

## F3 平台部署手册(v4.x.x)

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 8 核, 内存均为 16G。

备注说明: F3 平台 4.x.x 版本要求服务 4 台以上, 每台至少要求 8 核 16G, 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: 192.168.24.230

集群端 IP: 192.168.24.231 (主节点), 192.168.24.232, 192.168.24.233

### 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。

- 解压后进入安装包根目录下的 conf 文件夹下，输入 **vim init.conf** 按文件内注释要求修改 init.conf 文件，如下图。(vi 保存方式：按 Esc 键后，输入:wq 再按回车)

```
# 重要说明
# 1. 修改以下配置文件时千万注意注释中的服务器类型！F3平台部署过程中，服务器分三种：web服务器、集群服务器、视频服务器

# 平台信息
F3NAME='中位F3物联网监控平台'

# root用户的密码(请提前统一修改"所有"服务器密码，由于特殊原因，密码中请勿包含竖线 | ，否则会导致部署出错)
ROOT_PASSWORD='000000'

# 请设置ambari登录密码(密码由大/小写字母、数字组成，请勿使用符号)
AMBARI_PASSWORD='admin'

# "web服务器"hostname
WEBHOST='zwlbsweb'

# 列出"集群服务器"hostname
NODES='zwlbs1 zwlbs2 zwlbs3'

# 设置"集群服务器"IP及hostname应对关系，以空格隔开。每行一个，请勿填入任何多余字符
ALLHOST='
#--开始标志，请勿删除--
192.168.24.231 zwlbs1
192.168.24.232 zwlbs2
192.168.24.233 zwlbs3
#--结束标志，请勿删除--
'

# "web服务器"的内网IP
WEB_IP='192.168.24.230'
# "web服务器"的外网IP
WEB_Internet_IP='113.204.5.58'

# "视频服务器"和FTP内网IP（默认集成到web服务器）
VIDEO_IP="$WEB_IP"
# "视频服务器"和FTP外网IP（默认集成到web服务器）
VIDEO_Internet_IP="$WEB_Internet_IP"

# fastdfs文件系统内网IP（默认集成到web服务器）
FASTDFS_IP="$WEB_IP"
# fastdfs文件系统外网IP（默认集成到web服务器）
FASTDFS_Internet_IP="$WEB_Internet_IP"

# 需要安装静态数据库备份从服务器的内网IP
SLAVE_IP='192.168.24.232'

# 接收平台异常提醒邮箱
EMAIL='monitor@zwlbs.com'

#-----非特殊情况，以下配置请勿修改-----
USER='root'
# 设置虚拟内存路径
SWAP_PATH="/"
# 设置虚拟内存大小(单位KB)
SWAP_SIZE='8388608'
# Zookeeper所在集群服务器的hostname(默认所有)
```

3. 进入安装包根目录下输入 **sh install.sh** 执行脚本，选择第一项“F3 平台部署”（过程中集群服务器会自动重启），等待如下图提示后，输入 **y** 后将重启完成第一个阶段。（此时可以输入 n 退出，但切记下个步骤前要手动重启）

```

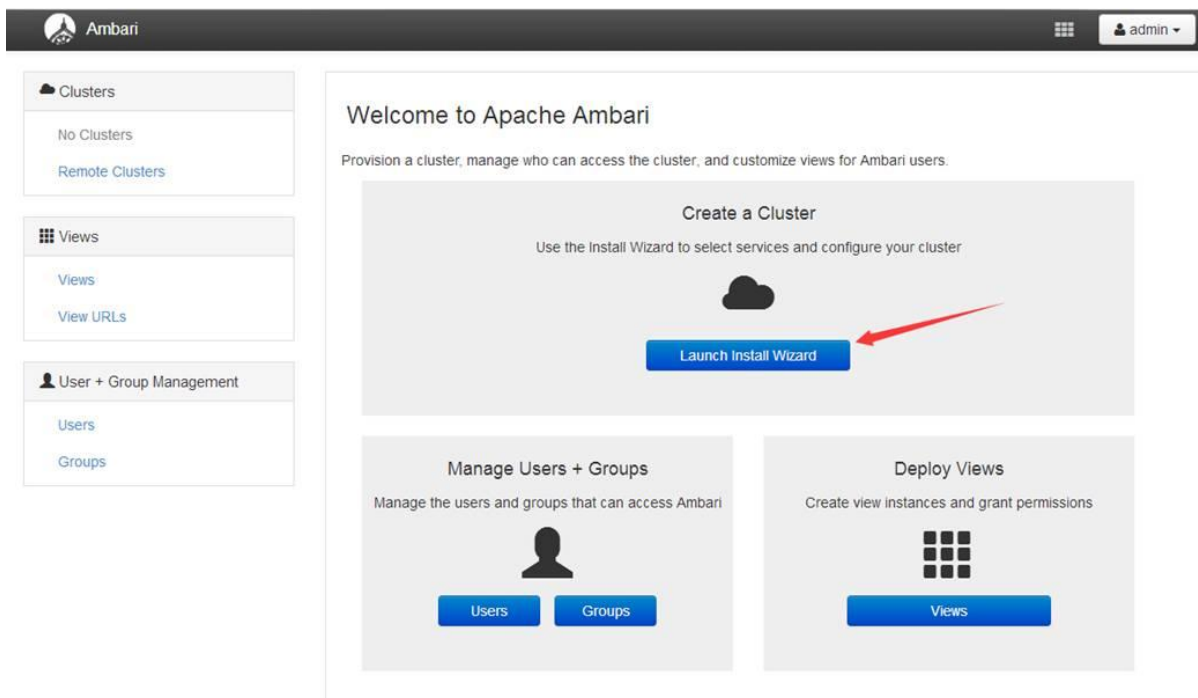
已写入执行记录到/opt/zwlbs/record
===== F3平台服务组件安装将在重启后完成，请先重启，并完成以下操作之后，再执行初始化步骤 =====
===== 请登录ambari管理页面 http://主节点IP:8080 手动完成集群服务安装，账号密码为admin =====
===== 重要提示：为确保安装正常，请勿手动修改ambari密码！ =====

是否立即重启(y/n)

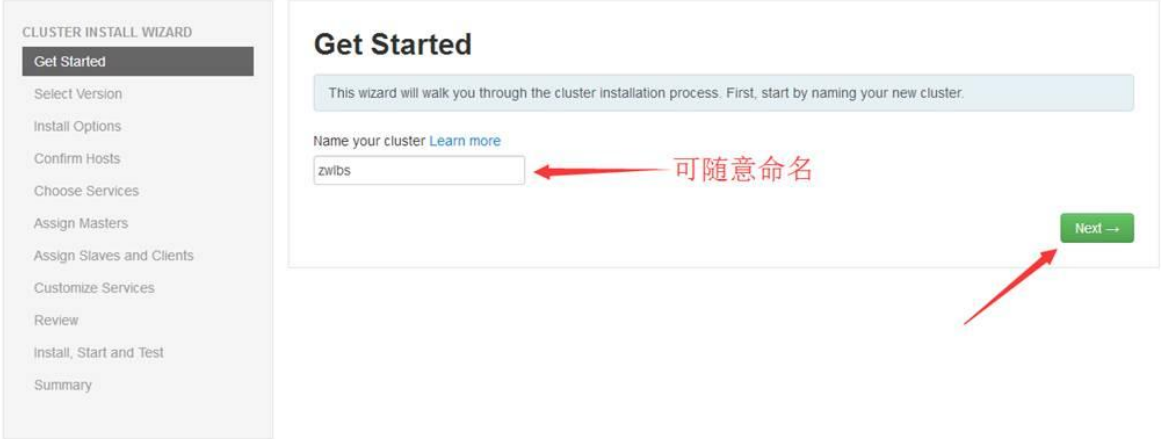
```

4. 浏览器打开 <http://主节点 IP:8080> 登录 Ambari，默认帐号密码为 admin（此时一定不要去手动修改 ambari 的 admin 密码），按以下步骤依次操作：

1) .开始集群安装



## 2) .为集群命名



The screenshot shows the 'Get Started' step of the 'CLUSTER INSTALL WIZARD'. On the left is a sidebar with a list of steps: 'Get Started' (highlighted), 'Select Version', 'Install Options', 'Confirm Hosts', 'Choose Services', 'Assign Masters', 'Assign Slaves and Clients', 'Customize Services', 'Review', 'Install, Start and Test', and 'Summary'. The main content area has the title 'Get Started' and a sub-header 'This wizard will walk you through the cluster installation process. First, start by naming your new cluster.' Below this is a form with the label 'Name your cluster' and a link 'Learn more'. The input field contains the text 'zwibs'. A red arrow points from the Chinese text '可随意命名' to the input field. Another red arrow points from the 'Next -->' button to the right.

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/`

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`

Install, Start and Test

Summary

Flume
1.5.2.2.5

HBase
1.1.2.2.5

☐ Use Public Repository [Why is this not selected?](#)

☒ Use Local Repository

Repositories

Provide Base URLs for the Operating Systems you are configuring.

| OS       | Name               | Base URL                                                                          |          |
|----------|--------------------|-----------------------------------------------------------------------------------|----------|
| debian7  | HDP-2.5            | <input type="text" value="Enter Base URL or remove this OS"/>                     | - Remove |
|          | HDP-UTILS-1.1.0.21 | <input type="text"/>                                                              |          |
| redhat6  | HDP-2.5            | <input type="text" value="Enter Base URL or remove this OS"/>                     | - Remove |
|          | HDP-UTILS-1.1.0.21 | <input type="text"/>                                                              |          |
| redhat7  | HDP-2.5            | <input type="text" value="http://120.220.247.11:53990/HDP/centos7/"/>             | - Remove |
|          | HDP-UTILS-1.1.0.21 | <input type="text" value="http://120.220.247.11:53990/HDP-UTILS-1.1.0.21/repos"/> |          |
| suse11   | HDP-2.5            | <input type="text" value="Enter Base URL or remove this OS"/>                     | - Remove |
|          | HDP-UTILS-1.1.0.21 | <input type="text"/>                                                              |          |
| suse12   | HDP-2.5            | <input type="text" value="Enter Base URL or remove this OS"/>                     | - Remove |
|          | HDP-UTILS-1.1.0.21 | <input type="text"/>                                                              |          |
| ubuntu12 | HDP-2.5            | <input type="text" value="Enter Base URL or remove this OS"/>                     | - 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

选择文件
id\_rsa

-----BEGIN RSA PRIVATE KEY-----

MIIEowIBAAKCAQEA3hzRpoq27YdbMo5juqgPtxFSLucZ8AVNEzv5nXfqr0cR/16n

SSH User Account

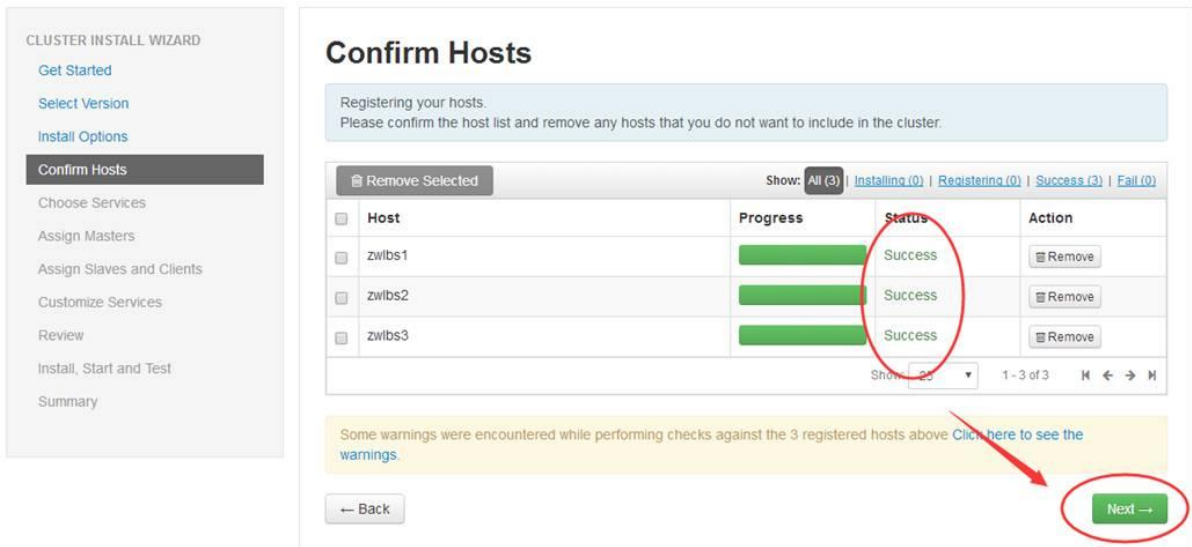
SSH Port Number

☐ Perform [manual registration](#) on hosts and do not use SSH

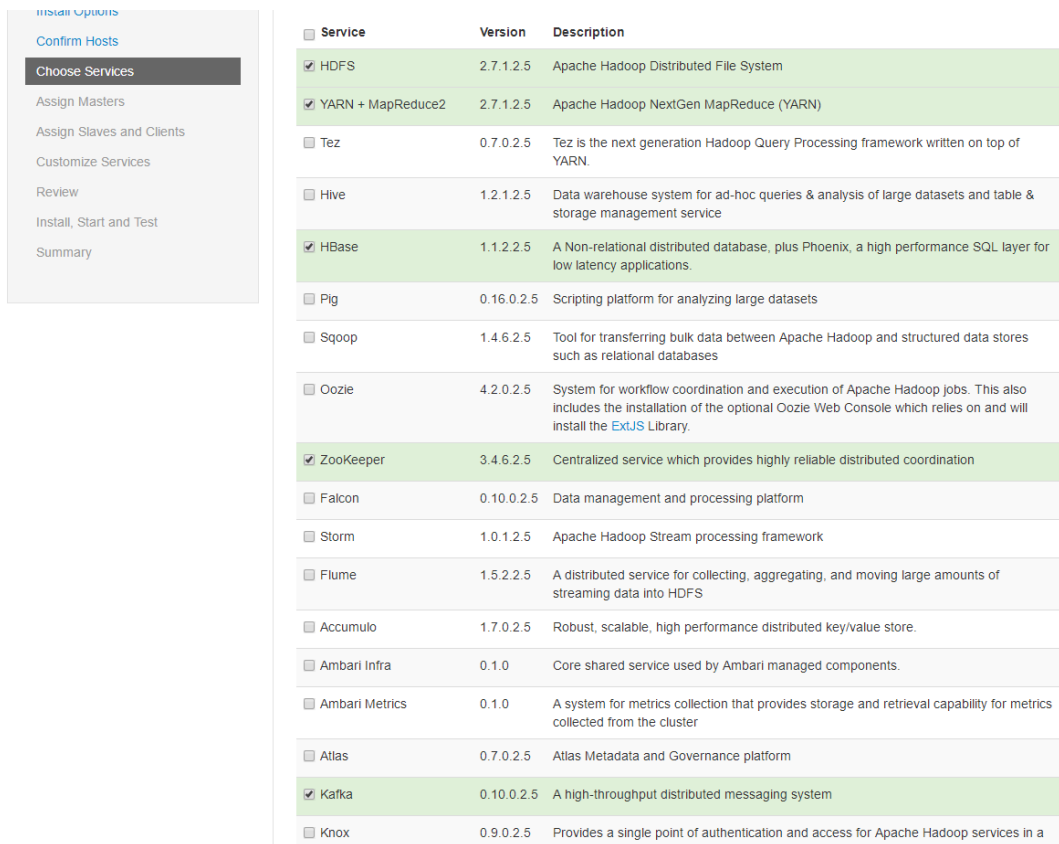
← Back
Register and Confirm →

5 / 12

5) . 如下图全部 Success 后, 依次点击 Next → OK。



6) .只勾选下图 5 项, 依次 Next → Proceed Anyway → Proceed Anyway



7) .下图 kafka Broker 处选最后一个节点, 然后 Next 。

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

## Assign Masters

Assign master components to hosts you want to run them on.

NameNode: zwlbs1 (15.5 GB, 8 cores)
SNameNode: zwlbs2 (15.5 GB, 8 cores)
App Timeline Server: zwlbs2 (15.5 GB, 8 cores)
ResourceManager: zwlbs2 (15.5 GB, 8 cores)
History Server: zwlbs2 (15.5 GB, 8 cores)
HBase Master: zwlbs1 (15.5 GB, 8 cores)
ZooKeeper Server: zwlbs3 (15.5 GB, 8 cores)
ZooKeeper Server: zwlbs1 (15.5 GB, 8 cores)
ZooKeeper Server: zwlbs2 (15.5 GB, 8 cores)
Kafka Broker: zwlbs3 (15.5 GB, 8 cores)

zwlbs1 (15.5 GB, 8 cores)
NameNode
HBase Master
ZooKeeper Server

zwlbs2 (15.5 GB, 8 cores)
SNameNode
App Timeline Server
ResourceManager
History Server
ZooKeeper Server

zwlbs3 (15.5 GB, 8 cores)
ZooKeeper Server
Kafka Broker

Back
Next

8) .如下图全部勾选后 Next。

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

## Assign Slaves and Clients

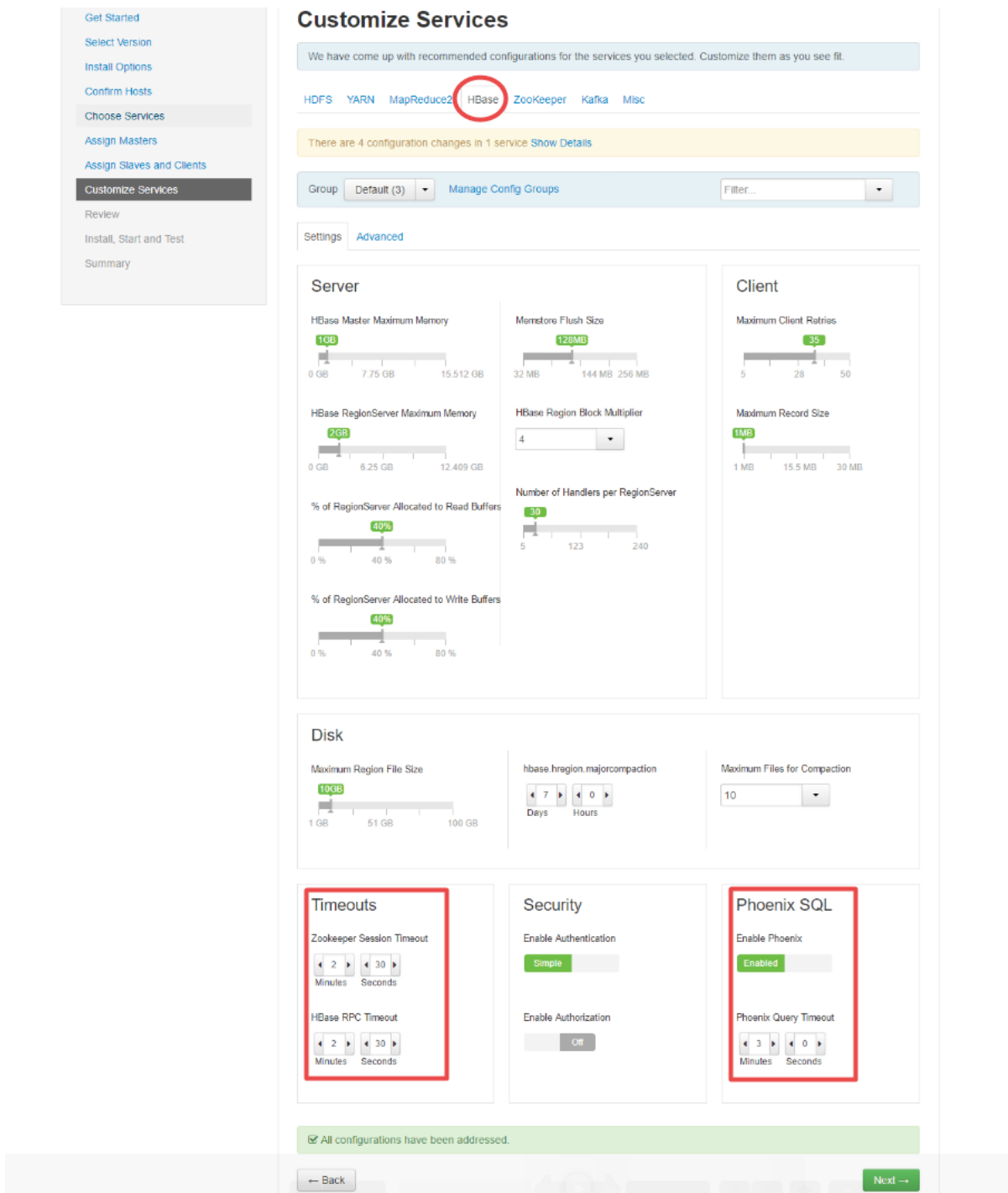
Assign slave and client components to hosts you want to run them on.  
Hosts that are assigned master components are shown with \*.  
"Client" will install HDFS Client, YARN Client, MapReduce2 Client, Tez Client, HBase Client, Pig Client and ZooKeeper Client.

| Host    | all                                          | none                                           | all                                             | none                                             | all                                                      | none                                           | all                                      | none | all | none | all | none | all | none | all | none |
|---------|----------------------------------------------|------------------------------------------------|-------------------------------------------------|--------------------------------------------------|----------------------------------------------------------|------------------------------------------------|------------------------------------------|------|-----|------|-----|------|-----|------|-----|------|
| zwlbs1* | <input checked="" type="checkbox"/> DataNode | <input checked="" type="checkbox"/> NFSGateway | <input checked="" type="checkbox"/> NodeManager | <input checked="" type="checkbox"/> RegionServer | <input checked="" type="checkbox"/> Phoenix Query Server | <input checked="" type="checkbox"/> Supervisor | <input checked="" type="checkbox"/> Clie |      |     |      |     |      |     |      |     |      |
| zwlbs2* | <input checked="" type="checkbox"/> DataNode | <input checked="" type="checkbox"/> NFSGateway | <input checked="" type="checkbox"/> NodeManager | <input checked="" type="checkbox"/> RegionServer | <input checked="" type="checkbox"/> Phoenix Query Server | <input checked="" type="checkbox"/> Supervisor | <input checked="" type="checkbox"/> Clie |      |     |      |     |      |     |      |     |      |
| zwlbs3* | <input checked="" type="checkbox"/> DataNode | <input checked="" type="checkbox"/> NFSGateway | <input checked="" type="checkbox"/> NodeManager | <input checked="" type="checkbox"/> RegionServer | <input checked="" type="checkbox"/> Phoenix Query Server | <input checked="" type="checkbox"/> Supervisor | <input checked="" type="checkbox"/> Clie |      |     |      |     |      |     |      |     |      |

Show: 25
1 - 3 of 3

Back
Next

9) .如下图，选择 Hbase 标签，左下红框内两个时间改为 2: 30，右下红框内开启 Phoenix SQL 开关，并将下面时间改为 3: 0，然后再前换到 Kafka 标签。



**Customize Services**

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

HDFS YARN MapReduce2 **HBase** ZooKeeper Kafka Misc

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

Group: Default (3) Manage Config Groups Filter...

Settings Advanced

**Server**

HBase Master Maximum Memory: 1GB

HBase RegionServer Maximum Memory: 2GB

% of RegionServer Allocated to Read Buffers: 40%

% of RegionServer Allocated to Write Buffers: 40%

Memstore Flush Size: 128MB

HBase Region Block Multiplier: 4

Number of Handlers per RegionServer: 30

**Client**

Maximum Client Retries: 35

Maximum Record Size: 1MB

**Disk**

Maximum Region File Size: 100GB

hbase.region.majorcompaction: 7 Days 0 Hours

Maximum Files for Compaction: 10

**Timeouts**

Zookeeper Session Timeout: 2 Minutes 30 Seconds

HBase RPC Timeout: 2 Minutes 30 Seconds

**Security**

Enable Authentication: Simple

Enable Authorization: Off

**Phoenix SQL**

Enable Phoenix: Enabled

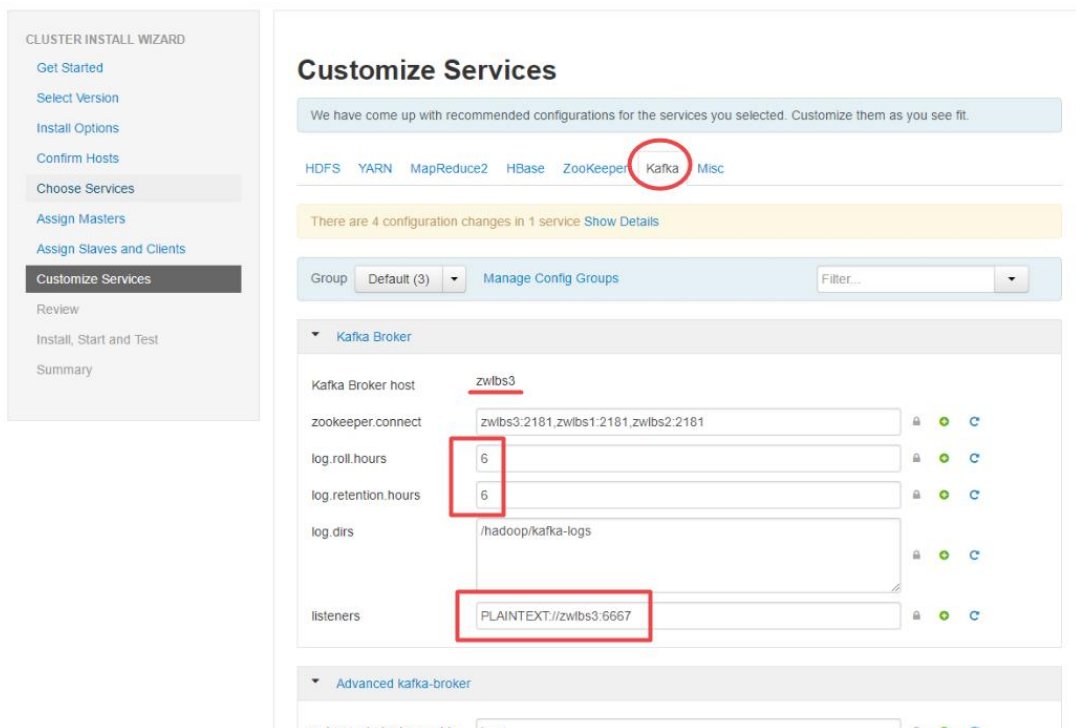
Phoenix Query Timeout: 3 Minutes 0 Seconds

All configurations have been addressed.

Back Next



10) 选择 Kafka 标签后，需修改内容如下图所示，



The screenshot shows the 'Customize Services' page for Kafka. The 'Kafka' tab is selected. The 'Kafka Broker' section contains the following configuration fields:

- Kafka Broker host: zwlbs3
- zookeeper.connect: zwlbs3:2181, zwlbs1:2181, zwlbs2:2181
- log.roll.hours: 6
- log.retention.hours: 6
- log.dirs: /hadoop/kafka-logs
- listeners: PLAINTEXT://zwlbs3:6667

The 'Advanced kafka-broker' section is partially visible below the main configuration fields.

再展开 Advanced kafka-broker，分别核对修改以下三个参数为以下值，另附下图：

delete.topic.enable = true

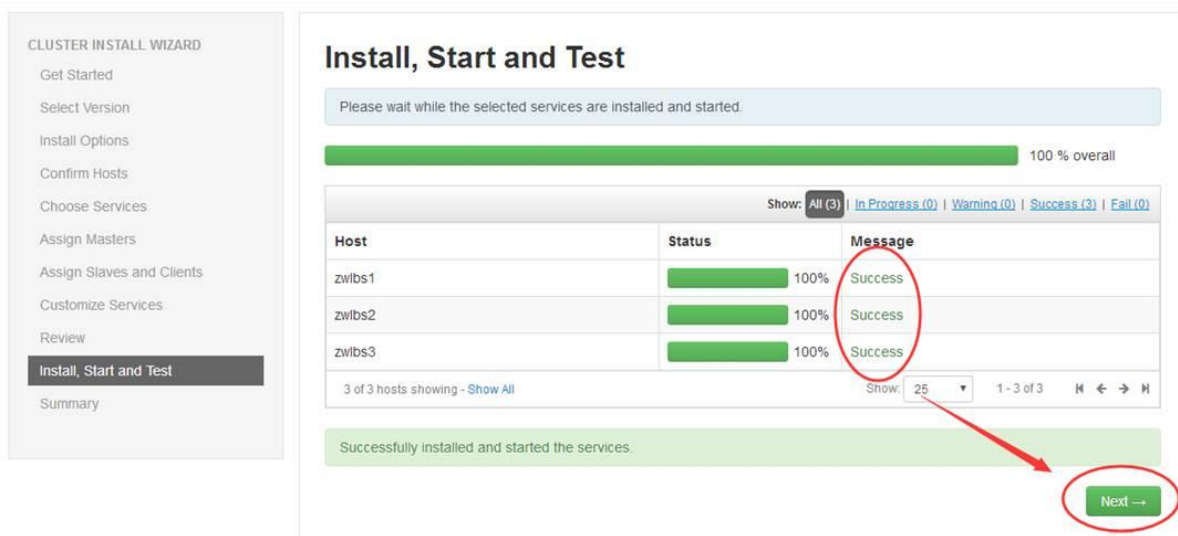
default.replication.factor = 1

num.partitions = 12

|                                                            |                                                                      |   |   |   |
|------------------------------------------------------------|----------------------------------------------------------------------|---|---|---|
| listeners                                                  | PLAINTEXT://zwlbs3:6667                                              | 🔒 | + | ↺ |
| <div> <div>▼</div> <div>Advanced kafka-broker</div> </div> |                                                                      |   |   |   |
| auto.create.topics.enable                                  | true                                                                 | 🔒 | + | ↺ |
| auto.leader.rebalance.enable                               | true                                                                 | 🔒 | + | ↺ |
| compression.type                                           | producer                                                             | 🔒 | + | ↺ |
| controlled.shutdown.enable                                 | true                                                                 | 🔒 | + | ↺ |
| controlled.shutdown.max.retries                            | 3                                                                    | 🔒 | + | ↺ |
| controlled.shutdown.retry.backoff.ms                       | 5000                                                                 | 🔒 | + | ↺ |
| controller.message.queue.size                              | 10                                                                   | 🔒 | + | ↺ |
| controller.socket.timeout.ms                               | 30000                                                                | 🔒 | + | ↺ |
| default.replication.factor                                 | 1                                                                    | 🔒 | + | ↺ |
| delete.topic.enable                                        | true                                                                 | 🔒 | + | ↺ |
| external.kafka.metrics.exclude.prefix                      | kafka.network.RequestMetrics,kafka.server.DelayedOperationPurgatory, | 🔒 | + | ↺ |
| external.kafka.metrics.include.prefix                      | kafka.network.RequestMetrics.ResponseQueueTimeMs,request.OffsetC     | 🔒 | + | ↺ |
| fetch.purgatory.purge                                      | 10000                                                                | 🔒 | + | ↺ |
| message.max.bytes                                          | 1000000                                                              | 🔒 | + | ↺ |
| min.insync.replicas                                        | 1                                                                    | 🔒 | + | ↺ |
| num.io.threads                                             | 8                                                                    | 🔒 | + | ↺ |
| num.network.threads                                        | 3                                                                    | 🔒 | + | ↺ |
| num.partitions                                             | 12                                                                   | 🔒 | + | ↺ |
| num.recovery.threads.per.data.dir                          | 1                                                                    | 🔒 | + | ↺ |
| num.replica.fetchers                                       | 1                                                                    | 🔒 | + | ↺ |
| offset.metadata.max.bytes                                  | 4096                                                                 | 🔒 | + | ↺ |
| offsets.commit.required.acks                               | -1                                                                   | 🔒 | + | ↺ |

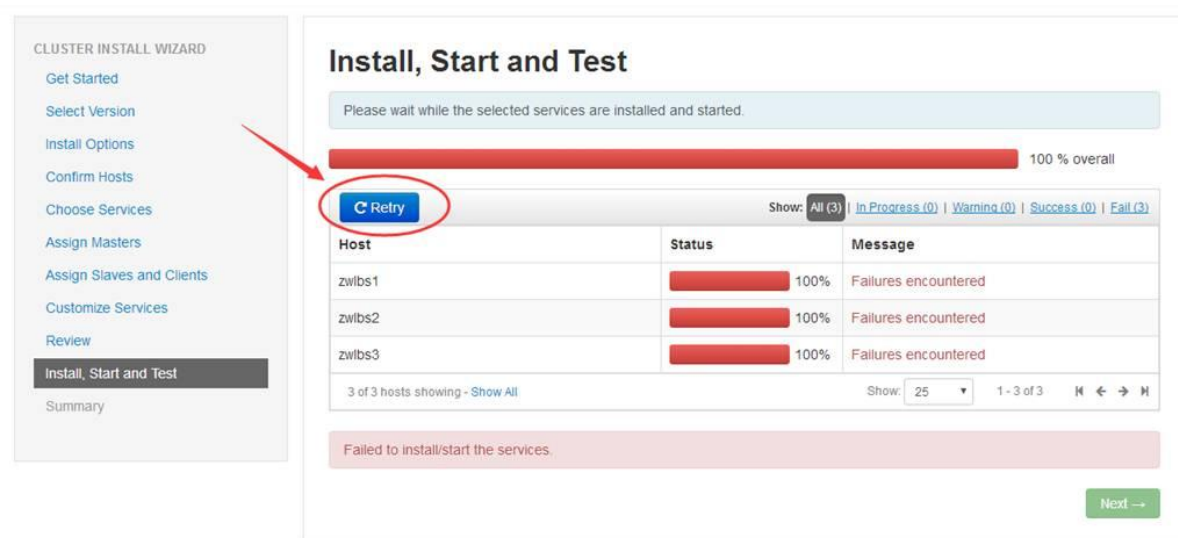
然后依次点击 Next → Deploy。

11) . 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.

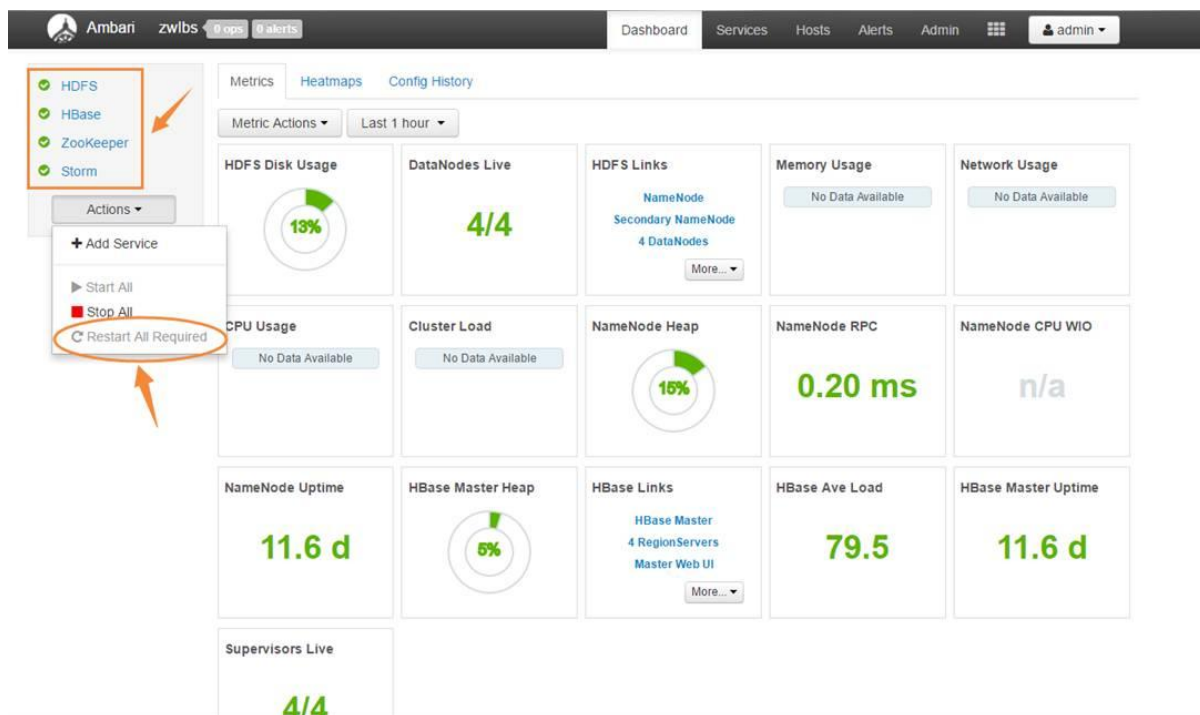


备注:

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。



至此完成第二个阶段

5. 进入安装包根目录下输入 `sh install.sh` 执行脚本，选择第二项“初始化平台”等待如下图提示后，即完成安装步骤。

```
=====F3平台已经初始化完成，服务正在启动中，首次启动加载较为缓慢，您可能需要等待10-20分钟=====
[root@zwlbsweb clbs_install_universal]#
```

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！