Systems Administrator's Guide

Version 6.00

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GETTING STARTED

This guide is for understanding and performing operations for administering Fitrix software and your Informix Dynamic Server database (IDS) within your Fitrix installation.

Before you proceed with the steps detailed in this document, please note that those operations labeled as "Advanced" are complex system administration operations. Risk is always involved; including, but not limited to, data loss and database failure.

Backup your entire system or verify that a valid backup is available before performing any of the advanced operations.

PERFORMING THE OPERATIONS

One of the easiest ways to perform the steps in this operation is to cut and paste the text into your command window. Always verify that the commands paste correctly. Any typo will cause the command to fail.

If you prefer to enter the commands by hand, take note of the following:

- Sometimes "backticks" are used instead of single quotation marks. Backticks are handled differently by Linux and have a specific programmatic use; text between backticks will be executed like any other Linux command. This symbol can be found on standard English keyboards with the tilde (~).
- Often, the numeral one looks very similar to the lower-case letter "L". Take care when entering commands that the correct character is used.

CREATING A DESKTOP SHORTCUT & LOGGING IN TO LINUX

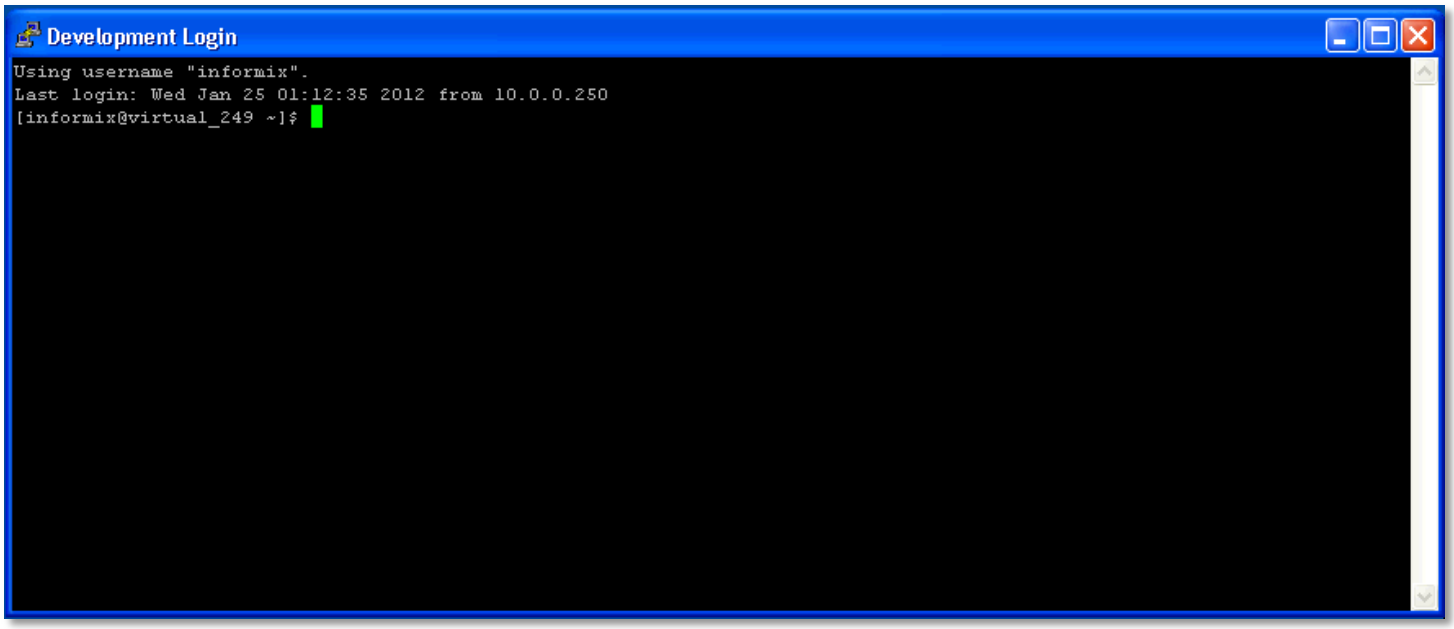
Many of the commands detailed in this document are performed in the Linux client using the root or informix login. By default, there is no desktop

shortcut for logging in to the Linux client. If you do not have a shortcut, perform the following steps:

1. First, check to see if a shortcut has been created. Click the Windows Start button and select **Programs > Fitrix Accounting 6**. If a login shortcut has been created, it will be located here. Drag it to your desktop for easy access.
2. If a shortcut is not present, select **Start > Programs > Fitrix Accounting 6 > Fitrix Administration > Login Configuration**. When the Login Configuration screen displays, create a shortcut using the **Login prompt** Session Template. You can name it whatever you like; but, for simplicity, the shortcut referenced throughout this guide will be called **Linux login**.
3. Double-click the **Linux login** icon you placed on your desktop.

4. Enter *informix* in the **Login** field, the Informix account password in the **Password** field, and click **OK**. If you do not know the password, contact your system administrator.

5. If your login credentials are accepted, you will see a screen similar to the one shown.



x

DATABASE CORE CONCEPTS AND COMMANDS

This section provides information about common commands and basic procedures.

DATABASE INSTANCES

An Informix instance is the database server software (daemon) that manages one or more IDS databases.

When you install Fitrix, three separate processing environments (instances) are created for different purposes:

- The **Production** environment, fx_prod, contains the versions of the programs your business will run, as well as the live database you will use. Additionally, the Production database is called live and is empty when Fitrix is installed so that it is ready for you to begin setting up your company's data.
- The **Development** environment, fx_dev, is a completely separate area to allow your programmers to develop customizations to Fitrix without disturbing your production software. Once a change has been developed and tested, the new software should be installed in the production area. The Development database is called standard and it is fully populated with sample data from a sample company when Fitrix is installed. This database is used for code generation but is not normally used to run programs against. The sample database is also included and is used for development and testing.
- The **Training** environment, fx_train, is also a completely separate area that allows end users or programmers to train on the Fitrix software. The databases included are: standard, student1, student2, and student3.

ACCESSING INSTANCE SETUP FILES

The environment variable $INFORMIXDIR points to the installation directory of the IDS software. The environment variable $ONCONFIG contains the name of the important configuration file that describes the parameters that describe the instance (the default name is 'onconfig'). This file is located in $INFORMIXDIR/etc.

Configuration files:

$ONCONFIG (default: onconfig in $INFORMIXDIR/etc). This contains instance configuration information. There will be one for each instance: onconfig.dev, onconfig.prod, and onconfig.train. See Appendix A for details.

$INFORMIXSQLHOSTS (default: sqlhosts in $INFORMIXDIR/etc). This contains a list of database server names and connection information. See Appendix B for details.

DATABASE INSTANCE MANAGEMENT

When a program requests something from a database (SELECT, INSERT, UPDATE, or DELETE), the process daemons that are the engine (oninit) service these requests.

The switches for oninit include:

-i Initialize disk space and shared memory, leave in on-line mode. **Very dangerous! All data will be lost!**

-j Initialize shared memory, leave in single-user mode.

-s Initialize shared memory, leave in quiescent mode.

-y Respond yes to all prompts

-v Verbose mode: prints all initialization messages.

-w Wait until server is initialized successfully.

INSTANCE STARTUP AND VERBOSE MODE

1. Set the proper environment by entering the following command and pressing the Enter key, substituting env_dev.sh or env_train.sh as shown:

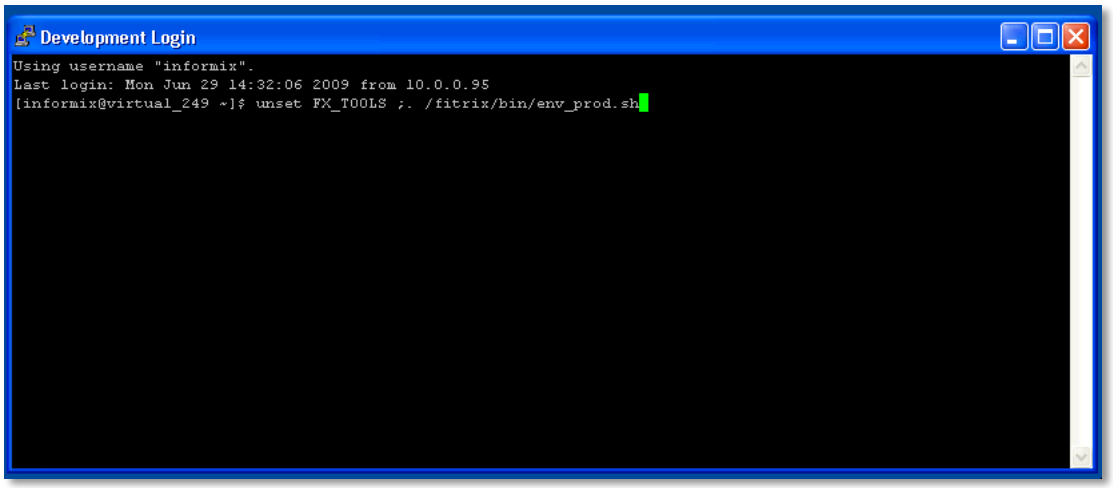
   unset FX_TOOLS ;. /fitrix/bin/env_dev.sh

   or

   unset FX_TOOLS ;. /fitrix/bin/env_prod.sh

   or

   unset FX_TOOLS ;. /fitrix/bin/env_train.sh



   a) If you are unsure what instances are running on the system, use the command:

      ps -f --ppid 1 | grep "oninit"

Each instance may run many deamons (sometimes referred to as *services*) grouped together to share the load of users accessing the instances.

b) To see the individual instances, use the command:

ps -ef | grep "oninit"

```
[informix@virtual_249 ~]$ ps -ef | grep "oninit"
informix  2349     1  4 13:07 ?        00:00:10 oninit -vw
root      2350  2349  0 13:07 ?        00:00:00 oninit -vw
root      2351  2350  1 13:07 ?        00:00:02 oninit -vw
root      2352  2350  0 13:07 ?        00:00:00 oninit -vw
root      2353  2350  0 13:07 ?        00:00:00 oninit -vw
root      2354  2350  0 13:07 ?        00:00:00 oninit -vw
root      2355  2350  0 13:07 ?        00:00:00 oninit -vw
root      2356  2350  0 13:07 ?        00:00:00 oninit -vw
root      2357  2350  0 13:07 ?        00:00:00 oninit -vw
root      2358  2350  0 13:07 ?        00:00:00 oninit -vw
root      2359  2350  0 13:07 ?        00:00:00 oninit -vw
informix  2765  2660  0 13:11 pts/0    00:00:00 grep oninit
[informix@virtual_249 ~]$
```

2. Initialize the server and enable verbose mode with the command: oninit –vw

```
[informix@virtual_249 ~]$ oninit -vw
Checking group membership to determine server run mode...succeeded
Reading configuration file '/var/opt/fitrix/ifmx_idsll/etc/onconfig.prod'...succeeded
Creating /INFORMIXTMP/.infxdirs...succeeded
Checking config parameters...succeeded
Allocating and attaching to shared memory...succeeded
Creating resident pool 18960 kbytes...succeeded
Allocating 160016 kbytes for buffer pool of 2K page size...succeeded
Creating infos file "/var/opt/fitrix/ifmx_idsll/etc/.infos.fx_prod_540_shm"...succeeded
Linking conf file "/var/opt/fitrix/ifmx_idsll/etc/.conf.fx_prod_540_shm"...succeeded
Initializing rhead structure...succeeded
Writing to infos file...succeeded
Initialization of Encryption...succeeded
Initializing ASF...succeeded
Initializing Dictionary Cache and SPL Routine Cache...succeeded
Bringing up ADM VP...succeeded
Creating VP classes...succeeded
Onlining 0 additional cpu vps...succeeded
```

Please note, in Fitrix, the first user to log in when the engine is down will bring the engine up.

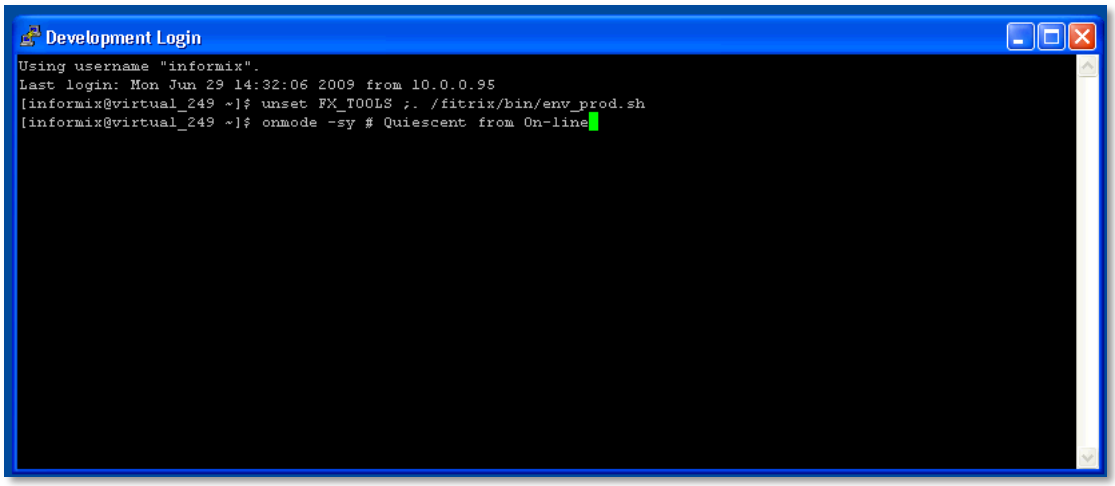
QUIESCENT MODE

To ensure that no other users are in the system while you are performing operations, you must switch the engine from multi-user to single-user, or *quiescent*, mode.

Please note, if you are unsure as to whether the engine is On-line or down, you may enter both commands. The one that does not apply to the current engine state will fail. This will not affect the outcome of the operation. You will learn a command to determine the engine status in the next section.

1. If the engine is On-line, then enter the following command and press the Enter key.

   onmode -sy # Quiescent from On-line



2. Alternately, if the engine is not On-line, enter:

   oninit -vs # Quiescent from engine down

   If successful, a substantial amount of output will be returned. If any of the initializations fail, contact your system administrator before proceeding further.

```
Creating resident pool 18960 kbytes...succeeded
Allocating 160016 kbytes for buffer pool of 2K page size...succeeded
Creating infos file "/var/opt/fitrix/ifmx_idsll/etc/.infos.fx_prod_540_shm"...succeeded
Linking conf file "/var/opt/fitrix/ifmx_idsll/etc/.conf.fx_prod_540_shm"...succeeded
Initializing rhead structure...succeeded
Writing to infos file...succeeded
Initialization of Encryption...succeeded
Initializing ASF...succeeded
Initializing Dictionary Cache and SPL Routine Cache...succeeded
Bringing up ADM VP...succeeded
Creating VP classes...succeeded
Onlining 0 additional cpu vps...succeeded
Onlining 2 IO vps...succeeded
Forking main_loop thread...succeeded
Initializing DR structures...succeeded
Forking 1 'ipcshm' listener threads...succeeded
Forking 1 'soctcp' listener threads...succeeded
Starting tracing...succeeded
Initializing 8 flushers...succeeded
oninit: Fatal error in shared memory initialization

WARNING: server initialization failed, or possibly timed out (if -w was used).
Check the message log, online.log, for errors.
```

USING ONSTAT

In addition to oninit, there are several other helpful commands to assist in instance maintenance. The information returned will relate to the instance identified by the INFORMIXSERVER variable currently set when you run the command.

The switches for onstat include:

--	Print help for the command.
-	List the state of the engine.
–l	List logical log files.
-u	List users.
–d	List DBSpaces and chunks.
–d	update List DBSpaces and chunks and update BLOB chunk statistics.
–g ses	List sessions for the currently logged in user.
–g <session id>	Print "Current SQL statement" and "Last parsed SQL statement".

CHECK THE STATUS OF AN INSTANCE

1. Set the proper environment, substituting dev, prod or train as necessary:

   unset FX_TOOLS ;. /fitrix/bin/env_dev.sh

2. Use the command: onstat –

This will return results similar to:

IBM Informix Dynamic Server Version 11.50.UC7E -- On-Line

The word 'On-Line' indicates that the instance is up.

In some cases, you may see:

Shared memory not initialized for INFORMIXSERVER 'fx_prod_540_net'

This indicates that the instance is down.

FIND WHO'S LOGGED IN

1. To generate a list of users who are currently logged in, enter onstat -u.

```
IBM Informix Dynamic Server Version 11.50.UC7E -- On-Line -- Up 00:42:38 -- 152876 Kbytes

Userthreads
address  flags    sessid   user     tty      wait     tout locks nreads   nwrites
4af71018 ---P--D 1        informix -        0        0    0     71       219
4af71620 ---P--F 0        informix -        0        0    0     0        2322
4af71c28 ---P--F 0        informix -        0        0    0     0        4
4af72230 ---P--F 0        informix -        0        0    0     0        0
4af72838 ---P--F 0        informix -        0        0    0     0        0
4af72e40 ---P--F 0        informix -        0        0    0     0        0
4af73448 ---P--F 0        informix -        0        0    0     0        0
4af73a50 ---P--F 0        informix -        0        0    0     0        0
4af74058 ---P--F 0        informix -        0        0    0     0        0
4af74660 ---P--- 9        informix -        0        0    0     0        1
4af74c68 ---P--B 10       informix -        0        0    0     0        0
4af75878 ---P--D 14       informix -        0        0    0     0        0
4af76488 ---P--D 15       informix -        0        0    0     2        0
4af76a90 ---P--- 23       informix -        0        0    1     50       78
4af77098 ---P--- 20       informix -        0        0    1     185      15
4af782b0 ---P--- 24       informix -        0        0    1     17       6
4af78ec0 Y--P--D 22       informix -        44123084 0    0     0        0
 17 active, 128 total, 25 maximum concurrent
```

2. Many of the sessions shown are overhead for the system. To filter these out, use:

   onstat –u | grep –v 'informix'

FIND WHO'S HOLDING A LOCK

1. To find out who's holding a lock run onstat -u. The session holding lock will have a number greater than zero in the locks column.

```
Userthreads
address          flags    sessid   user     tty      wait             tout locks nreads   nwrites
4b833028         ---P--D 1        informix -        0                0    0     125      3106
4b833870         ---P--F 0        informix -        0                0    0     0        4928
4b8340b8         ---P--F 0        informix -        0                0    0     0        11
4b834900         ---P--F 0        informix -        0                0    0     0        4
4b835148         ---P--F 0        informix -        0                0    0     0        0
4b835990         ---P--F 0        informix -        0                0    0     0        0
4b8361d8         ---P--F 0        informix -        0                0    0     0        0
4b836a20         ---P--F 0        informix -        0                0    0     0        0
4b837268         ---P--F 0        informix -        0                0    0     0        0
4b837ab0         ---P--- 7        informix -        0                0    0     0        0
4b8382f8         ---P--B 8        informix -        0                0    0     2798     128
4b838b40         Y--P--D 9        informix -        4d6404a8         0    0     1271     0
4b839388         Y--P--D 28       informix -        4424b9a8         0    0     0        0
4b839bd0         ---P--D 13       informix -        0                0    0     0        0
4b83a418         Y-BP--- 179      informix 1        4dec35b0         0    3     5        0
4b83ac60         ---P--D 14       informix -        0                0    0     2        0
4b83b4a8         ---P--- 25       informix -        0                0    1     854      3000
4b83bcf0         ---P--- 24       informix -        0                0    1     2740     3764
4b83c538         ---P--- 23       informix -        0                0    1     231      442
4b83cd80         L--PR-- 180      informix 4        4431c408         -1   1     0        0
```

2. Using the session ID, run onstat –g ses (enter session number) to see the sql statement it is running.
3. The session with the matching address, in this instance 4431c408, is waiting on the lock
4. Run onstat –g ses 180 to see the sql statement for the session that is waiting on a lock.
5. Run onstat –k | grep "4431c408" to find the owner.
6. Run onstat -k

```
Locks
address          wtlist           owner       lklist        type    tblsnum  rowed key#/bsiz
44319b08         0                 4b83c538      0          HDR+S    100002   204          0
44319b88         0                 4b83bcf0      0              S    100002   204          0
44319c08         0                 4b83b4a8      0              S    100002   204          0
4431b608         0                 4b83cd80      0              S    100002   206          0
4431c188         0                 4b83a418      0          HDR+S    100002   206          0
4431c408         4b83cd80          4b83a418      4431db88   HDR+X    1001db   100          1
4431db88         0                 4b83a418      4431c188 HDR+IX    1001db     0          0

 7 active, 20000 total, 16384 hash buckets, 0 lock table overflows
20 active, 128 total, 25 maximum concurrent
```

7. The "owner" 4b83a418 is the address of the session holding the lock.
8. Run onstat –u |grep "4b83a418" to find the session.

DATABASE INSTANCE SHUTDOWN WITH ONMODE

1. Set the proper environment, substituting prod or train as necessary:

   unset FX_TOOLS ;. /fitrix/bin/env_dev.sh

2. Once the environment is set, there are two ways to shut down an instance.

   a. To shut down the instance after the last user disconnects, use the command:

      onmode -sy

      No new users will be allowed to connect but the engine will remain up while existing users are still connected.

   b. To bring the engine down immediately, use the command:

      onmode –ky

      Any open transactions will be lost and rolled back when the engine is brought back up.

   Note, there is no automatic shutdown in Fitrix, it is assumed your server stays up. However, shutting down the server with IDS up rarely causes a problem. This would amount to using the onmode –ky command.

ADDING AN AUTO STARTUP AND SHUTDOWN TO YOUR LINUX BOOT

You may want the Informix database instances to startup and shutdown as part of the Linux OS boot. See Appendix C for details.

DATABASE - ADVANCED CONCEPTS AND COMMANDS

This section provides details on how to perform complex commands. Incorrectly performing the commands in this section could result in data loss or system instability and should be attempted only by individuals with a deep understanding of Informix.

DATABASE ADMINISTRATION

The basic building block for data stored in Informix is the *chunk*. Each database is contained in a DBSpace. A DBSpace is made up of one or more chunks: ordinary OS files (cooked files) in Fitrix. Chunks are of a fixed size and do not grow or shrink.

Adding chunks expands the DBSpace that contains your database. This won't make your database larger; but, instead, increases the amount of space available for it to use.

Warning! Never add a chunk when doing so will create a situation where the hard drive will be greater than 80% full. Filling the hard drive to capacity will cause the system to crash. As a precaution, you should maintain a 20% free space buffer on your hard drive.

At initial setup, the Fitrix instance 'dev' has the following DBspaces:

Number	Nchunks	Owner	Name	Databases
1	1	informix	rootdbs	sysmaster, sysuser, sysadmin, sysutils
2	1	informix	tempdbs	
3	1	informix	datadbs	standard, sample
4	1	informix	blobdbs	

There are no databases in 'tempdbs' or 'blobdbs' because the DBSpace 'tempdbs' is for special transitory tables created by programs; the DBSpace 'blobdbs' is for Binary Large Objects such as images.

USING SQL TO MAKE DATABASE QUERIES

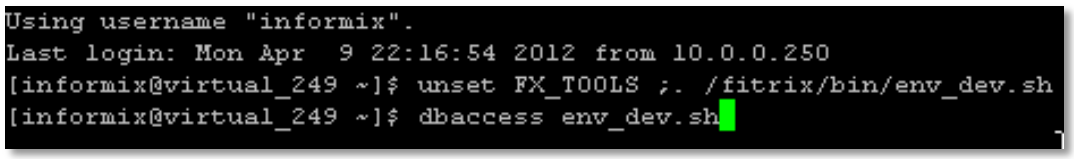
To run SQL, you must first log in to your target environment.

1. Set the proper environment, substituting dev, prod or train as necessary:

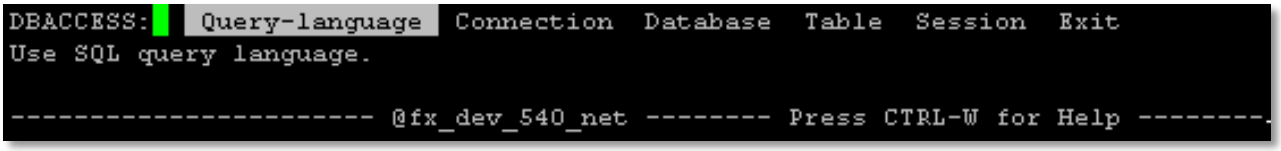
   unset FX_TOOLS ;. /fitrix/bin/env_dev.sh

2. Specify which database on which you wish to run SQL statements by entering, substituting the proper environment as necessary.

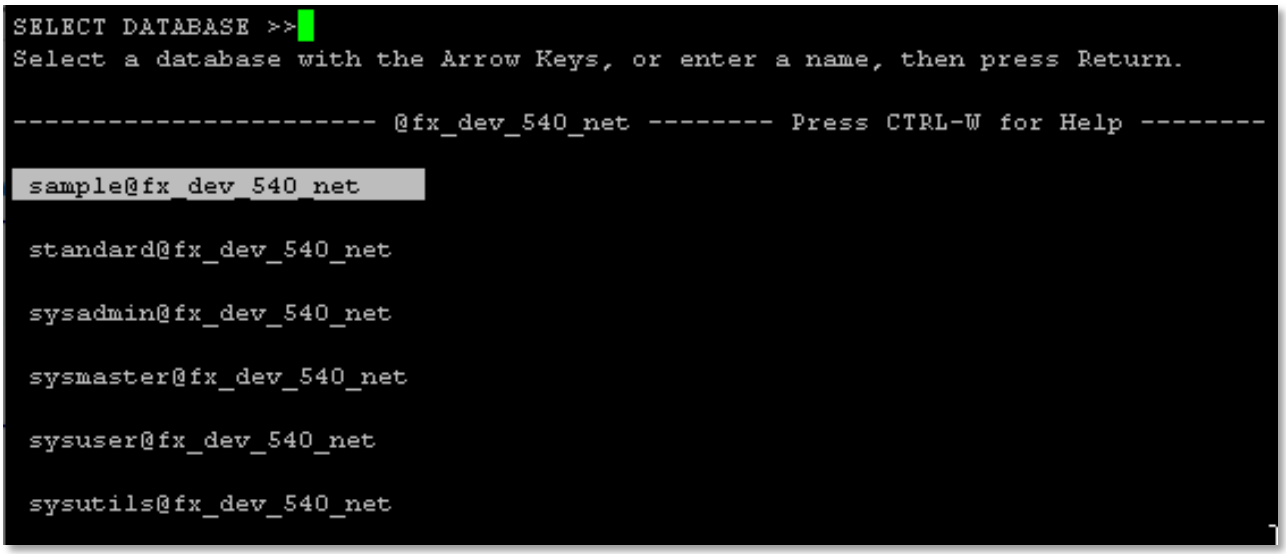
   Dbaccess env_dev.sh



3. Select **Query-language** and press Enter.



4. Select a database from the list and press Enter.



5. Select **New**.

6. To find out which DBSpace contains a certain database, enter the following SQL statement:

```
DATABASE sysmaster;
SELECT b.dbsname, a.name
        FROM sysdbspaces a, systabnames b
        WHERE a.dbsnum= partdbsnum(b.partnum)
        AND b.tabname="systables";
```

```
NEW:     ESC     = Done editing       CTRL-A = Typeover/Insert      CTRL-R = Redraw
         CTRL-X = Delete character   CTRL-D = Delete rest of line

------------ sample@fx_dev_540_net ------------- Press CTRL-W for Help --------

DATABASE sysmaster;
SELECT b.dbsname, a.name
         FROM sysdbspaces a, systabnames b
         WHERE a.dbsnum= partdbsnum(b.partnum)
         AND b.tabname="systables";
```

7. When you are done entering your SQL statements, press Esc.
8. Run should already be selected. Press Enter to run the SQL statements.
9. The returned results will provide you with the details to which DBSpace contains which database.

```
SQL:  New  Run  Modify  Use-editor  Output  Choose  Save  Info  Drop  Exit
Run the current SQL statements.

----------- sysmaster@fx_dev_540_net ----------- Press CTRL-W for Help --------


dbsname  sysmaster
name     rootdbs

dbsname  sysuser
name     rootdbs

dbsname  sysadmin
name     rootdbs

dbsname  sysutils
name     rootdbs

dbsname  standard
name     datadbs

dbsname  sample
name     datadbs
```

10. Select **Exit** and press Enter when you are finished.

BACKING UP YOUR FITRIX COMPLETE DATA AND SOFTWARE

If you are running Fitrix as a VMware virtual, the easiest and safest way to backup all of your Fitrix programs and data is to simply backup the entire Fitrix virtual environment. This ensures that everything is included in the backup and recovery is simply a matter of recovering a prior good backup of the Fitrix virtual environment which can even be recovered intact to a new or different VMware virtual server. Relicensing and reconfiguring for any hardware differences may apply but is normally minor. It is recommended that you follow the instructions below for shutting down your Fitrix database instances below before making your

backup, however many of our customers make virtual image backups without doing this which risks losing any transactions still in memory during the backup.

If you are not running Fitrix as a VMware virtual or want a more manual backup method, continue reading:

1. Making a Complete Fitrix Backup (basic method):

Your entire Fitrix Complete software and databases are completely contained in a file structure which is pointed to from the '/fitrix' link. To backup all of Fitrix (programs and data), just shut down all of the database instances (see below) and copy all of '/fitrix' to your backup media. Be sure to use a copy command that preserves all file permissions.

Your Linux systems administrator will determine the appropriate backup media and methods, but here is an example of making a full backup of Fitrix programs and data to tape on a Red Hat Enterprise Linux version 5 system:

First, have all users log completely out of all Fitrix applications

Next shut down all databases or reboot the Linux server (see instructions below)

login as root

cd /fitrix

tar cvf /dev/tape . ('dev/tape' will vary depending on your system)

Be sure to verify your backup media

2. Shutting down your Fitrix Database Instances:

Unless you are using an advanced IDS database backup method, it is critical to shut down each of your Fitrix database instances before making your backup. Failure to shut down a database instance will result in a corrupt copy of the database.

To do this:

1. have all users log completely out of all Fitrix applications
2. log into your Linux server as 'root' and access the '#' prompt
3. to bring down the database instances in the 'production' environment:

   . /fitrix/bin/env_prod.sh

   onmode –ky

4. to bring down the database instances in the 'development' environment:

   . /fitrix/bin/env_dev.sh

   onmode –ky

5. to bring down the database instances in the 'training' environment:

   . /fitrix/bin/env_train.sh

   onmode –ky

An alternate method of shutting down the database instances is to shutdown and restart your Linux server. Shutting down your Linux server will shut down the Fitrix database instances and the databases will remain shutdown until someone logs in to Fitrix.

There is no need to bring the databases back up. The Fitrix user login will automatically start the database instance if it is not running. The first user to log-in will notice a short delay while the database instance is starting.

3. Backing up only the database(s) (for advanced users)

To backup only the data, you will need to identify the specific database instance or database to backup. Within each Fitrix environment (production, development, training) there is a 'data' folder where the databases for that environment are located. Each environment contains one database 'instance' that contains all databases for the environment. The database instance is a proprietary file structure that appears as a set of Linux files. We recommend that you backup the entire data folder structure which will contain the entire database instance and all databases for the environment. These are:

/fitrix/fx_prod/data

/fitrix/fx_dev/data

/fitrix/fx_train/data

Before making a backup, you will need to shut down the database instances.

The above backup method obtains an image backup of the database instance that can only be restored in its entirety and only to the exact original location to run under the exact same version of the Informix software.

An alternate and more flexible backup method is to create an export of each database to ascii delimited flat files which can then be copied to your backup media. To create an export of a database:

1) have all users log completely out of all Fitrix applications
2) DO NOT bring down the database instance, it must be up for this process
3) login as 'root' or 'informix'
4) . /fitrix/bin/env_prod.sh (access the desired environment: prod, dev, or train)
5) cd /fitrix/fx_prod/data (navigate to the desired data folder: prod, dev, or train)
6) dbexport –d live (specify the name of the database to export, in this example 'live')

This will create a folder named live.exp that will contain a complete export of your database including data, schema, and permissions. Copy this (????.exp) folder to your backup media and you will have a complete backup of that database that can be restored in full or in part and to any location or version of Fitrix but requires a database administrator to make the recovery.

4. Recovering a Fitrix backup

To recover a Fitrix backup made using the 'basic' method above, bring down the databases and either restore all of Fitrix (/fitrix), or just the database instance in question ('??/data') by copying your backup files to their original locations.

Please note that if you are recovering a backup of '/fitrix' or '/fitrix/fx_????/data' you will need to recover to the exact original location. You are working with an image backup of the database and somewhere within this image is a record of the exact file location of itself which it requires to operate.

To recover a backup made using any method other that the basic method defined above, consult your database administrator.

5. Additional Backup Guidelines

There are many strategies for managing backups and many backup devices (tape, removable hard drive, internet, flash drive, …). Your Linux systems administrator will recommend a strategy that is best for you. We do suggest the following guidelines:

1. Backup at least your databases at least 5 nights per week.
2. Maintain at least the previous 5 nightly backups so that you can recover from any of these.
3. Keep at least 3 recent copies of your backups off site (typically this is your last 3 Friday/weekly backups)
4. Verify your backup every night to confirm that the media is readable
5. Practice recovering from a backup at least twice a year to confirm your backup strategy
6. Review your backup strategy at least once a quarter.

6. Advanced Backup Methods

For advanced users: Fitrix uses the IBM/Informix IDS database. This is a very robust fully featured SQL relational database product. There are many more sophisticated backup methodologies available to trained IDS database administrators including the ability to make continuous 'on-line' backups that allow 24x7 database operations. IBM offers a full complement of training classes for IDS DBA's and Fourth Generation also offers DBA consulting services.

FIND THE SIZE OF AN INFORMIX DATABASE

To determine the size of an Informix database, you will need to run a SQL query.

1. Enter the following SQL by selecting Query-language > New.

```
SELECT    t1.dbsname,
        round(sum(t2.nptotal)*(t2.pagesize/1024)/1024,2) mb_total,
        round(sum(t2.npused)*(t2.pagesize/1024)/1024,2) mb_used,
        round(sum(t2.npdata)*(t2.pagesize/1024)/1024,2) mb_data
FROM      sysmaster:systabnames t1, sysmaster:sysptnhdr t2
WHERE     t1.partnum = t2.partnum
AND       dbsname  = "standard"
GROUP BY  t1.dbsname, t2.pagesize;
```

2. Press Esc and Enter to run the SQL Query.

```
SQL:  New  Run  Modify  Use-editor  Output  Choose  Save  Info  Drop  Exit
Run the current SQL statements.

----------- sysmaster@fx_dev_540_net ----------- Press CTRL-W for Help --------

SELECT    t1.dbsname,
          round(sum(t2.nptotal)*(t2.pagesize/1024)/1024,2) mb_total,
          round(sum(t2.npused)*(t2.pagesize/1024)/1024,2) mb_used,
          round(sum(t2.npdata)*(t2.pagesize/1024)/1024,2) mb_data
FROM      sysmaster:systabnames t1, sysmaster:sysptnhdr t2
WHERE     t1.partnum = t2.partnum
AND       dbsname  = "standard"
GROUP BY  t1.dbsname, t2.pagesize;
```

3. The data returned will be similar to the following:

```
SQL:  New  Run  Modify  Use-editor  Output  Choose  Save  Info  Drop  Exit
Run the current SQL statements.

----------- sysmaster@fx_dev_540_net ----------- Press CTRL-W for Help --------


dbsname   standard
mb_total  48.92
mb_used   36.83
mb_data   14.20
```

mb_total – Is the total MB allocated for this database
mb_used - A page is used if at least one row is/was in it.
mb_data - The total amount of completely full pages.

OPTIMIZE A DATABASE

To optimize performance, run the SQL statement:

update statistics;

MAKING SENSE OUT OF 'ONSTAT -D'

The onstat utility from IBM for Informix is very useful in providing information about your running Informix database engine instances. The following are just small excerps of the set of parameters available in onstat. Please refer to the IBM Informix documentation for a full discussion of the onstat utility for version 12.10 of Informix On-Line at: https://www.ibm.com/support/knowledgecenter/SSGU8G_12.1.0/com.ibm.adref.doc/ids_adr_0488.htm.

1. Enter the following to list the dbspaces and chunks.

onstat –d

```
IBM Informix Dynamic Server Version 11.50.UC7E -- Quiescent -- Up 10 days 03:00:30 -- 161068 Kbytes

Dbspaces
address  number   flags      fchunk   nchunks  pgsize   flags    owner    name
4aed1808 1        0x60001    1        1        2048     N  B     informix rootdbs
4afb4e48 2        0x42001    2        1        2048     N TB     informix tempdbs
4aed1b88 3        0x60001    3        1        2048     N  B     informix datadbs
4aed1ce8 4        0x60011    4        1        10240    N BB     informix blobdbs
 4 active, 2047 maximum

Note: For BLOB chunks, the number of free pages shown is out of date.
      Run 'onstat -d update' for current stats.

Chunks
address  chunk/dbs     offset     size       free       bpages     flags pathname
4aed1968 1      1      0          250000     206207               PO-B- /fitrix/fx_dev/data/ids_11/chunks/chunk1
4afa1430 2      2      0          25000      24947                PO-B- /fitrix/fx_dev/data/ids_11/chunks/chunk2
4afa1608 3      3      0          500000     440562               PO-B- /fitrix/fx_dev/data/ids_11/chunks/chunk3
4afa17e0 4      4      0          125000    ~25000      25000     POBB- /fitrix/fx_dev/data/ids_11/chunks/chunk_blob1
 4 active, 32766 maximum

NOTE: The values in the "size" and "free" columns for DBspace chunks are
      displayed in terms of "pgsize" of the DBspace to which they belong.

Expanded chunk capacity mode: always
```

To determine which chunk corresponds to which dbspace, match the number column entry in dbpaces to the dbs entry in Chunks.

CREATE A NEW DATABASE FOR TRAINING PURPOSES.

Mount the original media or obtain a copy of the sample database dataset by exporting it. To do this from the development instance, enter the following statements as user root or informix:

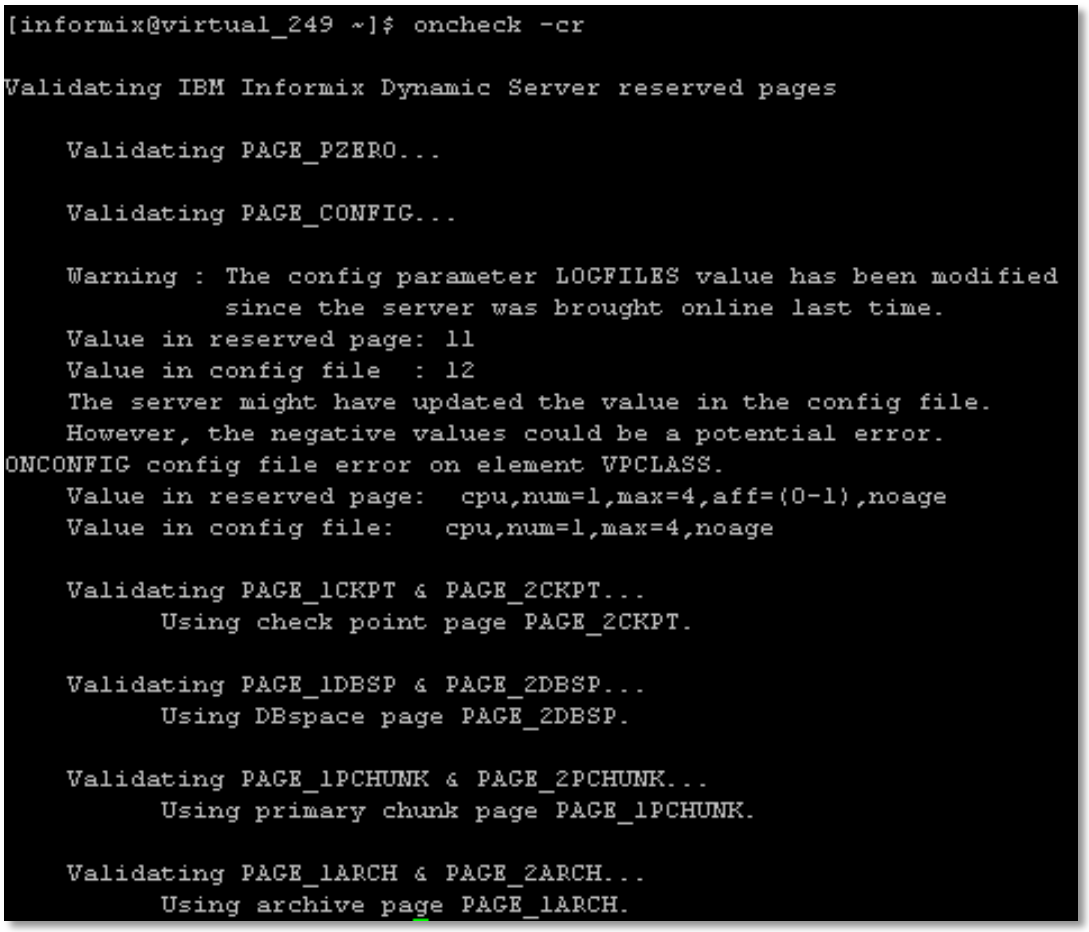
unset FX_TOOLS;. /fitrix/bin/env_dev.sh	- set up in the development environment
cd /fitrix/fx_train/data/chunks	- change directory to the training data area to store the exported database
export sample	- export the database creating an asci copy of it
unset FX_TOOLS;. /fitrix/bin/env_train.sh	- set up in the training environment
import sample	- import the database sample into the training instance
ontape –s –U sample	- set up the sample database to use unbuffered loggin
echo "grant dba to public"|dbaccess sample	- grant access for all users to the sample database

Users can now log into the training instance and will have the sample database available to them for running Fitrix programs.

USEFUL ON-LINE COMMANDS

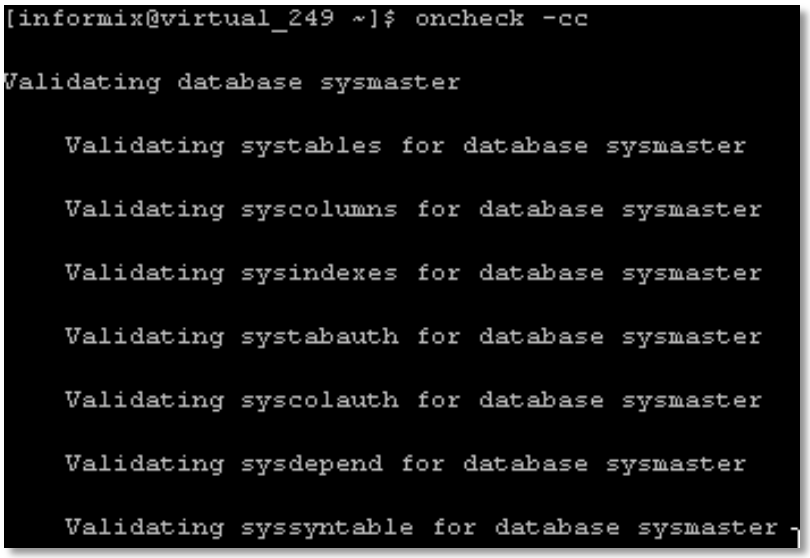
Check consistency of the reserved pages:

oncheck –cr



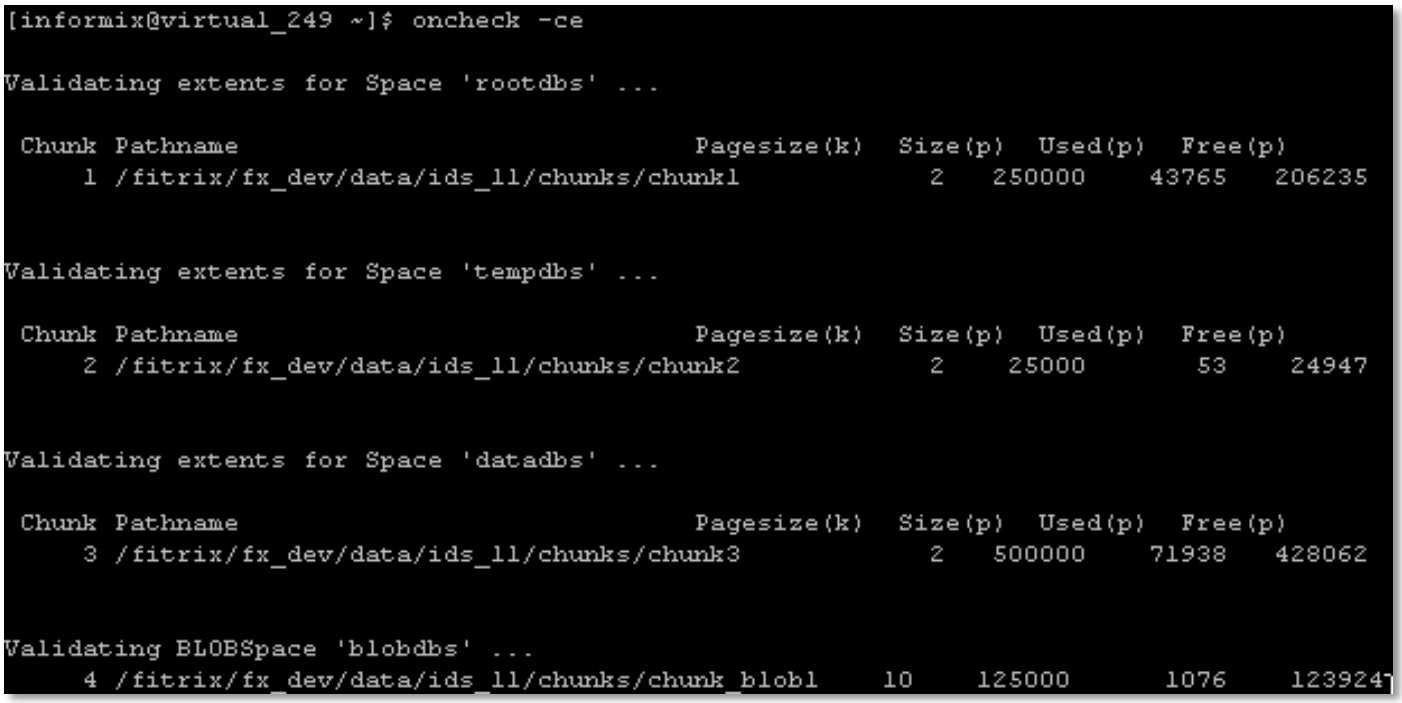
Check consistency of the system catalog tables:

oncheck –cc



Check the consistency of the extents:

oncheck –ce



Check consistency of the data and index pages within the specified database (table name is optional)

oncheck -cDI database_name [:table_name]

Look at memory (perhaps orphaned) memory segments

ipcs –m

```
[informix@virtual_249 ~]$ ipcs -m

------ Shared Memory Segments --------
key        shmid      owner      perms      bytes      nattch     status
0x527e4801 0          root       660        114651136  12
0x527e4802 32769      root       660        33439744   12
0x527e4803 65538      root       666        65536      12
0x527e4804 98307      informix   660        8388608    12
0x527e4805 131076     informix   660        8388608    12
```

Remove orphaned memory segments

iprm -m <shmid>

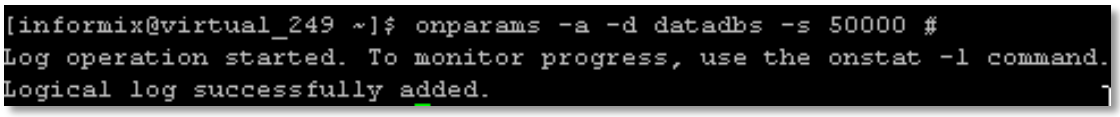
List logical log files:

onstat –l

```
[informix@virtual_249 ~]$ onstat -l

IBM Informix Dynamic Server Version 11.50.UC7E -- On-Line -- Up 4 days 01:19:36 -- 161068 Kbytes

Physical Logging
Buffer bufused  bufsize  numpages   numwrits   pages/io
  P-1  0        64       12998      710        18.31
      phybegin         physize    phypos     phyused    %used
      1:263            10000      8148       0          0.00

Logical Logging
Buffer bufused  bufsize  numrecs    numpages   numwrits   recs/pages pages/io
  L-2  0        32       1264281    108831     69025      11.6       1.6
       Subsystem    numrecs    Log Space used
       OLDRSAM      1263695    125565148
       HA           586        25784

address  number   flags    uniqid   begin              size     used    %used
4afb4b30 1        U-B----  517      1:10263            2500     2500   100.00
4afb4b78 2        U-B----  518      1:12763            2500     2500   100.00
4afb4bc0 3        U-B----  519      1:15263            2500     2500   100.00
4afb4c08 4        U-B----  520      1:17763            2500     2500   100.00
4afb4c50 5        U-B----  521      1:20263            2500     2500   100.00
4afb4c98 6        U-B----  522      1:22763            2500     2500   100.00
4afb4ce0 7        U---C-L  523      1:25263            2500     1906    76.24
4afb4d28 8        U-B----  512      1:27763            2500     2500   100.00
4afb4d70 9        U-B----  513      1:30263            2500     2500   100.00
4afb4db8 10       U-B----  514      1:32763            2500     2500   100.00
4afb4e00 11       U-B----  515      3:59452            10000    10000  100.00
4c7a2fd0 12       U-B----  516      3:69452            2500     2500   100.00
 12 active, 12 total
```

Add a log:

onparams -a -d datadbs -s 50000 #



This command adds a 50,000 KB (50MB) log file to datadbs.

Activity log files:

1. Switch to the tmp directory

   cd $informixdir/tmp

2. Enter the following, substituting prod or train as necessary:

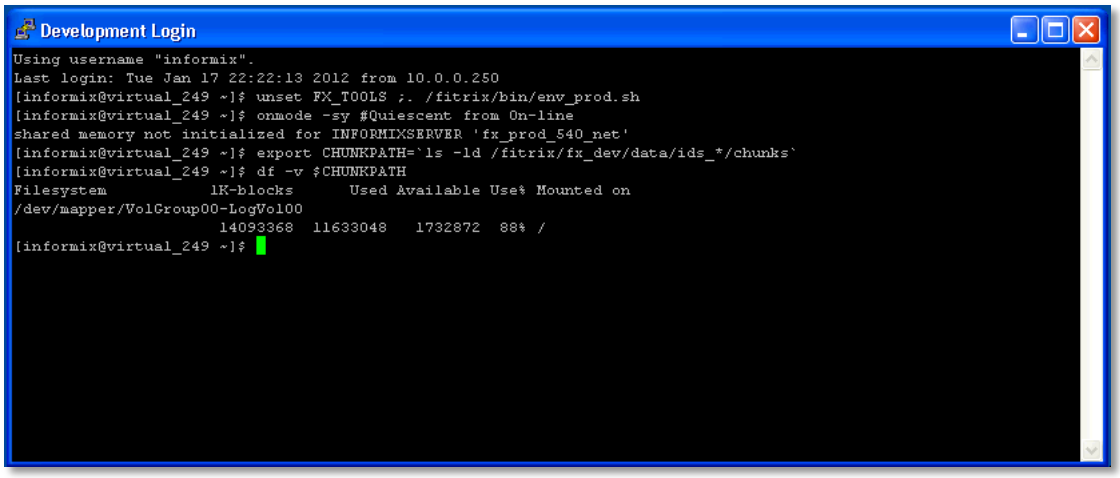
   more online_dev.log

EXPANDING A DATABASE

DETERMINE EXISTING DATABASE CONDITIONS

1. Log in as informix, set the environment, and put the engine in quiescent mode.
2. Chunks for each instance (prod, dev and train) are all stored in their own directory under the appropriate section of the Fitrix tree. After setting a particular environment, the environment variable $CHUNKPATH will point to the location used for database chunks. Remember, filling your hard drive to capacity will crash the system and can cause substantial data loss. You should always check the available disc space to make sure your expansion needs will not fill the hard drive beyond 80% capacity. To check disc space, enter:

   df -v $CHUNKPATH



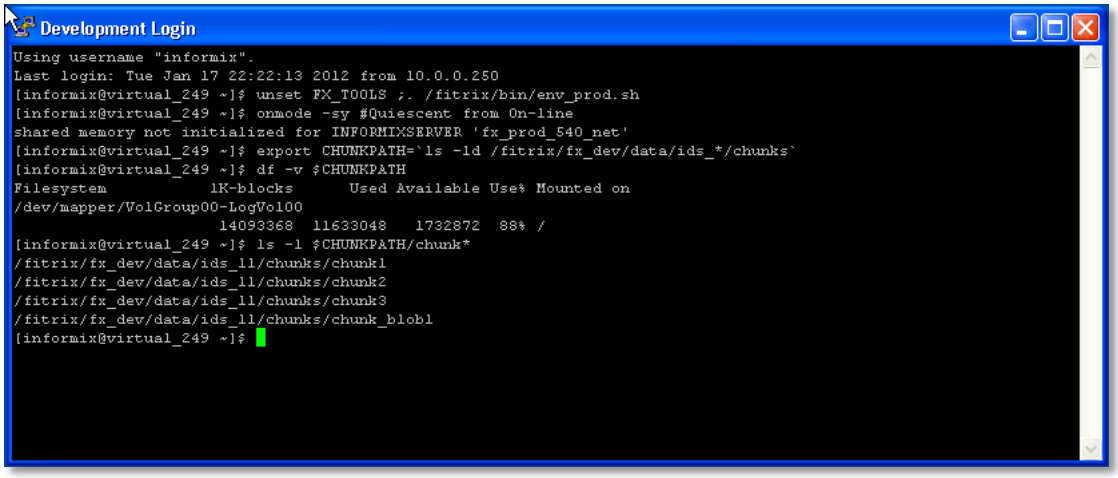
   Filesystem 1K-blocks Used Available Use% Mounted on
   /dev/mapper/VolGroup00-LogVol00
   14093368 11632920 1733000 88% /

   In this example, you can see that 11.6 GB of 14 GB of disc space, or 88% of the space is in use, and that there is 1.7 GB remaining.

   It would not be recommended that you expand this database any further. You should never fill your hard drive more than 80%.

3. Enter the following to find out what chunks already exist (again, notice the usage of lower-case "L" vs. the numeral one):

   ls -1 $CHUNKPATH/chunk*



Regular chunks are named: chunk# or chunk_blob# for blobs, where '#' is just a sequential number.

CREATING THE COPY

Now you will set some temporary environment variables. The number of the chunk should be the next sequential number (in the previous step, you saw that there are 3 existing chunks). For this example, you will add a chunk to a data space, rather than a blob space.

4. Set the chunk number by entering:

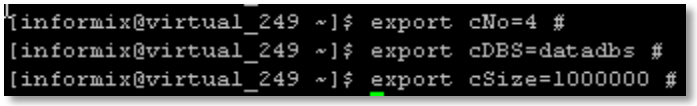
   export cNo=4

5. Set the data space to add the chunk to by entering:

   export cDBS=datadbs

6. Define the size of your new chunk in kilobytes (1 GB is equal to 1,000,000 KB) by entering:

   export cSize=1000000



7. Create an empty chunk file by entering the following commands:

   cd $CHUNKPATH

   Note: This command should change your directory. If it does not, review your previous entries.

   touch chunk${cNo}

   chmod 660 chunk${cNo} ;chown informix:informix chunk${cNo} ;ls -la

```
[informix@virtual_249 ~]$ cd $CHUNKPATH
[informix@virtual_249 chunks]$ touch chunk${cNo}
[informix@virtual_249 chunks]$ chmod 660 chunk${cNo} ;chown informix:informix chunk${cNo} ;ls -la
total 1802460
drwxrwxrwx 6 informix informix       4096 Jan 18 22:28 .
drwxrwxrwx 3 informix informix       4096 Sep 21  2010 ..
drwxrwxr-x 2 fitrix   sys           20480 Sep 21  2010 baseplustemp_set.exp
lrwxrwxrwx 1 informix informix          7 Sep 21  2010 chunk1 -> cooked1
lrwxrwxrwx 1 informix informix          7 Sep 21  2010 chunk2 -> cooked2
lrwxrwxrwx 1 informix informix          7 Sep 21  2010 chunk3 -> cooked3
-rw-rw---- 1 informix informix          0 Jan 18 22:28 chunk4
lrwxrwxrwx 1 informix informix         12 Sep 21  2010 chunk_blob1 -> cooked_blob1
-rw-rw---- 1 informix informix  512000000 Jan 18 22:24 cooked1
-rw-rw---- 1 informix informix   51200000 Jan 18 22:08 cooked2
-rw-rw---- 1 informix informix 1024000000 Jan 16 15:53 cooked3
-rw-rw---- 1 informix informix  256000000 Sep 21  2010 cooked_blob1
-rw-rw-rw- 1 informix informix     575044 Sep 21  2010 dbimport.out
-rw-rw-rw- 1 informix informix         20 Sep 21  2010 dbimport_sample_train.out
-rw-rw-rw- 1 informix informix         20 Sep 21  2010 dbimport_standard_baseplustemp.out
drwxr-xr-x 2 informix informix      24576 Sep 21  2010 sample.exp
drwxr-xr-x 2 informix informix      24576 Sep 21  2010 standard.exp
drwxrwxr-x 2 fitrix   sys           20480 Sep 21  2010 train_set.exp
```

8. Set a temporary variable by entering:

   cChunkPath=`pwd`/chunk${cNo}

   ls -la $cChunkPath

```
[informix@virtual_249 chunks]$ cChunkPath=`pwd`/chunk${cNo}
[informix@virtual_249 chunks]$ ls -la $cChunkPath
/fitrix/fx_dev/data/ids_11/chunks/chunk4
```

   You can see from the returned statement that our fourth chunk is almost ready.

9. Preview the statement by entering:

   echo onspaces -a $cDBS -p $cChunkPath -o 0 -s $cSize

```
[informix@virtual_249 chunks]$ echo onspaces -a $cDBS -p $cChunkPath -o 0 -s $cSize
onspaces -a datadbs -p /fitrix/fx_dev/data/ids_11/chunks/chunk4 -o 0 -s 1000000
```

   By using the echo command, you can verify the parameters you entered previously for the chunk.

   The switches you are using in this statement define the following variables:

   -a adds the chunk to dbspace

   -p defines the path

   -o defines the offset

   -s defines the size (in this case, calling the variable you defined in step 10)

10. Make the chunk by entering:

    onspaces -a $cDBS -p $cChunkPath -o 0 -s $cSize ;ls -la chunk${cNo}

    It may take some time once you press the Enter key, depending on the size of the chunk you have defined. After the process completes, you will receive the following statement, letting you know that creation of your chunk is complete.

-rw-rw---- 1 informix informix 0 Jan 17 22:44 chunk4

VERIFICATION AND FINAL STEPS

11. Rename the chunk and make a link to it:

    mv chunk${cNo} cooked${cNo}

    ln -s cooked${cNo} chunk${cNo} ;ls –la

```
[informix@virtual_249 chunks]$ ls -la chunk4
-rw-rw---- 1 informix informix 0 Jan 18 22:28 chunk4
[informix@virtual_249 chunks]$ mv chunk${cNo} cooked${cNo}
[informix@virtual_249 chunks]$ ln -s cooked${cNo} chunk${cNo} ;ls -la
total 1802460
drwxrwxrwx 6 informix informix       4096 Jan 18 22:46 .
drwxrwxrwx 3 informix informix       4096 Sep 21  2010 ..
drwxrwxr-x 2 fitrix   sys           20480 Sep 21  2010 baseplustemp_set.exp
lrwxrwxrwx 1 informix informix          7 Sep 21  2010 chunk1 -> cooked1
lrwxrwxrwx 1 informix informix          7 Sep 21  2010 chunk2 -> cooked2
lrwxrwxrwx 1 informix informix          7 Sep 21  2010 chunk3 -> cooked3
lrwxrwxrwx 1 informix fxdev             7 Jan 18 22:46 chunk4 -> cooked4
lrwxrwxrwx 1 informix informix         12 Sep 21  2010 chunk_blob1 -> cooked_blob1
-rw-rw---- 1 informix informix  512000000 Jan 18 22:39 cooked1
-rw-rw---- 1 informix informix   51200000 Jan 18 22:08 cooked2
-rw-rw---- 1 informix informix 1024000000 Jan 16 15:53 cooked3
-rw-rw---- 1 informix informix          0 Jan 18 22:28 cooked4
-rw-rw---- 1 informix informix  256000000 Sep 21  2010 cooked_blob1
-rw-rw-rw- 1 informix informix     575044 Sep 21  2010 dbimport.out
-rw-rw-rw- 1 informix informix         20 Sep 21  2010 dbimport_sample_train.out
-rw-rw-rw- 1 informix informix         20 Sep 21  2010 dbimport_standard_baseplustemp.out
drwxr-xr-x 2 informix informix      24576 Sep 21  2010 sample.exp
drwxr-xr-x 2 informix informix      24576 Sep 21  2010 standard.exp
drwxrwxr-x 2 fitrix   sys           20480 Sep 21  2010 train_set.exp
```

    You can see from the returned statement that chunk4 is now cooked4, the same as your existing chunks.

12. Make a level 0 archive by entering:

    ontape -s -L 0

13. Print spaces by entering:

    onstat -d update

    By entering the update command, you are requesting that the server update BLOB chunk statistics.

14. If you re-run the ls -1 $CHUNKPATH/chunk* command at this point, you should see your new chunk in the list.

```
[informix@virtual_249 chunks]$ ls -1 $CHUNKPATH/chunk*
lrwxrwxrwx 1 informix informix  7 Sep 21  2010 /fitrix/fx_dev/data/ids_11/chunks/chunk1 -> cooked1
lrwxrwxrwx 1 informix informix  7 Sep 21  2010 /fitrix/fx_dev/data/ids_11/chunks/chunk2 -> cooked2
lrwxrwxrwx 1 informix informix  7 Sep 21  2010 /fitrix/fx_dev/data/ids_11/chunks/chunk3 -> cooked3
lrwxrwxrwx 1 informix fxdev     7 Jan 18 22:46 /fitrix/fx_dev/data/ids_11/chunks/chunk4 -> cooked4
lrwxrwxrwx 1 informix informix 12 Sep 21  2010 /fitrix/fx_dev/data/ids_11/chunks/chunk_blob1 -> cooked_blob1
```

15. Congratulations – you have created a chunk and expanded your database. Bring the engine back to On-line state: onmode -m # On-line

CLONING A DATABASE

To make a database for testing or training, clone an existing database.

1. As you did when you expanded the database, log in as informix.
2. Set the proper environment, substituting prod or train as necessary:

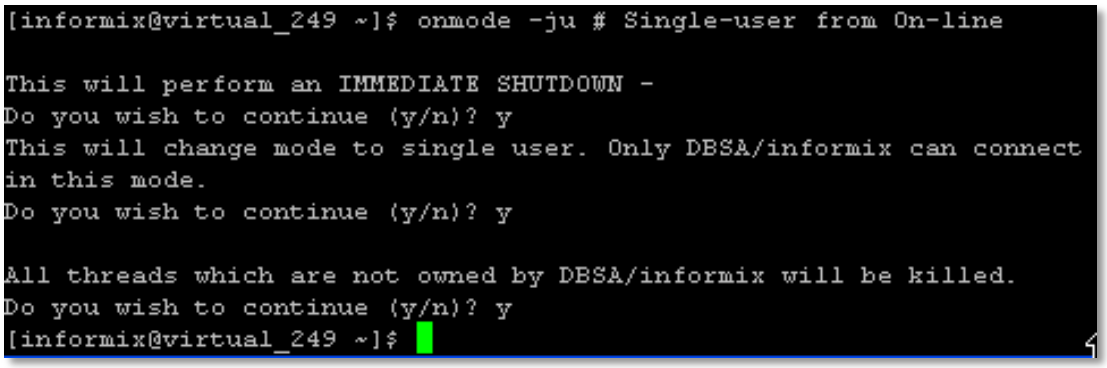
   unset FX_TOOLS ;. /fitrix/bin/env_dev.sh

3. Check disk space

   df -v $CHUNKPATH

4. Bring engine to single-user mode with the following command, confirming each question with a Y response:

   onmode -jy # Single-user from On-line



5. Export an existing database; for this example, database 'live' will be cloned to new database 'newdb'.

   rm –f dbexport.out

   dbexport –q live

   mv live.exp newdb.exp

   mv newdb.exp/live.sql newdb.exp/newdb.sql

   vi newdb.exp/newdb.sql

   Change: { DATABASE live delimiter | }

   To: { DATABASE newdb delimiter | }

6. Import the new database

   rm –f dbimport.out

   dbimport -q newdb -d *datadbs* (where datadbs is the DBSpace it is to be in)

7. Turn on logging

   ontape -s -U newdb

8. Make a level 0 archive

   ontape -s -L 0

9. Bring engine up to on-line state

   onmode -m # On-line

PRINTERS

OVERVIEW OF PRINTERS

Fitrix can print to Client printers (any printer accessible from your MS-Windows Client), or to Linux Host printers (any printer accessible from your Linux host).

WINDOWS CLIENT PRINTERS

Windows Client printers require no special configuration for Fitrix, If you can print successfully to the printer from standard Windows software such as MS-Word, then Fitrix should be able to access and print in text or graphical mode to the printer. (The printer does need to be postscript compliant which is almost always the case for modern printers that can print graphically from other MS-Windows software)

LINUX HOST PRINTERS

Linux Host printers must be configured specifically for Fitrix before they can be accessed by Fitrix and used successfully. This will need to be performed by a qualified Linux Systems Administrator.

Host printers are completely optional with Fitrix. If you don't need any of the specific advantages and don't have a Linux Systems Administrator on staff, we recommend you print all of your Fitrix reports and documents to Client printers

Advantages of a Linux Host printer:

- Faster throughput for large printing jobs, prints directly from Fitrix software on Linux Host, does not need to be transferred to Client first.
- Printer(s) is accessible to all Fitrix users (shared Client printers must be configured on each PC from which they will be accessed)
- Easier to tie as default printer to a menu option. (Fitrix can be set to default to a specific printer for an operation such as 'print picking tickets'. The printer name must be uniform across all users which can be tedious to maintain with Client printers)

For full requirements and information for Fitrix Linux Host based printers, please refer to the following web location:
http://www.fitrix.com/tech-support/technical-procedures/fitrix-linux-host-printer-configuration/

PRINTING BUSINESS FORMS

Fitrix offers many methods of printing business forms and configuring Fitrix and your server varies widely depending on you your choices.

1. Forms on plain paper using Fitrix Graphical (PDF) printing.

This is the easiest method of printing business forms as Fitrix will generate a PDF image of your forms and submit those to your printers. This method can be used for all forms other than checks.

First you must configure Fitrix Graphical Printing: http://www.fitrix.com/tech-support/technical-procedures/fitrix-gui-print/

a) Printing to a Client laser or ink jet printer

There is no configuration needed as long as your printer can print a PDF

From the print selection window, select PDF, when the PDF appears on your screen in a PDF viewer, use the print facility in the PDF viewer.

Or

From the print selection window, select client printer, paper source: cut sheet, output format: graphical. This will call the PDF viewer behind the scenes and cause it to print to your selected printer

b) Printing to a Host printer

You must first configure a Linux Host printer that is postscript compatible. See Fitrix Host Printers above.

From the print selection window, select Host printer, output format: graphical. This will generate a PDF image of your forms and submit the image to the designated Host printer queue from Linux.

2. Single part cut-sheet pre-printed forms (such as checks).

These are forms such as your accounts payable or payroll checks that can be loaded into a cut sheet printer such as a laser or ink jet printer. Fitrix will print the data onto your form paper.

a) Printing to a Client laser or ink jet printer

There is no configuration needed.

Load your forms into the printer

Select the form printing option from the Fitrix menu designated for "Client printer".

From the print selection window, select client printer, line width: 80, paper source: cut sheet, output format: Plain Text.

Please note that our standard forms are set for 10cpi but Fitrix cannot set cpi for Client printers and must use another method which results in approximately 11.5cpi for most printers. For this reason a special version of the form printing program is used for proper alignment.

b) Printing to a Host printer

You must first configure a Linux Host printer. See Fitrix Host Printers above.

The printer should be set for 10cpi and 6lpi

From the print selection window, select Host printer, output format: Plain Text. This will generate a text file and submit the file to the designated Host printer queue from Linux.

3. Multi or Single part continuous feed pre-printed forms.

<TBD>

LABEL PRINTERS

If you are configuring a bar code label printer to use with the Fitrix bar code software, please refer to the following section on "Bar Code Label Printers"

If you are configuring a label printer to use with a standard Fitrix label print process other than bar codes, or for a custom label program written with the Fitrix tools, we have the following recommendations:

1. Windows Client or Linux Host based printer
2. Zebra printer (or Zebra emulation) recommended

Linux Host Printer Recommendations:

- CUPS configuration recommended
- Make: Zebra
- Model/Driver: dependent on your specific printer (select a model that corresponds to a label printer)
- Media size: match this to your label
- Output resolution: 203 DPI recommended
- No banners
- CPI: 8

Please test your printer by printing a local text file to the printer before attempting to use it with Fitrix

If this is a Linux Host based printer, please also refer to the following web location for additional information on Fitrix host based printers:
http://www.fitrix.com/tech-support/technical-procedures/fitrix-linux-host-printer-configuration/

BAR CODE LABEL PRINTERS

The Fitrix bar code software requires specific label printer configuration, please make sure that you conform to the following requirements:

Fitrix Bar Code Label printer requirements:

- Must be a Zebra printer
- Must be configured as a Linux host based printer (Windows Client printers are not supported, but this can be a network printer configured in Linux)
- CUPS configuration recommended
- use: textonly.ppd (recommendation)
- The following settings are required, these can be included in the lpr command in the Fitrix $printerlist file (or can be made permanent via lpoptions)
    - -o cpi=12
    - -o lpi=7
    - -o page-top=36
    - -o page-bottom=72
    - -o page-left=57
    - -o page-right=57

- Please test your printer by printing a local text file to the printer using the lp command before attempting to use it with Fitrix

For additional information for Fitrix Linux Host based printers, please refer to the following web location:
http://www.fitrix.com/tech-support/technical-procedures/fitrix-linux-host-printer-configuration/

BAR CODE EQUIPMENT

OVERVIEW OF BAR CODE EQUIPMENT

Fitrix includes bar code support:

- Printing bar code labels
- Capturing bar codes from workstations
- Capturing bar codes and performing bar code transactions from hand held units
    - These can run in text mode
    - These can also run in HTML5 mode

As of this writing, while we have provided HTML5 compatible screens for all of our bar code applications, we have not found a hand held scanner that can smoothly support HTML5 browser applications. While they work on some browsers and handheld devices, they are slow and the screens can be hard to read. Fitrix is shipped with the following bar code programs ready to run in HTML5 mode:

Adjustments: http://192.168.999.999/gas/wa/r/bc_4gm/gwc-i_adjust?OutputMap=DUA_HTML5
Physical Counts: http://192.168.999.999/gas/wa/r/bc_4gm/gwc-i_count?OutputMap=DUA_HTML5
Pick Order: http://192.168.999.999/gas/wa/r/bc_4gm/gwc-i_pick?OutputMap=DUA_HTML5
Bin Move/Putaway: http://192.168.999.999/gas/wa/r/bc_4gm/gwc-i_put?OutputMap=DUA_HTML5
Receive PO: http://192.168.999.999/gas/wa/r/bc_4gm/gwc-i_recver?OutputMap=DUA_HTML5
Product Returns: http://192.168.999.999/gas/wa/r/bc_4gm/gwc-i_retrn?OutputMap=DUA_HTML5
Ship Order: http://192.168.999.999/gas/wa/r/bc_4gm/gwc-i_ship?OutputMap=DUA_HTML5
Transfer Out: http://192.168.999.999/gas/wa/r/bc_4gm/gwc-i_trane?OutputMap=DUA_HTML5
Transfer In: http://192.168.999.999/gas/wa/r/bc_4gm/gwc-i_train?OutputMap=DUA_HTML5
Component Issue: http://192.168.999.999/gas/wa/r/bc_4gm/gwc-sc203?OutputMap=DUA_HTML5
Production Receipt: http:/192.168.999.999/gas/wa/r/bc_4gm/gwc-sc204?OutputMap=DUA_HTML5

To use these url links you will need to:

1. Make a vpn connection from the device if your device is not on the same network as your Fitrix server (or outside of the firewall)
2. Replace 192.168.999.999 with the ip address of your Fitrix server

Or

1. Punch a hole in your firewall so that you can access the HTML5 application from outside of your firewall
2. Point port 8080 to your Fitrix server

3. Replace 192.168.999.999 with your static ip address then append :8080 (i.e. http:/192.168.999.999:8080/gas/wa/r/bc_4gm/gwc-sc204?OutputMap=DUA_HTML5

DEPLOYING A FITRIX SCREEN TO HTML5 BROWSER

OVERVIEW HTML5 DEPLOYMENT

Any Fitrix screen program can be deployed to an HTML5 browser.

No code changes are involved but normally you will want to optimize the program for this use or create a special version for this use, for example:

- To add a login or other security

- To streamline options if deploying to users not trained on the Fitrix user interface
- To adjust screen size and layout for intended devices

To deploy a screen program, there are a few configuration steps required, "Configuring a screen for HTML5 deployment" below for details.

The CRM company screen is deployed by default with your Fitrix installation, you can run this from any HTML5 compatible device (Windows pc, smart phone, tablet, …)

Use the following link:

http://192.168.999.999/gas/wa/r/crm_4gm/gwc-i_saacct

To use thus url link you will need to:

1. Make a vpn connection from the device if your device is not on the same network as your Fitrix server (or outside of the firewall)
2. Replace 192.168.999.999 with the ip address of your Fitrix server

Or

3. Punch a hole in your firewall so that you can access the HTML5 application from outside of your firewall
4. Point port 8080 to your Fitrix server
5. Replace 192.168.999.999 with your static ip address then append :8080 ,i.e.

http:/192.168.999.999:8080/gas/wa/r/bc_4gm/gwc-sc204?OutputMap=DUA_HTML5

Be sure to exit the screen using File → Exit as each screen will consume one user license and the license will not be released until waiting for a lengthy timeout if the browser is closed or abandoned before the program Exit is selected

CONFIGURING A SCREEN FOR HTML5 DEPLOYMENT

These instructions complement the setup instructions that accompany the distribution of the Fitrix 6.x virtual machine instance. They identify all steps necessary to make a Genero program available through a browser.

Initial Configuration

The Fitrix 6.x virtual instance comes completely configured to allow users to make use of the Genero Application Server (GAS). The GAS is the Genero component that allows Genero programs to be served to users through their browser. This therefore allows users to access programs without having to install anything on their user stations making the client setup quite trivial.

The Fitrix 6.x virtual comes with the Apache Web Server completely configured for the execution of Genero programs using the GAS. As such, these instructions will not cover that aspect of the setup but will concentrate on the steps required to add programs to the list of browser launchable programs. Should you need to make changes to the web server configuration, please refer to the GAS setup guide from Fourj's.

GAS Configuration File

The GAS uses the file as.xcf located in the directory $FGLASDIR/etc. This file defines all environment variables and all directories used by the GAS in the serving of Genero programs. This file is a well-structured XML file and must conform to the rules for XML.

All sections related to Fitrix and Fitrix code generation tools are demarcated with comments as in:

<!-- Fitrix stuff :: -->

…Fitrix related entries…

<!-- End Fitrix stuff :: -->

The first Fitrix related section deals with the location of program modules and is located in the <UNX> component entry. Fitrix uses two main environment variables: fg and ifxproject. fg holds the value of the top directory for the Fitrix Accounting system while ifxproject holds the value of the location of the accounting modules themselves. If you are adding a Genero program to be served by the GAS to any of the Fitrix modules, you do not need to make any changes to this section as it already contains references to all the Fitrix modules.

If however you wish to add a separate directory of your own to hold your custom programs, you will need to add an entry to this section to reference that directory. The entry would look like:

<RESOURCE Id="res.path.custom_4gm" Source="INTERNAL">/usr/custom.4gm</RESOURCE>

Here, the directory to be used for custom programs would be /usr/custom.4gm. While you are free to use absolute paths for the value of entries in the configuration file, it is recommended that you use environment variables instead to allow you to make changes without then having to modify the configuration file.

The next Fitrix section of this file is the WEB_APPLICATION_EXECUTION_COMPONENT section. This section defines the location of and environment variables related to the Informix database instance. By default, the Fitrix oriented GAS configuration makes use of the Informix database management system (DBMS). If you wish to use a different DBMS, you would need to modify this section in order to include configuration parameters related to your DBMS.

Next, you would need to modify the IP address used in the INTERFACE_TO_DVM entry to reflect the address of your GAS Server. As well, you would need to modify the MONITOR section in order to define the sub-nets that will be allowed to access the GAS as in:

```
<MONITOR>
  <ALLOW_FROM>127.0.0.1</ALLOW_FROM>
  <ALLOW_FROM>::1</ALLOW_FROM>
  <ALLOW_FROM>192.168.</ALLOW_FROM>
  <ALLOW_FROM>10.</ALLOW_FROM>
</MONITOR>
```

This defines that the local system and the two subnets 192.168.0.0 and 10.0.0.0 can access the GAS running on this node.

Next, under the APPLICATION_LIST section, you will need to add in any custom directories which will include program definition configuration files. The entries here define the location of these files. For your custom directory defined above, you would create the directory /usr/custom.4gm/app and then add an entry to the APPLICATION_LIST entry of as.xcf file as in:

<GROUP Id="custom_4gm">$(res.path.custom_4gm)/app</GROUP>

This identifies the path custom_4gm with the app directory which will hold definition files for the programs within the /usr/custom.4gm directory.

Again, you do not need to add a custom directory if you add your custom programs to previously defined Fitrix directories.

Those are all the changes required to the GAS as.xcf configuration file.

Program Entries

For each program that you want to serve via the GAS, you will need a separate xcf file for it to define its individual characteristics. If you have a program called i_myprg.4gs which is located under the directory /usr/custom.4gm, then you would create a file called /usr/custom.4gm/app/gwc-i_myprg.xcf and the contents would be like:

```
<APPLICATION Parent="defaultgwc">
    <EXECUTION  allowUrlParameters="TRUE"><PATH>$(res.path.custom_4gm)/i_myprg.4gs</PATH><MODULE>i_myprg.42r</MODULE></EXECUTION>
</APPLICATION>
```

The resulting URL to use within the browser would then be:

//<ip of gas server>/gas/wa/r/custom_4gm/gwc-i_myprg

You can also add additional parameters to the line using standard URL conventions if your program is built to accept command line parameters.

Changes to the program configuration files are dynamic and do not require a restart of the Web server while change to the main GAS configuration file require you to restart the sew server for them to take effect.

INSTALLING FITRIX

To install Fitrix:

1. Install the Fitrix Server
   a) Select your Server installation option from the choices below and perform the installation steps for that option
2. Configure the Fitrix Thin Client Install Point
   a) The Thin Client Install Point is now delivered pre-installed and pre-configured with the Fitrix Server and accessed via Samba.
   b) If you are using the Fitrix server virtual install image, all of the final configuration steps are included with the Server configuration instructions.
   c) Use the advanced configuration steps for all other scenarios.
3. Install the Fitrix Thin Client software on each user's pc.
   a) The user's Fitrix Windows Thin Clients are installed from a central Fitrix Thin Client Install Point. The Fitrix Thin Client Install Point is located on the Fitrix server and is accessed as a Samba drive. The Fitrix Thin Client Install Point comes pre-installed with your Fitrix server and requires minor configuration before use.

OVERVIEW OF SERVER INSTALLATION OPTIONS

Fitrix offers the following installation options for the Fitrix Server:

1. Fitrix Complete Series – Installing the virtual server image.
   a) this is the easiest way to install Fitrix
   b) Recommended for all systems with under 25 users
   c) Requires VMware
   d) You must accept our virtual image including Linux distribution and version
2. Fitrix Complete Series – Installing onto your Linux server from download media
   a) You choose the Linux Operating System supported by Fitrix
   b) Canned installation process
3. Fitrix Components Series – Custom installation
   a) You choose any Linux or Unix server and version
   b) You control all installation choices

c) This requires different licensing

INSTALLING AND CONFIGURING THE FITRIX COMPLETE SERIES VIRTUAL SERVER IMAGE

- You must supply a virtual server that meets the virtual pre-install image prerequisites for Fitrix listed here: http://www.fitrix.com/tech-support/pre-installation-requirements/pre-installation-requirements-v6-0/
- You will need your Fitrix License Certificate which contains information required for this installation
- Access the Fitrix media area on our FTP site :
  ftp://ftp.fitrix.com/fitrix/version_6.0/server/vmware/
  - use the ftp login and password provided on your Fitrix License Certificate
  - download the Fitrix .ova file to a location accessible by your VMware server
  - Please note that the Fitrix .ova image is updated regularly as new features and patches are released for Fitrix. Your Fitrix .ova image will be up to date per the date in the image name.
- Import the Fitrix .ova image into your VMware environment
- We recommend 'Thin' provisioning
- Install VMware tools (this has already been done for the image we supply but may require update for your version of VMware)
- Please note that the Fitrix virtual image uses CentOS version 6 which is Open Source and does not require any Linux licensing. All instructions that follow are specific to this operating system and the supplied virtual image.
- before powering up the image, get the network mac address for the image from VMware and write this down
- Power up the image
- Assign an IP address for your Fitrix server: (for our examples, we will use 192.168.0.100)
- Note to systems administrators – in all of the following instructions we use the IP address rather than a name identified by a data name service (DNS). You may prefer to use a DNS entry for your server in which case you would replace the IP address with the DNS name for the server.
- Access the 'console' of the Fitrix host from VMware (you will not be able to access the Fitrix host from ssh until after the initial network settings have been made)
- Login as root
  - The initial password is: Secret1
- # TERM=xterm (recommended)
- Apply the VMware MAC address bug fix:
  - some versions of VMware do not update the MAC address within CentOS
  - here is the article if needed:
  - http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=2002767
  - The issue is that the mac address in the config file on the Fitrix virtual host does not get updated by vmware during the import/deploy of the .OVA
  - get the correct mac address from VSphere (if you did not do so already in the above step):
    - the Fitrix virtual must be powered down for some versions of VMware to view the setting
    - for the virtual, edit settings, drill down on network adaptor
    - write down the mac address from VSphere
  - set the correct mac address in the Fitrix virtual:
  - power up the Fitrix virtual
  - access the console for the Fitrix Virtual Host from VSphere
  - Login as root
    vi /etc/sysconfig/network-scripts/ifcfg-eth0
  - set the correct mac address for variable HWADDR
  - cd /etc/udev/rules.d
  - rm 70-persistent-net.rules (it will recreate itself)
  - (you will need to reboot for these changes to take effect but we will be doing that a few steps below)

- Make local network settings:

  vi /etc/sysconfig/network

  - set HOSTNAME=<your name> (for example: HOSTNAME="Fitrix")
  - The result should resemble this:

    NETWORKING=yes
    HOSTNAME="fitrix"

- Change IP address in Ethernet adaptor setting:

  vi /etc/sysconfig/network-scripts/ifcfg-eth0

  - set IPADDR=<your ip address> (for example: IPADDR=192.168.0.100)
  - set GATEWAY=<your gateway address>

  - set BOOTPROTO=static

  - The result should resemble this:

    DEVICE=eth0
    TYPE=Ethernet
    UUID=532fd828-e2b2-4ce9-8540-f61e0c58a9d4
    ONBOOT=yes
    NM_CONTROLLED=yes
    BOOTPROTO=static
    DEFROUTE=yes
    IPV4_FAILURE_FATAL=yes
    IPV6INIT=no
    NAME="fitrix-eth0"
    IPADDR=192.168.0.100
    PREFIX=24
    GATEWAY=192.168.0.20
    HWADDR=00:50:56:b4:5d:70
    DNS1=8.8.8.8

- Set DNS servers:

  vi /etc/resolv.conf

  - Make the appropriate settings for your system
    - (if you use named services internally, make sure that your named server is listed first)
  - set DOMAIN=<your domain>
  - set SEARCH=<your domain>
  - The result should resemble this:

    domain fgss.local
    search fgss.local
    nameserver 8.8.8.8
    nameserver 4.2.2.1

- Set hosts file:

  vi /etc/hosts

  - Set for your server and network
  - The result should resemble this:

    127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4
    192.168.0.100 fitrix6.<your domain> fitrix6

- You may want to reboot at this point so that you can complete the remaining steps from an ssh session that allows copy/paste, if so log back in as 'root'
- run the following commands from the # prompt:
  - # unset FX_TOOLS
  - # . /fitrix/bin/env_dev.sh
- Set sqlhosts Fitrix services:
  vi $INFORMIXDIR/etc/sqlhosts
  - position to the end of the file, you should see 6 Fitrix services, 2 for each Fitrix environment, Prod, Dev, Train
  - for each of the 6, change the ip address to <your ip address>
  - the result should look similar to this:

```
# Fitrix ************************************************************************
# $INFORMIXSERVER       nettype         $APPSERVER      /etc/services
# Production instance
fx_prod_540_shm    onipcshm  192.168.0.100 fx_prod_540_dummy
fx_prod_540_net    onsoctcp  192.168.0.100 fx_prod_540_srv

# Development instance
fx_dev_540_shm     onipcshm  192.168.0.100 fx_dev_540_dummy
fx_dev_540_net     onsoctcp  192.168.0.100 fx_dev_540_srv

# Training instance
fx_train_540_shm   onipcshm  192.168.0.100 fx_train_540_dummy
fx_train_540_net   onsoctcp  192.168.0.100 fx_train_540_srv
# End Fitrix ********************************************************************
```

- Apache Server Configuration file:
  vi /etc/httpd/conf/httpd.conf
  - find the following line:
    - #ServerName www.example.com:80
  - change it to:
    ServerName 192.168.0.100:80 (using your host ip address)
  - You may need to set localdomain on this entry to your domain as well (if using DNS)
  - You would need to stop and start the Apache Web Server for the changes to take affect, but this won't be needed as we will be rebooting in a step below.
- SAMBA:
  - vi /etc/samba/smb.conf
  - Change this setting to your Fitrix host:
  - >---interfaces = lo 192.168.0.100 /24
  - Change this setting to your network:
  - >---hosts allow = 192.168.0.
  - Samba will be started with Linux at each reboot, but if you need to start it manually:
    - service smb start
  - the command to add this to the boot process is: (this is already done, you do not need to repeat this)
    - sysconfig –level 2345 smb on (There are two dashes in front of level btw)
- Configure the Fitrix install point:

  - There is now a separate 64 and 32 bit install point, these instructions assume you will be using Fitrix on 64 bit clients but repeat the instructions for 32 bit if you will also have some 32 bit clients.
  - The Fitrix install point is now located on the Fitrix server and will be accessed from the Samba share. vi /fitrix/install_point_64/vminstall.ini
    - Locate the "HostName" setting and set it to your host IP address, it should like similar to this:
      - HostName=192.168.0.100
- Reboot the virtual server for the changes to take effect.
- Set the putty configurations in the install point to your Fitrix host IP address:
  - The Fitrix Thin Client Install Point is pre-installed on the Fitrix Server media and by default is accessed by Samba in the following location: "\\999.999.999.999\Fitrix Install Point - 64"
  - (Where 999.999.999.999 is the ip address of your Fitrix server)
  - Access a MS-Windows client and login with an account with 'administrator' privileges.
  - To access the install point in its default location, launch windows explorer aka file explorer (not Internet Explorer) on your Windows Client and navigate to the address of your Fitrix Thin Client Install Point. (i.e. \\192.168.0.100\Fitrix Install Point - 64
  - The following steps would normally be used but are not working currently:
    - ~~locate the program "puttyses.exe" and run it as administrator~~
      - ~~click "set all sessions"~~
      - ~~Enter:~~
        - ~~Name or IP address of application server: i.e. 192.168.0.100~~
        - ~~VMport: 20020~~
        - ~~Four J's Port: 6402~~
      - ~~click 'apply'~~
  - puttyses.exe is not currently able to write to the puttyses.ini file, until this is resolved, please use the following steps to configure your putty sessions:
    - remain in the same folder on your MS-Windows client as above
    - open puttyses.ini with notepad
    - use ctrl-h to find and replace:
      - find: 10.0.0.105
      - replace: <your host ip addrees>
      - replace all
      - save

- login to the Fitrix server as root
- License Fitrix
  - Obtain your Fitrix Certificate of License which will contain all of the information required for licensing
  - This will need to be a new Fitrix Certificate of License that has been updated with Genero license codes for Fitrix 6.0 that uses Genero 2.50
  - Follow the directions to license Fitrix located in the section of this document by that name
- Sendmail configuration
  - Fitrix is preconfigured to use sendmail for email alerts and Flexible Document Delivery. Before you can use this you will need to configure sendmail using the instructions below under the heading "CONFIGURING SENDMAIL FOR USE WITH EMAIL ALERTS AND FDD".
- Your logos for pdf print :
  - All of the configuration for GUI/PDF print has already been completed for your Fitrix host virtual image, the only remaining step is to install your custom logos
  - If you do not already have logos, use the specifications here to create them: http://www.fitrix.com/support/fitrix.gui.print/v5.4x/custom_logo_requirements.pdf
  - If you already have logos, place them in the following folder:

/fitrix/bin/pdfprint/images

  - full information on configuring GUI/PDF print can be found here:
  - http://www.fitrix.com/tech-support/technical-procedures/fitrix-gui-print/fitrix-gui-print-v5-4x/
- FDD configuration
  - Flexible Document Delivery (FDD) is pre-configured and should work with email. If you are also using faxing you will need a Fitrix fax modem and will need to complete the final configuration steps for faxing located here: http://www.fitrix.com/tech-support/technical-procedures/fitrix-virtual-basic/fitrix-virtual-basic-v5-4x/
- Host Based Printers:
  - If you will be using host based printers (optional), these will need to be configured. Please refer to the directions located in the section of this document by that name
  -
- expand the database:
  - Your newly installed Fitrix development and live databases are currently set at the default size for installation.
  - You will need to determine your existing database sizes (if updating or migrating) and compare those to the default sizes installed, then consider near term growth
  - If your databases need expanding follow the directions located in the section of this document by that name
- Secure the default login accounts shipped with Fitrix:
  - See "APPENDIX F - DEFAULT USER ACCOUNTS SHIPPED WITH FITRIX COMPLETE" for a list of default login accounts and initial passwords shipped with Fitrix

ADVANCED CONFIGURATION OF THE FITRIX INSTALL POINT

The Fitrix Thin Clients are each installed from a central Fitrix Install Point.

If you are using the Fitrix VMware virtual Fitrix host, the thin client basic configuration steps were included in your virtual host installation steps and there is no further configuration required.

If you have manually installed Fitrix host software onto your Linux server, continue with these Fitrix Install Point installation steps.

Introduction

Before a Fitrix Windows Client can be installed, the Fitrix Windows Client Install Point must first be installed and configured for your requirements. Typically the install point is installed on a Windows server accessible by all clients. If only one Fitrix client is to be installed, it is also possible to install the install point on that client.

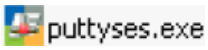
Design architecture

Install Point Machine (probably a Linux Server)

In this example the directory where the install point is kept will be:

\\10.0.0.104\Fitrix Install Point - 64 Browsing to this directory through Windows Explorer might be done like this:

This path was selected during Install Point Installation: 

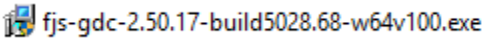
Login Templates are established using: 

Each PC workstation will be installed from this Install Point.

PC Workstation

In this example the directory where the client product is installed is:
C:\Program Files\FourJs\gdc\fitrix\fgss_bin

Browse to the Install Point and install/create:

1) FourJs Genero Desktop Client (GDC).
   a. 

2) Visual Menus
   a. 

3) Logins shortcuts from the Login Templates:

Click:
Click: Start -> All Programs -> Fitrix Accounting 6.00 - > Fitrix Administration -> Login Configuration

When setting up Logins, the PC workstation must be able to access the Login Templates kept in the Install Point. This reference is kept in file:
C:\Program Files\FourJs\gdc\fitrix\fgss_bin\puttyupdate.ini:

```
[installpoint]
\\10.0.0.104\Fitrix Install Point - 64
```

Thus each PC workstation will know where it was installed from (it's Install Point).

*** Note: Do not use mapped drives. Use 'UNC' style paths. ***

For the purpose of this documentation, version '2.50.17' is used. Your version may be different. Make the appropriate substitutions. Name of installation: **fitrix**.

1. Install the 'Install Point'.

The install point comes already preconfigured for you when using the FITRIX COMPLETE SERIES VIRTUAL SERVER IMAGE. Thus no installation effort is required and you can skip to item 2 (Configuring putty Sessions) in this section. If you are not using the FITRIX COMPLETE SERIES VIRTUAL SERVER IMAGE installation method, then please contact Fourth Generation Software for assistance in setting up your custom install point.

2. **Establish PuTTY Session Templates.**

NOTE: Configuring session templates is not required if this is a standard

Fitrix Complete installation, however you must follow the instructions below to 'set all session'.

The Fitrix install point will include a login session template for each unique type of Fitrix login (i.e End User login, Developer login, Training login). Once these are established in the Install Point, they can then be selected during the client installation process.

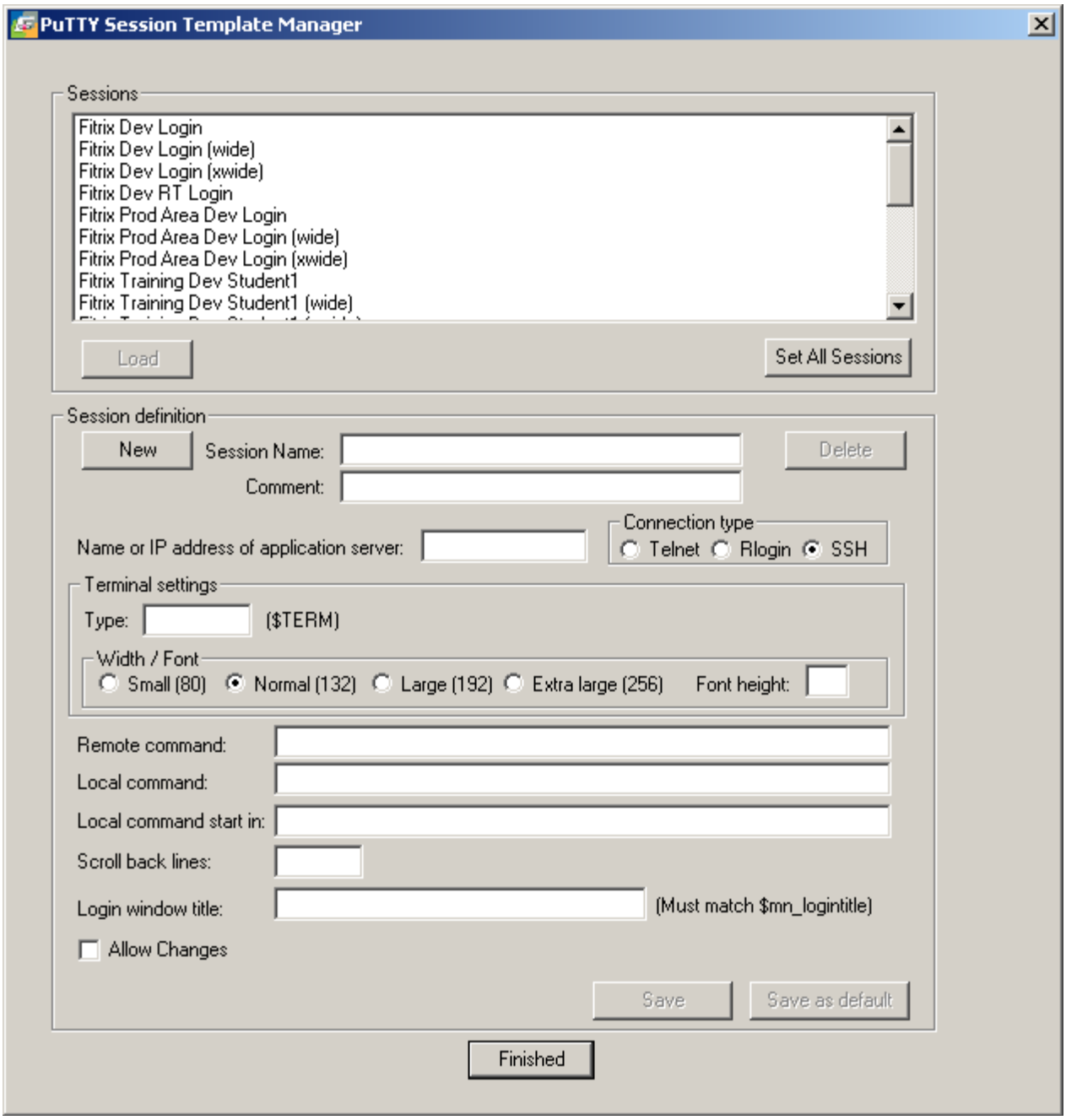
The Fitrix install image comes with a complete set of login session templates ready to be used with a "FitrixComplete or Quickstart" installation. All you will need to do is "Set all session".

You can also use the template manager to edit templates and create new templates if required.

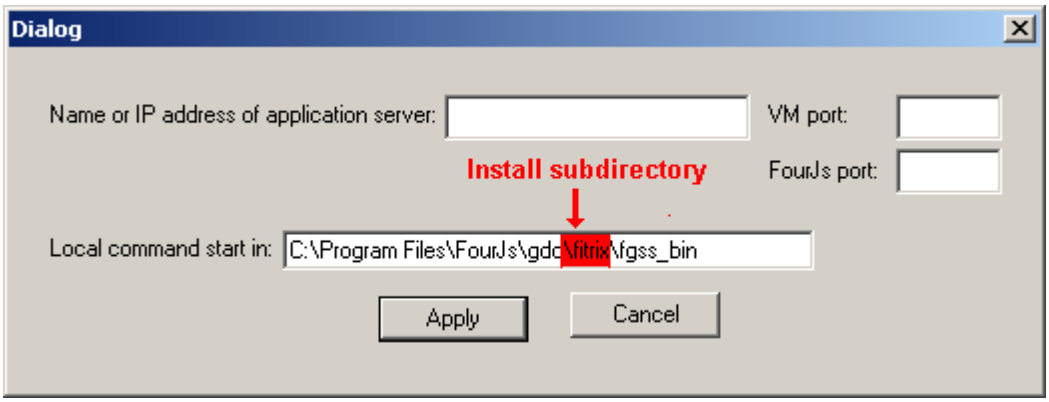
Launch the template manager:

Browse to the Install Point and launch:
`\\10.0.0.104\ Fitrix Install Point - 64` (for example)
and execute: puttyses.exe

You will see:



Next, Click:  to globally set the IP address, VM port and 'Local command start in'. You will see:



Complete the fields using the values displayed at the end of your Fitrix Server installation
At the end of the Fitrix Server Installation, you were instructed as follows:

Various information will be needed later during client install.
FJS_PORT=9999
Application server: "XXXXXX" (999.999.999.999)
Visual Menus port: 99999
---
where the actual values were appropriate to your installation.
If you did not record these values, you can find them again by logging on to your Fitrix Server and accessing the file: /fitrix/logs/info.log

(login with the 'root' user name and password, then, at the '#' prompt, key in:
cat /fitrix/logs/info.log
)

Once the values are keyed, click: Apply

This will set your unique values for every session that exists in the template manager. Your login templates are now ready to use.

Click: Finished

You may skip the remaining instructions in this document unless you need custom templates.

The standard Fitrix Windows Thin Client Install Point installation is now complete. Templates have been installed for all standard login scenarios. The remaining steps in this document are optional steps for custom installation requirements.

Please locate the "Fitrix Windows Thin Client – Installation" instructions to use the install point you have just installed to install the Fitrix Windows Client on each Windows PC that you will access Fitrix from.

OPTIONAL STEPS

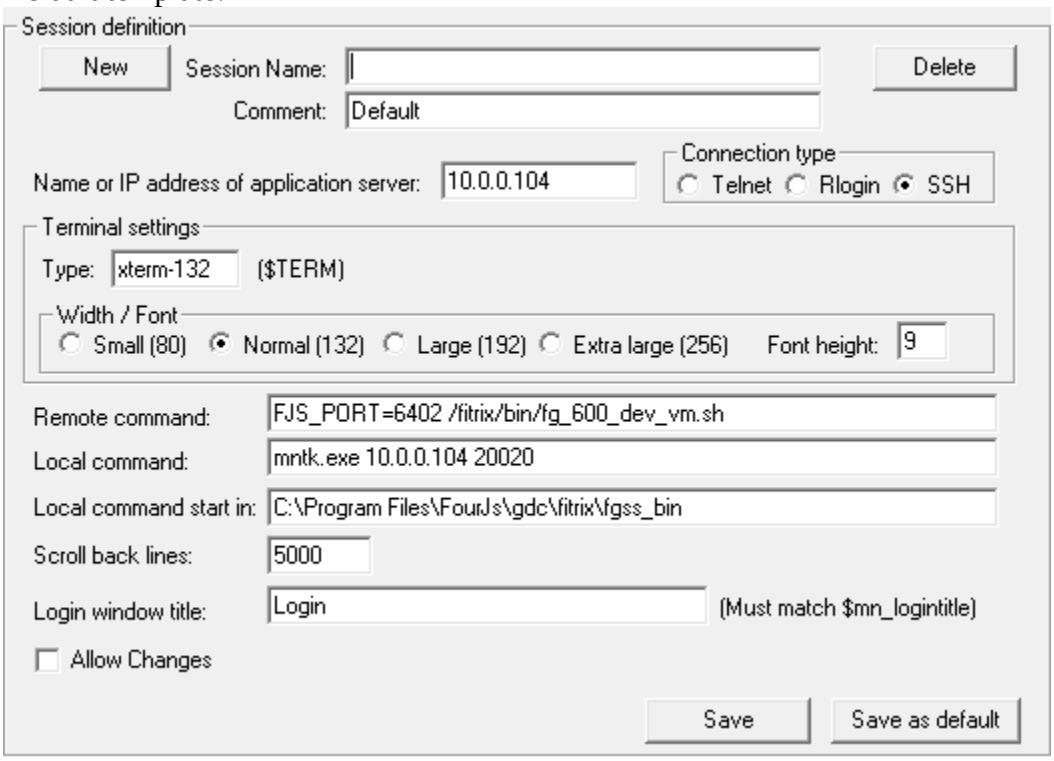
Creating a new custom template:

The login scripts have been made as modular as possible with the intention that you will not need to change these scripts. The best way to create custom login sessions is to first use the standard process to set the ip and port numbers on the supplied sessions, and then create variations on these. Note that in the remote command (i.e. FJS_PORT=6402 /fitrix/bin/fg_600_????_vm.sh standard), the script can either be set to call the development environment (i.e. FJS_PORT=6402 /fitrix/bin/fg_600_dev_vm.sh standard), or the runtime environment (i.e. FJS_PORT=6402 /fitrix/bin/fg_600_prod_vm.sh standard).

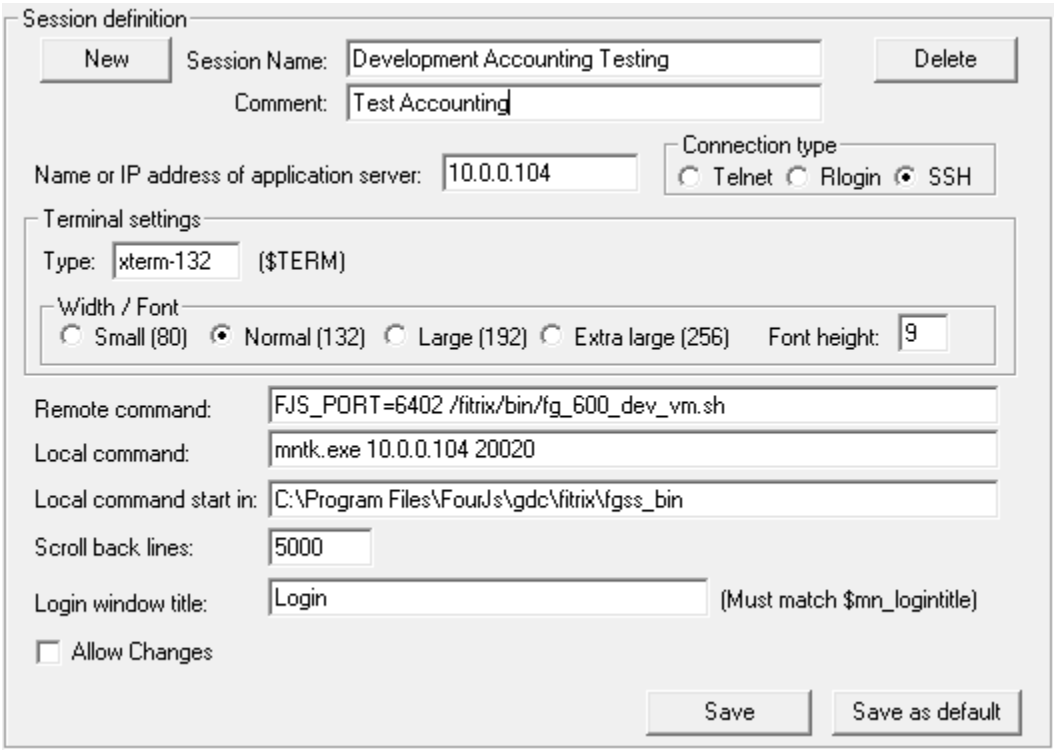
The development environment will use the Four J's Genero development license, and will include access to the development tools, while the runtime environment will use the Four J's runtime license, and will not include access to the development tools.

Click: New and you will see a default template:
(Stored under the directory: 'S:\Install\Fitrix Install Point' in file: puttyses.ini .)

Default template:

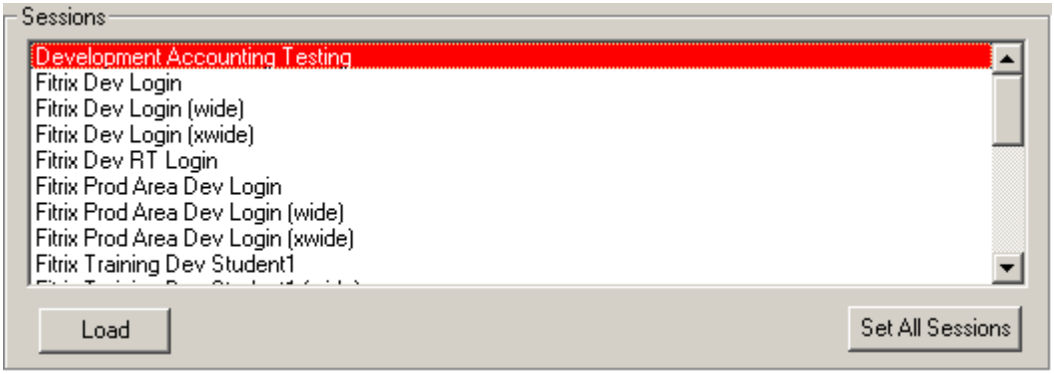


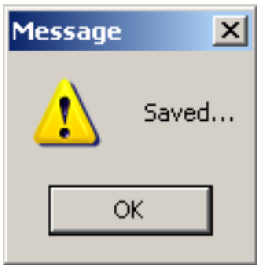
Fill in the fields as appropriate:

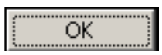


and click 

You will see the new session:





Click: 

Editing an existing template:

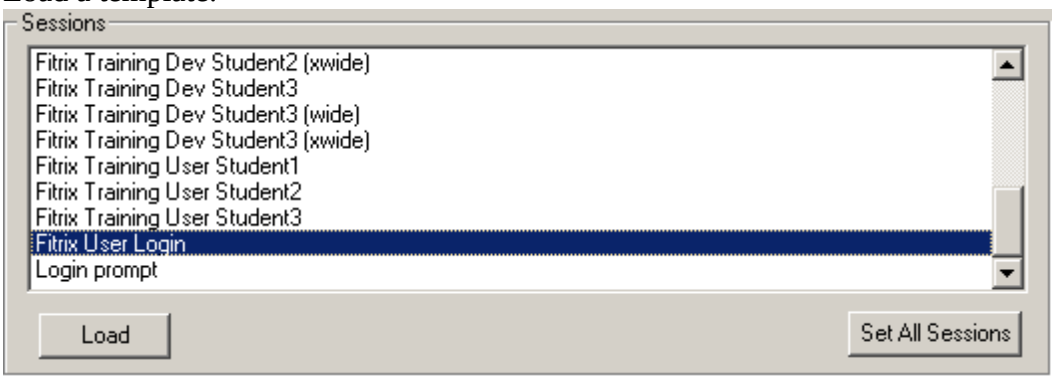
Launch the template manager:
Browse to the Install Point and launch:
`\\10.0.0.104\Fitrix Install Point - 64` (for example)
and execute: puttyses.exe

You may modify an existing session by either double-clicking one or single-clicking one and clicking: Load . You will the make changes and click: Save

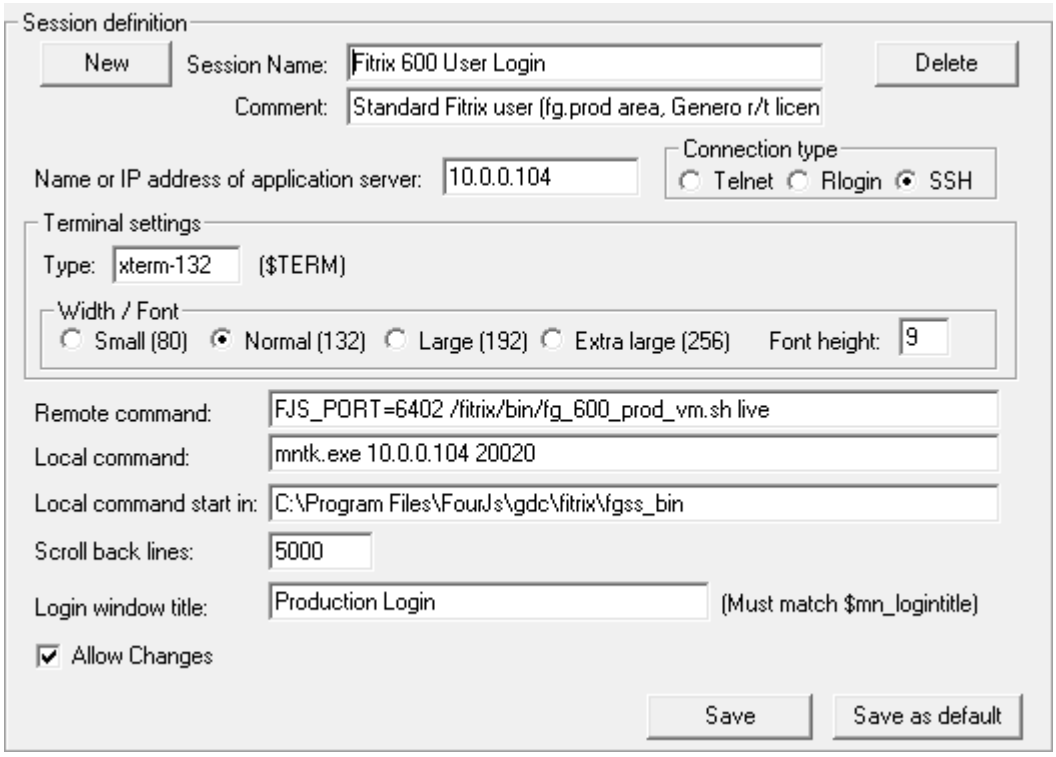
Create as many session templates as you like.
Click: Finished when finished.

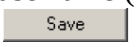
Changing the database access:

Load a template:



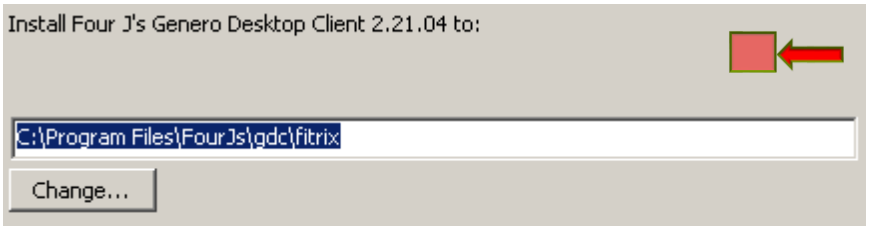
Highlight the template and either double-click or click: Load



Change the database name (and the Session name if you want to clone a new template) and click: 

Overriding the default 'Installation subdirectory':

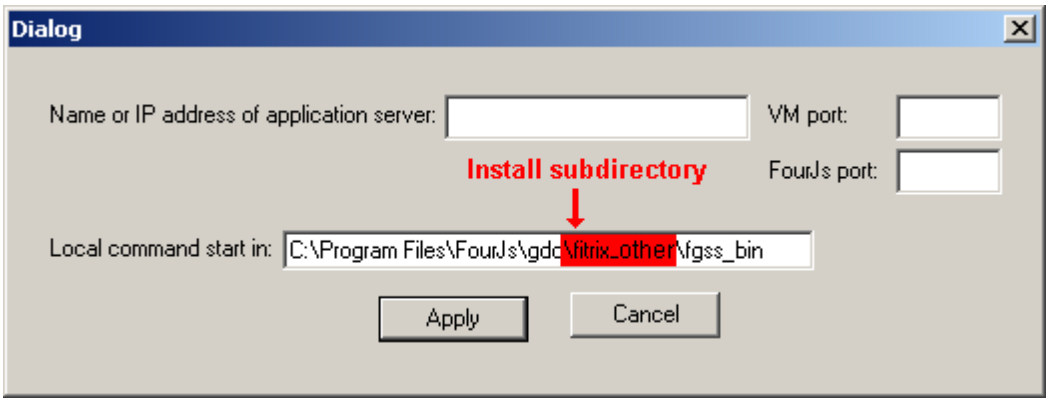
The term "Install subdirectory" is used during FourJs Genero Desktop Client (GDC) installation to allow multiple installations.



The installation subdirectory and some shortcuts are named by appending the "Install subdirectory" to the directory or shortcut. If you wish to override the default "Install subdirectory" referred to in this and the document: "`Fitrix Windows Thin Client - Installation.pdf`", you must override the install directory here:

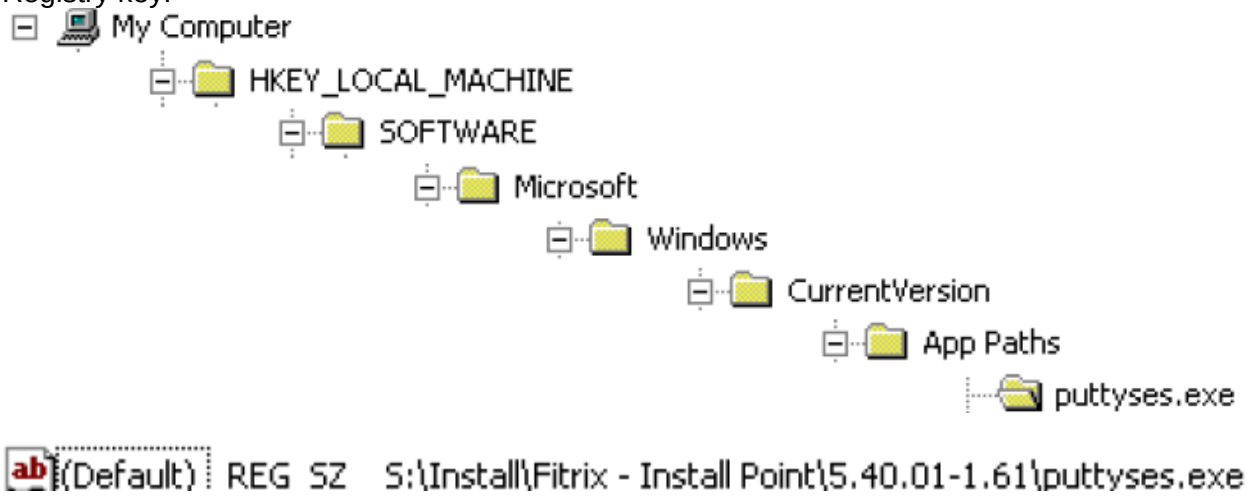
Click: 

to globally set the IP address, VM port and 'Local command start in'. You will see:



Appendix:

Registry key:




```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\App Paths\puttyses.exe
```

UPDATEING THE FITRIX INSTALL POINT

The Fitrix thin clients must be kept in sync with the Fitrix server menu version. This is done by first updating the Fitrix Install point version, then updating each Fitrix client from the install point.

1. This process will update your Fitrix Thin Client install point to the most recent patch level regardless of its current patch level (doesn't hurt to run even if not needed)
2. This process assumes that you have already installed the Fitrix Install Point.
3. Locate your Fitrix Install Point (this is currently on your Windows server, with Fitrix version 6 this will be in a set location on your Fitrix server accessible via a Samba share drive letter)
4. Access the Fitrix FTP site: From windows explorer go to ftp.fourthgeneration.com Login: fg_cust / Password: fourth9
5. Navigate to: /distr/update/workstation/

6. Download the latest update file for your version of Fitrix and expand this into your install point (i.e. unzip it from your install point folder) to update the Install point.
    a. Please note that the update file you are looking for will be named with the format Update-x.xx.xx-m.mm.zip stating that x.xx.xx is the version of Fitrix and m.mm is the version of the VM's. Please ignore all files that have additional extensions, i.e. Update-x.xx.xx-m.mm-z.z.zip
    b. As of 11/25/14 the file to use is: Update-5.40.05-1.70.zip
7. Copy this .zip patch file into your install point folder
8. Extract all contents of this .zip patch file into your install point folder replacing and overwriting all files

INSTALLING THE FITRIX THIN CLIENT

(If you plan to use a Windows PC to access Fitrix, follow these instructions to install the Fitrix Thin Client software on each Windows PC to be used.)

Before a Windows Client can be installed, the Fitrix Windows Client Install Point must be installed and configured. Please see the steps above and confirm the location of the install point and confirm that it has been configured for your use.

Before you can log on to Fitrix, you will need for your Linux systems administrator to set up individual login accounts for each user – the requirements are listed here:

http://www.fitrix.com/support/fitrix_docs/v5.40/Documentation/welcome_guide_docs/linux%20user%20account%20requirements.htm

If you have previously installed any Fitrix or Four J's software, shut down any existing FourJs Windows Front Ends () or Genero Desktop clients ().

For the purpose of this documentation, version '2.50.17' is used. Your version may be different. Make the appropriate substitutions. Name of installation: **`fitrix`**.

For administrators installing in a terminal services environment (Citrix, etc...) please note the

yellow areas

1. GDC (Genero Desktop Client) Installation onto your Windows PC

(Onto the Windows Server If this is a terminal services installation).

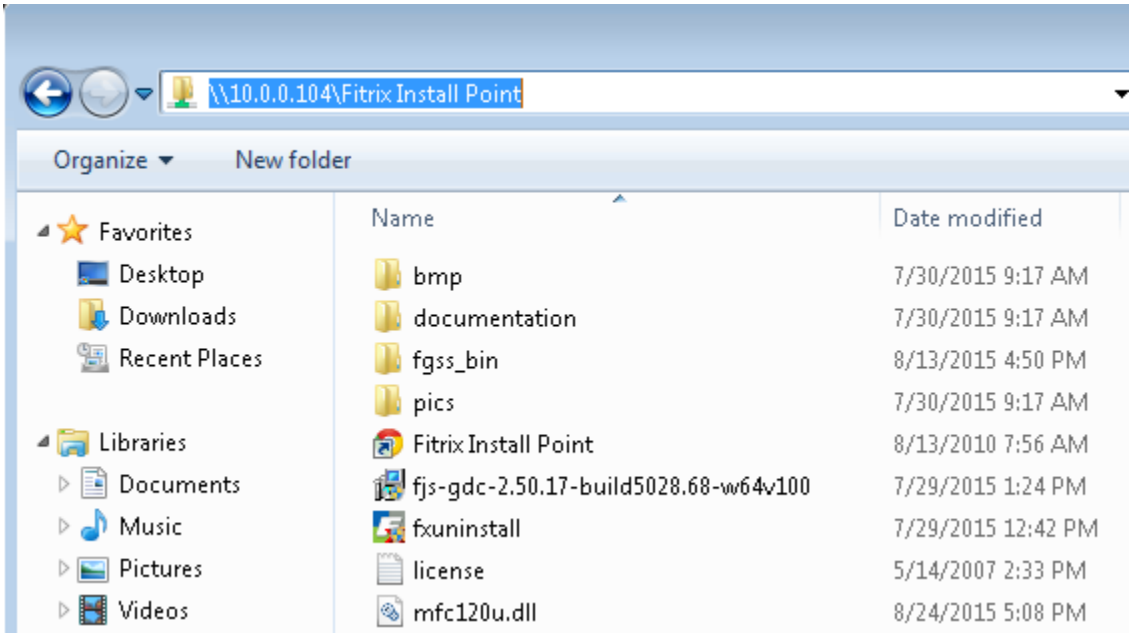
Obtain the address of your Fitrix Thin Client Install Point from your Fitrix systems administrator.

The Fitrix Thin Client Install Point is pre-installed on the Fitrix Server media and by default is accessed by Samba in the following location: \\999.999.999.999\Fitrix Install Point - 64 for the 64 bit version and \\999.999.999.999\fitrix Install Point - 32 for the 32-bit version. Currently only the 64 bit version is available.

(Where 999.999.999.999 is the ip address of your Fitrix server)

Access your Windows client and login with an account with 'administrator' privileges.

To access the install point in its default location, launch windows explorer or file explorer (not Internet Explorer) on your Windows Client and navigate to the address of your Fitrix Thin Client Install Point.

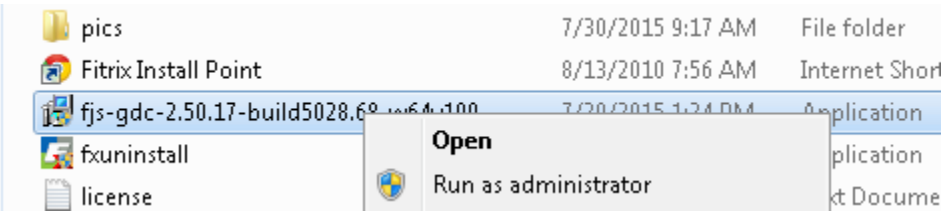


You must run this next step as administrator:

Startup the installation program: 'fjs-gdc-x.xx.xx-buildxxxxxxx.exe' by selecting it and right click "run as administrator"

Terminal Services Install

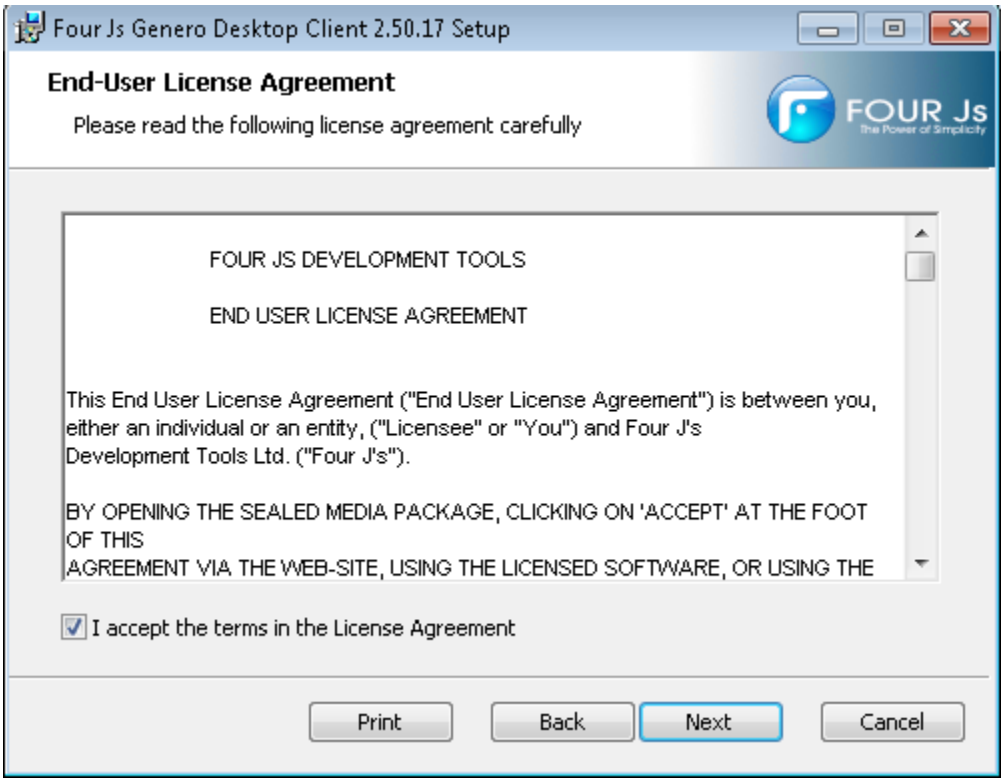
This step should be done on the Windows Server where Terminal Services is installed.

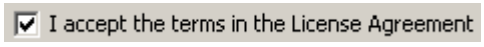


You will see:

Click 

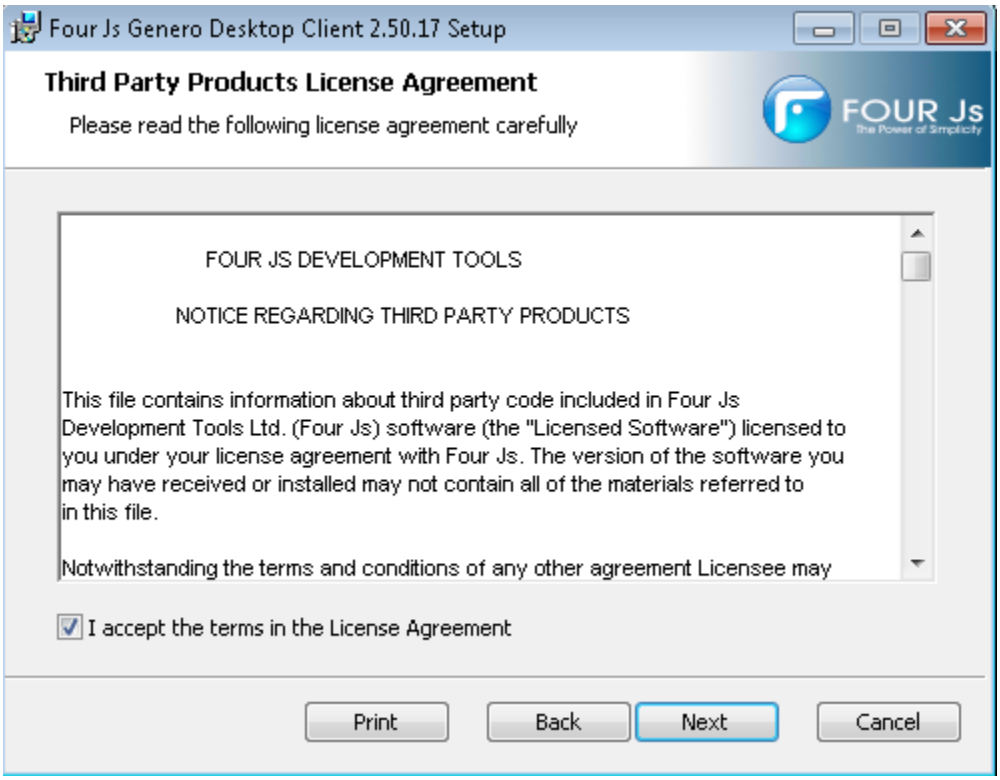
You will see:

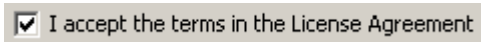


Check: 

Click: 

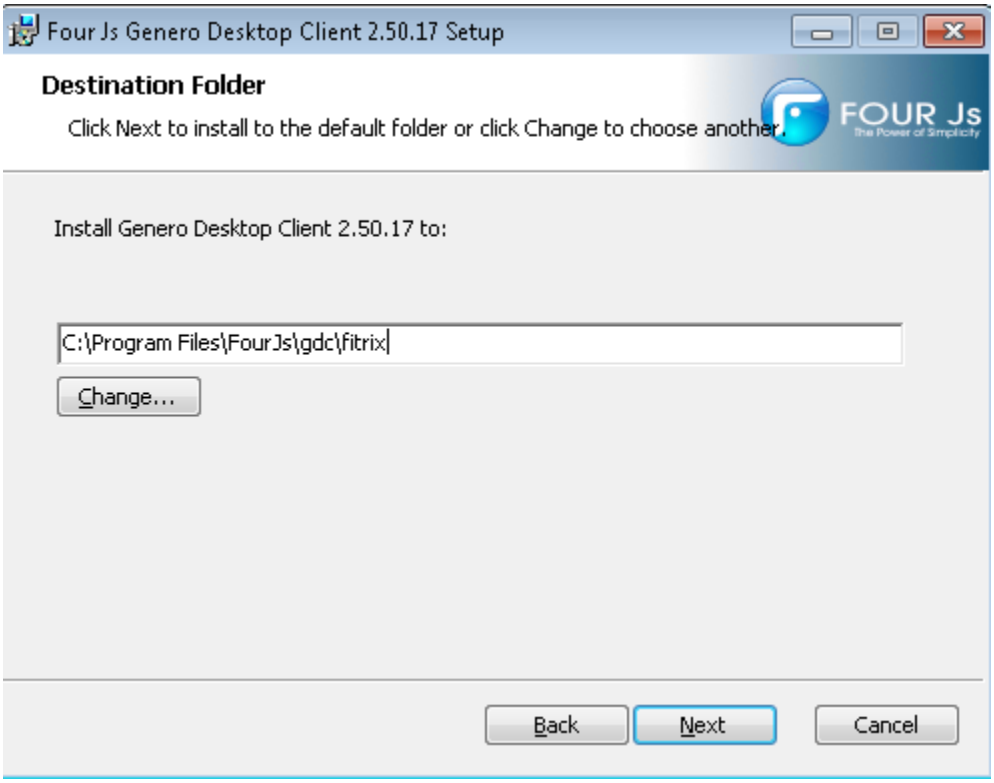
You will see:


Four Js Genero Desktop Client 2.50.17 Setup
Third Party Products License Agreement
Please read the following license agreement carefully
FOUR Js
FOUR JS DEVELOPMENT TOOLS
NOTICE REGARDING THIRD PARTY PRODUCTS
This file contains information about third party code included in Four Js Development Tools Ltd. (Four Js) software (the "Licensed Software") licensed to you under your license agreement with Four Js. The version of the software you may have received or installed may not contain all of the materials referred to in this file.
Notwithstanding the terms and conditions of any other agreement Licensee may
I accept the terms in the License Agreement
Print
Back
Next
Cancel

Check: 
I accept the terms in the License Agreement

Click: 
Next >

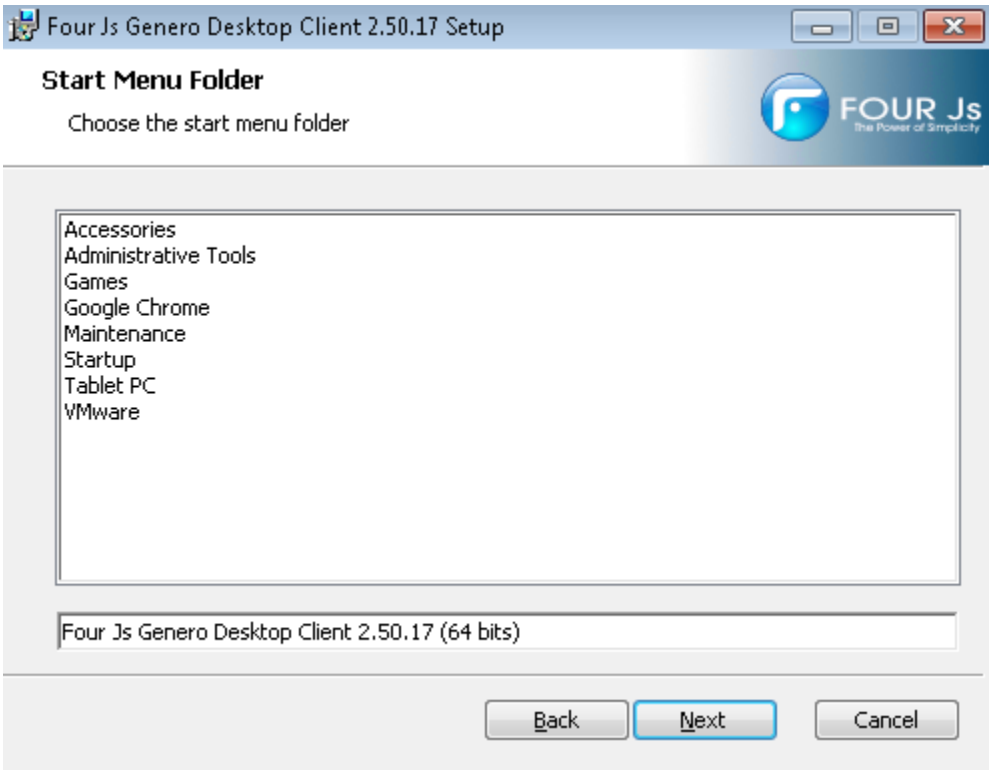
You will see:



Enter **'fitrix'** after `C:\Program Files\FourJs\gdc\'` so that it shows your destination folder as in the above screen example.

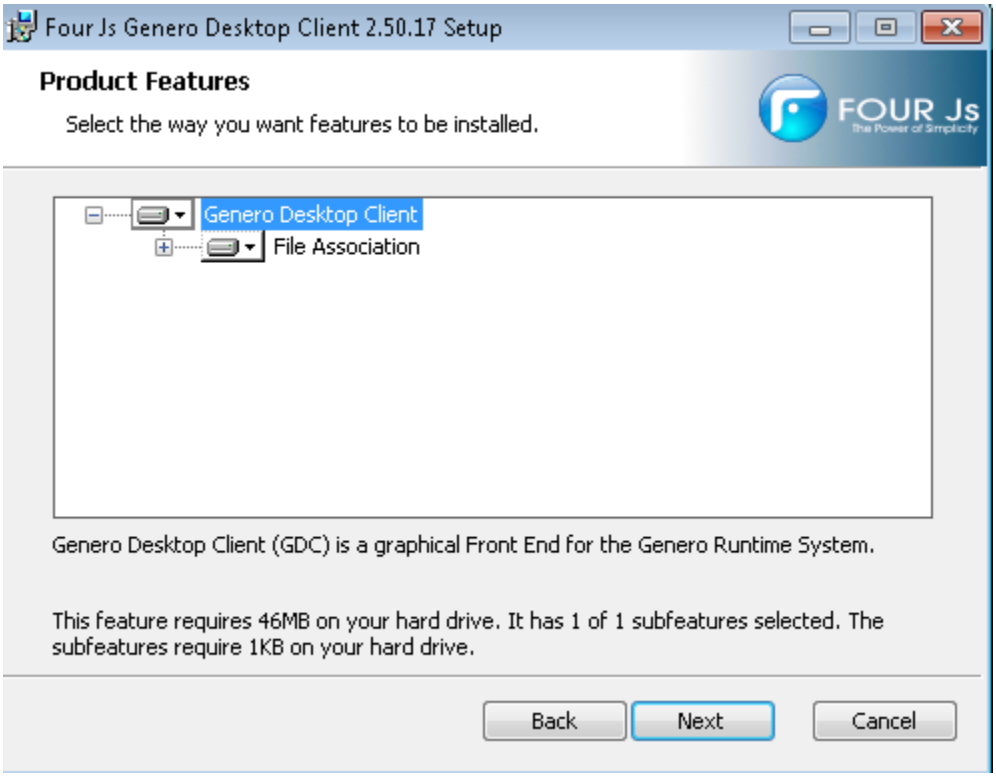
Click: Next >

You will see:


Four Js Genero Desktop Client 2.50.17 Setup
Start Menu Folder
Choose the start menu folder
FOUR Js
Accessories
Administrative Tools
Games
Google Chrome
Maintenance
Startup
Tablet PC
VMware
Four Js Genero Desktop Client 2.50.17 (64 bits)
Back
Next
Cancel

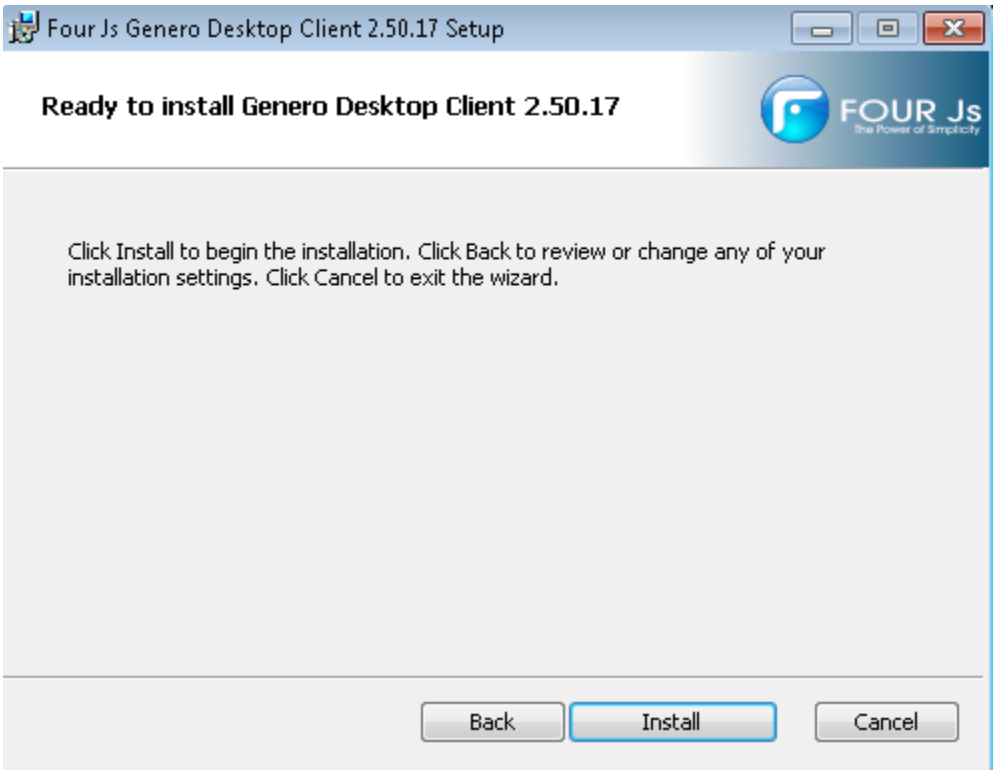
Click: 
Next >

You will see:



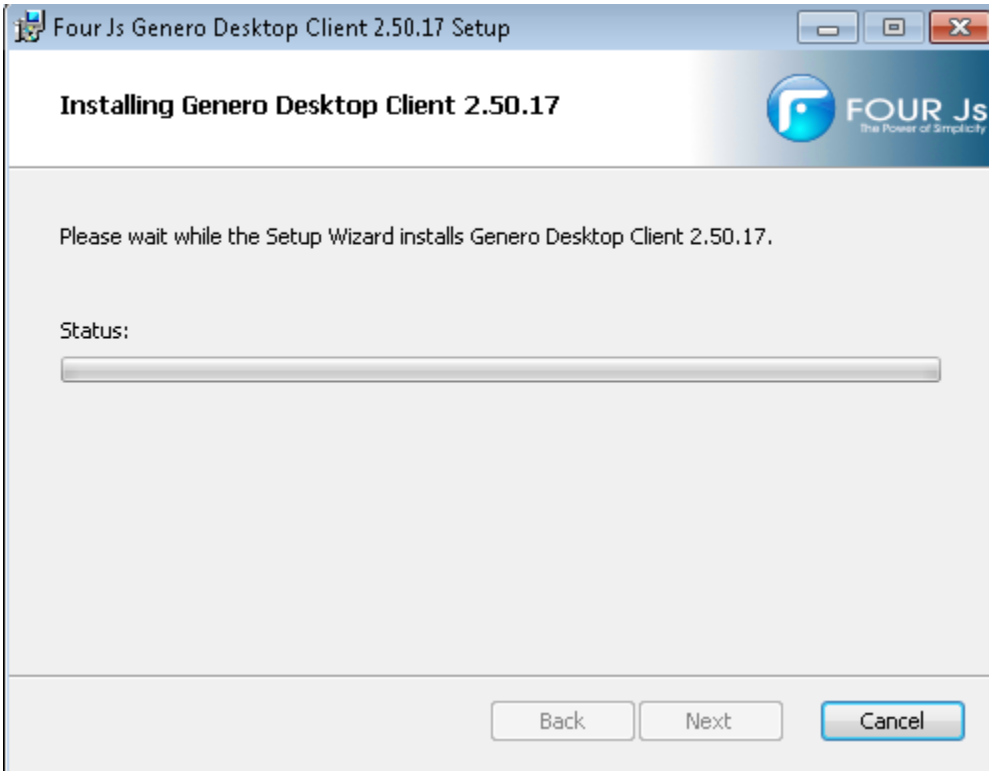
Click: 

You will see:

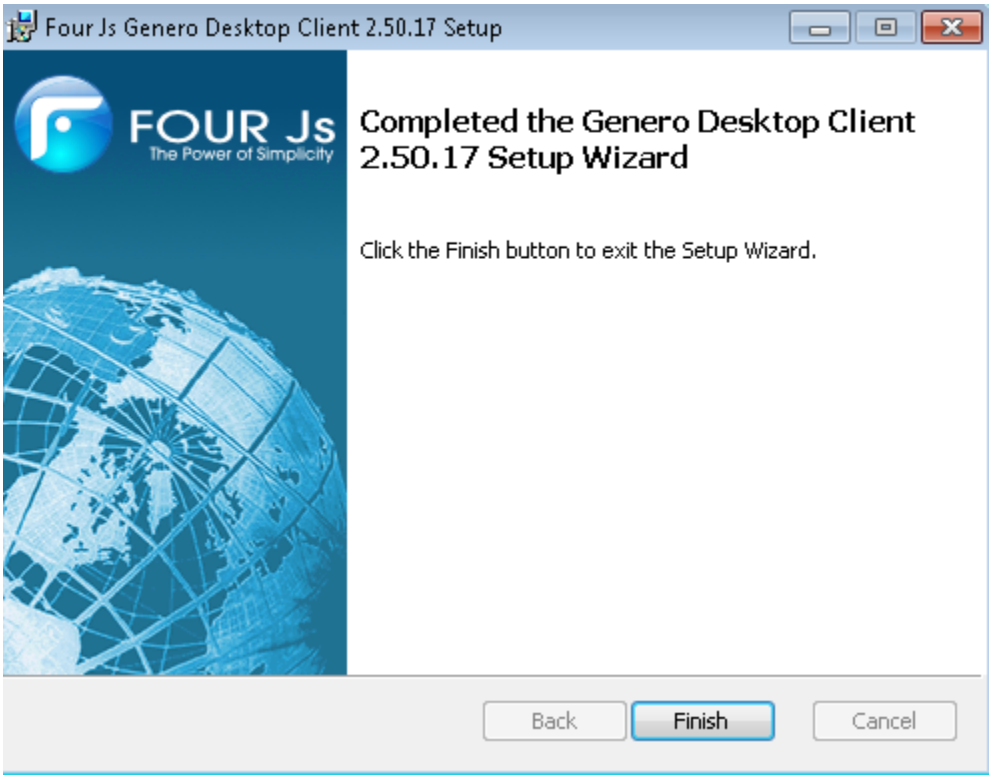


Click: Install

You will see:



You will see:

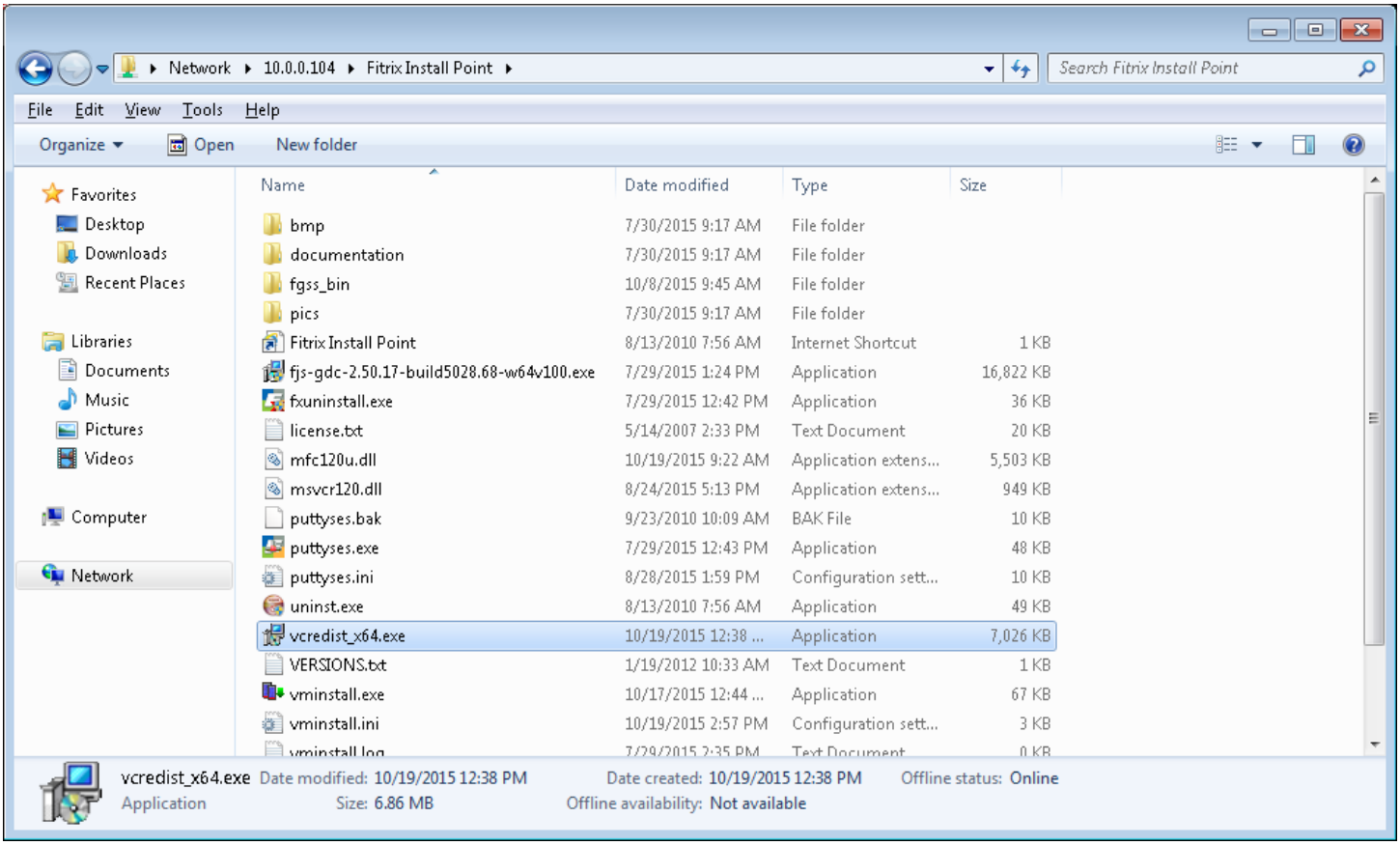


Click: 

2. VCREDIST Installation onto your Windows PC

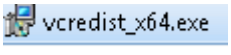
(Onto the Windows Server If this is a terminal services installation)

Return to the Windows Explorer window opened in the previous step to access the install point:



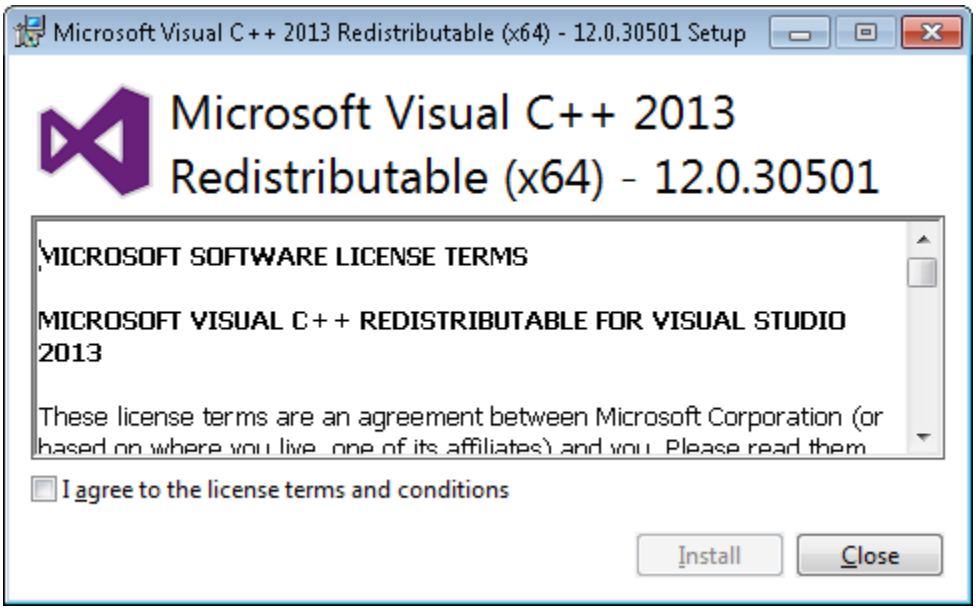
Startup the vcredist program:

You must run this next step as administrator:

Click: 

by selecting it and right click "run as administrator"

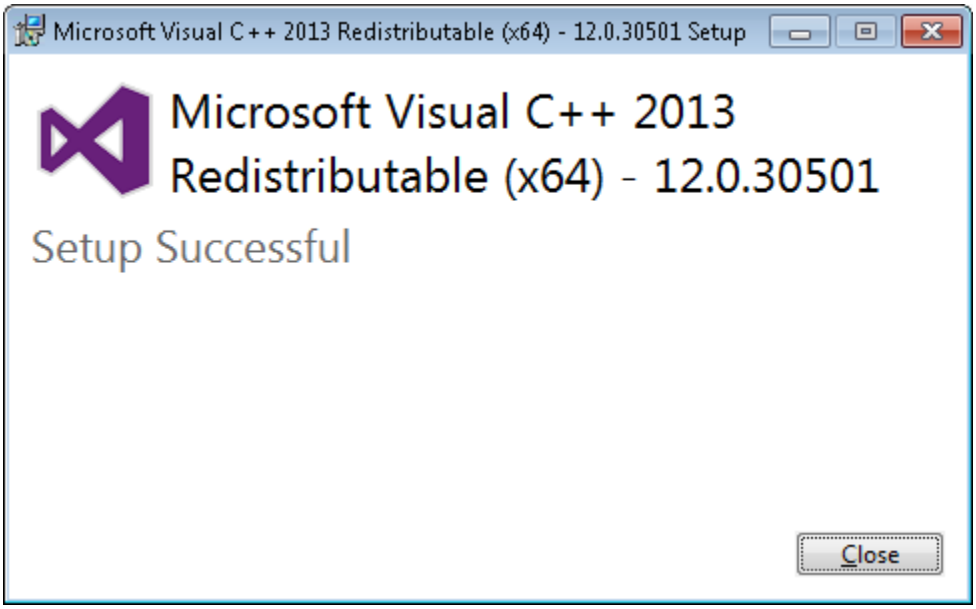
You will see:



Click "agree"
Click "Install"

If you are notified that any files are already installed you may let it skip these files

When it is completed you will see:

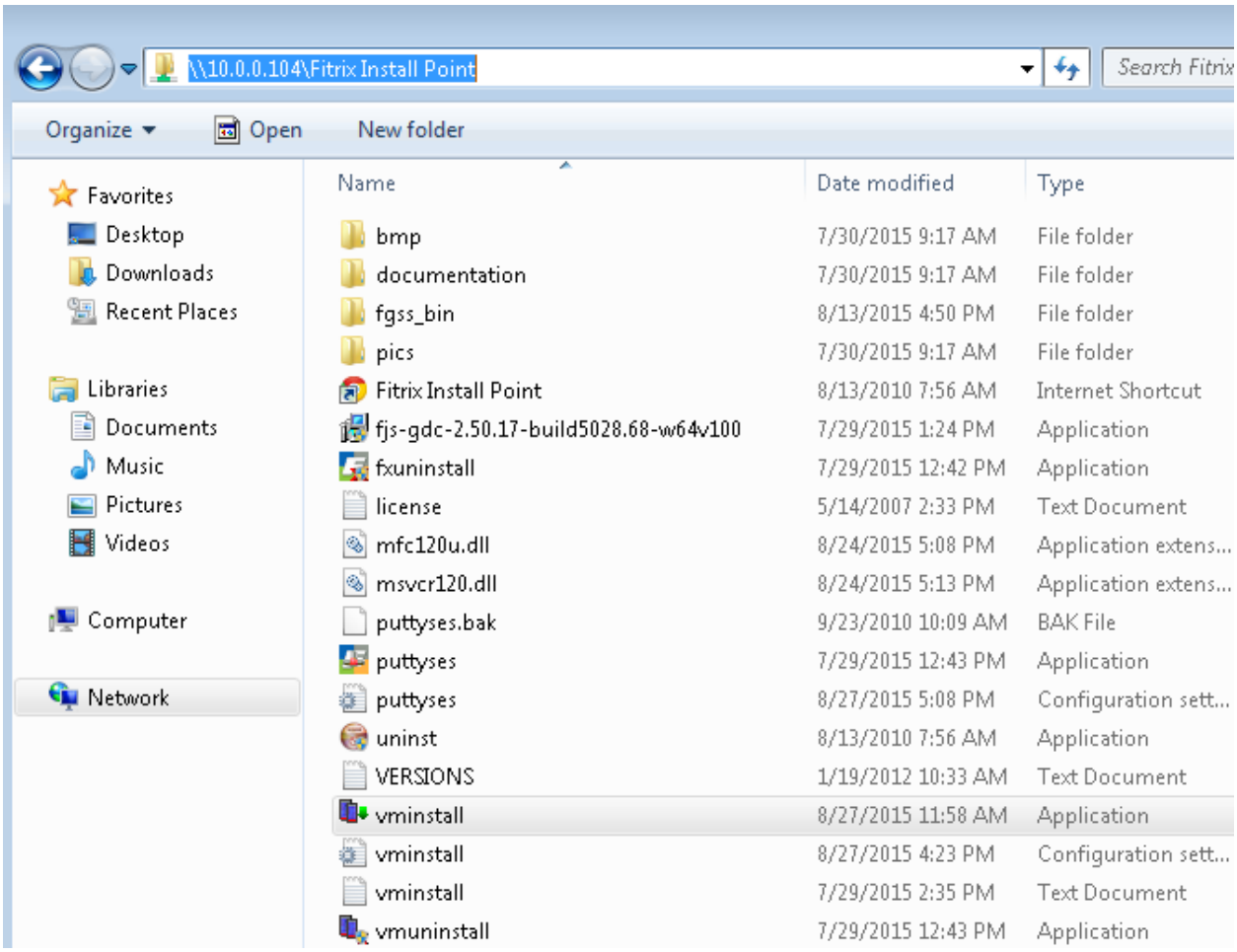


Click "Close"

3. VM Installation onto your Windows PC

(Onto the Windows Server If this is a terminal services installation)

Return to the Windows Explorer window opened in the previous step to access the install point:

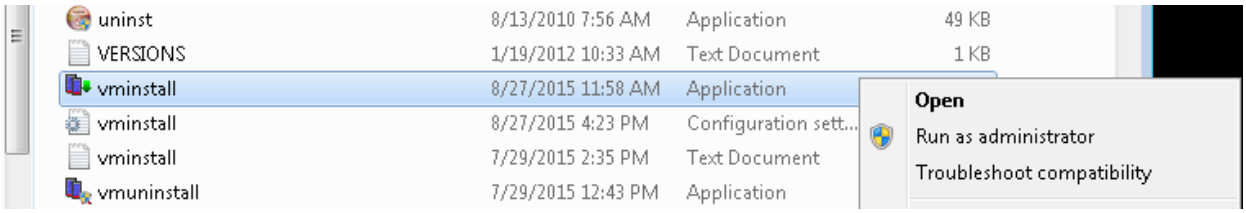


Startup the installation program:

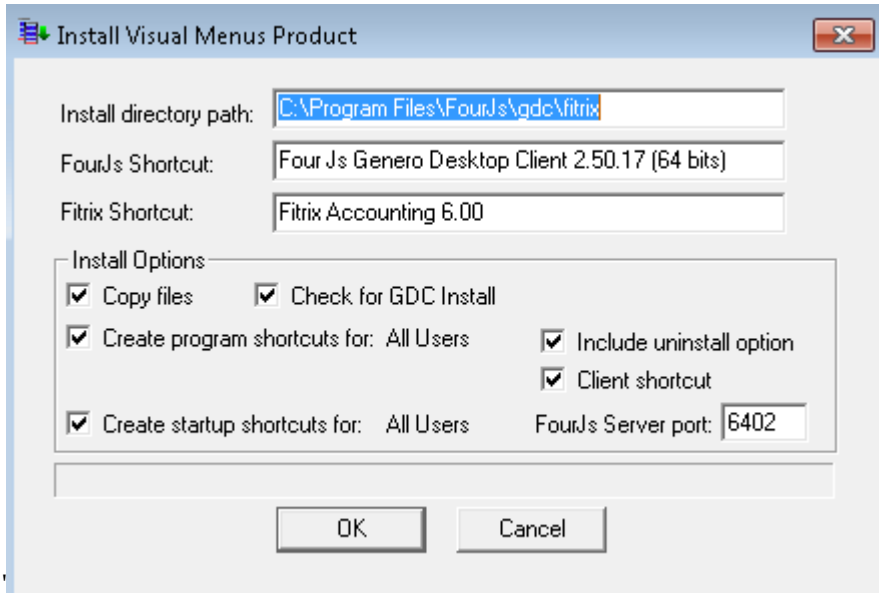
You must run this next step as administrator:

Click: vminstall.exe by selecting it and right click "run as administrator"

(note that you will have 3 entries titled "vminstall", select the one with type=application)



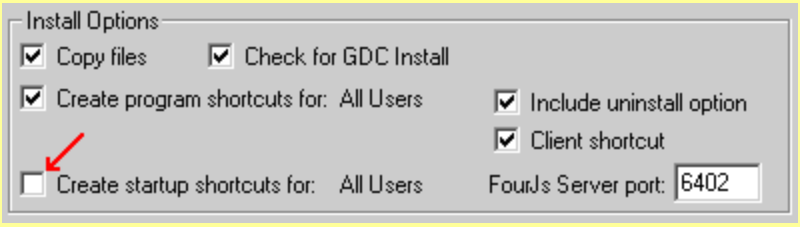
You will see:



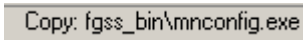
The default value for "Four J's Server Port" is already entered for you as "6402". In most cases this does not need to be changed.

If your Fitrix Server was manually installed or the default was changed, you will need to obtain the correct port number from your systems administrator and enter it here. The Fitrix virtual pre-installed server uses the default port value. The Fitrix manual server install process will report the port number at the end of the install process.

Terminal Services Install

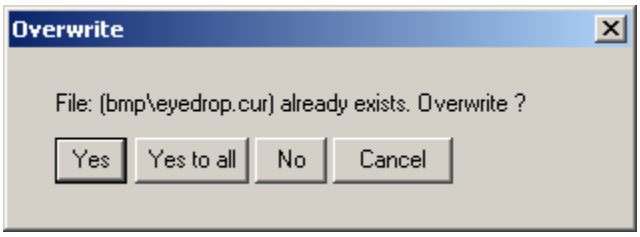


Click: 

You will see files being copied: 

...

If you are reinstalling, you will see:

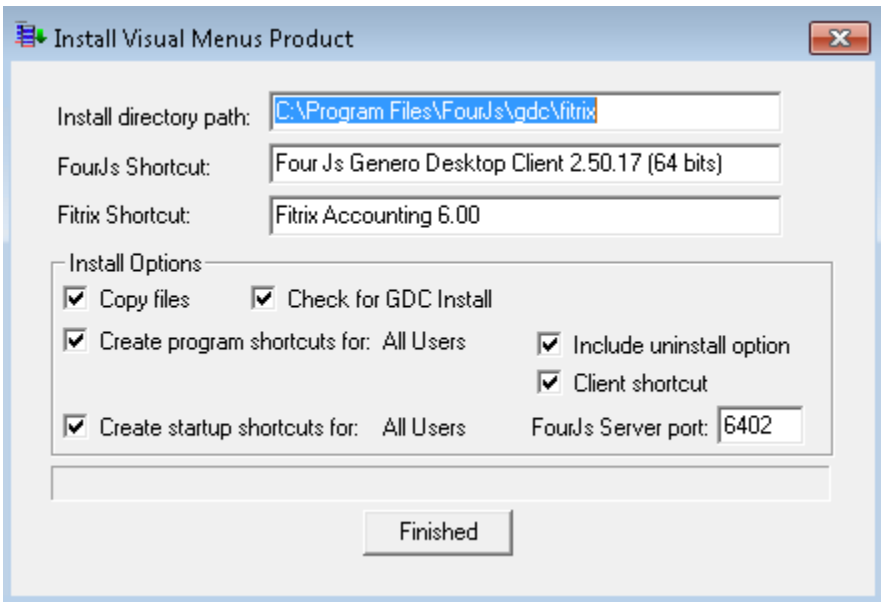


Click: 

You will see files being copied: 

...

You will see:



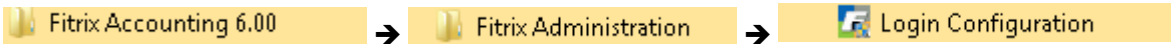
Click: 

4. Fitrix Login Creation -- For each user's workstation

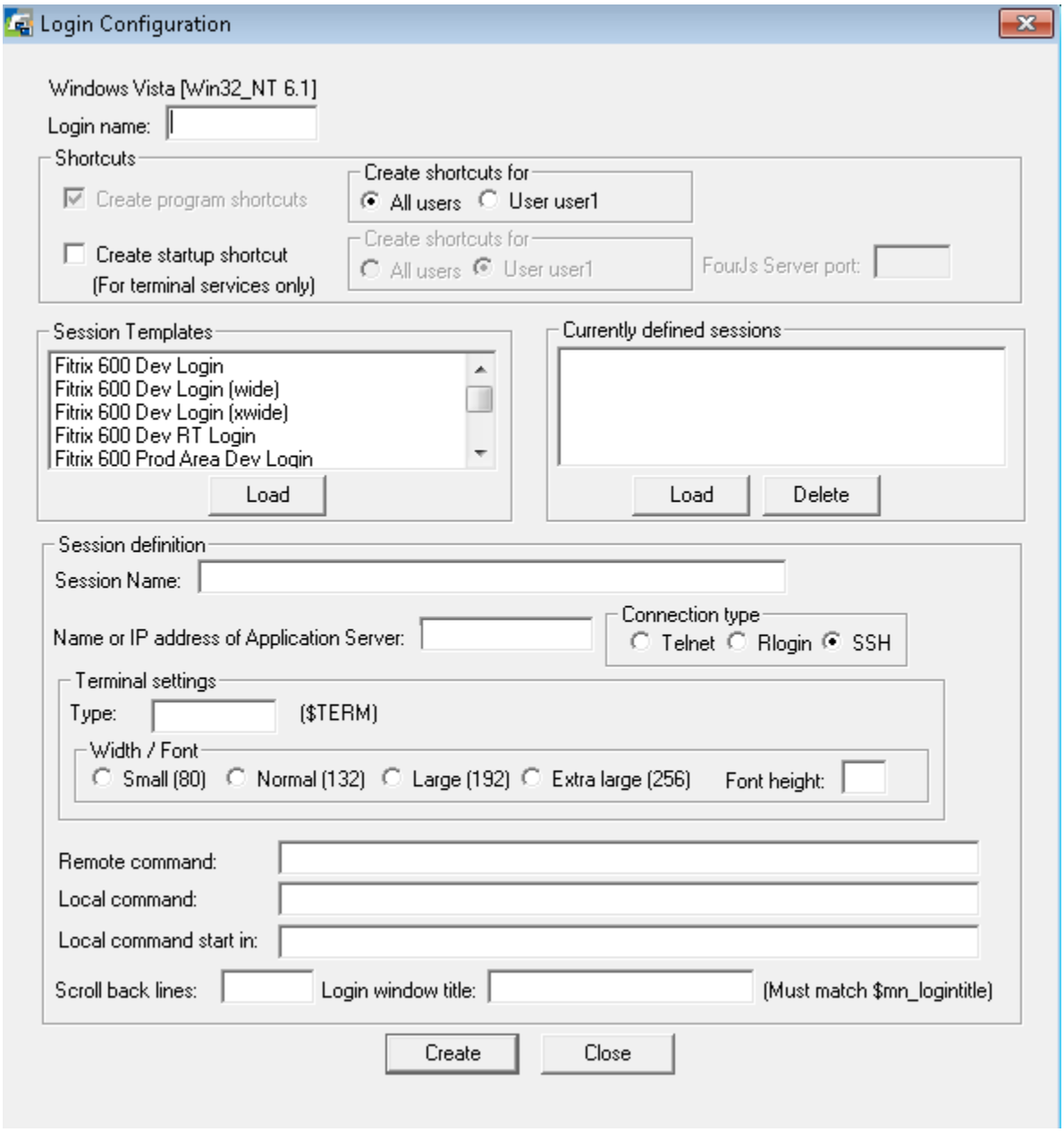
or terminal services workstation

Click: Start Menu ➔ 

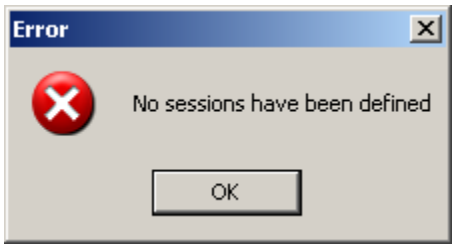
➔



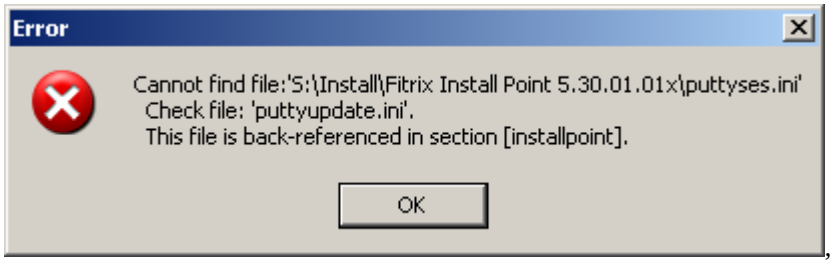
You will see:


Login Configuration
Windows Vista [Win32_NT 6.1]
Login name:
Shortcuts
Create program shortcuts
Create shortcuts for
All users
User user1
Create startup shortcut
(For terminal services only)
Create shortcuts for
All users
User user1
FourJs Server port:
Session Templates
Fitrix 600 Dev Login
Fitrix 600 Dev Login (wide)
Fitrix 600 Dev Login (xwide)
Fitrix 600 Dev RT Login
Fitrix 600 Prod Area Dev Login
Load
Currently defined sessions
Load
Delete
Session definition
Session Name:
Name or IP address of Application Server:
Connection type
Telnet
Rlogin
SSH
Terminal settings
Type:
($TERM)
Width / Font
Small (80)
Normal (132)
Large (192)
Extra large (256)
Font height:
Remote command:
Local command:
Local command start in:
Scroll back lines:
Login window title:
(Must match $mn_logintitle)
Create
Close

If you receive the error message:



or



,

the install point has changed. There is a 'back' reference to the path to the install point that was set during initial installation of the workstation's components. This 'back' reference is contained in file:

`C:\Program Files\FourJs\gdc\fitrix\fgss_bin\puttyupdate.ini` [default location]

in the section:

```
[installpoint]
```

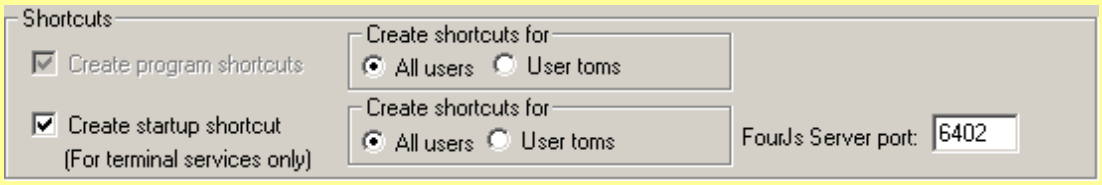
The error probably means that the mapped drive in this case is not mapped properly. Instead of using a mapped drive, use the UNC style address:

```
[installpoint]
```

Filling in the Login Name is optional. If the name is left blank here, the user will be prompted for their login name each time they log in to Fitrix. If a Login name is filled in here, the user's login name will be filled in for them, but cannot be changed by the user.

The defaults for the shortcuts should be taken:

Terminal Services Install



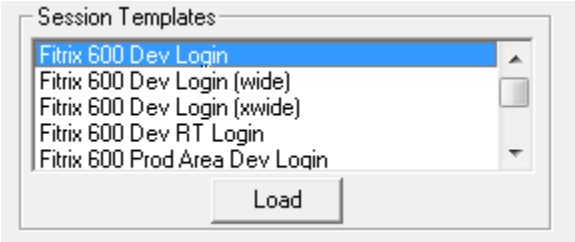
Next, create the login session(s) to be used with the client you are installing.

The typical login session templates are:

- Fitrix User Login – for end users to access their live production copy of Fitrix
- Fitrix Training User Student1 – for end users to access the training environment. This can be used with the Fitrix training workbook or with a Fitrix class, or simply to explore Fitrix using the supplied training database
- Fitrix Dev Login – for developers to access the development copy of Fitrix with access to the development tools.

For each login session to be created on the Windows client, use the following steps:

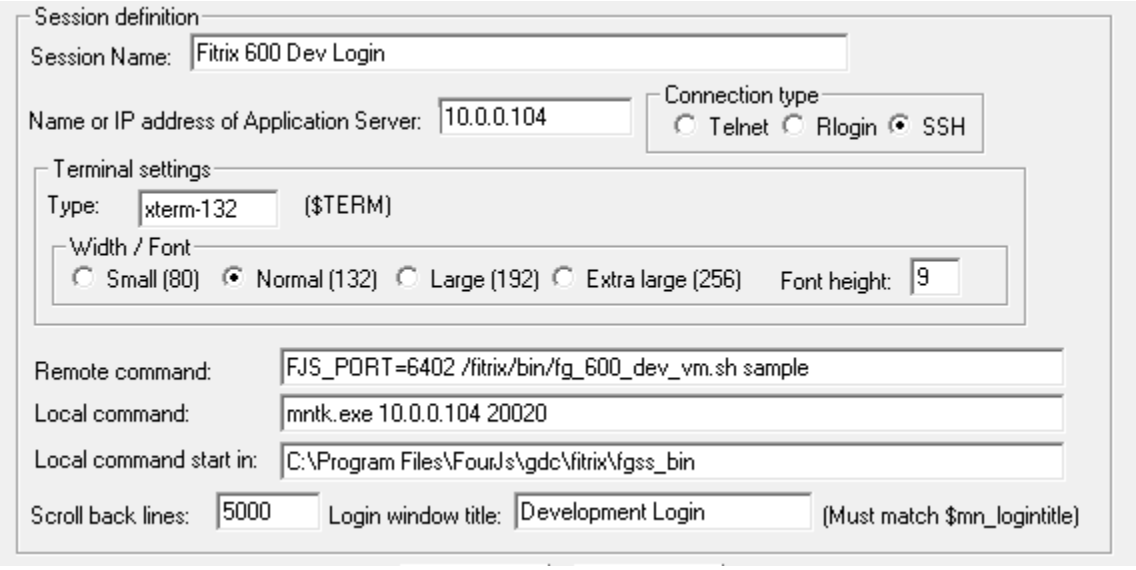
a. Highlight the session template in the top list:



b. Then click: 

.

The details for the selected session will appear in the lower portion of the screen.

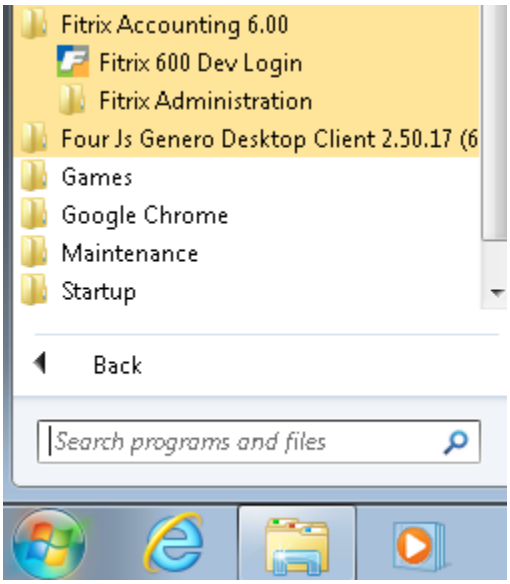


If this is a standard installation, use all of the defaults. If this is a custom installation,

Make any changes to the template.

c. Next, Click: 

This will create a menu option for the login session:



and will list the created login session in the "Currently Defined Sessions" window of the Login Configuration Screen.

d. repeat the process if the user will need login prompts to more than one area of Fitrix

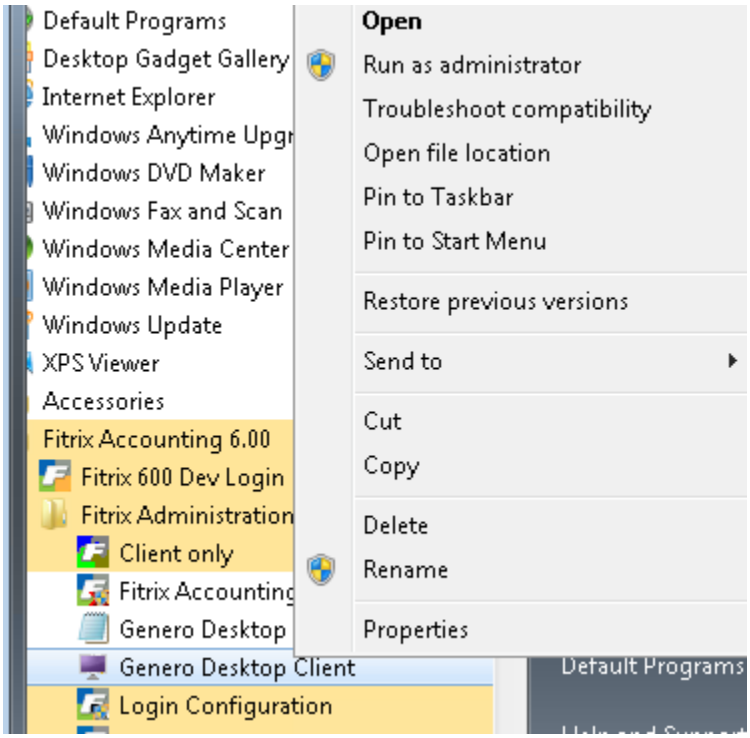
Click: Close when finished creating login sessions.

5. Bring up the Genero Desktop Client (GDC)

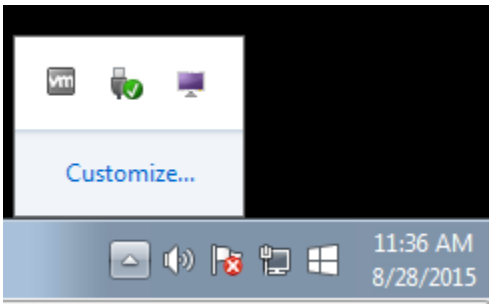
Click: Start Menu ➔ All Programs ➔

Fitrix Accounting 6.00 ➔ Fitrix Administration

Then locate: Genero Desktop Client and right click and click on "Run as administrator"



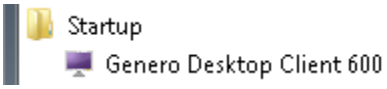
If this step is successful, you will see the GDC icon in the lower right tray:



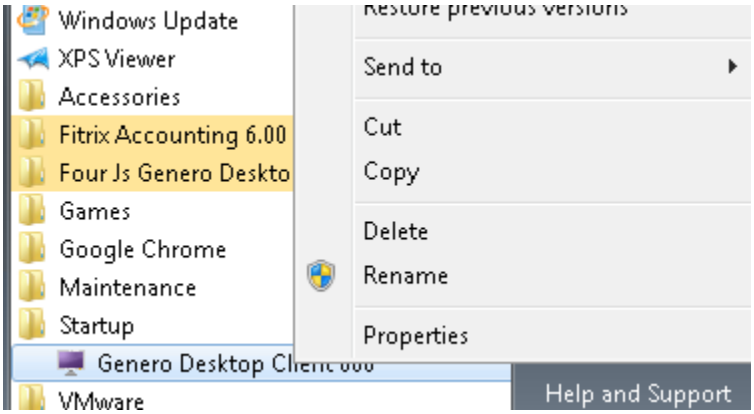
If you do not see the GDC icon, GDC has probably been blocked by your firewall. You will need to access your Windows firewall, find all copies of GDC, and allow access in all scenarios. Then repeat the above steps for launching GDC and confirm that the icon appears.

Please note that you should not need to start the GDC again in the future as it should continue running until you logout or shutdown and has also been placed in your startup folder so that it will automatically start each time you login.

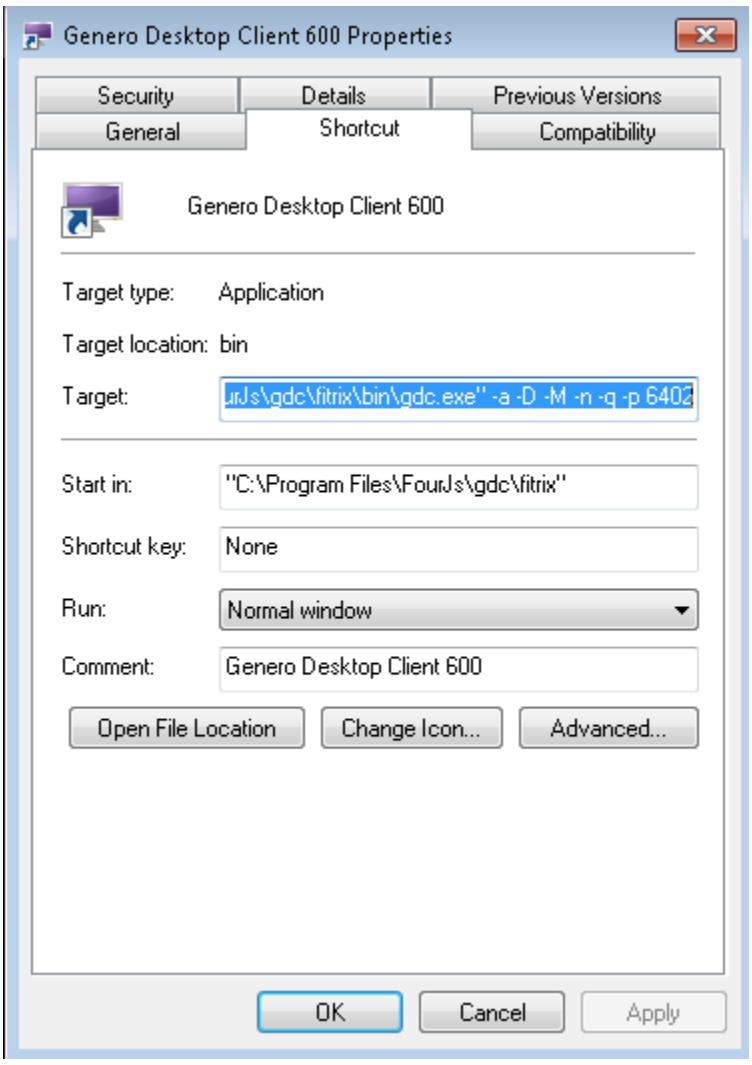
A copy of the GDC has been placed in your start up folder. Please locate your Start Up folder and the GDC program that is there:



Then right click on the GDC (Genero Desktop Client) listing, and select "properties"

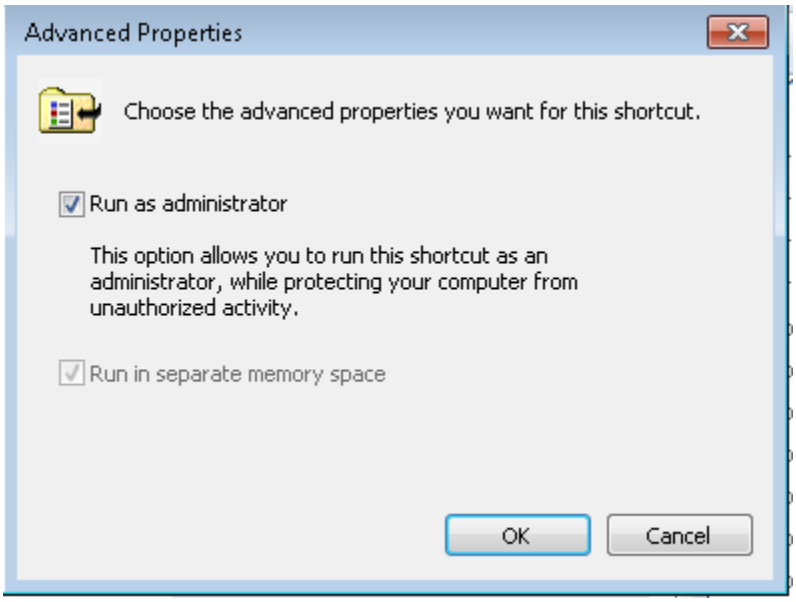


You will see:



Click on 

You will see:

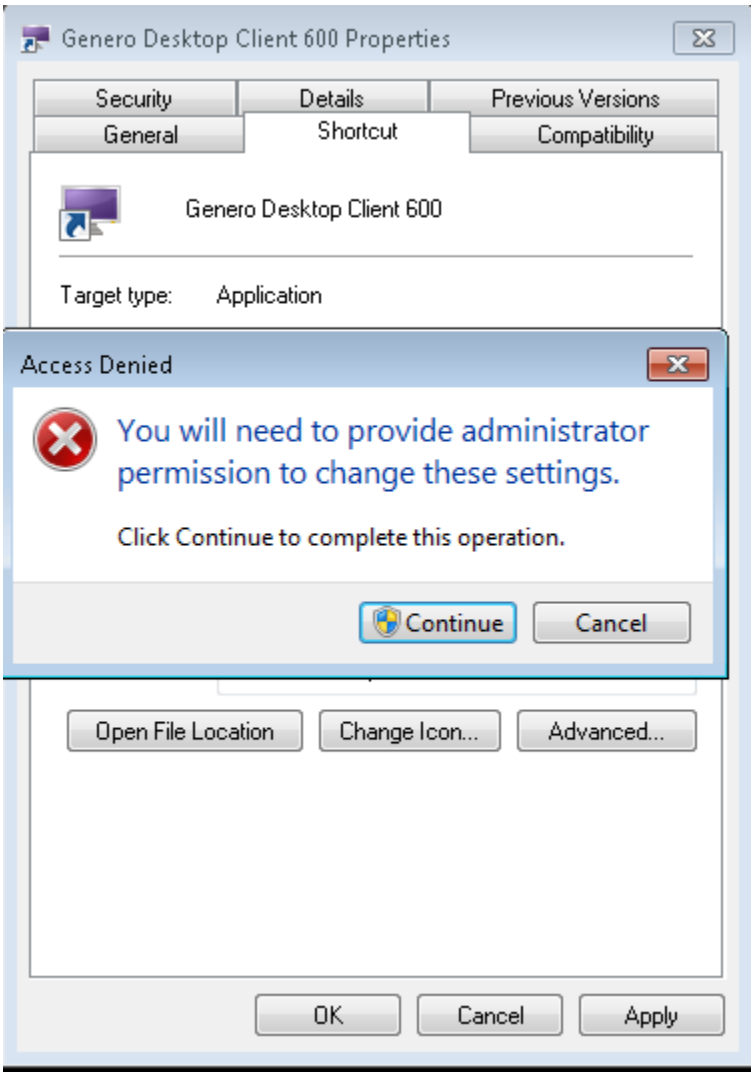


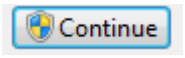
Check the box "Run as administrator" as indicated above

Click OK (1st window closes)

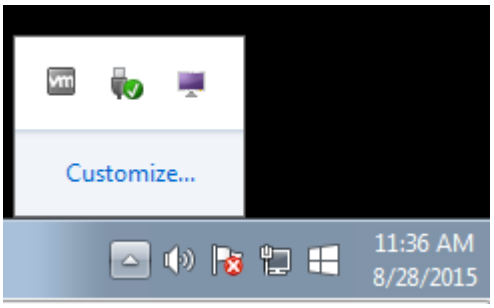
Click OK

You will see:



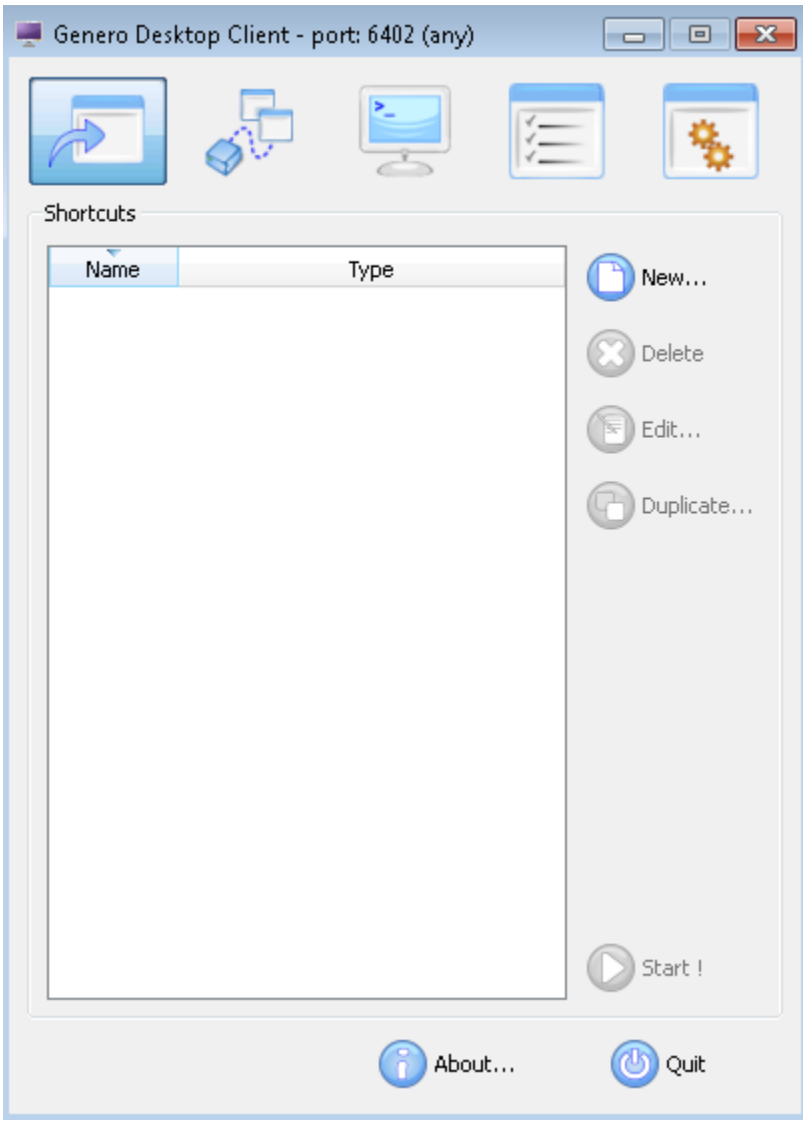
Click 

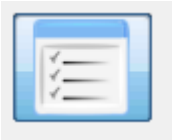
Set the GDC to "no security" to avoid common firewall issues:

Locate the GDC icon  in the lower right tray: 

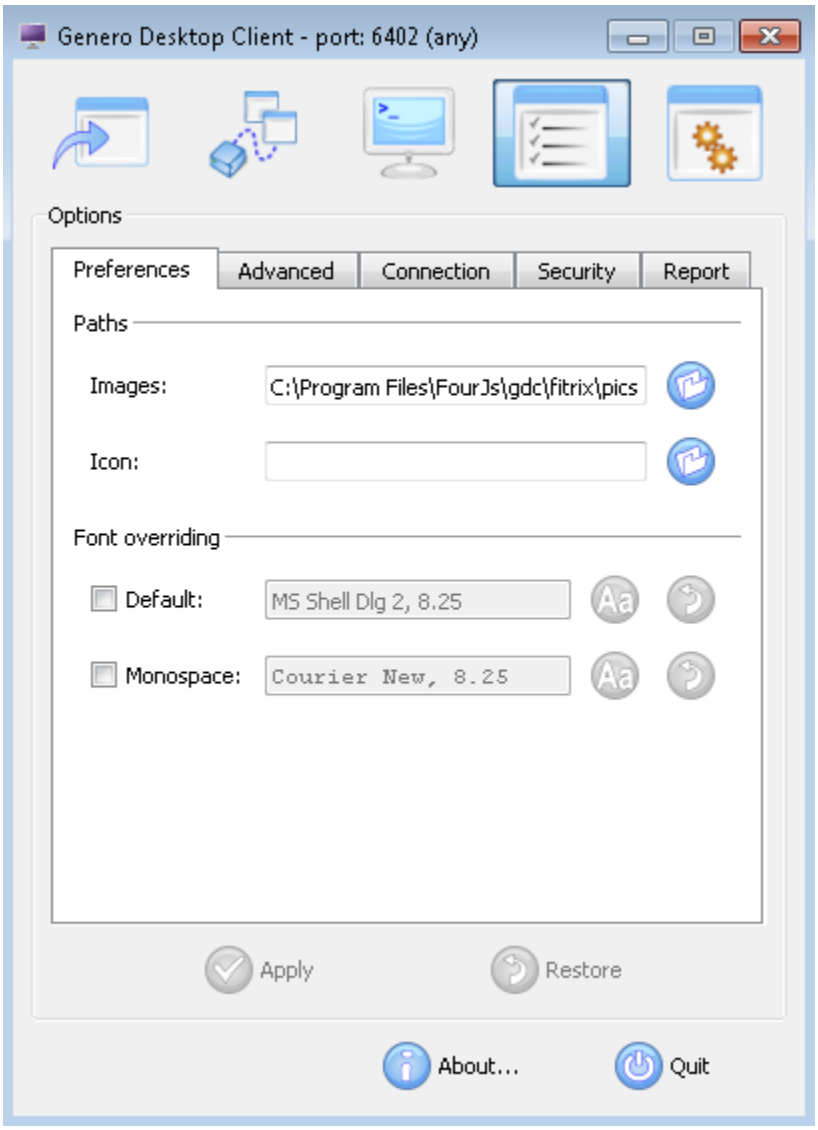
Double click on the GDC icon 

You will see:

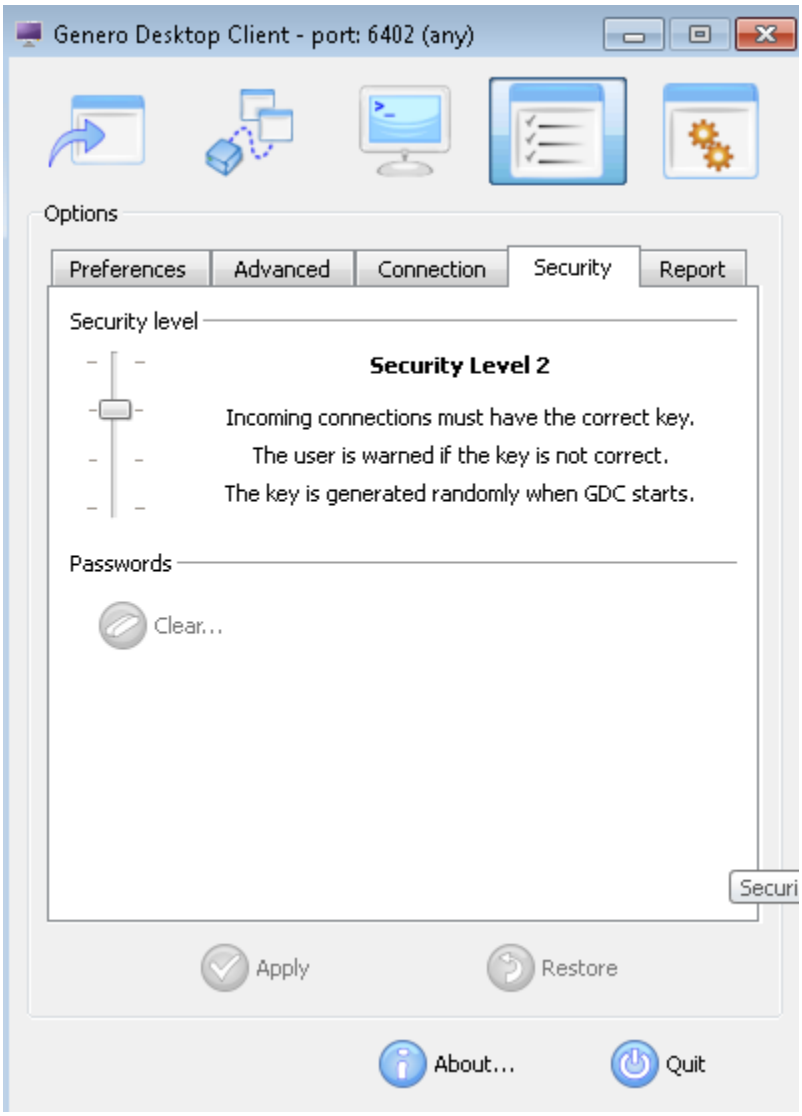


Click on the Options Icon: 

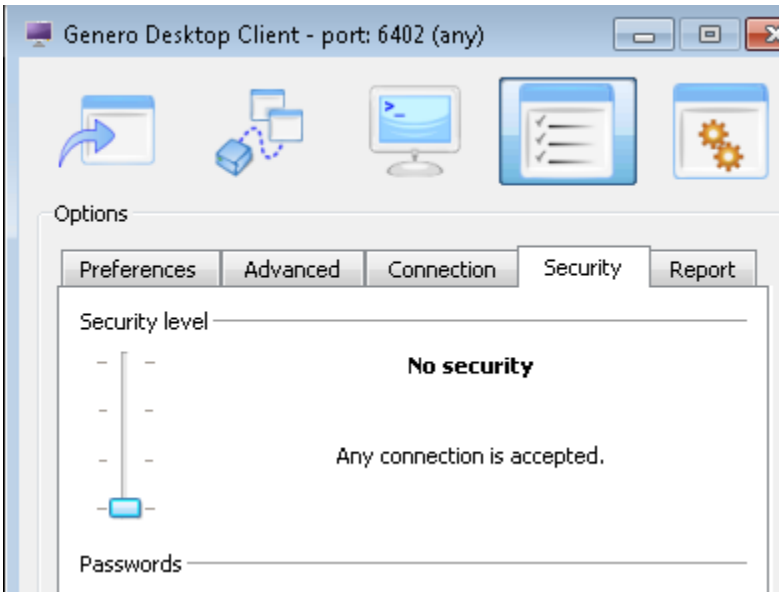
You will see:



Click on the "Security" tab, you will see:



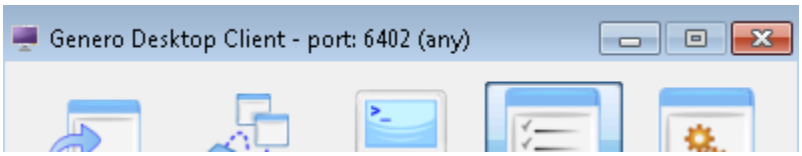
Slide the Security Level Slider to the bottom, indicating "no security"



Click "Apply"

WARNING – Do not click "Quit" to get out – this will shut down the GDC

Click the red X at the top right of the screen to exit,



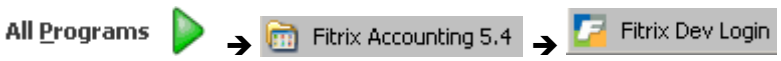
This will hide the GDC screen but it will continue to run.

6. Login – The first time

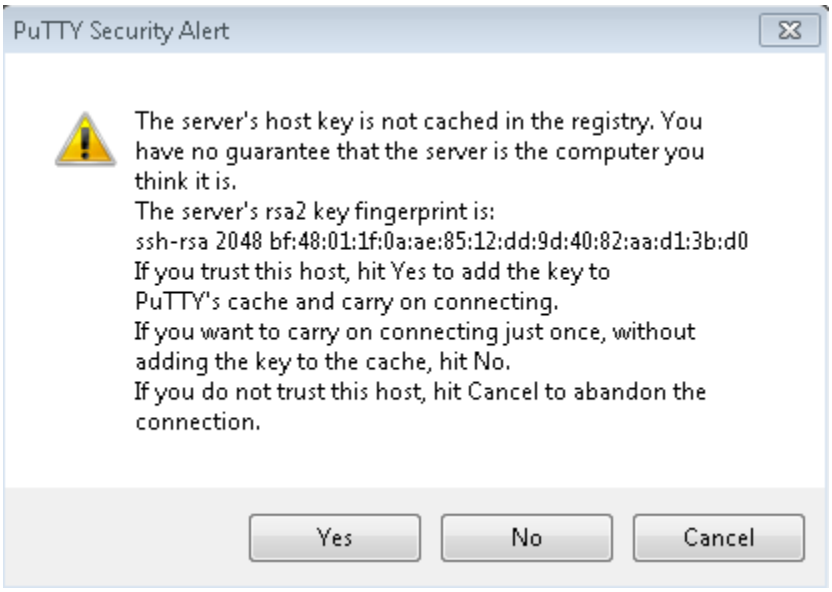
The installer should test the initial login for the user to confirm that it is working, and to address the windows that appear only once for a new installation. Separate (less complicated) login instructions are provided for end users.

Note: Before a user can login to Fitrix, a Linux User ID must be established. Please follow the instructions for creating Linux Users and confirming that the users are configured to meet the requirements of Fitrix which are included elsewhere in this document.

The user is now ready to login and begin using Fitrix:

Click: Start Menu ➔ 

The first time you login, you may see a Putty security alert:



If so, click 'Yes'

You should now see the login screen:

Enter your Linux user name at the Login prompt (unless it is already filled in)

Enter your Linux password at the Password prompt

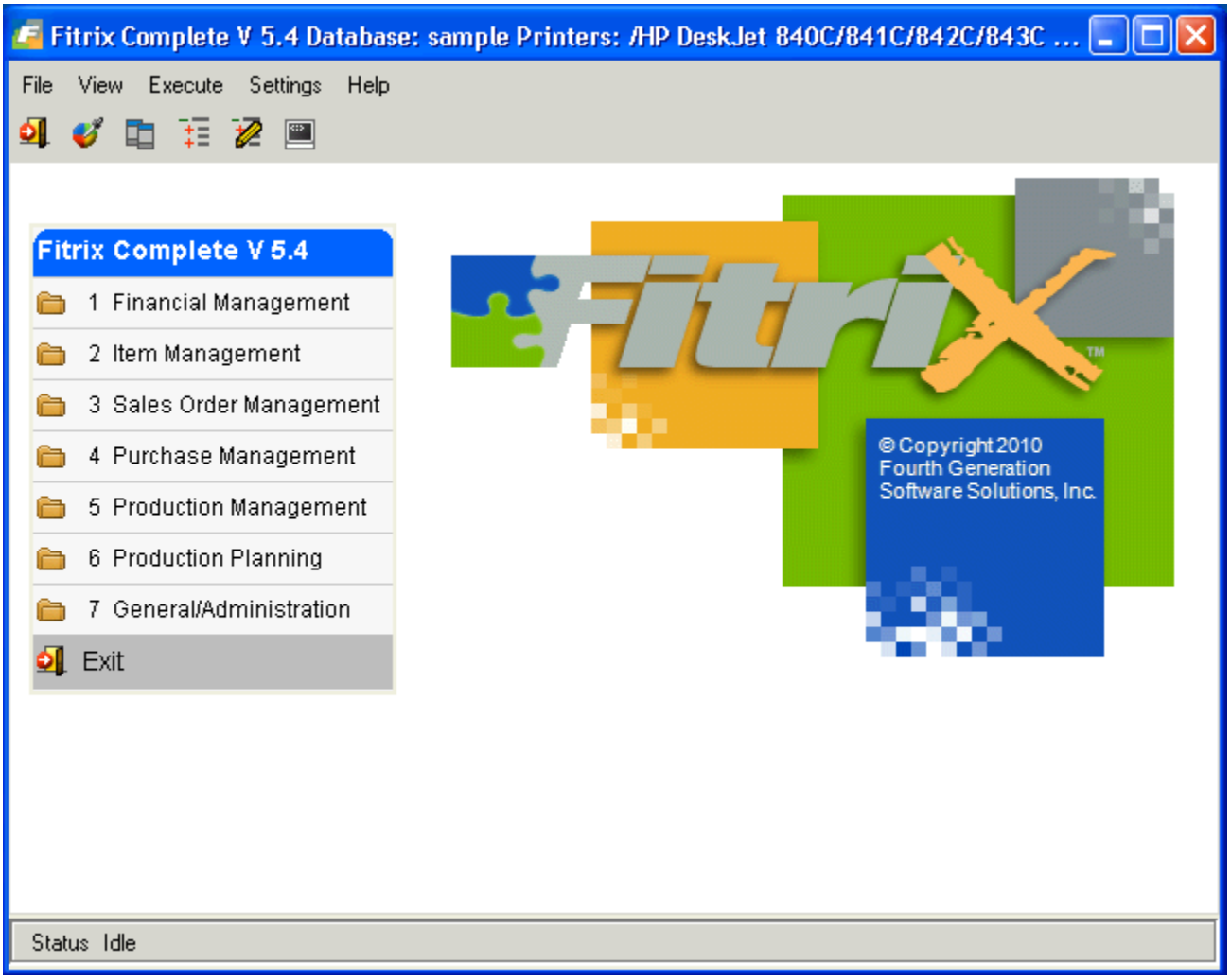
Click: 

If you are the first person to access a Fitrix database after a new installation of Fitrix or a restart of the server, there will be a delay of 10 seconds to 2 minutes while the database is started.

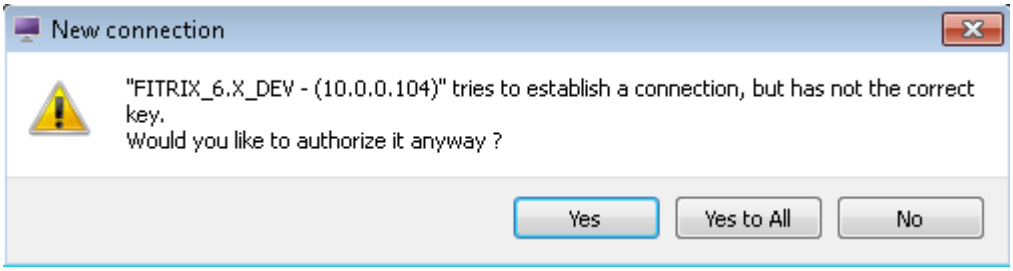
Note:

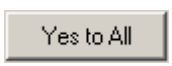
If the Login does not work or appears to hang the first time, Log off of Windows, then Login to Windows again and login to Fitrix again. (On some systems this is required to allow the database time to launch. The database will not need to be re-launched until the next time the Fitrix server is brought down and back up.)

You should see the Fitrix Menu:



You may see the dialog box below the first time you launch a Fitrix data entry screen:

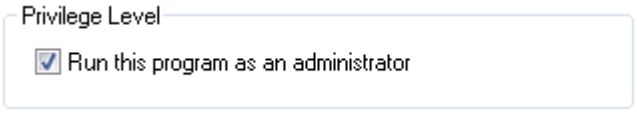


Click: 

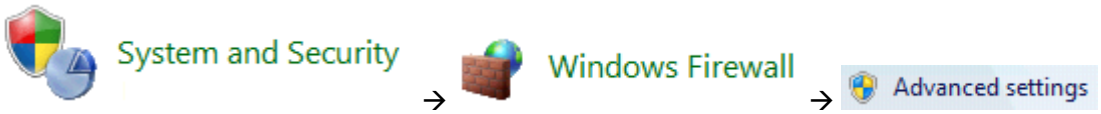
7. Privileges - Windows Vista and Windows 7

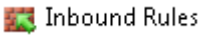
Do **NOT** set PuTTY.exe, GDC.exe, or MNTK.exe to 'Run as Administrator'

Do **NOT** check:



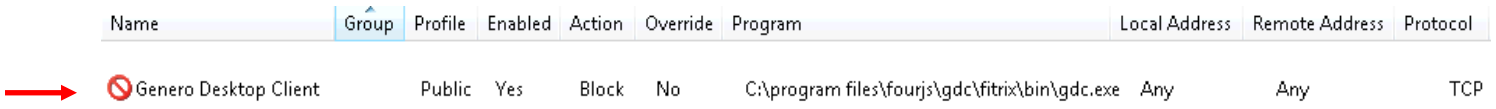
You may either turn off the Windows Firewall or enter Program exceptions for GDC (and perhaps PuTTY and mntk) as necessary:



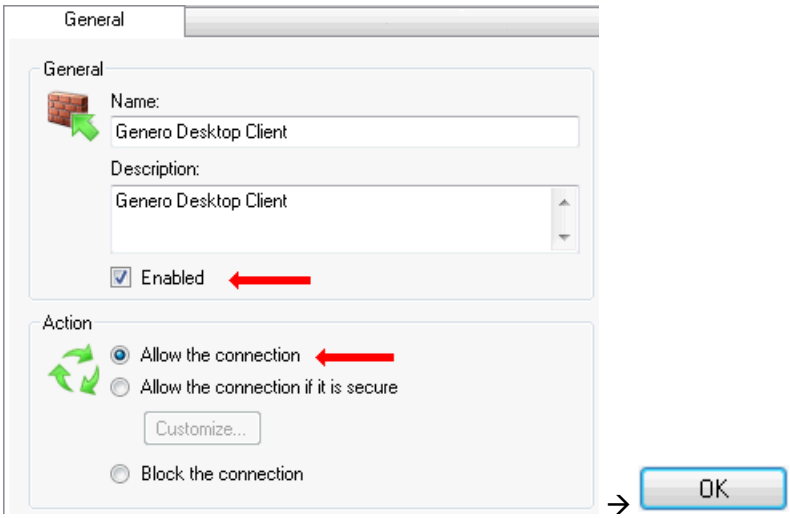
Click: 

If GDC does not show follow 6.1 below:

Right-click the entry:



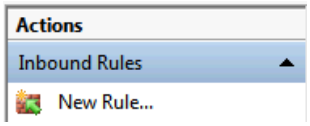
Select Properties:

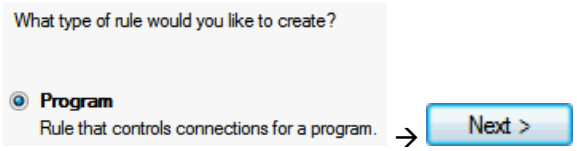


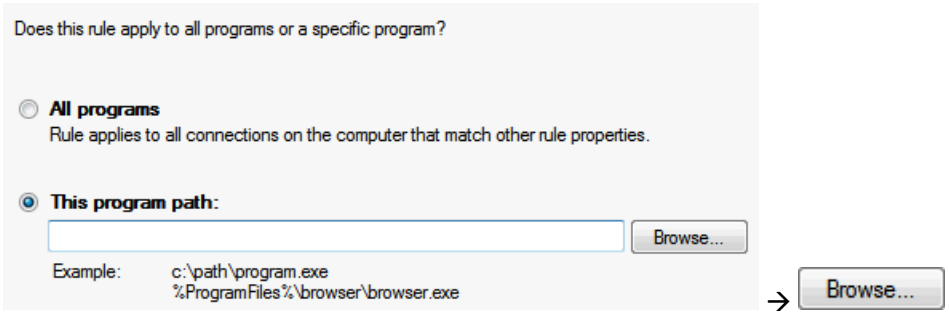
The entry will be changed to:

Name	Group	Profile	Enabled	Action	Override	Program	Local Address	Remote Address	Protocol
Genero Desktop Client		Public	Yes	Allow	No	C:\program files\fourjs\gdc\fitrix\bin\gdc.exe	Any	Any	TCP

6.1 Privileges - Windows Vista and Windows 7 - New Inbound Rule

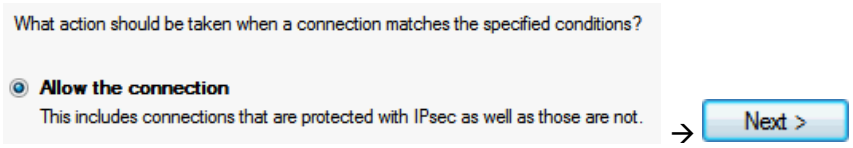


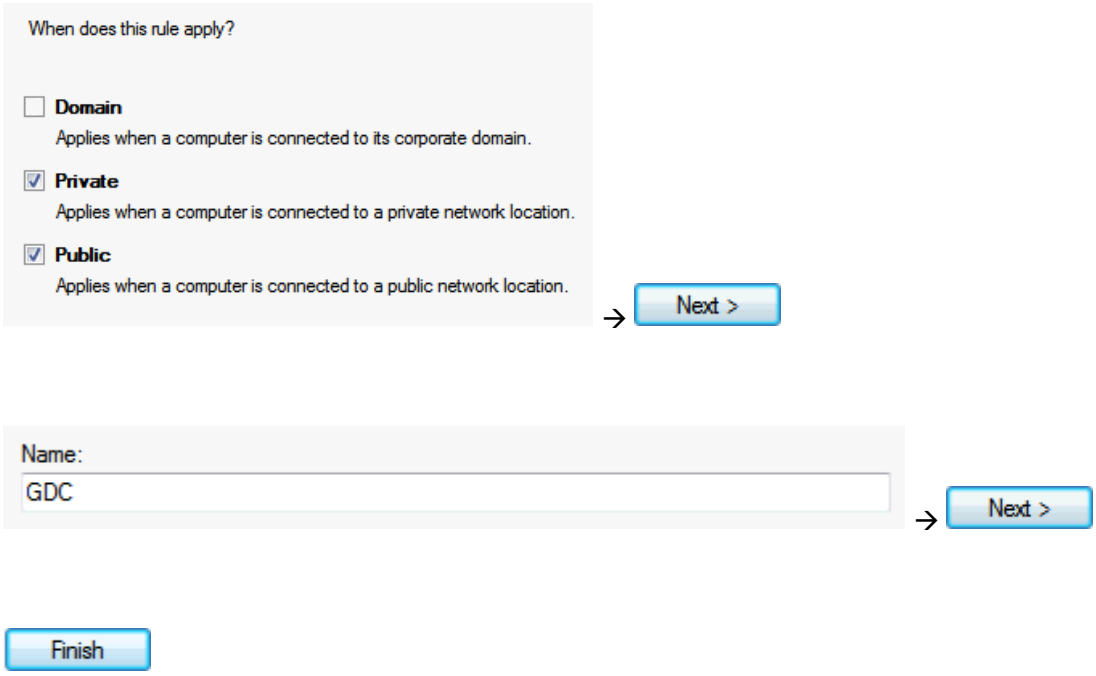




Browse to: C:\Program Files\FourJs\gdc\fitrix\bin\gdc.exe → Open

Next >




When does this rule apply?
Domain
Applies when a computer is connected to its corporate domain.
Private
Applies when a computer is connected to a private network location.
Public
Applies when a computer is connected to a public network location.
Next >
Name:
GDC
Next >
Finish

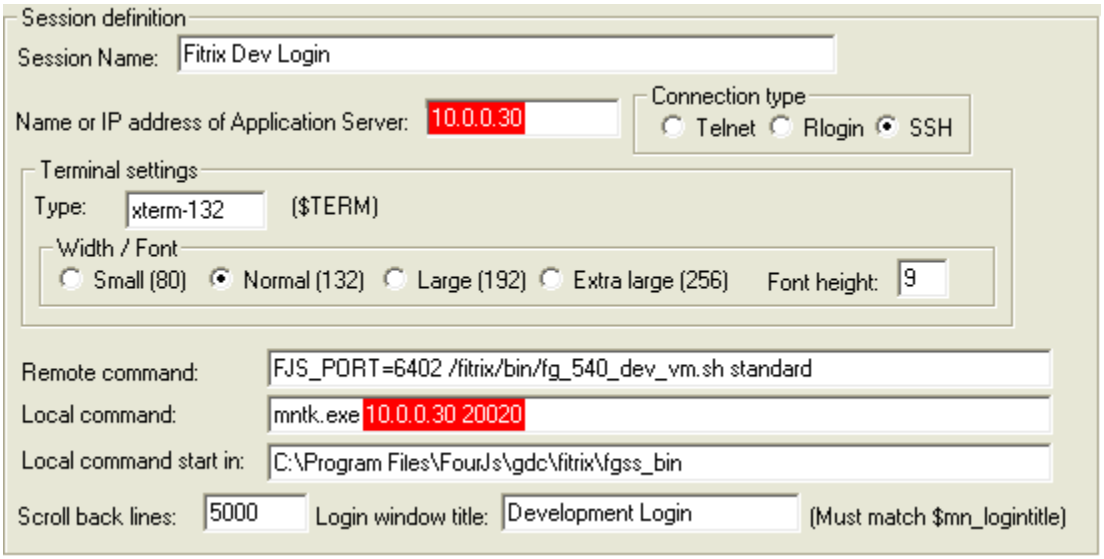
INSTALLING THE FITRIX THIN CLIENT – OPTIONAL ADVANCED STEPS

Please note: the advanced steps in this section have not been updated for Fitrix version 6.0 and are provided here as guidelines. If you need updated instructions in any of these areas before we release an update of this document, please request this from support.

8. Customized Login Sessions (optional):

If changes to a login session are required for the local Windows Client, the screen allows for this

Make changes in any field that is not grayed out:



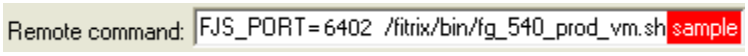
Click:  and you will see:


Currently defined sessions
Development Test
Load
Delete

Additional parameters

1) To change the database for a session:

Connection → SSH



The default is for Development sessions to use the 'DEV' environment, Training sessions to use the 'DEV' environment, and for Production sessions to use the 'RT' (runtime) environment.

2) To change a session to use the Development environment:

Connection → SSH

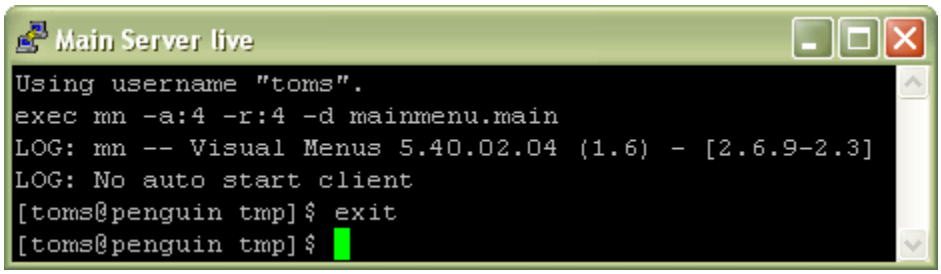
3) To change a session to use the Runtime environment:

Connection → SSH

2) To change a session to use a special Terminal Login Window Title ($mn_logintitle) :

Connection → SSH

Window → Behavior



Click: Create

Create as many sessions as you like either by: 1) starting with a Session Template or 2) by loading a 'Currently defined session' and changing the session name.

Click: Delete to delete a 'Currently defined session'.

Click: Close when finished.

Appendix: A - vminstall - control files

- Input control file:

S:\Install\Fitrix Install Point\vminstall.ini:

```
[defaults]
installpath=C:\Program Files\FourJs\gdc\fitrix
fourjs_shortcut=Four J's Genero Desktop Client 2.22.03
fitrix_shortcut=Fitrix Accounting 5.4
copyfiles=y
create_program_shortcuts=y
all_program_users=y
create_startup_shortcuts=y
all_startup_users=y
uninstalloption=y
serverport=6402

[fourjs_shortcuts]
Genero Desktop Client
Genero Desktop Client Release Notes
```

- Output control file:

```
[defaults]

installpath=C:\Program Files\FourJs\gdc\fitrix

fourjs_shortcuts=C:\Documents and Settings\All Users\Start Menu\Programs\Programs\Four J's Genero Desktop Client 2.22.03

fitrix_shortcuts=C:\Documents and Settings\All Users\Start Menu\Programs\Fitrix Accounting 5.4

startup_shortcuts=C:\Documents and Settings\All Users\Start Menu\Programs\Startup\

fourjs_uninstall=Genero Desktop Client Setup


[files]

...


[directories]
```

`gdc\fitrix\vmuninstall.ini` (create)

`gdc\fitrix\fgss_bin\puttyupdate.ini` (append)

```
[installpoint]
```

Appendix: B - Overriding the default 'Name of installation':

The term "Name of installation" used during FourJs Genero Desktop Client (GDC) installation to allow multiple installations. The installation directory and some shortcuts are named by appending the "Name of installation" to the directory or shortcut. This can be controlled by either:

1) Changing the VM install control file:

S:\Install\Fitrix Install Point\vminstall.ini:

```
installpath=C:\Program Files\FourJs\gdc\fitrix-other
fourjs_shortcut=Four J's Genero Desktop Client 2.22.03-other
fitrix shortcut=Fitrix Accounting 5.4 - other
```

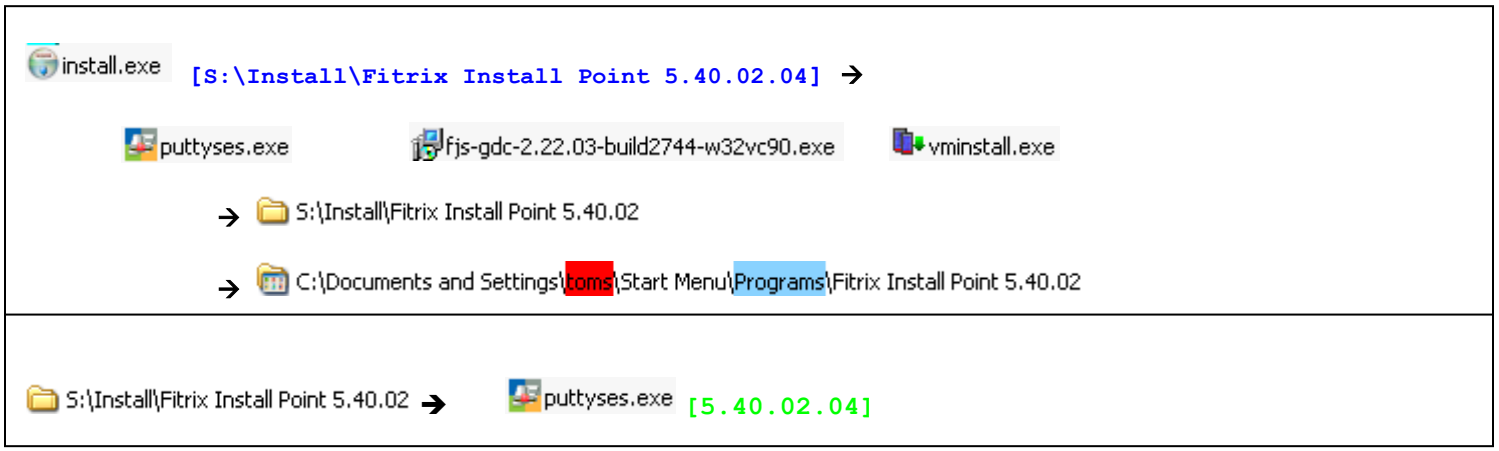
or

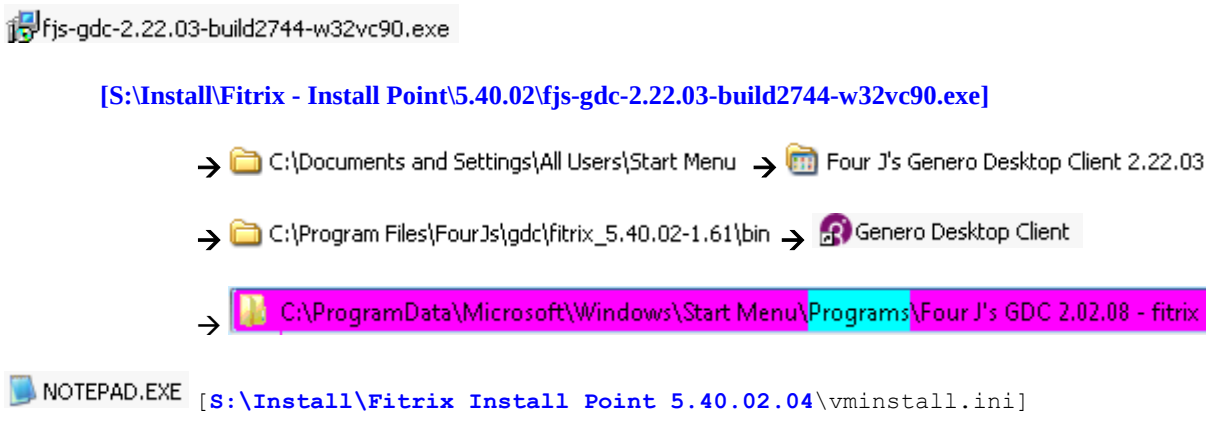
2) By manually making the appropriate changes during the install processs.

Appendix: C - Install sequence

Vista

Install Point




fjs-gdc-2.22.03-build2744-w32vc90.exe
[S:\Install\Fitrix - Install Point\5.40.02\fjs-gdc-2.22.03-build2744-w32vc90.exe]
C:\Documents and Settings\All Users\Start Menu
Four J's Genero Desktop Client 2.22.03
C:\Program Files\FourJs\gdc\fitrix_5.40.02-1.61\bin
Genero Desktop Client
C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Four J's GDC 2.02.08 - fitrix
NOTEPAD.EXE
[S:\Install\Fitrix Install Point 5.40.02.04\vminstall.ini]

vminstall.exe **[5.40.02.01/1220]**

[S:\Install\Fitrix Install Point\vminstall.exe]

vminstall.ini → vminstall.exe vmuninstall.ini

[S:\Install Point] **[S:\Install Point]** **[C:\Program Files\FourJs\gdc\fitrix]**

→ putt

[installpoint]

S:\Install\Fitrix Install Point 5.40.02.04

[C:\Program Files\FourJs\gdc\fitrix\fgss_bin]

→ putty

C:\Program Files\FourJs\gdc-fitrix\fgss_bin

-
-
- Input control file:
-

S:\Install\Fitrix Install Point\puttyses.ini

```
session]
SessionName=Fitrix Dev Login
HostName=127.0.0.1
Protocol=SSH
TerminalType=xterm-132
LocalCommand=mntk.exe 127.0.0.1 20020
TermWidth=132
```

gdc\fitrix\fgss_bin\sshwin.rtx

```
FontHeight=9 REG_DWORD

HostName="127.0.0.1" REG_SZ

LocalCommand="mntk.exe 127.0.0.1 20020" REG_SZ

LocalCommandStartIn="C:\Program Files\FourJs\gdc\fitrix\fgss_bin" REG_SZ

Protocol=ssh REG_SZ
```

Create PuTTY registry entries and shortcuts.

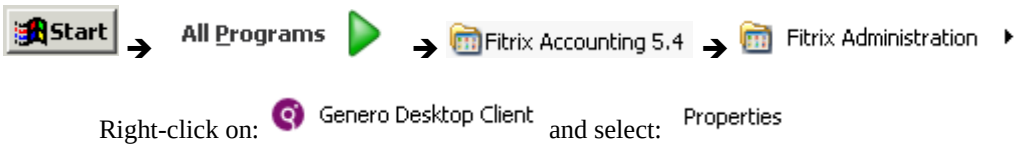
gdc\fitrix\fgss_bin\puttyupdate.ini:

```
[defaults]
installpath=C:\Program Files\FourJs\gdc\fitrix
serverport=6402

[fourjs_server]
Genero Desktop Client

[fourjs_server_arguments]
-a -D -M -n -q
```

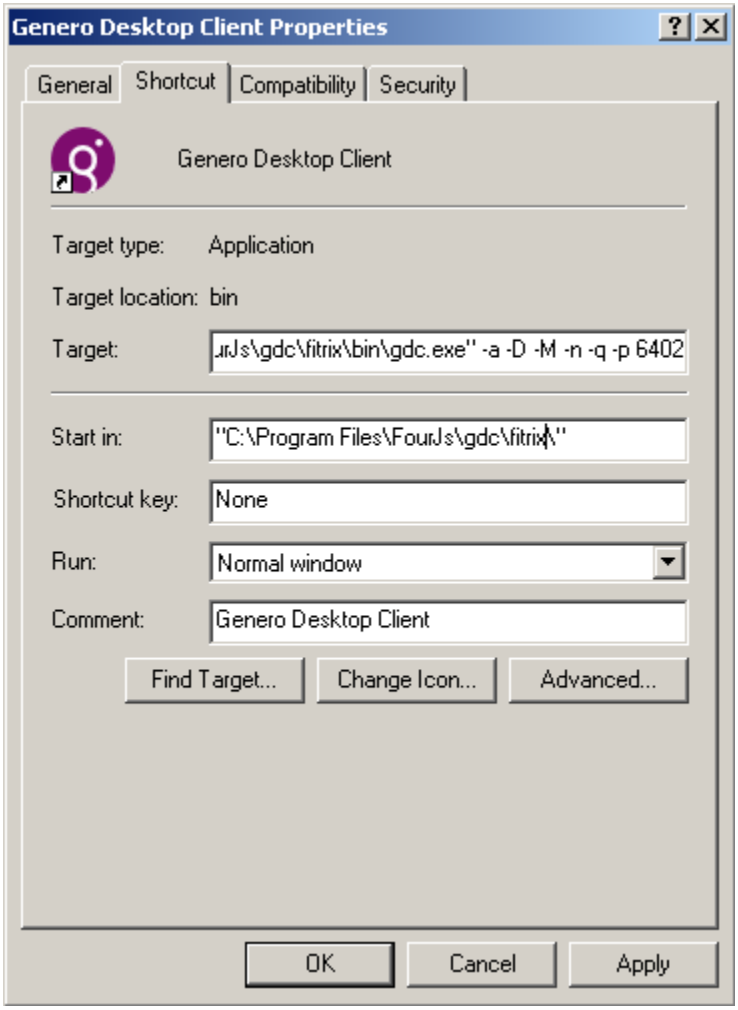
Appendix: D - GDC startup

Find and change the GDC startup

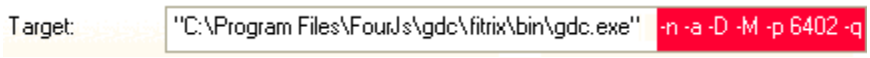
> Terminal Services Install
>
> This step is not done-- the GDC port is controlled in the **Fitrix Login Creation** step.



You will see:


Genero Desktop Client Properties
General
Shortcut
Compatibility
Security
Genero Desktop Client
Target type: Application
Target location: bin
Target: urJs\gdc\fitrix\bin\gdc.exe" -a -D -M -n -q -p 6402
Start in: "C:\Program Files\FourJs\gdc\fitrix\"
Shortcut key: None
Run: Normal window
Comment: Genero Desktop Client
Find Target...
Change Icon...
Advanced...
OK
Cancel
Apply

Add switches to the Target box to:



Where-- `-n:` Start new instance of GDC {do not use next port available}

`-a:` Start GDC in 'Admin Mode'

`-D:` Starts GDC in 'Debug Mode'

`-R:` Automatically starts the built-in RCP daemon

`-M:` Starts GDC minimized

`-p 6402:` GDC will listen on the new port 6402

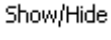
`-q:` Exit if port not available.

Click: 

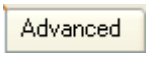
Start the GDC

The GDC will launch invisibly and display as an icon on the far right of the Windows Task Bar. The GDC should always be up and will launch automatically whenever the Windows Client is booted, you should not need to manually start it in the future.

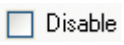
Appendix E: - Save stored settings

Right-click:  in system tray (lower right). Select: 

.

Click:  tab and select 

tab.

Unclick 

:

Click: 

.

Leave the dialog box by clicking:  **NOT** 

(which will terminate the GDC).

Appendix F: List of Vista/Windows 7 privileges

Standard	Default
Full control	
Modify	
Read & execute	✓
List folder contents	✓
Read	✓
Write	
Special permissions	

Advanced	Default
Full control	
Traverse folder / execute file	✓
List folder / read data	✓
Read attributes	✓
Read extended attributes	✓
Create files / write data	
Create folders / append data	
Write attributes	
Write extended attributes	
Delete subfolders and files	
Delete	
Read permissions	✓
Change permissions	
Take ownership	

Fitrix back-end startup:

Customer start-up:

PuTTY Remote command: `FJS_PORT=6402 /fitrix/bin/fg_540_dev_vm.sh`

```
/fitrix/bin/fg_540_dev_vm.sh
      db=$db . /fitrix/bin/fg_env_dev.sh
      /bin/sh /fitrix/bin/kill_orphans.sh
      ...
      exec fg.all [$fgtooldir/bin]
            exec mn.sh mainmenu [$fgtooldir/bin]
                  exec mn or exec mnl [$fgtooldir/bin]
```

UN-INSTALLING THE FITRIX THIN CLIENT

UnInstall each workstation:

- Launch: Start → Programs → Four J's GDC 2.00.1d - 2001d → Genero Desktop Client Uninstallation
- Launch: Start → Programs → Four J's GDC 2.00.1d - 2001d → Visual Menus Uninstall
- Next use the standard Windows 'Add/Remove' option on the control panel to remove 'Fitrix …'
- From Windows Explorer delete the entire Fitrix directory-- C:\Program Files\FourJs\gdc-2001d
- Or, follow the Detailed Uninstall instructions

UnInstall the Install point:

- At the Windows Server, launch: Start → Programs → Fitrix Install Point → Uninstall

Or follow these detailed instructions:

Fitrix Windows Thin Client Install Point - UnInstall.pdf

LICENSING FITRIX

INSTALLING OR UPGRADING THE FITRIX SERIAL NUMBERS AND LICENSE CODES

login as root

(cannot su or sudo, must login as root for this)

/fitrix/bin/license.sh

(occasionally we are getting 'bad license file' when trying to access the Fitrix licenses, if so delete the files /etc/.fg??)

<TBD> Please contact Fourth Generation Software to install your license

CONFIGURING FITRIX USER ACCOUNTS AND LOGGING ON

LINUX USER ACCOUNT REQUIREMENTS FOR FITRIX

Each Fitrix user should have their own user account (login) established on the Linux server. Please follow these guidelines for setting up user accounts:

Basic User Account Creation:

The easiest way to setup a new user account with full access is:

At the Linux Host system (system console screen) where you installed the Fitrix Linux host software:

- **Press** control+alt+F2 **(this should position you to a text window)**

Login as 'root':

Login: root

Password: <enter your root password here>

Create a standard user 'johndoe' and set initial password:

```
$ useradd -m -G informix,fitrix johndoe
$ passwd johndoe
```

Create an administrator/developer user 'janedoe' and set initial password:

```
$ useradd -m -G informix,fitrix,root,fxdev janedoe
$ passwd  janedoe
```

NOTE: The above example will create user janedoe and put her in group root. Any user that is a member of group root will have the capability to edit Visual Menus options as well as leave the menus and access the Linux server from the command prompt (a.k.a 'shell out' of the menus). Membership is group 'fxdev' grants necessary programmer privileges.

Additional user account guidelines:

1. We do not advise running Fitrix applications as user 'root'
2. The user accounts must have groups: 'informix'.
3. If the user requires administrator privileges in the menu, the account must also have group 'root'
4. Note that the Fitrix login process will bypass any .profile settings.

LOGGING ON TO FITRIX VIA THE FITRIX WINDOWS THIN CLIENT

Before any user can login to Fitrix, they will need a Fitrix Windows Thin Client installed on their Windows PC and a properly configured Linux user account.

Once you have installed the Fitrix Software, you are now ready to log on and run the software. The Fitrix software can be run from the Linux Host system, or from a Windows PC. Please follow the instructions for the client logon of your choice.

If you will be running Fitrix from a Windows PC:

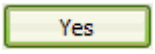
- Confirm that you have completed the Windows Client Installation on the Windows PC you plan to use (as well as the Linux Host Installation). If not, instructions are provided here
- Click **"Start"**
- Click **"Programs"**
- Click a login option such as:
  - Click **"Fitrix User Login"**
  - Click **"Fitrix Dev Login"**
  - Click **"Fitrix Prod Area Dev Login"**
  - Click **"Fitrix Training User Student1"**
  - Click **"Fitrix Training Dev Student1"**

You will see the Login Box as follows:

Enter your password and click: 

.

You may see the alert:

Click: 

You may see the dialog box below the first time you login:

Click: 

You should see the Fitrix Application menu on your desktop and be able to fully access the software

ADVANCED INSTALLATION/CONFIGURATION OPTIONS

CONFIGURING SENDMAIL FOR USE WITH EMAIL ALERTS AND FDD

The instructions below allow you to edit our existing sendmail configuration file which was tested and working with Fitrix from our offices on the Fitrix virtual media before we removed our local settings. Adding your local settings here may be all you need to do to activate sendmail. If you need advanced instructions on setting up FDD and sendmail for Fitrix you can find these published on the Fitrix website here: http://www.fitrix.com/tech-support/technical-procedures/fitrix-fdd/fitrix-fdd-v5-4x/

1. Open your Sendmail configuration file (/etc/mail/sendmail.mc)using 'vi' or an alternative file editor.

3. Smart Host Relay Configurations:
   If you will be using Smart Host Relay, which is strongly recommended
   Find the line that reads:
   dnl # define(`SMART_HOST', `Smtp.YourProvider.com')dnl
   Change this to:
   define(`SMART_HOST', ` Smtp.YourProvider.com'')dn
   (fill in your provider info)

3. Masquerade Configurations:
   Find the line that reads:
   MASQUERADE_AS(`localhost.localdomain')dnl
   fill in your domain name, for example:

MASQUERADE_AS(`xyz.com')dnl

Find the line that reads:
dnl # MASQUERADE_DOMAIN(`YourDomain.com')dnl
Change this to:
MASQUERADE_DOMAIN(`YourDomain.com')dnl

Find the line that reads:
EXPOSED_USER(`root')dnl
Change this to:
dnl # EXPOSED_USER(`root')dnl

Find the line that reads:
dnl # FEATURE(masquerade_envelope)dnl
Change to:
FEATURE(masquerade_envelope)dnl

Find the line that reads:
dnl # FEATURE(masquerade_entire_domain)dnl
Change to:
FEATURE(masquerade_entire_domain)dnl

Save and close the file.
Run the following commands:
cd /etc/mail
m4 /etc/mail/sendmail.mc > /etc/mail/sendmail.cf
service sendmail restart

Run the following basic test to send an email and confirm that this works, you will need to also test by sending an email to users outside of your domain to make sure mail is getting through

```
/usr/sbin/sendmail -v {email_address} <<EOF
Subject: This is a sendmail test on `date`
From host: $HOSTNAME
EOF
```

CONFIGURING EMAIL ALERTS

The Fitrix applications have standard email alerts for a number of functions. Each alert requires the user to setup the required data for the alert such as email addresses and thresholds required. These are specific to each alert and the configuration for each of these is covered in the User Guide for the application module that the alert belongs to.

Creating new email alerts areas within Fitrix requires a software developer. Each alert must be fully defined and all data required to activate the alert must be identified or created within Fitrix. Fitrix includes the basic infrastructure for a developer to use to create new alerts and the developer can study the function and code of existing alerts to see how they work. Additionally a guide for developers creating new email alerts has been included in the Fitrix Applications Developer Technical Guide here:

http://www.fitrix.com/support/fitrix_docs/v6.00/Documentation/Index_files/Fitrix%20files/User%20Guides/Acct.Dist.Guides_files/FX-A-DG-TG-6.00.pdf

APPENDIX A - THE $ONCONFIG FILE

Important variables:

ROOTNAME rootdbs (Name of the DBSpace‡.)

ROOTPATH /porters/fourthg/linux_2_6-2_5-32/genero/data_11.5/chunk1

Directory where chunks‡ reside. Chunks are cooked spaces (ordinary Linux files) where your databases reside.

SERVERNUM 65 (Any number [0-255] that is unique across a DB server machine)

DBSERVERNAME **dev_shm** (The name of the default database server)

DBSERVERALIASES **dev_net** (The list of up to 32 alternative dbservernames, separated by commas)

NETTYPE **ipcshm**,1,5,CPU (The configuration of poll threads for a specific protocol. The format is: NETTYPE <protocol>,<# poll threads> ,<number of connections/thread> ,(NET|CPU)

NETTYPE **soctcp**,1,50,NET

‡ See discussion of databases.

APPENDIX B - THE SQLHOSTS FILE

Format and example from Fitrix:

```
# $INFORMIXSERVER nettype        $APPSERVER              /etc/services
dev_shm         onipcshm        virtual_65.localdomain    dev_dummy
dev_net         onsoctcp        virtual_65.localdomain    dev_srv
```

Field 1: $INFORMIXSERVER (**DBSERVERNAME**)

Field 2: **NETTYE** (The 'on' prefix refers to **on**line engine)

Field 3: The IP address or name of the server-- this is **NOT DBSERVERNAME**)

Field 4: Entry in system file /etc/services for the daemon's port. One for each instance. For example:

```
fx_dev_540_srv          20021/tcp       # IDS dev for Genero
fx_prod_540_srv         20022/tcp       # IDS prod for Genero
fx_train_540_srv        20023/tcp       # IDS train for Genero
```

The useful script: **'/fitrix/bin/ifxenv.sh'** will trace and print this information.

Note the owner and permissions for these files:

```
chmod 644 $INFORMIXDIR/etc/$ONCONFIG
chmod 644 $INFORMIXDIR/etc/sqlhosts
chown informix:informix $INFORMIXDIR
chown informix:informix $INFORMIXDIR/etc/$ONCONFIG
chown informix:informix $INFORMIXDIR/etc/sqlhosts
```

APPENDIX C - START-UP THE ENGINE AT SYSTEM BOOT

Some companies may wish to remove group 'informix' from normal users and only allow system administrator(s) to start/stop the IDS engine. There are template **init scripts** to accomplish this on the CD in directory: 'server\media\common\bin' (oninit_redhat_suse or oninit_debian). Rename these scripts and copy to '/etc/init.d':

/etc/init.d/**oninitd_dev**

/etc/init.d/**oninitd_prod**

To **start** the IDS engine manually, login as 'root' and use:

Development: /etc/init.d/**oninitd_dev start**

Production: /etc/init.d/**oninitd_prod start**

To **stop** the IDS engine manually, login as 'root' and use:

Development: /etc/init.d/**oninitd_dev stop**

Production: /etc/init.d/**oninitd_prod stop**

For Redhat, the administrator may alternately use the '/sbin/service' utility to start/stop manually.

The administrator may create links to these scripts in '/etc/rc.d/rc<level>.d' to start/stop the IDS engine automatically at boot. To create these links use the utilities:

Redhat: '/sbin/chkconfig'

/sbin/chkconfig --add oninitd_prod

/sbin/chkconfig --levels 345 oninitd_prod on

Debian: '/usr/sbin/update-rc.d'

update-rc.d oninitd_prod defaults

APPENDIX D – THE FITRIX HOST DIRECTORY/FOLDER MAP

This directory/folder map will help you find the different components of Fitrix once you have installed the host product on your Linux host system. (Indentation will indicate subdirectories)

NOTE: A 'README' file within each directory will provide a brief description of its contents.

/fitrix - this is a link in your root directory pointing to the top fitrix directory

<root directory>/fitrix - Parent Directory. (the entire fitrix product is contained here)

fx_dev - Fitrix development installation. This will be the $fg directory referred to by the documentation for the development system

fx_prod - Fitrix production installation. This will be the $fg directory referred to by the documentation for the production system

fx_train - Fitrix training installation. This will be the $fg directory referred to by the documentation for the training system

(For more information on these 3 'environments' as well as a list of the scripts that are used to access them, view the Fitrix Environment Chart in Appendix E)

fourjs_dev - Four J's Genero installation. The Four J's tools used by Fitrix are installed here

fourjs_rt - Four J's Genero installation. The Four J's Runtime used by Fitrix are installed here

ifmx_idsXX - The IBM products used by Fitrix are installed here. These include the IDS relational database engine, and also a 4GL runtime required by the Fitrix RAD tool (but not used with the Fitrix applications)

fx_tools - Fitrix RAD development tools installation. This will be the $fgtooldir directory referred to by the documentation

fx_tools_rt - Fitrix RAD runtime tools installation. This will be the $fgtooldir directory referred to by the documentation

bin - Scripts and utilities to support the Fitrix products

logs - Log files created during installation

APPENDIX E – THE FITRIX HOST ENVIRONMENTS CHART

When you install Fitrix, 3 separate processing 'environments' are created for different purposes:

- The Production Environment "fx_prod" contains the versions of the programs your business will run, and the "live" database you will use. The Production database is called "live" and it is empty when Fitrix is installed so that it is ready for you to begin setting up your company's data.
- The Development Environment "fx_dev" is a completely separate area to allow your programmers to develop customizations to Fitrix without disturbing your production software. Once a change has been developed and tested, the new software should be installed in the production area. The Development database is called 'standard' and it is fully populated with sample data from a sample company when Fitrix is installed.
- The Training Environment "fx_train" is another completely separate area to allow end users or programmers to train on the Fitrix software.

Fitrix includes a library of 'shell scripts' used for accessing each environment and the Fitrix Install Point includes login templates for each environment (and for a variety of scenarios for each environment)
The following chart explains each environment and the scripts for accessing each environment for each mode.

Environment Description /	Database Name (for	Login Title/Remote Command Called By Client	Data Pre-Loaded	Four J's	Comments

Directory Name	**each database installed in each Environment**		*** notes 1 and 2**	**license accessed * Note 3**	
Development fx_dev					The development area is where all customizations to your Fitrix software should be developed and tested. It contains a completely separate set of application source code and a separate development database to minimize the possibility of affecting the production users due to software development activities.
	standard		baseplustemp		This is used for code generation but is not normally used to run programs against
	sample		train		This is the development and testing database
		Fitrix Dev Login /fitrix/bin/fg_540_dev_vm.sh sample		Dev	Use for developing customizations to Fitrix. (can also be used for testing customizations but typically limited to 1 user)
		Fitrix Dev RT Login FX_TOOLS=RT /fitrix/bin/fg_540_dev_vm.sh sample		r/t	Use for testing in development area when more than 1 user is needed for testing. (this uses the Four J's runtime licenses)
Production fx_prod					The production area is where your live system runs.
	standard		baseplustemp		This is used for code generation but is not normally used to run programs against
	live	Fitrix User Login /fitrix/bin/fg_540_prod_vm.sh live	base	r/t	Use these scripts for users of the software. The database named 'live' is exactly that, your live database. If you have multiple companies, you will want to create additional databases for each company beside this database.
	sample	Fitrix Prod Area Dev Login FX_TOOLS=DEV /fitrix/bin/fg_540_prod_vm.sh sample	train	dev	Use these scripts to access development capabilities in the production environment. While not recommended, it is possible to perform all development tasks in the production environment. It is sometimes desirable to make a small change or be able to recompile a program in this environment – so a script has been provided. Note that this script accesses the 'sample' database rather than the 'live' database. This allows for testing without affecting the live data

Training fx_train					This environment is ready to be used with your Fitrix Training Guides.
	standard		baseplustemp		This is used for code generation but is not normally used to run programs against
	student1		train		
		Fitrix Training User Student1 FX_TOOLS=RT /fitrix/bin/fg_540_train_vm.sh student1		r/t	For end user training on Fitrix Business applications
		Fitrix Training Dev Student1 /fitrix/bin/fg_540_train_vm.sh student3		dev	For training on development tools
	student2		Train		Same as student1 but allows separate training database for additional student
	student3		Train		Same as student1 but allows separate training database for additional student

Notes:

1. "Sample" data includes all 'infrastructure data' as well as a full sample company with live transaction and history data. This is intended for training and testing.
2. "Standard" data includes only 'infrastructure data' such as messages, help, menu options, … and is ready for you to begin setting up your live company data.
3. The Four J's development license (and Fitrix development tools) cannot be accessed from the same login as the Four J's runtime license. A Typical Fitrix license contains 1 or 2 Development licenses and 5,10,25,50, or 100 runtime (or user) licenses. When you are developing, you will need to access the environment with a script that uses the Four J's development license, but when users are running the software, or if a number of users are testing or training on the software, they will need to access the environment with a script (probably tied to a login account) that accesses the Four J's runtime license.

APPENDIX F – DEFAULT USER ACCOUNTS SHIPPED WITH FITRIX COMPLETE

When you install Fitrix Complete series from our preconfigured virtual image or using the full install from the Fitrix media onto your Linux Host, the follow user accounts will be created by default:

root, password=Secret1 (virtual image only)
fitrix, password=Secret1
informix, password=Secret1

Please change the passwords on each of these to a unique secure password as soon as Fitrix is installed on your host.
If Fourth Generation software will be directly supporting your Fitrix installation, please let your Fitrix installer know the new passwords for each of these as they will be required for support.