premises front instances expose a single port for communicating either by using HTTPS, HTTP, or AJP protocols. To configure the protocol to use, edit the main configuration file located in your config-shared volume:

```
sudo vim [VOLUMES_DIR]/config-shared/globalConfig/globalConfig.properties
```

Look for the "kiuwan-nodes.access.protocol property and set its value to either "https", "http" or "ajp" depending on the protocol you want to use. For example, to use the AJP protocol:

```
kiuwan-nodes.access.protocol=ajp
```

Note that this only sets how Kiuwan front servers are configured. You must configure how Kiuwan will generate access URLs for you by following the next step.

Step 3: configure client access protocol for URL generation

Kiuwan instances need to know how you are accessing your Kiuwan On-Premises installation to correctly generate dynamic URLs. To configure this, edit the main configuration file, located in your config-shared volume:

```
sudo vim [VOLUMES_DIR]/config-shared/globalConfig/globalConfig.properties
```

Look for the "kiuwan.protocol" property and set its value to either "https" or "http". For example, if you want to access Kiuwan On-Premises through https:

```
kiuwan.protocol=https
```

Note that "https" and "http" are the only two allowed options here, as you only can access Kiuwan On-Premises from a web browser through one of these protocols.

Step 4: restart your servers

In case you have made modifications to the provided Apache load balancer, you should restart the server:

```
cd [INSTALLER_DIR]/docker
sudo ./stop-infrastructure.sh apacheloadbalancer
sudo ./start-infrastructure.sh apacheloadbalancer
```

If you are using your front-end server, please restart to apply the changes.

In case you have made modifications to the globalConfig.properties file, you should restart the Kiuwan servers:

```
cd [INSTALLER_DIR]
sudo ./stop-kiuwan.sh
sudo ./start-kiuwan.sh
```

Modifying exposed ports

Kiuwan On-Premises installation supports changing which ports will be exposed to the outside of the Docker network by any of these services:

- Apache load balancer.
- Kiuwan front instances.
- MySQL database.

Note that the port used by the provided containers inside the Kiuwan Docker Network (172.172.0.0/16) is fixed and cannot be changed. Only the exposed ports are configurable. The following table shows which ports are used by each container inside the Docker network and how they are mapped to the outside by default:

Container name	Internal ports (cannot be changed)	Exposed ports (configurable)	Protocol
apacheloadbalancer	80, 443	80, 443	HTTPS or HTTP
wildflykiuwan-f[n]	8443	8[n]43	HTTPS, HTTP or AJP
wildflykiuwan-a[n]	None	None	None
wildflykiuwan-s[n]	None	None	None
mysqlkiuwan	3306	3306	MySQL protocol

Note that containers can only be accessed from outside its host when at least one port is exposed. These considerations should be taken into account as well:

- If you are accessing any container through HTTPS and you change the provided ports you should update your certificates in order to modify the provided SANs (Subject Alternative Names). Please refer to Managing certificates page for more information.
- On single hosts installations where the provided front-end server (apacheloadbalancer) or the provided MySQL (mysqlkiuwan) are not externalized, changing Kiuwan front instances ports or MySQL port is not usually needed unless there are port conflicts on your host. As we recommend using a dedicated host for Kiuwan On-Premises installations, this should not be the

case in most installations. By default, the provided Apache access Kiuwan front instances through port 8443 and Kiuwan access MySQL through port 3306, as they belong to the same Docker network.
- When using an externalized front-end server, it may be needed to change the Kiuwan front instances ports if your company has strict traffic guidelines or you just prefer using ports that you are more comfortable with.
- In case you are using your MySQL server, Kiuwan should be instructed to use the port in which your MySQL server is listening to.
- In case you are using the provided MySQL container on a different host and you want to modify the exposed port by the container you must change both the MySQL exposed port and the port used by Kiuwan to communicate with MySQL. Both ports must match.

When modifying the front-end server, Kiuwan front instances or MySQL ports, you should always update how Kiuwan connects to each service. Please refer to Setting which ports Kiuwan should use for more details.



You must restart the needed servers when ports have been reconfigured.

In case you have made modifications to the provided Apache load balancer, you should restart the server:

```
cd [INSTALLER_DIR]/docker
sudo ./stop-infrastructure.sh apacheloadbalancer
sudo ./start-infrastructure.sh apacheloadbalancer
```

If you are using your own front-end server, please restart it to apply the changes.

In case you have made modifications that affect Kiuwan, you should restart the Kiuwan servers:

```
cd [INSTALLER_DIR]
sudo ./stop-kiuwan.sh
sudo ./start-kiuwan.sh
```

Modifying exposed ports in Apache load balancer

When using the provided Apache load balancer, the following properties found in the globalConfig.properties main configuration file will set the exposed ports:

- kiuwan.port.apache.http: sets the exposed port for HTTP.
- kiuwan.port.apache.https: sets the exposed port for HTTPS.

Ports set must be different to avoid conflicts. Note that the provided Apache container will expose both ports to listen HTTPS and HTTP traffic, but you can unset any of them by modifying the provided configuration file.

Step 1: modify globalConfig.properties file

In case you modify the default ports, you must change the httpd.conf file located under [VOLUMES_DIR]/config-shared/ApacheLoadBalancer/conf folder.

Locate the properties shown above and set them to the ports that you want to expose (default configuration is shown below):

```
kiuwan.port.apache.http=80
kiuwan.port.apache.https=443
```

Step 2: modify httpd.conf file

First, locate the ports Apache will listen to and set your selected ports. Default configuration is shown below (ports 80 and 443):

```
Listen 80
Listen 443
```

Second, locate the default virtual host entry and change the assigned port. Default configuration is shown below (port 443):

```
<VirtualHost *:443>
```

Modifying exposed ports in Kiuwan front instances

To change the exposed port of a Kiuwan front instance, edit the main configuration file (globalConfig.properties):

```
sudo vim [VOLUMES_DIR]/config-shared/globalConfig/globalConfig.properties
```

Locate the following properties (default values are shown):

```
kiuwan.port.front1=8143
kiuwan.port.front2=8243
kiuwan.port.front3=8343
kiuwan.port.front4=8443
kiuwan.port.front5=8543
kiuwan.port.front6=8643
kiuwan.port.front7=8743
kiuwan.port.front8=8843
```

By default, only one front instance will be started, but it is recommended to change all available instances just in case you need to add front instances in the future.

Note that the previous properties set the ports that will be exposed outside Kiuwan Docker network. Changing these ports is only recommended when externalizing the Apache load balancer service, as the internal port (8443) will be used when this service is inside the Docker network.

Modifying exposed ports in MySQL

To change the exposed port of the provided MySQL service, edit the main configuration file (globalConfig.properties):

```
sudo vim [VOLUMES_DIR]/config-shared/globalConfig/globalConfig.properties
```

Locate the following property (default value is shown):

```
kiuwan.port.mysql=3306
```

Note that the previous property sets the port that will be exposed outside Kiuwan Docker network. Changing these ports is only recommended when externalizing the MySQL service, as the internal port (3306) will be used when this service is inside the Docker network.

Setting which ports Kiuwan should use

Kiuwan instances must know which ports you are exposing both in:

- The provided apache load balancer or your front-end server.
- The provided MySQL database or your MySQL instance.

As both services can be externalized, there are two additional properties to configure these ports (found in the main configuration file [VOLUMES_DIR]/config-shared/globalConfig/globalConfig.properties):

- kiuwan.port: the port that will be used when generating dynamic URLs from Kiuwan. This port must match the one exposed by the front-end server.
- mysql.port: the port that will be used by Kiuwan to connect to the MySQL host. This port must match the one exposed by the MySQL server.

Configuration examples

Example 1

The following table shows how to set the values in globalConfig.properties file for installation where:

- All Kiuwan containers are deployed in the same host (single host installation).
- Apache load balancer externalized. The Apache server listens to port 444.
- Apache will access Kiuwan On-Premises front servers through port 8009. If new front instances are added, the next port will be used for the new instance.
- MySQL has been externalized and is accessible though port 3344.

Property key	Value
kiuwan.port	444
mysql.port	3344
kiuwan.port.front1	8009
kiuwan.port.front2	8010
kiuwan.port.front[n]	8009 + (n - 1)
kiuwan.port.apache.http	Does not apply, service externalized
kiuwan.port.apache.https	Does not apply, service externalized
kiuwan.port.mysql	Does not apply, service externalized

The front-end server must use ports 8009, 8010, etc. to access Kiuwan front servers.

Example 2

The following table shows how to set the values in globalConfig.properties file for installation where:

- All Kiuwan containers are deployed in the same host (single host installation).
- Apache load balancer is NOT externalized and will listen to port 80 for HTTP and port 443 for HTTPS.
- Kiuwan On-Premises front servers should be accessible from the outside through port 8080. If new front instances are added, the next port will be used for the new instance.
- MySQL has NOT been externalized and will be accessible through port 3406 for direct external connections to the database.

Property key	Value
kiuwan.port	443
mysql.port	3306
kiuwan.port.front1	8080
kiuwan.port.front2	8081
kiuwan.port.front[n]	8080 + (n - 1)
kiuwan.port.apache.http	80
kiuwan.port.apache.https	443
kiuwan.port.mysql	3406

The front-end server must use port 8443 to access Kiuwan front servers, as it belongs to the same Docker network, but a user will be able to access these front servers through ports 8080, 8081, etc. from outside the Kiuwan On-Premises host.

Configure a password in Redis



This configuration is available from version 2.8.2010.1 of Kiuwan on-premise

The default configuration of Kiuwan does not set any password in Redis.

To configure a password in Redis and configure Kiuwan to connect to Redis using a password, follow these steps:

If you are installing Kiuwan for the first time, make sure that you have completed at least the “Step 6: initialize your volumes” described in Kiuwan On-Premises Distributed Installation Guide before continuing.

Step 1: Stop Kiuwan

If you are installing Kiuwan for the first time in your instance, skip this step.

If you are modifying the configuration of an existing Kiuwan installation stop executing it:

```
cd [INSTALLER_DIR]
sudo ./stop-kiuwan.sh
sudo ./start-kiuwan.sh
```

Step 2: Edit the global configuration file

Using your preferred editor, open the default configuration file located in your config-shared volume. In the following example, the used editor is vim:

```
sudo vim [VOLUMES_DIR]/config-shared/globalConfig/globalConfig.properties
```

Edit these properties and assign a password to be used on connecting to Redis, you should set the same value for both *redis.cache* and *redis.store* password:

- redis.cache.password={YOUR_REDIS_PASSWORD}
- redis.store.password={YOUR_REDIS_PASSWORD}

Step 3: Activate authentication in Redis

You should edit the Redis configuration files located in the following path:

```
sudo vim [VOLUMES_DIR]/config-shared/Redis/conf/redis[1-6].conf
```

Add the following lines in each of them (6 files in total):

```
requirepass {YOUR_REDIS_PASSWORD}
masterauth {YOUR_REDIS_PASSWORD}
```

If you have externalized the Redis installation, you should edit the equivalent configuration file to activate the authentication and restart the externalized Redis installation.

Step 4: Propagate the changes in Kiuwan

If you are installing Kiuwan for the first time in your instance, skip this step.

To propagate the changes in *globalConfig.properties*, execute the following commands:

```
cd [INSTALLER_DIR]/docker
sudo ./update.sh
```

Step 5: Start kiuwan

All the required changes are completed. If you are installing Kiuwan for the first time make sure that you complete all the installation steps and start Kiuwan.

If you are modifying an existing installation start Kiuwan and the setup is completed:

```
cd [INSTALLER_DIR]
sudo ./start-all.sh
```

Externalizing services

Kiuwan On-Premises uses three main services under its infrastructure's hood:

- Apache: used as a load balancer when multiple Kiuwan frontal instances are running.
- Redis: an in-memory cache to speed up response times.
- MySQL: Kiuwan's main database.

If you want to use your services for any of the previous ones, Kiuwan On-Premises can connect to them by bypassing their creation at installation time.

Configuring services to externalize

First of all, you will need to edit the main configuration file and mark which services you want to externalize:

- [VOLUMES_DIR]/config-shared/globalConfig/globalConfig.properties

This table shows the properties you should modify when externalizing each service:

Service	Property	Default value
Apache	kiuwan.externalize.apacheloadbalancer	false
Redis	kiuwan.externalize.redis.[cache|storage]	false
MySQL	kiuwan.externalize.mysql	false

When setting to "true" any of the previous properties, the corresponding service will be externalized and the installation tool will not manage any related instance. Note that all the configuration will be up to you, as the Kiuwan On-Premise installer will only be able to configure how Kiuwan On-Premise will connect to your services.

Externalizing Apache

When externalizing this service you should take into account that:

- Each Kiuwan On-Premises frontal instance domain name is wildflykiuwan-f[n], [n] being the frontal instance number. Note that depending on your installation needs you may want to access each instance via IP or its hostname.
- Each Kiuwan On-Premises frontal instance only exposes one port for https/http/ajp traffic. By default, the port 8[n]43, [n] being the frontal instance number will be exposed. If you need to change the exposed ports refer to Changing exposed ports for more information.
- In case you are accessing through https scheme, you should provide your frontal service the needed certificates to make https connections available (please refer to Managing certificates for more information):
  - domaincert.pem
  - domainkey.pem
  - cacert.pem

Externalizing Redis

Kiuwan On-Premises must work with your Redis installation that it complies with these characteristics:

- Redis version must be equal or higher than 5.0.4.
- Redis must be configured as a cluster.
- Eviction policy must be set to "noeviction" (refer to Redis official documentation, maxmemory-policy configuration property).

In case you set Redis as an external service, Kiuwan On-Premises needs to know where the Redis nodes are deployed and which ports to use when connecting to them.

In case you use a special DNS that can resolve the same host to different hosts and ports (DNS Round-Robin or equivalent), you should configure just a single host in the "redis.[cache|store].nodes" properties.

All the needed configuration is located in the main configuration file:

- [VOLUMES_DIR]/config-shared/globalConfig/globalConfig.properties

The following table shows the properties to configure (note that you should set the same configuration for both "cache" and "store" Redis configurations):

Property	Meaning	Example
redis.[cache|store].nodes	Comma separated list of host and port for each Redis node	rn1.mydomain.com:6379, rn2.mydomain.com:6379, rn3.mydomain.com:6379, rn4.mydomain.com:6379, rn5.mydomain.com:6379, rn6.mydomain.com:6379
redis.[cache|store].timeout	Connection timeout in milliseconds	2000
redis.[cache|store].password	Password to use when connecting to a node (leave empty if you have set no password access)	
redis.[cache|store].clientName	Name of the client connection (defaults to empty)	

Externalizing MySQL

When externalizing MySQL note that your MySQL installation should comply with these characteristics:

- MySQL version 5.7
- The maximum number of connections: 130 per Kiuwan On-Premises instance.

Step 1: create Kiuwan On-Premises schemas

You should create the needed schemas in your MySQL installation. To do so, please execute this script with a user that has schema creation privileges:

```
create database opt_activity CHARACTER SET utf8 COLLATE utf8_unicode_ci;
create database opt_cinc CHARACTER SET utf8 COLLATE utf8_unicode_ci;
create database opt_metamodel CHARACTER SET utf8 COLLATE utf8_unicode_ci;
create database opt_qmm CHARACTER SET utf8 COLLATE utf8_unicode_ci;
create database opt_transaction CHARACTER SET utf8 COLLATE utf8_unicode_ci;
create database opt_insight CHARACTER SET utf8 COLLATE utf8_unicode_ci;
```

Step 2: create Kiuwan On-Premises user

You should create the user that will be connecting to Kiuwan On-Premises schemas. Please run this script as an admin user to do so:

```
create user '[USER]'@'%' identified by '[PASSWORD]';
grant all privileges on `opt_%`.* to '[USER]'@'%' identified by
'[PASSWORD]';
flush privileges;
```

Note that you should replace [USER] with the desired user name and [PASSWORD] with the desired password.

Step 3: configure your installation

The following table shows the properties to configure for Kiuwan On-Premises to connect to your MySQL instance:

Property	Meaning	Example
mysql.host	Your MySQL installation host	mysqlkiuwan
mysql.port	The connection port to access your MySQL installation	3306

mysql.username	The user that will be connecting to Kiuwan On-Premises schemas (should match the one provided in the previous step)	csaas
mysql.password	The user's password (should match the one provided in the previous step)	

Using Amazon S3 as file repository

Kiuwan On-Premises uses these shared file repositories to store analysis related data:

- kiuwanCentralRepository: stores analysis results files.
- kiuwanSourceCodeRepository: stores source code.
- kiuwanCustomConfigRepository: stores centralized analysis configuration files.

These Kiuwan On-Premises internal file repositories can be replaced with Amazon S3 buckets.

To do so, you should first configure these properties in the main configuration file ([VOLUMES_DIR] /config-shared/globalConfig/globalConfig.properties):

- centralFileRepository.type=s3
- sourceCodeFileRepository.type=s3
- customConfigFileRepository.type=s3

The following table shows the properties you should modify when making Kiuwan On-Premises connect to AWS S3 buckets:

Property	Meaning	Example
s3.privateBucket.bucketName	Your AWS S3 bucket name	s3mycompany-us
s3.privateBucket.subDirectoryName	Your AWS S3 subdirectory name under the configured bucket	mydirectory
s3.privateBucket.accessKeyId	AWS access key for your bucket	BS3BX35Z27UAQCEACTPQ
s3.privateBucket.secretKeyId	AWS secret key for your bucket	Aasdfjklwe1234123lkjfasc21ssACasfEq124Da
s3.dir.centralFileRepository	The main key prefix that will be used to keep the central file repository entries	kiuwanCentralWorkingDirectory/analysisData
s3.dir.sourceCodeFileRepository	The main key prefix that will be used to keep the source code file repository entries	kiuwanCentralWorkingDirectory/analyzedSourceCode
s3.dir.customConfigFileRepository	The main key prefix that will be used to keep the custom config file repository entries	kiuwanCentralWorkingDirectory/customConfig

Automatic data purge

To keep used disk space under control, Kiuwan On-Premises is capable of automatically purge unnecessary files and, optionally, old data that you may not need anymore.

By default, Kiuwan On-Premises purges:

- Analyses that are not among the last 50 processed (for each application).
- Analyses older than 5 years (1825 days).
- Support files older than 6 months (180 days).

The previous thresholds can be configured through the following properties:

- kiuwan.purge.analysis.lastAnalysesToKeep
- kiuwan.purge.analysis.antiquity.days
- kiuwan.purge.support.files.antiquity.days

In case you do not want to delete and purge any of your data, simply change the active flag to false in the following properties:

- kiuwan.purge.analysis.data.active
- kiuwan.purge.support.files.active

Also, turn off *kiuwan.purge.analysis.files.active flag*, but this is only recommended for troubleshooting purposes since you will deactivate a task that only purges temporary files that are not needed when using Kiuwan On-Premises.

All the configuration properties can be found inside the main configuration file:

- [VOLUMES_DIR]/config-shared/globalConfig/globalConfig.properties

Internally, Kiuwan On-Premises uses 5 scheduled tasks to implement file and data purge:

- Soft-delete “old” analyses: performs a logical deletion of analyses that are considered “old”.
- Purge soft-deleted analysis data: purges the data associated with soft-deleted analyses.
- Purge “old” support files: purges “old” files that have been stored for support purposes.
- Purge analysis shared files: purges files that belong to soft-deleted analyses (stored in the data-shared volume).
- Purge analysis local temporary files: purges internal temporary data that belong to “old” analyses and is not needed anymore (locally stored on front and analyzer nodes).

The previous tasks are executed on a daily basis, following this timetable:

Task	Execution Time	Execution Node
Soft-delete “old” analyses	3:00 AM	Scheduler
Purge soft-deleted analysis data	5:00 AM	Scheduler
Purge “old” support files	2:00 AM	Scheduler
Purge analysis shared files	4:00 AM	Scheduler
Purge analysis local temporary files	3:00 AM	Front, Analyzer

Configuration options reference

All configuration properties you can modify are located in this file, located inside your config-shared volume:

- [VOLUMES_DIR]/config-shared/globalConfig/globalConfig.properties

Here is a complete list of the properties you can configure and their meaning (default passwords are omitted):

Property	Default value	Meaning
Installer behavior		
kiuwan.singlehost.nodes.front	wildflykiuwan-f1	Service identifiers that will be used when starting and stopping Kiuwan through start-kiuwan.sh and stop-kiuwan.sh scripts. Change these values only in single-host installations where you want to manage multiple Kiuwan front/analyzer/scheduler instances. For example, if you want to start two front kiuwan nodes, simply set: kiuwan.singlehost.nodes.front=wildflykiuwan-f1 wildflykiuwan-f2 The same pattern would apply to the different kiuwan containers.
kiuwan.singlehost.nodes.analyzers	wildflykiuwan-a1	
kiuwan.singlehost.nodes.schedulers	wildflykiuwan-s1	
kiuwan.clients.update	true	Update clients when update.sh is executed. Set to false if you need to run the update process without updating clients (in case there are any new available), propagate changes in this configuration file while not updating clients or run the update process when no connection to static.kiuwan.com is available.
Kiuwan connection		
kiuwan.protocol	https	Kiuwan default access protocol
kiuwan.domain	kiuwan.onpremise.local	Kiuwan default domain

kiuwan.port	443	Kiuwan default access port
kiuwan. nodes. access. protocol	https	Access protocol to Kiuwan front instances [https|http|ajp]. This will be the only accepted protocol to access Kiuwan front instances from the provided Apache balancer or your own balancer. Note that this property has nothing to do with "kiuwan.protocol" unless you do not use a frontend server like Apache to access Kiuwan. If this is the case, both properties must have the same value.
kiuwan. proxy. autoconfig	true	Autoconfigure Kiuwan instances proxy. When true, Kiuwan instances will be automatically configured to use the proxy configured in your Docker installation (typically using a ~/.docker/config.json file). If you want to force Kiuwan instances to use a different proxy settings, set this property to false and fill the kiuwan.*.proxy* properties values.
Kiuwan instances alternative proxy		
These properties only apply when kiuwan.proxy.autoconfig is false. Note that the https properties are used to indicate the proxy to use when making https connections, not to configure a proxy that should be accessed through https. Ignore these properties if you want Kiuwan instances to use the proxy configured in your Docker installation.		
kiuwan. http. proxyHost		Proxy to use from Kiuwan instances when making http connections.
kiuwan. http. proxyPort		
kiuwan. http. proxyUser		
kiuwan. http. proxyPass word		
kiuwan. https. proxyHost		Proxy to use from Kiuwan instances when making https connections.
kiuwan. https. proxyPort		
kiuwan. https. proxyUser		
kiuwan. https. proxyPass word		
kiuwan. http. nonProxyH osts		No proxy connection will be used when connecting to these comma-separated list of hosts.
Kiuwan instances shared configuration		
kiuwan. mail.host	mail. kiuwan. local	Email server access configuration. It is mandatory that all Kiuwan instances can access the specified host and port.
kiuwan. mail.port	25	
kiuwan. mail. authenticat ion	true	Email server authentication enables flag. Set to false if your email server does not use a SMTP username/password authentication method.
kiuwan. mail. username	admin. kiuwan	Email server username.

kiuwan.mail.password		Email server password.
kiuwan.mail.from	admin.kiuwan@mail.kiuwan.local	The email account that will be used in the "from" field when composing emails. This field is mandatory, do not leave blank.
kiuwan.mail.secure.layer	ssl	The security layer that your mail server uses [ssl|tls|none]. Set to none if your Email server only supports plain text connections.
kiuwan.mail.secure.layer.value	true	The value to set to the security layer configuration flag. Only applies when kiuwan.mail.secure.layer is set to ssl or tls.
kiuwan.default.mail.account	admin.kiuwan@mail.kiuwan.local	Mail account that will be assigned to the default Kiuwan account.
timezone	Europe/Madrid	Kiuwan servers timezone. Please refer to Supported timezones page for a complete list of supported time zones.
java.keystore.password		Java keystore password. Note that Kiuwan will use this password to access the generated keystore and must be aligned with the one provided in the field "java.keystore.password" in ssl/config/certs.properties file. Make sure they are aligned when creating your certificates.
java.truststore.password		Java truststore password. Note that Kiuwan will use this password to access the generated truststore and must be aligned with the one provided in the field "java.truststore.password" in ssl/config/certs.properties file. Make sure they are aligned when creating your own certificates.
kiuwan.purge.analysis.files.active	true	When the value is set to true, the following tasks are executed daily: • Purge analysis shared files, which are related to analyses that have been soft-deleted, are completely removed. This task runs on scheduler nodes. • Purge analysis local temporary files, which are considered old files (see *kiuwan.purge.analysis.files.antiquity.days)*, are deleted. This task runs on both, front and analyzer nodes.
kiuwan.purge.analysis.files.antiquity.days	3	The value refers to the number of days since the last modification date of a local temporary file to be considered "old".
Kiuwan file repositories		
centralFileRepository.type	filesystem	Central file repository storage type [filesystem|s3].
sourceCodeFileRepository.type	filesystem	Source code repository storage type [filesystem|s3].
customConfigFileRepository.type	filesystem	Custom config repository storage type [filesystem|s3].
s3.privateBucket.bucketName		S3 bucket name (only applies when using AWS S3 type repositories).

s3.privateBucket.subDirectoryName		S3 subdirectory name (only applies when using AWS S3 type repositories).
s3.privateBucket.accessKeyId		Access key id (only applies when using AWS S3 type repositories).
s3.privateBucket.secretKeyId		Secret key id (only applies when using AWS S3 type repositories).
s3.dir.centralFileRepository		Central file repository directory (only applies when using AWS S3 type repositories).
s3.dir.sourceCodeFileRepository		Source code file repository directory (only applies when using AWS S3 type repositories).
s3.dir.customConfigFileRepository		Centralized configuration file repository directory (only applies when using AWS S3 type repositories).
Kiuwan front instances		
kiuwan.port.front[n]	8[n]43	Ports that will be exposed by each kiuwan front container instance. Note that depending on the kiuwan front instances that you are starting some of these ports will be ignored.
kiuwan.nodes.front.max.memory	2048m	Max memory to set to front instances
session.timeout	3600	Time a session can be inactive before close it (in seconds)
session.secure	false	Use the secure attribute of the session cookie. Set this field to true only if you plan to access your Kiuwan On-Premises installation through https.
session.httponly	false	Use the httponly attribute of the session cookie.
Kiuwan analyzer instances		
kiuwan.nodes.analyzers.max.memory	4096m	Max memory to set to analyzer instances.
queues.reportsGeneratedQueueSize	2	Number of slots enabled for analysis processing.
Kiuwan scheduler instances		
kiuwan.nodes.schedulers.max.memory	2048m	Max memory to set to front instances.

kiuwan.purge.analysis.data.active	true	When this value is set to true, the following tasks executes daily: • Soft-delete "old" analyses, which satisfyes both *kiuwan.purge.analysis.antiquity.days* and *kiuwan.purge.analysis.lastAnalysesToKeep* conditions are soft-deleted. • Purge soft-deleted analysis data, the database entries related to analyses that have been soft-deleted, are purged. ⚠ The purged data is unrecoverable, make sure you keep your backups up to date when activating this task.
kiuwan.purge.analysis.antiquity.days	1825	The value refers to the number of days since the creation timestamp of a baseline analysis to be considered "old". If Soft-delete "old" analyses task is active, the analyses older than the specified number of days are automatically soft-deleted.
kiuwan.purge.analysis.lastAnalysesToKeep	50	The value refers to the number of baseline analyses to keep per application. This takes precedence over "old" analyses, meaning that even when the soft-delete "old" analyses task is active and a baseline analysis is considered "old", this minimum number of baseline analyses is kept per application.
kiuwan.purge.support.files.active	true	When this value is set to true, purge "old" support files task are executed daily. This task automatically purges "old" files (see *kiuwan.purge.support.files.antiquity.days*) that are downloaded when asking Kiuwan to retrieve support data.
kiuwan.purge.support.files.antiquity.days	180	The value refers to the number of days since the last modification of a support file to be considered old. When the purge "old" support files task is active, the support files older than the specified days are automatically removed.
Apache load balancer		
kiuwan.port.apache.http	80	Ports that will be exposed by the Apache load balancer container. When using the provided load balancer, the specified "kiuwan.port.apache.https" (or "kiuwan.port.apache.http" when disabling https support) must match the value set to "kiuwan.port field". When externalizing this service, their values have no effect.
kiuwan.port.apache.https	443	
MySQL		
kiuwan.port.mysql	3306	Port that will be exposed by the MySQL container. When using the provided MySQL, its value must match the one specified in "mysql.port" field. When externalizing this service, its value has no effect.
mysql.host	mysqlkiuwan	MySQL connection settings. Note that this must be aligned with the configured MySQL port or your external MySQL service in case you are externalizing MySQL.
mysql.port	3306	
mysql.username	csaas	MySQL connection authentication settings. Note that a MySQL user with the specified credentials will be automatically created when installing from scratch if you are running the provided MySQL service. In case you want to change the user accessing Kiuwan's schemas after the installation is completed, you must manually create the user both in the provided MySQL or an externalized one.
mysql.password		
mysql.config.useSSL	false	Enable or disable the use of encryption when connecting to MySQL
mysql.config.requireSSL	false	Force the use of encryption when connecting to MySQL
mysql.config.verifyServerCertificate	false	Force the validation of the certificate served MySQL

Redis Cluster cache and store		
redis.[cache|store].nodes	redis_0000[1-6]:6379	Redis nodes hosts (use the provided single host name when using elasticache)
redis.[cache|store].timeout	2000	Redis connection timeout
redis.[cache|store].password		Redis password
redis.[cache|store].clientName		Redis client name

Supported timezones reference

The following table shows the available timezones that can be set to the Kiuwan On-Premises server when editing the main configuration file located in:

- [VOLUMES_DIR]/config-shared/globalConfig/globalConfig.properties

Note that you can set only one of these values to the **timezone** property found in the previous file:

Time zone	GMT offset
Africa/Abidjan	0
Africa/Accra	0
Africa/Addis_Ababa	3
Africa/Algiers	1
Africa/Asmara	3
Africa/Asmera	3
Africa/Bamako	0
Africa/Bangui	1
Africa/Banjul	0
Africa/Bissau	0
Africa/Blantyre	2
Africa/Brazzaville	1
Africa/Bujumbura	2
Africa/Cairo	2
Africa/Casablanca	0
Africa/Ceuta	1
Africa/Conakry	0
Africa/Dakar	0
Africa/Dar_es_Salaam	3
Africa/Djibouti	3
Africa/Douala	1
Africa/El_Aaiun	0
Africa/Freetown	0

Africa/Gaborone	2
Africa/Harare	2
Africa/Johannesburg	2
Africa/Juba	3
Africa/Kampala	3
Africa/Khartoum	2
Africa/Kigali	2
Africa/Kinshasa	1
Africa/Lagos	1
Africa/Libreville	1
Africa/Lome	0
Africa/Luanda	1
Africa/Lubumbashi	2
Africa/Lusaka	2
Africa/Malabo	1
Africa/Maputo	2
Africa/Maseru	2
Africa/Mbabane	2
Africa/Mogadishu	3
Africa/Monrovia	0
Africa/Nairobi	3
Africa/Ndjamena	1
Africa/Niamey	1
Africa/Nouakchott	0
Africa/Ouagadougou	0
Africa/Porto-Novo	1
Africa/Sao_Tome	0
Africa/Timbuktu	0
Africa/Tripoli	2
Africa/Tunis	1
Africa/Windhoek	2
America/Adak	-10
America/Anchorage	-9
America/Anguilla	-4
America/Antigua	-4
America/Araguaina	-3
America/Argentina/Buenos_Aires	-3
America/Argentina/Catamarca	-3
America/Argentina/ComodRivadavia	-3
America/Argentina/Cordoba	-3
America/Argentina/Jujuy	-3

America/Argentina/La_Rioja	-3
America/Argentina/Mendoza	-3
America/Argentina/Rio_Gallegos	-3
America/Argentina/Salta	-3
America/Argentina/San_Juan	-3
America/Argentina/San_Luis	-3
America/Argentina/Tucuman	-3
America/Argentina/Ushuaia	-3
America/Aruba	-4
America/Asuncion	-4
America/Atikokan	-5
America/Atka	-10
America/Bahia	-3
America/Bahia_Banderas	-6
America/Barbados	-4
America/Belem	-3
America/Belize	-6
America/Blanc-Sablon	-4
America/Boa_Vista	-4
America/Bogota	-5
America/Boise	-7
America/Buenos_Aires	-3
America/Cambridge_Bay	-7
America/Campo_Grande	-4
America/Cancun	-5
America/Caracas	-4
America/Catamarca	-3
America/Cayenne	-3
America/Cayman	-5
America/Chicago	-6
America/Chihuahua	-7
America/Coral_Harbour	-5
America/Cordoba	-3
America/Costa_Rica	-6
America/Creston	-7
America/Cuiaba	-4
America/Curacao	-4
America/Danmarkshavn	0
America/Dawson	-8
America/Dawson_Creek	-7
America/Denver	-7

America/Detroit	-5
America/Dominica	-4
America/Edmonton	-7
America/Eirunepe	-5
America/El_Salvador	-6
America/Ensenada	-8
America/Fort_Nelson	-7
America/Fort_Wayne	-5
America/Fortaleza	-3
America/Glace_Bay	-4
America/Godthab	-3
America/Goose_Bay	-4
America/Grand_Turk	-5
America/Grenada	-4
America/Guadeloupe	-4
America/Guatemala	-6
America/Guayaquil	-5
America/Guyana	-4
America/Halifax	-4
America/Havana	-5
America/Hermosillo	-7
America/Indiana/Indianapolis	-5
America/Indiana/Knox	-6
America/Indiana/Marengo	-5
America/Indiana/Petersburg	-5
America/Indiana/Tell_City	-6
America/Indiana/Vevay	-5
America/Indiana/Vincennes	-5
America/Indiana/Winamac	-5
America/Indianapolis	-5
America/Inuvik	-7
America/Iqaluit	-5
America/Jamaica	-5
America/Jujuy	-3
America/Juneau	-9
America/Kentucky/Louisville	-5
America/Kentucky/Monticello	-5
America/Knox_IN	-6
America/Kralendijk	-4
America/La_Paz	-4
America/Lima	-5

America/Los_Angeles	-8
America/Louisville	-5
America/Lower_Princes	-4
America/Maceio	-3
America/Managua	-6
America/Manaus	-4
America/Marigot	-4
America/Martinique	-4
America/Matamoros	-6
America/Mazatlan	-7
America/Mendoza	-3
America/Menominee	-6
America/Merida	-6
America/Metlakatla	-9
America/Mexico_City	-6
America/Miquelon	-3
America/Moncton	-4
America/Monterrey	-6
America/Montevideo	-3
America/Montreal	-5
America/Montserrat	-4
America/Nassau	-5
America/New_York	-5
America/Nipigon	-5
America/Nome	-9
America/Noronha	-2
America/North_Dakota/Beulah	-6
America/North_Dakota/Center	-6
America/North_Dakota/New_Salem	-6
America/Ojinaga	-7
America/Panama	-5
America/Pangnirtung	-5
America/Paramaribo	-3
America/Phoenix	-7
America/Port-au-Prince	-5
America/Port_of_Spain	-4
America/Porto_Acre	-5
America/Porto_Velho	-4
America/Puerto_Rico	-4
America/Punta_Arenas	-3
America/Rainy_River	-6

America/Rankin_Inlet	-6
America/Recife	-3
America/Regina	-6
America/Resolute	-6
America/Rio_Branco	-5
America/Rosario	-3
America/Santa_Isabel	-8
America/Santarem	-3
America/Santiago	-4
America/Santo_Domingo	-4
America/Sao_Paulo	-3
America/Scoresbysund	-1
America/Shiprock	-7
America/Sitka	-9
America/St_Barthelemy	-4
America/St_Johns	-3
America/St_Kitts	-4
America/St_Lucia	-4
America/St_Thomas	-4
America/St_Vincent	-4
America/Swift_Current	-6
America/Tegucigalpa	-6
America/Thule	-4
America/Thunder_Bay	-5
America/Tijuana	-8
America/Toronto	-5
America/Tortola	-4
America/Vancouver	-8
America/Virgin	-4
America/Whitehorse	-8
America/Winnipeg	-6
America/Yakutat	-9
America/Yellowknife	-7
Antarctica/Casey	8
Antarctica/Davis	7
Antarctica/DumontDUrville	10
Antarctica/Macquarie	11
Antarctica/Mawson	5
Antarctica/McMurdo	12
Antarctica/Palmer	-3
Antarctica/Rothera	-3

Antarctica/South_Pole	12
Antarctica/Syowa	3
Antarctica/Troll	0
Antarctica/Vostok	6
Arctic/Longyearbyen	1
Asia/Aden	3
Asia/Almaty	6
Asia/Amman	2
Asia/Anadyr	12
Asia/Aqtau	5
Asia/Aqtobe	5
Asia/Ashgabat	5
Asia/Ashkhabad	5
Asia/Atyrau	5
Asia/Baghdad	3
Asia/Bahrain	3
Asia/Baku	4
Asia/Bangkok	7
Asia/Barnaul	7
Asia/Beirut	2
Asia/Bishkek	6
Asia/Brunei	8
Asia/Calcutta	5
Asia/Chita	9
Asia/Choibalsan	8
Asia/Chongqing	8
Asia/Chungking	8
Asia/Colombo	5
Asia/Dacca	6
Asia/Damascus	2
Asia/Dhaka	6
Asia/Dili	9
Asia/Dubai	4
Asia/Dushanbe	5
Asia/Famagusta	2
Asia/Gaza	2
Asia/Harbin	8
Asia/Hebron	2
Asia/Ho_Chi_Minh	7
Asia/Hong_Kong	8
Asia/Hovd	7

Asia/Irkutsk	8
Asia/Istanbul	3
Asia/Jakarta	7
Asia/Jayapura	9
Asia/Jerusalem	2
Asia/Kabul	4
Asia/Kamchatka	12
Asia/Karachi	5
Asia/Kashgar	6
Asia/Kathmandu	5
Asia/Katmandu	5
Asia/Khandyga	9
Asia/Kolkata	5
Asia/Krasnoyarsk	7
Asia/Kuala_Lumpur	8
Asia/Kuching	8
Asia/Kuwait	3
Asia/Macao	8
Asia/Macau	8
Asia/Magadan	11
Asia/Makassar	8
Asia/Manila	8
Asia/Muscat	4
Asia/Nicosia	2
Asia/Novokuznetsk	7
Asia/Novosibirsk	7
Asia/Omsk	6
Asia/Oral	5
Asia/Phnom_Penh	7
Asia/Pontianak	7
Asia/Pyongyang	9
Asia/Qatar	3
Asia/Qostanay	6
Asia/Qyzylorda	5
Asia/Rangoon	6
Asia/Riyadh	3
Asia/Saigon	7
Asia/Sakhalin	11
Asia/Samarkand	5
Asia/Seoul	9
Asia/Shanghai	8

Asia/Singapore	8
Asia/Srednekolymsk	11
Asia/Taipei	8
Asia/Tashkent	5
Asia/Tbilisi	4
Asia/Tehran	3
Asia/Tel_Aviv	2
Asia/Thimbu	6
Asia/Thimphu	6
Asia/Tokyo	9
Asia/Tomsk	7
Asia/Ujung_Pandang	8
Asia/Ulaanbaatar	8
Asia/Ulan_Bator	8
Asia/Urumqi	6
Asia/Ust-Nera	10
Asia/Vientiane	7
Asia/Vladivostok	10
Asia/Yakutsk	9
Asia/Yangon	6
Asia/Yekaterinburg	5
Asia/Yerevan	4
Atlantic/Azores	-1
Atlantic/Bermuda	-4
Atlantic/Canary	0
Atlantic/Cape_Verde	-1
Atlantic/Faeroe	0
Atlantic/Faroe	0
Atlantic/Jan_Mayen	1
Atlantic/Madeira	0
Atlantic/Reykjavik	0
Atlantic/South_Georgia	-2
Atlantic/St_Helena	0
Atlantic/Stanley	-3
Australia/ACT	10
Australia/Adelaide	9
Australia/Brisbane	10
Australia/Broken_Hill	9
Australia/Canberra	10
Australia/Currie	10
Australia/Darwin	9

Australia/Eucla	8
Australia/Hobart	10
Australia/LHI	10
Australia/Lindeman	10
Australia/Lord_Howe	10
Australia/Melbourne	10
Australia/NSW	10
Australia/North	9
Australia/Perth	8
Australia/Queensland	10
Australia/South	9
Australia/Sydney	10
Australia/Tasmania	10
Australia/Victoria	10
Australia/West	8
Australia/Yancowinna	9
Brazil/Acre	-5
Brazil/DeNoronha	-2
Brazil/East	-3
Brazil/West	-4
CET	1
CST6CDT	-6
Canada/Atlantic	-4
Canada/Central	-6
Canada/Eastern	-5
Canada/Mountain	-7
Canada/Newfoundland	-3
Canada/Pacific	-8
Canada/Saskatchewan	-6
Canada/Yukon	-8
Chile/Continental	-4
Chile/EasterIsland	-6
Cuba	-5
EET	2
EST5EDT	-5
Egypt	2
Eire	0
Etc/GMT	0
Etc/GMT+0	0
Etc/GMT+1	-1
Etc/GMT+10	-10

Etc/GMT+11	-11
Etc/GMT+12	-12
Etc/GMT+2	-2
Etc/GMT+3	-3
Etc/GMT+4	-4
Etc/GMT+5	-5
Etc/GMT+6	-6
Etc/GMT+7	-7
Etc/GMT+8	-8
Etc/GMT+9	-9
Etc/GMT-0	0
Etc/GMT-1	1
Etc/GMT-10	10
Etc/GMT-11	11
Etc/GMT-12	12
Etc/GMT-13	13
Etc/GMT-14	14
Etc/GMT-2	2
Etc/GMT-3	3
Etc/GMT-4	4
Etc/GMT-5	5
Etc/GMT-6	6
Etc/GMT-7	7
Etc/GMT-8	8
Etc/GMT-9	9
Etc/GMT0	0
Etc/Greenwich	0
Etc/UCT	0
Etc/UTC	0
Etc/Universal	0
Etc/Zulu	0
Europe/Amsterdam	1
Europe/Andorra	1
Europe/Astrakhan	4
Europe/Athens	2
Europe/Belfast	0
Europe/Belgrade	1
Europe/Berlin	1
Europe/Bratislava	1
Europe/Brussels	1
Europe/Bucharest	2

Europe/Budapest	1
Europe/Busingen	1
Europe/Chisinau	2
Europe/Copenhagen	1
Europe/Dublin	0
Europe/Gibraltar	1
Europe/Guernsey	0
Europe/Helsinki	2
Europe/Isle_of_Man	0
Europe/Istanbul	3
Europe/Jersey	0
Europe/Kaliningrad	2
Europe/Kiev	2
Europe/Kirov	3
Europe/Lisbon	0
Europe/Ljubljana	1
Europe/London	0
Europe/Luxembourg	1
Europe/Madrid	1
Europe/Malta	1
Europe/Mariehamn	2
Europe/Minsk	3
Europe/Monaco	1
Europe/Moscow	3
Europe/Nicosia	2
Europe/Oslo	1
Europe/Paris	1
Europe/Podgorica	1
Europe/Prague	1
Europe/Riga	2
Europe/Rome	1
Europe/Samara	4
Europe/San_Marino	1
Europe/Sarajevo	1
Europe/Saratov	4
Europe/Simferopol	3
Europe/Skopje	1
Europe/Sofia	2
Europe/Stockholm	1
Europe/Tallinn	2
Europe/Tirane	1

Europe/Tiraspol	2
Europe/Ulyanovsk	4
Europe/Uzhgorod	2
Europe/Vaduz	1
Europe/Vatican	1
Europe/Vienna	1
Europe/Vilnius	2
Europe/Volgograd	4
Europe/Warsaw	1
Europe/Zagreb	1
Europe/Zaporozhye	2
Europe/Zurich	1
GB	0
GB-Eire	0
GMT	0
GMT0	0
Greenwich	0
Hongkong	8
Iceland	0
Indian/Antananarivo	3
Indian/Chagos	6
Indian/Christmas	7
Indian/Cocos	6
Indian/Comoro	3
Indian/Kerguelen	5
Indian/Mahe	4
Indian/Maldives	5
Indian/Mauritius	4
Indian/Mayotte	3
Indian/Reunion	4
Iran	3
Israel	2
Jamaica	-5
Japan	9
Kwajalein	12
Libya	2
MET	1
MST7MDT	-7
Mexico/BajaNorte	-8
Mexico/BajaSur	-7
Mexico/General	-6

NZ	12
NZ-CHAT	12
Navajo	-7
PRC	8
PST8PDT	-8
Pacific/Apia	13
Pacific/Auckland	12
Pacific/Bougainville	11
Pacific/Chatham	12
Pacific/Chuuk	10
Pacific/Easter	-6
Pacific/Efate	11
Pacific/Enderbury	13
Pacific/Fakaofo	13
Pacific/Fiji	12
Pacific/Funafuti	12
Pacific/Galapagos	-6
Pacific/Gambier	-9
Pacific/Guadalcanal	11
Pacific/Guam	10
Pacific/Honolulu	-10
Pacific/Johnston	-10
Pacific/Kiritimati	14
Pacific/Kosrae	11
Pacific/Kwajalein	12
Pacific/Majuro	12
Pacific/Marquesas	-9
Pacific/Midway	-11
Pacific/Nauru	12
Pacific/Niue	-11
Pacific/Norfolk	11
Pacific/Noumea	11
Pacific/Pago_Pago	-11
Pacific/Palau	9
Pacific/Pitcairn	-8
Pacific/Pohnpei	11
Pacific/Ponape	11
Pacific/Port_Moresby	10
Pacific/Rarotonga	-10
Pacific/Saipan	10
Pacific/Samoa	-11

Pacific/Tahiti	-10
Pacific/Tarawa	12
Pacific/Tongatapu	13
Pacific/Truk	10
Pacific/Wake	12
Pacific/Wallis	12
Pacific/Yap	10
Poland	1
Portugal	0
ROK	9
Singapore	8
SystemV/AST4	-4
SystemV/AST4ADT	-4
SystemV/CST6	-6
SystemV/CST6CDT	-6
SystemV/EST5	-5
SystemV/EST5EDT	-5
SystemV/HST10	-10
SystemV/MST7	-7
SystemV/MST7MDT	-7
SystemV/PST8	-8
SystemV/PST8PDT	-8
SystemV/YST9	-9
SystemV/YST9YDT	-9
Turkey	3
UCT	0
US/Alaska	-9
US/Aleutian	-10
US/Arizona	-7
US/Central	-6
US/East-Indiana	-5
US/Eastern	-5
US/Hawaii	-10
US/Indiana-Starke	-6
US/Michigan	-5
US/Mountain	-7
US/Pacific	-8
US/Pacific-New	-8
US/Samoa	-11
UTC	0
Universal	0

W-SU	3
WET	0
Zulu	0