



VisQ

**Queue Manager
System Guide**

Version 2020.1



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NeuQuant Neural-Net Quantization Algorithm

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NEUQUANT Neural-Net quantization algorithm by Anthony Dekker, 1994.

See "Kohonen neural networks for optimal colour quantization" in "Network: Computation in Neural Systems" Vol. 5 (1994) pp 351-367 for a discussion of the algorithm.

See also <http://members.ozemail.com.au/~dekker/NEUQUANT.HTML>

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Conventions

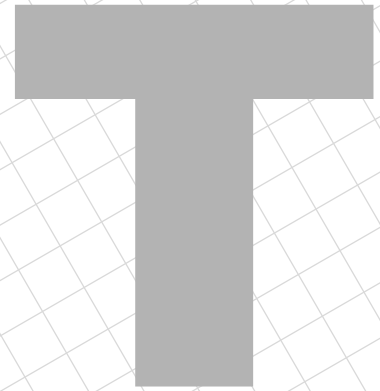
This manual uses different fonts to highlight command names or input that you must type.

<code>a:setup</code>	Shows text that you should type.
<i>OK, Cancel</i>	Shows a command name or text that you will see in a dialog box.

Throughout this manual, you will see references to Windows. Windows refers to Microsoft® Windows XP, Windows Vista, and Windows 7 (32-bit and 64-bit versions). You will need one of these operating environments to run FEMAP for the PC. This manual assumes that you are familiar with the general use of the operating environment. If you are not, you can refer to the Windows User's Guide for additional assistance.

Similarly, throughout the manual all references to FEMAP, refer to the latest version of our software.

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Introduction



VisQ - The Visual Queue Manager for FEMAP®

VisQ™, the Visual Queue Manager for FEMAP, improves your productivity by streamlining and automating the often cumbersome process of using a remote server to solve your finite element analyses modeled using FEMAP. Input file transfer, batch analysis job submittal, queue management, results retrieval and server file management are all controlled through an easy to use visual environment, integrated with FEMAP, on your desktop computer.

VisQ consists of two main components: *VisQ Client* and *VisQ Server*. *VisQ Client* is typically used on your desktop computer to submit analysis jobs that are then solved remotely on another computer on the network with *VisQ Server* driving the required analysis solver software. Multiple clients can access a single server or multiple servers.

VisQ Client allows you to visually submit, monitor and manage analysis jobs for batch processing, and automatically retrieve results when a job is complete. *VisQ Client* includes several options for batch jobs including job priority, deferred submit time, and results retrieval once a job is completed. You can manage the queue by changing the order jobs are to be run, deleting jobs from the queue, and changing the status of a job, e.g., change from immediate to deferred or overnight.

VisQ Server drives the solver software, the batch queue, files and directories on the compute server. An important step is to configure *VisQ Server* with the specific solver commands. *VisQ Server* also provides the ability to define and intelligently track the maximum number of licenses of each solver type, and then manage the queue accordingly. When a job is submitted for a given solver and the number of current jobs equals the maximum number of solver licenses you have defined, *VisQ Server* will “queue up” additional jobs to be run as jobs in the queue are completed. *Note, however, that VisQ Server does not monitor solver license status directly but rather uses the number you define as the maximum number of licenses to determine when to queue a job versus when to submit a job.*

While FEMAP provides a productive finite element modeling and visualization environment, *VisQ* extends your productivity by speeding and improving the quality of the interactive aspects of the solution process.

Considerations, setup and use

VisQ Client and *VisQ Server* will be installed with your FEMAP installation by default. You also have the ability to install *VisQ* on any other pc if you plan to run analysis software on a server. You will want to determine where you plan to install the server then review and determine which options you want to use on the various batch solver commands and review the available number of solver licenses. Once you have made these pre-install considerations you are ready to install *VisQ*.

You will probably want to setup *VisQ Server* to start each time the server is restarted.

Once both *VisQ Server* and *VisQ Client* are installed and configured you are ready to start using *VisQ*. To do so, simply start the *VisQ Client* and choose the use the “Submit” option to select analysis input files to be run on the server. When you submit a job you can also define options on job priority, time to run the job and automatic file retrieval. You can monitor the status of your jobs and others' jobs using *VisQ Client*, but you can control only your jobs.

VisQ operates as a separate, stand alone process from FEMAP however FEMAP has the ability to launch the *VisQ Client* from the Analysis Manager when *VisQ* is installed in the Femap directory.

Using VisQ on a single computer

While the software is mainly intended to enable the “client/server” usage of computers that are networked, *VisQ* can also be used on a single computer. In this case you install both *VisQ Client* and *VisQ Server* on the same system, and the two components work together directly.

Installation

2

The VisQ Client and VisQ Server are installed in the FEMAP directory by default when FEMAP is installed. This setup allows FEMAP to automatically launch the VisQ Client when the Analysis Manager option to “Run Analysis Using VisQ” is selected.

VisQ can be installed manually from the cd as well. See “Installing the Windows Version” on page 1

2.1 System Requirements and Recommendations

Before you begin installing, there are a few basic requirements that are good to check. For example VisQ currently requires one of the following operating environments: Windows XP or Vista. All systems should have a minimum of 64 MBytes of real memory.

Installing VisQ Client:

The VisQ Client is typically installed on all the computers where FEMAP is installed and being used. Each user can then run a VisQ Client and submit jobs to the remote VisQ Server.

Installing VisQ Server:

The VisQ Server is installed wherever you plan to install the solver(s). The installations can be on the users local pc but usually is a high performance workstation that is only used for running the solver.

2.2 Installing the Windows Version

Windows XP or Vista

1. Log into your computer as Administrator.
2. Insert the FEMAP CD into the drive. The setup should automatically begin within a few seconds.



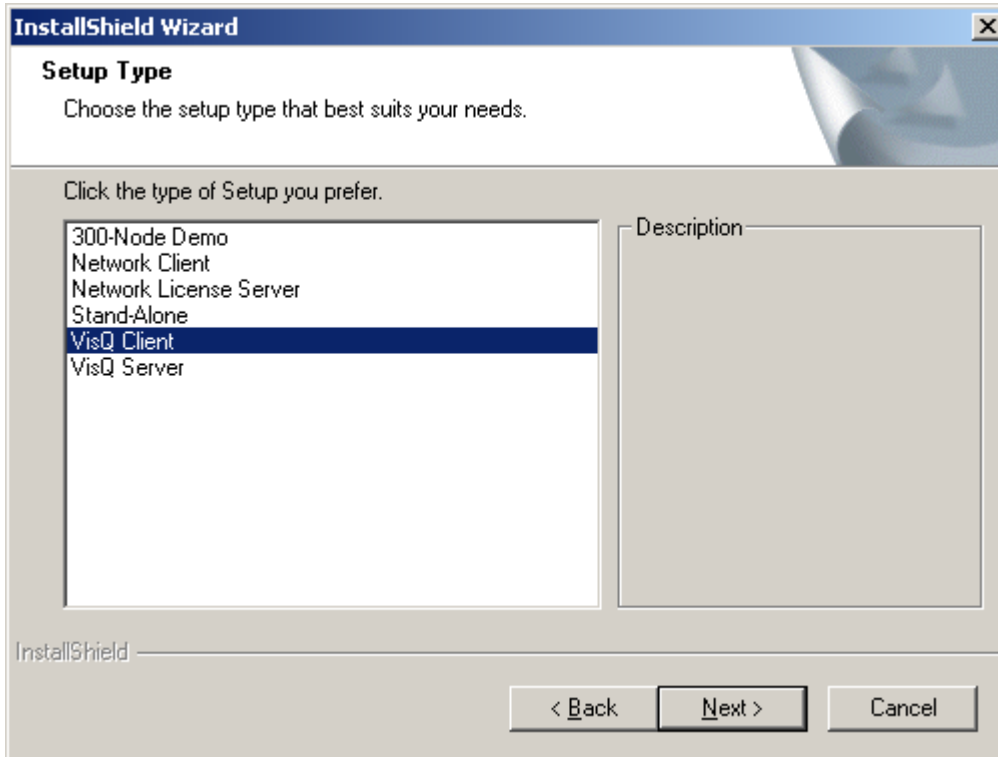
Note:

If the setup program does not start automatically, use the Windows Explorer to view the CD-ROM’s contents. You can manually start the setup by double clicking on the file *Setup.bat*.

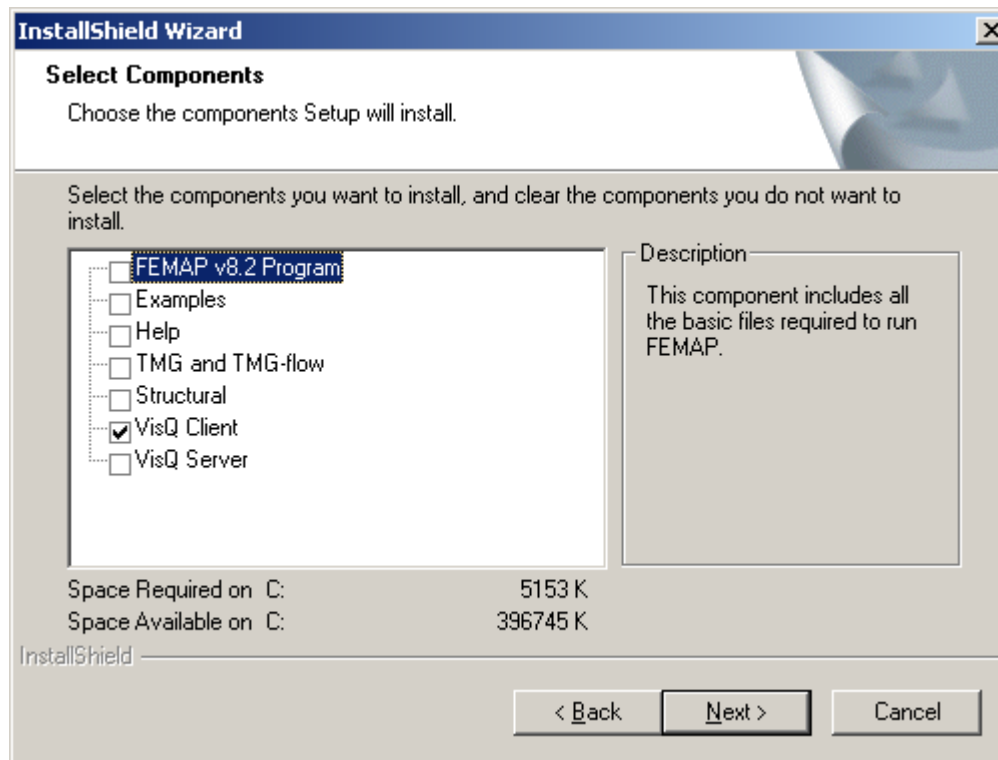
Once setup is running you will see a license agreement. Assuming that you agree with the license agreement, press *Yes* to continue and select the directory where you would like to have the VisQ program installed.

You will now be asked which type of installation to perform.

3. You can now select to install the VisQ Client or VisQ Server by selecting the appropriate options.



You will now be prompted to the VisQ Client or VisQ Server.



Once you have finished the installation you will be able to start VisQ right away.

2.3 Running VisQ in a Network Environment

There are two general methods for using VisQ in a networked environment. They are:

1. Installing VisQ Server on a server, and VisQ Client on local clients.
2. Installing and running VisQ on a server, but displayed on local clients.

2.3.1 VisQ Server installed on Server / VisQ Client installed Locally

The most common implementation of VisQ in a networked environment involves installing the software on a server system, then running and displaying VisQ Clients on local client systems.

2.3.2 Server Installation, Client Execution

Follow the installation instructions given previously to install both the VisQ Server and Client on your server. Then share the VisQ directory, so that the clients can all access VisQ Client. Users can now run the VisQ Client remotely over the network and the interface will be displayed on the users local pc.

VisQ Server

3

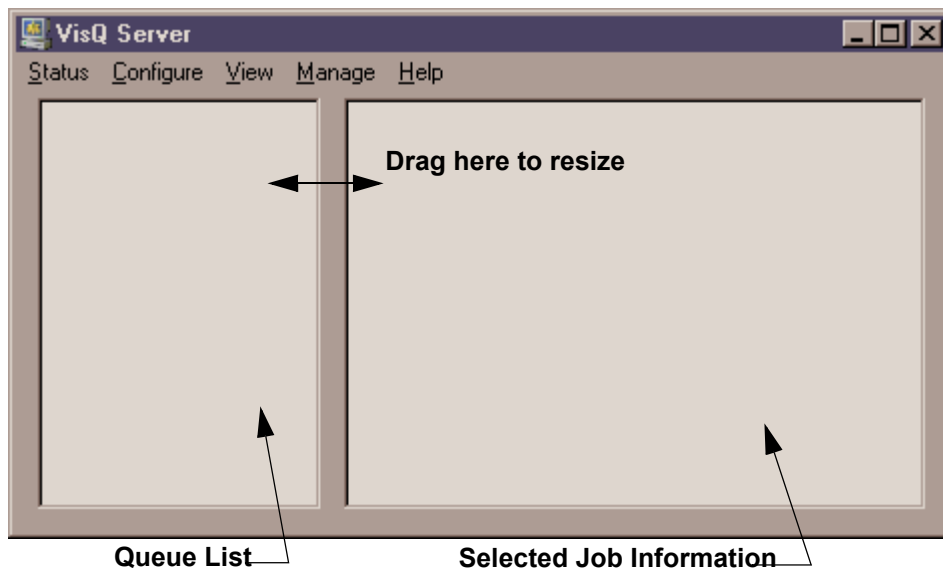
The VisQ Server is the portion of VisQ that performs the queuing and submission of your jobs. There are two versions of the VisQ Server - one that is fully interactive (just like the VisQ Client) and allows you to configure your Server, and one that can be run as a background process without an interactive window. As its name suggests VisQ is generally used in a visual and interactive environment; however the VisQ Server, once configured, does not require frequent interaction. The Console Server allows you to easily and automatically start VisQ Server, outside of a Windowing environment.

3.1 Starting the Server

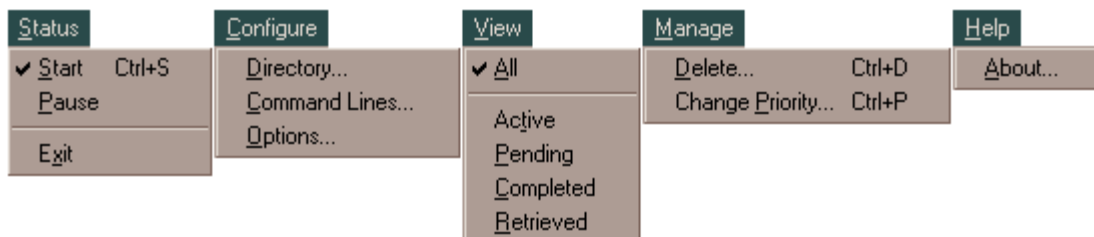
In all Windows versions of VisQ, you can simply double-click the icon for the Server.

3.1.1 The VisQ Server User Interface

When VisQ Server starts, you will see the following:



GUI Commands



3.1.1.1 The Queue List Window

The window on the left contains the list of jobs that are currently in the queue. Each job will be listed in the following form:

```
S .. jobname ( user@host )
```

where the first letter indicates the current status of the job. The following status indicators are possible:

Status	Meaning
P	Pending - Job is in the queue, waiting to be executed.
A	Active - Job is currently being executed.
C	Complete - Job has finished execution.
R	Retrieved - Job has finished execution and one or more of the files have been retrieved by a Client.

The “user @ host” string will show you who submitted the job and which computer they were using at the time.

To review the status of any job in the queue, simply click on the job name, and you will see additional information about the job in the Job Information window on the right. You can adjust the relative sizes of these two windows by clicking on the bar that is between them and dragging it to a different position.

3.1.1.2 The Job Information Window

The Job Information Window shows the options that were specified when a job was submitted, and the files that are associated with the job.

```

Status: Retrieved
Submitted By: george@DEVEL
Client Filename: E:\ababrick.inp
Server Filename: /data/AnalysisAgent/ababrick/ababrick.inp
Command Line: ABAQUS 5.7
Command Options:
Priority: Normal
Retrieve: Y
Delete From Server: N

Submitted: Wed Apr 29 11:03:39 1998
Started: Wed Apr 29 11:03:39 1998
Finished: Wed Dec 31 19:00:00 1969

Files:
ababrick.com [1,880 Bytes]
ababrick.dat [15,692,960 Bytes]
ababrick.fil [32,427,135 Bytes]
ababrick.inp [1,166,157 Bytes]
ababrick.job [179 Bytes]
ababrick.msg [6,110 Bytes]
ababrick.sta [297 Bytes]
Total Size: 49,294,718 Bytes

```

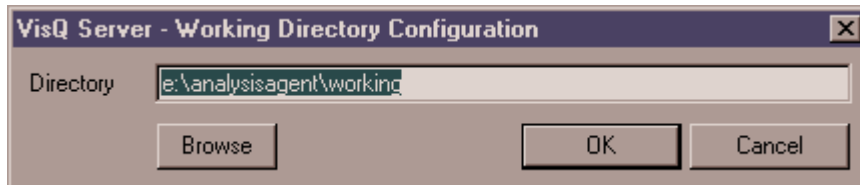
It also shows the time that the job was submitted and when it started and completed execution (if those events have occurred). You can use this information to see how long a job has been on the Server, which could be used to delete old jobs that have already been retrieved.

3.2 Configuring the Server

There are three steps you must do to configure your Server - (1) configure a working directory, (2) define one or more command lines, and (3) set a few miscellaneous options. These are described in the following sections.

3.2.1 The Working Directory

To begin, choose the “Configure Directory” command. You will see a dialog box that looks like the following:



Here you must specify a full pathname to the directory that you want to use as the working directory for your Server queue. You can either type the name of a directory, or press “Browse” to select the directory graphically.

VisQ does not create the working directory, you must choose one that already exists. You must also choose a directory that will be accessible to all of the “Clients” - this means that it must be accessible to your network (via NFS or similar software, FTP or a Windows share), and must have both read and write permission enabled for all Client users.

The working directory is used for all jobs that are placed in the queue. A subdirectory of the working directory is created for each job (using the jobname) and all job files are moved to the associated subdirectory. This means however that the working directory must be on a disk or filesystem with sufficient free space to hold all of the files that are in the queue at any one time. If you run out of space, most likely your jobs will abort. Some further guidelines include:

1. Choose a big, empty disk or filesystem.
2. If possible, setup your command lines (next section) to direct scratch files to a different disk or filesystem.
3. Use the Client Automatic Retrieve and Delete feature to minimize the number of jobs in the working directory at any one time.
4. Review the completed and retrieved jobs frequently, and delete ones that are no longer needed.

3.2.2 Command Lines

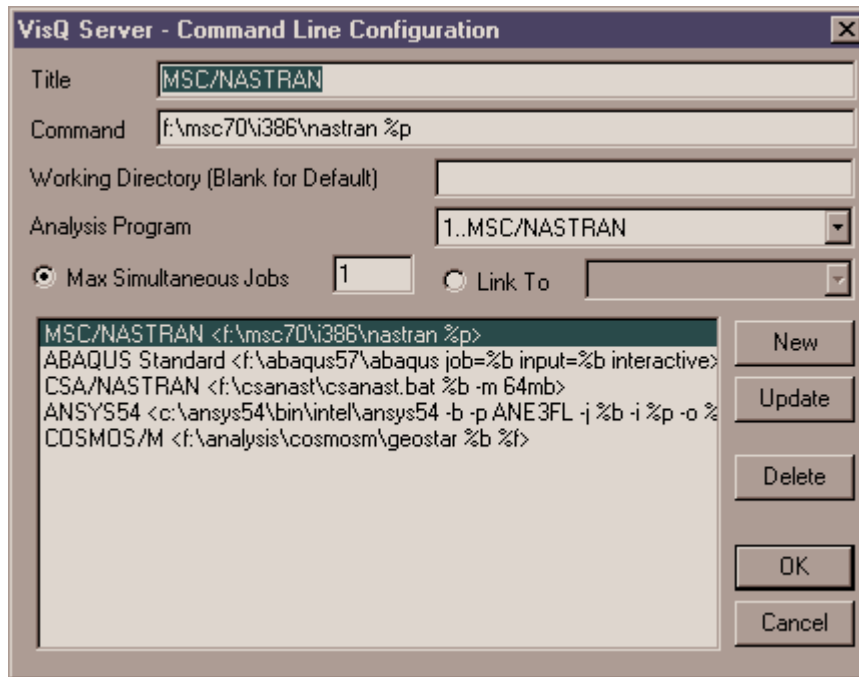
After you have chosen a working directory, the next step is to configure one or more command lines. Command lines are the commands that are used to actually run the analysis program or other job that you want the Server to perform. They are normally a single command, just like you would type at a command prompt to perform the same task. In some cases however, you will want to perform a number of tasks automatically. In this case, you can create a batch file for Windows that will perform the tasks, and then specify that file as your Server command line.

3.2.2.1 Command Line Philosophy

In the simplest case, you may only have a single command line, to run your one analysis program. If you have multiple analysis programs however, you will need a separate command line for each program. Furthermore, if you want to specify different options, you might want to create multiple command lines for a single program. For example, you might want to create different command lines for small, medium and large memory settings, or for different scratch file configurations. If you do this, make sure that you specify descriptive titles for each command line that describe the options - the title is the only information that the Clients will see when selecting a command line. You do not need to specify a separate command line for every possible command line option. The Clients can define additional options to be added when they submit a job, but it is probably best to define separate command lines for important, frequently used, or confusing options.

3.2.2.2 Defining Command Lines

To begin, choose the Configure Command Lines command. You will see the following dialog box (although it will be blank):



Title

To define your first command line, specify a title. Each command line must have a unique title (up to 50 characters). Make the titles descriptive of the program and options that they include.

Command

Next specify the command. As you can see in the example above, you should specify complete pathnames to your programs - you should not assume that the Server will be running from a particular directory. You should specify all of the needed options on the command line. Since this command will be used to execute jobs contained in many different files, you cannot specify a data filename. Instead, there are a number of replacement variables that you must use instead. They are:

Variable	Description	Example (if filename is d:\data\mymodel\bracket.dat)
%b	Base Filename with no extension and no path.	bracket
%f	Filename with no path.	bracket.dat
%n	Full filename including path, but with no extension.	d:\data\mymodel\bracket
%p	Full filename including path and extension.	d:\data\mymodel\bracket.dat
%j	Jobname	
%u	Username of Client who submitted job	
%h	Hostname of Client who submitted job	

Depending on the context where you want to substitute a filename, you may need to use one or more of these options in a command line. For example, if you wanted to run ANSYS, you might configure a command line that looks like:

```
F:\ProgramFiles\AnsysInc\ansys60 -b -p ANE3FL -j %b -i %p -o %n.out
```

then if you executed this command line using a data file named:

```
/users/mike/project/bracket.ans
```


with a jobname of

topbracket

the resulting command would be:

```
F:\ProgramFiles\AnsysInc\ansys60 -b -p ANE3FL -j topbracket
-i /users/mike/project/bracket.ans
-o /users/mike/project/bracket.out
```

Command lines (prior to substitution) can contain up to 250 characters. If you need command lines that are longer, or that are actually multiple lines, you must create a batch or script file that contains the real commands, and execute that file in the VisQ command line.

Working Directory

By default, all jobs will be moved to subdirectories under the main Server working directory. Those subdirectories will be named with the jobname. If you want to spread your jobs over multiple file systems or disks, you can specify a different working directory for each command line. In this case, jobs are still submitted by the Clients to the main working directory, but they are immediately moved by the Server to the proper command line working directory. If you leave this field blank, all jobs will remain under the main Server working directory.

Analysis Program

Next, you should select the analysis program that is to be associated with this command line. This selection is not used if you run the VisQ Client independently, but if you launch it from FEMAP, the VisQ will automatically select the command line that is associated with the analysis program that you chose in FEMAP - as long as you specify it correctly here.

Max Simultaneous Jobs

If you are going to allow VisQ Server to run more than one simultaneous job (see next section) you should specify the maximum number of simultaneous jobs that you want to run for each command line. This is especially important if you have a license for the command line program that only allows one job at a time.

Linking Command Lines

If you only have one command line for a given program, you can simply specify the maximum number of simultaneous jobs, and you are done. If you have multiple command lines for the same program, and you want to limit the total number of jobs for all of those command lines, you should set the maximum number on the first command line for the program, then on all other command lines, choose the “Link To” option and choose the first command line. VisQ Server will then consider all of the linked command lines in the same group when deciding whether to execute an additional job for any of the command lines.

New

Once you have specified all of the options at the top of the dialog box, press New to create a new command line. You will see the information transfer to the list box. You are then free to change the information at the top to define your next command line. Press New again, and you have another command line defined.

Update

If you want to modify a command line once it has been defined, first select it from the list of available command lines. All of the information for that command will be transferred to the top of the dialog box so that you can modify it. When you are finished making your changes, press Update to modify the command line in the list.

Note:

You can not simply select the command line, make changes and press OK to leave the dialog box. Until you press Update, the command line has not been modified. If you do not press Update, when you press OK all of your changes will be lost.

Delete

If you want to delete a command line, select it from the list, and press Delete.

3.2.2.3 Configuring Command Lines For Analysis Programs

Some analysis programs, or other tasks, may require very specific command line options to work properly with VisQ. In particular, you must make sure that the following conditions are satisfied:

1. The program (or process) that is executed when your command line runs, must remain active for the entire duration of the job.

If the program that you run simply launches another program and ends, VisQ will be able to submit jobs, but it will show that the job has completed as soon as the first program finishes - even though the real job may have just begun. In that case, Clients that try to use the automatic retrieve will fail, because the files that they are retrieving will not be complete. In addition, if there is another job in the queue, it will be submitted, even though the previous job is still running.

2. The program that is executed by your command line must not require further interaction with a user or the console.

Since you are running the program in a “batch” environment there is no way to interact with that program. All of the required data must be specified in command line options or in the data file.

3. The program that you are running must only require a single data file, or any other data files must be referred to with a full path in the primary data file or on the command line.

The VisQ Client automatically transfers one data file to the Server when you submit a job - it does not currently do multiple files or automatic include files.

3.2.2.4 Configuring an ABAQUS Command Line

ABAQUS is one of the programs that by default starts an initial process that terminates before the job is complete. To prevent this behavior, you must use the “interactive” command line option. Therefore a command line for ABAQUS will typically look like:

```
/fullpath/abaqus job=%j input=%p interactive
```

3.2.2.5 Configuring an ANSYS Command Line

ANSYS needs to be run in batch mode to disable the user interface. Therefore a command line for ANSYS will typically look like:

```
c:\ansys54\bin\intel\ansys54 -b -p ANE3FL -j %j -i %p -o %n.out
```

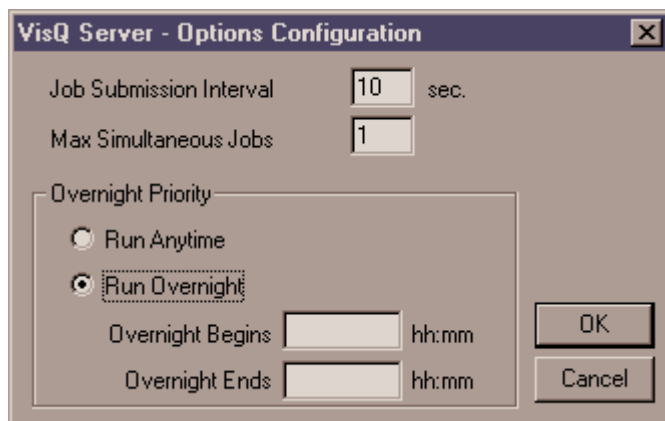
where the -b option specifies “batch” mode. Note we have also used the -p option to specify the ANSYS product code that we will use. This must correspond to your ANSYS license or you will not be able to run in batch mode.

3.2.2.6 Configuring an MSC.Nastran / NX Nastran Command Line

On Windows, MSC.Nastran and NX Nastran run in an interactive fashion, so the “bat=no” option is not required.

3.2.3 Other Options

Once you have completed configuring your working directory and command lines, the final configuration step allows you to define several other options. Unlike the previous two steps, changing these options is not required. When you choose the Configure Options command, you will see a dialog box like the following:



Job Submission Interval

VisQ Server scans the working directory periodically to see if new jobs are available to be placed into the queue, or if jobs are to be removed from the queue. This option specifies the amount of time between these scans. The shorter that you set this interval, the more responsive and interactive VisQ will be in performing your requests, but it will also consume more resources.

Max Simultaneous Jobs

This option specifies the maximum number of jobs that VisQ Server can run at one time. If you set this to one, only one job, from any command line, will run at once. If you set it to a higher number, only that number of jobs will run at one time, however no more than the maximum number of jobs specified on each command line will run for that command line (refer back to configuring command lines for more information). You want to set this option based on the types of jobs that you run and the capability of your system. Some systems may only be capable of running one job at a time because of memory or disk space limitations. Other larger systems may be able to efficiently run multiple jobs simultaneously.

Overnight Priority

The “lowest” priority that a Client can use to submit a job is Overnight. With these options, you can decide when “overnight” jobs will be run. If you choose “Run Anytime”, then an overnight job will begin as soon as there are no jobs of higher priority to execute. In this case, the word “overnight” has no real meaning - it is just the lowest priority. If you choose “Run Overnight”, you must also specify the time when the overnight period will start and end. You specify this time in 24 hour format, like 8:00, 12:00, 16:30 or 20:15. Do not add AM or PM designations. For example, if you set Overnight Begins to 18:00 and Overnight Ends to 7:00, then overnight jobs will only be started after 6:00 PM at night (18:00) and before 7:00 AM in the morning. In this case, even if it was the only job in the queue, an overnight job would not be running until 6:00 PM.



Note:

The VisQ Overnight settings only control when a job can begin. Once a job has started it will run to completion, even if it goes beyond the end of the overnight period. VisQ does not abort, hold or otherwise modify jobs once they have begun executing. You may therefore want to set the “Overnight Ends” time that is early enough so that all overnight jobs that are started will have completed by the time you want to begin submitting higher priority jobs in the morning.

3.3 Other Server Commands

In addition to configuring the Server, the VisQ Server has other commands that control its performance and allow you to manage the jobs that it is controlling. They are described in this section.

3.3.1 Starting and Pausing the Queue

On the Status menu, you will see two commands Start and Pause. Press Start to tell the Server to begin managing the queue and submitting jobs. Press Pause to stop this process. Pausing the queue merely prevents jobs from being added or started, it does not pause any active jobs. While the queue is paused, Clients can still submit jobs, however they will be added to the queue, and will only be visible to the Clients, when you restart it. Once the Server is properly configured, the queue will start automatically every time you start the Server.

If you choose any of the Configure commands, and press Cancel, the queue will automatically be paused - you must press Start to restart it.

3.3.2 Viewing Jobs

The Queue List window shows you all jobs that are currently in the queue - including jobs that are waiting to be submitted, those that are active and those that have been completed. By default, all of these jobs are visible, and their status is indicated by the letter that precedes the jobname.

Depending upon how you manage your queue, you may eventually build up a large number of jobs in the Queue List including the completed jobs. The View Menu allows you to limit the display in the Queue List to only one class of job.

3.3.3 Managing Jobs in the Queue

As described earlier you can find information about a job in the queue simply by clicking on it and selecting it from the queue list. Once you have done that, the Manage menu allows you to also delete or change the priority of the selected job.

Deleting a Job

To delete a job, click on that job in the queue list and choose Manage Delete. You will be asked to confirm that you really want to delete the job. You can not delete jobs that are currently active - if you really want to do that, you will have to use system commands on the Server to kill the job process first - then the status in VisQ will change to completed and you will be able to delete the job.

Changing Priority

If you want to change the priority of a job that is pending in the queue, click on the job in the Queue List, choose Manage Change Priority and select a new priority. Only pending jobs can have their priority changed.

3.4 The Console Server

The regular VisQ Server is an interactive program, just like the VisQ Clients, that allows you to configure and manage the jobs in the queue. In some cases however, you may want to give up this functionality in favor of running the Server as a “blind” or background process. This can be accomplished with the Console Server. You can start the Console Server with the command:

```
visqcon
```

You can also start the Console Server by simply double-clicking on the program `visqcon.exe`

The Console Server does not allow any input or commands. Therefore, **YOU MUST FULLY CONFIGURE THE SERVER USING THE INTERACTIVE SERVER (visqs) BEFORE RUNNING THE CONSOLE SERVER.** If the Server has been properly configured, there will be no interaction required. All job management can be performed from the Clients and the Console Server will just automatically submit jobs as they and resources become available.



Note:

You can add the Console Server to a startup group so that it can start automatically when you login.

3.5 Reconfiguring the Server

If you are going to reconfigure the VisQ Server once it has begun to be used, you should always stop or shut it down first. This is especially important for the Console Server, `visqcon`.

In addition, depending on what you are going to reconfigure, you will want to inform Client users to retrieve all of their jobs before you begin. For example, if you change the working directory, none of the jobs that were in the old working directory will be available in the new one (unless you first copy all of the subdirectories and files into the new directory before restarting - if you are going to do this you must also copy the queue file named `VisQ.que` to the new working directory). Similarly, if you delete or modify a command line, jobs that are pending in the queue might be executed with a different command line than the Client expected. Deleting a command line can be especially problematic, and can cause jobs pending for other command lines to be submitted incorrectly.



Hint:

If possible, completely configure VisQ Server before you begin submitting jobs that you want to retain in the queue. If you have to reconfigure, shut down the Server before you do it.

VisQ Client

4

The VisQ Client is the portion of VisQ that you can use to submit jobs to the VisQ Server, and manage and retrieve the results of those jobs. This chapter describes how to run and configure the Client software.

Hint:

You should always fully configure and run the VisQ Server before you begin configuring or using the VisQ Client.

4.1 Starting the Client

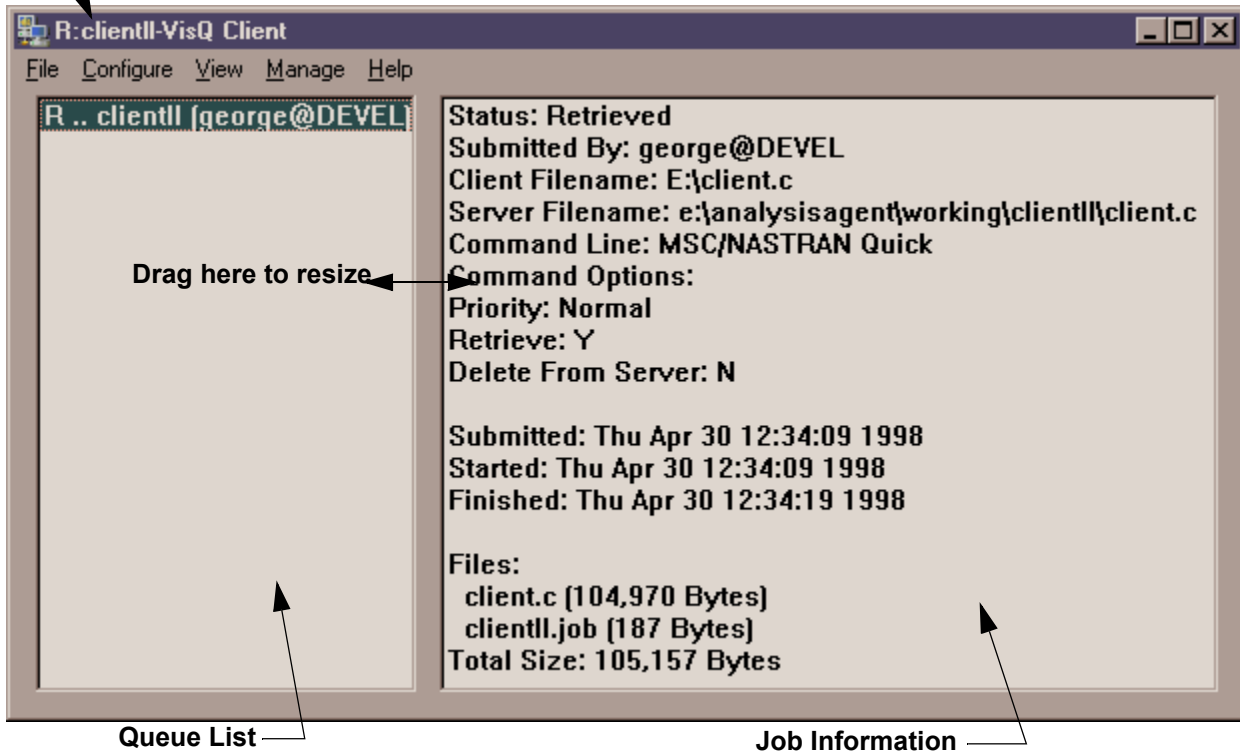
To start the VisQ Client, find the directory where VisQ has been installed and simply double-click the icon for the VisQ Client.



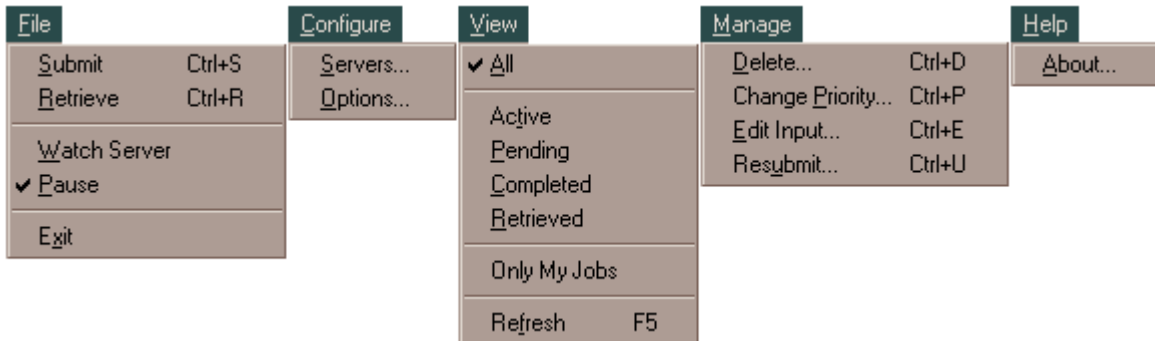
4.2 The VisQ Client User Interface

When VisQ Client starts, you will see the following:

Active Job and Status shown in title bar



GUI Commands



4.2.1 The Queue List Window

The window on the left contains the list of jobs that are currently in the queue on the Server that you have selected. Each job will be listed in the following form:

```
S .. jobname ( user@host )
```

where the first letter indicates the current status of the job. The following status indicators are possible:

Status	Meaning
P	Pending - Job is in the queue, waiting to be executed.
A	Active - Job is currently being executed.
C	Complete - Job has finished execution.
R	Retrieved - Job has finished execution and one or more of the files have been retrieved by a Client.

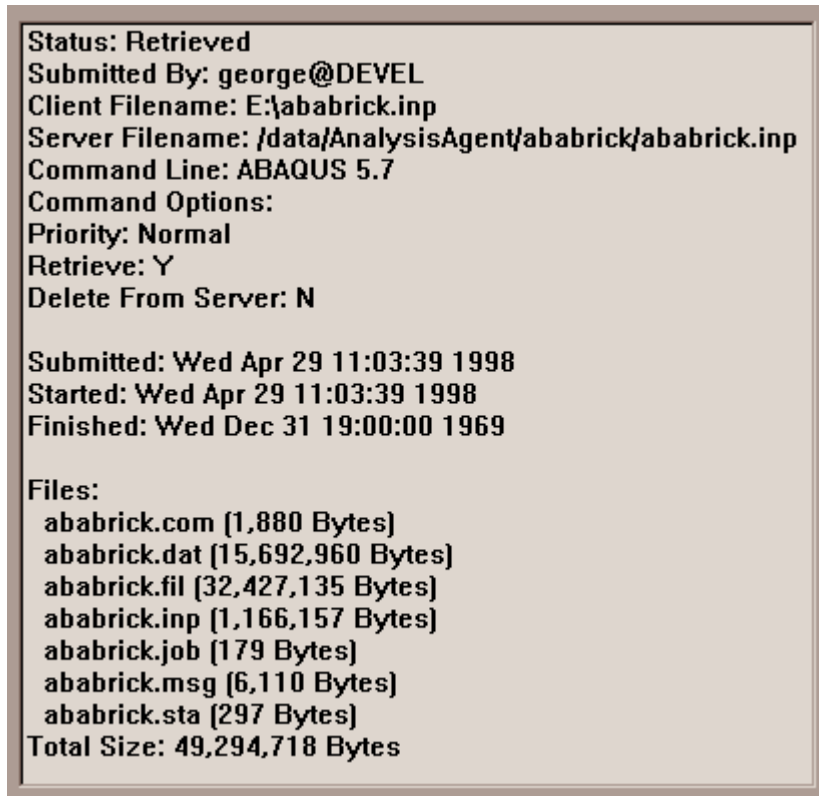
The “user @ host” string will show you who submitted the job and which computer they were using at the time.

To review the status of any job in the queue, simply click on the jobname, and you will see additional information about the job in the Job Information window on the right. You can adjust the relative sizes of these two windows by clicking on the bar that is between them and dragging it to a different position.

The name and status of the job that you select is also shown in the window title bar. On Windows, this allows you to select a job, then icon the VisQ Client application. While the VisQ Client is shown as an icon in the taskbar, it will continue to monitor the progress of your job and the title in the taskbar will change to show its status. When you see it change to completed or retrieved, you will be ready to check its results.

4.2.2 The Job Information Window

The Job Information Window shows the options that were specified when a job was submitted, and the files that are associated with the job.



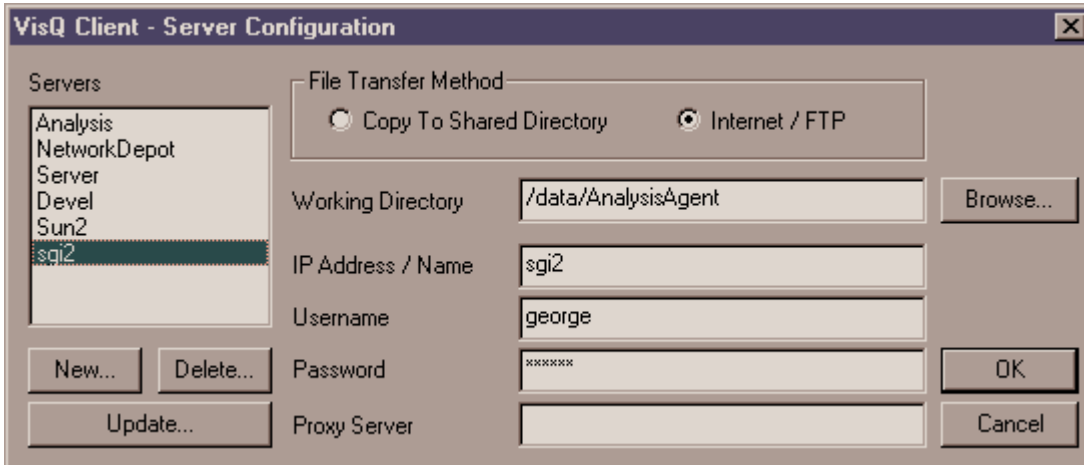
It also shows the time that the job was submitted and when it started and completed execution (if those events have occurred). You can use this information to see how long a job has been on the Server, which could be used to delete old jobs that have already been retrieved.

4.3 Configuring the Client

There is only one major step required to configure a VisQ Client, that is selecting the Servers that you will access. In addition, you may optionally specify other options to control the Client.

4.3.1 Defining Servers

To begin, choose the “Configure Servers” command. You will see a dialog box that looks like the following:



When you start, all fields will be blank. The buttons on the left provide three options for managing your Servers - creating a new Server, updating an existing Server, and deleting a Server.

4.3.1.1 Accessing a New Server

To access a new Server (which you will have to do to configure your Client), first press the New button. You will be asked for a Server name. You can specify any name you want, however you should use a unique name that provides way to recognize the Server. This is obviously important if you are going to access and switch between multiple Servers from this Client.

When you define the name, it will be added to the Server list in the left of the dialog box and it will be selected as the active Server. The other fields will be filled with default information - this is not enough to access the Server. You must change these to the appropriate information for your Server.

File Transfer Method

The first selection to make is which method you will use to transfer files between your Client and Server. Your choice depends upon the type of networking software and the types of computers and operating systems that you are using. In general, if you are running all of your Clients and Servers systems on Windows (95, 98, NT...) and running a Windows network, you will simply want to share a directory across your network and choose “Copy to Shared Directory”. You can also choose this method if you are using NFS or similar software that shares directories. In most other cases, you will want to use the “Internet / FTP” method.

You can only use “Copy to Shared Directory” if both the Client can access the Server’s working directory as a normal directory that is part of its file system. Depending upon your network and intended usage, it is certainly possible that some Clients will access a Server using the “Copy” method and other Clients will access the same Server using FTP.

Working Directory

After selecting a File Transfer Method, you must define the Server working directory. This directory **MUST** be the same directory that was specified as the working directory for the Server. It is not necessarily exactly the same name, since a shared directory may appear differently to different systems depending upon how it was mounted, but it must access the same actual directory.

Using the Copy Method

If you are using the “Copy” File Transfer method, the text that you enter must be whatever is required to access the shared Server directory from your Client system. When you are using this method, you can use the Browse button to graphically select the directory.

Using the FTP Method

If you are using the FTP File Transfer Method, the text that you specify is slightly different. In this case, you should specify whatever is required to access the directory from the directory where you login via FTP. Typically you will be able to use the full pathname to the directory as it appears to the Server. If you want to use a relative pathname, it will depend on the login location of the account that you specify in the other FTP options.

Although the Browse button is still available for this method, so you can browse your network, the path that it selects will probably be incorrect for the FTP method.

FTP File Transfer Options

If you choose the FTP File Transfer method, a number of other options must be defined.

IP Address / Name

Here you must specify the Internet (IP) address or system name of the Server. For example, you might use “192.100.100.87” or “OurServer” (without the quotes) to access a local Server, or you might use “ftp.mycompany.com” to access a Server system across the Internet. You can only use Server names if your system can translate those names into proper network addresses - otherwise you must use the numbering method.

Username and Password

Here you specify the username and password that you want to use to login to the Server. You can use any valid username and password for the Server, but be aware that the working directory that you specify is relative to the login location for that account.

Proxy Server

In most cases, you will probably want to leave this option blank. It is only used if your network uses a Proxy Server to access an outside network like the Internet, and your VisQ Server resides somewhere on the outside network. This can be used if you use a Proxy Server to provide Internet access and you want to submit jobs to a Server across the Internet.

If you want or need to use this option, you must again specify either an Internet (IP) address or Server name of the system that is being used as the Proxy Server. You must be able to directly access the Proxy Server from your Client login, and then FTP from the Proxy Server system.

When you are done defining a Server, press Update or OK to save the changes.



Hint:

If you have defined multiple Servers, the one that you select in the Server List is the active Server for which you will see the queue. To change Servers, you must go back to Configure Servers and choose a different one from the list. If you just want to submit a job quickly to a “non-active” Server, this can be done from the File Submit command.

4.3.1.2 Updating a Server Definition

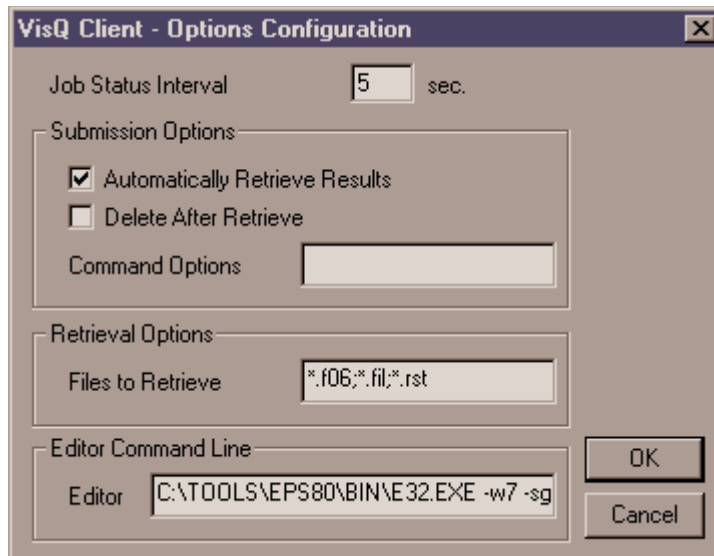
Once a Server has been defined, you can update its definition by selecting the Server from the Server list, changing the various options, and pressing Update or OK to save the changes.

4.3.1.3 Deleting Access to a Server

Similarly, you can delete a Server by selecting it from the Server list and pressing Delete. You will be asked to confirm the deletion before proceeding.

4.3.2 Other Options

Using Configure Options, you will see the following dialog box:



These options specify how often your Client will check the queue and specify default options for the other commands.

Job Status Interval

The VisQ Client checks the active Server queue periodically to determine job and Server status. This option specifies the amount of time between those checks. Setting this time shorter will make the Client more interactive, but will create unnecessary network traffic. In general, this time should be as long as or longer than the similar time for the Server.

In addition to the automatic checks, you can recheck the queue at any time by using the View Refresh command.

Submission Options

These options specify default values for the File Submit command. Refer to the documentation for that command to learn what each option will do.

Retrieval Options

This option specifies default values for the File Retrieve command. Refer to the documentation for that command to learn more about this option.

Editor Command Line

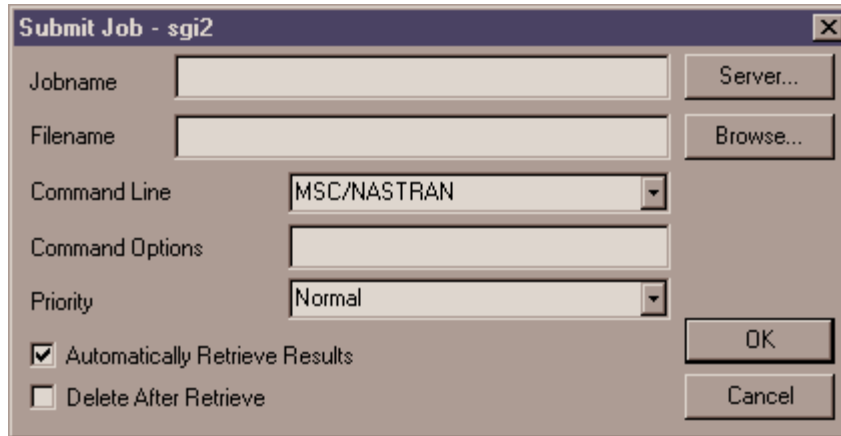
This option defines the command line that will be used by the Manage Edit Input command to start your editor. This command line must include the full path to the editor, unless it is in your path and can be started without a full path. Although you do not specify it here, the editor must be able to accept the filename to be edited as the last argument (following any others that you specify here) on the command line.

4.4 Using the Client

Once you have selected one or more Servers, the primary use for the VisQ Client is to submit and retrieve various jobs. This section describes the commands necessary to perform those functions.

4.4.1 Submitting Jobs

To submit a job, choose the File Submit command. You will see the following dialog box:



Selecting a File

Probably the first thing you will want to do is select the file to submit. In many cases the easiest way to do that is to press the Browse button. You will see a standard file selection dialog box where you can simply move around until you find the file to submit. When you leave this dialog box, both the Filename and Jobname fields will be filled. If you simply type a Filename, without using Browse, you will also have to type a Jobname.

Specifying a Jobname

All job names in the queue must be unique. This includes names from jobs that have already completed but have not been deleted from the queue. Therefore, if you submit the same file a number of times, without deleting the previous jobs from the queue, you will have to make up a unique jobname for each - you can not just use the filename over and over again. Of course, once you have deleted the previous jobs from the queue, the jobname may be reused again.

A jobname can be up to 50 characters in length and may only use characters that can be used to create a valid filename on your Server system.

Selecting a Command Line or Alternate Server

After specifying a file and jobname, you must choose the command line that you want to use to run the job. The list contains all of the command lines that are currently defined on the active Server. Choose the command line that is appropriate for your file.

The active Server is shown in the title bar of the dialog box. If you need to submit this file to a different Server, just press the Server button and choose one of the other Servers that you have configured. Once you make your selection, the command line list will be updated to show the command lines on that Server.

Command Options

In most cases, you will not want to use this option, however if there are command line options that you want to add just for this job, or that were not included when the command line was created on the Server, you can type them here. These options will be appended to the command line as it was defined on the Server, so the syntax of what you type will depend on the program you are trying to run.

Setting the Priority

VisQ has four available priorities. In order, they are High, Normal, Low, and Overnight. When VisQ looks for a job to submit, it will always attempt to submit jobs with a higher priority first, even if they were submitted after another job. Of course, these jobs could still be skipped because of other limit - like the maximum number of simultaneous jobs for a command line. Within a priority group, jobs are submitted on a "first in, first out" basis, barring any other limits.

It is usually best to submit all jobs with Normal priority. If you do that, and you get a situation where there are number of pending jobs in the queue, you can always change the priority of a job to “High” to move or submit it to the top of the queue. Similarly, you can change the priority of a job to “Low” to move it down in the queue.

The exception to the “Normal” priority rule, is using the Overnight priority. If you have configured the Server to run Overnight jobs after a certain time, you may want to choose this priority if you do not need the results quickly, or if the job will require a lot of resources (time, memory, ...).

Automatic Retrieval of Results

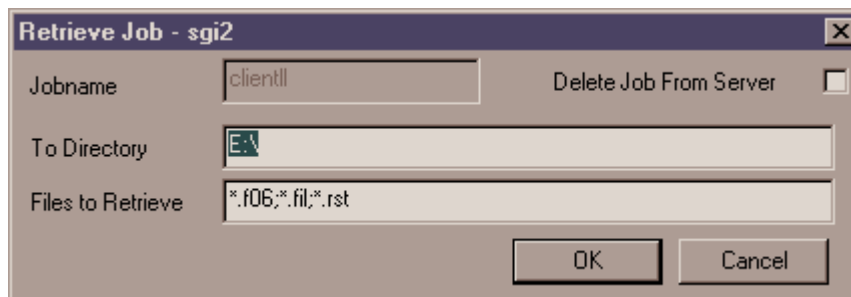
If you check this option, the VisQ Client will monitor your job and automatically retrieve the files that you specify as soon as the job has completed. Files will be retrieved to the directory where the original data file was located. Only those files selected by the “Files to Retrieve” string in Configure Options will be retrieved.

Automatic Job Deletion

If you automatically retrieve a job, you can also automatically delete it from the queue by selecting this option. You can use this option to minimize the number of jobs and files that are left on your Server, and automatically distribute those files back to the Clients.

4.4.2 Retrieving Jobs

If you chose not to automatically retrieve the results of your job, or if you just want to retrieve additional files, you can use the File Retrieve command. You will see the following dialog box:



Specifying a Directory

Files are automatically retrieved to the same directory where the original data file for the job was located. This directory is also the default directory listed for this command. If you want to retrieve files to a different directory, you can specify it here.

Selecting Files for Retrieval

The default retrieval criterion is “*”. This means to retrieve all files associated with the selected job. In the Configure Options command you can change this default string to anything you want. In addition, in this dialog box, you can change the default, just for this retrieval. If you only want to retrieve some of the files associated with the job, just specify the appropriate strings here. For example, if you were running an MSC/NASTRAN job, you might only need to look at the printed output (F06) file, and you might not need the other database, scratch and log files. Simply change the retrieval string to *.f06

If you are running multiple analysis programs, you can still setup a default retrieval string that will usually work no matter what analysis program was used for the current job. For example in the dialog box shown, the string is:

```
*.f06;*.fil;*.rst
```

This will automatically retrieve all files ending with the extension “f06”, “fil” or “rst”. These happen to be the output files for MSC/NASTRAN (f06), ABAQUS (fil) and ANSYS (rst). Since there are no “f06” or “fil” files in an ANSYS analysis, those extensions will simply be skipped and the “rst” file will be retrieved. If the current job was an ABAQUS job, the “fil” file would have been retrieved. If you use this approach, in the worst case you will simply get one or more extra files retrieved.

There are several items to note:

1. If you are specifying multiple file descriptions, they should all be separated with ‘;’ characters, like the example shown above.
2. VisQ will never retrieve the original data file or the “job” file that was used to submit your job.

4.5 Other Client Commands

In addition to submitting and retrieving jobs, the VisQ Client can perform other selected operations to view and manage jobs that are in the queue.

4.5.1 Watching the Selected Server

On the File menu, you will see two commands Watch Server and Pause. Press “Watch Server” to tell the Client to begin checking the queue status. Press Pause to stop this process. Pausing this operation merely stops the automatic checking of the queue. You can still refresh the display using the View Refresh command.

4.5.2 Viewing Jobs

The Queue List window shows you all jobs that are currently in the queue - including jobs that are waiting to be submitted, those that are active and those that have been completed. By default, all of these jobs are visible, and their status is indicated by the letter that precedes the jobname.

Depending upon how you manage your queue, you may eventually build up a large number of jobs in the Queue List including the completed jobs. The View Menu allows you to limit the display in the Queue List to only one class of job - Active, Pending, Completed or Retrieved.

You can also choose “View Only My Jobs” to display only jobs that were submitted with your user and system name. Choosing this command again will switch back to displaying all jobs.

Finally, the View Refresh command simply updates the display to show the current status of the queue.



Note:

If you have just submitted a job and you do a View Refresh, you may still not see the job. It will not appear in the queue until the next time the Server checks for new jobs, which is controlled by the option settings on the Server. Similarly, if you delete a job and press Refresh (or the queue is automatically refreshed) you may see the job temporarily reappear. Again, it will not really be deleted until the next time the Server checks for jobs.

4.5.3 Managing Jobs in the Queue

As described earlier you can find information about a job in the queue simply by clicking on it and selecting it from the queue list. Once you have done that, the Manage menu allows you to also delete or change the priority of the selected job.

Deleting a Job

To delete a job, click on that job in the queue list and choose Manage Delete. Unlike the VisQ Server, the VisQ Client will only let you delete jobs if they are “your jobs”. That means that they must have the same user and system name as the Client that you are currently running. If they do not match, you will not be allowed to delete the job.

You can not delete jobs that are currently active - if you really want to do that, you will have to use system commands on the Server to kill the job process first - then the status in VisQ will change to completed and you will be able to delete the job.

Changing Priority

If you want to change the priority of a job that is pending in the queue, click on the job in the Queue List, choose Manage Change Priority and select a new priority. Only pending jobs can have their priority changed.

4.5.4 Editing and Resubmitting a Job

If you run a job and it does not work as you had intended, you will probably want to make some changes and resubmit the job. In the Manage menu, you will find two commands that will make this process very easy.

Editing Your Input File

If you choose the Manage Edit Input command, VisQ Client will automatically launch your editor and load the input file to your job. Before using this command, you must select a job from the queue list. That job must be one that you submitted from your current computer.

VisQ does not come with an editor, but you can include almost any system editor by defining the appropriate command line in the Configure Options command.

 **Note:**

If you are using FEMAP, you may not want to edit your input file in this manner, since it will no longer match your FEMAP model. In this case, simply go back to FEMAP, edit your model as appropriate, choose Export, and overwrite the old file using FEMAP. If you follow this procedure, Resubmit will still work, and your model will be “in sync” with your analysis.

Resubmitting a Job

To resubmit a job, you must once again choose the job from the queue list. It must be a completed or retrieved job that you submitted from your current computer. When you choose the Manage Resubmit command, you will be asked whether you want to delete the job from the server and resubmit it.

Using this command will always submit the job with the same jobname and options as your previous job. All files from the previous job that are still on the server will be deleted, the input file will be retransmitted from your client system and it will be resubmitted. Therefore, if you want to keep any of the files from the previous analysis, you will want to move or rename them before using this command. Even the previous job files that are on your client system will be overwritten if you are automatically retrieving the results of the job.

When a job is resubmitted, it is placed back at the bottom of the queue, just as if you had used the normal Submit command.