Usage Instructions for the BOINC with Red Hat Enterprise Linux 7.6 AMI

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Getting Started

This AMI meets the AWS 1-Click fulfillment experience. To get started, simply:

1. Log into the AWS console and navigate to the EC2 console.
2. Click the 'Launch Instance' button to launch a new instance.
3. Search for the BOINC with Red Hat Enterprise Linux 7.6 AMI in the search panel project. Select that AMI.
4. Choose the EC2 instance type you'd like to launch the AMI on. Any instance type will do for BOINC!
5. Choose the 'Review and Launch' button.
6. Launch!

That's it! In a few minutes, your EC2 instance should start up. You now have a fully functional version of Red Hat Enterprise Linux 7.6. Additionally, a BOINC client will automatically start up and begin polling for BOINC jobs.

You'll learn in the next few sections how to configure your EC2 instance to execute your BOINC project-of-choice.

Signing up with BOINC

You don't have to sign up with BOINC in order to use the BOINC with Red Hat Enterprise Linux 7.6 AMI. The AMI will run just fine without any configuration. That said, if you want to run a BOINC project on your instance, you'll have to do a few things. First, you have to have an account with at least one BOINC project. If you already have such an account, you can skip this section. Here, we'll show you how to sign up for such a project, using the MilkyWay@Home project to illustrate the process:

1. In a browser, navigate to MilkyWay@Home.
2. Click on the 'Your account' link about half-way down the page.
3. Click 'Create an account' and create your account.
4. Once your account has been created, log in to MilkyWay@Home in your browser with your new credentials (email and password). You should see an Account Information panel like the one below.

5. Click on the 'View' link next to Account keys.
6. You'll see a page like the one below, titled 'Account Keys'. You'll have to provide your weak account key and master url when setting up so make note of them now. Note that the account keys in the image below have been partially redacted for privacy.

Of course, you don't have to use the MilkyWay@Home project. There are tens of BOINC projects available and you can pick projects at https://boinc.berkeley.edu/projects.php. Once you've chosen a BOINC project and created an account,
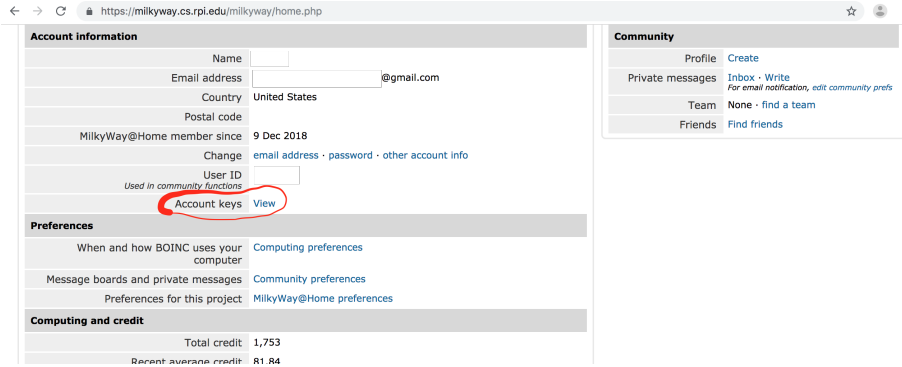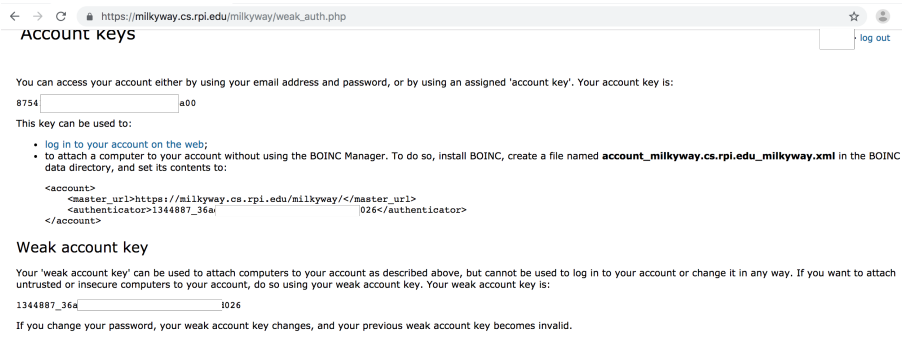
Figure 1: Main account page at MilkyWay@Home site

Figure 2: Main account keys (partially redacted) at MilkyWay@Home site

discover and make note of your weak account key and master project url as described above.

Note that some projects reward you with gridcoin. A list of these projects is at https://gridcoin.us/.

Configuring Your BOINC Project in the BOINC with Red Hat Enterprise Linux 7.6 AMI

From the EC2 Console

1. Log into the AWS console and navigate to the EC2 console.
2. Select the EC2 instance that you launched with the BOINC with Red Hat Enterprise Linux 7.6 AMI.
3. Click the 'Actions' button at the top of the EC2 table.
4. In the Actions menu which appears, select 'Instance State' > 'Stop'.
5. Wait for your instance to stop.
6. Click the 'Actions' button again, but this time select 'Instance Settings' > 'View/Change User Data' as shown in the image below.
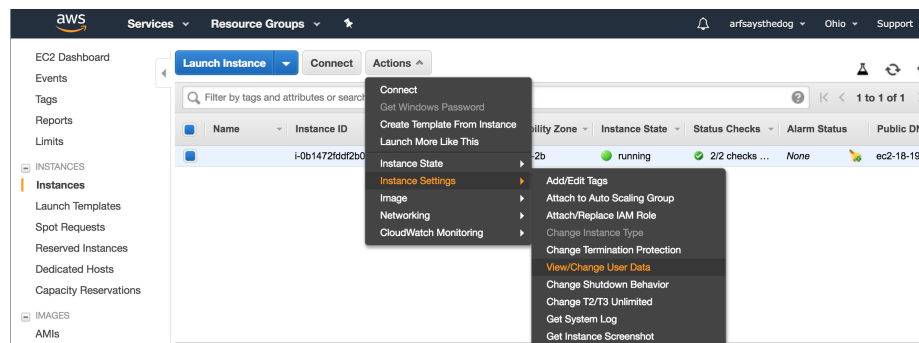

Figure 3: Menu for changing your EC2 instance's user data after stopping the instance.

7. In the User Data text area that appears, enter the master url of the BOINC project you'd like to run followed by your weak account key, separated by a comma.
8. Click 'Save'
9. In the Actions menu, select 'Instance State' > 'Start'.

Once your EC2 instance starts back up, your new BOINC project should start automatically on that instance.

Note that if you'd like to change your BOINC project at any time, simply follow the steps above to stop the running instance, set new user data and restart that

instance. Any previously configured BOINC project will cease to run; the new BOINC project you configured will run instead.

If you'd like to stop running a BOINC project on a given EC2 instance, repeat the steps above. At step 7, delete the existing master project url/weak account key pair.

From the Elastic Beanstalk Console

Coming soon. . . .

Verifying that your BOINC Project is Running

There are several ways to verify that – after your EC2 instance starts up – it is actually crunching the data for your chosen BOINC project. You can:

- SSH into the node as the ec2-user, or a similarly privileged user. You can get instructions for ssh'ing onto your node by clicking the 'Connect' button in the EC2 console. Once you are logged in on the instance, run **boinccmd –get_tasks** on the command line. You should see a list of BOINC tasks that are currently running on your node. If you see no tasks, wait a few minutes and try again; it sometimes takes several minutes for task data to be downloaded from BOINC sources.
- Navigate to the online account of your chosen BOINC project (the same place where you got your master project URL and weak account key). Most BOINC accounts list the tasks which you are currently running as well as the machines the tasks are running on. Note that it may take minutes to hours for your tasks to show up in your BOINC account.

Troubleshooting

- It could be the case that the BOINC project you have chosen currently has no data to crunch. Check that project's page online to determine its status.
- Check that the project url and weak account key you provided to your EC2 instance are correct.
- To determine if there was an error starting BOINC on your EC2 instance, ssh onto that instance and run the command **journalctl -u boinc-project-attach.service** on the command line which will show you the startup logs that BOINC writes when trying to attach to a new project. Look for any errors in those logs.