# An Introduction to Cloud Shell

(in less than 5 minutes)

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The ISB Cancer Genomics Cloud
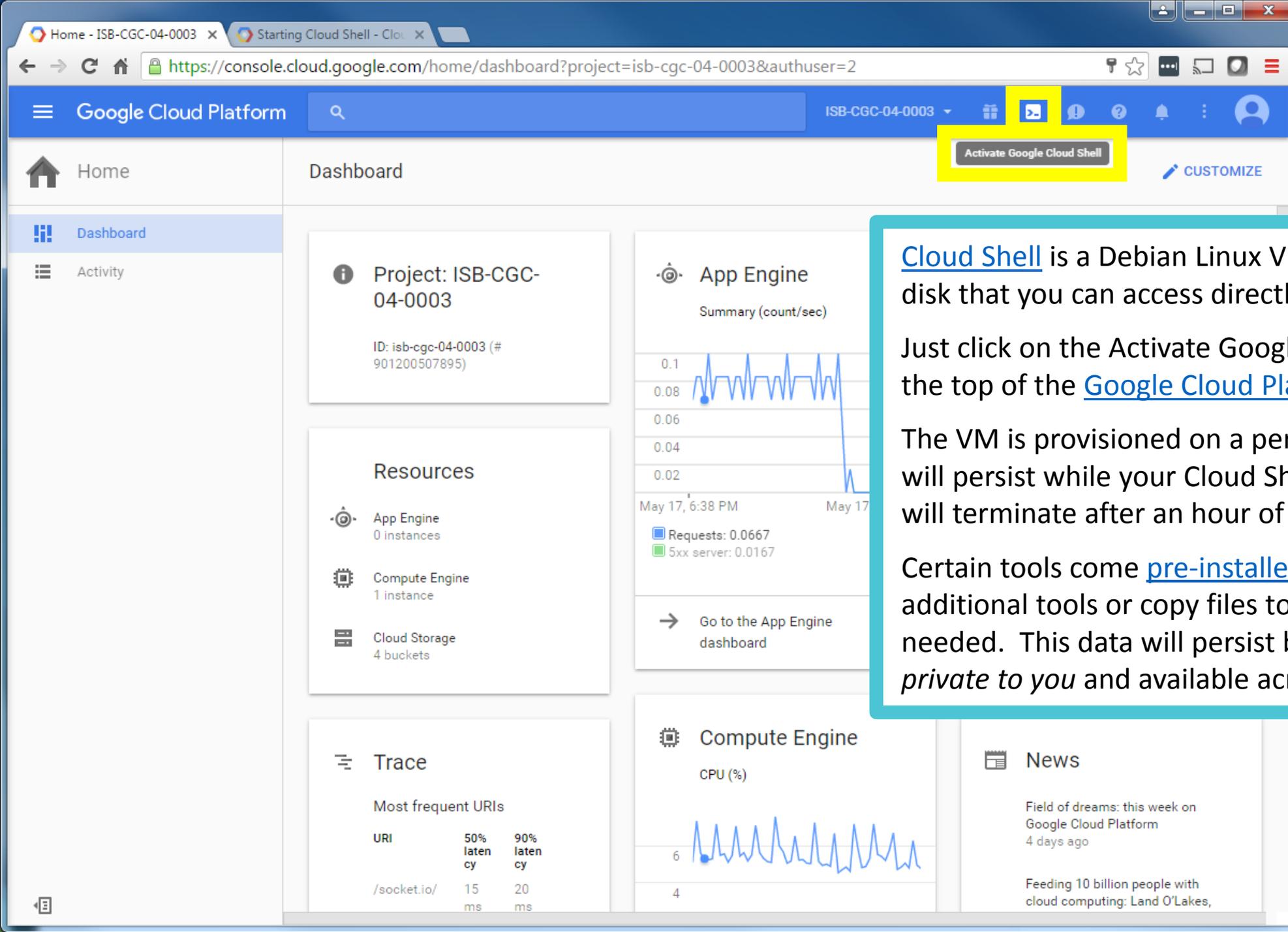
Cloud Shell is a Debian Linux VM with a 5GB persistent disk that you can access directly from the Console.

Just click on the Activate Google Cloud Shell button at the top of the Google Cloud Platform Console.

The VM is provisioned on a per-user, per-session basis, will persist while your Cloud Shell session is active, and will terminate after an hour of inactivity.

Certain tools come pre-installed and you can install additional tools or copy files to your home directory as needed. This data will persist between sessions and is *private to you* and available across projects.
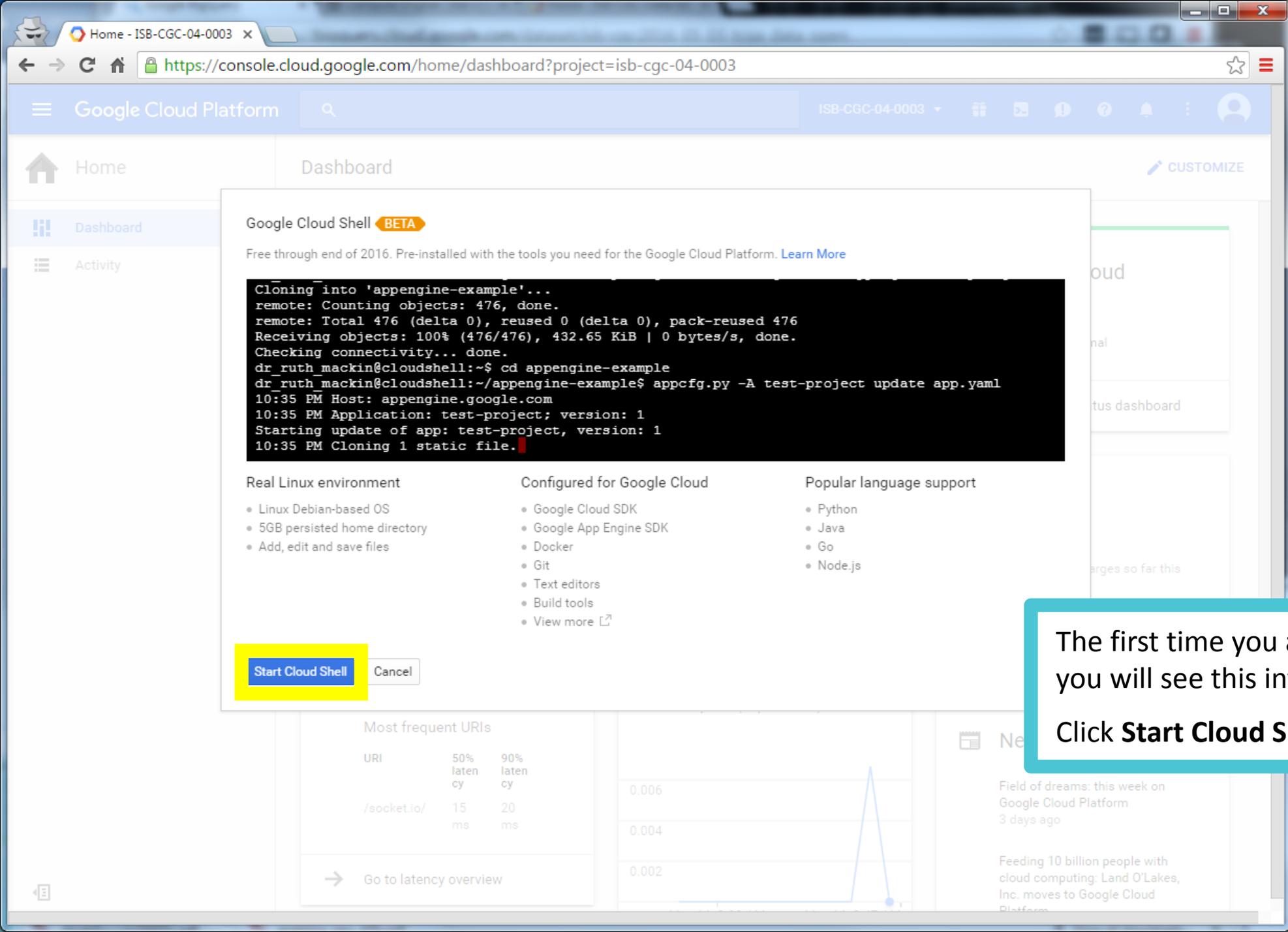
The first time you activate the Cloud Shell, you will see this introductory pop-up.

Click **Start Cloud Shell**.

The Cloud Shell session opens inside a new frame at the bottom of the console. It can take a few seconds for the session to be initialized.

Once you see the prompt, your Cloud Shell session is ready to use.

You can minimize, open in a new window, or close your Cloud Shell session using the controls in the upper right corner.

You can also open additional shell sessions as additional tabs using the **+** symbol, or close existing sessions using the **x**.

You can access settings and other information from the gear icon.

```
Welcome to Cloud Shell! For help, visit https://cloud.google.com/cloud-shell/help.
dr_ruth_mackin@isb-cgc-04-0003:~$
```
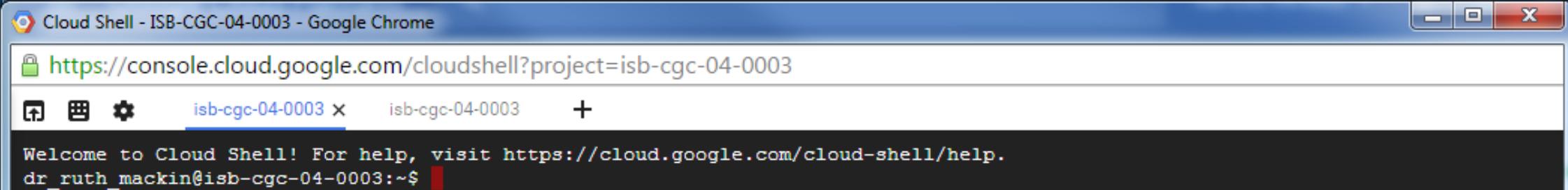
Popping the shell out into its own window lets you resize it and gives you more space to work.

Let's install a few additional Python packages so that we can run the ISB-CGC python examples. Type or paste the following commands into your Cloud Shell:

```
sudo pip install google-api-python-client
sudo pip install python-dateutil
```

Now we'll clone the ISB-CGC examples-Python repository and run an example script that will query the CCLE data at a point mutation of interest (takes about 10 minutes to scan over 500 samples):

```
cd
mkdir git_home
cd git_home
git clone https://github.com/isb-cgc/examples-Python.git
cd examples-Python/python
python ./query_ccle_reads_v2.py -c 7 -p 140453136 -w 25
```

https://console.cloud.google.com/cloudshell?project=isb-cgc-04-0003

isb-cgc-04-0003 ✕   isb-cgc-04-0003   +

Your Google Cloud Shell session was idle for over 60 minutes and terminated.   **Reconnect**   Close

```
        {
                "kind": "cohort_ap
                "name": "example cohort from samples",
                "perm": "OWNER",
                "email": "dr.ruth.mackin@gmail.com",
                "comments": "None",
                "filters": [
                        {
                                "name": "SampleBarcode",
                                "value": "[u'TCGA-OR-A5J2-01A', u'TCGA-OR-A5J2-10A', u'TCGA-OR-A5J3-01A', u'TCGA-OR-A5J3-10A', u'TCGA-OR-A5.
4-01A', u'TCGA-OR-A5J4-10A', u'TCGA-OR-A5J5-01A', u'TCGA-OR-A5J5-10A', u'TCGA-OR-A5J6-01A', u'TCGA-OR-A5J6-10A', u'TCGA-OR-A5J7-
01A', u'TCGA-OR-A5J7-10A', u'TCGA-OR-A5J8-01A', u'TCGA-OR-A5J8-10A', u'TCGA-OR-A5J9-01A', u'TCGA-OR-A5J9-10A']"
                        }
                ],
                "last_date_saved": "2016-05-16 18:53:09",
                "id": "363"
        }
    ],
    "kind": "cohort_api#cohorts",
    "etag": "\"Ga8btiTfgttDwD6hb042onDGVm0/ayxhC4hdwFRd_TOaP1Rdo8CqaPw\""
}

 *** calling delete endpoint ***   363
{
    "msg": "Cohort 363 successfully deactivated.",
    "kind": "cohort_api#cohortsItem",
    "etag": "\"Ga8btiTfgttDwD6hb042onDGVm0/KS7RMeCCe70-qF9uORpDQMItfx4\""
}


 ================================================================

 time taken in seconds :  2.59256911278


 ================================================================
dr_ruth_mackin@isb-cgc-04-0003:~/git_home/examples-Python/python$
```

After 60 minutes of inactivity, your session will be terminated, but you can **Reconnect** with just one click.

Cancer Genomics Cloud

What Next?

You can find more details about [Cloud Shell](#) in the [Google Cloud Platform Product Documentation](#).

The ISB-CGC platform includes an interactive [Web App](#), over a Petabyte of TCGA data in Google Genomics and Cloud Storage, and tutorials and code examples on [GitHub](#) to get you started.

Documentation for the [ISB-CGC](#) platform and [Google Genomics](#) can be found on readthedocs.