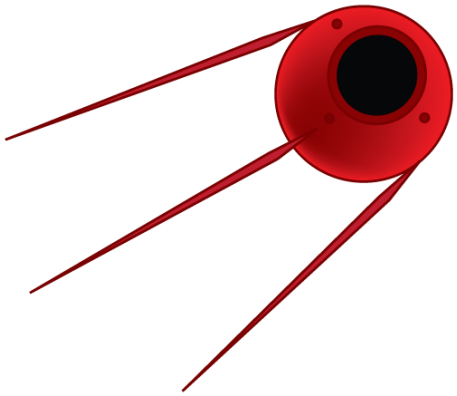

Sputnik Installation and Configuration Guide

1 Contents

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2 Introduction

Sputnik is Teradek's interface between Bond and your streaming destination. Sputnik is designed to run on a Linux computer either in the cloud (using Amazon's EC2 services) or on a local server with a single, publically addressable TCP port. For Amazon EC2 configuration, start with Creating an Amazon EC2 instance for Sputnik**,** page **3.**

3 Installing Sputnik (Local Linux Machine)

1. Download the Sputnik RPM file. This package contains the Sputnik binaries and configuration files.
2. Open your file browser and navigate to the directory containing the Sputnik RPM.
3. Double click to open your package manager and follow prompts to install Sputnik.
4. You will be prompted for an administrator password to complete the installation.

Note: As of Sputnik version 1.0, the following Linux distributions have been tested:

- Fedora 13
- Fedora 14
- Fedora 15
- Amazon Linux 2011
- Enterprise Linux 6 (CentOS 6)
- Debian (Stable)

4 Sputnik Operation

1. To start Sputnik: `sudo service sputnik start`
2. To stop Sputnik: `sudo service sputnik stop`
3. To restart Sputnik: `sudo service sputnik restart`
4. Sputnik Dashboard: Access the sputnik dashboard by entering Sputnik's IP address (or host name) and web server port in your browser. For example, if Sputnik's IP address is 192.168.1.200 and it is using the default web server port (1957), access the dashboard by entering 'http://192.168.1.200:1957' in your web browser.

   The Sputnik Dashboard displays statistics and information about connected modems' throughput, round trip delay, and data usage. In addition, Sputnik's buffer statistics and uptime are displayed. A restart button is also present on the Dashboard.

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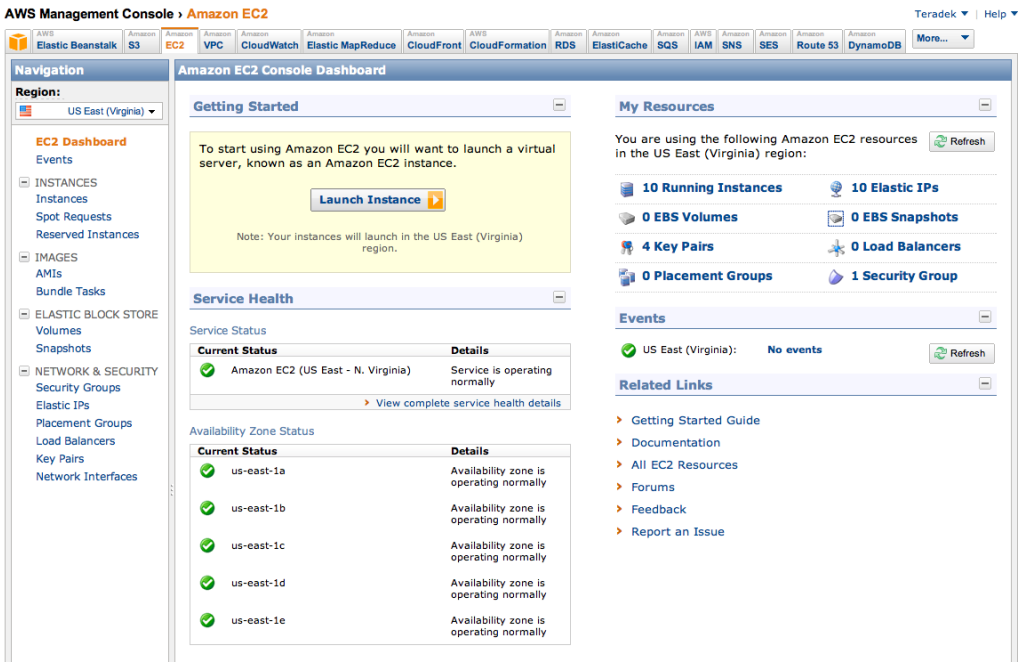
5. Sputnik log file location: `/var/log/sputnik.log` (to view Sputnik's output while it is running, use '`tail -f /var/log/sputnik.log`')
6. Sputnik configuration file location: `/etc/sputnik.conf`
   i. Sputnik's configuration file contains two options – listening port and web server port. Sputnik must be restarted after any changes are made to the configuration.
   ii. Listening Port: Default is 5111. This option allows you to specify the TCP port that Sputnik uses to listen for connections from Bond devices.
   iii. Web Server Port: Default is 1957. This option specifies the port to be used by the web server running Sputnik's dashboard.

5 Creating an Amazon EC2 instance for Sputnik

1. go to: https://console.aws.amazon.com/s3/home
2. Log in to your account, or sign up if you have not done so already.
3. Click the 'Amazon EC2' tab.



4. Select the appropriate Region on the left navigation pane.
5. Set up a new Security Group if you have not done so already. See Configuring your EC2 Instance's Security Settings**,** page **7** for details.
6. Select 'Instances' in the navigation pane.
7. Click the large 'Launch Instance' button.

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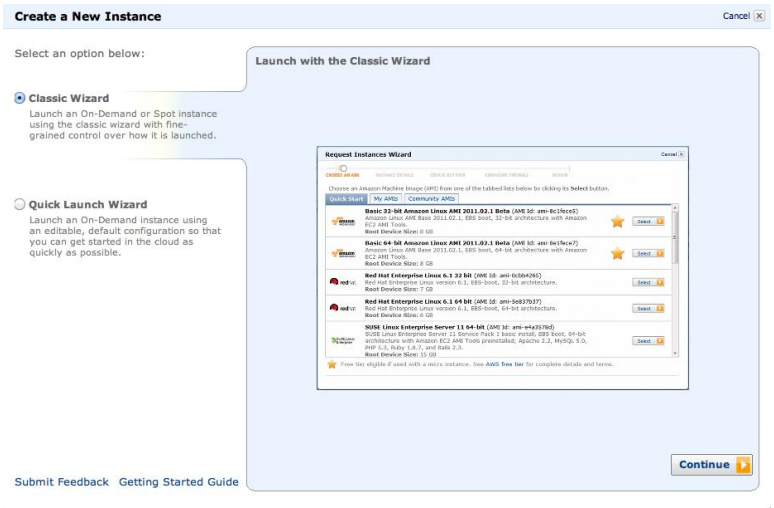
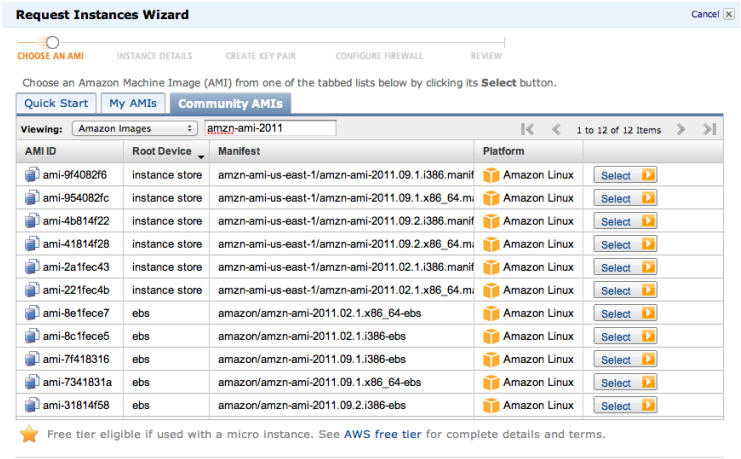


8. Select ‘Launch Classic Wizard.’
9. Select the ‘Community AMIs’ tab and wait for the AMI List to load.
10. Select ‘Amazon Images’ in the ‘Viewing’ dropdown.
    a. Search for ‘amzn-ami-2011.’
    b. Choose an i386 ami with ‘instance-store’ as the root device. Click the ‘Select’ button next to your chosen AMI. Your AMI name will look something like ‘amzn-ami-2011.09.02.i386-xx….xx.’ The “xx…xx” after the i386- varies depending on Region selected.

       Note: The i386 ami instance allows you to select a “small” instance. The others will force a larger and higher cost instance.



11. Choose your instance details. These details affect the pricing and resources available to you.
    a. For one or two encoders streaming to Sputnik, the ‘m1.small’ instance type should be sufficient.
    b. Select the default “Launch Instances” based on preferred Availability Zone or “No Preference”.

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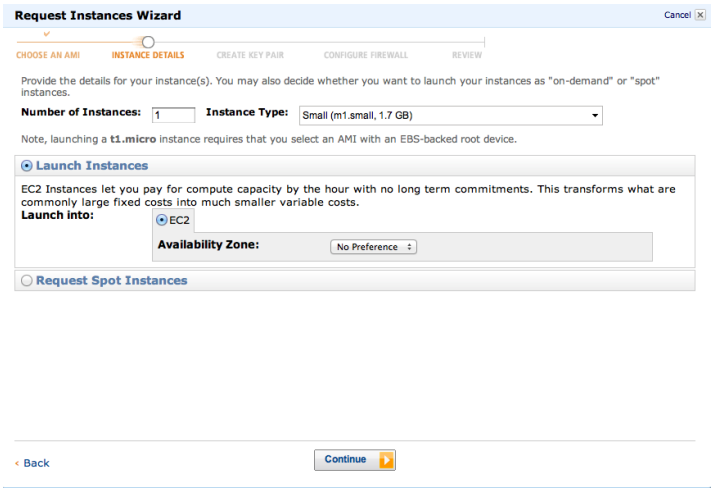
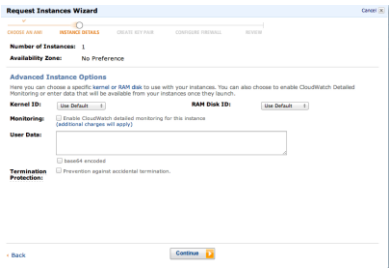
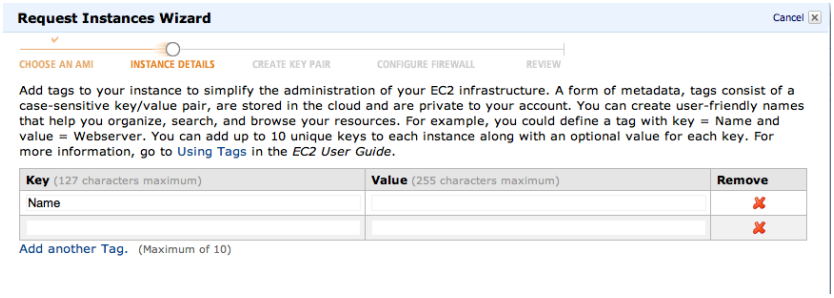


12. Skip the ‘Advanced Instance Options’ by selecting Continue.



13. Add a name to your instance by specifying it next to ‘Name’ in the ‘Value’ column on the tags page.



14. Create a Key-Pair. In this case we have entered ‘TeradekBond’ as an example.

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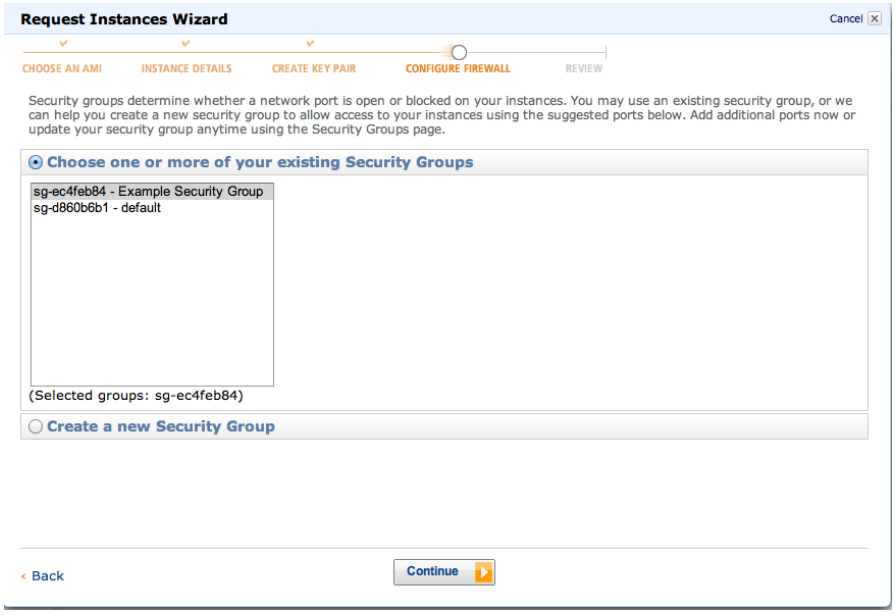
15. Download the '.pem' permissions file. This file is required for SSH access to your Sputnik server. The permissions file can only be downloaded once from Amazon, so it may be wise to create a backup of the file. Note you will use this file later in the process.
16. Select the Security Group you configured in step 5 or configure a new one according to Configuring your EC2 Instance's Security Settings if you haven't already. Click Continue.



17. Review your settings and then click 'Launch.' After a short while your new EC2 instance will show as running in the Instances section of the AWS Management Console. Close the Launch Instance Wizard.

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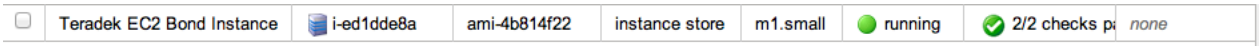
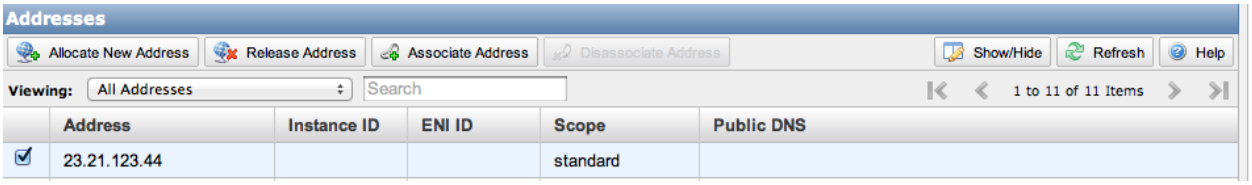
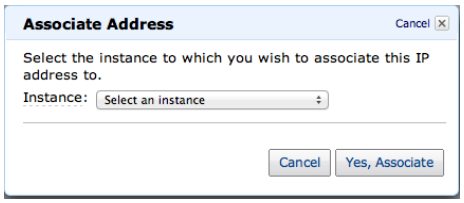


18. To give your EC2 instance a fixed address.
    a. In the Navigation bar Navigate to the ‘Elastic IPs’ section
    b. Click the ‘Allocate New Address’ button and confirm by clicking ‘Yes, allocate’ (make sure ‘EC2’ is selected).



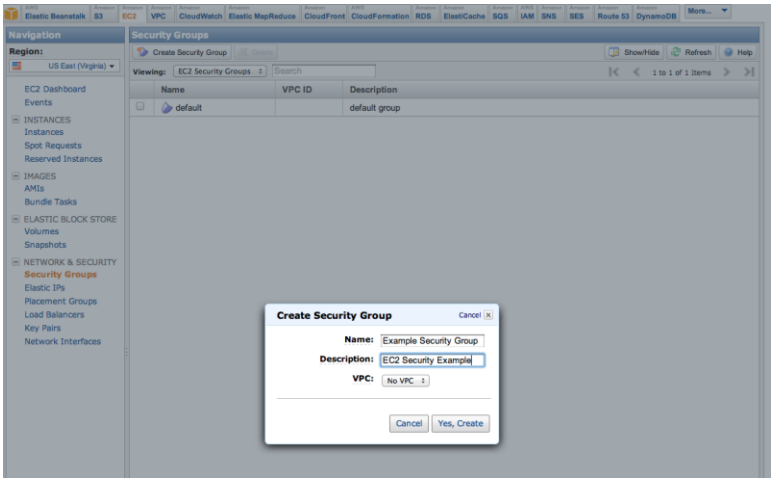
19. Select the newly listed Address listing and click the ‘Associate Address’ button. Select your newly created instance and click ‘Yes, Associate.’



20. Your Amazon EC2 instance should now be running and ready for Sputnik installation.
21. NOTE: For the most up-to-date documentation, consult Amazon’s ‘Get Started with EC2’ guide, located at http://docs.amazonwebservices.com/AWSEC2/latest/GettingStartedGuide/

6 Configuring your EC2 Instance’s Security Settings

1. Select ‘Security Groups.’
2. Click ‘Create Security Group.’



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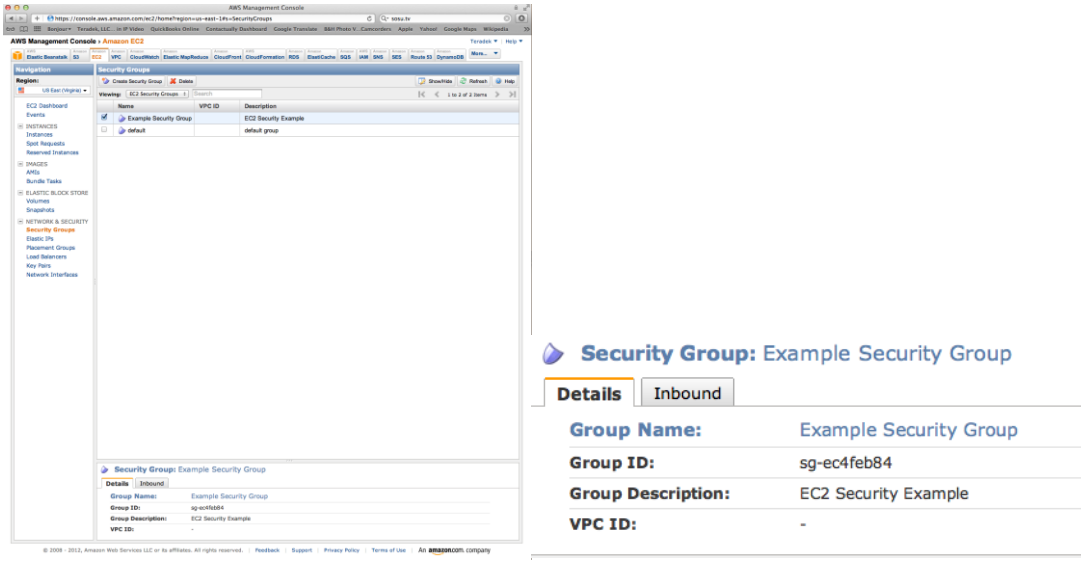
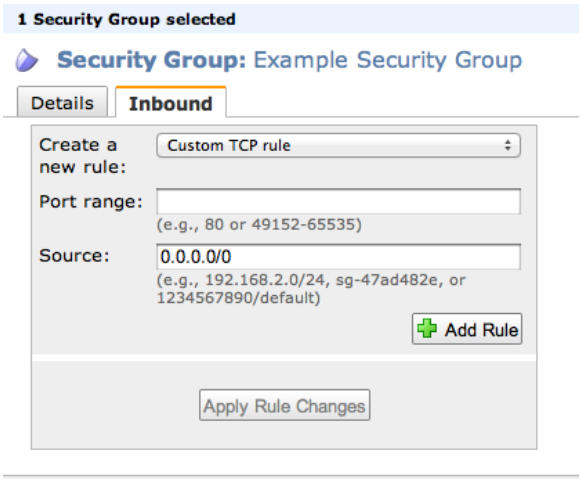
3. Enter a name and description for your security group. Make sure ‘No VPC’ is selected and click ‘Yes, Create.’



4. Select the ‘Inbound’ tab



   a. Select ‘Custom TCP rule.’
   b. Enter 5111 in the ‘Port range’ field . This is the default port used for connections between Bond and Sputnik.
   c. Click ‘Add Rule.’
   d. With ‘Custom TCP rule’ selected, add another rule for port 1957, the default web server port for Sputnik. If you are using a different port (See section 4, step 6), make sure that your configured web server port matches the rule created here.

5. Add a third rule under ‘Create a new rule’. This is required to access your EC2 instance to start, stop, or configure Sputnik.

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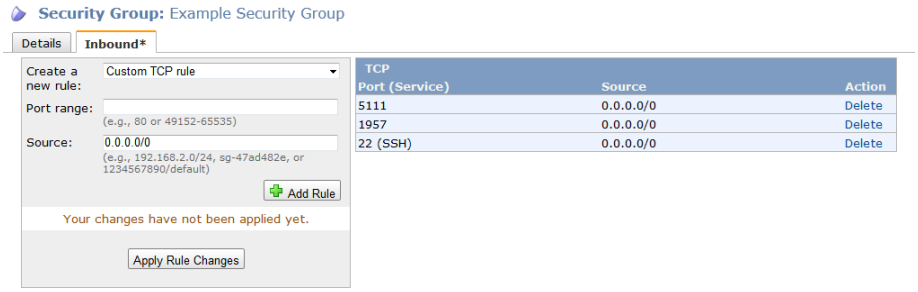
a. Select ‘SSH’ for ‘Create a new rule.’
b. Click ‘Add Rule.’
c. After adding the rules, the listing on the right should look similar to the following:



d. Click ‘Apply Rule Changes’ at the bottom of the Security Group pane.

7 Installing Sputnik (EC2)

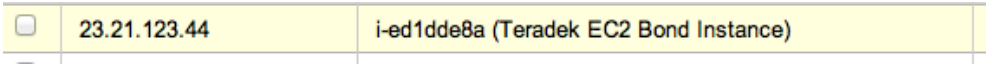
Download the Sputnik RPM file. This package contains the Sputnik binaries and configuration files. For convenience, save the RPM file to the same directory as your permissions file (Creating an Amazon EC2 instance for Sputnik, step 13).

Installing Sputnik requires the use of a terminal program. On Mac this can be found in the ‘Utilitities’ folder within Applications:

1. Mac/Linux users -- open a terminal and navigate to the directory where your permissions file is saved.
    a. Replace `<pem-file-location>` with the path to your permissions file.

    ```
    $ cd <pem-file-location>
    ```
2. Modify the permissions of the .pem file using `chmod`.
    a. Replace `<pem-file.pem>` with the permissions file name.

    ```
    $ chmod 400 <pem-file.pem>
    ```
3. Using `scp`, copy the file to your EC2 instance.
    a. You will need to use the IP address configured in Creating an Amazon EC2 instance for Sputnik, steps 16 and 17.



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b. Replace `<pem-file.pem>` with the permissions file name, `<sputnik-rpm>` with the Sputnik RPM name (and path if not in the same directory), and `<ip-address>` with the address of your EC2 instance.

```
$ scp –i <pem-file.pem> <sputnik-rpm> ec2-user@<ip-address>:~/
```

4. Connect via SSH to your Amazon EC2 instance.
    a. SSH allows you to log into your EC2 instance in the cloud to begin the installation process.
    b. Replace `<pem-file.pem>` with the permissions file name and `<ip-address>` with the address of your EC2 instance.

```
$ ssh –i <pem-file.pem> ec2-user@<ip-address>
```

5. If you are prompted, type 'yes' to continue.
6. Install Sputnik using `yum`.
    a. yum installs Sputnik on the EC2 instance.
    b. Replace `<sputnik-rpm>` with the Sputnik RPM name.

```
$ sudo yum –y localinstall <sputnik-rpm>
```

7. Once installed, start Sputnik.

```
$ sudo service sputnik start
```

8. See Sputnik Operation (Section 4) for more information on configuring and running Sputnik.

NOTE: type `ls` to view the contents of your current directory, this will display the RPM name, among other things.

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