VMR PACKAGE MANAGE VIRTUAL MACHINES FOR/WITH R

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{VMR} PACKAGE
MANAGE VIRTUAL MACHINES FOR/WITH R

https://rstuff.gitlab.io/vmr/

PRÉSENTATION

{VMR} R package allow to **manage**, **provision** and **use** a **V**irtual **M**achine preconfigured for **R**.

Develop, make tests and build a package in a clean environment with a choice of different providers and OS improve the quality, the productivity, the reproductibility and the share of R productions.

Here we present, the posibilities offered by **{VMR}** to manipulate a **VM** using **R** code.

How these VMs are built using severals pipelines over GitLab CI/CD and stored in the Vagrant cloud repository.

{VMR}

=> R package to use Vagrant CLI tool

- Vagrant have to be installed (>=2.2.10)
- Implement most of the commands
- Currently works for VirtualBox (≥ 6.1.14) provider

- **`vmrList()`** : List boxes (OS, R Versions, providers)
- **`vmrCreate(...)`** : Create a VMR environment
- **`vmrInitEnv(...)`** : Initialyse environment and download VM
- **`vmrStart()`**, **`vmrSuspend()`**, **`vmrResume()`**, **`vmrStop()`**

TOOLS

Vagrant is a tool for building and managing virtual machine environments in a single workflow and focus on automation.
Open Source MIT License – HashiCorp

Box ~= a Virtual Machine
Provider ~= virtualization product

VirtualBox is a virtualization tool
Open Source GPL-v2 – ORACLE

Runs on and supports multiples OS

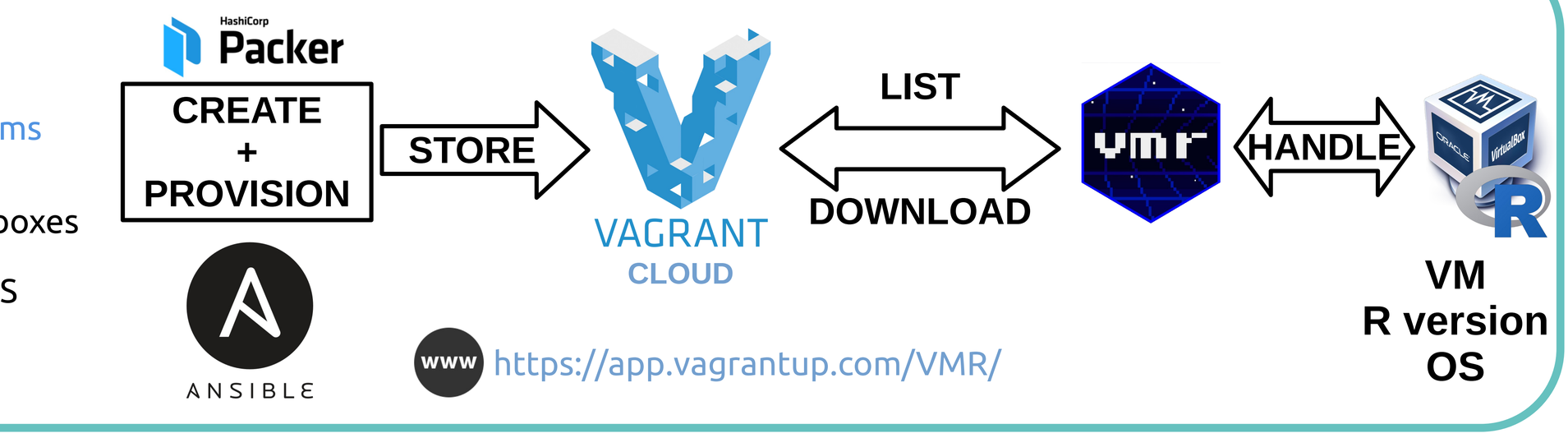
BOXES AND VM CREATIONS

GitLab

https://gitlab.com/rstuff/vms

Repositories use CI/CD
to create, provision and store boxes

For Windows, Linux and Mac OS



https://app.vagrantup.com/VMR/

WORK WITH VMR

Mount Local Directory

```
vmrMountDir(vmr_env, src, dest)
```

Guest informations

```
vmrInfo()
```

VirtualBox Options

```
opt ← virtualboxOptions()
opt$name ← "useR"
opt$gui ← TRUE
opt$modifyvm$memory ← 4096
opt$modifyvm$cpu ← 4
```

R in the VM

```
vmrExec('print("Hello UseR!")')
vmrProvision(cmd="Rscript -e mycode.R", elt="mycode.R")
vmrInstallPackages(pkg = c("vmr"))
```

R Packages

`vmrPackageCheck()`

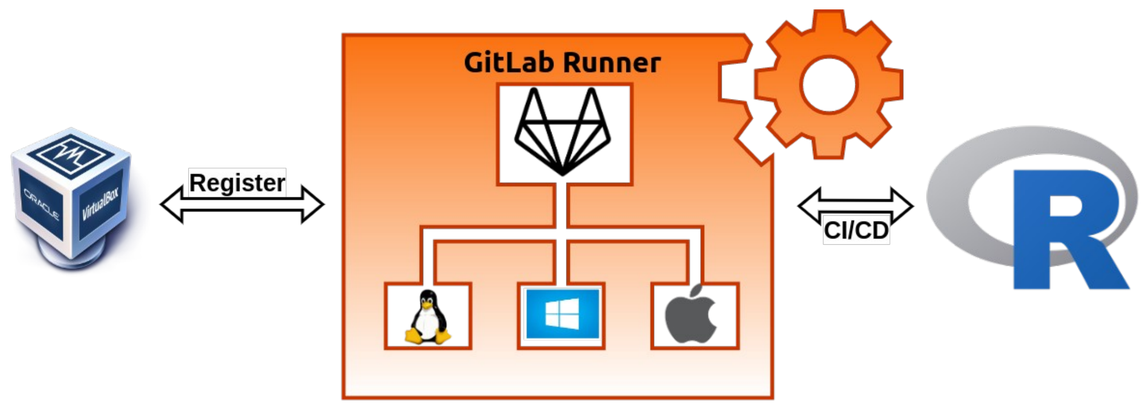
`vmrPackageTest()`

`vmrPackageBuild()`

GITLAB-RUNNER

Use a VM as a GitLab Runner for CI/CD

`VirtualboxGitlabRunner(...)`→CLI to register the VM as Runner



Automate Tests, Check and Build

PERSPECTIVES

- Add new providers : Docker, VMware, ...
- Find storage capacity for boxes
- Improve boxes provisionning
- Add new OS (Fedora, Solaris, ...)
- Improve integration for R Dev (simplify remote R, execution interactive shell, Rstudio addins)

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