



## **XLSTATE**

### **Инструкция по установке**



## 1. Установка системы

Все команды должны выполняться от имени пользователя root. **Соблюдайте точный порядок действий!**

### 1.1. Операционная система

#### 1.1.1 Поддерживаемая ОС

Версия DEBIAN >= 10

ASTRA Linux

Версия CentOS = 7

Рекомендуется: DEBIAN

#### 1.1.2 Directory структура

Variables (Переменные)

```
# set the name of top-level directory (Leave this line as it is for default.)
XLSTATE_DIR_DESTINATION="/"
```

Script (Скрипт)

```
# creating directory xlstate in destination
mkdir -p "${XLSTATE_DIR_DESTINATION}xlstate"

# creating /xlstate link
if [[ ! -d "/xlstate" ]]; then
    ln -s "${XLSTATE_DIR_DESTINATION}/xlstate" "/xlstate"
fi

# creating directory structure
mkdir -p /xlstate/bin/ifo_a
mkdir -p /xlstate/bin/ifo_b
mkdir -p /xlstate/bin/scripts
mkdir -p /xlstate/bulk
mkdir -p /xlstate/cdr/archive
mkdir -p /xlstate/cdr/local_a
mkdir -p /xlstate/cdr/tmp
mkdir -p /xlstate/export/local_a
mkdir -p /xlstate/log/ifo_a
mkdir -p /xlstate/tmp
mkdir -p /xlstate/trace
```



### 1.1.3 Системные модули

```
touch
/xlstate/export/local_a/{carr_fas,carr_sk,carrier_list,category_section,destination_list,fas_prfx_crr}.csv
touch
/xlstate/export/local_a/{holidays,info_presets,mnp_list,normalization,numbers_lists,parameter_list}.csv
touch
/xlstate/export/local_a/{prefix_destination,regions,rules,state_domains,subs_data,time_templates,timezone}.csv
touch
/xlstate/export/local_a/{xlstate_domain_settings,xlstate_profile,xlapi_auth,xlapi_bank_query,xlapi_iw_settings}.csv
touch
/xlstate/export/local_a/{content_list,domain_distribution,parameter_list_smsfw}.csv
```

## 1.2. Установка XLSTATE

Распакуйте дистрибутив `xlstate.tar.gz` в директорию `/home/xlstate_vrf`. Скопируйте из директории `/home/xlstate_vrf` следующие файлы:

- `xl_main`
- `start`
- `stop`
- `xlstate`

в папку `/xlstate/bin/ifo_a`.

Выполните следующие команды (при необходимости создайте поддиректории):

```
chown root:root /xlstate/bin/scripts/*
chmod +x /xlstate/bin/scripts/*

chown root:root /xlstate/bin/ifo_a/*
chmod +x /xlstate/bin/ifo_a/*
```

### Первичный запуск.

- а. Запустите сервис:  
*./start*



b. Остановите сервис:

```
./stop
```

c. В появившемся файле XL\_MAIN.INI в поле APP:0 впишите 'xlstate':

```
GLB:LOGGING=1  
GLB:LOG_GENERAL=2  
GLB:LOG_MAX_SIZE_MB=1024  
APP:0=xlstate
```

Также в поле GLB:APP\_LOG впишите '/xlstate/log/ifo\_a/xl\_main\_log.csv'

```
GLB:APP_LOG=/xlstate/log/ifo_a/xl_main_log.csv  
GLB:LOGGING=1
```

d. Запустите сервис:

```
./start
```

## 2. Конфигурация XLSTATE

**XLSTATE** управляется с помощью правил и фильтров, которые настраиваются в файлах конфигурации модулей, перечисленных в главах ниже.

### 2.1. Описание файлов конфигурации XLSTATE

Файлы конфигурации хранятся в таблице файлов XLSTATE в форматах INI и CSV. Некоторые из них обязательны, а некоторые генерируются автоматически при запуске программы XLSTATE, если они не существуют, но их необходимо правильно отредактировать вручную. Все файлы конфигурации считываются при запуске XLSTATE. Если вы измените содержимое файла Rules.csv, XLSTATE будет читать и использовать все файлы конфигурации во время работы XLSTATE. Однако некоторые параметры требуют перезапуска XLSTATE и отмечены в этих таблицах. Выходные файлы и файлы журналов автоматически генерируются XLSTATE.

Default Filename	Required	Type	Description
XLSTATE_CFG.INI	Autogenerated	Autogenerated configuration file	Configuration of XLSTATE - general
XLSTATE_SS7.INI	Autogenerated	Autogenerated configuration file	Configuration of XLSTATE - associations
/xl/export/local_a/xlstate_domain_settings.csv	Yes	Manually edited	Configuration of domains
/xl/cdr/local_a/xlstate_cdr.csv		Output	Xlstate CDR output
/xl/cdr/local_a/syslog_cdr.csv		Output	Xlstate syslog CDR output
/xl/cdr/local_a/xlstate_debug_cdr.csv		Output	Debug CDR output (disabled by default)
/xl/log/ifo_a/xlstate_log.csv		Log	Log (M3UA, SCCP)
/xl/log/ifo_a/xlstate_app.csv		Log	Log (GENERAL, RULE, TCAP, SIP)



Default Filename	Required	Type	Description
/xl/log/ifo_a/xlstate_sctp.csv		Log	Log (SCTP)

### 2.1.1. XLSTATE\_CFG.INI

Parameter	Description	Must set	Need restart
GLB:RULE_RELOAD_FILE=/xl/export/local_a/rules.csv	File which triggers rule/data reload		
GLB:NUMLIST_FILE_COUNT=1	Number of numlist files		
GLB:NUMLIST_FILE(_2,_3,...)=/xl/export/local_a/numbers_lists.csv	Number lists file filename		
GLB:NUMLIST_COUNT_MAX=1000	Storage size for numberslists (max number of numberlist IDs)		Yes
GLB:OPTIMIZE_QUESTIONMARK_NUMBERS=0	1 = use optimization for numbers ending with ?, requires different sorting on numbers_lists		
GLB:LOG_FILE=/xl/log/ifo_a/xlstate_log.csv	XLSTATE log file filename		
GLB:APP_LOG=/xl/log/ifo_a/xlstate_app.csv	XLSTATE app log file filename		
GLB:SCTP_LOG=/xl/log/ifo_a/xlstate_sctp.csv	XLSTATE sctp log file filename		
GLB:STAT_FILE=/xl/export/local_a/xlstate_stat.csv	XLSTATE stat file filename		
GLB:SYSLOG_CDR_FILE=/xl/cdr/local_a/syslog_cdr.csv	Xlstate syslog CDR filename		
GLB:XLSTATE_CDR_FILE=/xl/cdr/local_a/xlstate_cdr.csv	XLSTATE CDR filename		
GLB:XLSTATE_DEBUG_CDR_FILE=/xl/cdr/local_a/xlstate_debug_cdr.csv	XLSTATE debug CDR filename		
GLB:DOMAIN_FILE=/xl/export/local_a/xlstate_domain_settings.csv	XLSTATE domain settings filename		
GLB:PROFILE_FILE=/xl/export/local_a/xlstate_profile.csv	XLSTATE profile check settings filename		
GLB:LOGGING=0	Logging level (0 = all off, 1 = only LOG_GENERAL on, 2 = all on)	Yes	
GLB:LOG_GENERAL=1	Log type for level GENERAL (0 = off, 1 = file only, 2 = stdout and file)		



Parameter	Description	Must set	Need restart
GLB:LOG_SCTP=0	Log type for level SCTP (0 = off, 1 = file only, 2 = stdout and file)		
GLB:LOG_CALL=1	Log type for level CALL (0 = off, 1 = file only, 2 = stdout and file)		
GLB:LOG_MAX_SIZE_MB=1024	Max file size for log files in megabytes before rotating, negative number = unlimited		
GLB:SERVER_ID=1	ID for this server	Yes	
GLB:WORKER_COUNT=4	Number of worker threads	Maybe	Yes
GLB:CLEANUP_THREAD_COUNT=4	Number of cleanup threads		Yes
GLB:NUMLIST_MAX_SIZE=10000000	Numlist storage capacity	Yes	Yes
GLB:CALLSTATE_MAX_SIZE=200000	Callstate (calls) storage capacity	Yes	Yes
GLB:DOMAIN_INFO_MAX_SIZE=10000	Domain info (call counters per domain) capacity		Yes
GLB:SYSLOG_SERVER=0	1 = enable Syslog server	Maybe	Yes
GLB:SYSLOG_DOMAIN=10	DomainID to use for advertises for Syslog calls		
GLB:SYSLOG_PORT=601	Unused		
GLB:SCTP_USE_RX_GAPS_REPORTING=0	1 = on SCTP associations report TSN gaps in SACK replies (request resend)		
GLB:EVENT_PROCESSOR_ENABLED=0	1 = enable connection to EventProcessor		Yes
GLB:EVENT_PROCESSOR_IP=0.0.0.0	EventProcessor IP		
GLB:EVENT_PROCESSOR_PORT=7601	EventProcessor port		
GLB:PROFILECHECK_MAP_SIZE=10000000	Profile check capacity (map with profiles)		Yes
GLB:PROFILE_CALLS_MAX_SIZE=100000	Profile check calls capacity (for detailed call profile tracking answer ratio, call duration etc.)		Yes
GLB:CALL_TRACKING_TIMEOUT_SECONDS=1800	Advertise timeout to use when Answer event arrives		
GLB:STAT_FILE_VERBOSITY=1	2 = print additional data into xlstate_stat.csv		



Parameter	Description	Must set	Need restart
GLB:XLSTATE_CDR_ENABLED=1	1 = xlstate CDR writing enabled		
GLB:XLSTATE_DEBUG_CDR_ENABLED=0	1 = xlstate debug CDR writing enabled		
GLB:MAX_INPUT_QUEUE_SIZE=3000	Capacity for input packet (SCTP part) queue		Yes
GLB:ATI_REQUEST_TIMEOUT_MS=1200	ATI request timeout (originating from VerifyClientState)		
GLB:ROUTING_NUMBER_NUMLIST_ID=-1	if > 0, Routing number numlist ID		
GLB:ROUTING_NUMBER_MAX_SIZE=1024	Capacity for storing and tracking routing numbers		Yes
GLB:ROUTING_NUMBER_DOMAIN_ID=-1	DomainID where routing number requests are advertised to		
GLB:ROUTING_NUMBER_TIMEOUT_MS=15000	Timeout of routing number reservation (and advertise timeout)		
GLB:LOOKUP_LINKED_LIST_SIZE_LIMIT=-1	if > 0, only add calls when linked list is shorter than specified number of elements		
GLB:RTA_ENABLED=0	1 = enable connection to XLRTA	Maybe	Yes
GLB:RTA_PROXY=0	if > 0, send Dynamic numlist request to other XLSTATE instead of to all XLSIGs	Maybe	

### 2.1.2. XLSTATE\_SS7.INI

Parameter	Description	Must set	Need restart
GLB:TIMER_ACTIVITY=10	If no RX on assoc for this many seconds, reinitialize SCTP assoc		
GLB:TIMER_HB=5	If no RX on assoc for this many seconds, send a heartbeat		
GLB:XLAPI_ASSOC=-1	Specify up to 2 indices for associations to xlapi (primary,secondary)	Yes	
GLB:XLSTATE_SYNCHRONISATION_ASSOC=-1	if > 0, index of association to other xlstate in the redundancy pair	Yes	
GLB:ATI_REQUEST_ASSOC=-1	if > 0, index of association to be used for ATI requests (to xlsig)		



Parameter	Description	Must set	Need restart
GLB:DYNAMIC_LIST_ASSOC_LIST=	zero or more association indices to where dynamic list adds are updated to (all xlsigs)		
GLB:SEND_FALSE_HISTORY=0	1 = send false SCTP history as emergency workaround for lossy connections between xlsig and xlstate, 2 = send false history only if real history not found		
GLB:USE_RX_THREADS=0	1 = 1 rx thread per SCTP association listening on the socket, 2 = 1 thread per assoc taking from single queue	Yes	Yes
GLB:RX_QUEUE_STORAGE_COUNT=1024	Capacity for RX queue in case USE_RX_THREADS=2		Yes
GLB:SCTP_ASSOC_COUNT=1	Number of SCTP Associations	Yes	Yes
ASSOC#n:DISPLAY_NAME=ASSOC	Display name for this association	Yes	
ASSOC#n:ASSOCIATION_ACTIVE=0	1 = enable this association	Yes	Assocrestart
ASSOC#n:SERVER=1	0 = perform as client (send INIT), 1 = perform as server (wait for INIT)	Yes	Assocrestart
ASSOC#n:PORT_LOCAL=0	Port number on this machine to use	Yes	Assocrestart
ASSOC#n:PORT_REMOTE=0	Port number on the remote machine to use	Yes	Assocrestart
ASSOC#n:IP_LOCAL1=0.0.0.0	First IP to use on this machine	Yes	Assocrestart
ASSOC#n:IP_LOCAL2=0.0.0.0	Second IP to use on this machine (or 0.0.0.0 to disable multihoming)	Yes	Assocrestart
ASSOC#n:IP_PEER1=0.0.0.0	First IP to use on the remote machine	Yes	Assocrestart
ASSOC#n:IP_PEER2=0.0.0.0	Second IP to use on the remote machine (or 0.0.0.0 to disable multihoming)	Yes	Assocrestart
ASSOC#n:PEER_SERVER_ID=1	Unused		
ASSOC#n:HISTORY_PACKET_MAX_SIZE=1700	History buffer for resend (outgoing) buffer size		Yes
ASSOC#n:HISTORY_PACKET_COUNT=2000	History buffer for resend (outgoing) number of buffers		Yes
ASSOC#n:QUIT_ON_SEND_HISTORY_FAILURE=0	If 1, quit if resend of history fails (requested packet not found in history)		