Developer Setup

Goals

This module describes how to setup a developer environment. You will use this environment for the Lab exercises.

At the end of this module you will be able to:

- Install and Configure a single server development cluster in
  - AWS
  - your own computer
- Manage the development cluster


Server Installation

Server options

- Amazon Web Server instance (AWS)
- Install on your own server.
  - Windows
  - OSX
  - Linux

AWS Aerospike Server

For this course, Aerospike has prepared an Amazon EC2 instance for your use.

AMI: "**`aerotraining-developer-v0.71`**"

This instance has pre-loaded the following:

- Aerospike Java client
- Aerospike Python client
- Aerospike C client
- Aerospike data loader
- Oracle JDK 1.7
- maven
- lua
- git

You may not need all of these, but they are there for your convenience.

How To Log Into The AWS Instance

You will use the IP address for your own AWS instance to use with the training module.

Log into the server:

- Mac/Linux

  `ssh aerotraining@<ip_address>`

- Windows PC
  - You can use a tool such as putty to ssh login to the server:
  - http://www.chiark.greenend.org.uk/~sgtatham/putty/

The username/password is aerotraining/aerotraining.

You each should have your own IP address to log into your own instance. You can use whichever tool you are comfortable with to log in. You will not need to have a good knowledge of Linux for this class.

Server IP Address

Write down your server IP address

Install on your own Computer

Follow the instructions at this URL to install Aerospike on your own Machine

- http://www.aerospike.com/download/server/latest/

Install

- Aerospike server
- Aerospike tools
- Aerospike Management Console

Installing on Linux Server

To install the software you must have root/sudo privileges

- Download the server software

```
wget -O aerospike-server.tgz http://www.aerospike.com/download/server/latest/artifact/el6
```

- Download the Aerospike Monitoring software

```
wget -O aerospike-amc.rpm http://www.aerospike.com/download/amc/latest/artifact/el6
```

- Install the AMC
  - `sudo rpm -ivh aerospike-amc.rpm`
- Install the server
  - `tar xvf aerospike-server.tgz`
  - `cd aerospike-server-community-<version>`
  - `sudo ./asinstall`

The URLs for the latest version remain static, so these URLs will get the latest version of the both the database and the Aerospike Management Console.

It is NOT required to install the AMC as the same node as the Aerospike Server, but it is useful to install it here for the class.

Installing on Windows

Follow the instructions at:

- http://www.aerospike.com/docs/operations/install/vagrant/win/

Create an Aerospike Virtual Machine

1. Install Git for windows
2. Create an Aerospike Virtual Machine
3. Initialize the Aerospike Virtual Machine
4. Start Aerospike and the AMC

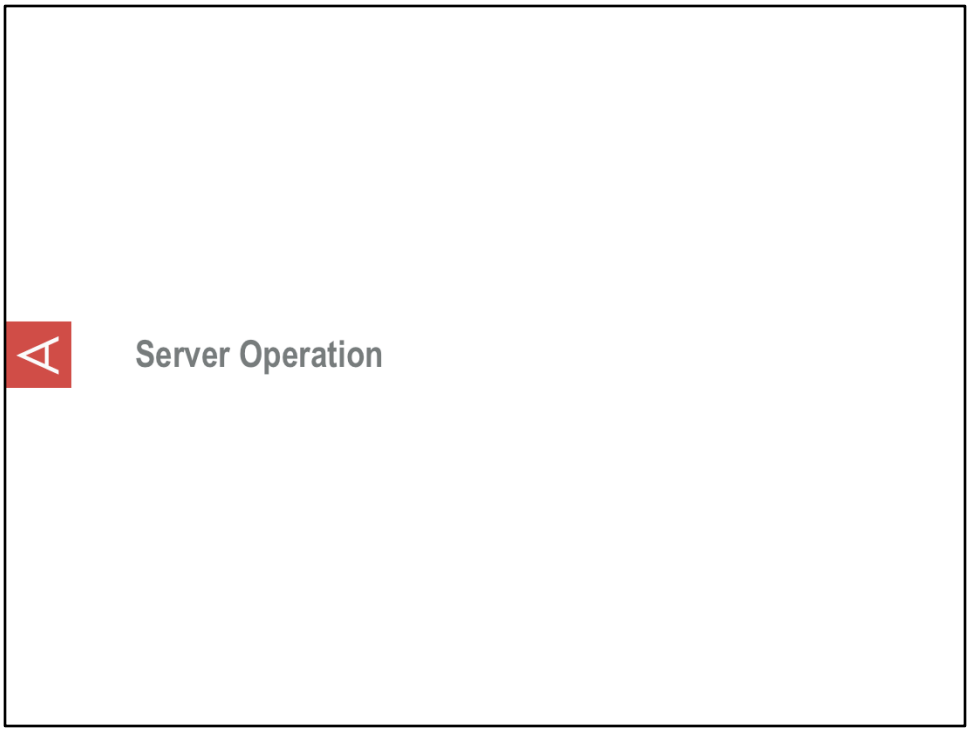
Installing on OSX

Follow the instructions at:

- http://www.aerospike.com/docs/operations/install/vagrant/mac/

Create an Aerospike Virtual Machine

1. Create an Aerospike Directory
2. Initialize the Aerospike Virtual Machine
3. Start Aerospike and AMC


Server Operation

Starting And Stopping Aerospike Server

Controlling the server requires you to be root or have sudo privileges, which the aerotraining user has.

Start server

```
sudo service aerospike start
```

Check on server status

```
sudo service aerospike status
```

Stop server

```
sudo service aerospike stop
```

Restart server

```
sudo service aerospike restart
```

Starting and Stopping the AMC Server

The Aerospike Management Console (AMC) is used to see how the server is doing.

Start server

```
sudo service amc start
```

Check on server status

```
sudo service amc status
```

Stop server

```
sudo service amc stop
```

Restart server

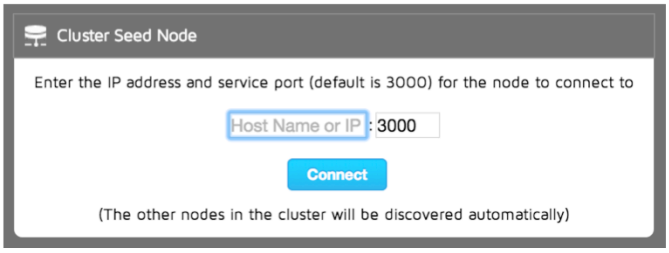
```
sudo service amc restart
```

Aerospike Management Console

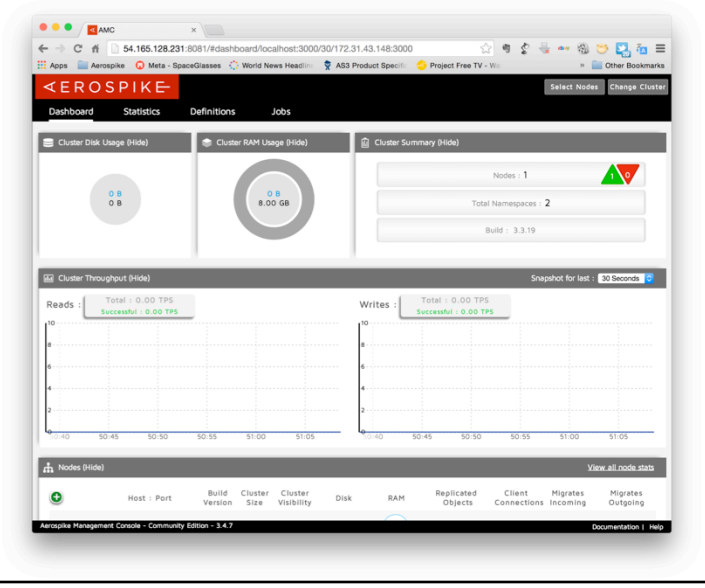
Connect to the AMC using

- http://<your ip address>:8081

You will be prompted for a node address in the cluster, enter your IP address:



AMC


AMC
54.165.128.231:8081/#dashboard/localhost:3000/30/172.31.43.148:3000
AEROSPIKE
Select Nodes
Change Cluster
Dashboard
Statistics
Definitions
Jobs
Cluster Disk Usage (Hide)
Cluster RAM Usage (Hide)
Cluster Summary (Hide)
Nodes : 1
Total Namespaces : 2
Build : 3.3.19
Cluster Throughput (Hide)
Snapshot for last : 30 Seconds
Reads :
Writes :
Nodes (Hide)
View all node stats
Host : Port
Build Version
Cluster Size
Cluster Visibility
Disk
RAM
Replicated Objects
Client Connections
Migrates Incoming
Migrates Outgoing
Aerospike Management Console - Community Edition - 3.4.7
Documentation | Help

Logs

It is always helpful to be able to look at the logs of the server. You MUST have root/sudo privileges to see the logs in the default locations:

```
/var/log/aerospike/aerospike.log
/var/log/aerospike/udf.log
```

It is often useful to keep a window open with a tail of the log:

```
sudo tail -f /var/log/aerospike/aerospike.log
```

UDF logging

Log entries are used to debug User Defined Functions (UDFs). To log UDF entries in a separate log file, do the following:

Edit the Aerospike configuration file:

`/etc/aerospike/aerospike.conf`

Locate the "logging" stanza and modify it to look like this:

```
logging {
    file /var/log/aerospike/aerospike.log {
        context any warning
     }
     file /var/log/aerospike/udf.log {
              context udf debug
   }
}
```

Restart Aerospike (`sudo service aerospike restart`)

If you are not comfortable with using a tool such as vi to edit the file, simply copy the example file by using:

```
sudo cp -f ~/aerospike.conf /etc/aerospike
```

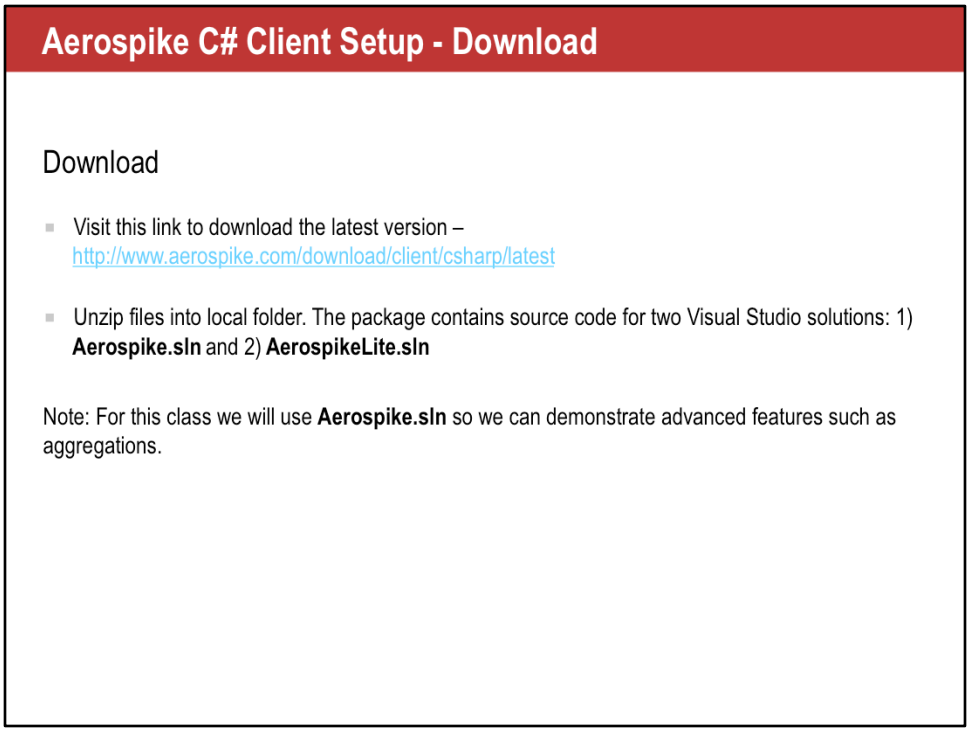
Development Environment

You will need to setup you language development environment to include Aerospike:

- Java
- C#
- Go

The details of each environment are in the next slides – follow the instructions for you language

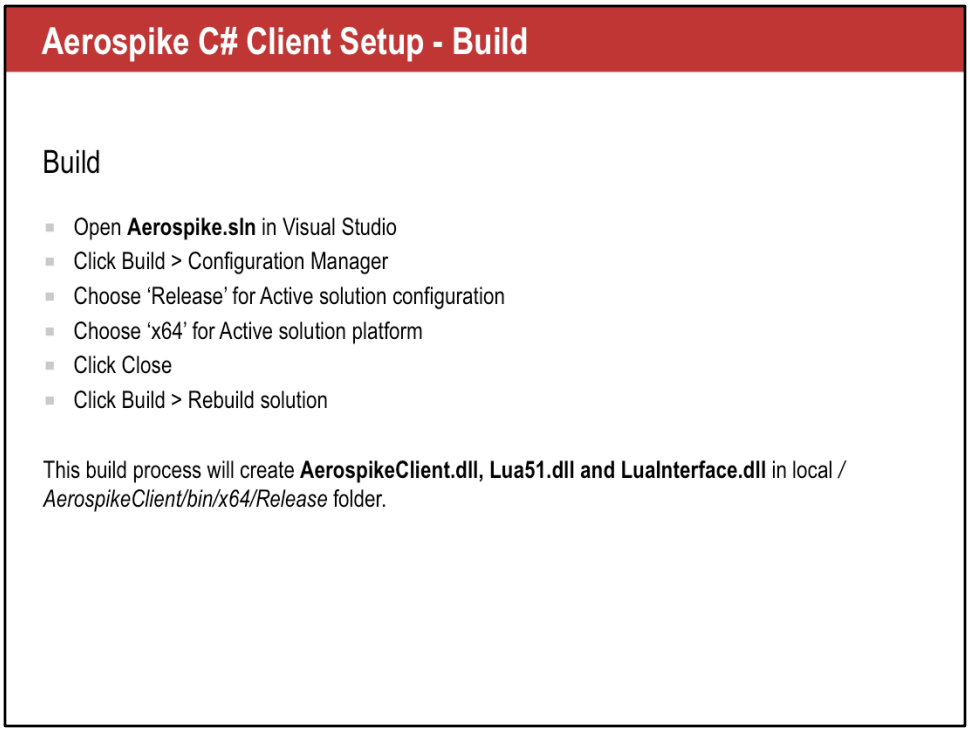
C# Client is one of the several client libraries that can be used to access Aerospike's database from an application. For a full list of client libraries, please visit http://www.aerospike.com/develop/



Aerospike.sln vs AerospikeLite.sln:

Aerospike.sln includes advanced features that depend on Lua interpreter. For example, secondary index query with user-defined aggregation. Supported compile targets are x64 (64-bit) and x86 (32-bit)

AerospikeLite.sln does *not* include advanced features such as aggregations. Effectively eliminating the dependency on Lua interpreter. Supported compile targets are AnyCPU, x64 (64-bit) and x86 (32-bit)



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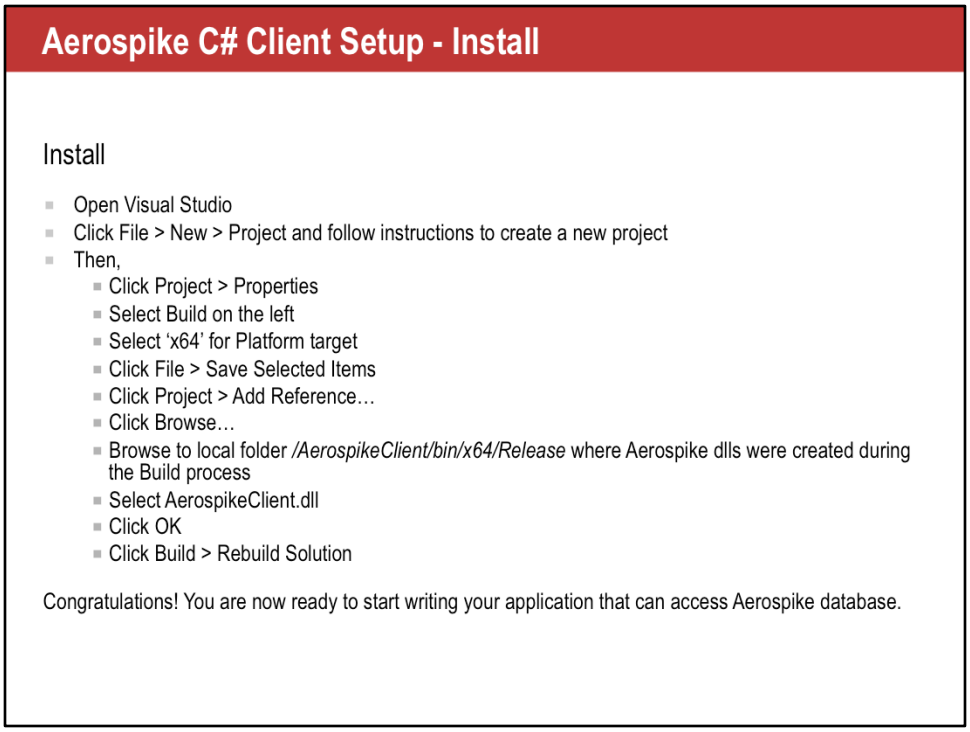
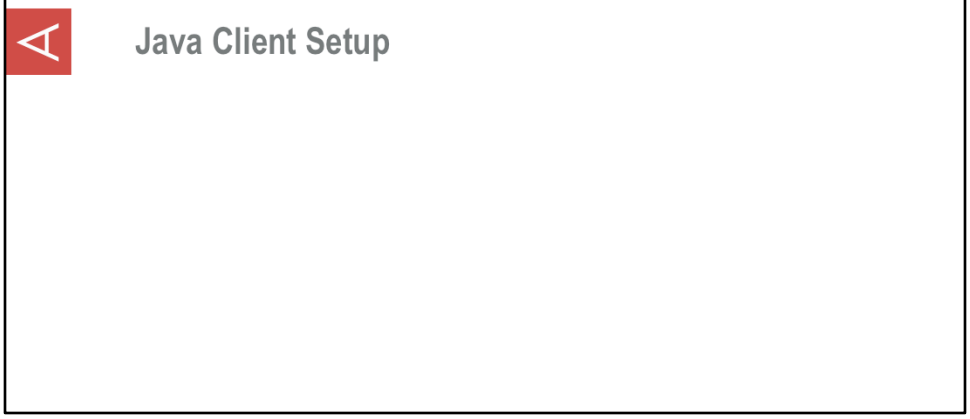


Two ways to install:

1) By adding reference to AerospikeClient DLL in an application. This is the norm.

2) By referencing the AerospikeClient project in an application. Unless absolutely necessary for very specific reason(s), this is not how applications normally reference external libraries.


Java Client Setup

Java Client Tools - Install

- Download and install Maven:
  - http://maven.apache.org/download.cgi#Installation
- Optional Eclipse Installation:
  - Download and install Eclipse JDT – Kepler or better
    - http://www.eclipse.org/jdt/
  - Install m2e plugin (maven):
    - Add an Update site for m2eclipse
    - http://download.eclipse.org/technology/m2e/releases
    - Install Maven Integration for Eclipse
  - Install Aerospike Developer Tools plugin:
    - Add an Update site for the Aerospike Developer Tools
    - https://github.com/aerospike/eclipse-tools/raw/master/aerospike-site
    - Install Aerospike Developer Tools

Java Client Setup- Download setup download

Download

- Visit this link to download the latest version – http://www.aerospike.com/download/client/java/latest
- Unzip/untar files into local folder. The package contains source code for the Java client, comprehensive examples and a Benchmark tool

Note: For this class we will use **Maven** to build the project and manage dependencies.

```
<dependencies>
   <dependency>
     <groupId>com.aerospike</groupId>
     <artifactId>aerospike-client</artifactId>
     <version>3.X.XX</version>
   </dependency>
 </dependencies>
```


Go Setup

Go Client install

Prerequisites

- Go version 1.2+
- The latest stable version of Go is at: http://golang.org/dl/

Installation

- Add the Go client in your GOPATH:

```
go get github.com/aerospike/aerospike-client-go
```

- To update the Go client:

```
go get -u github.com/aerospike/aerospike-client-go
```

Summary

You have learned how to:

- Install and Configure a single server development cluster in AWS
- Manage the development cluster


AEROSPIKE