

F3 平台部署手册(v3.7.2)

以下示例所用到的服务器信息、局域网 IP:

四台服务器, 系统均为 CentOS 7.2, CPU 均为四核, 内存均为 8G。

备注说明: F3 平台集群模式要求服务 3 台以上, 每台至少要求 4 核 8G, 系统要求 CentOS 7.2; 所有服务器要求时区、时间一致; 集群端密码需要一致。

Web 端 IP: 192.168.24.50

集群端 IP: 192.168.24.51 (主节点), 192.168.24.52, 192.168.24.53

部署前准备工作:

1. 检查、修改**每台服务器**/etc/hosts 文件, 保证每台服务器的 hosts 文件**只有以下两行**:

```
127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4
::1      localhost localhost.localdomain localhost6 localhost6.localdomain6
```

2. 部分最小化安装的系统可能缺少部分基础工具及重要组件, **每台服务器**都需要安装以下工具, 工具的安装会自动补全其它所缺组件, 安装指令:

```
yum -y install net-tools wget vim ntpdate
```

部署步骤:

1. 将平台安装包 (clbs_install_universal_x.x.x_xxx.tar.gz) 上传到 **web 端服务器**后, 输入 **tar -xzf clbs_install_universal_x.x.x_xxx.tar.gz** 解压安装包。

2. 解压后进入安装包根目录下的 conf 文件夹下, 修改以下五个文件:

- 1). 输入 `vim host.conf` 修改 `host.conf` 文件设置别名，将文件内 IP 修改为**集群端**局域网 IP，**集群端**有几台就填写几台（**千万注意：只填写集群端 IP，不能填 web 端 IP!**），多余的删掉，不够的换行加上，如下图。（vi 保存方式：按 Esc 键后，输入`:wq`再按回车）

```
192.168.24.51 zwlbs1
192.168.24.52 zwlbs2
192.168.24.53 zwlbs3
~
~
~
```

- 2). 输入 `vim init.conf` 修改 `init.conf` 文件，将文件内密码修改为**集群端密码**，引号需保留，如下图。

```
#安装的软件包，小写，多个用空格分隔，没有就空着
INSTALL_SOFT_LIST="expect"

#root用户的密码
ROOT_PASSWORD="Mypassword@123"
IF_INSTALL_OTHER_USER=1
~
~
~
```

- 3). 输入 `vim params.conf` 修改 `params.conf` 文件，将文件内密码修改为**集群端密码**，将别名填入 NODES 这一项，有几台**集群端**就填写几个，和 `host.conf` 中对应的一样，如下图。

```
INSTALL_USER="root"
INSTALL_PASSWORD="Mypassword@123"
NODES="zwlbs1 zwlbs2 zwlbs3"
~
~
~
~
~
```

4). 输入 **vim video.conf** 修改 video.conf，将文件中的 IP、密码修改为自己服务器的信息，如下图。

```
#视频服务器和FTP服务器ip
VIDEO_IP="192.168.24.50"          #内网IP
VIDEO_Internet_IP="113.204.5.58" #外网IP

#视频FTP服务器的root用户的密码
ROOT_PASSWORD="password50"

#WEB服务器的IP
WEB_IP="192.168.24.50"          #内网IP
WEB_Internet_IP="113.204.5.58" #外网IP
```

5). 输入 **vim zwlbs.conf** 修改 zwlbs.conf 文件，将文件内平台名称和 IP 修改为自己平台的信息，如下图。

```
用户平台名: 中位F3平台  web外网IP地址: 113.204.5.58  版本号: 3.5.0
用户平台名: 中位F3平台  集群端外网IP地址: 113.204.5.58  版本号: 3.5.0
```

3. 进入安装包根目录下输入 **sh install.sh** 执行安装（过程中服务器会重启），等待如下图提示安装完成。

```
Complete!
开启防火墙及端口完成
=====F3平台一键安装完成=====
F3平台一键安装完成!
=====
Connection closing...Socket close.

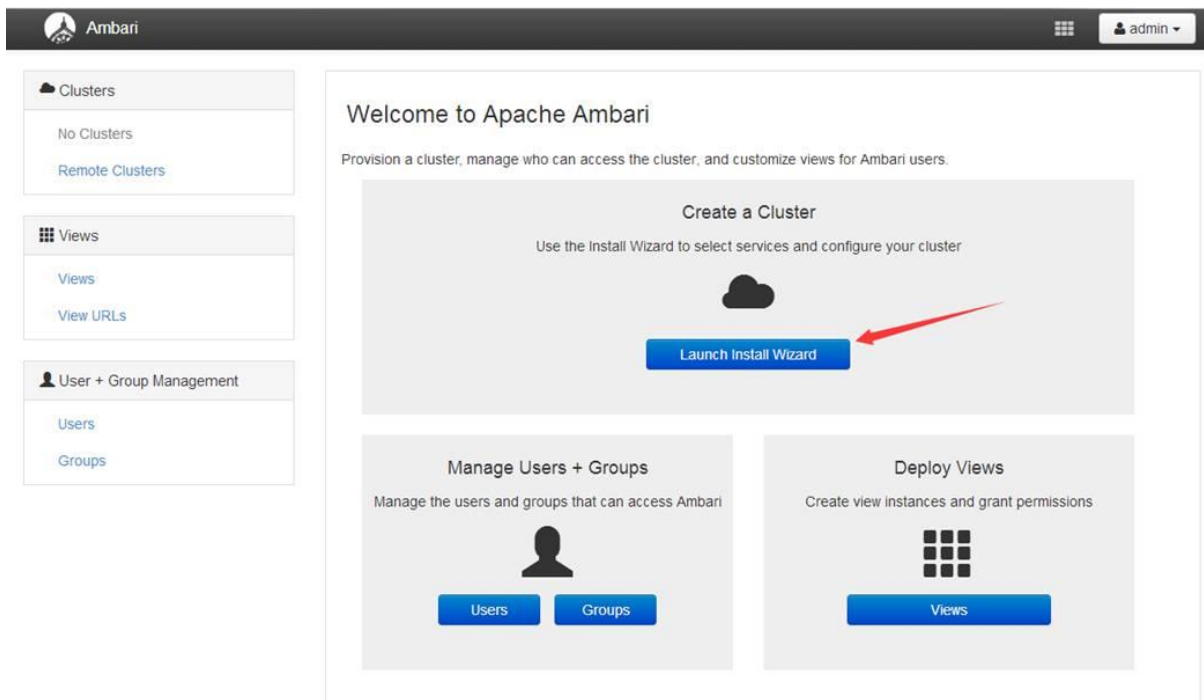
Connection closed by foreign host.

Disconnected from remote host(192.168.24.50) at 14:43:19.

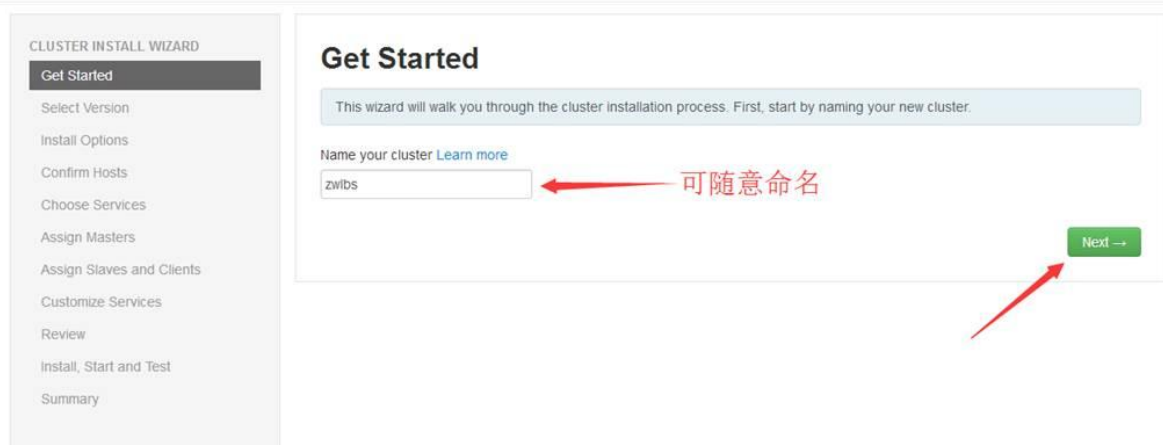
Type `help' to learn how to use Xshell prompt.
[d:\~]$
```

4. 浏览器打开 <http://主节点 IP:8080> 登录 Ambari, 默认帐号密码为 admin, 按以下步骤依次操作:

1) .开始集群安装



2) .为集群命名



3) . 如下图修改选项后填入资源路径，其它地方默认，再点击 next 进入下一步：

以下为中位科技提供的资源地址 1（推荐，使用前请先访问确认是否能正常打开）：

<http://120.220.247.11:53990/HDP/centos7/>

<http://120.220.247.11:53990/HDP-UTILS-1.1.0.21/repos/centos7/>

以下为中位科技提供的资源地址 2（相比上一个资源要慢，使用前请先访问确认是否能正常打开）：

<http://112.126.64.32:8081/HDP/centos7/>

<http://112.126.64.32:8081/HDP-UTILS-1.1.0.21/repos/centos7/>

或者（官方网站，资源在国外，国内服务器下载很慢）：

<http://public-repo-1.hortonworks.com/HDP/centos7/2.x/updates/2.5.0.0/>

<http://public-repo-1.hortonworks.com/HDP-UTILS-1.1.0.21/repos/centos7/>

The screenshot shows the 'Repos' configuration step in the HDP installation wizard. The 'Use Local Repository' option is selected and circled in red. Below it, a table lists operating systems and their corresponding HDP and HDP-UTILS versions. For 'redhat7', the 'HDP-UTILS-1.1.0.21' row has its 'Base URL' field filled with the local repository URL, which is also circled in red. A red arrow points from the 'Use Local Repository' option to the 'Base URL' field for 'redhat7'.

OS	Name	Base URL	Action
debian7	HDP-2.5	Enter Base URL or remove this OS	- Remove
	HDP-UTILS-1.1.0.21		- Remove
redhat6	HDP-2.5	Enter Base URL or remove this OS	- Remove
	HDP-UTILS-1.1.0.21		- Remove
redhat7	HDP-2.5	http://112.126.64.32:8081/HDP/centos7/	- Remove
	HDP-UTILS-1.1.0.21	http://112.126.64.32:8081/HDP-UTILS-1.1.0.21/repos/centos7/	- Remove
suse11	HDP-2.5	Enter Base URL or remove this OS	- Remove
	HDP-UTILS-1.1.0.21		- Remove
suse12	HDP-2.5	Enter Base URL or remove this OS	- Remove
	HDP-UTILS-1.1.0.21		- Remove

4) . Target Hosts 这项填入集群别名，用回车换行隔开。然后登录集群主节点，将/root/.ssh 路径下 id_rsa 文件下载下来，下图中选择文件的时候需要上传 id_rsa 文件。依次点击 Register and Confirm → OK。

CLUSTER INSTALL WIZARD

- Get Started
- Select Version
- Install Options**
- Confirm Hosts
- Choose Services
- Assign Masters
- Assign Slaves and Clients
- Customize Services
- Review
- Install, Start and Test
- Summary

Install Options

Enter the list of hosts to be included in the cluster and provide your SSH key.

Target Hosts

Enter a list of hosts using the Fully Qualified Domain Name (FQDN), one per line. Or use [Pattern Expressions](#)

zwlbs1
zwlbs2
zwlbs3

Host Registration Information

☒ Provide your **SSH Private Key** to automatically register hosts

id_rsa

-----BEGIN RSA PRIVATE KEY-----
MIIEowIBAAKCAQEA3hzRpoqZ7YdbMo5juqgPtxFSLucZ8AVNEzv5nXfqr0c
R/16n

SSH User Account: root

SSH Port Number: 22

☐ Perform **manual registration** on hosts and do not use SSH

5) . 如下图全部 Success 后，依次点击 Next → OK。

CLUSTER INSTALL WIZARD

- Get Started
- Select Version
- Install Options
- Confirm Hosts**
- Choose Services
- Assign Masters
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- Review
- Install, Start and Test
- Summary

Confirm Hosts

Registering your hosts.
Please confirm the host list and remove any hosts that you do not want to include in the cluster.

Show: **All (3)** | [Installing \(0\)](#) | [Registering \(0\)](#) | [Success \(3\)](#) | [Fail \(0\)](#)

Host	Progress	Status	Action
☐ zwlbs1		Success	Remove
☐ zwlbs2		Success	Remove
☐ zwlbs3		Success	Remove

Show: 25 1 - 3 of 3

Some warnings were encountered while performing checks against the 3 registered hosts above. [Click here to see the warnings.](#)

6) 只勾选下图 4 项，依次 Next → Proceed Anyway → Proceed Anyway → Next

Choose Services

Choose which services you want to install on your cluster.

Service	Version	Description
☒ HDFS	2.7.3	Apache Hadoop Distributed File System
☐ YARN + MapReduce2	2.7.3	Apache Hadoop NextGen MapReduce (YARN)
☐ Tez	0.7.0	Tez is the next generation Hadoop Query Processing framework written on top of YARN.
☐ Hive	1.2.1000	Data warehouse system for ad-hoc queries & analysis of large datasets and table & storage management service
☒ HBase	1.1.2	A Non-relational distributed database, plus Phoenix, a high performance SQL layer for low latency applications.
☐ Pig	0.16.0	Scripting platform for analyzing large datasets
☐ Sqoop	1.4.6	Tool for transferring bulk data between Apache Hadoop and structured data stores such as relational databases
☐ Oozie	4.2.0	System for workflow coordination and execution of Apache Hadoop jobs. This also includes the installation of the optional Oozie Web Console which relies on and will install the ExtJS Library.
☒ ZooKeeper	3.4.6	Centralized service which provides highly reliable distributed coordination
☐ Falcon	0.10.0	Data management and processing platform
☒ Storm	1.0.1	Apache Hadoop Stream processing framework

7) 如下图全部勾选后 Next。

Assign Slaves and Clients

Assign slave and client components to hosts you want to run them on.
Hosts that are assigned master components are shown with *.
"Client" will install HDFS Client, YARN Client, MapReduce2 Client, Tez Client, HBase Client, Pig Client and ZooKeeper Client.

Host	all	none	all	none	all	none	all	none	all	none	all	none	all	none	all	none
zwlbs1*	☒ DataNode	☒ NFSGateway	☒ NodeManager	☒ RegionServer	☒ Phoenix Query Server	☒ Supervisor	☒ Client									
zwlbs2*	☒ DataNode	☒ NFSGateway	☒ NodeManager	☒ RegionServer	☒ Phoenix Query Server	☒ Supervisor	☒ Client									
zwlbs3*	☒ DataNode	☒ NFSGateway	☒ NodeManager	☒ RegionServer	☒ Phoenix Query Server	☒ Supervisor	☒ Client									

Show: 25 1 - 3 of 3

← Back Next →

8) .如下图，选择 Hbase 开启 Phoenix SQL 开关，依次点击 Next → Deploy。

CLUSTER INSTALL WIZARD

- Get Started
- Select Version
- Install Options
- Confirm Hosts
- Choose Services
- Assign Masters
- Assign Slaves and Clients
- Customize Services**
- Review
- Install, Start and Test
- Summary

Customize Services

We have come up with recommended configurations for the services you selected. Customize them as you see fit.

HDFS HBase ZooKeeper Storm Misc

There are 4 configuration changes in 1 service [Show Details](#)

Group: Default (1) Manage Config Groups Filter...

Settings Advanced

Server

HBase Master Maximum Memory

1GB

0 GB 7.75 GB 15.514 GB

HBase RegionServer Maximum Memory

2GB

0 GB 6.25 GB 12.41 GB

% of RegionServer Allocated to Read Buffers

40%

0 % 40 % 80 %

% of RegionServer Allocated to Write Buffers

40%

0 % 40 % 80 %

Memstore Flush Size

128MB

32 MB 144 MB 256 MB

HBase Region Block Multiplier

4

Number of Handlers per RegionServer

30

5 123 240

Client

Maximum Client Retries

35

5 28 50

Maximum Record Size

1MB

1 MB 15.5 MB 30 MB

Disk

Maximum Region File Size

10GB

1 GB 51 GB 100 GB

Hbase hregion majorcompaction

7 Days 0 Hours

Maximum Files for Compaction

10

Timeouts

Zookeeper Session Timeout

1 Minutes 30 Seconds

HBase RPC Timeout

10000 ms

Security

Enable Authentication

Simple

Enable Authorization

Simple

Phoenix SQL

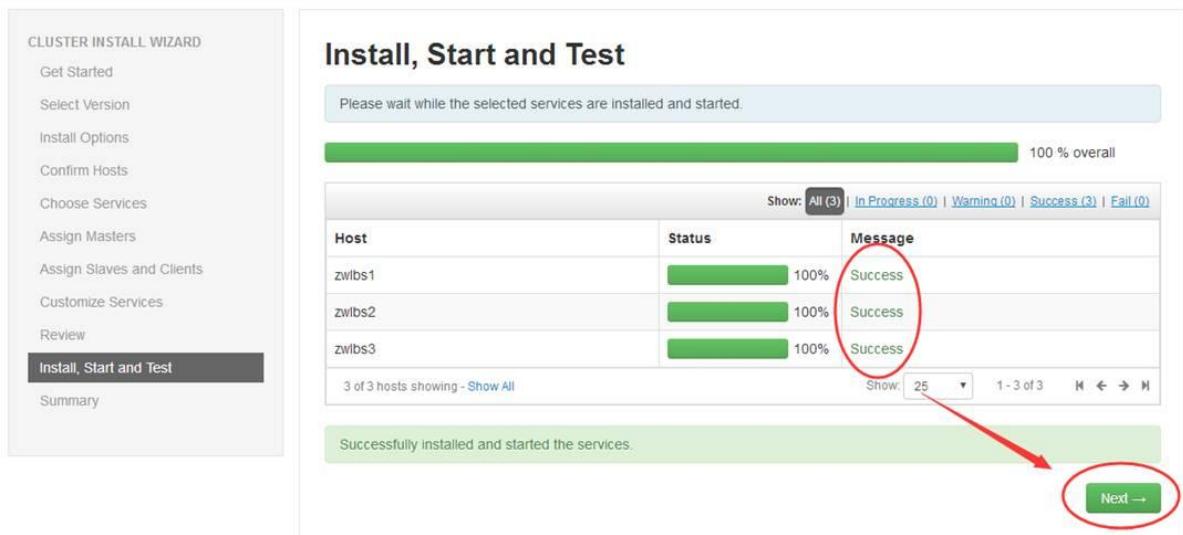
Enable Phoenix

Enabled

Phoenix Query Timeout

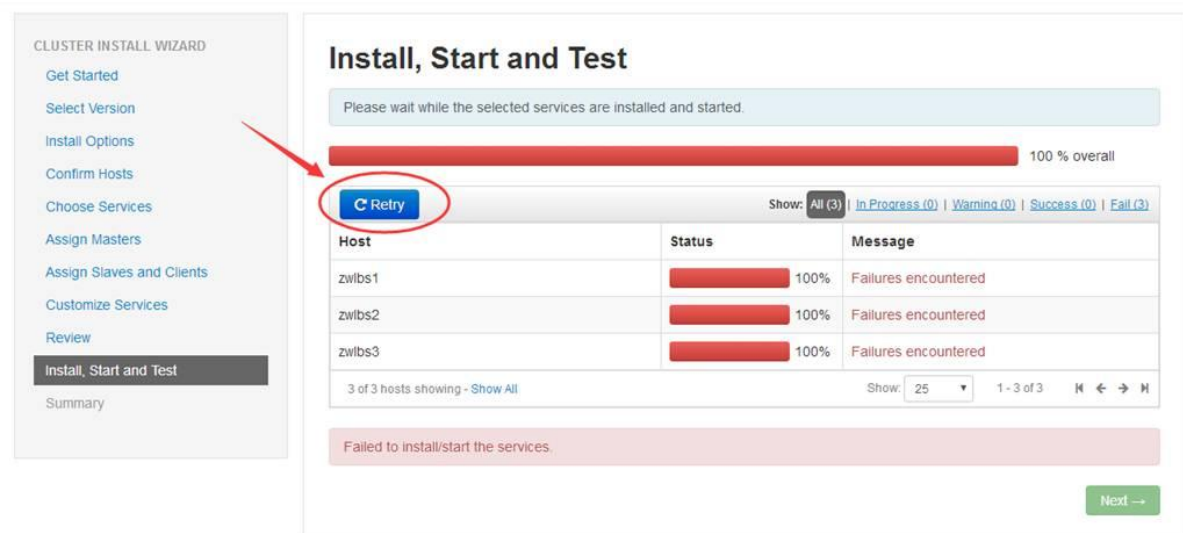
10000 ms

9) . 如下图全部 Success 后 (需要下载、安装 6G 左右的资源, 需要等待较长时间), 依次点击 Next
→ Complete.

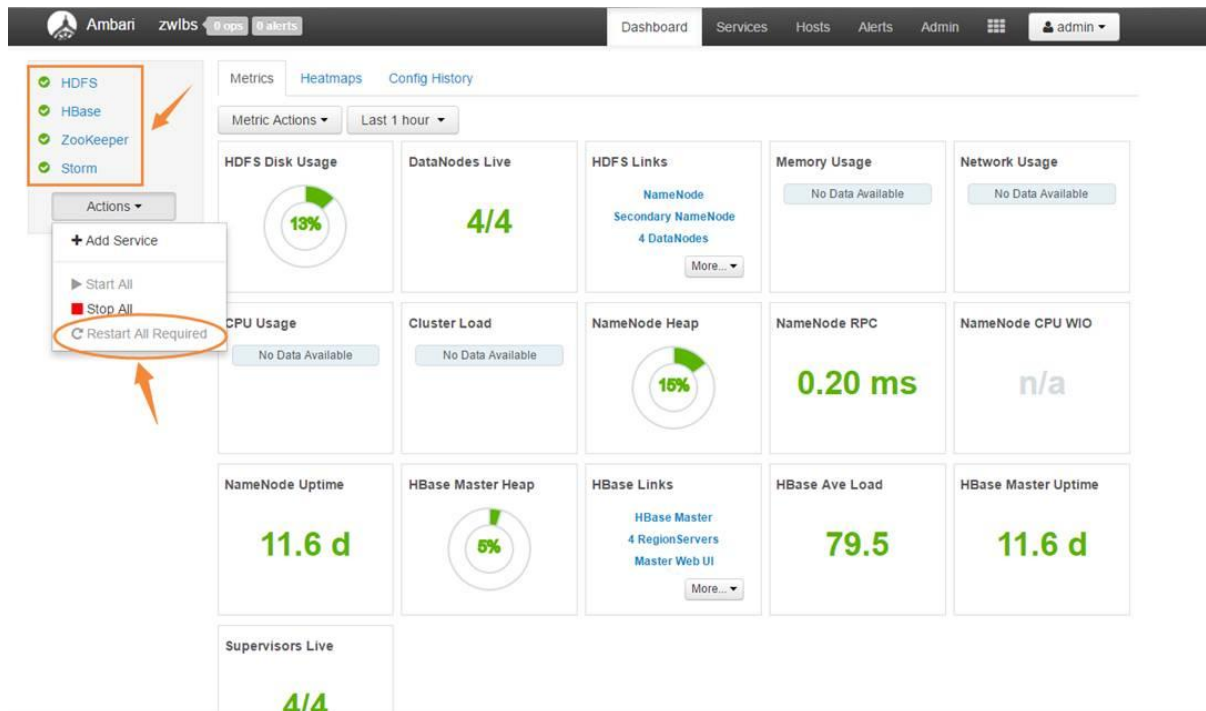


备注:

①. 由于网络波动也可能会出现如下图全红色警告的情况, 点击 Retry 即可继续下载安装。

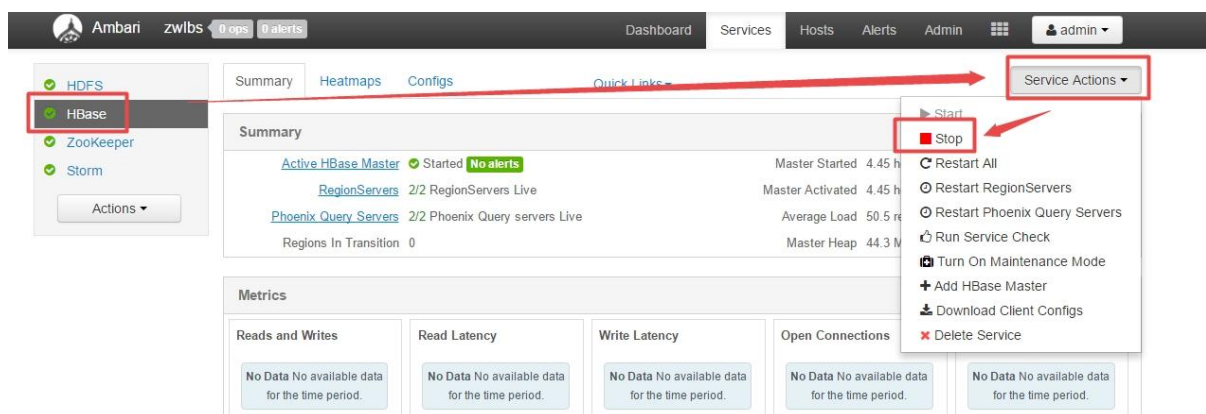


②.安装完成等几分钟后，如下图框中均为绿勾就代表正常，若一直出现红色标识，可点击圈中全部重启。



5.升级 phoenix

1) .关闭 hbase 服务



2).登录属于**集群端的每台服务器**，分别进入每台集群端服务器的安装包根目录中的 file 文件夹下，

执行升级脚本：

```
sh up_ph.sh
```

3) .脚本执行完成后，登录 ambari 中，将刚刚关闭的 hbase 服务再开启即可。

6. 导入 Hbase 数据表结构

1) . 登录集群主节点，输入以下命令：

phoenix-sqlline localhost:2181:/hbase-unsecure

2) .将安装包根目录下 file 文件夹下的 Hbase3.x.x.txt 中的内容复制粘贴过来，运行完成后可用**!tables** 命令查看，如下图，蓝色框中为系统默认存在的表结构，红框内为贴入脚本后导入的表结构。

TABLE_CAT	TABLE_SCHEM	TABLE_NAME	TABLE_TYPE	REMARKS	TYPE_NAME	SELF_REFERENCING_COL_NAME	REF_GENERATION	INDEX_STATE	IMMUTABLE_ROWS	SALT_BUCKETS	MUL
		IDX_BOTD_ID_LATITUDE_VTIME_LONGITUDE	INDEX					ACTIVE	false	null	false
		IDX_VEHICLE_ID_LATITUDE_VTIME_LONGITUDE	INDEX					ACTIVE	false	null	false
		IDX_VEHICLE_ID_LATITUDE_VTIME_LONGITUDE	INDEX					ACTIVE	false	null	false
SYSTEM		CATALOG	SYSTEM TABLE						false	null	false
SYSTEM		FUNCTION	SYSTEM TABLE						false	null	false
SYSTEM		SEQUENCE	SYSTEM TABLE						false	null	false
SYSTEM		STATS	SYSTEM TABLE						false	null	false
		ALARM	TABLE						false	null	false
		BOTTLE	TABLE						false	null	false
		BUSINESS	TABLE						false	null	false
		INTEGRATED	TABLE						false	null	false
		POSITIONAL	TABLE						false	null	false
		POSITION	TABLE						false	null	false
		POSITION	TABLE						false	null	false
		POSITION	TABLE						false	null	false
		WORK	TABLE						false	null	false

7. 安装 storm 服务组件

登录主节点服务器，复制安装包到运行路径即可：

cp /root/storm-loa/ storm-streaming-3.7.2.jar /home/storm/

8. 完成以上步骤后，web 端会自动检测服务并启动平台（启动所需时间因服务器配置而定）。可在 web 端用 **netstat -lntp** 命令查看端口和服务启动情况，下图端口都启动则平台已经成功启动完成。

tcp	0	0 0.0.0.0:26378	0.0.0.0:*	LISTEN	6011/redis-sentinel
tcp	0	0 192.168.24.37:6378	0.0.0.0:*	LISTEN	6007/redis-server 1
tcp	0	0 0.0.0.0:26379	0.0.0.0:*	LISTEN	6003/redis-sentinel
tcp	0	0 192.168.24.37:6379	0.0.0.0:*	LISTEN	5999/redis-server 1
tcp	0	0 0.0.0.0:22	0.0.0.0:*	LISTEN	1140/sshd
tcp	0	0 127.0.0.1:25	0.0.0.0:*	LISTEN	2010/master
tcp	0	0 0.0.0.0:389	0.0.0.0:*	LISTEN	1422/slaped
tcp	0	0 0.0.0.0:53990	0.0.0.0:*	LISTEN	6707/java
tcp6	0	0 127.0.0.1:8105	:::*	LISTEN	6729/java
tcp6	0	0 :::8009	:::*	LISTEN	6751/java
tcp6	0	0 :::26378	:::*	LISTEN	6011/redis-sentinel
tcp6	0	0 :::3306	:::*	LISTEN	1766/mysqld
tcp6	0	0 :::26379	:::*	LISTEN	6003/redis-sentinel
tcp6	0	0 :::8109	:::*	LISTEN	6729/java
tcp6	0	0 :::6990	:::*	LISTEN	6729/java
tcp6	0	0 :::6992	:::*	LISTEN	6729/java
tcp6	0	0 :::8080	:::*	LISTEN	6751/java
tcp6	0	0 127.0.0.1:8305	:::*	LISTEN	6707/java
tcp6	0	0 :::6993	:::*	LISTEN	6729/java
tcp6	0	0 :::8180	:::*	LISTEN	6729/java
tcp6	0	0 :::8309	:::*	LISTEN	6707/java
tcp6	0	0 :::22	:::*	LISTEN	1140/sshd
tcp6	0	0 :::8023	:::*	LISTEN	6729/java
tcp6	0	0 :::5209	:::*	LISTEN	6751/java
tcp6	0	0 :::1:25	:::*	LISTEN	2010/master
tcp6	0	0 :::6971	:::*	LISTEN	6729/java
tcp6	0	0 :::6972	:::*	LISTEN	6729/java
tcp6	0	0 :::8380	:::*	LISTEN	6707/java
tcp6	0	0 :::6975	:::*	LISTEN	6729/java
tcp6	0	0 :::6976	:::*	LISTEN	6729/java
tcp6	0	0 :::6977	:::*	LISTEN	6729/java
tcp6	0	0 :::6978	:::*	LISTEN	6729/java
tcp6	0	0 :::6979	:::*	LISTEN	6729/java
tcp6	0	0 :::7971	:::*	LISTEN	6707/java
tcp6	0	0 :::6980	:::*	LISTEN	6729/java
tcp6	0	0 :::7972	:::*	LISTEN	6707/java
tcp6	0	0 :::9093	:::*	LISTEN	6729/java
tcp6	0	0 :::6981	:::*	LISTEN	6729/java
tcp6	0	0 127.0.0.1:8005	:::*	LISTEN	6751/java
tcp6	0	0 :::7973	:::*	LISTEN	6707/java
tcp6	0	0 :::389	:::*	LISTEN	1422/slaped
tcp6	0	0 :::9094	:::*	LISTEN	6707/java
tcp6	0	0 :::9095	:::*	LISTEN	6729/java
tcp6	0	0 :::6983	:::*	LISTEN	6751/java

平台地址 <http://web> 端 IP:8080/clbs/ 默认初始帐号 admin, 密码 000000。

备注:

Mysql 用户名: root 密码: Zwkj@123Mysql

Ldap 用户名: Manager 密码: zwkj@123

至此, F3 平台已经成功部署完成!