# Day 2



# Fast and smooth simulation of space-time problems

# Maciej Paszynski

Department of Computer Science, AGH University of Science and Technology, Krakow, Poland

Desde 24 al 28 de Julio, 2017 Todos los días de 15:00 a 17:00 hrs. Sala Aula, Instituto de Matemáticas PUCV

#### 1. Download VMPlayer

https://www.vmware.com/products/workstation.html

#### Go to Downloads



## **Download Workstation Player**

Workstation for Win	dows - V × +		
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<b>vm</b> ware <sup>®</sup>			OUS Login > Training
CLOUD SERVICES	Product Downloads	Free Product Trials & Demos	Free Product Downloads
🚓 🕹	vsphere kstation for Windo	vCloud Suite	vSphere Hypervisor
PRODUCTS	vSphere with Operations Management	vSphere	vCenter Converter
¢°	vCloud Suite	vSphere with Operations Management	Workstation Player
SOLUTIONS	NSX	vSAN	Software Manager
a	Site Recovery Manager	Site Recovery Manager	VMware Remote Console
SUPPORT	Horizon 7 WS Virtualization for Eve		
	Fusionare Workstation Pro and VMware Wo	for running multiple operating s	
×	Workstation Pro II professionals, developer	Workstation Pro and	Workstation Player to be more
	Workstation Player	All Product Trials	
PROFESSIONAL SERVICES	With over 15 years of virtualization leaders virtualization platform in the industry.	ship, millions of satisfied customers, and m	ore than 50 awards, VMware p

If you have Windows, select Windows, if you have Linux, select Linux



I do it on Windows:

WWware Workstation 12 Play	/er Setup
	Welcome to the VMware Workstation 12 Player Setup Wizard
WWORKSTATION	The Setup Wizard will install VMware Workstation 12 Player on your computer. Click Next to continue or Cancel to exit the Setup Wizard.
vmware	Copyright 1998-2017 VMware, Inc. All rights reserved. This product is protected by U.S. and international copyright and intellectual property laws. VMware products are covered by one or more patents listed at: http://www.vmware.com/go/patents
	Next Cancel

Continue with the installation with default settings.

## 2. Download the image of Linux Ubuntu 32 bits system

Download 32bit unbuntu

http://releases.ubuntu.com/16.04/

(We will use 32 bits system because some laptops do not support virtual 64 bits systems)



3. Run VMware Workstation Player and create new virtual machine using the downloaded image



Select the virtual image that you have downloaded

New Virtual Machine Wizard					
Welcome to the New Virtual Machine Wizard A virtual machine is like a physical computer; it needs an operating system. How will you install the guest operating system?	9				
Install from:					
◯ Installer disc:					
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Browse for ISO Image		·		X
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Enter the name of your virtual machine, e.g. Ubuntu,

Enter username and password e.g. student, student, student

New Virtual Ma	ichine Wizard
Easy Instal	I Information
Personalize Lin	X
<u>F</u> ull name:	Ubuntu
<u>U</u> ser name:	student
Password:	•••••
<u>C</u> onfirm:	••••••
Help	< Back Next > Cancel

Then go through default settings:

New Virtual Machine Wizard	X
Name the Virtual Machine What name would you like to use for this virtual machine?	,
Virtual machine name:	
Ubuntu	
Location:	
C:\Users\Maciej\Documents\Virtual Machines\Ubuntu	Browse
	Cancol
< <u>B</u> ack <u>N</u> ext >	Cancel





Finally, the virtual machine is running. It may ask for installation of some addition tools, but this is not necessary:



Wait for the installation of Ubuntu Linux inside the virtual machine:



Enter the password: student

(the one that you have setup during the installation)

Ubuntu -	VMware	Work	statio	n 12 P	layer (l	Non-co	omme	ercial u	se onl	y)	UTTU.						X
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And you have your virtual machine with Ubuntu running

# 4. Installation of IGA-ADS solver inside the virtual machine

We are going to install the software described in

https://www.researchgate.net/publication/313532745\_IGA-ADS\_Isogeometric\_analysis\_FEM\_using\_ADS\_solver

Section 8 describes the installation processs briefly

## 4a) Run Xterm



# 4b) Install git

Type inside xterm:

sudo apt install git

student

Y

# 4c) Install cmake

sudo apt install cmake

Y

# 4d) Install emacs

sudo apt install emacs24

# 4e) Install gfortran

sudo apt install gfortran

# 4f) Install lapack

sudo apt install liblapack-doc

sudo apt install liblapack-dev

# 4g) Install blas

sudo apt install libblas-doc

sudo apt install libblas-dev

# 4h) Install boost

sudo apt install libboost-all-dev

## Y

# 4i) Install GALOIS

Open the internat browser in the virtual machine and go to GALOIS web page

http://iss.ices.utexas.edu/?p=projects/galois



#### Save the GALOIS zip



student@ubuntu:~/Downloads\$ cd ~

student@ubuntu:~\$ cd Downloads/

student@ubuntu:~/Downloads\$ ls

Galois-2.2.1.tar.gz

student@ubuntu:~/Downloads\$ mv Galois-2.2.1.tar.gz ~

student@ubuntu:~/Downloads\$ cd ~

student@ubuntu:~\$ tar xzvf Galois-2.2.1.tar.gz

student@ubuntu:~\$ cd Galois-2.2.1/build

student@ubuntu:~/Galois-2.2.1/build\$ mkdir release

student@ubuntu:~/Galois-2.2.1/build\$ cd release/

student@ubuntu:~/Galois-2.2.1/build/release\$ cmake -DSKIP\_COMPILE\_APPS=ON ../..

student@ubuntu:~/Galois-2.2.1/build/release\$ make

student@ubuntu:~/Galois-2.2.1/build/release\$ sudo make install

#### 4j) Install unittests

Open the internat browser in the virtual machine and go to unittests webpage

#### http://libunittest.sourceforge.net/



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A	A changelog can be found <u>here</u> Cat direct access to the master branch	
	Get <u>direct access</u> to the master branch     The most recent libunittest XML schema (XSD)	
<u>a</u> ,		
1	Arch Linux packages	
	• Get an Arch Linux package of libunittest	

## Save it to the disc

student@ubuntu:~/Downloads\$ cd ~

student@ubuntu:~\$ cd Downloads/

student@ubuntu:~/Downloads\$ ls

libunittest-9.3.5.tar.gz

student@ubuntu:~/Downloads\$ mv libunittest-9.3.5.tar.gz ~

student@ubuntu:~/Downloads\$ cd ~

student@ubuntu:~\$ tar -xvf libunittest-9.3.5.tar.gz

student@ubuntu:~\$ cd libunittest-9.3.5/

student@ubuntu:~/libunittest-9.3.5\$ ./configure

student@ubuntu:~/libunittest-9.3.5\$ make

student@ubuntu:~/libunittest-9.3.5\$ sudo make install

#### 4k) Install gnuplot

sudo apt install gnuplot

#### 4I) Install IGA-ADS

student@ubuntu:~\$ cd ~

student@ubuntu:~\$ git clone https://github.com/marcinlos/iga-ads

student@ubuntu:~\$ cd iga-ads/

student@ubuntu:~/iga-ads\$ cmake . && make

student@ubuntu:~/iga-ads\$ ls

CMakeCache.txt cmake\_install.cmake heat\_1d init.data Makefile src

CMakeFiles CMakeLists.txt heat\_3d libads.a README test

student@ubuntu:~/iga-ads\$

If you have files heat\_1d and heat\_3d and libads.a then congratulations!