
K2

CONNECTION SERVER

SOFTWARE

INSTALLATION GUIDE

V1.7E

Please, always check the www.bse.hu website to see whether you are using the latest version of the present document.

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1 Introduction

The Installation Guide for K2 Connection Server Software (hereinafter: the Software) summarises the steps for the Software installation and its environmental requirements. Installation of the Software enables trading on the markets of the Budapest Stock Exchange Ltd. (hereinafter: the BSE), inasmuch that the relevant network and communication channels are available.

1.1 Targeted User Group

This document was prepared for Remote Traders' IT professionals who are authorised to change settings and perform installations on workstations used by brokers, i.e.

- ◆ IT staff at Remote Traders
- ◆ System Administrators
- ◆ Professionals at IT companies authorised by Remote Traders to operate IT systems.

1.2 Legal Issues Concerning the Use of K2 Connection Servers

The use of the Software is controlled by BSE regulations and an individual contract between the Remote Trader and the BSE. Both the Regulations on the Operation and Use of Remote Trading and the CEO's resolution putting the Regulations into effect can be viewed at the BSE's official publication site on the Internet, www.bse.hu. The development and marketing licence rights of the Software are granted to the BSE while the utilisation rights are granted to the Remote Trader according to the contract between the BSE and the Remote Trader at the time of preparing this document. Other users are not permitted to use or apply the Software for any purpose.

2 Installing the Software for the first time

This section describes the necessary steps to install the K2 software into an environment for the first time (the K2 software hasn't been installed into the given environment yet). If you want to upgrade an already existing K2 environment to the new version, please follow "Install/upgrade an already existing K2 server environment", page 19.

2.1 Hardware and Software Requirements of the Software Installation

The hardware and operating system requirements for installing and running the Software are published by the BSE in the form of a resolution from the CEO. The resolutions can be found

on the BSE website. The conditions described in this document must be met in order to install the Software. The current document describes the installation in ,Red Hat Linux and HP-UX environment.

The following operating systems are supported at the time of preparing this document:

Red Hat Linux ,HP-UX

The tested environments are as follows:

*Red Hat Linux 7.3
Red Hat Enterprise Linux 3
Red Hat Enterprise Linux 4
HP-UX 10.20 ,11.0, 11i*

If you wish to install the Software under a newer version of the operating systems, please check whether it is listed among the environments tested by the BSE.

Minimum hardware requirements for Linux servers (at the time of preparing this document according to CEO's Resolution No.11/2003)

- *IBM PC PIII or higher*
- *Min. 256 MB Ram*
- *10 GB hard disk*

Minimum hardware requirements for HP-UX servers (at the time of preparing this document)

- *HP9000 servers with PA-RISC architecture*
- *Min. 256 MB Ram*
- *10 GB hard disk*

2.2 Downloading the Software Installation Kit

In order to install the Software, download the Software Installation Kit, which can be accessed from:

- the official BSE website, www.bse.hu, under the Members/Technical Information menu item. This page is password-protected and requires a user ID which can be obtained from a BSE contact person upon agreement, after submitting the relevant and properly signed authorisation (see paragraph 3);

Downloading the installation kit gives you a compressed file with the Software's name and version number, for example, *k2_2_5_5_install_linux.tar.gz* or *k2_2_5_5_install_hp-ux.tar.gz*

2.3 *Other Components Required for Operating the K2 Software*

For *Linux/Red Hat* environment

ntp-4.1.1-1.i386.rpm Network Time Protocol Package or a higher version is required for time synchronisation with the BSE Central System (this package can be found on the Red Hat distribution installation disk)

Install the component using the following command:

```
rpm -i ntp-4.1.1-1.i386.rpm
```

after installing the package, adjust the following settings in the */etc/ntp.conf* file

```
# BSE NTP Server
```

```
server 192.168.7.120 prefer
```

```
server 192.168.7.2
```

```
server 192.168.7.3
```

```
server 192.168.7.4
```

pdksh-5.2.14-16.i386.rpm – (ksh) Korn Shell clone program or a higher version is required to run k2 ksh-shell scripts (this package can be found on the Red Hat distribution installation disk)

Install the component using the following command:

```
rpm -i pdksh-5.2.14-16.i386.rpm
```

openssh-server-3.1p1-3.rpm – SSH server package or a higher version required for remote access and verification (this package can be found on the Red Hat distribution installation disk)

Install the component using the following command:

```
rpm -i openssh-server-3.1p1-3.rpm
```

After installing the package, the following must be set in the */etc/ssh/sshd_config* file:

```
Port 22
```

```
Protocol 2
```

```
HostKey /etc/ssh/ssh_host_rsa_key
```

```
HostKey /etc/ssh/ssh_host_dsa_key
```

```
PermitRootLogin no
```

```
RSAAuthentication yes
```

```
PubkeyAuthentication yes
```

```
AuthorizedKeysFile .ssh/authorized_keys
PasswordAuthentication no
PermitEmptyPasswords no
```

For *HP-UX* environment

openssh-server-3.1p1-3.rpm – SSH server package or a higher version required for remote access and verification (this package can be found on the HP-UX distribution installation disk)

Install the component using the following command:

```
swinstall -s /path to/sshd_xxx_depot_file \*;
      where path to is the exact path to the current available version sshd
      depot file
```

After installing the package, the following must be set in the */usr/local/etc/openssh/sshd_config* file:

```
Port 22
Protocol 2
HostKey /usr/local/etc/openssh/ssh_host_rsa_key
HostKey /usr/local/etc/openssh/ssh_host_dsa_key

PermitRootLogin no
RSAAuthentication yes
PubkeyAuthentication yes
AuthorizedKeysFile .ssh/authorized_keys
PasswordAuthentication no
PermitEmptyPasswords no
```

Before starting Secure Shell Daemon, you must generate host key files – specified above in *sshd_config* – using *ssh-keygen* command:

```
ssh-keygen -t rsa -f /usr/local/etc/openssh/ssh_host_rsa_key
ssh-keygen -t dsa -f /usr/local/etc/openssh/ssh_host_dsa_key
ssh-keygen -t rsa1 -f /usr/local/etc/openssh/ssh_host_key
```

If this latter parameter group is set, BSE personnel can use the k2 username to remotely log on to your computer (if it can be accessed through a network) via SSH. These kinds of logons are permitted by BSE regulations only if they are requested by phone at the IT Help Desk (the phone calls are recorded). The IT Help Desk will request your username and ID in order to identify you. Please get in touch with our contact persons to obtain these (see paragraph 3).

Important! If you do not want the BSE to remotely check the state of your K2 computer in case of emergency, then disable the SSH service on your computer.

In order to stop SSH service, type the following command as a root user: `service sshd stop`.

Under HP-UX the SSH service can be controlled by a root user issuing the following commands:

```
/sbin/init.d/sshd stop  
/sbin/init.d/sshd start
```

2.4 Installation steps for the server to connect to the BSE live trading system

These installation steps are the same for both the Linux and the HP-UX environment.

1. Create a user account with the username `k2` and an initial password in your system (you will need root privileges for creating the account).

```
groupadd k2  
useradd -g k2 -d /home/k2 -m k2  
passwd k2
```

Important! Log on as the `k2` user and continue with the subsequent installation steps.

2. Start the installation kit that was downloaded according to paragraph 2.2 with the following command in the `k2 user's $HOME` directory

```
cd $HOME  
gzip -cd k2_2_5_5_linux_install.tar.gz | tar -xvf -
```

After successful installation, the following directories are installed:

<code>\$HOME/k2</code>	- main directory
<code>\$HOME/k2/bin</code>	- executable files
<code>\$HOME/k2/cfg</code>	- configuration files
<code>\$HOME/k2/doc</code>	- documentation
<code>\$HOME/k2/log</code>	- log files
<code>\$HOME/k2/pkg</code>	- prepared ifsc packages

3. After completing the commands of the previous paragraph, the `.bash_profile` of the `k2` user is prepared. Check the following configuration commands in the `.bash_profile` file or set them in the `.profile` of the given user if another *shell* is run:

```
PATH=$PATH:$HOME/k2/bin  
export PATH  
cd k2  
. ./setup.sh  
cd bin
```

Important! There is a space between the two dots!

The *\$HOME/k2/setup.sh* script will automatically set the parameters required to operate k2. Check the settings after running the scripts. These parameters are as follows:

```
PGWROOT=$HOME/k2
TSMR1=$PGWROOT/bin/
SYSSRV1=$PGWROOT/bin/
TSMR2=$PGWROOT/bin
SYSSRV2=$PGWROOT/bin/
AMP2=$PGWROOT/bin
TSMRMSGFILE=$TSMR2/tsmr.msg
TSMR1CONFIG=$PGWROOT/cfg/pgwtsmr1.ini
TSMR2CONFIG=$PGWROOT/cfg/pgwtsmr2.ini
PGW1CONFIG=$PGWROOT/cfg/pgw1.cfg
PGW2CONFIG=$PGWROOT/cfg/pgw2.cfg
SL_LIBRARY_PATH=$SSH_LIBRARY_PATH:$PGWROOT/bin
PATH=$PATH:$HOME/k2/bin
```

4. Insert the following lines into the */etc/services* file:

```
# MMTS

mmt_gateway 30000/tcp
mmt_gateway 30000/udp

mm2_gateway 30005/tcp
mm2_gateway 30005/udp

# k2

ifss          40010/tcp
ifss          40010/udp

ifss2         40011/tcp
ifss2         40011/udp
```

5. Setting the SHM (Shared Memory)

K2 software holds downloaded trading parameters, orders and trades in shared memory. It means unix system running K2 is able to handle System V type shared memory segments and the whole shared memory size has to be enough to include all the downloaded trading parameters.

Set the shared memory (SHM) size as a root user:

- write the following setting into the */etc/sysctl.conf* file:
kernel.shmmax = 1342177280
- issue the following command:
sysctl -w kernel.shmmax = 1342177280

For HP-UX use Sam for kernel tuning (SHM setting).

6. Configuring the number and names of the clients logging on to the server Software:

The maximum number of client applications connected to the server Software is set by the purchased and installed licence. If you purchased the Standard or Plus version, set the appropriate number (10) of client users (applications).

Each client application logs on to the server Software with a separate or the same identity code. Set these codes in the *\$HOME/k2/cfg/ifss.uaf* file.

ifss.uaf file

```
demob:password:a:query,entry,confirm,config,admin,bypass
demo:password:a:entry,confirm,query,config,admin
broker1:pwd1:a:query,entry,confirm
broker2:pwd2:a:query,entry,confirm,config,admin
broker3:pwd3:a:query,entry
broker4:pwd4:a:query,confirm,entry
broker5:pwd5:a:query,entry,confirm,config
broker6:pwd6:a:query
```

The structure of the lines are as follows:

<client username>:<client password>:<client state>:<client authorisation>

client state: “a” = active, “s” = suspended (without quotation marks).

client authorisations: combination of the following items separated by commas

- query** Authorisation for data queries.
- entry** Entering, modifying, and deleting data.
- confirm** Confirming orders in K2.
- config** Configuring the order book lists.
- bypass** The entered orders become confirmed automatically.
- admin** Not used.

7. Test start of the server Software (PGW and IFSS modules)

You can use the following commands to test whether the Software starts and logs on to the BSE central trading system. This requires an operating network connection, and you will need the MMTS username and password issued by the BSE Listing and Supervisory Division (you will need this information for the *k2start 1* and *k2start 2* commands).

```
k2start 1
k2start 2
export IFSHOST=localhost
export IFSSERVICE=ifss    (or ifss2 for the derivatives market)
export IFSUSER=demo       (replace this with the username export in the ifss.uaf file)
export IFSPWD=password    (replace this with the password set in the ifss.uaf file)
get_table -1 market
get_table -2 market
```

When running the `get_table -1 market` command, the market table data are displayed in the following form:

1 MKT KÖTV	Debt securities	A
1 MKT OTCK	MMTS unregulated market	A
1 MKT PA	Auctions	A
1 MKT RV	Equities	A

We do recommend to check if Hungarian special characters could cause some problems on your display (depending on your terminal settings). If so please change the codepage used for an equivalent of ISO-8859-2 (Latin2) coding standard. If the test run fails, an error message informs you of the error.

2.5 Additional Installation Steps of the Server to connect to the BSE TEST Trading System

These installation steps are the same for both the Linux and the HP-UX environment.

In order to connect to the BSE TEST trading system, change the following item in the `$HOME/k2/cfg/pgwt smr1.ini` and `$HOME/k2/cfg/pgwt smr2.ini` files

```
broadcastAddress=192.168.15.1
# test server IP address
```

In order to return to the live system, modify the item as indicated below in both files (this is the default setting):

```
broadcastAddress=192.168.7.2,192.168.7.4,192.168.7.3,192.168.8.2,192.168.8.4,192.168.8.3
# live server IP address
```

2.6 Installing the Client Software (IFSC) Routine Directory in a Windows Environment

Installing the IFSC package in a Windows NT or WIN32 system:

1. Set the environment as follows:

Insert the following lines into the %SystemRoot%\System32\drivers\etc\services file:

```
ifss          40010/tcp
ifss          40010/udp

ifss2         40011/tcp
ifss2         40011/udp
```

Copy the *ifs.dll* and *ifstest.dll* file into the directory of your application or into the %SystemRoot%\System32 directory in order to operate your k2 client application.

2. Test start

You can use the following commands to test whether the client Software is able to appropriately connect to the server Software. This requires a network connection between the k2 server and the k2 client computer, and the K2 server must be running.

In a Windows environment, get to the *cmd* prompt – Start – Run – *cmd* and then set the following environment variables:

```
set IFSHOST=<the IP address of the K2 server>
set IFSSERVICE=<ifss (or ifss2)>
set IFSUSER=demo
set IFSPWD=password
```

Run the *get_table* commands

```
get_table -1 market
get_table -2 market
```

When running the *get_table -1 market* command, the market table data are displayed in the following form:

1 MKT KÖTV	Debt securities	A
1 MKT OTCK	MMTS unregulated market	A
1 MKT PA	Auction	A
1 MKT RV	Equities	A

If the test run fails, an error message informs you of the error.

2.7 Installing the Client Software (IFSC) Routine Directory in a Linux or HP-UX Environment

1. Set the environment as follows:

Insert the following lines into the */etc/services* file:

```
ifss      40010/tcp
ifss      40010/udp

ifss2     40011/tcp
ifss2     40011/udp
```

Copy the *ifs.so* and *ifstest.so* files in case of Linux (or the *ifs.sl* and *ifstest.sl* in case of HP-UX) into the directory of your application in order to operate your k2 client application.

2. Test start

You can use the following commands to test whether the client Software is able to appropriately connect to the server Software. This requires a network connection between the k2 server and the k2 client computer, and the K2 server must be running.

In a Linux or HP-UX environment, set the following environment variables:

```
export IFSHOST=<the IP address of the K2 server>
export IFSSERVICE=<ifss (or ifss2)>
export IFSUSER=demo
export IFSPWD=password
```

Run the *get_table* commands

```
get_table -1 market
get_table -2 market
```

When running the *get_table -1 market* command, the market table data are displayed in the following form:

1 MKT KÖTV	Debt securities	A
1 MKT OTCK	MMTS unregulated market	A
1 MKT PA	Auction	A
1 MKT RV	Equities	A

If the test run fails, an error message informs you of the error.

We do recommend to check if Hungarian special characters could cause some problems on your display (depending on your terminal settings). If so please change the codepage used for an equivalent of ISO-8859-2 (Latin2) coding standard.

2.8 Installation steps for creating a separate test environment on the K2 server computer to connect to the BSE test trading system

The reason for creating a separate test environment on the K2 computer is to provide a convenient way of conducting K2 tests for users. This is achieved by eliminating the need for changing the settings each case the target trading system to be accessed is changed.

Once this separate K2 environment is created on the K2 computer, the user can log in using the special *testk2* username and can start the K2 program in the usual way. The K2 program started from this separate test environment will connect to the BSE test trading system. In this manner the two environments can be used even parallelly, meaning that tests can be done during the live trading hours from the same computer.

These installation steps for creating the separate test environment are the same for both the Linux and the HP-UX environment:

1. Create a user with the username *testk2* in your system, and log on as the new user

```
groupadd testk2
useradd -g testk2 -d /home/testk2 -m testk2
passwd testk2
```

Important! Log on as the *testk2* user and continue with the subsequent installation steps.

2. Start the installation kit that was downloaded according to paragraph 2.2 with the following command in the *testk2* user's *\$HOME* directory

```
cd $HOME
gzip -cd k2_2_5_5_linux_install.tar.gz | tar -xvf -
(this is an example command with an example version number only)
```

After successful installation, the following directories are installed:

<i>\$HOME/k2</i>	- main directory
<i>\$HOME/k2/bin</i>	- executable files
<i>\$HOME/k2/cfg</i>	- configuration files
<i>\$HOME/k2/doc</i>	- documentation
<i>\$HOME/k2/log</i>	- log files
<i>\$HOME/k2/pkg</i>	- prepared ifsc packages

3. After completing the commands of the previous paragraph, the *.bash_profile* of the *testk2* user is prepared. Check the following configuration commands in the *.bash_profile* file or set them in the *.profile* of the given user if another *shell* is run:

```
PATH=$PATH:$HOME/k2/bin
export PATH
cd k2
. ./setup.sh
cd bin
```

Important! There is a space between the two dots!

The *\$HOME/k2/setup.sh* script will automatically set the parameters required to operate k2. Check the settings after running the scripts. These parameters are as follows:

```
PGWROOT=$HOME/k2
TSMR1=$PGWROOT/bin/
SYSSRV1=$PGWROOT/bin/
TSMR2=$PGWROOT/bin
SYSSRV2=$PGWROOT/bin/
AMP2=$PGWROOT/bin
TSMRMSGFILE=$TSMR2/tsmr.msg
TSMR1CONFIG=$PGWROOT/cfg/pgwtsmr1.ini
TSMR2CONFIG=$PGWROOT/cfg/pgwtsmr2.ini
PGW1CONFIG=$PGWROOT/cfg/pgw1.cfg
PGW2CONFIG=$PGWROOT/cfg/pgw2.cfg
SL_LIBRARY_PATH=$SH_LIBRARY_PATH:$PGWROOT/bin
PATH=$PATH:$HOME/k2/bin
```

The username, firmname and licence information for accessing the test trading system of BSE can be the same as for the live production MMTS trading system.

Don't forget to replace the ipckey information in pgw1.cfg and pgw2.cfg configuration files with the following:

```
ipckey=0x70666631      in pgw1.cfg
ipckey=0x70666632      in pgw2.cfg
```

Don't forget to correct the logpath and rlogpath parameters in pgw1.cfg and pgw2.cfg configuration files.

4. Insert the following lines into the */etc/services* file:

```
# MMTS

mmt_gateway 30000/tcp
mmt_gateway 30000/udp
```

```
mm2_gateway 30005/tcp
mm2_gateway 30005/udp
```

```
# k2
```

```
ifss          40010/tcp
ifss          40010/udp
```

```
ifss2         40011/tcp
ifss2         40011/udp
```

Insert the following lines for the test environment:

```
test1         40012/tcp
test1         40012/udp
```

```
test2         40013/tcp
test2         40013/udp
```

- For the client application logins to the server Software the identity codes can be modified in the \$HOME /k2/cfg/ifss.uaf file.

```
# ifss.uaf file
```

```
demob:password:a:query,entry,confirm,config,admin,bypass
demo:password:a:entry,confirm,query,config,admin
broker1:pwd1:a:query,entry,confirm
broker2:pwd2:a:query,entry,confirm,config,admin
broker3:pwd3:a:query,entry
broker4:pwd4:a:query,confirm,entry
broker5:pwd5:a:query,entry,confirm,config
broker6:pwd6:a:query
```

The structure of the lines are as follows:

```
<client username>:<client password>:<client state>:<client authorisation>
```

client state: “a” = active, “s” = suspended (without quotation marks).

client authorisations: combination of the following items separated by commas

- query** Authorisation for data queries.
- entry** Entering, modifying, and deleting data.
- confirm** Confirming orders in K2.
- config** Configuring the order book lists.

bypass The entered orders become confirmed automatically.

admin Not used.

7. Setting the broadcast address for the BSE test trading system:

In order to connect to the BSE TEST trading system, change the following item in the \$HOME/k2/cfg/pgwtsmr1.ini and \$HOME/k2/cfg/pgwtsmr2.ini files

broadcastAddress=192.168.15.1

test server IP address

Leave this broadcast address unchanged for the test environment.

8. Installing the Client Software (IFSC) Routine Directory for the test environment

Installing the IFSC package in a Windows environment (Windows NT or WIN32 system):

Insert the following lines into the %SystemRoot%\System32\drivers\etc\services file:

```
test1      40012/tcp
test1      40012/udp

test2      40013/tcp
test2      40013/udp
```

Copy the *ifs.dll* and *ifstest.dll* file into the directory of your application or into the %SystemRoot%\System32 directory in order to operate your k2 client application.

In a Windows environment, get to the *cmd* prompt – Start – Run – *cmd* and then set the following environment variables:

```
set IFSHOST=<the IP address of the K2 server>
set IFSSERVICE=<test1 (or test2)>
set IFSUSER=demo
set IFSPWD=password
```

Installing the IFSC package in a Linux or HP-UX Environment

Insert the following lines into the */etc/services* file:

```
test1      40012/tcp
test1      40012/udp
```

test2 **40013/tcp**
test2 **40013/udp**

Copy the *ifs.so* and *ifstest.so* files in case of Linux (or the *ifs.sl* and *ifstest.sl* in case of HP-UX) into the directory of your application in order to operate your k2 client application.

In a Linux or HP-UX environment, set the following environment variables:

```
export IFSHOST=<the IP address of the K2 server>
export IFSSERVICE=<test1 (or test2)>
export IFSUSER=demo
export IFSPWD=password
```

9. Test start of the server Software in the test environment (PGW and IFSS modules)

As a *test2* user, you can use the following commands to test whether the Software starts and logs on to the BSE test trading system. This requires an operating network connection, and you will need the MMTS username and password issued by the BSE Listing and Supervisory Division (you will need this information for the *k2start 1* and *k2start 2* commands).

```
cd $PGWROOT/bin
k2start 1
k2start 2
export IFSHOST=<the IP address of the K2 server>
export IFSSERVICE=test1 (or test2 for the derivatives market)
export IFSUSER=demo (replace this with the username export in the ifss.uaf file)
export IFSPWD=password (replace this with the password set in the ifss.uaf file)

$PGWROOT/bin/get_table -1 market
$PGWROOT/bin/get_table -2 market
```

To run the *get_table* command in Windows environment, the IFSC package has to be installed previously.

When running the *get_table -1 market* command, the market table data are displayed in the following form:

1 MKT KÖTV	Debt securities	A
1 MKT OTCK	MMTS unregulated market	A
1 MKT PA	Auctions	A
1 MKT RV	Equities	A

We do recommend to check if Hungarian special characters could cause some problems on your display (depending on your terminal settings). If so please change

the codepage used for an equivalent of ISO-8859-2 (Latin2) coding standard. If the test run fails, an error message informs you of the error.

3 Install/upgrade an already existing K2 server environment

This section contains instructions on upgrading and installing a new version of the K2 software into an environment which already contains an installed K2 server software.

3.1 Install the new version

1. It is assumed that the earlier K2 installation exists in your K2 environment. If not, please refer to the K2 Installation Guide (k2_inst_guide) accessible by downloading K2 documentation from the BSE site.

2. Login as the k2 user and use its home directory

```
cd /home/k2
```

3. Copy the downloaded install kit of the new version into the home directory
4. Stop the K2 software if needed

```
k2stop 1
```

```
k2stop 2
```

5. Make a backup copy of the existing version of the K2 by saving the executables of the bin directory:

```
mkdir k2_backup
```

```
cp /home/k2/k2/bin/* /home/k2/k2_backup
```

6. Unzip the downloaded install kit by issuing the following command in the home directory (**x_x_x** denotes the version number of the new release):

In case of a Linux system:

```
gzip -cd k2_x_x_x_Linux_install.tar.gz | tar -xvf -
```

In case of a HP-UX system:

```
gzip -cd k2_x_x_x_HP-UX_install.tar.gz | tar -xvf -
```

After successful extracting, all the K2 executables in the `/home/k2/k2/bin` directory will be replaced.

3.2 *Instructions to UNINSTALL newly installed versions*

If you experience any problem with the new version released by the BSE and/or you want to uninstall it and return to the earlier version:

1. The backup copy of the earlier K2 installation must exist in your K2 environment
2. Login as the k2 user and use its home directory

```
cd /home/k2
```

3. Stop the K2 software if needed

```
k2stop 1  
k2stop 2
```

4. Copy the saved version of the K2 executables from the k2_backup to the bin directory:

```
cp /home/k2/k2_backup/* /home/k2/k2/bin/
```

4 **Contacting the Help Desk**

If you have any installation related problems, please contact the Help Desk.
Telephone: +36 1 429-6853.

VERY IMPORTANT! In certain cases, the IT Help Desk can only help you solve problems if you identify yourself by phone. This is achieved by announcing the name of your company and a valid IT Help Desk password. This password can be obtained through your BSE contact person in advance. If you have not done so, please call us at +36 1 429-6721 to obtain an “IT Help Desk password”.

In case of procedural or authorisation-related technical problems, please call Ms. Szilvia Hegyi, telephone: +36 1 429-6721.