Netkiller Database 手札

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Mr. Neo Chan, 陈景峰

中国广东省深圳市宝安区龙华镇
518109
+86 755 29812080
+86 755 29812080
<openunix@163.com>

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下面是我多年积累下来的经验总结，整理成文档供大家参考:

Netkiller Architect 手札	Netkiller Linux 手札	Netkiller Developer 手札	Netkiller Database 手札
Netkiller Debian 手札	Netkiller CentOS 手札	Netkiller FreeBSD 手札	Netkiller Shell 手札
Netkiller Web 手札	Netkiller Monitoring 手札	Netkiller Storage 手札	Netkiller Mail System 手札
Netkiller MySQL 手札	Netkiller LDAP 手札	Netkiller Security 手札	Netkiller Version 手札
Netkiller Intranet 手札	Netkiller Cisco IOS 手札	Netkiller Writer 手札	Netkiller Studio Linux 手札

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目录

1. 内容简介

当前文档档容比较杂，涉及内容广泛。

慢慢我会将其中章节拆成新文档.

文档内容简介:

1. Network
2. Security
3. Web Application
4. Database
5. Storage And Backup/Restore
6. Cluster
7. Developer

1.1. Audience(读者对象)

This book is intended primarily for Linux system administrators who are familiar with the following activities:

Audience

1. Linux system administration procedures, including kernel configuration
2. Installation and configuration of cluster, such as load balancing, High Availability,
3. Installation and configuration of shared storage networks, such as Fibre Channel SANs
4. Installation and configuration of web server, such as apache, nginx, lighttpd, tomcat/resin ...

本文档的读者对象:

文档面向有所有读者。您可以选读您所需要的章节,无需全篇阅读,因为有些章节不一定对你有用,用得着就翻来看看,暂时用不到的可以不看.

大体分来读者可以分为几类:

1. 架构工程师
2. 系统管理员
3. 系统支持,部署工程师

不管是谁,做什么的,我希望通过阅读这篇文档都能对你有所帮助。

1.2. 写给读者

欢迎提出宝贵的建议,如有问题请到 邮件列表 讨论

为什么写这篇文章

有很多想法,工作中也用不到所以未能实现，所以想写出来,和大家分享.有一点写一点,写得也不好,只要能看懂就行,就当学习笔记了.

开始零零碎碎写过一些文档，也向维基百科供过稿，但维基经常被ZF封锁，后来发现sf.net可以提供主机存放文档，便做了迁移。并开始了我的写作生涯。

这篇文档是作者8年来对工作的总结,是作者一点一滴的积累起来的，有些笔记已经丢失，所以并不完整。

因为工作太忙整理比较缓慢。目前的工作涉及面比较窄所以新文档比较少。

我现在花在技术上的时间越来越少，兴趣转向摄影，无线电。也想写写摄影方面的心得体会。

写作动力:

曾经在网上看到外国开源界对中国的评价，中国人对开源索取无度，但贡献却微乎其微.这句话一直记在我心中，发誓要为中国开源事业做我仅有的一点微薄贡献

另外写文档也是知识积累，还可以增加在圈内的影响力.

人跟动物的不同,就是人类可以把自己学习的经验教给下一代人.下一代在上一代的基础上再创新,不断积累才有今天.

所以我把自己的经验写出来,可以让经验传承

没有内容的章节:

目前我自己一人维护所有文档，写作时间有限，当我发现一个好主题就会加入到文档中，待我有时间再完善章节，所以你会发现很多章节是空无内容的.

文档目前几乎是流水帐试的写作，维护量很大，先将就着看吧.

我想到哪写到哪,你会发现文章没一个中心,今天这里写点,明天跳过本章写其它的.
文中例子绝对多,对喜欢复制然后粘贴朋友很有用,不用动手写,也省时间.
理论的东西,网上大把,我这里就不写了,需要可以去网上查.
我爱写错别字,还有一些是打错的,如果发现请指正.
文中大部分试验是在Debian/Ubuntu/Redhat AS上完成.

1.3. 获得文档

1.3.1. PDF

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Download PDF Document 下载PDF文档2

1.3.2. EPUB

http://netkiller.sourceforge.net/technology.html

1.3.3. 获得光盘介质

如有特别需要，请联系我

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2. 作者简介

主页地址：http://netkiller.sourceforge.net, http://netkiller.github.com/

陈景峰 (ㄔㄣˊ ㄐㄧㄥˇ ㄈㄥ)

Nickname：netkiller | English name: Neo chen | Nippon name: ちんけいほう (音訳) | Korean name: | Thailand name:

IT民工， UNIX like Evangelist, 业余无线电爱好者（呼号：BG7NYT）,户外运动以及摄影爱好者。

《PostgreSQL实用实例参考》，《Postfix 完整解决方案》，《Netkiller Linux 手札》的作者

2001年来深圳进城打工,成为一名外来务工者.

2002年我发现不能埋头苦干,埋头搞技术是不对的,还要学会"做人".

2003年这年最惨,公司拖欠工资16000元,打过两次官司2005才付清.

2004年开始加入分布式计算团队,目前成绩

2004-10月开始玩户外和摄影

2005-6月成为中国无线电运动协会会员

2006年单身生活了这么多年,终于找到归宿.

2007物价上涨,金融危机，休息了4个月（其实是找不到工作）

2008终于找到英文学习方法，， 《Netkiller Developer 手札》，《Netkiller Document 手札》

2008-8-8 08:08:08 结婚,后全家迁居湖南省常德市

2009《Netkiller Database 手札》,年底拿到C1驾照

2010对电子打击乐产生兴趣，计划学习爵士鼓

2011 职业生涯路上继续打怪升级

2.1. 联系作者

Mobile: +86 13113668890

Tel: +86 755 2981-2080

Callsign: BG7NYT QTH: Shenzhen, China

注：请不要问我安装问题!

E-Mail: openunix@163.com
IRC irc.freenode.net #ubuntu / #ubuntu-cn

Yahoo: bg7nyt
ICQ: 101888222
AIM: bg7nyt

TM/QQ: 13721218
MSN: netkiller@msn.com
G Talk: 很少开
网易泡泡：很少开

写给火腿:

欢迎无线电爱好者和我QSO,我的QTH在深圳宝安区龙华镇溪山美地12B7CD,设备YAESU FT-50R,FT-60R,FT-7800 144-430双段机,拉杆天线/GP天线 Nagoya MAG-79EL-3W/Yagi

如果这篇文章对你有所帮助,请寄给我一张QSL卡片,qrz.cn or qrz.com or hamcall.net

Personal Amateur Radiostations of P.R.China

ZONE CQ24 ITU44 ShenZhen, China

Best Regards, VY 73! OP. BG7NYT

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招商银行(China Merchants Bank) 陈景峰 9555500000007459

部分 I. Database Design

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下面数据库设计实例中，大部分使用MySQL,PostgreSQL为例

1. 常用属性参考

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90B
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92S
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96S
98S

文胸

A罩
B罩
C罩
D罩

其他服装

F
XF
XXS
XS
S
M
L
XL
XXL
XXXL
XXXXL
XXXXXL

隐形眼镜

100
125
150
175
200
225
250
275
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375
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425
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475
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550
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650
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950
1000

戒指

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手机号码分配：

移动：134，135，136，137，138，139，150，151，152，157，158，159，187，188，147，182

联通：130，131，132，155，156，185，186，140

电信：180，159，133，153 ，189

中国电信发布中国3G号码段，中国联通185，186；中国移动188，187；中国电信189，180共6个号段。目前，3G业务专属的180-189号段已基本分配给各运营商使用，其中180、189分配给中国电信，187、188归中国移动使用，185、186属于新联通。

中国移动拥有号码段
为：139、138、137、136、135、134、159、158、157（3G）、151、150、188（3G）、187（3G）；13个号段

中国联通拥有号码段为：130、131、132、156（3G）、186（3G）、185（3G）；6个号段

中国电信拥有号码段为：133、153、189（3G）、180（3G）；4个号码段

第 1 章 RDBMS 数据库设计

目录

仅供参考

1. 数据字典

我比建议使用传统的《数据字典》，我的做法是E-R图加数据库注释

注释伴随表，视图，触发器，过程等等，便于维护

---

2. 用户帐号表

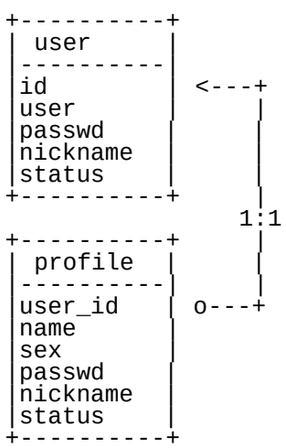
用户帐号或通行证系统设计，下面以我的数库为例讲解。

我一般使用两个表 passport，profile 完成网站会员系统。

首先说说passport表，你也要以使用user或member等等命名，这个表设计尽可能地简单，不要使用过多字段。仅保存登录所必须用到的字段，如user,password,nickname,email... 登录帐号和密码做复合索引。

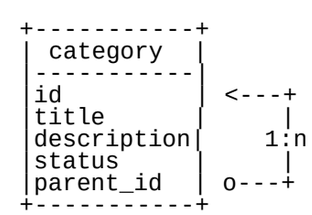
然后是profile表，这个表与passport是1:1关系，保存用户详细信息

这样设计可以保证海量用户登录时的速度。



3. 分类表设计

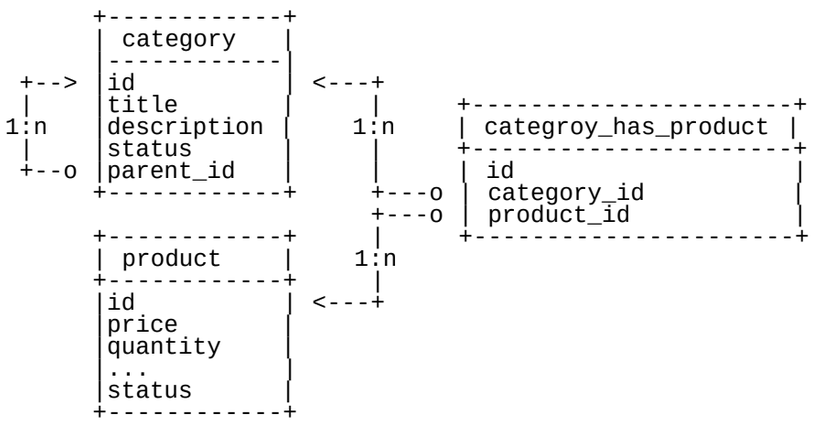
3.1. 树形分类表




```
CREATE TABLE `category` (
        `id` SMALLINT(10) UNSIGNED NOT NULL AUTO_INCREMENT,
        `name` VARCHAR(10) NOT NULL,
        `description` VARCHAR(255) NULL,
        `status` ENUM('enable','desable') NOT NULL DEFAULT 'enable',
        `parent_id` SMALLINT(10) UNSIGNED NOT NULL DEFAULT '0',
        PRIMARY KEY (`id`),
        CONSTRAINT `FK1` FOREIGN KEY (`parent_id`) REFERENCES `category` (`id`)
)
COMMENT='goods category'
ENGINE=InnoDB
ROW_FORMAT=DEFAULT
```

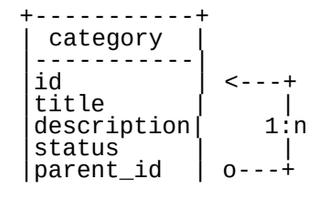
3.2. 多对多分类

多对多分类,主要用于满足，一个产品/文章属于多个分类的需求。



3.3. 快速检索子分类设计

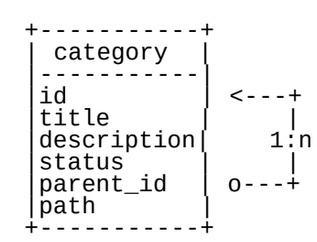
上面我刚刚讲过怎样实现“不限子树的分类树”，我们可以实现不限层次的无线分类表。



```
 +-----------+
```

问题出来了，当我需要读取一个分类（任意分类）下的所有子分类，怎样实现，很多人会说用“递归”。当然“递归”可是现实我们的需求，在几百个分类的项目中，使用递归也不是不可以的，但是当数量非常庞大时怎么办？

当然有更好的解决方案，请看下面




```
+-----------------------------------------------------------------------------+
| category                                                                    |
+----+----------+----------------------+--------+-----------+-----------+
| id | name     | description          | status | parent_id | path      |
+----+----------+----------------------+--------+-----------+-----------+
|  1 | 中国     | 中华人民共和家                                  | Y      |      NULL | 1/
|
|  4 | 广东省 | 广东省                                                  | Y      |         1 |
1/4    |
|  5 | 深圳市 | NULL                 | Y      |         4 | 1/4/5     |
|  6 | 宝安区 | NULL                 | Y      |         5 | 1/4/5/6   |
|  7 | 龙华镇 | NULL                 | Y      |         6 | 1/4/5/6/7 |
+----+----------+----------------------+--------+-----------+-----------+
```

```
CREATE TABLE `category` (
        `id` INT(10) UNSIGNED NOT NULL AUTO_INCREMENT COMMENT '分类ID',
        `name` VARCHAR(50) NOT NULL COMMENT '分类名称',
        `description` VARCHAR(200) NULL DEFAULT NULL COMMENT '分类描述',
        `status` ENUM('Y','N') NOT NULL DEFAULT 'Y' COMMENT '分类状态有继承性',
        `parent_id` INT(10) NULL DEFAULT '1' COMMENT '分类父ID',
        `path` VARCHAR(255) NOT NULL COMMENT '分类递归路径索引',
        INDEX `PK` (`id`),
        INDEX `relation` (`id`, `parent_id`),
        INDEX `FK_category_category` (`parent_id`),
        INDEX `path` (`path`)
)
COMMENT='分类表'
ENGINE=InnoDB
ROW_FORMAT=DEFAULT
AUTO_INCREMENT=0

insert into category(`name`,`description`,`status`,`parent_id`,`path`) values('中国','中华人民共和
家','Y',null,'1/')
```

```
ALTER TABLE `category`
        ADD CONSTRAINT `FK_category_category` FOREIGN KEY (`parent_id`) REFERENCES `category`
(`id`)
```

抽取广东子树

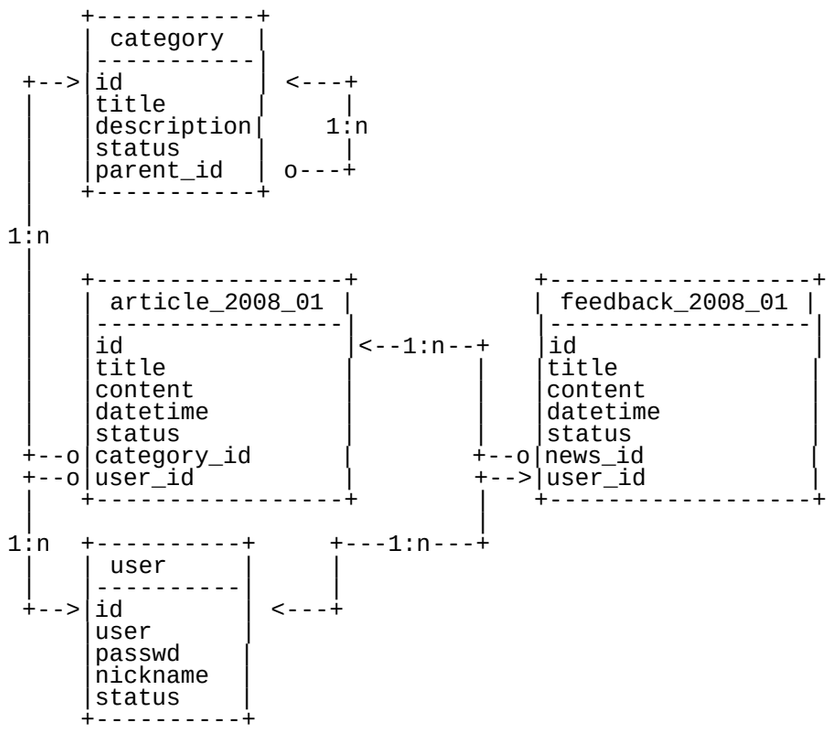
```
select * from category where path like '1/4%';
```

```
mysql> select * from category where path like '1/4%';
+----+----------+-------------+--------+-----------+-----------+
| id | name     | description | status | parent_id | path      |
+----+----------+-------------+--------+-----------+-----------+
|  4 | 广东省 | 广东省   | Y      |         1 | 1/4       |
|  5 | 深圳市 | NULL        | Y      |         4 | 1/4/5     |
|  6 | 宝安区 | NULL        | Y      |         5 | 1/4/5/6   |
|  7 | 龙华镇 | NULL        | Y      |         6 | 1/4/5/6/7 |
+----+----------+-------------+--------+-----------+-----------+
4 rows in set (0.00 sec)
```

---

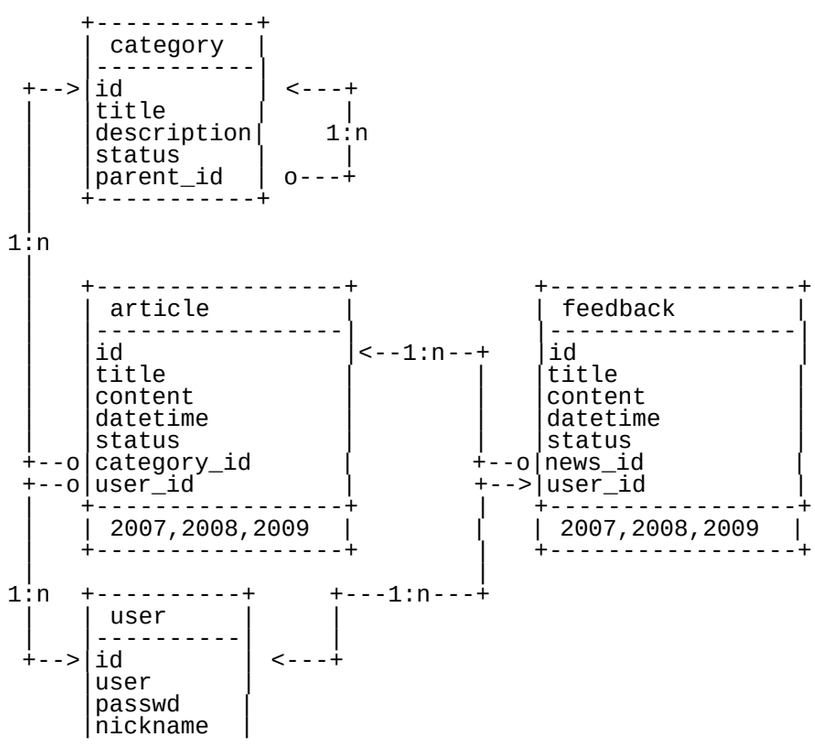
4. 文章表设计

看具体情况，拆分表，可按“日”，“月”，“年”等等



4.1. 分区表设计

分区表可以通过表空间，等等技术实现，优点是解决了Union查询问题，保证了数据的一致性。



```
|status    |
+----------+
```

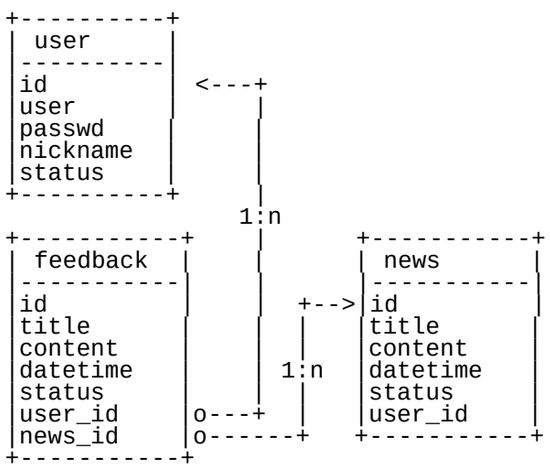
4.2. Title性能优化

显示title前20个汉字并在后尾添加省略号。

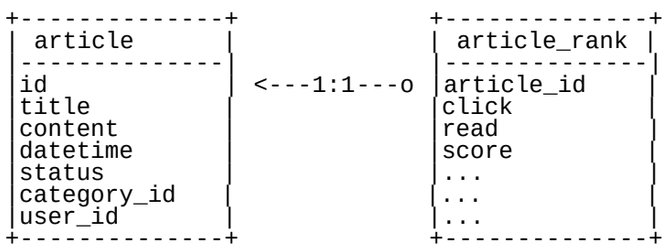
上一页 | 上一级 | 下一页

3. 分类表设计 | 起始页 | 5. 评论表

5. 评论表

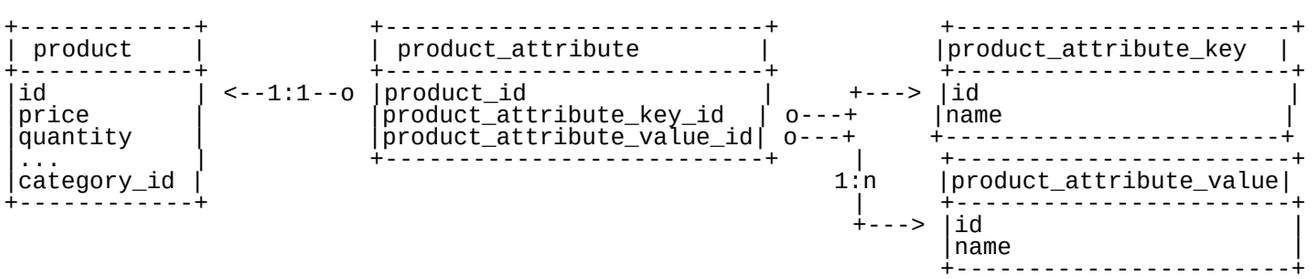


6. 记录点击率，阅读次数，及评分表



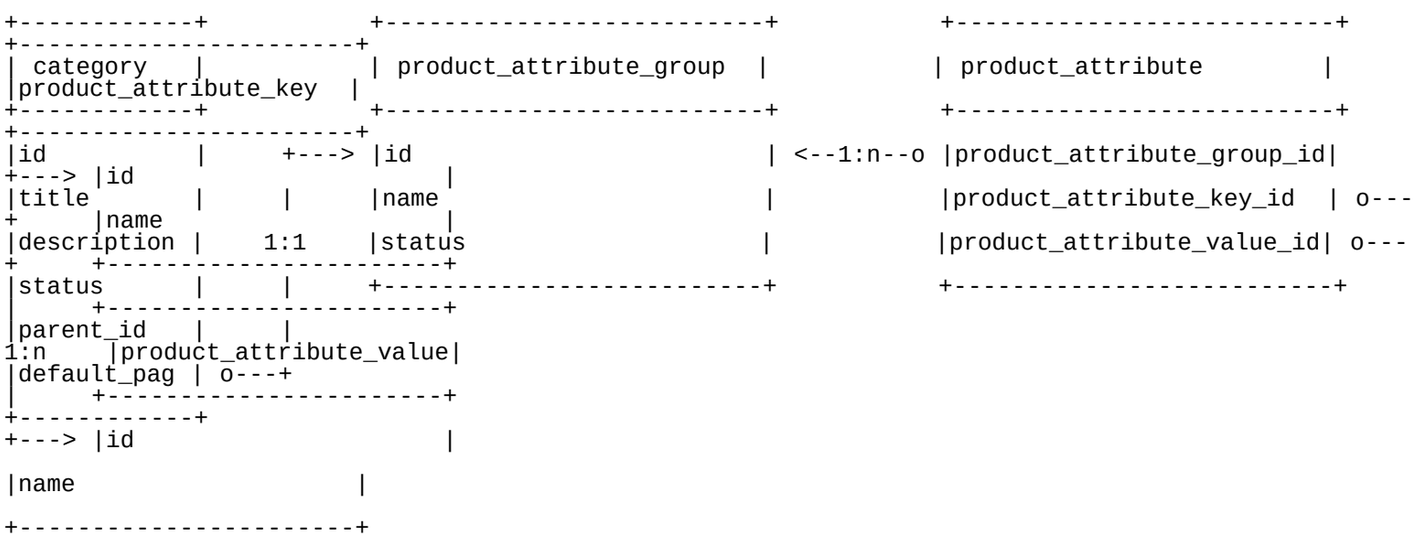
7. 产品属性表

7.1. 简单实现



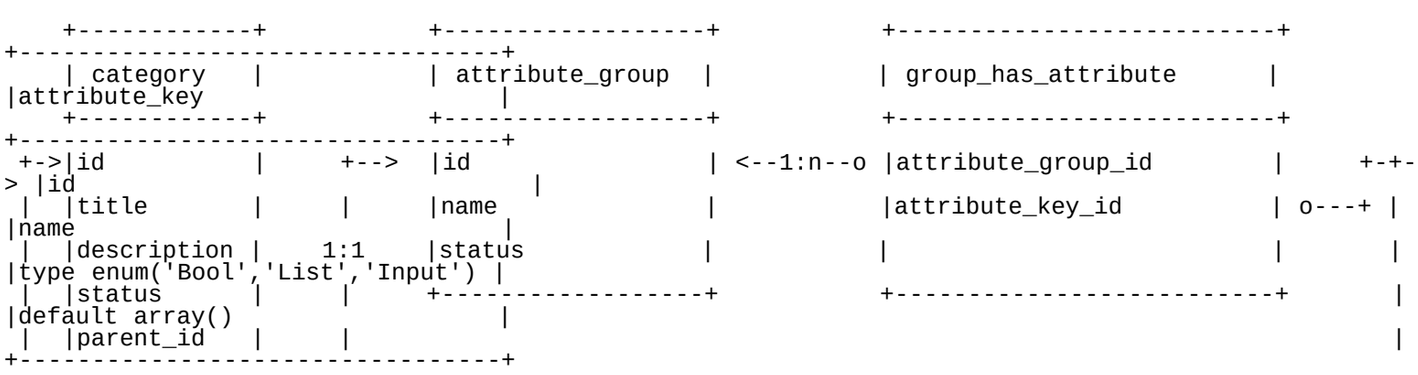
7.2. 实现属性组管理

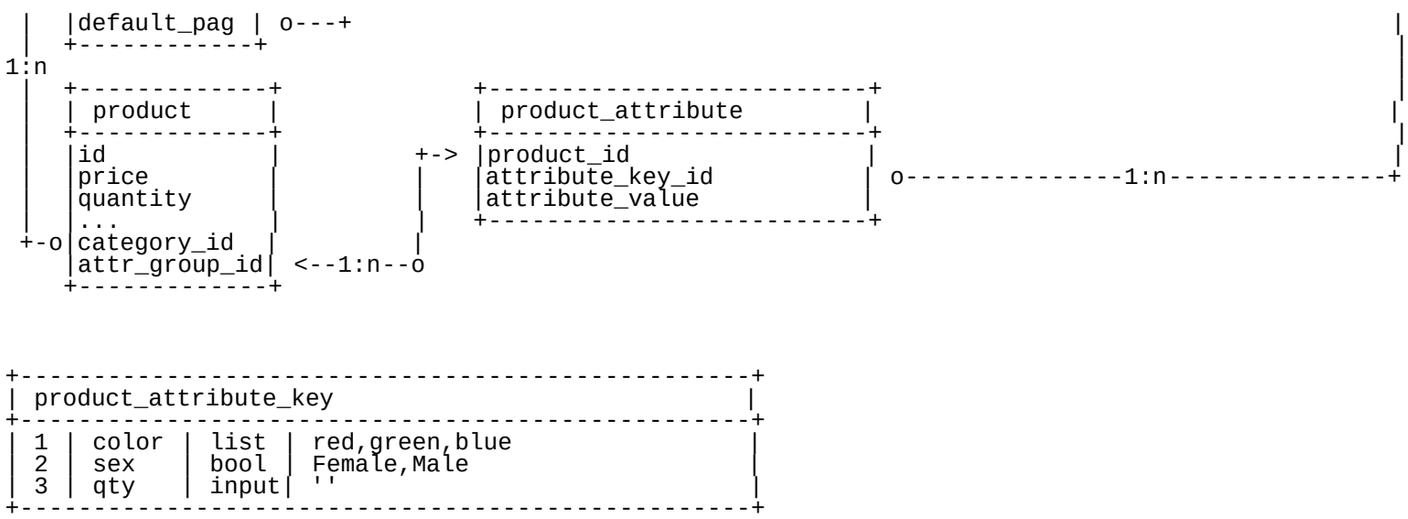
product attribute group



7.3. 可编辑属表

product attribute group



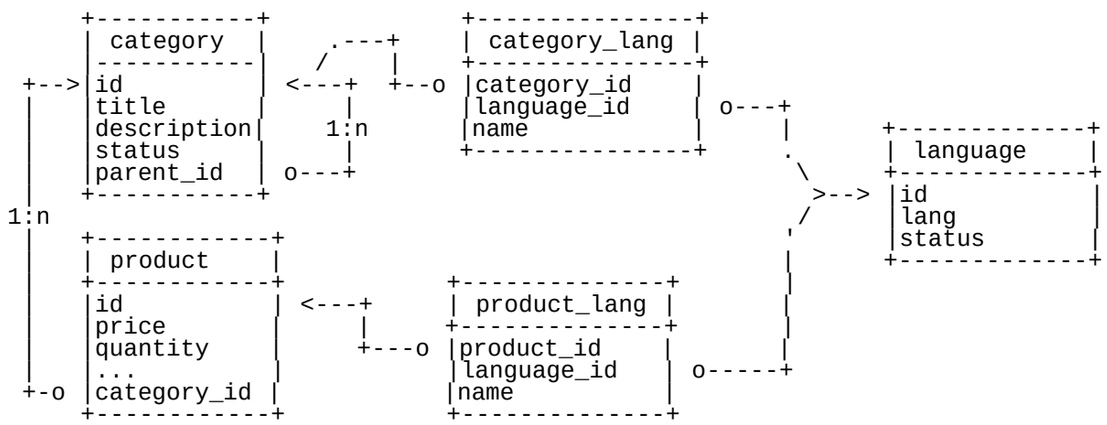


product_attribute_key			
1	color	list	red,green,blue
2	sex	bool	Female,Male
3	qty	input	''

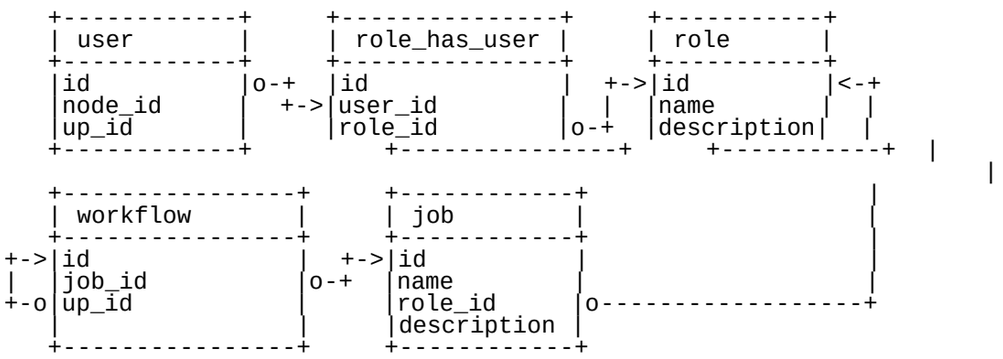
上一页 上一级 下一页

6. 记录点击率，阅读次数，及评分表 起始页 8. 国际化语言表

8. 国际化语言表



9. Workflow



10. 内容版本控制

主表

```
CREATE TABLE `article` (
        `article_id` MEDIUMINT(8) UNSIGNED NOT NULL AUTO_INCREMENT,
        `cat_id` SMALLINT(5) NOT NULL DEFAULT '0',
        `title` VARCHAR(150) NOT NULL DEFAULT '',
        `content` LONGTEXT NOT NULL,
        `author` VARCHAR(30) NOT NULL DEFAULT '',
        `keywords` VARCHAR(255) NOT NULL DEFAULT '',
       PRIMARY KEY (`article_id`),
       INDEX `cat_id` (`cat_id`)
)
ENGINE=MyISAM
ROW_FORMAT=DEFAULT
AUTO_INCREMENT=1
```

本版控制表，用于记录每次变动

```
CREATE TABLE `article_history` (
        `id` MEDIUMINT(8) UNSIGNED NOT NULL AUTO_INCREMENT,
        `article_id` MEDIUMINT(8) UNSIGNED NOT NULL,
        `cat_id` SMALLINT(5) NOT NULL DEFAULT '0',
        `title` VARCHAR(150) NOT NULL DEFAULT '',
        `content` LONGTEXT NOT NULL,
        `author` VARCHAR(30) NOT NULL DEFAULT '',
        `keywords` VARCHAR(255) NOT NULL DEFAULT '',
       PRIMARY KEY (`id`),
       INDEX `article_id` (`article_id`)
)
ENGINE=MyISAM
ROW_FORMAT=DEFAULT
AUTO_INCREMENT=1
```

版本控制触发器

```
DROP TRIGGER article_history;

DELIMITER //
CREATE TRIGGER article_history BEFORE update ON article FOR EACH ROW
BEGIN
        INSERT INTO article_history SELECT * FROM article WHERE article_id = OLD.article_id;
END; //
DELIMITER;
```

11. Sharding

Sharding是近几年提出的概念，可以做分表，分库切割，通过hash值定位。但都存在一个问题，数据连续性，索引无法跨表。

Oracle 在8.x中就支持分区功能，MySQL在5.1.x中也是闲类似功能，PostgreSQL 因存储结构设计的较好，基本不需要做分区。

11.1. horizontal

```
ALTER TABLE `goods`  DROP INDEX `goods_sn_2`;
ALTER TABLE goods PARTITION BY RANGE (goods_id) (
    PARTITION p0 VALUES LESS THAN (10000),
    PARTITION p1 VALUES LESS THAN (20000),
    PARTITION p2 VALUES LESS THAN (30000),
    PARTITION p3 VALUES LESS THAN (40000),
    PARTITION p4 VALUES LESS THAN MAXVALUE
);

ALTER TABLE goods PARTITION BY HASH(goods_id) PARTITIONS 10;

ALTER TABLE goods  PARTITION BY KEY (is_on_sale) PARTITIONS 2;

ALTER TABLE goods PARTITION BY HASH(YEAR(FROM_UNIXTIME(add_time))) PARTITIONS 4;
```

11.2. vertical

第 2 章 Hierarchical Database Management System

目录


```
<Keyspaces>
  <Keyspace Name="Example">

    <KeysCachedFraction>0.01</KeysCachedFraction>

    <ColumnFamily CompareWith="BytesType" Name="User"/>
    <ColumnFamily CompareWith="UTF8Type" Name="UserProfile"/>
    <ColumnFamily CompareWith="UTF8Type" Name="Category"/>
    <ColumnFamily CompareWith="UTF8Type" Name="Article"/>
    <ColumnFamily CompareWith="UTF8Type" Name="ArticleComment" />
    <ColumnFamily CompareWith="UTF8Type" Name="Product"/>
    <ColumnFamily CompareWith="UTF8Type" Name="ProductComment" />
    <ColumnFamily CompareWith="UTF8Type" Name="ProductAttribute" CompareSubcolumnsWith="UTF8Type" ColumnType="Super" />

    <ColumnFamily ColumnType="Super"
          CompareWith="UTF8Type"
          CompareSubcolumnsWith="UTF8Type"
          Name="Address"
          Comment="A column family with supercolumns, whose column and subcolumn names are UTF8 strings"/>
  </Keyspace>
</Keyspaces>
```

1. User And Profile

```
set Example.User['neo']['uuid']='b5ac78c3-fd5c-40ca-acc2-04d483052fc4'
set Example.User['neo']['name']='neo'
set Example.User['neo']['passwd']='mNBhMPAH'
set Example.User['neo']['email']='openunix@163.com'
set Example.User['neo']['status']='Y'

get Example.User['neo']

set Example.User['jam']['uuid']='8e07adbd-2dea-40d0-a822-5909f14f9ba2'
set Example.User['jam']['name']='jam'
set Example.User['jam']['passwd']='mNBhMPAH'
set Example.User['jam']['email']='t1@163.com'
set Example.User['jam']['status']='Y'

get Example.User['jam']


set Example.UserProfile['b5ac78c3-fd5c-40ca-acc2-04d483052fc4']['name']='neo chen'
set Example.UserProfile['b5ac78c3-fd5c-40ca-acc2-04d483052fc4']['age']='30'
set Example.UserProfile['b5ac78c3-fd5c-40ca-acc2-04d483052fc4']['gender']='male'
set Example.UserProfile['b5ac78c3-fd5c-40ca-acc2-04d483052fc4']['Tel']='13113668890'
set Example.UserProfile['b5ac78c3-fd5c-40ca-acc2-04d483052fc4']['Cellphone']='13113668890'

get Example.UserProfile['b5ac78c3-fd5c-40ca-acc2-04d483052fc4']
```

---

2. Category

```
set Example.Category['85c1acb3-dc81-4626-aea9-c153dc80e74f']['uuid'] = '85c1acb3-dc81-4626-aea9-
c153dc80e74f'
set Example.Category['85c1acb3-dc81-4626-aea9-c153dc80e74f']['name'] = '中国'
set Example.Category['85c1acb3-dc81-4626-aea9-c153dc80e74f']['description'] = '中华人民共和国'

set Example.Category['002f7fd4-455a-4f16-9cc8-38a43f9d285c']['uuid'] = '002f7fd4-455a-4f16-9cc8-
38a43f9d285c'
set Example.Category['002f7fd4-455a-4f16-9cc8-38a43f9d285c']['name'] = '广东'
set Example.Category['002f7fd4-455a-4f16-9cc8-38a43f9d285c']['description'] = '广东省'
set Example.Category['002f7fd4-455a-4f16-9cc8-38a43f9d285c']['parent_uuid'] = '85c1acb3-dc81-4626-
aea9-c153dc80e74f'

get Example.Category['002f7fd4-455a-4f16-9cc8-38a43f9d285c']
```

3. Article

```
set Example.Article['862f0f17-a697-49b3-9bca-68b0cfc873ec']['uuid'] = '862f0f17-a697-49b3-9bca-
68b0cfc873ec'
set Example.Article['862f0f17-a697-49b3-9bca-68b0cfc873ec']['title'] = '文章标题'
set Example.Article['862f0f17-a697-49b3-9bca-68b0cfc873ec']['content'] = '文章内容'
set Example.Article['862f0f17-a697-49b3-9bca-68b0cfc873ec']['author'] = 'Neo'
set Example.Article['862f0f17-a697-49b3-9bca-68b0cfc873ec']['datetime'] = '2010-5-10 12:00:00'

get Example.Article['862f0f17-a697-49b3-9bca-68b0cfc873ec']
```

4. Product and ProductAttribute

Product data

```
set Example.Product['b12e97e1-63b4-4042-a3f2-da60005ec081']['uuid'] = 'b12e97e1-63b4-4042-a3f2-
da60005ec081'
set Example.Product['b12e97e1-63b4-4042-a3f2-da60005ec081']['name'] = 'Dell Optiplex 780'
set Example.Product['b12e97e1-63b4-4042-a3f2-da60005ec081']['description'] = 'Dell Computer'
set Example.Product['b12e97e1-63b4-4042-a3f2-da60005ec081']['price'] = '5000'
set Example.Product['b12e97e1-63b4-4042-a3f2-da60005ec081']['image'] = '/www/images/dell780.jpg'
set Example.Product['b12e97e1-63b4-4042-a3f2-da60005ec081']['category_uuid'] = 'b12e97e1-63b4-
4042-a3f2-da60005ec081'

get Example.Product['b12e97e1-63b4-4042-a3f2-da60005ec081']
```

product attribute

```
set Example.ProductAttribute['b12e97e1-63b4-4042-a3f2-da60005ec081']['color']['box'] = 'silver'
set Example.ProductAttribute['b12e97e1-63b4-4042-a3f2-da60005ec081']['color']['display'] = 'black'
set Example.ProductAttribute['b12e97e1-63b4-4042-a3f2-da60005ec081']['monitor']['size'] =
'1440*900'
set Example.ProductAttribute['b12e97e1-63b4-4042-a3f2-da60005ec081']['monitor']['power'] = '12v'
set Example.ProductAttribute['b12e97e1-63b4-4042-a3f2-da60005ec081']['parameter']['process'] =
'Intel(R) Core(TM)2 Duo CPU E7500 @ 2.93Ghz'
set Example.ProductAttribute['b12e97e1-63b4-4042-a3f2-da60005ec081']['parameter']['memory'] =
'2GB'
set Example.ProductAttribute['b12e97e1-63b4-4042-a3f2-da60005ec081']['parameter']['harddisk'] =
'360GB'
set Example.ProductAttribute['b12e97e1-63b4-4042-a3f2-da60005ec081']['parameter']['disc'] = 'DVD
RW'
set Example.ProductAttribute['b12e97e1-63b4-4042-a3f2-da60005ec081']['software']['os'] = 'Windows
7'
set Example.ProductAttribute['b12e97e1-63b4-4042-a3f2-da60005ec081']['software']['compress'] =
'7zip'
set Example.ProductAttribute['b12e97e1-63b4-4042-a3f2-da60005ec081']['software']['media'] =
'Kmplay'
set Example.ProductAttribute['b12e97e1-63b4-4042-a3f2-da60005ec081']['software']['game'] = 'mine'

get Example.ProductAttribute['b12e97e1-63b4-4042-a3f2-da60005ec081']
```

5. Address

```
set Example.Address['b5ac78c3-fd5c-40ca-acc2-04d483052fc4']['home']['street']='Longhua'
set Example.Address['b5ac78c3-fd5c-40ca-acc2-04d483052fc4']['home']['city']='Shenzhen'
set Example.Address['b5ac78c3-fd5c-40ca-acc2-04d483052fc4']['home']['zip']='518000'

set Example.Address['b5ac78c3-fd5c-40ca-acc2-04d483052fc4']['work']['street']='CheGongMiao'
set Example.Address['b5ac78c3-fd5c-40ca-acc2-04d483052fc4']['work']['city']='Shenzhen'
set Example.Address['b5ac78c3-fd5c-40ca-acc2-04d483052fc4']['work']['zip']='51800'

get Example.Address['b5ac78c3-fd5c-40ca-acc2-04d483052fc4']
```

6. 练习

```
division
 id
 name
 country_id

department
 id
 name
 up_id
 path

division_has_department

employee
 id
 ename
 name
 sex
 age
 department_id

devices
 name
 sn

devices_attribute


employee_has_devices
 employee_id
 devices_id
```

第 3 章 ORDBMS / OODBMS

对象相关数据库管理系统(ORDBMS Object – Oriented Relative DBMS)

部分 II. MySQL

目录

1. Import / Export (Backup and Recovery)

1.1. Export(Backup)

```
mysqldump -hlocalhost -proot -p**** mydb > mydb.sql
```

gzip

```
mysqldump -hlocalhost -proot -p**** mydb | gzip > mydb.sql.gz
```

1.2. Import(Recovery)

```
mysql -hlocalhost -proot -p**** mydb < mydb.sql
```

gunzip

```
gunzip mydb.sql.gz -c | mysql -hlocalhost -proot -p**** mydb
```

1.3. xml

export xml

```
$ mysqldump -uusrname -ppasswd -X -t database table -r filename.xml
```

1.4. 备份表数据

```
SELECT * INTO OUTFILE 'file_name' FROM tbl_name
LOAD DATA INFILE 'file_name' REPLACE INTO TABLE tbl_name
```

1.5. source

```
mysql> use your_db
mysql> SOURCE database.sql
```

1.6. 使用 mysqlhotcopy 备份 MyISAM 引擎的数据库

shell> mysqlhotcopy db_name /path/to/some/dir

```
mysql:~# mysqlhotcopy --user=neo --password=chen shop /tmp/backup
Locked 100 tables in 0 seconds.
Flushed tables (`shop`.`account_log`, `shop`.`ad`, `shop`.`ad_custom`, `shop`.`ad_position`,
`shop`.`admin_action`,
```

```
`shop`.`admin_log`, `shop`.`admin_message`, `shop`.`admin_user`, `shop`.`adsense`,
`shop`.`affiliate_log`,
...
...
...
`shop`.`user_rank`, `shop`.`users`, `shop`.`virtual_card`, `shop`.`volume_price`, `shop`.`vote`,
`shop`.`vote_log`,
`shop`.`vote_option`, `shop`.`wholesale`) in 0 seconds.
Copying 299 files...
Copying indices for 0 files...
Unlocked tables.
mysqlhotcopy copied 100 tables (299 files) in 0 seconds (0 seconds overall).
```

1.7. AutoMySQLBackup

https://sourceforge.net/projects/automysqlbackup/

1.8. xtrabackup - Open source backup tool for InnoDB and XtraDB.

https://launchpad.net/percona-xtrabackup

第 4 章 MySQL Server

目录

1. MySQL Installation

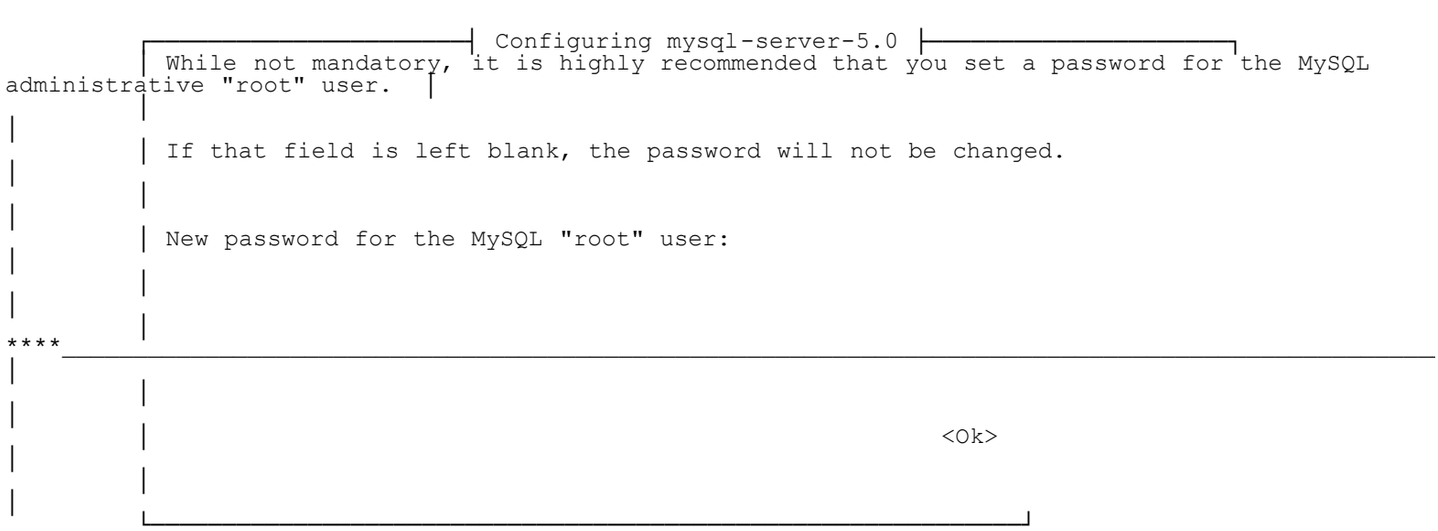
http://downloads.mysql.com/archives.php

1.1. Installation by apt-get under debian/ubuntu

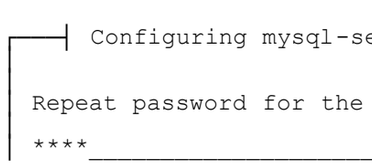
安装环境 ubuntu 8.10

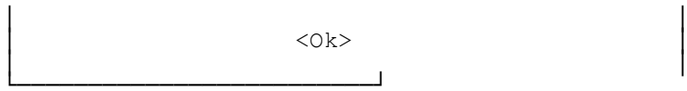
```
sudo apt-get install mysql-server
```

New password for the MySQL "root" user



Repeat password for the MySQL "root" user





create database

```
create database example;

mysql> SHOW GRANTS;
+-----------------------------------------------------------------------------------------------------
----------------------------------------+
| Grants for root@localhost
|
+-----------------------------------------------------------------------------------------------------
----------------------------------------+
| GRANT ALL PRIVILEGES ON *.* TO 'root'@'localhost' IDENTIFIED BY PASSWORD
'*C6325DAF39AE6CC34E960D3C65F1398FE467E1D0' WITH GRANT OPTION |
+-----------------------------------------------------------------------------------------------------
----------------------------------------+
1 row in set (0.00 sec)

GRANT ALL PRIVILEGES ON example.* TO 'dbuser'@'localhost' IDENTIFIED BY '******' WITH GRANT
OPTION;
FLUSH PRIVILEGES;

./mysql -udbuser -p
Enter password:

./mysql -udbuser -p example < /tmp/example_china_copy.sql

./mysql -uroot
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 6
Server version: 5.0.45 Source distribution

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql> use example;
Database changed
mysql> show tables;
```

配置文件样本

```
debian:~# ls /usr/share/doc/mysql-server-5.0/examples/
my-huge.cnf.gz  my-innodb-heavy-4G.cnf.gz  my-large.cnf.gz  my-medium.cnf.gz  my-small.cnf
ndb_mgmd.cnf
```

1.2. Installation by source code

```
./configure \
--prefix=/usr/local/$MYSQL_DIR \
--enable-assembler \
--enable-local-infile \
--with-charset=utf8 \
--with-collation=utf8_general_ci \
--with-extra-charsets=none \
--with-openssl \
--with-pthread \
--with-unix-socket-path=/var/lib/mysql/mysql.sock \
--with-mysqld-user=mysql \
--with-mysqld-ldflags \
--with-client-ldflags \
--with-comment \
--with-big-tables \
--without-ndb-debug \
--without-docs \
--without-debug \
--without-bench

make && make install
```

/usr/local/$MYSQL_DIR/bin/mysql_install_db

other option

```
--without-isam
--without-innodb
--without-ndbcluster
--without-blackhole
--without-ibmdb2i
--without-federated
--without-example
```

```
--without-comment
--localstatedir=/usr/local/mysql/data
```

1.3. MySQL binary distribution

```
shell> groupadd mysql
shell> useradd -g mysql mysql
shell> cd /usr/local
shell> gunzip < /path/to/mysql-VERSION-OS.tar.gz | tar xvf -
shell> ln -s full-path-to-mysql-VERSION-OS mysql
shell> cd mysql
shell> chown -R mysql .
shell> chgrp -R mysql .
shell> scripts/mysql_install_db --user=mysql
shell> chown -R root .
shell> chown -R mysql data
shell> bin/mysqld_safe --user=mysql &
```

install core database

```
[root@test mysql]# ./scripts/mysql_install_db
Installing MySQL system tables...
100428 23:16:20 [Warning] '--skip-locking' is deprecated and will be removed in a future release.
Please use '--skip-external-locking' instead.
OK
Filling help tables...
100428 23:16:20 [Warning] '--skip-locking' is deprecated and will be removed in a future release.
Please use '--skip-external-locking' instead.
OK

To start mysqld at boot time you have to copy
support-files/mysql.server to the right place for your system

PLEASE REMEMBER TO SET A PASSWORD FOR THE MySQL root USER !
To do so, start the server, then issue the following commands:

./bin/mysqladmin -u root password 'new-password'
./bin/mysqladmin -u root -h db.example.com password 'new-password'

Alternatively you can run:
./bin/mysql_secure_installation

which will also give you the option of removing the test
databases and anonymous user created by default.  This is
strongly recommended for production servers.

See the manual for more instructions.

You can start the MySQL daemon with:
cd . ; ./bin/mysqld_safe &

You can test the MySQL daemon with mysql-test-run.pl
cd ./mysql-test ; perl mysql-test-run.pl

Please report any problems with the ./bin/mysqlbug script!
```

set root's password

```
[root@test mysql]# cp support-files/mysql.server /etc/init.d/mysqld
[root@test mysql]# /etc/init.d/mysqld start
Starting MySQL.                                            [  OK  ]

[root@test mysql]# ./bin/mysqladmin -u root password 'chen'
[root@test mysql]# ./bin/mysqladmin -u root -h db.example.com password 'chen'
```

test

```
[root@test mysql]# ./bin/mysql -uroot -pchen
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 3
Server version: 5.1.45 MySQL Community Server (GPL)

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

---

2. my.cnf

2.1. Configuring Database Character Encoding

```
mysql> SHOW VARIABLES LIKE 'character_set_%';
+--------------------------+----------------------------+
| Variable_name            | Value                      |
+--------------------------+----------------------------+
| character_set_client     | latin1                     |
| character_set_connection | latin1                     |
| character_set_database   | utf8                       |
| character_set_filesystem | binary                     |
| character_set_results    | latin1                     |
| character_set_server     | latin1                     |
| character_set_system     | utf8                       |
| character_sets_dir       | /usr/share/mysql/charsets/ |
+--------------------------+----------------------------+
8 rows in set (0.00 sec)
```

Server Character Set and Collation

```
shell> mysqld --character-set-server=latin1
shell> mysqld --character-set-server=latin1 \
           --collation-server=latin1_swedish_ci
```

$ vim /etc/mysql/my.cnf

```
[mysqld]
default-character-set=utf8
init_connect='SET NAMES utf8'

[client]
default-character-set=utf8
```

```
mysql --default-character-set=utf8 -u root -p
```

```
mysql> show variables like 'character%';
+--------------------------+----------------------------+
| Variable_name            | Value                      |
+--------------------------+----------------------------+
| character_set_client     | utf8                       |
| character_set_connection | utf8                       |
| character_set_database   | utf8                       |
| character_set_filesystem | binary                     |
| character_set_results    | utf8                       |
| character_set_server     | utf8                       |
| character_set_system     | utf8                       |
| character_sets_dir       | /usr/share/mysql/charsets/ |
+--------------------------+----------------------------+
8 rows in set (0.00 sec)
```

2.2. max_connections

```
[mysqld]
max_connections=250
```

2.3. storage-engine

```
[mysqld]
default-storage-engine=INNODB
```

2.4. reload

```
mysqladmin --user=root --password reload
```

2.5. max_allowed_packet

```
max_allowed_packet=500M
```

2.6. skip-name-resolve

跳过域名解析

```
# vim /etc/mysql/my.cnf

[mysqld]
skip-external-locking
skip-name-resolve
```

MySQL 登录缓慢，大量用户排队等待

```
mysql> SHOW FULL PROCESSLIST;
+-----+----------------------+------------------------+------+---------+------+-------+---------
--------------+
| Id  | User                 | Host                   | db   | Command | Time | State | Info
|
+-----+----------------------+------------------------+------+---------+------+-------+---------
--------------+
| 718 | unauthenticated user | 192.168.3.124:42075    | NULL | Connect | NULL | login | NULL
| 719 | unauthenticated user | 192.168.3.124:42073    | NULL | Connect | NULL | login | NULL
| 720 | unauthenticated user | 192.168.3.124:42074    | NULL | Connect | NULL | login | NULL
| 721 | unauthenticated user | 192.168.3.124:42077    | NULL | Connect | NULL | login | NULL
| 722 | unauthenticated user | 192.168.3.124:42076    | NULL | Connect | NULL | login | NULL
| 723 | unauthenticated user | 192.168.3.124:42079    | NULL | Connect | NULL | login | NULL
| 724 | unauthenticated user | 192.168.3.124:42078    | NULL | Connect | NULL | login | NULL
| 725 | unauthenticated user | 192.168.3.124:42081    | NULL | Connect | NULL | login | NULL
| 726 | unauthenticated user | 192.168.3.124:42080    | NULL | Connect | NULL | login | NULL
| 727 | unauthenticated user | 192.168.3.124:42082    | NULL | Connect | NULL | login | NULL
| 728 | unauthenticated user | 192.168.3.124:42083    | NULL | Connect | NULL | login | NULL
| 729 | unauthenticated user | 192.168.3.124:42085    | NULL | Connect | NULL | login | NULL
| 730 | unauthenticated user | 192.168.3.124:42084    | NULL | Connect | NULL | login | NULL
| 731 | unauthenticated user | 192.168.3.124:42086    | NULL | Connect | NULL | login | NULL
| 732 | unauthenticated user | 192.168.3.124:42087    | NULL | Connect | NULL | login | NULL
| 733 | unauthenticated user | 192.168.3.124:42088    | NULL | Connect | NULL | login | NULL
| 734 | unauthenticated user | 192.168.3.124:42089    | NULL | Connect | NULL | login | NULL
| 735 | unauthenticated user | 192.168.3.124:42090    | NULL | Connect | NULL | login | NULL
| 736 | unauthenticated user | 192.168.3.124:42091    | NULL | Connect | NULL | login | NULL
| 737 | unauthenticated user | 192.168.3.124:42092    | NULL | Connect | NULL | login | NULL
| 738 | unauthenticated user | 192.168.3.124:42093    | NULL | Connect | NULL | login | NULL
| 739 | unauthenticated user | 192.168.3.124:42094    | NULL | Connect | NULL | login | NULL
| 740 | unauthenticated user | 192.168.3.124:42095    | NULL | Connect | NULL | login | NULL
| 741 | unauthenticated user | 192.168.3.124:42096    | NULL | Connect | NULL | login | NULL
| 742 | unauthenticated user | 192.168.3.124:42097    | NULL | Connect | NULL | login | NULL
| 743 | unauthenticated user | 192.168.3.124:42098    | NULL | Connect | NULL | login | NULL
| 744 | unauthenticated user | 192.168.3.124:42099    | NULL | Connect | NULL | login | NULL
| 745 | unauthenticated user | 192.168.3.124:42100    | NULL | Connect | NULL | login | NULL
| 746 | unauthenticated user | 192.168.3.124:42101    | NULL | Connect | NULL | login | NULL
| 747 | unauthenticated user | 192.168.3.124:42102    | NULL | Connect | NULL | login | NULL
| 748 | unauthenticated user | 192.168.3.124:42103    | NULL | Connect | NULL | login | NULL
```

```
| 749 | unauthenticated user | 192.168.3.124:42104    | NULL | Connect | NULL | login | NULL
| 750 | unauthenticated user | 192.168.3.124:42068    | NULL | Connect | NULL | login | NULL
| 751 | unauthenticated user | 192.168.3.124:42064    | NULL | Connect | NULL | login | NULL
| 752 | unauthenticated user | 192.168.3.124:42071    | NULL | Connect | NULL | login | NULL
| 753 | unauthenticated user | 192.168.3.124:42072    | NULL | Connect | NULL | login | NULL
| 754 | unauthenticated user | 192.168.3.124:42067    | NULL | Connect | NULL | login | NULL
| 755 | unauthenticated user | 192.168.3.124:42070    | NULL | Connect | NULL | login | NULL
| 756 | unauthenticated user | 192.168.3.124:42069    | NULL | Connect | NULL | login | NULL
| 757 | unauthenticated user | 192.168.3.124:42065    | NULL | Connect | NULL | login | NULL
| 758 | unauthenticated user | 192.168.3.124:42112    | NULL | Connect | NULL | login | NULL
| 759 | unauthenticated user | 192.168.3.50:4872      | NULL | Connect | NULL | login | NULL
| 761 | unauthenticated user | 192.168.3.40:36363     | NULL | Connect | NULL | login | NULL
| 762 | neo                  | www.example.com:56200  | NULL | Query   |    0 | NULL  | SHOW FULL
PROCESSLIST |
+-----+----------------------+------------------------+------+---------+------+-------+---------
--------------+
44 rows in set (0.00 sec)

mysql> SHOW FULL PROCESSLIST;
+-----+----------------------+------------------------+------+---------+------+-------+---------
--------------+
| Id  | User                 | Host                   | db   | Command | Time | State | Info
|
+-----+----------------------+------------------------+------+---------+------+-------+---------
--------------+
| 718 | unauthenticated user | 192.168.3.124:42075    | NULL | Connect | NULL | login | NULL
| 719 | unauthenticated user | 192.168.3.124:42073    | NULL | Connect | NULL | login | NULL
| 720 | unauthenticated user | 192.168.3.124:42074    | NULL | Connect | NULL | login | NULL
| 721 | unauthenticated user | 192.168.3.124:42077    | NULL | Connect | NULL | login | NULL
| 722 | unauthenticated user | 192.168.3.124:42076    | NULL | Connect | NULL | login | NULL
| 723 | unauthenticated user | 192.168.3.124:42079    | NULL | Connect | NULL | login | NULL
| 724 | unauthenticated user | 192.168.3.124:42078    | NULL | Connect | NULL | login | NULL
| 725 | unauthenticated user | 192.168.3.124:42081    | NULL | Connect | NULL | login | NULL
| 726 | unauthenticated user | 192.168.3.124:42080    | NULL | Connect | NULL | login | NULL
| 727 | unauthenticated user | 192.168.3.124:42082    | NULL | Connect | NULL | login | NULL
| 728 | unauthenticated user | 192.168.3.124:42083    | NULL | Connect | NULL | login | NULL
| 729 | unauthenticated user | 192.168.3.124:42085    | NULL | Connect | NULL | login | NULL
| 730 | unauthenticated user | 192.168.3.124:42084    | NULL | Connect | NULL | login | NULL
| 731 | unauthenticated user | 192.168.3.124:42086    | NULL | Connect | NULL | login | NULL
| 732 | unauthenticated user | 192.168.3.124:42087    | NULL | Connect | NULL | login | NULL
| 733 | unauthenticated user | 192.168.3.124:42088    | NULL | Connect | NULL | login | NULL
| 734 | unauthenticated user | 192.168.3.124:42089    | NULL | Connect | NULL | login | NULL
| 735 | unauthenticated user | 192.168.3.124:42090    | NULL | Connect | NULL | login | NULL
| 736 | unauthenticated user | 192.168.3.124:42091    | NULL | Connect | NULL | login | NULL
| 737 | unauthenticated user | 192.168.3.124:42092    | NULL | Connect | NULL | login | NULL
| 738 | unauthenticated user | 192.168.3.124:42093    | NULL | Connect | NULL | login | NULL
| 739 | unauthenticated user | 192.168.3.124:42094    | NULL | Connect | NULL | login | NULL
| 740 | unauthenticated user | 192.168.3.124:42095    | NULL | Connect | NULL | login | NULL
| 741 | unauthenticated user | 192.168.3.124:42096    | NULL | Connect | NULL | login | NULL
| 742 | unauthenticated user | 192.168.3.124:42097    | NULL | Connect | NULL | login | NULL
| 743 | unauthenticated user | 192.168.3.124:42098    | NULL | Connect | NULL | login | NULL
| 744 | unauthenticated user | 192.168.3.124:42099    | NULL | Connect | NULL | login | NULL
| 745 | unauthenticated user | 192.168.3.124:42100    | NULL | Connect | NULL | login | NULL
| 746 | unauthenticated user | 192.168.3.124:42101    | NULL | Connect | NULL | login | NULL
| 747 | unauthenticated user | 192.168.3.124:42102    | NULL | Connect | NULL | login | NULL
| 748 | unauthenticated user | 192.168.3.124:42103    | NULL | Connect | NULL | login | NULL
| 749 | unauthenticated user | 192.168.3.124:42104    | NULL | Connect | NULL | login | NULL
| 750 | unauthenticated user | 192.168.3.124:42068    | NULL | Connect | NULL | login | NULL
| 751 | unauthenticated user | 192.168.3.124:42064    | NULL | Connect | NULL | login | NULL
```

```
| 752 | unauthenticated user | 192.168.3.124:42071    | NULL | Connect | NULL | login | NULL
| 753 | unauthenticated user | 192.168.3.124:42072    | NULL | Connect | NULL | login | NULL
| 754 | unauthenticated user | 192.168.3.124:42067    | NULL | Connect | NULL | login | NULL
| 755 | unauthenticated user | 192.168.3.124:42070    | NULL | Connect | NULL | login | NULL
| 756 | unauthenticated user | 192.168.3.124:42069    | NULL | Connect | NULL | login | NULL
| 757 | unauthenticated user | 192.168.3.124:42065    | NULL | Connect | NULL | login | NULL
| 758 | unauthenticated user | 192.168.3.124:42112    | NULL | Connect | NULL | login | NULL
| 759 | unauthenticated user | 192.168.3.50:4872      | NULL | Connect | NULL | login | NULL
| 761 | unauthenticated user | 192.168.3.40:36363     | NULL | Connect | NULL | login | NULL
| 762 | neo                  | www.example.com:56200  | NULL | Query   |    0 | NULL  | SHOW FULL
PROCESSLIST |
+-----+----------------------+------------------------+------+---------+------+-------+---------
--------------+
44 rows in set (0.00 sec)
```

解决方案 my.cnf 配置文件中加入skip-name-resolve

2.7. 禁用TCP/IP链接

```
[mysqld]
skip-networking
```

2.8. timeout

```
[mysqld]
wait_timeout = 30
interactive_timeout =30
```

如果你没有修改过MySQL的配置，缺省情况下，wait_timeout的初始值是28800。

wait_timeout过大有弊端，其体现就是MySQL里大量的SLEEP进程无法及时释放，拖累系统性能，不过也不能把这个指设置的过小，否则你可能会遭遇到“MySQL has gone away”之类的问题，通常来说，我觉得把wait_timeout设置为10是个不错的选择，但某些情况下可能也会出问题，比如说有一个CRON脚本，其中两次SQL查询的间隔时间大于10秒的话，那么这个设置就有问题了：

```
mysql> show global variables like 'wait_timeout';
+----------------------------+-------+
| Variable_name              | Value |
+----------------------------+-------+
| wait_timeout               | 10    |
+----------------------------+-------+
```

---

3. Replication

3.1. Master

过程 4.1. Master 设置步骤

1. 配置 my.cnf 文件

   确保主服务器主机上my.cnf文件的[mysqld]部分包括一个log-bin选项。该部分还应有一个server-id=Master_id选项

```
# vim /etc/mysql/my.cnf

[mysqld]
bind-address            = 192.168.245.129

server-id               = 1
log_bin                 = /var/log/mysql/mysql-bin.log
```

   bind-address默认是127.0.0.1你必须更改它，否则Slave将无法链接到 Master

2. 重启服务器

```
neo@netkiller:~$ sudo /etc/init.d/mysql reload
 * Reloading MySQL database server mysqld          [ OK ]
```

   建议使用reload,如果不起作用再用restart

3. MASTER STATUS

```
mysql> SHOW MASTER STATUS;
+------------------+----------+--------------+------------------+
| File             | Position | Binlog_Do_DB | Binlog_Ignore_DB |
+------------------+----------+--------------+------------------+
| mysql-bin.000001 |       98 |              |                  |
+------------------+----------+--------------+------------------+
1 row in set (0.00 sec)
```

   如果显示下面内容表示，配置不正确

```
mysql> SHOW MASTER STATUS;
Empty set (0.02 sec)
```

4. 创建账户并授予REPLICATION SLAVE权限

```
mysql> GRANT REPLICATION SLAVE ON *.* TO 'repl'@'%.mydomain.com' IDENTIFIED BY 'slavepass';
mysql> FLUSH PRIVILEGES;
```

GRANT REPLICATION SLAVE, REPLICATION CLIENT ON *.* TO repl@'192.168.245.131' IDENTIFIED BY 'slavepass'

5. 清空所有表和块写入

```
mysql> FLUSH TABLES WITH READ LOCK;
```

6. 备份数据库

```
# tar zcvf mysql-snapshot.tar.gz /var/lib/mysql/neo
```

复制给从数据库

```
scp mysql-snapshot.tar.gz  neo@192.168.245.131:/tmp
```

7. 取得快照并记录日志名和偏移量后，可以在主服务器上重新启用写活动

```
mysql> UNLOCK TABLES;
```

8. 复制的信息

SHOW PROCESSLIST语句可以提供在主服务器上和从服务器上发生的关于复制的信息

```
mysql> SHOW PROCESSLIST\G
*************************** 1. row ***************************
     Id: 7
   User: root
   Host: localhost
     db: NULL
Command: Query
   Time: 0
  State: NULL
   Info: SHOW PROCESSLIST
1 row in set (0.00 sec)
```

3.2. Slave

过程 4.2. Slave 设置步骤

1. 配置my.cnf

从服务器的ID必须与主服务器的ID不相同,如果设置多个从服务器，每个从服务器必须有一个唯一的server-id值，必须与主服务器的以及其它从服务器的不相同。

```
# vim /etc/mysql/my.cnf
[mysqld]
server-id               = 2
```

2. 恢复数据库

snapshot 恢复

```
neo@slave:/tmp$ cd
neo@slave:~$ cd /tmp/
neo@slave:/tmp$ tar zxvf mysql-snapshot.tar.gz
neo@slave:/tmp$ cd /var/lib/mysql
neo@slave:/var/lib/mysql$ mv /tmp/var/lib/mysql/neo .
neo@slave:/var/lib/mysql$ sudo chown mysql.mysql -R neo
```

重新启动Mysql

```
neo@slave:~$ sudo /etc/init.d/mysql restart
```

如果使用mysqldump备份主服务器的数据，将转储文件装载到从服务器

```
# mysql -u root -p < dump_file.sql
```

3. 指定 master 相关参数

在从服务器上执行下面的语句，用你的系统的实际值替换选项值

```
mysql> CHANGE MASTER TO
        ->     MASTER_HOST='master_host_name',
        ->     MASTER_USER='replication_user_name',
    ->     MASTER_PASSWORD='replication_password',
    ->     MASTER_LOG_FILE='recorded_log_file_name',
    ->     MASTER_LOG_POS=recorded_log_position;
```

CHANGE MASTER TO MASTER_HOST=’192.168.245.129’, MASTER_USER=’repl’,

MASTER_PASSWORD=’slavepass’;

```
mysql> CHANGE MASTER TO MASTER_HOST='192.168.245.129', MASTER_USER='repl',
MASTER_PASSWORD='slavepass';
Query OK, 0 rows affected (0.14 sec)
```

4. 启动从服务器线程

```
mysql> START SLAVE;
Query OK, 0 rows affected (0.00 sec)
```

5. 查看复制线程

```
mysql> SHOW PROCESSLIST\G
*************************** 1. row ***************************
     Id: 13
   User: root
   Host: localhost
     db: NULL
Command: Query
   Time: 0
  State: NULL
   Info: SHOW PROCESSLIST
*************************** 2. row ***************************
     Id: 14
   User: system user
   Host:
     db: NULL
Command: Connect
   Time: 2
  State: Connecting to master
   Info: NULL
*************************** 3. row ***************************
     Id: 15
   User: system user
   Host:
     db: NULL
Command: Connect
   Time: 2
  State: Has read all relay log; waiting for the slave I/O thread to update it
   Info: NULL
3 rows in set (0.00 sec)
```

6. SLAVE STATUS

```
mysql> SHOW SLAVE STATUS\G
*************************** 1. row ***************************
             Slave_IO_State: Connecting to master
                Master_Host: 192.168.245.129
                Master_User: repl
                Master_Port: 3306
              Connect_Retry: 60
            Master_Log_File:
        Read_Master_Log_Pos: 4
             Relay_Log_File: mysqld-relay-bin.000002
              Relay_Log_Pos: 98
      Relay_Master_Log_File:
           Slave_IO_Running: No
          Slave_SQL_Running: Yes
            Replicate_Do_DB:
        Replicate_Ignore_DB:
         Replicate_Do_Table:
     Replicate_Ignore_Table:
    Replicate_Wild_Do_Table:
Replicate_Wild_Ignore_Table:
                 Last_Errno: 0
                 Last_Error:
               Skip_Counter: 0
        Exec_Master_Log_Pos: 0
            Relay_Log_Space: 98
            Until_Condition: None
             Until_Log_File:
              Until_Log_Pos: 0
         Master_SSL_Allowed: No
         Master_SSL_CA_File:
         Master_SSL_CA_Path:
            Master_SSL_Cert:
          Master_SSL_Cipher:
             Master_SSL_Key:
      Seconds_Behind_Master: NULL
1 row in set (0.00 sec)
```

3.3. Testing

登录 master

```
mysql> insert into foo(id,data) values(2,'Hello world!!!');
Query OK, 1 row affected (0.00 sec)
```

登录 slave

```
mysql> select * from foo;
```

在master服务器上插入一条记录，你可以立刻在slave服务器上看到变化。

---

4. MySQL CLuster

The cluster need a lot of server for experiments, if you haven't any server for one, I have a good idea that using Vmware for you.

at first, let's create lots of virtual machine(You MUST have a third server). and then follow me step by step learning how to set up a mysql cluster on your virtual machine.


```
mgm             192.168.0.1             # Management
data            192.168.0.2             # Ndbd Node
data            192.168.0.3             # Ndbd Node
sql                     192.168.0.4             # SQL Node
sql                     192.168.0.5             # SQL Node
```

4.1. Management node (MGM node)

```
neo@mgm:~$ sudo vim /var/lib/mysql-cluster/config.ini

[NDBD DEFAULT]
NoOfReplicas=2
DataMemory=80M
IndexMemory=18M

[MYSQLD DEFAULT]

[NDB_MGMD DEFAULT]

[TCP DEFAULT]
portnumber=2202

[NDB_MGMD]
hostname=192.168.0.1
datadir=/var/lib/mysql-cluster

[NDBD]
hostname=192.168.0.2
datadir=/var/lib/mysql-cluster

[NDBD]
hostname=192.168.0.3
datadir=/var/lib/mysql-cluster

[MYSQLD]
hostname=192.168.0.4

[MYSQLD]
hostname=192.168.0.5
```

4.2. Data node

my.cnf

```
neo@data:~$ sudo vim /etc/mysql/my.cnf

[mysqld]
ndbcluster
ndb-connectstring=192.168.0.1   # the IP of the MANAGMENT SERVER
[mysql_cluster]
ndb-connectstring=192.168.0.1   # the IP of the MANAGMENT SERVER
```

4.3. SQL node

my.cnf

```
neo@sql:~$ sudo vim /etc/mysql/my.cnf
```

```
[mysqld]
ndbcluster
ndb-connectstring=192.168.0.1   # the IP of the MANAGMENT SERVER
[mysql_cluster]
ndb-connectstring=192.168.0.1   # the IP of the MANAGMENT SERVER
```

4.4. Starting

1. starting mgm

   ```
   neo@mgm:~$ sudo ndb_mgmd -f /var/lib/mysql-cluster/config.ini
   ```

2. initial ndbd

   ```
   neo@data:~$ sudo ndbd --initial
   ```

   首次运行需要 --initial 参数，以后不需要。

4.5. Shutdown

MGM

```
$ sudo ndb_mgm -e shutdown
```

4.6. Testing

```
neo@mgm:~$ ndb_mgm
-- NDB Cluster -- Management Client --
ndb_mgm> show
Connected to Management Server at: localhost:1186
Cluster Configuration
---------------------
[ndbd(NDB)]     2 node(s)
id=2    @192.168.0.2  (Version: 5.0.51, Nodegroup: 0)
id=3    @192.168.0.3  (Version: 5.0.51, Nodegroup: 0, Master)

[ndb_mgmd(MGM)] 1 node(s)
id=1    @192.168.0.1  (Version: 5.0.51)

[mysqld(API)]   2 node(s)
id=4    @192.168.0.4  (Version: 5.0.51)
id=5    @192.168.0.5  (Version: 5.0.51)

ndb_mgm>
```

与没有使用簇的MySQL相比，在MySQL簇内操作数据的方式没有太大的区别。

执行这类操作时应记住三点

1. 表必须用ENGINE=NDB或ENGINE=NDBCLUSTER选项创建，或用ALTER TABLE选项更改，以使用NDB Cluster存储引擎在 Cluster内复制它们。如果使用mysqldump的输出从已有数据库导入表，可在文本编辑器中打开SQL脚本，并将该选项添加到任何表创建语句，或用这类选项之一替换任何已有的ENGINE（或TYPE）选项。

2. 另外还请记住，每个NDB表必须有一个主键。如果在创建表时用户未定义主键，NDB Cluster存储引擎将自动生成隐含的主键。（注释：该隐含 键也将占用空间，就像任何其他的表索引一样。由于没有足够的内存来容纳这些自动创建的键，出现问题并不罕见）。

3. 当你在一个节点上运行create database mydb;你去其他sql node上执行show databases;将不能看到mydb,你需要创建它，然后use mydb; show tables;你将看到同步的表。

SQL Node 1

```
neo@sql:~$ mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 7
Server version: 5.0.51a-3ubuntu5.1 (Ubuntu)

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql> create database cluster;
Query OK, 1 row affected (0.00 sec)

mysql> use cluster
Database changed
mysql> create table city( id mediumint unsigned not null auto_increment primary key, name
varchar(20) not null default '' ) engine = ndbcluster default charset utf8;
Query OK, 0 rows affected (1.07 sec)

mysql> insert into city values(1, 'Shenzhen');
Query OK, 1 row affected (0.12 sec)

mysql> insert into city values(2, 'Guangdong');
Query OK, 1 row affected (0.00 sec)
```

SQL Node 2

```
neo@sql:~$ mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 7
Server version: 5.0.51a-3ubuntu5.1 (Ubuntu)

Type 'help;' or '\h' for help. Type '\c' to clear the buffer.

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| example            |
| mydb               |
| mysql              |
| neo                |
+--------------------+
6 rows in set (0.13 sec)

mysql> create database cluster;
Query OK, 1 row affected (0.00 sec)

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| cluster            |
| example            |
| mydb               |
| mysql              |
| neo                |
+--------------------+
6 rows in set (0.13 sec)

mysql> use cluster;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables;
+------------------+
| Tables_in_cluster |
+------------------+
| city             |
+------------------+
1 row in set (0.01 sec)

mysql> select * from city;
+----+-----------+
| id | name      |
```

```
+----+-----------+
|  1 | Shenzhen  |
|  2 | Guangdong |
+----+-----------+
2 rows in set (0.03 sec)

mysql>
```

---

5. Security

Firewall

```
iptables -A INPUT -i eth0 -p tcp -s xxx.xxx.xxx.xxx --dport 3306 -j ACCEPT
```

6. Monitoring

http://netkiller.sourceforge.net/monitoring/index.html

6.1. SHOW COMMAND

```
SHOW DATABASES;
SHOW TABLE STATUS FROM `db`;
SHOW FUNCTION STATUS WHERE `Db`='db';
SHOW PROCEDURE STATUS WHERE `Db`='db';
SHOW TRIGGERS FROM `db`;

Show Global Status;
Show global variables;
Show full processlist;
```

6.1.1. show status

```
数据库性能状态
(1)QPS(每秒Query量)
QPS = Questions(or Queries) / seconds
mysql > show /*50000 global */ status like 'Question';

(2)TPS(每秒事务量)
TPS = (Com_commit + Com_rollback) / seconds
mysql > show status like 'Com_commit';
mysql > show status like 'Com_rollback';

(3)key Buffer 命中率
key_buffer_read_hits = (1-key_reads / key_read_requests) * 100%
key_buffer_write_hits = (1-key_writes / key_write_requests) * 100%

mysql> show status like 'Key%';

(4)InnoDB Buffer命中率
innodb_buffer_read_hits = (1 - innodb_buffer_pool_reads / innodb_buffer_pool_read_requests) * 100%

mysql> show status like 'innodb_buffer_pool_read%';

(5)Query Cache命中率
Query_cache_hits = (Qcahce_hits / (Qcache_hits + Qcache_inserts )) * 100%;

mysql> show status like 'Qcache%';
(6)Table Cache状态量
mysql> show status like 'open%';

(7)Thread Cache 命中率
Thread_cache_hits = (1 - Threads_created / connections ) * 100%

mysql> show status like 'Thread%';

mysql> show status like 'Connections';

(8)锁定状态
mysql> show status like '%lock%';

(9)复制延时量
mysql > show slave status

(10) Tmp Table 状况(临时表状况)
mysql > show status like 'Create_tmp%';
(11) Binlog Cache 使用状况
mysql > show status like 'Binlog_cache%';

(12) Innodb_log_waits 量
mysql > show status like 'innodb_log_waits';
```

6.1.2. show master status

```
mysql> show master status;
```

```
+---------------------+-----------+--------------+------------------+
| File                | Position  | Binlog_Do_DB | Binlog_Ignore_DB |
+---------------------+-----------+--------------+------------------+
| DBMaster-bin.000018 | 409468882 | example      |                  |
+---------------------+-----------+--------------+------------------+
1 row in set (0.00 sec)

mysql>
```

6.2. Analysis and Optimization

6.2.1. mytop - top like query monitor for MySQL

```
sudo apt-get install mytop

mytop --host=172.16.0.7 --user=monitor --password=your_passwd
```

6.2.2. mtop - MySQL terminal based query monitor

http://mtop.sourceforge.net/

```
sudo apt-get install mtop
mtop --host=172.16.0.6 --dbuser=monitor --password=your_passwd
```

mkill

```
mkill -sl 180 -fi 'select.*from bad_table' > /var/log/mkill.out 2> /var/log/mkill.kill
```

6.2.3. innotop

6.2.4. mysqlreport

```
# yum install mysqlreport -y

wget hackmysql.com/scripts/mysqlreport
```

```
[root@database ~]# mysqlreport --user root --password chen
Use of uninitialized value in multiplication (*) at /usr/bin/mysqlreport line 829.
Use of uninitialized value in formline at /usr/bin/mysqlreport line 1227.
MySQL 5.0.77-log         uptime 28 23:42:33     Sat Apr 10 18:15:44 2010

__ Key _________________________________________________________________
Buffer used     6.54M of   8.00M  %Used:  81.75
  Current       1.49M            %Usage:  18.58
Write hit      97.65%
Read hit       99.81%

__ Questions ___________________________________________________________
Total           2.22M     0.9/s
  DMS           1.91M     0.8/s  %Total:  86.16
  Com_        249.93k     0.1/s           11.25
  COM_QUIT     63.68k     0.0/s            2.87
  -Unknown      6.26k     0.0/s            0.28
Slow 10 s          52     0.0/s            0.00  %DMS:   0.00  Log: OFF
DMS             1.91M     0.8/s           86.16
  SELECT        1.17M     0.5/s           52.81         61.29
  INSERT      276.13k     0.1/s           12.43         14.43
  DELETE      264.78k     0.1/s           11.92         13.84
  UPDATE      158.14k     0.1/s            7.12          8.26
  REPLACE      41.74k     0.0/s            1.88          2.18
Com_          249.93k     0.1/s           11.25
  set_option   89.09k     0.0/s            4.01
  change_db    59.71k     0.0/s            2.69
  show_create  28.57k     0.0/s            1.29

__ SELECT and Sort _____________________________________________________
Scan          161.33k     0.1/s %SELECT:  13.76
Range           6.47k     0.0/s            0.55
Full join       1.56k     0.0/s            0.13
Range check         0       0/s            0.00
Full rng join       0       0/s            0.00
Sort scan       34.03k     0.0/s
Sort range      21.98k     0.0/s
Sort mrg pass     733     0.0/s

__ Table Locks _________________________________________________________
Waited             56     0.0/s  %Total:   0.00
```

```
Immediate       2.15M     0.9/s

__ Tables ______________________________________________________________
Open              64 of   64    %Cache: 100.00
Opened         159.20k     0.1/s

__ Connections _________________________________________________________
Max used          36 of  200      %Max:  18.00
Total          63.75k     0.0/s

__ Created Temp ________________________________________________________
Disk table     32.80k     0.0/s
Table          63.69k     0.0/s    Size:  32.0M
File             319      0.0/s

__ Threads _____________________________________________________________
Running           1 of    1
Cached            0 of    0      %Hit:      0
Created        63.75k     0.0/s
Slow               0       0/s

__ Aborted _____________________________________________________________
Clients          128      0.0/s
Connects         130      0.0/s

__ Bytes _______________________________________________________________
Sent           23.89G    9.5k/s
Received        6.36G    2.5k/s

__ InnoDB Buffer Pool __________________________________________________
Usage           8.00M of   8.00M  %Used: 100.00
Read hit       99.99%
Pages
  Free             0             %Total:   0.00
  Data           511                     99.80 %Drty:   0.00
  Misc             1                      0.20
  Latched                                 0.00
Reads            1.54M     0.6/s
  From file        135     0.0/s            0.01
  Ahead Rnd          4     0.0/s
  Ahead Sql          6     0.0/s
Writes         868.00k     0.3/s
Flushes          1.56k     0.0/s
Wait Free            0       0/s

__ InnoDB Lock _________________________________________________________
Waits                0       0/s
Current              0
Time acquiring
  Total              0 ms
  Average            0 ms
  Max                0 ms

__ InnoDB Data, Pages, Rows ____________________________________________
Data
  Reads            194     0.0/s
  Writes           628     0.0/s
  fsync            323     0.0/s
  Pending
    Reads            0
    Writes           0
    fsync            0

Pages
  Created          534     0.0/s
  Read             201     0.0/s
  Written         1.56k    0.0/s

Rows
  Deleted            0       0/s
  Inserted     423.82k     0.2/s
  Read           1.27M     0.5/s
  Updated            0       0/s
```

6.3. Munin

6.4. Cacti

6.5. Monitoring MySQL with SNMP

mysql-snmp - monitoring MySQL with SNMP

MySQL slow query log.

第 6 章 Client and Utility Programs

目录

1. mysql - the MySQL command-line tool

1.1. ~/.my.cnf

```
# mysql_secure_installation config file
[mysql]
user=root
password='chen'
```

1.2. 终端编码

```
mysql> show variables like 'char%';
+--------------------------+----------------------------+
| Variable_name            | Value                      |
+--------------------------+----------------------------+
| character_set_client     | utf8                       |
| character_set_connection | utf8                       |
| character_set_database   | utf8                       |
| character_set_filesystem | binary                     |
| character_set_results    | utf8                       |
| character_set_server     | utf8                       |
| character_set_system     | utf8                       |
| character_sets_dir       | /usr/share/mysql/charsets/ |
+--------------------------+----------------------------+
8 rows in set (0.00 sec)
```

设置终端编码 set names utf8;

```
mysql> select * from category;
+----+------+-------------+--------+-----------+-----------+
| id | name | description | status | parent_id | path      |
+----+------+-------------+--------+-----------+-----------+
|  1 | ??   | ???????     | Y      |      NULL | 1/        |
|  4 | ???  | ???         | Y      |         1 | 1/4       |
|  5 | ???  | NULL        | Y      |         4 | 1/4/5     |
|  6 | ???  | NULL        | Y      |         5 | 1/4/5/6   |
|  7 | ???  | NULL        | Y      |         6 | 1/4/5/6/7 |
+----+------+-------------+--------+-----------+-----------+
5 rows in set (0.00 sec)

mysql> set names utf8;
Query OK, 0 rows affected (0.00 sec)

mysql> select * from category;
+----+-----------+-----------------------+--------+-----------+-----------+
| id | name      | description           | status | parent_id | path      |
+----+-----------+-----------------------+--------+-----------+-----------+
|  1 | 中国      | 中华人民共和家        | Y      |      NULL | 1/
|
|  4 | 广东省 | 广东省                | Y      |         1 |
1/4       |
|  5 | 深圳市 | NULL                  | Y      |         4 | 1/4/5     |
|  6 | 宝安区 | NULL                  | Y      |         5 | 1/4/5/6   |
|  7 | 龙华镇 | NULL                  | Y      |         6 | 1/4/5/6/7 |
+----+-----------+-----------------------+--------+-----------+-----------+
5 rows in set (0.00 sec)
```

1.3. Unix Socket

```
mysql -uroot -p -S /tmp/mysql.sock
```

1.4. 重定向巧用

```
echo "show databases;" | mysql -uroot -pneo

cat |mysql -uroot -pneo << EOF
show databases;
EOF
```

---

2. mysqldump - a database backup program

```
mysqldump -uroot -p dbname | gzip > dbname.backup
```

3. mysqladmin - client for administering a MySQL server

3.1. status

每个10秒输出一次mysql的状态信息

```
mysqladmin -i 10 extended status
```

```
mysqladmin -h 172.16.0.1 -u monitor -ppasswd status
Uptime: 195824  Threads: 21  Questions: 57744081  Slow queries: 516230  Opens: 13202607  Flush
tables: 1  Open tables: 160  Queries per second avg: 294.877
```

```
 mysqladmin -h 172.16.0.1 -u monitor -ppasswd  extended-status
+-----------------------------------+-------------+
| Variable_name                     | Value       |
+-----------------------------------+-------------+
| Aborted_clients                   | 60336       |
| Aborted_connects                  | 4599        |
| Binlog_cache_disk_use             | 36          |
| Binlog_cache_use                  | 100721      |
| Bytes_received                    | 17510873261 |
| Bytes_sent                        | 92890743568 |
| Com_admin_commands                | 10026660    |
| Com_assign_to_keycache            | 0           |
| Com_alter_db                      | 0           |
| Com_alter_db_upgrade              | 0           |
| Com_alter_event                   | 0           |
| Com_alter_function                | 0           |
| Com_alter_procedure               | 0           |
| Com_alter_server                  | 0           |
| Com_alter_table                   | 418         |
| Com_alter_tablespace              | 0           |
| Com_analyze                       | 0           |
| Com_backup_table                  | 0           |
| Com_begin                         | 0           |
| Com_binlog                        | 0           |
| Com_call_procedure                | 0           |
| Com_change_db                     | 4440400     |
| Com_change_master                 | 1           |
| Com_check                         | 0           |
| Com_checksum                      | 0           |
| Com_commit                        | 30089       |
| Com_create_db                     | 1           |
| Com_create_event                  | 0           |
| Com_create_function               | 0           |
| Com_create_index                  | 1           |
| Com_create_procedure              | 0           |
| Com_create_server                 | 0           |
| Com_create_table                  | 211         |
| Com_create_trigger                | 4           |
| Com_create_udf                    | 0           |
| Com_create_user                   | 0           |
| Com_create_view                   | 2           |
| Com_dealloc_sql                   | 0           |
| Com_delete                        | 36664       |
| Com_delete_multi                  | 0           |
| Com_do                            | 0           |
| Com_drop_db                       | 0           |
| Com_drop_event                    | 0           |
| Com_drop_function                 | 0           |
| Com_drop_index                    | 0           |
| Com_drop_procedure                | 0           |
| Com_drop_server                   | 0           |
| Com_drop_table                    | 213         |
| Com_drop_trigger                  | 0           |
| Com_drop_user                     | 0           |
| Com_drop_view                     | 4           |
| Com_empty_query                   | 0           |
| Com_execute_sql                   | 0           |
| Com_flush                         | 9           |
| Com_grant                         | 6           |
| Com_ha_close                      | 0           |
| Com_ha_open                       | 0           |
| Com_ha_read                       | 0           |
| Com_help                          | 0           |
| Com_insert                        | 472260      |
| Com_insert_select                 | 0           |
| Com_install_plugin                | 0           |
| Com_kill                          | 12          |
```

Com_load	0
Com_load_master_data	0
Com_load_master_table	0
Com_lock_tables	209
Com_optimize	0
Com_preload_keys	0
Com_prepare_sql	0
Com_purge	0
Com_purge_before_date	0
Com_release_savepoint	0
Com_rename_table	0
Com_rename_user	0
Com_repair	0
Com_replace	4612
Com_replace_select	0
Com_reset	0
Com_restore_table	0
Com_revoke	0
Com_revoke_all	0
Com_rollback	0
Com_rollback_to_savepoint	0
Com_savepoint	0
Com_select	20310686
Com_set_option	9089818
Com_show_authors	0
Com_show_binlog_events	0
Com_show_binlogs	0
Com_show_charsets	24
Com_show_collations	18214
Com_show_column_types	0
Com_show_contributors	0
Com_show_create_db	0
Com_show_create_event	0
Com_show_create_func	0
Com_show_create_proc	0
Com_show_create_table	0
Com_show_create_trigger	0
Com_show_databases	24
Com_show_engine_logs	0
Com_show_engine_mutex	0
Com_show_engine_status	0
Com_show_events	0
Com_show_errors	0
Com_show_fields	147160
Com_show_function_status	3
Com_show_grants	0
Com_show_keys	2
Com_show_master_status	1
Com_show_new_master	0
Com_show_open_tables	0
Com_show_plugins	0
Com_show_privileges	0
Com_show_procedure_status	3
Com_show_processlist	12483
Com_show_profile	0
Com_show_profiles	0
Com_show_slave_hosts	0
Com_show_slave_status	0
Com_show_status	1158
Com_show_storage_engines	0
Com_show_table_status	2
Com_show_tables	29915
Com_show_triggers	0
Com_show_variables	26295
Com_show_warnings	0
Com_slave_start	0
Com_slave_stop	0
Com_stmt_close	0
Com_stmt_execute	0
Com_stmt_fetch	0
Com_stmt_prepare	0
Com_stmt_reprepare	0
Com_stmt_reset	0
Com_stmt_send_long_data	0
Com_truncate	0
Com_uninstall_plugin	0
Com_unlock_tables	209
Com_update	501411
Com_update_multi	23112
Com_xa_commit	0
Com_xa_end	0
Com_xa_prepare	0
Com_xa_recover	0
Com_xa_rollback	0
Com_xa_start	0
Compression	OFF
Connections	4555052
Created_tmp_disk_tables	421231
Created_tmp_files	1172
Created_tmp_tables	2769149
Delayed_errors	0
Delayed_insert_threads	0
Delayed_writes	0
Flush_commands	1
Handler_commit	100721
Handler_delete	133583
Handler_discover	0
Handler_prepare	0
Handler_read_first	404032
Handler_read_key	18292439681
Handler_read_next	33393351305
Handler_read_prev	77792315
Handler_read_rnd	2969739139
Handler_read_rnd_next	41965058450
Handler_rollback	0

Handler_savepoint	0
Handler_savepoint_rollback	0
Handler_update	4595750766
Handler_write	6069006380
Innodb_buffer_pool_pages_data	19
Innodb_buffer_pool_pages_dirty	0
Innodb_buffer_pool_pages_flushed	0
Innodb_buffer_pool_pages_free	493
Innodb_buffer_pool_pages_misc	0
Innodb_buffer_pool_pages_total	512
Innodb_buffer_pool_read_ahead_rnd	1
Innodb_buffer_pool_read_ahead_seq	0
Innodb_buffer_pool_read_requests	77
Innodb_buffer_pool_reads	12
Innodb_buffer_pool_wait_free	0
Innodb_buffer_pool_write_requests	0
Innodb_data_fsyncs	3
Innodb_data_pending_fsyncs	0
Innodb_data_pending_reads	0
Innodb_data_pending_writes	0
Innodb_data_read	2494464
Innodb_data_reads	25
Innodb_data_writes	3
Innodb_data_written	1536
Innodb_dblwr_pages_written	0
Innodb_dblwr_writes	0
Innodb_log_waits	0
Innodb_log_write_requests	0
Innodb_log_writes	1
Innodb_os_log_fsyncs	3
Innodb_os_log_pending_fsyncs	0
Innodb_os_log_pending_writes	0
Innodb_os_log_written	512
Innodb_page_size	16384
Innodb_pages_created	0
Innodb_pages_read	19
Innodb_pages_written	0
Innodb_row_lock_current_waits	0
Innodb_row_lock_time	0
Innodb_row_lock_time_avg	0
Innodb_row_lock_time_max	0
Innodb_row_lock_waits	0
Innodb_rows_deleted	0
Innodb_rows_inserted	0
Innodb_rows_read	0
Innodb_rows_updated	0
Key_blocks_not_flushed	0
Key_blocks_unused	6917
Key_blocks_used	53585
Key_read_requests	35870213140
Key_reads	13788784
Key_write_requests	35265303
Key_writes	2467239
Last_query_cost	0.000000
Max_used_connections	3001
Not_flushed_delayed_rows	0
Open_files	238
Open_streams	0
Open_table_definitions	228
Open_tables	160
Opened_files	20864567
Opened_table_definitions	653
Opened_tables	13202613
Prepared_stmt_count	0
Qcache_free_blocks	10480
Qcache_free_memory	38697120
Qcache_hits	17943956
Qcache_inserts	8251298
Qcache_lowmem_prunes	560647
Qcache_not_cached	11879434
Qcache_queries_in_cache	54611
Qcache_total_blocks	125193
Queries	57755205
Questions	57582352
Rpl_status	NULL
Select_full_join	602236
Select_full_range_join	6851
Select_range	1633467
Select_range_check	0
Select_scan	10981650
Slave_open_temp_tables	0
Slave_retried_transactions	0
Slave_running	OFF
Slow_launch_threads	206
Slow_queries	516237
Sort_merge_passes	548
Sort_range	293328
Sort_rows	2831414035
Sort_scan	2726547
Ssl_accept_renegotiates	0
Ssl_accepts	0
Ssl_callback_cache_hits	0
Ssl_cipher	
Ssl_cipher_list	
Ssl_client_connects	0
Ssl_connect_renegotiates	0
Ssl_ctx_verify_depth	0
Ssl_ctx_verify_mode	0
Ssl_default_timeout	0
Ssl_finished_accepts	0
Ssl_finished_connects	0
Ssl_session_cache_hits	0
Ssl_session_cache_misses	0
Ssl_session_cache_mode	NONE
Ssl_session_cache_overflows	0

```
| Ssl_session_cache_size             | 0           |
| Ssl_session_cache_timeouts         | 0           |
| Ssl_sessions_reused                | 0           |
| Ssl_used_session_cache_entries     | 0           |
| Ssl_verify_depth                   | 0           |
| Ssl_verify_mode                    | 0           |
| Ssl_version                        |             |
| Table_locks_immediate              | 46406490    |
| Table_locks_waited                 | 1428430     |
| Tc_log_max_pages_used              | 0           |
| Tc_log_page_size                   | 0           |
| Tc_log_page_waits                  | 0           |
| Threads_cached                     | 33          |
| Threads_connected                  | 33          |
| Threads_created                    | 77809       |
| Threads_running                    | 7           |
| Uptime                             | 195854      |
| Uptime_since_flush_status          | 195854      |
+------------------------------------+-------------+
```

3.2. process list

```
[root@development ~]# mysqladmin -u root -p -h 127.0.0.1 processlist
Enter password:
+-------+--------+----------------------+--------+---------+------+-------+------------------+
| Id    | User   | Host                 | db     | Command | Time | State | Info             |
+-------+--------+----------------------+--------+---------+------+-------+------------------+
| 23648 | dbuser | 192.168.3.237:1220   | testdb | Sleep   | 2733 |       |                  |
| 23878 | dbuser | www.testdb.com:53639 | testdb | Sleep   | 7    |       |                  |
| 23881 | root   | localhost:57243      |        | Query   | 0    |       | show processlist |
+-------+--------+----------------------+--------+---------+------+-------+------------------+
```

```
mysql -u root -pneo -S /tmp/mysql.sock -e "show full processlist;"|grep -v Sleep
```

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2. mysqldump - a database backup program 起始页 4. myisamchk — MyISAM Table-Maintenance Utility

4. myisamchk — MyISAM Table-Maintenance Utility

先停止mysqld，在--datadir目录运行

```
myisamchk */*.MYI >/dev/null  # 检查哪些表需要修复
```

修复用以下命令一个个修复：

```
myisamchk -r table.MYI
```

更省事的做法：

```
myisamchk -r /var/lib/mysql/*.MYI
```

myisamchk可用crontab定時最佳化table

```
0 * * 0 /usr/bin/myisamchk -s /var/lib/mysql/*/*.MYI
```

5. mysqlcheck — A Table Maintenance and Repair Program

即可最佳化所有db

```
mysqlcheck -a -c -o -r --all-databases -uroot -p
-a = Analyse given tables.
-c = Check table for errors
-o = Optimise table
-r = Can fix almost anything except unique keys that aren't unique

mysqlcheck -A -o -r -p
```

6. mysqlslap - load emulation client

`--auto-generate-sql, -a`
自动生成测试表和数据

`--auto-generate-sql-load-type=type`
测试语句的类型。取值包括：`read`，`key`，`write`，`update`和`mixed`(默认)。

`--number-char-cols=N, -x N`
自动生成的测试表中包含多少个字符类型的列，默认`1`

`--number-int-cols=N, -y N`
自动生成的测试表中包含多少个数字类型的列，默认`1`

`--number-of-queries=N`
总的测试查询次数(并发客户数×每客户查询次数)

`--query=name,-q`
使用自定义脚本执行测试，例如可以调用自定义的一个存储过程或者`sql`语句来执行测试。

`--create-schema`
测试的`schema`，`MySQL`中`schema`也就是`database`

`--commint=N`
多少条`DML`后提交一次

`--compress, -C`
如果服务器和客户端支持都压缩，则压缩信息传递

`--concurrency=N, -c N`
并发量，也就是模拟多少个客户端同时执行`select`。可指定多个值，以逗号或者`--delimiter`参数指定的值做为分隔符

`--engine=engine_name, -e engine_name`
创建测试表所使用的存储引擎，可指定多个

`--iterations=N, -i N`
测试执行的迭代次数

`--detach=N`
执行`N`条语句后断开重连

`--debug-info, -T`
打印内存和`CPU`的信息

`--only-print`
只打印测试语句而不实际执行

```
mysqlslap -u root -p -h localhost -c 10,50,100,200 -i 1 \
--engine=myisam --auto-generate-sql-load-type=mixed --number-of-queries=50000 \
--number-char-cols=5 --number-int-cols=5 --auto-generate-sql


mysqlslap --defaults-file=/etc/my.cnf --concurrency=50,100,200 --iterations=1 \
--number-int-cols=4 --number-char-cols=4 --auto-generate-sql --auto-generate-sql-add-
autoincrement \
--auto-generate-sql-load-type=mixed --engine=myisam,innodb --number-of-queries=200 --debug-info \
-uroot -p -S/tmp/mysql.sock
```

7. mysqldumpslow - Parse and summarize the MySQL slow query log.

开启记录日志，修改my.cnf加入下面几行

--log-slow-queries[=file_name]

```
long_query_time = 10
log-slow-queries =
```

long_query_time 是指执行超过10秒的sql会被记录下来。

log-slow-queries设置把日志文件的位置，如果没有给出文件名值， 默认未主机名，后缀为-slow.log。如果给出了文件名，但不是绝对路径名，文件则写入数据目录。

cat /etc/mysql/my.cnf

```
[mysqld]
set-variable=long_query_time=1
log-slow-queries=/var/log/mysql/log-slow-queries.log

You must create the file manually and change owners this way:

touch /var/log/mysql/log-slow-queries.log
chown mysql.mysql -R /var/log/mysql/log-slow-queries.log

$ mysqldumpslow /var/log/mysql/log-slow-queries.log
```

mysqldumpslow 参数

1. -s，是order的顺序，说明写的不够详细，俺用下来，包括看了代码，主要有c,t,l,r和ac,at,al,ar，t=time, l=lock time, r=rows分别是按照query次数，时间，lock的时间和返回的记录数来排序，前面加了a的时倒叙
2. -t，是top n的意思，即为返回前面多少条的数据
3. -g，后边可以写一个正则匹配模式，大小写不敏感的
4. -g，后边可以写一个正则匹配模式，大小写不敏感的

```
mysqldumpslow -s c -t 20 ubuntu-slow.log


mysqldumpslow -s r -t 20 ubuntu-slow.log
```

第 7 章 Database Administration

目录

1. User Account Management

1.1. Create User

```
CREATE USER user [IDENTIFIED BY [PASSWORD] 'password']
    [, user [IDENTIFIED BY [PASSWORD] 'password']] ...

CREATE USER 'test'@'xxx.xxx.xxx.xxx' IDENTIFIED BY  'your_password';
```

add a new user by grant

```
GRANT ALL PRIVILEGES ON opencart.* TO 'neo'@'localhost' IDENTIFIED BY 'chen' WITH GRANT OPTION;
GRANT ALL PRIVILEGES ON *.* TO 'neo'@'localhost' IDENTIFIED BY 'chen' WITH GRANT OPTION;
FLUSH PRIVILEGES;
```

1.2. Drop User

```
DROP USER user [, user] ...
```

1.3. Rename User

```
RENAME USER old_user TO new_user
    [, old_user TO new_user] ...
```

1.4. SET PASSWORD

```
SET PASSWORD FOR 'bob'@'%.loc.gov' = PASSWORD('newpass');
```

1.5. Reset root password

忘记root密码是使用

```
shell>mysqld_safe --skip-grant-tables &
shell>mysqladmin -u root flush-privileges password "newpassword"
```

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7. mysqldumpslow - Parse and summarize the MySQL slow query log.

起始页

2. Access Privilege System

2. Access Privilege System

2.1. Grant privileges

Global privileges

```
GRANT ALL ON *.* TO 'someuser'@'somehost';
GRANT SELECT, INSERT ON *.* TO 'someuser'@'somehost';
```

Database privileges

```
GRANT ALL ON mydb.* TO 'someuser'@'somehost';
GRANT SELECT, INSERT ON mydb.* TO 'someuser'@'somehost';
```

Table privileges

```
GRANT ALL ON mydb.mytbl TO 'someuser'@'somehost';
GRANT SELECT, INSERT ON mydb.mytbl TO 'someuser'@'somehost';
```

Column privileges

```
GRANT SELECT (col1), INSERT (col1,col2) ON mydb.mytbl TO 'someuser'@'somehost';
```

Routine privileges

```
GRANT CREATE ROUTINE ON mydb.* TO 'someuser'@'somehost';
GRANT EXECUTE ON PROCEDURE mydb.myproc TO 'someuser'@'somehost';
```

2.2. Revoke privileges

```
REVOKE
    priv_type [(column_list)]
      [, priv_type [(column_list)]] ...
    ON [object_type] priv_level
    FROM user [, user] ...

REVOKE ALL PRIVILEGES, GRANT OPTION
    FROM user [, user] ...
```

2.3. Show Privileges

```
mysql> select * from user where user = 'neo'\G
*************************** 1. row ***************************
                 Host: 192.168.0.5
                 User: neo
             Password: *7564B7B0A062C9523700601CBA1DCE1F861D6270
          Select_priv: Y
          Insert_priv: Y
          Update_priv: Y
          Delete_priv: Y
          Create_priv: Y
            Drop_priv: Y
          Reload_priv: Y
        Shutdown_priv: Y
         Process_priv: Y
            File_priv: Y
           Grant_priv: N
      References_priv: Y
```

```
           Index_priv: Y
           Alter_priv: Y
         Show_db_priv: Y
           Super_priv: Y
Create_tmp_table_priv: Y
     Lock_tables_priv: Y
         Execute_priv: Y
      Repl_slave_priv: Y
     Repl_client_priv: Y
     Create_view_priv: Y
       Show_view_priv: Y
  Create_routine_priv: Y
   Alter_routine_priv: Y
     Create_user_priv: Y
           Event_priv: Y
         Trigger_priv: Y
             ssl_type:
           ssl_cipher:
          x509_issuer:
         x509_subject:
        max_questions: 0
          max_updates: 0
      max_connections: 0
 max_user_connections: 0
1 row in set (0.00 sec)

mysql>
```

---

3. 查看版本

Server

```
mysql> select version();
+-----------+
| version() |
+-----------+
| 5.0.77    |
+-----------+
1 row in set (0.00 sec)


mysql> status;
--------------
mysql  Ver 14.12 Distrib 5.0.77, for redhat-linux-gnu (x86_64) using readline 5.1

Connection id:          1533
Current database:
Current user:           root@localhost
SSL:                    Not in use
Current pager:          stdout
Using outfile:          ''
Using delimiter:        ;
Server version:         5.0.77 Source distribution
Protocol version:       10
Connection:             Localhost via UNIX socket
Server characterset:    latin1
Db     characterset:    latin1
Client characterset:    latin1
Conn.  characterset:    latin1
UNIX socket:            /var/lib/mysql/mysql.sock
Uptime:                 1 day 21 hours 40 min 52 sec

Threads: 1  Questions: 22172  Slow queries: 0  Opens: 3130  Flush tables: 1  Open tables: 64
Queries per second avg: 0.135
--------------
```

Client

```
[root@development ~]# mysql -V
mysql  Ver 14.12 Distrib 5.0.77, for redhat-linux-gnu (x86_64) using readline 5.1
```

4. 当前数据

```
mysql> status;
--------------
mysql  Ver 14.12 Distrib 5.0.77, for redhat-linux-gnu (x86_64) using readline 5.1

Connection id:          101447
Current database:       center
Current user:           root@localhost
SSL:                    Not in use
Current pager:          stdout
Using outfile:          ''
Using delimiter:        ;
Server version:         5.0.77 Source distribution
Protocol version:       10
Connection:             Localhost via UNIX socket
Server characterset:    latin1
Db     characterset:    utf8
Client characterset:    latin1
Conn.  characterset:    latin1
UNIX socket:            /var/lib/mysql/mysql.sock
Uptime:                 45 days 23 hours 9 min 23 sec

Threads: 6  Questions: 5434727  Slow queries: 68  Opens: 89637  Flush tables: 1  Open tables: 18
Queries per second avg: 1.368
--------------
```

第 8 章 DDL - Data Definition Language

目录

7.3. 添加分区

1. Database

1.1. create

Creating a UTF-8 database

```
CREATE DATABASE db_name DEFAULT CHARACTER SET utf8 COLLATE utf8_general_ci;
```

Create a UTF-8 database with binary UTF-8 collation.

```
CREATE DATABASE dbname CHARACTER SET utf8 COLLATE utf8_bin;
```

1.2. drop

```
DROP DATABASE db_name;
```

1.3. Alter

```
ALTER DATABASE dbname DEFAULT CHARACTER SET utf8 COLLATE utf8_general_ci;
```

1.4. Rename

```
RENAME {DATABASE | SCHEMA} db_name TO new_db_name;
```

before 5.0 version

```
[neo@development ~]$ mysqldump -uroot -pchen db_old | mysql -uroot -pchen db_new
```

上一页 上一级 下一页
4. 当前数据 起始页 2. Table

2. Table

2.1. create table ... select

创建空表

```
create table admin_user_history select * from admin_user where 1 <> 1;
```

创建有数据的表

```
create table admin_user_history select * from admin_user;
```

2.2. modifiy table

modifiy table

```
ALTER TABLE ecs_users add user_picture varchar(255);
```

2.3. TEMPORARY Table

临时表将在你连接期间存在。一旦断开时将自动删除表并释放所用的空间。你在连接期间删除该表也同样释放空间。

```
CREATE TEMPORARY TABLE tmp_table (
        key VARCHAR(10) NOT NULL,
        value INTEGER NOT NULL
)
```

声明临时表是一个HEAP表，允许你指定在内存中创建它

```
CREATE TEMPORARY TABLE tmp_mem_table (
        key VARCHAR(10) NOT NULL,
        value INTEGER NOT NULL
) TYPE = HEAP
```

2.4. Collate

```
ALTER TABLE `tmp_cats`  COLLATE='utf8_general_ci',  CONVERT TO CHARSET utf8;
```

3. Index

3.1. SHOW INDEX

```
SHOW INDEX FROM tbl_name
```

垂直显示

```
SHOW INDEX FROM tbl_name\G
```

3.2. CREATE INDEX

```
CREATE INDEX index_name
ON table_name (column_name)
```

3.3. DROP INDEX

```
DROP INDEX index_name ON tbl_name
```

CREATE UNIQUE INDEX

```
CREATE UNIQUE INDEX index_name
ON table_name (column_name)
```

3.4. rebuild

```
SHOW INDEX FROM tbl_name
alter index IND_PK rebuild;
```

4. 外键(Foreign Key)

ON DELETE、ON UPDATE 事件触发限制，可选参数：

1. RESTRICT（限制外表中的外键改动）
2. CASCADE（跟随外键改动）
3. SET NULL（设空值）
4. SET DEFAULT（设默认值）
5. NO ACTION（无动作，默认的）

5. View

```
CREATE VIEW view_name AS
SELECT column_name(s)
FROM table_name
WHERE condition
```

update view

```
SQL CREATE OR REPLACE VIEW Syntax
CREATE OR REPLACE VIEW view_name AS
SELECT column_name(s)
FROM table_name
WHERE condition
```

6. Trigger

6.1. create trigger

history

```
CREATE TABLE user_history SELECT * FROM user WHERE 1 <> 1

DELIMITER //
CREATE TRIGGER user_history BEFORE update ON user FOR EACH ROW
BEGIN
insert into user_history SELECT * FROM user WHERE id = OLD.id;
END; //
DELIMITER ;
```

6.2. drop trigger

```
DROP TRIGGER admin_user_history;

DELIMITER //
CREATE TRIGGER admin_user_history BEFORE update ON admin_user FOR EACH ROW
BEGIN
insert into admin_user_history SELECT * FROM admin_user WHERE user_id = OLD.user_id;
END; //
DELIMITER;
```

6.3. show triggers

```
show triggers;
```

7. Partitioning

18.5.1. Partitioning Keys, Primary Keys, and Unique Keys
This section discusses the relationship of partitioning keys with primary keys and unique keys. The rule governing this relationship can be expressed as follows: All columns used in the partitioning expression for a partitioned table must be part of every unique key that the table may have.

In other words, every unique key on the table must use every column in the table's partitioning expression. (This also includes the table's primary key, since it is by definition a unique key. This particular case is discussed later in this section.) For example, each of the following table creation statements is invalid:

SQL code:

```
mysql> create table tx (
    ->     id int not null ,
    ->     info_time date,
    ->     primary key(id,info_time)
    -> )
    -> PARTITION BY RANGE(info_time div 100)
    -> (
    ->     PARTITION p_2008_11 VALUES LESS THAN (200812),
    ->     PARTITION p_2008_12 VALUES LESS THAN (200901),
    ->     PARTITION p_2009_01 VALUES LESS THAN (200902),
    ->     PARTITION p_2009_02 VALUES LESS THAN (200903),
    ->     PARTITION p_2009_03 VALUES LESS THAN (200904),
    ->     PARTITION p_2009_04 VALUES LESS THAN (200905),
    ->     PARTITION p_catch_all VALUES LESS THAN MAXVALUE
    -> );
Query OK, 0 rows affected (0.17 sec)

mysql>
```

```
mysql> SHOW VARIABLES LIKE '%partition%';

+-------------------+-------+
| Variable_name     | Value |
+-------------------+-------+
| have_partitioning | YES   |
+-------------------+-------+
1 row in set (0.00 sec)
```

SHOW PARTITIONS

SHOW PARTITION STATUS

7.1. range

```
CREATE TABLE t1 (
    year_col  INT,
    some_data INT
)
PARTITION BY RANGE (year_col) (
    PARTITION p0 VALUES LESS THAN (1991),
    PARTITION p1 VALUES LESS THAN (1995),
    PARTITION p2 VALUES LESS THAN (1999),
    PARTITION p3 VALUES LESS THAN (2002),
    PARTITION p4 VALUES LESS THAN (2006),
    PARTITION p5 VALUES LESS THAN MAXVALUE
);
```

e.g.2

```
CREATE TABLE rc (
    a INT NOT NULL,
    b INT NOT NULL
)
PARTITION BY RANGE COLUMNS(a,b) (
    PARTITION p0 VALUES LESS THAN (10,5),
    PARTITION p1 VALUES LESS THAN (20,10),
    PARTITION p2 VALUES LESS THAN (MAXVALUE,15),
    PARTITION p3 VALUES LESS THAN (MAXVALUE,MAXVALUE)
);
```

7.2. list

```
CREATE TABLE client_firms (
    id   INT,
    name VARCHAR(35)
)
PARTITION BY LIST (id) (
    PARTITION r0 VALUES IN (1, 5, 9, 13, 17, 21),
    PARTITION r1 VALUES IN (2, 6, 10, 14, 18, 22),
    PARTITION r2 VALUES IN (3, 7, 11, 15, 19, 23),
    PARTITION r3 VALUES IN (4, 8, 12, 16, 20, 24)
);
```

```
CREATE TABLE lc (
    a INT NULL,
    b INT NULL
)
PARTITION BY LIST COLUMNS(a,b) (
    PARTITION p0 VALUES IN( (0,0), (NULL,NULL) ),
    PARTITION p1 VALUES IN( (0,1), (0,2), (0,3), (1,1), (1,2) ),
    PARTITION p2 VALUES IN( (1,0), (2,0), (2,1), (3,0), (3,1) ),
    PARTITION p3 VALUES IN( (1,3), (2,2), (2,3), (3,2), (3,3) )
);
```

```
CREATE TABLE th (id INT, name VARCHAR(30), adate DATE)
PARTITION BY LIST(YEAR(adate))
(
  PARTITION p1999 VALUES IN (1995, 1999, 2003)
    DATA DIRECTORY = '/var/appdata/95/data'
    INDEX DIRECTORY = '/var/appdata/95/idx',
  PARTITION p2000 VALUES IN (1996, 2000, 2004)
    DATA DIRECTORY = '/var/appdata/96/data'
    INDEX DIRECTORY = '/var/appdata/96/idx',
  PARTITION p2001 VALUES IN (1997, 2001, 2005)
    DATA DIRECTORY = '/var/appdata/97/data'
    INDEX DIRECTORY = '/var/appdata/97/idx',
  PARTITION p2000 VALUES IN (1998, 2002, 2006)
    DATA DIRECTORY = '/var/appdata/98/data'
    INDEX DIRECTORY = '/var/appdata/98/idx'
);
```

7.3. 添加分区

mysql 5.5+

```
CREATE TABLE expenses (
  expense_date DATE NOT NULL,
  category VARCHAR(30),
  amount DECIMAL (10,3)
);

ALTER TABLE expenses
PARTITION BY LIST COLUMNS (category)
(
  PARTITION p01 VALUES IN ( 'lodging', 'food'),
  PARTITION p02 VALUES IN ( 'flights', 'ground transportation'),
  PARTITION p03 VALUES IN ( 'leisure', 'customer entertainment'),
  PARTITION p04 VALUES IN ( 'communications'),
  PARTITION p05 VALUES IN ( 'fees')
);
```

```
SELECT
  partition_name part,
  partition expression expr,
```

```
  partition_description descr,
  table_rows
FROM
  INFORMATION_SCHEMA.partitions
WHERE
  TABLE_SCHEMA = schema()
  AND TABLE_NAME='employees';



select
  partition_name part,
  partition_expression expr,
  from_seconds(partition_description) descr,
  table_rows
FROM
INFORMATION_SCHEMA.partitions
WHERE
    TABLE_SCHEMA = 'test'
    AND TABLE_NAME='t2';



/* 在MySQL 5.1中*/
CREATE TABLE t2
(
  dt DATE
)
PARTITION BY RANGE (TO_DAYS(dt))
(
  PARTITION p01 VALUES LESS THAN (TO_DAYS('2007-01-01')),
  PARTITION p02 VALUES LESS THAN (TO_DAYS('2008-01-01')),
  PARTITION p03 VALUES LESS THAN (TO_DAYS('2009-01-01')),
  PARTITION p04 VALUES LESS THAN (MAXVALUE));

SHOW CREATE TABLE t2 \G
*************************** 1. row ***************************
       Table: t2
Create Table: CREATE TABLE `t2` (
  `dt` date DEFAULT NULL
) ENGINE=MyISAM DEFAULT CHARSET=latin1
/*!50100 PARTITION BY RANGE (TO_DAYS(dt))
(PARTITION p01 VALUES LESS THAN (733042) ENGINE = MyISAM,
 PARTITION p02 VALUES LESS THAN (733407) ENGINE = MyISAM,
 PARTITION p03 VALUES LESS THAN (733773) ENGINE = MyISAM,
 PARTITION p04 VALUES LESS THAN MAXVALUE ENGINE = MyISAM) */



 /*在MySQL 5.5中*/
CREATE TABLE t2
(
  dt DATE
)
PARTITION BY RANGE COLUMNS (dt)
(
  PARTITION p01 VALUES LESS THAN ('2007-01-01'),
  PARTITION p02 VALUES LESS THAN ('2008-01-01'),
  PARTITION p03 VALUES LESS THAN ('2009-01-01'),
  PARTITION p04 VALUES LESS THAN (MAXVALUE));

SHOW CREATE TABLE t2 \G
*************************** 1. row ***************************
       Table: t2
Create Table: CREATE TABLE `t2` (
  `dt` date DEFAULT NULL
) ENGINE=MyISAM DEFAULT CHARSET=latin1
/*!50500 PARTITION BY RANGE  COLUMNS(dt)
(PARTITION p01 VALUES LESS THAN ('2007-01-01') ENGINE = MyISAM,
 PARTITION p02 VALUES LESS THAN ('2008-01-01') ENGINE = MyISAM,
 PARTITION p03 VALUES LESS THAN ('2009-01-01') ENGINE = MyISAM,
 PARTITION p04 VALUES LESS THAN (MAXVALUE) ENGINE = MyISAM) */
```

第 9 章 SQL Statement Syntax

Structured Query Language

目录

1. DISTINCT

SELECT DISTINCT user.name FROM user

```
SELECT DISTINCT user.name FROM user
```

2. replace

replace into

```
replace into (id) value('1')
```

3. OUTFILE/LOAD DATA INFILE

```
SELECT * INTO OUTFILE '/home/mark/Orders.txt'
  FIELDS
  TERMINATED BY = ','
  FROM Orders
  WHERE Order_Date >= '2000-01-01'
```

```
LOAD DATA INFILE 'data.txt' INTO TABLE db2.my_table;
```

3.1. Export data to CSV from MySQL

```
SELECT *
INTO OUTFILE '/tmp/products.csv'
FIELDS TERMINATED BY ','
ENCLOSED BY '"'
ESCAPED BY '\\'
LINES TERMINATED BY '\n'
FROM products
```

4. SQL 92

insert + select

```
insert into product_type_commission select id,5,1,1,0,0,0,0,0,0 from product_type where
title='notebook' and is_physical=0;
```

update table1,table2

```
begin;
ALTER TABLE `customer` ADD COLUMN `cutoff_time` TIMESTAMP NOT NULL default '0000-00-00 00:00:00';
update customer,agent set customer.cutoff_time = agent.cutoff_time where customer.id = agent.id;
ALTER TABLE `agent` DROP COLUMN `cutoff_time`;
commit;
```

update table1 set field1 = (select value from table2)

```
UPDATE
        transaction
SET
        transaction.total_sold_price = (
                SELECT
                        SUM(transaction_item.price)
        FROM
                        transaction_item
                WHERE transaction_item.transaction_id = 100
        )
WHERE
        transaction.id = 100
```

update table1, (select * from other) as table2 set table1.field1 = table2.field1

```
UPDATE
        transaction,(   SELECT
                                                SUM(product_item.bought_price) AS
total_bought_price, transaction_item.transaction_id
                                        FROM
                                                transaction_item
                                WHERE
                                                transaction_item.transaction_id IN ( '123','456'
)
                                ) as total
SET
        transaction.total_bought_price = total.total_bought_price
WHERE
        transaction.id = total.transaction_id
```

join + subquery

```
select u.*,t.category,t.items,t.[property] from tb_sysregchkusers as u left join (select a.items
as category, b.* from (select id, items from tb_sysregchktask where categoryid=0) as a left join
tb_sysregchktask as b on b.categoryid=a.id ) as t on u.taskID=t.id

select * from tb_sysregchklog where CONVERT(datetime,CONVERT(varchar(10),checkTime,120)) between
convert(datetime,'2007-12-12') and convert(datetime,'2007-12-12')


select DISTINCT user_point_history.user_id,user.username,
(select count(id) from transaction where id = user_point_history.transaction_id) as transactions,
(SELECT SUM(u_p_h.points) FROM user_point_history as u_p_h WHERE u_p_h.type != 'RDMP' AND
u_p_h.status IN('pr','ac') AND u_p_h.user_id = user_point_history.user_id) as total_points_earned,
(SELECT SUM(u_p_h.points) FROM user_point_history as u_p_h WHERE u_p_h.type = 'RDMP' AND
u_p_h.status IN('pr','ac') AND u_p_h.user_id = user_point_history.user_id) as
total_points_redeemed
from user_point_history,user where user_point_history.user_id = user.id;
```

(total_points_earned - total_points_redeemed) as current_balance_points

```
select user_id, username, transactions, total_points_earned, total_points_redeemed,
(total_points_earned - total_points_redeemed) as current_balance_points
from (select DISTINCT user_point_history.user_id,user.username,
(select count(id) from transaction where id = user_point_history.transaction_id) as transactions,
(SELECT SUM(u_p_h.points) FROM user_point_history as u_p_h WHERE u_p_h.type != 'RDMP' AND
u_p_h.status IN('pr','ac') AND u_p_h.user_id = user_point_history.user_id) as total_points_earned,
(SELECT SUM(u_p_h.points) FROM user_point_history as u_p_h WHERE u_p_h.type = 'RDMP' AND
u_p_h.status IN('pr','ac') AND u_p_h.user_id = user_point_history.user_id) as
total_points_redeemed
from user_point_history,user where user_point_history.user_id = user.id) as user_performance;
```

subquery作为一个字段使用

```
select product_type_attribute.*,(select 'selected' from product_type_attribute_set where
product_type_attribute_set.product_type_attribute_id = product_type_attribute.id and
product_type_attribute_set.product_type_id = 26) as selected
from product_type_attribute;
```

---

5. Functions and Operators

5.1. COUNT

count()

```
SELECT (SELECT count(1) FROM ecs_category) as 'Export category count',
        (SELECT count(1) FROM ecs_goods) as 'Goods count',
        (SELECT count(1) FROM ecs_goods_attr) as 'Attr count';
```

5.2. String

5.2.1. LEFT/RIGHT

LEFT(str,len)

```
mysql> select left(concat('1','0000000'),5) as number;
+--------+
| number |
+--------+
| 10000  |
+--------+
1 row in set (0.00 sec)
```

RIGHT(str,len)

```
mysql> select right(concat('0000000','1'),5) as number;
+--------+
| number |
+--------+
| 00001  |
+--------+
1 row in set (0.00 sec)
```

5.2.2. RPAD/LPAD

补齐长度用'0'填充

RPAD(str,len,padstr)

```
mysql> select rpad('10',5,'0') as txt;
+-------+
| txt   |
+-------+
| 10000 |
+-------+
1 row in set (0.01 sec)
```

LPAD(str,len,padstr)

```
mysql> select lpad('10',5,'0') as txt;
+-------+
| txt   |
+-------+
| 00010 |
+-------+
1 row in set (0.00 sec)
```

5.2.3. CONCAT

CONCAT(str1,str2,...)

```
mysql> select concat('Neo',' ','Chen') as Name;
+----------+
| Name     |
+----------+
| Neo Chen |
+----------+
1 row in set (0.00 sec)
```

5.2.4. replace

```
select replace(goods_desc,':8000','') from ecs_goods;
update ecs_goods set goods_desc=replace(goods_desc,':8000','');
```

5.3. Data and Time

5.3.1. Unix time

```
mysql> SELECT UNIX_TIMESTAMP('2005-03-27 02:00:00');
+---------------------------------------+
| UNIX_TIMESTAMP('2005-03-27 02:00:00') |
+---------------------------------------+
|                            1111885200 |
+---------------------------------------+
mysql> SELECT FROM_UNIXTIME(1111885200);
+---------------------------+
| FROM_UNIXTIME(1111885200) |
+---------------------------+
| 2005-03-27 03:00:00       |
+---------------------------+
```

第 10 章 MySQL Connectors

目录

1. JDBC

JDBC connection settings

```
jdbc:mysql://hostname:port/database?autoReconnect=true&useUnicode=true&characterEncoding=utf8
```

confluence.cfg.xml

```
<property name="hibernate.connection.url">jdbc:mysql://hostname:port/database?
autoReconnect=true&amp;useUnicode=true&amp;characterEncoding=utf8</property>
```

2. ODBC

3. MySQL native driver for PHP - mysqlnd

第 11 章 MySQL GUI/Web Manager

目录

1. HeidiSQL

http://www.heidisql.com/

2. Toad for MySQL Freeware

http://toadsoft.veriomigrations.com/

3. phpMyAdmin - MySQL web administration tool

homepage: http://www.phpmyadmin.net/

```
$ wget http://nchc.dl.sourceforge.net/sourceforge/phpmyadmin/phpMyAdmin-3.1.3.1-all-
languages.tar.bz2
$ tar jxvf phpMyAdmin-3.1.3.1-all-languages.tar.bz2
$ ln -s phpMyAdmin-3.1.3.1-all-languages phpMyAdmin
```

4. Maatkit Essential command-line utilities for MySQL

http://www.maatkit.org/

第 12 章 FAQ

目录

1. 数据库内容替换

```
#!/bin/bash
HOST='localhost'
USER='neo'
PASS='chen'

SDB='neo'
TDB='netkiller'
MYSQLDUMP="mysqldump"
MYSQLDUMPOPTS="-h${HOST} -u${USER} -p${PASS}"

MYSQL="mysql"
MYSQLOPTS="-h${HOST} -u${USER} -p${PASS}"
#SED="sed -e 's/netkiller\.8800\.org/netkiller\.sf\.net/g' -e 's/陈景峰/景峰/g' -e
's/Neo/Netkiller/g'"

$MYSQL $MYSQLOPTS <<SQL
DROP DATABASE $TDB;
CREATE DATABASE $TDB DEFAULT CHARACTER SET utf8 COLLATE utf8_general_ci;
SQL


$MYSQLDUMP $MYSQLDUMPOPTS ${SDB} | sed -e 's/netkiller\.8800\.org/netkiller\.sf\.net/g' -e 's/陈景
峰/景峰/g' -e 's/Neo/Netkiller/g' | $MYSQL $MYSQLOPTS ${TDB}
#echo "$MYSQLDUMP $MYSQLDUMPOPTS ${SDB} | $SED | $MYSQL $MYSQLOPTS ${TDB}"
```

2. 查看错误代码

```
mysql> \! perror 6
OS error code   6:  No such device or address
```

3. ERROR 1153 (08S01) at line 3168: Got a packet bigger than 'max_allowed_packet' bytes

```
max_allowed_packet=500M
```

4. 临时表是否需要建索引

答案：要

第 13 章 HandlerSocket

第 14 章 MariaDB

http://mariadb.org/

部分 III. PostgreSQL

目录

第 15 章 PostgreSQL

目录

1. Install

安装环境 ubuntu 8.10

$ sudo apt-get install postgresql-8.3

```
$ sudo apt-get install postgresql
```

2. Postgres 配置

8.1.5之后版本不在使用tcpip_socket,改用listen_addresses

去掉注释

```
listen_addresses = 'localhost'
```

如果有多个网络适配器可以指定 'ip' 或 '*'

```
postgres@Linux-server:~$ vi /etc/postgresql/8.2/main/postgresql.conf

listen_addresses = '*'

postgres@Linux-server:~$
```

访问权限

```
netkiller@Linux-server:~$ sudo vi /etc/postgresql/8.1/main/pg_hba.conf
host    woodart         woodart      0.0.0.0/0       md5
hostssl woodart     all              0.0.0.0/0       md5
```

设置Postgres管理员密码

```
netkiller@Linux-server:~$ sudo passwd postgres
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
```

su postgres

```
netkiller@Linux-server:~$ su - postgres
Password:
postgres@Linux-server:~$ pwd
/var/lib/postgresql
postgres@Linux-server:~$
```

psql环境

```
postgres@Linux-server:~$ psql
Welcome to psql 8.1.4, the PostgreSQL interactive terminal.

Type:  \copyright for distribution terms
       \h for help with SQL commands
       \? for help with psql commands
       \g or terminate with semicolon to execute query
       \q to quit

postgres=#
```

退出\q

```
postgres=# \q
```

创建数据,用户

```
CREATE ROLE woodart LOGIN
  ENCRYPTED PASSWORD 'md58360b47e149f615d2d52f98d1b22431a'
  NOSUPERUSER NOINHERIT CREATEDB NOCREATEROLE;

CREATE DATABASE woodart
  WITH OWNER = woodart
       ENCODING = 'UTF8'
       TABLESPACE = pg_default;
```

使用psql登录

```
postgres@Linux-server:~$ psql -h127.0.0.1 -dwoodart -Uwoodart
Password for user woodart:
Welcome to psql 8.1.4, the PostgreSQL interactive terminal.

Type:  \copyright for distribution terms
       \h for help with SQL commands
       \? for help with psql commands
       \g or terminate with semicolon to execute query
       \q to quit

SSL connection (cipher: DHE-RSA-AES256-SHA, bits: 256)

woodart=>
```

3. PostgreSQL 实用实例参考

http://netkiller.8800.org/book/postgres/

4. phpPgAdmin

homepage: http://phppgadmin.sourceforge.net/

```
$ wget http://nchc.dl.sourceforge.net/sourceforge/phppgadmin/phpPgAdmin-
4.2.2.tar.bz2
$ tar jxvf phpPgAdmin-4.2.2.tar.bz2
$ ln -s phpPgAdmin-4.2.2 phpPgAdmin
```

5.

6.

第 16 章 Manager

目录

1. User

新建用户

```
CREATE ROLE woodart LOGIN PASSWORD 'chen'
  NOINHERIT
   VALID UNTIL 'infinity';
```

2. Database

新建数据

```
CREATE DATABASE woodart
  WITH ENCODING='UTF8'
       OWNER=woodart;
```

3. Table

4. Backup / Restore

Backup

```
pg_dump -i -h localhost -p 5432 -U user -Fc -c -f "your_db.backup" your_db
```

Restore

```
pg_restore -i -h localhost -p 5432 -U user -d your_db -v -c -Fc "your_db.backup"
```

local -> remote

```
set PG_HOME="C:\Program Files\PostgreSQL\8.1\bin"
%PG_HOME%\pg_dump.exe -i -h localhost -p 5432 -U woodart -Fc -c -f
"woodart.backup" woodart
%PG_HOME%\pg_restore.exe -i -h woodart.8800.org -p 5432 -U woodart -d woodart -v -
c -Fc "woodart.backup"
```

4.1. import

导入

\i file.backup

```
postgres=# \i /home/neo/woodart.backup
```

4.2. 大型数据库

split 命令可以将大型文件切成小块以适应文件系统限制的单个文件大小。

分割,每650M为一个文件，试用于光盘备份

```
$ pg_dump dbname | split -b 650m - filename
```

合并，并且恢复到数据库中。

```
$ createdb dbname
$ cat filename* | psql dbname
```

部分 IV. Oracle

目录

第 17 章 Installing Oracle Database

目录

1. Installing Oracle Database 10g Release 2 on Linux x86

reference: http://www.oracle.com/technology/pub/articles/smiley_10gdb_install.html

To make these changes, cut and paste the following commands as root:

过程 17.1. Configure linux step by step

1. Verifying Your Installation

```
rpm -q binutils compat-db control-center gcc gcc-c++ glibc glibc-common \
gnome-libs libstdc++ libstdc++-devel make pdksh sysstat xscreensaver libaio openmotif21
```

installing package

```
yum install compat-gcc-32 compat-gcc-32-c++ compat-gcc-32-g77 compat-libf2c-32 compat-
libstdc++-296 compat-libstdc++-33 compat-db compat-readline43
```

2. Verifying System Requirements

```
grep MemTotal /proc/meminfo
grep SwapTotal /proc/meminfo
```

Swap = mem * 2

3. Create the Oracle Groups and User Account

```
groupadd oinstall
groupadd dba
useradd -m -g oinstall -G dba oracle
passwd oracle
id oracle
```

4. Create Directories

```
mkdir -p /u01/app/oracle
chown -R oracle:oinstall /u01/app/oracle
chmod -R 775 /u01/app/oracle
```

5. Configuring the Linux Kernel Parameters

```
cat >> /etc/sysctl.conf <<EOF
kernel.shmall = 2097152
kernel.shmmax = 536870912
kernel.shmmni = 4096
kernel.sem = 250 32000 100 128
fs.file-max = 65536
net.ipv4.ip_local_port_range = 1024 65000
net.core.rmem_default=262144
net.core.wmem_default=262144
net.core.rmem_max=262144
net.core.wmem_max=262144
EOF
/sbin/sysctl -p
```

Run the following commands as root to verify your settings:

```
/sbin/sysctl -a | grep shm
/sbin/sysctl -a | grep sem
/sbin/sysctl -a | grep file-max
/sbin/sysctl -a | grep ip_local_port_range
/sbin/sysctl -a | grep rmem_default
/sbin/sysctl -a | grep rmem_max
/sbin/sysctl -a | grep wmem_default
/sbin/sysctl -a | grep wmem_max
```

6. Setting Shell Limits for the oracle User

```
cat >> /etc/security/limits.conf <<EOF
oracle soft nproc 2047
oracle hard nproc 16384
oracle soft nofile 1024
oracle hard nofile 65536
EOF
```

7. /etc/profile

```
cat >> /etc/profile <<EOF
if [ \$USER = "oracle" ]; then
 if [ \$SHELL = "/bin/ksh" ]; then
 ulimit -p 16384
 ulimit -n 65536
 else
 ulimit -u 16384 -n 65536
 fi
 umask 022
fi
EOF

cat >> /etc/csh.login <<EOF
if ( \$USER == "oracle" ) then
 limit maxproc 16384
 limit descriptors 65536
 umask 022
endif
EOF
```

8. .bash_profile

```
# su - oracle
$ vim .bash_profile

export ORACLE_BASE=/u01/app/oracle
export ORACLE_HOME=$ORACLE_BASE/product/10.2.0.1
export ORACLE_SID=orcl
```

```
export PATH=$PATH:$HOME/bin:$ORACLE_HOME/bin
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:/usr/lib
```

过程 17.2. Installing Oracle

1. 编辑 /10201_database_linux32/database/install/oraparam.ini 添加

```
vim 10201_database_linux32/database/install/oraparam.ini

### #[Certified Versions]

Linux=redhat-3,SuSE-9,redhat-4,centos-5,UnitedLinux-1.0,asianux-1,asianux-2

[Linux-centos-5.1-optional]
TEMP_SPACE=80
SWAP_SPACE=150
MIN_DISPLAY_COLORS=256
```

2. install

```
gunzip xxxx.cpio.gz
cpio -idmv < xxxx.cpio
export LANG=en_US
./runInstaller
```

3. dbstart

```
# su - oracle
# dbstart
```

提示打开 `/ade/vikrkuma_new/oracle/bin/tnslsnr` 失败

编辑 /u01/app/oracle/product/10.2.0.1/bin/dbstart

```
# Set this to bring up Oracle Net Listener
ORACLE_HOME_LISTNER=/ade/vikrkuma_new/oracle
```

应该是在78行，将其改为:

```
# Set this to bring up Oracle Net Listener
ORACLE_HOME_LISTNER=$ORACLE_HOME
```

/etc/oratable 将最后一行的最后一个字符由 “N” 改为 “Y”

```
orcl: /u01/app/oracle/product/10.2.0.1:Y
```

过程 17.3. Configuring Storage

1. Partition the Disks

```
fdisk -l /dev/sdb
```

2. Filesystems

ZFS or btrfs

3. Create the Mount Point

```
mkdir /u02
```

Add the New Filesystem to /etc/fstab

```
/dev/sdb1 /u02 xfs defaults 1 1
```

Mount the New Filesystem

```
mount /u02
df -h /u02
```

4. Create Oracle Directories and Set Permissions

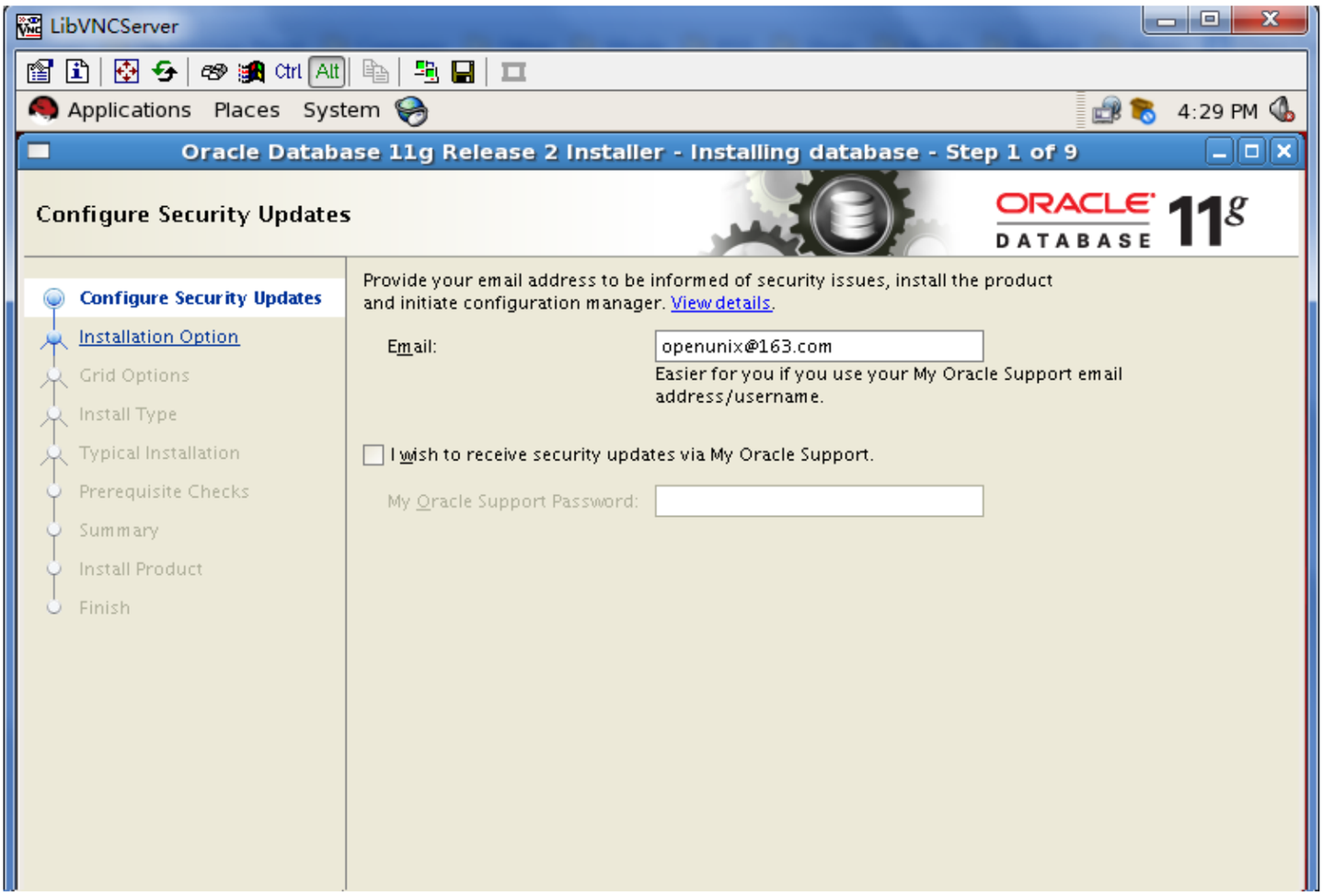
```
mkdir -p /u02/oradata/demo1
chown -R oracle:oinstall /u02/oradata
chmod -R 775 /u02/oradata
```

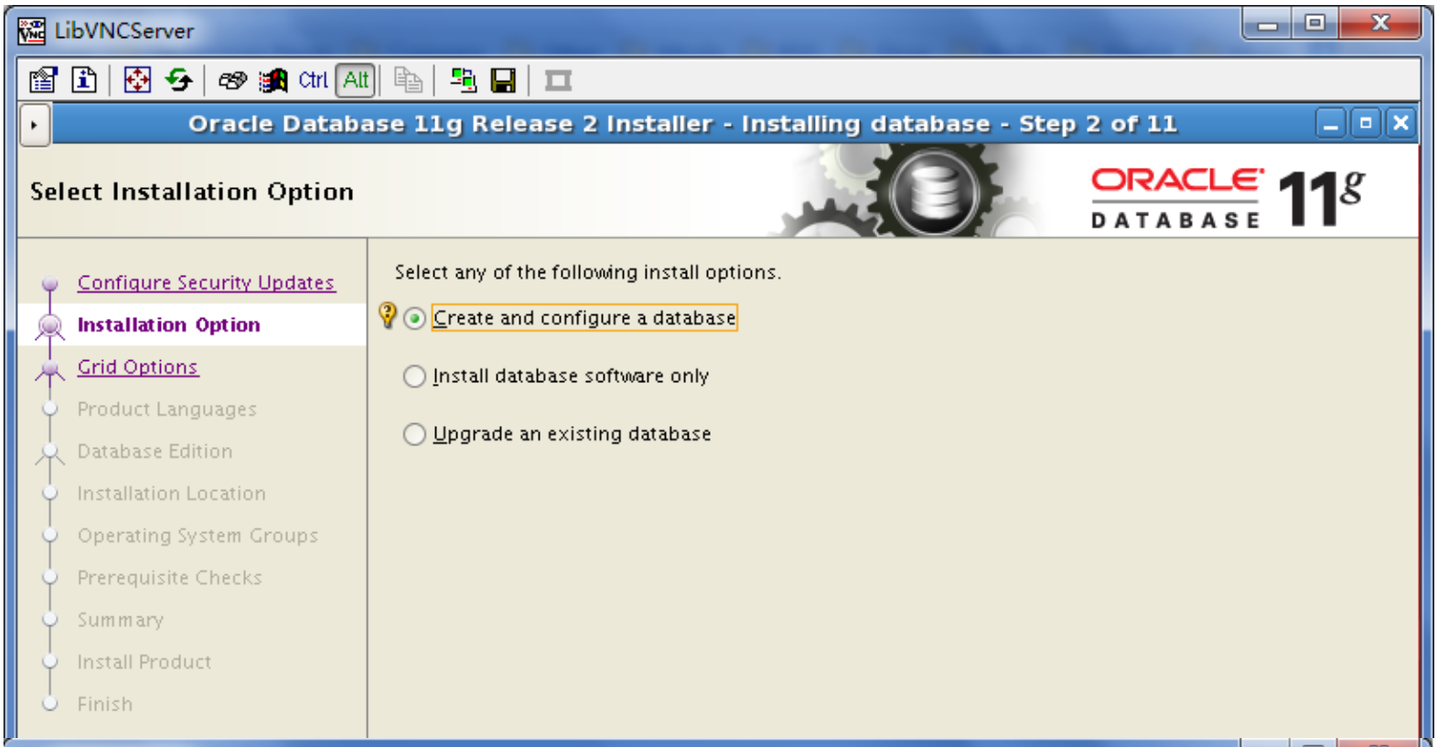
5. Create a New Tablespace in the New Filesystem

```
Ex:
$ sqlplus

SQL*Plus: Release 10.2.0.1.0 - Production on Sun Nov 27 15:50:50 2005

Copyright (c) 1982, 2005, Oracle.  All rights reserved.

Enter user-name: system
Enter password:

Connected to:
Oracle Database 10g Enterprise Edition Release 10.2.0.1.0 - Production
With the Partitioning, OLAP and Data Mining options

SQL> create tablespace data1
  2  datafile '/u02/oradata/demo1/data1_01.dbf' size 100m
  3  extent management local
  4  segment space management auto;

Tablespace created.

Now you can use the new tablespace to store database objects such as tables and indexes.

Ex:
SQL> create table demotab (id number(5) not null primary key,
 2 name varchar2(50) not null,
 3 amount number(9,2))
 4 tablespace data1;

Table created.
```

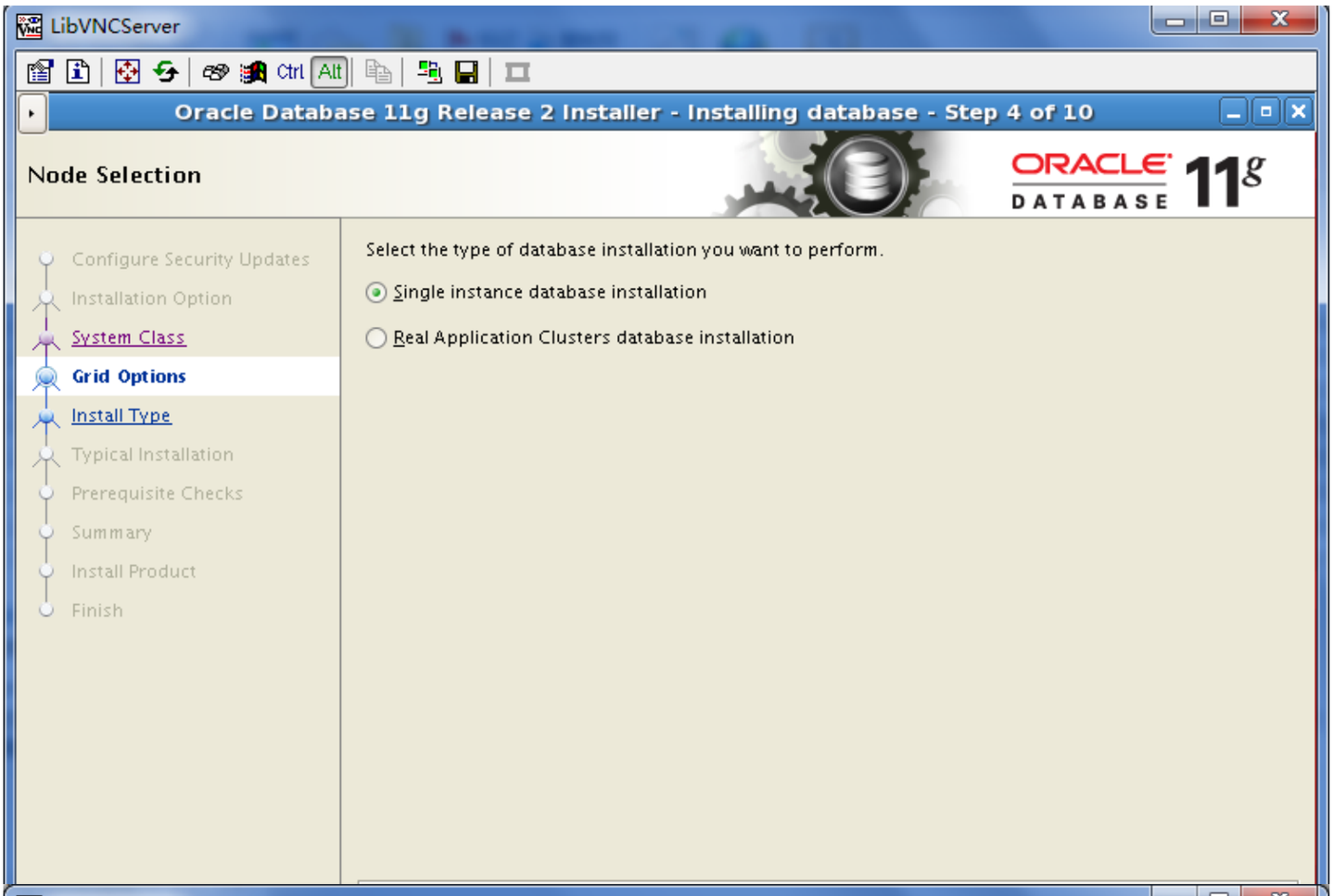
2. 11gR2

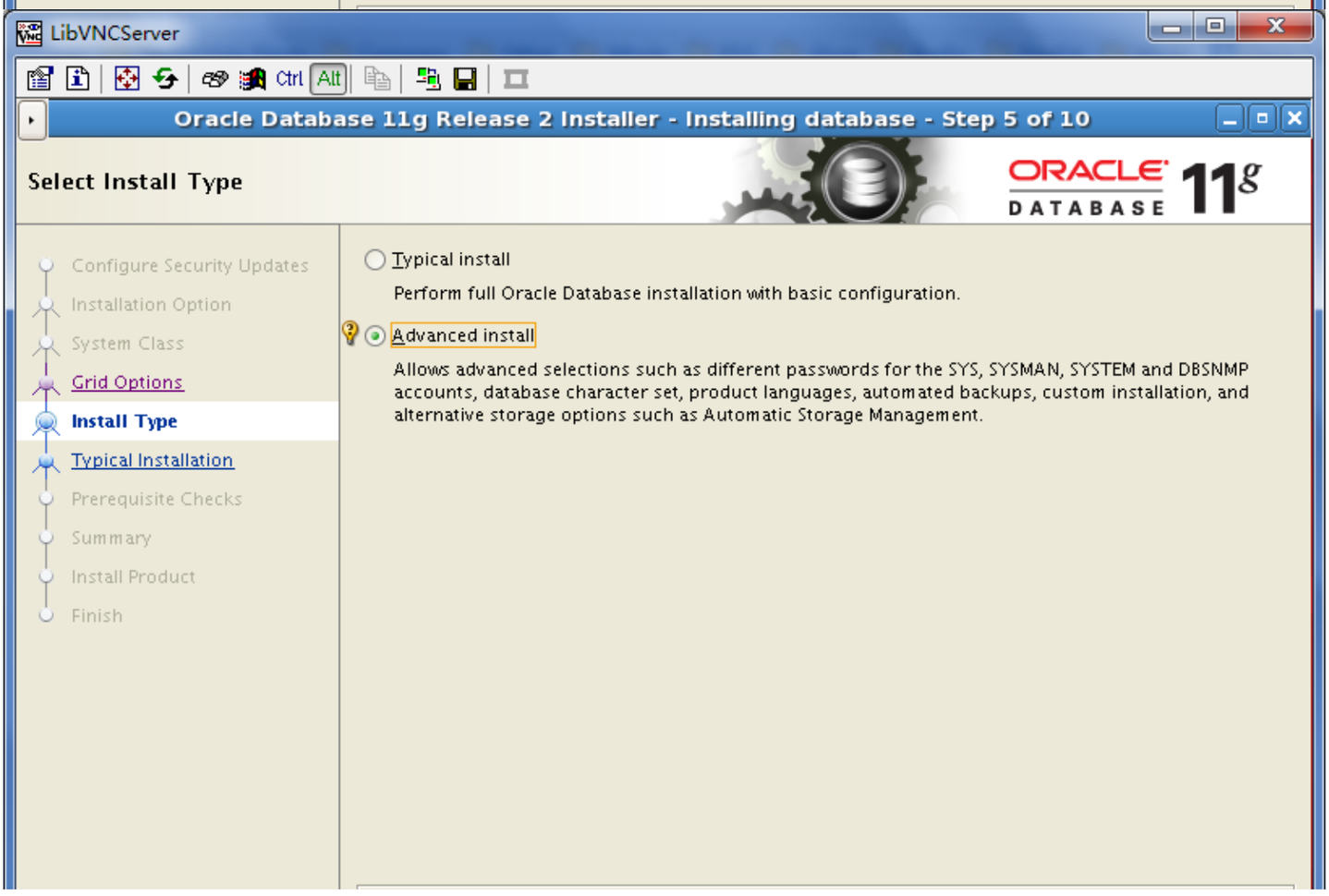
```
unzip linux.x64_11gR2_database_1of2.zip
unzip linux.x64_11gR2_database_2of2.zip

[oracle@wcs ~]$ vi .bash_profile
export TMP=/tmp
export TMPDIR=$TMP
export ORACLE_BASE=/opt/oracle/
export ORACLE_HOME=$ORACLE_BASE/product/11.2.0/dbhome_1
export ORACLE_SID=orcl
export ORACLE_TERM=xterm
export ORACLE_HOME_LISTNER=$ORACLE_HOME
export PATH=$ORACLE_HOME/bin:$PATH
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:/lib64:/usr/lib64:/usr/local/lib64:/usr/X11R6/lib64/
export CLASSPATH=$ORACLE_HOME/JRE:$ORACLE_HOME/jlib:$ORACLE_HOME/rdbms/jlib
export LD_ASSUME_KERNEL=2.6.18
export NLS_LANG="AMERICAN_AMERICA.ZHS16GBK"



cat >> /etc/sysctl.conf <<EOF
fs.aio-max-nr = 3145728
fs.file-max = 6815744
kernel.shmall = 1073741824
kernel.shmmax = 4398046511104
kernel.shmmni = 4096
kernel.sem = 250 32000 100 142
net.ipv4.ip_local_port_range = 9000 65500
net.core.rmem_default = 262144
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 1048576
EOF
/sbin/sysctl -p
```

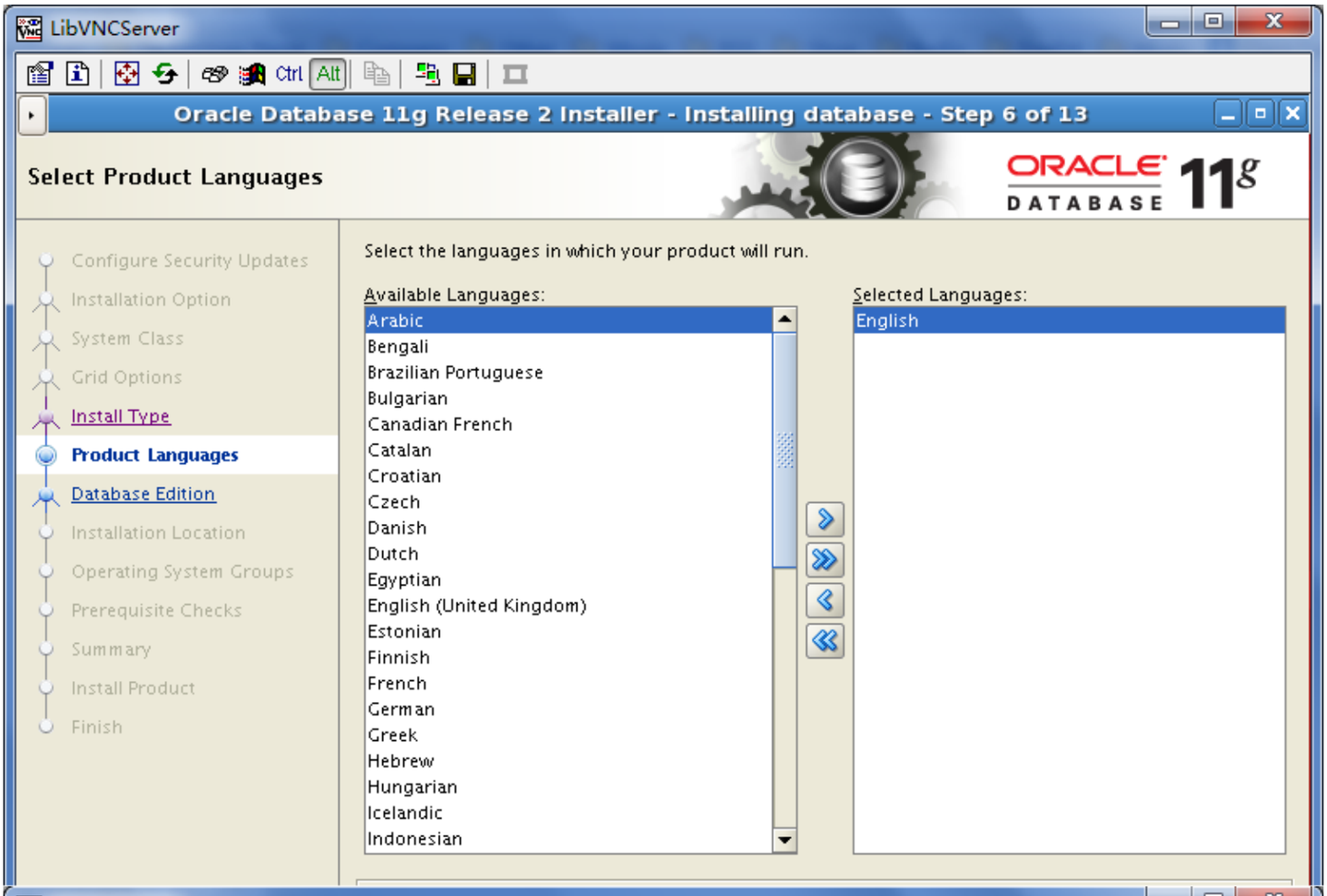


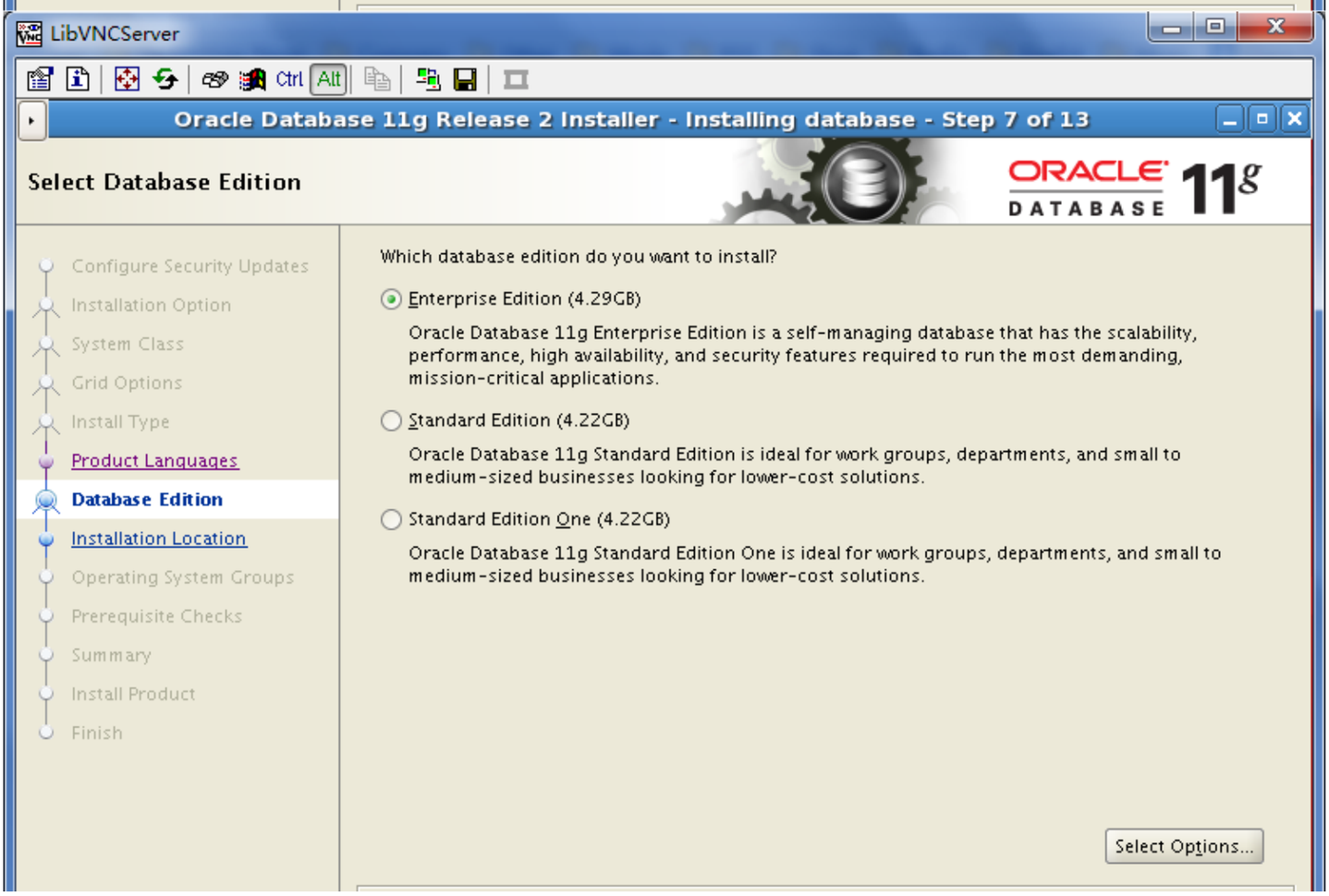

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 2 of 11
Select Installation Option
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
Grid Options
Product Languages
Database Edition
Installation Location
Operating System Groups
Prerequisite Checks
Summary
Install Product
Finish
Select any of the following install options.
Create and configure a database
Install database software only
Upgrade an existing database

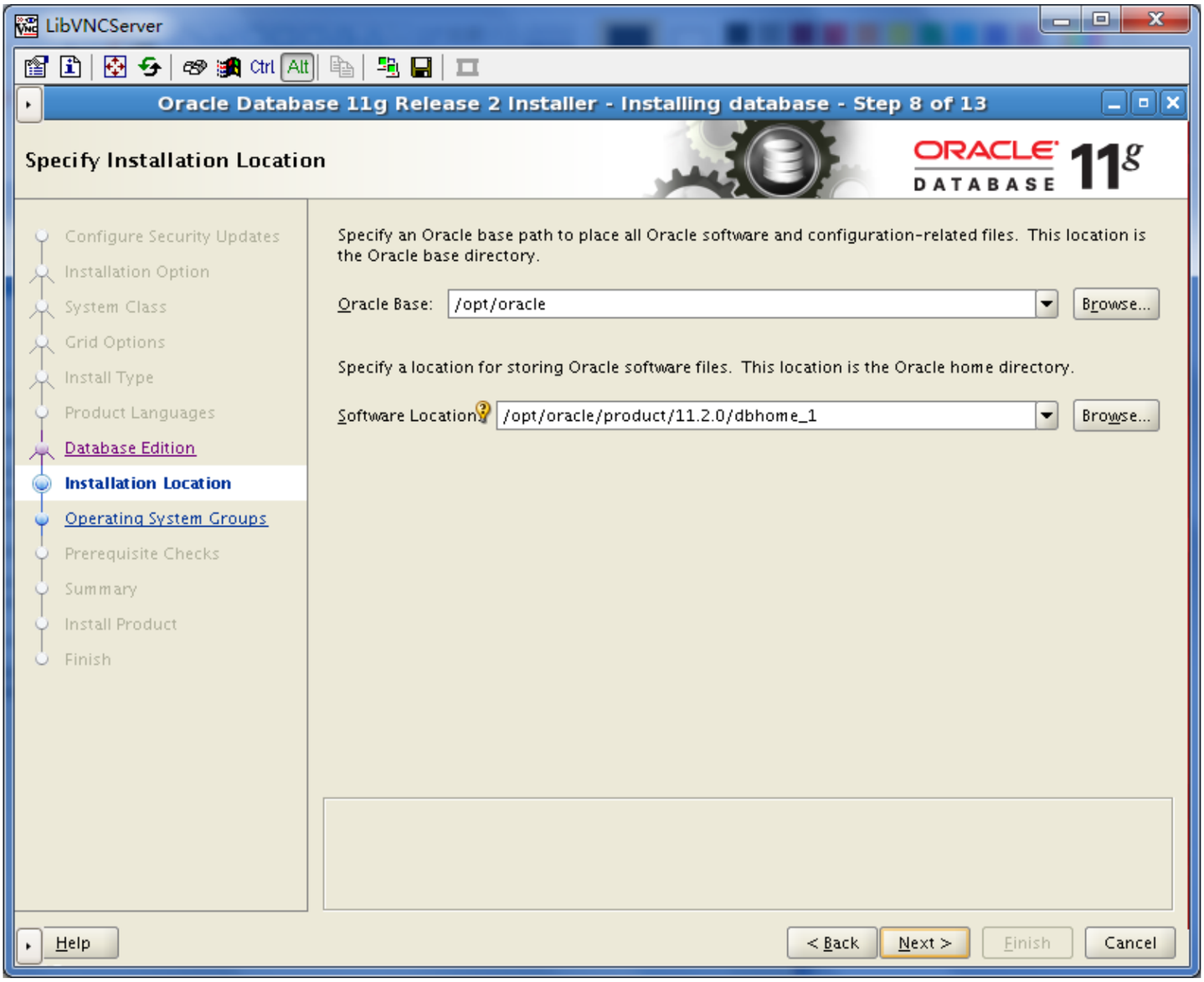

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 3 of 8
System Class
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Desktop Class
Choose this option if you are installing on a laptop or desktop class system. This option includes a starter database and allows minimal configuration.
Server Class
Choose this option if you are installing on a server class system, such as what you would use when deploying Oracle in a production data center. This option allows for more advanced configuration options.

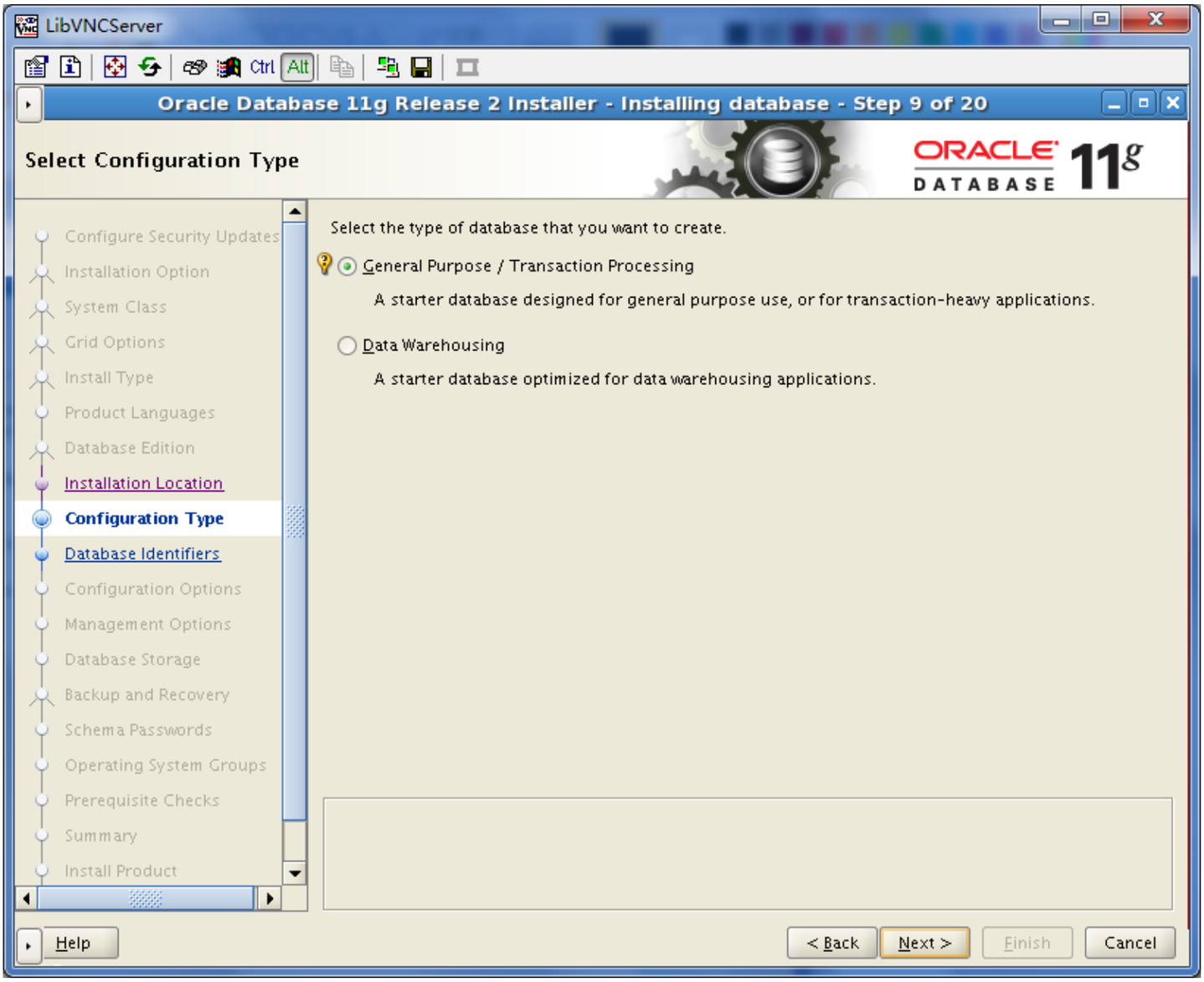

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 4 of 10
Node Selection
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Select the type of database installation you want to perform.
Single instance database installation
Real Application Clusters database installation

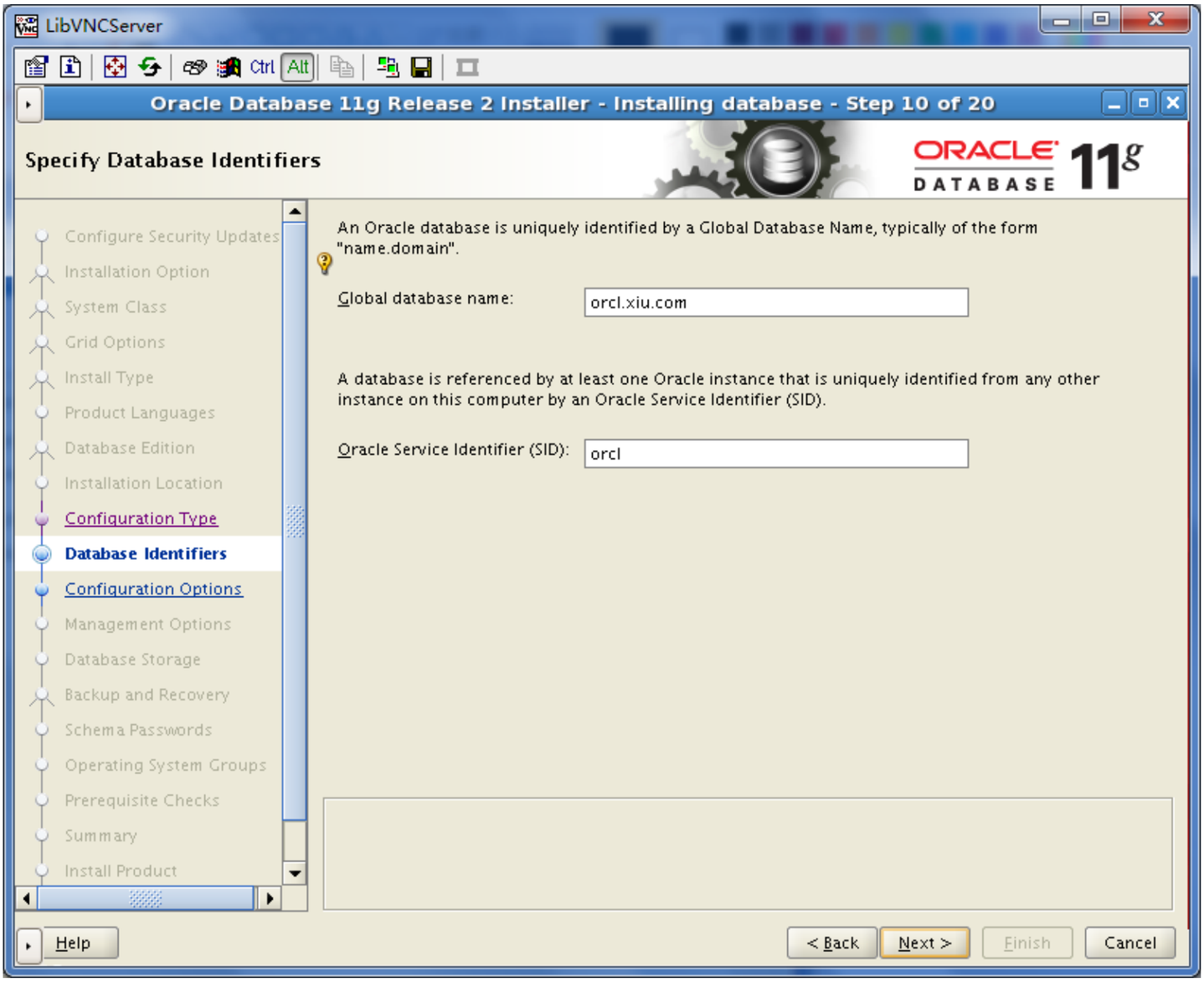

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 5 of 10
Select Install Type
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Typical install
Perform full Oracle Database installation with basic configuration.
Advanced install
Allows advanced selections such as different passwords for the SYS, SYSMAN, SYSTEM and DBSNMP accounts, database character set, product languages, automated backups, custom installation, and alternative storage options such as Automatic Storage Management.

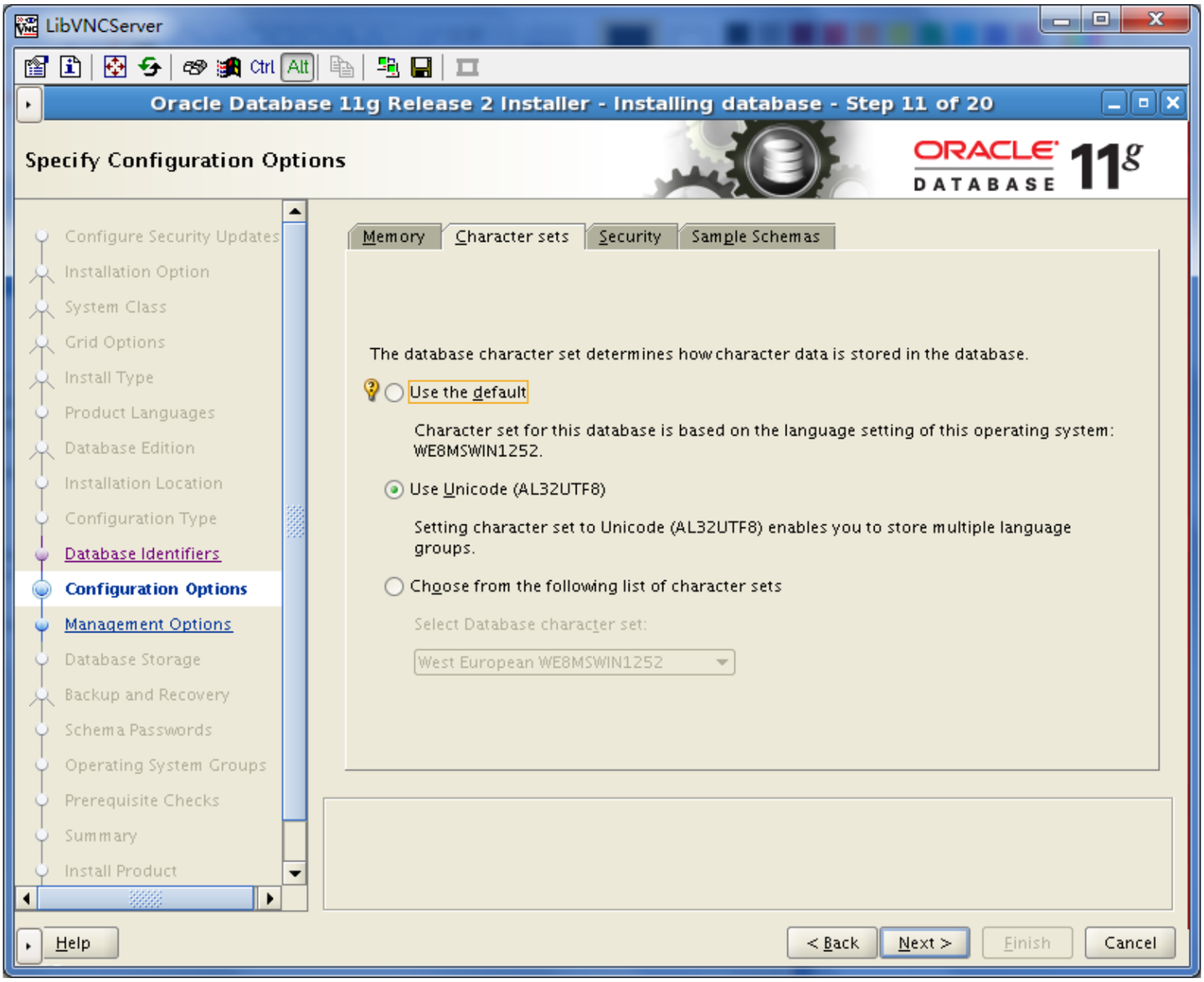

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 6 of 13
Select Product Languages
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Product Languages
Database Edition
Installation Location
Operating System Groups
Prerequisite Checks
Summary
Install Product
Finish
Select the languages in which your product will run.
Available Languages:
Arabic
Bengali
Brazilian Portuguese
Bulgarian
Canadian French
Catalan
Croatian
Czech
Danish
Dutch
Egyptian
English (United Kingdom)
Estonian
Finnish
French
German
Greek
Hebrew
Hungarian
Icelandic
Indonesian
Selected Languages:
English

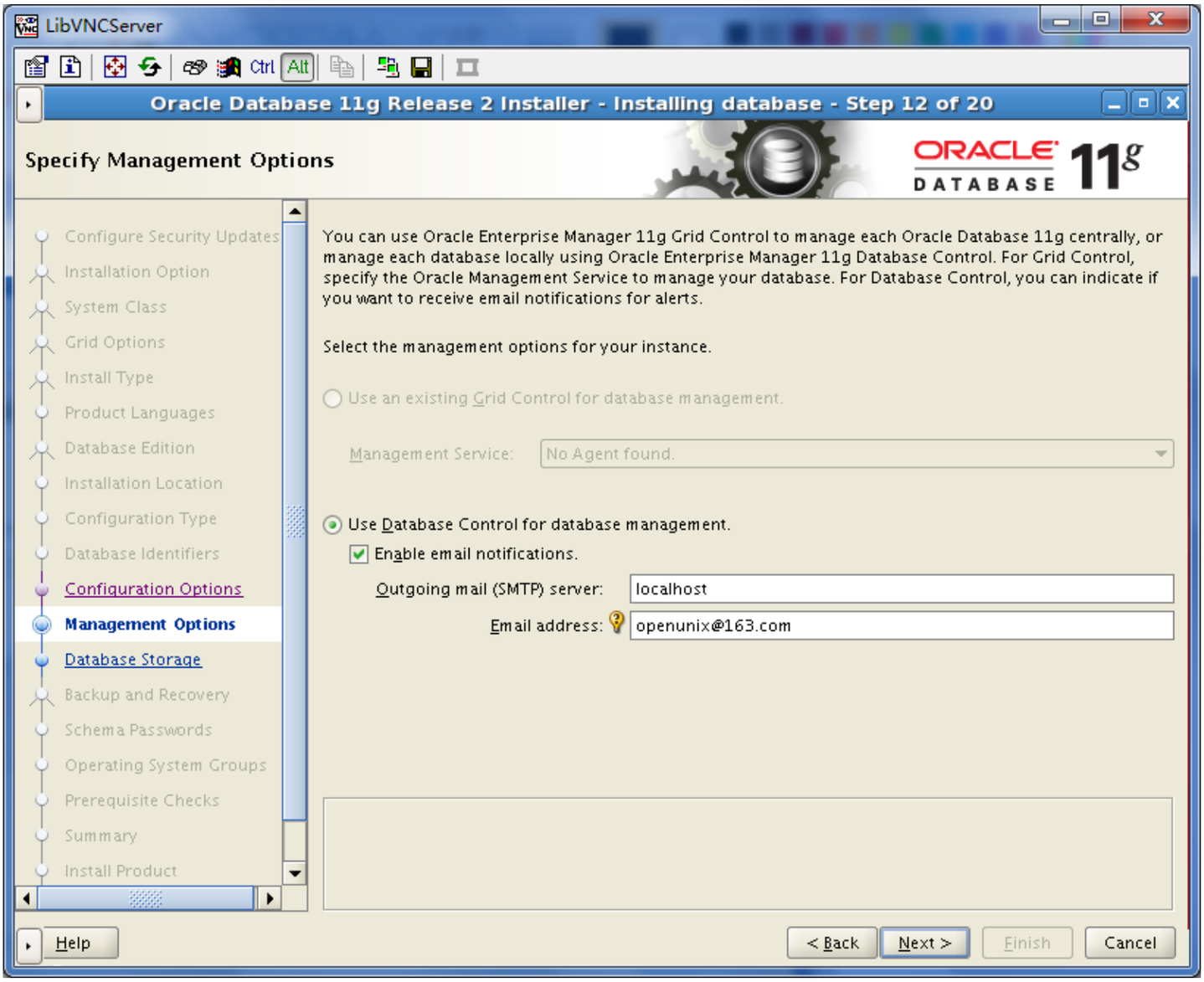

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 7 of 13
Select Database Edition
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Product Languages
Database Edition
Installation Location
Operating System Groups
Prerequisite Checks
Summary
Install Product
Finish
Which database edition do you want to install?
Enterprise Edition (4.29GB)
Oracle Database 11g Enterprise Edition is a self-managing database that has the scalability, performance, high availability, and security features required to run the most demanding, mission-critical applications.
Standard Edition (4.22GB)
Oracle Database 11g Standard Edition is ideal for work groups, departments, and small to medium-sized businesses looking for lower-cost solutions.
Standard Edition One (4.22GB)
Oracle Database 11g Standard Edition One is ideal for work groups, departments, and small to medium-sized businesses looking for lower-cost solutions.
Select Options...

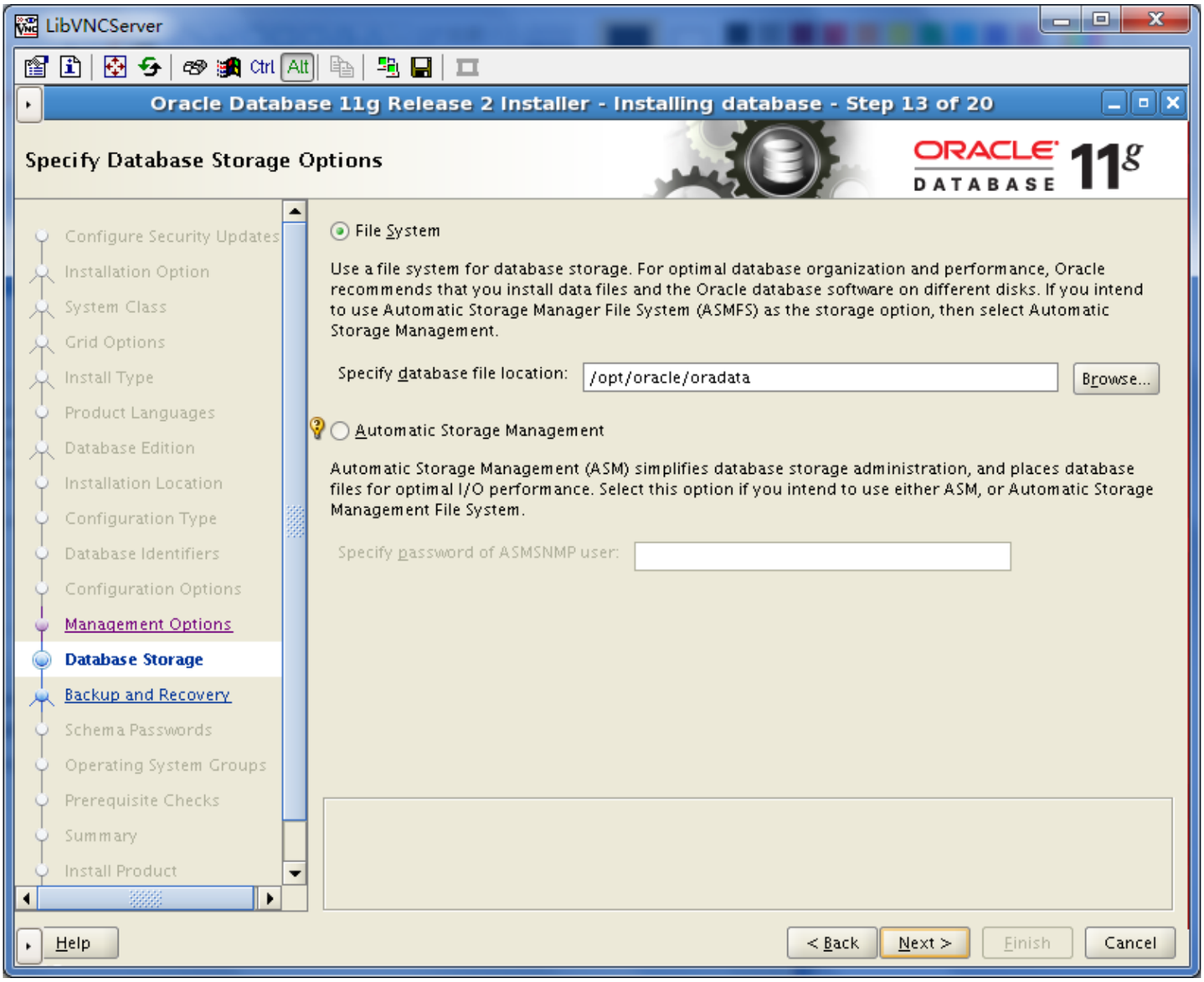

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 8 of 13
Specify Installation Location
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Product Languages
Database Edition
Installation Location
Operating System Groups
Prerequisite Checks
Summary
Install Product
Finish
Specify an Oracle base path to place all Oracle software and configuration-related files. This location is the Oracle base directory.
Oracle Base: /opt/oracle
Browse...
Specify a location for storing Oracle software files. This location is the Oracle home directory.
Software Location: /opt/oracle/product/11.2.0/dbhome_1
Browse...
Help
< Back
Next >
Finish
Cancel

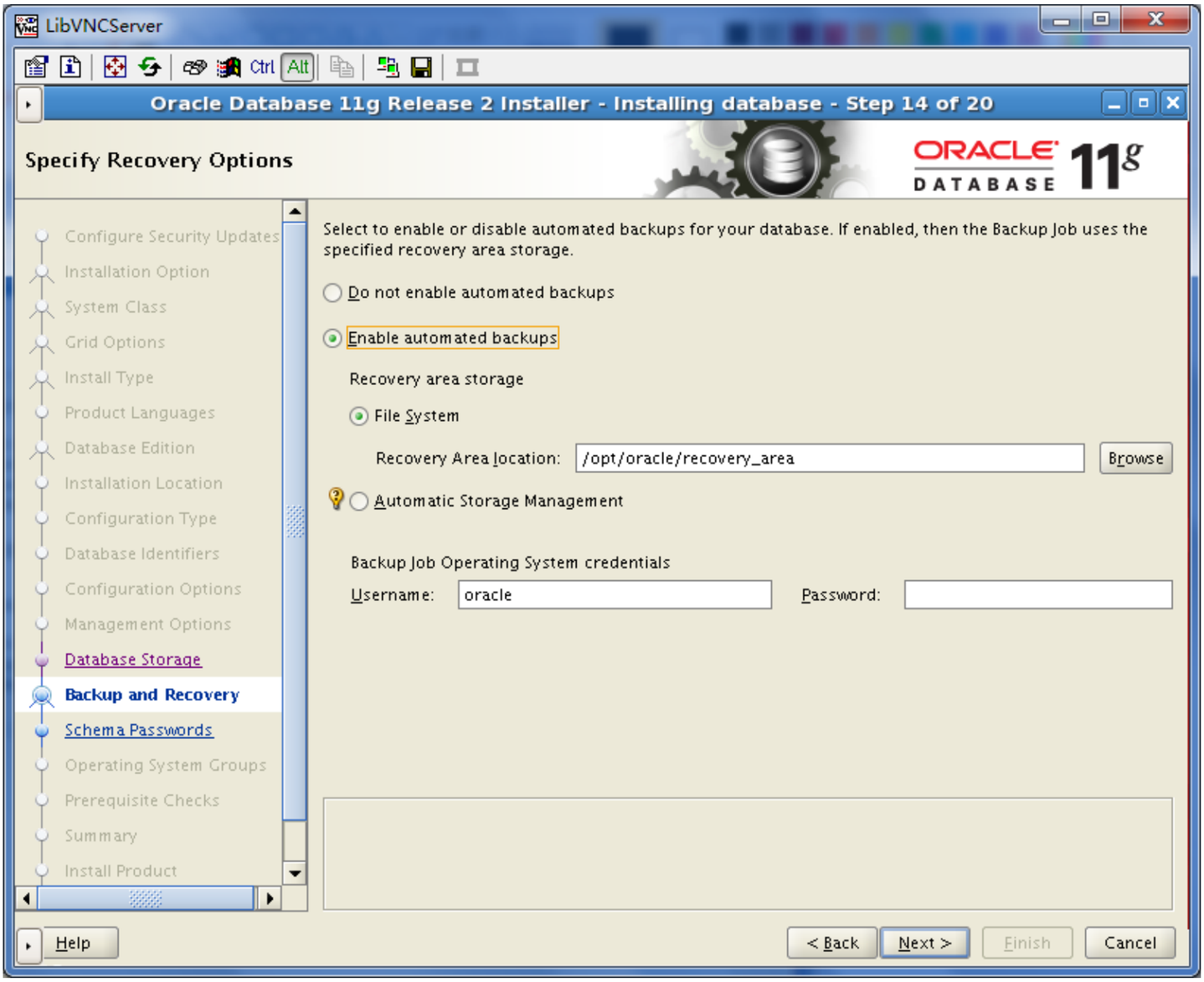

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 9 of 20
Select Configuration Type
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Product Languages
Database Edition
Installation Location
Configuration Type
Database Identifiers
Configuration Options
Management Options
Database Storage
Backup and Recovery
Schema Passwords
Operating System Groups
Prerequisite Checks
Summary
Install Product
Select the type of database that you want to create.
General Purpose / Transaction Processing
A starter database designed for general purpose use, or for transaction-heavy applications.
Data Warehousing
A starter database optimized for data warehousing applications.
Help
< Back
Next >
Finish
Cancel

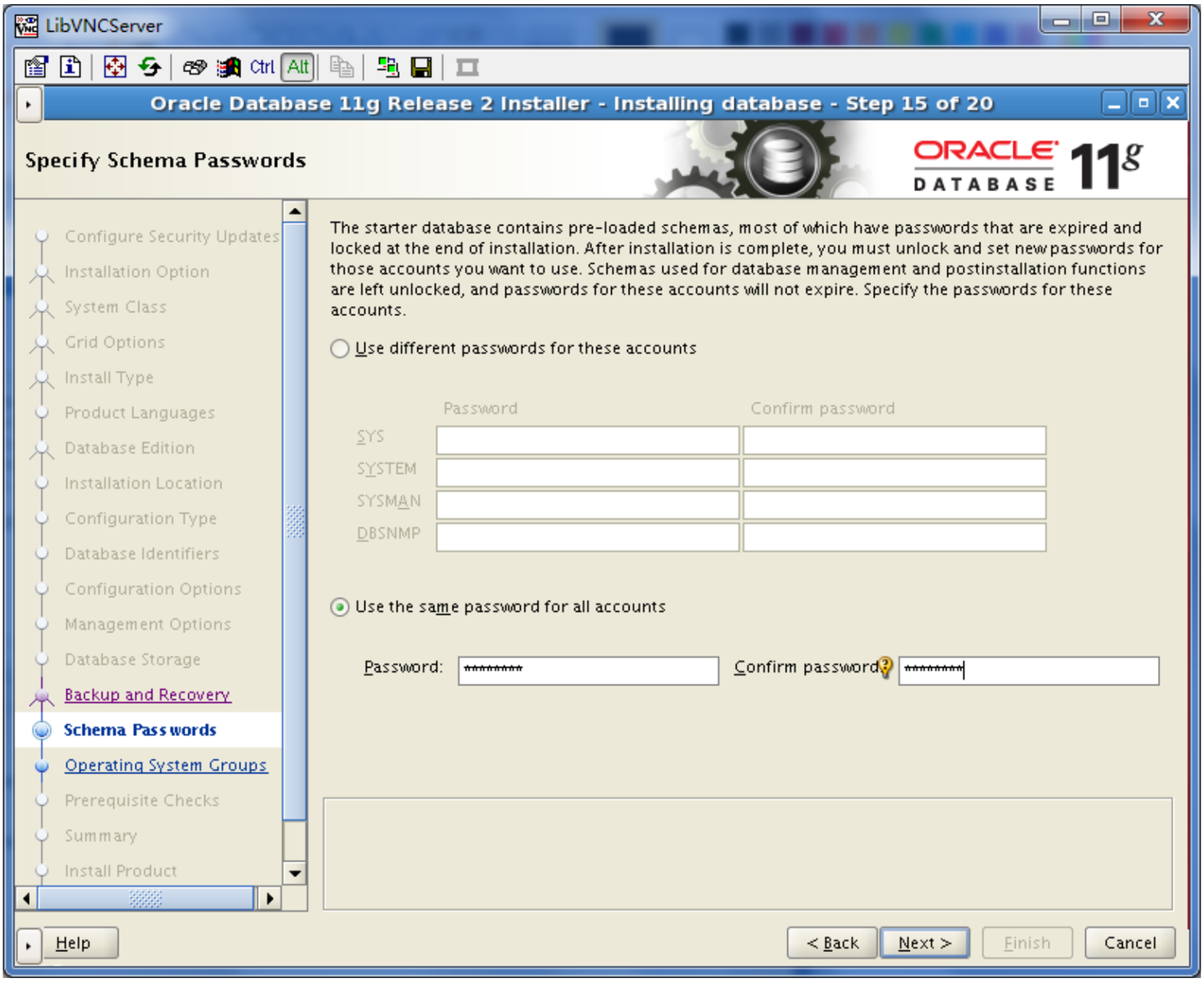

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 10 of 20
Specify Database Identifiers
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Product Languages
Database Edition
Installation Location
Configuration Type
Database Identifiers
Configuration Options
Management Options
Database Storage
Backup and Recovery
Schema Passwords
Operating System Groups
Prerequisite Checks
Summary
Install Product
An Oracle database is uniquely identified by a Global Database Name, typically of the form "name.domain".
Global database name:
orcl.xiu.com
A database is referenced by at least one Oracle instance that is uniquely identified from any other instance on this computer by an Oracle Service Identifier (SID).
Oracle Service Identifier (SID):
orcl
Help
< Back
Next >
Finish
Cancel

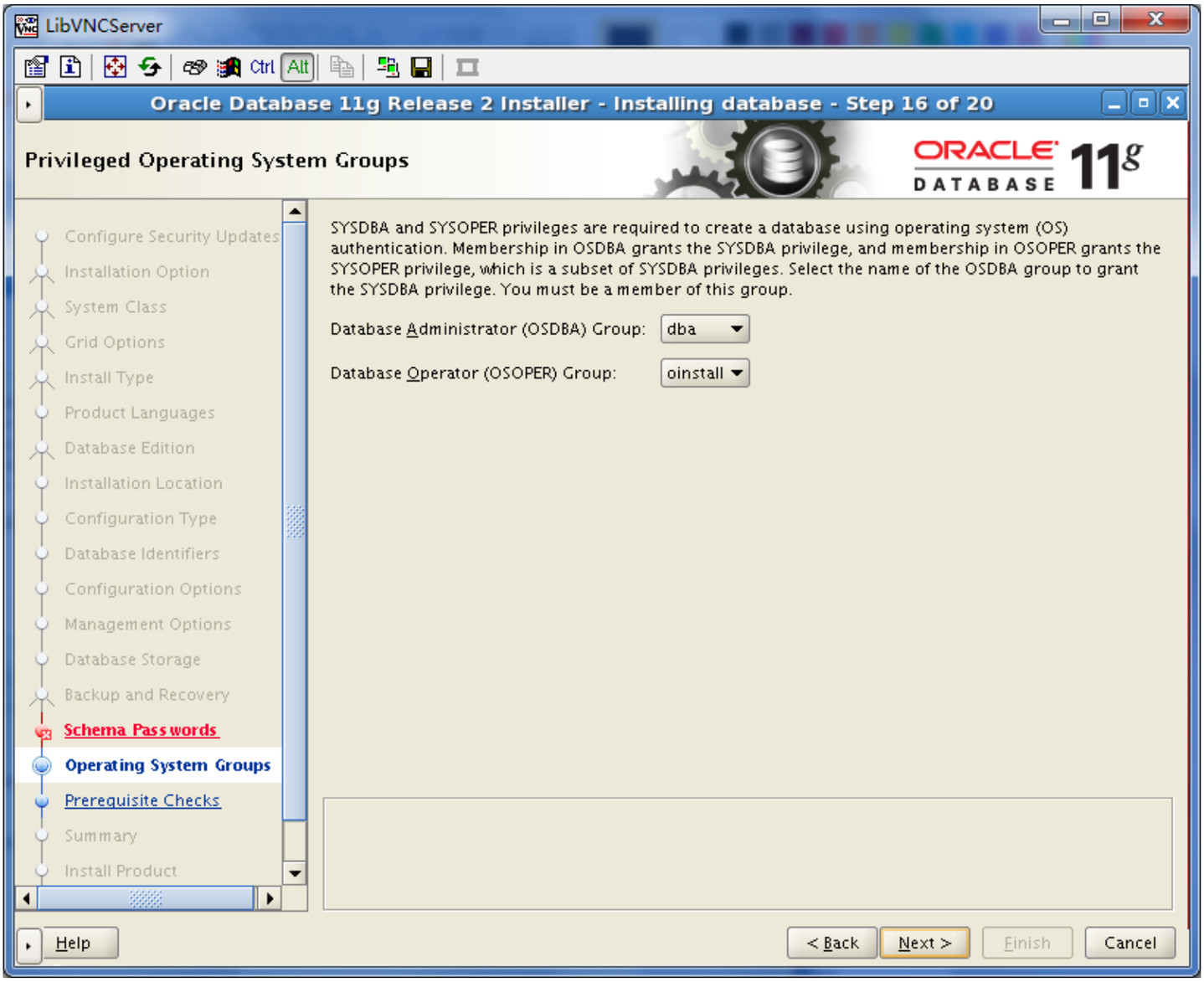

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 11 of 20
Specify Configuration Options
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Product Languages
Database Edition
Installation Location
Configuration Type
Database Identifiers
Configuration Options
Management Options
Database Storage
Backup and Recovery
Schema Passwords
Operating System Groups
Prerequisite Checks
Summary
Install Product
Memory
Character sets
Security
Sample Schemas
The database character set determines how character data is stored in the database.
Use the default
Character set for this database is based on the language setting of this operating system: WE8MSWIN1252.
Use Unicode (AL32UTF8)
Setting character set to Unicode (AL32UTF8) enables you to store multiple language groups.
Choose from the following list of character sets
Select Database character set:
West European WE8MSWIN1252
Help
< Back
Next >
Finish
Cancel

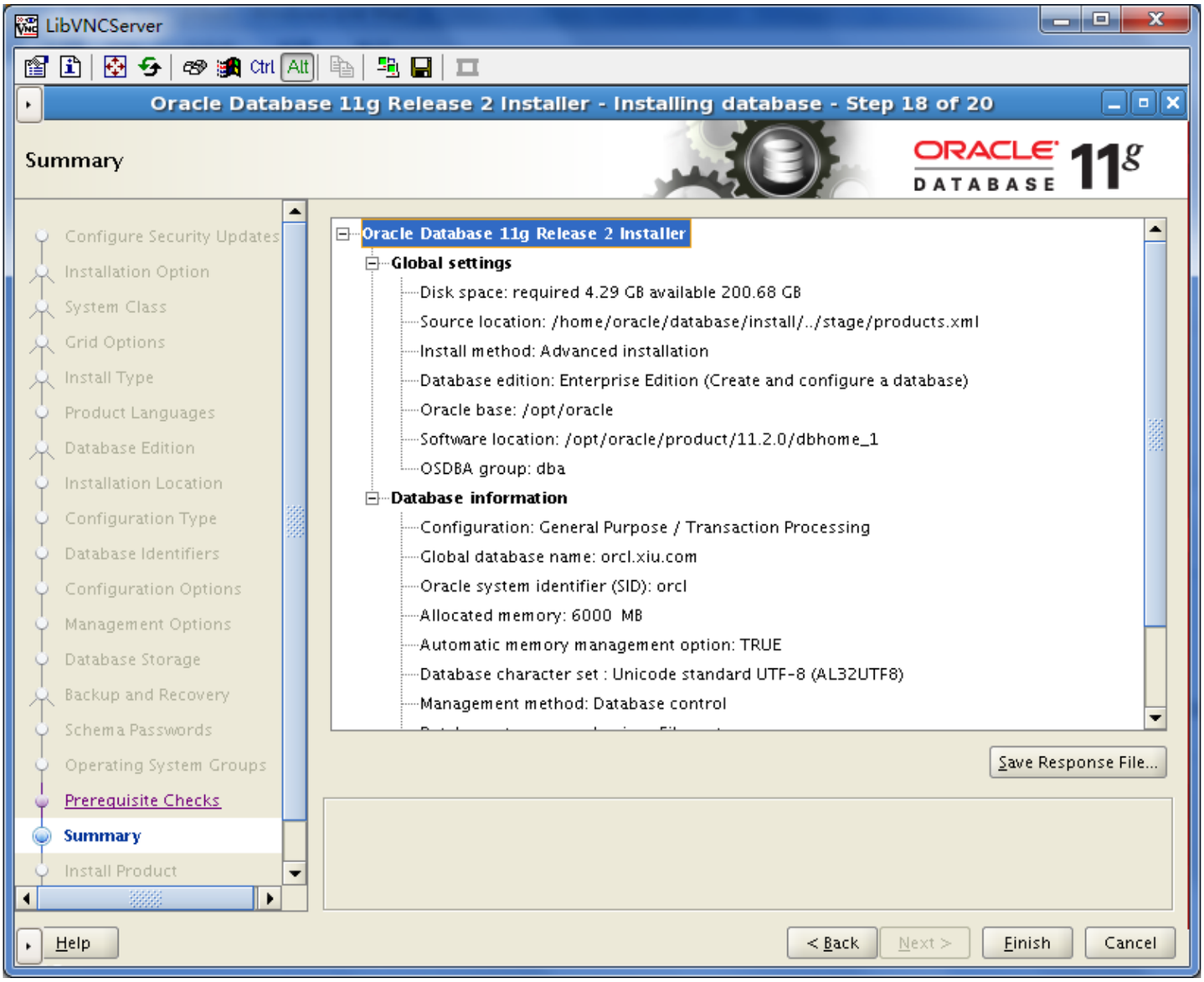

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 12 of 20
Specify Management Options
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Product Languages
Database Edition
Installation Location
Configuration Type
Database Identifiers
Configuration Options
Management Options
Database Storage
Backup and Recovery
Schema Passwords
Operating System Groups
Prerequisite Checks
Summary
Install Product
You can use Oracle Enterprise Manager 11g Grid Control to manage each Oracle Database 11g centrally, or manage each database locally using Oracle Enterprise Manager 11g Database Control. For Grid Control, specify the Oracle Management Service to manage your database. For Database Control, you can indicate if you want to receive email notifications for alerts.
Select the management options for your instance.
Use an existing Grid Control for database management.
Management Service:
No Agent found.
Use Database Control for database management.
Enable email notifications.
Outgoing mail (SMTP) server:
localhost
Email address:
openunix@163.com
Help
< Back
Next >
Finish
Cancel

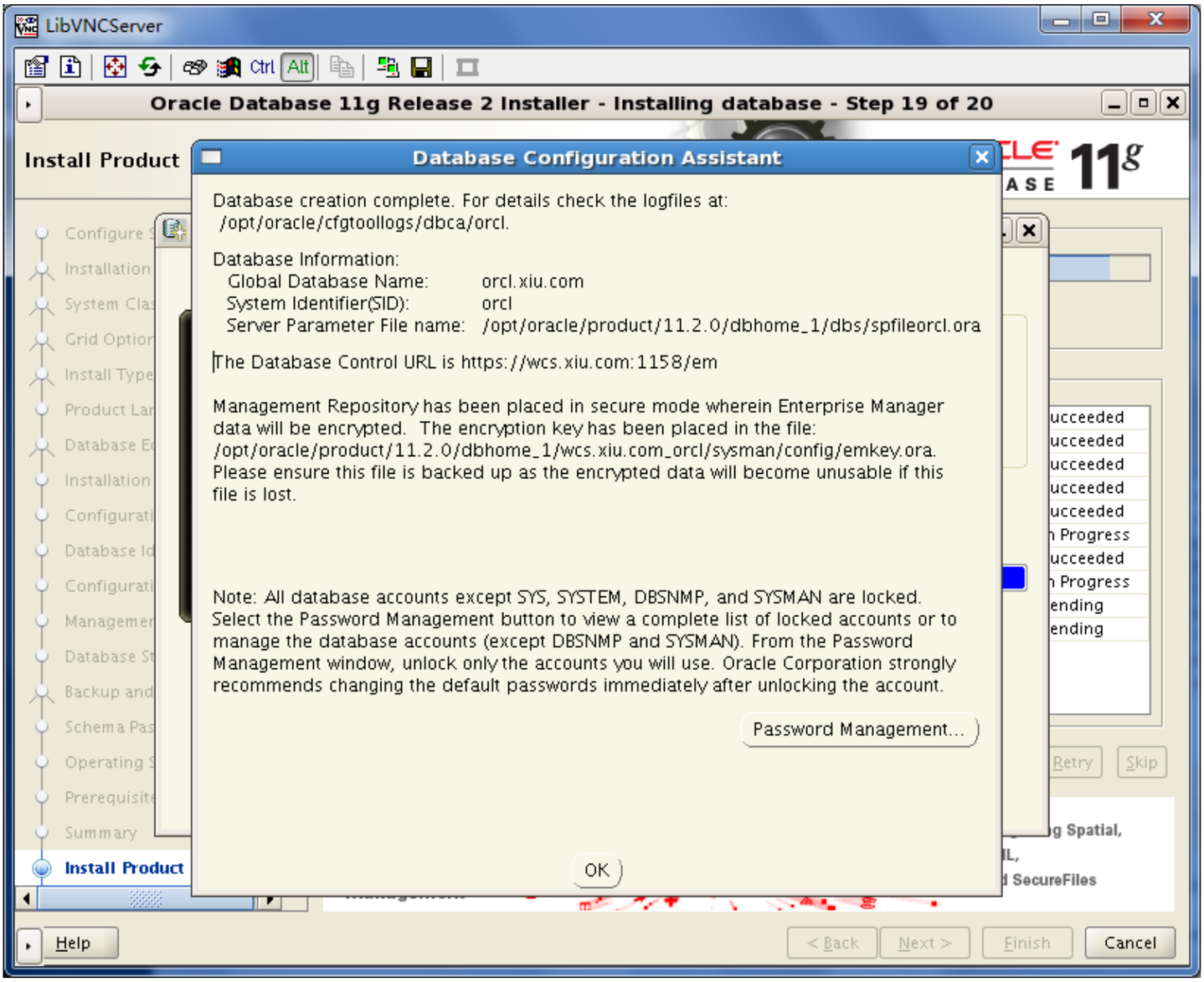

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 13 of 20
Specify Database Storage Options
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Product Languages
Database Edition
Installation Location
Configuration Type
Database Identifiers
Configuration Options
Management Options
Database Storage
Backup and Recovery
Schema Passwords
Operating System Groups
Prerequisite Checks
Summary
Install Product
File System
Use a file system for database storage. For optimal database organization and performance, Oracle recommends that you install data files and the Oracle database software on different disks. If you intend to use Automatic Storage Manager File System (ASMFS) as the storage option, then select Automatic Storage Management.
Specify database file location:
/opt/oracle/oradata
Browse...
Automatic Storage Management
Automatic Storage Management (ASM) simplifies database storage administration, and places database files for optimal I/O performance. Select this option if you intend to use either ASM, or Automatic Storage Management File System.
Specify password of ASMSNMP user:
Help
< Back
Next >
Finish
Cancel

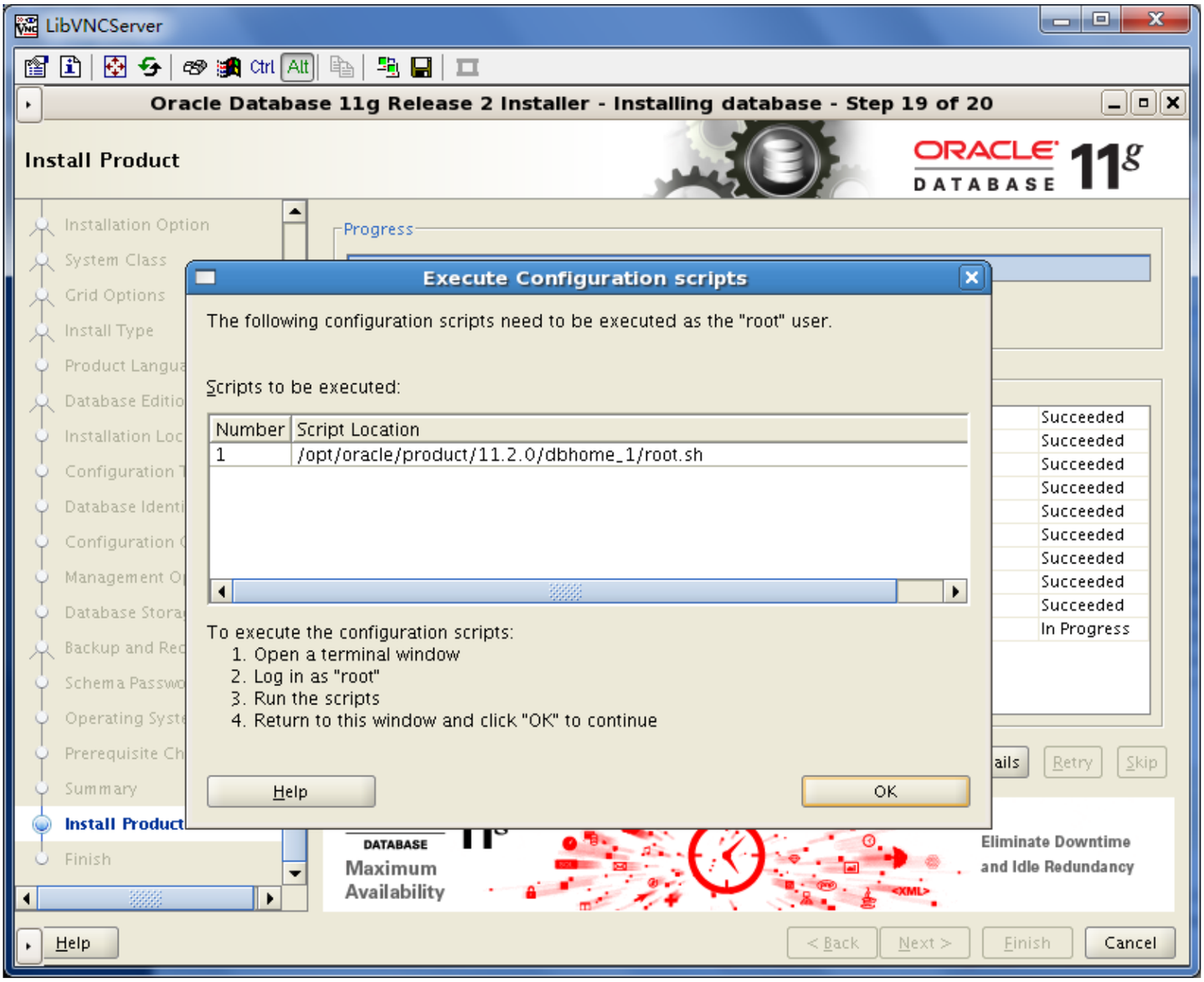

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 14 of 20
Specify Recovery Options
ORACLE 11g DATABASE
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Product Languages
Database Edition
Installation Location
Configuration Type
Database Identifiers
Configuration Options
Management Options
Database Storage
Backup and Recovery
Schema Passwords
Operating System Groups
Prerequisite Checks
Summary
Install Product
Select to enable or disable automated backups for your database. If enabled, then the Backup Job uses the specified recovery area storage.
Do not enable automated backups
Enable automated backups
Recovery area storage
File System
Recovery Area location:
/opt/oracle/recovery_area
Browse
Automatic Storage Management
Backup Job Operating System credentials
Username:
oracle
Password:
Help
< Back
Next >
Finish
Cancel

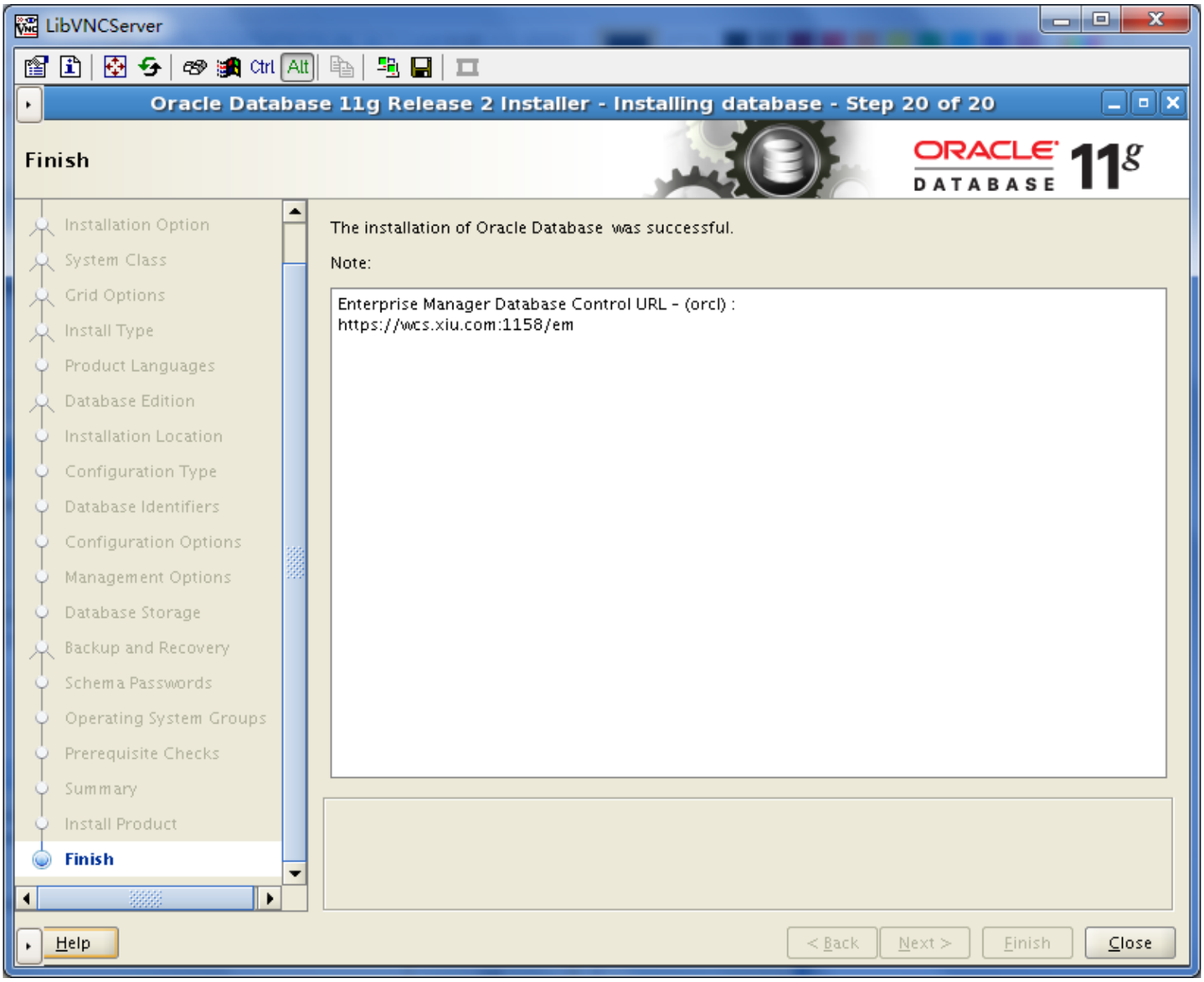

LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 15 of 20
Specify Schema Passwords
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Product Languages
Database Edition
Installation Location
Configuration Type
Database Identifiers
Configuration Options
Management Options
Database Storage
Backup and Recovery
Schema Passwords
Operating System Groups
Prerequisite Checks
Summary
Install Product
The starter database contains pre-loaded schemas, most of which have passwords that are expired and locked at the end of installation. After installation is complete, you must unlock and set new passwords for those accounts you want to use. Schemas used for database management and postinstallation functions are left unlocked, and passwords for these accounts will not expire. Specify the passwords for these accounts.
Use different passwords for these accounts
Password
Confirm password
SYS
SYSTEM
SYSMAN
DBSNMP
Use the same password for all accounts
Password:
Confirm password:
Help
< Back
Next >
Finish
Cancel


LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 16 of 20
Privileged Operating System Groups
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Product Languages
Database Edition
Installation Location
Configuration Type
Database Identifiers
Configuration Options
Management Options
Database Storage
Backup and Recovery
Schema Passwords
Operating System Groups
Prerequisite Checks
Summary
Install Product
SYSDBA and SYSOPER privileges are required to create a database using operating system (OS) authentication. Membership in OSDBA grants the SYSDBA privilege, and membership in OSOPER grants the SYSOPER privilege, which is a subset of SYSDBA privileges. Select the name of the OSDBA group to grant the SYSDBA privilege. You must be a member of this group.
Database Administrator (OSDBA) Group:
dba
Database Operator (OSOPER) Group:
oinstall
Help
< Back
Next >
Finish
Cancel


LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 18 of 20
Summary
ORACLE DATABASE 11g
Configure Security Updates
Installation Option
System Class
Grid Options
Install Type
Product Languages
Database Edition
Installation Location
Configuration Type
Database Identifiers
Configuration Options
Management Options
Database Storage
Backup and Recovery
Schema Passwords
Operating System Groups
Prerequisite Checks
Summary
Install Product
Oracle Database 11g Release 2 Installer
Global settings
Disk space: required 4.29 GB available 200.68 GB
Source location: /home/oracle/database/install/../stage/products.xml
Install method: Advanced installation
Database edition: Enterprise Edition (Create and configure a database)
Oracle base: /opt/oracle
Software location: /opt/oracle/product/11.2.0/dbhome_1
OSDBA group: dba
Database information
Configuration: General Purpose / Transaction Processing
Global database name: orcl.xiu.com
Oracle system identifier (SID): orcl
Allocated memory: 6000 MB
Automatic memory management option: TRUE
Database character set : Unicode standard UTF-8 (AL32UTF8)
Management method: Database control
Save Response File...
Help
< Back
Next >
Finish
Cancel


LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 19 of 20
Install Product
Database Configuration Assistant
Database creation complete. For details check the logfiles at:
/opt/oracle/cfgtoollogs/dbca/orcl.
Database Information:
Global Database Name: orcl.xiu.com
System Identifier(SID): orcl
Server Parameter File name: /opt/oracle/product/11.2.0/dbhome_1/dbs/spfileorcl.ora
The Database Control URL is https://wcs.xiu.com:1158/em
Management Repository has been placed in secure mode wherein Enterprise Manager data will be encrypted. The encryption key has been placed in the file: /opt/oracle/product/11.2.0/dbhome_1/wcs.xiu.com_orcl/sysman/config/emkey.ora. Please ensure this file is backed up as the encrypted data will become unusable if this file is lost.
Note: All database accounts except SYS, SYSTEM, DBSNMP, and SYSMAN are locked. Select the Password Management button to view a complete list of locked accounts or to manage the database accounts (except DBSNMP and SYSMAN). From the Password Management window, unlock only the accounts you will use. Oracle Corporation strongly recommends changing the default passwords immediately after unlocking the account.
Password Management...
OK
Configure S
Installation
System Clas
Grid Optior
Install Type
Product Lar
Database Ec
Installation
Configurati
Database Id
Configurati
Managemer
Database St
Backup and
Schema Pas
Operating S
Prerequisite
Summary
Install Product
Retry
Skip
Help
< Back
Next >
Finish
Cancel


LibVNCServer
Ctrl
Alt
Oracle Database 11g Release 2 Installer - Installing database - Step 19 of 20
Install Product
ORACLE DATABASE 11g
Installation Option
System Class
Grid Options
Install Type
Product Langua
Database Editio
Installation Loc
Configuration T
Database Identi
Configuration
Management Op
Database Stora
Backup and Rec
Schema Passwo
Operating Syste
Prerequisite Ch
Summary
Install Product
Finish
Progress
Succeeded
Succeeded
Succeeded
Succeeded
Succeeded
Succeeded
Succeeded
Succeeded
Succeeded
In Progress
ails
Retry
Skip
Execute Configuration scripts
The following configuration scripts need to be executed as the "root" user.
Scripts to be executed:
Number
Script Location
1
/opt/oracle/product/11.2.0/dbhome_1/root.sh
To execute the configuration scripts:
1. Open a terminal window
2. Log in as "root"
3. Run the scripts
4. Return to this window and click "OK" to continue
Help
OK
DATABASE
Maximum Availability
Eliminate Downtime and Idle Redundancy
Help
< Back
Next >
Finish
Cancel



切换到root用户运行下面脚本

```
/opt/oracle/oraInventory/orainstRoot.sh
/opt/oracle/product/11.2.0.1/client/root.sh


[root@oracle ~]# /opt/oracle/oraInventory/orainstRoot.sh
Changing permissions of /opt/oracle/oraInventory.
Adding read,write permissions for group.
Removing read,write,execute permissions for world.

Changing groupname of /opt/oracle/oraInventory to oinstall.
The execution of the script is complete.

[root@oracle ~]# /opt/oracle/product/11.2.0/dbhome_1/root.sh
Running Oracle 11g root.sh script...

The following environment variables are set as:
    ORACLE_OWNER= oracle
    ORACLE_HOME=  /opt/oracle/product/11.2.0/dbhome_1

Enter the full pathname of the local bin directory: [/usr/local/bin]:
   Copying dbhome to /usr/local/bin ...
   Copying oraenv to /usr/local/bin ...
   Copying coraenv to /usr/local/bin ...


Creating /etc/oratab file...
Entries will be added to the /etc/oratab file as needed by
Database Configuration Assistant when a database is created
Finished running generic part of root.sh script.
Now product-specific root actions will be performed.
Finished product-specific root actions.
```

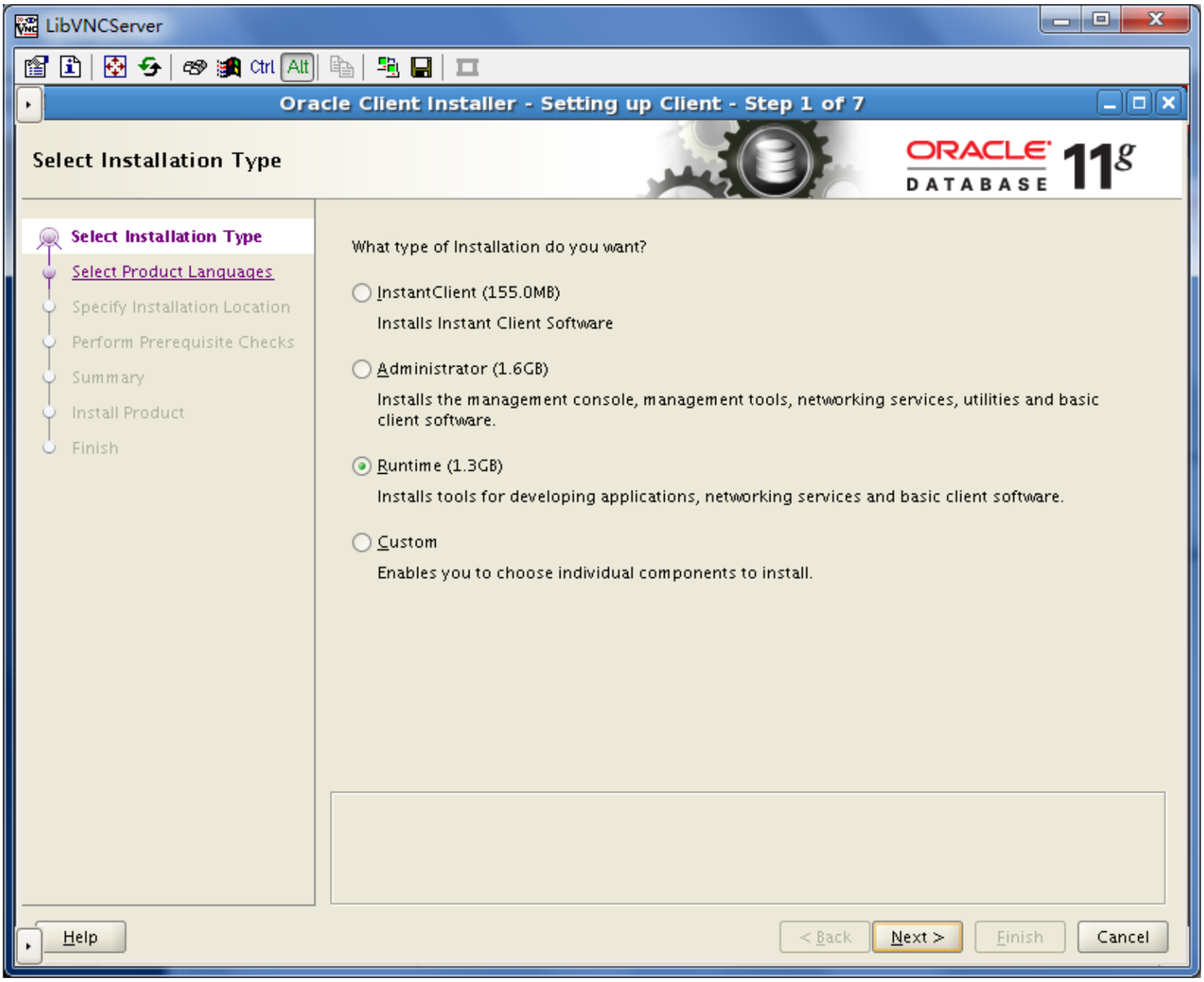
3. Installing Oracle Client

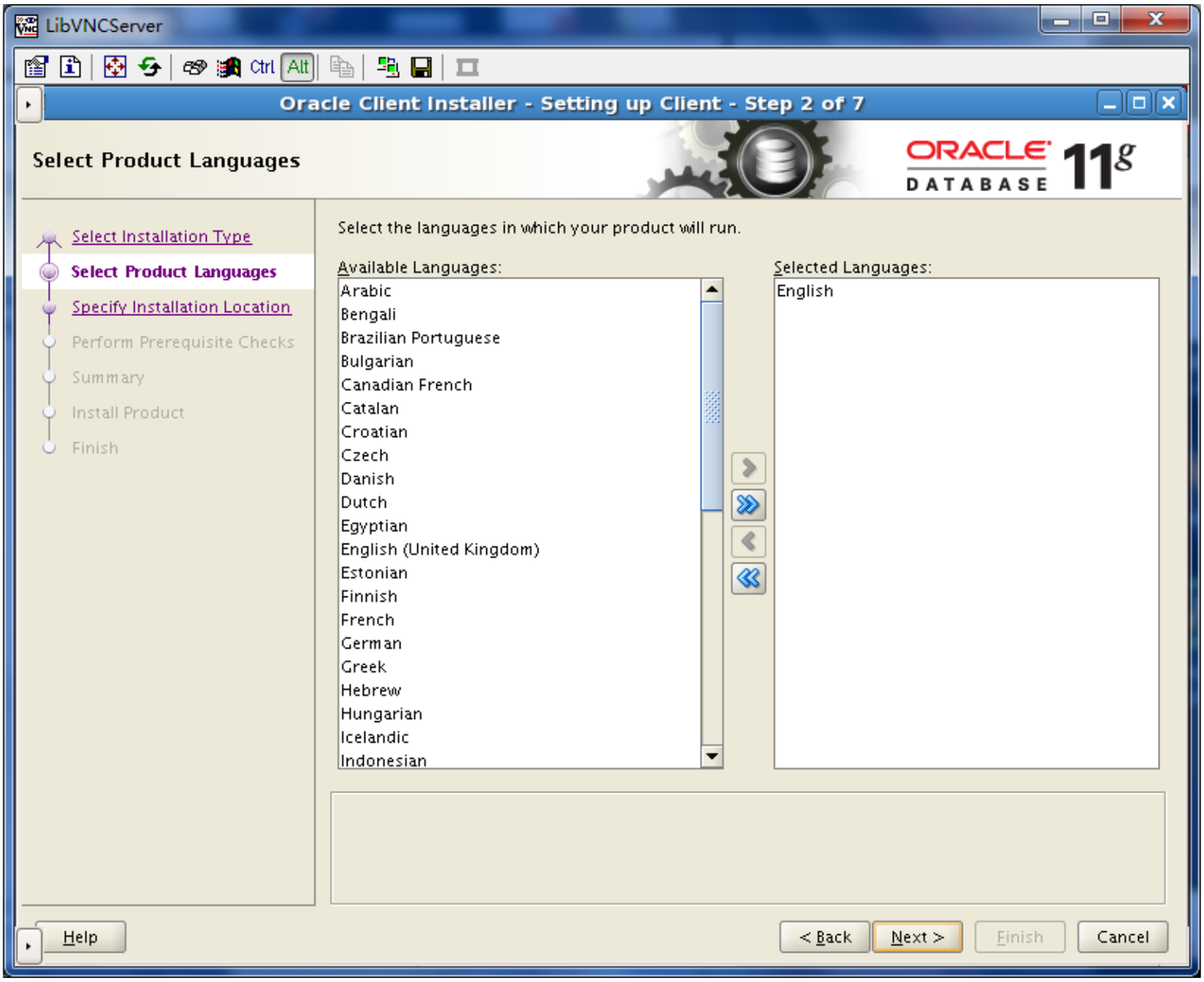
orains.sh

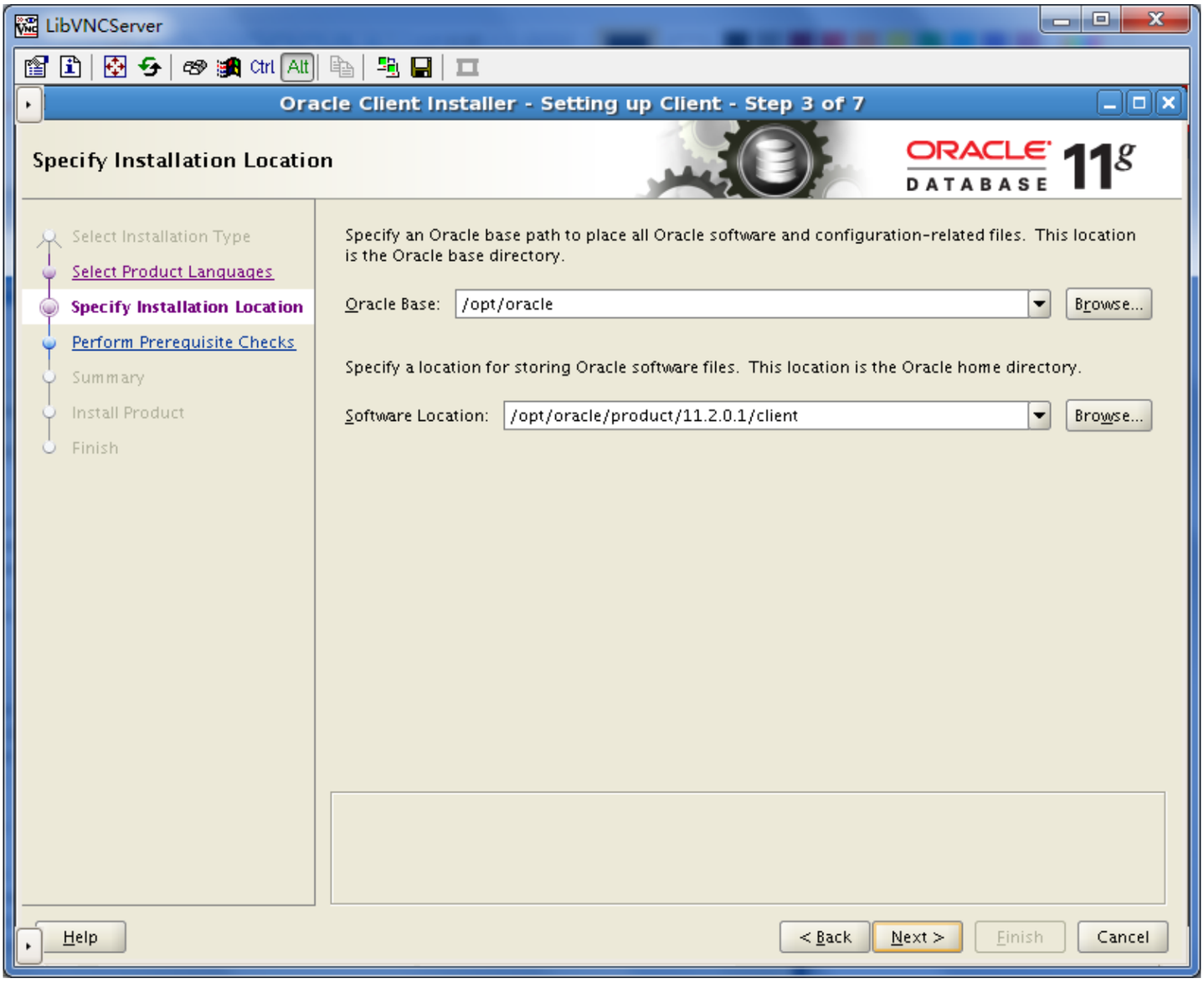
```
#!/bin/bash
groupadd oinstall
groupadd dba
useradd -m -g oinstall -G dba oracle
echo "oracle:oracle" | chpasswd
id oracle
mkdir -p /opt/oracle
chown oracle.oinstall /opt/oracle


cat >> /etc/sysctl.conf <<EOF
kernel.shmall = 2097152
kernel.shmmax = 536870912
kernel.shmmni = 4096
kernel.sem = 250 32000 100 128
fs.file-max = 65536
net.ipv4.ip_local_port_range = 32768 61000
net.core.rmem_default=262144
net.core.wmem_default=262144
net.core.rmem_max=4194304
net.core.wmem_max=262144
EOF
/sbin/sysctl -p
```

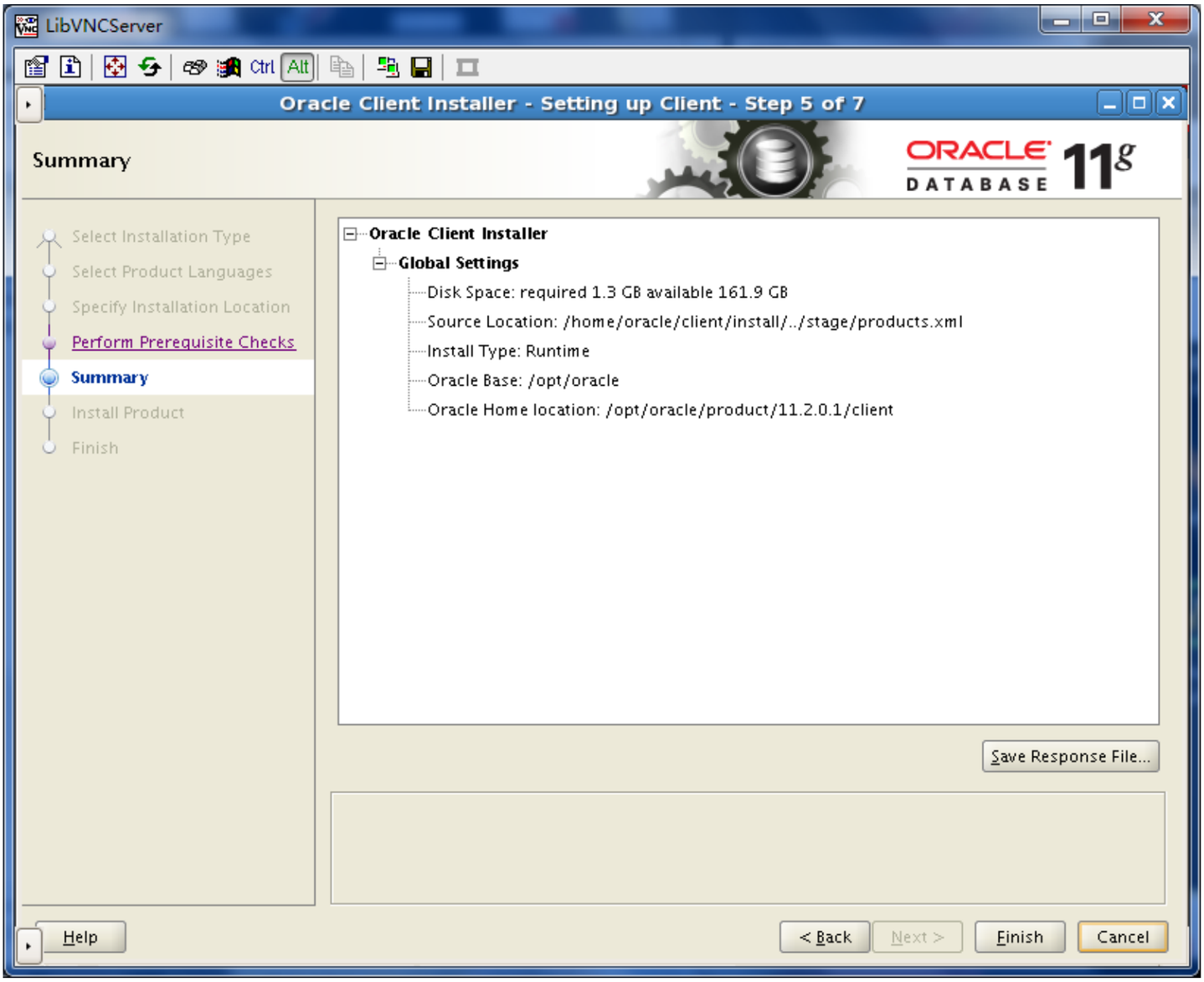
Run the following commands as root to verify your settings:

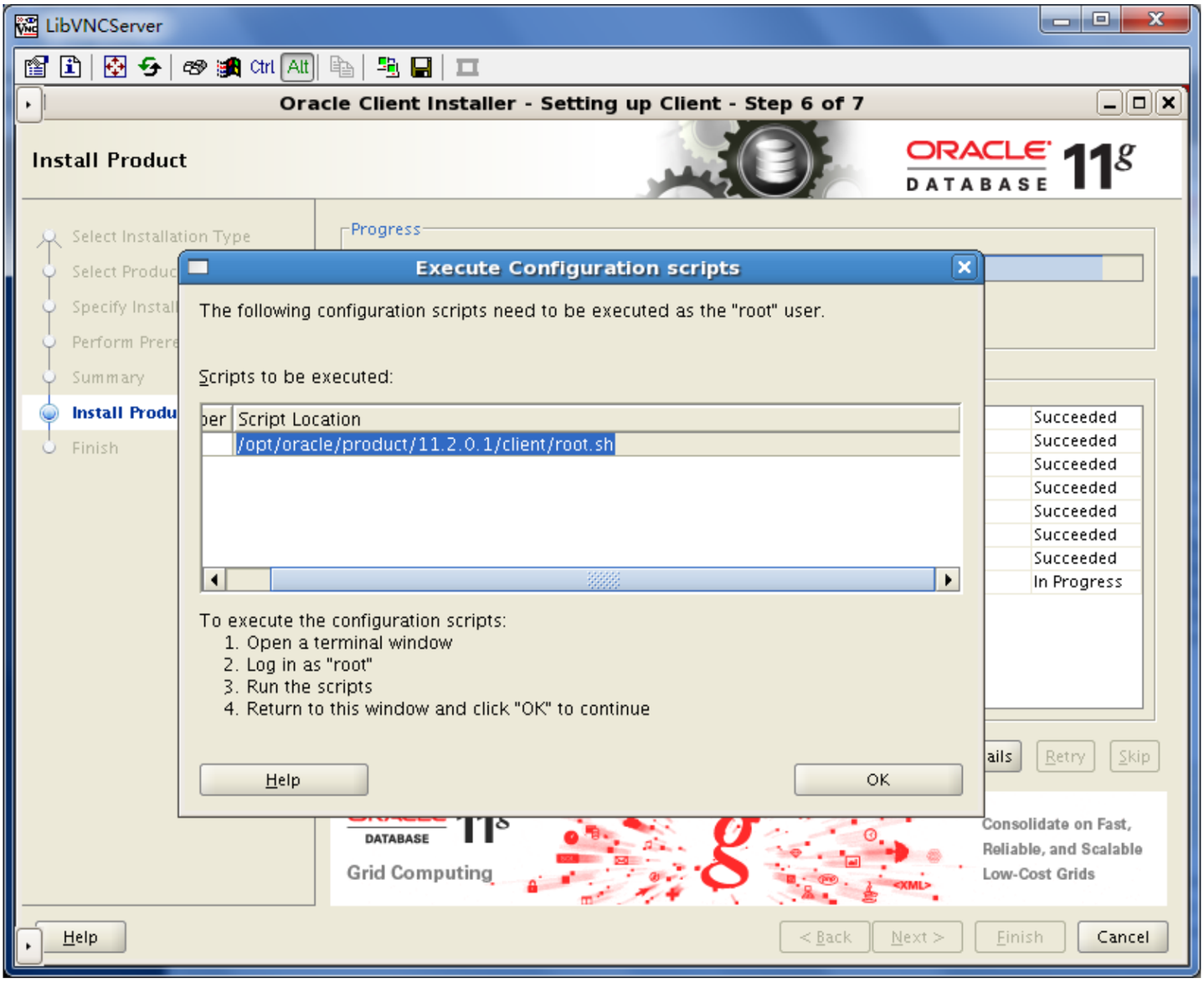
```
/sbin/sysctl -a | grep shm
/sbin/sysctl -a | grep sem
/sbin/sysctl -a | grep file-max
/sbin/sysctl -a | grep ip_local_port_range
/sbin/sysctl -a | grep rmem_default
/sbin/sysctl -a | grep rmem_max
/sbin/sysctl -a | grep wmem_default
/sbin/sysctl -a | grep wmem_max


export TMP=/tmp
export TMPDIR=/tmp
export ORACLE_BASE=/opt/oracle
export ORACLE_HOME=$ORACLE_BASE/product/11.2.0.1/client
export PATH=$ORACLE_HOME/bin:$PATH


yum install sysstat libaio-devel glibc-devel elfutils-libelf-devel unixODBC unixODBC-devel

unzip linux.x64_11gR2_client.zip

[oracle@wcs ~]$ cd client/
[oracle@wcs client]$ ./runInstaller
```

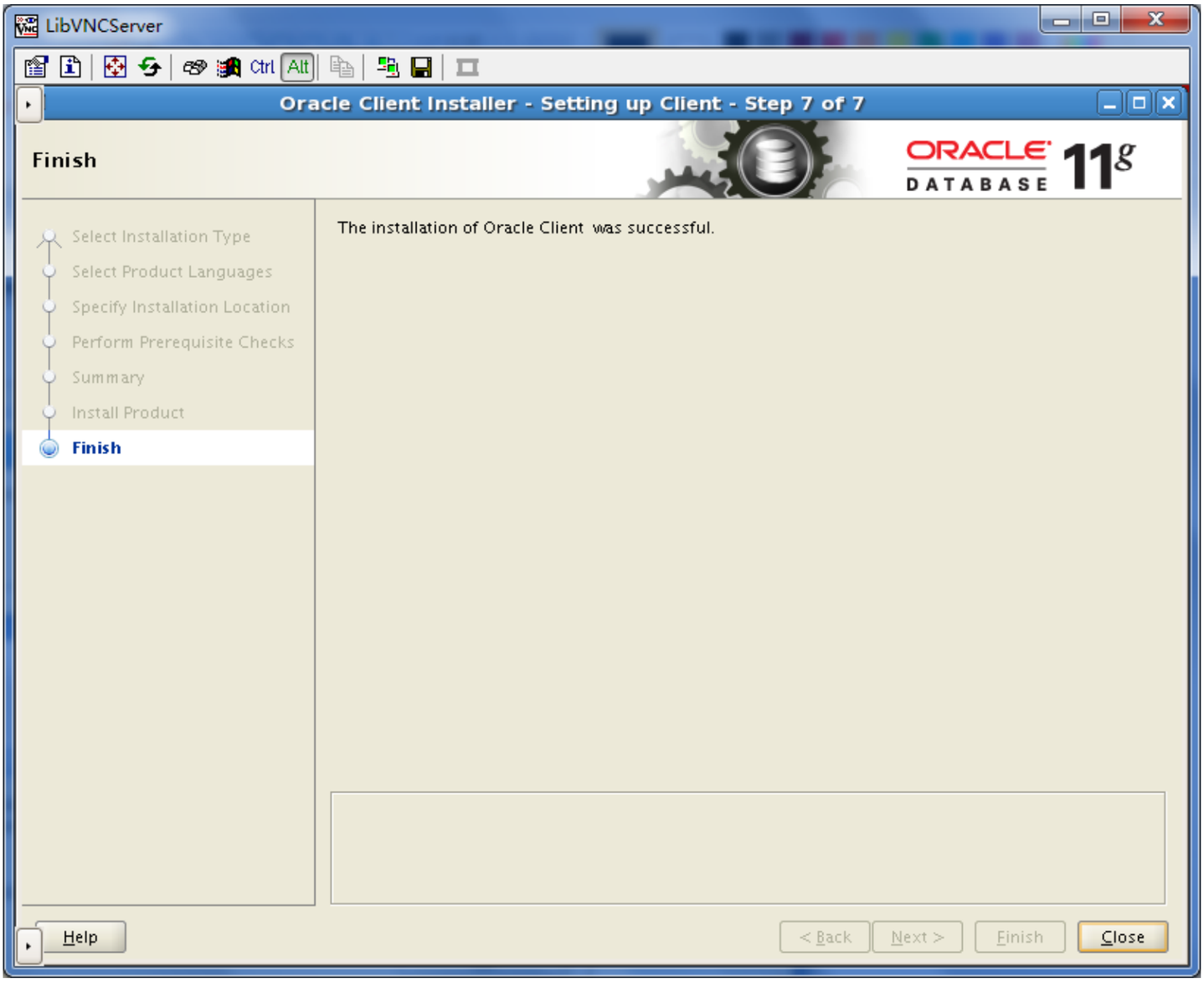

LibVNCServer
Ctrl
Alt
Oracle Client Installer - Setting up Client - Step 1 of 7
Select Installation Type
ORACLE DATABASE 11g
Select Installation Type
Select Product Languages
Specify Installation Location
Perform Prerequisite Checks
Summary
Install Product
Finish
What type of Installation do you want?
InstantClient (155.0MB)
Installs Instant Client Software
Administrator (1.6GB)
Installs the management console, management tools, networking services, utilities and basic client software.
Runtime (1.3GB)
Installs tools for developing applications, networking services and basic client software.
Custom
Enables you to choose individual components to install.
Help
< Back
Next >
Finish
Cancel


LibVNCServer
Ctrl
Alt
Oracle Client Installer - Setting up Client - Step 2 of 7
Select Product Languages
ORACLE DATABASE 11g
Select Installation Type
Select Product Languages
Specify Installation Location
Perform Prerequisite Checks
Summary
Install Product
Finish
Select the languages in which your product will run.
Available Languages:
Arabic
Bengali
Brazilian Portuguese
Bulgarian
Canadian French
Catalan
Croatian
Czech
Danish
Dutch
Egyptian
English (United Kingdom)
Estonian
Finnish
French
German
Greek
Hebrew
Hungarian
Icelandic
Indonesian
Selected Languages:
English
Help
< Back
Next >
Finish
Cancel


LibVNCServer
Ctrl
Alt
Oracle Client Installer - Setting up Client - Step 3 of 7
Specify Installation Location
ORACLE DATABASE 11g
Select Installation Type
Select Product Languages
Specify Installation Location
Perform Prerequisite Checks
Summary
Install Product
Finish
Specify an Oracle base path to place all Oracle software and configuration-related files. This location is the Oracle base directory.
Oracle Base: /opt/oracle
Browse...
Specify a location for storing Oracle software files. This location is the Oracle home directory.
Software Location: /opt/oracle/product/11.2.0.1/client
Browse...
Help
< Back
Next >
Finish
Cancel


LibVNCServer
Ctrl
Alt
Oracle Client Installer - Setting up Client - Step 5 of 7
Summary
ORACLE DATABASE 11g
Select Installation Type
Select Product Languages
Specify Installation Location
Perform Prerequisite Checks
Summary
Install Product
Finish
Oracle Client Installer
Global Settings
Disk Space: required 1.3 GB available 161.9 GB
Source Location: /home/oracle/client/install/../stage/products.xml
Install Type: Runtime
Oracle Base: /opt/oracle
Oracle Home location: /opt/oracle/product/11.2.0.1/client
Save Response File...
Help
< Back
Next >
Finish
Cancel


LibVNCServer
Ctrl
Alt
Oracle Client Installer - Setting up Client - Step 6 of 7
Install Product
ORACLE DATABASE 11g
Select Installation Type
Select Product
Specify Install
Perform Prere
Summary
Install Produ
Finish
Progress
Execute Configuration scripts
The following configuration scripts need to be executed as the "root" user.
Scripts to be executed:
Script Location
/opt/oracle/product/11.2.0.1/client/root.sh
To execute the configuration scripts:
1. Open a terminal window
2. Log in as "root"
3. Run the scripts
4. Return to this window and click "OK" to continue
Help
OK
Succeeded
Succeeded
Succeeded
Succeeded
Succeeded
Succeeded
Succeeded
In Progress
Retry
Skip
DATABASE 11g
Grid Computing
Consolidate on Fast, Reliable, and Scalable Low-Cost Grids
Help
< Back
Next >
Finish
Cancel



登录到root用户运行下面脚本

```
/opt/oracle/oraInventory/orainstRoot.sh
/opt/oracle/product/11.2.0.1/client/root.sh


[root@wcs oracle]# /opt/oracle/oraInventory/orainstRoot.sh
Changing permissions of /opt/oracle/oraInventory.
Adding read,write permissions for group.
Removing read,write,execute permissions for world.

Changing groupname of /opt/oracle/oraInventory to oinstall.
The execution of the script is complete.
[root@wcs oracle]# /opt/oracle/product/11.2.0.1/client/root.sh
Running Oracle 11g root.sh script...

The following environment variables are set as:
    ORACLE_OWNER= oracle
    ORACLE_HOME=  /opt/oracle/product/11.2.0.1/client

Enter the full pathname of the local bin directory: [/usr/local/bin]:
   Copying dbhome to /usr/local/bin ...
   Copying oraenv to /usr/local/bin ...
   Copying coraenv to /usr/local/bin ...


Creating /etc/oratab file...
Entries will be added to the /etc/oratab file as needed by
Database Configuration Assistant when a database is created
Finished running generic part of root.sh script.
Now product-specific root actions will be performed.
```

至此，Oracle客户端安装完毕

上一页 | 上一级 | 下一页

2. 11gR2 | 起始页 | 4. Silence Install - Database

4. Silence Install - Database

4.1. Response File

创建response文件 /home/oracle/db.rsp

```
[oracle@oracle ~]$ cat db.rsp

#------------------------------------------------------------------------------
# Do not change the following system generated value.
#------------------------------------------------------------------------------
oracle.install.responseFileVersion=/oracle/install/rspfmt_dbinstall_response_schema_v11_2_0

#------------------------------------------------------------------------------
# The installation option can be one of the following
# 1. INSTALL_DB_SWONLY
# 2. INSTALL_DB_AND_CONFIG
# 3. UPGRADE_DB
#------------------------------------------------------------------------------
oracle.install.option=INSTALL_DB_AND_CONFIG

#------------------------------------------------------------------------------
# This variable holds the hostname of the system as set by the user.
# It can be used to force the installation to use an alternative
# hostname rather than using the first hostname found on the system
# (e.g., for systems with multiple hostnames and network interfaces).
#------------------------------------------------------------------------------
ORACLE_HOSTNAME=oracle.example.com

#------------------------------------------------------------------------------
# Unix group to be set for the inventory directory.
#------------------------------------------------------------------------------
UNIX_GROUP_NAME=oinstall

#------------------------------------------------------------------------------
# Inventory location.
#------------------------------------------------------------------------------
INVENTORY_LOCATION=/opt/oracle/oraInventory

#------------------------------------------------------------------------------
# Specify the languages in which the components will be installed.
#
# en   : English                  ja   : Japanese
# fr   : French                   ko   : Korean
# ar   : Arabic                   es   : Latin American Spanish
# bn   : Bengali                  lv   : Latvian
# pt_BR: Brazilian Portuguese     lt   : Lithuanian
# bg   : Bulgarian                ms   : Malay
# fr_CA: Canadian French          es_MX: Mexican Spanish
# ca   : Catalan                  no   : Norwegian
# hr   : Croatian                 pl   : Polish
# cs   : Czech                    pt   : Portuguese
# da   : Danish                   ro   : Romanian
# nl   : Dutch                    ru   : Russian
# ar_EG: Egyptian                 zh_CN: Simplified Chinese
# en_GB: English (Great Britain)  sk   : Slovak
# et   : Estonian                 sl   : Slovenian
# fi   : Finnish                  es_ES: Spanish
# de   : German                   sv   : Swedish
# el   : Greek                    th   : Thai
# iw   : Hebrew                   zh_TW: Traditional Chinese
# hu   : Hungarian                tr   : Turkish
# is   : Icelandic                uk   : Ukrainian
# in   : Indonesian               vi   : Vietnamese
# it   : Italian
#
# Example : SELECTED_LANGUAGES=en,fr,ja
#------------------------------------------------------------------------------
SELECTED_LANGUAGES=en

#------------------------------------------------------------------------------
# Complete path of the Oracle Home
#------------------------------------------------------------------------------
ORACLE_HOME=/opt/oracle/product/11.2.0/dbhome_1

#------------------------------------------------------------------------------
# Complete path of the Oracle Base.
#------------------------------------------------------------------------------
ORACLE_BASE=/opt/oracle
```

```
#------------------------------------------------------------------------------
# Installation Edition of the component.
#
# The value should contain only one of these choices.
# EE     : Enterprise Edition
# SE     : Standard Edition
# SEONE  : Standard Edition One
# PE     : Personal Edition (WINDOWS ONLY)
#------------------------------------------------------------------------------
oracle.install.db.InstallEdition=EE

#------------------------------------------------------------------------------
# This property is considered only if InstallEdition is EE.
#
# true  : Components mentioned as part of 'customComponents' property
#         are considered for install.
# false : Value for 'customComponents' is not considered.
#------------------------------------------------------------------------------
oracle.install.db.isCustomInstall=false

#------------------------------------------------------------------------------
# This property is considered only if 'IsCustomInstall' is set to true
#
# Description: List of Enterprise Edition Options you would like to install.
#
#              The following choices are available. You may specify any
#              combination of these choices.  The components you choose should
#              be specified in the form "internal-component-name:version"
#              Below is a list of components you may specify to install.
#
#              oracle.oraolap:11.2.0.0.2 - Oracle OLAP
#              oracle.rdbms.dm:11.2.0.0.2 - Oracle Data Mining RDBMS Files
#              oracle.rdbms.dv:11.2.0.0.2 - Oracle Database Vault option
#              oracle.rdbms.lbac:11.2.0.0.2 - Oracle Label Security
#              oracle.rdbms.partitioning:11.2.0.0.2 - Oracle Partitioning
#              oracle.rdbms.rat:11.2.0.0.2 - Oracle Real Application Testing
#              oracle.clrintg.ode_net:11.2.0.0.2 - Oracle Database Extensions for .NET 1.x
(Windows)
#              oracle.clrintg.ode_net_2:11.2.0.0.2 - Oracle Database Extensions for .NET 2.0
(Windows)
#------------------------------------------------------------------------------
oracle.install.db.customComponents=

#------------------------------------------------------------------------------
oracle.install.db.DBA_GROUP=dba

#------------------------------------------------------------------------------
oracle.install.db.OPER_GROUP=dba

#------------------------------------------------------------------------------
# This variable represents the cluster node names selected by the .
# user for installation
#------------------------------------------------------------------------------
oracle.install.db.CLUSTER_NODES=

#------------------------------------------------------------------------------
# One of the following
# - GENERAL_PURPOSE
# - TRANSACTION_PROCESSING
# - DATAWAREHOUSE
#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.type=GENERAL_PURPOSE

#------------------------------------------------------------------------------
# Global Database Name
#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.globalDBName=orcl.example.com

#------------------------------------------------------------------------------
# The Starter Database SID
#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.SID=orcl

#------------------------------------------------------------------------------
# Database character set
#
#  One of the following
#  AL32UTF8, WE8ISO8859P15, WE8MSWIN1252, EE8ISO8859P2,
#  EE8MSWIN1250, NE8ISO8859P10, NEE8ISO8859P4, BLT8MSWIN1257,
#  BLT8ISO8859P13, CL8ISO8859P5, CL8MSWIN1251, AR8ISO8859P6,
#  AR8MSWIN1256, EL8ISO8859P7, EL8MSWIN1253, IW8ISO8859P8,
#  IW8MSWIN1255, JA16EUC, JA16EUCTILDE, JA16SJIS, JA16SJISTILDE,
#  KO16MSWIN949, ZHS16GBK, TH8TISASCII, ZHT32EUC, ZHT16MSWIN950,
#  ZHT16HKSCS, WE8ISO8859P9, TR8MSWIN1254, VN8MSWIN1258
#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.characterSet=AL32UTF8
#------------------------------------------------------------------------------
# Specify the total memory allocation for the database. (in MB)
# Value should be at least 256 MB, and should not exceed the
# total physical memory available on the system.
# Example: oracle.install.db.config.starterdb.memoryLimit=40
#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.memoryLimit=6218
oracle.install.db.config.starterdb.memoryOption=true

#------------------------------------------------------------------------------
# This variable controls whether to load Example Schemas onto
# the starter database or not.
#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.installExampleSchemas=true

#------------------------------------------------------------------------------
# This include enabling audit settings, configuring password
# profiles and revoking some grants to public. These settings
```

```
# are provided by default.  You may choose to disable all.
#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.enableSecuritySettings=true

#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.password.ALL=

#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.password.SYS=

#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.password.SYSTEM=

#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.password.SYSMAN=

#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.password.DBSNMP=

#------------------------------------------------------------------------------
# Can be one of the following
# 1. GRID_CONTROL
# 2. DB_CONTROL
#
oracle.install.db.config.starterdb.control=DB_CONTROL

#------------------------------------------------------------------------------
# Determines the Management Service to use if Grid Control
# is selected to manage the database.
#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.gridcontrol.gridControlServiceURL=

#------------------------------------------------------------------------------
# Determines whether to receive email notification for
# critical alerts when using DB control.
#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.dbcontrol.enableEmailNotification=false

#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.dbcontrol.emailAddress=

#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.dbcontrol.SMTPServer=

#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.automatedBackup.enable=false

#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.automatedBackup.osuid=

#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.automatedBackup.ospwd=

#------------------------------------------------------------------------------
# Can be one of the following
# - FILE_SYSTEM_STORAGE
# - ASM_STORAGE
#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.storageType=FILE_SYSTEM_STORAGE

#------------------------------------------------------------------------------
# Database file location:
# directory for datafiles, control files, redo logs.
#
# Applicable only when oracle.install.db.config.starterdb.storage=FILE_SYSTEM_STORAGE
#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.fileSystemStorage.dataLocation=/opt/oracle/oradata

#------------------------------------------------------------------------------
# Backup and recovery location
#
# Applicable only when oracle.install.db.config.starterdb.storage=FILE_SYSTEM_STORAGE
#------------------------------------------------------------------------------
oracle.install.db.config.starterdb.fileSystemStorage.recoveryLocation=

#------------------------------------------------------------------------------
# Name of ASM disk group to be used for storage.
#
# Applicable only when oracle.install.db.config.starterdb.storageType=ASM_STORAGE
#------------------------------------------------------------------------------
oracle.install.db.config.asm.diskGroup=

#------------------------------------------------------------------------------
# Password for ASMSNMP user of the ASM instance.
#
# Applicable only when oracle.install.db.config.starterdb.storage=ASM_STORAGE
#------------------------------------------------------------------------------
oracle.install.db.config.asm.ASMSNMPPassword=

#------------------------------------------------------------------------------
# Specify the My Oracle Support Account Username.
#
#  Example   : MYORACLESUPPORT_USERNAME=metalink
#------------------------------------------------------------------------------
MYORACLESUPPORT_USERNAME=neo.chen@msn.com

#------------------------------------------------------------------------------
# Specify the My Oracle Support Account Username password.
#
# Example    : MYORACLESUPPORT_PASSWORD=password
#------------------------------------------------------------------------------
MYORACLESUPPORT_PASSWORD=

#------------------------------------------------------------------------------
# Specify whether to enable the user to set the password for
```

```
# My Oracle Support credentials. The value can be either true or false.
# If left blank it will be assumed to be false.
#
# Example    : SECURITY_UPDATES_VIA_MYORACLESUPPORT=true
#------------------------------------------------------------------------------
SECURITY_UPDATES_VIA_MYORACLESUPPORT=false

#------------------------------------------------------------------------------
# Specify whether user wants to give any proxy details for connection.
# The value can be either true or false. If left blank it will be assumed
# to be false.
#
# Example    : DECLINE_SECURITY_UPDATES=false
#------------------------------------------------------------------------------
DECLINE_SECURITY_UPDATES=false

#------------------------------------------------------------------------------
# Specify the Proxy server name. Length should be greater than zero.
#
# Example    : PROXY_HOST=proxy.domain.com
#------------------------------------------------------------------------------
PROXY_HOST=

#------------------------------------------------------------------------------
# Specify the proxy port number. Should be Numeric and atleast 2 chars.
#
# Example    : PROXY_PORT=25
#------------------------------------------------------------------------------
PROXY_PORT=
```

4.2. OS 配置脚本

/home/oracle/orains.sh

```
#!/bin/bash
ORACLE_BASE=/opt/oracle
ORACLE_PASSWORD="oracle"

groupadd oinstall
groupadd dba
useradd -m -g oinstall -G dba oracle
echo "oracle:$ORACLE_PASSWORD" | chpasswd

mkdir -p $ORACLE_BASE
chown -R oracle:oinstall $ORACLE_BASE
chmod -R 775 $ORACLE_BASE

cat >> /etc/sysctl.conf <<EOF
fs.aio-max-nr = 3145728
fs.file-max = 6815744
kernel.shmall = 1073741824
kernel.shmmax = 4398046511104
kernel.shmmni = 4096
kernel.sem = 250 32000 100 142
net.ipv4.ip_local_port_range = 9000 65500
net.core.rmem_default = 262144
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 1048576
EOF

cat >> /etc/security/limits.conf <<EOF
oracle soft nproc 2048
oracle hard nproc 16384
oracle soft nofile 1024
oracle hard nofile 65536
EOF

cat >> /home/oracle/.bash_profile <<\EOF
export TMP=/tmp
export TMPDIR=$TMP
export ORACLE_HOSTNAME=$(hostname)
export ORACLE_BASE=/opt/oracle
export ORACLE_HOME=$ORACLE_BASE/product/11.2.0/dbhome_1
export ORACLE_SID=orcl
export ORACLE_TERM=xterm
export PATH=$ORACLE_HOME/bin:$PATH
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:/lib64:/usr/lib64:/usr/local/lib64
export CLASSPATH=$ORACLE_HOME/JRE:$ORACLE_HOME/jlib:$ORACLE_HOME/rdbms/jlib
export LD_ASSUME_KERNEL=2.6.18
export NLS_LANG="american_america.UTF8"
export NLS_LANG="AMERICAN_AMERICA.US7ASCII"
#export NLS_LANG="AMERICAN_AMERICA.ZHS16GBK"
#export NLS_LANG="SIMPLIFIED CHINESE_CHINA.ZHS16GBK"
#export NLS_LANG="TRADITIONAL CHINESE_TAIWAN.ZHT16MSWIN950"
#export NLS_LANG="JAPANESE_JAPAN.WE8MSWIN1252"
EOF

cat >> /home/oracle/.bashrc <<\EOF
alias sysdba='sqlplus "/ as sysdba"'
EOF

cat >> /etc/oraInst.loc <<EOF
inventory_loc=$ORACLE_BASE/oraInventory
inst_group=oinstall
EOF
```

```
chmod 664 /etc/oraInst.loc

cat >> /etc/yum.repos.d/rhel-source-local.repo <<\EOF
[rhel-source-local]
name=Red Hat Enterprise Linux $releasever - Source
baseurl=file:///media/cdrom0/Server
enabled=1
gpgcheck=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release
EOF

yum install gcc gcc-c++ glibc-devel libstdc++ libstdc++-devel libaio-devel sysstat libaio-devel
elfutils-libelf-devel unixODBC unixODBC-devel



su - root
/home/oracle/orains.sh
```

4.3. 运行 runInstaller

```
unzip linux.x64_11gR2_database_1of2.zip
unzip linux.x64_11gR2_database_2of2.zip
cd database
./runInstaller -silent -noconfig -responseFile /home/oracle/db.rsp
```

检查安装日志

```
ls /opt/oracle/oraInventory/logs/
```

---

5. Silence Install - Client

```
##############################################################################
## Copyright(c) Oracle Corporation 1998,2008. All rights reserved.           ##
##                                                                           ##
## Specify values for the variables listed below to customize                ##
## your installation.                                                        ##
##                                                                           ##
## Each variable is associated with a comment. The comment                   ##
## can help to populate the variables with the appropriate                   ##
## values.                                                                   ##
##                                                                           ##
##############################################################################

#------------------------------------------------------------------------------
# Do not change the following system generated value.
#------------------------------------------------------------------------------
oracle.install.responseFileVersion=http://www.oracle.com/2007/install/rspfmt_clientinstall_response_s


#------------------------------------------------------------------------------
# This variable holds the hostname of the system as set by the user.
# It can be used to force the installation to use an alternative
# hostname rather than using the first hostname found on the system
# (e.g., for systems with multiple hostnames and network interfaces).
ORACLE_HOSTNAME=wcs.example.com
#------------------------------------------------------------------------------
# Unix group to be set for the inventory directory.
UNIX_GROUP_NAME=oinstall
#------------------------------------------------------------------------------
# Inventory location.
INVENTORY_LOCATION=/opt/oracle/oraInventory
#------------------------------------------------------------------------------
# Specify the languages in which the components will be installed.
#
# en   : English                   ja   : Japanese
# fr   : French                    ko   : Korean
# ar   : Arabic                    es   : Latin American Spanish
# bn   : Bengali                   lv   : Latvian
# pt_BR: Brazilian Portuguese      lt   : Lithuanian
# bg   : Bulgarian                 ms   : Malay
# fr_CA: Canadian French           es_MX: Mexican Spanish
# ca   : Catalan                   no   : Norwegian
# hr   : Croatian                  pl   : Polish
# cs   : Czech                     pt   : Portuguese
# da   : Danish                    ro   : Romanian
# nl   : Dutch                     ru   : Russian
# ar_EG: Egyptian                  zh_CN: Simplified Chinese
# en_GB: English (Great Britain)   sk   : Slovak
# et   : Estonian                  sl   : Slovenian
# fi   : Finnish                   es_ES: Spanish
# de   : German                    sv   : Swedish
# el   : Greek                     th   : Thai
# iw   : Hebrew                    zh_TW: Traditional Chinese
# hu   : Hungarian                 tr   : Turkish
# is   : Icelandic                 uk   : Ukrainian
# in   : Indonesian                vi   : Vietnamese
# it   : Italian
#
# Example : SELECTED_LANGUAGES=en,fr,ja
SELECTED_LANGUAGES=en
#------------------------------------------------------------------------------
# Complete path of the Oracle Home
ORACLE_HOME=/opt/oracle/product/11.2.0.1/client
#------------------------------------------------------------------------------
# Complete path of the Oracle Base.
ORACLE_BASE=/opt/oracle
#------------------------------------------------------------------------------
#Name       : INSTALL_TYPE
#Datatype   : String
#Description: Installation type of the component.
#
#             The following choices are available. The value should contain
#             only one of these choices.
#             InstantClient : InstantClient
#             Administrator : Administrator
#             Runtime       : Runtime
#             Custom        : Custom
#
#Example    : INSTALL_TYPE = "Administrator"
#------------------------------------------------------------------------------
oracle.install.client.installType=Administrator
#------------------------------------------------------------------------------
# Name       : oracle.install.client.customComponents
```

```
# Datatype   : StringList
#
# This property is considered only if INSTALL_TYPE is set to "Custom"
#
# Description: List of Client Components you would like to install
#
#   The following choices are available. You may specify any
#   combination of these choices.  The components you choose should
#   be specified in the form "internal-component-name:version"
#   Below is a list of components you may specify to install.
#
# oracle.sqlj:11.2.0.1.0 -- "Oracle SQLJ"
# oracle.rdbms.util:11.2.0.1.0 -- "Oracle Database Utilities"
# oracle.javavm.client:11.2.0.1.0 -- "Oracle Java Client"
# oracle.sqlplus:11.2.0.1.0 -- "SQL*Plus"
# oracle.dbjava.jdbc:11.2.0.1.0 -- "Oracle JDBC/THIN Interfaces"
# oracle.ldap.client:11.2.0.1.0 -- "Oracle Internet Directory Client"
# oracle.rdbms.oci:11.2.0.1.0 -- "Oracle Call Interface (OCI)"
# oracle.precomp:11.2.0.1.0 -- "Oracle Programmer"
# oracle.xdk:11.2.0.1.0 -- "Oracle XML Development Kit"
# oracle.network.aso:11.2.0.1.0 -- "Oracle Advanced Security"
# oracle.assistants.oemlt:11.2.0.1.0 -- "Enterprise Manager Minimal Integration"
# oracle.oraolap.mgmt:11.2.0.1.0 -- "OLAP Analytic Workspace Manager and Worksheet"
# oracle.network.client:11.2.0.1.0 -- "Oracle Net"
# oracle.ordim.client:11.2.0.1.0 -- "Oracle Multimedia Client Option"
# oracle.ons:11.2.0.0.0 -- "Oracle Notification Service"
# oracle.odbc:11.2.0.1.0 -- "Oracle ODBC Driver"
# oracle.has.client:11.2.0.1.0 -- "Oracle Clusterware High Availability API"
# oracle.dbdev:11.2.0.1.0 -- "Oracle SQL Developer"
# oracle.rdbms.scheduler:11.2.0.1.0 -- "Oracle Scheduler Agent"
#
# Example    :
oracle.install.client.customComponents="oracle.precomp:11.2.0.1.0","oracle.ons:11.2.0.0.0","oracle.o

#------------------------------------------------------------------------------
oracle.install.client.customComponents=
#------------------------------------------------------------------------------
#Name       : MTS_PORT
#Datatype   : int
#Description: Port number to be used for by the Oracle MTS Recovery Service to listen
#                 for requests. This needs to be entered in case oracle.ntoramts is
#               selected in the list of custom components in custom install
#
#
#Example    : MTS_PORT = 2030
#------------------------------------------------------------------------------
oracle.install.client.oramtsPortNumber=

#------------------------------------------------------------------------------
# Host name to be used for by the Oracle Scheduler Agent.
# This needs to be entered in case oracle.rdbms.scheduler is selected in the
# list of custom components during custom install
#
# Example    : oracle.install.client.schedulerAgentHostName = acme.domain.com
#------------------------------------------------------------------------------
oracle.install.client.schedulerAgentHostName=

#------------------------------------------------------------------------------
# Port number to be used for by the Oracle Scheduler Agent.
# This needs to be entered in case oracle.rdbms.scheduler is selected in the
# list of custom components during custom install
#
# Example: oracle.install.client.schedulerAgentPortNumber = 1500
#------------------------------------------------------------------------------
oracle.install.client.schedulerAgentPortNumber=
```

```
#!/bin/bash
groupadd oinstall
groupadd dba
useradd -m -g oinstall -G dba oracle
echo "oracle:oracle" | chpasswd
id oracle

mkdir -p /opt/oracle
chown oracle.oinstall /opt/oracle

cat >> /etc/sysctl.conf <<EOF
kernel.shmall = 2097152
kernel.shmmax = 536870912
kernel.shmmni = 4096
kernel.sem = 250 32000 100 128
fs.file-max = 65536
net.ipv4.ip_local_port_range = 32768 61000
net.core.rmem_default=262144
net.core.wmem_default=262144
net.core.rmem_max=4194304
net.core.wmem_max=262144
EOF
/sbin/sysctl -p

cat >> /home/oracle/.bash_profile <<\EOF
export TMP=/tmp
export TMPDIR=/tmp
export ORACLE_BASE=/opt/oracle
export ORACLE_HOME=$ORACLE_BASE/product/11.2.0.1/client
export PATH=$ORACLE_HOME/bin:$PATH
EOF

cat >> /home/oracle/.bashrc <<\EOF
alias sysdba='sqlplus "/ as sysdba"'
EOF
```

```
yum install sysstat libaio-devel glibc-devel elfutils-libelf-devel unixODBC unixODBC-devel

unzip linux.x64_11gR2_client.zip

cd client/
./runInstaller -silent -noconfig -responseFile /home/oracle/client.rsp


# /opt/oracle/oraInventory/orainstRoot.sh
# /opt/oracle/product/11.2.0.1/client/root.sh
```

第 18 章 Manager

目录

1. listener.ora

```
[root@database ~]# cat /u01/app/oracle/product/10.2.0.1/network/admin/listener.ora
# listener.ora Network Configuration File:
/u01/app/oracle/product/10.2.0.1/network/admin/listener.ora
# Generated by Oracle configuration tools.

SID_LIST_LISTENER =
  (SID_LIST =
    (SID_DESC =
      (SID_NAME = PLSExtProc)
      (ORACLE_HOME = /u01/app/oracle/product/10.2.0.1)
      (PROGRAM = extproc)
    )
  )

LISTENER =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROC1))
      (ADDRESS = (PROTOCOL = TCP)(HOST = database.example.com)(PORT = 1521))
    )
  )
```

1.1. TNS 配置

tnsnames.ora 文件默认在 network/admin/tnsnames.ora

有些情况如你没有权限修改network/admin/tnsnames.ora, 你可以在$HOME下创建一个.tnsnames.ora文件

```
oradb10g =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = db1.domain.com)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SID = oradb10g)
    )
  )

oradb =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = db2.domain.com)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SID = oradb)
    )
  )
```

测试TNS

```
$ sqlplus user@oradb
```

1.1.1. 11gR2

```
ORCL =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = 192.168.0.5)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVICE_NAME = orcl.example.com)
    )
  )
```

SERVICE_NAME通過show parameter service_name;查詢

---

2. Account

```
select username,account_status from dba_users;
```

2.1. show user

```
SQL> show user;
USER is "SYS"
SQL> select user from dual;

USER
------------------------------
SYS
```

2.2. DEFAULT_TABLESPACE

用户默认表空间

```
SQL> SELECT DEFAULT_TABLESPACE FROM DBA_USERS WHERE USERNAME='WCUSER';

DEFAULT_TABLESPACE
------------------------------
WCSDB
SQL> SELECT DEFAULT_TABLESPACE FROM DBA_USERS WHERE USERNAME=(select user from dual);

DEFAULT_TABLESPACE
------------------------------
SYSTEM
```

2.3. unlock/lock

帐号加锁与解锁

alter user scott account unlock /lock;

```
SQL> alter user scott account unlock;

User altered.
SQL> select username,account_status from dba_users where username='SCOTT';

USERNAME                       ACCOUNT_STATUS
------------------------------ --------------------------------
SCOTT                          EXPIRED
SQL> alter user scott account lock;

User altered.
SQL> select username,account_status from dba_users where username='SCOTT';

USERNAME                       ACCOUNT_STATUS
------------------------------ --------------------------------
SCOTT                          EXPIRED & LOCKED
SQL>
```

3. 显示表

```
select * from tab where tabtype='SYNONYM';

select name,type,referenced_name from user_dependencies;
```

4. oracle 817 script

Oracle 817 数据库启动脚本

```
#!/bin/bash
#############################################################
# Script to startup and shutdown Oracle and listener
# File:/etc/rc.d/init.d/orcl
#############################################################
# Setup environment for script execution
#./home/oracle/.bash_profile
#
ORACLE_HOME=/u01/app/oracle/product/8.1.7
# Determine and execute action based on command line parameter
case "$1" in
start)
echo "Starting Oracle database(s) listed in /etc/oratab ..."
sleep 2
su - oracle -c "$ORACLE_HOME/bin/dbstart"
echo "Starting TNS listener ..."
sleep 2
su - oracle -c "$ORACLE_HOME/bin/lsnrctl start"
touch /var/lock/subsys/orcl
;;
stop)
echo "Shutting down TNS listener ..."
sleep 2
su - oracle -c "$ORACLE_HOME/bin/lsnrctl stop"
echo "Shutting down Oracle database(s) listed in /etc/oratab ..."
su - oracle -c "$ORACLE_HOME/bin/dbshut"
rm -f /var/lock/subsys/orcl
;;
status)
ps -ax | grep -e ora_ -e tnslsnr
;;
*)
echo "Usage: $1 {start|stop|status}"
;;
esac
exit 0
```

5. Script for automatic startup on boot

```
#!/bin/bash
#
# Run-level Startup script for the Oracle Instance and Listener
#
# chkconfig: 345 91 19
# description: Startup/Shutdown Oracle listener and instance

ORA_HOME="/u01/app/oracle/product/9.2.0.1.0"
ORA_OWNR="oracle"

# if the executables do not exist -- display error

if [ ! -f $ORA_HOME/bin/dbstart -o ! -d $ORA_HOME ]
then
        echo "Oracle startup: cannot start"
        exit 1
fi

# depending on parameter -- startup, shutdown, restart
# of the instance and listener or usage display

case "$1" in
    start)
        # Oracle listener and instance startup
        echo -n "Starting Oracle: "
        su - $ORA_OWNR -c "$ORA_HOME/bin/lsnrctl start"
        su - $ORA_OWNR -c $ORA_HOME/bin/dbstart
        touch /var/lock/subsys/oracle
        echo "OK"
        ;;
    stop)
        # Oracle listener and instance shutdown
        echo -n "Shutdown Oracle: "
        su - $ORA_OWNR -c "$ORA_HOME/bin/lsnrctl stop"
        su - $ORA_OWNR -c $ORA_HOME/bin/dbshut
        rm -f /var/lock/subsys/oracle
        echo "OK"
        ;;
    reload|restart)
        $0 stop
        $0 start
        ;;
    *)
        echo "Usage: $0 start|stop|restart|reload"
        exit 1
esac
exit 0
```

6. Run level shell script to start Oracle 10g services on RedHat Enterprise Linux (RHAS 4)

```
#!/bin/bash
#################################################################
# Script to startup and shutdown Oracle and listener
# Author: neo - http://netkiller.8800.org
# File:/etc/rc.d/init.d/oracle
# chmod 750 /etc/init.d/oracle
# chkconfig --add oracle --level 0356
#################################################################
# Setup environment for script execution
export ORACLE_BASE=/u01/app/oracle
export ORACLE_HOME=/u01/app/oracle/product/10.2.0.1/
export PATH=$ORACLE_HOME/bin:$ORACLE_HOME/Apache/Apache/bin:$PATH
export NLS_LANG='croatian_croatia.ee8iso8859p2'
export ORACLE_SID=orcl
export DISPLAY=:0
export USER=oracle
if [ -f ./home/oracle/.bash_profile ]; then
        ./home/oracle/.bash_profile
fi

# Determine and execute action based on command line parameter

# check Oracle db status
function chkdb_status() {

        # set username
        SUSER="scott"
        # set password
        SPASS="123456"

        sqlplus -s /nolog > /dev/null 2>&1 <<EOF
whenever sqlerror exit failure
connect $SUSER/$SPASS
exit success
EOF

        if [ $? -ne 0 ]; then
                echo "Connection failed : DB is down"
                exit 1
        else
                echo "Connection succeeded : DB is up"
fi
}


function isql {
        case "$1" in
                start)
                        echo  "*** Starting Oracle iSQL Plus *** "
                        su - $USER -c "$ORACLE_HOME/bin/isqlplusctl start"
                        echo "*** Note: You can access service at url:
http://$(hostname):5560/isqlplus"
                        ;;
                stop)
                        echo  "*** Stopping Oracle iSQL Plus *** "
                        su - $USER -c "$ORACLE_HOME/bin/isqlplusctl stop"
                        ;;
                *)
                        echo "Usage: $1 isql {start|stop}"
                        ;;
        esac

}

function sqlplus {
        case "$1" in
                start)

su - "$oracle_user"<<EOO
    lsnrctl start
    apachectl start
    sqlplus /nolog<<EOS
      connect / as sysdba
      startup
EOS
EOO
                        ;;
                stop)
```

```
su - "$oracle_user"<<EOO
    lsnrctl stop
    apachectl stop
    sqlplus /nolog<<EOS
      connect / as sysdba
      shutdown immediate
EOS
EOO
                        ;;
                *)
                        echo "Usage: $1 emctl {start|stop}"
                        ;;
        esac

}
function emctl {
        case "$1" in
                start)
                        echo  "*** Starting Oracle Enterprise Manager 10g Database Control ***"
                        su - $USER -c "$ORACLE_HOME/bin/emctl start dbconsole"
                        echo "*** Note: You can access service at url:
http://$(hostname):1158/em"
                        ;;
                stop)
                        echo  "*** Stopping Oracle Enterprise Manager 10g Database Control ***"
                        su - $USER -c "$ORACLE_HOME/bin/emctl stop dbconsole"
                        ;;
                *)
                        echo "Usage: $1 emctl {start|stop}"
                        ;;
        esac
}
case "$1" in
        start)
                echo "Starting Oracle database(s) listed in /etc/oratab ..."
                sleep 2
                su - $USER -c "$ORACLE_HOME/bin/dbstart"
                echo "Starting TNS listener ..."
                sleep 2
                su - $USER -c "$ORACLE_HOME/bin/lsnrctl start"
                touch /var/lock/subsys/orcl
                ;;
        stop)
                echo "Shutting down TNS listener ..."
                sleep 2
                su - $USER -c "$ORACLE_HOME/bin/lsnrctl stop"
                echo "Shutting down Oracle database(s) listed in /etc/oratab ..."
                su - $USER -c "$ORACLE_HOME/bin/dbshut"
                rm -f /var/lock/subsys/orcl
                ;;
        status)
                chkdb_status
                ps -ax | grep -e ora_ -e tnslsnr
                ;;
        isql)
                isql $2
                ;;
        sqlplus)
                sqlplus $2
                ;;
        emctl)
                emctl $2
                ;;
        *)
                echo "Usage: $1 {start|stop|status}"
                echo
                echo "Usage: $1 [isql | sqlplus | emctl] {start|stop}"
                ;;
esac
exit 0
```

第 19 章 Oracle Gui

目录

1. Create instance

```
[oracle@wcs ~]$ dbca
```

2. Oracle Net Configuration Assistant

3. Oracle Enterprise Manager

启动em

emctl start dbconsole

```
[oracle@oracle ~]$ emctl start dbconsole
Oracle Enterprise Manager 11g Database Control Release 11.2.0.1.0
Copyright (c) 1996, 2009 Oracle Corporation.  All rights reserved.
https://oracle.example.com:1158/em/console/aboutApplication
Starting Oracle Enterprise Manager 11g Database Control ..... started.
------------------------------------------------------------------
Logs are generated in directory
/opt/oracle/product/11.2.0/dbhome_1/oracle.example.com_wcsdb/sysman/log


https://oracle.example.com:1158/em
```

使用system用户登录

停止em

emctl stop dbconsole

```
[oracle@oracle ~]$ emctl stop dbconsole
Oracle Enterprise Manager 11g Database Control Release 11.2.0.1.0
Copyright (c) 1996, 2009 Oracle Corporation.  All rights reserved.
https://oracle.example.com:1158/em/console/aboutApplication
Stopping Oracle Enterprise Manager 11g Database Control ...
 ...  Stopped.
```

4. Other GUI - phpOraAdmin

http://phporaadmin.sourceforge.net

第 20 章 CLI

目录

1. SQL*Plus

```
[oracle@wcs ~]$ sqlplus /nolog
```

```
SQL*Plus: Release 11.2.0.1.0 Production on Sat May 28 18:19:53 2011

Copyright (c) 1982, 2009, Oracle.  All rights reserved.

SQL> conn / as sysdba;
Connected to an idle instance.
SQL> exit


[oracle@wcs ~]$ sqlplus / as sysdba

SQL*Plus: Release 11.2.0.1.0 Production on Sat May 28 18:31:25 2011

Copyright (c) 1982, 2009, Oracle.  All rights reserved.


Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options

SQL>
```

1.1. startup/shutdown

```
[oracle@localhost ~]$ sqlplus

SQL*Plus: Release 10.2.0.1.0 - Production on Tue Jan 5 09:44:13 2010

Copyright (c) 1982, 2005, Oracle.  All rights reserved.

Enter user-name: sys as sysdba
Enter password:

SYS@orcl> startup



SYS@orcl> shutdown immediate
```

1.2. conn

```
SQL> conn / as sysdba;
```

1.3. parameter

1.3.1. db

```
SQL> show parameter db;

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
db_16k_cache_size                    big integer 0
db_2k_cache_size                     big integer 0
db_32k_cache_size                    big integer 0
db_4k_cache_size                     big integer 0
db_8k_cache_size                     big integer 0
db_block_buffers                     integer     0
db_block_checking                    string      FALSE
db_block_checksum                    string      TYPICAL
db_block_size                        integer     8192
db_cache_advice                      string      ON
db_cache_size                        big integer 0

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
db_create_file_dest                  string
db_create_online_log_dest_1          string
db_create_online_log_dest_2          string
db_create_online_log_dest_3          string
db_create_online_log_dest_4          string
db_create_online_log_dest_5          string
db_domain                            string      example.com
db_file_multiblock_read_count        integer     128
db_file_name_convert                 string
db_files                             integer     200
db_flash_cache_file                  string

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
db_flash_cache_size                  big integer 0
db_flashback_retention_target        integer     1440
```

```
db_keep_cache_size                   big integer 0
db_lost_write_protect                string      NONE
db_name                              string      orcl
db_recovery_file_dest                string      /opt/oracle/flash_recovery_are
                                                 a
db_recovery_file_dest_size           big integer 3882M
db_recycle_cache_size                big integer 0
db_securefile                        string      PERMITTED
db_ultra_safe                        string      OFF

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
db_unique_name                       string      orcl
db_writer_processes                  integer     1
dbwr_io_slaves                       integer     0
rdbms_server_dn                      string
standby_archive_dest                 string      ?/dbs/arch
standby_file_management              string      MANUAL
xml_db_events                        string      enable
```

1.3.2. instance_name

```
SQL> show parameter instance_name;

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
instance_name                        string      orcl
SQL>

SQL> select instance from v$thread;

INSTANCE
--------------------------------------------------------------------------------
orcl
```

1.3.3. service_name

```
SQL> show parameter service_name;

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
service_names                        string      orcl.example.com
SQL>
```

1.3.4. global_name

```
SQL> select * from global_name;

GLOBAL_NAME
--------------------------------------------------------------------------------
ORCL.EXAMPLE.COM
```

1.3.5. db_name

```
SQL> show parameter db_name;

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
db_name                              string      orcl

SQL> select name from v$database;

NAME
---------
ORCL
```

1.3.6. db_domain

```
SQL> show parameter db_domain;
```

```
NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
db_domain                            string      example.com
SQL>
```

1.3.7. sga

```
SQL> show parameter sga;

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
lock_sga                             boolean     FALSE
pre_page_sga                         boolean     FALSE
sga_max_size                         big integer 6016M
sga_target                           big integer 0
```

1.3.8. size

```
SQL> show parameter size

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
bitmap_merge_area_size               integer     1048576
client_result_cache_size             big integer 0
create_bitmap_area_size              integer     8388608
db_16k_cache_size                    big integer 0
db_2k_cache_size                     big integer 0
db_32k_cache_size                    big integer 0
db_4k_cache_size                     big integer 0
db_8k_cache_size                     big integer 0
db_block_size                        integer     8192
db_cache_size                        big integer 0
db_flash_cache_size                  big integer 0

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
db_keep_cache_size                   big integer 0
db_recovery_file_dest_size           big integer 3882M
db_recycle_cache_size                big integer 0
global_context_pool_size             string
hash_area_size                       integer     131072
java_max_sessionspace_size           integer     0
java_pool_size                       big integer 0
large_pool_size                      big integer 0
max_dump_file_size                   string      unlimited
object_cache_max_size_percent        integer     10
object_cache_optimal_size            integer     102400

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
olap_page_pool_size                  big integer 0
parallel_execution_message_size      integer     16384
result_cache_max_size                big integer 16064K
sga_max_size                         big integer 6272M
shared_pool_reserved_size            big integer 36909875
shared_pool_size                     big integer 0
sort_area_retained_size              integer     0
sort_area_size                       integer     65536
streams_pool_size                    big integer 0
workarea_size_policy                 string      AUTO
```

1.3.9. spfile

```
SQL> show parameter spfile ;

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
spfile                               string      /opt/oracle/product/11.2.0/dbh
                                                 ome_1/dbs/spfilewcsdb.ora
```

1.3.10. cache

```
SQL> show parameter cache

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
client_result_cache_lag              big integer 3000
client_result_cache_size             big integer 0
db 16k cache size                    big integer 0
```

```
db_2k_cache_size                     big integer 0
db_32k_cache_size                    big integer 0
db_4k_cache_size                     big integer 0
db_8k_cache_size                     big integer 0
db_cache_advice                      string      ON
db_cache_size                        big integer 0
db_flash_cache_file                  string
db_flash_cache_size                  big integer 0

NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
db_keep_cache_size                   big integer 0
db_recycle_cache_size                big integer 0
object_cache_max_size_percent        integer     10
object_cache_optimal_size            integer     102400
result_cache_max_result              integer     5
result_cache_max_size                big integer 16064K
result_cache_mode                    string      MANUAL
result_cache_remote_expiration       integer     0
session_cached_cursors               integer     50
```

1.4. $ORACLE_HOME/sqlplus/admin/glogin.sql

```
set line 2000
set linesize 2000
set pagesize 100
col ename format a30
col sal format 999,999.999
```

1.5. @运行SQL

```
SQL> @ /home/oracle/your.sql
```

```
set pagesize 0
set linesize 80
set term off
set feed off
set echo off
set show off
set veri off
set head off

spool outputfile
select * from dba_users;
/
spool off
```

---

2. lsnrctl

3. RMAN

3.1. 数据库模式

数据库必须是归档模式，使用下面SQL查询当前数据库模式

```
SQL> archive log list;
Database log mode              Archive Mode
Automatic archival             Enabled
Archive destination            USE_DB_RECOVERY_FILE_DEST
Oldest online log sequence     66
Next log sequence to archive   68
Current log sequence           68
```

如果已经是归档模式可跳过此步,下面是切换服务器到归档模式的方法:

```
[oracle@oracle ~]$ sqlplus /nolog (启动sqlplus)
SQL> conn / as sysdba (以DBA身份连接数据库)
SQL> shutdown immediate; (立即关闭数据库)
SQL> startup mount (启动实例并加载数据库，但不打开)
SQL> alter database archivelog; (更改数据库为归档模式)
SQL> alter database open; (打开数据库)
SQL> alter system archive log start; (启用自动归档)
SQL> exit (退出)
```

rman 采用块备份，查看块信息使用下面SQL语句

```
select * from dba_extents
```

3.2. 完全备份

```
run {
allocate channel d1 type disk;
backup format='/opt/oracle/backup/%d_%N_%s.bk' tablespace users;
release channel d1;
}
```

下面让我来演示给你看

```
[oracle@oracle ~]$ mkdir /opt/oracle/backup
[oracle@oracle ~]$ rman target sys/passw0rd nocatalog

Recovery Manager: Release 11.2.0.1.0 - Production on Mon Jun 13 12:03:20 2011

Copyright (c) 1982, 2009, Oracle and/or its affiliates.  All rights reserved.

connected to target database: WCSDB (DBID=2970836713)
using target database control file instead of recovery catalog

RMAN> run {
allocate channel d1 type disk;
backup format='/opt/oracle/backup/%d_%N_%s.bk' tablespace users;
release channel d1;
} 2> 3> 4> 5>
```

```
allocated channel: d1
channel d1: SID=36 device type=DISK

Starting backup at 13-JUN-11
channel d1: starting full datafile backup set
channel d1: specifying datafile(s) in backup set
input datafile file number=00004 name=/opt/oracle/oradata/wcsdb/users01.dbf
channel d1: starting piece 1 at 13-JUN-11
channel d1: finished piece 1 at 13-JUN-11
piece handle=/opt/oracle/backup/WCSDB_USERS_1.bk tag=TAG20110613T120325 comment=NONE
channel d1: backup set complete, elapsed time: 00:00:01
Finished backup at 13-JUN-11

released channel: d1

RMAN>
```

查看备份结果

```
RMAN> list backup of tablespace users;


List of Backup Sets
===================


BS Key  Type LV Size       Device Type Elapsed Time Completion Time
------- ---- -- ---------- ----------- ------------ ---------------
1       Full    1.30M      DISK        00:00:01     13-JUN-11
        BP Key: 1   Status: AVAILABLE  Compressed: NO  Tag: TAG20110613T120325
        Piece Name: /opt/oracle/backup/WCSDB_USERS_1.bk
  List of Datafiles in backup set 1
  File LV Type Ckp SCN    Ckp Time  Name
  ---- -- ---- ---------- --------- ----
  4       Full 1561686    13-JUN-11 /opt/oracle/oradata/wcsdb/users01.dbf
```

备份目录下面是刚刚生成的备份文件

```
$ ls /opt/oracle/backup
WCSDB_USERS_1.bk
```

例 20.1. full backup

```
# crontab -u oracle -l
0 1 * * * /opt/oracle/rman/backup.sh
```

```
# cat .bash_profile
export ORACLE_BASE=/opt/oracle
export ORACLE_HOME=$ORACLE_BASE/product/11.2.0/dbhome_1
export ORACLE_SID=orcl
export PATH=$PATH:$HOME/bin:$ORACLE_HOME/bin
export LD_LIBRARY_PATH=$ORACLE_HOME/lib:/usr/lib

# cat /opt/oracle/rman/backup.sh
rman target sys/passw0rd@orcl msglog=/opt/oracle/rman/log/`date +"%Y%m%d%H%M"`.log
cmdfile=/opt/oracle/rman/orcl.rman
```

```
# cat /opt/oracle/rman/orcl.rman
run {
   allocate channel c1 type disk;
   allocate channel c2 type disk;
   configure retention policy to recovery window of 6 days;
   configure controlfile autobackup on;
   configure backup optimization  on;
   configure device type disk parallelism 4 backup type to compressed backupset;
   configure controlfile autobackup format for device type disk to
'/opt/oracle/backup/rman/%F.ctl';
   sql 'alter system switch logfile';
   backup full database format '/opt/oracle/backup/rman/df_%t_%s_%p.bak' tag='full' include
current controlfile;
   sql 'alter system archive log current';
   backup  archivelog all  format '/opt/oracle/backup/rman/arc_%U_%s.bak' delete all input;
   release channel c1;
   release channel c2;
}
crosscheck backup;
delete noprompt expired backup;
delete noprompt obsolete;
exit
```

3.3. 增量备份

```
RMAN> BACKUP INCREMENTAL LEVEL 0 DATABASE;
RMAN> BACKUP INCREMENTAL LEVEL 1 TABLESPACE SYSTEM DATAFILE 'ora_home/oradata/ tools01.dbf';
RMAN> BACKUP INCREMENTAL LEVEL = 1 CUMULATIVE TABLESPACE users;
```

网上发现的脚步，署名不详

```
run{
allocate channel c1 type disk;
allocate channel c2 type disk;
allocate channel c3 type disk;
backup full tag 'dbfull' format '/u01/oradata/backup/full%u_%s_%p' database include current
controlfile;
sql 'alter system archive log current';
backup filesperset 3 format '/u01/oradata/backup/arch%u_%s_%p' archivelog all delete input;
release channel c1;
release channel c2;
release channel c3;
}
```

零级备份脚本

```
run{
allocate channel c1 type disk;
allocate channel c2 type disk;
allocate channel c3 type disk;
backup incremental level 0 tag ‘db0’ format ‘/u01/oradata/backup/db0%u_%s_%p’ database skip
readonly;
sql ‘alter system archive log current’;
backup filesperset 3 format ’/u01/oradata/backup/arch%u_%s_%p’ archivelog all delete input;
release channel c1;
release channel c2;
release channel c3;
}
```

一级备份脚本

```
run{
allocate channel c1 type disk;
allocate channel c2 type disk;
allocate channel c3 type disk;
backup incremental level 1 tag ‘db1’ format ‘/u01/oradata/backup/db1%u_%s_%p’ database skip
readonly;
sql ‘alter system archive log current’;
backup filesperset 3 format ’/u01/oradata/backup/arch%u_%s_%p’ archivelog all delete input;
release channel c1;
release channel c2;
release channel c3;
}
```

网上发现的脚步，没有署名，我也没有测试过，仅供参考

do_rman.sh

```
#!/bin/bash
#set env
export NLS_LANG=AMERICAN_AMERICA.ZHS16GBK
export PATH=$ORACLE_HOME/bin:$PATH

TARGET_SID=$TARGET_SID
RMAN_SID=$RMAN_SID

export PATH=$ORACLE_HOME/bin:$PATH
DATE=`date +%w`
DATE_2=`date +%Y%m%d`
BACKUP_PATH=$ORACLE_BASE/admin/$ORACLE_SID/rman/backup
LEVEL=$@
BIN=$ORACLE_HOME/bin
# Delete the data backuped last time

rm -rf $BACKUP_PATH/data/$DATE/*

if [ $# != 1 ]; then
        echo "usage: do_rman.sh n
        where n is the rman backup level(0,1,2 is permitted)."
        exit 1
fi
if [ $@ -ne 0 -a $@ -ne 1 -a $@ -ne 2 ]; then
        echo "usage: do_rman.sh n
        where n is the rman backup level(Only 0,1,2 is permitted)."
        exit 2
fi
echo "[do_rman] rman is starting."
if [ $LEVEL = 0 ]; then
        $BIN/rman log $BACKUP_PATH/log/level.$TARGET_SID.$LEVEL.$DATE_2.log < connect target /;
        connect catalog rman/rman@$RMAN_SID;
        resync catalog;
        run{
                allocate channel c1 type disk ;
```

```
                crosscheck backupset of archivelog all ;
                backup filesperset 3 format
'$BACKUP_PATH/data/$DATE/arch.%d.live.$LEVEL.%t'(archivelog from time 'sysdate-7' all delete
input) ;
                delete noprompt expired backupset of archivelog all ;
                release channel c1 ;
        }

        run{
                allocate channel c2 type disk ;
                crosscheck backupset of database ;
                backup incremental level $LEVEL filesperset 3 format
'$BACKUP_PATH/data/$DATE/data.%d.live.$LEVEL.%t'(database include current controlfile) ;
                delete noprompt expired backupset of database ;
                delete noprompt obsolete ;
                release channel c2 ;
        }
        exit;
EOF

else
        $BIN/rman log $BACKUP_PATH/log/level.$TARGET_SID.$LEVEL.$DATE_2.log < connect target
sys/sys202;
        connect catalog rman/rman@$RMAN_SID;
        resync catalog;
        run{
                allocate channel c1 type disk ;
                crosscheck backupset of archivelog all ;
                backup filesperset 3 format '$BACKUP_PATH/data/$DATE/arch.%d.live.$LEVEL.%t'
(archivelog from time 'sysdate-1' all) ;
                delete noprompt expired backupset of archivelog all ;
                release channel c1 ;
        }

        run{
                allocate channel c2 type disk ;
                crosscheck backupset of database ;
                backup incremental level $LEVEL filesperset 3 format
'$BACKUP_PATH/data/$DATE/data.%d.live.$LEVEL.%t' (database include current controlfile) ;
                delete noprompt expired backupset of database ;
                delete noprompt obsolete ;
                release channel c2 ;
        }

        exit;
EOF
fi

echo "[do_rman] rman is success."
```

3.4. 恢复数据库

```
%rman target=rman/rman@mydb

RMAN> startup nomount

RMAN> restore database;

RMAN> recover database;

RMAN> alter database open;
```

网上找到的文档，署名不详，我没有测试过是否可以运行

```
设定参数:
CONFIGURE CONTROLFILE AUTOBACKUP FORMAT FOR DEVICE TYPE DISK TO '/arch/rman/controlfile%F.ctnl';
CONFIGURE CHANNEL 1 DEVICE TYPE DISK FORMAT   '/arch/rman/full%t.bak';

数据库rman 全备
rman>backup database plus archivelog delete input;
备份产生的三个文件
-rw-r----- 1 oracle oinstall   7143424 Jan 28 18:05 controlfilec-2719028776-20100128-01.ctnl
-rw-r----- 1 oracle oinstall  41074688 Jan 28 18:03 full709495428.bak
-rw-r----- 1 oracle oinstall 763379712 Jan 28 18:05 full709495432.bak
-rw-r----- 1 oracle oinstall     17920 Jan 28 18:05 full709495518.bak


rman恢复
------------------
1、启动数据库到 nomount 状态
$sqlplus / as sysdba
SQL> startup nomount

2、spfile 恢复
$rman nocatalog
rman> connect target /
run {
allocate channel c1 DEVICE TYPE DISK format '/arch/rman/controlfile%F.ctnl';
restore spfile to pfile '/arch/pfile.ora' from '/arch/rman/controlfilec-2719028776-20100128-
01.ctnl';
release channel c1;
}
```

3、控制文件恢复

```
run {
allocate channel c1 DEVICE TYPE DISK format '/arch/rman/controlfile%F.ctnl';
restore controlfile from '/arch/rman/controlfilec-2719028776-20100128-01.ctnl';
release channel c1;
}
```

4、全库恢复

在恢复控制文件的情况下，可以修改数据到 mount状态，进行全库的恢复

```
rman> alter database mount;
run {
allocate channel c1 device type disk format '/arch/rman/full%t.bak';
restore database;
release channel c1;
}
```

5、恢复archivelog

```
run {
allocate channel c1 device type disk format '/arch/rman/full%t.bak';
restore archivelog all;
}
run {
allocate channel c1 device type disk format '/arch/rman/full%t.bak';
restore archivelog from logseq=72 until logseq=73;
}
```

6、redolog 恢复

```
SQL>recover database using backup controlfile until cancel;
SQL>alter database open resetlogs;  //现在有redolog 产生了，还有temp表空间文件也生成了或者分开两步执行

SQL>select * from dual;
```

全库成功恢复

3.5. 是用tar打包rman文件

```
# find /opt/oracle/rman/ -type f -mtime 1 -printf "%CY-%Cm-%Cd %Cr %s %f\n"

tar --newer="2011-07-04" -zcvf backup.tar.gz /opt/oracle/rman/

find /opt/oracle/rman/ -type f -mtime 1 | xargs tar zcvf oracle_2011-07-04.tgz

rsync -azP `find /opt/oracle/rman/ -type f -mtime 1` test@172.16.0.5:/home/test
```

部分 V. NoSQL

目录

http://nosql-database.org/

第 21 章 Cassandra

目录

http://incubator.apache.org/cassandra/

1. Getting Started

1.1. Downloading and Installation

$ cd /srv/

```
$ cd /usr/local/src/
```

```
$ sudo wget -c http://apache.freelamp.com/cassandra/0.5.1/apache-cassandra-0.5.1-bin.tar.gz
$ sudo tar zxvf apache-cassandra-0.5.1-bin.tar.gz
$ cp -r /usr/local/src/apache-cassandra-0.5.1 /srv/
$ cd /srv/
$ sudo ln -s apache-cassandra-0.5.1 apache-cassandra
$ cd apache-cassandra
```

1.2. Running Cassandra

Running Cassandra

```
$ bin/cassandra
$ Listening for transport dt_socket at address: 8888
INFO - Saved Token not found. Using 70882909557229809272696372631016976044
INFO - Starting up server gossip
```

1.3. cli tool

cli

$ bin/cassandra-cli

```
neo@db:/srv/apache-cassandra$ bin/cassandra-cli
Welcome to cassandra CLI.
```

```
Type 'help' or '?' for help. Type 'quit' or 'exit' to quit.
cassandra>
```

```
cassandra> connect localhost/9160
Connected to localhost/9160
```

1.4. Testing Cassandra

test

```
cassandra> show keyspaces
Keyspace1
system
```

insert value

```
cassandra> set Keyspace1.Standard1['member']['name']='neo'
Value inserted.
cassandra> set Keyspace1.Standard1['member']['age']='27'
Value inserted.
cassandra> set Keyspace1.Standard1['member']['email']='openunix@163.com'
Value inserted.
cassandra>
cassandra> get Keyspace1.Standard1['member']
=> (column=name, value=neo, timestamp=1271070497471)
=> (column=email, value=openunix@163.com, timestamp=1271070498334)
```

```
=> (column=age, value=27, timestamp=1271070497519)
Returned 3 results.
cassandra>
```

---

2. Configure Cassandra

2.1. Envionment variables

```
CASSANDRA_HOME=/srv/apache-cassandra
```

2.2. log4j.properties

```
[root@db apache-cassandra]# vim conf/log4j.properties
log4j.appender.R=org.apache.log4j.RollingFileAppender
log4j.appender.file.maxFileSize=20MB
log4j.appender.file.maxBackupIndex=50
log4j.appender.R.layout=org.apache.log4j.PatternLayout
log4j.appender.R.layout.ConversionPattern=%5p [%t] %d{ISO8601} %F (line %L) %m%n
# Edit the next line to point to your logs directory
log4j.appender.R.File=/var/log/cassandra/system.log

# Application logging options
#log4j.logger.com.facebook=DEBUG
#log4j.logger.com.facebook.infrastructure.gms=DEBUG
#log4j.logger.com.facebook.infrastructure.db=DEBUG
```

2.3. storage-conf.xml

```
[root@db apache-cassandra]# vim conf/storage-conf.xml
```

3. Keyspace

3.1. Schema

3.1.1. Keyspace

3.1.2. Column family

3.1.2.1. Name

3.1.2.2. Column

3.1.2.3. Super column

3.1.2.4. Sorting

3.2. Keyspace example

例 21.1. Twitter

```
<Keyspace Name="Twitter">
<ColumnFamily CompareWith="UTF8Type" Name="Statuses" />
<ColumnFamily CompareWith="UTF8Type" Name="StatusAudits" />
<ColumnFamily CompareWith="UTF8Type" Name="StatusRelationships"
CompareSubcolumnsWith="TimeUUIDType" ColumnType="Super" />
<ColumnFamily CompareWith="UTF8Type" Name="Users" />
<ColumnFamily CompareWith="UTF8Type" Name="UserRelationships"
CompareSubcolumnsWith="TimeUUIDType" ColumnType="Super" />
</Keyspace>
```

例 21.2. Twissandra

```
  <Keyspaces>
    <Keyspace Name="Twissandra">
       <ColumnFamily CompareWith="UTF8Type" Name="User"/>
      <ColumnFamily CompareWith="BytesType" Name="Username"/>
      <ColumnFamily CompareWith="BytesType" Name="Friends"/>
      <ColumnFamily CompareWith="BytesType" Name="Followers"/>
      <ColumnFamily CompareWith="UTF8Type" Name="Tweet"/>
      <ColumnFamily CompareWith="LongType" Name="Timeline"/>
      <ColumnFamily CompareWith="LongType" Name="Userline"/>

<ReplicaPlacementStrategy>org.apache.cassandra.locator.RackUnawareStrategy</ReplicaPlacementStrategy

      <!-- Number of replicas of the data -->
      <ReplicationFactor>1</ReplicationFactor>
      <EndPointSnitch>org.apache.cassandra.locator.EndPointSnitch</EndPointSnitch>

    </Keyspace>
  </Keyspaces>
```

Schema Layout

In Cassandra, the way that your data is structured is very closely tied to how how it will be retrieved. Let's start with the user ColumnFamily. The key is a user id, and the columns are the properties on the user:

```
User = {
    'a4a70900-24e1-11df-8924-001ff3591711': {
        'id': 'a4a70900-24e1-11df-8924-001ff3591711',
        'username': 'ericflo',
        'password': '****',
    },
}
```

Since some of the URLs on the site actually have the username, we need to be able to map from the username to the user id:

```
Username = {
    'ericflo': {
        'id': 'a4a70900-24e1-11df-8924-001ff3591711',
    },
}
```

Friends and followers are keyed by the user id, and then the columns are the friend user id and follower user ids, and we store a timestamp as the value because it's interesting information to have:

```
Friends = {
    'a4a70900-24e1-11df-8924-001ff3591711': {
        # friend id: timestamp of when the friendship was added
        '10cf667c-24e2-11df-8924-001ff3591711': '1267413962580791',
        '343d5db2-24e2-11df-8924-001ff3591711': '1267413990076949',
        '3f22b5f6-24e2-11df-8924-001ff3591711': '1267414008133277',
    },
}

Followers = {
    'a4a70900-24e1-11df-8924-001ff3591711': {
        # friend id: timestamp of when the followership was added
        '10cf667c-24e2-11df-8924-001ff3591711': '1267413962580791',
        '343d5db2-24e2-11df-8924-001ff3591711': '1267413990076949',
        '3f22b5f6-24e2-11df-8924-001ff3591711': '1267414008133277',
    },
}
```

Tweets are stored in a way similar to users:

```
Tweet = {
    '7561a442-24e2-11df-8924-001ff3591711': {
        'id': '89da3178-24e2-11df-8924-001ff3591711',
        'user_id': 'a4a70900-24e1-11df-8924-001ff3591711',
        'body': 'Trying out Twissandra. This is awesome!',
        '_ts': '1267414173047880',
    },
}
```

The Timeline and Userline column families keep track of which tweets should appear, and in what order. To that effect, the key is the user id, the column name is a timestamp, and the column value is the tweet id:

```
Timeline = {
    'a4a70900-24e1-11df-8924-001ff3591711': {
        # timestamp of tweet: tweet id
        1267414247561777: '7561a442-24e2-11df-8924-001ff3591711',
        1267414277402340: 'f0c8d718-24e2-11df-8924-001ff3591711',
        1267414305866969: 'f9e6d804-24e2-11df-8924-001ff3591711',
        1267414319522925: '02ccb5ec-24e3-11df-8924-001ff3591711',
    },
}

Userline = {
    'a4a70900-24e1-11df-8924-001ff3591711': {
        # timestamp of tweet: tweet id
        1267414247561777: '7561a442-24e2-11df-8924-001ff3591711',
        1267414277402340: 'f0c8d718-24e2-11df-8924-001ff3591711',
        1267414305866969: 'f9e6d804-24e2-11df-8924-001ff3591711',
        1267414319522925: '02ccb5ec-24e3-11df-8924-001ff3591711',
    },
}
```

4. Cluster

4.1. Running a cluster

```
<Seed>127.0.0.1</Seed>
```

改为

```
<Seed>172.16.0.1</Seed>
```

```
  <ListenAddress>localhost</ListenAddress>
```
改为:
```
  <ListenAddress>172.16.0.1</ListenAddress>
```

```
    <ThriftAddress>localhost</ThriftAddress>
```
改为:
```
    <ThriftAddress>0.0.0.0</ThriftAddress>
```

$ bin/cassandra

4.2. Running a single node

```
<Seed>127.0.0.1</Seed>
```

改为

```
<Seed>172.16.0.2</Seed>
```

```
  <Seeds>
      <Seed>172.16.0.1</Seed>
      <Seed>172.16.0.2</Seed>
      <Seed>172.16.0.3</Seed>
      <Seed>172.16.0.4</Seed>
      <Seed>172.16.0.5</Seed>
  </Seeds>
```

```
  <ListenAddress>localhost</ListenAddress>
```
改为:
```
  <ListenAddress>172.16.0.2</ListenAddress>
```

```
    <ThriftAddress>localhost</ThriftAddress>
```

改为:

```
<ThriftAddress>0.0.0.0</ThriftAddress>
```

$ bin/cassandra

4.3. nodetool

```
nodeprobe -host 172.16.0.1 ring
```

第 22 章 MongoDB

目录

http://www.mongodb.org/

1. Quickstart

Install MongoDB

```
wget http://fastdl.mongodb.org/linux/mongodb-linux-x86_64-1.5.5.tgz

debian:/srv# tar zxf mongodb-linux-x86_64-1.5.5.tgz
debian:/srv# ln -s mongodb-linux-x86_64-1.5.5 mongodb
```

Create a data directory

By default MongoDB will store data in /data/db, but it won't automatically create that directory. To create it, do:

```
$ sudo mkdir -p /data/db/
$ sudo chown `id -u` /data/db
```

You can also tell MongoDB to use a different data directory, with the --dbpath option.

Run and connect to the server

First, start the MongoDB server in one terminal:

```
$ ./mongodb/bin/mongod
```

In a separate terminal, start the shell, which will connect to localhost by default:

```
$ ./mongodb/bin/mongo
> db.foo.save( { a : 1 } )
> db.foo.find()
```

Congratulations, you've just saved and retrieved your first document with MongoDB!

例 22.1. MongoDB Test

```
debian:/srv/mongodb/bin# ./mongo
MongoDB shell version: 1.5.5
connecting to: test
[initandlisten] Thu Jul 22 16:42:07 connection accepted from 127.0.0.1:42876 #1
> db.foo.save({a:1})
Thu Jul 22 16:42:23 allocating new datafile /data/db/test.ns, filling with zeroes...
Thu Jul 22 16:42:23 done allocating datafile /data/db/test.ns, size: 16MB,  took 0.025 secs
Thu Jul 22 16:42:23 allocating new datafile /data/db/test.0, filling with zeroes...
Thu Jul 22 16:42:23 done allocating datafile /data/db/test.0, size: 64MB,  took 0.105 secs
[conn1] Thu Jul 22 16:42:23 building new index on { _id: 1 } for test.foo
[conn1] Thu Jul 22 16:42:23 Buildindex test.foo idxNo:0 { name: "_id_", ns: "test.foo", key: {
_id: 1 } }
[conn1] Thu Jul 22 16:42:23 done for 0 records 0secs
[conn1] Thu Jul 22 16:42:23 insert test.foo 136ms
> Thu Jul 22 16:42:23 allocating new datafile /data/db/test.1, filling with zeroes...
Thu Jul 22 16:42:24 done allocating datafile /data/db/test.1, size: 128MB,  took 0.228 secs
> db.foo.find()
{ "_id" : ObjectId("4c48046f74050cbf6c9a0ef6"), "a" : 1 }

> use neo
switched to db neo
> db.foo.save({a:1})
Thu Jul 22 16:54:50 allocating new datafile /data/db/neo.ns, filling with zeroes...
Thu Jul 22 16:54:50 done allocating datafile /data/db/neo.ns, size: 16MB,  took 0.026 secs
Thu Jul 22 16:54:50 allocating new datafile /data/db/neo.0, filling with zeroes...
Thu Jul 22 16:54:50 done allocating datafile /data/db/neo.0, size: 64MB,  took 0.122 secs
[conn1] Thu Jul 22 16:54:50 building new index on { _id: 1 } for neo.foo
[conn1] Thu Jul 22 16:54:50 Buildindex neo.foo idxNo:0 { name: "_id_", ns: "neo.foo", key: { _id:
1 } }
Thu Jul 22 16:54:50 allocating new datafile /data/db/neo.1, filling with zeroes...
[conn1] Thu Jul 22 16:54:50 done for 0 records 0.01secs
[conn1] Thu Jul 22 16:54:50 insert neo.foo 164ms
> Thu Jul 22 16:54:50 done allocating datafile /data/db/neo.1, size: 128MB,  took 0.217 secs

> db.foo.find()
{ "_id" : ObjectId("4c48075a74050cbf6c9a0ef7"), "a" : 1 }
>

> db.neo.save({a:1})
[conn1] Thu Jul 22 16:58:32 building new index on { _id: 1 } for neo.neo
[conn1] Thu Jul 22 16:58:32 Buildindex neo.neo idxNo:0 { name: "_id_", ns: "neo.neo", key: { _id:
1 } }
[conn1] Thu Jul 22 16:58:32 done for 0 records 0.024secs
> db.neo.find()
{ "_id" : ObjectId("4c48083874050cbf6c9a0ef8"), "a" : 1 }
```

1.1. Starting Mongo

Running as a Daemon

```
 $ ./mongod --fork --logpath /var/log/mongodb.log --logappend
```

1.2. Ubuntu MongoDB

```
$ sudo apt-get install mongodb-server mongodb-clients
```

```
$ /etc/init.d/mongodb
Usage: /etc/init.d/mongodb {start|stop|force-stop|restart|force-reload|status}
```

---

2. Security and Authentication

Add Users

```
> use neo
switched to db neo
> db.addUser('neo','chen')
{
        "user" : "neo",
        "readOnly" : false,
        "pwd" : "68ace374737253d87e0ec91d4fcb673d"
}
[conn5] Thu Jul 22 17:48:52 building new index on { _id: 1 } for neo.system.users
[conn5] Thu Jul 22 17:48:52 Buildindex neo.system.users idxNo:0 { name: "_id_", ns:
"neo.system.users", key: { _id: 1 } }
[conn5] Thu Jul 22 17:48:52 done for 0 records 0secs
> db.system.users.find()
{ "_id" : ObjectId("4c481404b9db6474d2fcb76f"), "user" : "neo", "readOnly" : false, "pwd" :
"68ace374737253d87e0ec91d4fcb673d" }
> db.auth('neo','chen')
1
```

Deleting Users

To delete a user:

```
db.system.users.remove( { user: username } )
```

3. Drivers

3.1. Using MongoDB in PHP

Installing the PHP Driver

```
sudo pecl install mongo
```

Open your php.ini file and add to it:

```
extension=mongo.so
```

例 22.2.

```
[root@subversion html]# cat mongo.php
<?php

// connect
$m = new Mongo('192.168.3.9');

// select a database
$db = $m->comedy;
$collection = $db->cartoons;

// add an element
$obj = array( "title" => "Calvin and Hobbes", "author" => "Bill Watterson" );
$collection->insert($obj);

// add another element, with a different "shape"
$obj = array( "title" => "XKCD", "online" => true );
$collection->insert($obj);

// find everything in the collection
$cursor = $collection->find();

// iterate through the results
foreach ($cursor as $obj) {
    echo $obj["title"] . "\n";
}

// disconnect
$m->close();

?>
```

```
[root@subversion html]# php mongo.php
Calvin and Hobbes
XKCD
[root@subversion html]# php mongo.php
Calvin and Hobbes
XKCD
Calvin and Hobbes
XKCD
```

```
> use comedy
switched to db comedy
> db.foo.find()
> db.cartoons.find()
{ "_id" : ObjectId("4c481d2b9503c17611000000"), "title" : "Calvin and Hobbes", "author" : "Bill
Watterson" }
{ "_id" : ObjectId("4c481d2b9503c17611010000"), "title" : "XKCD", "online" : true }
{ "_id" : ObjectId("4c481d2f9503c17711000000"), "title" : "Calvin and Hobbes", "author" : "Bill
Watterson" }
{ "_id" : ObjectId("4c481d2f9503c17711010000"), "title" : "XKCD", "online" : true }
>
```

第 23 章 Membase

第 24 章 key-value cache

目录

1. TokyoCabinet/Tyrant

http://www.162cm.com/p/tokyotyrant.html

2. Redis

http://redis.io/

```
$ sudo apt-get install redis-server
```

```
$ dpkg -s redis-server
Package: redis-server
Status: install ok installed
Priority: optional
Section: database
Installed-Size: 208
Maintainer: Chris Lamb <lamby@debian.org>
Architecture: amd64
Source: redis
Version: 2:1.2.6-1
Depends: libc6 (>= 2.7), adduser
Conffiles:
 /etc/redis/redis.conf a19bad63017ec19def2c3a8a07bdc362
 /etc/logrotate.d/redis-server 06755b99ef70d62a56cff94cbfc36de7
 /etc/init.d/redis-server 3742555c10ab16fdd67fcbaf92faf694
 /etc/bash_completion.d/redis-cli 848565df7f222dc03c8d5cb34b9e0188
Description: Persistent key-value database with network interface
 Redis is a key-value database in a similar vein to memcache but the dataset
 is non-volatile. Redis additionally provides native support for atomically
 manipulating and querying data structures such as lists and sets.
 .
 The dataset is stored entirely in memory and periodically flushed to disk.
Homepage: http://code.google.com/p/redis/
```

```
$ cat /etc/redis/redis.conf

# Redis configuration file example

# By default Redis does not run as a daemon. Use 'yes' if you need it.
# Note that Redis will write a pid file in /var/run/redis.pid when daemonized.
daemonize yes

# When run as a daemon, Redis write a pid file in /var/run/redis.pid by default.
# You can specify a custom pid file location here.
pidfile /var/run/redis.pid

# Accept connections on the specified port, default is 6379
port 6379

# If you want you can bind a single interface, if the bind option is not
# specified all the interfaces will listen for connections.
#
bind 127.0.0.1

# Close the connection after a client is idle for N seconds (0 to disable)
timeout 300

# Set server verbosity to 'debug'
# it can be one of:
# debug (a lot of information, useful for development/testing)
# notice (moderately verbose, what you want in production probably)
# warning (only very important / critical messages are logged)
loglevel notice

# Specify the log file name. Also 'stdout' can be used to force
# the demon to log on the standard output. Note that if you use standard
# output for logging but daemonize, logs will be sent to /dev/null
logfile /var/log/redis/redis-server.log

# Set the number of databases. The default database is DB 0, you can select
# a different one on a per-connection basis using SELECT <dbid> where
# dbid is a number between 0 and 'databases'-1
databases 16

################################ SNAPSHOTTING  #################################
#
# Save the DB on disk:
#
#   save <seconds> <changes>
#
#   Will save the DB if both the given number of seconds and the given
#   number of write operations against the DB occurred.
```

```
#
#   In the example below the behaviour will be to save:
#   after 900 sec (15 min) if at least 1 key changed
#   after 300 sec (5 min) if at least 10 keys changed
#   after 60 sec if at least 10000 keys changed
save 900 1
save 300 10
save 60 10000

# Compress string objects using LZF when dump .rdb databases?
# For default that's set to 'yes' as it's almost always a win.
# If you want to save some CPU in the saving child set it to 'no' but
# the dataset will likely be bigger if you have compressible values or keys.
rdbcompression yes

# The filename where to dump the DB
dbfilename dump.rdb

# For default save/load DB in/from the working directory
# Note that you must specify a directory not a file name.
dir /var/lib/redis

################################# REPLICATION #################################

# Master-Slave replication. Use slaveof to make a Redis instance a copy of
# another Redis server. Note that the configuration is local to the slave
# so for example it is possible to configure the slave to save the DB with a
# different interval, or to listen to another port, and so on.
#
# slaveof <masterip> <masterport>

# If the master is password protected (using the "requirepass" configuration
# directive below) it is possible to tell the slave to authenticate before
# starting the replication synchronization process, otherwise the master will
# refuse the slave request.
#
# masterauth <master-password>

################################## SECURITY ###################################

# Require clients to issue AUTH <PASSWORD> before processing any other
# commands.  This might be useful in environments in which you do not trust
# others with access to the host running redis-server.
#
# This should stay commented out for backward compatibility and because most
# people do not need auth (e.g. they run their own servers).
#
# requirepass foobared

################################### LIMITS ####################################

# Set the max number of connected clients at the same time. By default there
# is no limit, and it's up to the number of file descriptors the Redis process
# is able to open. The special value '0' means no limts.
# Once the limit is reached Redis will close all the new connections sending
# an error 'max number of clients reached'.
#
# maxclients 128

# Don't use more memory than the specified amount of bytes.
# When the memory limit is reached Redis will try to remove keys with an
# EXPIRE set. It will try to start freeing keys that are going to expire
# in little time and preserve keys with a longer time to live.
# Redis will also try to remove objects from free lists if possible.
#
# If all this fails, Redis will start to reply with errors to commands
# that will use more memory, like SET, LPUSH, and so on, and will continue
# to reply to most read-only commands like GET.
#
# WARNING: maxmemory can be a good idea mainly if you want to use Redis as a
# 'state' server or cache, not as a real DB. When Redis is used as a real
# database the memory usage will grow over the weeks, it will be obvious if
# it is going to use too much memory in the long run, and you'll have the time
# to upgrade. With maxmemory after the limit is reached you'll start to get
# errors for write operations, and this may even lead to DB inconsistency.
#
# maxmemory <bytes>

############################## APPEND ONLY MODE ###############################

# By default Redis asynchronously dumps the dataset on disk. If you can live
# with the idea that the latest records will be lost if something like a crash
# happens this is the preferred way to run Redis. If instead you care a lot
# about your data and don't want to that a single record can get lost you should
# enable the append only mode: when this mode is enabled Redis will append
# every write operation received in the file appendonly.log. This file will
# be read on startup in order to rebuild the full dataset in memory.
#
# Note that you can have both the async dumps and the append only file if you
# like (you have to comment the "save" statements above to disable the dumps).
# Still if append only mode is enabled Redis will load the data from the
# log file at startup ignoring the dump.rdb file.
#
# The name of the append only file is "appendonly.log"
#
# IMPORTANT: Check the BGREWRITEAOF to check how to rewrite the append
# log file in background when it gets too big.

appendonly no

# The fsync() call tells the Operating System to actually write data on disk
# instead to wait for more data in the output buffer. Some OS will really flush
# data on disk, some other OS will just try to do it ASAP.
#
# Redis supports three different modes:
```

```
#
# no: don't fsync, just let the OS flush the data when it wants. Faster.
# always: fsync after every write to the append only log . Slow, Safest.
# everysec: fsync only if one second passed since the last fsync. Compromise.
#
# The default is "always" that's the safer of the options. It's up to you to
# understand if you can relax this to "everysec" that will fsync every second
# or to "no" that will let the operating system flush the output buffer when
# it want, for better performances (but if you can live with the idea of
# some data loss consider the default persistence mode that's snapshotting).

appendfsync always
# appendfsync everysec
# appendfsync no

############################### ADVANCED CONFIG ###############################

# Glue small output buffers together in order to send small replies in a
# single TCP packet. Uses a bit more CPU but most of the times it is a win
# in terms of number of queries per second. Use 'yes' if unsure.
glueoutputbuf yes

# Use object sharing. Can save a lot of memory if you have many common
# string in your dataset, but performs lookups against the shared objects
# pool so it uses more CPU and can be a bit slower. Usually it's a good
# idea.
#
# When object sharing is enabled (shareobjects yes) you can use
# shareobjectspoolsize to control the size of the pool used in order to try
# object sharing. A bigger pool size will lead to better sharing capabilities.
# In general you want this value to be at least the double of the number of
# very common strings you have in your dataset.
#
# WARNING: object sharing is experimental, don't enable this feature
# in production before of Redis 1.0-stable. Still please try this feature in
# your development environment so that we can test it better.
shareobjects no
shareobjectspoolsize 1024


$ sudo /etc/init.d/redis-server start
```

2.1. Test Redis

http://redis.io/commands

```
$ redis-cli info
redis_version:1.2.6
arch_bits:64
multiplexing_api:epoll
uptime_in_seconds:859
uptime_in_days:0
connected_clients:1
connected_slaves:0
used_memory:619490
used_memory_human:604.97K
changes_since_last_save:0
bgsave_in_progress:0
last_save_time:1311100746
bgrewriteaof_in_progress:0
total_connections_received:4
total_commands_processed:0
role:master

$ redis-cli set name neo
OK
$ redis-cli get name
neo

$ telnet localhost 6379
Trying ::1...
telnet: connect to address ::1: Connection refused
Trying 127.0.0.1...
Connected to localhost (127.0.0.1).
Escape character is '^]'.
get name
$3
neo
quit
Connection closed by foreign host.
```

3. Flare

4. Voldemort

5. LevelDB

LevelDB is a fast key-value storage library written at Google that provides an ordered mapping from string keys to string values.

http://code.google.com/p/leveldb/

部分 VI. Database Relational

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第 27 章 GreenSQL

第 28 章 ETL (Extract-Transform-Load)

ETL或ELT （extract）、转置（transform）、加载（load）

http://zh.wikipedia.org/wiki/ETL

```
Kettle http://www.ketl.org

http://www.cloveretl.org/

http://www.xaware.org/

Apatar http://www.apatar.org/

http://www.enhydra.org/
```

第 29 章 Database design & E-R diagram

目录

1. opensource database design tools

DBDesigner 4 - http://www.fabforce.net/dbdesigner4/

2. OpenSystemArchitect

http://www.codebydesign.com

3. SQL Power Architect

http://www.sqlpower.ca/

2. Snapshot Backup

```
# mysql –uroot –pmysql
mysql> flush tables with read lock;
mysql>flush logs;
mysql>system lvcreate -L1024M -s -n snap0 /dev/vg00/lvol00
mysql>show master status;
mysql>unlock tables;
mysql>quit
```