

Controller Flow: Add Host(s)

- controller receives add host(s) request
 - received arguments
 - cloud_spec
 - specifies cloud provider (openstack ...)
 - provider specific details used to provision vm(s)
 - vm_image(s), flavor(s), node_count, etc.
 - cluster_spec
 - specifies Hadoop provider
 - provider specific cluster details
 - cluster, host, host_components, etc.
- controller calls provision_nodes(cloud_spec) on cloud provider
 - cloud provider provisions vm(s) based on cloud_spec
 - blocks until network info (ip addr) are available for node(s)
 - returns cloud_ctx
 - general cluster information
 - servers[]
 - server specific information such as hostname, public/private ip addr, vm_image, flavor, etc.
 - functionality related to interacting with provisioned cluster/vm's
 - install_package(package)
 - yum -y, zypper --non-interactive, ...
 - execute(command)
 - execute a command on a server
 - execute_interactive(command, prompts)
 - execute a command that requires interactive responses
 - open_file(file, mode)
 - returns a file pointer to a remote file
- Controller calls add_hosts(cloud_ctx, cluster_spec) on Hadoop provider
 - provider adds nodes to Hadoop cluster and starts all specified services
 - HDP specific details
 - install/confirm various epel packages on node(s)
 - cloud_ctx.server[0].install('epel-release')
 - ...
 - install/setup/start Ambari agent
 - install ambari-agent package
 - cloud_ctx.server[0].install('ambari-agent')
 - update Ambari agent configuration
 - set Ambari server address in ambari-agent.ini configuration
 - lookup master host information for cluster
 - obtain via savanna_ctx
 - provided to Hadoop provider during init
 - server = savanna_ctx.lookup(cluster_name)
 - f = cloud_ctx.servers[0].open_file('ambari-agent.ini', 'r+')
 - f.write(...)
 - start ambari-agent

- `cloud_ctx.server[0].execute('ambari-agent start')`
- update various Hadoop configurations on hosts
- interact with Ambari via REST api
 - invoked via `savanna_ctx`
 - `savanna_ctx.invoke_rest(request)`
 - install Hadoop services
 - start Hadoop services