

**UPDATE 13 APRIL 2019 :**

**Since leela zero 0.17 release, it is needed to use gcc-8 or later version, scripts have been updated to support it now, thanks to @ozymandias8 for testing and feedback in : <https://github.com/leela-zero/leela-zero/issues/2333>**

**VERSION OF 02 FEBRUARY 2019 :**

see changelog of new versions of this tutorial at the end of this message : <https://github.com/leela-zero/leela-zero/issues/1905#issue-366048983>

INSTRUCTIONS TO USE MICROSOFT AZURE FREE TRIAL WITH A TESLA V100 LOW PRIORITY COST :

all screenshots can be viewed in fullsize in this google drive folder if you prefer :

<https://drive.google.com/drive/folders/11kbc4plutXgD2g5Q0YnvfsV0Ctm14Yd?usp=sharing>

These instructions may seem very long but it's only because a lot of screenshots (46 screenshots !) and some repetitions are included to make it easier to understand.

It should take you less than 30 minutes to go through these instructions and start contributing for free with microsoft azure cloud free trial, as you can see in the video tutorial it's quite fast to do

(but you will have to wait a few hours for mail answer to quota request)

Before starting, i want to thank microsoft azure for their thorough mail support and commercial efforts (as when it was hardly not working, they kindly extended my free trial credit, as well as allowed me to have a free technical request to amend for all the mistakes and long time issues)

## Vocabulary :

batch account = a microsoft feature that allows you to create and manage pools of nodes

pool = equivalent of a "google cloud instances group", aka : a group that will automatically create VM machines/instances for us, run scripts on them automatically, and manage the instances after preemption due to low priority price

node = a VM machine/an instance that belongs to a pool, regardless of whether it is full cost or low priority

NC6v3 = cheapest Tesla V100 instance

NCv3 series = all possible Tesla V100 instances

preemption/preempted = stopped : when a low priority node is stopped by microsoft azure after some time of running

the leela zero script : by that i am referring to the job that will compile and run leela zero in job manager task, inside our job schedule, but this is easier to refer to it like that

i will add more vocabulary if more azure words are unclear

## General idea :

- The instructions below are entirely automated : after being set up correctly, you dont have to do anything, except cancelling your free trial subscription when your free credit ends, in order to avoid being charged
- in this tutorial, we will activate the free trial for microsoft azure. This free trial is free of charge as long as you cancel it when your free credit ends
- after starting the free trial, we will activate the "pay as you go" option (necessary, free with a need to cancel your free trial when credit ends), request a quota increase to use tesla V100 gpus in a batch account
- on microsoft azure, unlike for google cloud, all can be set up and managed directly from the azure portal website (no need to connect via SSH to your instance, logs are available in stdout.txt web page as we will see later)
- then in our batch account we will create a pool of one Tesla V100 low priority node
- low priority nodes are much cheaper (= they consume free credit much slower) because microsoft provides them with the excess hardware capacity they dont use at the moment we request it.
- but this much lower price has the drawback that our node will not be always available : microsoft azure can preempt = stop it anytime they need the hardware capacity for other customers, as explained below in "low priority prices" part. This stop happens rarely, on average once every 12 hours from my experience (can vary with regions)
- however this will not be a problem because we will use a job schedule for our low priority node in our pool in our batch account
- after our low priority pool is created and job schedule starts, the batch account will take care of automatically recreating our node everytime it gets preempted, as well as rerunning the leela zero job schedule automatically : you dont need to do anything for that (except cancelling your free trial when your credit ends, to avoid being charged)
- the batch account will keep retrying to recreate our node and run the leela zero script on it until it finds hardware available in the region the batch account belongs to
- when you want to stop contributing (consuming free trial credit), just delete your pool (the batch account is free so you dont have to delete it, plus if you delete it you'll have to remake a quota request for nc6v3 batch in your next batch account, all the more reason not to delete your batch account)
- when your free credit ends or when you reach day 30 of your azure account, you have to manually cancel it or you'll get charged because of the "pay as you go" option

## Game production speed :

About same speed than google cloud with a Tesla V100, slightly faster :

around 5-6 games in 20 minutes, (selfplay -r 5 only, as no resign games are much slower), a bit less with the datascience image provided by azure (when they update it to ubuntu 18.04 and latest gpu drivers, it should be faster)

You will be able to run this powerful Tesla V100 h24 for 250 hours entirely free of charge, as explained below !

The screenshot shows the Microsoft Azure portal interface. On the left, there's a sidebar with navigation links: Home, Overview, General, Properties, Files, Recent tasks, Start task info, Certificate references, and Users. The main area displays a Batch account named 'testp100'. It shows details like Pool ('test81'), VM size ('standard\_nc6s\_v3'), Operating System ('Canonical UbuntuServer 18.04-LTS (latest)'), and Total tasks run (3). Below this, there's a 'See more' link. To the right, there's a detailed view of a file named 'workitems/test81/job-1/test81/stdout.txt'. This view includes fields for File name, Creation time, URL, Last modified, Content type, and Size. The content of the file is shown as a large JSON object containing game data, black and white hash values, and various configuration options.

## Video tutorial :

as microsoft azure instructions are very unintuitive, a video tutorial will be provided to you here

-- TO ADD LATER--

however, for simplicity, this tutorial will skip the prerequisites steps (it will start directly at batch account creation then skip quota increase request, because the mail answer takes a few hours to come)

## Start Microsoft Azure Cloud Free trial

go here : <https://azure.microsoft.com/en-us/offers/ms-azr-0044p/>

just like for google cloud, to avoid abuse of their hardware ressource, fake accounts, fake id, etc, microsoft will ask you to check your id with a valid credit card and/or a valid phone number

however you will not be charged anything during the free trial, this is just a security check, as explained for google cloud instructions

## Low Priority Price and pricing information :

200 dollars free trial credit

Tesla V100 = 0.796\$/hour => 250 hours for free => 10,4 days of tesla v100 h24 7/7

low priority prices are much cheaper (80% cheaper = will consume free credit 80% slower), as you can see here :

<https://azure.microsoft.com/en-us/pricing/details/batch/>

## NCv3 series

NCv3 series virtual machines is a new addition to the GPU product family offering the next generation of our popular NC-series machines, powered by NVIDIA Tesla V100 GPUs. Customers can take advantage of these updated GPUs for traditional HPC workloads that will benefit from a performance boost, powering scenarios like reservoir modeling, DNA sequencing, protein analysis, Monte Carlo simulations, and others. These new GPUs can provide 1.5 times the computational performance of the current NCv2-series. And like our other NC series, we offer a configuration, NC24r v3, with InfiniBand networking for workloads that require fast interconnect, like Oil and Gas, Automotive, and Genomics to also accelerate scale out capability as well as improved single instance performance.

ADD TO ESTIMATE	INSTANCE	CORE	RAM	TEMPORARY STORAGE	GPU	PAY AS YOU GO (LOW PRIORITY)	PAY AS YOU GO (NORMAL PRIORITY)	ONE YEAR RESERVED (% SAVINGS)	THREE YEAR RESERVED (% SAVINGS)
+ NC6 v3	6	112.00 GiB	336 GiB	1X V100	\$0.796/hour	\$3.978/hour	\$2.535/hour (~36%)	\$1.507/hour (~62%)	
+ NC12 v3	12	224.00 GiB	672 GiB	2X V100	\$1.592/hour	\$7.956/hour	\$5.068/hour (~36%)	\$3.014/hour (~62%)	
+ NC24 v3	24	448.00 GiB	1,344 GiB	4X V100	\$3.183/hour	\$15.92/hour	\$10.14/hour (~36%)	\$6.028/hour (~62%)	
+ NC24r v3	24	448.00 GiB	1,344 GiB	4X V100	\$3.501/hour	\$17.51/hour	\$11.15/hour (~36%)	\$6.631/hour (~62%)	

to have such a lower price, they have the drawback :

this is possible because the cloud companies provide them with the excess hardware capacity they have, however if their customers need them, our node will get preempted (stopped)

but this is not a problem for us, because our pool will automatically try to recreate our low priority node until hardware is available again, and it will then run the script to install and run leela zero automatically, without needing anything for you to do

note : when a low priority node is preempted, it stops its free credit consumption because it is not running anymore, "Pay as you" go required to use low priority nodes, so if you do not manually cancel your subscription when free credit ends, you'll get charged Free trial cannot last more than 30 days (after that you will be charged if you dont cancel your subscription), which is not an issue because with a Tesla V100 credit will end after 10,4 days of h24 computing

To check remaining free trial credit, in the left panel go to :

Cost Management + Billing -> Overview -> My subscriptions

Click on your subscription id :

The screenshot shows the Azure Cost Management + Billing interface. On the left, there's a navigation sidebar with various options like Home, Cost Management + Billing, Overview, Management groups, Cost Management, Diagnose and solve problems, Organization billing, Account overview, Cost analysis, Usage + charges, Credits, Individual billing, Account overview, Subscriptions, and Invoices. The main area is titled 'Cost Management + Billing'. It has three sections: 'Organizations overview' (which says 'You don't have any billing accounts.'), 'My subscriptions' (which lists a single subscription with a red box around the 'SUBSCRIPTION ID' column), and 'Other subscriptions' (which says 'You don't have access to anyone else's subscriptions in the current directory. Don't see a subscription? Switch directories'). The 'My subscriptions' section includes columns for NAME, SUBSCRIPTION ID, OFFER, STATUS, and CURRENT COST. The first subscription listed has a 'Free Trial' offer, an 'Active' status, and a current cost of €119.92.

Then a new window will open, and after a few seconds it will show spent credit as well as estimate your future consumption if you keep at the same rate : You can see it in the screenshot below in the next part : "0) prerequisites"

Note : on microsoft azure, low priority instances can last up to 7 days (vs 24 hours for google cloud)  
Here are the actual instructions now :

## 0) prerequisite : activate the "pay as you go" subscription option,

meaning when free credit ends you will get charged, so you have to manually cancel your subscription when your free credit ends

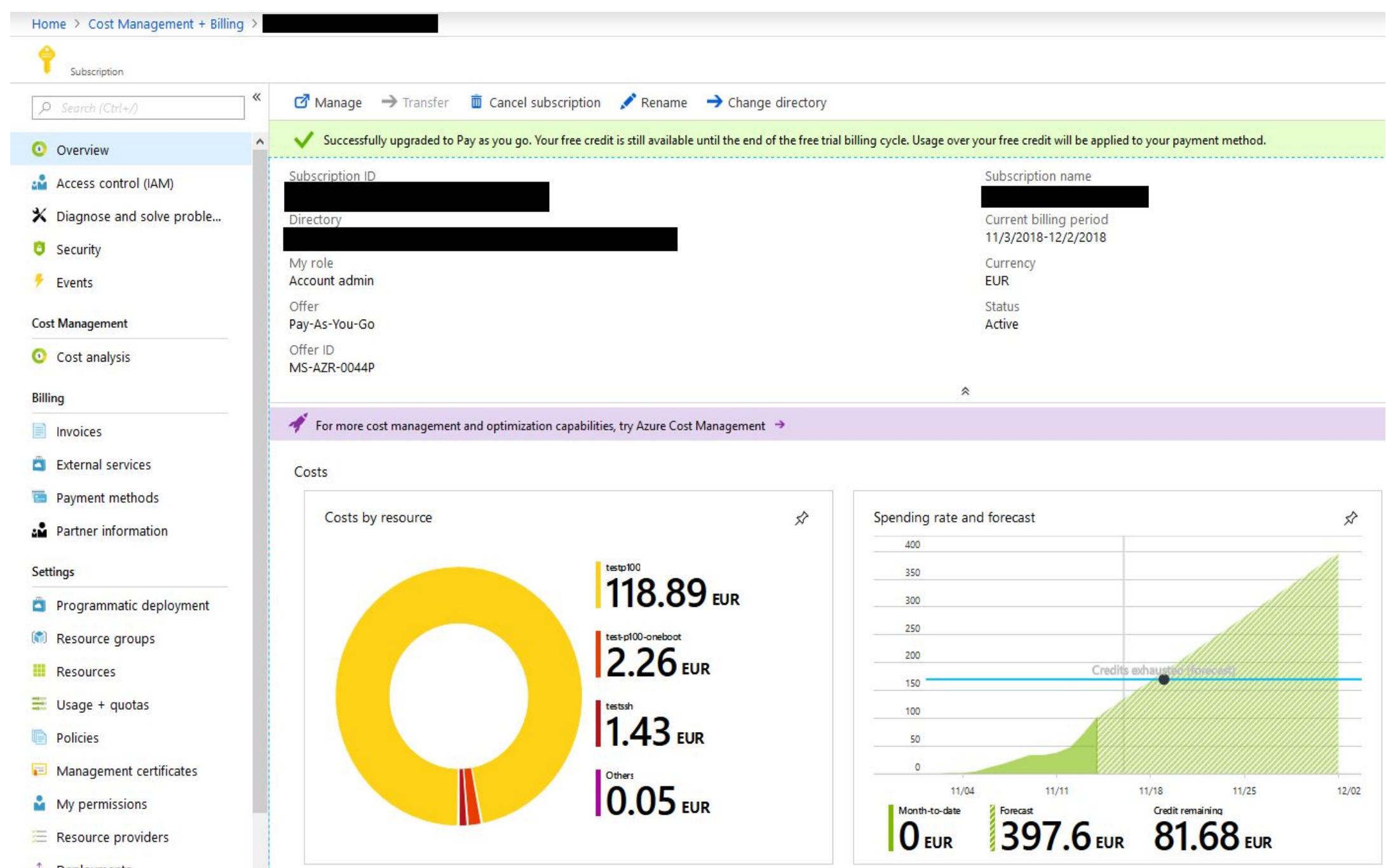
To activate "pay as you go", go here :

<https://azure.microsoft.com/en-us/offers/ms-azr-0003p/>

Click "purchase now" (we will not purchase anything, it will remain free as long as you have free credit, but dont forget to cancel your subscription when free credit ends)  
And answer what is asked of you

When pay as you go activation is successful, you will see it in billing tab with the green line :

"successfully upgraded to pay as you go. Your free credit is still available until the end of the free trial billing cycle. Usage over your free credit will be applied to your payment method".



## 1) create a batch account (free)

Without a batch account ressource, you cant create low priority VMs (that are 80% cheaper = will consume free credit 80% slower), as explained here :  
<https://azure.microsoft.com/en-us/pricing/details/batch/>

To create a batch account, an easy way is to write "batch" in azure portal search bar, and click on "batch accounts"  
then click on "add" on top left

Home > All resources

## All resources

**Add** **Edit columns** **Refresh** | **Assign tags** **Delete**

**Subscriptions:** Paiement à l'utilisation

Filter by name... All resource groups

6 items  Show hidden types ?

<input type="checkbox"/>	NAME	LOCATION
<input type="checkbox"/>	f22b434e-92d8-43dc-8415-351611331a85-azurebatch-cloudserviceload	zurebatch
<input type="checkbox"/>	f22b434e-92d8-43dc-8415-351611331a85-azurebatch-cloudservicenetv	zurebatch
<input type="checkbox"/>	f22b434e-92d8-43dc-8415-351611331a85-azurebatch-cloudservicepub	zurebatch
<input type="checkbox"/>	testp100	West Europe
<input type="checkbox"/>	testp100	West Europe
<input type="checkbox"/>	vnet-westeurope-azurebatch	West Europe

batch account

RESOURCES 0 results

RESOURCE GROUPS 0 results

SERVICES

**Batch accounts** Batch accounts

MARKETPLACE 0 results

DOCUMENTATION All 4 results [View](#)

Create a **Batch account** in the Azure portal | Microsoft Docs  
Note. When creating a Batch account, you can choose between two pool allocation modes: user s...

Run tasks under user accounts in Azure Batch | Microsoft Docs  
Azure Batch provides two types of user accounts for running tasks: Auto-user accounts. Auto-user...

Service quotas and limits for Azure Batch | Microsoft Docs  
You can run multiple Batch workloads in a single Batch account, or distribute your workloads amo...

Manage **Batch account** resources with the client library for ...  
Note. While this article focuses on the programmatic management of your Batch accounts, keys, a...

Searching all subscriptions. [Change](#)

Home > Batch accounts > New Batch account

**Batch accounts** << ⌂ X

**New Batch account**

Provide basic Batch account info

**Basics** Advanced Tags Review + create

Microsoft Azure Batch is a fully-managed cloud service that provides job scheduling and compute resource management for developers in organizations, independent software vendors, and cloud service providers. Both new and existing high performance computing (HPC) applications running on workstations and clusters today can be readily enabled to run in Azure at scale, and with no on-premises infrastructure required. Common application workloads include image and video rendering, media transcoding, engineering simulations, Monte Carlo simulations, and software test execution, among others; all highly parallel, computationally intensive workloads that can be broken into individual tasks for execution. With Azure Batch, you can scale from a few VMs, up to tens of thousands of VMs, and run the largest, most resource-intensive workloads. [Learn more](#)

**PROJECT DETAILS**

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

\* Subscription [dropdown] (Red box)

  \* Resource group [dropdown] (Red box)  
    batch  
    Create new

**INSTANCE DETAILS**

\* Account name [text input] (Red box)  
  testforleelazero  
  .eastus.batch.azure.com

\* Location [dropdown] (Red box)  
  East US



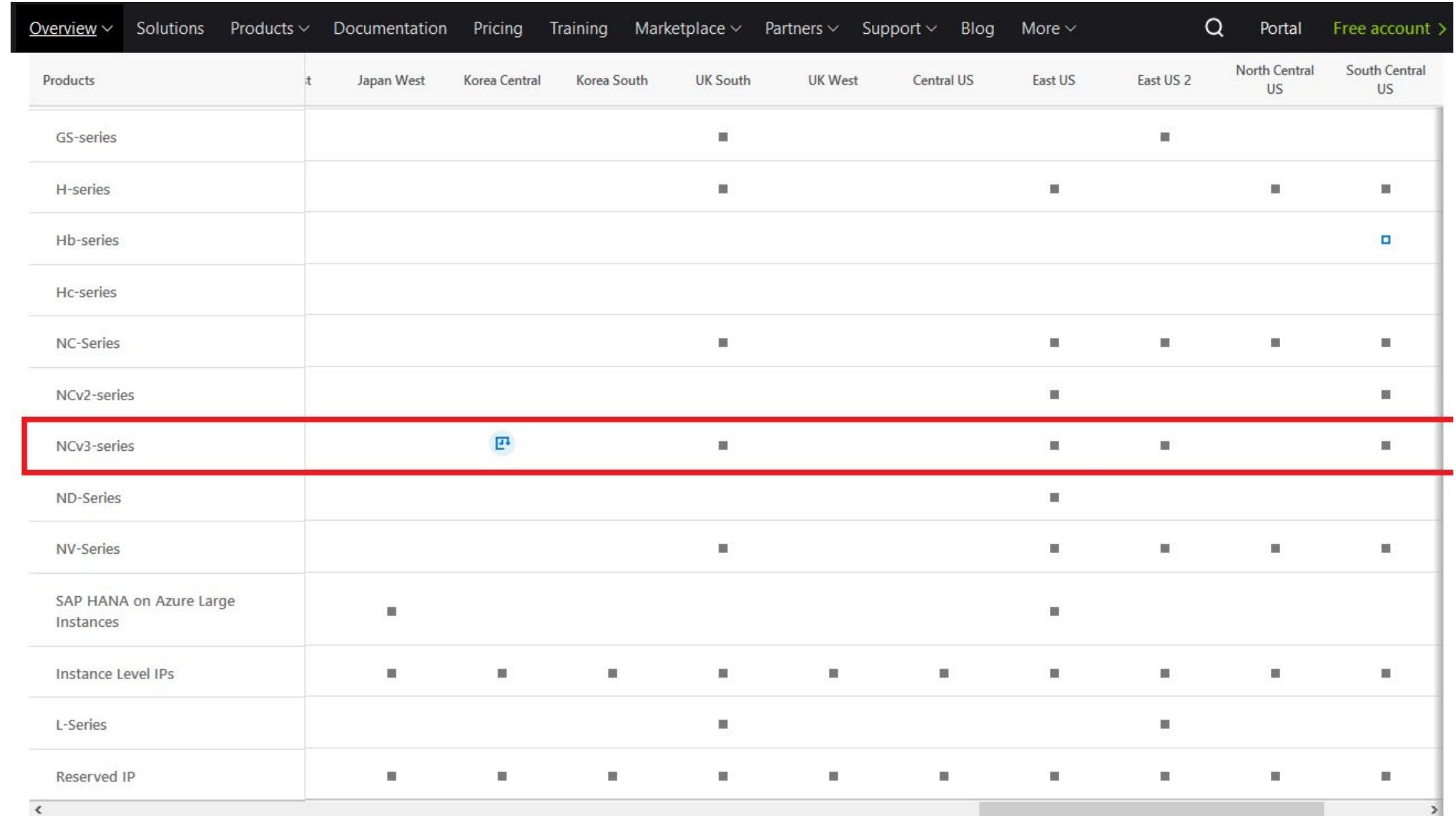
**Review + create** (Red box)

Previous

Next: Advanced >

As you can see in the screenshots above, i already had a batch account named testp100 located in west europe

The batch account name can be any name, but the name needs to be unique (you have to find a name no one else is using)  
 For the region, this batch account needs to be in any region providing Tesla V100 (for example East US or West Europe for this tutorial)  
 you can check availability of Tesla V100 here (NCv3 series line) :  
<https://azure.microsoft.com/en-us/global-infrastructure/services/?products=virtual-machines&regions=all>



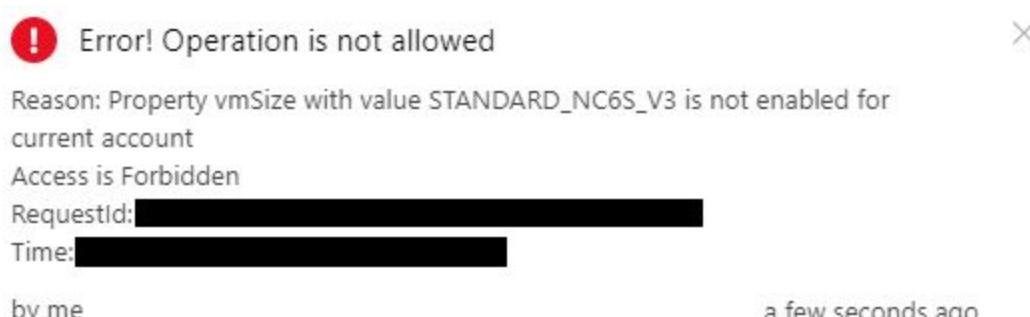
The screenshot shows a grid where rows represent GPU series and columns represent regions. A red box highlights the 'NCv3-series' row. The regions listed are Japan West, Korea Central, Korea South, UK South, UK West, Central US, East US, East US 2, North Central US, and South Central US. Most regions show availability (indicated by a small square icon), except for Korea Central, Korea South, and UK South which are empty.

Products	Japan West	Korea Central	Korea South	UK South	UK West	Central US	East US	East US 2	North Central US	South Central US
GS-series				■				■		
H-series				■			■		■	■
Hb-series										■
Hc-series										
NC-Series				■			■	■	■	■
NCv2-series							■			■
NCv3-series	■			■			■	■		■
ND-Series							■			
NV-Series				■			■	■	■	■
SAP HANA on Azure Large Instances	■						■			
Instance Level IPs	■	■	■	■	■	■	■	■	■	■
L-Series				■				■		
Reserved IP	■	■	■	■	■	■	■	■	■	■

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## 2) prerequisite : create a support request of quota increase specifically to batch accounts,

because with default settings NC6v3 are access denied, even if you increase quota for manual VMs  
 if you try to create a NC6v3 with batch account, you'll get the access denied message even if you increase quota for compute/vm



So what i suggest you do is to open 2 quota requests (1. for compute/vm for nc6v3 and 2. for batch, and if you still get access denied when trying to create nc6v3 with batch account, email back the support)

To do that, in azure portal website, go to (on left panel) :  
 Help + Support -> New Support request :

- Then for the first request, choose compute/vm

add the ressources which you want to increase its quota , here NCSv3 which is Tesla V100 (plus NC and NCv2 which are tesla K80 and tesla P100 if you want)  
 Increase number of cores to an enough number, for example 20 cores (when we create one NC6v3 VM, since the cpu is a 6 core cpu it is counted as 6 cores of your quota)

Validate and go to next page

Choose B-Moderate priority

then enter your personal information : i recommend 24x7 email english language

Home > Help + support > New support request > Basics

New support request X

HELP + SUPPORT

1 Basics >

2 Problem >

3 Contact information >

**Basics** X

NEW SUPPORT REQUEST

\* Issue type  
Service and subscription limits (quotas)

\* Subscription  
[REDACTED]

Can't find your subscription? [Show more](#) ⓘ

\* Quota type  
Compute/VM (cores/vCPUs) subscription limit increases

\* Support plan  
Basic support

[Next](#)

**New support request**

HELP + SUPPORT

**1** Basics ✓**2** Problem >**3** Contact information >**Problem**

NEW SUPPORT REQUEST

**Quota details**

X

\* Severity ⓘ

\* Quota details

Provide details for your quota request &gt;

File upload ⓘ

\* Deployment model ⓘ

\* Location ⓘ

\* SKU family

SKU SERIES	CURRENT	NEW LIMIT	
NCSv3 Series	100	101	✓ X
NCSv2 Series	100	101	✓ X
NC Series	100	101	✓ X

[Learn about Compute \(cores/vCPUs\) quota increase requests](#)**Next****Save and continue**

New support request

HELP + SUPPORT

- 1 Basics ✓
- 2 Problem ✓
- 3 Contact information >

Contact information

NEW SUPPORT REQUEST



Contact options

\* Preferred contact method ⓘ

Response

 Business Hours

24x7

\* Language

The available languages are limited because of 24x7 response

Contact information

\* First name

\* Last name

\* Email

Who else should we email? ⓘ

Phone number



\* Country/region

Save contact changes for future support requests.

By clicking create you accept the [terms and conditions](#). View our [privacy policy](#).

Create

- Then for the second request, choose batch :

add the ressources which you want to increase its quota,

Increase number of cores to an enough number, for example 20 cores (when we create one NC6v3 VM, since the cpu is a 6 core cpu it is counted as 6 cores of your quota)

Validate and go to next page

Choose B-Moderate priority

then enter your personal information : i recommend 24x7 email english language  
you will be notified by email when your quota request is approved

## New support request

HELP + SUPPORT

### Basics

NEW SUPPORT REQUEST

X

1 Basics >

2 Problem >

3 Contact information >

\* Issue type

Service and subscription limits (quotas)

v

\* Subscription

[REDACTED]

v

Can't find your subscription? [Show more](#) ⓘ

\* Quota type

Batch

v

\* Support plan

Basic support

v

Next

**New support request**

HELP + SUPPORT

**1** Basics ✓**2** Problem >**3** Contact information >**Problem**

NEW SUPPORT REQUEST

\* Severity ⓘ

B - Moderate impact

\* Quota details

Provide details for your quota request &gt;

File upload ⓘ

Select a file

**Quota details**

\* Location

West Europe

\* Quota type ⓘ

Per batch account

\* Batch account

testp100 (/subscriptions/[REDACTED])

\* Resources

4 selected

Please enter the limit for any resource(s) you are requesting:

RESOURCES	CURRENT LIMIT	NEW LIMIT
Dedicated cores per batch account	50	51 ✓ ✕
Active jobs and job schedules per batch account	100	101 ✓ ✕
Low-priority cores per batch account	50	51 ✓ ✕
Pools per batch account	20	21 ✓ ✕

[Learn more about Azure batch service quota](#)**Next****Save and continue**

New support request		Contact information
		NEW SUPPORT REQUEST
1	Basics	<input checked="" type="checkbox"/>
2	Problem	<input checked="" type="checkbox"/>
3	Contact information	<input type="checkbox"/>
<p><b>Contact options</b></p> <p>* Preferred contact method <small>i</small></p> <p>Email <input type="text"/></p> <p>Response</p> <p>Business Hours <input checked="" type="radio"/> 24x7 <input type="radio"/></p> <p>* Language</p> <p>English <input type="text"/></p> <p><small>i The available languages are limited because of 24x7 response</small></p> <p><b>Contact information</b></p> <p>* First name <input type="text"/></p> <p>* Last name <input type="text"/></p> <p>* Email <input type="text"/></p> <p>Who else should we email? <small>i</small> <input type="text"/></p> <p>Phone number <input type="text"/></p> <p>* Country/region <input type="text"/></p> <p><input checked="" type="checkbox"/> Save contact changes for future support requests.</p> <p>By clicking <b>Create</b> you accept the terms and conditions. View our <a href="#">privacy policy</a>.</p>		

if after quota request is approved you still get error message, you will have to email them and specify that you get access denied and that it is for batch account for example, this is the email they asked me to send :

Hello,

Thanks for your response.

As per your previous email I can understand you want us to increase the batch account cores for Ncsv3 and Ncsv2 series.

Request you to please confirm below details so that we can go ahead and engage capacity team.

Batch Account Name: testp100

Region: West Europe

VM Type: NC6v3 (and NC6v2 too)

Additional Quantity: 0 (Please add Zero if you do not have the current Limit)

Current Limit: 0 (Please add Zero if you do not have the current Limit)

New Limit: 50 cores (for NC6v2 : 50 cores too)

Dedicated or Low priority : Low priority for all the 50 cores (same for the NC6v2)

They may ask you some personal data during this process but in the end it will work (it did for me at least)

you will have to wait a few hours to get an email answer (notification of approval generally)

### 3) in the batch account, create a pool of low priority node(s) :

to go in your batch account, go to :

All Ressources -> yourbatchaccount (testp100 in my example) :

All resources				
<a href="#">Home</a> > All resources				
<a href="#">All resources</a>				
<a href="#">Add</a>	<a href="#">Edit columns</a>	<a href="#">Refresh</a>	<a href="#">Assign tags</a>	<a href="#">Delete</a>
<a href="#">Subscriptions:</a> [REDACTED]	<a href="#">Filter by name...</a>	<a href="#">All resource groups</a>	<a href="#">All types</a>	<a href="#">All locations</a>
6 items	<input type="checkbox"/> Show hidden types <small>?</small>			
<input type="checkbox"/>	<a href="#">NAME ↑↓</a>	<a href="#">TYPE ↑↓</a>	<a href="#">RESOURCE GROUP ↑↓</a>	<a href="#">LOCATION ↑↓</a>
<input type="checkbox"/>	f22b434e-92d8-43dc-8415-351611331a85-azurebatch-cloudserviceloadbalancer	Load balancer	vnet-westeurope-azurebatch	West Europe
<input type="checkbox"/>	f22b434e-92d8-43dc-8415-351611331a85-azurebatch-cloudservicenetworksecurit...	Network security group	vnet-westeurope-azurebatch	West Europe
<input type="checkbox"/>	f22b434e-92d8-43dc-8415-351611331a85-azurebatch-cloudservicepublicip	Public IP address	vnet-westeurope-azurebatch	West Europe
<input type="checkbox"/>	<b>testp100</b>	Batch account	batch	West Europe
<input type="checkbox"/>	testp100	Storage account	testgroup	West Europe
<input type="checkbox"/>	vnet-westeurope-azurebatch	Virtual network	vnet-westeurope-azurebatch	West Europe

then in this batch account, create a pool as you can see in the screenshots below, with the following settings :  
Pools -> Add

**testp100 - Pools** Batch account

**Add** **Add (JSON editor)** **Columns** **Refresh**

Queries: All pools

Advanced query

Search for pool by ID or display name

Pagination effort limit: 1 Actual: 1

POOL ID	DEDICATED NODES	LOW-PRIORITY NODES	CURRENT CORES	VM SIZE	ALLOCATION STATE
No pools were found for this Batch account					

**Settings**

- Quick start
- Properties
- Quotas
- Storage account
- Keys
- Locks
- Automation script

**Features**

- Applications
- Pools**
- Jobs
- Job schedules
- Certificates

**Monitoring**

- Alerts
- Metrics
- Diagnostic settings

**Support + troubleshooting**

- New support request

## Add pool

testp100

### POOL DETAIL

\* Pool ID  ✓

\* VM size ([View full pricing details](#))  ✓

Display name  ✓

### OPERATING SYSTEM



Select "Marketplace" to deploy VMs using an Azure Marketplace image, "Cloud Services" to deploy Cloud Service worker role VMs, "Custom Image" to deploy using a custom VM image, or "Graphics and rendering" if you want to deploy VMs with premium graphics and rendering applications pre-installed.

Image Type  ✓

\* Publisher  ✓

\* Offer  ✓

\* Sku  ✓

Batch Node Agent SKU ID

Enable automatic updates (Windows only)

Data disks ✓  
0 data disks"/> ✓

Container configuration

### GRAPHICS AND RENDERING LICENSING

OK

## Add pool

testp100

### Data disks

Data disks [i](#)

0 data disks

### Container configuration [i](#)

None

Custom

### GRAPHICS AND RENDERING LICENSING

#### Metered licenses for rendering

Metered licenses for rendering [i](#)

Select software and pricing

### SCALE

#### Mode

Fixed

Auto scale

#### Target dedicated nodes [i](#)

0

#### Low priority nodes [i](#)

1



Target cores: 6

#### Resize timeout [i](#)

15

minutes

### START TASK

#### Start task [i](#)

Disabled



### OPTIONAL SETTINGS

#### Max tasks per node [i](#)

24

#### User accounts

User accounts [i](#)



Default

OK

## Add pool

testp100

Max tasks per node

User accounts

User accounts

Default

Task scheduling policy

Inter-node communication  Yes  No

Application packages

Application packages

0 packages

Certificates

Certificates

0 certificates

## VIRTUAL NETWORK

Pool endpoint configuration

Inbound NAT pool

n/a



Batch accounts with image type of marketplace, custom image and graphics and rendering (IaaS) only support Azure resource manager Vnet. Batch accounts with image type of cloud services (PaaS) only support classic Vnet. Any changes made in image type selection will result mismatched Vnet reset.

Network Configuration

Network Configuration

Select a virtual network

Subnet

OK

## Choose virtual network



These are the virtual networks in the selected subscription and location 'West Europe'.

vnet-westeurope-azure...

- pool id : any name (testworking in this example)
- vm size : NC6v3 (Tesla V100 less consuming option : 6 cpu cores and 1 gpu)
- image type : we'll choose the data science custom image for batch accounts ubuntu, provided by microsoft  
at the time of the tutorial, it can be found as you can see in the screenshots in : Marketplace (Linux/Windows) -> microsoft-dsvm -> linux-data-science-vm-ubuntu->linuxdsvmbuntu  
this is a custom image provided by microsoft azure that comes with gpu driver preinstalled, as well as cuda cudnn tensorflow opencl and many other tools using this custom image will enable us to avoid rebooting our system to install gpu driver, which makes the rest of the instructions a lot easier !  
if you want more details about this image you can go here :  
<https://azuremarketplace.microsoft.com/en-us/marketplace/apps/microsoft-ads.linux-data-science-vm-ubuntu?tab=Overview>
- data disks : no need to change it (no data disk, we don't need it, the system disk is enough)
- target dedicated nodes : 0
- low priority nodes : 1
- resize timeout : no need to change it
- start task : disabled (instead, we will set up a scheduled job later in this tutorial)
- max tasks per node : max (here 24)
- user accounts : no need to change it
- task scheduling policy : no need to change it (Pack : every node of the pool will have to run all tasks)
- network configuration : during pool creation, you will need to create a network ressource if you dont have one already (free), any network will do  
to create a new network ressource, click on "create new" : any network name with default settings will do fine, for example (in my example the network is vnet-westeurope-azurebatch)

Then click "OK" to validate and create our pool

if the validation is a success, we will have to wait a few minutes until our pool is resizing (from 0 to 1 node : 0->1) to create the one low priority node we requested

So we enter the main page of batch account

The screenshot shows the Azure portal interface for managing a batch account named 'testp100'. On the left, a navigation sidebar lists various resources like 'f22b434e...' and 'testp100'. Under the 'testp100' section, the 'Pools' option is selected. The main content area displays a table of pools. A new row is being added for a pool named 'testworking'. The table includes columns for POOL ID, DEDICATED NODES, LOW-PRIORITY NODES, CURRENT CORES, VM SIZE, and ALLOCATION STATE. The 'LOW-PRIORITY NODES' column shows '0 -> 1', indicating the pool is currently resizing. A success message at the top right states 'Pool created successfully'.

POOL ID	DEDICATED NODES	LOW-PRIORITY NODES	CURRENT CORES	VM SIZE	ALLOCATION STATE
testworking	0	0 -> 1	0	standard_nc6s_v3	Resizing

This screenshot shows the same Azure portal interface after some time has passed. The pool 'testworking' is now listed in the table with a status of '1' in the 'LOW-PRIORITY NODES' column, indicating it has completed its resize. The 'ALLOCATION STATE' is now 'Steady'. The rest of the table data remains the same: POOL ID is 'testworking', DEDICATED NODES is '0', CURRENT CORES is '6', and VM SIZE is 'standard\_nc6s\_v3'.

POOL ID	DEDICATED NODES	LOW-PRIORITY NODES	CURRENT CORES	VM SIZE	ALLOCATION STATE
testworking	0	1	6	standard_nc6s_v3	Steady

but if the validation fails with a acces denied for nc6v3, email the support as explained in the prerequisites "2) quota requests" of this tutorial, until they unlock the nc6v3 for you

we are now finished with pool creation, but if you want to come back to this pool later, you can find it in azure portal website (on left panel) :  
All ressources -> yourbatchaccount (testp100 in this example) -> Pools -> yourpool (testworking in this example)

## 4) for this pool, create a job schedule :

to sum up things, so far we created a batch account and in this batch account we created a pool that contains one low priority nc6v3 node and 0 dedicated node

in this example, i created the batch account testp100 , then in this batch account we created the pool testworking  
in this example, i chose the batch account testp100 to be located in west europe, because this region has tesla V100 available

now, we will create a job schedule for this pool

the job scheduled will be applied to all nodes of the pool we choose,  
in this example it will be applied the only node we have in this pool : 1 low priority nc6v3 (tesla v100) node  
the job schedule will automatically run our script to install and run leela zero with autogtp (to contribute)

this needs to be done only once, then because the job is scheduled with a recurrence time and a few other settings, the job schedule will keep being restarted automatically (you dont need to do anything for that)

To create a job schedule, go in your batch account, then click on "Add" as you see in the screenshots below :

If you are lost, this is the full path, starting from microsoft azure portal website :

All ressources -> yourbatchaccount (in this example testp100 in western europe) -> Job Schedule

The screenshot shows the Azure portal interface for the 'testp100' batch account. The left sidebar lists various resources: All resources, Overview, Activity log, Access control (IAM), Tags, Settings, Quick start, Properties, Quotas, Storage account, Keys, Locks, Automation script, Features, Applications, Pools, Jobs, Job schedules (which is selected and highlighted with a red box), Certificates, Monitoring, Alerts, Metrics, Diagnostic settings, Support + troubleshooting, and New support request.

The main content area displays the following details for the batch account:

- Resource group (change): batch
- Status: Online
- Location: West Europe
- Subscription (change): [REDACTED]
- Subscription ID: [REDACTED]
- Tags (change): Click here to add tags

Below these details are four monitoring charts:

- Core minutes:** A line chart showing core usage over time. It shows a sharp peak at 6 PM reaching approximately 5.5 units, followed by a dip and then a steady state around 3.24 units. The Y-axis ranges from 0 to 6. The X-axis shows times from 6 PM to 6:45 PM.
- Failed tasks:** A line chart showing task failure events over time. The Y-axis ranges from 0 to 100. The X-axis shows times from 6 PM to 6:45 PM. The chart shows a single data point at 0.
- Task states:** A line chart showing task states over time. The Y-axis ranges from 0 to 100. The X-axis shows times from 6 PM to 6:45 PM. The chart shows a single data point at 100.
- Node states:** A line chart showing node states over time. The Y-axis ranges from 0 to 1. The X-axis shows times from 6 PM to 6:45 PM. The chart shows a single data point at 1.

Note : To make screenshots bigger and easier to read, i removed the left panel of all the screenshots below

# testp100

Batch account

Search (Ctrl+)

Refresh Delete Keys Open in Batch Explorer

Resource group (change)  
batch

URL  
<https://testp100.westeurope.batch.azure.com>

Status  
Online

Pool allocation mode  
Batch service

Location  
West Europe

Resource id  
[/subscriptions/\[REDACTED\]/resourceGroups/batch/providers/Microsoft.Batch/batchAccounts/testp100](#)

Subscription (change)

Quick start

Subscription ID  
[REDACTED]

Click here to view Quick start

Tags (change)  
Click here to add tags

Account usage  
Click here to view Account usage

## Settings

Quick start

Properties

Quotas

Storage account

Keys

Locks

Automation script

## Features

Applications

Pools

Jobs

Job schedules

Certificates

## Monitoring

Alerts

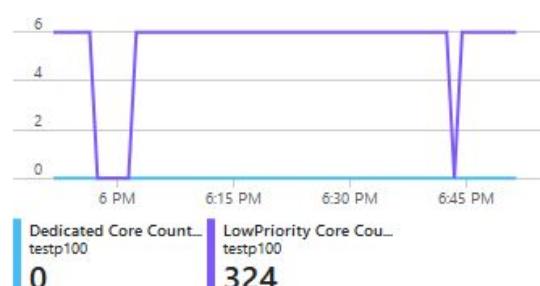
Metrics

Diagnostic settings

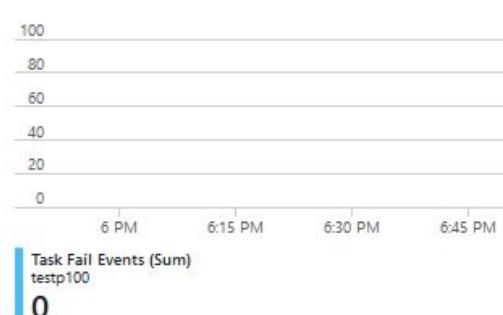
## Support + troubleshooting

New support request

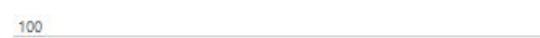
### Core minutes



### Failed tasks



### Task states



### Node states



Chart type

Line

Show UTC time

# testp100 - Job schedules

Batch account

**+ Add**

Columns

Refresh

Queries: All job schedules

Advanced query

Filter by ID ...

Pagination effort limit

1

Actual: 1

ID	STATE	INTERVAL	NEXT RUN TIME	CREATED
----	-------	----------	---------------	---------

No job schedules were found for this Batch account

Overview

Activity log

Access control (IAM)

Tags

Settings

Quick start

Properties

Quotas

Storage account

Keys

Locks

Automation script

Features

Applications

Pools

Jobs

**Job schedules**

Certificates

Monitoring

Alerts

Metrics

Diagnostic settings

Support + troubleshooting

 **Add job schedule**  
testp100
[Basic form](#)[JSON editor](#)**BASIC INFORMATION**\* Job schedule ID 

Display name 

**Metadata**

<input type="checkbox"/>	NAME	VALUE
	Name of the metadata	Value of the metadata

**SCHEDULE**Do not run until 

YYYY-MM-DD 	h:mm A
(UTC+01:00) --- Current Time Zone --- 	

Do not run after 

YYYY-MM-DD 	h:mm A
(UTC+01:00) --- Current Time Zone --- 	

Recurrence interval 
 Disabled  Enabled
Start window 
 Unlimited  Custom
**JOB SPECIFICATION**\* Please specify the pool on which the Batch service runs the tasks of jobs created under this job or job schedule. ([Update](#))

\* Pool ID

Job configuration task ([Update](#))

Job manager task

Job preparation task

[Save](#)[Cancel](#)

We are now in the job schedule window

There are many settings to put in different screens in this window,  
so for simplicity the job schedule part is separated in 3 tutorial parts

however it only takes 2-3 minutes to do

**part 1 : top part of the add job schedule main screen**

Choose the same as you see in the screenshots below :

## Add job schedule

testp100

Basic form • JSON editor

### BASIC INFORMATION

\* Job schedule ID ⓘ

testjob ✓

Display name ⓘ

testjob ✓

#### Metadata

<input type="checkbox"/>	NAME	VALUE
	Name of the metadata	Value of the metadata

### SCHEDULE

Do not run until ⓘ

2018-11-16  8:00 AM

(UTC+01:00) --- Current Time Zone ---

Selected date must be on or after 2018-11-16 08:19:13 PM.

Do not run after ⓘ

YYYY-MM-DD  h:mm A

(UTC+01:00) --- Current Time Zone ---

Recurrence interval ⓘ

 Disabled  Enabled

Start window ⓘ

 Unlimited  Custom

### JOB SPECIFICATION

\* Please specify the pool on which the Batch service runs the tasks of jobs created under this job or job schedule. ([Update](#))

\* Pool ID

Job configuration task ([Update](#))

Job manager task

n/a

 Add job schedule

Basic form JSON editor

**BASIC INFORMATION**\* Job schedule ID testjob Display name testjob 

## Metadata

<input type="checkbox"/>	NAME	VALUE
	Name of the metadata	Value of the metadata

**SCHEDULE**Do not run until 

2018-11-16 	8:25 PM
(UTC+01:00) --- Current Time Zone --- 	

Do not run after 

YYYY-MM-DD 	h:mm A
(UTC+01:00) --- Current Time Zone --- 	

Recurrence interval 

<input checked="" type="radio"/> Disabled	<input type="radio"/> Enabled		
Days	Hours	Minutes	Seconds
0	0	15	0

Start window 

<input type="radio"/> Unlimited	<input checked="" type="radio"/> Custom
---------------------------------	---

**JOB SPECIFICATION**\* Please specify the pool on which the Batch service runs the tasks of jobs created under this job or job schedule. ([Update](#))

\* Pool ID

testworking Job configuration task [\(Update\)](#)

Job manager task

n/a

**Save****Cancel**

- name : any job schedule name (testjob in this example)
- display name : any name (testjob in this example)
- do not run until = do not run before = first start time : choose your current time and add to it 5-10 minutes  
for example it was 16 november 2018 arround 8PM at the time of these screenshots,  
so i set it to first start time : 16 november 2018 at 08:25 PM
- do not run after : no need to change it (we dont want any time limit)
- recurrence interval : Enabled (0 days 0 hours 15 minutes 0 seconds)  
this means the leela zero script will be restarted every 15 minutes  
however, the script will not run twice or more simultaneously : reccurence only means the job schedule will try to run again every 15 minutes, but it will notice that the leela zero script is already running so it will retry 15 minutes later, etc  
this loop will be repeated until our node gets preempted : when the node is preempted all the data on it is deleted (but the node keeps having the same name), then in less than 15 minutes (the recurrence time we set), the job schedule will try to run the script again  
however, the job schedule will notice no script is running (after our node preemption)  
so after preemption, in less than 15 minutes (our recurrence time), the job schedule will automatically restart our leela zero script to contribute : you dont need to do anything for that  
this also means free credit will not be consumed needlessly after preemption : all the free credit will be used to produce games with the leela zero script without waste
- start window : no need to change it (we dont want any time limit)
- pool id : the name of the pool you chose (in this example testworking as we saw earlier)
- Job configuration task : we will set up a "job manager task" that will include our leela zero script  
to do that, click on "update"  
a box opens on the right panel, as you can see below

The screenshot shows two overlapping windows from the Azure portal. On the left is the 'Add job schedule' window, which includes sections for 'BASIC INFORMATION', 'SCHEDULE', and 'JOB SPECIFICATION'. On the right is the 'Job configuration task' window, which has tabs for 'Job manager task' (selected), 'Job preparation task', and 'Job release task'. The 'Job manager task' tab contains sections for 'BASIC INFORMATION', 'CONSTRAINTS', 'OTHER SETTINGS', and 'RESOURCE FILES'. A red box highlights the 'Job manager task' tab in the top navigation bar.

we will continue in part 2 :

## part 2 : right panel of the add job schedule - job manager task

we will now finally input the leela zero script as you can see in the screenshots below :

This screenshot shows the same two windows as the previous one, but with the 'Command line' field populated in the 'Job configuration task' window. The command entered is:

```
/bin/bash -c 'sudo -i; sudo apt-get -y install clinfo; rm -r leela-zero; clinfo; nvidia-smi; git clone https://github.com/gcp/leela-zero && cd leela-zero && git submodule update --init --recursive && mkdir build && cd build && cmake .. && cmake --build . && cd ..& ./autogtp && cp ./build/autogtp/autogtp . && cp ./build/leelaz . && ./autogtp -g 2'
```

A red box highlights the 'Save' button in the bottom right corner of the 'Job configuration task' window.

- task id : any job name (testjob1 in this example)  
this is theoretical, but you may prefer to use a different name than job schedule name we chose earlier to avoid compatibility issues, this is why i added a "1"
- display name : any name (testjob1 in this example)
- command line : copy paste this leela zero script :

-> Option A : if you want to use MASTER branch (stable, recommended), choose this script :

```
/bin/bash -c 'sudo -i ; sudo apt-get -y install clinfo ; rm -r leela-zero ; clinfo ; nvidia-smi ; sudo
add-apt-repository -y ppa:ubuntu-toolchain-r/test ; sudo apt-get update ; sudo apt-get -y install gcc-8 g++-8 ;
sudo update-alternatives --install /usr/bin/gcc gcc /usr/bin/gcc-8 40 --slave /usr/bin/g++ g++ /usr/bin/g++-8 ;
git clone https://github.com/leela-zero/leela-zero && cd leela-zero && git submodule update --init --recursive &&
mkdir build && cd build && cmake .. && cmake --build . && cd ../autogtp && cp ../build/autogtp/autogtp . && cp
../build/leelaz . && ./autogtp -g 2'
```

-> Option B : else, if you want to use NEXT branch (beta test branch, latest improvements, not recommended), choose this script instead :

```
/bin/bash -c 'sudo -i ; sudo apt-get -y install clinfo ; rm -r leela-zero ; clinfo ; nvidia-smi ; sudo
add-apt-repository -y ppa:ubuntu-toolchain-r/test ; sudo apt-get update ; sudo apt-get -y install gcc-8 g++-8 ;
sudo update-alternatives --install /usr/bin/gcc gcc /usr/bin/gcc-8 40 --slave /usr/bin/g++ g++ /usr/bin/g++-8 ;
git clone https://github.com/leela-zero/leela-zero -b next && cd leela-zero && git submodule update --init
--recursive && mkdir build && cd build && cmake .. && cmake --build . && cd ../autogtp && cp
../build/autogtp/autogtp . && cp ../build/leelaz . && ./autogtp -g 2'
```

Regardless of the script you choose, the script will install clinfo, run a clinfo compatibility check (checks if opencl is installed and works), then compile leela zero leelaz and autogtp binaries, then run autogtp. The only difference is we use "master" branch in script A or "next" branch in script B

as said earlier,

this script is very simple because the custom datascience image provided by microsoft azure already has everything we need preinstalled (gpu driver and opencl), which by the way avoids the need to reboot our node, which makes these azure instructions easier  
then the time settings below are important to configure correctly :

- max wall clock time : no need to change it (unlimited, we dont want any time limit)
- max task retry count : unlimited (we dont want any time limit)
- retention time : no need to change it (unlimited, we dont want any time limit)
- kill on job completion : false  
this is important : with false, our job will not go from "running" to "completed" after a node preemption, else we would have to recreate our job after every preemption because it would end  
so again, this is important to set up correctly
- user identity : "Task autouser, Admin"
- Run exclusive : true (this one works, false may work too)

the bottom boxes (blob and environment settings dont need to be used so leave it empty),

click on "Save" to validate our "Job manager task" inside the "job schedule"

in this example, we are validating "testjob" that includes leela zero script inside the job schedule "testjob"

 **Add job schedule**  
testp100
[Basic form](#) [JSON editor](#)**BASIC INFORMATION**\* Job schedule ID [i](#)testjob Display name [i](#)testjob **Metadata****NAME****VALUE***Name of the metadata**Value of the metadata***SCHEDULE**Do not run until [i](#)2018-11-16 

8:25 PM

(UTC+01:00) --- Current Time Zone --- Do not run after [i](#)YYYY-MM-DD 

h:mm A

(UTC+01:00) --- Current Time Zone --- Recurrence interval [i](#) Disabled  Enabled

Days

0

Hours

0

Minutes

15

Seconds

0

Start window [i](#) Unlimited  Custom**JOB SPECIFICATION**\* Please specify the pool on which the Batch service runs the tasks of jobs created under this job or job schedule. ([Update](#))

\* Pool ID

testworking Job configuration task ([Update](#))

Job manager task

testjob1

[Save](#)[Cancel](#)

as you can see in the screenshot below, our job manager task "testjob1" has been added to the job schedule "testjob" in this example

finally, complete the bottom part of main page of job schedule in part 3

**part 3 : bottom part of the add job schedule main screen**

in advanced settings, do as you see in the last screenshot below :

**Add job schedule**

testp100

(UTC+01:00) --- Current Time Zone ---

Do not run after  YYYY-MM-DD  h:mm A  
 (UTC+01:00) --- Current Time Zone ---

Recurrence interval  Enabled  Disabled

Days	Hours	Minutes	Seconds
0	0	15	0

Start window  Unlimited  Custom

### JOB SPECIFICATION

\* Please specify the pool on which the Batch service runs the tasks of jobs created under this job or job schedule. ([Update](#))

\* Pool ID

Job configuration task ([Update](#))

Job manager task

Job preparation task

Job release task

Advanced settings

Display name

Priority  0

Max wall clock time  Unlimited  Custom

Max task retry count  None  Unlimited  Custom

When all tasks complete   
 Do nothing. The job remains active unless terminated or disabled by some other means.

When a task fails   
 Do nothing. The job remains active unless terminated or disabled by some other means.

**Save** **Cancel**

- task id : any job name (testjoba in this example)  
 this is theoretical, but you may prefer to use a different name than job schedule name we chose earlier to avoid compatibility issues, this is why i added a "a"
- priority : no need to change (0 , which means normal priority : this is not the low priority of the node in low priority prices, no ! this is the priority of the job as compared to other jobs you may schedule, but since we are using only 1 job here for the leela zero script, this priority is not relevant to us, so no need to change it)

there are other time settings which are very important to set up correctly

some are similar to part 2 but we need to set up again in these advanced settings too :

- max wall clock time : no need to change (unlimited, we dont want any time limit)
- max retry count : unlimited (as explained earlier, this is very important for the leela zero script to run again after our node is preempted)
- when all tasks complete : No action (this is important as explained above)
- when a task fails : No action (this is less important but also do it for consistency)

Then click on "Save" to validate our job schedule ("testjob" in this example) :

You will see a screen like the screenshot below :

As you can see it is still not yet 8:25 PM (the do not start before time we set up in part 1), so the leela zero script has not started yet

Job schedule created successfully  
Job schedule 'testjob' was created successfully

8:23 PM

testp100 - Job schedules

Batch account

Search (Ctrl+)

Add Columns Refresh

Overview Activity log Access control (IAM) Tags

Settings

- Quick start
- Properties
- Quotas
- Storage account
- Keys
- Locks
- Automation script

Features

- Applications
- Pools
- Jobs
- Job schedules
- Certificates

Monitoring

- Alerts
- Metrics
- Diagnostic settings

Support + troubleshooting

Queries: All job schedules

Advanced query

Filter by ID ... Pagination effort limit 1 Actual: 1

ID	STATE	INTERVAL	NEXT RUN TIME	CREATED
testjob	Active	15 minutes	Nov 16, 20:25:00	Nov 16, 20:23:40

when the time comes (8:25 PM in this example), the leela zero script will start, as you can see below :

ID	STATE	INTERVAL	NEXT RUN TIME	CREATED
testjob	Active	15 minutes	Nov 16, 20:40:00	Nov 16, 20:23:40

And settings are complete !

All we have to do now is check if the script is working correctly and we'll be done !

## 5) See games being produced in azure portal website log/journal file : stdout.txt

we want to make sure the script works correctly before forgetting it, that would be a waste of free trial credit if we let the Tesla V100 run without producing any game due to some error we made

as said earlier, on microsoft azure, unlike on google cloud, we dont need to manually connect via SSH to our instance, no !  
the log/journal files can be viewed easily directly on azure portal website

We will now view the log/journal file of games being produced (and other packages being installed, as well as all the node activity in command line)

To do that, go to :

in your batch account (testp100 in west europe in this example) :

Pools -> yourpool (testworking in this example) -> Nodes

if you are lost or want to start from azure portal home page, the full path is :

All ressources -> yourbatchaccount (testp100 in west europe in this example) -> Pools -> yourpool (testworking in this example) -> Nodes

if you came too soon (before the "do not start until" = first start time we set earlier in part 4-1, 08:25 PM in this example), you will see that the node is still idle (grey circle) as you can see below :

**testworking - Nodes**

Search (Ctrl+ /) < Columns Refresh Delete

Queries: All nodes Advanced query

Search for nodes by state Pagination effort limit 1 Actual: 1

NAME	STATE	ALLOCATION TIME
tvm-1617737690_1-20181116t170142z-p	Idle	Friday, November 16, 2018, 18:01:42

this means you have to wait a little (until first start time), then when the time comes, shortly after (in 1-2 minute, you'll see the node transitionning from "idle" to "running" state (green arrow) as you can see below :

If not, click on blue button "refresh" to refresh the status of the node :

**testworking - Nodes**

Search (Ctrl+ /) < Columns Refresh Delete

Queries: All nodes Advanced query

Search for nodes by state Pagination effort limit 1 Actual: 1

NAME	STATE	ALLOCATION TIME
tvm-1617737690_1-20181116t170142z-p	▶ Running	Friday, November 16, 2018, 18:01:42

click on your node (tvm-1617737690\_1-20181116t170142z-p, the name is automatic, you dont choose it) :

At the start, we get in the "Overview" tab by default where we can access files (even though there is a specific Files tab if you want)

if you are lost or want to start from azure portal home page, the full path is :

All ressources -> yourbatchaccount (testp100 in west europe in this example) -> Pools -> yourpool (testworking in this example) -> Nodes -> yournode (tvm-1617737690\_1-20181116t170142z-p in this example)

in the node, if you come too fast (before do not run until = first start time, very shortly after preemption (between the time node is preempted and the time the script starts again)), you will see no files on the node, as shown below :

Overview

General

Properties

Files

Recent tasks

Start task info

Certificate references

Users

Add user account

Update user account

Remove user account

Batch account: testp100

Pool: testworking

VM size: standard\_nc6s\_v3

Operating System: microsoft-dsvm linux-data-science-vm-ubuntu linuxdsvmbuntu (latest)

Total tasks run: 0

State transition time: Friday, November 16, 2018, 18:03:24

Last boot time: Friday, November 16, 2018, 18:03:24

State: idle

Is dedicated: false

Remote login information: 40.115.56.145:50000

See more

Files on node

FILE NAME	SIZE	CONTENT TYPE	LAST MODIFIED
No task files were found on the node, or the files have been cleaned up.			

wait some time (2-3 minutes), then you will see files being created, as you can see below :  
 (click on "refresh" button to refresh file list)

Overview

General

Properties

Files

Recent tasks

Start task info

Certificate references

Users

Add user account

Update user account

Remove user account

Batch account: testp100

Pool: testworking

VM size: standard\_nc6s\_v3

Operating System: microsoft-dsvm linux-data-science-vm-ubuntu linuxdsvmbuntu (latest)

Total tasks run: 1

State transition time: Friday, November 16, 2018, 20:25:01

Last boot time: Friday, November 16, 2018, 18:03:24

State: running

Is dedicated: false

Remote login information: 40.115.56.145:50000

See more

Files on node

FILE NAME	SIZE	CONTENT TYPE	LAST MODIFIED
workitems/testjob/job-1/testjob1/wd/leela-zero/.git/index	13.9 KB	application/octet-stream	Nov 16, 20:25:12
workitems/testjob/job-1/testjob1/wd/leela-zero/validation...	3.6 KB	text/x-c++src	Nov 16, 20:25:12
workitems/testjob/job-1/testjob1/wd/leela-zero/autogtp/...	1.8 KB	text/x-chdr	Nov 16, 20:25:12
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/.git	30 Bytes	application/octet-stream	Nov 16, 20:25:14
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Tuner.h	2.2 KB	text/x-chdr	Nov 16, 20:25:12
workitems/testjob/job-1/testjob1/wd/leela-zero/autogtp/a...	735 Bytes	application/octet-stream	Nov 16, 20:25:12
workitems/testjob/job-1/testjob1/wd/leela-zero/.git/hooks...	478 Bytes	application/octet-stream	Nov 16, 20:25:10
workitems/testjob/job-1/testjob1/wd/leela-zero/src/SGFTr...	2.2 KB	text/x-chdr	Nov 16, 20:25:12
workitems/testjob/job-1/testjob1/wd/leela-zero/.gitmodules	177 Bytes	application/octet-stream	Nov 16, 20:25:12
workitems/testjob/job-1/testjob1/wd/leela-zero/autogtp/C...	1.7 KB	text/x-chdr	Nov 16, 20:25:12
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Rando...	2.3 KB	text/x-c++src	Nov 16, 20:25:12

scroll down in the files until you find stdout.txt file (log/journal file) :  
 note : do not confuse it with stderr.txt, which is another log file we dont need here (generally displays errors)  
 then double click on stdout.txt :

Home > All resources > testp100 - Pools > testworking - Nodes > tvm-1617737690\_1-20181116t170142z-p

**tvm-1617737690\_1-20181116t170142z-p**

Search (Ctrl+)

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Batch account testp100

Pool testworking

VM size standard\_nc6s\_v3

Operating System microsoft-dsvm linux-data-science-vm-ubuntu linuxdsvmbuntu (latest)

Total tasks run 1

See more

workitems/testjob/job-1/testjob1/wd/leela-zero/.git/hooks...	1.5 KB	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/CO...	6.6 KB	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Game...	2.3 KB	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Traini...	12.5 KB	text/x-c++src
workitems/testjob/job-1/testjob1/wd/leela-zero/AUTHORS	648 Bytes	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/Dockerfile...	165 Bytes	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/UCTN...	6.2 KB	text/x-c++src
workitems/testjob/job-1/testjob1/stdout.txt	13.5 KB	text/plain
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Im2C...	2.9 KB	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/validation...	1.4 KB	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/BUI...	4.8 KB	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Game...	8.0 KB	text/x-c++src
workitems/testjob/job-1/testjob1/wd/leela-zero/autogtp/C...	343 Bytes	text/plain
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/CM...	1.2 KB	text/plain
workitems/tortiinh1/job-1/tortiinh1/wd/leela-zero/.git/l...	268 Bytes	application/octet-stream

File name workitems/testjob/job-1/testjob1/stdout.txt Creation time n/a

URL https://testp100.westeurope.batch.azu... Last modified Friday, November 16, 2018, 20:26:54

Content type text/plain Size 13.5 KB

Reading package lists...  
Building dependency tree...  
Reading state information...  
The following NEW packages will be installed:  
clinfo  
0 upgraded, 1 newly installed, 0 to remove and 136 not upgraded.  
Need to get 30.0 kB of archives.  
After this operation, 88.1 kB of additional disk space will be used.  
Get:1 http://azure.archive.ubuntu.com/ubuntu xenial/universe amd64 clinfo amd64 2.1.16.01.12-1 [30.0 kB]  
Fetched 30.0 kB in 0s (2,796 kB/s)  
Selecting previously unselected package clinfo.  
(Reading database ...  
(Reading database ... 5%  
(Reading database ... 10%  
(Reading database ... 15%  
(Reading database ... 20%  
(Reading database ... 25%  
(Reading database ... 30%  
(Reading database ... 35%  
(Reading database ... 40%  
(Reading database ... 45%  
(Reading database ... 50%  
(Reading database ... 55%  
(Reading database ... 60%  
(Reading database ... 65%  
(Reading database ... 70%  
(Reading database ... 75%  
(Reading database ... 80%  
(Reading database ... 85%  
(Reading database ... 90%

You can click on "refresh" button on top right in stdout.txt window to see what happened since you opened stdout.txt

Home > All resources > testp100 - Pools > testworking - Nodes > tvm-1617737690\_1-20181116t170142z-p

**tvm-1617737690\_1-20181116t170142z-p**

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Overview

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Batch account testp100

Pool testworking

VM size standard\_nc6s\_v3

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Total tasks run 1

See more

workitems/testjob/job-1/testjob1/wd/leela-zero/.git/hooks...	1.5 KB	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/CO...	6.6 KB	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Game...	2.3 KB	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Traini...	12.5 KB	text/x-c++src
workitems/testjob/job-1/testjob1/wd/leela-zero/AUTHORS	648 Bytes	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/Dockerfile...	165 Bytes	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/UCTN...	6.2 KB	text/x-c++src
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workitems/testjob/job-1/testjob1/wd/leela-zero/src/Im2C...	2.9 KB	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/validation...	1.4 KB	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/BUI...	4.8 KB	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Game...	8.0 KB	text/x-c++src
workitems/testjob/job-1/testjob1/wd/leela-zero/autogtp/C...	343 Bytes	text/plain
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/CM...	1.2 KB	text/plain
workitems/tortiinh1/job-1/tortiinh1/wd/leela-zero/.git/l...	268 Bytes	application/octet-stream

File name workitems/testjob/job-1/testjob1/stdout.txt Creation time n/a

URL https://testp100.westeurope.batch.azu... Last modified Friday, November 16, 2018, 20:26:54

Content type text/plain Size 13.5 KB

Preparing to unpack .../clinfo\_2.1.16.01.12-1\_amd64.deb ...  
Unpacking clinfo (2.1.16.01.12-1) ...  
Processing triggers for man-db (2.7.5-1) ...  
Setting up clinfo (2.1.16.01.12-1) ...  
Number of platforms 1  
Platform Name NVIDIA CUDA  
Platform Vendor NVIDIA  
Corporation OpenCL 1.2  
CUDA 9.2.176  
Platform Profile FULL\_PROFILE  
Platform Extensions  
cl\_khr\_global\_int32\_base\_atomics  
cl\_khr\_global\_int32\_extended\_atomics  
cl\_khr\_local\_int32\_base\_atomics  
cl\_khr\_local\_int32\_extended\_atomics cl\_khr\_fp64  
cl\_khr\_byte\_addressable\_store cl\_khr\_icd cl\_khr\_gl\_sharing  
cl\_nv\_compiler\_options cl\_nv\_device\_attribute\_query  
cl\_nv\_pragma\_unroll cl\_nv\_copy\_opts cl\_nv\_create\_buffer  
Platform Extensions function suffix NV  
Platform Name NVIDIA CUDA  
Number of devices 1  
Device Name Tesla  
V100-PCIE-16GB  
Device Vendor NVIDIA  
Corporation OpenCL 1.2  
Device Vendor ID 0x10de  
Device Version OpenCL C 1.2  
CUDA Driver Version 396.44  
Device OpenCL C Version OpenCL C 1.2

note that there is a "refresh" button on top right of stdout.txt window to see what happened since you last opened stdout.txt  
then in stdout.txt you can scroll until you see opencl recognized (clinfo works), leela zero compiling, and autogtp producing games in the screenshots below :

Home > All resources > testp100 - Pools > testworking - Nodes > tvm-1617737690\_1-20181116t170142z-p

### tvm-1617737690\_1-20181116t170142z-p

Search (Ctrl+ /)

Refresh  Columns  Reboot  Reimage  Disable  Connect  Delete node  Upload batch logs

Batch account testp100	State transition time Friday, November 16
Pool testworking	Last boot time Friday, November 16
VM size standard_nc6s_v3	State running
Operating System microsoft-dsvm linux-data-science-vm-ubuntu linuxdsvmbuntu (latest)	Is dedicated false
Total tasks run 1	Remote login inform 40.115.56.145:50000
See more	
workitems/testjob/job-1/testjob1/wd/leela-zero/.git/hooks...	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/CO...	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Game...	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Traini...	text/x-c++src
workitems/testjob/job-1/testjob1/wd/leela-zero/AUTHORS	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/Dockerfile...	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/UCTN...	text/x-c++src
workitems/testjob/job-1/testjob1/stdout.txt	text/plain
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Im2C...	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/validation...	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/BUI...	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Game...	text/x-c++src
workitems/testjob/job-1/testjob1/wd/leela-zero/autogtp/C...	text/plain
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/CM...	text/plain
workitems/testjob/job-1/testjob1/wd/leela-zero/.git/logs/...	application/octet-stream

Download  Delete  Refresh

File name: workitems/testjob/job-1/testjob1/stdout.txt Creation time: n/a

URL: https://testp100.westeurope.batch.azure.com/... Last modified: Friday, November 16, 2018, 20:26:54

Content type: text/plain Size: 13.5 KB

```
[ 0%] Building CXX object CMakeFiles/objs.dir/src/runer.cpp.o
[ 41%] Building CXX object CMakeFiles/objs.dir/src/Random.cpp.o
[ 43%] Building CXX object CMakeFiles/objs.dir/src/SGFParser.cpp.o
[ 45%] Building CXX object CMakeFiles/objs.dir/src/OpenCLScheduler.cpp.o
[ 47%] Building CXX object CMakeFiles/objs.dir/src/Training.cpp.o
[ 49%] Building CXX object CMakeFiles/objs.dir/src/OpenCL.cpp.o
[ 49%] Built target objs
Scanning dependencies of target leelaz
[ 50%] Building CXX object CMakefiles/leelaz.dir/src/Leela.cpp.o
[ 52%] Linking CXX executable leelaz
[ 52%] Built target leelaz
Scanning dependencies of target gtest
[ 54%] Building CXX object gtest/googlemock/gtest/CMakeFiles/gtest.dir/src/gtest-all.cc.o
[ 56%] Linking CXX static library libgtest.a
[ 56%] Built target gtest
Scanning dependencies of target gtest_main
[ 58%] Building CXX object gtest/googlemock/gtest/CMakeFiles/gtest_main.dir/src/gtest_main.cc.o
[ 60%] Linking CXX static library libgtest_main.a
[ 60%] Built target gtest_main
Scanning dependencies of target tests
[ 62%] Building CXX object CMakeFiles/tests.dir/src/tests/utils_unittest.cpp.o
[ 64%] Building CXX object CMakeFiles/tests.dir/src/tests/gtests.cpp.o
[ 66%] Linking CXX executable tests
```

Home > All resources > testp100 - Pools > testworking - Nodes > tvm-1617737690\_1-20181116t170142z-p

### tvm-1617737690\_1-20181116t170142z-p

Search (Ctrl+ /)

Refresh  Columns  Reboot  Reimage  Disable  Connect  Delete node  Upload batch logs

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See more	
workitems/testjob/job-1/testjob1/wd/leela-zero/build/gtes...	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/AUTHORS	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/Dockerfile...	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/UCTN...	text/x-c++src
workitems/testjob/job-1/testjob1/stdout.txt	text/plain
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Im2C...	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/validation...	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/BUI...	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Game...	text/x-c++src
workitems/testjob/job-1/testjob1/wd/leela-zero/autogtp/C...	text/plain
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/CM...	text/plain
workitems/testjob/job-1/testjob1/wd/leela-zero/.git/packe...	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/UCTN...	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/src/NNCa...	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/autootp/...	text/x-c++src

Download  Delete  Refresh

File name: workitems/testjob/job-1/testjob1/stdout.txt Creation time: n/a

URL: https://testp100.westeurope.batch.azure.com/... Last modified: Friday, November 16, 2018, 20:30:06

Content type: text/plain Size: 19.8 KB

```
validation/CMakeFiles/validation.dir/validation_automoc.cpp.o
[100%] Linking CXX executable validation
[100%] Built target validation
Starting tuning process, please wait...
Net filename:
networks/efa2fefdf122cb212b990cadcd6cb07258ea266bc4904ce0b4ee3f6
9ede03bb2b.gz
net:
efa2fefdf122cb212b990cadcd6cb07258ea266bc4904ce0b4ee3f69ede03bb2
b.
./leelaz --tune-only -w
networks/efa2fefdf122cb212b990cadcd6cb07258ea266bc4904ce0b4ee3f6
9ede03bb2b.gz
Leela Zero 0.16 Copyright (C) 2017-2018 Gian-Carlo Pascutto
and contributors
This program comes with ABSOLUTELY NO WARRANTY.
This is free software, and you are welcome to redistribute it
under certain conditions; see the COPYING file for details.

Using 2 thread(s).
RNG seed: 1698710981871650498
BLAS Core: built-in Eigen 3.3.5 library.
Detecting residual layers...v1...256 channels...40 blocks.
Initializing OpenCL (autodetecting precision).
Detected 1 OpenCL platforms.
Platform version: OpenCL 1.2 CUDA 9.2.176
Platform profile: FULL_PROFILE
Platform name: NVIDIA CUDA
Platform vendor: NVIDIA Corporation
Device ID: 0
Device name: Tesla V100-PCIE-16GB
Device type: GPU
Device vendor: NVIDIA Corporation
```

Home > All resources > testp100 - Pools > testworking - Nodes > tvm-1617737690\_1-20181116t170142z-p

**tvm-1617737690\_1-20181116t170142z-p**

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Batch account: testp100

Pool: testworking

VM size: standard\_nc6s\_v3

Operating System: microsoft-dsvm linux-data-science-vm-ubuntu linuxdsvmbuntu (latest)

Total tasks run: 1

State transition time: Friday, November 16

Last boot time: Friday, November 16

State: running

Is dedicated: false

Remote login inform: 40.115.56.145:50000

See more

workitems/testjob/job-1/testjob1/wd/leela-zero/build/gtes...	262 Bytes	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/AUTHORS	648 Bytes	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/Dockerfile...	165 Bytes	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/UCTN...	6.2 KB	text/x-c++src
workitems/testjob/job-1/testjob1/stdout.txt	19.8 KB	text/plain
workitems/testjob/job-1/testjob1/wd/leela-zero/src/lm2C...	2.9 KB	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/validation...	1.4 KB	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/BUI...	4.8 KB	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/Game...	8.0 KB	text/x-c++src
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workitems/testjob/job-1/testjob1/wd/leela-zero/.git/packe...	1.2 KB	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/UCTN...	3.9 KB	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/src/NNCa...	2.7 KB	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/autoctp/...	27.2 KB	text/x-c++src

File name: workitems/testjob/job-1/testjob1/stdout.txt Creation time: n/a

URL: https://testp100.westeuropa.batch.azure.com/tvm-1617737690\_1-20181116t170142z-p/workitems/testjob/job-1/testjob1/stdout.txt Last modified: Friday, November 16, 2018, 20:30:06

Content type: text/plain Size: 19.8 KB

```

Device name: Tesla V100-PCIE-16GB
Device type: GPU
Device vendor: NVIDIA Corporation
Device driver: 396.44
Device speed: 1380 MHz
Device cores: 80 CU
Device score: 1112
Selected platform: NVIDIA CUDA
Selected device: Tesla V100-PCIE-16GB
with OpenCL 1.2 capability.
Half precision compute support: No.
Detected 1 OpenCL platforms.
Platform version: OpenCL 1.2 CUDA 9.2.176
Platform profile: FULL_PROFILE
Platform name: NVIDIA CUDA
Platform vendor: NVIDIA Corporation
Device ID: 0
Device name: Tesla V100-PCIE-16GB
Device type: GPU
Device vendor: NVIDIA Corporation
Device driver: 396.44
Device speed: 1380 MHz
Device cores: 80 CU
Device score: 1112
Selected platform: NVIDIA CUDA
Selected device: Tesla V100-PCIE-16GB
with OpenCL 1.2 capability.
Half precision compute support: No.

Started OpenCL SGEMM tuner.
Will try 290 valid configurations.
(1/290) KWG=16 KWI=2 MDIMA=8 MDIMC=8 MWG=16 NDIMB=8 NDIMC=8

```

Home > All resources > testp100 - Pools > testworking - Nodes > tvm-1617737690\_1-20181116t170142z-p

**tvm-1617737690\_1-20181116t170142z-p**

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Remove user account

Batch account: testp100

Pool: testworking

VM size: standard\_nc6s\_v3

Operating System: microsoft-dsvm linux-data-science-vm-ubuntu linuxdsvmbuntu (latest)

Total tasks run: 1

State transition time: Friday, November 16

Last boot time: Friday, November 16

State: running

Is dedicated: false

Remote login inform: 40.115.56.145:50000

See more

workitems/testjob/job-1/testjob1/wd/leela-zero/build/gtes...	262 Bytes	application/octet-stream
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workitems/testjob/job-1/testjob1/wd/leela-zero/src/Game...	8.0 KB	text/x-c++src
workitems/testjob/job-1/testjob1/wd/leela-zero/autoctp/C...	343 Bytes	text/plain
workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/CM...	1.2 KB	text/plain
workitems/testjob/job-1/testjob1/wd/leela-zero/.git/packe...	1.2 KB	application/octet-stream
workitems/testjob/job-1/testjob1/wd/leela-zero/src/UCTN...	3.9 KB	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/src/NNCa...	2.7 KB	text/x-chdr
workitems/testjob/job-1/testjob1/wd/leela-zero/autoctp/...	27.2 KB	text/x-c++src

File name: workitems/testjob/job-1/testjob1/stdout.txt Creation time: n/a

URL: https://testp100.westeuropa.batch.azure.com/tvm-1617737690\_1-20181116t170142z-p/workitems/testjob/job-1/testjob1/stdout.txt Last modified: Friday, November 16, 2018, 20:30:06

Content type: text/plain Size: 19.8 KB

```

playouts : 0 ,
"randomcnt": "999",
"resignation_percent": "5",
"visits": "1601"
},
"options_hash": "b37dca",
"random_seed": "5529354191336577623",
"required_client_version": "16"
}

Got new job: selfplay
net:
efa2fefdf122cb212b990cadcd6cb07258ea266bc4904ce0b4ee3f69ede03bb2
b.
Engine has started.
time_settings 0 1 0
Thinking time set.
Engine has started.
time_settings 0 1 0
Thinking time set.
1 (B Q4) 1 (B D4) 2 (W Q17) 3 (B R17) 3 (B D16) 4 (W D4) 5 (B R15) 4 (W R16) 5 (B Q17) 6 (W P16) 7 (B P17) 6 (W P16) 8 (W N17) 9 (B D16) 10 (W Q4) 11 (B O17) 12 (W O16) 7 (B C3) 13 (B N18) 14 (W M17) 15 (B M18) 16 (W Q16) 8 (W D3) 9 (B C4) 10 (W C6) 17 (B O3) 11 (B C5) 12 (W D5) 13 (B B6) 18 (W C3) 14 (W R3) 19 (B D3) 20 (W C4) 21 (B C6) 22 (W C5) 23 (B D5) 24 (W B6) 25 (B R3) 15 (B Q3) 16 (W R4) 17 (B R6) 18 (W R5) 19 (B Q5) 20 (W S6) 26 (W Q3) 27 (B R4) 28 (W Q5) 21 (B C7) 22 (W D6) 23 (B C2) 29 (B M14) 24 (W H3) 30 (W R5) 25 (B K3) 31 (B Q2) 26 (W Q14) 32 (W P2) 33 (B R2) 34 (W P3) 27 (B D7) 35 (B O2) 28 (W Q8) 36 (W O4) 29 (B R7) 30 (W S7) 37 (B M3) 31 (B R8) 38 (W O1) 32 (W Q10) 39 (B S5) 40 (W S6) 33 (B F7) 41 (B S4) 42 (W L4) 34 (W P6)

```

as explained earlier, after preemption, low priority node is recreated (you lose installed packages)  
the script scheduled to install and run leela zero starts automatically as scheduled,  
all this is entirely automated, you are now a leela zero contributor !

after some time :  
86 games in 718 minutes  
it was somehow much slower due to a lot of no resign games

Home > testworking - Nodes > tvm-1617737690\_1-20181116t170142z-p

**tvm-1617737690\_1-20181116t170142z-p**

Overview	
General	Batch account testp100
Properties	Pool testworking
Files	VM size standard_nc6s_v3
Recent tasks	Operating System microsoft-dsvm linux-data-science-vm-ubuntu linuxdsvmbuntu (latest)
Start task info	Total tasks run 1
Certificate references	See more
Users	
Add user account	
Update user account	
Remove user account	

Batch account: testp100  
 Pool: testworking  
 VM size: standard\_nc6s\_v3  
 Operating System: microsoft-dsvm linux-data-science-vm-ubuntu linuxdsvmbuntu (latest)  
 Total tasks run: 1

File list:

- workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/CO... 6.6 KB application/octet-stream
- workitems/testjob/job-1/testjob1/wd/leela-zero/src/Game... 2.3 KB text/x-chdr
- workitems/testjob/job-1/testjob1/wd/leela-zero/build/gtes... 262 Bytes application/octet-stream
- workitems/testjob/job-1/testjob1/wd/leela-zero/AUTHORS 648 Bytes application/octet-stream
- workitems/testjob/job-1/testjob1/wd/leela-zero/Dockerfile... 165 Bytes application/octet-stream
- workitems/testjob/job-1/testjob1/wd/leela-zero/src/UCTN... 6.2 KB text/x-c++src
- workitems/testjob/job-1/testjob1/stdout.txt 310.8 KB text/plain
- workitems/testjob/job-1/testjob1/wd/leela-zero/src/Im2C... 2.9 KB text/x-chdr
- workitems/testjob/job-1/testjob1/wd/leela-zero/validation... 1.4 KB text/x-chdr
- workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/BUI... 4.8 KB application/octet-stream
- workitems/testjob/job-1/testjob1/wd/leela-zero/src/Game... 8.0 KB text/x-c++src
- workitems/testjob/job-1/testjob1/wd/leela-zero/autogtp/C... 343 Bytes text/plain
- workitems/testjob/job-1/testjob1/wd/leela-zero/gtest/CM... 1.2 KB text/plain
- workitems/testjob/job-1/testjob1/wd/leela-zero/.git/packe... 1.2 KB application/octet-stream

File details for stdout.txt:

```

  File name: workitems/testjob/job-1/testjob1/stdout.txt
  Creation time: n/a
  URL: https://testp100.westeurope.batch.azure.com/tv...
  Last modified: Saturday, November 17, 2018, 08:28:27
  Content type: text/plain
  Size: 310.8 KB

  Score: W+Resign
  Winner: white
  51 (B D3) Uploading match:
  60ab640555414aad8ea977e3194d3bee.sgf for networks
  efa2fef122cb212b990cadcd6cb07258ea266bc4904ce0b4ee3f69ede03bb2
  b and
  0ee19d8a3488f8d317010a1a48b415af02332710f79106ec187c9183565b0a3
  8
  Match data
  7d130778e2ad09eaaca71888073f682e6c84a380851868725b39a0fffb54a3ef
  e stored in database
  86 game(s) (75 self played and 11 matches) played in 718
  minutes = 501 seconds/game, 2408 ms/move, last game took 1035
  seconds.
  {
    "black_hash":
    "0ee19d8a3488f8d317010a1a48b415af02332710f79106ec187c9183565b0a3
    8",
    "black_hash_gzip_hash":
    "839f45ee5289bce642034480170730d9d28d919c8997ab3121386ae2b5e7d4
    e3",
    "cmd": "match",
    "minimum_autogtp_version": "16",
    "minimum_leelaz_version": "0.15",
    "options": {
      "noise": "false",
      "playouts": "0",
      "randomcnt": "0",
      "resignation_percent": "5",
      "visits": "1600"
    },
  }

```

note : with our job schedule settings, you can know how much time our node has been preempted if you look at the line " Total tasks run" : 1 in this example for testworking node

i'm not sure if the node is always deleted after each preemption, this is why i added a "rm -r leela zero" in the leela zero script, so that if a leela zero folder exists, it is removed to avoid overwriting errors  
 another example, for this test80 pool (another one), the node has been preempted 4 times because "total tasks run" : 4  
 236 games in 1378 minutes :

Home > All resources > testp100 - Pools > test81 - Nodes > tvm-2065159654\_1-20181113t081948z-p

**tvm-2065159654\_1-20181113t081948z-p**

Overview	
General	Batch account testp100
Properties	Pool test81
Files	VM size standard_nc6s_v3
Recent tasks	Operating System Canonical UbuntuServer 18.04-LTS (latest)
Start task info	Total tasks run 3
Certificate references	See more
Users	
Add user account	
Update user account	
Remove user account	

Batch account: testp100  
 Pool: test81  
 VM size: standard\_nc6s\_v3  
 Operating System: Canonical UbuntuServer 18.04-LTS (latest)  
 Total tasks run: 3

File list:

FILE NAME	SIZE	CONTENT TYPE
workitems/test81/job-1/test81/stderr.txt	494 Bytes	text/plain
workitems/test81/job-1/test81/stdout.txt	777.3 KB	text/plain
workitems/test81/job-1/test81/wd/leela-zero/.gitignore	183 Bytes	application/octet-stream
workitems/test81/job-1/test81/wd/leela-zero/appveyor.yml	1.1 KB	application/octet-stream
workitems/test81/job-1/test81/wd/leela-zero/FAQ.md	3.0 KB	text/markdown
workitems/test81/job-1/test81/wd/leela-zero/CMakeLists.txt	5.9 KB	text/plain
workitems/test81/job-1/test81/wd/leela-zero/.gitmodules	177 Bytes	application/octet-stream
workitems/test81/job-1/test81/wd/leela-zero/.travis.yml	1.7 KB	application/octet-stream
workitems/test81/job-1/test81/wd/leela-zero/AUTHORS	648 Bytes	application/octet-stream
workitems/test81/job-1/test81/wd/leela-zero/COPYING	34.3 KB	application/octet-stream

File details for stdout.txt:

```

  File name: workitems/test81/job-1/test81/stdout.txt
  Creation time: n/a
  URL: https://testp100.westeurope.batch.azure.com/tv...
  Last modified: Wednesday, November 14, 2018, 08:40:06
  Content type: text/plain
  Size: 777.3 KB

  uploading game: c90e50adc20142b4dec02c7892340015.sgf to
  network
  efa2fef122cb212b990cadcd6cb07258ea266bc4904ce0b4ee3f69ede03bb2
  b
  Game data
  54703dbbed168cc8ec65d632a46bb721433dc7686d5297e03b3057c275b8b3
  9 stored in database
  236 game(s) (182 self played and 54 matches) played in 1378
  minutes = 350 seconds/game, 1824 ms/move, last game took 490
  seconds.
  {
    "cmd": "selfplay",
    "hash":
    "efa2fef122cb212b990cadcd6cb07258ea266bc4904ce0b4ee3f69ede03bb2",
    "hash_gzip_hash":
    "037a7c86d4f75c5da52196659e57cb7ad362f984022e7951dc53",
    "minimum_autogtp_version": "16",
    "minimum_leelaz_version": "0.15",
    "options": {
      "noise": "true",
      "playouts": "0",
      "randomcnt": "999",
      "resignation_percent": "5",
      "visits": "1601"
    },
    "options_hash": "b37dca",
    "random_seed": "64300484445638996",
    "required_client_version": "16"
  }

```

## extra : details about node management

finally, when stdout.txt file size is too big (>1MB) , it cannot be displayed :

The screenshot shows the Azure Batch portal interface. On the left, there's a navigation sidebar with links like Home, All resources, testp100 - Pools, test80 - Nodes, and tvm-668756614\_1-20181113t074834z-p. The main area displays details for a node named tvm-668756614\_1-20181113t074834z-p. It shows the batch account (testp100), pool (test80), VM size (standard\_nc6s\_v3), and operating system (Canonical UbuntuServer 18.04-LTS (latest)). The node has run 4 total tasks. A 'See more' link is present. Below this, a table lists files on the node, including 'workitems/test80/job-1/test80/stdout.txt' which is 1.0 MB and has a content type of text/plain. To the right, a separate window shows the file details for 'workitems/test80/job-1/test80/stdout.txt'. It includes fields for File name, Creation time, URL, Last modified, Content type, and Size. The URL is https://testp100.westeurope.batch.azure.com/... and the last modified date is Wednesday, November 14, 2018, 14:37:23. The content type is text/plain and the size is 1.0 MB. A message at the bottom of this window states 'The file is too large to be displayed in this viewer.'

but you can download the file anytime and view it on your computer, or upload it to txt upload websites like this one for example :

[http://www.uploadedit.com/\\_to-upload-documents-onto-internet-PLAIN-TEXT-TXT-hosting.htm](http://www.uploadedit.com/_to-upload-documents-onto-internet-PLAIN-TEXT-TXT-hosting.htm)

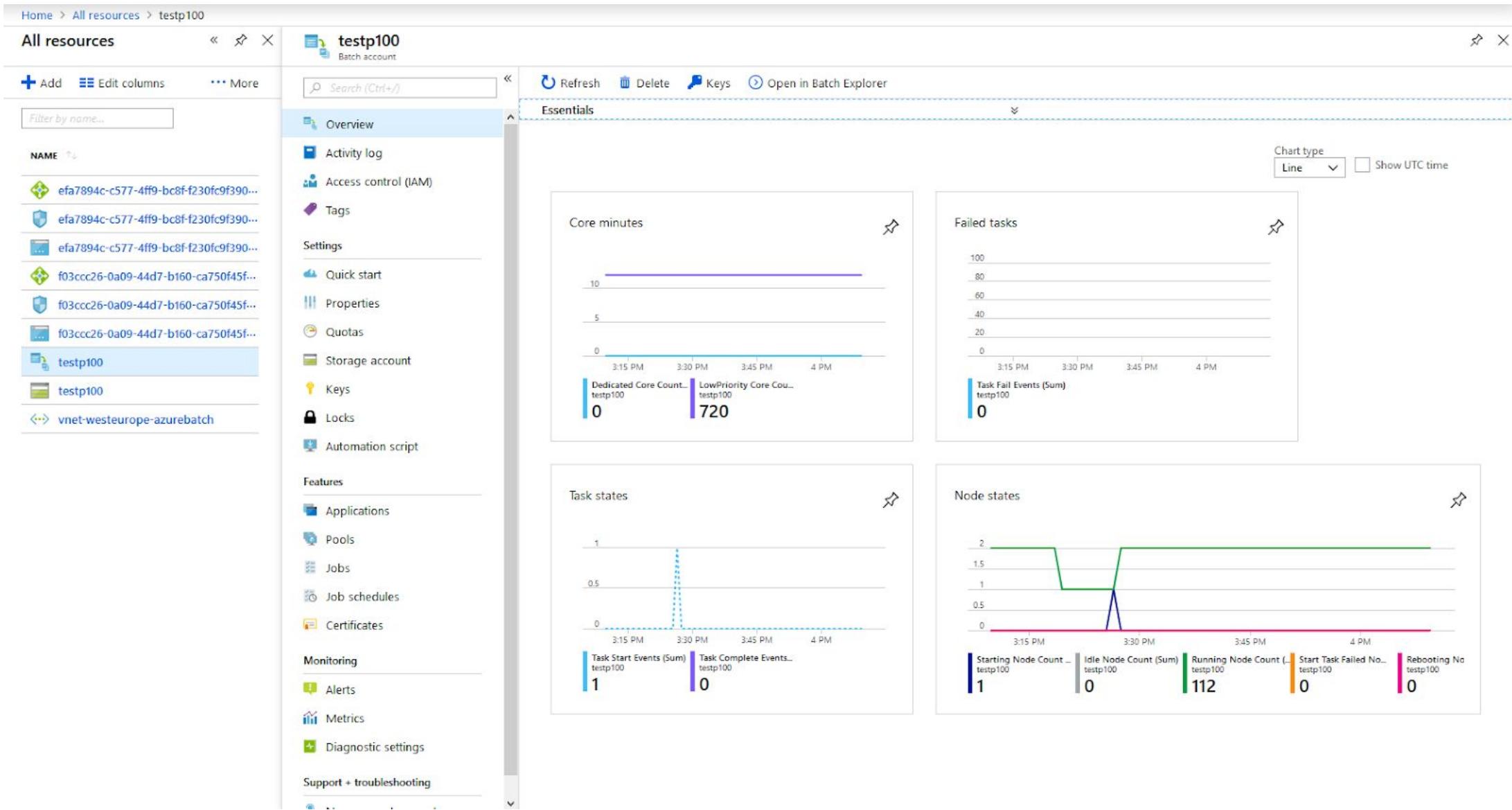
for example, with another pool i ran in the past, named test81:

(note : the connection lost issue you see at the end of the log was because <https://zero.sjeng.org> website of leela zero had a ssl connection error, no one could connect to it via https or autogtp , but it worked via http)



<http://m.uploadedit.com/bbtc/15422043546.txt>

to confirm this is what automatically happens at preemption :



you can see that the leela zero script restarts automatically in less than 15 minutes (here it was test81 pool with recurrence time set to 30 minutes when i was testing) so the job schedule is working as intended, entirely automatically

## if you want to stop contributing for now

finally, when you want to delete any ressource you create, go in azure portal website homepage -> All ressources

note : if you want to delete only a pool in a batch account, dont delete all the batch account ! as explained in "general ideas" in the introduction !! not only it is not needed because a batch account is free (it doesnt consume any free credit), and also because you can delete the pool directly in your batch account settings :

in All ressources -> yourbatchaccount -> Pools

but !! if you do the mistake of deleting your batch account, you would have to recreate your batch account, and rerequest a quota request for nc6v3 for it ! so just deleting the pool (and the job schedules if you want) is enough

however, if you want to contribute again later with the rest of the free credit, know that you have only 30 days at maximum to spend the 200 dollars free credit (that can produce 10,4 days of Tesla V100 h24 computing), after that your account would become paid !

to avoid that, follow last words :

## Last words : Cancel subscription when free credit ends !!

As said again and again, dont forget to cancel your subscription when you consumed all your free credit and at maximum at day (free trial time limit), or you will get charged

Cancel subscription:

<https://docs.microsoft.com/en-us/azure/billing/billing-how-to-cancel-azure-subscription>

## documentation

interesting read :

<https://docs.microsoft.com/en-us/azure/virtual-machines/extensions/custom-script-linux#tips-and-tricks>

Cancel subscription: <https://docs.microsoft.com/en-us/azure/billing/billing-how-to-cancel-azure-subscription>

Update/change profile information: <https://docs.microsoft.com/en-us/azure/billing/billing-how-to-change-azure-account-profile>

A few extra links :

<https://azure.microsoft.com/en-us/pricing/details/batch/>

<https://docs.microsoft.com/en-us/azure/batch/batch-technical-overview>

<https://docs.microsoft.com/en-us/azure/batch/quick-create-portal>

<https://docs.microsoft.com/en-us/azure/batch/batch-low-pri-vms>