

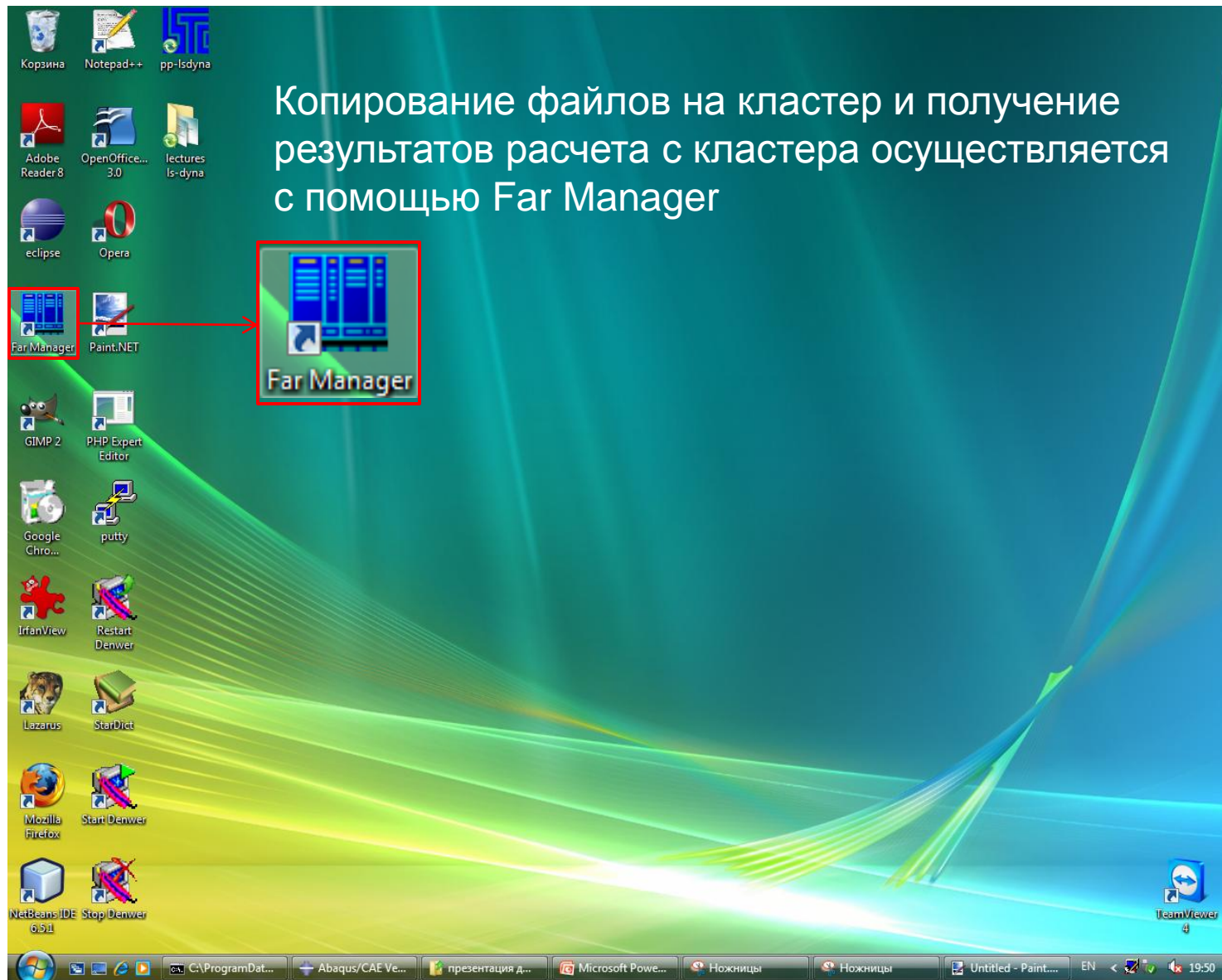


Суперкомпьютерный центр ЮУрГУ

Передача файлов задачи с  
пользовательского компьютера на  
вычислительный кластер ЮУрГУ «СКИФ  
Урал» и получение результатов расчета

**Моделирование статической линейной  
задачи для трехмерного объекта на  
примере изгиба консольно-закрепленной  
балки в пакете ABAQUS**

# Запуск файлового менеджера (Far Manager)

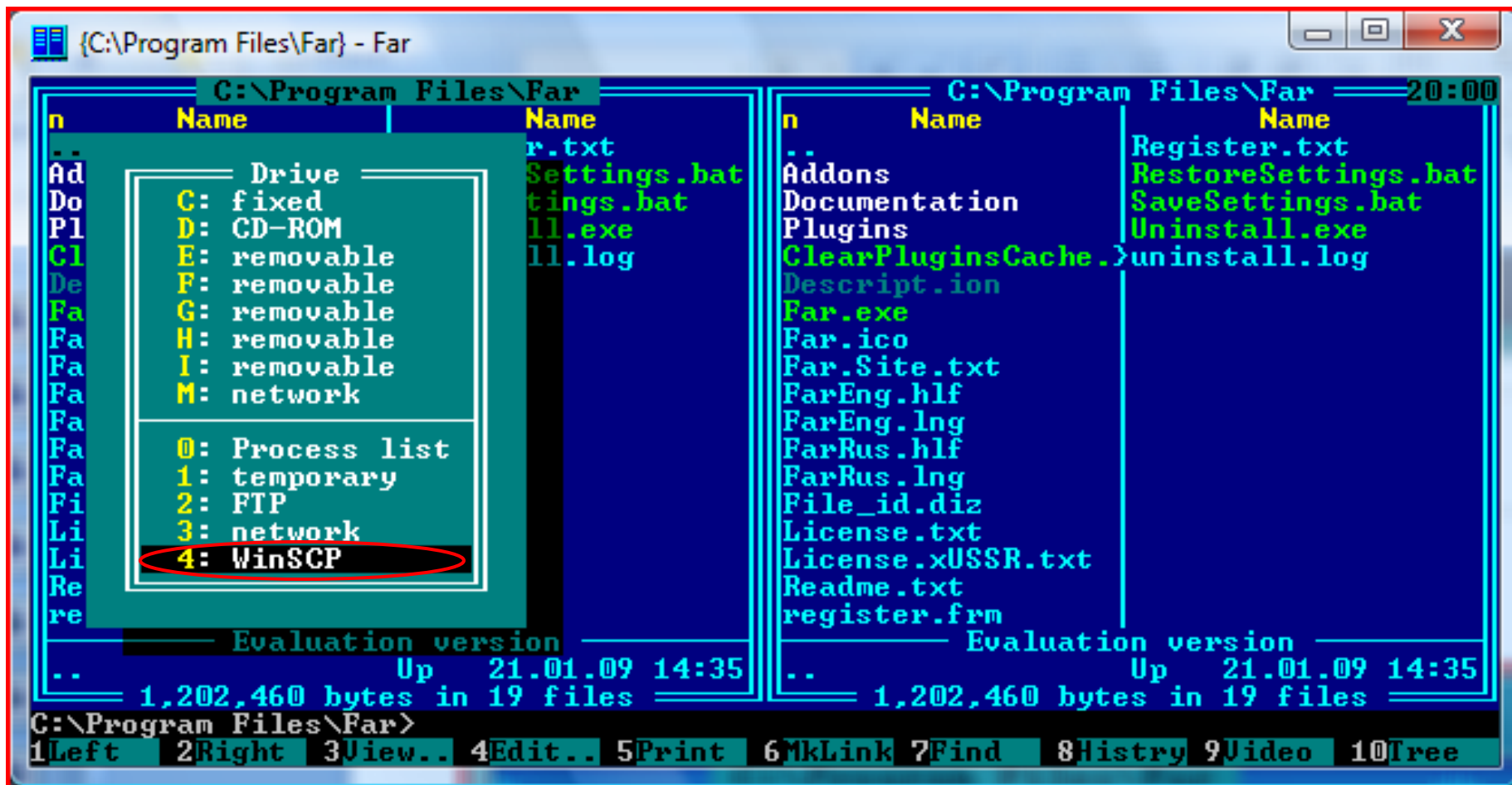


# ALT+F1

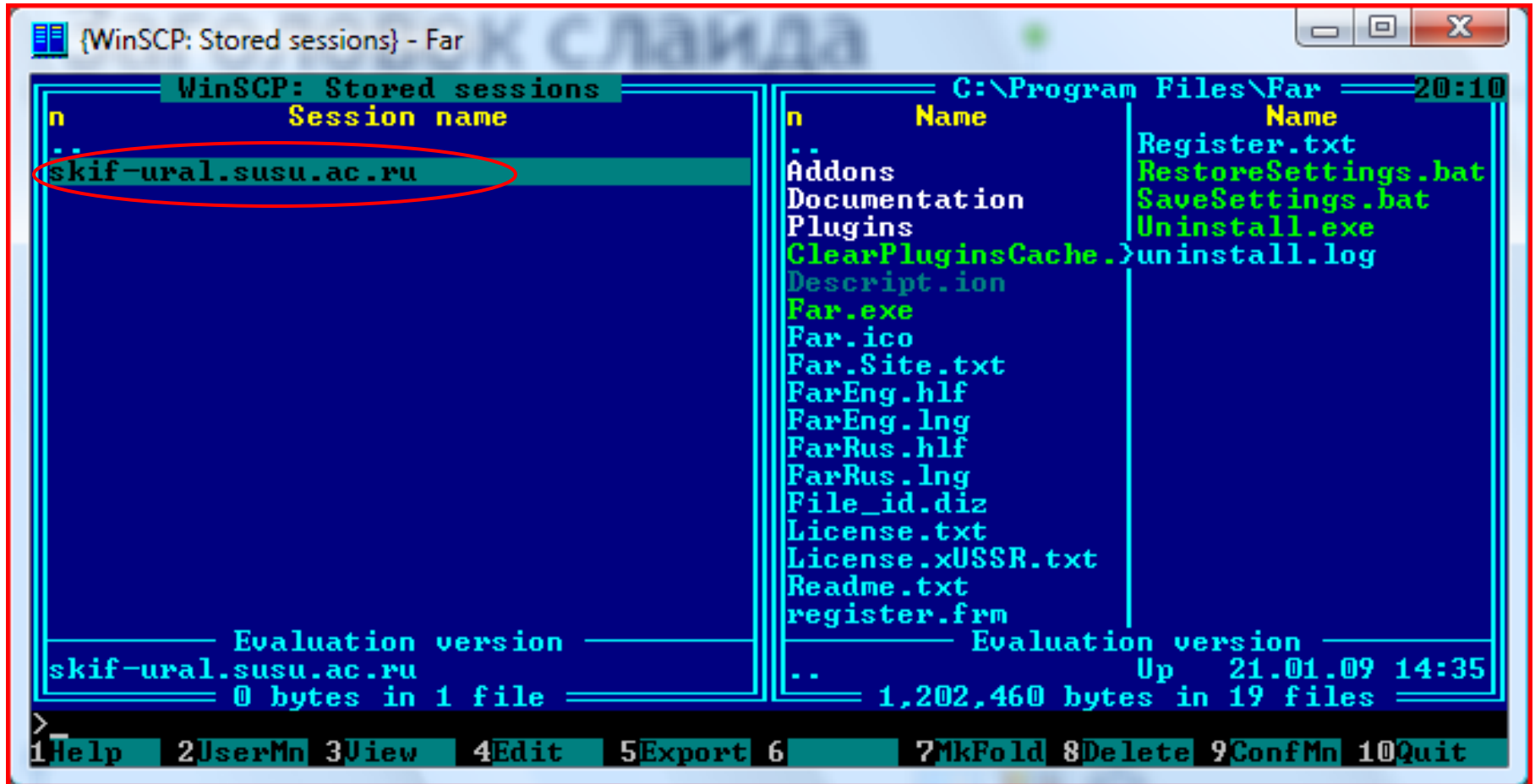
```
{C:\Program Files\Far} - Far  
C:\Program Files\Far  
n      Name  
..  
Addons  
Documentation  
Plugins  
ClearPluginsCache. >  
Description  
Far.exe  
Far.ico  
Far.Site.txt  
FarEng.hlf  
FarEng.lng  
FarRus.hlf  
FarRus.lng  
File_id.diz  
License.txt  
License.xUSSR.txt  
Readme.txt  
register.frm  
----- Evaluation version -----  
..      Up 21.01.09 14:35  
----- 1,202,460 bytes in 19 files -----  
C:\Program Files\Far>  
1Help 2UserMn 3View 4Edit 5Copy 6RenMov 7MkFold 8Delete 9ConfMn 10Quit
```

```
C:\Program Files\Far 19:58  
n      Name  
..  
Addons  
Documentation  
Plugins  
ClearPluginsCache. >  
Description  
Far.exe  
Far.ico  
Far.Site.txt  
FarEng.hlf  
FarEng.lng  
FarRus.hlf  
FarRus.lng  
File_id.diz  
License.txt  
License.xUSSR.txt  
Readme.txt  
register.frm  
----- Evaluation version -----  
..      Up 21.01.09 14:35  
----- 1,202,460 bytes in 19 files -----  
C:\Program Files\Far>  
1Help 2UserMn 3View 4Edit 5Copy 6RenMov 7MkFold 8Delete 9ConfMn 10Quit
```

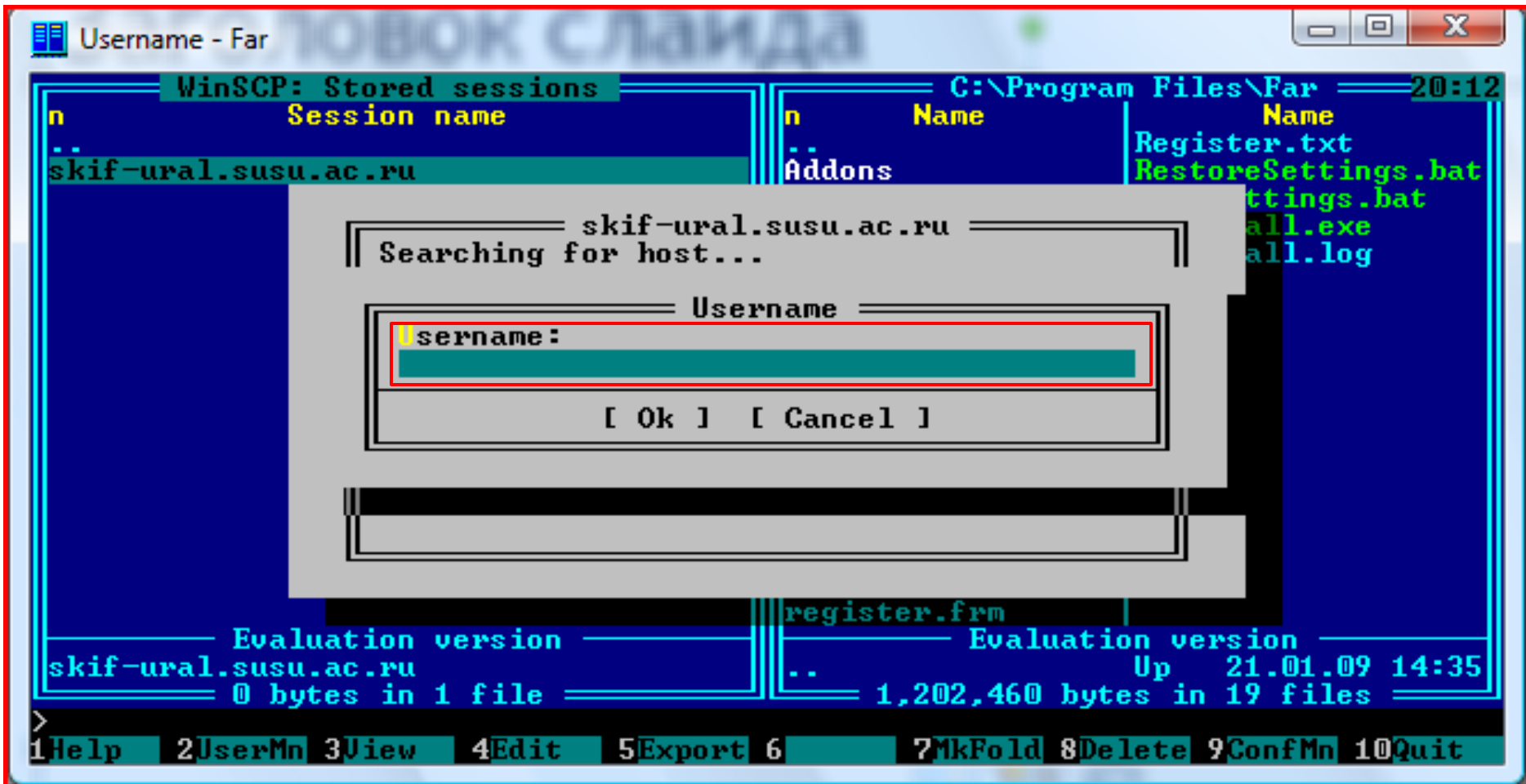
# Драйвер WinSCP



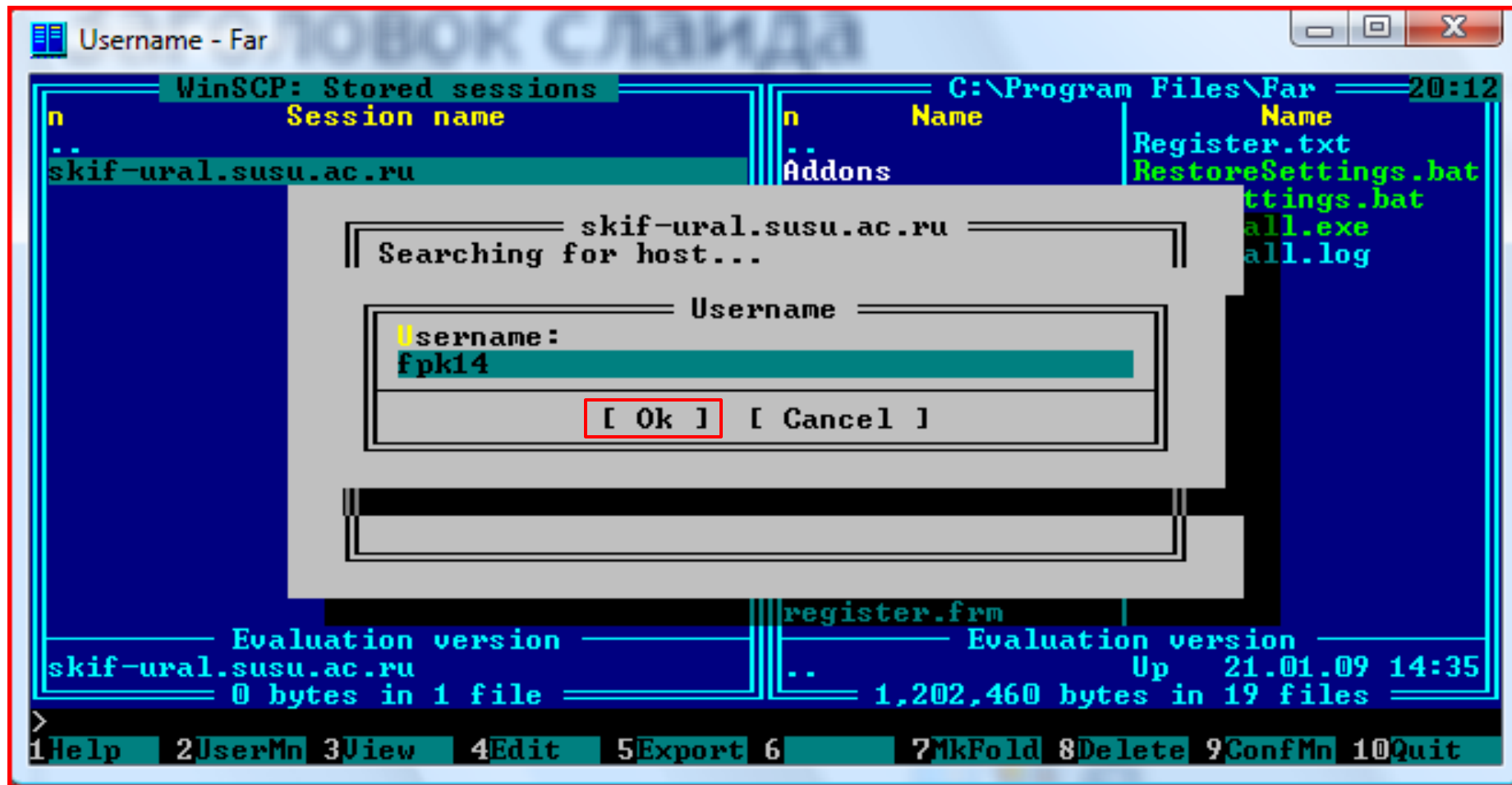
# Подключение к суперкомпьютеру СКИФ Урал



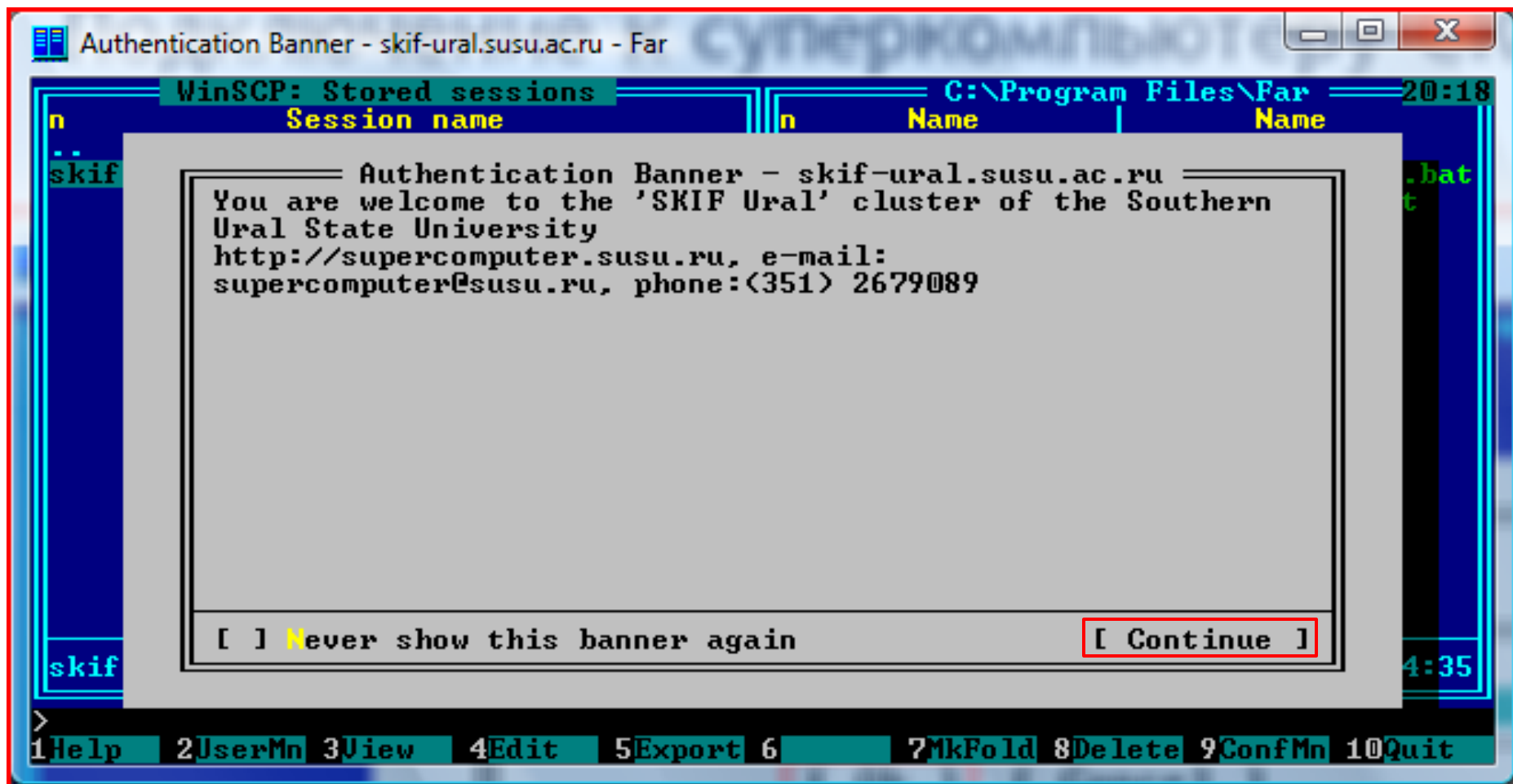
# Подключение к суперкомпьютеру СКИФ Урал



# Подключение к суперкомпьютеру СКИФ Урал

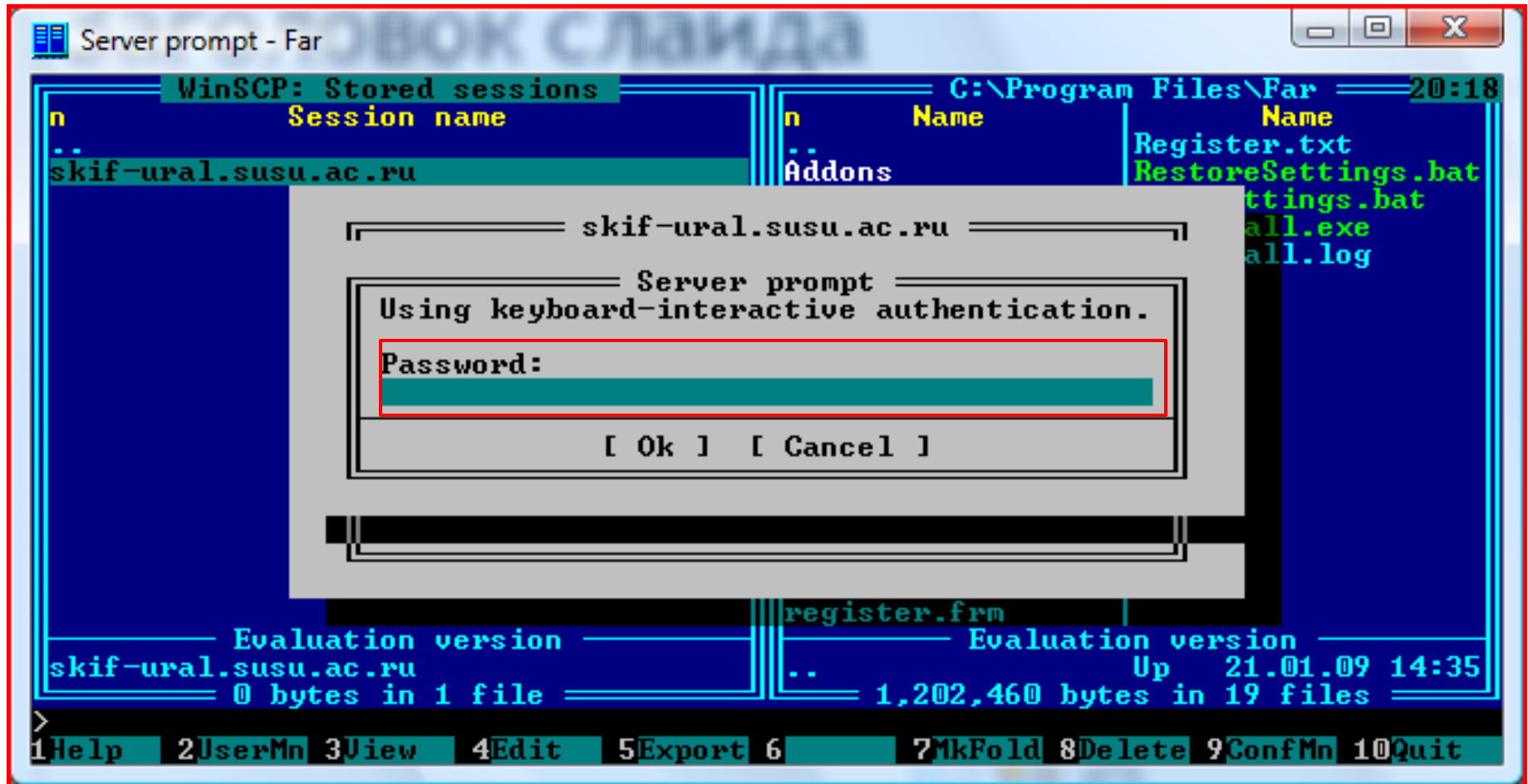


# Подключение к суперкомпьютеру СКИФ Урал

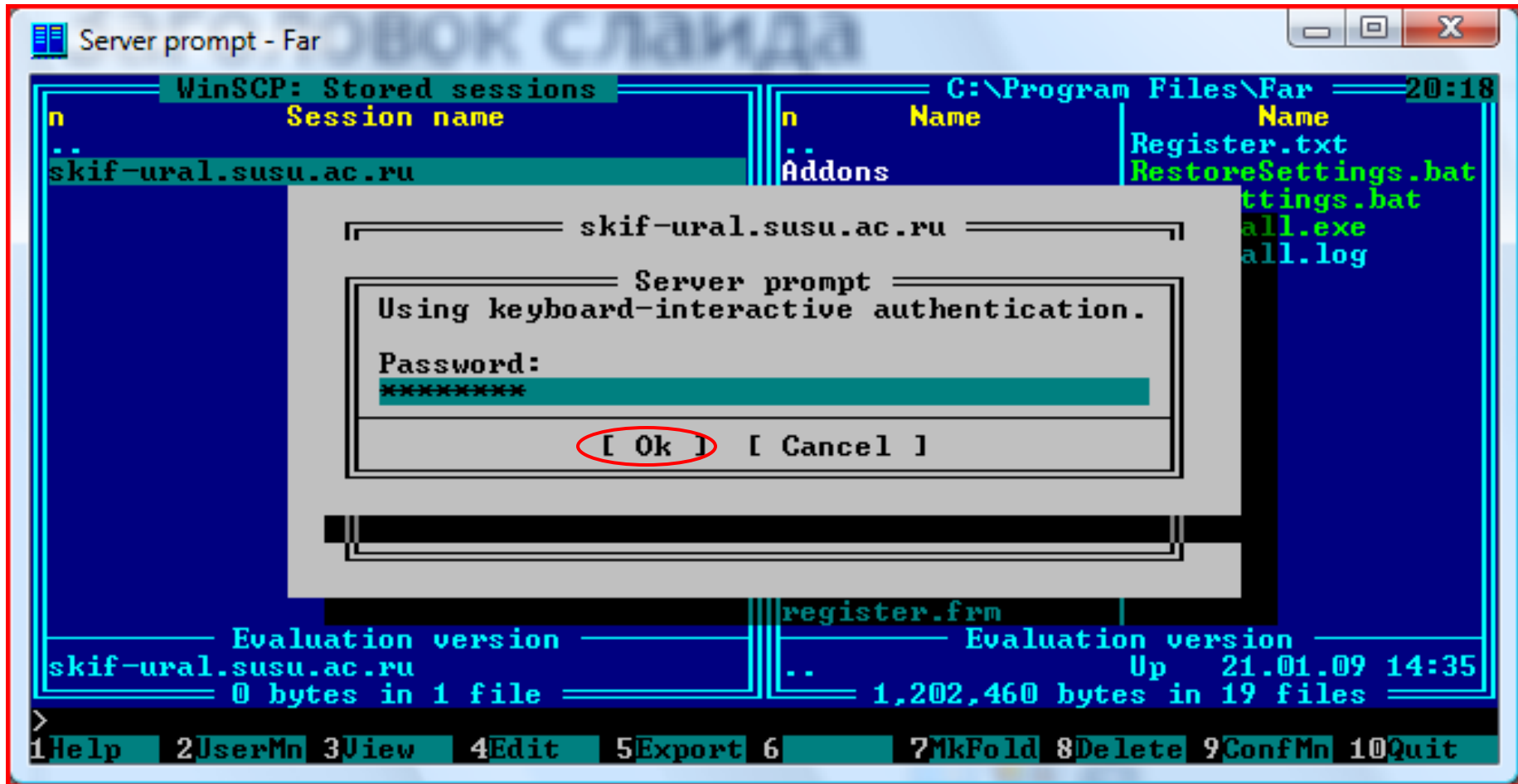




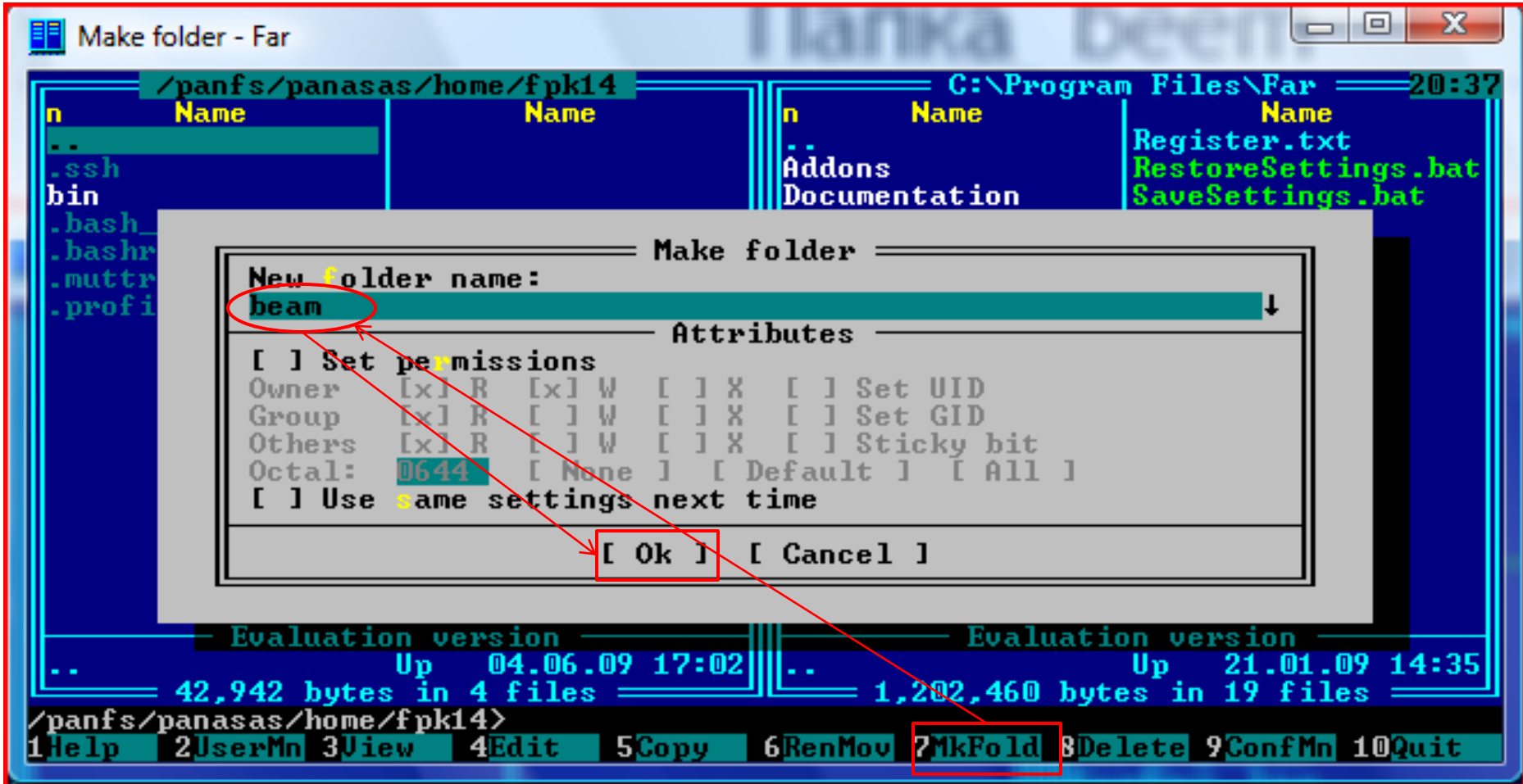
# Подключение к суперкомпьютеру СКИФ Урал



# Подключение к суперкомпьютеру СКИФ Урал



# Создание папки



# Создание папки

```
{/panfs/panasas/home/fpk14} - Far  
/panfs/panasas/home/fpk14  
n Name  
..  
..ssh  
beam  
bin  
.bash_history  
.bashrc  
.muttrc  
.profile  
Evaluation version  
beam Folder 04.06.09 21:38  
47,038 bytes in 4 files  
/panfs/panasas/home/fpk14>  
1Help 2UserMn 3View 4Edit 5Copy 6RenMov 7MkFold 8Delete 9ConfMn 10Quit  
C:\Program Files\Far 20:39  
n Name Name  
.. Register.txt  
Addons RestoreSettings.bat  
Documentation SaveSettings.bat  
Plugins Uninstall.exe  
ClearPluginsCache.uninstall.log  
Description  
Far.exe  
Far.ico  
Far.Site.txt  
FarEng.hlf  
FarEng.lng  
FarRus.hlf  
FarRus.lng  
File_id.diz  
License.txt  
License.xUSSR.txt  
Readme.txt  
register.frm  
Evaluation version  
.. Up 21.01.09 14:35  
1,202,460 bytes in 19 files
```

# Папка beam

```
{/panfs/panasas/home/fpk14/beam} - Far

/panfs/panasas/home/fpk14/beam          C:\Program Files\Far          20:40
n      Name                               n      Name                               Name
..                                         ..      Register.txt
Addons                                     ..      RestoreSettings.bat
Documentation                             ..      SaveSettings.bat
Plugins                                    ..      Uninstall.exe
ClearPluginsCache.>uninstall.log
Description
Far.exe
Far.ico
Far.Site.txt
FarEng.hlf
FarEng.lng
FarRus.hlf
FarRus.lng
File_id.diz
License.txt
License.xUSSR.txt
Readme.txt
register.frm

Evaluation version                          Evaluation version
..      Up 04.06.09 21:38                    ..      Up 21.01.09 14:35
4,096 bytes in 0 files                      1,202,460 bytes in 19 files

/panfs/panasas/home/fpk14/beam>
1Help 2UserMn 3View 4Edit 5Copy 6RenMov 7MkFold 8Delete 9ConfMn 10Quit
```

# Переход в директорию с входным файлом

```
{C:\Program Files\Far} - Far
/panfs/panasas/home/fpk14/beam
n Name
..
Evaluation version
.. Up 04.06.09 21:38
4,096 bytes in 0 files

C:\Program Files\Far 20:40
n Name Name
.. Register.txt
Addons RestoreSettings.bat
Documentation SaveSettings.bat
Plugins Uninstall.exe
ClearPluginsCache.uninstall.log
Description
Far.exe
Far.ico
Far.Site.txt
FarEng.hlf
FarEng.lng
FarRus.hlf
FarRus.lng
File_id.diz
License.txt
License.xUSSR.txt
Readme.txt
register.frm
Evaluation version
.. Up 21.01.09 14:35
1,202,460 bytes in 19 files

C:\Program Files\Far>
1Help 2UserMn 3View 4Edit 5Copy 6RenMov 7MkFold 8Delete 9ConfMn 10Quit
```

# Переход в директорию с входным файлом

```
{C:\Program Files} - Far
/panfs/panasas/home/fpk14/bean
n Name Name
..
..
Evaluation version
Up 04.06.09 21:38
4,096 bytes in 0 files

C:\Program Files
n Name Name
..
7-Zip
Adobe
ANSYS Inc
Argonne National L
CE Remote Tools
Common Files
DEFORM License Man
Doc++
EASEUS
eclipse
Eset
Far
GIMP-2.0
glassfish-v2.1
glassfish-v3-prelu
HTML Help Workshop
IBM
InstallShield Insta
Internet Explorer
IrfanView
Java
MapWindow
Microsoft.NET
Microsoft Device Em
Microsoft Expressio
Microsoft Office
Microsoft SDKs
Microsoft Silverlig
Microsoft SQL Serve
Microsoft SQL Serve
Microsoft Synchroni
Microsoft Virtual P
Microsoft Visual St
Microsoft Visual St
Microsoft Visual St
Evaluation version
Up 30.05.09 11:49
174 bytes in 1 file

C:\Program Files>
1Help 2UserMn 3View 4Edit 5Copy 6RenMov 7MkFold 8Delete 9ConfMn 10Quit
```

# Переход в директорию с входным файлом

The screenshot shows the Far Manager interface with two panes. The left pane shows the directory listing for `/panfs/panasas/home/fpk14/beam`. The right pane shows the directory listing for `C:\`. The `Temp` directory in the right pane is highlighted with a red circle. The status bar at the bottom shows the current directory and file information for both panes.

```
{C:\} - Far ОЛОВОК СЛАЙДА
/panfs/panasas/home/fpk14/beam
n      Name
..
Evaluation version
Up    04.06.09 21:38
4,096 bytes in 0 files

C:\
n      Name
$Recycle.Bin
ABAQUS
Boot
Config.Msi
DEFORM_F3
DEFORM2D
DEFORM3D
Documents and Sett>
FPC
IBM
IDE
lazarus
localtexmf
ls-dyna
MinGW
MSOCache
Program Files
ProgramData
Temp
texmf
Users
WebServers
Windows
XP
autoexec.bat
bootmgr
bootsect.bak
config.sys
hiberfil.sys
io.sys
msdos.sys
pagefile.sys
putty@6@.exe
Evaluation version
Temp
Folder 04.06.09 17:05
4,571,047,349 bytes in 9 files

C:\>_
1Help 2UserMn 3View 4Edit 5Copy 6RenMov 7MkFold 8Delete 9ConfMn 10Quit
```



# Переход в директорию с входным файлом

```
{C:\Temp} - Far  
/panfs/panasas/home/fpk14/beam  
n Name Name  
..  
Evaluation version  
Up 04.06.09 21:38  
4,096 bytes in 0 files  
C:\Temp 20:49  
n Name Name  
..  
abaqus.rpy  
abaqus_acis.log  
Job-1.inp  
seminar.cae  
seminar.rec  
Evaluation version  
Up 04.06.09 20:47  
237,440 bytes in 5 files  
C:\Temp>  
1Help 2UserMn 3View 4Edit 5Copy 6RenMov 7MkFold 8Delete 9ConfMn 10Quit
```

# Переход в директорию с входным файлом

The screenshot shows the Far Manager interface with two panels. The left panel displays the remote directory `/panfs/panasas/home/fpk14/beam` with a file list containing only `..`. The right panel displays the local directory `C:\Temp` with a file list containing `..`, `abaqus.rpy`, `abaqus_acis.log`, `Job-1.inp` (highlighted), `seminar.cae`, and `seminar.rec`. The status bar at the bottom shows the file sizes and counts for both panels: `4,096 bytes in 0 files` for the left and `237,440 bytes in 5 files` for the right. A menu bar at the very bottom lists actions: `1Help 2UserMn 3View 4Edit 5Copy 6RenMov 7MkFold 8Delete 9ConfMn 10Quit`.

```
{C:\Temp} - Far
```

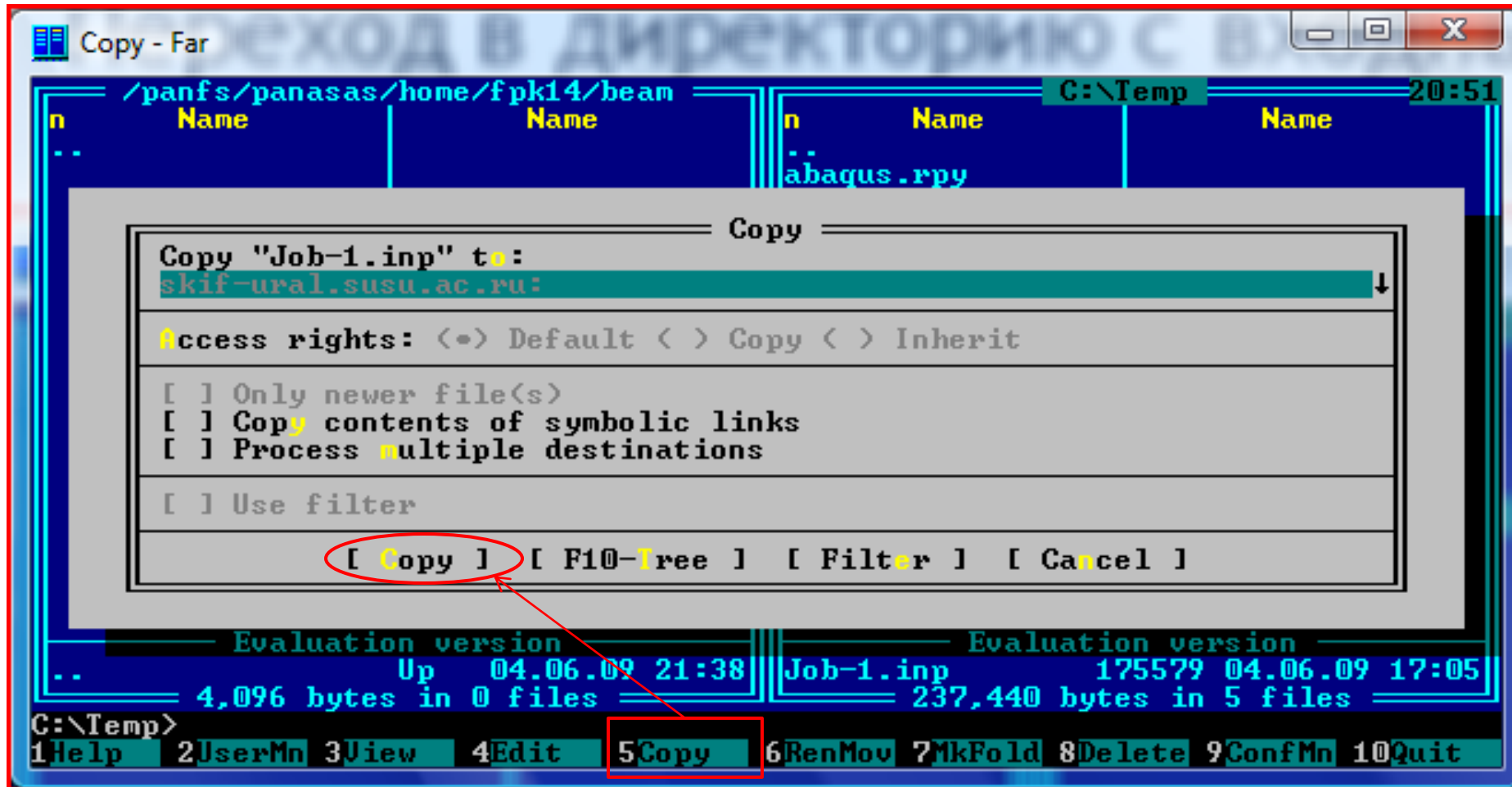
/panfs/panasas/home/fpk14/beam		C:\Temp	
n	Name	n	Name
..		..	
		abaqus.rpy	
		abaqus_acis.log	
		Job-1.inp	
		seminar.cae	
		seminar.rec	

Evaluation version  
Up 04.06.09 21:38  
4,096 bytes in 0 files

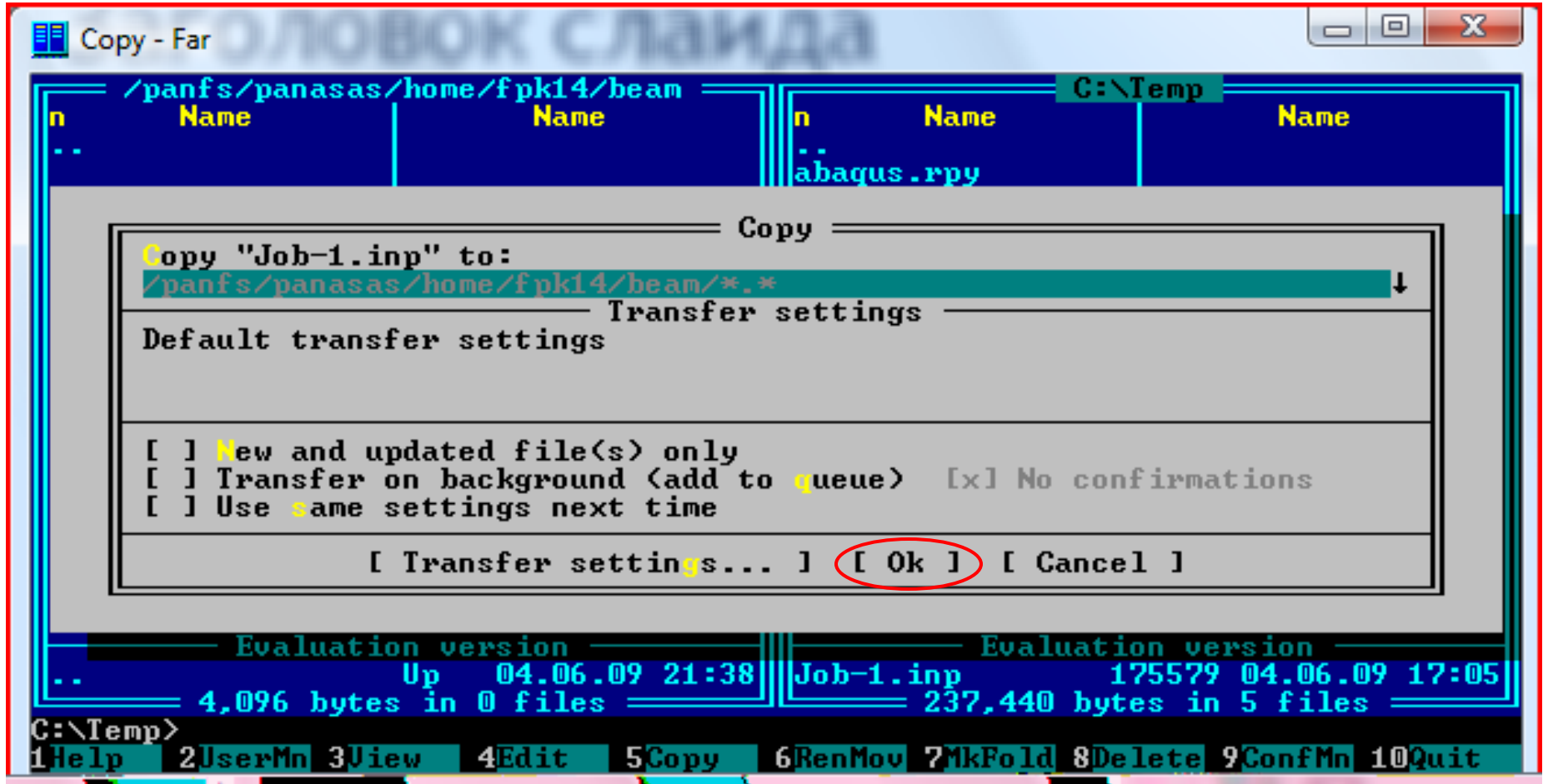
Job-1.inp 175579 04.06.09 17:05  
237,440 bytes in 5 files

C:\Temp>  
1Help 2UserMn 3View 4Edit 5Copy 6RenMov 7MkFold 8Delete 9ConfMn 10Quit

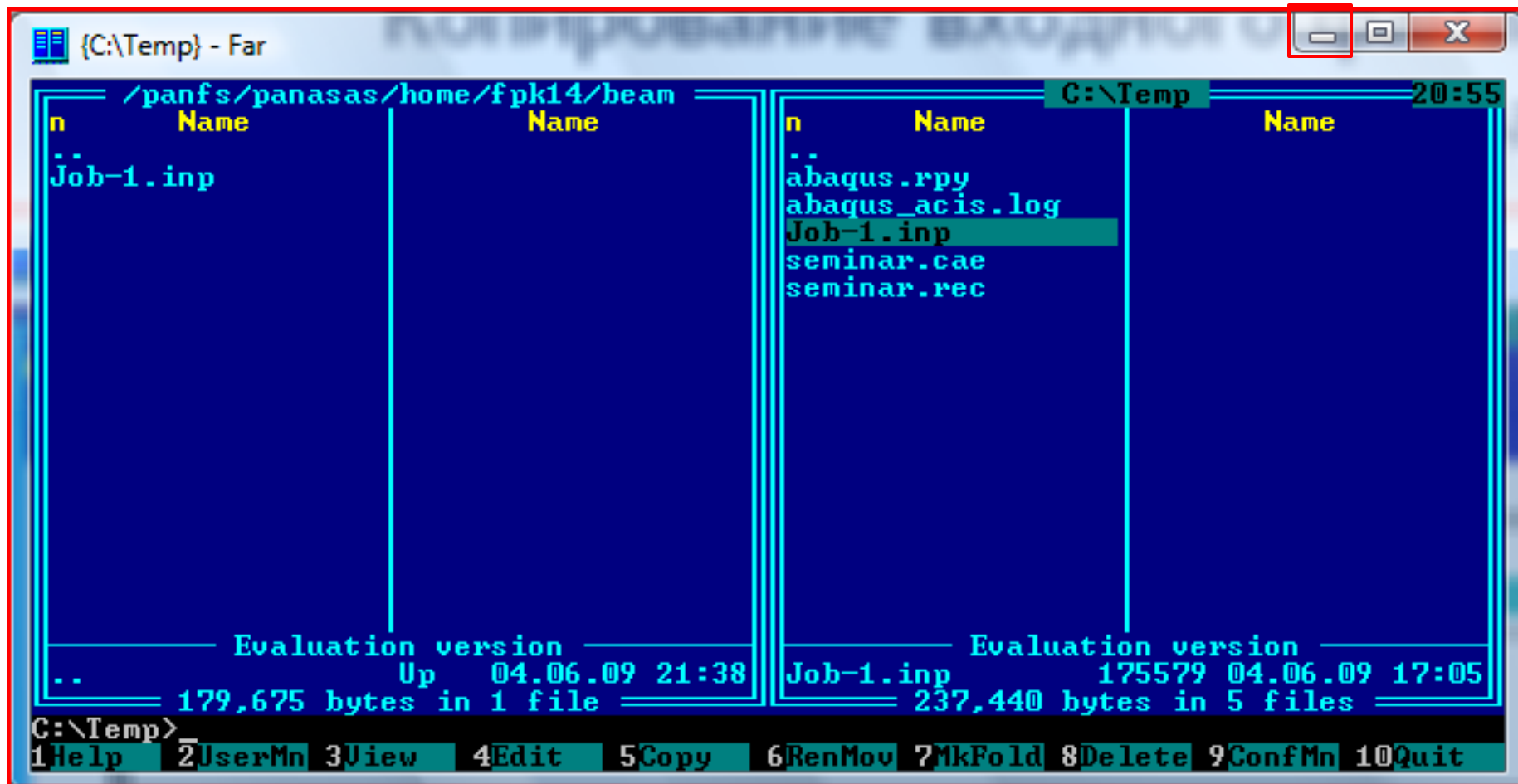
# Копирование входного файла на суперкомпьютер СКИФ Урал



# Копирование входного файла на суперкомпьютер СКИФ Урал

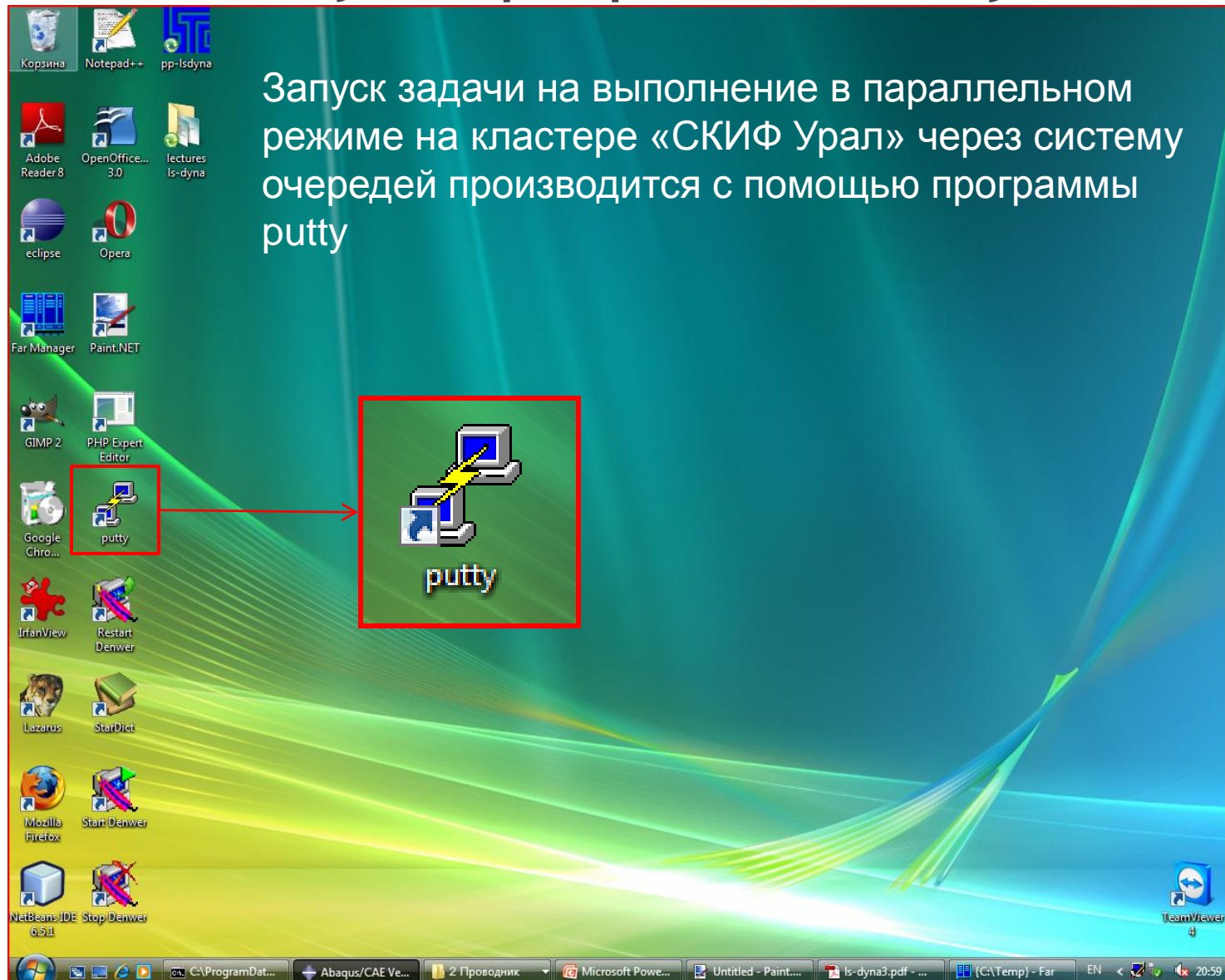


# Свернуть окно Far

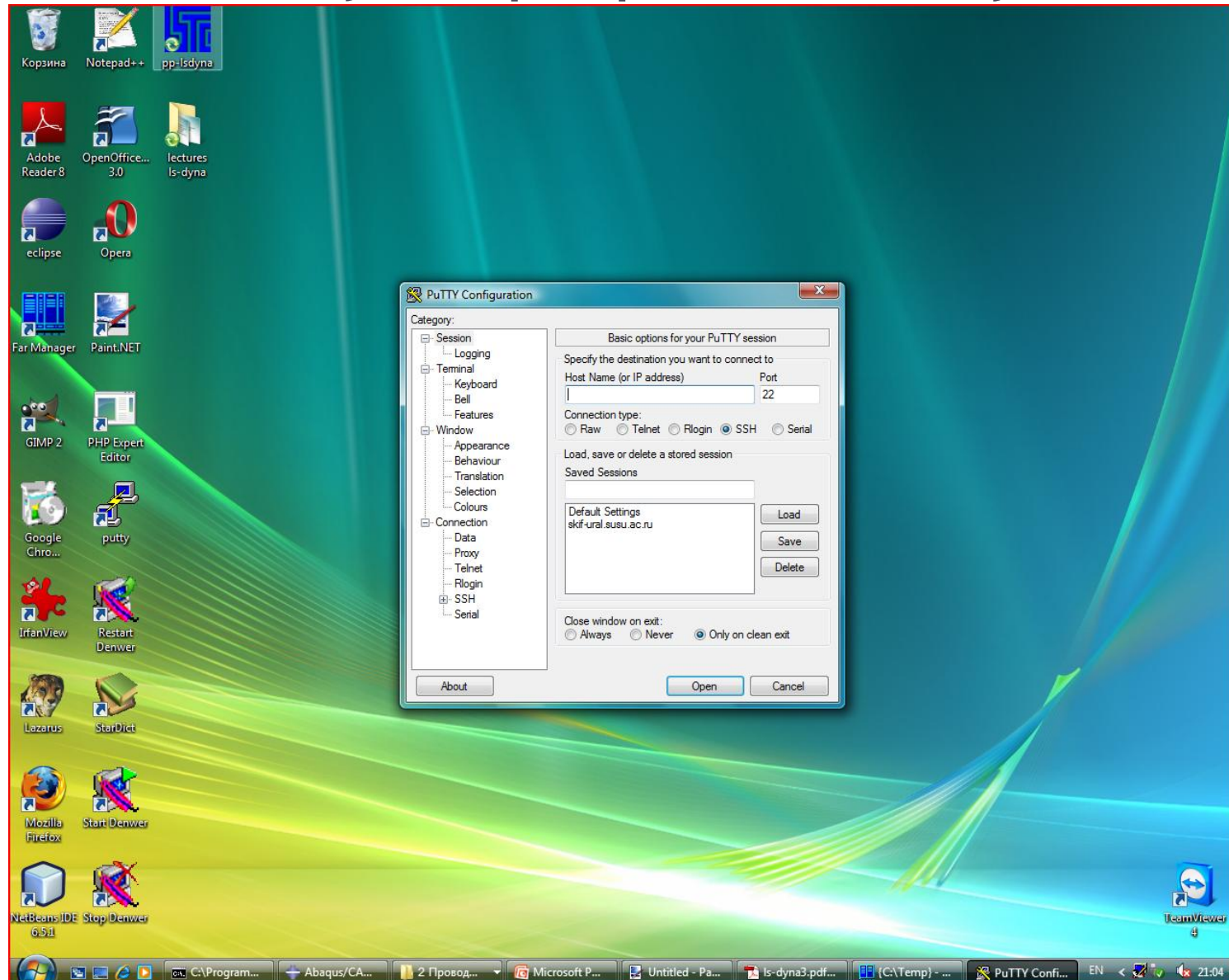


# Запуск программы Putty

Запуск задачи на выполнение в параллельном режиме на кластере «СКИФ Урал» через систему очередей производится с помощью программы putty

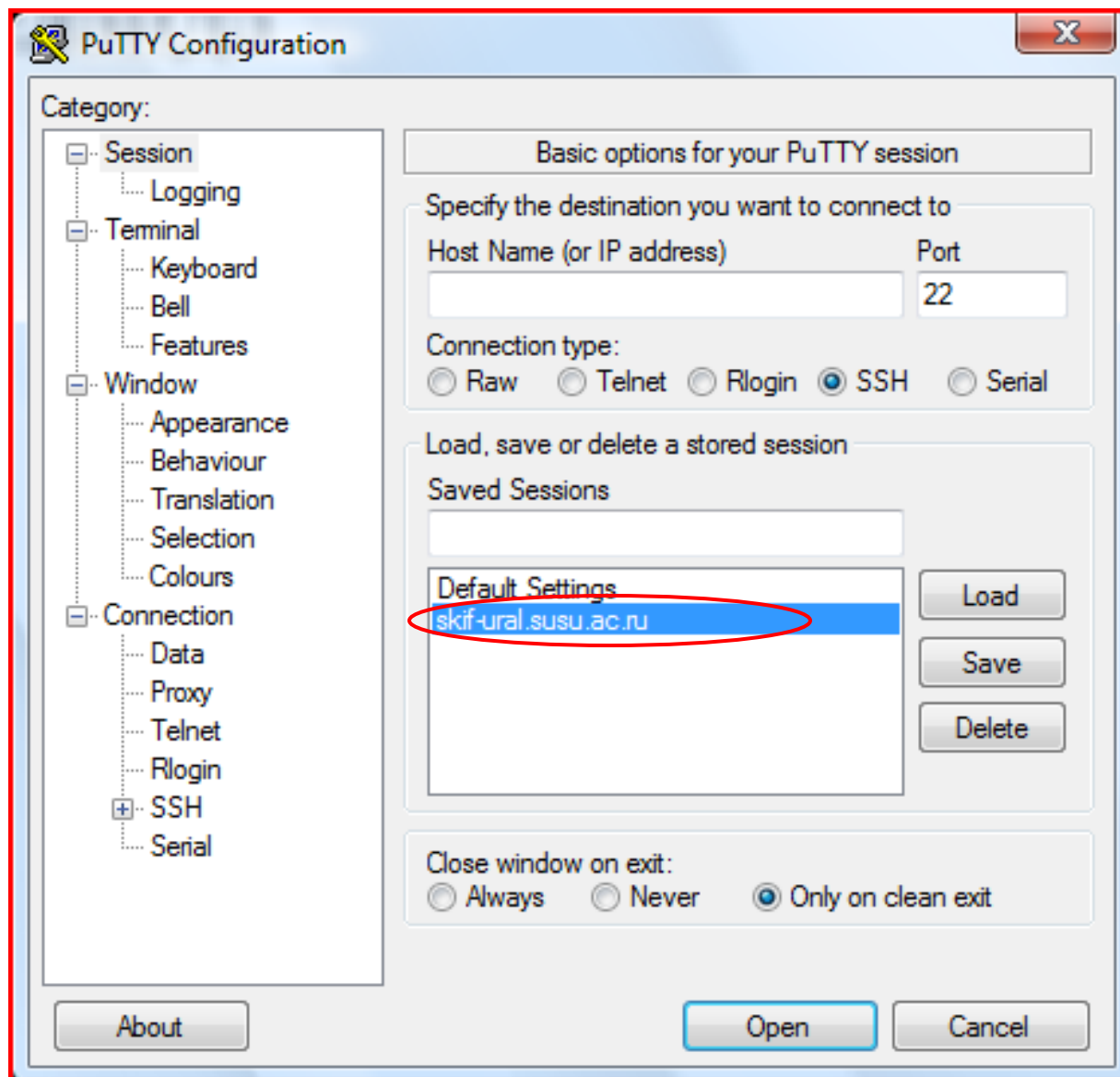


# Запуск программы Putty



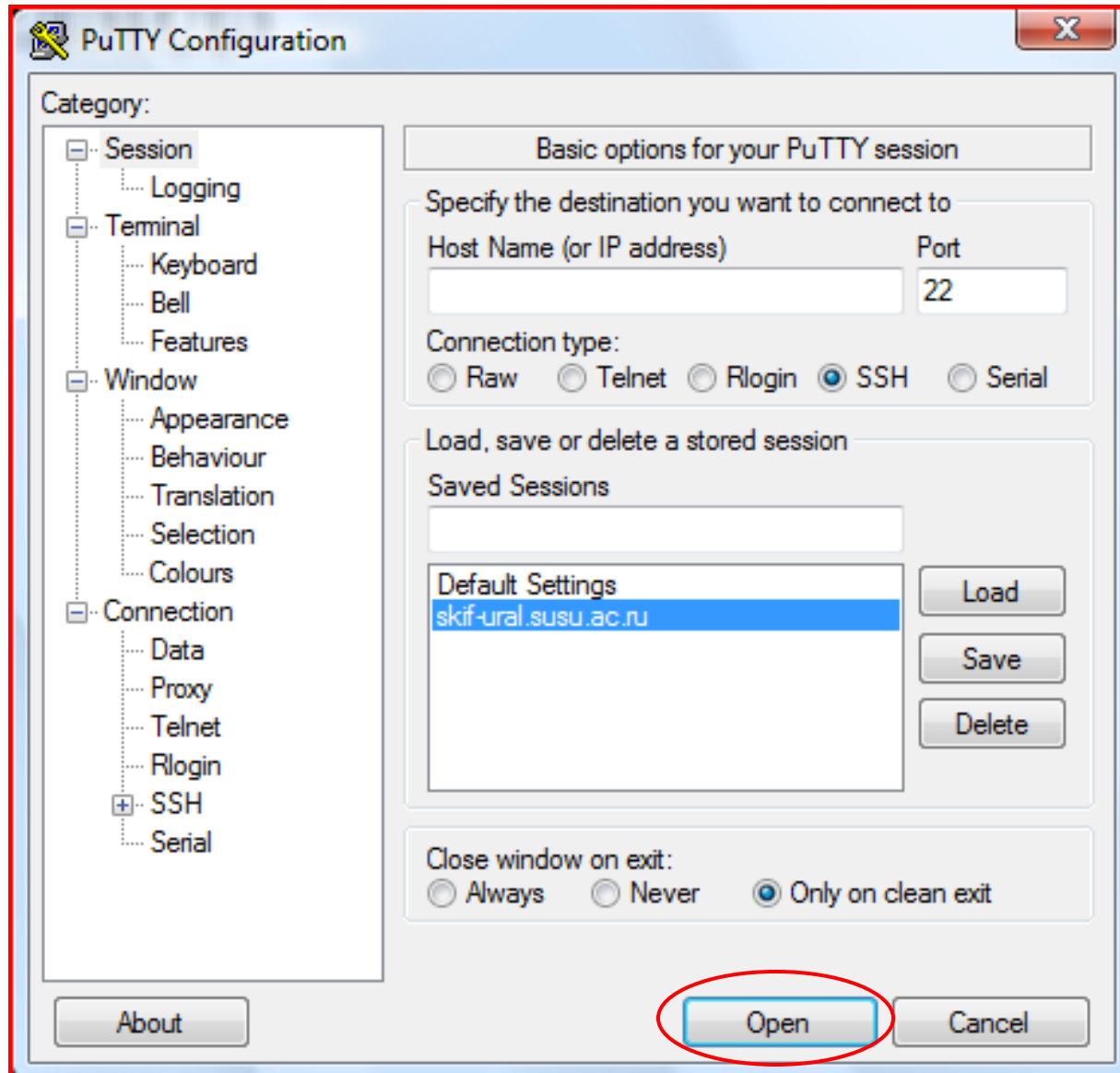


# Подключение к суперкомпьютеру СКИФ Урал

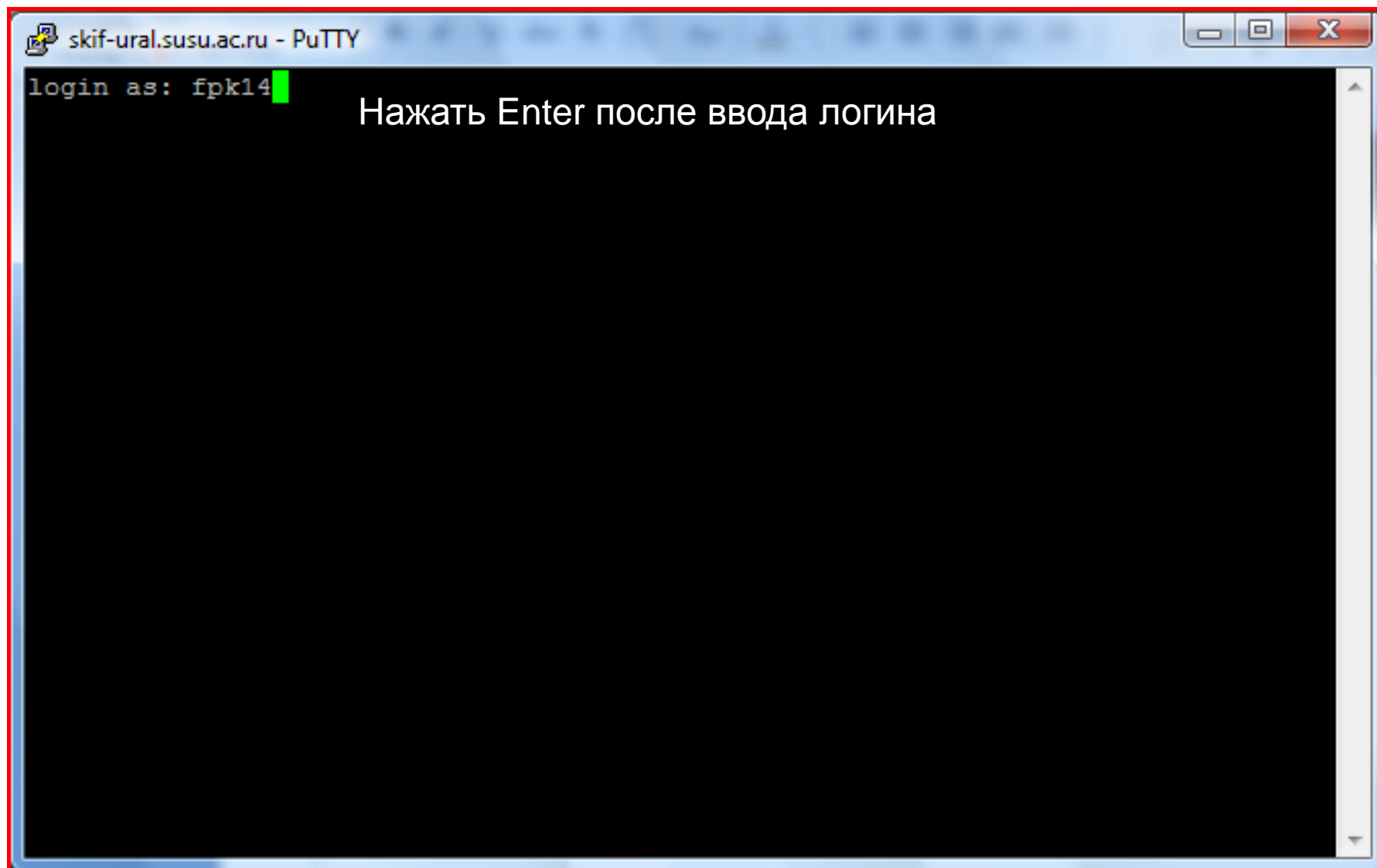




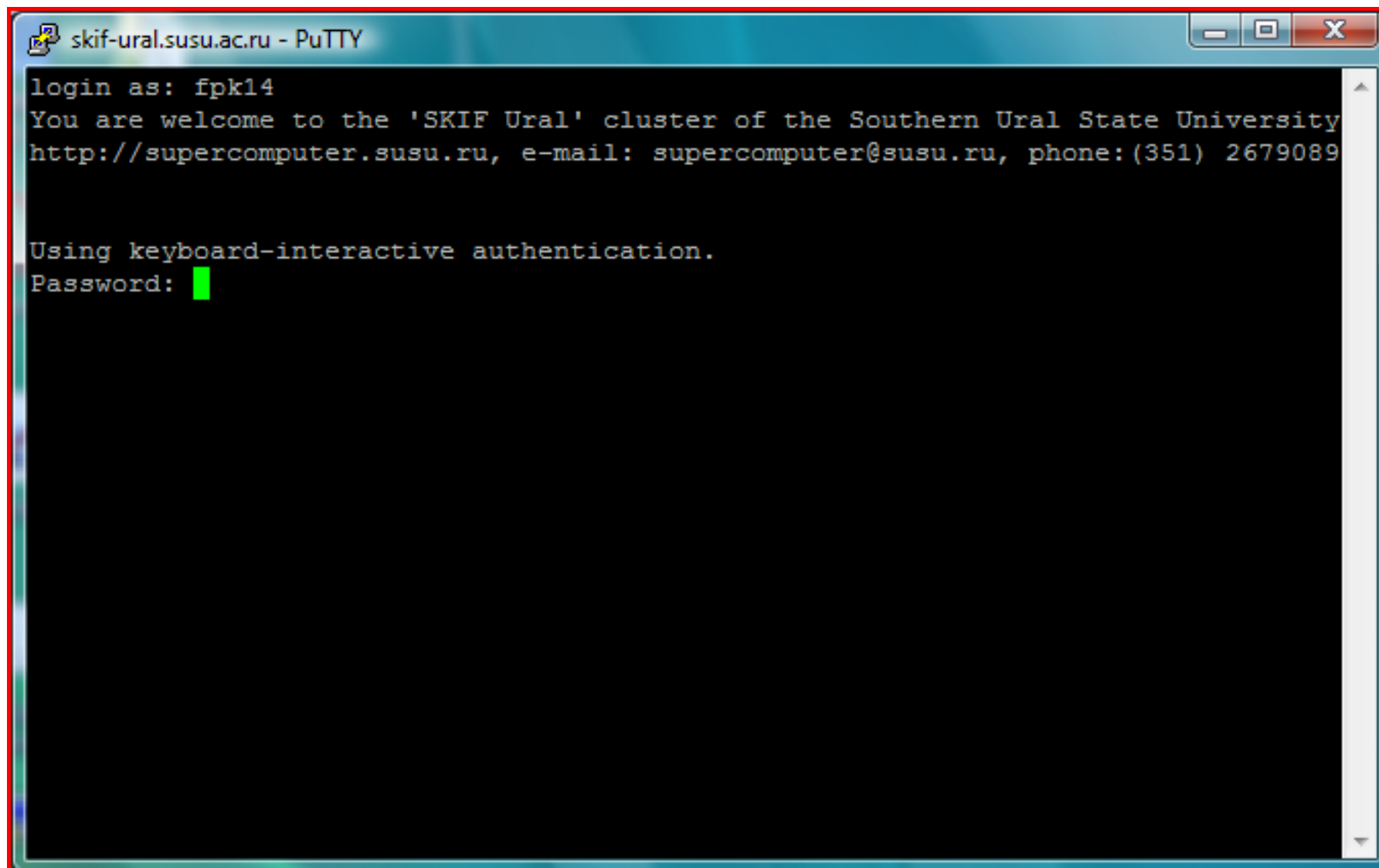
# Подключение к суперкомпьютеру СКИФ Урал



# Подключение к суперкомпьютеру СКИФ Урал



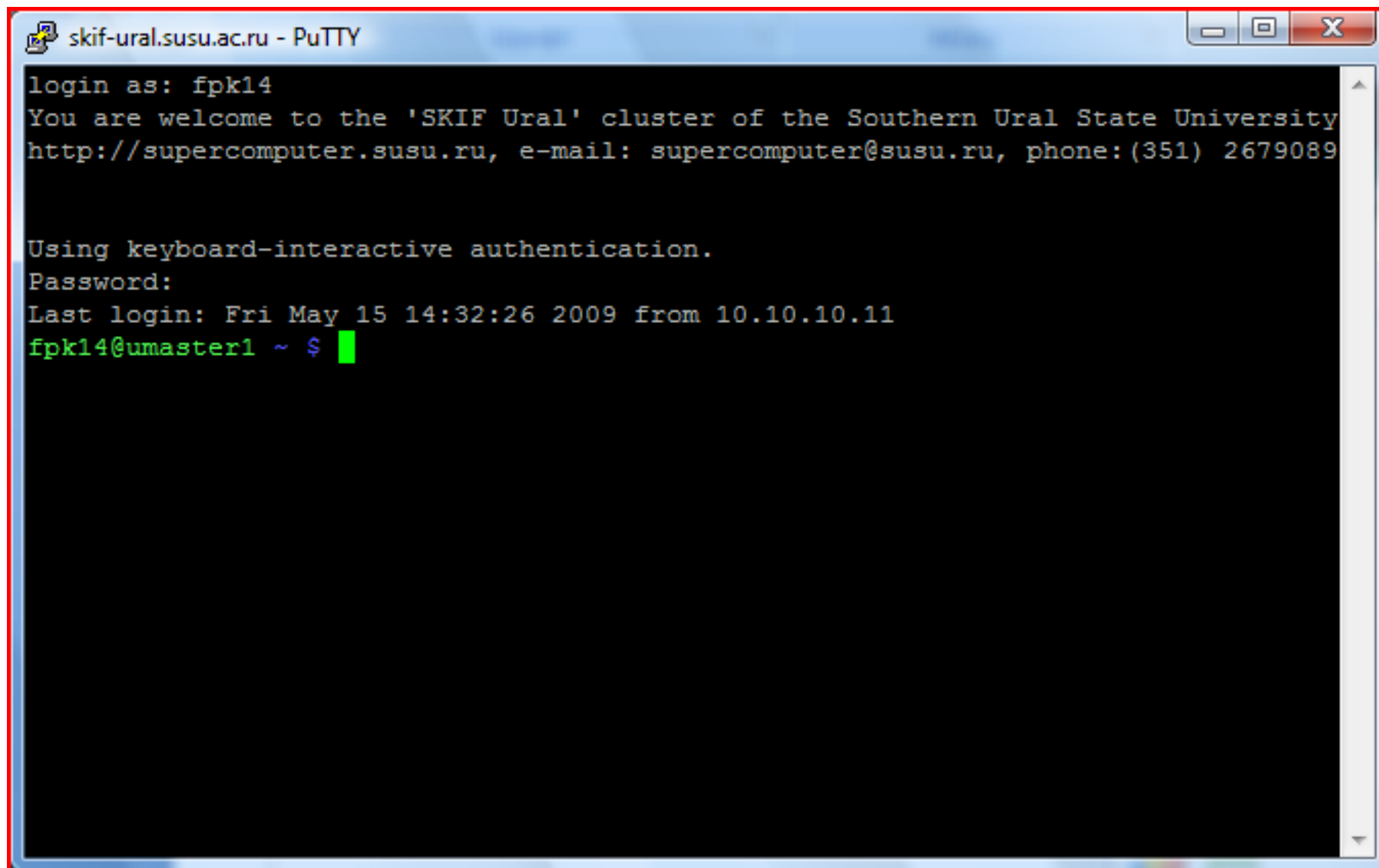
# Подключение к суперкомпьютеру SKIF Урал



```
skif-ural.susu.ac.ru - PuTTY
login as: fpk14
You are welcome to the 'SKIF Ural' cluster of the Southern Ural State University
http://supercomputer.susu.ru, e-mail: supercomputer@susu.ru, phone: (351) 2679089

Using keyboard-interactive authentication.
Password: █
```

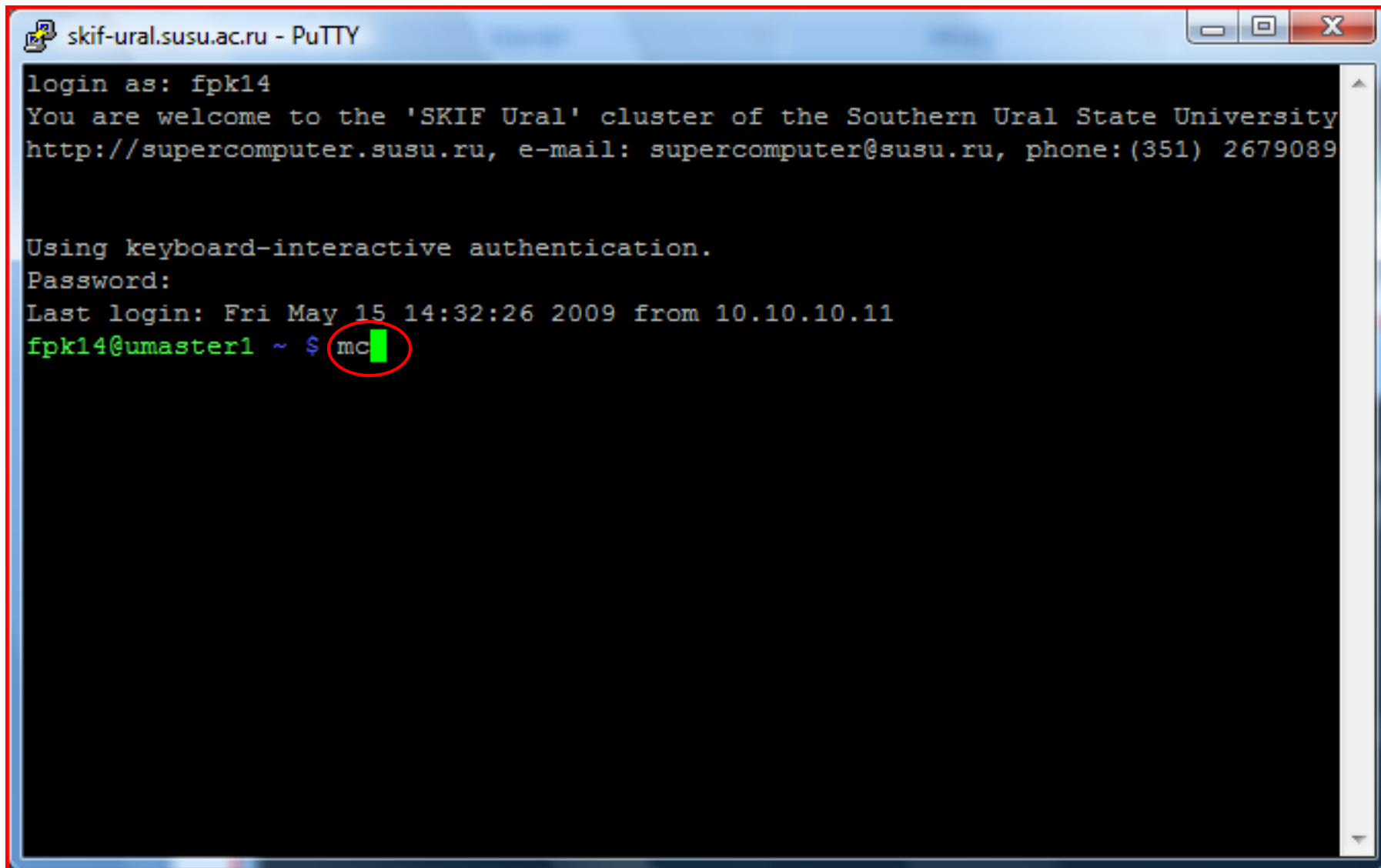
# Подключение к суперкомпьютеру SKIF Урал



```
skif-ural.susu.ac.ru - PuTTY
login as: fpk14
You are welcome to the 'SKIF Ural' cluster of the Southern Ural State University
http://supercomputer.susu.ru, e-mail: supercomputer@susu.ru, phone: (351) 2679089

Using keyboard-interactive authentication.
Password:
Last login: Fri May 15 14:32:26 2009 from 10.10.10.11
fpk14@umaster1 ~ $
```

# Введите команду mc и нажмите Enter



```
skif-ural.susu.ac.ru - PuTTY
login as: fpk14
You are welcome to the 'SKIF Ural' cluster of the Southern Ural State University
http://supercomputer.susu.ru, e-mail: supercomputer@susu.ru, phone: (351) 2679089

Using keyboard-interactive authentication.
Password:
Last login: Fri May 15 14:32:26 2009 from 10.10.10.11
fpk14@umaster1 ~ $ mc
```

# Зайдите в папку beam

mc - /panfs/panasas/home/fpk14

Left	File	Command	Options	Right		
< /panfs/panasas/home/fpk14				< /panfs/panasas/home/fpk14		
Name	Size	MTime		Name	Size	MTime
../	UP--DIR			../	UP--DIR	
/.mc	4096	Jun 4 21:24		/.mc	4096	Jun 4 21:24
/.ssh	4096	May 15 14:32		/.ssh	4096	May 15 14:32
<b>/beam</b>	<b>4096</b>	<b>Jun 4 20:55</b>		/beam	4096	Jun 4 20:55
/bin	4096	May 15 14:32		/bin	4096	May 15 14:32
.bash_history	0	May 15 14:32		.bash_history	0	May 15 14:32
@.bashrc	17	May 15 14:32		@.bashrc	17	May 15 14:32
.muttrc	6043	May 15 14:32		.muttrc	6043	May 15 14:32
@.profile	18	May 15 14:32		@.profile	18	May 15 14:32

/beam

Hint: Find File: you can work on the files found using the Panelize button.

fpk14@umaster1 /panfs/panasas/home/fpk14 \$

1Help 2Menu 3View 4Edit 5Copy 6RenMov 7Mkdir 8Delete 9PullDn 10Quit

# Команда запуска решателя abaqus

The screenshot shows a file manager window titled "mc - /panfs/panasas/home/fpk14/beam". The main area is split into two panels, "Left" and "Right", both displaying a file list with columns for "Name", "Size", and "MTime".

Left Panel	Right Panel																																							
<table border="1"><thead><tr><th>Name</th><th>Size</th><th>MTime</th></tr></thead><tbody><tr><td>../</td><td>UP--DIR</td><td></td></tr><tr><td>Job-1.inp</td><td>175579</td><td>Jun 4 16:05</td></tr></tbody></table>	Name	Size	MTime	../	UP--DIR		Job-1.inp	175579	Jun 4 16:05	<table border="1"><thead><tr><th>Name</th><th>Size</th><th>MTime</th></tr></thead><tbody><tr><td>../</td><td>UP--DIR</td><td></td></tr><tr><td>/.mc</td><td>4096</td><td>Jun 4 21:24</td></tr><tr><td>/.ssh</td><td>4096</td><td>May 15 14:32</td></tr><tr><td>/beam</td><td>4096</td><td>Jun 4 20:55</td></tr><tr><td>/bin</td><td>4096</td><td>May 15 14:32</td></tr><tr><td>.bash_history</td><td>0</td><td>May 15 14:32</td></tr><tr><td>@.bashrc</td><td>17</td><td>May 15 14:32</td></tr><tr><td>.muttrc</td><td>6043</td><td>May 15 14:32</td></tr><tr><td>@.profile</td><td>18</td><td>May 15 14:32</td></tr></tbody></table>	Name	Size	MTime	../	UP--DIR		/.mc	4096	Jun 4 21:24	/.ssh	4096	May 15 14:32	/beam	4096	Jun 4 20:55	/bin	4096	May 15 14:32	.bash_history	0	May 15 14:32	@.bashrc	17	May 15 14:32	.muttrc	6043	May 15 14:32	@.profile	18	May 15 14:32
Name	Size	MTime																																						
../	UP--DIR																																							
Job-1.inp	175579	Jun 4 16:05																																						
Name	Size	MTime																																						
../	UP--DIR																																							
/.mc	4096	Jun 4 21:24																																						
/.ssh	4096	May 15 14:32																																						
/beam	4096	Jun 4 20:55																																						
/bin	4096	May 15 14:32																																						
.bash_history	0	May 15 14:32																																						
@.bashrc	17	May 15 14:32																																						
.muttrc	6043	May 15 14:32																																						
@.profile	18	May 15 14:32																																						

Below the file lists, a terminal window is visible. The prompt is "fpk14@umaster1 /panfs/panasas/home/fpk14/beam \$". The command "abaqus Job-1.inp" is entered and highlighted with a red box. A red arrow points from the terminal to the "Job-1.inp" entry in the left panel of the file manager.

Hint: Find File: you can work on the files found using the Panelize button.

1Help 2Menu 3View 4Edit 5Copy 6RenMov 7Mkdir 8Delete 9PullDn 10Quit

После ввода команды запуска входного файла на расчет решателю, нажмите Enter

abaqus Job-1.inp

# Для обновления директории нажмите CTRL+R

mc - /panfs/panasas/home/fpk14/beam

Left	File	Command	Options	Right		
< /panfs/panasas/home/fpk14/beam v>				<- /panfs/panasas/home/fpk14 v>		
	Name	Size	MTime	Name	Size	MTime
	/. .	UP--DIR		/. .	UP--DIR	
	Job-1.inp	175579	Jun 4 16:05	/.mc	4096	Jun 4 21:24
	*abaqus-s~ple.com	1599	Jun 4 21:28	/.ssh	4096	May 15 14:32
	abaqus-s~ple.dat	10913	Jun 4 21:29	/beam	4096	Jun 4 20:55
	abaqus-s~ple.msg	109573	Jun 4 21:29	/bin	4096	May 15 14:32
	abaqus-s~.o17274	652	Jun 4 21:29	.bash_history	0	May 15 14:32
	abaqus-s~ple.odb	2942484	Jun 4 21:29	@.bashrc	17	May 15 14:32
	abaqus-s~ple.prt	72369	Jun 4 21:29	.muttrc	6043	May 15 14:32
	abaqus-s~ple.sta	1248	Jun 4 21:29	@.profile	18	May 15 14:32
	abaqus_v6.env	101	Jun 4 21:28			
	nds	11	Jun 4 21:28			
	/. .			/. .		

Hint: Find File: you can work on the files found using the Panelize button.

fpk14@umaster1 /panfs/panasas/home/fpk14/beam \$

1Help 2Menu 3View 4Edit 5Copy 6RenMov 7Mkdir 8Delete 9PullDn 10Quit



# Открываем Far Manager



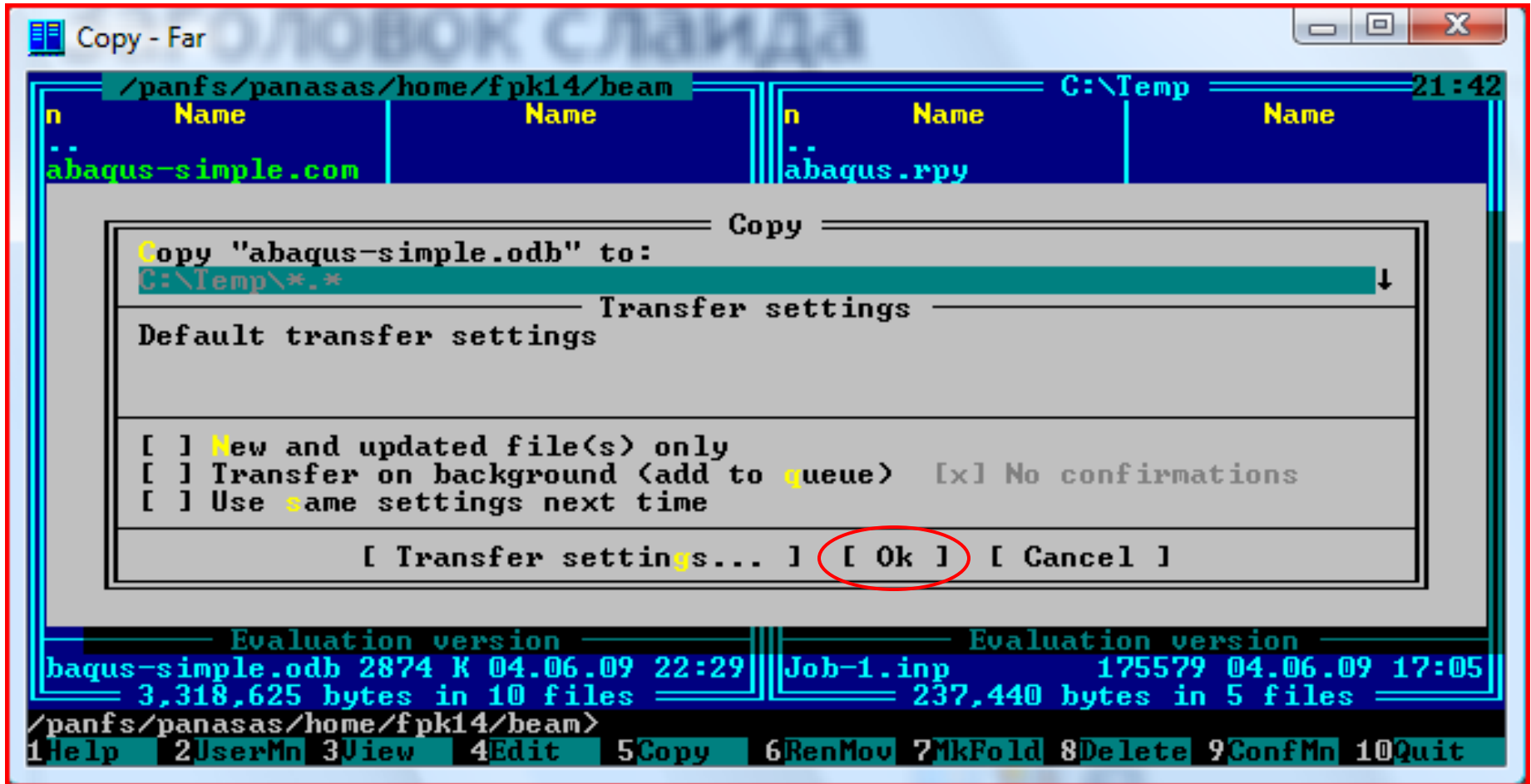
Для обновления директории нажмите CTRL+R

```
Far Manager window: /panfs/panasas/home/fpk14/beam - Far  
Left Panel: /panfs/panasas/home/fpk14/beam  
n Name  
..  
abaqus-simple.com  
abaqus-simple.dat  
abaqus-simple.msg  
abaqus-simple.o172}  
abaqus-simple.odb  
abaqus-simple.prt  
abaqus-simple.sta  
abaqus_v6.env  
Job-1.inp  
nds  
Evaluation version  
Up 04.06.09 22:24  
3,318,625 bytes in 10 files  
Right Panel: C:\Temp  
n Name  
..  
abaqus.rpy  
abaqus_acis.log  
Job-1.inp  
seminar.cae  
seminar.rec  
Evaluation version  
Job-1.inp 175579 04.06.09 17:05  
237,440 bytes in 5 files  
Bottom Bar: /panfs/panasas/home/fpk14/beam>  
1 Help 2 UserMn 3 View 4 Edit 5 Copy 6 RenMov 7 MkFold 8 Delete 9 ConfMn 10 Quit
```

# Копирование результата расчета

```
{/panfs/panasas/home/fpk14/beam} - Far  
/panfs/panasas/home/fpk14/beam C:\Temp 21:38  
n Name Name n Name Name  
.. ..  
abaqus-simple.com  
abaqus-simple.dat  
abaqus-simple.msg  
abaqus-simple.o172>  
abaqus-simple.odb  
abaqus-simple.prt  
abaqus-simple.sta  
abaqus_v6.env  
Job-1.inp  
nds  
abaqus.rpy  
abaqus_acis.log  
Job-1.inp  
seminar.cae  
seminar.rec  
Evaluation version Evaluation version  
abaqus-simple.odb 2874 K 04.06.09 22:29 Job-1.inp 175579 04.06.09 17:05  
3,318,625 bytes in 10 files 237,440 bytes in 5 files  
/panfs/panasas/home/fpk14/beam>  
1Help 2UserMn 3View 4Edit 5Copy 6RenMov 7MkFold 8Delete 9ConfMn 10Quit
```

# Копирование результата расчета



# Копирование результата расчета

```
{C:\Temp} - Far
/panfs/panasas/home/fpk14/beam
n      Name
--
abaqus-simple.com
abaqus-simple.dat
abaqus-simple.msg
abaqus-simple.o172}
abaqus-simple.odb
abaqus-simple.prt
abaqus-simple.sta
abaqus_v6.env
Job-1.inp
nds

Evaluation version
baqus-simple.odb 2874 K 04.06.09 22:29
3,318,625 bytes in 10 files

C:\Temp
n      Name
--
abaqus.rpy
abaqus-simple.odb
abaqus_acis.log
Job-1.inp
seminar.cae
seminar.rec

Evaluation version
baqus-simple.odb 2874 K 04.06.09 22:29
3,179,924 bytes in 6 files

C:\Temp>
1 Help 2 UserMn 3 View 4 Edit 5 Copy 6 RenMov 7 MkFold 8 Delete 9 ConfMn 10 Quit
```