

# Windows Azure Platform

**CSCI 4180**

**Qin Chuan**

# Overview

- This year we use Windows Azure Platform to do the assignments
- Get the 12 character code before you start
- Redeem your Windows Azure at
  - [www.WindowsAzurePass.com/azureu](http://www.WindowsAzurePass.com/azureu)
- Ensure email won't be blocked
  - [admin@windowsazurepassadmin.com](mailto:admin@windowsazurepassadmin.com)

# Overview

- Each account includes following setting
- Windows Azure
  - 2 small compute instances
  - 70GB of storage
  - 50,000,000 storage transactions
  - 10 Shared WebSites
  - 10 Shared Mobile Services

# Overview

- SQL Azure
  - Two 1GB Web Edition database
- AppFabric
  - 1500 Service Bus Relay hours
  - 500,000 Service Bus Messages
- Data Transfers
  - 12 GB in
  - 12 GB out

# Redeem the Pass



All Microsoft Sites



## Try Windows Azure

We're offering a Windows Azure academic pass for 6 months, you can try Windows Azure for free.



### ▶ APPLY FOR AN EDUCATOR GRANT.

Fill out the fields below to apply for an Educator Grant of Windows Azure Academic Passes for you and your students

### ▶ APPLICATION IS FOR EDUCATORS/FACULTY ONLY.

All fields are required.

Full Name:

Email:

Country:

University:

Course Name:

Course Description:  
(4000 character limit)

Course Start Date:

# of Students:

# of Passes Requested: Students:  Faculty:

Course URL:

Faculty Verification: ☒ URL ☐ Upload Document

URL:

Submit

Have a code already?  
Redeem it here.

Click here

# Redeem the Pass



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Search Windows Azure



## Try Windows Azure Pass

We're offering a Windows Azure Pass, so for a limited time period, you can try Windows Azure for free.



### SIGN UP FOR YOUR PASS

To begin, select your country and enter a promo code.

Please select country

Enter Promo Code

submit

\*No credit card required

Enter code here

- Followed with some register information
- To redeem the pass, you also need a windows live account

# Redeem the Pass



The screenshot shows the Windows Azure Pass redemption page. The header includes the Windows Azure logo and the tagline "Microsoft's Cloud Computing Platform". A search bar is located in the top right corner. The main content area lists the resources included in the pass: Windows Azure (3 Small Compute Instances, 1 GB of Storage, 250,000 Storage Transactions), SQL Azure (Two 1 GB Web Edition Database), AppFabric (100,000 Access Control Transactions, 2 Bus Service Connections), and Data Transfers (1 GB In, 1 GB Out). A sign-in prompt is displayed on the right side, stating "To continue please sign into Windows Live, fill out the remaining information, then click submit." Below this text is a "Sign In" button. An arrow points to the "Sign In" button with the text "Login your windows account" below it. The footer contains links for "Terms of Service" and "Privacy Statement", social media icons for Facebook, Twitter, YouTube, and RSS, and the Microsoft logo. The copyright notice at the bottom right reads "©2011 Microsoft, One Microsoft Way, Redmond, WA 98052 USA".

Windows Azure<sup>™</sup>  
Microsoft's Cloud Computing Platform

All Microsoft Sites

Search Windows Azure

## Windows Azure Pass

The Windows Azure Pass includes the following resources:

- Windows Azure**
  - 3 Small Compute Instances
  - 1 GB of Storage
  - 250,000 Storage Transactions
- SQL Azure**
  - Two 1 GB Web Edition Database
- AppFabric**
  - 100,000 Access Control Transactions
  - 2 Bus Service Connections
- Data Transfers**
  - 1 GB In
  - 1 GB Out

To continue please sign into Windows Live, fill out the remaining information, then click submit.

[Sign In](#)


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# Redeem the Pass





**Windows Azure**  
Microsoft's Cloud Computing Platform

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Search Windows Azure

## Windows Azure Pass

The Windows Azure Pass includes the following resources:

- **Windows Azure**
  - 3 Small Compute Instances
  - 3 GB of Storage
  - 250,000 Storage Transactions
- **SQL Azure**
  - Two 1 GB Web Edition Database
- **AppFabric**
  - 100,000 Access Control Transactions
  - 2 Bus Service Connections
- **Data Transfers**
  - 3 GB In
  - 3 GB Out

## Fill out the remaining information, then click submit.

Sign Out

First Name\* Peter

Last Name\* Smith

Email\* petersmith@live.com


Phone\* 425 555 5555





Company Name\* University

Zip Code\* 98052

☐ I would like to be contacted by Microsoft regarding Windows Azure developer offers and campaigns.

Submit

 Valid phone number capable of receiving SMS messages may be required for activation.




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# Redeem the Pass

 **Windows Azure**  
Microsoft's Cloud Computing Platform

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## Windows Azure Pass terms of service

**MICROSOFT WINDOWS AZURE PASS TRIAL AGREEMENT**

Last Updated October, 2011

**1. WHAT THE AGREEMENT COVERS**

This agreement is between the entity agreeing to these terms ("Customer," "you" or "your") and Microsoft Corporation, ("Microsoft," "we," "us," or "our"). If you are accepting this agreement on behalf of your employer or another legal entity, you represent and warrant that you have the authority to bind that entity and that you are agreeing to these terms on behalf of that entity. If you cannot truthfully make these representations, do not click "accept" below. The terms and conditions of this agreement apply to Customer's access and use of certain trial versions of Microsoft Windows Azure pass, including any technology, information, software, materials, and updates that Microsoft makes available to Customer as part of such services (the "Services"). Unless otherwise expressly noted, the following terms apply to all Services provided to Customer under this agreement.

**2. DATA**

**2.1 Customer's Data.**

The Services may allow Customer to store, process, access, and query Data from Customer's devices without having to replicate or move Data. "Data" means all data, including all text, sound, or image files that Customer uploads to or that is processed using the Services.

**2.2 Customer's Responsibility.**

Customer is solely responsible for Data and information used to develop, operate or maintain any software programs or services it uses

☐ By checking this box, you are accepting Microsoft Windows Azure Trial Agreement

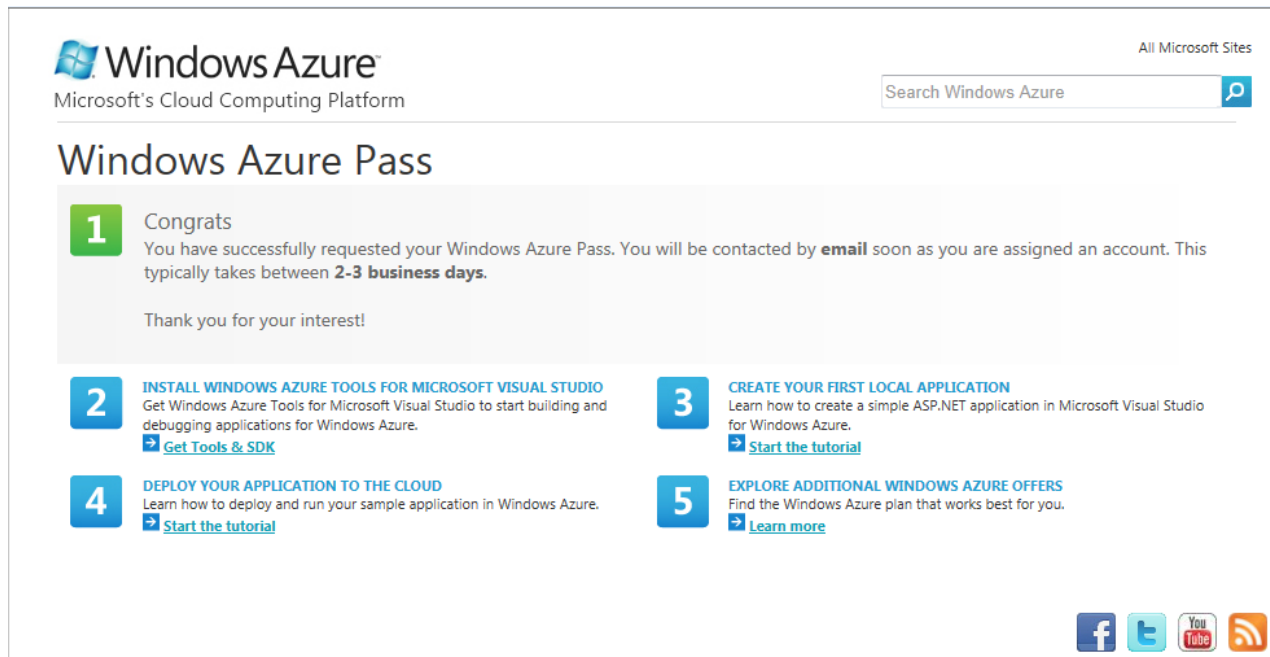
**Accept**

First Name\*

Last Name\*

Accept the term of use agreement

# Redeem the Pass



The screenshot shows the 'Windows Azure Pass' page on the Microsoft website. At the top, the Windows Azure logo and 'Microsoft's Cloud Computing Platform' are visible. A search bar and 'All Microsoft Sites' link are in the top right. The main heading is 'Windows Azure Pass'. Below it, a green box with the number '1' says 'Congrats' and 'You have successfully requested your Windows Azure Pass. You will be contacted by email soon as you are assigned an account. This typically takes between 2-3 business days.' Below this, it says 'Thank you for your interest!'. There are five numbered steps in blue boxes: 2. 'INSTALL WINDOWS AZURE TOOLS FOR MICROSOFT VISUAL STUDIO', 3. 'CREATE YOUR FIRST LOCAL APPLICATION', 4. 'DEPLOY YOUR APPLICATION TO THE CLOUD', and 5. 'EXPLORE ADDITIONAL WINDOWS AZURE OFFERS'. Each step has a brief description and a link to a tutorial or more information. At the bottom right, there are social media icons for Facebook, Twitter, YouTube, and RSS.

Windows Azure™  
Microsoft's Cloud Computing Platform

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Search Windows Azure

## Windows Azure Pass

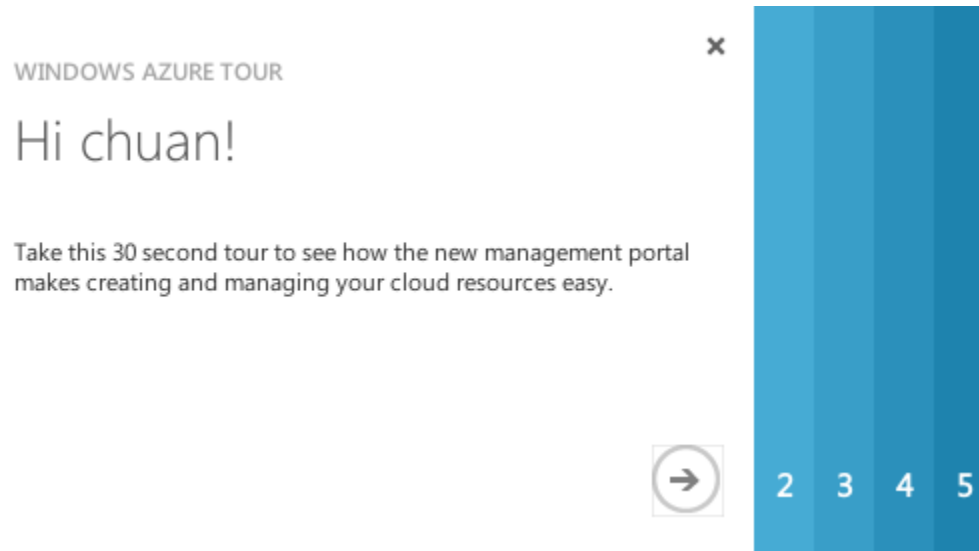
- 1** **Congrats**  
You have successfully requested your Windows Azure Pass. You will be contacted by **email** soon as you are assigned an account. This typically takes between **2-3 business days**.  
  
Thank you for your interest!
- 2** **INSTALL WINDOWS AZURE TOOLS FOR MICROSOFT VISUAL STUDIO**  
Get Windows Azure Tools for Microsoft Visual Studio to start building and debugging applications for Windows Azure.  
[→ Get Tools & SDK](#)
- 3** **CREATE YOUR FIRST LOCAL APPLICATION**  
Learn how to create a simple ASP.NET application in Microsoft Visual Studio for Windows Azure.  
[→ Start the tutorial](#)
- 4** **DEPLOY YOUR APPLICATION TO THE CLOUD**  
Learn how to deploy and run your sample application in Windows Azure.  
[→ Start the tutorial](#)
- 5** **EXPLORE ADDITIONAL WINDOWS AZURE OFFERS**  
Find the Windows Azure plan that works best for you.  
[→ Learn more](#)

f t YouTube RSS

- After register, your account will be assigned by **register email in 2-3 days**

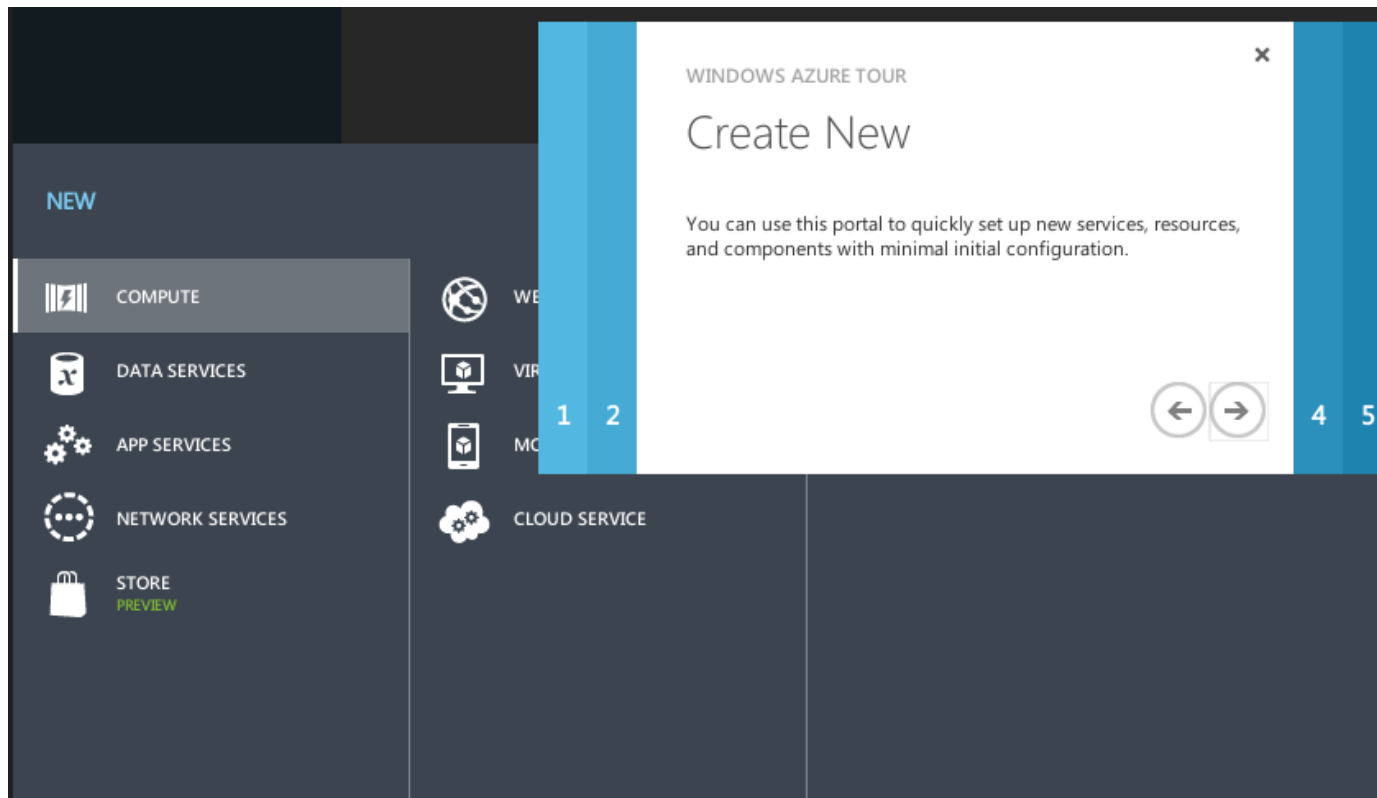
# Access Azure

- Once you receive the email, you access the link inside the email



# Access Azure

- To create new machine



# Create VMs

- The student grand only has the quota of two small instances of VMs

The screenshot shows the 'QUICK CREATE' interface for a Virtual Machine in the Azure portal. The left sidebar contains navigation options: WEB SITE, VIRTUAL MACHINE (selected), MOBILE SERVICE, and CLOUD SERVICE. The main area is divided into 'QUICK CREATE' and 'FROM GALLERY'. The 'QUICK CREATE' section contains the following fields:

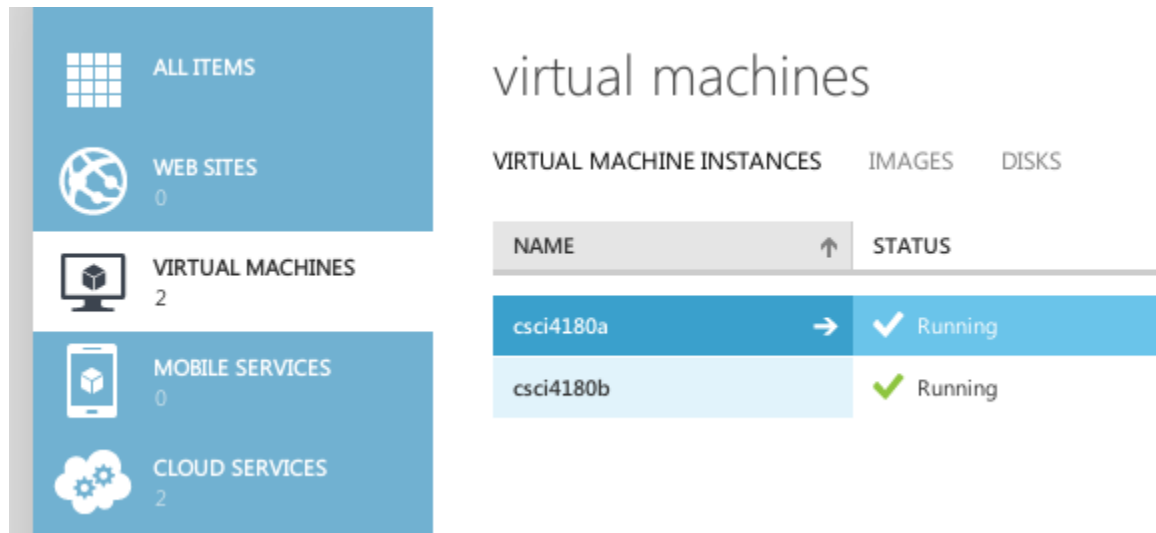
- DNS NAME:** csci4180c (with a green checkmark icon)
- IMAGE:** Ubuntu Server 12.04 L1 (dropdown menu)
- SIZE:** Small (1 core, 1.75 GB r) (dropdown menu, circled in red)
- USER NAME:** azureuser
- NEW PASSWORD:** (masked with dots, with a green checkmark icon)
- CONFIRM:** (masked with dots)
- REGION/AFFINITY GROUP:** Southeast Asia (dropdown menu)

At the bottom, there is a disclaimer: "By clicking Create, I agree this software is from Canonical and Canonical's [legal terms](#) apply to it. Microsoft doesn't provide rights for third party software."

The bottom right corner features a button labeled "CREATE A VIRTUAL MACHINE" with a green checkmark icon.

# Create VMs

- When succeeded, you can browse the VMs











The screenshot displays the Azure portal interface for managing virtual machines. On the left, a sidebar contains navigation links: 'ALL ITEMS', 'WEB SITES' (0), 'VIRTUAL MACHINES' (2), 'MOBILE SERVICES' (0), and 'CLOUD SERVICES' (2). The 'VIRTUAL MACHINES' link is selected. The main content area is titled 'virtual machines' and features three tabs: 'VIRTUAL MACHINE INSTANCES', 'IMAGES', and 'DISKS'. The 'VIRTUAL MACHINE INSTANCES' tab is active, showing a table of running VMs.

NAME	STATUS
csci4180a	Running
csci4180b	Running

# Other Services

- There are also several interesting services on Azure
- You might have a try on those cool stuffs
- Do remember the limit of academic grand

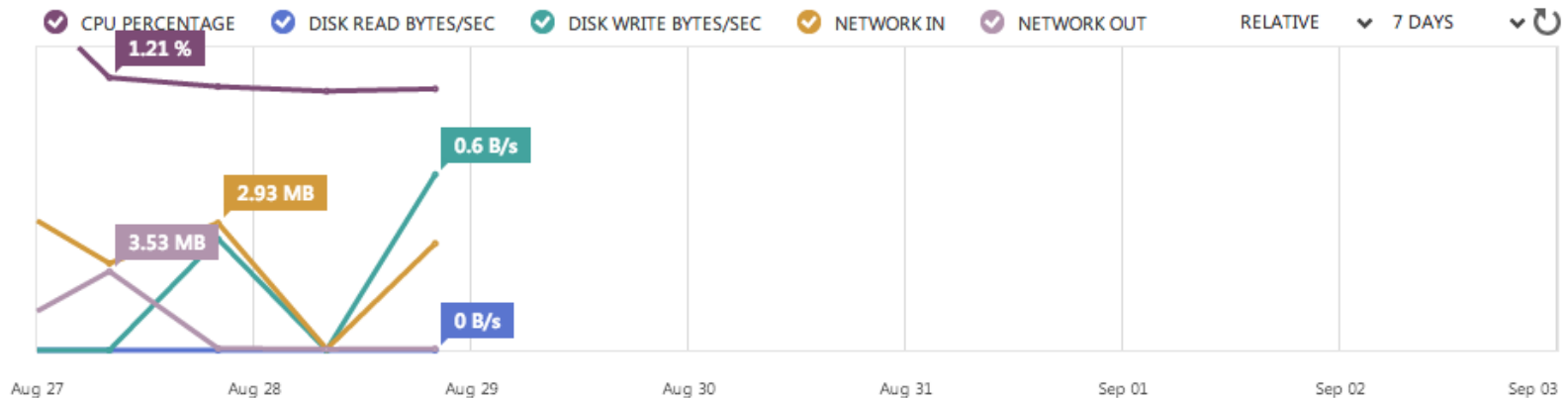
	WEB SITES 0
	VIRTUAL MACHINES 2
	MOBILE SERVICES 0
	CLOUD SERVICES 2
	SQL DATABASES 0
	STORAGE 1
	SQL REPORTING 0
	MEDIA SERVICES 0

# Browse VM status

csci4180a

Click “monitor” to view  
the status of VMs

[DASHBOARD](#) [MONITOR](#) [ENDPOINTS](#) [CONFIGURE](#)

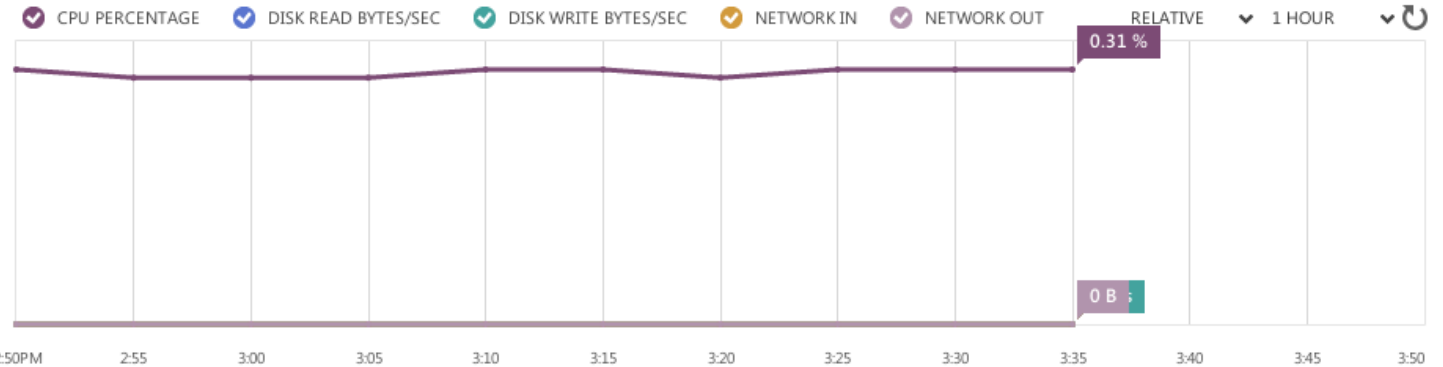


	NAME	SOURCE	MIN	MAX	AVG	TOTAL	ALERT RULES	
✓	CPU Percentage	csci4180a	1.15 %	1.21 %	1.17 %	---	Not Configured	
✓	Disk Read Bytes/sec	csci4180a	0 B/s	0 B/s	0 B/s	---	Not Configured	
✓	Disk Write Bytes/sec	csci4180a	0 B/s	0.6 B/s	0.21 B/s	---	Not Configured	
✓	Network In	csci4180a	28.02 KB	2.93 MB	14.29 KB	7.41 MB	Not Configured	
✓	Network Out	csci4180a	46.9 KB	3.53 MB	7.18 KB	3.72 MB	Not Configured	



## csci4180a

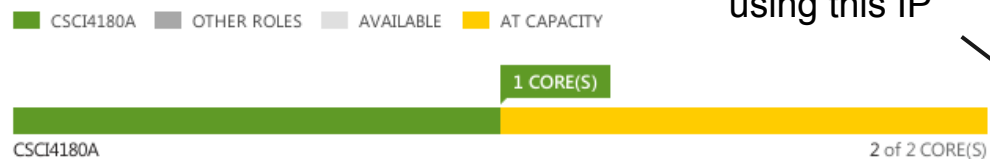
[DASHBOARD](#) [MONITOR](#) [ENDPOINTS](#) [CONFIGURE](#)

web endpoint status PREVIEW

You have not configured a web endpoint for monitoring. Configure one to get started.

[CONFIGURE WEB ENDPOINT MONITORING](#) 

## usage overview



disks

DISK	TYPE	HOST CACHE	VHD	
cscsi4180a-cscsi4180a-0-201...	OS disk	Read/Write	http://portalvhdsms5kijw7h6zc	

quick glance

STATUS  
Running

DNS  
csci4180a.cloudapp.net

HOST NAME  
csci4180a

PUBLIC VIRTUAL IP (VIP) ADDRESS  
168.63.172.231

INTERNAL IP ADDRESS  
10.78.54.31

SSH DETAILS  
csci4180a.cloudapp.net : 22

SIZE  
Small (1 core, 1.75 GB memory)

DISKS  
1

You can ssh  
to your VM  
using this IP

# Access VMs

- In your terminal

```
chintran@Axima ~ $ ssh azureuser@168.63.172.231
azureuser@168.63.172.231's password:
Welcome to Ubuntu 12.04.2 LTS (GNU/Linux 3.2.0-48-virtual x86_64)

* Documentation:  https://help.ubuntu.com/

System information as of Tue Aug 20 08:04:24 UTC 2013

System load:  0.0                       Processes:            81
Usage of /:   5.0% of 28.82GB           Users logged in:     0
Memory usage: 12%                      IP address for eth0: 10.78.54.31
Swap usage:   0%

Graph this data and manage this system at https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

Use Juju to deploy your cloud instances and workloads:
https://juju.ubuntu.com/#cloud-precise

55 packages can be updated.
31 updates are security updates.

Last login: Thu Aug  1 06:17:53 2013 from sepc463.se.cuhk.edu.hk
azureuser@csci4180a:~$ █
```

# Install Hadoop

- First install Java 6

- ~\$ sudo add-apt-repository ppa:webupd8team/java
- ~\$ sudo apt-get update
- ~\$ sudo apt-get install oracle-java6-installer

- Create hadoop user and add key

- ~\$ sudo addgroup hadoop
- ~\$ sudo adduser --ingroup hadoop hduser
- ~\$ su - hduser
- ~\$ ssh-keygen -t rsa -P ""
- ~\$ cat \$HOME/.ssh/id\_rsa.pub >> \$HOME/.ssh/authorized\_keys

# Install Hadoop

- Copy ssh keys
  - only need to be done on namenode

```
• $ ssh-copy-id -i $HOME/.ssh/id_rsa.pub username@192.168.0.1
• $ ssh-copy-id -i $HOME/.ssh/id_rsa.pub username@192.168.0.2
• $ ssh-copy-id -i $HOME/.ssh/id_rsa.pub username@192.168.0.3
```

- Check whether ssh needs password or not
  - master node should be able to access slave nodes without password after this

# Install Hadoop

- Disable IPv6

- ~\$ sudo gedit /etc/sysctl.conf
  - net.ipv6.conf.all.disable\_ipv6 = 1
  - net.ipv6.conf.default.disable\_ipv6 = 1
  - net.ipv6.conf.lo.disable\_ipv6 = 1
- ~\$ sudo sysctl -p

- Download Hadoop

- ~\$ wget <http://www.eng.lsu.edu/mirrors/apache/hadoop/core/hadoop-0.22.0/hadoop-0.22.0.tar.gz>
- ~\$ cd /home/hduser
- ~\$ tar xzf hadoop-0.22.2.tar.gz
- ~\$ mv hadoop-0.22.2 hadoop

# Install Hadoop

- Set hadoop environment
  - In **hadoop/conf/hadoop-env.sh** append following

- export JAVA\_HOME=/usr/lib/jvm/java-6-sun
  - #depends where you put the jvm
- export HADOOP\_OPTS=-Djava.net.preferIPv4Stack=true
  - #disable IPv6

# Install Hadoop

- Set hadoop core
  - In **hadoop/conf/core-site.xml** append following

```
• <property>
•     <name>hadoop.tmp.dir</name>
•     <value>/home/hduser/hadoop/tmp</value>
• </property>
• <property>
•     <name>fs.default.name</name>
•     <value>hdfs://192.168.0.1:54310</value>
• </property>
```

# Install Hadoop

- Set hadoop mapred-site
  - In **hadoop/conf/mapred-site.xml** append following


```
• <property>
•     <name>mapred.job.tracker</name>
•     <value>192.168.0.1:54311</value>
• </property>
```

- Set hadoop hdfs
  - In **hadoop/conf/hdfs-site.xml** append following

```
• <property>
•     <name>dfs.replication</name>
•     <value>3</value>
• </property>
```



# Install Hadoop

- Set hadoop master
  - In **hadoop/conf/masters** Add hostname which is supposed to run JobTracker and NameNode
  - eg. 192.168.0.1
- Set hadoop slave
  - In **hadoop/conf/slaves** Add hostname which is supposed to run TaskTracker and DataNode
  - eg. 192.168.0.1 
  - eg. 192.168.0.2
  - eg. 192.168.0.3

# Install Hadoop

- Format Hadoop Namenode
  - only on master

- `~$ hadoop namenode -format`

**Important !**

# Install Hadoop

- Start hadoop on master

- ~\$ start-all.sh

- you can type “jps” to see whether the startup is successful

```
5660 TaskTracker
7176 Jps
5436 JobTracker
5141 DataNode
5352 SecondaryNameNode
4923 NameNode
```

- **Office SHB 118**
- **Facebook** <https://www.facebook.com/groups/200985016728843/>

**Thank you**