

**CMVC frequently asked questions:
How to perform typical operations with Informix 7
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Angel Rivera, Kevin Postreich

CMVC Direct Customer Support
IBM Software Solutions
Research Triangle Park, North Carolina, USA
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ABSTRACT

This technical report provides a collection of hints and tips for CMVC family administrators that use the Informix database management system (DBMS), Version 7. Some of the scenarios are:

- Installing and configuring Informix.
- Starting and stopping Informix.
- Creating a CMVC family under Informix.
- Backup and restore of Informix databases.
- Accessing the CMVC tables.
- Error messages and how recover from them.

ITIRC KEYWORDS

- CMVC
- Informix

ABOUT THE AUTHORS

ANGEL RIVERA

Mr. Rivera is an Advisory Software Engineer and team lead for the CMVC Direct Customer Support team. He joined IBM in 1989 and since then has worked in the development and support of library systems.

Mr. Rivera has an M.S. in Electrical Engineering from The University of Texas at Austin, and B.S. in Electronic Systems Engineering from the Instituto Tecnológico y de Estudios Superiores de Monterrey, México.

KEVIN POSTREICH

Mr. Postreich is a staff software engineer with the VisualAge TeamConnection development group. He joined IBM in 1980 as an electronic engineer in Charlotte, North Carolina. He relocated to RTP as an MVS systems programmer.

Mr. Postreich is currently a member of the TeamConnection development/test team, and a member of the direct customer support team.

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Updated appropriate sections to include HP-UX 11 and Informix Client SDK 2.20 (which replaces ESQL/C) and Dynamic Server 7.31.

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INTRODUCTION

This technical report provides a collection of hints and tips for CMVC family administrators that use the Informix database management system (DBMS), version 7.

The chapters in this TR are organized in the expected sequence of utilization of Informix from a CMVC point of view:

- Chapter “Installing Informix” on page 5 provides some overall recommendations for installing Informix.
- Chapter “Configuring Informix” on page 11 describes how to configure Informix in order to properly create and support CMVC 2.3.1 families.
- Chapter “Starting and stopping the Informix DBMS” on page 19 describes how to start, stop, query the status, verify, and find out the version of the Informix DBMS. Chapter “Creating a database for a CMVC family” on page 23 describes how to create a CMVC family under Informix.
- Chapter “Backup and restore” on page 27 describes how to perform a backup of the database and how to restore it.
- Chapter “Accessing the Informix database tables” on page 29 provides procedures for accessing the database tables and views used by CMVC.
- Chapter “Common error messages with Informix” on page 35 describes the most common error messages that a CMVC family administrator may encounter when working with Informix, and how to recover from them.

DISCLAIMERS

To avoid misunderstandings with the purpose of this technical report and to better understand its scope, the following disclaimers are in order:

- This technical report is not an official publication from the CMVC group. The authors are solely responsible for its contents.
- This technical report was prepared when working with Informix Dynamic Server:
 - 7.23 in AIX 4.2.1
 - 7.24 in HP-UX 10.20
 - 7.31 in HP-UX 11.00

Therefore, if you have a different version of the mentioned software, then you may expect some differences in the information or in the procedures described in this technical report.

- This technical report covers information that has the author has gathered thru the years while working with the CMVC technical support team.
- It is the intention of this technical report to provide recommendations and guidelines that can be helpful to CMVC administrators when using CMVC families where the database is stored in Informix. In some cases, the procedures will not be exhaustive, and will just show the overall sequence that has worked before, which might be different in your case.
- Real values that were used in our setup will be used in this technical report. Thus, you will need to customize the commands that you issue to reflect the values that are meaningful to your setup.
- It is assumed that the reader has knowledge of CMVC, Informix and the appropriate operating system.

This technical report is not a substitute to the information provided by Informix, CMVC and the appropriate operating system. Please refer to the appropriate documentation provided with the corresponding software.

YEAR 2000 READINESS FOR CMVC AND INFORMIX

CMVC 2.3.1 provides support for the Year 2000

CMVC 2.3.1 is a new version-release-modification of CMVC (branched from CMVC 2.3.0.24) which uses 4 digits to represent the years instead of the 2 digits used in 2.3.0 and previous versions. Thus, CMVC 2.3.1 provides support for the Year 2000. For more details on CMVC and its Year 2000 readiness status, see the file:

<ftp://ftp.software.ibm.com/ps/products/cmvc/README.year2000.txt>

Informix 7.2 and 7.3 are Year 2000 ready

Informix 7.2 and 7.3 are Year 2000 ready, according to the information provided in:

<http://www.informix.com/informix/products/year2000.htm>

HOW TO GET THE MOST UP TO DATE VERSION OF THIS TECHNICAL REPORT.

The most up to date version of this technical report can be obtained from the IBM CMVC ftp site at URL:

<ftp://ftp.software.ibm.com/ps/products/cmvc/doc/tr/trcmfinf.txt>

For the list of available technical reports, see the file:
<ftp://ftp.software.ibm.com/ps/products/cmvc/doc/tr/README.index.txt>

ACKNOWLEDGEMENTS

Many of the questions and answers that are compiled in this technical report were obtained from the CMVC forum in the IBMPC conferencing disk and from the CMVC6000 forum in the IBMUNIX conferencing disk. We want to thank the main participants in these electronic forums for their support!

We want to thank in particular the following co-workers:

- Edna Wong Kyu, OEM Lab in IBM RTP, North Carolina, USA.
- Keith Purcell, OEM Lab in IBM RTP, North Carolina, USA.

INSTALLING INFORMIX

This chapter provides some overall recommendations when installing Informix.

You need to consult the following manual (or its equivalent) for the details on the requirements and installation steps:

- AIX and HP-UX 10.20

Informix, Unix Products, Installation Guide, Version 7.21

- HP-UX 11.00

For the new Client SDK:

Informix Client Products, Installation Guide, for UNIX, Version 2.2

For SQL:

Informix, Unix Products, Installation Guide, Version 7.21

For Dynamic Server:

Installation Guide, for Informix Dynamic Server, on UNIX, Version 7.3

It is assumed that this is the first installation of Informix in your server. That is, this TR does not explain how to perform advanced installation/upgrade tasks.

NUMBER OF LICENSES NEEDED FOR INFORMIX

The minimum number of user licenses required by Informix to run 4 CMVC daemons and all the other CMVC tools is shown below:

```
1 license for isql/dbaccess to query the database
1 license for the notify daemon
1 license for chfield
1 license for other CMVC tools, such as vcPath
4 one license for each cmvcd daemon.
---
8 Total
```

However, the number of user licenses required depends on the number of CMVC server daemons started by the CMVC administrator. This number varies depending on the number of CMVC clients that simultaneously request service from the CMVC server.

ORDER OF INSTALLATION

This is the order of installation for the Informix products in our development/test machines:

1. ESQL/C (New name: Informix Client SDK)

Starting with Informix 7.2, the component ESQL/C became a software requirement for running the CMVC tools: vcPath and resetAge.

- AIX: 7.24 (old name: ESQL/C)
- HP-UX 10.20: 7.23 (old name: ESQL/C)
- HP-UX 11.00: 2.20 (new name: Informix Client SDK)

2. Informix SQL

- AIX: 7.20
- HP-UX 10.20: 7.20
- HP-UX 11.00: 7.20

3. Informix Online Dynamic Server (IDS)

- AIX: 7.24
- HP-UX 10.20: 7.23
- HP-UX 11.00: 7.31

Need to install Informix ESQL/C 7.2 or higher for resetAge and vcPath

Due to a change in library files between Informix 7.1 and 7.2, it is necessary to install the extra product Informix ESQL/C (new name: Informix Client SDK) when running on Informix 7.2 or higher, in order to properly use resetAge or vcPath. Otherwise, you will be getting a core dump and messages such as:

```
/usr/lib/dld.sl: Can't open shared library: /usr/informix/lib/esql/libixglx.sl  
/usr/lib/dld.sl: No such file or directory.
```

ONE-TIME SYSTEM ACTIVITIES TO PREPARE FOR THE INSTALLATION

1. Login as root.
2. Create a new group, such as "informix".
3. Create a new user id, such as "informix" that belongs to the "informix" group. This will be known as "the Informix user id".

The home directory used in this document is /usr/informix; this is the value for the environment variable \$INFORMIXDIR.

INSTALLING ESQL/C (NEW NAME: INFORMIX CLIENT SDK)

1. Login as root.

2. Set up the environment variables:

```
INFORMIXDIR=/usr/informix
export INFORMIXDIR
```

```
PATH=$INFORMIXDIR/bin:$PATH
export PATH
```

3. Change to the \$INFORMIXDIR directory:

```
cd $INFORMIXDIR
```

4. Mount the CD-ROM, such as:

```
AIX: mount -v'cdrfs' -r'' /dev/cd0 /cdrom
HP-UX: mount /dev/dsk/c1t2d0 /cdrom
```

5. Transfer the software from the CD-ROM to the current directory. Use the statement included in the serial-number keycard provided by Informix:

- For ESQL/C:

```
AIX: cpio -icdumvB < /dev/cd0
HP-UX: cpio -icdumvB < "/cdrom/ESQL.CPI;1"
```

HP-UX: Notice that because the CD-ROM that we received was not prepared in a CD-ROM driver/software that supported the Backridge standard, then the double quotes had to be given for the file name.

- Execute the installation script:

```
./installesql
```

Provide the data requested from the installation script. The data can be found in the serial-number keycard provided by Informix.

- For Client SDK:

```
HP-UX: tar -xvf /cdrom/CLISDK/CLISDK.TAR
```

- Execute the following installation script:

```
./installclientsdk
```

Notice that the installesql script is an identical copy of installclientsdk. Thus, there is no need to run installesql.

Answer "no" to the rather confusing question:

```
Is ClientSDK being installed along with Informix Dynamic Server with
Universal Data Option (Release 9, required to be run as user "informix"?
```

Provide the data requested from the installation script. The data can be found in the serial-number keycard provided by Informix.

6. Un-mount the CD-ROM:

```
umount /cdrom
```

INSTALLING SQL

1. Login as root.

2. Set up the environment variables:

```
INFORMIXDIR=/usr/informix  
export INFORMIXDIR
```

```
PATH=$INFORMIXDIR/bin:$PATH  
export PATH
```

3. Change to the \$INFORMIXDIR directory:

```
cd $INFORMIXDIR
```

4. Mount the CD-ROM, such as:

```
AIX: mount -v'cdrfs' -r'' /dev/cd0 /cdrom  
HP-UX: mount /dev/dsk/c1t2d0 /cdrom
```

5. Transfer the software from the CD-ROM to the current directory. Use the statement included in the serial-number keycard provided by Informix, such as:

```
AIX: tar -xvf /dev/cd0  
HP-UX: tar -xvf "/cdrom/SQL.TAR;1"
```

HP-UX: Notice that because the CD-ROM that we received was not prepared in a CD-ROM driver/software that supported the Backridge standard, then the double quotes had to be given for the file name.

6. Execute the installation script:

```
./installsql
```

Provide the data requested from the installation script. The data can be found in the serial-number keycard provided by Informix.

7. Un-mount the CD-ROM:

```
umount /cdrom
```

INSTALLING IDS (INFORMIX ONLINE DYNAMIC SERVER)

1. Login as root.

2. Set up the environment variables:

```
INFORMIXDIR=/usr/informix
export INFORMIXDIR
```

```
PATH=$INFORMIXDIR/bin:$PATH
export PATH
```

3. Change to the \$INFORMIXDIR directory:

```
cd $INFORMIXDIR
```

4. Mount the CD-ROM, such as:

```
AIX: mount -v'cdrfs' -r'' /dev/cd0 /cdrom
HP-UX: mount /dev/dsk/c1t2d0 /cdrom
```

5. Transfer the software from the CD-ROM to the current directory. Use the statement included in the serial-number keycard provided by Informix, such as:

```
AIX, Online 7.2: cpio -icdumvB < /dev/cd0
HP-UX, Online 7.2: cpio -icdumvB < /cdrom/ONLINE/ONLINE.CPI
HP-UX, Dynamic 7.3: cpio -icdumvB < /cdrom/SERVER/IDS.CPI
```

6. Execute the installation script for Online Dynamic Server 7.2:

```
./installonline
```

Provide the data requested from the installation script. The data can be found in the serial-number keycard provided by Informix.

7. Execute the installation script for Dynamic Server 7.3:

```
./installserver
```

Provide the data requested from the installation script. The data can be found in the serial-number keycard provided by Informix.

8. Un-mount the CD-ROM:

```
umount /cdrom
```


CONFIGURING INFORMIX

This chapter describes how to configure Informix in order to properly support CMVC 2.3.1 families.

The instructions from the following manual allow you to build an OnLine database server that is suitable for a few users and databases of a moderate size:

INFORMIX-OnLine Dynamic Server
Administrator's Guide, Volume 1, Version 7.x
Chapter 3, "Installing and Configuring OnLine"

CHOOSE NAMES FOR CONFIGURATION ITEMS

To perform the tasks in this section you need to login as the Informix user id (such as informix).

In this section you will choose names for your configuration file, your database server and your service name. The details for the configuration of the files mentioned in this section will be explained later; this section shows only how the items are used.

- Configuration file (ONCONFIG)

Choose a name for your ONCONFIG configuration file to indicate how the file is used. In this document, a variation (ppc3) of the hostname (oem-ppc3) is used as an identifier. For example, in the .profile file, the following environment variable will indicate the file name:

```
ONCONFIG=onconfig.ppc3
export ONCONFIG
```

The actual location of the ONCONFIG configuration file will be:

```
$INFORMIXDIR/etc/$ONCONFIG
```

In this example, once the values are substituted, the full path for the configuration file will be:

```
/usr/informix/etc/onconfig.ppc3
```

- Database server (DBSERVERNAME)

Choose a name for your OnLine database server, which will be known as DBSERVERNAME. You will use this value in many places:

- ONCONFIG configuration file:

The DBSERVERNAME is defined in the ONCONFIG configuration file which is located in \$INFORMIXDIR/etc/\$ONCONFIG. In this document, a variation (oem_ppc3) of the hostname (oem-ppc3) is used.

```
DBSERVERNAME    oem_ppc3          # Name of default database server
```

- INFORMIXSERVER environment variable in .profile for the Informix user id. In this document, a variation (oem_ppc3) of the hostname (oem-ppc3) is used.

```
INFORMIXSERVER=oem_ppc3
export INFORMIXSERVER
```

- INFORMIXSERVER environment variable in .profile for the CMVC family user id. In this document, a variation (oem_ppc3) of the hostname (oem-ppc3) is used.

```
export INFORMIXSERVER=oem_ppc3
```

- SQLHOSTS file

The DBSERVERNAME is used in the first column of the SQLHOSTS file (\$INFORMIXDIR/etc/sqlhosts). For example, the DBSERVERNAME name is "oem_ppc3":

```
oem_ppc3  onsoctcp          oem-ppc3          online3
```

- Service name

The service name will identify the particular Informix OnLine database in a given host.

The service name MUST be unique and should NOT be set to an existing user id. That is, do NOT use the user id informix, nor any of the CMVC family names that will use Informix. If you use an existing user id for the Informix service name, you will have connectivity problems that are extremely difficult to diagnose:

```
0010-381 cmvc client software is not compatible with the cmvc server
          software for this action.
0010-256 An error ...
```

The service name, which in this document will be "online3", is used in the following files:

- /etc/services

The service name is properly defined in /etc/services, for example:

```
online3      1301/tcp          # informix service-name
```

If the service name is not present in /etc/services, then you will encounter the following runtime problem with CMVC:

```
0010-063: Database error -931, cannot locate %s server/tcp servers
          in /etc/services
```

- Connectivity file (SQLHOSTS)

The service name is used in the fourth (last) column of the SQLHOSTS file (\$INFORMIXDIR/etc/sqlhosts). For example, the service name is "online3":

SET ENVIRONMENT VARIABLES

The default profile provided by the Informix installation is in Bourne shell.

The following environment variables for the Informix user id need to be correctly set before you can initialize the Informix OnLine master database:

- **INFORMIXDIR:** it should have the full pathname of the directory where the Informix products are installed. It is the directory just above the "bin" directory, in that way, this variable can be used to specify the Informix bin directory as follows:

```
INFORMIXDIR=/usr/informix
export INFORMIXDIR
```

- **ONCONFIG:** it specifies the name of the active ONCONFIG configuration file. If this variable is not present, then OnLine uses the configuration values from the file `$INFORMIXDIR/etc/onconfig`.

```
ONCONFIG=onconfig.ppc3
export ONCONFIG
```

Thus, the location of the ONCONFIG configuration file is:

```
$INFORMIXDIR/etc/$ONCONFIG
```

- **PATH:** it should include `$INFORMIXDIR` and `$INFORMIXDIR/bin`

```
PATH=$PATH:.$INFORMIXDIR:$INFORMIXDIR/bin
export PATH
```

- **INFORMIXSERVER:** it specifies the name of the default database server. You set it to the same value used in the `DBSERVERNAME` configuration parameter in the ONCONFIG file. If this variable is not set, then OnLine does not build the sysmaster tables, and the ON-Monitor and DB-Access utilities will not work.

```
INFORMIXSERVER=oem_ppc3
export INFORMIXSERVER
```

- **TERM, TERMCAP or TERMINFO, INFORMIXTERM:** They specify the type of terminal interface.
- A typical usage of these variables in the `.profile` is shown below.

```
INFORMIXDIR=/usr/informix
export INFORMIXDIR
```

```
ONCONFIG=onconfig.ppc3
export ONCONFIG
```

```
INFORMIXSERVER=oem_ppc3
export INFORMIXSERVER
```

```
INFORMIXTERM=termcap
export INFORMIXTERM
```

```
TERMCAP=$INFORMIXDIR/etc/termcap
export TERMCAP
```

```
TERM=vt100
export TERM
```

- Logout and login again to refresh the environment by using the most up to date version of the profile.
- Verify the settings:
set | grep -i INF

ALLOCATE DISK SPACE FOR DATA STORAGE

In this document, "cooked file space" is used for the Informix "chunks" which are the biggest unit of physical disk storage. Cooked file space refers to ordinary Unix files.

It is necessary to create the initial "chunk", which for handling CMVC families needs to take at least 30 MB of disk space, which is specified by the ROOTSIZE parameter in the ONCONFIG configuration file.

Informix recommends to create the initial chunk in a directory that is NOT the home directory of user informix (\$INFORMIXDIR). Furthermore, the file should be in a place where user informix should have write permission.

To create the initial chunk for Informix, do the following as user root:

```
# cd /disk2 # or the appropriate directory
# cat /dev/null > informix_chunk
# chmod 660 informix_chunk
# chown informix:informix informix_chunk
# ls -l informix_chunk
-rw-rw---- 1 informix informix 0 Jun 22 12:36 informix_chunk
```


PREPARE THE ONCONFIG CONFIGURATION FILE

The ONCONFIG configuration file contains values for parameters that describe the OnLine environment. This file resides in \$INFORMIXDIR/etc.

Do not alter the default onconfig.std, instead, copy it into a new file with the name that you have selected already (such as ppc3), and then modify the new file:

```
$ login informix
$ cd etc
$ cp onconfig.std onconfig.ppc3
```

It is necessary to customize some parameters in this file. In our case, the parameters that were changed are shown below. Consult the Informix documentation in case that you need to modify other variables to suit your environment.

- Title of the ONCONFIG configuration file.

Although it is a comment, it is important to be consistent:

```
# Title:      onconfig.ppc3
```

- ROOTPATH

It is the full directory pathname of the cooked file that you just created:

```
ROOTPATH /disk2/informix_chunk # Path for device containing root db
```

- ROOTSIZE

Indicates the initial size for the chunk. In order to accommodate CMVC databases of moderate size, the value needs to be changed from the default 20000 (20 MB) to at least 30000 (30 MB) to avoid a problem of not enough space in the root dbspace during the Informix initialization command, which is "oninit -i".

```
ROOTSIZE      30000          # Size of root dbspace (Kbytes)
```

- LOGSIZE

The default value is 500 KB. The following entry sets it to 4.5 MB which is needed in order to allow the CMVC Level -check and level -commit command (these commands use a lot of log space):

```
LOGSIZE          4500          # Logical log size (Kbytes)
```

- TAPEDEV and LTAPEDEV

Setting these parameters to /dev/null allows OnLine to behave as if tape drives were present and log files were being backed up, but in fact the output tape is discarded. With these settings you cannot restore data.

```
TAPEDEV      /dev/null      # Tape device path
LTAPEDEV     /dev/null      # Log tape device path
```

This initial setting is OK for an initial configuration, but eventually you will need to change them in order to properly backup and restore data. For more information see Chapter 20, "What is logging?" from the INFORMIX-OnLine Dynamic Server, Archive and Backup Guide.

- **SERVERNUM**

Change it to some integer between 0 and 255, because each OnLine instance must have a distinct value. It is safer to not keep the default value of 0 to avoid future collisions with another instance:

```
SERVERNUM    123          # Unique id corresponding to a OnLine instance
```

This variable is not the same as the "service name" in /etc/services.

- **DBSERVERNAME**

This is the value provided by the \$INFORMIXSERVER environment variable:

```
DBSERVERNAME oem_ppc3    # Name of default database server
```

- **LOCKS**

Change the default 2000 to 3000 to avoid problems when executing the CMVC mkdb command which is used to create the database for the CMVC family:

```
LOCKS        3000        # Maximum number of locks
```

UPDATE THE /ETC/SERVICES FILE

The service name, which in this document will be "online3", is used in the following files:

- /etc/services

The service name is properly defined in /etc/services, for example:

```
online3      1301/tcp          # informix service-name
```

If the service name is not present in /etc/services, then you will encounter the following runtime problem with CMVC:

```
0010-063: Database error -931, cannot locate %s server/tcp servers
         in /etc/services
```

PREPARE THE CONNECTIVITY FILE SQLHOSTS

The \$INFORMIXDIR/etc/sqlhosts file contains information that allows a client application to connect to an Informix database server. An example of an active line in that file is shown below:

```
oem_ppc3 onsoctcp      oem-ppc3      online3
```

It is important to keep the following in mind:

- You can separate the fields with spaces or tabs.
- The value in the first column is the Informix DB server. This is the value of the environment variable `INFORMIXSERVER` in the `.profile` for both the Informix user id and all the CMVC families. By the way, this value is defined in the variable `DBSERVERNAME`, in the `ONCONFIG` configurable file such as `$INFORMIX_HOME/etc/onconfig.ppc3`
- The value in the second column determines the shared-memory connection.

It is extremely important to specify in the `sqlhost` file that the interprocess communication for Informix should be done via TCP/IP sockets (value for 2nd column: `onsoctcp`) and not via the default shared-memory connection (value: `onipcshm`).

- The value in the third column indicates the name of the host.

In this example is "oem-ppc3" and it is the short name, and not the fully qualified name "oem-ppc3.raleigh.ibm.com".

- The value in the fourth column indicates the Informix Service Name. which should be also in the `/etc/services` file.

In this example is "online3".

UPDATE THE /ETC/HOSTS.EQUIV AND \$INFORMIXDIR/.RHOSTS FILE

Ensure that the following files are properly set with the same information:

- `/etc/hosts.equiv` (you need to be root)
- `$INFORMIXDIR/.rhosts` (you need to be the Informix user id)

The contents should be as follows (example):

```
oem-ppc3.raleigh.ibm.com informix
oem-ppc3 informix
```

Where the second item in each row is the Informix user id.

INITIALIZE ONLINE

Once all the configuration files are ready, now you must initialize the disk space that is used by the OnLine database server, by executing the following command (as the Informix user id):

```
oninit -i
```

If there are problems, such as `oninit` is not recognized as being in the path, then check for the group of the Informix user id, which must be "informix".

RESTART ONLINE AND FIND OUT ITS STATUS

After OnLine is initialized, stop it, restart it and find out its running status:

1. Login as the Informix user id.

2. Stop OnLine:

```
onmode -k
```

If there is an error saying:

```
shared memory not initialized for INFORMIXSERVER 'oem_hp15'
```

Then this means that Informix Dynamic Server was not started. If this is the first attempt to start the server, then it is very likely that the `/etc/services` was not updated with the `'online3'` (or similar) to help with the connectivity required by Informix.

3. Start OnLine:

```
oninit
```

4. Find out its status:

```
onstat | more
```

The important thing here is that you should not see an error message that Informix user id could not connect to the database or that the shared memory was not initialized.

STARTING AND STOPPING THE INFORMIX DBMS

This chapter describes how to start, stop, query the status, verify, and find out the version of the Informix DBMS.

STATE DIAGRAM FOR THE INFORMIX DBMS

The figure Figure 1 shows the main states in which an Informix DBMS can be at a given point in time, and the commands that are used to trigger the state transitions.

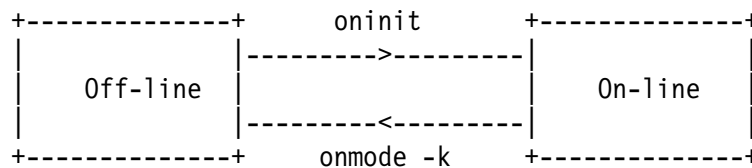


Figure 1. State diagram for the Informix DBMS

Notes:

1. You need to be the Informix user id in order to issue the commands for starting or stopping the DBMS.
2. Note the difference between the use of 'on-line' and 'OnLine' in the above diagram:
 - 'On-line' means that the DBMS is active.
 - 'OnLine' refers to the Informix OnLine Dynamic Server (DBMS).
3. After executing any of the commands above, you can execute 'onstat' next. The header on the onstat output gives the current operating mode.
4. Another way to find out if the Informix DBMS is active, is by using the following command:

```
ps -ef | grep oninit
```

If you do not see any processes related to oninit, then the Informix DBMS is not active.

HOW TO START THE INFORMIX DBMS

The command to start the Informix database management system is:

```
oninit
```

The state of the DBMS will move from off-line to on-line.

HOW TO STOP THE INFORMIX DBMS

The command to stop the Informix database management system is:

```
onmode -k
```

The state of the DBMS will move from on-line to off-line.

HOW TO QUERY THE STATUS OF THE INFORMIX DBMS

The command to query the status of the Informix database management system is:

```
onstat | more
```

The important thing here is that you should not see an error message that Informix user id could not connect to the database.

The onstat utility reads shared-memory structures and provides statistics about OnLine that are accurate at the instant that the command executes.

There are many options flags that provide different types of information but of interest are:

- The flag -c is used to get more information on the configuration file (\$INFORMIXDIR/etc/\$ONCONFIG).
- The flag -d is used to get more information on the dbspace chunks, and general information.
- The flag -D is used to get more information on the dbspace chunks, and pages reads/writes.
- The flag -k is used to get more information on the locks held.

If onstat is issued when Informix is down it will display one of these error messages:

```
shared memory not initialized for INFORMIXSERVER 'oem_hp03  
or  
onstat: Cannot attach to shared memory. errno = 22
```

For more information, refer to the Informix-OnLine Dynamic Server Administrator's Guide, Volume 2, Chapter "OnLine Utilities".

HOW TO VERIFY THE INTEGRITY OF THE INFORMIX DBMS

The command to verify the integrity of the Informix database management system is:
oncheck

The oncheck utility can be used to:

- Check specified disk structures for inconsistencies.
- Repair index structures found to contain inconsistencies.
- Display information about disk structures.

There are many options flags that provide different types of information but of interest are:

- The flag -pe is used to display information about the dbspace chunk and extents.
- The flags -pt and -pT are used to display space usage.

For more information, refer to the Informix-OnLine Dynamic Server Administrator's Guide, Volume 2, Chapter "OnLine Utilities".

HOW TO FIND OUT THE VERSION OF THE INFORMIX DBMS

To find out the version of the Informix DBMS, perform the following:

1. Login into the Informix user id.
2. Issue one of the following commands:

- oninit -V

The output will have something like this:

```
INFORMIX-OnLine Version 7.24.UC5   Software Serial Number xxxxxxxxxxxx
```

- esql -V

The output will have something like this:

```
INFORMIX-ESQL Version 7.24.UC5  
Software Serial Number xxxxxxxxxxxx
```

When using the Informix Client SDK 2.2, which replaced the old ESQ/C, then the output will look like this:

```
INFORMIX-ESQL Version 9.20.UC2  
Software Serial Number xxxxxxxxxxxx
```

It seems that the new Client SDK 2.20 corresponds to the old ESQ/C 9.20.

CREATING A DATABASE FOR A CMVC FAMILY

This chapter describes how to create a CMVC family under Informix.

This is an overview on how to create a CMVC family that uses an Informix database. For more information see the manual CMVC Server Administration and Installation, 2.3.

ACTIVITIES TO BE PERFORMED BY ROOT

1. Login as root.
2. Create the CMVC family user id, which should belong to the same group as the informix user id.

In this example, the family name is "cmvc3inf" and it belongs to the group "informix".

3. Add the new CMVC family user id in /etc/hosts.
4. Add the new CMVC family user id in /etc/services.
5. Add the following entries for the CMVC family into /etc/hosts.equiv:

```
oem-ppc3.raleigh.ibm.com cmvc3inf
oem-ppc3 cmvc3inf
```

6. Logout as root.

ACTIVITIES TO BE PERFORMED BY THE INFORMIX USER ID.

1. Login as the Informix user id.
2. Add to \$INFORMIXDIR/.rhosts the same changes made to the /etc/hosts.equiv file:

```
oem-ppc3.raleigh.ibm.com cmvc3inf
oem-ppc3 cmvc3inf
```

3. When creating a regular database space for the CMVC family, do not use the root dbspace for the Informix user id, instead, do the following:

- a. Create a directory where to store the regular dbspace, such as:

```
mkdir /home2/informix/cmvc-space
```

You have to choose a place where you have enough file system space for the database.

- b. Create file where to store the regular dbspace, such as:

```
touch /home2/informix/cmvc-space/cmvc3inf
```

- c. You may need to change the file permissions for the file created in the previous step in order for the next step to be successful.

```
chmod 777 /home2/informix/cmvc-space/cmvc3inf
```

- d. Use the onspaces utility to create the regular dbspace. In the example below the dbspace is named "cmvc3inf" and with a size of 2.5MB (parameter: -s 5000) and offset of 0 (parameter: -o 0).

```
onspaces -c -d cmvc3inf -p /home2/informix/cmvc-space/cmvc3inf -s 5000 -o 0
```

The value for the parameter "-d" needs to be used with the INFORMIX_DBSP environment variable in the .profile of the CMVC family. See "Activities to be performed by the CMVC family user id."

You may need to follow the advice for the warning message from Informix:

```
** WARNING ** A level 0 archive of Root DBSpace will need to be done.
```

- e. Verify that the new regular dbspace is active by using:

```
onstat -d
```

4. Logout as Informix user id.

ACTIVITIES TO BE PERFORMED BY THE CMVC FAMILY USER ID.

1. Login as the CMVC family user id.
2. Copy the sample profile for a CMVC family:

```
cp /usr/lpp/cmvc/install/profile.informix .profile
```

The above command uses the default location for CMVC.

All the CMVC related environment variables are already listed and documented in the sample profile for a CMVC family that uses Informix.

3. Modify the .profile. Follow the instructions in the comments in the header of the file.
4. Ensure that all the environment variables related to Informix are defined. Some of these variables may not be part of the original profile:

```
export INFORMIXDIR=/usr/informix
export INFORMIXSERVER=oem_ppc3
export INFORMIX_DBSP=cmvc3inf
export INFORMIXTERM=terminfo
export SQLEXEC=$INFORMIXDIR/lib/sqlrm
export TERMCAP=/usr/informix/etc/termcap
export TERM=vt100
```

The value for the INFORMIX_DBSP environment variable is the value used with the parameter "-d" when the Informix user id used the the command "onspaces" to create a regular dbspace. See "Activities to be performed by the Informix user id." on page 23.

You may need to use the proper TERM value for your situation.

5. After editing the profile, exit your session and login again in order to have a clean environment.
6. Create the CMVC family. At this time, all the environment variables and the configuration items should be ready for creating the CMVC family:
 - a. mkfamily
 - b. mkdb -d
 - c. cmvcd cmvc3inf 2
 - d. You can now use the CMVC family.
 - e. To monitor the usage of the CMVC daemons do: monitor 1

Press an alphanumeric key to stop the monitor command.
 - f. To stop the CMVC daemons do: stopCMVC cmvc3inf

BACKUP AND RESTORE

This chapter describes how to perform a backup of the database and how to restore it.

There are several ways of performing a backup/restore in Informix. In this chapter describes only the method that uses dbexport and dbimport.

BACKUP OF INFORMIX DATABASES

1. Login as the CMVC family administrator (\$LOGNAME):

2. Stop the CMVC family:

```
stopCMVC $LOGNAME
```

3. Create a directory where to store the backup files:

```
$ mkdir $HOME/backup  
$ chmod 777 $HOME/backup
```

4. Use the **dbexport** command to export the database for the CMVC family into a directory named \$HOME/backup/\$LOGNAME.exp:

```
$INFORMIXDIR/bin/dbexport -o $HOME/backup $LOGNAME
```

5. Wait for the following message that indicates that the backup was completed:

```
dbexport completed
```

6. The text that is shown in the screen while the backup was being performed is stored in \$HOME/backup/dbexport.out

7. The backup via dbexport consists of a directory "\$HOME/backup/\$LOGNAME.exp" that has many ASCII files, one that has a file extension of ".sql" and many files that have a file extension of ".unl" for each table in the database. A complete list is shown below:

```
acces00100.unl  cmpc3inf.sql  files00113.unl  level00105.unl  tests00125.unl  
appro00101.unl  compm00107.unl  files00114.unl  notes00119.unl  track00126.unl  
appro00102.unl  compo00108.unl  fix__00115.unl  notif00120.unl  users00127.unl  
autho00103.unl  confi00109.unl  histo00116.unl  path__00121.unl  verif00129.unl  
cfgco00130.unl  coreq00110.unl  hosts00117.unl  relea00122.unl  versi00128.unl  
cfgre00131.unl  defec00111.unl  inter00118.unl  seque00123.unl  
chang00106.unl  enviro00112.unl  level00104.unl  sizes00124.unl
```

RESTORE OF INFORMIX DATABASES

Use the **dbimport** command to import the exported data for the CMVC family.

1. If you are restoring a database into an existing one, then it is necessary to drop/delete the database:

```
$ rmdb
```

If the database exists, then the following error will occur when trying to restore the database from the backup file:

```
*** create database
330 - Cannot create or rename database.
```

```
100 - ISAM error: duplicate value for a record with unique key.
```

2. If INFORMIX_DBSP is not set, run the following:

```
$INFORMIXDIR/bin/dbimport -i $HOME/backup -l -ansi $LOGNAME
```

3. If INFORMIX_DBSP is set, run the following (in one single line):

```
$INFORMIXDIR/bin/dbimport -i $HOME/backup -l -ansi -d $INFORMIX_DBSP \
$LOGNAME
```

4. Wait for the restore to be completed:

```
dbimport completed
```

5. The above commands will create a database with the name of the CMVC family with log (-l) and mode ansi (-ansi).

The data is loaded into INFORMIX_DBSP or into the root dbspace if INFORMIX_DBSP was not specified.

ACCESSING THE INFORMIX DATABASE TABLES

This chapter provides procedures for accessing the database tables and views used by CMVC.

HOW TO USE INTERACTIVE ISQL TO GAIN ACCESS TO THE DATABASE

Sometimes it is necessary to access the Informix database used by the CMVC family in order to query the entries for a certain table or view.

To gain access to the Informix database, do the following:

1. Login to an account that has access to Informix, such as the CMVC family user id or the Informix user id.

2. Enter:

```
isql familyName
```

3. To look at all the entries for a table (such as Users), do:

- a. Select Query-Language.

- b. Select New.

- c. Specify the query (for example, to show all users, sorted by login):

```
select * from Users where login like '%' order by login
```

- d. Press ESC to exit the edit mode.

- e. Select Run.

You will see the output of the query.

- f. Select Next or Restart to navigate thru the results.

- g. Select Exit several times until you get out of isql.

Need to setup the proper TERM variable to use isql or dbaccess

If you enter the command "isql" and if the following error message is displayed:

The type of your terminal is unknown to the system

Then you need to setup the TERM environment variable to something that Informix will understand. It is recommended that you modify the profile to include the environment variables mentioned below. There are 2 methods:

- Using terminfo:

```
export INFORMIXTERM=terminfo
export TERM=vt100
```

- Using termcap:

```
INFORMIXTERM=termcap
export INFORMIXTERM
TERMCAP=/usr/informix/etc/termcap
export TERMCAP
TERM=vt100
export TERM
```

HOW TO USE A SCRIPT TO EXECUTE SQL COMMANDS

The Korn shell script shown in “Korn shell script: informixScript” on page 31 can be used to interact with the Informix dbaccess tool to issue SQL commands and to store the output in an output file.

In this example, the following SQL command will be executed (show all users, sorted by login):

```
select * from Users where login like '%' order by login
```

Actually, the above command needs to be specified between 2 specific lines in the Korn script; each line contains the delimiter !!! . The following lines show the correct location; notice that the select statement needs to terminate with a semicolon, to allow multiple SQL commands to be issued in the same script:

```
dbaccess $1 >> $LOG 2>&1 <<!!!
select * from Users where login like '%' order by login;
!!!
```

Once the script is ready, you can execute it as follows (you need to specify the CMVC family name):

```
informixScript familyName
```

There are 2 outputs:

- The messages displayed in the screen:


```
informixScript: Starting script  cmpc3inf
```

```
informixScript: Please see the following log for the details  
of the execution of the Informix commands:  informixScript.out
```

```
informixScript: End of script
```

- The file informixScript.out that contains the results.

Korn shell script: informixScript

The informixScript Korn shell script is shown below:

```

#!/usr/bin/ksh
# Name:      informixScript familyName
# Purpose:  This is a sample shell script that shows
#           how to issue a set of Informix command lines.
# Note:    If you get this message when invoking isql or dbaccess:
#           The type of your terminal is unknown to the system
#           Then you may need to specify a value for TERM that is
#           recognized by Informix, such as:
#           export INFORMIXTERM=terminfo
#           export TERM=vt100

# Process the proper number if input parameters
if [ "$#" -ne 1 ]
then
    print -u2 'usage:  informixScript familyName  '
    exit 1
else
    print 'informixScript: Starting script ' $1
fi
export LOG=informixScript.out

##### Customization notes #####
# Place the actual Informix commands inside the begin and end !!!
# Remember to put the ; (semicolon) at the end of each logical statement
#####
dbaccess $1 >> $LOG 2>&1 <<!!!
select * from Users where login like '%' order by login;
!!!
# The above !!! indicates the end of the long series of Informix commands

print ' '
print 'informixScript: Please see the following log for the details'
print '           of the execution of the Informix commands: ' $LOG
print ' '
print 'informixScript: End of script'

exit 0
# end of file

```

Figure 2. Korn shell script: informixScript

HOW TO USE ISQL WITH A FILE WITH SQL COMMANDS

Some times you do not want to interact with the isql menus, but rather want to store in a file a set of SQL commands to be executed in a batch. In this case, you can do the following:

1. Create a file with the data manipulation or SQL commands, such as cmdfile.txt, that has the following lines (show all users, sorted by login):

```
select * from Users where login like '%' order by login
```

2. Issue:

```
cat cmdfile.txt | isql $CMVC_FAMILY
```

3. The result will be something like the following (showing only part of the output):

```
id          12
login       paul
name        Paul Wilder
superuser   no
area        Manufacturing
address     cmpc3inf@oem-ppc3
adddate     1999/06/22 08:30:15
dropdate
lastupdate  1999/06/22 08:30:15
```

```
12 row(s) retrieved.
```


COMMON ERROR MESSAGES WITH INFORMIX

This chapter describes the most common error messages that a CMVC family administrator may encounter when working with Informix, and how to recover from them.

To avoid duplication, this chapter describes those error messages that are not described in the other chapters in this TR.

HOW TO USE ONMONITOR TO MODIFY PARAMETERS

In some cases, after a CMVC family is created, it is necessary to use the command "onmonitor" to change some configuration items for the Informix database such as the logging to "unbuffered ANSI".

For demo purposes, I will be using the following naming convention:

- familyName

This is the name of the CMVC family, such as cmvc3inf.

- Vol-1

This refers to the manual: INFORMIX-Online Dynamic Server, Administrator's Guide, Volume 1, Version 7.x

- Vol-2

This refers to the manual: INFORMIX-Online Dynamic Server, Administrator's Guide, Volume 2, Version 7.x

To use onmonitor, it is necessary to follow the sequence mentioned in the next subsections.

Stop the CMVC family

It is necessary to stop the CMVC family to change the database characteristics.

1. Login to familyName.
2. stopCMVC familyName.

Find out if there is a dedicated dbspace for the family.

Issue the following command to find out if there is a dedicated dbspace for this family:

```
set | grep INF
```

You will see some variables (which will have different values), such as:

```
INFORMIXDIR=/disk2/informix
INFORMIXSERVER=oem_ppc3
INFORMIX_DBSP=cmppc3inf
```

The last variable, INFORMIX_DBSP indicates the explicit dbspace used for the database for the CMVC family.

Using onmonitor

Query the status of the database used by CMVC to find out if there is space to grow:

1. Login as the Informix user id.
2. Ensure that the Informix DBMS must be up and running.
3. Setup a TERM value that will be recognized by the Informix tools. The following worked from a dtterm window in CDE:

```
export TERM=vt100
```

4. Invoke the ON-Monitor tool:

```
onmonitor
```

Use the arrow keys and the enter key to navigate.

Use Esc to escape, and Ctrl-C as "Interrupt".

In my case, F3 did not work but Ctrl-B worked fine when asked to select an item.

5. From the top menu, select Dbspaces and press Enter.
6. From the DBSPACES menu, select Info and press enter.
7. From the list of DBSPACES, select the database mentioned in the INFORMIX_DBSP variable in the CMVC family (such as cmppc3inf) and press Ctrl-B to show more information on the "chunks" that are part of the database.

Notice the Pages in Chunk and Pages Used. Also, notice in the footer of the window the number of free pages.

8. In case that there are no more pages free (or all or almost all of the pages are used), then you will need to add a "chunk" to the dbspace. You cannot just simply change the size of a current chunk because this increase action is not allowed.
9. Exit onmonitor.

Adding a chunk to a database

Consult Vol-1, pages 15-3, 4 and 5 for allocating cooked file space or "chunk".

Consult Vol-1, pages 15-12 and 13 for adding a chunk to a dbspace. Repeat "Using onmonitor" to find out how many pages are used.

Modifying the logging to "Unbuffered ANSI"

1. Login as the Informix user id.
2. Issue onmonitor (see "Using onmonitor" on page 36).
3. From the top menu, select "Logical-Logs", located next to the Exit option.
4. From the LOGICAL LOGS menu, select Databases.
5. From the DATABASES list, select your database and press Ctrl-B to modify the logging.
6. You will see what is the current log status. If it is not "Unbuffered Logging, Mode ANSI", then you need to change it, as follows:

From the OPTIONS FOR DATABASE LOGGING, select "Unbuffered Logging, Mode ANSI" then Ctrl-B to actually modify it.

7. Exit onmonitor.

Note: The Enter key will just simply move to the next option and will not enable the desired one. You need to use Ctrl-B.

Restart the CMVC family

1. Login familyName.
2. Start 2 CMVC server daemons for the family:
`cmvcd familyName 2`
3. Start the notify daemon:
`not ifyd`
4. Use the GUI to open a defect and select the "root" component, or another component that is more appropriate for dummy defects. Complete the required fields, and click on OK or Apply.
5. If you get a 0010-256 error message, then take a look at the bottom of the syslog (in AIX, the default is /var/sppol/syslog) and look for a more detailed error from CMVC that shows the actual database error, such as -524 from Informix.

IF \$INFORMIX_DIR/BIN/ISQL DOES NOT EXIST, CREATE LINK FROM DBACCESS

Problem:

When running mkdb or chfield, an error message is displayed that isql cannot be found or does not exist.

Answer:

It seems that ISQL is not an Informix component that customers are ordering from Informix and thus, "isql" is not always present in shops where CMVC will be installed.

CMVC requires \$INFORMIX_DIR/bin/isql for mkdb and chfield (among other utilities). However, it seems that "dbaccess" is present in all the installations of Informix. Thus, if the customer does not have installed "isql", then the following symbolic link should be created (assuming that \$INFORMIX_DIR points to the top directory where Informix has been installed):

```
cd $INFORMIX_DIR
ln -s ./bin/dbaccess ./bin/isql
```

DURING MKDB, PROBLEM ABOUT THE CMVC FAMILY NOT BEING A TRUSTED USER

Problem:

During mkdb, problem when creating the INFORMIX database, in which the CMVC family is not a trusted user:

```
956: Client host or user (cmhp3inf@oem-hp03.raleigh.ibm.com)
      is not trusted by the server
No such file or directory
Error in line 1
Near character position 1
```

0010-728 Running rmdb may be necessary before running mkdb again.

Answer:

Create or update the following files:

1. \$INFORMIXDIR/.rhosts
2. /etc/hosts.equiv

The contents should be as follows (example):


```
oem-ppc3.raleigh.ibm.com informix
oem-ppc3 informix
oem-ppc3.raleigh.ibm.com cmpc3inf
oem-ppc3 cmpc3inf
```

Where the second item in each row is the Informix user id (in the first 2 rows) and the CMVC family (in the last 2 rows).

DURING MKDB, PROBLEM WITH NO MORE LOCKS DURING CREATION OF VIEWS

Problem:

The following error message is displayed during mkdb, during the creation of views:

View created.

```
312: Cannot update system catalog (syscolumns).
```

```
134: ISAM error: no more lockslog (syscolumns).
```

```
Error in line 27
```

```
Near character position 18 locks
```

```
Error in line 27
```

```
312: Cannot update system catalog (systables).
```

```
134: ISAM error: no more lockslog (systables).
```

```
Error in line 20
```

```
Near character position 15 locks
```

Answer:

You need to specify at least 3000 locks. When you initialize the parameters for your INFORMIX database, the default is 2000.

Use the onmonitor command option "Parameters" then option "Shared-memory" to change the number of locks to at least 3000.

When doing the initial configuration of the Informix user id, the file referred to by ONCONFIG should have the following data:

```
LOCKS          3000          # Maximum number of locks
```

ERRORS WHEN THE INFORMIX DATABASE IS NOT IN "ON-LINE" MODE

Problem:

Errors are displayed when the Informix DBMS is not in "on-line" mode. Below is a copy of a log file generated by the CMVC mkdb utility. The log file is placed in the /tmp directory when mkdb encounters an error:

Creating the INFORMIX database.

529: Cannot attach to shared memory.

123: ISAM error: no shared memory
Error in line 1
Near character position 1

Answer:

This particular error is a result of the fact that the Informix database was not in "on-line" mode.

To fix this error, do the following:

1. Login as the Informix user id.
2. Change the mode for Informix to be "on-line" by issuing: oninit
3. Perform "mkdb" again.

SYSTEM ROLLBACK ERROR WHEN USING MKDB

Problem:

The following Informix error was displayed when running mkdb:

```
... cannot use system rollback segment for non-system tablespace ...
```

Answer:

When you create a tablespace the first time, you also have to create at least one rollback segment for the CMVC database if you have only the system rollback segment.

You must include this new rollback segment in the database initialization file.

You must bring the database down and then up to pick up this new rollback segment.

To store your CMVC tables and indexes into different tablespaces, set the INFORMIX_TBLSP and INFORMIX_NDXSP environment variables. These tablespaces must have been created prior to running mkdb.

To store your CMVC tables and indexes into a different dbspace, set the INFORMIX_DBSP environment variable. This dbspace must have been created prior to running mkdb. Use the onmonitor command to create a new dbspace.

Actually, it is recommended to have 2 rollback segments:

- A small one, as explained in the previous paragraph. This is the one to use for most of the CMVC transactions which are small and brief in nature.
- A very large one that will be used for those few CMVC transactions that are large and consume lots of database resources, such as the Level commit and check.

It is suggested to schedule these expensive operations to off-shift hours in which the normal (small) rollback segment is disabled and the large rollback segment is enabled. Then the expensive CMVC transactions are performed, and when they are finished, then you can disable the large rollback segment and enable the normal (small) one.

NEED TO USE ONSOCTCP FOR INTERPROCESS COMMUNICATION

Problems:

- A level extract hangs, even though all the files have been extracted successfully.
Note: We did not try Release extracts, but because the extract code between levels and releases is very similar, we suspect that this problem might happen too when extracting releases.
- In a new CMVC family or in a newly migrated CMVC family, the user always gets the error message pair 0010-381 and 0010-256 about txInit.

Answer:

You need to specify that TCP/IP and not shared memory is the method for interprocess communications for the Informix database, and this is specified in the Informix connectivity file: sqlhosts.

To avoid problems with unreleased shared-memory when doing some CMVC tasks, it is critical to NOT use the default shared-memory connection for the Informix databases and use the TCP/IP connection. For example, the file \$INFORMIXDIR/etc/sqlhosts below shows one correct entry (the 2nd one) and one incorrect entry (the 1st one, which is commented out):

```
# oem_ppc3 onipcshm      oem-ppc3      online3
oem_ppc3 onsoctcp      oem-ppc3      online3
```

Notes:

1. The value in the first column is the Informix DB server. This is the value of the environment variable INFORMIXSERVER in the .profile for the CMVC family. By the way, this value is defined in the variable DBSERVERNAME, which is mentioned in the file that is referred to in the environment variable ONCONFIG of the Informix user id, such as \$INFORMIX_HOME/etc/onconfig.ppc3
2. The value in the second column determines the interprocess communication. Use "onsoctcp" for TCP/IP.
3. The value in the third column indicates the name of the host. In this case is "oem-ppc3".
4. The value in the fourth column indicates the Informix Service Name. You can assign any unique alphanumeric identifier.

WARNING:

This value **MUST** be different than the name of the CMVC family in order to avoid a problem with Informix which will cause the following error messages for ANY CMVC command:

```
0010-381 cmvc client software is not compatible w/cmvc server
          software for this action.
0010-256 ...
```

This value (4th column) must be also in the /etc/services file in order to avoid a runtime problem with Informix with error

```
0010-063: Database error -931, cannot locate %s server/tcp servers
          in /etc/services
```

5. You need to stop and start the Informix DBMS in order to begin using the new settings.

PROBLEM WITH UNBUFFERED SETTING FOR DATABASE LOGGING

Problem:

There is a problem when using unbuffered setting for database logging in Informix.

One of the symptoms is a CMVC error message in the syslog, that reports the Informix error message:

```
-524 "a locked table can only be used within a transaction".
```

Answer:

The default setup of an Informix database is to have the setting for the database logging as "unbuffered". This causes some transactions to hang/fail. To avoid this situation the setting must be changed to: "unbuffered ANSI".

Please see "How to use onmonitor to modify parameters" on page 35 for the details on how to do this.

INCREASE LOGICAL LOGS TO AVOID PROBLEMS WITH LEVEL -CHECK

Problem:

When I execute Level -check, I am having problems with Informix saying that the logical logs are filled up:

```
0010-256 An error occurred when the CMVC server software tried to process
        function txLevelCheck. It is possible that the network or
        CMVC server is experiencing problems.
```

Also, when doing a report that has a large output set of results there is an error saying that Informix cannot sort the rows.

Answer:

You might need to increase the size of the logical logs (which need to be greater than 4 MB) to avoid a problem with Level -check, which may fill up the logical logs if the logs are not big enough.

When doing the initial configuration of user informix, the file referred to by ONCONFIG should have the following data. The default value is 500 KB. The following entry sets it to 4.5 MB:

```
LOGSIZE          4500          # Logical log size (Kbytes)
```


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