Hadoop2.X 64 位编译

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【注】该系列所使用到安装包、测试数据和代码均可在百度网盘下载,具体地址为 http://pan.baidu.com/s/10PnDs, 下载该 PDF 文件

1 编译环境

1.1 软硬件环境说明

所有节点均是 CentOS 系统,防火墙和 SElinux 禁用,所有节点上均创建了一个 shiyanlou 用户,并在系统根目录下创建/app 目录,用于存放 Hadoop 等组件运行包。因为该目录用于安 装 hadoop 等组件程序,用户对 shiyanlou 必须赋予 rwx 权限(一般做法是 root 用户在根目 录下创建/app 目录,并修改该目录拥有者为 shiyanlou(chown –R shiyanlou:shiyanlou /app)。

Hadoop 搭建环境:

- 虚拟机操作系统: CentOS6.6 64 位,单核,1G 内存
- JDK: 1.7.0_55 64 位
- Hadoop : 1.1.2

1.2 环境搭建

1.2.1 JDK 安装和 Java 环境变量配置

1. 下载 JDK1.7 64bit 安装包

打开 JDK1.7 64bit 安装包下载链接为:

<u>http://www.oracle.com/technetwork/java/javase/downloads/jdk7-downloads-1880</u> 260.html

第1页共17页 出自石山园,博客地址: http://www.cnblogs.com/shishanyuan

打开界面之后,先选中 Accept License Agreement,然后下载 jdk-7u55-linux-x64.tar.gz,如下图所示:

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	Product / File Description	File Size	Download	Subscribe Today Webcast Introducing Java 8	
Linux Linux Linux	x86 x86 x64	115.67 MB 133 MB 116.97 MB	jdk-7u55-linux-i586.rpm jdk-7u55-linux-i586.tar.gz jdk-7u55-linux-x64.rpm	Java-	Ш
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2. 创建/app 目录,把该目录的所有者修改为 shiyanlou

sudo mkdir /app

sudo chown -R shiyanlou:shiyanlou /app

```
[shiyanlou@b393a04554e1 /]$ sudo mkdir /app
[shiyanlou@b393a04554e1 /]$ sudo chown -R shiyanlou:shiyanlou /app
[shiyanlou@b393a04554e1 /]$ ll
total 72
drwxr-xr-x 2 shiyanlou shiyanlou 4096 Jun 1 06:11 app
dr-xr-xr-x 2 root root 4096 Mar 24 14:17 bin
drwxr-xr-x 4 root root 4096 Apr 8 04:03 dev
drwxr-xr-x 64 root root 4096 Jun 1 03:18 etc
```

3. 创建/app/lib 目录,使用命令如下:

mkdir /app/lib

```
[shiyanlou@b393a04554e1 /]$ cd /app
[shiyanlou@b393a04554e1 app]$ ls
[shiyanlou@b393a04554e1 app]$ mkdir lib
[shiyanlou@b393a04554e1 app]$ ll
total 4
drwxrwxr-x 2 shiyanlou shiyanlou 4096 Jun 1 06:12 lib
[shiyanlou@b393a04554e1 app]$
```

- 4. 把下载的安装包解压并迁移到/app/lib 目录下
- cd /home/shiyanlou/install-pack
- tar -zxf jdk-7u55-linux-x64.tar.gz
- *mv jdk1.7.0_55/ /app/lib*

ll /app/lib

[[shiyan]ou@b393a04554e1 ~]\$ cd /home/shiyan]	ou/install-pack	
[shiyanlou@b393a04554e1 install-pack]\$ tar -	zxf jdk-7u55-linux-x64.tar.gz	
[shiyanlou@b393a04554e1 install-pack]\$ ls		
apache-maven-3.0.5-bin.tar.gz	jdk-7u55-linux-x64.tar.gz	
chukwa-0.6.0.tar.gz	mahout-distribution-0.6.tar.gz	
eclipse-jee-luna-SR1-linux-gtk-x86_64.tar.gz	MySQL-client-5.6.21-1.el6.x86_64.rpm	
flume-1.5.2-bin.tar.gz	mysql-connector-java-5.1.22-bin.jar	
hadoop-1.1.2-bin.tar.gz	MýSQL-devel-5.6.21-1.el6.x86_64.rpm	
hadoop-2.2.0.tar.gz	MySQL-server-5.6.21-1.el6.x86_64.rpm	
hadoop-eclipse-plugin-1.1.2.jar	pig-0.13.0.tar.gz	
hbase-0.96.2-hadoop1-bin.tar.gz	prótobuf-2.5.0.ťar.gz	
hive-0.13.0-bin.tar.gz	sqoop-1.4.5.bin_hadoop-1.0.0.tar.gz	
jdk1.7.0_55		
[[shiyanlou@b393a04554e1 install-pack]\$ mv jd	k1.7.0_55/ /app/lib/	
[shiyanlou@b393a04554e1 install-pack]\$ 11 /a	pp/lib	
total 4		
drwxr-xr-x 8 shiyanlou shiyanlou 4096 Mar 18	2014 jdk1.7.0_55	
[shiyanlou@b393a04554e1 install-pack]\$		

5. 使用 sudo vi /etc/profile 命令打开配置文件,设置 JDK 路径

export JAVA_HOME=/app/lib/jdk1.7.0_55

export PATH=\$JAVA_HOME/bin:\$PATH

export CLASSPATH=.:\$JAVA_HOME/lib/dt.jar:\$JAVA_HOME/lib/tools.jar

```
unset i
unset -f pathmunge
export JAVA_HOME=/app/lib/jdk1.7.0_55
export PATH=$JAVA_HOME/bin:$PATH
export CLASSPATH=.:$JAVA_HOME/lib/dt.jar:$JAVA_HOME/lib/tools.jar
```

6. 编译并验证

source /etc/profile

java -version

```
[shiyan]ou@b393a04554e1 ~]$ source /etc/profile
[shiyan]ou@b393a04554e1 ~]$ java -version
java version "1.7.0_55"
Java(TM) SE Runtime Environment (build 1.7.0_55-b13)
Java HotSpot(TM) 64-Bit Server VM (build 24.55-b03, mixed mode)
[shiyan]ou@b393a04554e1 ~]$ ■
```

1.2.2 安装并设置 maven

 下载 maven 安装包(建议安装 3.0 以上版本)本次安装选择的是 maven3.0.5 的二进制包, 下载地址 *http://mirror.bit.edu.cn/apache/maven/maven-3/*,也可以在 /home/shiyanlou/install-pack 目录中找到该安装包

Ø Index of /apache/maven/maven-	3 - Windows Internet Explore	er	territori					×
Attp://mirror.bit.ed	lu.cn/apache/maven/maven-	3/	- 🗟 + 🗙 🕻	D Bing				۰ م
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Index of /apacl	he/maven/m	ave	n-3					*
Name	Last modified	<u>Size</u>	Description					_
Parent Directory		-						
<u>3.0.5/</u>	23-Feb-2013 01:39	-]					
<u>3.1.1/</u>	05-Oct-2013 00:33	-						
<u>3.2.1/</u>	22-Feb-2014 16:33	-						
<u>3.2.2/</u>	26-Jun-2014 08:12	-						
<u>3.2.3/</u>	16-Aug-2014 01:32	-						

2. 解压缩 apache-maven-3.0.5-bin.tar.gz 包, 并把 apache-maven-3.0.5 目录移到/app/lib

目录下

cd /home/shiyanlou/install-pack

tar -zxf apache-maven-3.0.5-bin.tar.gz

mv apache-maven-3.0.5 /app/lib



3. 使用 sudo vi /etc/profile 打开配置文件,并加入 maven 设置

export MAVEN_HOME=/app/lib/apache-maven-3.0.5

export PATH=\$PATH:\$MAVEN_HOME/bin

```
unset -f pathmunge
export JAVA_HOME=/app/lib/jdk1.7.0_55
export PATH=$JAVA_HOME/bin:$PATH
export CLASSPATH=.:$JAVA_HOME/lib/dt.jar:$JAVA_HOME/lib/tools.jar
export MAVEN_HOME=/app/lib/apache-maven-3.0.5
export PATH=$PATH:$MAVEN_HOME/bin
```

4. 编译/etc/profile 文件并验证配置是否成功:

source /etc/profile mvn -version

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[shiyanlou@b393a04554e1 ~]\$ source /etc/profile [shiyanlou@b393a04554e1 ~]\$ mvn -version Apache Maven 3.0.5 (r01de14724cdef164cd33c7c8c2fe155faf9602da; 2013-02-19 13:51:28+ 0000) Maven home: /app/lib/apache-maven-3.0.5 Java version: 1.7.0_55, vendor: Oracle Corporation Java home: /app/lib/jdk1.7.0_55/jre Default locale: en_US, platform encoding: UTF-8 OS name: "linux", version: "3.13.0-30-generic", arch: "amd64", family: "unix" [shiyanlou@b393a04554e1 ~]\$

1.2.3 使用 yum 安装 svn

sudo yum install svn

[shiyanlou@b393a04554e1 ~]\$ sudo yum install svn Loaded plugins: fastestmirror		~	-
Setting up Install Process			
Determining fastest mirrors			
* base: mirrors.alivuncs.com			
* extras: mirrors.alivuncs.com			
* updates: mirrors.alivuncs.com			
base	3.7 kB	00:00	
extras	3.4 kB	00:00	
extras/primary db	31 kB	00:00	
updates	3.4 kB	00:00	
updates/primarv_db	3.3 MB	00:00	
Resolving Dependencies			
> Running transaction check			
> Package subversion.x86_64 0:1.6.11-12.el6_6 will be ins	talled		
> Processing Dependency: perl(URI) >= 1.17 for package: su	bversion-1.	6.11-12.el6_	
6.x86_64			
> Processing Dependency: $apr >= 1.3.0$ for package: subvers	ion-1.6.11-	12.el6_6.x86	
64			
> Processing Dependency: libneon.so.27()(64bit) for package	e: subversi	on-1.6.11-12	
.el6_6.x86_64			
> Processing Dependency: libaprutil-1.so.0()(64bit) for particular particular dependency for particular particular dependency for particular particular dependency for parti	ckage: subv	version-1.6.1	1
1-12.el6_6.x86_64	-		
> Processing Dependency: libapr-1.so.0()(64bit) for package	e: subve <u>rs</u> i	on-1.6.11-12	
.el6_6.x86_64			

Dependencies Resolved

Package	Arch	Version	Repository	Size
Installing:				
subversion	x86_64	1.6.11-12.el6_6	updates	2.3 M
Installing for deper	ndencies:			
apr	x86_64	1.3.9-5.el6_2	base	123 k
apr-util	x86_64	1.3.9-3.el6_0.1	base	87 k
gnutls	x86_64	2.8.5-14.el6_5	base	346 k
libproxy	x86_64	0.3.0-10.e]6	base	39 k
libproxy-bin	x86_64	0.3.0-10.e]6	base	9.0 k
libproxy-python	x86_64	0.3.0-10.e]6	base	9.1 k
neon	x86_64	0.29.3-3.e16_4	base	119 k
pakchois	x86_64	0.4-3.2.el6	base	21 k
perl-URI	noarch	1.40-2.el6	base	117 k
Transaction Summary				
Install 10 Pack				
Total download size: Installed size: 14 M	: 3.1 M 4			
Is this ok [y/N]: y				

Verifying : subversion-1.6.11-12.el6_6.x86_64 3/ Verifying : pakchois-0.4-3.2.el6.x86_64 4/ Verifying : libproxy-python-0.3.0-10.el6.x86_64 5/ Verifying : neon-0.29.3-3.el6_4.x86_64 6/ Verifying : gnutls-2.8.5-14.el6_5.x86_64 7/ Verifying : perl-URI-1.40-2.el6.noarch 8/ Verifying : apr-1.3.9-5.el6_2.x86_64 9/ Verifying : apr-util-1.3.9-3.el6_0.1.x86_64 10/	10 10 10 10 10 10 10 10
Installed: subversion.x86_64 0:1.6.11-12.el6_6	
Dependency Installed: apr.x86_64 0:1.3.9-5.el6_2 gnutls.x86_64 0:2.8.5-14.el6_5 libproxy-bin.x86_64 0:0.3.0-10.el6 neon.x86_64 0:0.29.3-3.el6_4 perl-URI.noarch 0:1.40-2.el6 Dependency Installed: apr-util.x86_64 0:1.3.9-3.el6_0.1 libproxy.x86_64 0:0.3.0-10.el6 libproxy-python.x86_64 0:0.3.0-10.el6 pakchois.x86_64 0:0.4-3.2.el6	
Complete!	E

1.2.4 使用 yum 安装 autoconf automake libtool cmake

sudo yum install autoconf automake libtool cmake



Dependencies Resolved				*
Package	Arch	Version	Repository	Size
Installing: autoconf automake cmake libtool	========== noarch x86_64 x86_64	2.63-5.1.el6 1.11.1-4.el6 2.8.12.2-4.el6 2.2.6-15.5.el6	base base base base base	781 k 550 k 8.0 M 564 k
Installing for depend cloog-ppl cpp gcc glibc-devel glibc-headers kernel-headers libarchive libgomp m4 mpfr ppl Updating for dependen	encies: x86_64 x86_64 x86_64 x86_64 x86_64 x86_64 x86_64 x86_64 x86_64 x86_64 x86_64 cies: x86_64	0.15.7-1.2.el6 4.4.7-11.el6 4.4.7-11.el6 2.12-1.149.el6_6.9 2.12-1.149.el6_6.9 2.6.32-504.16.2.el6 2.8.3-4.el6_2 4.4.7-11.el6 1.4.13-5.el6 2.4.1-6.el6 0.10.2-11.el6	base base updates updates updates base base base base base base	93 k 3.7 M 984 k 612 k 3.4 M 126 k 133 k 278 k 157 k 1.3 M
glibc-common	x86_64 x86_64	2.12-1.149.e16_6.9 2.12-1.149.e16_6.9	updates updates	14 M
Install 15 Packa Upgrade 2 Packa Total download size:	ge(s) ge(s) 49 M			ш
Is this ok [y/N]: y Verifying : cmake- Verifying : glibc- Verifying : autoco Verifying : libtoo Verifying : ppl-0. Verifying : cpp-4. Verifying : glibc- Verifying : glibc-	2.8.12.2-4.e common-2.12-1 nf-2.63-5.1.e 1-2.2.6-15.5. 10.2-11.e16.x 4.7-11.e16.x ke-1.11.1-4.e common-2.12-1 2.12-1.149.e	l6.x86_64 1.149.el6_6.9.x86_64 el6.noarch .el6.x86_64 x86_64 36_64 el6.noarch 1.149.el6_6.5.x86_64 l6_6.5.x86_64		11/19 12/19 13/19 14/19 15/19 16/19 17/19 18/19 19/19
Installed: autoconf.noarch 0:2 cmake.x86_64 0:2.8.	.63-5.1.el6 12.2-4.el6	automake.noarch libtool.x86_64 (0:1.11.1-4.el6 0:2.2.6-15.5.el6	
Dependency Installed: cloog-ppl.x86_64 0: gcc.x86_64 0:4.4.7- glibc-headers.x86_64 libarchive.x86_64 0 m4.x86_64 0:1.4.13- ppl.x86_64 0:0.10.2	0.15.7-1.2.e 11.el6 4 0:2.12-1.14 :2.8.3-4.el6_ 5.el6 -11.el6	l6 cpp.x86_64 0:4.4 glibc-devel.x86_6 49.el6_6.9 kernel-headers.x8 _2 libgomp.x86_64 0: mpfr.x86_64 0:2.4	.7-11.el6 54 0:2.12-1.149.el6_ 86_64 0:2.6.32-504.1 :4.4.7-11.el6 4.1-6.el6	6.9 6.2.el6
Dependency Updated: glibc.x86_64 0:2.12	-1.149.el6_6.	.9 glibc-common.x86_64	4 0:2.12-1.149.el6_6	5.9

1.2.5 使用 yum 安装 ncurses-devel

sudo yum install ncurses-devel

<pre>[shiyanlou@b393a04554e1 ~]\$ sudo yum install ncurses-devel Loaded plugins: fastestmirror Setting up Install Process Loading mirror speeds from cached hostfile * base: mirrors.aliyuncs.com * extras: mirrors.aliyuncs.com * updates: mirrors.aliyuncs.com Resolving Dependencies > Running transaction check > Package ncurses-devel.x86_64 0:5.7-3.20090208.el6 will be installed > Finished Dependency Resolution Dependencies Resolved </pre>					
Package	Arch	Version	Repositor	ry Size	
Installing: ncurses-devel	x86_64	5.7-3.20090208.el6	base	642 k	
Transaction Summary					
Install 1 Package	e(s)				
Total download size: 642 k Installed size: 1.7 M Is this ok [y/N]: y Downloading Packages: ncurses-devel-5.7-3.20090208.el6.x86_64.rpm 642 kB 00:00 Running rpm_check_debug Running Transaction Test Transaction Test Succeeded Running Transaction Installing : ncurses-devel-5.7-3.20090208.el6.x86_64 1/1 Verifying : ncurses-devel-5.7-3.20090208.el6.x86_64 1/1					
Installed: ncurses-devel.x86_64 Complete!	0:5.7-3.2009	00208.e16		E	

1.2.6 使用 yum 安装 openssl-devel

sudo yum install openssl-devel

[shiyanlou@b393a04554e1 ~]\$ sudo yum install openssl-devel	*
Loaded plugins: fastestmirror	
Setting up Install Process	
Loading mirror speeds from cached hostfile	
* base: mirrors.aliyuncs.com	
* extras: mirrors.aliyuncs.com	
* updates: mirrors.aliyuncs.com	
Resolving Dependencies	
> Running transaction check	
> Package openssl-devel.x86_64_0:1.0.1e-30.el6.8 will be installed	
>_Processing Dependency: openssl = 1.0.1e-30.el6.8 for package: openssl-devel-1.0.1e-3	
0.el6.8.x86_64	
> Processing Dependency: zlib-devel for package: openssl-devel-1.0.1e-30.el6.8.x86_64	
> Processing Dependency: krb5-devel for package: openssl-devel-1.0.1e-30.el6.8.x86_64	
> Running transaction check	
> Package krb5-devel.x86_64_0:1.10.3-37.el6_6 will be installed	
> Processing Dependency: krb5-libs = 1.10.3-37.el6_6 for package: krb5-devel-1.10.3-37	
.el6_6.x86_64	
> Processing Dependency: libselinux-devel for package: krb5-devel-1.10.3-37.el6_6.x86_	
64	
> Processing Dependency: libcom_err-devel for package: krb5-devel-1.10.3-3/.el6_6.x86_	
> Processing Dependency: keyutils-libs-devel for package: krb5-devel-1.10.3-3/.el6_6.x	
86_64	

Dependencies Resolved				
Package	Arch	Version	Repository	Size
Installing: openssl-devel	x86_64	1.0.1e-30.el6.8	updates	====== 1.2 М
keyutils-libs-devel krb5-devel libcom_err-devel libselinux-devel libsepol-devel zlib-devel Updating for dependencies:	x86_64 x86_64 x86_64 x86_64 x86_64 x86_64	1.4-5.el6 1.10.3-37.el6_6 1.41.12-21.el6 2.0.94-5.8.el6 2.0.41-4.el6 1.2.3-29.el6	base updates base base base base	29 k 499 k 32 k 137 k 64 k 44 k
krb5-libs openssl	x86_64 x86_64	1.10.3-37.el6_6 1.0.1e-30.el6.8	updates updates	766 k 1.5 M
Transaction Summary				
Install 7 Package(s) Upgrade 2 Package(s)				
Total download size: 4.2 M Is this ok [y/N]: y				THE T
Verifying : keyutils-lib Verifying : libsepol-dev Verifying : openssl-1.0. Verifying : krb5-devel-1 Verifying : krb5-libs-1. Verifying : openssl-deve Verifying : libcom_err-d Verifying : libselinux-d Verifying : openssl-1.0. Verifying : krb5-libs-1.	s-devel-1.4-5.6 el-2.0.41-4.el6 1e-30.el6.8.x86 .10.3-37.el6_6.x 10.3-37.el6_6.x 1-1.0.1e-30.el6 evel-1.41.12-21 .2.3-29.el6.x86 evel-2.0.94-5.8 1e-30.el6_6.7.x 10.3-33.el6.x86	el6.x86_64 5.x86_64 5_64 .x86_64 x86_64 5.8.x86_64 1.el6.x86_64 5_64 8.el6.x86_64 5_64 5_64		1/11 2/11 3/11 4/11 5/11 6/11 7/11 8/11 9/11 10/11 11/11
Installed: openssl-devel.x86_64 0:1.	0.1e-30.el6.8			
Dependency Installed: keyutils-libs-devel.x86_6 libcom_err-devel.x86_64 0 libsepol-devel.x86_64 0:2	4 0:1.4-5.el6 :1.41.12-21.el6 .0.41-4.el6	krb5-devel.x86_64 0:1 5 libselinux-devel.x86_ zlib-devel.x86_64 0:1	10.3-37.el6_6 64 0:2.0.94-5.8 .2.3-29.el6	8.el6
Dependency Updated: krb5-libs.x86_64 0:1.10.3	-37.el6_6	openssl.x86_64 0:1.0).1e-30.el6.8	
Completel				

1.2.7 使用 yum 安装 gcc*

sudo yum install qcc*





1.2.8 安装并设置 protobuf

注:该程序包需要在 gcc 安装完毕后才能安装,否则提示无法找到 gcc 编译器。

1. 下载 protobuf 安装包

下载链接为 https://code.google.com/p/protobuf/downloads/list ,也可以在 /home/shiyanlou/install-pack 目录中找到该安装包

🍘 Downloads - protobuf - Protocol Buffers - Google's data interchange format - Google Project Hos - Windows Internet Explorer					
https://code	.google.com/p/protobuf/downloads/list	-	≁ 🗙 🔍 360摄	該	م
🚖 收藏夹 🏾 🏉 Downloads	- protobuf - Protocol Buffers - G		<u></u> → □ 🖶 •	· 页面(P) ▼	安全(S) ▼ 工具(O) ▼ 🕢
					<u>My favorites</u> ▼ <u>Sign in</u>
nrotok	suf				
protor	Jui				
Protocol Buffers -	Google's data interchange format				Search projects
Project Home Downloa	ids <u>Wiki</u> <u>Issues</u> <u>Source</u>				
Search Current downloads	s v for Search				
					4 40 640
Ellenome =	Summany + Labela =		DelegeeDete =	Circ -	1 - 12 of 12
protoc-2.5.0-win32.zip	Protocol Buffers 2.5.0 compiler Windows binary Featured	Feb 2013	Feb 2013	637 KB	60292
protobuf-2 5 0 tar bz2	Protocol Buffers 2.5.0 full source C++ Java Python Featured	Feb 2013	Feb 2013	1.8 MB	113095
protobult-2.5.0 tar. gz	Protocol Buffers 2.5.0 full source - C++, Java Python Featured	Feb 2013	Feb 2013	2.3 MB	67282
protobul-2.5.0.tar.gz	Protocol Buffers 2.5.0 full source C++ Java Python Featured	Fab 2013	Feb 2013	2.5 MB	66121
protobul-2.5.0.21p	Protocol Bullers 2.5.0 full source - C++, Java, Python Featured	Apr 2011	A == 2011	2.3 WD	100004
protobul-2.4.1.tar.b22	Protocol Bullers 2.4.1 full source C++, Java, Python	Apr 2011	Apr 2011	1.4 IVID	129624
protobut-2.4.1.tar.gz	Protocol Buffers 2.4.1 full source C++, Java, Python	Apr 2011	Apr 2011	1.8 MB	82202
protobuf-2.4.1.zip	Protocol Buffers 2.4.1 full source C++, Java, Python	Apr 2011	Apr 2011	2.4 MB	83437
protoc-2.4.1-win32.zip	Protocol Buffers 2.4.1 compiler Windows binary	Apr 2011	Apr 2011	627 KB	55623
protobuf-2.3.0.tar.bz2	Protocol Buffers 2.3.0 full source C++, Java, Python	Jan 2010		1.4 MB	34160
protobuf-2.3.0.tar.gz	Protocol Buffers 2.3.0 full source C++, Java, Python	Jan 2010		1.8 MB	32956
protobuf-2.3.0.zip	Protocol Buffers 2.3.0 full source C++, Java, Python	Jan 2010		2.2 MB	36410
https://code.google.com/p/pr	rotobuf/downloads/detail?name=protobuf-2.5.0.tar.k	🤤 I	internet 保护模式: 爬	自用	🖓 🔻 🔍 100% 🔻

2. 解压安装包并把 protobuf-2.5.0 目录转移到/app/lib 目录下

cd /home/shiyanlou/install-pack tar -zxf protobuf-2.5.0.tar.gz mv protobuf-2.5.0 /app/lib



3. 进行目录运行命令

进入目录运行如下命令: cd /app/lib/protobuf-2.5.0/ sudo ./configure

sudo make

sudo make check

sudo make install

[shiyanlou@b3 [shiyanlou@b3	93a04554e1 ~]\$ cd /app/lib/pro 93a04554e1 protobuf-2.5.0]\$ ls	tobuf-2.5.0/		*
aclocal.m4	CONTRIBUTORS.txt	INSTALL.txt	protobuf.pc.in	
autogen.sh	COPYING.txt		python	
CHANGES.txt	depcomp	ltmain.sh	README.txt	
config.guess		m4		
config.h.in		Makefile.am		
contig.sub	generate_descriptor_proto.sh	Maketile.in		
configure	gtest	missing		
contigure.ac	install-sh	protobut-lite.pc.in		
[[shiyanlou@b3	93a04554el protobut-2.5.0]\$ su	do ./configure		
config.status	: creating Makefile			
config.status	: creating scripts/gtest-confi	g		
config.status	: creating build-aux/config.h			
config.status	: executing deptiles commands			
config.status	: executing libtool commands			
[[shiyan]ou@b3	93a04554e1 protobut-2.5.01			
[sniyanlou@b3	93a04554e1 protobut-2.5.0]\$ su	do make		Ŧ
maka试理时间	城上 重再法行日公钟时间			

make 过程时间较长,需要运行几分钟时间

libtool: link: ar cru .libs/libprotobuf-lite.a atomicops_internals_x86_gcc.o atomico ps_internals_x86_msvc.o common.o once.o stringprintf.o extension_set.o generated_mess age_util.o message_lite.o repeated_field.o wire_format_lite.o coded_stream.o zero_cop y_stream.o zero_copy_stream_impl_lite.o libtool: link: ranlib .libs/libprotobuf-lite.a libtool: link: (cd ".libs" && rm -f "libprotobuf-lite.la" && ln -s "../libprotobuf-l ite.la" "libprotobuf-lite.la") make[3]: Leaving directory `/app/lib/protobuf-2.5.0/src' make[1]: Leaving directory `/app/lib/protobuf-2.5.0' [shiyanlou@b393a04554e1 protobuf-2.5.0]\$

check 结果如下

PASS: google/protobut/compiler/zip_output_unittest.sh + TESTFILE=Makefile	
+ ./zcgzip	
+ gunzip + cmp - Makefile	
+ gzip + ./zcgunzip + cmp - Makefile PASS: google/protobuf/io/gzip_stream_unittest.sh	
All 5 tests passed	
<pre>make[3]: Leaving directory `/app/lib/protobuf-2.5.0/src' make[2]: Leaving directory `/app/lib/protobuf-2.5.0/src' make[1]: Leaving directory `/app/lib/protobuf-2.5.0/src'</pre>	

运行 install 命令及结果如下

[shiyan]ou@b393a04554e1 protobuf-2.5.0]\$ sudo make install Making install in . make[1]: Entering directory `/app/lib/protobuf-2.5.0' make[2]: Entering directory `/app/lib/protobuf-2.5.0' make[2]: Nothing to be done for `install-exec-am'. test -z "/usr/local/lib/pkgconfig" || /bin/mkdir -p "/usr/local/lib/pkgconfig" /usr/bin/install -c -m 644 protobuf.pc protobuf-lite.pc '/usr/local/lib/pkgconfig' make[2]: Leaving directory `/app/lib/protobuf-2.5.0'

<pre>atomicops_internals_arm_gcc.h google/protobuf/stubs/atomicops_internals_arm_qnx.h goo gle/protobuf/stubs/atomicops_internals_atomicword_compat.h google/protobuf/stubs/atom icops_internals_macosx.h google/protobuf/stubs/atomicops_internals_mips_gcc.h google/ protobuf/stubs/atomicops_internals_pnacl.h google/protobuf/stubs/atomicops_internals_ x86_gcc.h google/protobuf/stubs/atomicops_internals_x86_msvc.h google/protobuf/stubs/ common.h google/protobuf/stubs/platform_macros.h google/protobuf/stubs/once.h google/ protobuf/stubs/template_util b_google/protobuf/stubs/type_traits_h '(vsr/local/includ)</pre>	
e/google/protobuf/stubs'	
make[3]: Leaving directory //app/lib/protobut-2.5.0/src'	
make[1]: Leaving directory /app/lib/protobuf-2.5.0/src'	
make[2]: Leaving directory `/app/lib/protobuf-2.5.0/src'	
make[1]: Leaving directory /app/lib/protobut-2.5.0/src	4

4. 验证是否安装成功

运行成功之后,通过如下方式来验证是否安装成功,如果出现"Missing input file"表示成功安装 protobuf

protoc

[shiyanlou@b393a04554e1 protobuf-2.5.0]\$ protoc Missing input file. [shiyanlou@b393a04554e1 protobuf-2.5.0]\$

2 编译 Hadoop

2.1 下载 Hadoop 源代码 Release2.2.0

在/app 目录下新建 compile 子目录,在该文件夹通过 SVN 获取 Hadoop2.2.0 源代码,命令如下:

cd /app

mkdir compile

cd compile

svn checkout http://svn.apache.org/repos/asf/hadoop/common/tags/release-2.2.0

获取时间较长,大小约75.3M

```
[shiyanlou@b393a04554e1 ~]$ cd /app
[shiyanlou@b393a04554e1 app]$ mkdir compile
[shiyanlou@b393a04554e1 app]$ ls
compile hadoop-1.1.2 lib
[shiyanlou@b393a04554e1 app]$ svn checkout http://svn.apache.org/repos/asf/ha
doop/common/tags/release-2.2.0
A release-2.2.0/BUILDING.txt
A release-2.2.0/hadoop-dist
A release-2.2.0/hadoop-dist/pom.xml
A release-2.2.0/hadoop-project
A release-2.2.0/hadoop-project/src
A release-2.2.0/hadoop-project/src
```

2.2 编译 Hadoop 源代码

由于 hadoop2.2.0 在 svn 中 pom.xml 有点问题, 会造成编译中出错, 可先参考 3.1 修复该问

第 13 页 共 17 页 出自石山园,博客地址: http://www.cnblogs.com/shishanyuan

题。在 Hadoop 源代码的根目录执行如下命令:

cd /app/compile/release-2.2.0/

mvn package -Pdist, native -DskipTests –Dtar

(注意:这行命令需要手工输入,如果复制执行会报异常!)

[shiyanlou@b393a04554e	1 ~]\$ cd /app/compile/rele	ase-2.2.0/	
[shiyanlou@b393a04554e1 release-2.2.0]\$ ls			
BUILDING.txt			
dev-support			
hadoop-assemblies			
hadoop-client			
hadoop-common-project	hadoop-miniclust <u>er</u>	pom.xml	
[shiyanlou@b393a04554e]	1 release-2.2.0]\$ mvn pack	age -Pdist,native -DskipTests -Dtar	

在编译过程需要联网,从网络中下载所依赖的包,编译的过程时间根据网速时间不等,一般在 30 分钟左右。

[[INFO]	
[INFO] Reactor Summary:	
[INFO]	
[INFO] Apache Hadoop Main	
[INFO] Apache Hadoop Project POM	
[INFO] Apache Hadoop Annotations	
[INFO] Apache Hadoop Assemblies	
[INFO] Apache Hadoop Project Dist POM	
[INFO] Apache Hadoop Maven Plugins SUCCESS [4.737s]	
[INFO] Apache Hadoop Auth	
[INFO] Apache Hadoop Auth Examples	
[INFO] Apache Hadoop Common	4s]
[INFO] Apache Hadoop NFS	
[INFO] Apache Hadoop Common Project SUCCESS [0.053s]	
[INFO] Apache Hadoop HDFS	7s]
[INFO] Apache Hadoop HttpFS	
[INFO] Apache Hadoop HDFS BookKeeper Journal SUCCESS [9.914s]	
[INFO] Apache Hadoop HDFS-NFS	
[INFO] Apache Hadoop HDFS Project	
[INFO] hadoop-yarn	
[INFO] hadoop-yarn-api	Ls]
[INFO] hadoop-yarn-common	
[INFO] hadoop-yarn-server	
[INFO] hadoop-yarn-server-commonSUCCESS [11.785s]	
[INFO] hadoop-yarn-server-nodemanager SUCCESS [17.322s]	
[INFO] hadoop-yarn-server-web-proxy SUCCESS [4.221s]	
[INFO] hadoop-yarn-server-resourcemanager SUCCESS [16.438s]	
[INFO] hadoop-yarn-server-tests	
[INFO] hadoop-yarn-client	

[INFO]	hadoop-yarn-applications	SUCCESS	[0.121s]	
[INFO]	hadoop-yarn-applications-distributedshell	SUCCESS	[3.258s]	
[INFO]	hadoop-mapreduce-client	SUCCESS	[0.103s]	
[INFO]	hadoop-mapreduce-client-core	SUCCESS	[28.955s]	
[INFO]	hadoop-yarn-applications-unmanaged-am-launcher	SUCCESS	[2.785s]	
[INFO]	hadoop-yarn-site	SUCCESS	[0.168s]	
[INFO]	hadoop-yarn-project	SUCCESS	[9.119s]	
[INFO]	hadoop-mapreduce-client-common	SUCCESS	[24.678s]	
[INFO]	hadoop-mapreduce-client-shuffle	SUCCESS	[3.339s]	
[INFO]	hadoop-mapreduce-client-app	SUCCESS	[12.100s]	
[INFO]	hadoop-mapreduce-client-hs	SUCCESS	[6.200s]	
[INFO]	hadoop-mapreduce-client-jobclient	SUCCESS	[6.698s]	
[INFO]	hadoop-mapreduce-client-hs-plugins	SUCCESS	[2.682s]	
[INFO]	Apache Hadoop MapReduce Examples	SUCCESS	[7.893s]	
[INFO]	hadoop-mapreduce	SUCCESS	[8.173s]	
[INFO]	Apache Hadoop MapReduce Streaming	SUCCESS	[6.114s]	
[INFO]	Apache Hadoop Distributed Copy	SUCCESS	[10.887s]	
[INFO]	Apache Hadoop Archives	SUCCESS	[2.902s]	
[INFO]	Apache Hadoop Rumen	SUCCESS	[7.573s]	
[INFO]	Apache Hadoop Gridmix	SUCCESS	[5.578s]	
[INFO]	Apache Hadoop Data Join	SUCCESS	[4.030s]	
[INFO]	Apache Hadoop Extras	SUCCESS	[4.802s]	
[INFO]	Apache Hadoop Pipes	SUCCESS	[11.418s]	
[INFO]	Apache Hadoop Tools Dist	SUCCESS	[2.885s]	
[INFO]	Apache Hadoop Tools	SUCCESS	[0.055s]	
[INFO]	Apache Hadoop Distribution	SUCCESS	[31.610s]	
[INFO]	Apache Hadoop Client	SUCCESS	[12.550s]	
[INFO]	Apache Hadoop Mini-Cluster	SUCCESS	[0.184s]	
[INFO]				
[INFO]	BUILD SUCCESS			
[INFO]				
[INFO]	Total time: 11:33.398s			
[INFO]	Finished at: Tue Jun 02 02:41:53 UTC 2015			=
[INFO]	Final Memory: 80M/797M			
[INFO]				-

编译好的 Hadoop2.X 64 位安装包在 hadoop-dist/target 目录中,该文件为 hadoop-2.2.2.tar.gz。

[shiyan]ou@b393a04554e1 ~]\$ cd /app/co	mpile/rele	ase-2.2.0/hadoop-dist/target/	-
[shiyanlou@b393a04554e1 target]\$ []			
total 282352			
drwxrwxr-x 2 shiyanlou shiyanlou	4096 Jun	2 02:41 antrun	
-rw-rw-r 1 shiyanlou shiyanlou	1622 Jun	2 02:41 dist-layout-stitching.sh	
-rw-rw-r 1 shiyanlou shiyanlou	639 Jun	2 02:41 dist-tar-stitching.sh	
drwxrwxr-x 9 shiyanlou shiyanlou	4096 Jun	2 02:41 hadoop-2.2.0	
-rw-rw-r 1 shiyanlou shiyanlou 9618	1971 Jun	2 02:41 hadoop-2.2.0.tar.gz	
-rw-rw-r 1 shiyanlou shiyanlou	2749 Jun	2 02:41 hadoop-dist-2.2.0.jar	
-rw-rw-r 1 shiyanlou shiyanlou 19290	9463 Jun	2 02:41 hadoop-dist-2.2.0-javadoc.jar	
drwxrwxr-x 2 shiyanlou shiyanlou	4096 Jun	2 02:41 javadoc-bundle-options	
drwxrwxr-x 2 shiyanlou shiyanlou	4096 Jun	2 02:41 maven-archiver	
drwxrwxr-x 2 shiyanlou shiyanlou	4096 Jun	2 02:41 test-dir	
[shiyanlou@b393a04554e1 target]\$			

2.3 验证编译是否成功

到 hadoop-dist/target/hadoop-2.2.0/lib/native 目录中查看 libhadoop.so.1.0.0 属性:

cd /app/compile/release-2.2.0/hadoop-dist/target/hadoop-2.2.0/lib/native

file *

该文件为 ELF 64-bit LSB 则表示文件成功编译为 64 位 (如果系统没有 file 命令,则使用 sudo yum install file 进行安装)

[shiyanlou@b393a045	54e1 native]\$ file *	
libhadoop.a:	current ar archive	
libhadooppipes.a:	current ar archive	
libhadoop.so:	symbolic link to `libhadoop.so.1.0.0'	
libhadoop.so.1.0.0:	ELF 64-bit LSB shared object, x86-64, version 1 (SYSV), dynamically 1	
inked, not stripped		
libhadooputils.a:	current ar archive	
libhdfs.a:	current ar archive	
libhdfs.so:	symbolic link to `libhdfs.so.0.0.0'	
libhdfs.so.0.0.0:	ELF 64-bit LSB shared object, x86-64, version 1 (SYSV), dynamically 1	
inked, not stripped		
[shiyanlou@b393a045	54e1 native]\$	

3 问题解决

3.1 编译 Hadoop2.2.0 出现代码异常

目前的 2.2.0 的 Source Code 压缩包解压出来的 code 有个 bug 需要 patch 后才能编译。否则编译 hadoop-auth 会提示下面错误:

[ERROR] Failed to execute goal org.apache.maven.plugins:maven-compiler-plugin:2.5.1:testCompile (default-testCompile) on project hadoop-auth: Compilation failure: Compilation failure: [ERROR]

/home/hadoop/Downloads/release-2.2.0/hadoop-common-project/hadoop-auth/src/test/java/org /apache/hadoop/security/authentication/client/AuthenticatorTestCase.java:[88,11] error: cannot access AbstractLifeCycle

[ERROR] class file for org.mortbay.component.AbstractLifeCycle not found [ERROR]

/home/hadoop/Downloads/release-2.2.0/hadoop-common-project/hadoop-auth/src/test/java/org /apache/hadoop/security/authentication/client/AuthenticatorTestCase.java:[96,29] error: cannot access LifeCycle

[ERROR] class file for org.mortbay.component.LifeCycle not found

[INFO] Apache Hadoop Pipes SKIPPED	
[INFO] Apache Hadoop Tools DistSKIPPED	
LINFO_ Apache Hadoop Tools SKIPPED	
[INFO] Apache Hadoop Distribution SKIPPED	
[INFO] Apache Hadoop Client	
LINFOJ APACNE HAdoop Mini-Cluster SKIPPED	
[INFO] Total time: 10:40.061c	
[INFO] Finished at: Wed Sen 24 22:05:36 CST 2014	
[INFO] Final Memory: 36M/82M	
[ERROR] Failed to execute goal org.apache.maven.plugins:maven-compiler-plugin:2.5.1:testCompile (default-testCompile	2)
on project hadoop-auth: Compilation failure: Compilation failure:	-
[ERROR] /home/hadoop/Downloads/release-2.2.0/hadoop-common-project/hadoop-auth/src/test/java/org/apache/hadoop/secu	ri l
ty/authentication/client/AuthenticatorTestCase.java:[88,11] error: cannot access AbstractLifeCycle	
[ERROR] class file for org.mortbay.component.AbstractLifeCycle not found	
[ERROR] /home/hadoop/Downloads/release-2.2.0/hadoop-common-project/hadoop-auth/src/test/java/org/apache/hadoop/secu	1
ty/authentication/client/AuthenticatorTestCase.java:[96,29]_error: cannot access LifeCycle	
[ERROR] class file for org.mortbay.component.lifeCycle not found	
[ERROR] /home/hadoop/Downloads/release-2.2.0/hadoop-common-project/hadoop-auth/src/test/java/org/apache/hadoop/secu	
ty/authentication/client/AuthenticatorTestCase.java:[98,10] error: Cannot find symbol	
[ERROR] Symbol: method start()	
[[ERROR] focation: variable server of type server [ERROR] /bore (hadeen /complete relations) 2.0 (hadeen common project /badeen auth/cns/test/java/eng/apache/badeen/cosu	
[EKKOK] /home/hadoop/bowhoads/refease-z.z.0/hadoop-common-project/hadoop-auth/src/test/java/org/apache/hadoop/secu	
$[cpopo] \rightarrow [haln 1]$	
[ERROR] To see the full stack trace of the errors, re-run Mayen with the -e switch.	
[FERBOR] Re-run Mayen using the -x switch to enable full debug logging.	
FERROR 1	
[ERROR] For more information about the errors and possible solutions, please read the following articles:	
[ERROR] [Help 1] http://cwiki.apache.org/confluence/display/MAVEN/MojoFailureException	
[ERROR]	
[ERROR] After correcting the problems, you can resume the build with the command	
[[ERROR] _ mvn <goals> -rt :hadoop-auth</goals>	=
[[root@hadoop1 release-2.2.0]#	-
	L

直接修改 hadoop-common-project/hadoop-auth/pom.xml,其实就是少了一个包,添加一

个 dependency :

<dependency>

<groupId>org.mortbay.jetty</groupId> <artifactId>jetty-util</artifactId> <scope>test</scope>

</dependency>

