OpenStack实验环境部署

概述

- 安装工具概述
- 实验环境安装
  - 拓扑规划
  - DevStack概述
  - DevStack安装
  - 国内网络环境下的DevStack安装

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OpenStack安装概述

- 参考：https://www.openstack.org/software/start/
- 个人&开发
  - 手工部署
  - DevStack
  - Rdo
  - ......
- 企业级应用
  - Puppet
  - Ansible
  - SaltStack
  - Tripleo
  - Kolla
  - Fuel
  - ......
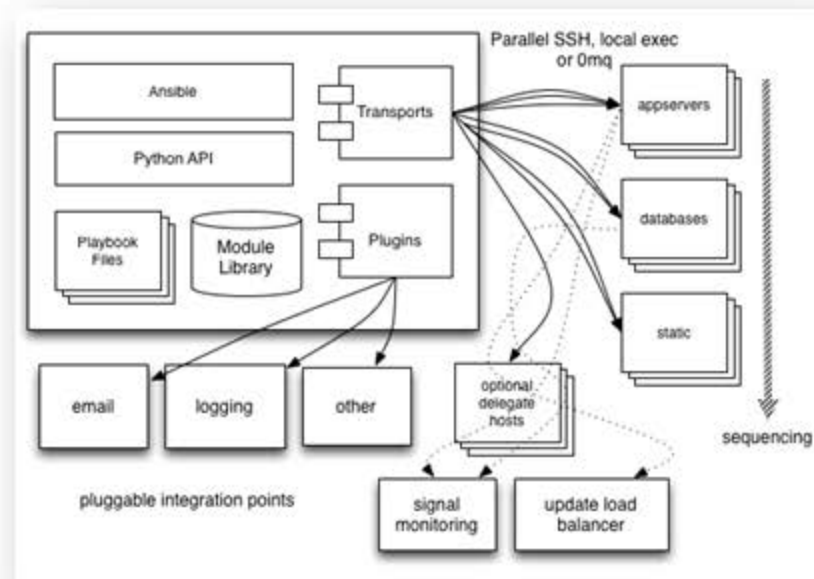
◆ 实验环境安装

▸ 拓扑规划
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▸ DevStack安装
▸ 国内网络环境下的DevStack安装

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拓扑规划

▸ OpenStack是分布式的，由若干不同功能的节点（Node）组成
  ▸ 控制节点 Controller Node
  ▸ 网络节点 Network Node
  ▸ 存储节点 Storage Node
  ▸ 计算节点 Compute Node
▸ 可以根据需求灵活配置
  ▸ All-in-One
    ▸ 麻雀虽小五脏俱全
  ▸ 生产环境
    ▸ 每类节点都分别部署在若干台物理服务器上，各司其职并互相协作。
    ▸ 具备很好的性能、伸缩性和高可用性

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DevStack概述

▸ **官方介绍** https://git.openstack.org/cgit/openstack-dev/devstack

DevStack is a series of extensible scripts used to quickly bring up a complete OpenStack environment based on the latest versions of everything from git master. It is used interactively as a development environment and as the basis for much of the OpenStack project's functional testing.

▸ **使用方法**
1. 安装Linux
2. 添加Stack用户
3. 下载DevStack脚本
4. 创建回答文件local.conf文件
5. 开始安装 ./stack.sh

stack.sh脚本

```
#!/usr/bin/env bash

# ``stack.sh`` is an opinionated OpenStack developer installation.  It
# installs and configures various combinations of **Cinder**, **Glance**,
# **Heat**, **Horizon**, **Keystone**, **Nova**, **Neutron**, and **Swift**

# This script's options can be changed by setting appropriate environment
# variables.  You can configure things like which git repositories to use,
# services to enable, OS images to use, etc.  Default values are located in the
# ``stackrc`` file. If you are crafty you can run the script on multiple nodes
# using shared settings for common resources (eg., mysql or rabbitmq) and build
# a multi-node developer install.

# To keep this script simple we assume you are running on a recent **Ubuntu**
# (14.04 Trusty or newer), **Fedora** (F20 or newer), or **CentOS/RHEL**
# (7 or newer) machine. (It may work on other platforms but support for those
# platforms is left to those who added them to DevStack.) It should work in
# a VM or physical server. Additionally, we maintain a list of ``deb`` and
# ``rpm`` dependencies and other configuration files in this repo.

# Learn more and get the most recent version at http://devstack.org

# Print the commands being run so that we can see the command that triggers
# an error.  It is also useful for following along as the install occurs.
set -o xtrace

# Make sure custom grep options don't get in the way
unset GREP_OPTIONS

# Sanitize language settings to avoid commands bailing out
# with "unsupported locale setting" errors.
unset LANG
unset LANGUAGE
LC_ALL=C
export LC_ALL

# Make sure umask is sane
umask 022

# Not all distros have sbin in PATH for regular users.
PATH=$PATH:/usr/local/sbin:/usr/sbin:/sbin

# Keep track of the DevStack directory
TOP_DIR=$(cd $(dirname "$0") && pwd)

# Check for uninitialized variables, a big cause of bugs
NOUNSET=${NOUNSET:-}
if [[ -n "$NOUNSET" ]]; then
    set -o nounset
fi

# Set start of devstack timestamp
DEVSTACK_START_TIME=$(date +%s)

# Configuration
# =============

# Sanity Checks
# -------------

# Clean up last environment var cache
if [[ -r $TOP_DIR/.stackenv ]]; then
    rm $TOP_DIR/.stackenv
fi

# ``stack.sh`` keeps the list of ``deb`` and ``rpm`` dependencies, config
# templates and other useful files in the ``files`` subdirectory
FILES=$TOP_DIR/files
```
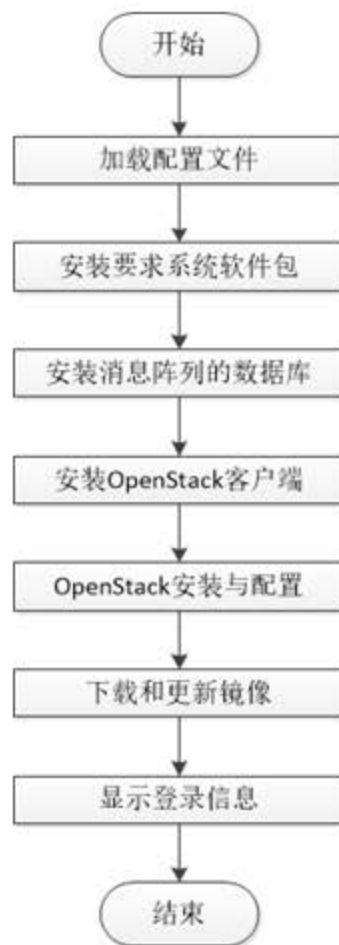
开始

↓

加载配置文件

↓

安装要求系统软件包

↓

安装消息阵列的数据库

↓

安装OpenStack客户端

↓

OpenStack安装与配置

↓

下载和更新镜像

↓

显示登录信息

↓

结束

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DevStack为什么安装的比较慢？

```
stack@tomops1:~/devstack$ ./stack.sh
经常漫长的等待，最终成功了！

==========================
DevStack Component Timing
==========================
Total runtime            19253

run_process               56
test_with_retry            4
apt-get-update             7
pip_install             1791
restart_apache_server     17
wait_for_service          23
git_timed              15530
apt-get                  779
==========================
```

	耗时（秒）	耗时（分）	比例
Total runtime	19253	321	
run_process	56	1	0%
test_with_retry	4	0	0%
apt-get-update	7	0	0%
pip_install	1791	30	9%
restart_apache_server	17	0	0%
wait_for_service	23	0	0%
git_timed	15530	259	81%
apt-get	779	13	4%

```
This is your host IP address: 192.168.1.102
This is your host IPv6 address: ::1
Horizon is now available at http://192.168.1.102/dashboard
Keystone is serving at http://192.168.1.102/identity/
The default users are: admin and demo
The password: admin
2017-02-21 18:54:32.992 | WARNING:
2017-02-21 18:54:32.992 | Using lib/neutron-legacy is deprecated, and it will be removed in the future
2017-02-21 18:54:32.992 | stack.sh completed in 19253 seconds.
```

解决方法

▸ 采用相对比较快的镜像站点
  ▸ OpenStack ？
  ▸ Ubuntu
  ▸ Python
▸ 构建自已的镜像站点或离线安装源

总结

▸ 安装工具概述
▸ 实验环境安装

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