

INFOWATCH

# TM 7.11 Configuration Files Guide

27/01/2025

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# Table of Contents


1 Traffic Monitor configuration and unit files description ..... 6

1.1 adlibitum.conf and iw_adlibitum.service ..... 7

1.2 agent.conf and iw_agent.service ..... 10

1.3 analysis_client.conf ..... 13

1.4 analysis.conf and iw_analysis.service ..... 14

1.5 attributor.conf and iw_attributor.service ..... 19

1.6 blackboard.conf and iw_blackboard.service ..... 23

1.7 bookworm.conf and iw_bookworm.service ..... 25

1.8 capstack.conf and iw_capstack.service ..... 32

1.9 cas_config_compiler.conf ..... 40

1.10 cas.conf and iw_cas.service ..... 43

1.11 configerator.conf and iw_configerator.service ..... 54

1.12 deliver.conf and iw_deliver.service ..... 57

1.13 extractors.conf ..... 60

1.14 icap.conf and iw_icap.service ..... 64

1.15 image2text_fre.conf ..... 70

1.16 image2text_ts.conf ..... 73

1.17 image_autoling.conf and iw_image_autoling.service ..... 76

1.18 indexer.conf and iw_indexer.service ..... 82

1.19 is.conf and iw_is.service ..... 87

1.20 kicker.conf and kicker.service ..... 97

1.21 license.conf ..... 101

1.22 licensed.conf and iw_licensed.service ..... 101

1.23 lua.conf ..... 104

1.24 luaengined.conf and iw_luaengined.service ..... 104

1.25 messed.conf and iw_messed.service ..... 114

1.26 oracle.conf ..... 119

1.27 pas.conf and iw_pas.service ..... 120

1.28 postgresql.conf ..... 123

1.29 proxy.conf and iw_proxy_http.service, iw_proxy_icq.service, iw_proxy_smtp.service ... 123

1.30 qmover_client.conf and iw_qmover_client.service ... 140
1.31 qmover_server.conf and iw_qmover_server.service ... 143
1.32 rammer.conf ... 146
1.33 sample_compiler.conf and iw_sample_compiler.service ... 148
1.34 smtpd.conf and iw_smtpd.service ... 155
1.35 sniffer.conf and iw_sniffer.service ... 158
1.36 space_manager.conf and iw_space_manager.service ... 177
1.37 system_check.conf and iw_system_check.service ... 180
1.38 tech_tools.conf and iw_tech_tools.service ... 183
1.39 text_autoling.conf and iw_text_autoling.service ... 185
1.40 updater.conf and iw_updater.service ... 190
1.41 warpd.conf and iw_warpd.service ... 194
1.42 web.conf ... 197
1.43 x2db.conf and iw_x2db.service ... 204
1.44 x2x.conf and iw_x2x.service ... 209
1.45 xapi.conf and iw_xapi_xapi.service, iw_xapi_puppy.service ... 213
1.46 General section Bookworm ... 221
1.47 General section Discovery ... 224
1.48 General section Logging ... 225
1.49 General section Statistics ... 231
1.50 General section Statistic ... 232
1.51 General section ThriftServers ... 232
1.52 rest2push.conf and iw_rest2push.service ... 233

2 Other configuration files of Traffic Monitor ... 237

2.1 FineReader 12 OR extractor features of control ... 237
2.1.1 [BarcodeParams] ... 241
2.1.2 [DocumentProcessingParams] ... 242
2.1.3 [DocumentStructureDetectionParams] ... 242
2.1.4 [FontFormattingDetectionParams] ... 242
2.1.5 [ImageProcessingParams] ... 243
2.1.6 [ObjectsExtractionParams] ... 244
2.1.7 [OrientationDetectionParams] ... 245
2.1.8 [PageAnalysisParams] ... 246
2.1.9 [PagePreprocessingParams] ... 248
2.1.10 [PageProcessingParams] ... 249
2.1.11 [PrepareImageMode] ... 249

2.1.12 [RecognizerParams] ... 252
2.1.13 [SynthesisParamsForDocument] ... 254
2.1.14 [SynthesisParamsForPage] ... 255
2.1.15 [TableAnalysisParams] ... 256
2.1.16 Constants ... 256
ThreeStatePropertyValueEnum ... 256
CorrectSkewModeEnum ... 257
OrientationDetectionModeEnum ... 257
PaperSizeDetectionModeEnum ... 258
BarcodeTypeEnum ... 258
BarcodeOrientationEnum ... 259
TextTypeEnum ... 260
CaseRecognitionModeEnum ... 260
ParagraphExtractionModeEnum ... 261
MonospaceDetectionModeEnum ... 261
RotationTypeEnum ... 261
PhotoProcessingModeEnum ... 261
RecognitionModeEnum ... 262
2.1.17 FRProfile.ini example ... 262

Traffic Monitor configuration and unit files description
Other configuration files of Traffic Monitor
PDF

# 1 Traffic Monitor configuration and unit files description


- adlibitum.conf and iw_adlibitum.service
- agent.conf and iw_agent.service
- analysis_client.conf
- analysis.conf and iw_analysis.service
- attributor.conf and iw_attributor.service
- blackboard.conf and iw_blackboard.service
- bookworm.conf and iw_bookworm.service
- capstack.conf and iw_capstack.service
- cas_config_compiler.conf
- cas.conf and iw_cas.service
- configerator.conf and iw_configerator.service
- deliver.conf and iw_deliver.service
- extractors.conf
- icap.conf and iw_icap.service
- image2text_fre.conf
- image2text_ts.conf
- image_autoling.conf and iw_image_autoling.service
- indexer.conf and iw_indexer.service
- is.conf and iw_is.service
- kicker.conf and kicker.service
- license.conf
- licensed.conf and iw_licensed.service
- lua.conf
- luaengined.conf and iw_luaengined.service
- messed.conf and iw_messed.service
- oracle.conf
- pas.conf and iw_pas.service
- postgresql.conf
- proxy.conf and iw_proxy_http.service, iw_proxy_icq.service, iw_proxy_smtp.service
- qmover_client.conf and iw_qmover_client.service
- qmover_server.conf and iw_qmover_server.service
- rammer.conf
- sample_compiler.conf and iw_sample_compiler.service
- smtpd.conf and iw_smtpd.service
- sniffer.conf and iw_sniffer.service
- space_manager.conf and iw_space_manager.service
- system_check.conf and iw_system_check.service
- tech_tools.conf and iw_tech_tools.service
- text_autoling.conf and iw_text_autoling.service
- updater.conf and iw_updater.service
- warpd.conf and iw_warpd.service
- web.conf
- x2db.conf and iw_x2db.service
- x2x.conf and iw_x2x.service
- xapi.conf and iw_xapi_xapi.service, iw_xapi_puppy.service
- General section Bookworm
- General section Discovery
- General section Logging

- General section Statistics
- General section Statistic
- General section ThriftServers
- rest2push.conf and iw_rest2push.service

## 1.1 adlibitum.conf and iw_adlibitum.service

The **adlibitum.conf** configuration file

| Content | Description |
|---|---|
| `{` | |
| `"Logging": {...},` | See General section Logging |
| `"ThriftServers": {...},` | See General section ThriftServers |
| `"NookDir": "/opt/iw/tm5",` | In this section, the module working directory is specified. By default – `/opt/iw/tm5` |
| `"Discovery": {...}` | See Common section Discovery |
| `"Adlibitum": {` | |
| `"DomainParams": {` | A section that describes conversion of domain parameters<br>If your infrastructure has domains other than Windows AD, then for each of these domains you need to add its own custom setting. The structure of these settings is similar to the one described below. The " `NetBiosNameDefault` " field should remain empty and the " `DnsRootDefault` " should contain the domain name |
| `"default": {` | A setting for default conversions. It has a higher priority than parameters retrieved during synchronization. If there are no such parameters, this setting has the lowest priority |
| `"DnsRootDefault": "",` | Domain address through which the System gets auth contacts of persons. |

| Content | Description |
| --- | --- |
| | If the domain is specified in the custom setting, the priority of this custom setting will be higher than the default one |
| `"NetbiosNameDefault": ""` | Domain name used for identification and the auth type contact generation |
| `}` | |
| `},` | |
| `"ConfigDir": "etc/adlibitum/"` | Directory to store temporary files. The path is set in accordance with NookDir. Empty during the installation |
| `"SyncTempFilesDir": "tmp/"` | Directory to store temporary files. The path is set in accordance with NookDir. In case there is no such directory, to be automatically created |
| `},` | |
| `"UnsafeHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes |
| `}` | |

The **iw_adlibitum.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |

| Code | Description |
| --- | --- |
| `Description=InfoWatch Traffic Monitor Adlibitum` | Daemon name |
| `After=network-online.service iwtm-consul.service  postgresql-9.6.service oracle.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_adlibitum` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_adlibitum -p /opt/iw/tm5/etc --backend $DB_BACKEND` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` field |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |

| Code | Description |
| --- | --- |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB).<br>The `infinity` value means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| `EnvironmentFile=-/etc/default/iwtm` | The path to the environment file |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.2 agent.conf and iw_agent.service

The **agent.conf** configuration file:

| Content | Description |
| --- | --- |
| `{` | |
| `"Autoscan": {` | Automatic system information gathering settings section |
| `"Enabled": true,` | Enable auto-scan |
| `"StartTime": 0` | Scanning start time offset in minutes (once a day, starting from current start time) |
| `},` | |
| `"AutoscanTime": 0,` | Older versions support. The StartTime parameter is used in the up-to-date versions. Entirely equivalent. |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"Discovery": {...},` | See Common section Discovery |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/ disabling this parameter is not recommended without consultation with developers. |
| `"Logging": {...},` | See General section Logging |
| `"NookDir": "/opt/iw/tm5",` | In this section, the module working directory is specified. By default – `/opt/iw/tm5` |
| `"ThriftServers": {...}` | See General section ThriftServers |
| `}` | |

The **iw_agent.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Agent` | The daemon name |
| `After=network-online.service iwtm-consul.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_agent` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_agent -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |

| Code | Description |
| --- | --- |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or forcibly terminated |
| `User=root` | The name of the user under whose account the daemon is started |
| `Group=root` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| `AmbientCapabilities=CAP_DAC_READ_SEA RCH` | A privilege that removes the check for permission to read files. The whole file system becomes available for reading. |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.3 analysis_client.conf

| Content | Description |
| --- | --- |
| `{` | |
| `"PASPort": 9989,` | **iw_pas** port |
| `"PASHost": "127.0.0.1",` | **iw_pas** daemon host address |

| Content | Description |
| --- | --- |
| `"CASPort": 9987,` | **iw_cas** port |
| `"CASHost": "127.0.0.1",` | **iw_cas** daemon host address |
| `"ChunkSize" : 8388608,` | Clipboard size (bytes) for data exchange with CAS service (optional). |
| `}` | |

## 1.4 analysis.conf and iw_analysis.service

The **analysis.conf** configuration file:

| Content | Description |
| --- | --- |
| `{` | |
| `"Analysis": {` | |
| `"HTTP": {` | |
| `"CharsetDetection": 0,` | Encoding detection method. The default value is 0. The encoding is determined by the usual method. After extractinп the context, some POST-requests might be displayed incorrectly. To fix this, the value can be set to `1`. |
| `"DecodeHttpContent": true,` | Enables extracting the request contents if the value of the Content-Encoding header is `gzip`, `deflate`, or `compress`. By default, the value is `true`. |
| `"ExtractHttpEntity": false,` | Enables text extraction from the contents of an encrypted request using external decompressors. This procedure is used, if the internal decoding procedure with the use of zlib does not work. By default, the value is `false`. |
| `"MaxFileMap": 131072,` | Maximum buffer size to read an HTTP context file (in bytes). |

| Content | Description |
| --- | --- |
| `"MaxMemoryBlock": 4096,` | Maximum amount of POST request data (in kilobytes), which can be stored in RAM. Blocks of a larger size will be unloaded to temporary files. The default value is `4096` KB. |
| `"MaxReadBuf": 131072,` | Buffer size limit. The default value is 131072. |
| `"MinHeader": 10,` | Minimum text size (in bytes) for one block of a URL-encoded variable, which will be sent to the content analysis server. The default value is `10`. |
| `"MinText": 0,` | Minimum text size (in bytes), for which the content analysis will be performed. The default value is `0`. Setting this parameter allows you to reduce the load on the content analysis server. This can be done by excluding from content analysis the text that is too small to contain valuable messages. |
| `"OnlyPost": true,` | Intercepting only POST-requests. The default value is `true`. |
| `"ZimbraMail": false` | Intercepting Zimbra mail. The default value is `false`. |
| `},` | |
| `"TempDir": "tmp",` | Directory for storing temporary files. The default value is `tmp`. |
| `"NumExtractorThreads": 0,` | • Value 0 - an old mode. The number of started extractors is equal to the number of streams and each object will be processed sequentially by one thread (for example, an archive with 100 files).<br>• Value >0 - a new mode. In this case, if the object contains attachments (an archive), they will be processed by a maximum of `NumExtractorThreads` threads. And, irrespective of the number of working threads, only NumExtractorThreads extractors can be run simultaneously. |
| `"WorkerThreads": 12` | The number of processed streams. The default value is `12` |

| Content | Description |
| --- | --- |
| `},` | |
| `"AnalysisClient": {` | Settings for data analysis client |
| `"BindataMaxSizeInMb": 1024` | Maximum size of a file to be processed (MB). The default value is 1024 |
| `"Cas": {` | Settings of **iw_cas** |
| `"SleepIntervalInSec": 5,` | The interval between connection attempts |
| `"ConnectTryCount": 200` | Number of attempts to connect **iw_cas** service |
| `},` | |
| `"ConsulKVWatchPort": 9998,` | Port which Consul is using to inform interceptor about kv (key-value) changes and the necessity to update values |
| `"Pas": {` | Settings of **iw_pas** |
| `"SleepIntervalInSec": 5,` | The interval between connection attempts |
| `},` | |
| `},` | |
| `"Bookworm": {...},` | see General section Bookworm |
| `"DebugBreak": false,` | Whether SIGTRAP (SIGBREAK on Windows) should be sent when handling any exception. Used for debugging purposes. |
| `"ExtractorCache": {` | Extractor cache options |
| `"ExtractorCacheDepth": 0,` | Maximum number of objects stored in a cache. The default value is 0 (cache is disabled). |

| Content | Description |
| --- | --- |
| `"ExtractorCacheClearExistingDir": true,` | Flag, indicating if the contents of the daemon's cache directory should be deleted once started, if the directory already exists and is not empty. The default value is true (to delete). |
| `"ExtractorCacheMaxSize": 107374182400,` | Maximum cache size reserved on the disk (in bytes). The default value is 107374182400 (100 GB). |
| `"ExtractorCacheFileMaxSize": 10485760,` | Maximum file size to be cached (in bytes). The default value is 10485760 (10 MB). |
| `"ExtractorCacheShards": 0` | Number of threads to store data in the cache. If the value is 0, all system threads are used. Otherwise, the specified number of threads are used. It is better not to specify a value greater than the number of threads in the system. The default value is 0. |
| `},` | |
| `"Logging": {...},` | see General section Logging |
| `"NookDir": "/opt/iw/tm5",` | In this section, the module working directory is specified. By default: `/opt/iw/tm5` |
| `"UnsafeSignalHandlers":false,` | Support for working with unhandled signals. Disabled by default ( `false` ). Once the `true` value is set, you can use "unsafe" signal handlers in the code (e.g. SIGSEVG). We recommend not adding, enabling or disabling this parameter without consulting our developers. |
| `"Statistics": {...},` | see Genaral section Statistics |
| `}` | |

The **iw_analysis.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |

| Code | Description |
| --- | --- |
| `Description=InfoWatch Traffic Monitor Analysis daemon` | Daemon name |
| `After=network-online.service iwtm-consul.service iw_bookworm.service iw_licensed.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_analysis` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_analysis -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |

| Code | Description |
| --- | --- |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.5 attributor.conf and iw_attributor.service

The **iw_attributor.conf** configuration file:

| Content | Description |
| --- | --- |
| `{` | |
| `"de": {` | Parameters of interaction between Traffic Monitor and Data Analysis Service |

| Content | Description |
| --- | --- |
| `"tmhost": "set_tmhost_here",` | Traffic Monitor address |
| `"tokenslist": "/opt/iw/tm5/etc/config/access_control/tokens.list"` | The full path to the file containing authentication tokens |
| `},` | |
| `"logger": {` | Logging parameters |
| `"filename": "/var/log/infowatch/attributor.log",` | The full path to the file, in which logs are recorded |
| `"level": "debug"` | Logging level.<br>Possible logging levels (Severity):<br>• *trace* - detailed logging (including messages with the levels *debug, info* and higher)<br>• *debug* - debugging information output, usually for error diagnostics and communication with developers/tech support<br>• *info* - information messages, could be disabled in the stable system<br>• *warning*<br>• *error*<br>• *fatal* - most important messages leading to system crash and failure. |
| `}` | |
| `}` | |

The **iw_attributor.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |

| Code | Description |
| --- | --- |
| `Description=InfoWatch iw_attributor service` | Daemon name |
| `After=network-online.target iwtm-consul.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_attributor_pg` | Only for PostgreSQL DBMS. The full path and arguments of the command that should be executed before the main process is started. |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_attributor_ora` | Only for Oracle DBMS. The full path and arguments of the command that should be executed before the main process is started. |
| `ExecStart=/opt/iw/tm5/bin/iw_attributor_pg -p /opt/iw/tm5/etc` | Only for PostgreSQL DBMS. The full path and arguments of the command that should be executed before starting the daemon. The command is run under user specified in the `User` field |
| `ExecStart=/opt/iw/tm5/bin/iw_attributor_ora -p /opt/iw/tm5/etc` | Only for Oracle DBMS. The full path and arguments of the command that should be executed before starting the daemon. The command is run under user specified in the `User` field |
| `ExecStop=/bin/kill -s SIGTERM $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |

| Code | Description |
| --- | --- |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=` | The maximum number of open files |
| `LimitFSIZE=` | The maximum size of a file (KB).<br>The `infinity` value means that the size is unlimited |
| `LimitNPROC=` | The maximum number of processes |
| `LimitCORE=` | Limit for core dump size (KB) |
| `LimitMEMLOCK=` | The maximum size of memory locked address space (KB) |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.6 blackboard.conf and iw_blackboard.service

The **blackboard.conf** configuration file:

| Content | Description |
|---|---|
| `{` | |
| `"DebugBreak": false,` | If SIGTRAP (SIGBREAK to Windows) should be sent while any exception handling. Used for debugging purposes. |
| `"Discovery": {...},` | See Common section Discovery |
| `"Logging": {...}` | See General section Logging |
| `"NookDir": "/opt/iw/tm5",` | In this section, the module working directory is specified. By default – `/opt/iw/tm5` |
| `"OpenMessagesMax": 100,` | Maximum number of simultaneously opened elements of **iw_blackboard** daemon message queue |
| `"UnsafeSignalHandlers":false,` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"ThriftServers": {...}` | See General section ThriftServers |
| `}` | |

The **iw_blackboard.service** unit file:

| Code | Description |
|---|---|
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Configuration Blackboard` | Daemon name |
| `After=network-online.service iwtm-consul.service` | Daemons that will be started before the current one |

| Code | Description |
| --- | --- |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_blackboard` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_blackboard -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |

| Code | Description |
|---|---|
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` value means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.7 bookworm.conf and iw_bookworm.service

The **bookworm.conf** configuration file:

| Content | Description |
|---|---|
| `{` | |
| `"Logging": {...}` | See General section Logging |
| `"ThriftServers": {...}` | See General section ThriftServers |
| `"NookDir": "/opt/iw/tm5",` | In this section, the module working directory is specified. By default – `/opt/iw/tm5` |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |

| Content | Description |
| --- | --- |
| | |
| `"UnsafeSignalHandlers":false,` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"Discovery": {...},` | See Common section Discovery |
| `"MergeDetector": {` | Configuration of splice detector |
| `"CFBFormats": {` | Formts signatures search |
| `"XMLPath": "mergedetector/cfb_formats.xml",` | Path to directory |
| `"XSDPath": "mergedetector/cfb_formats.xsd"` | Path to XSD scheme to validate |
| `},` | |
| `"EOFFormats": {` | Comparison of file size and data from CFB (only for formats based on MS CFB) |
| `"XMLPath": "mergedetector/eof_formats.xml",` | Path to directory |
| `"XSDPath": "mergedetector/eof_formats.xsd"` | Path to XSD scheme to validate |
| `},` | |
| `"SizeFormats": {` | Comparison of file size and value recorded in the known place (for different formats with size fields). This can be also applied to formats consisting of block series with records. |

| Content | Description |
| --- | --- |
| "XMLPath": "mergedetector/size_formats.xml", | Path to directory |
| "XSDPath": "mergedetector/size_formats.xsd" | Path to XSD scheme to validate |
| }, | |
| "Compendiums": { | Paths to compendiums list |
| "OCRCompendium": { | Directory containing information about enabling OCR extraction for a specified service/ object type/ protocol. |
| "XMLPath": "config-perm/ bookworm/ocr.xml", | Basic OCR directory. It is to be overwritten when updating the RPM packages. |
| "CustomNodeXMLPath": [], | Custom OCR directory list for separate nodes. The highest rules priority. |
| "CustomXMLPath": "config-perm/ bookworm/ocr-custom.xml", | Custom OCR options directory . The rules belonging to this section have higher priority over the corresponding rules from BaseXMLPath. This directory is not overwritten when RPM packages are updating. |
| "XSDPath": "compendiums/ ocr.xsd" | Path to XSD schema for OCR directory validation |
| }, | |
| "ErrorCompendium": { | Localized processing errors directory |
| "XMLPath": "config-perm/ bookworm/errors.xml", | Path to directory |
| "XSDPath": "compendiums/ errors.xsd" | Path to XSD schema for validation |
| }, | |

| Content | Description |
| --- | --- |
| "ActionCompendium": { | Directory of actions related to interrupted events. Supporting localization. |
| "XMLPath": "config/bookworm/actions.xml", | Path to directory |
| "XSDPath": "compendiums/actions.xsd" | Path to XSD schema for validation |
| }, | |
| "AntigarbageCompendium": { | Directory with the samples of events, needed to avoid error when the events are wrongly deleted as garbage |
| "XMLPath": "config-perm/bookworm/antigarbage.xml", | Path to directory |
| "XSDPath": "compendiums/errors.xsd" | Path to XSD-scheme for validation. |
| }, | |
| "FormatCompendium": { | Supported formats directory |
| "CustomXMLPath": "config-perm/bookworm/formats_custom.xml", | Path to user xml file with settings |
| "CustomizationXMLPath": "config-perm/bookworm/formats_customization.xml", | Path to xml file with settings customization |
| "CustomizationXSDPath": "compendiums/formats_customization.xsd", | Path to xsd scheme, with which the file with settings customization should comply |

| Content | Description |
| --- | --- |
| "XMLPath": "config-perm/bookworm/formats.xml", | Path to directory |
| "XSDPath": "compendiums/formats.xsd" | Path to XSD schema for validation |
| }, | |
| "ExtractorCompendium": { | Directory for signature-based detection of mime-type, and suitable extractor determination. |
| "CustomXMLPath": "config-perm/bookworm/extractors_custom.xml", | Path to user xml file with settings |
| "CustomizationXMLPath": "config-perm/bookworm/extractors_customization.xml", | Path to xml file with settings customization |
| "CustomizationXSDPath": "compendiums/extractors_customization.xsd", | Path to xsd scheme, with which the file with settings customization should comply |
| "XMLPath": "config-perm/bookworm/extractors.xml", | |
| "XSDPath": "compendiums/extractors.xsd" | Path to XSD schema for validation |
| }, | |
| "ProtocolCompendium": { | Localized protocols directory. |
| "XMLPath": "config/bookworm/protocols.xml", | Path to directory |

| Content | Description |
| --- | --- |
| "XSDPath": "compendiums/protocols.xsd" | Path to XSD schema for validation |
| }, | |
| "ServiceCompendium": { | Localized services and event types directory. |
| "XMLPath": "config/bookworm/services.xml", | Path to directory |
| "XSDPath": "compendiums/services.xsd" | Path to XSD schema for validation |
| }, | |
| "TechInfoCompendium": { | Localized directory of technologies for mime-type processing. |
| "XMLPath": "config-perm/bookworm/tech_info.xml", | Path to directory. |
| "XSDPath": "compendiums/tech_info.xsd" | Path to XSD schema for validation. |
| }, | |
| "ValidatorCheck": true, | Enabling/disabling directory validation |
| "UnsafeHandlers": false | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| } | |

The **iw_bookworm.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Configuration Bookworm` | Daemon name |
| `After=network-online.service iwtm-consul.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_bookworm` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_bookworm -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |

| Code | Description |
| --- | --- |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.8 capstack.conf and iw_capstack.service

The **capstack.conf** configuration file:

| Content | Description |
| --- | --- |
| `{` | |
| `"Messed3": {` | Object model for **iw_capstack** type Messed3 and its settings |

| Content | Description |
| --- | --- |
| "Format": true | If formatting of XML file queue should be enabled |
| }, | |
| "Statistics": {...} | See General section Statistics |
| "Logging": {...} | See General section Logging |
| "processors": { | Protocols processors (used processors are described in section UsedProcessors) |
| "pop3": { | Pop3 |
| "OperatingPorts": [ | Ports |
| 110 | |
| ] | |
| }, | |
| "imap4": { | Imap4 |
| "OperatingPorts": [ | Ports |
| 143, | |
| 993 | |
| ] | |
| }, | |
| "nrpc": { | NRPC |

| Content | Description |
| --- | --- |
| "TrackExternal": true, | If incoming/outgoing messages from/to IBM Lotus Domino should be parsed |
| "OperatingPorts": [ | Ports |
| 1352 | |
| ], | |
| "TrackInternal": true | If messages between internal addressees of IBM Lotus Domino should be parsed |
| } | |
| }, | |
| "NookDir": "/opt/iw/tm5", | In this section, the working directory of the module is specified. By default – `/opt/iw/tm5` |
| "UnsafeSignalHandlers":false, | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| "UsedProcessors": { | This section contains protocols that should be parsed by **iw_capstack** . The process parses the protocol and transforms it into the extension. Then, traffic is sent to **iw_messed** (see section processors for the valid protocol processors list). |
| "pop3": true, | Pop3 parsing. Default value: `true` |
| "imap4": true, | Imap4 parsing. Default value: `true` |
| "nrpc": false | Nrpc parsing. Default value: `false` |

| Content | Description |
| --- | --- |
| `},` | |
| `"UsedSources": {` | Used data sources for **iw_capstack** are specified in the section. Iscp is the only supported element, but pcap could be used for debugging purposes if required. |
| `"iscp": true` | At this time, `iscp` is only supported |
| `},` | |
| `"MemoryLimits": {` | Memory limits for **iw_capstack** (bytes). (0 - without restrictions. RejectSessionsLimit < DropSessionsLimit < StopAllocationLimit for not null values) |
| `"RejectSessionsLimit": 4294967296,` | Upon achieving the limit, new sessions could not be created |
| `"StopAllocationLimit": 0,` | Upon achieving the limit, memory allocation is no longer possible |
| `"DropSessionsLimit": 0` | Operation threshold, upon crossing which the session dropping mechanism is activated (starting with the most memory consuming). |
| `},` | |
| `"Sources": {` | Data source lists for **iw_capstack** are specified here |
| `"iscp": {` | InfoWatch Sniffer Connection Protocol (proprietary protocol) |
| `"ListenArea": "capstack",` | Listen area, used in **iw_sniffer** .<br>If a listen area with the specified name is not configured in **iw_sniffer** , but it exists in **iw_capstack** or **iw_proxy** , the error "This area does not exist and interruption is not possible" will be written in the logs upon connection. |

| Content | Description |
| --- | --- |
| `"BaudRate": "max",` | Baud rate limit for `iscp`, "max" - do not set a limit (baud) |
| `"Niceness": -8,` | Priority value (nice) for threads-handlers of iscp |
| `"Host": "127.0.0.1",` | **iw_sniffer** IP address |
| `"Port": 4301` | **iw_sniffer** port |
| `},` | |
| `"script": {` | Source used for debugging. NOT USED. To get the script, make "sessiondump": true in *UsedProcessors* . Scripts are written in the `cs-dump` directory by default. |
| `"InputDir": "scripts"` | |
| `},` | |
| `"smtp": {` | NOT USED |
| `"Host": "127.0.0.1",` | |
| `"Port": 2525` | |
| `},` | |
| `"icap": {` | NOT USED |
| `"Host": "127.0.0.1",` | |
| `"Port": 1344` | |
| `},` | |

| Content | Description |
| --- | --- |
| "devmon": { | NOT USED |
| "Host": "127.0.0.1", | |
| "Port": 6559 | |
| }, | |
| "pcap": { | NOT USED. Could be used for debugging purposes. This processing differs from the sniffer processing. Therefore, it could be used only for totally correct dumps without violation of order/skips/double packages. |
| "Filter": "1:65535", | - |
| "Speed": "fast", | - |
| "DefragTimeoutInSec": 60, | - |
| "InputFile": "input.pcap" | - |
| } | |
| }, | |
| "DebugBreak": false, | To send or not to send SIGTRAP (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| "HeartbeatTimeInMs": 257, | Asynchronous internal procedures call interval |
| "Sheme_liro": "bin/typedef-main.lso", | Path to file with Liro scheme |
| "UsedObjectModels": { | Used object model (the only one model could be used) |

| Content | Description |
| --- | --- |
| `"Messed3": true,` | Use the Messed3 model |
| `},` | |
| `}` | |

The **iw_capstack.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Capture Stack` | The daemon name |
| `After=network-online.service iwtm-consul.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_capstack` | The full path and command arguments that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_capstack -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |

| Code | Description |
| --- | --- |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| `AmbientCapabilities=CAP_SYS_NICE` | A privilege that enables raising the priority for processes and streams |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |

| Code | Description |
| --- | --- |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.9 cas_config_compiler.conf

| Content | Description |
| --- | --- |
| `{` | |
| `"Logging": {...},` | see General section Logging |
| `"NookDir": "/opt/iw/tm5",` | In this section, the module working directory is specified. By default – `/opt/iw/tm5` |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"UnsafeSignalHandlers":false,` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"Analysis": {` | |
| `"Autoling": {` | Autolinguist training configuration section. |
| `"AutolingConfigPath": "etc/config-perm/cas/autoling.conf",` | |
| `"Classifier": {` | Text classifier section. The parameter contains: |
| `"DictPath": "etc/config-perm/cas/",` | Path to morphological dictionaries. |

| Content | Description |
| --- | --- |
| "LexerJson": "etc/config-perm/cas/lexer.json", | Path to morphological dictionaries configuration. |
| "Translit": { | |
| "TranslitConfigPath": "etc/config-perm/cas/onto_translit_table.conf", | Path to transliteration tables. |
| "Enabled": false | Enabling/disabling the option to add transliterated terms into ontology. |
| } | |
| "EnableSchemaCheck": true, | Enabling the check of xml on xsd (disabling substantially increases the configuration loading speed). `true` by default. |
| "EnableContentSchemaCheck": true, | Enabling the validation of **cas_config.xml** content (true value) |
| "Images": { | |
| "ImageClassifier": { | Image classifier training settings section. |
| "NumClusters": 300, | Number of clusters for quantization. |
| "NumDictionaryTrainDecriptors": 10000, | Maximum number of training descriptors |
| "StatModel": { | Machine learning parameters section. Not recommended to change without the skilled person. |
| "C": 100.0, | The C parameter for some types of SVM (C-SVC, epsilon-SVR, and nu-SVR). |
| "probability": false, | If the probability of classifier training should be used. |

| Content | Description |
| --- | --- |
| "degree": 3, | The kernel of a classifier function degree. |
| "shrinking": false, | defining, if the shrinking heuristics should be used. |
| "eps": 9.9999999999999995e-07, | Set permissibility for terminating criteria. |
| "p": 0.10000000000000001, | Set a permissible error for terminating criteria. |
| "KernelType": 2, | The kernel of a classifier function type. |
| "cache_size": 1000.0, | Cache size (megabytes). |
| "coef0": 0.0, | Null coefficient for the kernel function. |
| "nu": 0.5, | The nu parameter for some types of SVM (nu-SVC, one-class SVM и nu-SVR). |
| "gamma": 0.5, | The gamma parameter for the kernel of a classifier function. |
| "SVMType": 0 | SVM classifier type |
| }, | |
| }, | |
| "MatcherConfig": "etc/config-perm/cas/image-matcher.yml" | Text classifier section. The parameter contains: |
| "SchemaPath": "etc/cas_config.xsd", | Path to morphological dictionaries. |

| Content | Description |
| --- | --- |
| `"Stamper": {},` | Path to morphological dictionaries configuration. |
| `"Researcher": {` | Section for "Text objects" technology. Not used. |
| `"ThreadsCount": 1` | The number of threads when compiling technology of regular expressions. The number can be:<br>• if you specify an integer value N bigger than 0, then this number of threads will be allocated<br>• if you specify 0, then a number of threads will be equal to the number of kernels<br>• if you specify an integer value N smaller than 0, then a number of threads will equal (number of kernels - module of the N value specified). In this case, if you specify an unvalid value, that means the one exceeding considerably the number of kernels, then the compilation will run as 1 thread |
| `}` | |
| `}` | |
| `}` | |

## 1.10 cas.conf and iw_cas.service

The **cas.conf** configuration file:

| Content | Description |
| --- | --- |
| {<br> | |
| "Logging": {...},<br> | See General section Logging |
| "ThriftServers": {...},<br> | See General section ThriftServers |
| "NookDir": "/opt/iw/tm5",<br> | In this section, the module working directory is specified. By default, it is `/opt/iw/tm5`. |
| "Discovery": {...},<br> | See Common section Discovery |
| "OPencvThreads": 1,<br> | Configuration of productive capacity of threads being started, which are managed by the internal OpenCV pool. Possible values:<br>• 0 or 1 – by default;<br>• >1 – memory consumption increase (several GB) when using image-processing technologies and enabling the appropriate protected objects;<br>• -1 – automatic calculation of threads based on a number of processors/kernels in the system. |
| "Statistic": {<br> | Section for statistical data collection |
| "Multiplier": 1000,<br> | A multiplier. As many functions work during a short period, their data is multiplied in statistics. Otherwise, some numbers will be omitted. |
| "Enabled": false,<br> | Whether to enable/disable statistical data collection |
| "Groups": {<br> | Statistical data groups. This section is to specify in which groups statistical data collection is enabled/disabled. |
| "TechStats": true,<br> | Statistics of technologies |

| Content | Description |
| --- | --- |
| `"CasCacheStats": true,` | Statistics of **iw_cas** cache |
| `"TechEnableStats": true,` | Statistics of enabling technologies |
| `"CasWorkStats": true,` | Statistics of **iw_cas** operation |
| `"TechResultStats": true` | Statistics of technology operation results |
| `}` | |
| `},` | |
| `"Bookworm": {...},` | See General section Bookworm |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"UnsafeSignalHandlers":false,` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/ disabling this parameter is not recommended without consultation with developers. |
| `"Analysis": {` | |
| `"Autoling": {` | Section for Autolinguist settings |
| `"Enabled": false,` | Technnology enabling (value – `true` ) and disabling (value – `false` ) |
| `"MinTermLength": 3,` | Minimum length of terms found in text |
| `"MinTextWordCount": 10,` | Minimum amount of words in text to be analysed |

| Content | Description |
| --- | --- |
| "MinUniqueTermCount": 5, | Minimum number of unique terms found in the text to be analyzed |
| "RelevanceThreshold": 0.1, | Minimum probability threshold below which a category is not considered triggered |
| "ResultLimits": { | Limits to the amount of results of the technology in the event context |
| "MaxEntriesPerCategory": 50 | Maximum number of terms from an Autolinguist category that are highlighted in the text if the category is triggered |
| } | |
| }, | |
| "FormAnalysis": { | Detector of forms |
| "MaxHighlightedRows": 50, | Maximum number of rows of the form to be highlighted. By default, it is `50`. |
| "StopWordsPath": "etc/config-perm/cas/form_stopwords.txt", | Path to stop words dictionary |
| "Enabled": "true", | Enabling ( `true` ) and disabling ( `false` ) of analysis technologies |
| "LongFieldThreshold": 0.20000000298023224, | Long fields threshold (more than one word) in the intercepted form, used in the heuristic formula for comparison algorithm selection. By default, it is `0.2`. |
| "MinMatchedRows": 1 | The minimum number of matched rows to activate the form. It has an influence on all forms. By default, it is `1`. |
| }, | |
| "Vector": { | Vector image analysis technology |

| Content | Description |
| --- | --- |
| "Enabled": true | Enabling ( `true` ) and disabling ( `false` ) of analysis technologies |
| }, | |
| "Researcher": { | Text object detector |
| "LuaReplacesPath": "etc/config-perm/cas/lua_replaces.json", | Path to the file with symbol list to be replaced for the specified ones before sending the text to the verification function |
| "Enabled": true, | Enabling ( `true` ) and disabling ( `false` ) of analysis technologies. |
| "ResultLimits": { | Event-context technology results limits |
| "MaxEntriesPerInstance": 50, | The maximum number of text objects found to be written to the context. This means, **how many times maximum** the unique object can be found. From the `"MaxEntriesPerInstance"` and `"MaxInstancesPerTextObject"` parameters, only the former one is used in case the text object template is specified as a string. The default value is `5 0` . |
| "MaxInstancesPerTextObject": 50 | The maximum number of text object occurrences to be written to the context. This means, how many different object values can be found. From the " `MaxEntriesPerInstance` " and " `MaxInstancesPerTextObject` " parameters, only the latter one is used in case the text object template is set as a regular expression. The default value is `50.` |
| } | |
| }, | |
| "Classifier": { | Content analysis |

| Content | Description |
| --- | --- |
| `"RelevanceThreshold": 0.1,` | Relevance threshold. By default, it is `0.10000000000000001` |
| `"Enabled": true,` | Enabling ( `true` ) and disabling ( `false` ) of analysis technologies. |
| `"ResultLimits": {` | Limits for the number of event-context technology results |
| `"MaxEntriesPerTerm": 50` | The maximum number of terms entries for each category, which should be written to the context. By default, it is `5 0` . |
| `},` | |
| `"Speller": {` | Speller. Technology is disabled by default |
| `"Enabled": true,` | Enabling ( `true` ) and disabling ( `false` ) of analysis technologies. |
| "SpellerDictsPath": "etc/config-perm/cas/" | The path to the directory containing morphological dictionaries |
| `},` | |
| `"Translit": {` | Transliteration. The technology is disabled by default.<br><br>If transliteration is used for traffic analysis, then case-sensitive term detection does not work (terms with uppercase letters are not detected). |
| `"TranslitConfigPath": "etc/config-perm/cas/translit_table.txt",` | The path to the exchange tables for transliteration |
| `"Enabled": true` | Enabling ( `true` ) and disabling ( `false` ) of analysis technologies. |

| Content | Description |
| --- | --- |
| } | |
| }, | |
| "Stamper": { | Reference document detector. |
| "Enabled": true, | Enabling ( `true` ) and disabling ( `false` ) of analysis technologies. |
| "ResultLimits": { | Event-context technology results limits |
| "MaxEntriesPerFingerprint": 50 | Maximum number of reference documents entries to be written to the context. The default value is `5 0` . |
| } | |
| }, | |
| "Images": { | Image detector |
| "MatcherConfig": "etc/config-perm/cas/image-matcher.yml", | Path to analysis configuration file ( `image-matcher.yml` ) |
| "KeypointMatcher": { | Small image detector technology. Used for credit cards. |
| "Enabled": true | |
| }, | |
| "ImageMaxWidth": 50000, | Maximum image width. The System does not process images wider than this value. The default value is `50 000` . |
| "ImageMaxHeigth": 50000, | Maximum image height. The System does not process images of a larger height. The default value is `50 000` . |

| Content | Description |
| --- | --- |
| `"Barcode": {` | Barcode recognition technology. Returns text. |
| `"Enabled": false` | Enabling ( `true` ) and disabling ( `false` ) of analysis technologies |
| `},` | |
| `"StampDetector": {` | Stamp detector |
| `"Enabled": true` | Enabling ( `true` ) and disabling ( `false` ) of analysis technologies |
| `},` | |
| `"ResultLimits": {` | Event-context technology results limits |
| `"MaxFingerprint": 50` | The maximum number of found fingerprints to be written to the context. The default value is `5 0` . |
| `},` | |
| `"ImageClassifier": {` | Image classifier technology to work with passports, drawings, maps. |
| `"Enabled": true` | |
| `},` | |
| `},` | |
| `"Exclusions": {` | Exclusions |
| `"Enabled": false` | Enabling ( `true` ) and disabling ( `false` ) of analysis technologies |
| `},` | |

| Content | Description |
| --- | --- |
| `"TableAnalysis": {` | Database unloading detector |
| `"MinWords": 10,` | The minimum number of words in a database unloadings file, sufficient to detect unloading. All field names and data from the table are included in this value. It is required having an interword space. The default value is `10`. |
| `"Enabled": true,` | Enabling ( `true` ) and disabling ( `false` ) of analysis technologies |
| `"MaxHighlightedWords": 200` | Maximum number of words from unloading to be highlighted. The default value is `200`. |
| `"StopOnLimitExceed": true` | The parameter used for the database unloading technology when applying the *All words in one cell following each other in any order* search type. Values:<br>• If `true`, the search algorithm stops as soon as it finds the minimum number of lines required for triggering. Used for optimization.<br>• If `false`, the algorithm checks all the lines in the sample. |
| `"MaxCheckLimit": 0` | The parameter used for the database unloading technology when applying the *All words in one cell following each other in any order* search type. Effective only if optimization is disabled ( `"StopOnLimitExceed": false` ). If the value is greater than `0`:<br>• For unloadings with keys, the System continues searching until it finds the specified maximum number of lines with unique keys;<br>• For unloadings without keys, the System continues searching until it finds the specified maximum number of unique lines. |
| `}` | |

| Content | Description |
| --- | --- |
| `},` | |
| `"Config": {` | |
| `"EnableSchemaCheck": true,` | Enabling the check of xml on xsd (disabling substantially increases the configuration loading speed). The default value is `true`. |
| `"CacheMaxSize": 10000,` | Number of analysis results saved in the cache. The number of cache elements. The default value is `10000`. |
| `"SchemaPath": "etc/cas_config.xsd",` | Path to the xsd file used for xml configuration validation. The default value is `etc/cas_config.xsd`. |
| `"Path": "etc/config/cas"` | Path to the cas file. The default value is `etc/config/cas`. |
| `},` | |
| } | |

The **iw_cas.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Content Analysis Server` | Daemon name |
| `After=network-online.service iwtm-consul.service postgresql-9.6.service oracle.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |

| Code | Description |
| --- | --- |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre as the **root** user |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_cas` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_cas -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |

| Code | Description |
| --- | --- |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in the multi-user mode |

## 1.11 configerator.conf and iw_configerator.service

The **configerator.conf** configuration file:

| Content | Description |
| --- | --- |
| `{` | |
| `"UnsafeSignalHandlers":false,` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/ disabling this parameter is not recommended without consultation with developers. |
| `"Debug": false,` | Switch to Debug mode (increases the logging level). |
| `"ConfigurationsCount": 100,` | Number of configurations saved in `etc/ configerator/` (The value could be increased if the connections are too slow and the configurations do not reach DM. To save the disc space the value could be decreased). Default value - `100` |

| Content | Description |
| --- | --- |
| `"WebSocketURL": "https://localhost/api/notify/publish/configUpdate",` | URL, where the configuration update notifications are sent. It is recommended changing, if nginx has a non-standard configuration. |
| `"Logging": {` | Logging configuration. |
| `"Backends": {` | Backends list. |
| `"DefaultDirectory": "/var/log/infowatch/",` | Configuration saving directory. |
| `"Descriptions": {` | Format description for every logging type and specific settings. |
| `"File": {` | Separate file output (the directory to create a file in is specified in `DefaultDirectory`). |
| `"FileName": "configerator.log"` | File name (basename) to save a log. |
| `}` | |
| `}` | |
| `}` | |
| `}` | |
| `}` | |

The **iw_configerator.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |

| Code | Description |
| --- | --- |
| `Description=InfoWatch Traffic Monitor Indexer` | Daemon name |
| `After=network-online.service iwtm-consul.service postgresql-9.6.service oracle.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_configerator` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_configerator -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |

| Code | Description |
| --- | --- |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| `EnvironmentFile=-/etc/default/iwtm` | The path to the environment file |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.12 deliver.conf and iw_deliver.service

The **deliver.conf** configuration file:

| Content | Description |
| --- | --- |
| `{` | |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |

| Content | Description |
| --- | --- |
| `"Deliver": {` | Specific settings of **iw_deliver** daemon. |
| `"IdleTimeoutInSec": 100,` | Idle timeout in case of empty queue for sending before the next iteration (seconds). |
| `"MaxPickObjectsCount": 20,` | Maximum number of objects, picked by **iw_deliver** from database for sending. |
| `"MaxSentAttempt": 10,` | Maximum number of attempts to send an object in case of error occured. |
| `"SentTimeoutInSec": 150` | Object resend interval ( seconds). |
| `},` | |
| `"Logging": {...}` | see General section Logging |
| `"NookDir": "/opt/iw/tm5",` | In this section the module working directory is specified. By default – `/opt/iw/tm5` |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/ disabling this parameter is not recommended without consultation with developers. |
| `}` | |

The **iw_deliver.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Deliver` | Daemon name |

| Code | Description |
| --- | --- |
| `After=network-online.service iwtm-consul.service postgresql-9.6.service oracle.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_deliver` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_deliver -p /opt/iw/tm5/etc --backend $DB_BACKEND` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |

| Code | Description |
| --- | --- |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` value means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| `EnvironmentFile=-/etc/default/iwtm` | The path to the environment file |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.13 extractors.conf

| Content | Description |
| --- | --- |
| `{` | |
| `"MergeDetector": {` | Configuration of splicing detector |
| `"Enabled": true,` | Global enabling/disabling of splicing detector |
| `"Optimization": "Fast",` | Splicing detection optimization settings. The values can be as follows:<br>• `Fast` check - only files that are smaller than a certain size are to be checked. Detecting of final signatures is disabled. File threshold size is equal to |

| Content | Description |
| --- | --- |
| | the size of area, used by detector (1 Mb) to avoid additional file opening. When PIRE is enabled, the matching between initial and final signatures is being checked, the ones that were found during the file type detection.<br>• `Moderate` check - the files of all sizes are to be checked. Final signatures detection is held in the files, where the recognized format has well known final signature and only in the area, where it should be located. |
| `"EOFConfigPath": "/opt/iw/tm5/etc/mergedetector/eof_formats.json",` | Path to **EOF** configuration mechanism file (Comparing file size with the CFB title data (only for formats, based on MS CFB)). |
| `"SizeConfigPath": "/opt/iw/tm5/etc/mergedetector/size_formats.json",` | Path to **Size** configuration mechanism file (Comparing file size with the value, recorded in a known place) (for different formats having the size field). Applies to the formats, consisting of blocks series having size recorded. |
| `"CFBConfigPath": "/opt/iw/tm5/etc/mergedetector/cfb_formats.json",` | Path to **CFB** configuration mechanism file (Searching for formats signatures). |
| `"ProbabilityThreshold": 1e-3` | OEF detector threshold when using PIRE. Spacing: [1, 0]. This value is regulating the detector sensivity. The bigger value, the more sensitive detector is, but the number of false positive is growing as well. Physical meaning: this value is being compared to the possibility to find suspicious signatures within the random data.<br>**Warning!** Using PIRE is **prohibited** in splicing detector |
| `},` | |
| `"NgramsPath": "etc/typedetector/ngrams",` | Path to json files, containing profile extractors convertings to their N-Gram frequencies. |
| `"MaxMultiScannerSize": 2000,` | Scanner size in bites. It is calculated nontrivially; on a first approximation, it is proportional to product of these numbers: the number of states multiplied by the number of equivalent symbols classes. The parameter affects the memory speed and size, while creating scanners (once, when initializing), and their number (on each detection). |

| Content | Description |
| --- | --- |
| "MaxRecursiveLevel": 100, | Maximum level of the initial nesting of files to be unpacked by extractor. If the nesting level in archive exceeds the value, or the files containing there are corrupted, then extracted data will not be analyzed. |
| "TempDir": "tmp", | Temporary directory for decompressed files. |
| "Dreamcatcher": "dreamcatcher", | Directory for files unable to decompress. |
| "UsePIRE": false | Enabling/disabling PIRE regular expressions to detect the files and splicing type.<br>**Warning!** Using PIRE is **prohibited** in splicing detector |
| } | |

**cfb_formats.json** configuration file of **CFB** mechanism:

| Content | Description |
| --- | --- |
| [ | |
| { | |
| "name": "msole" | List of formats based on search mechanism of **MS CFB** signature formats, detected by the mechanism. |
| }, | |
| { | |
| "name": "doc" | |
| }, | |
| .... | |
| ] | |

**size_formats.json** configuration file of **Size** mechanism:

| **Content** | **Description** |
| --- | --- |
| [ | |

| Content | Description |
| --- | --- |
| `{` | |
| `"name": "avi",` | Format, detected by the mechanism |
| `"byte_order": "le",` | Bytes order in the size field |
| `"size_offset" : 4,` | Size field offset from the blockhead |
| `"header_size" : 8` | Heading size in the top of the file |
| `},` | |
| `...` | |
| ] | |

**eof_formats.json** configuration file of **EOF** mechanism:

| Content | Description |
| --- | --- |
| { | |
| `{` | |
| `"name": "odt"` | The format detected by the mechanism |
| `"bof" : "PK",` | Top of the file signature (only used when PIRE is disabled) |
| `"eof" : "0x50,0x4B,0x05,0x06",` | End of file signature (only used when PIRE is disabled). You can list multiple options that indicate the end of file. These options must be separated by commas. Semicolons are not allowed |
| `"has_multiple_eof" : true,` | Whether the format allows multiple end signatures |
| `"end_offset" : 18,` | End signature offset relatively to the end of file |
| `"may_include_any": false,` | Whether any other formats are allowed inside of this one |
| `"may_include_formats": ["tiff_big_endian"],` | If other formats cannot be included, specify allowed formats in the list. |
| `"base_format": "zip"` | The format that is the base for it. |
| `},` | |

| Content | Description |
|---|---|
| `...` | |
| `}` | |

## 1.14 icap.conf and iw_icap.service

The **icap.conf** configuration file:

| Content | Description |
|---|---|
| { | |
| "Logging": {...} | see General section Logging |
| "NookDir": "/opt/iw/tm5", | In this section, the module working directory is specified. By default – `/opt/iw/tm5` |
| "UnsafeSignalHandlers":false | Support for working with unhandled signals. Disabled by default ( `false` ). Once the `true` value is set, you can use "unsafe" signal handlers in the code (e.g. SIGSEVG). We recommend not adding, enabling or disabling this parameter without consulting our developers. |
| "Bookworm": {...} | see General section Bookworm |
| "AnalysisClient": { | Settings for data analysis client |
| "BindataMaxSizeInMb": 1024, | Maximum size of a file to be processed (MB). The default value is 1024 |
| "Cas": { | **iw_cas** settings |
| "SleepIntervalInSec": 5, | Timeout when trying to connect |
| "ConnectTryCount": 200 | Number of attempts to connect to **iw_cas** |

| Content | Description |
| --- | --- |
| `"ConsulKVWatchPOrt": 9997,` | A port which Consul uses to inform the interceptor about kv (key-value) changes and the necessity to update values |
| }, | |
| `"Pas": {` | **iw_pas** settings |
| "SleepIntervalInSec": 5, | Timeout when trying to connect |
| "ConnectTryCount": 200 | Number of attempts to connect to **iw_pas** |
| } | |
| }, | |
| "ExtractorCache": { | Extractors cache parameters. |
| "ExtractorCacheDepth": 0, | Maximum number of objects stored in a cache. The default value is 0 (cache is disabled). |
| "ExtractorCacheClearExistingDir": true, | |
| "ExtractorCacheMaxSize": 107374182400, | Cache maximum size, reserved on the disk (in bytes). Default value - 107374182400 (100 Gb). |
| "ExtractorCacheFileMaxSize": 10485760, | File maximum size to store in a cache (in bytes). Default value - 10485760 (10 Mb). |
| "ExtractorCacheShards": 0 | Number of streams to store data in a cache. If the value is 0 - the number of System streams, otherwise - the number of specified streams, preferable that it wasn't bigger than the System streams number, the default value is 0. |
| }, | |

| Content | Description |
| --- | --- |
| `"ICAP": {` | |
| `"SocketIoDump": false,` | Save all data passing through ICAP, including protocol data (value true). If the value is false, the headings are saved only; in this case it is impossible to use the dump for resending the data to ICAP. |
| `"SessionTimeoutSec": 330,` | Idle period (seconds), once it expires, the session is to be interrupted. |
| `"MinDataLength": 10,` | Minimum data length (bytes) of URL-variable, which will be included in the text block, being passed to the content analysis module. |
| `"ListenPort": 1344,` | Port, on which ICAP server listens for HTTP requests, outgoing from a proxy server with ICAP client. It is fine to use port numbers starting from `1025` |
| `"IcapDumpPath": "",` | Path to saved objects passed through ICAP. |
| `"LogTimer": false,` | HTTP requests processing time logging. To enable logging set `true` |
| `"MaxAsyncThreads": 8192,` | Maximum number of threads for asynchronous processing of data interrupted by ICAP (if "AsyncCheck": true). |
| `"MaxConnections": 100,` | Recommended connection number to **iw_icap**. |
| `"NumExtractorThreads": 0,` | • Value 0 - an old mode. The number of started extractors is equal to the number of streams and each object will be processed sequentially by one thread (for example, an archive with 100 files).<br>• Value >0 - a new mode. In this case, if the object contains attachments (an archive), they will be processed by a maximum of `NumExtractorThreads` threads. And, irrespective of the |

| Content | Description |
| --- | --- |
| | number of working threads, only NumExtractorThreads extractors can be run simultaneously. |
| "DisableIPv6": false, | Disable ( `DisableIPv6 = true` ) or enable ( `DisableIPv6 = false` ) IPv6 connection support.<br>If IPv6 support is disabled on the ICAP server, **iw_icap** will start and function in the normal mode only if `DisableIPv6 = true` |
| "AsyncCheck": true, | First, ignoring the data, then starting the data analysis. Default value `false` |
| "PathTemporary": "tmp/icap", | Path to ICAP server temporary files (default value `/opt/iw/tm5/tmp/icap` ). |
| "ErrorHTML": "etc/error.html", | Path to HTML file, containing a message to be displayed in web-browser, if a user request was blocked by the System. Default value `etc/error.html` . (Path is specified with regard to the current directory, which is the root directory of the System). |
| "ZimbraMail": false, | Zimbra mail server parameter. |
| "MaxMemoryBlock": 4096, | Maximum memory size (KB), which is occupied by one object. |
| "MaxChunkLengthMb": 0, | Maximum chunk size (MB). The default value is `0` , which means that the size is unlimited. |
| "LogBlock": false, | Blocked HTTP requests logging. No logging by default. |
| "ForceKeepAlive": true, | Use one TCP connection for sending and receiving multiple HTTP requests and responses instead of opening a new connection for every request-response pair. |

| Content | Description |
| --- | --- |
| `"FormatXmlContext": false,` | Enable (true) or disable (false) XML context formatting. Used for improved readability. |
| `"AllMethods": false,` | Enable all types of HTTP requests (POST and PUT requests) processing. Default value `false` |
| `"MinTextLength": 5` | Minimum text size (in bytes), for which the content analysis will be performed. The default value is `0` . Setting this parameter allows you to reduce the load on the content analysis server. This can be done by excluding from content analysis the text that is too small to contain valuable messages. |
| `},` | |
| `"DebugBreak": false,` | To send or not to send SIGTRAP (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"Statistics": {...},` | see General section Statistics |
| `}` | |

The **iw_icap.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Indexer` | Daemon name |
| `After=network-online.service iwtm-consul.service postgresql-9.6.service oracle.service` | Daemons that will be started before the current one |
| | |

| Code | Description |
| --- | --- |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_icap` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_icap -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |

| Code | Description |
| --- | --- |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.15 image2text_fre.conf

The **image2text_fre.conf** configuration file:

| Content | Description |
| --- | --- |
| `{` | |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"FREngine": {` | OCR Abbyy Fine Reader engine settings. |
| `"ImageFormats": {` | Size limits for images to be processed. |
| `"ColorChecker": {` | Filter of colour section |
| `"target_image_area_sqrt": 300,` | Target area, to which the image is to be adjusted before proceeding to analysis (to speed up the analysis) |
| `"significant_colors_number_thres hold" : 30,` | Threshhold of number of colours, that overcame the threshhold `significance_threshold.` If the number |

| Content | Description |
| --- | --- |
| | is bigger than this threshold, then image is considered scan copy and will not be processed by OCR. |
| `"significance_threshold" : 0.005,` | Threshold of fraction of colour in image. If the fraction of colour is bigger than this threshold, such colour will be considered in the threshhold `significant_colors_number_threshold`. |
| `"dark_border" : 40,` | Dark border of colour. The border defines which colours from greyscale will be outcasted from consideration when calculating values for the thresholds `significance_threshold` and `significant_colors_number_threshold.` |
| `"light_border" : 220,` | Light border of colour. The border defines which colours from greyscale will be outcasted from consideration when calculating values for the thresholds `significance_threshold` and `significant_colors_number_threshold` |
| `"Enabled" : true` | Activation of colour filter.<br>Enabled by default |
| `}` | |
| `"default": {` | Default values |
| `"MinHeightInPx": 12,` | Minimum height of image (pixels). |
| `"MinLengthInPx": 140,` | Minimum length of image to be sent. |
| `"MinSizeInKb": 40,` | Minimum size of image to be sent (KB). |
| `"MaxSizeInKb": 1536` | Maximum size of image to be sent (KB). |
| `}` | |

| Content | Description |
| --- | --- |
| `"GIF": {` | Redefining of default values (section default) for gif format images. |
| `"MinSizeInKb": 40` | Minimum size of image to be sent (KB). |
| `},` | |
| `"PNG": {` | Redefining of default values (section default) for png format images. |
| `"MinSizeInKb": 40` | Minimum size of image to be sent (KB). |
| `},` | |
| `"JPEG": {` | Redefining of default values (section default) for jpeg format images. |
| `"MinSizeInKb": 40` | Minimum size of image to be sent (KB). |
| `}` | |
| `},` | |
| `"ABBYYProfile": "etc/FRProfile.ini",` | Path to engine settings. |
| `"Pwd": "Type password for serial here.",` | Licence password |
| `"SerNum": "Type serial number here."` | Licence serial number |
| `},` | |
| `"Logging": {...}` | see General section Logging |

| Content | Description |
| --- | --- |
| `"NookDir": "/opt/iw/tm5",` | In this section the module working directory is specified. By default – `/opt/iw/tm5` |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `}` | |

## 1.16 image2text_ts.conf

| Content | Description |
| --- | --- |
| `{` | |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"Logging": {...}` | see General section Logging |
| `"NookDir": "/opt/iw/tm5",` | In this section, the module working directory is specified. By default – `/opt/iw/tm5` |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"Tesseract": {` | OCR Tesseract engine settings |
| `"ImageFormats": {` | Size limitation for images processed |
| `"ColorChecker": {` | Filter of colour section |
| `"target_image_area_sqrt": 300,` | Target area, to which the image is to be adjusted before proceeding to analysis (to speed up the analysis) |

| Content | Description |
| --- | --- |
| `"significant_colors_number_threshold" : 30,` | Threshhold of number of colours, that overcame the threshhold `significance_threshold.` If the number is bigger than this threshold, then image is considered scan copy and will not be processed by OCR. |
| `"significance_threshold" : 0.005,` | Threshold of fraction of colour in image. If the fraction of colour is bigger than this threshold, such colour will be considered in the threshhold `significant_colors_number_threshold`. |
| `"dark_border" : 40,` | Dark border of colour. The border defines which colours from greyscale will be outcasted from consideration when calculating values for the thresholds `significance_threshold` and `significant_colors_number_threshold` |
| `"light_border" : 220,` | Light border of colour. The border defines which colours from greyscale will be outcasted from consideration when calculating values for the thresholds `significance_threshold` and `significant_colors_number_threshold` |
| `"Enabled" : true` | Activation of colour filter.<br>Enabled by default |
| `}` | |
| `"default": {` | Default values |
| `"MinHeightInPx": 12,` | Minimum image height (pixels) |
| `"MinLengthInPx": 140,` | Minimum image length (pixels) |
| `"MinSizeInKb": 40,` | Minimum size of the picture to be sent (KB) |
| `"MaxSizeInKb": 1536,` | Maximum size of the picture to be sent (KB) |
| `}` | |
| `"GIF": {` | Redefining the default values (section default) for gif format images |

| Content | Description |
| --- | --- |
| "MinSizeInKb": 40 | Minimum size of the picture to be sent (KB) |
| }, | |
| "PNG": { | Redefining the default values (section default) for png format images |
| "MinSizeInKb": 40 | Minimum size of the picture to be sent (KB) |
| }, | |
| "JPEG": { | Redefining the default values (section default) for jpeg format images |
| "MinSizeInKb": 40 | Minimum size of the picture to be sent (KB) |
| } | |
| }, | |
| "DiagnosticMode": false, | Enable diagnostic mode. Error messages will be written by the extractor in an output file. |
| "TesseractDataPath": "ocr", | Path to Tesseract service data |
| "TesseractLanguages": "rus, eng" | Recognizable languages addition |
| } | |
| } | |

## 1.17 image_autoling.conf and iw_image_autoling.service

| Content | Description |
|---|---|
| { | |
| "Logging": {...}, | see General section Logging |
| "NookDir": "/opt/iw/tm5", | In this section, the module working directory is specified. By default – `/opt/iw/tm5`. |
| "Bookworm": {...}, | see General section Bookworm |
| "DebugBreak": false, | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes |
| "UnsafeSignalHandlers":false, | Supporting unprocessed signals operation. By default, the option is disabled (false). When setting the true value, you can set the handler of "unsafe" signals in the code (for example, SIGSEVG). We do not recommend adding, enabling/disabling this option without pre-consultation with developers. |
| "Analysis": { | |
| "Images" | Images detector |
| "ImageClassifier": { | Section to configure graphical classifier learning. |
| "NumClusters": 300, | Number of clusters to quant. |
| `"NumDictionaryTrainDecriptors": 10000,` | Maximum number of descriptors to learn. |
| "StatModel": { | Machine learning parameters section. It is not recommended to be edited without involving specialists. |

| Content | Description |
| --- | --- |
| "C": 100.0, | C parameter for some types of SVM (C-SVC, epsilon-SVR, and nu-SVR). |
| "probability": false, | If probability to be used when learning a classifier. |
| "degree": 3, | Classifier core function degree. |
| "shrinking": false, | Specifies if narrowing heuristic should be used. |
| "eps": 1e-07, | Set the acceptability of termination criteria. |
| "p": 0.1, | Admission of termination criteria. |
| "KernelType": 2, | Classifier core function type. |
| "cache_size": 1000.0, | Cache size in Mb. |
| "coef0": 0.0, | Zero coefficient for core function. |
| "nu": 0.5, | Nude parameter for some types of SVM (nu-SVC, one-class SVM and nu-SVR). |
| "gamma": 0.5, | Gamma parameter for classifier core function. |
| "SVMType": 0 | SVM classifier type |
| `},` | |
| `},` | |
| "ImageMaxWidth": 50000, | Maximum image width. In case the image is greater, it cannot be processed by the System. The default value is – `50000`. |
| "ImageMaxHeigth": 50000, | Maximum image height. In case the image is higher, it cannot be processed by the System. The default value is – `50000`.. |

| Content | Description |
| --- | --- |
| "MatcherConfig": "etc/config-perm/cas/image-matcher.yml", | Path to a file containing precise analysis settings (image-matcher.yml) |
| } | |
| }, | |
| "Config": { | |
| "EnableContentSchemaCheck": true, | Enabling (the `true` value) validation for the contents of the **cas_config.xml** file |
| "EnableCrossvalidate": false, | Enabling/disabling cross-validation |
| "EnableSchemaCheck": true, | Enabling XML validation against XSD (disabling this significantly increases the speed of loading the configuration). The default value is `true` |
| "SchemaPath": "etc/cas_config.xsd", | Path to the XSD file against which validity of XML configuration is checked. The default value is `etc/cas_config.xsd` |
| "Path": "etc/config/text_autoling", | Path to the CAS configuration file. The default value is `etc/config/cas` |
| "TempDir": "tmp", | Path to temporary files of the service |
| "VariativeDataDir": "var/tech/text_autoling" | Directory for long-term data storage |
| }, | |
| "Curler": { | Section with curl backend settings |
| "Active": { | |

| Content | Description |
| --- | --- |
| "AlertSocketPath": "wss://localhost/api/notify/listen/autolingUpdate", | Websocket address where the signal concerning the Active configuration change is sent |
| "UpdaterHostName": "https://localhost/xapi/configurationState/autoling", | Configuration update address |
| "UpdaterPath": "/xapi/configugationState/image_classifier" | Path to WebSocket |
| }, | |
| "AlertTimeoutSec": 5, | Timeout after which control is returned to the calling thread if the configuration has not been changed before this |
| "CurlMaxThreads": 10, | Number of file download threads |
| "CurlOptSslVerifyHost": false, | HTTP server connection settings for loading configuration updates<br>**Note:** These are service fields and they are not intended for user editing |
| "CurlOptSslVerifyPeer": false, | Whether to require certificate verification |
| "CurlOptTcpKeepAlive": true, | The `keep-alive` parameter of TCP connection |
| "Sandbox": { | |
| "AlertSocketPath": "wss://localhost/api/notify/listen/autolingUpdateSb", | Websocket address where the signal concerning the Sandbox configuration change is sent |
| "UpdaterHostName": "https://localhost/xapi/configurationState/autoling_sb" | Configuration update address from SandBox |
| }, | |

| Content | Description |
| --- | --- |
| "TokenPath": "/opt/iw/tm5/etc/config/access_control/tokens.list" | |
| "Discovery": {...} | see General section Discovery |
| "ThriftServers": {...}, | see General section ThriftServers |
| } | |
| } | |
| } | |

**iw_image_autoling.service** unit file

| **Code** | **Description** |
| --- | --- |
| `[Unit]` | Section to define demon metadata and configure its interaction with other demons |
| `Description=InfoWatch Traffic Monitor Graphical Object Classifier` | Demon name |
| `After=network-online.target iwtm-consul.service` | Demons to be run before starting the current demon |
| | |
| `[Service]` | Section to configure demon running |
| `Type=simple` | Demon running type. `simple` - demon is started and goes into standby mode in the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre using **root** user |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_image_autoling` | Full path and command's arguments to be performed before running the main process |

| Code | Description |
| --- | --- |
| `ExecStart=/opt/iw/tm5/bin/iw_image_autoling -p /opt/iw/tm5/etc` | Full path and command' arguments to be performed before running the demon. To be run from the user specified in `User` |
| `ExecStop=/bin/kill -s SIGTERM $MAINPID` | Command to stop the demon. If not specified the process to be destroyed when the demon is stopped. To be run from the user specified in `User` |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | Command to reload demon's configuration in case it is available. To be run from the user specified in `User` |
| `Restart=on-failure` | Command to restart demon in case it fails or it is stopped. `on-failure` value means the demon can be restarted in case it was stopped with no zero return code or it was disabled by signal ( `kill <pid_demon>` ) |
| `RestartSec=5` | Standby time before trying to restart the demon |
| `RestartPreventExitStatus=SIGKILL` | Command to force demon's shutdown |
| `TimeoutStopSec=0` | Time required for the System to wait for demon's stop before marking it unavailable or forcibly shutdown. |
| `User=iwtm` | Name of the user to perform demon's running |
| `Group=iwtm` | User group name |
| `LimitNOFILE=32768` | Maximum number of opened files |
| `LimitFSIZE=infinity` | Maximum file size (Kb). `infinity` - no limitation |
| `LimitNPROC=65536` | Maximum number of processes |
| `LimitCORE=infinity` | Coredump file size limit (Kb) |
| `LimitMEMLOCK=infinity` | Maximum memory space blocked (Kb) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/disabled |

| Code | Description |
| --- | --- |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.18 indexer.conf and iw_indexer.service

The **indexer.conf** configuration file:

| Content | Description |
| --- | --- |
| { | |
| "Bookworm": {...} | see General section Bookworm |
| "DebugBreak": false, | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| "Indexer": { | Indexer configuration is stored in the file. Indexing parameters are applied to **iw_indexer** module.<br>In the `Indexer` section interaction with DB parameters and indexing methods are specified. |
| "ArchiveDir": "sphinx_archive", | Path to the archived indexes directory. If the working index construction as per event areas is disabled (false), the words, found via full-text search will not be highlited. |
| "BuildIndexByContent": true, | Content index. Used to highlight required content within the event content tree in detailed form of preview. Configuration is automatically enabled when zonal index is used. |
| `"BuildIndexZoned": false,` | Zonal index. Once enabled - new tablespaces are to be indexed only within the zonal index. All the rest old indexes will be stored. |
| "DBPrefetchRowCount": 131072, | Number of rows, fetched from DB at a time. |

| Content | Description |
| --- | --- |
| `"DebugNoCleanTemp": false,` | Do not delete temporary files *.xmlpipe2*. (Use `true` only for debugging purposes). |
| `"ExpireDeltaSecs": 43200,` | After this period of time delta indexes are being deleted since the new tablespaces were added. |
| `"FetchConcurrency": 0,` | Number of connections with DB and streams for text objects loading and `xmlpipe2` files generation. Default value: 0 (is equal to `ProcManConcurrency`, divided into the number of index types being under construction ( zonal index is not taken into consideration):<br>• general index only;<br>• general index and index by contents. |
| `"FetchSize": 1200,` | Number of objects, requested from DB by the service for later indexing . |
| `"IgnoreMalaysianDict": true,` | Disable malaysian morphology. |
| `"IndexExactWords": false,` | Possibility to make requests without consideration of morphology. Enabling this option ( `true` ) decreases the speed of indexing and increases the size of indexes and RAM consumption. |
| `"IndexRotateTimeoutInMs": 60000,` | Index rotation time (msec). |
| `"MinWordLen": 1,` | The parameter affects the **min_word_len** value in the index configuration **searchd**. The value of the parameter determines the minimum word length to be indexed. If the length of a word is shorter than the value, the search by these words does not work. Nonetheless, it affects the indexed word distance, thus, it should be considered, when constructing search queries with the exact phrase match.<br>Experimental parameter. It is expected that the 2 or 3 value will help to decrease the index file size with no sacrifice of |

| Content | Description |
| --- | --- |
| | search quality. Range: from 1 to 42.<br>Exact match. The value affects the *compatible magic* index, i.e. reindexing is not required and not performed, but new documents are added to other indexes and the search does work in new and old index files. |
| `"PipeDir": "tmp/sphinx",` | Temporary files directory needed for index construction. |
| `"ProcManConcurrency": 0,` | Maximum number of concurrently started indexing processes (automatically determine from the number of CPU cores and equal to it). |
| `"SearchdPath": "/opt/iw/tm5/bin/searchd",` | Path to **searchd**. It can be different depending on RHEL or Astra Linux. |
| `"ServicePath": "/sbin/service",` | Path to the service script. |
| `"SphinxBaseDir": "/var/lib/sphinx",` | Directory for the **searchd** daemon index files. Default value: `/var/lib/sphinx` |
| `"SphinxConfigDir": "etc/sphinx",` | Directory for the **searchd** daemon generated configuration files. Default value: `etc/sphinx` |
| `"SphinxTMConfigPath": "etc/sphinx.conf",` | Path to Sphinx systemic configuration. Default value: `etc/sphinx.conf` |
| `"TarPath": "/bin/tar",` | Path to a file archiver. Default value: `/bin/tar` |
| `"TextPrefetchSizeInMb": 700,` | Indexed object size limit (MB). Default value: 700 |
| `"WaitTimeInSecs": 30` | Time between attempts to retrieve objects from BD. Default value: 30 |
| `"CharTable": ""` | Table of symbols. Parameter enabling is optional. To be used when it is contained within the configuration file. Once is absent, the table of symbols is to be generated by default ( "0..9, _, a..z, |

| Content | Description |
| --- | --- |
| | U+430..U+44F, U+451, A..Z->a..z, U+401->U+451, U+410..U+42F->U+430..U+44F" ). |
| }, | |
| "Logging": {...} | see General section Logging |
| "NookDir": "/opt/iw/tm5", | In this section the module working directory is specified. By default – `/opt/iw/tm5` |
| "UnsafeSignalHandlers":false | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| } | |

The **iw_indexer.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Indexer` | Daemon name |
| `After=network-online.service iwtm-consul.service postgresql-9.6.service oracle.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |

| Code | Description |
| --- | --- |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_indexer` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_indexer -p /opt/iw/tm5/etc --backend $DB_BACKEND` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=584000` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |

| Code | Description |
| --- | --- |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| `EnvironmentFile=-/etc/default/iwtm` | Path to the environment file |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.19 is.conf and iw_is.service

**is.conf** configuration file
**iw_is -** Universal indexation system not linked to the search system and is meant to indexing metainformation.

| Code | Description |
| --- | --- |
| `{` | |
| `"Fetchers": [` | Fetchers section - these are modules performing data sampling for indexing |
| `{` | |
| `"CommandLineArgs": [` | Command line attributes |
| `"--backend",` | |
| `"oracle"` | |
| `],` | |
| `"Settings": {},` | Fetchers settings |
| `"Path": "/opt/iw/tm5/bin/iw_metainfo_fetcher",` | Path to fetcher |
| `"Name": "MetainfoFetcher"` | Fetcher name |
| `}` | |

| Code | Description |
| --- | --- |
| `    ],` | |
| `    "Indices": [` | Indexes section |
| `        {` | |
| `            "Description": {` | Indexes description |
| `                "Base": {` | Indexes base description. Sphinx options: |
| `                    "min_word_len": "3",` | Minimal word length, needed for indexing. Those words will be indexed only, that have the length not shorter than the minimum.<br>Value "1" - index all. |
| `                    "index_exact_words": "0",` | The setting prescribes to index the initial token (before applying morphology) additionally to morphology. |
| `                    "charset_table": "0..9, _ , a..z, U+430..U+44F, U+451, A..Z->a..z, U+401->U+451, U+410..U+42F->U+430..U+44F",` | The option sets the table of allowed symbols. If several allowed symbols are placed one after another in the text, Sphinx perceives them as one word. If a symbol is missing in the table of symbols, hence, is not considered as allowed, Sphinx perceives it as a divider. |
| `                    "morphology": "libstemmer_eng, libstemmer_rus",` | Morphological algorithms using option |
| `                    "type": "plain"` | |
| `                },` | |
| `                "Source": {` | Description of data source for index |
| `                    "Fields": [` | Data source fields |
| `                        "url",` | Hyperlink to contact's social network page |
| `                        "login",` | Contact's social network username |

| Code | Description |
| --- | --- |
| `"disp_name"` | Username used in intercepted object. Can be nickname, specified as name and surname in social network account. |
| `],` | |
| `"Attributes": {` | Data source attributes |
| `"contact": "string"` | "Contact" attribute |
| `},` | |
| `"Name": "mi2cntct"` | Data source name |
| `}` | |
| `},` | |
| `"AutoupdatePeriodSec": 140,` | Index autoupdate period |
| `"Hive": "Primary",` | Index storage name |
| `"IndexingPool": "TODO_indexing_pool",` | Not used, keeping it for the future |
| `"RotationPeriodSec": 120,` | Indexes update period on the search server |
| `"Indexer": "Default",` | Name of indexer building the index |
| `"Active": true,` | Status: active or not active |
| `"FetcherPool": "TODO_fetcher_pool",` | Not used, keeping it for the future |
| `"FetchSize": 0,` | Maximum number of objects to be processed by one fetcher |
| `"FetchingConcurrency": 1,` | Number of fetchers being started at a time |
| `"ApplyTimeoutSec": 60,` | Index update timeout (seconds). This ending, the warnings that index has not been loaded will appear. |

| Code | Description |
| --- | --- |
| `"MaxShards": 1,` | Number of segments in index |
| `"Fetcher": "MetainfoFetcher",` | Data sampling fetcher name |
| `"Scope": "System",` | Index scope name for **iw_is** |
| `"Mill": "Default",` | Data for indexing storage name |
| `"ServedBy": "Default",` | Search server name |
| `"State": "Active",` | Not used |
| `"UpdateStrategy": "Rebuild",` | Index update strategy. Values: rebuild, delta (finish building) |
| `"Name": "minfo_contact"` | Index name |
| `},` | |
| `{` | |
| `"Description": {` | Indexes description |
| `"Base": {` | Indexes base (Settings from Sphinx) |
| `"min_word_len": "3",` | Minimal word length, needed for indexing. Those words will be indexed only, that have the length not shorter than the minimum.<br>Value "1" - index all. |
| `"index_exact_words": "0",` | The setting prescribes to index the initial token (before applying morphology) additionally to morphology. |
| `"charset_table": "0..9, _ , a..z, U+430..U+44F, U+451, A..Z->a..z, U+401->U+451, U+410..U+42F->U+430..U+44F",` | The option sets the table of allowed symbols. If several allowed symbols are placed one after another in the text, Sphinx perceives them as one word. If a symbol is missing in the table of symbols, hence, is not considered as allowed, Sphinx perceives it as a divider. |
| `"morphology": "libstemmer_eng, libstemmer_rus",` | Morphological algorithms using option |

| Code | Description |
| --- | --- |
| `"type": "plain"` | |
| `},` | |
| `"Source": {` | Description of data source for index |
| `"Fields": [` | Data source fields |
| `"url",` | "url" field |
| `"login",` | "login" field |
| `"disp_name"` | "disp_name" field |
| `],` | |
| `"Attributes": {` | Data source attributes |
| `"event": "bigint",` | "Event" attribute |
| `"tbs": "bigint"` | "Table space" attribute |
| `},` | |
| `"Name": "mi2evnt"` | Data source name |
| `}` | |
| `},` | |
| `"AutoupdatePeriodSec": 70,` | Index autoupdate period |
| `"Hive": "Primary",` | Index storage name |
| `"IndexingPool": "TODO_indexing_pool",` | Not used, keeping it for the future |
| `"RotationPeriodSec": 60,` | Indexes update period on the search server |
| `"Indexer": "Default",` | Name of indexer building the index |
| `"Active": true,` | Status: active or not active |

| Code | Description |
| --- | --- |
| `"FetcherPool": "TODO_fetcher_pool",` | Not used, keeping it for the future |
| `"FetchSize": 1000,` | Maximum number of objects to be processed by one fetcher<br>Note: Values set as `"FetchSize": 10000` with `"FetchingConcurrency":9` will let index 1100 and more events per second |
| `"FetchingConcurrency": 9,` | Number of fetchers being started at a time |
| `"ApplyTimeoutSec": 60,` | Index update timeout (seconds). This ending, the warnings that index has not been loaded will appear. |
| `"MaxShards": 10,` | Number of segments in index |
| `"Fetcher": "MetainfoFetcher",` | Data sampling fetcher name |
| `"Scope": "tbs",` | Index scope name for **iw_is** |
| `"Mill": "Default",` | Data for indexing storage name |
| `"ServedBy": "Default",` | Search server name |
| `"State": "Active",` | Not used |
| `"UpdateStrategy": "Delta",` | Index update strategy. Values: rebuild, delta (finish building) |
| `"Name": "minfo_event"` | Index name |
| `}` | |
| `],` | |
| `"UnsafeSignalHandlers": false,` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |

| Code | Description |
| --- | --- |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"NookDir": "/opt/iw/tm5",` | Module working directory is specified in the section. By default `/opt/iw/tm5`. |
| `"Indexing": {` | **iw_is** configuration |
| `"TempDir": "tmp",` | Not used |
| `"KeepData": false` | Keep indexed data (yes/no) |
| `},` | |
| `"Vaults": [` | Indexes archives storages |
| `{` | |
| `"Name": "Default",` | Archive name |
| `"Path": "/opt/iw/tm5/sphinx_archive"` | Path to archive |
| `}` | |
| `],` | |
| `"Hives": [` | Indexes storages |
| `{` | |
| `"Path": "/var/lib/sphinx/indices",` | Path to storage |
| `"Name": "Primary"` | Storage name |
| `}` | |
| `],` | |
| `"Pools": [` | Pool of processes, executed inside **iw_is** |
| `{` | |

| Code | Description |
| --- | --- |
| `"Name": "Searching"` | Pool of processes name |
| `"MaxProcsRunning": 1,` | Maximum number of processes being executed at a time |
| `},` | |
| `{` | |
| `"Name": "Indexing"` | Pool of processes name |
| `"MaxProcsRunning": 3,` | Maximum number of processes being executed at a time |
| `},` | |
| `{` | |
| `"Name": "Fetching"` | Pool of processes name |
| `"MaxProcsRunning": 3,` | Maximum number of processes being executed at a time |
| `}` | |
| `],` | |
| `"Logging": {...},` | см. "General section Logging" |
| `"Mills": [` | Data for indexing storage |
| `{` | |
| `"Path": "/opt/iw/tm5/tmp/indexing",` | Path to storage |
| `"Name": "Default"` | Storage name |
| `}` | |
| `],` | |
| `"Indexers": [` | Indexers used in **iw_is** (array) |

| Code | Description |
| --- | --- |
| `{` | |
| `"Name": "Default",` | Indexer name |
| `"Path": "/opt/iw/tm5/bin/indexer",` | Path to indexer |
| `"Settings": {` | Options in Sphinx |
| `"mem_limit": "2047M",` | RAM use restriction while indexing (M - MB, K - KB) |
| `"max_xmlpipe2_field": "1024M",` | Maximum field size for source type XMLpipe2 |
| `"on_file_field_error": "ignore_field"` | Input-output errors processing option in file fields:<br>• `ignore_field` - index current document without a field;<br>• `skip_document` - skip current document, but continue indexation;<br>• `fail_index` - indexing failed, error message displayed |
| `}` | |
| `}` | |
| `]` | |
| `}` | |

The **iw_is.service** unit file:

| **Code** | **Description** |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Indexing Service` | Daemon name |

| Code | Description |
| --- | --- |
| `After=network-online.service iwtm-consul.service postgresql-9.6.service oracle.service iw_indexer.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_is` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_is -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |

| Code | Description |
| --- | --- |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited. |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| `EnvironmentFile=-/etc/default/iwtm` | Path to environment file |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.20 kicker.conf and kicker.service

| Content | Description |
| --- | --- |
| `{` | |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"Logging": {` | Logging configuration. |

| Content | Description |
| --- | --- |
| "Backends": { | Backends list. |
| "DefaultDirectory": "/var/log/infowatch/", | Log files directory. |
| "Descriptions": { | Format description for every logging type and specific settings. |
| "File": { | Output into separate file (file creation directory is specified within `DefaultDirectory` parameter). |
| "FileName": [ | Filename, where the log is to be written. |
| "web-console-error.log", | |
| "web-console-agent.log", | |
| "web-console-blackboard.log", | |
| "web-console-notifier.log", | |
| "web-console-report.log", | |
| "web-console-selection.log" | |
| ] | |
| } | |
| } | |

| Content | Description |
| --- | --- |
| }<br>} | |
| } | |

**iw_kicker.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Web GUI` | Daemon name |
| `After=network-online.service iwtm-consul.service gearmand.service redis.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_kicker` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_kicker -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld. |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field. |

| Code | Description |
| --- | --- |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field. |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.21 license.conf

| Content | Description |
|---|---|
| { | |
| "Service": { | Section for license services settings. |
| "Name": "licserv", | Service name to register in **Consul**. |
| "WaitIntervalInSec": 5, | Within this time interval (in seconds) repeated attempt to register in **Consul** is to be done, in case it was unavailable or not operating. |
| "AttemptsCount": 200 | Number of attempts to find the license server when starting the license client. |
| } | |
| } | |

## 1.22 licensed.conf and iw_licensed.service

**licensed.conf** confiruration file

| Content | Description |
|---|---|
| { | |
| "DebugBreak": false, | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| "LicenseServer": { | Section for license server setting. |
| "Path": "etc/licenses" | Path from product root to licenses folder. |
| }, | |

| Content | Description |
| --- | --- |
| `"Logging": {...},` | See General section Logging |
| `"NookDir": "/opt/iw/tm5",` | In this section the module working directory is specified. By default – `/opt/iw/tm5`. |
| `"Discovery": {...}` | See Common section Discovery |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"ThriftServers": {...}` | See General section ThriftServers |
| `}` | |

**iw_licensed.service** unit file

| **Code** | **Description** |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor License Server` | Daemon name |
| `After=network-online.service iwtm-consul.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |

| Code | Description |
| --- | --- |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_licensed` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_licensed -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld. |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field. |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field. |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |

| Code | Description |
|---|---|
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.23 lua.conf

| Content | Description |
|---|---|
| `{` | |
| `"Luaengine": {` | Luaengine configuration block |
| `"ThriftSocketSettings": {` | Section of thrift settings |
| `"SendTimeout": 30000,` | Setting of socket parameter to send data (ms) |
| `"RecvTimeout": 90000,` | Time to wait for response from luaengined (ms). Value "0" - time is unlimited |
| `"ConnTimeout": 5000` | Time to connect to luaengined (ms). Value "0" - time is unlimited |
| `},` | |
| `"NumRetries": 3` | Number of trials to send an object into luaengined, if the processing is being interrupted due to server connection error |
| } | |
| } | |

## 1.24 luaengined.conf and iw_luaengined.service

**luaengined.conf** configuration file

| Content | Description |
| --- | --- |
| `{` | |
| `"Bookworm": {...}` | see General section Bookworm |
| `"ContextUnwinder": {` | Contex processing rules. Mostly they are grouped by service, object type and protocol. |
| `"ContextRules": "etc/rules.xml",` | Preset contex processing rules |
| `"ContextCustomRules": "etc/custom_rules.xml"` | Custom rules of contex processing |
| `},` | |
| `"DebugBreak": false,` | If `SIGTRAP(SIGBREAK` to Windows) should be sent while any exception handling. Used for debugging purposes. |
| `"Discovery": {...},` | see General section Discovery |
| `"Ident": {` | Description of settings for data provider (LDAP, DNS) |
| `"CacheTTL": 60` | Data validity time `iw_ident` |
| `},` | |
| `"Logging": {...},` | see General section Logging |
| `"Lua": {` | |
| `"Headers": "etc/config/lua/vademecums/headers.list",` | Used headers guide |
| `"Vademecums": {` | Identification guides |
| `"Perimeters": "etc/config/lua/vademecums/perimeters.bin",` | Perimeter identification guide |
| `"GroupMembersCount": "etc/config/lua/vademecums/group_members_count.bin",` | Group membership guide |

| Content | Description |
| --- | --- |
| `"WorkstationContacts": "etc/config/lua/vademecums/workstation_contacts.bin",` | Workstations guide |
| `"PersonContacts": "etc/config/lua/vademecums/person_contacts.bin",` | Person's contacts guide |
| `"PerimeterWorkContacts": "etc/config/lua/vademecums/perimeter_work_contacts.bin",` | Guide to identify perimeters by person's working contacts and groups |
| `"Applications": "etc/config/lua/vademecums/applications.bin",` | Applications guide |
| `"Groups": "etc/config/lua/vademecums/groups.bin",` | Groups guide |
| `"Webform": "etc/config-perm/lua/vademecums/webform.bin",` | Web-form guide (used for POST-requests contents marking) |
| `"IdentityStatus": "etc/config/lua/vademecums/identity_status.bin",` | Status of Identification element (for example, "Under control", "On trial period", etc.) |
| `"MetaInfo": "etc/config/lua/vademecums/metainfo.bin",` | Meta information guide |
| `"GroupContacts": "etc/config/lua/vademecums/group_contacts.bin",` | Goups contacts guide |
| `"Resources": "etc/config/lua/vademecums/resources.bin"` | Web-resources list by categories |
| `},` | |
| `"MaxThreads": 8,` | Maximum number of processing streams |
| `"UserScript": "etc/scripts/process.lua",` | User lua-script. To be performed after the system one |
| `"SystemScript": "etc/scripts/system.lua",` | System lua-script |
| `"SessionTimeoutInSec": 60,` | Session lifecycle in case it was not contacted within the period specified (in seconds). In case the |

| Content | Description |
| --- | --- |
| | value is " `0` ", the session will not be deleted. Default value is `60`. |
| `"DumpConf": {` | Luaengined dumps filtering configuration section. For details, see Filtering of luaengined dumps |
| `"DumpDir": "",` | Directory to store dumps. In case it is not empty, the dumps will be recorded to the folder `/opt/iw/tm5/<parameter's value>` |
| `"DumpFilters": {` | Dump filters which can be configured. In case this section is present, but `ProtocolCode`, `ActionCode`, `License`, `ServiceCode`, `ObjectTypeCode` filters are empty, the filter will not be considered. Filters inside the section are combined by `AND` condition. Values inside filters are combined by `OR` condition. |
| `"ActionCode": [],` | `Action.key` attribute value which is taken from `/opt/iw/tm5/etc/compendiums/actions.xml`, if `action.mnemo` attribute is equal to " `action` " field in `object.json` |
| `"Headers": {},` | Pairs of values from " `headers` " section from `object.json`. They are used without any upgrades inside and is a directory of a type "key-value". |
| `"Identities": {` | |
| `"IdentityName": [],` | |
| `"IdentityType": [],` | |
| `"IdentityValue": []` | |
| `},` | |

| Content | Description |
| --- | --- |
| `"License": [],` | This parameter's value is a combination of `object.json` fields and `common_name` parameter. |
| `"ObjectTypeCode": [],` | The value of `object_type.key` attribute from `/opt/iw/tm5/etc/compendiums/services.xml`, for the objects whose `object_type.mnemo` attribute is equal to `"object_type_mnemo"` field value from `object.json` |
| `"ProtocolCode": [],` | `Protocol.key` attribute's value which is taken from `/opt/iw/tm5/etc/compendiums/protocols.xml`, if `protocol.mnemo` attribute is equal to `"protocol_mnemo"` field in `object.json` |
| `"ServiceCode": [],` | `Service.key` attribute's value from `/opt/iw/tm5/etc/compendiums/services.xml` of the service for which the object is detected, set by `"object_type_mnemo"` field in `object.json`. |
| `"UserHeaders": {}` | |
| `}` | |
| `},` | |
| `"SystemLua": {` | |
| `"DeleteDDEventsWithoutPolicy": false,` | Mode of a special anti-garbage filter for Data Discovery events. You can select:<br>• `true`, to save to TM database only those events that have triggered policies,<br>• `false` (selected by default), to save events that contain |

| Content | Description |
| --- | --- |
| | protected objects or have triggered policies.<br>Other Data Discovery events will be deleted by the filter.<br>We recommend enabling this setting in order to save space for storing events. |
| `"DisableDeleteDDEventsForServers": [],` | A list of Data Discovery server names, to which a special anti-garbage filter for Data Discovery events will not apply.<br>For servers from the list, the filter will not delete any events.<br>Example of a completed list:<br>`["server1", "server2", "server3"]` |
| `"LyncAuthToPhone": [],` | List of TM nodes where the contact type `auth` should be replaced with `phone`. Replacement is performed only in case the contact consists of figures. |
| `"LyncAuthToEmail": [],` | List of TM nodes where the contact type `auth` should be replaced with `email`. Replacement is performed only in case the "`@`" symbol is detected within the contact. |
| `"PhoneFixSendersIds": [],` | List of TM nodes on which the System should disable substituting telephone numbers with normalized values in `sender` header of "`im/message`" type objects in events received via `iw_xapi`. |
| `"PhoneNoFixSenders": [],` | List of TM nodes where the telephone number should not be replaced with a normalized one in `sender` header for "`im/message`" objects in events from `iw_xapi`. This option can be required to detect problems inside the telephone numbers "normalizing" function. |

| Content | Description |
| --- | --- |
| `"PhoneMinSuffixLen": 7,` | General for all TM nodes size of telephone number suffix, the number with no operator's/city code. The option supports contact searching functions for directories with no codes, which can be required to support AD contact download. |
| `"RcptRemove": {` | Receivers removal mode, used for e-mails received via SMTP. This function can be used to resolve different deployment scheme problems. |
| `"Enabled": false,` | Enabling receivers removal mode. In case `Enabled` is set to `true` value, all e-mails receivers will be deleted in case the e-mails priority is higher than `1`. |
| `"Text": ""` | If `"Enabled": true`, and configuration for `Text` property contains a non-empty string, the receivers whose addresses contain the specified text will be deleted. A single quote' cannot be used in the text. |
| `},` | |
| `"ResolveDNS": true,` | Enable/disable resolving DNS names. The default value is `true` ( enabled) |
| `"SmtpHistEml": [],` | List of TM nodes where EML archive should be supported via substitution of formal interception date with real date of e-mail sending<br>Example of list filled in:<br>`["tm-server1", "tm-server2", "tm-server3"]` |
| `"SmtpReceived": [],` | List of TM nodes on which to extract receiver address from EML " `Received` " header and to add it to receiver list. This function can be required in case TM receives copy of email traffic, where receivers are |

| Content | Description |
| --- | --- |
| | substituted with " `undisclosed-recipient` ". |
| `"SmtpPostfix": [],` | List of TM nodes where receiver's IP address should be replaced in header " `source_ip` " with the real address specified in EML " `Received` " header |
| `"SmtpLotusBcc": [],` | List of TM nodes where SMTP traffic is processed from Lotus server, where it is required to extract BCC copies receivers from service header within EML specific for Lotus server |
| `"SmtpTmBccList" : [],` | List of TM business addresses the traffic copy is sent to. These addresses will be removed from " `rcpt_to` " header. Example: `["iwtm-mon@local"]` |
| `"TransportModes": {` | Lists of transport modes for `"Smtp"` and `"Icap"` events. The lists are applied by default on specified TM nodes. The transport modes are used for events intercepted on TM node in case the interceptor hasn't defined the transport mode automatically or transport mode hasn't been defined in `iwssid.lua` file.<br>Transport modes. Examples:<br>`[{"Server": "tm-server1", "Mode": "Copy"}, {"Server":"tm-server2", "Mode": "Normal"}]`<br>In `Server` property there is a TM node name, but `Mode` property contains transport mode.<br>The specified mode is applied in case the receptor cannot detect if it is a traffic copy. It is available to reorganize the transport mode within `iwssid.lua` script in case one TM node is required to process traffic copy and operate in Inline mode. |

| Content | Description |
| --- | --- |
| `"Icap": [],` | List of transport modes for Icap |
| `"Smtp": []` | List of transport modes for Smtp |
| } | |
| } | |
| }, | |
| `"ThriftServers": {...},` | see General section ThriftServers |
| `"NookDir": "/opt/iw/tm5",` | Section specifies the working catalogue of the module. By default – `/opt/iw/tm5` . |
| `"UnsafeSignalHandlers":false` | Support of work with unprocessed signals. Disabled by default ( `false` ) . Setting `true` enables you to install processing of unsafe signals (e.g. SIGSEVG) in code. We do not recommed to add, enable/disable this setting without preliminary consultancy to developers. |
| `}` | |

**iw_luaengined.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor LUA engine daemon` | Daemon name |
| `After=network-online.service iwtm-consul.service iw_bookworm.service iw_licensed.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |

| Code | Description |
| --- | --- |
| `Type=simple` | Daemon start type. `simple` – the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under `root` |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_luaengined` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_luaengined -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld. |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field. |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field. |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ). |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the System waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` value means that the size is unlimited. |

| Code | Description |
|---|---|
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the System is loaded in multi-user mode |

## 1.25 messed.conf and iw_messed.service

**messed.conf** configuration file

| Content | Description |
|---|---|
| `{` | |
| `"Messed": {` | |
| `"HeloDomain": "smtp.company.com",` | HELLO SMTP-dialogue value. Default value is `smtp.company.com` |
| `"WorkerThreads": 8,` | Maximum number of streams to perform **iw_messed** parallel process. The default value is `8`. Streams increase will grow the process performance, but memory usage will also grow. |
| `"BookwormCacheDuration": 15,` | **Iw_bookworm** cash validity time (seconds). |
| `"ExchangeJournalAddRecipients": false,` | The parameter is added starting from the version 7.10.1. Enabling BCC-emails support to corporate address, in case all correspondence is transferred through external mail servers and Traffic Monitor |

| Content | Description |
| --- | --- |
| | receives only blind copies of separate emails.<br>Is used only if MS Exchange logging mode is enabled ("ExchangeJournalReports": false,) and incoming mail is controlled.<br>The parameter is disabled by default (false) |
| `"ExchangeJournalReports": false,` | Processing attached MS Exchange e-mails, operating in journaling mode (including the online version). The option is disabled by default (false) |
| `"NumExtractorThreads": 0,` | • Value 0 - an old mode. The number of started extractors is equal to the number of streams and each object will be processed sequentially by one thread (for example, an archive with 100 files).<br>• Value >0 - a new mode. In this case, if the object contains attachments (an archive), they will be processed by a maximum of `NumExtractorThreads` threads. And, irrespective of the number of working threads, only NumExtractorThreads extractors can be run simultaneously. |
| `"Relay": "127.0.0.1",` | The full domain name of mail relay-server where e-mail is to be redirected. It is used to be identified within the mail protocol. It is set during installation. |
| `"RelayPort": 2020,` | Mail relay-server port, where email is redirected. It is set during the installation. |
| `"Timeout": 1200,` | Time, when attempts to deliver SMTP-mails are taken (seconds). Upon the expiry of the time specified the e-mail is to be sent to DB. The default value is `1200` |
| `"FormatXmlContext": false` | XML formatting. Used to perform debugging. The default value is `false` |
| `},` | |

| Content | Description |
| --- | --- |
| "AnalysisClient": { | Client data analysis settings |
| "BindataMaxSizeInMb": 1024, | Maximum size of a file to be processed (MB). The default value is 1024 |
| "Cas": { | **iw_cas** settings |
| "SleepIntervalInSec": 5, | Timeout when trying to connect |
| "ConnectTryCount": 200 | Number of attempts to connect to **iw_cas** |
| }, | |
| "ConsulKVWatchPort": 9999, | The port which Consul uses to inform interceptor about kv (key-value) changes and the necessity to update values |
| "Pas": { | **iw_pas** settings |
| "SleepIntervalInSec": 5, | Timeout when trying to connect |
| "ConnectTryCount": 200 | Number of attempts to connect to **iw_pas** |
| } | |
| }, | |
| "ExtractorCache": { | Extractor cache options |
| "ExtractorCacheDepth": 0, | Maximum number of objects, stored in cache, default value is 0 (cache is disabled). |
| "ExtractorCacheClearExistingDir": true, | Flag, indicating if the contents of the daemon's cache directory should be deleted once started if the directory already exists and is not empty. The default value is true (to delete). |

| Content | Description |
| --- | --- |
| `"ExtractorCacheMaxSize": 107374182400,` | Cache maximum size, reserved on the disk (in bytes). Default value - 107374182400 (100 GB). |
| `"ExtractorCacheFileMaxSize": 10485760,` | File maximum size to store in a cache (in bytes). Default value - 10485760 (10 MB). |
| `"ExtractorCacheShards": 0` | Number of threads to store data in the cache. If the value is 0, all system threads are used. Otherwise, the specified number of threads are used. It is better not to specify a value greater than the number of threads in the system. The default value is 0. |
| `},` | |
| `"Statistics": {...}` | see General section Statistics |
| `"Logging": {...}` | see General section Logging |
| `"NookDir": "/opt/iw/tm5",` | In this section, the module working directory is specified. By default `/opt/iw/tm5` |
| `"UnsafeSignalHandlers":false` | Support for working with unhandled signals. Disabled by default ( `false` ). Once the `true` value is set, you can use "unsafe" signal handlers in the code (e.g. SIGSEVG). We recommend not adding, enabling or disabling this parameter without consulting our developers. |
| `"Bookworm": {...},` | see General section Bookworm |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `}` | |

**iw_messed.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Messed` | Daemon name |
| `After=network-online.service iwtm-consul.service  iw_bookworm.service iw_licensed.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_messed` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_messed -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |

| Code | Description |
| --- | --- |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.26 oracle.conf

| Content | Description |
| --- | --- |
| `{` | |
| `"NLS_LANG": "AMERICAN_AMERICA.AL32UTF8",` | Encoding, specifying DB localisation. |
| `"Username": "iwtm_linux",` | Linux-part account username. |

| Content | Description |
| --- | --- |
| `"ORACLE_HOME": "/u01/app/oracle/product/db_1",` | ORACLE_HOME environment variable value. |
| `"Password": "xxXX1234",` | Linux-part account password. |
| `"ConnString": "iwtm"` | DB server connection line (server screen name from **tnsnames.ora** file). |
| `}` | |

## 1.27 pas.conf and iw_pas.service

**pas.conf** configuration file

| Content | Description |
| --- | --- |
| `{` | |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"Logging": {...},` | see General section Logging |
| `"NookDir": "/opt/iw/tm5",` | In this section the module working directory is specified. By default – `/opt/iw/tm5`. |
| `"ProtectedDocuments": {` | |
| `"ConfigPath": "etc/config/pas/protected_documents.xml",` | Path to configuration file, containg the connections between elements of technology control and protection object. |
| `"EnableSchemaCheck": true,` | Xml check enabling on xsd (disabling increases greatly the configuration download speed). Default value – `true` |

| Content | Description |
| --- | --- |
| `"SchemaPath": "etc/protected_documents/protected_documents.xsd"` | Path to the file with xml configuration scheme. |
| `},` | |
| `"UnsafeHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"ThriftServers": {...}` | see General section ThriftServers |
| `}` | |

**iw_pas.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Postanalysis Server` | Daemon name |
| `After=network-online.service iwtm-consul.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_pas` | The full path and arguments of the command that should be executed before the main process is started |

| Code | Description |
| --- | --- |
| `ExecStart=/opt/iw/tm5/bin/iw_pas -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |

| Code | Description |
|---|---|
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.28 postgresql.conf

| Content | Description |
|---|---|
| { | |
| "DB": "postgres", | DB name |
| "Host": "localhost", | Host to be connected |
| "Password": "xxXX1234", | Linux-part user account password |
| "Port": 5433, | Port to be connected |
| "Username": "iwtm_linux" | Linux-part username |
| } | |

## 1.29 proxy.conf and iw_proxy_http.service, iw_proxy_icq.service, iw_proxy_smtp.service

The **proxy.conf** configuration file:

| Content | Description |
|---|---|
| { | |
| "Logging": {...}, | see General section Logging |

| Content | Description |
| --- | --- |
| `"NookDir": "/opt/iw/tm5",` | In this section the module working directory is specified. By default – /opt/iw/tm5. |
| `"NumExtractorThreads": 0,` | • 0 value - an old mode. Thus, the number of extractors started is in accordance with the number of streams, and every object is to be totally, consistently processed by one stream (for example, a 100 files archive).<br>• >0 value - a new mode. In this case, if the object contains the attachments (the archive), they are to be processed by maximum NumExtractorThreads streams; thus the maximum number of working streams can start at the same time only NumExtractorThreads number of extractors. |
| `"Niceness": -8,` | Priority value (nice) for protocol stream-handlers. |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"Bookworm": {...}` | see General section Bookworm |
| `"MemoryLimits": {` | Memory limits restrictions. |
| `"RejectSessionsLimit": 4294967296,` | Maximum memory capacity, available to use, exceeding its limit new sessions receipt is rejected (0 - no limits). |
| `"StopAllocationLimit": 0,` | Maximum memory capacity, to be used for sessions processing (0 - no limits). |
| `"DropSessionsLimit": 0` | Maximum memory capacity, available to use, exceeding its limit one or more active session is to be over (0 - no limits). |
| `},` | |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK on Windows) while any exception handling. Used for debugging purposes. |

| Content | Description |
| --- | --- |
| `"AnalysisClient": {` | Client data analysis settings |
| `"BindataMaxSizeInMb": 1024,` | Maximum size of file to be processed (Mb). The parameter is optional. If the value is not specified, the default value to be used is 1024 Mb |
| `"Cas": {` | **iw_cas** settings |
| `"SleepIntervalInSec": 5,` | Timeout when trying to connect |
| `"ConnectTryCount": 200` | Number of attempts to connect to **iw_cas** |
| `},` | |
| `"Pas": {` | **iw_pas** settings |
| `"SleepIntervalInSec": 5,` | Timeout when trying to connect |
| `"ConnectTryCount": 200` | Number of attempts to connect to **iw_pas** |
| `}` | |
| `},` | |
| `"ExtractorCache": {` | Parameters of extractors cache |
| `"ExtractorCacheDepth": 0,` | Cache depth,defaultvalue is 0 (cache is disabled) |
| `"ExtractorCacheClearExistingDir": true,` | Flag, indicating if the directory content of daemon cache should be deleted once started if it's already existed and not the empty one.Default value is - true (to delete) |
| `"ExtractorCacheMaxSize": 107374182400,` | Cache maximum size, reserved on the disk (in bytes). Default value - 107374182400 (100 Gb) |

| Content | Description |
| --- | --- |
| "ExtractorCacheFileMaxSize": 10485760, | File maximum size to store incache(in bytes). Default value - 10485760 (10 Mb) |
| "ExtractorCacheShards": 0 | The number of streams to store data in cache. If the value is 0 - the number of System streams, otherwise - the number of specified streams, preferable that it wasn't bigger than the System streams number, the default value is - 0. |
| }, | |
| "module": { | **Iw_proxy** modules list and its parameters. |
| "smtp": { | |
| "Statistics": {...} | see General section Statistics |
| "MaxMsgSize": 52428800, | SMP-message size (bytes), exceeding this message cannot be processed by System. The default value is – 52428800. |
| "iscp": { | Network data capture location, where **iw-sniffer** is running. |
| "TCPKeepaliveProbing": { | Monitoring of connection activity section |
| "ProbesIntervalSec": 15, | The interval (seconds) that divides sending of keep alive packages |
| "ProbesCount": 10, | Number of keep alive packages being sent |
| "StartProbingInSec": 30, | The time (seconds) during wich no connection activity is detected and after it passes, the system starts sending keep alive packages |
| "Enabled": true | Option is enabled or disabled |
| }, | |

| Content | Description |
| --- | --- |
| `"ListenArea": "smtp",` | Filter name, defined in iw_sniffer configuration, which is to be used to get the data. |
| `"Host": "localhost",` | Server address, where **iw_sniffer** is running. |
| `"Port": 4301` | Port, used by **iw_sniffer** to connect to clients. |
| `},` | |
| `"DumpMode": 0,` | Number is a bit mask, which includes different dump logs in accordance with its binary representation. Default value is `0`. Possible values:<br>• 1 - saving data,<br>• 2 - saving blocks sizes of data,<br>• 3 - saving data and blocks sizes of data |
| `"ReadBufferSize": 32768,` | Data size, got from **iw_sniffer** for once. Default value - `32768` |
| `"DumpPath": "dump.smtp",` | Path to dump file. Default value - `dump.smtp` |
| `"FormatXmlContext": false` | XML formatting. To perform the checkout. Default value - `false.` |
| `},` | |
| `"icq": {` | |
| `"MessageWindow": 10,` | Number of dialogue messages, reaching it ICQ-dialogue is to be stored in the file queue. Default value - `10.` |
| `"DefaultCodepage": "cp1251",` | ICQ incoming traffic coding. Default value - `cp1251.` |

| Content | Description |
| --- | --- |
| "Statistics": {...}, | see General section Statistics |
| "iscp": { | Network data capture location, where **iw_sniffer** is running: |
| "TCPKeepaliveProbing": { | Monitoring of connection activity section |
| "ProbesIntervalSec": 15, | The interval (seconds) that divides sending of keep alive packages |
| "ProbesCount": 10, | Number of keep alive packages being sent |
| "StartProbingInSec": 30, | The time (seconds) during wich no connection activity is detected and after it passes, the system starts sending keep alive packages |
| "Enabled": true | Option is enabled or disabled |
| }, | |
| "ListenArea": "icq", | Filter name, specified in **iw_sniffer** configuration, which is to be used to get the data. |
| "Host": "localhost", | Server address, where **iw_sniffer** is running. |
| "Port": 4301 | Port, used by **iw_sniffer** to connect to clients. |
| }, | |
| "TempDir": "tmp", | Temporary file storage directory, that should be located in the same partition with file queue. |
| "DialogTimeout": 5, | Period (minutes), when it is required saving dialogue in the file queue after the last ICQ-message was intercepted. Default value - `5` |

| Content | Description |
| --- | --- |
| "FormatXmlContext": false, | XML formatting. Used for debugging purposes. Default value - `false` |
| "DialogBytesCount": 500 | Dialogue size (bytes), when ICQ-dialogue is stored in the file queue reaching it. Default value - `500` |
| }, | |
| "http": { | |
| "Statistics": {...}, | see General section Statistics |
| "IcqIgnoreHosts": "", | Disabling of ICQ sessions specific hosts intercept |
| "DecodeHttpContent": true, | Enabling of query content unpacking when Content-Encoding heading is present and its value is `gzip`, `deflate` or `compress`. The default value - `true` |
| "IcqDumpPath": "", | Path to ICQ traffic dump file |
| "iscp": { | Network data interception location, where **iw_sniffer** is running: |
| "TCPKeepaliveProbing": { | Monitoring of connection activity section |
| "ProbesIntervalSec": 15, | The interval (seconds) that divides sending of keep alive packages |
| "ProbesCount": 10, | Number of keep alive packages being sent |
| "StartProbingInSec": 30, | The time (seconds) during wich no connection activity is detected and after it passes, the system starts sending keep alive packages |
| "Enabled": true | Option is enabled or disabled |

| Content | Description |
| --- | --- |
| `},` | |
| `"ListenArea": "http",` | Filter name, set in **iw_sniffer** configuration to be used to get data. |
| `"Host": "localhost",` | Server address, where **iw_sniffer** is running |
| `"Port": 4301` | Port used by **iw_sniffer** to connect clients. |
| `},` | |
| `"AuthContext": 0,` | Disabling HTTP inquiries storage with no authentication. Possible values are:<br>• `0` – storing queries with no authentication;<br>• `1` – queries with "*407*" respond from proxy-server are not to be stored,<br>• `2` – NTLM Type 1, or with no *Proxy-Authorization queries are not to be stored.* Thus SkipNegotiate parameter value is not important: System operates the way its value was On.<br>Default value - `0` |
| `"DialogTimeout": 5,` | Period (minutes), when it is required saving dialogue in the file queue after the last ICQ-message was intercepted above HTTP. Default value - `5` |
| `"HttpDumpPath": "",` | Path to HTTP traffic dump file |
| `"MaxMemoryBlock": 4096,` | Maximum data size of POST-request (kilobytes) which could be stored in RAM. Large size blocks will be unloaded to temporary files. Default value - `4096` |
| `"WCGAuthCache": false,` | Feature enabling authorized information caching function to integrate with WebSense WSG. To enable caching true value should be set. default value - `false` |
| `"StatusCheck": false,` | HTTP request delivery installation depending on status code, returned by the web server or proxy server. If the value set is true, code analysis is performed to display true HTTP request delivery state. Default value - f`alse` |

| Content | Description |
| --- | --- |
| `"IcqFilter": true,` | ICQ-messages intercept option (if the value is true), delivered by proxy server (above HTTP). The option is enabled by default |
| `"TransferTimeout": 300,` | Stop of active connection data transfer |
| `"InactiveConnectionTimeout": 172800,` | Closing of communication session since last time receiving data. By default - 172800 сек |
| `"SkipNegotiate": false,` | Disabling of NTLM Type 1 HTTP requests queue storage (required to remove inquiry duplicates). Default value - false. Implementing the deployment scheme, when HTTP traffic copy is intercepted via Sniffer, the value should be `false`. |
| `"HighVolumeErrors": {` | Error messages and HTTP protocol parser warnings limiter: |
| `"switchToNormalThreshold": 300,` | Threshold number of messages, displayed during the period specified in errorsWindow. Decrease of displayed messages to the specified number causes limiter to switch to normal mode, where every 5 minutes the number of errors occurred in the last "errorsWindow seconds" is displayed. |
| `"errorsWindow": 300,` | Period, when the efficient number of displayed messages is monitored.<br>By default - 300 seconds |
| `"switchToFailingThreshold": 1500,` | Maximum number of messages handled in the mode "display every 5 minutes the number of error messages" during the period, specified in errorsWindow. Exceeding this number causes switching to "display all messages with no limits" mode until the number of messages in "errorsWindow seconds" is below switchToNormalThreshold value. |
| `"mode": "normal"` | Errors counting mode ( - debug version) . By default - normal<br>• debug - the rest parameters are ignored, all error messages are displayed;<br>• normal - until error messages in the last errorsWindow seconds are less than switchToFailingThreshold - display every 5 minutes the number of errors occurred, when exceeding - start displaying all error messages until they are less than switchToNormalThreshold. |

| Content | Description |
| --- | --- |
| `},` | |
| `"OnlyPost": true,` | POST inquiries interception. Default value - `true` |
| `"FormatXmlContext": false,` | XML formatting. Used for debugging purposes. Default value - `false` |
| `"LogAuth": false,` | Logging the binding of user log-in information and his/her POST inquiries. Default value - `false` |
| `"MessageWindow": 10,` | Number of dialogue messages, reaching it ICQ dialogue (when ICQ is intercepted over HTTP) to be stored in the file queue. Default value - 10 |
| `"DefaultCodepage": "cp1251",` | ICQ incoming traffic coding. default value - `cp1251` |
| `"IcqKnownServers": "205.188.8.0/24:443, 64.12.30.0/24:443,`<br><br>`205.188.3.0/24:443, 205.188.251.0/24:443,`<br><br>`64.12.104.0/24:443, 64.12.28.0/24:443,`<br><br>`205.188.210.0/24:443, 64.12.73.0/24:443,`<br><br>`64.12.201.0/24:443, 205.188.248.0/24:443",` | IP ranges for ICQ servers while intercepting ICQ over HTTP. Few ranges are listed with a comma, for example: " `205.188.251.0/24:443, 64.12.30.0/24:443, 205.188.8.8:443` " |
| `"WCGAuthTTL": 900,` | Authorized information caching time, if `WCGAuthCache` parameter is set up (seconds). Default value - 900 |

| Content | Description |
| --- | --- |
| "IcqSessionTimeOut": 10800, | ICQ session inactive time, when traffic interception is over (seconds). Default value - `10800` |
| "SkipStat4XX": false, | Disables HTTP inquiries storage in the queue with proxy server respond "*4XX* ", where *XX* – any numerals. Default value - `false` . |
| "UnsafeMode": false, | The mode where in the time of intercept error the process operation is disabled and dump file is created. By default - `false` |
| "DialogBytesCount": 500 | Dialogue size (bytes), once it is reached ICQ dialogue (while ICQ is intercepted over HTTP) is to be stored in the file queue. Default value `500` |
| }, | |
| "void": { | |
| "Statistics": {...}, | see General section Statistics |
| "iscp": { | Network location of data interceptor, where **iw_sniffer** is running: |
| "TCPKeepaliveProbing": { | Monitoring of connection activity section |
| "ProbesIntervalSec": 15, | The interval (seconds) that divides sending of keep alive packages |
| "ProbesCount": 10, | Number of keep alive packages being sent |
| "StartProbingInSec": 30, | The time (seconds) during wich no connection activity is detected and after it passes, the system starts sending keep alive packages |
| "Enabled": true | Option is enabled or disabled |
| }, | |

| Content | Description |
| --- | --- |
| "ListenArea": "void", | Filter name, set in **iw_sniffer** configuration, which is to be used to get data. |
| "Host": "localhost", | Server address, where **iw_sniffer** is running. |
| "Port": 4301 | Port, used by **iw_sniffer** to connect the clients. |
| }, | |
| "Dump": false | Saving obtained data onCD. Used for debugging purposes. |
| } | |
| }, | |
| "ProcessingThreads": 0, | Number of streams, handling the data from **iw_sniffer**. If the value is 0, the number of used streams will be calculated automatically by means of CPU. |
| } | |

The **iw_proxy_http.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Proxy` | The daemon name |
| `After=network-online.service iwtm-consul.service iw_bookworm.service iw_licensed.service` | Daemons that will be started before the current daemon |
| | |
| `[Service]` | A section where the daemon start settings are specified |

| Code | Description |
| --- | --- |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_proxy -m http` | The full path and command arguments that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_proxy -p /opt/iw/tm5/etc -m http` | The full path and arguments of the command that should be run to start the daemon. The command is run under user specified in the `User` field |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` value means that the size is unlimited |

| Code | Description |
| --- | --- |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| `AmbientCapabilities=CAP_SYS_NICE` | A privilege that enables raising the priority for processes and streams |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

The **iw_proxy_icq.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Proxy` | The daemon name |
| `After=network-online.service iwtm-consul.service iw_bookworm.service iw_licensed.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |

| Code | Description |
| --- | --- |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_proxy -m icq` | The full path and command arguments that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_proxy -p /opt/iw/tm5/etc -m icq` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` field |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` value means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |

| Code | Description |
| --- | --- |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| `AmbientCapabilities=CAP_SYS_NICE` | A privilege that enables raising the priority for processes and streams |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

The **iw_proxy_smtp.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Proxy` | The daemon name |
| `After=network-online.service iwtm-consul.service iw_bookworm.service iw_licensed.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_proxy -m smtp` | The full path and command arguments that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_proxy -p /opt/iw/tm5/etc -m smtp` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` field |

| Code | Description |
| --- | --- |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` value means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| `AmbientCapabilities=CAP_SYS_NICE` | A privilege that enables raising the priority for processes and streams |
| | |

| Code | Description |
| --- | --- |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.30 qmover_client.conf and iw_qmover_client.service

**qmover_client.conf** configuration file

| Content | Description |
| --- | --- |
| { | |
| "ChannelWidth": 128, | Channel width, data downloading speed in Traffic Monitor, kilobits per sec. Can be indirectly limited by `WindowSize` parameter. |
| "DebugBreak": false, | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| "ListenerIP": "127.0.0.1", | Host party IP-address is - **qmover_server** |
| "TCPKeepaliveProbing": { | Section for monitoring connection activity |
| "ProbesIntervalSec": 15, | The interval between sending keepalive packets (in seconds) |
| "ProbesCount": 10, | The number of keepalive packets to be sent |
| "StartProbingInSec": 30, | The time during which the connection is inactive (in seconds). After this time, the sending of keepalive packets starts |
| "Enabled": true | Whether the option is enabled |
| } | |

| Content | Description |
| --- | --- |
| `"Logging": {...},` | see General section Logging |
| `"MaxFrameSize": 1400,` | Data block maximum size, sent at a time. |
| `"NookDir": "/opt/iw/tm5",` | In this section, the module working directory is specified. By default – `/opt/iw/tm5`. |
| `"Port": 16888,` | Server port. By default: `16888` |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"WindowSize": 100` | Data blocks maximum number, which can be sent with no confirmation. |
| `}` | |

**iw_qmover_client.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Queue Mover Client` | Daemon name |
| `After=network-online.service iwtm-consul.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |

| Code | Description |
| --- | --- |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check coredumps.sh -d iw_qmover_client` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_qmover_client -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |

| Code | Description |
| --- | --- |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.31 qmover_server.conf and iw_qmover_server.service

**qmover_server.conf** configuration file

| Content | Description |
| --- | --- |
| `{` | |
| `"Clients": [` | Agents massive |
| `{` | |
| `"IP": "127.0.0.1",` | IP-address of the maintained agent. |
| `"TCPKeepaliveProbing": {` | Section for monitoring connection activity |
| `"ProbesIntervalSec": 30,` | The interval between sending keepalive packets (in seconds) |
| `"ProbesCount": 10,` | The number of keepalive packets to be sent |
| `"StartProbingInSec": 300,` | The time during which the connection is inactive (in seconds). After this time, the sending of keepalive packets starts. If no keep |

| Content | Description |
| --- | --- |
| | alive packets receive a response, the current connection will be dropped.<br>If the system kernel version supports the **TCP_USER_TIMEOUT** option for the socket, the timeout is set equal to StartProbingInSec + ProbesIntervalSec * ProbesCount. With this option, even in the case of activity (attempts to transfer data to a connection already closed on the other side), the connection will be closed after the time calculated by the formula. |
| `"Enabled": true` | Whether the option is enabled |
| `}` | |
| `}` | |
| `],` | |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"Logging": {...},` | see General section Logging |
| `"NookDir": "/opt/iw/tm5",` | Module working catalogue is specified in the section. By default – `/opt/iw/tm5`. |
| `"Port": 16888,` | Server port. By default: `16888` |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/ disabling this parameter is not recommended without consultation with developers. |

| Content | Description |
| --- | --- |
| } | |

**iw_qmover_server.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Queue Mover Server` | Daemon name |
| `After=network-online.service iwtm-consul.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_qmover_server` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_qmover_server -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non- |

| Code | Description |
| --- | --- |
| | zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.32 rammer.conf

| Содержимое | Описание |
| --- | --- |
| { | |

| Содержимое | Описание |
| --- | --- |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"Logging": {...},` | see General section Logging |
| `"NookDir": "/opt/iw/tm5",` | In this section the module working directory is specified. By default – `/opt/iw/tm5`. |
| `"Rammer": {` | |
| `"Mail": {` | |
| `"DeleteAfterSending": true,` | Delete objects after sending (true) or relocate into queue/final-errors (false). |
| `"Notifications": {` | Notifications sending control. |
| `"NotificationTextPath": "config-perm/rammer/notification_mail_pattern.xml",` | Notification mail pattern. |
| `"Officer": "officer@tester.com",` | Security officer's e-mail to send the notification. |
| `"Sender": "sender@tester.com"` | E-mail address where from the initial message containing notification of sending from error queue will be sent |
| `},` | |
| `"Relay": {` | Relay server setup. |
| `"RelayHost": "localhost",` | Full domain name of mail relay server, where the message is redirected. It is used to be identified |

| Содержимое | Описание |
| --- | --- |
| | within mail protocol. To be set during the installation. |
| "RelayPort": 2020 | Port of mail relay server, where the message is redirected. To be set during the installation. |
| }, | |
| "SendOnDeliveryAbsence": true, | To send object messages with unknown DeliveryState (true). |
| "SendOnTransportModeAbsence": true | To send object messages with unknown TransportMode (true). |
| }, | |
| "TempDir": "tmp", | Path to temporary service files. |
| "WaitTimeSec": 5 | Time slot, defining how often the component checks the file queues for events. |
| }, | |
| "UnsafeSignalHandlers":false | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/ disabling this parameter is not recommended without consultation with developers. |
| } | |

## 1.33 sample_compiler.conf and iw_sample_compiler.service

**sample_compiler.conf** configuration file

| Content | Description |
| --- | --- |
| { | |
| `"Statistics": {...},` | See General section Statistics |
| "Logging": {...}, | See General section Logging |
| "ThriftServers": {...}, | See General section ThriftServers |
| "Discovery": {...} | See Common section Discovery |
| "NookDir": "/opt/iw/tm5", | In this section, the module working directory is specified. By default, `/opt/iw/tm5`. |
| "UnsafeSignalHandlers":false | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| "Bookworm": {...}, | See General section Bookworm |
| "EnableOCR": false, | Enabling OCR extractor, able to store scanned standard documents like a text content standard. Default value - `false`<br>**Note:** it is required to enable OCR in **warpd.conf** configuration file (w `arp` section, value `EnableOCR:true`). |
| "ErrorHandlers": { | Errors processing strategy description for each technology. |
| `"autoling": "NoErrorsAllowedHandler",` | Is not used at present time. |
| "exclusion": "NoErrorsAllowedHandler", | Is not used at present time. |

| Content | Description |
| --- | --- |
| `"form": "AtLeastOneSuccessHandlerWithCleanup",` | Reference blanks. Default value - AtLeastOneSuccessHandlerWithCleanup (the compilation is considered to be successful if any reference document was successfully compiled. Reference document is considered to be compiled if any component of this document was successfully compiled.<br>Choosing this strategy should admit that separate contents error information is wiped from the result and a client can get only successful contents compilations info). |
| `"image_learn": "NoErrorsAllowedHandler",` | Is not used at present time |
| `"normal": "AtLeastOneSuccessHandlerNoCleanup",` | Reference documents. Default value - AtLeastOneSuccessHandlerNoCleanup (similar to "AtLeastOneSuccessHandlerWithCleanup", but the content compilations error information is to be provided in conjuction with result). |
| `"stamp": "NoErrorsAllowedHandler",` | Reference stamps. Default value - NoErrorsAllowedHandler (any compilation error of any content results in an error of the whole compilation). |
| `"table": "NoErrorsAllowedHandler"` | Reference unloadings from DB. Default value - NoErrorsAllowedHandler (any compilation error of any content results in an error of the whole compilation). |
| `},` | |
| `"UnsafeSignalHandlers": false,` | If the processing details should be sent after the changes have been implemented. Used for debugging purposes. |

| Content | Description |
| --- | --- |
| `"ExtractorCache": {` | Extractors cache parameters |
| `"ExtractorCacheDepth": 0,` | Maximum number of objects stored in cache, default value - 0 (cache is disabled). |
| `"ExtractorCacheClearExistingDir": true,` | Flag specifying if the daemon cache directory content should be removed once started if it exists and not empty. The default value is - true (to remove). |
| `"ExtractorCacheMaxSize": 107374182400,` | Maximum size of cache on the drive (in bytes) The default value is 107374182400 (100 GB). |
| `"ExtractorCacheFileMaxSize": 10485760,` | Maximum file size to be placed into cache (bytes). The default value is 10485760 (10 MB). |
| `"ExtractorCacheShards": 0` | Number of streams to store data in cache. If 0 is specified the number of System's streams is considered, otherwise - the number of streams specified, preferable that it wasn't bigger than the system's streams number. Default value is - 0. |
| `},` | |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"OutChunkSizeLimit": 1048576,` | Maximum size of chunk where the compilation results are returned. Default value - `1048576` |
| `"ThreadsCount": 5,` | Number of handling streams |
| `"Technologies": {` | Separate technologies configuration section |

| Content | Description |
| --- | --- |
| `"AutolingMinTermCount": 5,` | Minimum number of terms, found in the text to be analyzed |
| "FingerprintMinBinFileSize": 256, | Minimum size of binary reference document (bytes) |
| "FormDelimitersPath": "etc/config-perm/cas/form_delimiters.json", | Path to delimiters file. Used for reference form technology |
| "FormStopWordsPath": "etc/config-perm/cas/form_stopwords.txt", | Path to stop words glossary (ignored words) used to analyze forms (documents containing fields to be filled in). |
| "FormMinRows": 2, | Minimum number of fields in reference blank form |
| "FingerprintMaxBinFileSize": 31457280, | Maximum size of binary reference document |
| "FingerprintMinTextFileSize": 256, | Minimum size of text reference document (bytes) |
| "ImageMatcherConfig": "etc/config-perm/cas/image-matcher.yml", | Path to configuration of technology image analysis |
| "TableStopWordsPath": "etc/config-perm/cas/table_stopwords.txt", | Path to stop words glossary to analyze DB unloadings |
| "FingerprintMaxTextFileSize": 31457280, | Maximum size of text sample document (characters) |
| "TableMinRows": 2, | Minimum number of rows in a sample table for DB unloadings |
| "TempDir": "tmp/analysis", | Directory to store temporary files. Default value - t`mp/analysis` |
| "VectorObjectMinSize": 800 | Minimum number of primitives to be extracted from vector image to be considered the standard ones. If it is extracted less than the number |

| Content | Description |
| --- | --- |
| | specified, the error occures: "File does not fit the standard". |
| `},` | |
| `}` | |

**iw_sample_compiler.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Configuration Sample Compiler` | Daemon name |
| `After=network-online.service iwtm-consul.service iw_bookworm.service licensed.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_sample_compiler` | The full path and arguments of the command that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_sample_compiler -p /opt/iw/tm5/etc --backend $DB_BACKEND` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |

| Code | Description |
| --- | --- |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.34 smtpd.conf and iw_smtpd.service

The **smtpd.conf** configuration file:

| Content | Description |
|---|---|
| `{` | |
| `"Logging": {...},` | see General section Logging |
| `"NookDir": "/opt/iw/tm5",` | In this section, the module working directory is specified. By default – `/opt/iw/tm5`. |
| `"UnsafeSignalHandlers":false,` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/ disabling this parameter is not recommended without consultation with developers. |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"SMTPD": {` | **Iw_smtpd** daemon settings section. |
| `"Domain": "smtp.company.com",` | Full domain name of hosting SMTP-server, used for identity inside mail protocol. It is recommended to use TM server name, where **iw_smtpd** process is running. |
| `"EnablePrivSock": false,` | Using privileged socket mechanism (privsock) to receive capability marks (used on OS Astra Linux version 1.6 and later ones) . Default value - false. |
| `"MaxThreads": 8,` | Maximum number of streams to perform **iw_smtpd** parallel process. The default value is `8`. Strems number growing will increase |

| Content | Description |
| --- | --- |
| | process performance, but memory usage will also grow. |
| `"MaxMsgSize": 104857600,` | E-mail maximum size (bytes). Default value is - `104857600` |
| `"ListenPort": 2025,` | Server port, where the listening process is running. It is set during the installation. |
| `"ListenAddr": "0.0.0.0"` | Server network interface address, where the listening process is running. It is set during the installation. |
| `}` | |
| `}` | |

The **iw_smtpd.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor SMTP` | The daemon name |
| `After=network-online.service iwtm-consul.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_smtpd` | The full path and arguments of the command that should be executed before the main process is started |

| Code | Description |
| --- | --- |
| `ExecStart=/opt/iw/tm5/bin/iw_smtpd -p /opt/iw/tm5/etc` | The full path and arguments of the command that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |

| Code | Description |
| --- | --- |
| `AmbientCapabilities=PARSEC_CAP_PRIV_SOCK` | A privilege for creating a privileged socket and changing its mandatory label. A privileged socket enables network operation ignoring the mandatory policy |
| `AmbientCapabilities=CAP_NET_BIND_SERVICE` | A privilege that enables binding a socket to privileged ports (port numbers lower than 1024). |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.35 sniffer.conf and iw_sniffer.service

The **sniffer.conf** configuration file:

| Content | Description |
| --- | --- |
| `{` | |
| `"Use": {` | |
| `"SessionDump": false` | If the intercepted packs, distributed by sessions are to be saved. Used for debugging purposes. SessionDump configuration part 1. |
| `},` | |
| `"Statistics": {...},` | see General section Statistics |
| `"Logging": {...},` | see General section Logging |
| `"iscp": {` | |
| `"TCPKeepaliveProbing": {` | Monitoring of connection activity section |

| Content | Description |
| --- | --- |
| `"ProbesIntervalSec": 30,` | The interval (seconds) that divides sending of keep alive packages |
| `"ProbesCount": 10,` | Number of keep alive packages being sent |
| `"StartProbingInSec": 300,` | The time (seconds) during wich no connection activity is detected and after it passes, the system starts sending keep alive packages |
| `"Enabled": true` | Option is enabled or disabled |
| `},` | |
| `"ListenHost": "0.0.0.0",` | Network interface to get iscp connected. By default `0.0.0.0` - for any interface to get. |
| `"ListenPort": 4301` | Server port, where listening process is running. Default value - `4101` |
| `},` | |
| `"NookDir": "/opt/iw/tm5",` | In this section the module working directory is specified. By default – `/opt/iw/tm5`. |
| `"Niceness": -15,` | Priority value (nice) for streams handling iscp-protocol. |
| `"UsedAreas": [` | Active filters from the list in the below section ListenAreas. Alternative, where every agent is to be connected to any ListenArea, is performed by title (set within sniffer client configuration - capstack or proxy). Inactive filters are assumed ( "pcap"). |
| `"capstack",` | |
| `"http",` | |
| `"icq",` | |
| `"smtp"` | |

| Content | Description |
| --- | --- |
| ], | |
| "UnsafeSignalHandlers":false | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| "DebugBreak": false, | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| "SessionDump": { | SessionDump configuration part 2. |
| "BaseDirectory": "snif-sessions" | Intercepted sessions storage location (if SessionDump = true). |
| }, | |
| "DumpFileDir": "dump-all", | NOT USED |
| "ListenAreas": { | Every ListenArea - is a filter to select handling packs. The source of packs is a network interface (through tmcap core module) or pcap-file. ListenArea names are used by agents while connecting to sniffer. |
| "capstack": { | |
| "MaxClient": 16, | The number of clients to be connected to one ListenArea at one time. |
| "Rules": [ | Chain of applied in sequence rules to choose the packs, captured for ListenArea given. The first rule is applied for every pack, where it suits. |
| { | |
| "LoPort": 110, | Range of ports, where thy given rule is applied to. Port affiliation to the range is verified this way: LoPort <= portnum <= HiPort. |

| Content | Description |
| --- | --- |
| "IP": "0.0.0.0", | Sender or receiver address. If IP and Mask are not equal to zero, the following condition should be met: IP & Mask == IP, where & - bit-by-bit multiplication. |
| "HiPort": 110, | Range of ports, where the given rule is applied to. Port affiliation to the range is verified this way: LoPort <= portnum <= HiPort. |
| "Policy": "ACCEPT", | The rules are applied in sequence and when one of them is affected the rest are not applied, so if one pack is suitable for 2 rules, where one is DROP and the other is ACCEPT - the first from the list to be applied. From operation only ACCEPT and DROP are supported:<br>• ACCEPT - stop checking the rest of rules, pass the pack for handling<br>• DROP - stop checking the rest of rules, stop handling the pack |
| "Mask": "0.0.0.0" | Subnet mask |
| }, | |
| { | |
| "LoPort": 143, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "IP": "0.0.0.0", | Sender or receiver address. If IP and Mask are not equal to zero, the following condition should be met: IP & Mask == IP, where & - bit-by-bit multiplication. |
| "HiPort": 143, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "Policy": "ACCEPT", | The rules are applied in sequence and when one of them is affected the rest are not applied, so if one pack is suitable for 2 rules, where one is DROP and the other is ACCEPT - the first from the list to be applied. From operation only ACCEPT and DROP are supported:<br>• ACCEPT - stop checking the rest of rules, pass the pack for handling |

| Content | Description |
| --- | --- |
| | • DROP - stop checking the rest of rules, stop handling the pack |
| "Mask" : "0.0.0.0" | Subnet mask |
| }, | |
| { | |
| "LoPort": 993, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "IP": "0.0.0.0", | Sender or receiver address. If IP and Mask are not equal to zero, the following condition should be met: IP & Mask == IP, where & - bit-by-bit multiplication. |
| "HiPort": 993, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "Policy": "ACCEPT", | The rules are applied in sequence and when one of them is affected the rest are not applied, so if one pack is suitable for 2 rules, where one is DROP and the other is ACCEPT - the first from the list to be applied. From operation only ACCEPT and DROP are supported:<br>• ACCEPT - stop checking the rest of rules, pass the pack for handling<br>• DROP - stop checking the rest of rules, stop handling the pack |
| "Mask" : "0.0.0.0" | Subnet mask |
| }, | |
| { | |
| "LoPort": 1352, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |

| Content | Description |
| --- | --- |
| "IP": "0.0.0.0", | Sender or receiver address. If IP and Mask are not equal to zero, the following condition should be met: IP & Mask == IP, where & - bit-by-bit multiplication. |
| "HiPort": 1352, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "Policy": "ACCEPT", | The rules are applied in sequence and when one of them is affected the rest are not applied, so if one pack is suitable for 2 rules, where one is DROP and the other is ACCEPT - the first from the list to be applied. From operation only ACCEPT and DROP are supported:<br>• ACCEPT - stop checking the rest of rules, pass the pack for handling<br>• DROP - stop checking the rest of rules, stop handling the pack |
| "Mask": "0.0.0.0" | Subnet mask |
| } | |
| ], | |
| "Balancer": "IpPref", | Selecting balanced type of workload for Traffic Monitor servers, to avoid data processing delay and data packs loss.<br>• By default InPref - traffic distribution between few server instances is performed basing on the source_ip intercepted session (all client's traffic is processed by only one server), the maximum number of agents, where the traffic is to be distributed is set by MaxClient parameter.<br>• In Easy mode there are no limits on intercepted sessions distribution between servers, and the server with the lowest load is taken (not by CPU, but the amount of traffic from sniffer). |
| "Timeouts": { | Timeouts to handle TCP connections, intercepted for the given ListenArea. |
| "OpenInSec": 120, | Time to get approval for session opening (response SYN, ACK). |

| Content | Description |
| --- | --- |
| "TailInSec": 15, | After the connection is closed, confirmations and replays may occur. Packs with the same parameters that the closed session has, coming after the closure within the period specified will belong to the closed one. |
| "CloseInSec": 120, | Time to get approval for session closure (response FIN). |
| "LiveInSec": 3600 | Maximum time break between new packs arrival for open sessions. |
| }, | |
| "QueueMemorySizeInBytes": 67108864, | Data memory capacity, ready to upload and collected within the given ListenArea. This memory is to be distributed between connected agents. |
| "Interface": "" | Network interface name, where the core module will collect traffic for the given ListenArea. The value is provided manually in each case. |
| }, | |
| "pcap": { | |
| "Timeouts": { | Timeouts to handle TCP-connections intercepted for the given ListenArea. |
| "OpenInSec": 120, | Time to get approval for session opening (response SYN, ACK). |
| "TailInSec": 15, | Packs expectation time (sec) to be delivered after the connection closure. In this case, confirmations and replays may occur. Packs with parameters, similar to closed session parameters and coming after the closure within the period specified will belong to the closed one. |
| "CloseInSec": 120, | Time to get approval for session closure (response FIN). |

| Content | Description |
| --- | --- |
| "LiveInSec": 3600 | Maximum time break between new packs arrival for open session. |
| }, | |
| "PcapFile": "input.pcap", | Path to dump traffic file ( PcapFile or Interface can be specified at a time). |
| "MaxClient": 16, | Number of agents to be connected at a time to one ListenArea. |
| "Balancer": "IpPref" | Selecting balanced type of workload for Traffic Monitor servers, to avoid data processing delay and data packs loss. By default - InPref (traffic distribution between few server instances).<br>• By default InPref - traffic distribution between few server instances is performed basing on source_ip intercepted session (all client's traffic is processed by only one server), maximum number of agents, where the traffic is to be distributed is set by MaxClient parameter.<br>• In Easy mode there are no limits on intercepted sessions distribution between servers, and the server with the lowest load is taken (not by CPU, but the amount of traffic from sniffer). |
| }, | |
| "icq": { | |
| "MaxClient": 16, | Number of agents to be connected at a time to one ListenArea. |
| "Rules": [ | Chain of packs selection rules, consistently applied, captured for the given ListenArea. Every pack is under the first rule capable for it. |
| { | |

| Content | Description |
| --- | --- |
| "LoPort": 443, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "IP": "0.0.0.0", | Sender or receiver address. If IP and Mask are not equal to zero, the following condition should be met: IP & Mask == IP, where & - bit-by-bit multiplication. |
| "HiPort": 443, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "Policy": "ACCEPT", | The rules are applied in sequence and when one of them is affected the rest are not applied, so if one pack is suitable for 2 rules, where one is DROP and the other is ACCEPT - the first from the list to be applied. From operation only ACCEPT and DROP are supported:<br>• ACCEPT - stop checking the rest of rules, pass the pack for handling<br>• DROP - stop checking the rest of rules, stop handling the pack |
| "Mask": "0.0.0.0" | Subnet mask |
| }, | |
| { | |
| "LoPort": 5190, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "IP": "0.0.0.0", | Sender or receiver address. If IP and Mask are not equal to zero, the following condition should be met: IP & Mask == IP, where & - bit-by-bit multiplication. |
| "HiPort": 5190, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "Policy": "ACCEPT", | The rules are applied in sequence and when one of them is affected the rest are not applied, so if one pack is suitable for 2 rules, where one is DROP and the other is ACCEPT - the first from the list to be applied. From operation only ACCEPT and DROP are supported: |

| Content | Description |
| --- | --- |
| | • ACCEPT - stop checking the rest of rules, pass the pack for handling<br>• DROP - stop checking the rest of rules, stop handling the pack |
| "Mask" : "0.0.0.0" | Subnet mask |
| } | |
| ], | |
| "Balancer": "IpPref", | Selecting balanced type of workload for Traffic Monitor servers, to avoid data processing delay and data packs loss.<br>• By default InPref - traffic distribution between few server instances is performed basing on source_ip intercepted session (all client's traffic is processed by only one server), maximum number of agents, where the traffic is to be distributed is set by MaxClient parameter.<br>• In Easy mode, there are no limits on intercepted sessions distribution between servers, and the server with the lowest load is taken (not by CPU, but the amount of traffic from sniffer). |
| "Timeouts": { | Timeouts to handle TCP connections intercepted for the given ListenArea. |
| "OpenInSec": 120, | Time to get approval for session opening (response SYN, ACK). |
| "TailInSec": 15, | After the connection is closed, confirmations and replays may occur. Packs with the same parameters that the closed session has, coming after the closure within the period specified will belong to the closed one. |
| "CloseInSec": 120, | Time to get approval for session closure (response FIN). |
| "LiveInSec": 86400 | Maximum time break between new packs arrival for open session. |

| Content | Description |
| --- | --- |
| `},` | |
| `"QueueMemorySizeInBytes": 67108864,` | Data memory capacity, ready to upload and collected within the given ListenArea. This memory is to be distributed between connected agents. |
| `"Interface": "eth1"` | Interface name, where the core module will collect traffic for the given ListenArea. |
| `},` | |
| `"smtp": {` | |
| `"MaxClient": 16,` | Number of agents to be connected at a time to one ListenArea. |
| `"Rules": [` | Chain of packs selection rules, consistently applied, captured for the given ListenArea. Every pack is under the first rule capable for it. |
| `{` | |
| `"LoPort": 25,` | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| `"IP": "0.0.0.0",` | Sender or receiver address. If IP and Mask are not equal to zero, the following condition should be met: IP & Mask == IP, where & - bit-by-bit multiplication. |
| `"HiPort": 25,` | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| `"Policy": "ACCEPT",` | The rules are applied in sequence and when one of them is affected the rest are not applied, so if one pack is suitable for 2 rules, where one is DROP and the other is ACCEPT - the first from the list to be applied. From operation only ACCEPT and DROP are supported:<br>• ACCEPT - stop checking the rest of rules, pass the pack for handling<br>• DROP - stop checking the rest of rules, stop handling the pack |

| Content | Description |
| --- | --- |
| "Mask" : "0.0.0.0" | Subnet connection |
| } | |
| ], | |
| "Balancer": "IpPref", | Selecting balanced type of workload for Traffic Monitor servers, to avoid data processing delay and data packs loss.<br>• By default InPref - traffic distribution between few server instances is performed basing on source_ip intercepted session (all client's traffic is processed by only one server), maximum number of agents, where the traffic is to be distributed is set by MaxClient parameter.<br>• In Easy mode there are no limits on intercepted sessions distribution between servers, and the server with the lowest load is taken (not by CPU, but the amount of traffic from sniffer). |
| "Timeouts": { | Timeouts to handle TCP connections, intercepted for the given ListenArea. |
| "OpenInSec": 120, | Time to get approval for session opening (response SYN, ACK). |
| "TailInSec": 15, | After the connection is closed, confirmations and replays may occur. Packs with the same parameters that the closed session has, coming after the closure within the period specified will belong to the closed one. |
| "CloseInSec": 120, | Time to get approval for session closure (response FIN). |
| "LiveInSec": 3600 | Maximum time break between new packs arrival for open session. |
| }, | |

| Content | Description |
| --- | --- |
| "QueueMemorySizeInBytes": 67108864, | Data memory capacity, ready to upload and collected within the given ListenArea. This memory is to be distributed between connected agents. |
| "Interface": "eth1" | Interface name, where the core module will collect traffic for the given ListenArea. |
| }, | |
| "http": { | |
| "MaxClient": 16, | Number of agents to be connected at a time to one ListenArea. |
| "Rules": [ | Chain of packs selection rules, consistently applied, captured for the given ListenArea. Every pack is under the first rule capable for it. |
| { | |
| "LoPort": 80, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "IP": "0.0.0.0", | Sender or receiver address. If IP and Mask are not equal to zero, the following condition should be met: IP & Mask == IP, where & - bit-by-bit multiplication. |
| "HiPort": 80, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "Policy": "ACCEPT", | The rules are applied in sequence and when one of them is affected the rest are not applied, so if one pack is suitable for 2 rules, where one is DROP and the other is ACCEPT - the first from the list to be applied. From operation only ACCEPT and DROP are supported:<br>• ACCEPT - stop checking the rest of rules, pass the pack for handling<br>• DROP - stop checking the rest of rules, stop handling the pack |

| Content | Description |
| --- | --- |
| "Mask" : "0.0.0.0" | Subnet mask |
| }, | |
| { | |
| "LoPort": 443, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "IP": "0.0.0.0", | Sender or receiver address. If IP and Mask are not equal to zero, the following condition should be met: IP & Mask == IP, where & - bit-by-bit multiplication. |
| "HiPort": 443, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "Policy": "ACCEPT", | The rules are applied in sequence and when one of them is affected the rest are not applied, so if one pack is suitable for 2 rules, where one is DROP and the other is ACCEPT - the first from the list to be applied. From operation only ACCEPT and DROP are supported:<br>• ACCEPT - stop checking the rest of rules, pass the pack for handling<br>• DROP - stop checking the rest of rules, stop handling the pack |
| "Mask" : "0.0.0.0" | Subnet mask |
| }, | |
| { | |
| "LoPort": 3128, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "IP": "0.0.0.0", | Sender or receiver address. If IP and Mask are not equal to zero, the following condition should be met: IP & Mask == IP, where & - bit-by-bit multiplication. |

| Content | Description |
| --- | --- |
| "HiPort": 3128, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "Policy": "ACCEPT", | The rules are applied in sequence and when one of them is affected the rest are not applied, so if one pack is suitable for 2 rules, where one is DROP and the other is ACCEPT - the first from the list to be applied. From operation only ACCEPT and DROP are supported:<br>• ACCEPT - stop checking the rest of rules, pass the pack for handling<br>• DROP - stop checking the rest of rules, stop handling the pack |
| "Mask": "0.0.0.0" | Subnet mask |
| }, | |
| { | |
| "LoPort": 8080, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "IP": "0.0.0.0", | Sender or receiver address. If IP and Mask are not equal to zero, the following condition should be met: IP & Mask == IP, where & - bit-by-bit multiplication. |
| "HiPort": 8080, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "Policy": "ACCEPT", | The rules are applied in sequence and when one of them is affected the rest are not applied, so if one pack is suitable for 2 rules, where one is DROP and the other is ACCEPT - the first from the list to be applied. From operation only ACCEPT and DROP are supported:<br>• ACCEPT - stop checking the rest of rules, pass the pack for handling<br>• DROP - stop checking the rest of rules, stop handling the pack |

| Content | Description |
| --- | --- |
| "Mask" : "0.0.0.0" | Subnet mask |
| }, | |
| { | |
| "LoPort": 8888, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "IP": "0.0.0.0", | Sender or receiver address. If IP and Mask are not equal to zero, the following condition should be met: IP & Mask == IP, where & - bit-by-bit multiplication. |
| "HiPort": 8888, | Range of ports, where the given rule is applied. To check where the port belongs to: LoPort <= portnum <= HiPort. |
| "Policy": "ACCEPT", | The rules are applied in sequence and when one of them is affected the rest are not applied, so if one pack is suitable for 2 rules, where one is DROP and the other is ACCEPT - the first from the list to be applied. From operation only ACCEPT and DROP are supported:<br>• ACCEPT - stop checking the rest of rules, pass the pack for handling<br>• DROP - stop checking the rest of rules, stop handling the pack |
| "Mask" : "0.0.0.0" | Subnet mask |
| } | |
| ], | |
| "Balancer": "IpPref", | Selecting balanced type of workload for Traffic Monitor servers, to avoid data processing delay and data packs loss.<br>• By default InPref - traffic distribution between few server instances is performed basing on source_ip intercepted session (all client's traffic is processed by only one server), maximum number of agents, where |

| Content | Description |
| --- | --- |
| | the traffic is to be distributed is set by MaxClient parameter.<br>• In Easy mode there are no limits on intercepted sessions distribution between servers, and the server with the lowest load is taken (not by CPU, but the amount of traffic from sniffer). |
| "Timeouts": { | Timeouts to handle TCP connections intercepted for the given ListenArea. |
| "OpenInSec": 120, | Time to get approval for session opening (response SYN, ACK). |
| "TailInSec": 15, | After the connection is closed, confirmations and replays may occur. Packs with the same parameters that the closed session has, coming after the closure within the period specified will belong to the closed one. |
| "CloseInSec": 120, | Time to get approval for session closure (response FIN). |
| "LiveInSec": 3600 | Maximum time break between new packs arrival for open session. |
| }, | |
| "QueueMemorySizeInBytes": 67108864, | Data memory capacity, ready to upload and collected within the given ListenArea. This memory is to be distributed between connected agents. |
| "Interface": "eth1" | Interface name, where the core module will collect traffic for the given ListenArea. |
| } | |
| } | |
| } | |

The **iw_sniffer.service** unit file:

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Sniffer` | The daemon name |
| `After=network-online.service iwtm-consul.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/usr/sbin/modprobe tmcap` | The full path and command arguments that should be executed before the main process is started. Here: - loading and unloading **tmcap** kernel module when **iw_sniffer** is started or stopped |
| `ExecStartPre=/usr/sbin/setcap cap_net_admin+ep /opt/iw/tm5/bin/sniffer` | The full path and command arguments that should be executed before the main process is started |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_sniffer` | The full path and command arguments that should be executed before the main process is started |
| `ExecStart=/opt/iw/tm5/bin/iw_sniffer -p /opt/iw/tm5/etc --backend $DB_BACKEND` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` field |
| `#ExecStart=/usr/sbin/ip link set ens192promisc on` | A comment. Is used for debug purposes |
| `#ExecStart=/bin/bash -e "ip link set ens192promisc on"` | A comment. Is used for debug purposes |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |

| Code | Description |
| --- | --- |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=584000` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` value means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| Nice=-17 | A priority that a user sets for the process. The lower the number, the higher the priority of execution is and the less often the task manager will interrupt the process. The range is from -20 (the highest) to +19 (the lowest). |
| `AmbientCapabilites=CAP_NET_ADMIN` | A privilege that allows the daemon to perform network-related operations: configure a network interface, firewall, change routing tables, etc. |
| | |

| Code | Description |
| --- | --- |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.36 space_manager.conf and iw_space_manager.service

The **space_manager.conf** configuration file

| Content | Description |
| --- | --- |
| `{` | |
| `"Logging": {...},` | See General section Logging |
| `"Consul": {` | Parameters of registration in the Consul service |
| `"Adress": "127.0.0.1:8500",` | Consul address and port |
| `"UserName": "consul_client"` | User name |
| `},` | |
| `"Database": {` | Section for the database connection configuration |
| `"ConnString": "oci:host=localhost;port=1521;dbname=iwtm",` | Database connection parameters: address, port, user name |
| `"Driver": "oci",` | Database type: pgsql – PostgreSQL, oci – Oracle |
| `"UserName": "iwtm",` | Database user account name |
| `"Password": "xxXX1234"` | Database password |

| Content | Description |
| --- | --- |
| `},` | |
| `"Debug": false,` | If `true`, gets the service debug logs. |
| `"WebConf": false` | Not used |
| `}` | |

The **iw_space_manager.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | Section for definition of daemon metadata and configuration of its interaction with other daemons |
| `Description=InfoWatch Traffic Monitor Table Space Manager` | Daemon name |
| `After=network-online.service iwtm-consul.service postgresql-9.6.service oracle.service` | Daemons that are run before the current daemon |
| | |
| `[Service]` | Section for configuration of daemon launch |
| `Type=simple` | Daemon start type. `simple` – the daemon starts and switches to the waiting mode in the console |
| `PermissionsStartOnly=true` | Start of ExecStartPre commands as the **root** user |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_space_manager` | Full path and parameteres of the commands that should be run before the start of the main process |
| `ExecStart=/opt/iw/tm5/bin/iw_spaca_manager -p /opt/iw/tm5/etc --backend $DB_BACKEND` | Full path and parameteres of the command that should be run to start the daemon. Run under the user defined in `User` |

| Code | Description |
| --- | --- |
| `ExecStop=/bin/kill -s SIGTERM $MAINPID` | Command to stop the daemon. If not specified, the process is immediately killed when the daemon stops. Run under the user defined in `User` |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | Command to restart the daemon configuration if possible. Run under the user defined in `User` |
| `Restart=on-failure` | Command to restart the daemon if it stops or fails. The `on-failure` value means that the daemon is restarted if it stops with non-zero return code and is killed with a command ( `kill <daemon_pid>` ) |
| `» RestartSec=5` | Waiting time before the daemon tries to start |
| `TimeoutStopSec=0` | Time during which the system waits for the daemon to stop before marking it as unavailable or force-stopped |
| `User=iwtm` | The name of a user under which the daemon starts |
| `Group=iwtm` | User group name |
| `LimitNOFILE=32768` | Maximal number of open files |
| `LimitFSIZE=infinity` | Maximal file size (KB). `infinity` stands for unlimited size |
| `LimitNPROC=65536` | Maximal number of processors |
| `LimitCORE=infinity` | Limit of the coredump file size (KB) |
| `LimitMEMLOCK=infinity` | Maximal address space blocked in the memory (KB) |
| `EnvironmentFile=-/etc/default/iwtm` | Path to the surrounding file |
| | |
| `[Install]` | Definition of daemon operation if it is enabled or disabled |

| Code | Description |
| --- | --- |
| `WantedBy=multi-user.target` | Run this daemon when the system is loaded in the multi-user mode |

## 1.37 system_check.conf and iw_system_check.service

The **system_check.conf** configuration file

| Content | Description |
| --- | --- |
| { | |
| "DebugBreak": false, | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| "Discovery": {...} | See Общая секция Discovery |
| "Logging": {...}, | See General section Logging |
| "Nagios": { | Nagios service settings section |
| "ConfigureFilePath": "/etc/nagios/nagios.cfg", | Path to configuration file |
| "ContactsFilePath": "/etc/nagios/iwmon/iwmon-contacts.cfg", | Path to configuration file containing description of contacts to be notified |
| "ResourcesFilePath": "/etc/nagios/private/resource-notify-iw.cfg", | Path to configuration file containing notification e-mails settings |
| "StatusFilePath": "/var/log/nagios/status.dat" | Path to file containing check results |
| }, | |
| "NookDir": "/opt/iw/tm5", | In this section, the module working directory is specified. By default - `/opt/iw/tm5`. |

| Content | Description |
| --- | --- |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/ disabling this parameter is not recommended without consultation with developers. |
| `"ThriftServers": {...}` | See General section ThriftServers |
| `}` | |

The **iw_system_check.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor System Check` | The daemon name |
| `After=network-online.service iwtm-consul.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_system_check` | The full path and command arguments that should be executed before the main process is started. |
| `ExecStart=/opt/iw/tm5/bin/iw_system_check -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The |

| Code | Description |
| --- | --- |
| | command is run under user specified in the `User` fie ld. |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited. |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |

| Code | Description |
| --- | --- |
| `[Install]` | Defines the behavior of a daemon when it is enabled/disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.38 tech_tools.conf and iw_tech_tools.service

The **tech_tools.conf** coniguration file

| Content | Description |
| --- | --- |
| `{` | |
| `"Config": {` | **Iw_tech_tools** configuration section |
| `"ConfigPath": "etc/config/tech_tools"` | Path to tech_tools technological configuration |
| `},` | |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"Discovery": {...}` | See Common section Discovery |
| `"Logging": {...},` | See General section Logging |
| `"NookDir": "/opt/iw/tm5",` | In this section, the module working directory is specified. By default, `/opt/iw/tm5`. |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"ThriftServers": {...}` | See General section ThriftServers |

| Content | Description |
| --- | --- |
| } | |

The **iw_tech_tools.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Tech Utilities` | The daemon name |
| `After=network-online.service iwtm-consul.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_tech_tools` | The full path and command arguments that should be executed before the main process is started. |
| `ExecStart=/opt/iw/tm5/bin/iw_tech_tools -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field. |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field. |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non- |

| Code | Description |
| --- | --- |
| | zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` val ue means that the size is unlimited |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.39 text_autoling.conf and iw_text_autoling.service

| Content | Description |
| --- | --- |
| { | |

| Content | Description |
| --- | --- |
| `"Logging": {...},` | see General section Logging |
| `"NookDir": "/opt/iw/tm5",` | In this section the module working directory is specified. By default – `/opt/iw/tm5`. |
| `"Bookworm": {...},` | see General section Bookworm |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes |
| `"UnsafeSignalHandlers":false,` | Supporting unprocessed signals operation. By default the option is disabled (false). When setting the true value, you can set the handler of "unsafe" signals in the code (for example, SIGSEVG). We do not recommend adding, enabling/ disabling this option without pre-consultation with developers. |
| `"Analysis": {` | |
| `"Autoling": {` | Section to configure autolinguist learning. |
| `"AutolingConfigPath": "etc/config-perm/cas/autoling.conf",` | Path to autolinguist technology configuration file |
| `"MinTermLength": 3,` | Minimum length of the terms, found in the text |
| `"MinTextWordCount": 10,` | Minimum number of words in the text to be analyzed |
| `"MinUniqueTermCount": 5,` | Minimum number of unique terms found in the text to be analyzed |
| `"RelevanceThreshold": 0.1` | Minimum probability threshold to define category as non-working |
| `},` | |

| Content | Description |
| --- | --- |
| `"Config": {` | |
| `"EnableContentSchemaCheck": true,` | Enabling (true value) **cas_config.xml** file content validation |
| `"EnableSchemaCheck": true,` | Enabling xml check on xsd (disabling significally increases the configuration download speed). The default value is – `true` |
| `"SchemaPath": "etc/cas_config.xsd",` | Path to xsd file, used to check xml configuration. The default value is – `etc/cas_config.xsd` |
| `"Path": "etc/config/text_autoling",` | Path to cas configuration file. The default value is – `etc/config/cas` |
| `"TempDir": "tmp",` | Path to temporary service files |
| `"VariativeDataDir": "var/tech/text_autoling"` | |
| `},` | |
| `"Curler": {` | Curl backend configuration section |
| `"Active": {` | |
| `"AlertSocketPath": "wss://localhost/api/notify/listen/autolingUpdate",` | Web socket address used to get a signal to change Active configuration |
| `"UpdaterHostName": "https://localhost/xapi/configurationState/autoling"` | Configuration update address |
| `},` | |
| `"AlertTimeoutSec": 5,` | Timeout, when it is over the management is returned to calling |

| Content | Description |
| --- | --- |
| | thread in case the configuration was not changed before. |
| `"CurlOptSslVerifyHost": false,` | Http server connection settings to download configuration updates<br>**Note:** service fields are not intended to be edited by user- |
| `"CurlOptSslVerifyPeer": false,` | |
| `"CurlOptTcpKeepAlive": true,` | |
| `"Sandbox": {` | |
| `"AlertSocketPath": "wss://localhost/api/notify/listen/autolingUpdateSb",` | Адрес вебсокета, по которому приходит сигнал о смене конфигурации Sandbox |
| `"UpdaterHostName": "https://localhost/xapi/configurationState/autoling_sb"` | Web socket address used to get a signal to change Sand Box configuration |
| `},` | |
| `"TokenPath": "/opt/iw/tm5/etc/config/access_control/tokens.list"` | Path to a file containing token access list |
| `},` | |
| `"ThriftServers": {...},` | see General section ThriftServers |
| `"Discovery": {...}` | see General section Discovery |
| `}` | |
| `}` | |

**iw_text_autoling.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | Section to define demon metadata and configure its interaction with other demons |
| `Description=InfoWatch Traffic Monitor Text Automatic Classifier` | Demon name |
| `After=network-online.target iwtm-consul.service` | Demons to be run before starting the current demon |
| | |
| `[Service]` | Section to configure demon running |
| `Type=simple` | Demon running type. `simple` - demon is started and goes into standby mode in the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre using **root** user |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_text_autoling` | Ful path and command's arguments to be preformed before running the main process |
| `ExecStart=/opt/iw/tm5/bin/iw_text_autoling -p /opt/iw/tm5/etc` | Full path and command' arguments to be prformed to run the demon. To be run from the user spesified in `User` |
| `ExecStop=/bin/kill -s SIGTERM $MAINPID` | Command to stop the demon. If not specified the process to be destroyed when the demon is stopped. To be run from the user spesified in `User` |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | Command to reload demon's configuration in case it is available. To be run from the user spesified in `User` |
| `Restart=on-failure` | Command to restart demon in case it fails or it is stopped. `on-failure` value means the demon can be restarted in case it was stopped with no zero return code or it was disabled by signal ( `kill <pid_demon>` ) |
| `RestartSec=5` | Standby time before trying to restart the demon |
| `RestartPreventExitStatus=SIGKILL` | Command to force demon's shutdown |

| Code | Description |
|---|---|
| `TimeoutStopSec=0` | Time which is required for the System to wait for demon's stop before marking it unavailable or forcely shutdown. |
| `User=iwtm` | Name of the user to perform demon's running |
| `Group=iwtm` | User group name |
| `LimitNOFILE=32768` | Maximum number of opened files |
| `LimitFSIZE=infinity` | Maximum file size (Kb). `infinity` - no limitation |
| `LimitNPROC=65536` | Maximum number of processes |
| `LimitCORE=infinity` | Coredump file size limit (Kb) |
| `LimitMEMLOCK=infinity` | Maximum memory space blocked (Kb) |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.40 updater.conf and iw_updater.service

The **updater.conf** configuration file

| Content | Description |
|---|---|
| `{` | |
| `"UseCurlBackend": false,` | Using curl backend instead of DB. It is not used in 6.7. x and earlier versions. |
| `"Logging": {...},` | see General section Logging |
| `"RetryAttemptTimeoutSec": 5,` | Delay between repeated attempts to download configuration (sec). |

| Content | Description |
| --- | --- |
| `"NookDir": "/opt/iw/tm5",` | In this section the module working directory is specified. By default – `/opt/iw/tm5`. |
| `"PIDFilesPath": "run",` | Not used. |
| `"NewConfigDirectory": "tmp/config-new",` | Temporary directory to download new Traffic Monitor configuration. |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/ disabling this parameter is not recommended without consultation with developers. |
| `"AlertTimeout": 5,` | Stand-by time (seconds) to notify about DBMS configuration update. On its expiry the expectation is suspended for some time (seconds), specified in RetryAttemptTimeoutSec parameter, than the new expectation is started. |
| `"DebugBreak": false,` | Using SIGTRAP/SIGBREAK in trap handlers in checkout mode. Only in checkout assemblies. |
| `"ScriptPath": "bin/notify.py",` | Path to the script, to be run after configuration download. |
| `"Curl": {` | Curl-backend settings section. It is not used |
| `"AlarmHostName": "wss://",` | - |
| `"CurlOptUserAgent": "curl/7.45.0",` | - |
| `"CurlMaxThreads": 10,` | - |
| `"CurlOptMaxRedirs": 50,` | - |

| Content | Description |
| --- | --- |
| "TokenPath": "/opt/iw/tm5/etc/updater_token.txt", | - |
| "CurlOptRange": "", | - |
| "UpdaterHostName": "https://", | - |
| "CurlOptSslVerifyHost": false, | - |
| "CurlOptSslVerifyPeer": false, | - |
| "AlarmSocketPath": "/api/notify/listen/configUpdate", | - |
| "CurlOptTcpKeepAlive": true | - |
| }, | |
| "CleanupDirectoryOnError": true, | New configuration directory cleaning when an error occurs. |
| "CurrentConfigDirectory": "etc/config" | Path to Traffic Monitor current configuration. |
| } | |

Unknown macro: 'show-if'

The **iw_updater.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor IConfiguration Updater` | The daemon name |

| Code | Description |
| --- | --- |
| `After=network-online.service iwtm-consul.service postgresql-9.6.service oracle.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_updater` | The full path and command arguments that should be executed before the main process is started. |
| `ExecStart=/opt/iw/tm5/bin/iw_updater -p /opt/iw/tm5/etc --backend $DB_BACKEND` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` field |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field. |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field. |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |

| Code | Description |
| --- | --- |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB).<br>The `infinity` value means that the size is unlimited. |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| `EnvironmentFile=-/etc/default/iwtm` | Path to environment file |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.41 warpd.conf and iw_warpd.service

The **warpd.conf** configuration file

| Content | Description |
| --- | --- |
| {<br>    "Logging": {...}, | see General section Logging |

| Content | Description |
| --- | --- |
| `"NookDir": "/opt/iw/tm5",` | In this section the module working directory is specified. By default – `/opt/iw/tm5`. |
| `"UnsafeHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"Bookworm": {...},` | see General section Bookworm |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"warp": {` | |
| `"EnableOCR": false,` | If OCR should be enabled. |
| `"EnableIRM": false` | If Oracle Information Rights Management (Oracle IRM) should be enabled. |
| `}` | |
| `}` | |

The **iw_warpd.service** unit file

| **Code** | **Description** |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor IConfiguration Warpd` | The daemon name |

| Code | Description |
| --- | --- |
| `After=network-online.service iwtm-consul.service iw_bookworm.service iw_licensed.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_warpd` | The full path and command arguments that should be executed before the main process is started. |
| `ExecStart=/opt/iw/tm5/bin/iw_warpd -p /opt/iw/tm5/etc` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` fie ld |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field. |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field. |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |

| Code | Description |
|---|---|
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` value means that the size is unlimited. |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.42 web.conf

The file contains relationships parameters between the managing Console and other system components.

| Content | Description |
|---|---|
| `{` | |
| `"hostname": null,` | Host to develop links to TM console. Once null, it is to be calculated automatically. |
| `"search": {` | Section contains Management Console parameters of interaction with full text search service. |
| `"hostname": "127.0.0.1",` | Server, where search engine is installed. |
| `"driver": "sphinx",` | Name of full text search driver. By default - sphinx |

| Content | Description |
| --- | --- |
| "max_matches_common": 100000, | Maximum number of expected events found during the full text search processing. In case the result is bigger than it was expected, the parameter **max_matches_maximum** will operate. This influences on average memory load produced by **sphinx** service during the full text search processing. The value should not be less than a **page_size.** |
| "max_matches_maximum": 10000000, | Maximum number of events found during the full text search. This influences on the maximum memory load produced by **sphinx** service during the full text search. |
| "page_size": 10000, | Number of events, sent during a query to full text search (**sphinx** service). This influences on maximum Web-GUI memory load, in particular PHP processes. The value should not be greater than a **max_matches_common.** |
| "port": 9306 | Port of mysql-protocol **sphinx** service. |
| }, | |
| "search_meta": { | Section contains parameters of interaction between management console and meta information search service. |
| "hostname": "127.0.0.1", | Server, where the searching engine has been installed. |
| "driver": "sphinx", | Full text search driver name. By default - sphinx |
| "max_matches_common": 100000, | Maximum number of expected events found during the full text search processing. In case the result is bigger than it was expected, the parameter **max_matches_maximum** will operate. This influences on average memory load produced by **sphinx** service during the full text search processing. |

| Content | Description |
| --- | --- |
| `"max_matches_maximum": 10000000,` | Maximum number of events found during the full text search. This influences on the maximum memory load produced by **sphinx** service during the full text search. |
| `"page_size": 10000,` | Number of events, sent during a query to full text search (**sphinx** service). This influences on maximum Web-GUI memory load, in particular PHP processes. |
| `"port": 9310` | **Sphinx** service mysql protocol. |
| `},` | |
| `"kickers_count": 10,` | Number of active `default worker` and `trackers worker` for all the kickers by default. Parameter `kickers_count` can be additionally written in any kicker ( `kickers` section) and individual value should be obligatory specified. |
| `"kickers_timeout": 1000,` | Stand-by-time between the tasks if no tasks in the pool (operates only if using un-updated gearmand package iwtm-gearmand, version earlier than 1.1.18-6.11.0.878) (milliseconds). |
| `"db": {` | Section contains Management Console parameters set in interaction with DB. |
| `"username": "iwtm_web",` | DB user, having rights to connect to tables and work in, using Web-GUI. |
| `"password": "xxXX1234",` | DB user password. |
| `"schema": "iwtm",` | TM DB scheme. |
| `"driver": "oci",` | DB connection driver type. |
| `"connstring": "127.0.0.1:1521/iwtm"` | DB connection line. |

| Content | Description |
| --- | --- |
| | For Oracle: "localhost/iwtm:pooled", for PostgreSQL: "pgsql:host=localhost;port=5433;dbname=postgres" |
| }, | |
| "kickers": { | Services, using Web-GUI are specified in the section. |
| "selection": { | Responsible for running the queries of **Events** and **Reports** sections. |
| "enabled": 1 | |
| }, | |
| "blackboard": { | Responsible for adding/deleting status to persons/workstations from policies, adding new contacts to a person after post-identification, adding new applications in search application autohints for buffer and printscreens, adding events to events queue from policies. It should be enabled to analyze Blackboard service. |
| "enabled": 1 | |
| }, | |
| "systemcheck": { | Responsible for Nagios notifications check and Nagios update counting interactivity in **Management → System condition** paragraph. |
| "enabled": 1 | |
| }, | |
| "autoling": { | Responsible for interaction with **iw_text_autoling** service (text autolinguist) |

| Content | Description |
| --- | --- |
| "enabled": 0 | |
| }, | |
| "imageclassifier": { | Responsible for interaction with **iw_image_autoling** service (Graphical objects) |
| "enabled": 1 | |
| }, | |
| "querytracker": { | Responsible for completed queries tracking and provides with implementation percent. |
| "enabled": 1 | |
| }, | |
| "agent": { | Responsible for interaction with agent service: diagnostics data gathering, services restart, integrity control. |
| "enabled": 1 | |
| }, | |
| "xapisamplecompiler": { | Responsible for adding and DB automatic unload adding activities. |
| "enabled": 1 | |
| }, | |
| "export": { | Responsible for configuration export (content filtration base, protection object). |

| Content | Description |
| --- | --- |
| "enabled": 1 | |
| }, | |
| "samplecompiler": { | Responsible for adding reference documents, forms, stamps and unloads from DB. |
| "enabled": 1 | |
| }, | |
| "report": { | Responsible for report generation in **Summary** and **Reports** sections and to generate unloads from **Events** section. |
| "enabled": 1 | |
| }, | |
| "import": { | Responsible for configuration import (content filtration base, protection object). |
| "enabled": 1 | |
| }, | |
| "reporttracker": { | Responsible for tracking of completed reports and provides with implementation percent. |
| "enabled": 1 | |
| }, | |
| "notifier": { | Responsible to send notifications from policies notification queues. |

| Content | Description |
| --- | --- |
| "enabled": 1 | |
| } | |
| }, | |
| "rotateDebug": true, | Debug json rotation enabling (true). When disabling (false) rotation all debug-files are to be stored in `/opt/iw/tm5/www/backend/protected/runtime/debug/` folder, and not to get into `https://example.com/api/debug/default/` . It is reccomended using shared with `slowRequestTime` with displayed value more than 10-30 seconds. |
| "inlineTextDump": false, | Paste texts to JSON while unloading event debugging data, but do not copy into separate file. |
| "debug": "", | Switching to checkout mode. |
| "mail": { | |
| "line_break": 0 | Enabled to replace "\r\n" separation symbol with "\n" in notification messages. it is required when getting the notification from incorrect view policies. |
| }, | |
| "consul": { | Consul connection parameters are specified in the section. |
| "username": "consul_client", | Consul username. |
| "token": "", | Access token. |
| "hostname": "127.0.0.1", | Server, where consul has been installed. |

| Content | Description |
| --- | --- |
| "port": 8500 | Consul port number. |
| }, | |
| "maxInlineDumpSize": 1048576, | Maximum length of one text selection to be pasted in JSON. If the length exceeds the size specified, the new file's UID=name is to be stored on disk with text selection. |
| "service_manager": "consul", | Current processes management service. |
| "slowRequestTime": 0, | Saving dump only for https queries or incorrect http queries that are bigger than the values specified (in seconds). |
| "version": "7.0.0.0" | Current TM server version. |
| "xapiGetLimitEntriesFromEvent": null | The limit of event highlights (entries) sent to DB, which is sent through xapi by events request. By default no limit is set. The file contains the service in case of clean installation and it is also added during the update. |
| } | |

## 1.43 x2db.conf and iw_x2db.service

The **x2db.conf** configuration file

| Content | Description |
| --- | --- |
| { | |
| "Logging": {...} | see General section Logging |
| "FileQueues": { | Files queues |
| "QueueWaitTimeMilliseconds": 100 | Time of waiting data from "queue/x2x" file queue. If the time's passed and the data is absent, the program starts a new waiting |

| Content | Description |
| --- | --- |
| | cycle, preliminary ensured that the stop wasn't requested. |
| `},` | |
| `"NookDir": "/opt/iw/tm5",` | In this section, the module working directory is specified. By default – `/opt/iw/tm5`. |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"OracleUtf8Processing": {` | Section of special UTF8 processing for Oracle DB. |
| `"Enabled": true,` | Enable processing (changing the value is unwelcome). |
| `"Substituter": 95` | ASCII-code of replacing symbol for 4+ bytes UTF8 (changing the value is unwelcome, always more than 32). |
| `},` | |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"Performance": {` | Performance configuration section. |
| `"Oracle": {` | Settings specific for Oracle backend. |
| `"ChunkClobBlobSizeInMb": 2047,` | Chunk size (Mb) setup for fragmented content recording. |
| `"MemoryPerLobThreshold": 10485760` | LOBs limits before recording to Oracle (in bytes). Once achieved, the record is done in DB. When the value is getting low, the memory footprint is getting low as well. Limitation: not more than 2Gb. |

| Content | Description |
| --- | --- |
| `},` | |
| `"Postgress": {` | PostgreSQL backend specific settings. |
| `"ChunkClobBlobSizeInMb": 100,` | Chunk size (MB) setup for fragmented content recording (limitation: 1 GB maximum) |
| `}` | |
| `"General": {` | Section of performance general settings. |
| `"ConnectionLifeTimeSeconds": 86400,` | Time during which the connection is open (in seconds). After the set time, a new connection is automatically created. |
| `"ConnectionExpirationCheckIntervalSeconds": 86400,` | Timeout for idle DB connections (in seconds). |
| `"ObjectsMax": {` | Objects processing limits. |
| `"MaxFreeCollectors": 10,` | Number of collectors, able for "living" without any activity (creating a new collector and issuing memory to it is more expensive than taking one from the pool. |
| `"CollectorsForFillLimit": 10,` | Number of objects able for pasting when all DB connections are busy with ready objects. |
| `"ConnectionsMax": 10` | Number of simultaneous connections to DB. |
| `}` | |
| `}` | |
| `},` | |

| Content | Description |
| --- | --- |
| `"DBWorkersCount": 5,` | Number of streams, pasting into DB. There is no use in setting the value more than possible ConnectionsMax. Normal value = (2 or 3) * WorkersCount. |
| `"WorkersCount": 5` | Number of streams, taking data from "InQueue" queue, fulfilling the collectors and transferring the fulfilled collectors into DBWorkersCount streams. |
| `}` | |

The **iw_x2db.service** unit file

| **Code** | **Description** |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor Database XML Loader` | The daemon name |
| `After=network-online.service iwtm-consul.service postgresql-9.6.service oracle.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_x2db` | The full path and command arguments that should be executed before the main process is started. |
| `ExecStart=/opt/iw/tm5/bin/iw_x2db -p /opt/iw/tm5/etc --backend $DB_BACKEND` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` field. |

| Code | Description |
| --- | --- |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field. |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` field. |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB).<br>The `infinity` value means that the size is unlimited. |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| `EnvironmentFile=-/etc/default/iwtm` | Path to the environment file |

| Code | Description |
|---|---|
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.44 x2x.conf and iw_x2x.service

**x2x.conf** configuration file

| Content | Description |
|---|---|
| {<br> | |
| "Logging": {...},<br> | see General section Logging |
| "BookwormCacheDuration": 15,<br> | Validity time of reference data (minutes), returned by **iw_bookworm**. Default value - `15 mins.` |
| "NookDir": "/opt/iw/tm5",<br> | In this section the module working directory is specified. By default – `/opt/iw/tm5`. |
| "ThrowHighlightError": "false",<br> | If the exception for highlighting displacement errors should be thrown or not. |
| "UseHighlightFix": "true",<br> | If highlighting displacement should be recalculated or not. |
| "XMLContext": {<br> | Xml-processing settings group. |
| "ValidatorCheck": true,<br> | If validator should be used by xsd-scheme. |
| "XSDPath": "etc/context.xsd"<br> | Path to xsd-scheme in accordance with work directory of NookDir module ( `/opt/iw/tm5` ). |
| },<br> | |

| Content | Description |
| --- | --- |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"Bookworm": {...},` | see General section Bookworm |
| `"DebugBreak": false,` | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| `"DebugSettings": {` | Section for debugging settings |
| `"PrintOutXml": false` | To display/not to display the xml entry to console |
| `},` | |
| `"Converter": {` | Description of settings to convert the data |
| `"ConvertOutType": "xml",` | Format type, to be presented for entry. At present, only xml is actualized. |
| `"ConverterTimeOut": 1000,` | Time of waiting the task for convertion from the file queue. If the time's passed and the data is absent, the programme starts new waiting cycle, preliminary ensured that the stop wasn't requested. |
| `"ConverterThreadsCount": 5` | Number of processing streams. |
| `},` | |
| `"PurgeTextNodes": true` | Removing installed message body from HTTP-heading (for custom over-HTTP protocols). |
| `"Statistic": {` | File queues data. |

| Content | Description |
| --- | --- |
| `"Enabled": true` | If statistics can be collected via Prometheus from **iw_x2x**. |
| `},` | |
| `}` | |

**iw_x2x.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | Section is used to specify daemon's metadata and its configuration to interact with other daemons. |
| `Description=InfoWatch Traffic Monitor XML-to-xml converter` | Daemon's title |
| `After=network-online.service iwtm-consul.service iw_bookworm.service` | Daemons to be started before the current daemon's start. |
| | |
| `[Service]` | Daemon's configuration section. |
| `Type=simple` | Daemon's start type. `simple` - daemon has been started and standby mode was activated using Console. |
| `PermissionsStartOnly=true` | Entering commands from ExecStartPre when logged as a **root** user. |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_x2x` | Full path and commands arguments to be fullfilled before starting the main process. |
| `ExecStart=/opt/iw/tm5/bin/iw_x2x -p /opt/iw/tm5/etc` | Full path and command arguments to be fullfilled before starting the daemon. To be started when logged as a user specified within `User.` |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | Command to stop the daemon. If not specified, the process to be deleted immediately when the daemon has been stopped. Команда для остановки демона. Если не указано, процесс будет немедленно уничтожен, когда демон будет |

| Code | Description |
| --- | --- |
| | остановлен. To be started when logged as a user specified within `User.` |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | Command to restart the daemon's configuration once its available.To be started when logged as a user specified within `User.` |
| `Restart=on-failure` | Command to restart the daemon if it falls or stops. `on-failure` value means the daemon will be restarted if it was stopped with zero return code or was stopped by signal ( `kill <pid_daemon>` ). |
| `RestartSec=5` | Timeout before taking an effort to restart the daemon. |
| `RestartPreventExitStatus=SIGKILL` | Command is used to complete the daemon's activity. |
| `TimeoutStopSec=0` | Time when the system will wait for daemon's stop before marking it unavailable and complete its activity. |
| `User=iwtm` | Username of one who has sterted the daemon. |
| `Group=iwtm` | User group name. |
| `LimitNOFILE=32768` | Maximum number of opened files. |
| `LimitFSIZE=infinity` | Maximum file size (Kb). `infinity` - with no limits. |
| `LimitNPROC=65536` | Maximum number of processes. |
| `LimitCORE=infinity` | Limit for core dump size (Kb). |
| `LimitMEMLOCK=infinity` | Maximum adress space blocked in memory (Kb). |
| | |
| | |
| `[Install]` | Daemon's certain behaviour once its enabled/ disabled. |
| `WantedBy=multi-user.target` | To start this daemon when the system is loading in multi-user mode. |

## 1.45 xapi.conf and iw_xapi_xapi.service, iw_xapi_puppy.service

**xapi.conf** configuration filelegas

| Content | Description |
|---|---|
| { | |
| "Bookworm": {...}, | see General section Bookworm |
| "DebugBreak": false, | If SIGTRAP should be sent (SIGBREAK to Windows) while any exception handling. Used for debugging purposes. |
| "DumpDir": "", | Path to the folder where xapi dumps are stored. If not empty, the folder */opt/iw/tm5/<parameter's value>* will collect the dumps. |
| "DumpFilters": { | Adjustible filters for dumps. |
| "ActionCode": [], | The value of action.key attribute, taken from `/opt/iw/tm5/etc/config/bookworm/actions.xml`, if the attribute `action.mnemo` is equal to the field "`action`" in `object.json`. |
| "CommonName": [], | The value of "`common_name`" field from xapi-tool configuration file or parameter. |
| "Headers": {}, | Pairs of values from "`headers`" section from `object.json`. They are used without any change and inside they occur to be the "key-meaning" vocabulary. |
| "License": [], | The value of this parameter is a mixture of fileds from `object.json`, and common_name parameter. |
| "ObjectTypeCode": [], | The value of `object_type.key` attribute from `/opt/iw/tm5/etc/config/bookworm/` |

| Content | Description |
| --- | --- |
| | `services.xml` for the objects, which attribute `object_type.mnemo` is equal to the value of `"object_type_mnemo"` field from `object.json`. |
| `"ProtocolCode": [],` | The value of `protocol.key` attribute, taken from `/opt/iw/tm5/etc/config/bookworm/protocols.xml`, if `protocol.mnemo` attribute is equal to the field `"protocol_mnemo"` in `object.json.` |
| `"ServiceCode": [],` | The value of `service.key` attribute from `/opt/iw/tm5/etc/config/bookworm/services.xml` of the service, with a specific object, assigned by the field `"object_type_mnemo"` in `object.json`. |
| `"ServiceMnemo": []` | The value of `service.mnemo` attribute from `/opt/iw/tm5/etc/config/bookworm/services.xml` of the service with a specific object, assigned by the field `"object_type_mnemo"` в `object.json`. |
| `},` | |
| `"Logging": {...},` | see General section Logging |
| `"MaxInmemTextSizeKB": 10240,` | Buffer size to store data. If exceeds, the data to be stored on disk. |
| `"NookDir": "/opt/iw/tm5",` | In this section the module working directory is specified. By default – `/opt/iw/tm5`. |
| `"UnsafeSignalHandlers":false` | Unhandled signals support. Disabled by default ( `false` ). Once `true` is set, it is allowed to use unsafe handlers in code |

| Content | Description |
| --- | --- |
| | (e.g. SIGSEVG). Adding, enabling/disabling this parameter is not recommended without consultation with developers. |
| `"TempDir": "tmp",` | Path to folder with temporary **iw_xapi** files |
| `"FreeSpaceThresholdMountPoint": "/opt/iw/tm5",` | Full path to a directory. The System checks the amount of free space in the volume where the directory is located. If the free space is less than `FreeSpaceThresholdGb`, the System reports that there is not enough space.<br>Default value: `/opt/iw/tm5` |
| `"FreeSpaceThresholdGb": 5,` | Minimum amount of free space in GB. If the free space in the `FreeSpaceThresholdMountPoint` section is lower than the limit, then the **iw_xapi_xapi** process does not receive events from Data Discovery interceptor until there is more free space than it is specified.<br>Default value: 5 |
| `"ThriftServers": {` | Thrift server settings |
| `"puppy": {` | Thrift server "puppy" section settings |
| `"AuthenticateClient": false,` | If authentication should be requested |
| `"CertificatePath": "etc/cert/server.pem",` | Certificate path |
| `"Port": 9101,` | Incoming connections path |
| `"PrivateKeyPath": "etc/cert/private_key.pem",` | Private key path |

| Content | Description |
| --- | --- |
| `"ServerType": "threaded",` | Server type. By default – `threaded` |
| `"TransportType": "ssl",` | Data exchange type. value by default – `socket` |
| `"TrustedCertificatesPath": "etc/cert/trusted_certificates"` | Path to entrusted certificates storage |
| `"UseLegacySSL": true` | If the value is false, then install for SSL sockets the protocol encoding version not earlier than TLS 1.2; and exclude from the available encoding algorythms all the algorythms from the groups 3DES and RC4, otherwise the old versions of TLS will be used. By default: true (enabled) |
| `},` | |
| `"xapi": {` | Thrift server "xapi" settings section |
| `"AuthenticateClient": false,` | If authentication should be requested |
| `"CertificatePath": "etc/cert/server.pem",` | Certificate path |
| `"Port": 9100,` | Incoming connections port |
| `"PrivateKeyPath": "etc/cert/private_key.pem",` | Private key path |
| `"ServerType": "threaded",` | Server type. By default – `threaded` |
| `"TransportType": "ssl",` | Data exchange type. Default value – `socket` |
| `"TrustedCertificatesPath": "etc/cert/trusted_certificates"` | Path to entrusted certificates storage |

| Content | Description |
| --- | --- |
| "UseLegacySSL": true | If the value is false, then install for SSL sockets the protocol encoding version not earlier than TLS 1.2; and exclude from the available encoding algorythms all the algorythms from the groups 3DES and RC4, otherwise the old versions of TLS will be used. By default: true (enabled) |
| } | |
| }, | |
| "TokensList": "etc/config/access_control/tokens.list", | Path to the folder where authentication thrift tokens are stored |
| "ValidatorScriptPath": "etc/xapi-valid.lua" | Path to **iw_xapi** incoming object validator |
| } | |

**Note:**

This configuration file is used to define the filtration conditions when creating the data dumps. The details can be found in the article "Filtering Xapi Dumps".

**iw_xapi_xapi.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor XAPI` | The daemon name |
| `After=network-online.service iwtm-consul.service iw_bookworm.service iw_licensed.service` | Daemons that will be started before the current one |
| | |

| Code | Description |
| --- | --- |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_xapi -m xapi` | The full path and command arguments that should be executed before the main process is started. |
| `ExecStart=/opt/iw/tm5/bin/iw_xapi -p /opt/iw/tm5/etc -m xapi` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` field. |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field. |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` fi eld |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |

| Code | Description |
| --- | --- |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` value means that the size is unlimited. |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| `EnvironmentFile=-/etc/default/iwtm` | Path to environment file |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

**iw_xapi_puppy.service** unit file

| Code | Description |
| --- | --- |
| `[Unit]` | A section where the daemon metadata is determined and interaction settings with other daemons are specified |
| `Description=InfoWatch Traffic Monitor XAPI` | The daemon name |

| Code | Description |
| --- | --- |
| `After=network-online.service iwtm-consul.service  iw_bookworm.service iw_licensed.service` | Daemons that will be started before the current one |
| | |
| `[Service]` | A section where the daemon start settings are specified |
| `Type=simple` | Daemon start type. `simple` - the daemon is started and goes into standby on the console |
| `PermissionsStartOnly=true` | Running commands from ExecStartPre under **root** |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_xapi -m puppy` | The full path and command arguments that should be executed before the main process is started. |
| `ExecStart=/opt/iw/tm5/bin/iw_xapi -p /opt/iw/tm5/etc -m puppy` | The full path and command arguments that should be executed before starting the daemon. The command is run under user specified in the `User` field |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | A command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run under user specified in the `User` field. |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | A command that reloads the daemon configuration if it is available. The command is run under user specified in the `User` fi eld. |
| `Restart=on-failure` | A command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |

| Code | Description |
| --- | --- |
| `RestartSec=5` | A timeout before attempting to restart the daemon |
| `RestartPreventExitStatus=SIGKILL` | A command that forcibly ends the daemon operation |
| `TimeoutStopSec=0` | The time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `User=iwtm` | The name of the user under whose account the daemon is started |
| `Group=iwtm` | Name of the user group |
| `LimitNOFILE=32768` | The maximum number of open files |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` value means that the size is unlimited. |
| `LimitNPROC=65536` | The maximum number of processes |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitMEMLOCK=infinity` | The maximum size of memory locked address space (KB) |
| | |
| | |
| `[Install]` | Defines the behavior of a daemon when it is enabled/disabled |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |

## 1.46 General section Bookworm

The section defines the parameters of working with **iw_bookworm** process.

| Content | Description |
| --- | --- |
| "Bookworm": { | |
| "SleepIntervalInSec": 1, | Interval between attempts to load **iw_bookworm**, sec |
| "ConnectTryCount": 200, | Number of connection attempts |
| "ItemTypes": { | Item types, called by **iw_bookworm** |
| "Actions": { | Actions |
| "CacheDuration": 15, | Duration of validity of reference data, returned by **iw_bookworm** (sec) |
| "CacheTimeout": 300 | Time to wait for response from **iw_bookworm** (sec) |
| }, | |
| "Events": { | Events |
| "CacheDuration": 15, | Duration of validity of reference data, returned by **iw_bookworm** |
| "CacheTimeout": 300 | Time to wait for response from **iw_bookworm** |
| }, | |
| "ExtractorGroups": { | Extractor groups |
| "CacheDuration": 15, | Duration of validity of reference data, returned by **iw_bookworm** |
| "CacheTimeout": 300 | Time to wait for response from **iw_bookworm** |
| }, | |

| Content | Description |
| --- | --- |
| "Extractors": { | Extractors |
| "CacheDuration": 15, | Duration of validity of reference data, returned by **iw_bookworm** |
| "CacheTimeout": 300 | Time to wait for response from **iw_bookworm** |
| }, | |
| "Formats": { | Formats |
| "CacheDuration": 15, | Duration of validity of reference data, returned by **iw_bookworm** |
| "CacheTimeout": 300 | Time to wait for response from **iw_bookworm** |
| }, | |
| "OCROptions": { | OCR options |
| "CacheDuration": 15, | Duration of validity of reference data, returned by **iw_bookworm** |
| "CacheTimeout": 300 | Time to wait for response from **iw_bookworm** |
| }, | |
| "Protocols": { | Protocols |
| "CacheDuration": 15, | Duration of validity of reference data, returned by **iw_bookworm** |
| "CacheTimeout": 300 | Time to wait for response from **iw_bookworm** |
| }, | |

| Content | Description |
| --- | --- |
| "Services": { | Services |
| "CacheDuration": 15, | Duration of validity of reference data, returned by **iw_bookworm** |
| "CacheTimeout": 300 | Time to wait for response from **iw_bookworm** |
| }, | |
| "TechsInfo": { | |
| "CacheDuration": 15, | Duration of validity of reference data, returned by **iw_bookworm**. |
| "CacheTimeout": 300 | Time to wait for response from **iw_bookworm.** |
| }, | |
| } | |

## 1.47 General section Discovery

| Content | Description |
| --- | --- |
| "Discovery": { | Section which specifies settings for detecting services |
| "Registration": { | Section which specifies registration settings in the Consul service |
| "WaitIntervalInSec": 10 | An interval after which the System tries to re-register with the Consul service if the service is unavailable or doesn't work |
| }, | |
| "TCPCheck": { | Checks if the service is available |

| Content | Description |
| --- | --- |
| "IntervalSec": 30, | An interval at which the service is queried |
| "MaxMissedChecksIntervals": 2, | Standard number of query cycles, after which a non-reaction from Consul will be reacted. The reaction event is called consul timeout and responsed with a service restart. |
| "DeregisterCriticalMin": 2, | A period after which the service is considered not working, if no reaction on requests. |
| "PortHigh": 8189, | The last port in the selection which is used to get the state of the component. |
| "PortLow": 8140 | An initial port in the selection which is used to get the state of the component. |
| } | |
| }, | |

## 1.48 General section Logging

The basic idea of logging:

1. The program checks the global logging level with regard to the logging level of a message.
2. If the global logging level enables logging the message, the logging level of a specific logger is checked.
3. If the logging level of the logger enables logging the message, the message is sent to the logging system.
4. The logging system checks all active backends whether they are capable of the message output (applies filters).
5. The message is sent to the backends for which the result of filtering was a success. In this case, the message is formatted for every backend according to its formatting rule.

Message filtering during the 1 and 2 stages does not take time. Filtering during the stage 4 takes a way much more time. Therefore, it is recommended to apply filtering only if it is crucial.

Logging configuration:

| Content | Description |
| --- | --- |
| "Logging": { | |

| Content | Description |
| --- | --- |
| `"Loggers": {` | Contains the list of loggers for the various program components, where the key is a logger name, the value is a logging level. Logger separation is performed for fine-tuning messages to be logged:<br>• `Cachets` - logging settings for the cached trees loading/ unloading subsystem<br>• `InfoCollector` - logging settings for the system information gathering subsystem<br>• `Integrity` - logging settings for the data integrity checking/ maintenance subsystem<br>• `Scan` - logging settings for the folder scanning subsystem<br>• `Timings` - logging settings for object processing stages in icap according to the time<br>• `Filequeue` - configuring the level of logging file queue actions. The default value is *debug*.<br>• `Sender`<br>• `Dreamcatcher`<br>• `ProcMan`<br>• `IslerTManager`<br>• `IslerController`<br>• `IslerDocument`<br>• `IslerConnector`<br>• `StatementCollector`<br>• `Connection`<br>• `Collector`<br>• `EventConverter`<br>• `Statistics`<br>• `Iscp`<br>• `Object`<br>• `pop3`<br>• `Script`<br>• `nrpc`<br>• `Om3`<br>• `POP3 Parser`<br>• `imap4`<br>• `Automate`<br>• `ListenArea_capstack`<br>• `ListenArea_icq`<br>• `ListenArea_smtp`<br>• `ListenArea_pcap` |

| Content | Description |
| --- | --- |
| | • `RawMailDump` - mail raw data (for iw_icap, iw_messsed, iw_analysis, iw_xapi). By default: `fatal`<br>• `puppy`<br>• `thrift_handler` - data of thrift-structures received over the network; needed for traffic check (for `iw_xapi`)<br>• `WorkerDB`<br>• `DB` - database logger<br>• `Devour` - building xmlpipe2 files for indexer<br>• `Indexer` - operations with the configuration file of searchd daemon: indexing, indexes and daemon files management<br>• `Root` - root logger, responsible for reading DB records, indexes creating, archiving, indexes deleting<br>• `Stat` - statistical data messages (various operations runtime)<br>Possible logging levels (Severity):<br>• *trace* - detailed logging (including messages with the levels *debug, info* and higher)<br>• *debug* - debugging information output, usually for error diagnostics and communication with developers/tech support<br>• *info* - information messages, could be disabled on the stable system<br>• *warning*<br>• *error*<br>• *fatal* - most important messages leading to system crash and failure.<br>**Example:**<br>From two values the strictest is selected, e.g. if `GlobalLevel = warning`, `Stat = info` |

| Content | Description |
| --- | --- |
| | => effective value for `Stat = warning` (restricted by the global level) |
| `"Root": "debug"` | Root logger, responsible for reading DB records, indexes creating, archiving, indexes deleting |
| `},` | |
| `"Core": {` | Logging kernel general settings |
| `"DisableLogging": false` | Capability to disable logging in the component. Disabling after the first 3 stages of the message transfer through the logging system, since these stages are performed outside of the logging system and are not controlled by this setting |
| `},` | |
| `"Backends": {` | Backends list |
| `"DefaultDirectory": "/var/log/infowatch/",` | Default directory for logging to a file |
| `"ActiveBackends": [` | Active backends list. The backends, that are on the list, are considered for logging |
| `"Console",` | Console output (if the process is not launched as daemon, otherwise logs will be saved to `/dev/null`). The fastest backend. |
| `"Syslog",` | System log output (`/var/log/messages`). The slowest backend. |
| `"File"` | Specified text file output (directory for a file to be created is specified in the parameter `DefaultDirectory`). Relatively slow backend. |

| Content | Description |
| --- | --- |
| `],` | |
| `"Descriptions": {` | Possible backend descriptions list, where the key is a backend name, the value is a backend description object. This list only describes backends. To make a backend active, add it to the list ActiveBackends |
| `"Syslog": {` | System log output description |
| `"Destination": "Syslog",` | Backend type |
| `"Asynchronous": false,` | Asynchronous backend or not. The **asynchronous** mode implies the message will be recorded after the message is processed by the logging system (the message will be enqueued and sent to console/syslog/file at some time). This means, if the System hangs up immediately after the message is processed by the logging system, there is a high possibility that the message will never be logged (shortage of time). The pro of the asynchronous mode is faster message processing (the main code of the program spends less time processing messages). It makes sense to set true, when it is necessary to have intensive logging, and the program performance does not raise questions. Otherwise, false should be set. |
| `"Format": "%LineID% (%ProcessID%: %ThreadID%)`<br><br>`[%Severity%] : <%Channel%> %Message%"` | Message formatting rules. Keywords for formatting and filtering:<br>• Severity - logging level<br>• LineID - line in a code, where the message was called<br>• ProcessID - PID<br>• ThreadID - TID<br>• Channel - logger name, through which the message was sent<br>• Message - message text<br>• TimeStamp - message generation time stamp |

| Content | Description |
| --- | --- |
| }, | |
| "Console": { | Console output description |
| "AutoFlush": true, | Screen output or awaiting in the buffer. The `false` parameter gives the same result as `Asynchronous=true` ( see above) |
| "Destination": "Console", | Backend type |
| "Asynchronous": false, | Asynchronous backend or not |
| "Format": "%LineID% %TimeStamp% (%ProcessID%:%ThreadID%)<br><br>[%Severity%] : <%Channel%> %Message%" | Message formating rules |
| }, | |
| "File": { | Specified text file output description |
| "Format": "%LineID% %TimeStamp% (%ProcessID%:%ThreadID%)<br><br>[%Severity%] : <%Channel%> %Message%", | Message formating rules |
| "Destination": "TextFile", | Backend type |
| "FileName": "adlibitum.log", | File name, where log will be written in |
| "AutoFlush": true, | Screen output or awaiting in the buffer. The `false` parameter gives the |

| Content | Description |
| --- | --- |
| | same result as `Asynchronous=true`. Setting rules are the same (but invertible). |
| "Asynchronous": false , | Asynchronous backend or not |
| "Append": true | Add message to an old file or create a new file at the program startup. |
| } | |
| } | |
| }, | |
| "SuppressExceptions": false, | Suppress exceptions in the logging mechanism |
| "GlobalLevel": "warning" | Global logging level. Recommended value when implementing – *error*. This level enables logging messages with the level *error* or higher (*fatal*).<br>Normal operation value and by default - *warning, i*.e. only errors and warnings are written in logs. It is not recommended to use the *trace* value without special purpose. |

## 1.49 General section Statistics

| Content | Description |
| --- | --- |
| "Statistics": { | Statistics gathering configuration |
| "DirectoryEnabled": false, | Enable writing statistics files in a directory |
| "DirectoryPath": "sniffer-stat/", | Path to the directory (if DirectoryEnabled = true), in which statistics will be collected |
| "FileEnabled": true, | Enable writing statistics in a file |

| Content | Description |
| --- | --- |
| "FilePath": "sniffer.stat" | File name for writing statistics in, in a current directory (if FileEnabled = true). The file will be rewritten. |
| "LogEnabled": true, | Enable logging statistics, the LOG_INFO level |
| }, | |

## 1.50 General section Statistic

| Content | Description |
| --- | --- |
| "Statistic": { | Collecting statistics on file queues |
| "Enabled": false | Whether it is possible to collect statistics on a specific daemon via **Prometheus**. By default, the option is disabled |
| }, | |

## 1.51 General section ThriftServers

In this section ThriftServer settings are set.

| Content | Description |
| --- | --- |
| "ThriftServers": { | In this section ThriftServer settings are set |
| " ": { | |
| "Port": 0000, | Incoming connection port (default):<br>• for adlibitum - 9096<br>• for agent - 9099<br>• для blackboard - 9093<br>• for bookworm - 9090<br>• for cas - 9987<br>• for licserv - 9095<br>• for pas - 9989<br>• for sample_compiler - 9091<br>• for system_check - 9097 |

| Content | Description |
| --- | --- |
| | • for tech_tools - 9102<br>• for puppy - 9101<br>• for xapi - 9100 |
| "ServerType": "threaded", | Server type |
| "TransportType": "socket" | Data transfer type |
| } | |

## 1.52 rest2push.conf and iw_rest2push.service

**rest2push.conf** configuration file

| Content | Description |
| --- | --- |
| `{` | |
| `"Consul": {` | Consul service registration parameters |
| `"Address": "localhost:8500",` | Consul client address and port |
| `"Balancing": "try_local"` | Balancing methods:<br>• `only_local` – use only the service from the server specified in `Address` parameter; in case the service is unavailable, send an error message<br>• `try_local` – use the service from the server specified in `Address` parameter; in case the service is unavailable, use `roundrobin` method<br>• `roundrobin` – use RoundRobin algorithm: send the first request to the first available service, the next request – to the next service, and so on. After all available services have been involved, the cycle starts over. In case one of the services fails, the other services continue request processing |
| `},` | |
| `"HttpServer": {` | Parameters for HTTP server startup |

| Content | Description |
| --- | --- |
| `"Address": ":9106"` | HTTP server startup address and port |
| `"Cert": "certification/web-server.pem"` | Certificate path[1] [2] |
| `"Key": "certification/web-server.key"` | Key path[1] [2] |
| `},` | |
| `"InsecureSkipVerify": false,` | Do not validate TLS certificates (for Thrift) |
| `"TrustedCertificatesPath": "cert/trusted_certificates",` | Path to certificate for Thrift connection check[2] |
| `"Logging": {` | Logging parameters |
| `"Level": "warning",` | Logging level ( `debug` , `info` , `warning` , `error` , `fatal` ) |
| `"Backends": {` | Backend list |
| `"DefaultDirectory": "/var/log/infowatch/",` | Path to default log files directory |
| `"Descriptions": {` | List of possible backends, in which key is a backend name and value is an object that describes the backend |
| `"File": {` | Output to the specified text file. File directory is specified in `DefaultDirectory` parameter. |
| `"FileName": "rest2push.log"` | Logger file name |
| `}` | |
| `}` | |
| `}` | |
| `}` | |
| `}` | |

**Примечание:**

[1] If `"HttpServer"` section does not specify certificate path and/or key path, HTTP will start without TLS.

[2] You can specify an absolute path or a path relative to the configuration directory.

**iw_rest2push.service** unit file

| Code | Description |
|---|---|
| `[Install]` | Defines the behavior of a daemon when it is enabled/ disabled |
| `[Service]` | Daemon start settings section |
| `[Unit]` | Section for daemon metadata and interaction settings with other daemons |
| `After=network-online.service iwtm-consul.service` | Daemons that will be started before the current one |
| `AmbientCapabilities=CAP_DAC_READ_SEARCH` | Privilege that removes the check for permission to read files. The whole file system becomes available for reading. |
| `Description=InfoWatch Rest to PushAPI service` | Daemon name |
| `ExecReload=/bin/kill -s SIGHUP $MAINPID` | Command that reloads the daemon configuration if it is available. The command is run on behalf of the user specified in `User` field |
| `ExecStart=/opt/iw/tm5/bin/iw_rest2push -p /opt/iw/tm5/etc --backend $DB_BACKEND` | Full path and command arguments that should be executed before starting the daemon. The command is run on behalf of the user specified in `User` field |
| `ExecStartPre=/bin/bash /opt/iw/tm5/bin/check_coredumps.sh -d iw_agent` | Full path and arguments of the command that should be executed before the main process is started |
| `ExecStop=/bin/kill -s SIGQUIT $MAINPID` | Command to stop the daemon. If the command is not specified, the process will be killed once the daemon is stopped. The command is run on behalf of the user specified in `User` field |
| `Group=root` | User group name |

| Code | Description |
| --- | --- |
| `LimitCORE=infinity` | Limit for core dump size (KB) |
| `LimitFSIZE=infinity` | The maximum size of a file (KB). The `infinity` value means that the size is unlimited |
| `LimitMEMLOCK=infinity` | Maximum size of memory locked address space (KB) |
| `LimitNOFILE=32768` | Maximum number of open files |
| `LimitNPROC=65536` | Maximum number of processes |
| `PermissionsStartOnly=true` | Running commands from `ExecStartPre` on behalf of `root` user |
| `Restart=on-failure` | Command that restarts the daemon when it stops or crashes. The `on-failure` value indicates that the daemon will be restarted if it has stopped with a non-zero return code or was ended by signal ( `kill <daemon_pid>` ) |
| `RestartPreventExitStatus=SIGKILL` | Command that forcibly ends daemon operation |
| `RestartSec=5` | Timeout before attempting to restart the daemon |
| `TimeoutStopSec=0` | Time during which the system waits for the signal to stop before marking the process as unavailable or terminated |
| `Type=simple` | Daemon start type. `simple` – daemon is started and goes into standby on the console |
| `User=root` | Name of the user on whose behalf the daemon is started |
| `WantedBy=multi-user.target` | Start the daemon when the system is loaded in multi-user mode |
| `EnvironmentFile=-/etc/default/iwtm` | Path to the environmant file |

# 2 Other configuration files of Traffic Monitor

## 2.1 FineReader 12 OR extractor features of control

Using FineReader 12 OCR extractor, able to recognise text and extracted images, the configuration of user account is performed in ini-file.

It includes the following objects of control:

| Object type | Object | Description |
|---|---|---|
| Document processing | `[SynthesisParamsForDocument]` | page processing parameters |
| Image processing | `[PrepareImageMode]` | page preprocessing parameters |
| General parameters | `[DocumentProcessingParams]` | image preprocessing parameters |
| Page processing | `[PageProcessingParams]` | document processing parameters |
| Page preprocessing | `[PagePreprocessingParams]` | document synthesis parameters |
| | `[OrientationDetectionParams]` | page orientation detection parameters |
| | `[PageAnalysisParams]` | page analysis parameters |
| | `[TableAnalysisParams]` | table analysis parameters |
| | `[BarcodeParams]` | barcode processing parameters |
| | `[ObjectsExtractionParams]` | extra objects detection parameters |
| | `[RecognizerParams]` | page recognition general parameters |
| | `[SynthesisParamsForPage]` | page synthesis parameters |
| | `[FontFormattingDetectionParams]` | font formatting detection parameters |
| | `[ImageProcessingParams]` | image processing parameters prior image analysis and recognition |

| Object type | Object | Description |
|---|---|---|
| | `[DocumentStructureDetectionParams]` | document structure detection parameters |

To enable fast image processing mode, configure ini file parameters. By default the System uses `/opt/iw/tm5/etc/CRProfile_fast.ini` file configured.

To enable fast mode of documents processing specify values of the parameters listed below as follows:

| Object | Parameter and Value | Description |
|---|---|---|
| [RecognizerParams] | `TextLanguage=English,Russian` | Set the language for text to be recognised |
| | `FastMode=true` | Recognition is to be performed in fast mode. Processing speed is 2-2,5 times faster than balanced mode can provide, but the number of mistakes is also 1.5-2 times bigger. This parameter is to be used for typewritten and handwritten texts. It is not recommended using this mode to recognise short paragraphs. |
| | `BalancedMode=false` | Recognition is to be performed in balanced mode. This parameter is available only for typewritten texts, recognition for handwritten texts is to be performed in full mode. |
| [PagePreprocessingParams] | `CorrectOrientation=true` | When the value is `True`, image orientation is to be defined during preprocessing. When it differes from the normal one, FineReader turns the image upside down. |
| | `ResolutionCorrectionMode=RCM_Correct` | Defines if image current resolution is to be revised during the preprocessing. |
| [PrepareImageMode] | `CorrectSkew=true` | When the value is T`rue,` it corrects the rotation during the image preparation. Rotation correction type is set via `CorrectSkewMode` parameter. When the value is `False` `CorrectSkewMode` is to be ignored. |
| | `AutoOverwriteResolution=true` | Specifies if it is required to overwrite resolution of prepared image. This parameter is available when the value of `OverwriteResolution` is `False`. When the value of `AutoOverwriteResolution` is `True`, then FineReader automatically defines image resolutiona and overwrite it. |

| Object | Parameter and Value | Description |
|---|---|---|
| | `PhotoProcessingMode=PPM_TreatAsNonPhoto` | Verifies if image should be processed like photo. If this photo is being processed, FineReader uses special algorithms of photo processing during different stages of image processing. |
| | `ImageCompression=IC_NoCompression` | Set the way to compress image during the convertion into external format. |
| | `UseFastBinarization=false` | When the value is `True,` FineReader uses image fast binarization algorithms. Binarization is performed when image is downloaded (when `DiscardColorImage` is set to `True` during the preparation) or later, when black-and-white image is required. This parameter puts on speed of image binarization, but the quality is getting low. |
| [FontFormattingDetectionParams] | `DetectFontFamily=false` | Specifies if font type is to be defined during the synthesis. |
| | `DetectFontSize=false` | Specifies if font size is to be detected during the synthesis. |
| [SynthesisParamsForPage] | `DetectFontFormattingAtPageLevel=false` | Specifies if font parameters are to be defined during the page synthesis phase. This parameter includes detection of low and upper indexes, italic font, lower case and upper case alphabet and it affords using additional parameters from `[FontFormattingDetectionParams]` section. When the value is `False` this section parameteres are to be ignored. |
| [SynthesisParamsForDocument] | `DetectFontFormatting=true` | Specifies if font formatting should be performed during the document synthesis. |
| | `DetectDocumentStructure=false` | Specifies if specific structures are to be performed during the document synthesis. |
| | `PagePoolSize=64` | Specifies the number of pages to be downloaded at a time during the document synthesis. This parameter can reduce memory pull. It is recommended using the value from 32 to 64. The bigger the number the processing speed is higher. It is not recommended to set big value to process big documents since low memory error |

| Object | Parameter and Value | Description |
|---|---|---|
| | | may occur. Numbers less than 5 are to be ignored. |
| `[PageAnalysisParams]` | `EnableTextExtractionMode=false` | `True` value specifies existing blocks of text on the page. Separate text blocks are to be found during the model analysis. Tables cannot be found. When the value is `True` model analysis cannot be perforemd in `ProhibitModelAnalysis.` |
| | `DetectPictures=false` | Detects images during the layout analysis. |
| | `ProhibitModelAnalysis=true` | Specifies if the model analysis should be performed. |
| | `NoShadowsMode=true` | FineReader will process the image ignoring the shadows. |
| | `DetectTables=true` | Detects table during the layout analysis. |
| `[ObjectsExtractionParams]` | `FastObjectsExtraction=true` | When the value is `True` objects extraction is fast, but the quality lowers. |
| | `RemoveGarbage=false` | Removes garbage from the image (except small dots). |
| | `RemoveTexture=false` | Removes texture from temporary image, used for recognition. Original image remains untouched. |
| | `DetectPorousText=false` | Specifies if porous text area should be found during the objects extraction. |
| | `DetectTextOnPictures=false` | Specifies if the whole text on the image should be recognised, including text within the image. Text sequence remains. |
| | `EnableAggressiveTextExtraction=false` | Specifies if all possible text from the image should be extracted. |
| `[DocumentStructureDetectionParams]` | `DetectHeadlines=false` | Specifies if headlines should be detected during document synthesis. |

| Object | Parameter and Value | Description |
|---|---|---|
| | `DetectFootnotes=false` | Specifies if footnotes should be detected during document synthesis. |
| | `DetectTableOfContents=false` | Specifies if table of contents should be detected during document synthesis. |
| | `DetectRunningTitles=false` | Specifies if running titles should be detected during document synthesis. |
| | `DetectLists=false` | Specifies if lists should be detected during document synthesis. |
| [OrientationDetectionParams] | `OrientationDetectionMode=ODM_Fast` | Pages orientation detection mode. |

### 2.1.1 [BarcodeParams]

Barcode processing parameters:

| Name | Type | Description | By default |
|---|---|---|---|
| `Type` | `Integer` | The value of this parameter is `OR`, constant superposition `BarcodeTypeEnum`, meaning different types of barcodes. For example, at `BT_EAN13 \| BT_EAN8` FineReader will process the barcodes only in accordance with `EAN13` и `EAN8` standards. `BT_Autodetect` value maintains all types of barcodes. | `BT_Autodetect` |
| `Orientation` | `Integer` | The value of this parameter is `OR`, constant superposition `BarcodeOrientationEnum`, meaning barcode orientation type. By default, FineReader automatically defines barcode orientation. | `BO_Autodetect` |
| `MinRatioToTextHeight` | `Double` | This parameter defines minimum possible barcode's hight according to letter's middle hight. It is recommended using this parameter when small barcodes are required to be found.<br>It is possible to set only positive value of this parameter less or equal to `2147483647`. Or `-1`, when FineReader automatically selects the hight. | `-1` |

### 2.1.2 [DocumentProcessingParams]

Document processing parameters:

| Name | Type | Description | By default |
|---|---|---|---|
| `PerformSynthesis` | `Boolean` | Performs document synthesis. At `False` value, object `[SynthesisParamsForDocument]` can not be preformed. | `True` |

### 2.1.3 [DocumentStructureDetectionParams]

The parameters that specify document structure:

| Name | Type | Description | Default value |
|---|---|---|---|
| `DetectHeadlines` | `Boolean` | Specifies if headlines should be detected during document synthesis. | `True` |
| `DetectFootnotes` | `Boolean` | Specifies if footnotes should be detected during document synthesis. | `True` |
| `DetectTableOfContents` | `Boolean` | Specifies if table of contents should be detected during document synthesis. | `True` |
| `DetectRunningTitles` | `Boolean` | Specifies if running titles should be detected during document synthesis. | `True` |
| `DetectLists` | `Boolean` | Specifies if lists should be detected during document synthesis. | `True` |

### 2.1.4 [FontFormattingDetectionParams]

Font formatting detection parameters:

| Name | Type | Description | By default |
|---|---|---|---|
| `DetectBold` | `Boolean` | When the value is `True` bold font to be defined during the synthesis. | `True` |
| `DetectFontFamily` | `Boolean` | When the value is `True` font type to be defined during the synthesis. | `True` |
| `DetectFontSerifs` | `Boolean` | When the value is `True` font serifs to be defined during the synthesis. Font with serifs is to be selected to present the recognised text. When the value is | `True` |

| Name | Type | Description | By default |
|---|---|---|---|
| | | `False`, font serifs are to be ignored. This means that the most suitable font (from the fonts with serifs and without serifs) is selected to present the recognised text independent from the fact if the text is secure or not. | |
| `DetectFontSize` | `Boolean` | When the value is `True` font size to be detected during the synthesis. | `True` |
| `DetectItalic` | `Boolean` | When the value is `True` italic font to be detected during the synthesis. | `True` |
| `DetectScaling` | `Boolean` | When the value is `True` scale to be detected during the synthesis. | `True` |
| `DetectSmallCaps` | `Boolean` | When the value is `True` letters within the lower case to be detected during the synthesis. | `True` |
| `DetectSpacing` | `Boolean` | When the value is `True` spaces to be detected during the synthesis. | `True` |
| `DetectSubscriptsSuperscripts` | `Boolean` | When the value is `True` upper and lower symbols to be detected during the synthesis. | `True` |
| `DetectUnderlineStrikeout` | `Boolean` | When the value is `True` underlining and striking out to be detected during the synthesis. | `True` |
| `MonospaceDetectionMode` | `MonospaceDetectionModeEnum` | Performs monospace font detection. | `MDM_Auto` |

### 2.1.5 [ImageProcessingParams]

Image processing parameters before analysis and recognition:

| Name | Type | Description | By default |
|---|---|---|---|
| `InvertImage` | `Boolean` | Specifies if image colours within the block are to be inverted. When the value is `True` FineReader inverts the unit image before recognition. | `False` |
| `MirrorImage` | `Boolean` | Specifies if image within the block is to be mirrored on a vertical axis. When the | `False` |

| Name | Type | Description | By default |
|---|---|---|---|
| | | value is `True` FineReader will mirror the block before recognition. | |
| `RotationType` | `RotationTypeEnum` | Set text orientation within the block in accordance with normal reading position. This parameter cannot be initialized `RT_UnknownRotation`. | `RT_NoR` |

### 2.1.6 [ObjectsExtractionParams]

Additional objects detection parameters:

| Name | Type | Description | By default |
|---|---|---|---|
| `FastObjectExtraction` | `Boolean` | When the value is `True` objects extraction is fast, but with the loss of quality. | `False` |
| `ProhibitColorImage` | `Boolean` | When the value is `True` FineReader uses black-and-white processing mode during the objects extraction. Therefore the colourful image quality is lower. | `False` |
| `RemoveGarbage` | `Boolean` | Removes garbage from the image (except small dots). | `False` |
| `RemoveTexture` | `Boolean` | Removes texture from temporary image, used for recognition. Original image remains untouched. | `True` |
| `DetectMatrixPrinter` | `Boolean` | Text, printed on a printer matrix to be recognised during the objects extraction. | `True` |
| `DetectPorousText` | `Boolean` | When the value is `True` porous text area to be found during the objects extraction. | `True` |
| `DetectTextOnPictures` | `Boolean` | When the value is `True` whole text on the image to be recognised, including text within the image. Text sequence remains. | `False` |
| `EnableAggressiveTextExtraction` | `Boolean` | When the value is `True` FineReader will extract all possible text from the image. It is recommended to use this parameter for images with low quality texts. This processing mode may cause the fault image description via text or vertical orientation of horizontal text. | `False` |

| Name | Type | Description | By default |
|---|---|---|---|
| `ProhibitDottedSeparators` | `Boolean` | When the value is `True` FineReader concludes that processed document doesn't contain dot separation symbols. It is recommended to use this parameter when the document doesn't contain this kind of separation symbols or when inforwation can be recognised wrong, if it was a dot separation symbol.<br>**Important:** this parameter is temporary. | `False` |

### 2.1.7 [OrientationDetectionParams]

Pages orientation detection parameters:

| Name | Type | Description | By default |
|---|---|---|---|
| `OrientationDetectionMode` | `OrientationDetectionModeEnum` | Pages orientation detection mode. | `ODM_Normal` |
| `ProhibitClockwiseRotation` | `Boolean` | Disables image clockwise rotation when its orientation is selected.<br>**Important:** this parameter shouldn't be set to `True`, if `ProhibitCounter-clockwiseRotation` and `ProhibitUpsidedownRotation` parameters are set to `True`. | `False` |
| `ProhibitCounterclockwiseRotation` | `Boolean` | Disables image counter-clockwise rotation when it's orientation is selcted.<br>**Important:** this parameter shouldn't be set to `True`, if `Prohibit ClockwiseRotation` and `ProhibitUpsidedownRotation` parameters are set to `True`. | `False` |
| `ProhibitUpsidedownRotation` | `Boolean` | Disables image upside-down rotation when it's orientation is selected.<br>**Important:** this parameter shouldn't be set to `True`, if `Prohibit` | `False` |

| Name | Type | Description | By default |
|---|---|---|---|
| | | `ClockwiseRotation` and `ProhibitCounterclockwiseRotation` parameters are set to `True`. | |

### 2.1.8 [PageAnalysisParams]

Parameters of page model analysis:

| Name | Type | Description | By default |
|---|---|---|---|
| `DetectText` | `Booalean` | Finds text area during the model analysis when the value is `True.` | `True` |
| `EnableTextExtractionMode` | `Boolean` | `True` value specifies existing blocks of text on the page. Separate text blocks are to be found during the model analysis. Tables cannot be found. When the value is `True` model analysis cannot be perforemd in `ProhibitModelAnalysis.` | `False` |
| `DetectTables` | `Boolean` | Detects table during the laypout analysis. | `True` |
| `AggressiveTableDetection` | `Boolean` | Controls table detaction modes. When the value is `True` FineReader finds all existing tables on the page. It is recommended for the documents, containingbig number of tables. | `False` |
| `DetectBarcodes` | `Boolean` | Detects barcodes. By default, barcodes are defined as ordinary images. | `False` |
| `DetectSeparators` | `Boolean` | Detects separation symbols. | `True` |
| `DetectPictures` | `Boolean` | Detects images during the model analysis. | `True` |
| `DetectVectorGraphics` | `Boolean` | Detects vector graphics during the model nanlysis. | `True` |
| `DetectMultipleBusinessCards` | `Boolean` | Detects business cards on a page. | `False` |

| Name | Type | Description | By default |
| --- | --- | --- | --- |
| `NoShadowsMode` | `Boolean` | FineReader will process the image ignoring the shadows. | `False` |
| `DetectVerticalEuropeanText` | `Boolean` | When the value is `True` FineReader is looking for vertical text. This parameter is valid for all languages, except Chinese, Japanese and Korean languages. `ProhibitCJKColumns` parameter detects the text belonging to this group of languages. | `False` |
| `ProhibitCJKColumns` | `Boolean` | Text written in Korean, Chinese and Japanese languages can be placed vertically and horizontally. When the value is `True` FineReader is looking for horizontal text on the languages mentioned. Thois parameter is valid only for Korean, Chinese and Japanese languages. | `False` |
| `ProhibitDoublePageMode` | `Boolean` | When the value is `True` FineReader will not process the image as the double page. | `False` |
| `ProhibitModelAnalysis` | `Boolean` | When the value is `False,` page models will be sorted out during the page analysis until the model amending the recognition quality is to be found. If the appropriate model cannot be found, standard page analysis is to be performed.<br>**Important:** if `EnableTextExtractionMode` is set to `True`, then it's ignored and model analysis cannot be performed. | `False` |
| `PaperSizeDetectionMode` | `PaperSizeDetectionModeEnum` | This parameters specifies if previously processed image can have information for analysis.<br>**Important:** for correct work `NoShadowsMode` parameter should be set to `False.` | `PSDM_Auto` |
| `CollectPdfExportData` | `Boolean` | When the value is `True` FineReader collects all data during the model analysis. Collected data are exported in PDF using MRC-compression if original image was saved in PDF format. | `False` |

### 2.1.9 [PagePreprocessingParams]

Page preprocessing parameters:

| Name | Type | Description | By default |
|---|---|---|---|
| `CorrectInvertedImage` | `Boolean` | Finds out image with colour inversion (for example, white text on a black background).<br>If the text colour differes from the normal one during preprocessing, FineReader automatically invert the image colours. | `False` |
| `CorrectOrientation` | `Boolean` | When the value is `True`, image orientation is to be defined during preprocessing. When it differes from the normal one, FineReader turns the image upside down. | `False` |
| `CorrectShadowsAndHighlights` | `ThreeStatePropertyValueEnum` | This parameter is used only for photo. When the value is `TSPV_Yes`, shadow and colour correction is to be also performed for further recognition enhancement. | `TSPV_Auto` |
| `CorrectSkew` | `ThreeStatePropertyValueEnum` | When the value is TSPV_Yes, image incline correction is to be performed during the preprocessing. CorrectSkewMode specifies the incline type. When the value is TSPV_No incline correction cannot be performed. | `TSPV_Auto` |
| `CorrectSkewMode` | `CorrectSkewModeEnum` | Defines image incline correction mode. `CorrectSkewModeEnum` parametr defines the incline type via `OR`. 0 means that incline coorrection was not performed. | `CSM_CorrectSkewByHorizontalText \| CSM_CorrectSkewByVerticalText` |
| `GeometryCorrectionMode` | `ThreeStatePropertyValueEnum` | Defines the types of geometric distortions to be deleted during the preprocessing. | `TSPV_Auto` |
| `CorrectResolution` | `ThreeStatePropertyValueEnum` | Defines if image current resolution is to be revised during the preprocessing. | `TSPV_Auto` |

### 2.1.10 [PageProcessingParams]

Page processing parameters:

| Name | Type | Description | By default |
|---|---|---|---|
| `PerformPreprocessing` | `Boolean` | When the value is `True,` page preprocessing block is to be launched, including inversion correction, orientation and geometric distortions and is performed before the page analysis. | `True` |
| `ProhibitColorObjectsAtProcessing` | `Boolean` | Specifies if image colour objects should be filtered before analysis and model recognition. | `False` |
| `PerformAnalysis` | `Boolean` | Specifies if page analysis is to be performed. When the value is `False`, `[PageAnalisysParams]` section is to be ignored. | `True` |
| `PerformRecognition` | `Boolean` | Specifies if recognition is to be performed. When the value is `False`, `[RecognizerParams]` section is to be ignored. | `True` |

### 2.1.11 [PrepareImageMode]

Image preprocessing parameters:

| Name | Type | Description | By default |
|---|---|---|---|
| `Rotation` | `RotationTypeEnum` | Setting image rotation angle during the image preparation. | `RT_NoRotation` |
| `CorrectSkew` | `Boolean` | When the value is T`rue,` it corrects the rotation during the image preparation. Rotation correction type is set via `CorrectSkewMode` parameter. When the value is `False` `CorrectSkewMode` is to be ignored. | `True` |
| `CorrectSkewMode` | `CorrectSkewModeEnum` | Setting image rotation angle. When the value is `OR`, `CorrectSkewModeEnum` constants superposition, meaning the correction modes. When the | `CSM_CorrectSkewByHorizontalText\|CSM_CorrectSkewByVerticalText` |

| Name | Type | Description | By default |
|---|---|---|---|
| | | value is 0 — distortion correction is not to be performed. | |
| `BackgroundFillingColor` | `Integer` | Defines the colour to be chosen to fill in the areas which are to be added after the image rotation correction. When the value is -1 — the colour is to be defined automatically.<br>**Important:** Integer type value is calculated from RGB trio: (Red) +(256*GREEN)+(65536*BLUE). | `-1` |
| `InvertImage` | `Boolean` | When the value is `True` FineReader inverts the image colours. | `False` |
| `MirrorImage` | `Boolean` | When the value is `True,` FineReader reflects prepared image to the vertical axis. | `False` |
| `EnhanceLocalContrast` | `Boolean` | Specifies if image contrast should be increased. This parameter may enhance the further recognition quality. To set this parameter to be `True` is reasonable only for colour and grey images. | `False` |
| `PhotoProcessingMode` | `PhotoProcessingModeEnum` | Verifies if image should be processed like photo. If this photo is being processed, FineReader uses special algorithms of photo processing during different stages of image processing. | `PPM_Auto` |
| `AutoOverwriteResolution` | `Boolean` | Specifies if it is required to overwrite resolution of prepared image. This parameter is available when the value of `OverwriteResolution` is `False`. When the value of `AutoOverwriteResolution` is `True`, then FineReader automatically defines image resolutiona and overwrite it. | `True` |
| `OverwriteResolution` | `Boolean` | Accepts overwriting resolution of prepared image. Resolution is to be overwrited in accordance with the values of `XResolutionToOverwrite` | `False` |

| Name | Type | Description | By default |
| --- | --- | --- | --- |
| | | and `YResolutionToOverwrite` parameters. In this case, the new resolution is to be used for preprocessing. | |
| `XResolutionToOverwrite` | `Integer` | Set horizontal resolution of original image in `DPI`. This value is used to overwrite prepared image in the case when resolution of original image wasn's defined correctly and `OverwriteResolution` parameter is set to `True`. FineReader processes the image with equal horizontal and vertical resolution, thus the program stretches the image the way the prepared image had equal horizontal and vertical rotation and equal to `XResolutionToOverwrite` и `YResolutionToOverwrite` maximum. | `300` |
| `YResolutionToOverwrite` | `Integer` | Set vertical rotation of orifinal image in `DPI`. This value is used to overwrite rotation of prepared image in the case, when rotation of original image wasn't defined correctly and if `OverwriteResolution` parameter is set to `True`. FineReader processes епру image with equal horizontal and vertical rotation, thus the program stretches the image the way the prepared image had equal horizontal and vertical rotation and equal to `XResolutionToOverwrite` and `YResolutionToOverwrite` maximum. | `300` |
| `DiscardColorImage` | `Boolean` | When the value is `True,` FineReader leaves only black-and-white flatness within prepared image. In this case image binarization is to be performed. | `False` |

| Name | Type | Description | By default |
|---|---|---|---|
| `UseFastBinarization` | `Boolean` | When the value is `True,` FineReader uses image fast binarization algorithms. Binarization is performed when image is downloaded (when `DiscardColorImage` is set to `True` during the preparation) or later, when black-and-white image is required. This parameter puts on speed of image binarization, but the quality is getting low. | `False` |
| `CompressImage` | `ThreeStatePropertyValueEnum` | Set the way to compress image during the convertion into external format. | `TSPV_Auto` |
| `CreatePreview` | `Boolean` | When thy value is T `rue` FineReader makes preview of prepared image. | `False` |
| `PreviewHeight` | `Integer` | Set the hight for image preview in pixels. When `CreatePreview` is set to `False` , preview cannot be made and this parameter is to be ignored. | `90` |
| `PreviewWidth` | `Integer` | Set the width for image preview in pixels. When `CreatePreview` is set to `False` , preview cannot be made and this parameter is to be ignored. | `64` |

## 2.1.12 [RecognizerParams]

Page recognition general parameters:

| Name | Type | Description | By default |
|---|---|---|---|
| `TextLanguage` | `TextLanguage` | Set the language for text to be recognised. | `English` |
| `LanguageDetectionMode` | `ThreeStatePropertyValueEnum` | Controls automatic language identification. When automatic language identification is enabled, language recognition is performed for every word within the text. It is recommended to be used for | `TSPV_Auto` |

| Name | Type | Description | By default |
|---|---|---|---|
| | | documents of language you do not know. | |
| `TextTypes` | `TextTypeEnum` | This parameter is defined by `OR`, `TextTypeEnum` constants superposition, meaning the types of recognition texts. | `TT_Normal` |
| `Mode` | `RecognitionModeEnum` | Define the recognition mode to be used. I sued to replaceoutdated `BalancedMode` and `FastMode`. | `RM_Normal` |
| `LowResolutionMode` | `Boolean` | Parameter for image recognition with low resolution. | `False` |
| `OneWordPerLine` | `Boolean` | When the value is `True` FineReader will recognise text line as one word. | `False` |
| `ProhibitItalic` | `Boolean` | When the value is `True,` FineReader cannot recognise symbols written in italic. Recognition speed is growing if the document doesn't contain this kind of text. | `False` |
| `ProhibitSubscript` | `Boolean` | When the value is `True,` FineReader cannot recognise index symbols. | `False` |
| `ProhibitSuperscript` | `Boolean` | When the value is `True,` FineReader cannot recognise symbols written via upper indexes. | `False` |
| `ProhibitHyphenation` | `Boolean` | When the value is T`rue,` FineReader cannot recognise words hyphenation. | `False` |
| `ProhibitInterblockHyphenation` | `Boolean` | When the value is `True,` one block of text cannot be hyphenated to the next block. | `False` |
| `CaseRecognitionMode` | `CaseRecognitionModeEnum` | Alphabetic recognition. | `CRM_AutoCase` |
| `WritingStyle` | `WritingStyleEnum` | Provides information about handwritten text styles. | `WS_Auto` |
| `FieldMarkingType` | `FieldMarkingType` | This parameter is able to recognise characters next to symbols (underlining, frames, etc). This option is available for handwritten texts only. | `FMT_SimpleText` |

| Name | Type | Description | By default |
|---|---|---|---|
| `CellsCount` | `Integer` | Specifies the number of symbol cells for the block that was recognised. This option is available for handwritten texts only. | `1` |
| `UseBuiltInPatterns` | `Boolean` | When the value is `True,` FineReader will use its built-in recognition models. Recognition models are the files relating symbol's shape and symbol. When the value is `False` FineReader uses user patterns only. | `True` |
| `UserPatternsFile` | `String` | Contains full file path with user recognition model. | `""` |

### 2.1.13 [SynthesisParamsForDocument]

Document synthesis parameters:

| Name | Type | Description | By default |
|---|---|---|---|
| `DetectDocumentStructure` | `Boolean` | Specifies if specific structures are to be performed during the document synthesis. | `True` |
| `DetectFontFormatting` | `Boolean` | Specifies if font formatting should be performed during the document synthesis. When the value is `False`, `[FontFormattingDetectionParams]` section is to be ignored.<br>**Important:** by default FineReader defines font parameters during the document synthesis phase. When the value is `False,` it is required to activate font parameters identification during the page synthesis. It is required to set `True` as `DetectFontFormattingAtPageLevel` parameter for `[SynthesisParamsForPage]` section. | `True` |
| `LowMemoryMode` | `Boolean` | Specifies if low memory pull mode is to be activated during the document synthesis. When the value is `True,` FineReader will use less than 600 Mb memory during document synthesis process via the download of lower number of pages. But this will reduce synthesis speed and the quality will also be low. | `False` |
| `PagePoolSize` | `Integer` | Specifies the number of pages to be downloaded at a time during the document synthesis. This parameter can reduce memory | `64` |

| Name | Type | Description | By default |
|---|---|---|---|
| | | pull. It is recommended using the value from 32 to 64. The bigger the number the processing speed is higher. It is not recommended to set big value to process big documents since low memory error may occur. Numbers less than 5 are to be ignored. | |

### 2.1.14 [SynthesisParamsForPage]

Page synthesis parameters:

| Name | Type | Description | By default |
|---|---|---|---|
| `ParagraphExtractionMode` | `ParagraphExtractionModeEnum` | Set paragraphs extraction mode. | `PEM_NormalExtraction` |
| `DetectFontFormattingAtPageLevel` | `Boolean` | When the value is `True`, font parameters are to be defined during the page synthesis phase. This parameter includes detection of low and upper indexes, italic font, lower case and upper case alphabet and it affords using additional parameters from `[FontFormattingDetectionParams]` section. When the value is `False` this section parameteres are to be ignored.<br>**Important:** FineReader specifies font parameters during the document synthesis phase by default. When the value is `True`, it is required deactivating font parameters detection during the document synthesis, setting `DetectFontFormatting` parameter for `[SynthesisParamsForDocument]` section with `False` value. | `False` |
| `DetectBackgroundColor` | `ThreeStatePropertyValueEnum` | When `TSPV_Yes` value is installed, the colour of background is to be defined during the page synthesis. | `TSPV_Auto` |
| `AllowGrayBackgroundColor` | `ThreeStatePropertyValueEnum` | When the value is set to `TSPV_Yes`, gray colour is defined for backgound. Otherwise, it is to be defined as black or white. This parameter is taken into consideration when the value of | `TSPV_Auto` |

| Name | Type | Description | By default |
|---|---|---|---|
| | | `DetectBackgroundColor` is `TSPV_Yes` and `TSPV_Auto`. | |
| `DetectTextColor` | `ThreeStatePropertyValueEnum` | When the value is `TSPV_Yes,` text colour is defined during the page synthesis. | `TSPV_Auto` |
| `CorrectDynamicRange` | `ThreeStatePropertyValueEnum` | When the value is `TSPV_Yes,` image colours will be corrected to white font and black text or vice versa. Image quality will be better, but recognition speed will get low. | `TSPV_Auto` |

## 2.1.15 [TableAnalysisParams]

Page blocks analysis parameters:

| Name | Type | Description | By default |
|---|---|---|---|
| `DetectCellsInversion` | `Boolean` | When the value is `True,` cells inversion detection is performed during the table blocks analysis. | `True` |
| `DetectCellsOrientation` | `Boolean` | When the value is `True,` cells orientation detection is performed during the table blocks analysis. | `True` |
| `SingleLinePerCell` | `Boolean` | It is recommended to set this parameter to `True` value, if every line within the table is a cell. Table recognition is to be performed thoroughly. | `False` |
| `SplitOnlyBySeparator` | `Boolean` | It is recommended to set this parameter to `True` value, if the table recognition is doesn't contain hidden separatotrs. | `False` |

## 2.1.16 Constants

### ThreeStatePropertyValueEnum

| Name | Description |
|---|---|
| `TSPV_Auto` | Finereader automatically detects if the mode is required to be applied. |
| `TSPV_No` | Disabling mode. |

| Name | Description |
| --- | --- |
| `TSPV_Yes` | Activating mode. |

### CorrectSkewModeEnum

| Название | Описание |
| --- | --- |
| `CSM_CorrectSkewByBlackSquaresHorizonally` | Image incline angle is corrected in accordance with "black squares" (incline angle is defined in accordance with horizontal square pairs). Black squares are often located within the forms. It is recommended using this constant only while working with forms, otherwise incorrect results can be provided. |
| `CSM_CorrectSkewByBlackSquaresVertically` | Image incline angle is corrected in accordance with "black squares" (incline angle is defined in accordance with vertical square pairs). Black squares are often located within the forms. It is recommended using this constant only while working with forms, otherwise incorrect results can be provided. |
| `CSM_CorrectSkewByHorizontalLines` | Image incline angle is corrected in accordance with horisontal lines (price-lists, documents with tables), otherwise incorrect results can be provided. |
| `CSM_CorrectSkewByHorizontalText` | Image incline angle is corrected in accordance with horizontal text lines. |
| `CSM_CorrectSkewByVerticalLines` | Image incline angle is corrected in accordance with vertical lines. It is recommended using this constant only for images, containing vertical lines (price-lists, documents with tables). |
| `CSM_CorrectSkewByVerticalText` | Image incline angle is corrected by means of vertical text lines. It is recommended using this constant working with documents made in Chinese, Japanese and Korean languages. |

### OrientationDetectionModeEnum

| Name | Description |
| --- | --- |
| `ODM_Fast` | Fast mode to define pages orientation with the loss of quality. |
| `ODM_Normal` | Normal mode to define pages orientation. |
| `ODM_Thorough` | Thorough mode to define pages orientation with no loss of quality. |

### PaperSizeDetectionModeEnum

| Name | Description |
| --- | --- |
| `PSDM_Auto` | Area is defined automatically and can be less than the original image. |
| `PSDM_Unknown` | There is no sufficient information about large image area. Area considered for analysis can be less that the image itself. |
| `PSDM_CloseToImageSize` | Whole image may contain information for analysis. Area to be analysed cannot be less than the original image. |

### BarcodeTypeEnum

| Name | Standard |
| --- | --- |
| `BT_Autodetect` | Automatic |
| `BT_Aztec` | Aztec |
| `BT_Codabar` | Codabar |
| `BT_Code128` | Code 128 |
| `BT_Code32` | Code 32 |
| `BT_Code39` | Code 39 |
| `BT_Code93` | Code 93 |
| `BT_DataMatrix` | Data Matrix |
| `BT_EAN13` | EAN 13 |
| `BT_EAN8` | EAN 8 |
| `BT_FullAscii` | Full ASCII Code 39 |
| `BT_IANA25` | Code 2 of 5 (it is recommended to use if you are sure this type of barcode is on the image .This type of barcodes have no control sum and by mistake can be found on the image with no barcodes). |
| `BT_Industial25` | Industrial 2 of 5 |

| | |
|---|---|
| `BT_IntelligentMail` | Intelligent Mail |
| `BT_Interleaved25` | Interleaved 2 of 5 (it is recommended to use if you are sure this type of barcode is on the image. This type of barcodes have no control sum and by mistake can be found on the image with no barcodes). |
| `BT_Matrix25` | Matrix 2 of 5 (it is recommended to use if you are sure this type of barcode is on the image. This type of barcodes have no control sum and by mistake can be found on the image with no barcodes). |
| `BT_MaxiCode` | MaxiCode |
| `BT_Patch` | Patch |
| `BT_PDF417` | PDF417 |
| `BT_PostNet` | PostNet |
| `BT_QRCode` | QR Code |
| `BT_UCC128` | GS1-128 |
| `BT_Unknown` | Unknown type of barcode. It is used as return message when it is impossible to identify barcode type. |
| `BT_UPCA` | UPC-A |
| `BT_UPCE` | UPC-E |

### BarcodeOrientationEnum

| Имя | Описание |
|---|---|
| `BO_Autodetect` | Automatic. |
| `BO_Down_To_Top` | Down-to-top orientation. |
| `BO_Left_To_Right` | Left-to-right orientation. |
| `BO_Right_To_Left` | Right-to-left orientation. |
| `BO_Top_To_Down` | Top-to-down orientation. |

| | |
|---|---|
| `BO_Unknown` | Unknown type of barcode orientation. It is used as return value if orientation type cannot be defined. |

### TextTypeEnum

| Название | Описание |
|---|---|
| `TT_Gothic` | Gothic style text recognition. |
| `TT_Handprinted` | Handwritten text. Automatic analysis is unavailable for handwritten text, block coordinates where handwritten text is contained are required to be enetered manually. |
| `TT_Index` | Special typesetting symbols, including only postal index numerals. |
| `TT_Matrix` | Text on the image, printed with matrix printer. |
| `TT_MICR_CMC7` | Symbols, including only numerals and letters A,B,C,D,E, written with CMC-7 font. |
| `TT_MICR_E13B` | Symbols, including only numerals and letters A,B,C,D,E, printed with magnetic ink. |
| `TT_Normal` | General typegraphical type of text. |
| `TT_OCR_A` | Monoscaped font, made for OCR. It is widely used in the banks, on the credit cards, etc. |
| `TT_OCR_B` | Font, made for OCR. |
| `TT_Receipt` | Text within pay receipts, bills and vouchers. Different from the other text types, text font is not important, because FineReader considers text to be recognised the one that is low quality monospaced or ordinary font. |
| `TT_Typewriter` | Text, printed with a typewriter. |

### CaseRecognitionModeEnum

| Name | Description |
|---|---|
| `CRM_Auto` | Alphabetic shift automatic detection and its continuance within the output text. |
| `CRM_CapitalCase` | Text to be recognised to shift to capitals. |
| `CRM_SmallCase` | Text to be recognised to lowercase shift. |

### ParagraphExtractionModeEnum

| Name | Description |
|---|---|
| `PEM_NormalExtraction` | Paragraphes normal extraction. |
| `PEM_RoughExtraction` | Minimum number of paragraphes to be extracted. |
| `PEM SingleLineParagraphsWithSpaceFormatting` | Every line is extracted like a separate paragraph, formatted with spaces. |
| `PEM SingleLineParagraphsWithWordSeparationOnly` | Every line is extracted like a paragraph with no space formatting between separate words. |

### MonospaceDetectionModeEnum

| Name | Description |
|---|---|
| `MDM_Auto` | Monospaced font is automatically detected. |
| `MDM_Ignore` | Monospaced font detection option is to be ignored. |
| `MDM_Monospace` | To set monospaced font. |
| `MDM_NotMonospace` | To set not monospaced font. |

### RotationTypeEnum

| Name | Description |
|---|---|
| `RT_Clockwise` | Rotates an image 90 degrees clockwise. |
| `RT_Counterclockwise` | Rotates an image 90 degrees counterclockwise. |
| `RT_NoRotation` | Does not rotate an image. |
| `RT_Upsidedown` | Rotates an image upside down. |
| `RT_UnknownRotation` | Rotation angle is undefined. |

### PhotoProcessingModeEnum

| Name | Description |
|---|---|
| `PPM_Auto` | FineReader automatically detects if the image is a photo. |

| Name | Description |
| --- | --- |
| `PPM_TreatAsPhoto` | Image is treated as a photo. |
| `PPM_TreatAsNonPhoto` | Image is treated as non photo. |

### RecognitionModeEnum

| Name | Description |
| --- | --- |
| `RM_Normal` | Balanced recognition mode.<br>Parameter is available for typescripts. For handwriting full recognition mode is to be used. |
| `RM_Fast` | Fast recognition mode.<br>Processing speed is 2-2.5 times higher than the balanced mode, but error risk is 1.5-2 higher.<br>Parameter can be used for typescripts and handwriting . We do not recommend to use this mode to recognize short fragments. |
| `RM_Accurate` | Accurate recognition mode. The highest recognition accuracy, but the lower speed. |

## 2.1.17 FRProfile.ini example

Ini-file settings example, located in `/opt/iw/tm5/etc/CRProfile.ini` :

| Contents | Description |
| --- | --- |
| `[RecognizerParams]` | To use page recognition parameters. |
| `TextLanguage = English,Russian` | To set Russian and English languages for text recognition. |
| `[PagePreprocessingParams]` | To use page preprocessing parameters. |
| `CorrectOrientation = True` | To enable automatic orientation correction. |
| `CorrectResolution = TSPV_Yes` | To specify if current image resolution should be fixed for pre-processing. |
| `[PrepareImageMode]` | To use image preprocessing parameters. |
| `CorrectSkew = True` | To enable image incline correction. |

| Contents | Description |
| --- | --- |
| `AutoOverwriteResolution=true` | To verify if the resolution for prepared image should be rewritten. This parameter is available when the value of `OverwriteResolution` parameter is `false`. If `AutoOverwriteResolution`'s value is `True`, then FineReader can automatically define and rewrite the image resolution. |
| `[FontFormattingDetectionParams]` | To use font formatting parameters. |
| `DetectFontFamily = False` | Font detection disabling. |
| `DetectBold = False` | Bold font detection disabling. |
| `DetectFontSize = False` | Font size detection disabling. |
| `[SynthesisParamsForPage]` | To use page synthesis parameters. |
| `DetectFontFormattingAtPageLevel=True` | To enable font formatting detection during the page synthesis phase. |
| `[SynthesisParamsForDocument]` | To use documents synthesis parameters. |
| `DetectFontFormatting = False` | To disable font formatting detection during the document synthesis phase. |
| `DetectDocumentStructure = False` | To disable document structure detection. |
| `[PageAnalysisParams]` | To use page analysis parameters. |
| `EnableTextExtractionMode = False` | To disable search mode for text blocks on a page. |
| `DetectPictures = False` | Image detection disabling. |
| `ProhibitModelAnalysis = True` | To disable model analysis. |