Deploying Hydra with Ansible and AWS

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How this project started . . .
We had:
We wanted:
Why Ansible?

(There are lots of deployment / configuration managers)
Lightweight
Low barrier-to-entry
Broad audience
Easy to share
Why AWS?

(Why the cloud, even?)
Local limitations
Ubiquitous
cost-effective
responsive to growth
easy to backup, upgrade, maintain
Result:

https://github.com/acozine/sufia-ansible
Get started in Ansible

- Clone the codebase
- Copy group_vars/sample_all.yml to group_vars/all.yml
- Gather your AWS credentials and information
What you need on AWS

- An AWS account
- Settings on 2 services
  - IAM for user management
  - EC2 for machine management
Create an IAM group w/EC2 perms
Create an IAM user with API creds
Create an EC2 keypair
Create an EC2 Security Group
To find the right EC2 AMI ID, use the Ubuntu Amazon EC2 AMI Finder tool. The tool provides a grid of entries with columns for Zone, Name, Version, Arch, Instance Type, Release, AMI-ID, and AKI-ID. You can search by entering the criteria in the search bar.

Example entries:
- **Zone**: us-west-2
- **Name**: trusty
- **Version**: 14.04 LTS
- **Arch**: amd64
- **Instance Type**: hvm
- **Release**: 20150908
- **AMI-ID**: ami-cf3c21ff
- **AKI-ID**: hvm

Showing 1 to 6 of 8 entries (filtered from 957 total entries)
Find the right EC2 instance type

M3

This family includes the M3 instance types and provides a balance of compute, memory, and network resources, and it is a good choice for many applications.

Features:
- High Frequency Intel Xeon E5-2670 v2 (Ivy Bridge) Processors*
- SSD-based instance storage for fast I/O performance
- Balance of compute, memory, and network resources

<table>
<thead>
<tr>
<th>Model</th>
<th>vCPU</th>
<th>Mem (GiB)</th>
<th>SSD Storage (GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>m3.medium</td>
<td>1</td>
<td>3.75</td>
<td>1 x 4</td>
</tr>
<tr>
<td>m3.large</td>
<td>2</td>
<td>7.5</td>
<td>1 x 32</td>
</tr>
<tr>
<td>m3.xlarge</td>
<td>4</td>
<td>15</td>
<td>2 x 40</td>
</tr>
<tr>
<td>m3.2xlarge</td>
<td>8</td>
<td>30</td>
<td>2 x 80</td>
</tr>
</tbody>
</table>
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# used in ec2 role
backup_access_key: AKIAJ462HCFCPJSOS7MA
backup_secret_key: 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
backup_name: HydraConnectBackup

# used in launch_ec2 role
ec2_region: us-west-2
ec2_zone: us-west-2b
ec2_instance_type: t1.micro
ec2_image: ami-c53c21f5
ec2_key: ansible
ec2_access_key: AKIAJ462HCFCPJSOS7MA
ec2_secret_key: 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
ec2_security_group: sg-a5dc5ac1

# used in housekeeping role
keys_to_add:
  - https://github.com/acozine.keys
And run the playbook

$ ansible-playbook -i hosts ec2.yml --private_key=/path/to/private/half/of/keypair --ask-vault-pass
Ansible with Vagrant

prod - identical, for systems testing
dev - similar, easy to use
Future Work

- Handle code deployment with Ansible
- Add tests to the Ansible playbook
- Use dynamic inventory