Temporal Server States and RD_TIMEOUT Parameters

Temporal server states and RD_TIMEOUT parameters

Changes of the server states (SS, HS, SBS, CS) are also characterized by changing its states into temporal states, which are specified by RD parameters given in seconds. The list of temporal states is shown in the following table:

State	Meaning
iNone	Stable state
iElection	Election
iWaitingHot	Waiting for **HS**
iWaitingReadyHot	Waiting for ready **HS**
iStartingKernelToSBS	Starting the server to **SBS** state
iStartingKernelToHOT	Starting the server to **HS** state
iHotOrSBSToSBS_WaitForHot	Waiting for **HS** after required change
iHotOrSBSToSBS_WaitAnsConn	Waiting for confirmation of **SBS** log on to **HS**

The basic assumption for the correct setting is to know the time (**T_START**), that is required for starting the server on particular platform. The server start time is the time from starting the server to the moment when the server is able to connect to a client. It depends mainly on the configuration database size, which is read by the server. You must realize, that the time increases along with extending the application.

iNone

Stable state. The server in this state has already read the configuration database. If the server is SBS, the configuration database is synchronized with the HS configuration database. Next configuration changes are replied in real time.

iElection

The state, when a **HS** is not selected. This state is the time, when the servers, which are able to change their states into the **HS** state, swap own **RDS** para meters (using **MULTICAST**) in order to choose a new **HS**. The state is terminated by:

1. expiration of the specified time. The server then set itself as **HS**. The server notifies the other **RDG** servers about it.
2. detection of a RDG member with a higher priority. The server then is waiting for the **HS** registration.
3. detection that a **HS** is in the **RDG**.

Recommended period of this state is 5 to 10 seconds (10 seconds for OpenVMS platforms).
RD_TIMEOUT_iElection = 7

iWaitingHot

The time period, when the server is waits for the **HS** registration. Server is in this state when:

1. there is no **HS** but there is an information that some of the **RDG** members will become the **HS** because of its priority.
2. there is no **HS** and the server cannot change its status into the **HS** state, because its priority is 0. The state will be terminated if a **HS** is registered or operator sets a HS server manually.

Recommended minimum period of the state is
RD_TIMEOUT_iWaitingHot = RD_TIMEOUT_iElection * 1.25.
It is 25 % longer than the iElection state.

iWaitingReadyHot

The time when the server waits for the ready **HS**. Server is in this state, when it is known which server is to be the **HS**, but the **HS** is not completely ready for its functioning (cannot connect a client), because is reading the configuration database. The time period of the state is at least the time **T_START**. The state is terminated, when the HS notify the other server that it is completely ready. If the server is in the state after unexpected failure of the **HS**, the server automatically changes its status to the **CS** status (it will be restarted).

Recommended minimum period is **T_START*1.5**.

RD_TIMEOUT_iWaitingHot = T_START*1.5

iStartingKernelToSBS

The time when the server:

1. is establishing the connection to the **HS**
2. is requiring the database synchronization from the **HS** and the synchronization will be successfully finished
3. is reading the configuration database

The configuration database synchronization time strongly depends on the size of the databases and the differences between them. If the server is stopped for a short time, the configuration are almost identical or minimal and the synchronization time is reduced to reading the databases.

Required minimum period of the state is **T_START*2.5**.

RD_TIMEOUT_iStartingKernelToSBS = T_START * 2.5

iStartingKernelToHOT

The server is in the state after:

1. starting if it was chosen to be the HS
2. manual switching the server with the priority of 0 to the **HS** state if there is not another **HS**

The server reads the configuration database in the state. The time period of the state is at least **T_START**.

Recommended minimum period of the state is **T_START*1.5**.

RD_TIMEOUT_iStartingKernelToHot = T_START * 1.5

iHotOrSBSToSBS_WaitForHot

Operator switches one server manually to the HS state. All servers, except the switched server, are to be in the state. The state is the time when the expectant SBS servers are waiting for confirmation of the HS state. Practically, the change takes a short time and the period should be set to the value equal to **RD_TIMEOUT_iWaitingHot**.

iHotOrSBSToSBS_WaitAnsConn

If a server is still in the **SBS** state and is waiting for confirmation or establishing the connection to the **HS** after manual switching the HS, then we can say the server is in the state **iHotOrSBSToSBS_WaitAnsConn**. Practically, the change takes a short time and the period should be set to the value equal to **RD_TIMEOUT_iWaitingHot**.

> ⓘ **Related pages:**
>
> Configuration of redundant group (Server)