

How to Use Geant4 in the CIP Pool (and remotely)

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Remote Access Using X2Go

- Session name: arbitrary
- Host: portal-intern.physik.rwth-aachen.de
- Login: username
- Try auto login (via SSH Agent or default SSH key)
- Use Proxy server for SSH connection
- Same login as on X2Go Server
- Same password as on X2Go Server
- Host (Proxy server): tunnel.physik.rwth-aachen.de
- SSH Agent or default SSH key
- Session type: XFCE, KDE

Sitzungsvoreinstellungen - Portal-Intern

Sitzung Verbindung Ein-/Ausgabe Medien freigegebene Ordner

Sitzungsname: Portal-Intern

 << Symbol ändern

Pfad: /

Server

Host: portal-intern.physik.rwth-aachen.de

Login: XXXXXXXX

SSH-Port: 22

RSA-/DSA-Schlüssel verwenden (ssh):

☒ Anmeldung über voreingestellten SSH-Schlüssel oder ssh-agent

☐ Kerberos5 (GSSAPI) Authentifizierung

☐ Übertragung der GSSAPI-Legitimation auf den Server

☒ Proxy-Server für SSH-Verbindung verwenden

Proxy-Server

Typ:

☒ SSH

☐ HTTP

Host: tunnel.physik.rwth-aachen.de

Port: 22

☒ Gleiche Anmeldung wie für X2Go-Server

Login:

☒ Gleiches Kennwort wie für X2Go-Server

RSA-/DSA-Schlüssel:

☒ SSH-Agent oder SSH-Standardschlüssel

☐ Kerberos5 (GSSAPI) Authentifizierung

Sitzungsart

XFCE

Befehl:

OK Abbrechen Voreinstellungen

Using Geant4 in the CIP Pool

- Log in using your account
- Download `geant4.10.6.p02.sh` from Moodle
- Source the setup files in a bash-like shell

```
source geant4.10.6.p02.sh
```
- **Hint:** `echo $SHELL` tells you the shell you are using

- **Remark 1:**

- When sourcing the above file you automatically set your environmental variables so that you use can use Geant4. This includes:
 - setting the **location of Geant4** and of its libraries and physics data,
 - preparing the environment for **compiling Geant4 program code**,
 - choosing a **newer compiler**,
 - adding **newer versions of libraries** to your library path.

- **Remark 2:**

- Every time you open a new console/terminal you will need to source your environmental variable.

- **Remark 3:**

- To avoid sourcing the setup file, one can make use of “.bashrc” file and source the file automatically when a new shell is started
- **WARNING: This may have side effects! Especially other programs depending on older libraries may not work anymore!**

Testing Your Setup

- Download Geant4 example B4 .tar.gz from Moodle.
- Extract it: `tar xzvf B4.tar.gz`
- Compile example B4a (simulation of a calorimeter):
 - `cd B4/B4a`
 - `cmake .`
 - `make`
- The executable will be stored in `.` (current directory)
- Start the program:
`./exampleB4a`
- Shoot 100 particles (in this case e^-) on the calorimeter.
Enter `"/run/beamOn 100"` in the session field.
- What do you see?
- **Remark:** The program reads its configuration file (*.mac) from the **current** directory. If you execute the program in its own directory you have to copy the configuration files first.