

Shell access and data transfer

Interactive Login

The Anselm cluster is accessed by SSH protocol via login nodes login1 and login2 at address anselm.it4i.cz. The login nodes may be addressed specifically, by prepending the login node name to the address.

Login address	Port	Protocol	Login node
anselm.it4i.cz	22	ssh	round-robin DNS record for login1 and login2
login1.anselm.it4i.cz	22	ssh	login1
login2.anselm.it4i.cz	22	ssh	login2

The authentication is by the private key

Please verify SSH fingerprints during the first logon. They are identical on all login nodes: 29:b3:f4:64:b0:73:f5:6f:a7:85:0f:e0:0d:be:76:bf (DSA) d4:6f:5c:18:f4:3f:70:ef:bc:fc:cc:2b:fd:13:36:b7 (RSA)

Private keys authentication:

On **Linux** or **Mac**, use

```
local $ ssh -i /path/to/id_rsa username@anselm.it4i.cz
```

If you see warning message “UNPROTECTED PRIVATE KEY FILE!”, use this command to set lower permissions to private key file.

```
local $ chmod 600 /path/to/id_rsa
```

On **Windows**, use PuTTY ssh client.

After logging in, you will see the command prompt:

```

      /
     / /
    / / | ' _ _ / _ _ / _ _ | ' _ _ _ _
   / _ _ _ | | | _ _ _ / | | | | | |
  / _ _ _ _ | | _ _ _ / _ _ | | | | |
 / _ _ _ _ _ | | _ _ _ / _ _ | | | | |

```

<http://www.it4i.cz/?lang=en>

```
Last login: Tue Jul  9 15:57:38 2013 from your-host.example.com
[username@login2.anselm ~]$
```

The environment is **not** shared between login nodes, except for shared filesystems.

Data Transfer

Data in and out of the system may be transferred by the scp and sftp protocols. class="discreet">(Not available yet.) In case large volumes of data are transferred, use dedicated data mover node dm1.anselm.it4i.cz for increased performance.

Address	Port	Protocol
anselm.it4i.cz	22	scp, sftp
login1.anselm.it4i.cz	22	scp, sftp
login2.anselm.it4i.cz	22	scp, sftp
class="discreet">dm1.anselm.it4i.cz 22 class=	"discreet">	scp, sftp

The authentication is by the private key

Data transfer rates up to **160MB/s** can be achieved with scp or sftp. 1TB may be transferred in 1:50h.

To achieve 160MB/s transfer rates, the end user must be connected by 10G line all the way to IT4Innovations and use computer with fast processor for the transfer. Using Gigabit ethernet connection, up to 110MB/s may be expected. Fast cipher (aes128-ctr) should be used.

If you experience degraded data transfer performance, consult your local network provider.

On linux or Mac, use scp or sftp client to transfer the data to Anselm:

```
local $ scp -i /path/to/id_rsa my-local-file username@anselm.it4i.cz:directory/file
```

```
local $ scp -i /path/to/id_rsa -r my-local-dir username@anselm.it4i.cz:directory
```

or

```
local $ sftp -o IdentityFile=/path/to/id_rsa username@anselm.it4i.cz
```

Very convenient way to transfer files in and out of the Anselm computer is via the fuse filesystem sshfs

```
local $ sshfs -o IdentityFile=/path/to/id_rsa username@anselm.it4i.cz:. mountpoint
```

Using sshfs, the users Anselm home directory will be mounted on your local computer, just like an external disk.

Learn more on ssh, scp and sshfs by reading the manpages

```
$ man ssh  
$ man scp  
$ man sshfs
```

On Windows, use WinSCP client to transfer the data. The win-sshfs client provides a way to mount the Anselm filesystems directly as an external disc.

More information about the shared file systems is available [here](#).