

IRIS FailSafe™ INFORMIX®
Administrator's Guide

Document Number 007-3268-001

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About This Guide

This guide provides information about configuring IRIS FailSafe™ systems with the IRIS FailSafe INFORMIX® database option. This option enables INFORMIX database resources to be failed over from one node to another if a component fails. This guide is intended as a supplement to the information about configuring IRIS FailSafe included in the *IRIS FailSafe Administrator's Guide*.

This guide was prepared in conjunction with the initial release of the IRIS FailSafe INFORMIX option. It describes IRIS FailSafe INFORMIX software for INFORMIX 7.12UC1.

Audience

This guide is written for system administrators who are responsible for configuring and administering an IRIS FailSafe system with the optional IRIS FailSafe INFORMIX software. These system administrators must be familiar with INFORMIX configuration.

Structure of This Document

This guide contains three chapters and an appendix:

- Chapter 1, “IRIS FailSafe INFORMIX Overview,” describes the IRIS FailSafe components that are included in the IRIS FailSafe INFORMIX option. It also provides an overview on the steps required to add INFORMIX databases as highly available services to an IRIS FailSafe cluster.
- Chapter 2, “Configuring IRIS FailSafe for INFORMIX,” explains the procedures for adding INFORMIX databases as highly available services.
- Chapter 3, “Configuration File Blocks for INFORMIX,” contains reference information for the INFORMIX blocks in IRIS FailSafe configuration files.

- Appendix A, “Messages About Configuration File Errors,” explains the error messages and warnings from the *ha_cfgverify* command that are related to INFORMIX.

Related Documentation

For INFORMIX installation information, see the *Informix Installation Guide Version 7.1 for UNIX Products*.

Besides this guide, other documentation for the IRIS FailSafe system includes

- *IRIS FailSafe Administrator’s Guide*
- *IRIS FailSafe Programmer’s Guide*
- *IRIS FailSafe Sybase Administrator’s Guide* (IRIS FailSafe Sybase[®] option)
- *IRIS FailSafe Oracle Administrator’s Guide* (IRIS FailSafe Oracle[®] option)

The IRIS FailSafe reference pages are as follows:

- *ha_admin*(1M)
- *ha_appmon*(1M)
- *ha_cfgchksum*(1M)
- *ha_cfginfo*(1M)
- *ha_cfgverify*(1M)
- *ha_exec*(1M)
- *ha_hbeat*(1M)
- *ha_ifa*(1M)
- *ha_ifmx*(1M) (IRIS FailSafe INFORMIX option)
- *ha_killd*(1M)
- *ha_nc*(1M)
- *ha_orcl*(1M) (IRIS FailSafe Oracle option)
- *ha_spng*(1M)
- *ha_sybs*(1M) (IRIS FailSafe Sybase option)

- `http_ping(1M)` (IRIS FailSafe Web option)
- `macconfig(1M)`
- `ha.conf(4)`
- `failsafe(7M)`

Release notes are included with each IRIS FailSafe product. The names of the release notes are as follows:

<code>ha_base</code>	release notes for IRIS FailSafe
<code>ha_nfs</code>	release notes for IRIS FailSafe NFS [®]
<code>ha_www</code>	release notes for IRIS FailSafe Web
<code>ha_orcl</code>	release notes for IRIS FailSafe Oracle
<code>ha_ifmx</code>	release notes for IRIS FailSafe INFORMIX
<code>ha_sybs</code>	release notes for IRIS FailSafe Sybase

Conventions Used in This Guide

These type conventions and symbols are used in this guide:

Bold	Literal command-line arguments and literal parameter values
<i>Italics</i>	Command names, filenames, new terms, the names of <i>inst</i> subsystems, manual/book titles, variable command-line arguments, and variables to be supplied by the user in examples, code, and syntax statements
Fixed-width type	Examples of command output that is displayed in windows on your monitor and of the contents of files
Bold fixed-width type	Commands and text that you are to type literally in response to shell and command prompts
#	IRIX [™] shell prompt for the superuser (<i>root</i>)

IRIS FailSafe INFORMIX Overview

This chapter provides information about the INFORMIX database agent that is added to the base IRIS FailSafe product by the IRIS FailSafe INFORMIX option. It assumes that you are familiar with the basic components of IRIS FailSafe described in Chapter 1 of the *IRIS FailSafe Administrator's Guide*. This chapter also lists some important points about setting up INFORMIX databases and lists the steps you must take to add INFORMIX databases to the highly available services that are failed over on an IRIS FailSafe cluster.

This chapter provides information about configuring the IRIS FailSafe INFORMIX database option for use on an IRIS FailSafe system. The major sections in this chapter are as follows:

- “IRIS FailSafe INFORMIX Database Monitoring” on page 1
- “Setting Up INFORMIX Databases for IRIS FailSafe” on page 3
- “Overview of Configuring IRIS FailSafe for INFORMIX” on page 4

IRIS FailSafe INFORMIX Database Monitoring

The IRIS FailSafe INFORMIX option adds a database agent, shown in Figure 1-1, to the IRIS FailSafe base software. The database agent, `/usr/etc/ha_ifmx`, monitors INFORMIX databases regularly. If `ha_ifmx` detects a failure, it dies. When the INFORMIX local monitoring script, `/var/ha/actions/ha_ifmx_lmon`, detects that `ha_ifmx` has died, it sends a message to the application monitor and the failover process begins.

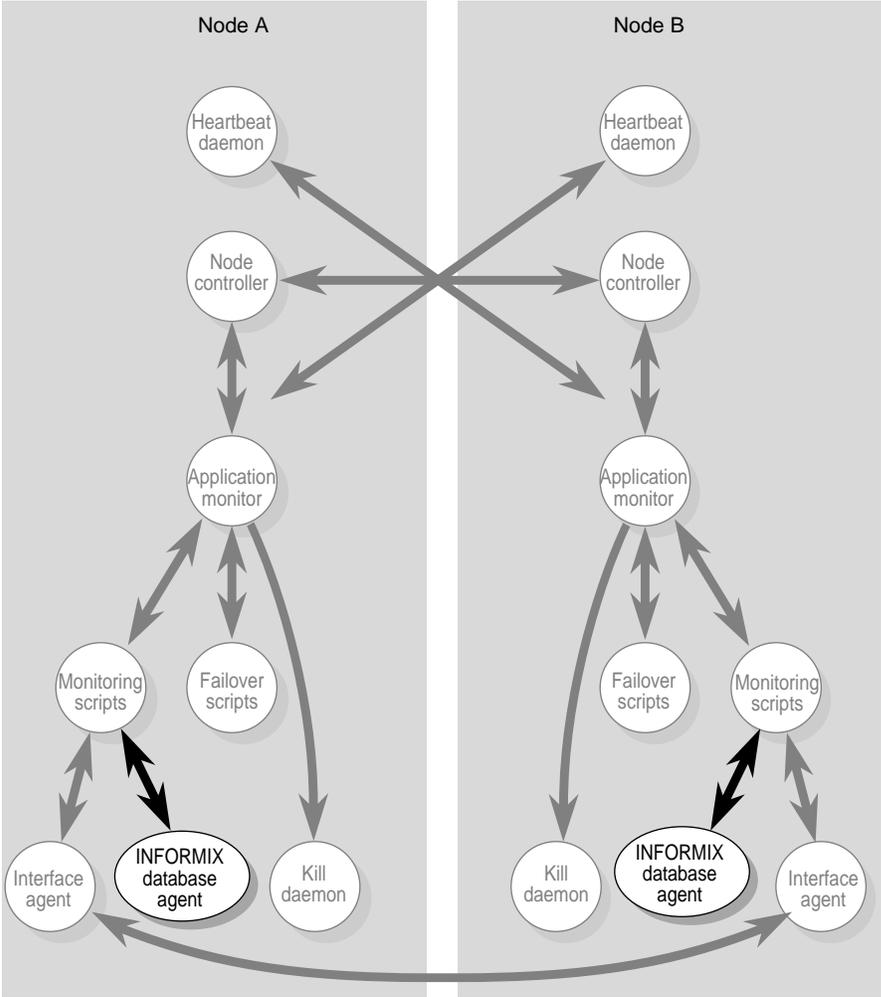


Figure 1-1 INFORMIX Database Agent Component in IRIS FailSafe

The IRIS FailSafe INFORMIX database agent can perform two types of monitoring:

- Performing an SQL query to detect the state of On-Line.
The query checks the `sh_mode` from the `sysmaster@sysshmvals` table and reports success if INFORMIX is in one of these modes: initialization, quiescent, fast recovery, archive backup, or on-line. It reports failure if the server is in shutdown mode or the system is aborting.
- Checking the output of the `onstat` command.
To check the output of the `onstat` command, the IRIS FailSafe INFORMIX database agent parses the output to look for strings that are specified in the configuration file `/var/ha/ha.conf`. If it finds any of these strings, it assumes that the INFORMIX database is running.

Setting Up INFORMIX Databases for IRIS FailSafe

When setting up INFORMIX database servers, follow these guidelines:

- IRIS FailSafe requires that all INFORMIX database servers be set up using the `root` account.
- Because IRIS FailSafe INFORMIX software runs as `root`, each INFORMIX database server must be set up so that `root` can access it to monitor it.
- The interactive logging sequence for INFORMIX users is not recommended.

The configuration files involved in setting up INFORMIX such as `$ONCONFIG`, `$INFORMIXDIR/etc/sqlhosts`, `/etc/services`, and `/etc/hosts` do not require any additional modification for IRIS FailSafe beyond the changes described in Chapter 3 of the *IRIS FailSafe Administrator's Guide*.

Overview of Configuring IRIS FailSafe for INFORMIX

To configure an IRIS FailSafe cluster for failover of INFORMIX databases, follow these steps:

1. Install, configure, and test the base IRIS FailSafe software as described in the *IRIS FailSafe Administrator's Guide*.
2. Install additional software if required. See the section "Required Software" in Chapter 2.
3. Choose how to configure INFORMIX software and databases on the disks. See the section "Planning INFORMIX Configuration" in Chapter 2.
4. Add INFORMIX information to the configuration file, */var/ha/ha.conf*. See the section "Adding INFORMIX Information to the Configuration File" in Chapter 2.
5. Install the new configuration file. See the section "Installing the Configuration File" in Chapter 2.
6. Test INFORMIX failover. See the section "Testing INFORMIX Failover" in Chapter 2.

Configuring IRIS FailSafe for INFORMIX

This chapter provides information about configuring the IRIS FailSafe INFORMIX database option for use on an IRIS FailSafe system. The major sections in this chapter are as follows:

- “Required Software” on page 5
- “Planning INFORMIX Configuration” on page 5
- “Adding INFORMIX Information to the Configuration File” on page 8
- “Testing INFORMIX Failover” on page 10

Required Software

The required software for INFORMIX failover is as follows:

- INFORMIX database software
See the *Informix Installation Guide Version 7.1 for UNIX Products* for installation instructions.
- base IRIS FailSafe software
See the section “Installing the IRIS FailSafe Software” in Chapter 2 of the *IRIS FailSafe Administrator’s Guide* for a complete list of required base software.
- IRIS FailSafe INFORMIX software
The software subsystem is *ha_ifmx.sw.base*.

Planning INFORMIX Configuration

The subsections below discuss choosing the location of key INFORMIX files and INFORMIX databases. They also describe an example configuration of INFORMIX files and the IRIS FailSafe configuration parameters for this configuration.

Choosing an INFORMIX Configuration

In configuring INFORMIX on an IRIS FailSafe cluster, consider the locations of these components:

- INFORMIX software (installed in \$INFORMIXDIR, for example */usr/informix*)
- the INFORMIX configuration file (specified by \$ONCONFIG)
- INFORMIX databases

You have the flexibility to use different copies of each component, for example INFORMIX software, for each database server (the INFORMIX software must be identical on both nodes). In addition, the INFORMIX configuration file for one database server can be different on each node. For example, if the two nodes have different amounts of memory, you may want different parameter values in the INFORMIX configuration file on the two nodes. However, the two configuration files must have identical pathnames.

To plan an IRIS FailSafe configuration for INFORMIX, you must answer these questions:

- What is the primary node of each database server?
- Do all of the database servers use the same INFORMIX software or not?
- Is the INFORMIX configuration file identical on each node for each database server or different?

After answering all of the questions above, follow these guidelines for each database server to decide whether to use shared or non-shared disks for each of the INFORMIX components for that server:

- INFORMIX databases must be on one or more XFS filesystems or XLV logical volumes that are on shared disks.
- If the INFORMIX configuration file is identical on each node, it can be on a shared disk or replicated on a non-shared disk on each node.
- If the INFORMIX configuration file is different on each node, it must be on non-shared disks on each node.
- INFORMIX software can be on a shared disk or replicated on non-shared disks (it must be identical on each node).

Example INFORMIX Configuration

For a simple INFORMIX configuration with one database server called INFORMIX1 whose primary node is *xfs-ha2*, an example configuration is as follows:

INFORMIX software

On a shared disk with \$INFORMIXDIR set to */usr/informix*.

INFORMIX configuration file

Identical on both nodes and stored in *\$INFORMIXDIR/etc/onconfig.1*, which is on the same shared disk as the INFORMIX software.

INFORMIX database

On filesystems that are on shared disk. The rootdbs is mounted at */xfs-ha2fs* on *xfs-ha2*.

Configuration Parameters for INFORMIX

Table 2-1 lists the label and configuration parameters for the INFORMIX database in the configuration described in the previous section, "Example INFORMIX Configuration."

Table 2-1 INFORMIX Configuration Parameters

Label or Parameter	Example Value	Comments
database label	INFORMIX1	Database server name.
release-dir	/usr/informix	This value is the value of \$INFORMIXDIR.
master-db-fs	/xfs-ha2fs	The value is the label of the filesystem that is used by the rootdbs for this database server.
sa-user	informix	Database user name.
config-file	onconfig.1	This value is the value of \$ONCONFIG.

Table 2-2 shows the configuration parameters that control monitoring. They are specified per database instance, so you can choose different monitoring for each database.

Table 2-2 Configuration Parameters for Monitoring

Parameter	Possible Values	Comment
monitoring-level	1 2	If the value is 1 , the <i>onstat</i> command is used for monitoring. If the value is 2 , an SQL query is used.
running-indicator-strings	"string string"	The value must begin and end with a double quote (""). It can contain one <i>string</i> or multiple <i>strings</i> separated by an "or" symbol (). See below for examples of <i>strings</i> .

An example of the parameter running-indicator-strings is

```
running-indicator-strings = "On-Line|Recovery"
```

For this example, the IRIS FailSafe INFORMIX database agent determines that the database is running if the output contains the *string* On-Line or the *string* Recovery. For example:

```
# onstat

INFORMIX-OnLine Version 7.12.UC1  -- On-Line -- Up 00:01:27 -- 9584
Kbytes
...
# onstat

INFORMIX-OnLine Version 7.12.UC1  -- Fast Recovery -- Up 00:00:10 --
9584
...
```

Adding INFORMIX Information to the Configuration File

The procedure for creating a configuration file that includes INFORMIX configuration information is described below. The procedure assumes that a configuration file that doesn't include INFORMIX has been created, installed, and tested as described in the *IRIS FailSafe Administrator's Guide*. Using the procedure, you add information to a copy of the configuration file. Installing the configuration file as */var/ha/ha.conf* on both nodes is described in the section "Installing the Configuration File" in this chapter.

1. Copy the file `/var/ha/ha.conf` to any directory on one of the nodes in the cluster.
2. Add all of the volumes that will be used for INFORMIX to the copy of `ha.conf` if they are not already specified in `ha.conf`. Be sure to specify the `devname-owner`, `devname-group`, and `devname-mode` parameters for volumes used as raw devices for INFORMIX database data. See the sections “Logical Volume Configuration” in Chapter 2 and “Volume Blocks” in Chapter 4 of the *IRIS FailSafe Administrator’s Guide* for more information.
3. Add all of the filesystems that will be used for INFORMIX to the copy of `ha.conf` if they are not already specified in `ha.conf`. See the section “Filesystem Blocks” in Chapter 4 of the *IRIS FailSafe Administrator’s Guide* for more information.
4. Append a copy of `/var/ha/templates/ha.conf.informix` to the end of the copy of the configuration file.
5. Complete the block called “application-class informix.” See the section “INFORMIX Application-Class Block” in Chapter 3 and the comments in the file for information.
6. Replicate the “informix” block so that there is one informix block for each database instance.
7. Using the configuration parameter choices you made in the section “Planning INFORMIX Configuration” in this chapter and the information in the section “INFORMIX Blocks” in Chapter 3, prepare each of the informix blocks.
8. Using information in the section “INFORMIX Blocks” in Chapter 3, prepare the “action informix” and “action-timer informix” blocks.
9. Check the configuration file with the `ha_cfgverify` command:

```
# /usr/etc/ha_cfgverify copy_filename
```

See the section “Verifying the Configuration File” in Chapter 4 of the *IRIS FailSafe Administrator’s Guide* for information about checking the configuration file with `ha_cfgverify`.

Installing the Configuration File

To install the new version of the configuration file `/var/ha/ha.conf` on each node, you must follow the procedure described in the section “Procedure C” in Chapter 7 of the *IRIS FailSafe Administrator’s Guide*.

Testing INFORMIX Failover

Follow the procedure below to test INFORMIX configuration and failover. When debugging INFORMIX failover, you can look in these places for information:

- INFORMIX log files
 - */var/adm/SYSLOG*
1. Comment out all of the INFORMIX related blocks in */var/ha/ha.conf* on one node. Do not comment out the blocks for the filesystems and volumes used for INFORMIX.
 2. Copy the copy of *ha.conf* from step 1 to the other node.
 3. Test the failover of the volumes and filesystems that are used by INFORMIX and are on shared disks using the procedures in “Testing Volumes” and “Testing Filesystems” in Chapter 5 of the *IRIS FailSafe Administrator’s Guide*.
 4. Bring up both nodes in the cluster so that they are running IRIS FailSafe and are in normal state.
 5. Bring up each INFORMIX database on its primary node using these commands (or the equivalent for your shell):

```
# setenv INFORMIXDIR release-dir
# setenv INFORMIXSERVER database-server-name
# setenv ONCONFIG config-dir
# setenv PATH ${PATH}:${INFORMIXDIR}/bin
# oninit
```

release-dir and *config-dir* are the values of the parameters in *ha.conf* with these names for the database you are starting up. *database-server-name* is the label for the *informix* block for the INFORMIX database you are bringing up.

(You can identify the primary node of an INFORMIX database by looking at its *master-db-vol* or *master-db-fs*. The volume block for *master-db-vol* or the volume on which *master-db-fs* resides lists the server-node for the volume. This is the primary node for the database.)

6. Check that the databases came up by entering the *onstat* command on each node that is a primary node:

```
# onstat
INFORMIX-OnLine Version 7.12.UC1  -- On-Line -- Up 00:01:27 --
9584 Kbytes
...
```

7. Shut down each INFORMIX database by entering these commands for each database on its primary node:

```
# setenv INFORMIXDIR release-dir
# setenv INFORMIXSERVER database-server-name
# setenv PATH ${PATH}:${INFORMIXDIR}/bin
# onmode -ky
```

8. Enter this command on each node to shut down IRIS FailSafe:

```
# /etc/init.d/failsafe stop
```

9. Uncomment all of the INFORMIX blocks in */var/ha/ha.conf* on one node.

10. Copy the copy of *ha.conf* from step 9 to the other node.

11. Enter this command on each node to start up IRIS FailSafe:

```
# /etc/init.d/failsafe start
```

12. Check that the databases came up by entering the *onstat* command on each node that is a primary node:

```
# onstat
INFORMIX-OnLine Version 7.12.UC1  -- On-Line -- Up 00:01:27 --
9584 Kbytes
...
```

13. For the first database listed in *ha.conf* (the first informix block), stop the database by entering these commands (or the equivalent for your shell) on its primary node:

```
# setenv INFORMIXDIR release-dir
# setenv INFORMIXSERVER database-server-name
# setenv ONCONFIG config-dir
# setenv PATH ${PATH}:${INFORMIXDIR}/bin
# onmode -ky
```

(See step 5 for an explanation of *release-dir*, *config-dir*, and the primary node.)

14. Check that IRIS FailSafe fails over the database that you killed and all other highly available services on that node to the other node.

15. Confirm that the node on which you stopped the database is in standby state:

```
# /usr/etc/ha_admin -i
ha_admin: Node controller state standby
```

16. On the node that is now in standby state, enter this command to reintegrate it into the cluster:

```
# /usr/etc/ha_admin -fr
```

17. Check that the highly available services that failed over in step 14 are stopped and restarted on their original node.
18. For each of the remaining INFORMIX databases listed in *ha.conf*, repeat steps 13 through 17 to verify that they fail over properly when stopped or killed.

Configuration File Blocks for INFORMIX

Configuration parameters for INFORMIX must be specified in the configuration file `/var/ha/ha.conf`. The sections in this chapter describe each INFORMIX specific block that must be added and the configuration parameters within each of those blocks. The sections are as follows:

- “INFORMIX Application-Class Block” on page 13
- “INFORMIX Blocks” on page 14
- “INFORMIX Action and Action-Timer Blocks” on page 18

The examples in this chapter show the INFORMIX configuration file blocks for the example discussed in the sections “Example INFORMIX Configuration” and “Configuration Parameters for INFORMIX” in Chapter 2.

INFORMIX Application-Class Block

Example 3-1 shows the application-class block in an INFORMIX configuration.

Example 3-1 INFORMIX Application-Class Block

```
application-class informix
{
    server-node = xfs-ha1
    agent = /usr/etc/ha_ifmx
}
```

The application-class informix block contains these configuration parameters:

<code>server-node</code>	Lists a node that is a primary server for INFORMIX. In this example, just one node is listed because just one node is a primary node for INFORMIX. If both nodes are primary nodes for INFORMIX, <code>server-node</code> is listed twice.
<code>agent</code>	The full pathname of the database agent for INFORMIX. You should not change this parameter.

INFORMIX Blocks

Example 3-2 shows an example informix block. Each informix block in an INFORMIX configuration file lists the volume or filesystem used by the INFORMIX master database, the INFORMIX user and password for the database, timeout and retry parameters, and an availability for the database.

Example 3-2 INFORMIX Block

```
informix INFORMIX1
{
    master-db-vol = voll
    unix-user = informix
    sa-user = informix
    sa-passwd = sa_passwd
    release-dir = /usr/informix
    config-file = onconfig.informix1
    shutdown-options = 2
    monitoring-level = 1
    running-indicator-strings = "On-Line|Recovery"
    db-avail = high
    db-probe-time = 120
    db-timeout = 120
    start-monitor-time = 300
    db-retry-count = 1
}
```

The configuration parameters used in informix blocks are as follows:

- | | |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| master-db-vol | The value must match the label of a volume block. See the discussion at the end of this section about master-db-vol and master-db-fs for information about which volume block label to use. This parameter or master-db-fs must be specified. |
| master-db-fs | The value must match the label of a filesystem block. See the discussion at the end of this section about master-db-vol and master-db-fs for information about which filesystem block label to use. This parameter or master-db-vol must be specified. |
| unix-user | The IRIX login name that is the owner of the INFORMIX release directory. |
| sa-user | The INFORMIX login name of the INFORMIX database system administrator. This parameter is required. |

sa-passwd	The unencrypted password of the INFORMIX database system administrator (sa-user). This parameter should be omitted if there is no password.
release-dir	The INFORMIX release directory specified in the INFORMIX configuration. This value is the value of the environment variable INFORMIXDIR. This parameter is required.
config-file	The configuration file for this node. Its value is the value of the ONCONFIG environment variable.
shutdown-options	<p>Defines how the INFORMIX database is shut down on a failover. It is required. The possible values are:</p> <ul style="list-style-type: none">0—Normal shutdown1—Shutdown with nowait and no checkpointing2—Shutdown with nowait with checkpointing
monitoring-level	<p>Defines which test is done to determine if INFORMIX is up. If the value is 1, the database agent executes the <i>onstat</i> command and searches the output for the pattern specified by <i>running-indicator-strings</i>. If there is a match, the database is up. If the value is 2, the database agent uses a database call to determine if INFORMIX is up.</p>
running-indicator-strings	<p>A string that is used as a search pattern in determining if On-Line is up. The output of the <i>onstat</i> command is searched (see the <i>INFORMIX-OnLine Dynamic Server Database Server Administrator's Guide Volume 2</i> from INFORMIX, Inc. for information about <i>onstat</i>). The string must begin and end with double-quotes. An OR symbol () can be used in the string to separate multiple search patterns. The string cannot contain any blanks and the search is case-sensitive. This parameter is required if <i>monitoring-level</i> is 1.</p>
db-avail	<p>The possible values are high and low. If the value is high and the database fails, the database agent sends a message to the application monitor that tells the application monitor to fail over this database and all other services on the volume. If the value is low and the database fails, the database agent sends mail to the address indicated by the <i>mail-dest-addr</i> parameter.</p>

- `db-probe-time` Defines the length of time (in seconds) between the completion of one probe of the database by the INFORMIX database agent and the beginning of the next probe. This parameter is required.
- `db-timeout` Defines the time the INFORMIX database agent waits for a response to its probe from the INFORMIX database instance in seconds. This parameter is required.
- `start-monitor-time` The amount of time that the INFORMIX database agent waits after receiving a message to start monitoring before it performs its first probe of the INFORMIX database instance. This wait ensures that the database instance has had time to start up.
- `db-retry-count` The number of monitoring retries by the database agent before a failure is declared.

The informix blocks list only the volume or filesystem of the master database; they do not list all volumes and filesystems that are part of the database. This is because the default monitoring of the database accesses the master volume or filesystem only. However, the configuration file must list all volumes and filesystems used by each database in volume and filesystem blocks. The IRIS FailSafe system uses the volume and filesystem blocks as a specification of the shared storage that must be online prior to bringing up the database.

Figure 3-1 shows the monitoring frequency parameters in each informix block. They control the monitoring of a database instance by the INFORMIX database agent.

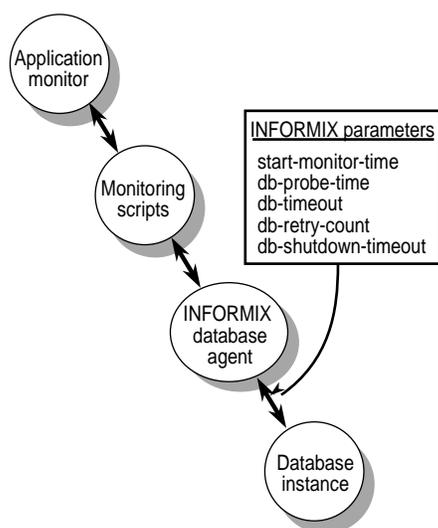


Figure 3-1 Monitoring Frequency Configuration Parameters in INFORMIX Blocks

Table 3-1 lists each of these monitoring frequency parameters and their suggested values. It also describes relationships between different parameters and the rounding that occurs for some parameter values.

Table 3-1 Values for Monitoring Frequency Configuration Parameter in INFORMIX Blocks

Parameter	Suggested Value	Comments
start-monitor-time (informix block)	300	Rounded to the nearest ten seconds.
db-probe-time	120	Rounded to the nearest ten seconds.
db-timeout	120	Rounded to the nearest ten seconds.
db-retry-count	1	

INFORMIX Action and Action-Timer Blocks

Example 3-3 shows the action and action-timer blocks for INFORMIX. The action block specifies the pathnames of the local monitoring script and the action-timer block specifies monitoring timing and timeout values for the monitoring of the INFORMIX database agent by the application monitor.

Example 3-3 INFORMIX Action and Action-Timer Blocks

```
action informix
{
    local-monitor = /var/ha/actions/ha_ifmx_lmon
}

action-timer informix
{
    start-monitor-time = 300
    lmon-probe-time = 60
    lmon-timeout = 30
    retry-count = 2
}
```

The parameters used in action and action-timer blocks for INFORMIX are as follows:

local-monitor The pathname of the local monitoring script for INFORMIX. Do not change this value.

start-monitor-time Specifies the amount of time that the application monitor waits before it starts using the local monitoring script to monitor the INFORMIX database agent. The value of this parameter should be greater than or equal to the largest value specified for start-monitor parameters in any of the informix blocks and it should be greater than or equal to the value of long-timeout.

lmon-probe-time Local monitoring of the INFORMIX agent is done this often (in seconds). Be aware that there is a performance penalty for monitoring the INFORMIX agent too frequently.

- lmon-timeout** Local monitoring of the INFORMIX agent times out in this many seconds if no response is received.
- retry-count** Specifies the number of probes done by the database agent during each probe seen by the application monitor. This value doesn't affect the lmon-timeout value.

Figure 3-2 shows the monitoring parameters in the "action-timer informix" block. They control the monitoring of the INFORMIX database agent by the local monitoring script.

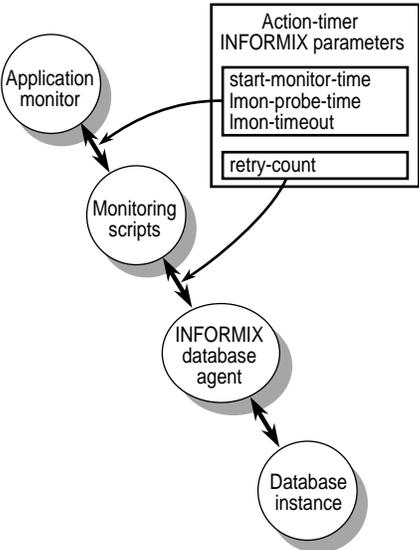


Figure 3-2 Monitoring Configuration Parameters in the Action-Timer Block for INFORMIX

Table 3-2 lists each of these monitoring parameters and their suggested values. It also describes relationships between different parameters and the rounding that occurs for some parameter values.

Table 3-2 Values for Monitoring Frequency Configuration Parameter in INFORMIX Action-Timer Blocks

Parameter	Suggested Value	Comments
start-monitor-time (action-timer block)	300	Should be greater than or equal to the value of long-timeout and greater than or equal to the largest of the values specified for start-monitor-time in any of the informix blocks.
lmon-probe-time	60	
lmon-timeout	30	
retry-count	2	This value doesn't affect the lmon-timeout value.

Messages About Configuration File Errors

This appendix lists the error messages and warnings that can appear as output of the `ha_cfgverify` command that are related to INFORMIX configuration. Other messages are described in Appendix A of the *IRIS FailSafe Administrator's Guide*.

Note: `ha_cfgverify` generates warnings when a possible error exists, but it is unable to determine for sure. You must check each warning manually. A warning could indicate invalid IRIS FailSafe configuration.

The error messages are given in alphabetical order.

```
ha_cfgverify : informix <informix_block_label> section must have
config-file entry
```

```
ha_cfgverify : informix <informix_block_label> section must have db-avail
entry
```

The db-avail value is missing in the informix block.

```
ha_cfgverify : informix <informix_block_label> section must have
db-probe-time entry
```

The db-probe-time value is missing in the informix block.

```
ha_cfgverify : informix <informix_block_label> section must have
db-retry-count entry
```

The db-retry-count value is missing in the informix block.

```
ha_cfgverify : informix <informix_block_label> section must have
db-timeout entry
```

The db-timeout value is missing in the informix block.

```
ha_cfgverify: informix <informix_block_label> section must have either
master-db-vol or master-db-fs entry
```

Either master-db-vol or master-db-fs must be specified.

ha_cfgverify : informix <informix_block_label> section must have monitoring-level entry

The monitoring-level value is missing in the informix block.

ha_cfgverify : informix <informix_block_label> section must have release-dir entry

You must specify release-dir in the informix block.

ha_cfgverify : informix <informix_block_label> section must have running-indicator-strings entry

The running-indicator-strings value is missing in the informix block.

ha_cfgverify : informix <informix_block_label> section must have sa-user entry

The sa-user value must be present in the informix block.

ha_cfgverify : informix <informix_block_label> section must have shutdown-options entry

The shutdown-options value is missing in the informix block.

ha_cfgverify : informix <informix_block_label> section must have start-monitor-time entry

The start-monitor-time value is missing in the informix block.

ha_cfgverify : informix <informix_block_label> section must have unix-user entry

The unix-user value is missing from the informix block.

ha_cfgverify : informix <informix_block_label> section: db-avail entry <value> must be either "high" or "low"

The db-avail value must be **high** or **low**.

ha_cfgverify : informix <informix_block_label> section: monitoring-level <value> must either 0 or 1

The monitoring-level value must be **0** or **1**.

ha_cfgverify : informix <informix_block_label> section: release-dir entry
<value> is invalid

The release-dir value is not a valid directory name.

ha_cfgverify : informix <informix_block_label> section: sa-passwd entry
is missing. Assuming no sa-passwd

This message is not an error message.

ha_cfgverify : informix <informix_block_label> section: shutdown-options
<value> must either 0 or 1 or 2

The shutdown-option value must be **0, 1, or 2**.

ha_cfgverify : informix <informix_block_label> section: unix-user entry
<value> is invalid

The unix-user value is not a valid user. Check the password file.

ha_cfgverify: No informix section present in the file

There is an informix application-class block, but there is no informix block.

ha_cfgverify: informix <informix_block_label>: the master-db-fs entry
<filesystem> is invalid

The master-db-fs value must match the label of a filesystem block.

ha_cfgverify : the master-db-vol entry <xlv_volume> is invalid

The master-db-vol value must match the label of a volume block.

