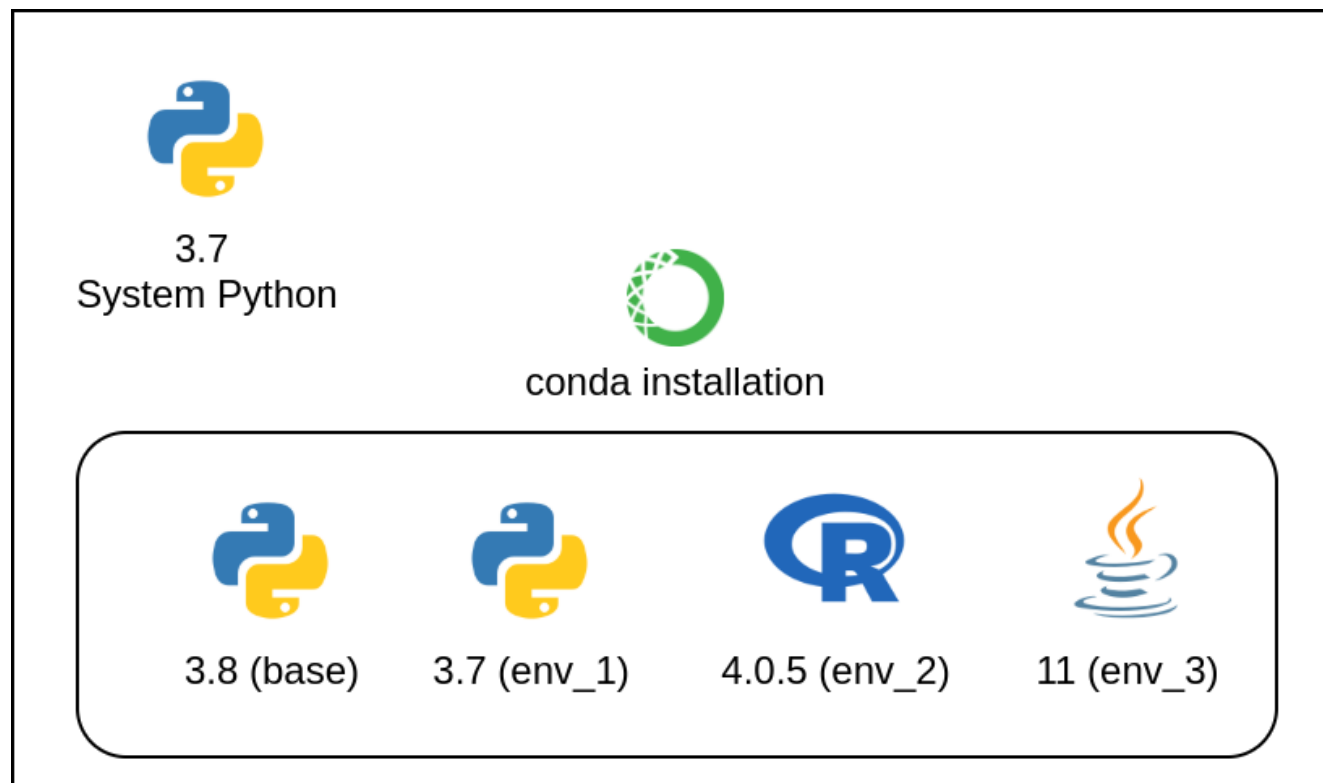


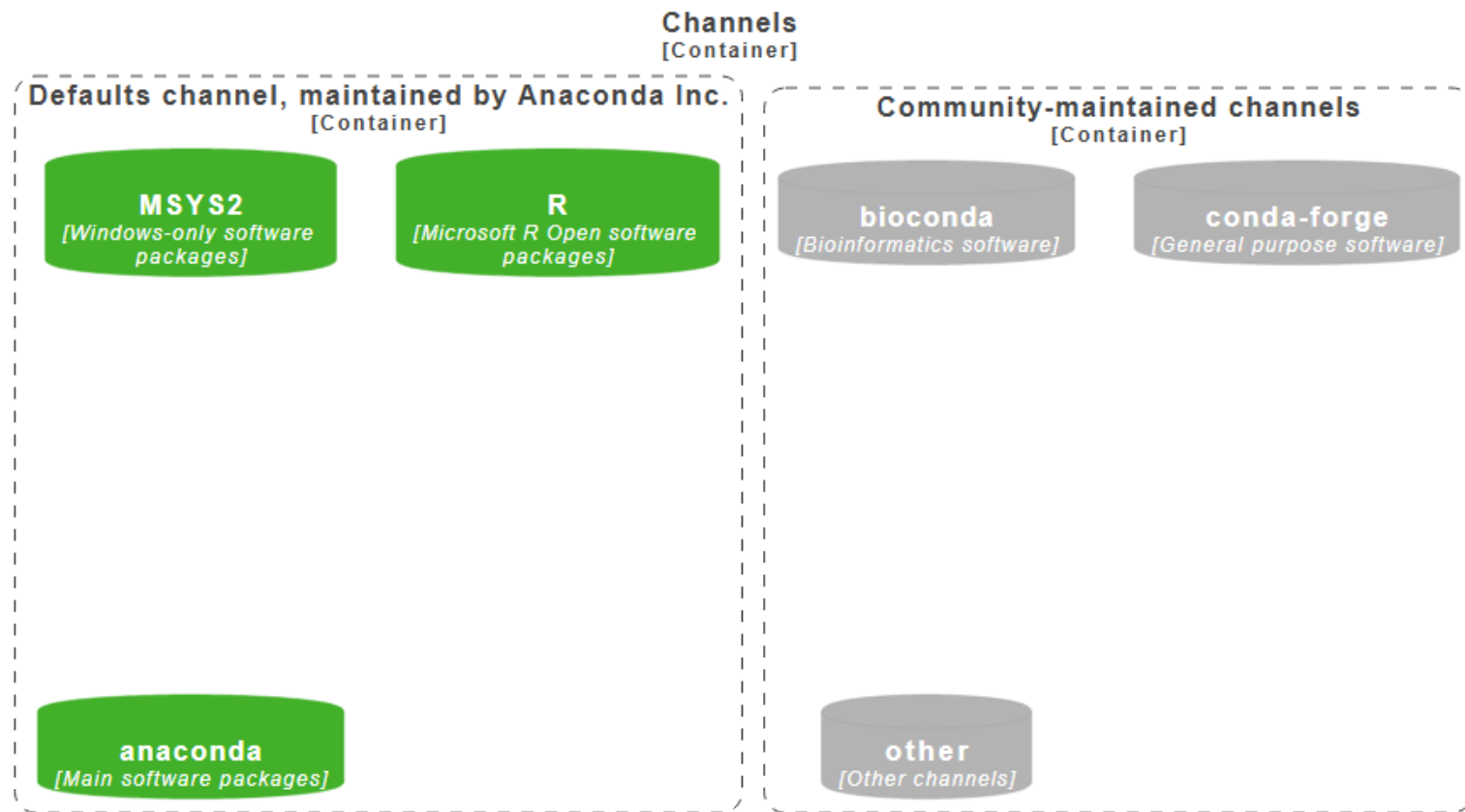
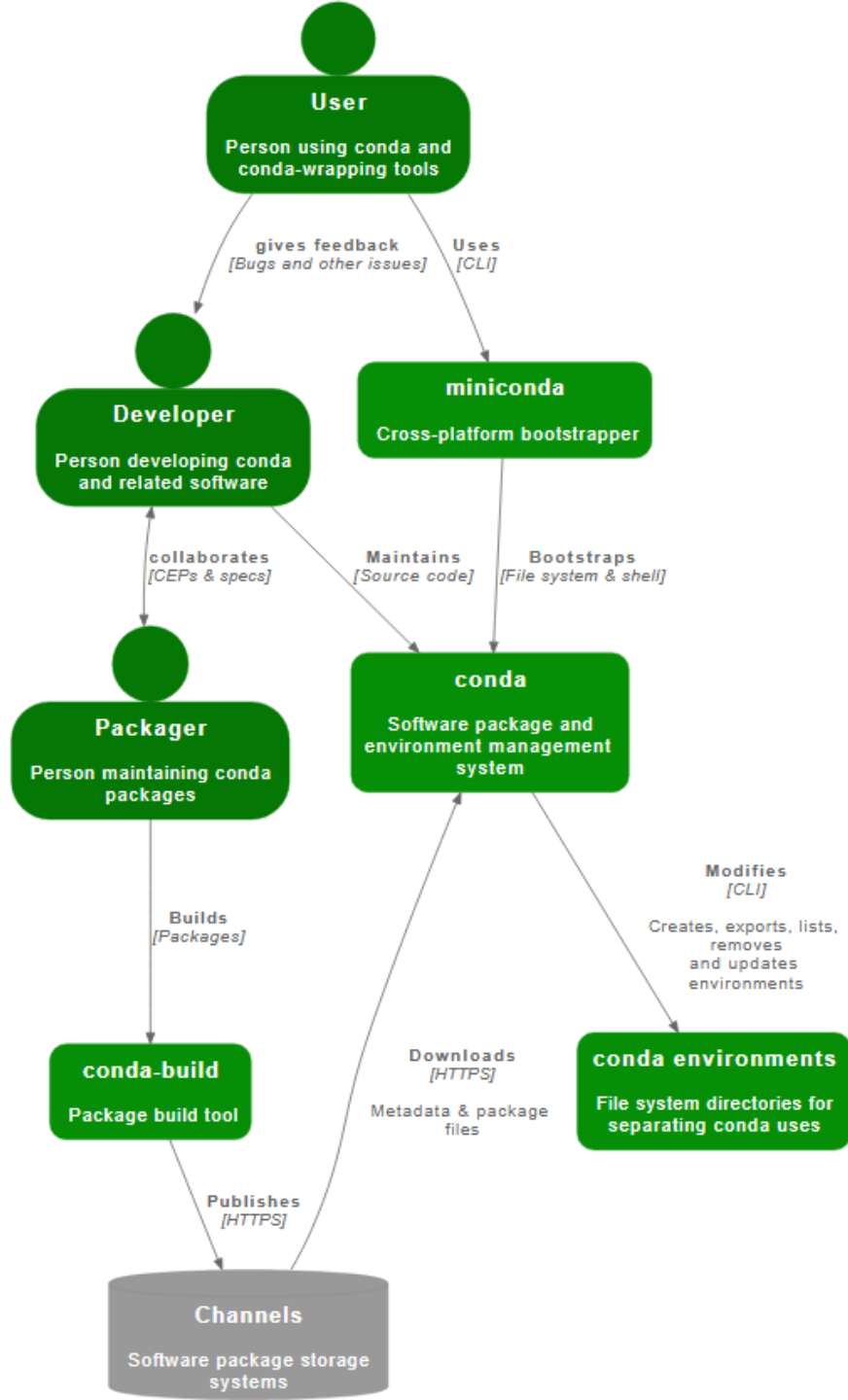
CONDA

What is Conda Environment?

Conda the package and environment manager program bundled with Anaconda that installs and updates conda packages and their dependencies.

Conda environment a folder or directory that contains a specific collection of conda packages and their dependencies, so they can be maintained and run separately without interference from each other.





Installing Miniconda

Run the following four commands to download and install the latest Linux installer for your chosen chip architecture.

```
~$ mkdir -p ~/miniconda3
~$ wget https://repo.anaconda.com/miniconda/Miniconda3-latest-Linux-x86_64.sh\
-O ~/miniconda3/miniconda.sh
~$ bash ~/miniconda3/miniconda.sh -b -u -p ~/miniconda3
~$ rm ~/miniconda3/miniconda.sh
```

After installing, close and reopen your terminal application or refresh it by running the following command

```
~$ source ~/miniconda3/bin/activate
```

Then, initialize conda on all available shells by running the following command:

```
~$ conda init --all
```

Commands

Create a new conda environment from a list of specified packages

```
~$ conda create -n myenv python pip
```

Activate environment

```
~$ conda activate myenv
```

Deactivate environment

```
~$ conda deactivate myenv
```

List all known conda environments

```
~$ conda info -envs
# conda environments:
#
base                /home/sangnguyen/miniconda3
biotools            * /home/sangnguyen/miniconda3/envs/biotools
learn-scikitlearn-pytorch /home/sangnguyen/miniconda3/envs/learn-
scikitlearn-pytorch
```

Commands

Install a list of packages into a specified conda environment

```
~$ conda install conda-forge::scikit-learn  
~$ conda install -n myenv scipy curl whee  
~$ conda install scipy curl whee
```

List installed packages in a conda environment.

```
~$ conda list
```

Commands

Remove a list of packages from a specified conda environment.

```
~$ conda remove -n myenv --all
```

Rename an existing environment

```
~$ conda rename --name test123 test321
```

Configuration

Display all configuration values as calculated and compiled

```
~$ conda config --show channels
channels:
- https://repo.anaconda.com/pkg/main
- https://repo.anaconda.com/pkg/r
```

Add the conda-canary channel

```
~$ conda config --add channels conda-canary
```

Remove the conda-canary channel

```
~$ conda config --remove channels conda-canary
```


Configuration

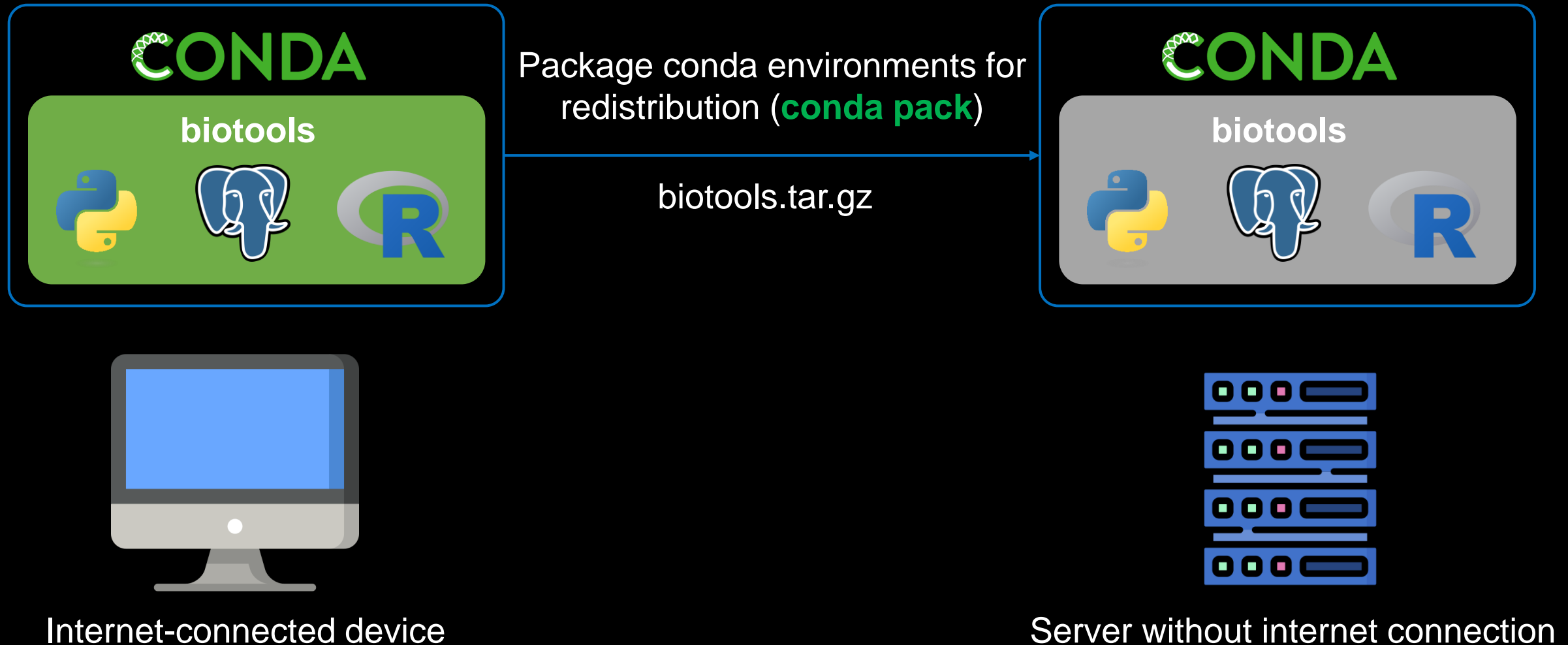
Modify configuration values in `.condarc`

```
~$ cat ~/.condarc
channels:
- https://repo.anaconda.com/pkgs/main
- https://repo.anaconda.com/pkgs/r
```

Add 2 channels to `.condarc`

```
channels:
- conda-forge
- bioconda
- https://repo.anaconda.com/pkgs/main
- https://repo.anaconda.com/pkgs/r
```

Conda Environment for Offline Server



Conda Environment for Offline Server

Environmental Redistribution

On Internet-Connected Device

Create biotools environment with Python and R

```
~$ source ~/miniconda3/bin/activate  
~$ conda create --name biotools python r-base r-essentials -y  
~$ conda activate biotools
```

Download and install the libraries

```
~$ conda install fastqc bwa gatk bcftools snpeff samtools bedtools tabix  
~$ conda install -c conda-forge scikit-learn matplotlib
```

Create distribution

```
~$ conda install -c conda-forge conda-pack  
~$ conda pack -n biotools -o biotools.tar.gz
```

Conda Environment for Offline Server

Environmental Redistribution

On Server Without Internet Connection

Unpack the biotools environment on the target server

```
~$ mkdir -p ~/.conda/envs/biotools  
~$ tar -xzf biotools.tar.gz -C ~/.conda/envs/biotools
```

Activate the biotools environment

```
~$ source ~/.conda/envs/biotools/bin/activate
```

Fix the hardcoded paths inside your Conda environment when you have moved the environment to the server

```
~$ cd $(dirname $(which R))/..  
~$ ./bin/conda-unpack
```

JAVA

Setting environment variables for JAVA

Set JAVA PATH variable

```
~$ echo 'export JAVA_HOME=/usr/' >> ~/.bashrc
~$ echo 'export PATH=$JAVA_HOME/bin:$PATH' >> ~/.bashrc
~$ source ~/.bashrc
```

Check the JAVA environment, it should be /usr/bin/java

```
~$ which java
~$ java --version
```

The end