

NDRXCONFIG.XML(5)

REVISION HISTORY			
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Chapter 1

SYNOPSIS

```
<?xml version="1.0" ?>
<endurox>
  <appconfig>
    <sanity>SANITY_SECONDS</sanity>
    <checkpm>CHECKPM_STY</checkpm>
    <brrefresh>BRIDGE_REFRESH_TIME</brrefresh>
    <restart_min>MIN_RESTART_TIME</restart_min>
    <restart_step>RESTART_STEP</restart_step>
    <restart_max>MAX_RESTART_TIME</restart_max>
    <restart_to_check>NDRXD_RESTART_TO_CHECK</restart_to_check>
    <gather_pq_stats>NDRXD_GATHER_PQ_STATS</gather_pq_stats>
  </appconfig>
  <defaults>
    <min>MIN_SERVERS_DEFAULT</min>
    <max>MAX_SERVERS_DEFAULT</max>
    <autokill>AUTOKILL_DEFAULT</autokill>
    <env>ENV_OVERRIDE_DEFAULT</env>
    <start_max>MAX_STARTUP_TIME_DEFAULT</start_max>
    <pingtime>PING_EVERY_TIME_DEFAULT</pingtime>
    <ping_max>MAX_PING_TIME_DEFAULT</ping_max>
    <end_max>MAX_SERVER_SHUTDOWN_TIME_DEFAULT</end_max>
    <killtime>KILL_TIME_DEFAULT</killtime>
    <exportsvcs>EXPORT_SERVICES_DEFAULT</exportsvcs>
    <blacklistsvcs>BLACKLIST_SERVICES_DEFAULT</blacklistsvcs>
    <srvstartwait>NDRXD_SRV_START_WAIT_DEFAULT</srvstartwait>
    <srvstopwait>NDRXD_SRV_STOP_WAITT_DEFAULT</srvstopwait>
    <cctag>COMMON_CONFIG_TAG_DEFAULT</cctag>
    <protected>PROTECTED_SERVER_DEFAULT</protected>
    <reloadonchange>RELOAD_ON_CHANGE_DEFAULT</reloadonchange>
  </defaults>
  <servers>
    <server name="SERVER_BINARY_NAME">
      <min>MIN_SERVERS_SRV</min>
      <max>MAX_SERVERS_SRV</max>
      <autokill>AUTOKILL_SRV</autokill>
      <respawn>RESPAWN_SRV</respawn>
      <env>ENV_OVERRIDE_SRV</env>
      <start_max>MAX_STARTUP_TIME_SRV</start_max>
      <pingtime>PING_EVERY_TIME_SRV</pingtime>
      <ping_max>MAX_PING_TIME_SRV</ping_max>
      <end_max>MAX_SERVER_SHUTDOWN_TIME_SRV</end_max>
      <killtime>KILL_TIME_SRV</killtime>
      <sleep_after>SECONDS_TO_SLEEP_AFTER_SRV_START</sleep_after>
      <srvid>SERVER_ID</srvid>
    </server>
  </servers>
</endurox>
```

```

        <sysopt>ATMI_SERVER_SYSTEM_OPTIONS</sysopt>
        <appopt>ATMI_SERVER_APPLICATION_OPTIONS</appopt>
        <exportsvcs>ATMI_SERVER_EXPORT_SERVICES</exportsvcs>
        <blacklistsvcs>ATMI_BLACKLIST_SERVICES</blacklistsvcs>
        <srvstartwait>NDRXD_SRV_START_WAIT</srvstartwait>
        <srvstopwait>NDRXD_SRV_STOP_WAIT</srvstopwait>
        <cctag>COMMON_CONFIG_TAG</cctag>
        <protected>PROTECTED_SERVER</protected>
        <reloadonchange>RELOAD_ON_CHANGE_SERVER</reloadonchange>
    <fullpath>ATMI_SERVER_FULL_PATH</fullpath>
  </server>
  ...
  <server name="SERVER_BINARY_NAME_N">
    ...
  </server>
</servers>
<clients>
  <client cmdline="CLT_COMMAND_LINE [{${NDRX_CLTTAG} ${NDRX_CLTSUBSECT}}]"
    log="CLT_LOG"
    stdout="CLT_STDOUT"
    stderr="CLT_STDERR"
    env="CLT_ENV"
    CCTAG="CLT_CCTAG"
    wd="CLT_WD"
    klevel="CLT_KLEVEL"
    autostart="CLT_AUTOSTART">

        <exec tag="CLT_TAG_EXEC"
          subsect="CLT_SUBSECT_EXEC"
          log="CLT_LOG_EXEC"
          stdout="CLT_STDOUT_EXEC"
          stderr="CLT_STDERR_EXEC"
          env="CLT_ENV_EXEC"
          cctag="CLT_CCTAG_EXEC"
          wd="CLT_WD_EXEC"
          autostart="CLT_AUTOSTART_EXEC"
          klevel="CLT_KLEVEL_EXEC"
        />

        <exec tag="CLT_TAG_EXEC2"
          subsect="CLT_SUBSECT2_EXEC2"
          .../>

    </client>
    <client cmdline="BINARY2" ...>
      <exec tag="CLT_EXE_TAG2" .../>
    </client>
  </clients>
</endurox>

```

Chapter 2

DESCRIPTION

ndrxconfig.xml holds the application domain configuration. It describes the ATMI servers which needs to be started. Counts of the, how much to start. Also it describes sanity times i.e. period after which system sanity checks should be made. Also it describes time frames in which ATMI server should start or stop. Internal server ping can be configured here too.

Chapter 3

DEBUG CONFIGURATION FILE SYNTAX

SANITY_SECONDS

Number of seconds after which perform system sanity checks. This number should divide by environment variable value *NDRX_CMDWAIT*. As this actually is time by which *ndrxd* sleeps periodically.

CHECKPM_STY

This is number of sanity cycles into which check dead processes from the process model. This makes the actual checking of the PID existence system. Thus if *ndrxd* is started in learning mode and will not receive signals of the dead servers, then by setting it will discover exited processes.

BRIDGE_REFRESH_TIME

Number of sanity units in which *tpbridge* refresh should be send to other node. If for example *SANITY_SECONDS* is set to 10, and *BRIDGE_REFRESH_TIME* is set to 2 then period between bridge refreshes will be $10 * 2 = 20$ seconds. Default value is 0 - do not send full updates.

MIN_RESTART_TIME

Number of sanity units in which died server will be tried to start back. This is minimal time, means that this time is applied in case if server was running and died. If it is consecutive try, then *RESTART_STEP* is applied on this timer.

RESTART_STEP

Number to sanity units to apply on *MIN_RESTART_TIME* in case of consecutive server death. Meaning that next try of restart will be tried later than previous by this number of sanity units.

MAX_RESTART_TIME

Max number of sanity units after which server will be tried to restart. After each consecutive ATMI server death, next reboot is tried by $MIN_RESTART_TIME + RESTART_STEP * try_count$. If this goes over the *MAX_RESTART_TIME* then *MAX_RESTART_TIME* is used instead.

NDRXD_RESTART_TO_CHECK

Number of **seconds** for *ndrxd* to wait after daemon started in recovery mode. Within this time no sanity checks are performed, but instead "learning" mode is used. During this mode, *ndrxd* asks each ATMI server for its configuration. If in this time ATMI server does not respond, then ATMI server is subject of sanity checks.

NDRXD_GATHER_PQ_STATS

Settings for **pq xadmin** command. If set to Y, *ndrxd* will automatically collect stats for service queues. In future this might be used for automatic service starting and stopping.

MIN_SERVERS_DEFAULT

Default minimum number of copies of the server which needs to be started automatically. This can be overridden by *MIN_SERVERS_SRV* per server.

MAX_SERVERS_DEFAULT

Max number of ATMI server copies per ATMI server entry. The difference between MIN and MAX servers means the number of standby servers configured. They can be started by hand without system re-configuration. But they are not

booted automatically at system startup. You will have to start them with `$ xadmin start -s <server_name>` or by `$ xadmin start -i <server_id>`. This can be overridden by `MAX_SERVERS_SRV`.

AUTOKILL_DEFAULT

Should server be automatically killed (by sequence signal sequence -2, -15, -9) in case if server have been starting up too long, or does not respond to pings too long, or it is performing shutdown too long. This can be overridden by `AUTOKILL_SRV` on per server basis.

ENV_OVERRIDE_DEFAULT

Full path to file containing environment variable overrides. see `ex_envover(5)` for more details. This can be overridden by per server basis by `ENV_OVERRIDE_SRV`. Both are optional settings.

MAX_STARTUP_TIME_DEFAULT

Max time (in sanity units) in which server should start up, i.e. send init info to `ndrxd`. If during this time server have not initialized, it is being restarted. This can be overridden by `MAX_STARTUP_TIME_SRV`.

PING_EVERY_TIME_DEFAULT

Number of sanity units in which perform peridical server pings. This can be overridden by `PING_EVERY_TIME_SRV`. Zero value disables ping.

MAX_PING_TIME_DEFAULT

Number of sanity units, time in which server **must** respond to ping requests. If there is no response from server within this time, then restart sequence is initiated. This can be overridden by `MAX_PING_TIME_SRV`.

MAX_SERVER_SHUTDOWN_TIME_DEFAULT

Maximum time in which shutdown of server must complete in sanity units. If in given time server is not shutdown, then forced shutdown sequence is started until server exits. This can be overridden by `MAX_SERVER_SHUTDOWN_TIME_SRV` on per server basis.

EXPORT_SERVICES_DEFAULT

Comma separated list of services to be applied to all binaries which means the list of services to be exported by **tpbridge** server to other cluster node. This can be overridden by `ATMI_SERVER_EXPORT_SERVICES`.

BLACKLIST_SERVICES_DEFAULT

Comma separated list of services to be applied to all server binaries which means the list of services that must not be exported by **tpbridge** server to other cluster node. `ATMI_SERVER_BLACKLIST_SERVICES` is first priority over the `EXPORT_SERVICES_DEFAULT` if service appears in both lists. `BLACKLIST_SERVICES_DEFAULT` can be overridden by `ATMI_SERVER_BLACKLIST_SERVICES`.

NDRXD_SRV_START_WAIT_DEFAULT

Number of seconds to wait for servers to boot. If not started in given time, then continue with next server. This can be overridden by `NDRXD_SRV_START_WAIT`. Default value for this is 30 seconds.

NDRXD_SRV_STOP_WAIT_DEFAULT

Number of seconds to wait for server to shutdown. If not started in given time, then continue with next server. This can be overridden by `NDRXD_SRV_STOP_WAIT_DEFAULT`. Default value for this is 30 seconds.

KILL_TIME_DEFAULT

Time in sanity units after which to progress from first signal -2 to next signal -15. And after -15 this time means when next -9 signal will be sent. This is used if forced restart of forced shutdown was initiated by `ndrxd`. This can be overridden by `KILL_TIME_SRV`.

COMMON_CONFIG_TAG_DEFAULT

Common configuration tag. Loaded into `NDRX_CCTAG` environment variable before process is spawned. This can be overridden by `COMMON_CONFIG_TAG`.

PROTECTED_SERVER_DEFAULT

Protected server is one that does not shutdown with `xadmin stop` unless you pass the `xadmin stop -c` paramter (complete shutdown). Still you can run the `sreload` and stop it by `xadmin stop -i <srvvid>` or by `xadmin stop -s <servernm>`. The `xadmin restart` won't work on these because `-c` is not supposed to be used by restart. The idea behind this, is to avoid accidental stop of the critical servers, like bridge or something else which is involved into `ndrxd` daemon management it self. This can be overridden by `PROTECTED_SERVER`.

RELOAD_ON_CHANGE_DEFAULT

If set to **Y** or **y** the **ndrxd** daemon will scan the every binaries time stamp, and if it detects that time stamp is changed **ndrxd** will reload (stop/start) the XATMI servers one by one. The scanning will occur at every sanity cycle. This is recommended to be used **only** for development purposes. And must not be used on production servers! This can be overridden by **RELOAD_ON_CHANGE_SERVER** on per server basis.

SECONDS_TO_SLEEP_AFTER_SRV_START

Number of seconds to wait for next item to start after the server is launched. This is useful in cases when for example we start bridge server, let it for some seconds to connect to other node, then continue with other service startup.

SERVER_BINARY_NAME

ATMI server executable's name. The executable must be in \$PATH. This name cannot contain special symbols like path separator / and it cannot contains commas ,! Commas are used as internal queue separator combined with binary names.

RESPAWN_SRV

Do the automatic process respawning if process is died for some reason. The default value is **Y**, meaning that processes are automatically recovered. If set to **N** or **n**, then sanity checks will not automatically re-boot the process.

SERVER_ID

Server ID. It is internal ID for server instance. For each separate ATMI server the ID must be unique. Also special care should be take when **MAX_SERVERS_SRV** is greater than 1. In this case up till **MAX** servers, internally **SERVER_ID** is incremented. Thus for example if **SERVER_ID** is 200, and **MAX_SERVERS_SRV** is 5, then following server IDs will be reserved: 200, 201, 202, 203, 204. The maximum server id is set in **\$NDRX_SRVMAX** environment variable. Minimal server id is 1.

ATMI_SERVER_SYSTEM_OPTIONS

Command line system options passed to ATMI server. Following parameters are used by Enduro/X ATMI servers: **-N**, boolean type. If present, then no services will be advertised by server. In this case will be advertised only services specified by **-s** flag. For example if server advertises **SERVICE1**, **SERVICE2**, **SERVICE3**, but **-N** was specified, and **-sSERVICE3** is specified, then only service **SERVICE3** will be advertised. The **-s** argument also can contain aliases for services, for example **-sOTHERSVC:SERVICE2**, then new service **OTHERSVC** will be advertised which basically is the same **SERVICE2** (same function used). **-s** and **-N** can be mixed. **-s** can appear multiple times in system options. With one **-s** multiple services can be aliased to single existing service. The format is: **-s<NEWSVC1>/<NEWSVC2>/...<NEWSVCN>:<EXISTINGSVC>**. The **,** can be used as separator too, but for certain platforms it does not work, thus **/** is recommended. Server binaries output is controlled via **-e LOG_FILE**, which means that stdout & stderr of server is dumped to **LOG_FILE**. There are few internal params: param **-k** is just a random key for shell scripts. Another internal param is Server ID which is automatically passed to binary via **-i SERVER_ID**. Enduro/X supports automatic buffer conversion for ATMI servers. Currently supported modes are **JSON2UBF**, **UBF2JSON**, these modes are activated by **-x** paramter in system options. These modes are passed for server functions being advertised. For example if we have service **functions** (not services) **UBF1FUNC**, **UBF2FUNC** and **JSONFUNC** and we want to ensure that these receive converted messages even if caller to **UBF** service sends **JSON** and vice versa, then following options might be set to command line: **-xUBF1FUNC,UBF2FUNC:JSON2UBF -xJSONFUNC:UBF2JSON**.

ATMI_SERVER_APPLICATION_OPTIONS

Application specific command line options. This follows content after sys options as: *system options — app options*.

ATMI_SERVER_EXPORT_SERVICES

Enduro/X server specific list of services to be exported. This list is only for **tpbridge** servers.

ATMI_SERVER_BLACKLIST_SERVICES

Enduro/X server specific list of services that must not be exported. This list is only for **tpbridge** servers. Blacklist have higher priority over the Export list.

ATMI_SERVER_FULL_PATH

This is full path of the XATMI server binary. At the porcess startup this overrides the server binary name at **SERVER_BINARY_NAME**. **ATMI_SERVER_FULL_PATH** is used only for process startup. This is intended for testing, if server wrapper scripts needs to be started. But as the **ndrxd** will do the sanity checks against the process names, for time of the testing this needs to be disabled. Thus to do the testings with full path enabled, please increase the *checkpm* sanity unit time. As at the moment of process model checks, the **ndrxd** will find out that wrapped binary name does not contain the **SERVER_BINARY_NAME**, thus will reboot the process.

CLT_COMMAND_LINE

Executable name and arguments for client program. Command line basically is a format for subsection substitution. Other env variables available here too.

CLT_LOG

Logfile to which stdout and stderr is logged. Can be overridden by *CLT_LOG_EXEC* for each individual process. Optional attribute.

CLT_STDOUT

File where to log stdout. Can be overridden by *CLT_STDOUT_EXEC* for each individual process. Optional attribute.

CLT_STDERR

File where to log stderr. Can be overridden by *CLT_STDERR_EXEC* for each individual process. Optional attribute.

CLT_ENV

Environment override file. See **ex_envover(5)** for syntax. Can be overridden by *CLT_ENV_EXEC* for each individual process. Optional attribute.

CLT_CCTAG

ATMI Client lib Common-Config tag. Can be overridden by *CLT_CCTAG_EXEC* for each individual process. Optional attribute.

CLT_WD

Working directory for the process. Can be overridden by *CLT_WD_EXEC*.

CLT_AUTOSTART

Should process be started automatically? *Y* or *y* means boot at start. Can be overridden by *CLT_AUTOSTART_EXEC* for each individual process. Optional attribute. Default *n*.

CLT_TAG_EXEC

Tagname to be set for process.

CLT_SUBSECT_EXEC

Subsection to be set for process. - used as default.

CLT_KLEVEL

Kill level of the client. **0** - do not kill child processes recursively of the client, **1** - do kill child processes only when performing SIGKILL (-9), **2** - do kill on SIGTERM and SIGINT child processes. The default is **0**.

Chapter 4

EXAMPLE

Sample configuration:

```
<?xml version="1.0" ?>
<endurox>
  <appconfig>
    <sanity>10</sanity>
    <brrefresh>6</brrefresh>
    <restart_min>1</restart_min>
    <restart_step>1</restart_step>
    <restart_max>5</restart_max>
    <restart_to_check>20</restart_to_check>
  </appconfig>
  <defaults>
    <min>1</min>
    <max>2</max>
    <autokill>1</autokill>
    <start_max>2</start_max>
    <pingtime>1</pingtime>
    <ping_max>4</ping_max>
    <end_max>3</end_max>
    <killtime>1</killtime>
  </defaults>
  <servers>
    <server name="tpevsrv">
      <srvid>14</srvid>
      <min>1</min>
      <max>1</max>
      <cctag>RM1</cctag>
      <env>${NDRX_HOME}/tpevsrv_env</env>
      <sysopt>-e /tmp/TPEVSRV -r</sysopt>
    </server>
    <server name="tpbridge">
      <max>1</max>
      <srvid>100</srvid>
      <sysopt>-e /tmp/BRIDGE -r</sysopt>
      <appopt>-n2 -r -i 0.0.0.0 -p 4433 -tA</appopt>
    </server>
    <server name="cpmsrv">
      <cctag>RM2</cctag>
      <srvid>9999</srvid>
      <sysopt>-e /tmp/cpmsrv.log -r -- -k3 -il</sysopt>
    </server>
  </servers>
  <clients>
```

```
<client cmdline="testbinary -t ${NDRX_CLTTAG} -s ${NDRX_CLTSUBSECT}" ↵
  autostart="Y" cctag="RM4">
  <exec tag="TAG1" subsect="SUBSECTION1" log="${APP_LOG}/testbin1-1. ↵
    log"cctag="RM5"/>
  <exec tag="TAG2" subsect="SUBSECTION2" log="${APP_LOG}/testbin1-2. ↵
    log"/>
</client>
<client cmdline="testenv.sh" env="environment.override1" log="env1.log">
  <exec tag="TESTENV" autostart="Y"/>
</client>
</clients>
</endurox>
```

Chapter 5

BUGS

Report bugs to madars.vitolins@gmail.com

Chapter 6

SEE ALSO

`xadmin(8)`, `ndrxd(8)`, `ndrxconfig.xml(5)`, `ndrxdebug.conf(5)`, `ex_envover(5)`

Chapter 7

AUTHOR

Enduro/X is created by Madars Vitolins.

Chapter 8

COPYING

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