

Azure Lab Services

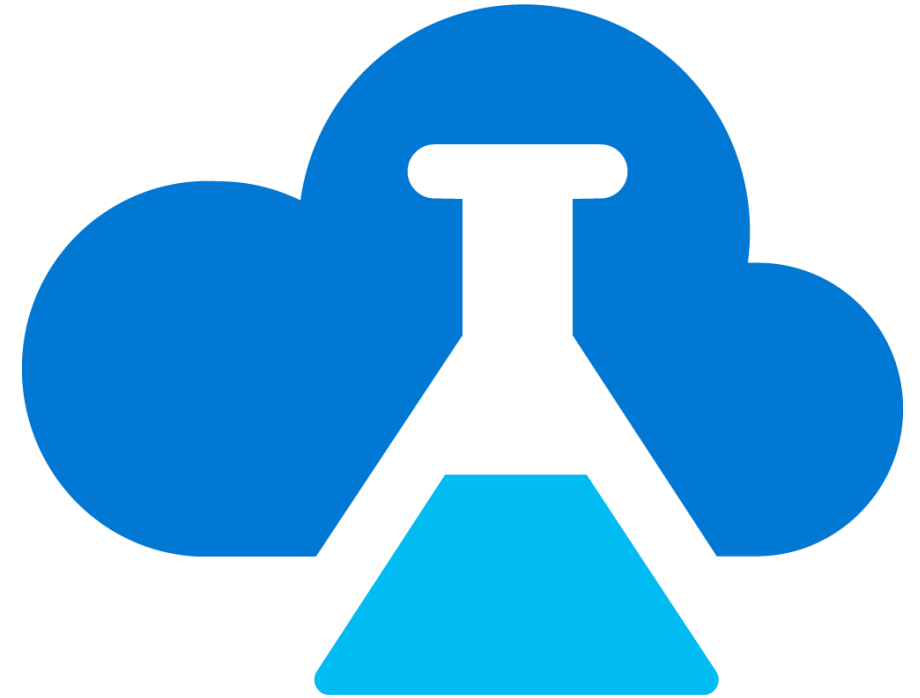
Computer labs in the cloud

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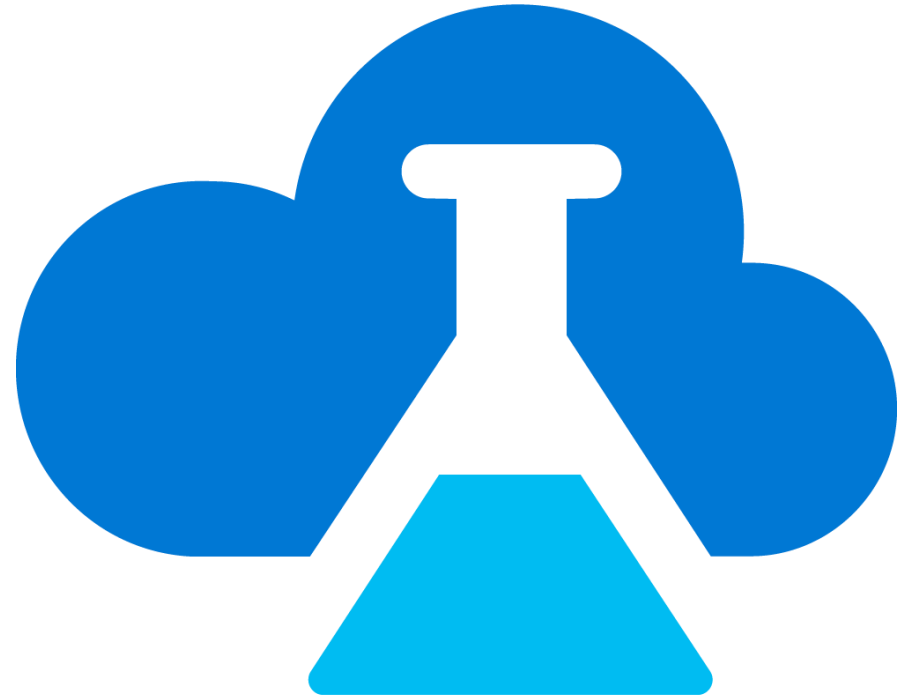
Azure Lab Services...

- provides lab resources to students in any location from any device
- enables faculty staff to create labs and manage their classes, reducing IT's support overhead
- has an all-inclusive pricing model to provide easy budgeting
- provides controls over scheduling and availability of lab resources to only pay for what is used



Azure Lab Services



- ✓ Simple
- ✓ Cost-effective
- ✓ Flexible




DEMO



Cost-effective

Azure Lab Services   50 Instance(s) x 40 Hours x 42 Lab Units, Size: Classroo...

 Azure Lab Services

INSTANCE:
Classroom Medium: 4 Cores(s), 8 GB RAM, 42 Lab Units, \$0.01 per hour per Lab Unit ▾

<input type="text" value="50"/>	×	<input type="text" value="40"/>	×	<input type="text" value="42"/>	×	<input type="text" value="\$0.01"/>	=	<input type="text" value="\$420.00"/>
Instance		Hours ▾		Lab Units		Per hour per Lab Unit		

Azure Online Pricing Calculator

50 students (instances) with 40 hours of allocated lab time per month.

Cost is all-inclusive of CPU, Storage, OS licensing and networking*

*Third party software licensing not included

Success
stories



"Microsoft creates an actual lab environment that doesn't require virtual servers....

It contextualizes and isolates the course environment for students and takes the burden off what the educational institution would normally have to do to create those spaces."

Jeff Krischel

IT architect at DeVry University

The image is a composite. On the right side, there is a photograph of a classroom or laboratory. In the foreground, a student is seen from the side, looking towards the front. In the background, other students are seated at desks, and a human skeleton model is visible on a desk. A large, semi-transparent blue rectangle is overlaid on the right side of the image, containing the text 'DeVry University' in white. The text is centered within the blue area.

DeVry University

IT

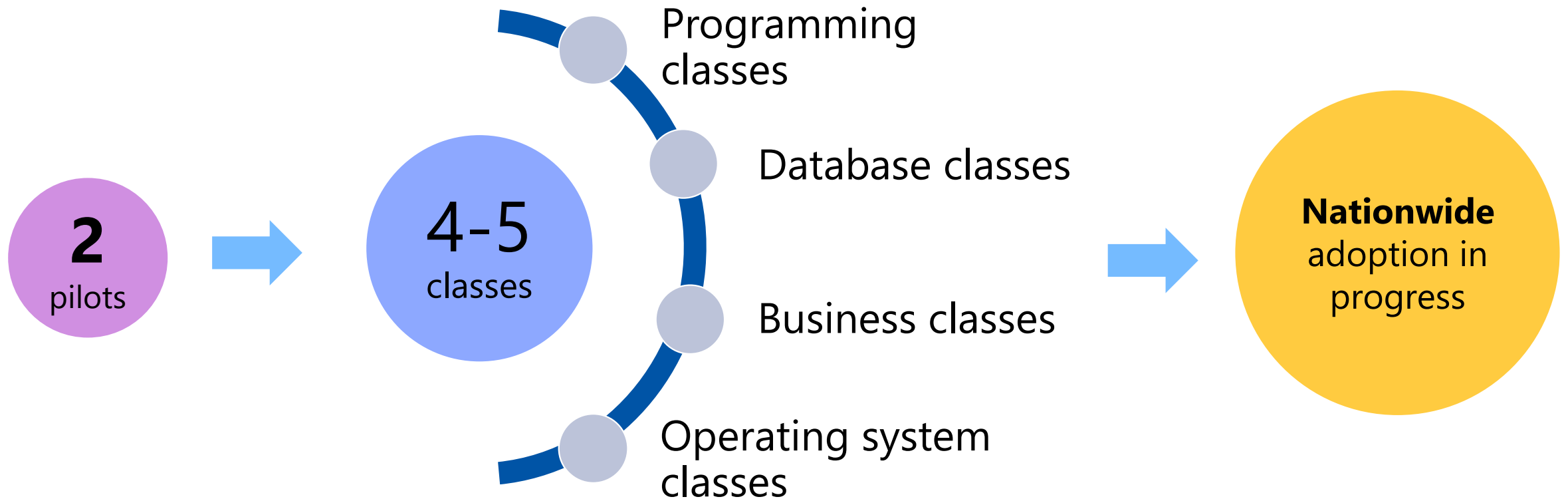
- ✓ Low overhead
- ✓ Easy management and scale
- ✓ Integration with existing AAD setup

Faculty

- ✓ Adapt curriculum quickly
- ✓ Flexible and easy setup and management labs

Students

- ✓ Easy hands-on learning experience
- ✓ Access from anywhere



"You can be at home or in another part of the world and still participate. We are setting up a large campus in Sri Lanka and the majority of the courses are around cyber and computer science.

What Azure Lab Services does is with minimal to no additional cost or effort we have the ability to scale."

Vito Forte

Chief Information Officer at Edith Cowan University

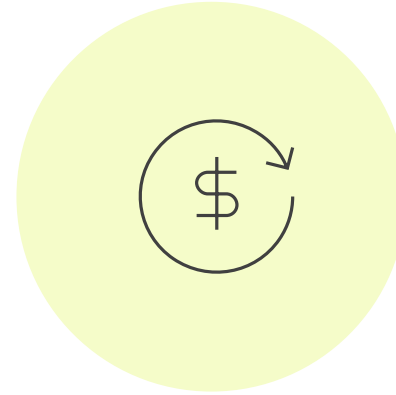
Edith Cowan University



>30,000 graduate &
undergraduate students



Aging on-prem infrastructure
Takes time and effort to maintain



Want to **reduce cost**
and infrastructure footprint



Expanding to overseas campuses
Need to support online students

Example Class types



Shell scripting on Linux

- ✓ Small VM size
- ✓ Minimal Ubuntu VM setup with Ruby language and development tools



Ubuntu Server 18.04 LTS VM

Ruby

Gedit or Visual Studio Code

Read more in our documentation:

<https://docs.microsoft.com//azure/lab-services/classroom-labs/class-type-shell-scripting-linux>

Deep learning in natural language processing

- ✓ Small GPU VM size
- ✓ Data Science Virtual Machine for Linux from the Azure marketplace

Read more in our documentation:

<https://docs.microsoft.com/azure/lab-services/classroom-labs/class-type-deep-learning-natural-processing>



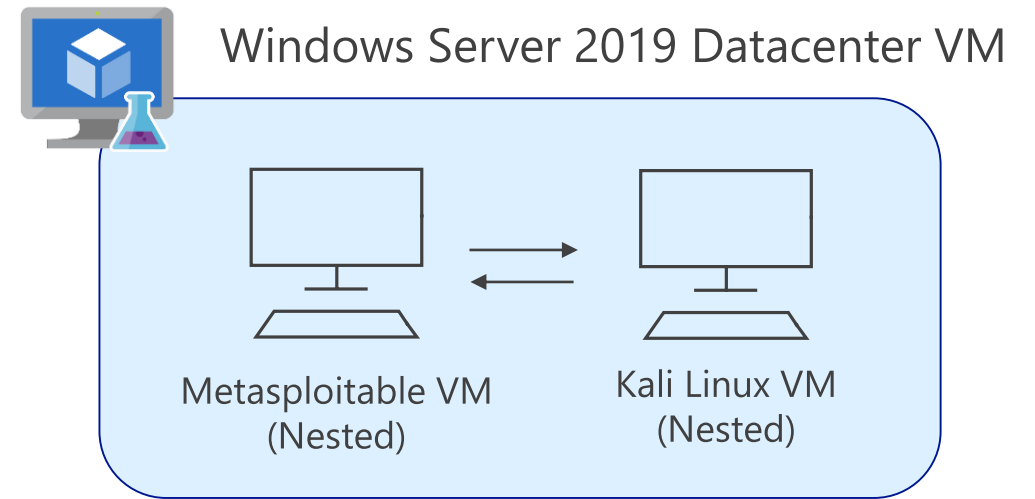
Data Science VM for Linux

- ✓ Microsoft Cognitive Toolkit
- ✓ TensorFlow
- ✓ MXNet
- ✓ Caffe, Caffe2
- ✓ Chainer
- ✓ NVIDIA DIGITS
- ✓ Deep Water
- ✓ Keras
- ✓ Theano
- ✓ Torch
- ✓ PyTorch
- ✓ Sample Jupyter notebooks
- ✓ Microsoft R Server
- ✓ Many other popular data science tools



Ethical hacking

- ✓ Medium (nested virtualization) VM size
- ✓ 2 Linux VMs within the same network



Read more in our documentation:

<https://docs.microsoft.com/azure/lab-services/classroom-labs/class-type-ethical-hacking>

FAQ

Q: What do I need to set up labs in Azure Lab Services?

A: An Azure subscription is needed to enable Azure Lab Services for your organization. Once it is enabled, lab creators and lab users do not need Azure subscriptions to use the service.

Q: What devices can I use?

A: Any device with a web browser and Remote Desktop client

Q: How can I control my costs?

A: Lab machines are only billed for running time. Scheduling and quotas can be set.

Q: Do the machines have internet access?

A: Yes

Q: Can I install my own software and data?

A: Yes, this is how the service is designed to work

Q: Do students use shared instances?

A: No, every student in the lab is allocated their own lab machine

Resources

Installing PowerShell Core: <https://docs.microsoft.com/en-us/powershell/scripting/install/installing-powershell>

Azure Lab Services / DevTest repository

<https://github.com/Azure/azure-devtestlab.git>

<https://github.com/francedot/Azure-Lab-Services-Tour/blob/master/CreateScheduleAZLabServices.ps1>

Enable remote desktop connection on Linux:

<https://docs.microsoft.com/bs-latn-ba/azure/lab-services/classroom-labs/how-to-enable-remote-desktop-linux>

https://github.com/francedot/Azure-Lab-Services-Tour/blob/master/enable_rdp_ubuntu.sh

Azure Lab Services or DevTest Labs:

<https://docs.microsoft.com/en-us/azure/lab-services/lab-services-overview#managed-lab-types-vs-devtest-labs>

Get started!

- ✓ Have a pilot class in mind? Contact us!
a-frbona@microsoft.com
azlabspilot@microsoft.com
- ✓ Create your first lab:
<https://azure.microsoft.com/services/lab-services/>
- ✓ Check out class type examples in documentation:
<https://docs.microsoft.com/azure/lab-services/classroom-labs/class-types>