Cloud Computing

Roger Hall
MidSouth Bioinformatics Center
University of Arkansas at Little Rock

rahall2@ualr.edu
HPC
SAAS
PAAS
IAAS
IT STINKS!
PROGRAMMING
You're Doing It Completely Wrong.
TIME

SHARING
ASPs
GOOD
FAST
CHEAP
PEW
PEW
The Internet
OUT THERE
## My Instances

### All Instances

<table>
<thead>
<tr>
<th>Instance</th>
<th>AMI ID</th>
<th>Root Device Typ</th>
<th>Type</th>
<th>Status</th>
<th>Lifecycle</th>
<th>Public DNS</th>
<th>Security Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>i-f3c474</td>
<td>ami-158607c</td>
<td>instance-store</td>
<td>m1.small</td>
<td>running</td>
<td>spot</td>
<td>ec2-204-236-196-238.compute-1.amazonaws.com</td>
<td>stemgroup</td>
</tr>
<tr>
<td>i-cb66b1a0</td>
<td>ami-51af9c</td>
<td>instance-store</td>
<td>m1.small</td>
<td>running</td>
<td>spot</td>
<td>ec2-184-73-76-227.compute-1.amazonaws.com</td>
<td>stemgroup</td>
</tr>
</tbody>
</table>

### AMI Launch Index: 0

- **Root Device:**
- **Root Device Type:** instance-store

### Block Devices:

- **N/A - Instance Store**

### Lifecycle:

- **spot**

### Public DNS:

- **ec2-184-73-76-227.compute-1.amazonaws.com**

### Private DNS:

- **domU-12-31-39-06-ED-17.compute-1.internal**

### Launch Time:

- **2010-03-09 19:51 CST**

### State Transition Reason:
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATION
LOCATI...
SLA
COMMUNICATE

REASON
Apache/mod_perl 2.0
HTTP Request Lifecycle
FAST
CHEAP
Different Time (asynchronous)

Same Time (synchronous)

Same Place (in person)

Different Place (online)
I WANT YOU TO TAKE A NUMBER
3. Find x.

Here it is

SIMPLICITY

The simplest solutions are often the cleverest
They are also usually wrong
Software

Agent Platform

Agent

Agent Management System

Directory Facilitator

Message Transport System
COMMUNICATE

REASON
REACTIVE
PROACTIVE
AUTONOMIC COMPUTING
MACHINE IMAGE