Main Document

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Basics

Document Type	**Discussion**
Subject	**虚拟机上DB2 V10.5的安装**
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Associated Subteam(s)	

Reviewers (optional)

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Reviewers
liao yuan guang

DB2V10.5的安装以及instance、db的创建

此手顺介绍在虚拟机上安装db2的不同方法，以及创建instance和db，创建instance和db主要摘自MVPN的新规手顺，大家都是linux平台，命令基本上一样的。

1 下载db2安装包

从网站下载DB2 Express-C database server版本的db2，但需要用户名和密码，需要注册。如果没有id的可以到我们组的台式电脑上下载，
大家可以通过以下方式下载

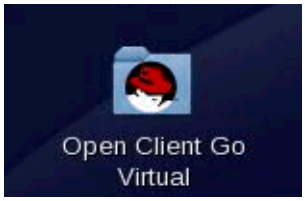
Express-C
https://www-01.ibm.com/marketing/iwm/iwm/web/reg/pick.do?source=swg-db2expressc&S_TACT=109HF15W&lang=en_US

或者

sftp qs@9.119.81.195
Connecting to 9.119.81.195...
qs@9.119.81.195's password:---------->xxxxx
sftp> cd /ftp/qsftp/qsdir/db2images
sftp> ls -l
-rwxrwxrwx 1 qs qs 595253657 Mar 23 16:42 v10.5_linuxx64_expc.tar.gz
-rwxrwxrwx 1 qs qs 411067830 Mar 23 16:46 v10.5_linuxx64_nlpack.tar.gz
sftp>
通过 get v10.5_linuxx64_expc.tar.gz和 get v10.5_linuxx64_nlpack.tar.gz把安装包下载到本地
以下安装包没有严格说要放到哪个目录，我放到了虚拟机的/home/liguangyuan/Downloads

2 在自己liunx下安装一个redhat虚拟机

在自己liunx下安装一个redhat



可以选择装redhat6或者7，然后在选配置的时候，disk选的容量30g就够了，如果自己电脑硬盘足够大，当然也可以选大点。把安装包传到虚拟机里面，可以通过虚拟机里面的
share folders传递。

注意:在自己电脑安装虚拟机之后，在ISAM注册的选项（workstation：Primary workstations、Plivileged user、IBM provided）要按照自己机器上其他kvm选项来注册，要不然会被audit。

3 安装之前条件确认

可以在官方网站上看看安装的要求
http://www-969.ibm.com/software/reports/compatibility/clarity-reports/report/html/softwareReqsForProduct?deliverableId=AA738AA0C5EF11E18183F12B0925FE36&osPlatform=Linux

①看fs够不够

df -m /tmp ←至要少2g

On Linux® and UNIX® operating systems, 2 GB of free space in the /tmp directory is recommended.

df -m /opt/IBM/db2 ←根据之前图形界面安装里的安装要求，安装目录起码也要1g多

②查看操作系统是多少位的，由于下载的这个安装包是64位的，所以操作系统的位数也应该为64
getconf LONG_BIT

③C++的确认
rpm -qa | egrep "libaio|libstdc"
compat-libstdc++-296-2.96-144.el6.i686
libstdc++-4.4.7-16.el6.i686
compat-libstdc++-33-3.2.3-69.el6.i686
libstdc++-4.4.7-16.el6.x86_64
libaio-0.3.107-10.el6.x86_64

以下是官方网站记载的需要的package

Table 1. Package requirements for SLES and RHEL

Package name	Description
libaio	Contains the asynchronous library required for data servers.
compat-libstdc++	Contains `libstdc++.so.6` (not required for Linux on POWER® or SLES 11) Contains `libstdc++.so.5` (required for Linux 390).
vacpp.rte	Contains 32 and 64 bit versions of `libibmc++.so.1` (required for Linux on POWER big endian)
libxlc	Contains `libibmc++.so.1` (64 bit only) (required for Linux on POWER little endian)
ksh93	Korn Shell

④看内存够不够

free ←推荐是1g

At a minimum, a DB2 database system requires 256 MB of RAM. For a system running just a DB2 product and the DB2 GUI tools, a minimum of 512 MB of RAM is required. However, 1 GB of RAM is recommended for improved performance. These requirements do not include any additional memory requirements for other software that is running on your system.

4 instance id和fence id以及一些group的作成

whoami
root
groupadd db2fadm
groupadd db2inst1
groupadd db2sysa
groupadd db2cntl
groupadd db2maint
groupadd db2mon

ls -ld /dbhome
mkdir /dbhome
chmod 755 /dbhome
chown root:root /dbhome
ls -ld /dbhome

useradd -m -d /dbhome/db2fenc1 -g db2fadm db2fenc1
useradd -m -d /dbhome/db2inst1 -g db2inst1 db2inst1

ls -ld /dbhome/db2inst1
ls -ld /dbhome/db2fenc1
chmod 750 /dbhome/db2inst1
chmod 750 /dbhome/db2fenc1
chown db2inst1:db2inst1 /dbhome/db2inst1
chown db2fenc1:db2fadm /dbhome/db2fenc1
ls -ld /dbhome/db2inst1
ls -ld /dbhome/db2fenc1

usermod -G db2sysa db2inst1
usermod -G db2sysa db2fenc1

comment：instance的命名规则
http://www.ibm.com/support/knowledgecenter/SSEPGG_10.5.0/com.ibm.db2.luw.admin.dbobj.doc/doc/c0007246.html?lang=zh

5 .DB2使用目录的作成

①/db目录
whoami
root
ls -ld /db/db2inst1
mkdir -p /db/db2inst1
chmod 755 /db
chown root:root /db
chmod 755 /db
chown db2inst1:db2inst1 /db/db2inst1
chmod 770 /db/db2inst1
ls -ld /db
ls -ld /db/db2inst1

②/dbbackup目录
ls -ld /dbbackup
mkdir -p /dbbackup/db2inst1
chmod 755 /dbbackup
chmod 755 /dbbackup/db2inst1
chown db2inst1:db2inst1 /dbbackup/db2inst1

③/dblogs目录
mkdir /dblogs
chmod 755 /dblogs
chown root:root /dblogs

6 安装目录的创建

sudo su -

cd /opt/IBM/
ls -l
mkdir db2
chmod 755 db2

cd db2
mkdir V10.5
chmod 755 V10.5
ls -ld V10.5

7 解压缩安装包

whoami
root
cd /home/liguangyuan/Downloads
gunzip -c v10.5_linuxx64_expc.tar.gz | tar xf -
gunzip -c v10.5_linuxx64_nlpack.tar.gz | tar xf -

8 产品安装检前precheck

whoami
root
cd /home/liguangyuan/Downloads/expc

ls -l
ls -l db2prereqcheck
./db2prereqcheck -i -v 10.5.0.5
命令所接的参数是什么意思，可以参这网址

http://www.ibm.com/support/knowledgecenter/SSEPGG_10.1.0/com.ibm.db2.luw.admin.cmd.doc/doc/r0059710.html?cp=SSEPGG_10.1.0&lang=zh

9 安装

■安装
现在介绍三种方法安装，注意无论哪种方法，要用root用户安装，当然也可以用其他的用户id去安装，但是会有一些差别和功能上会有一些限制，具体可以参照以下链接

root 用户安装和非 root 用户安装之间的差别：
http://www.ibm.com/support/knowledgecenter/SSEPGG_10.5.0/com.ibm.db2.luw.qb.server.doc/doc/c0050566.html?lang=zh

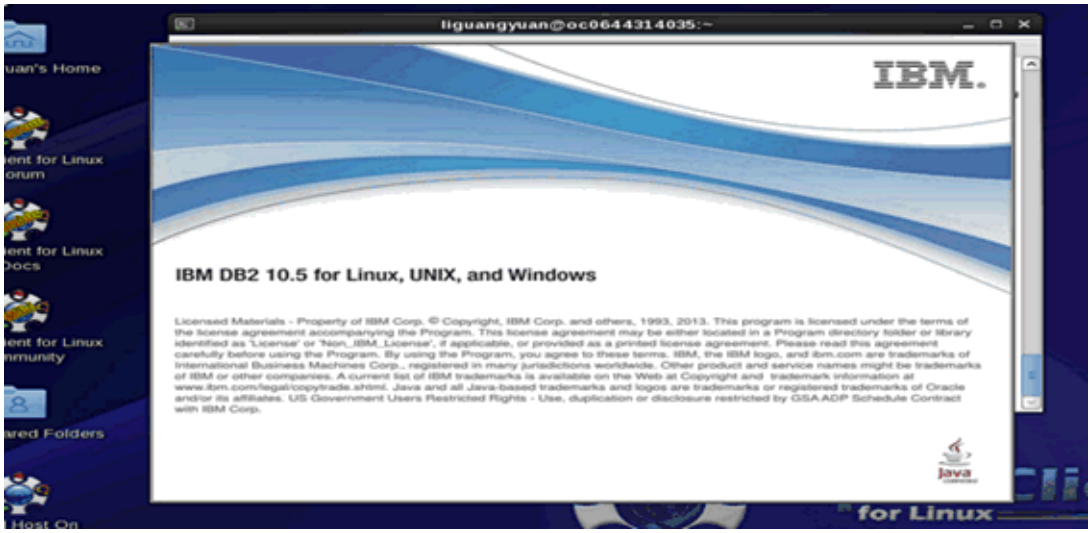
非 root 用户安装的局限性：
http://www.ibm.com/support/knowledgecenter/SSEPGG_10.5.0/com.ibm.db2.luw.qb.server.doc/doc/c0050568.html?lang=zh
http://www.ibm.com/support/knowledgecenter/SSEPGG_10.5.0/com.ibm.db2.luw.qb.server.doc/doc/t0007312.html?lang=zh

以下都是用root安装

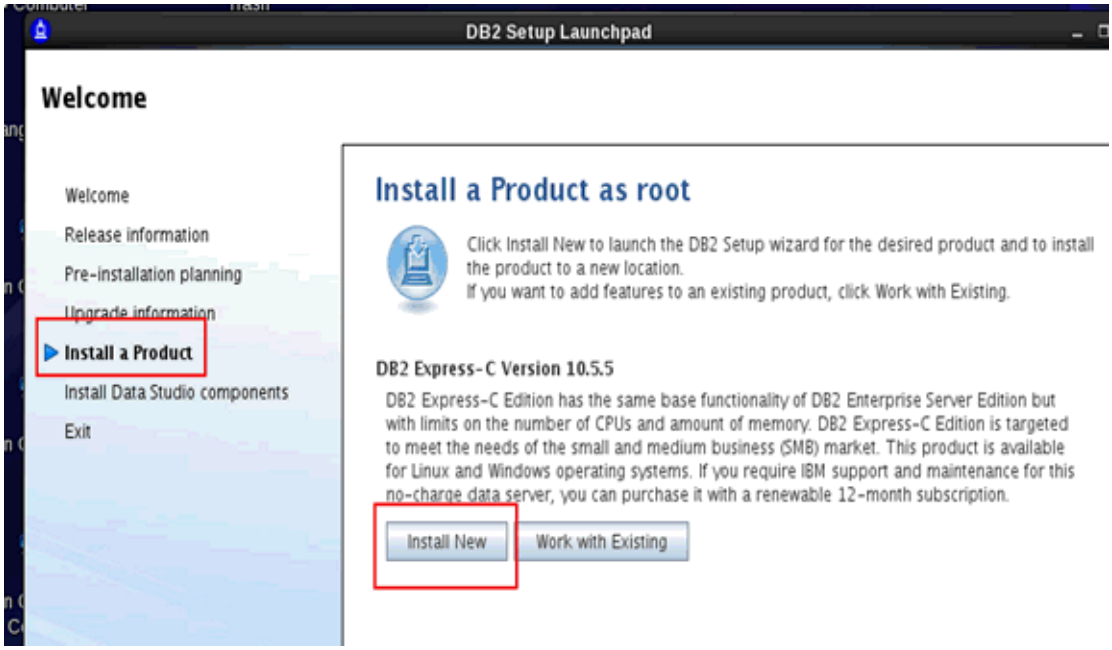
一、 **图形界面安装**

安装步骤
sudo su -
uname -n;whoami;pwd;date

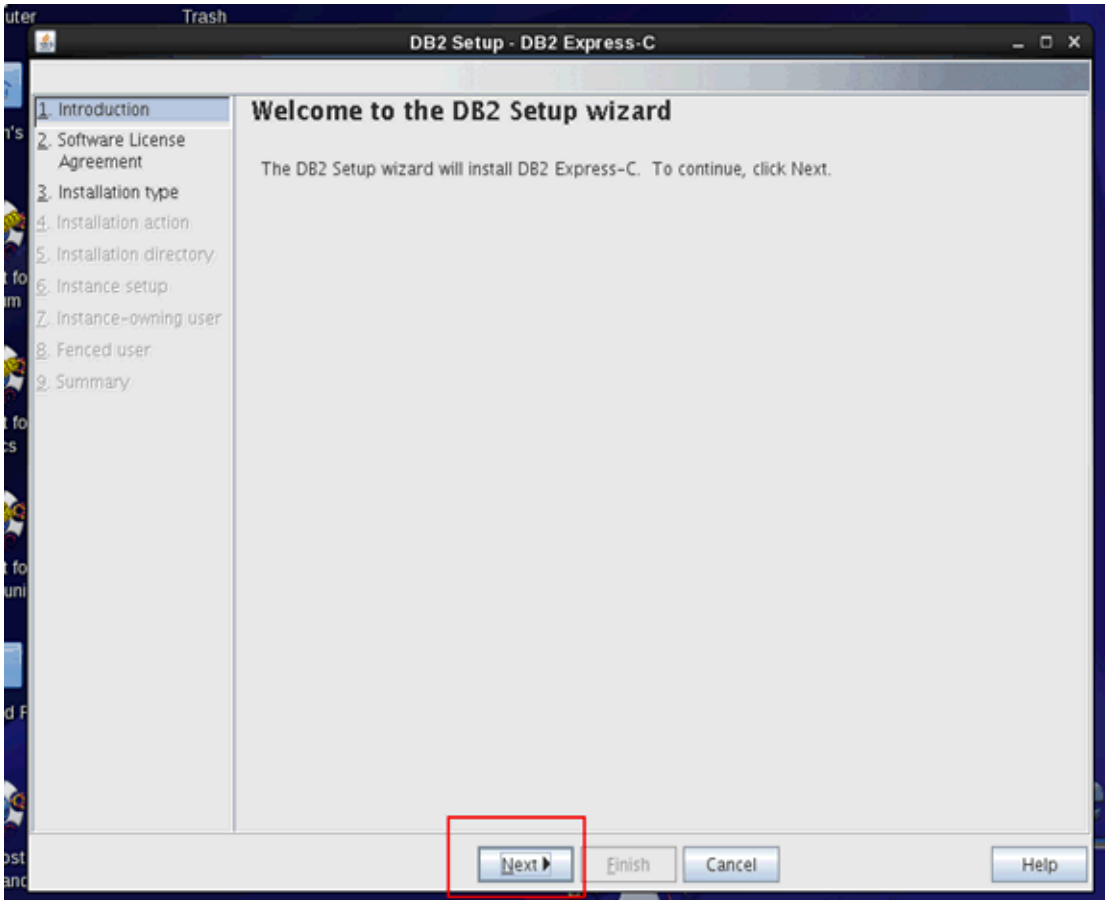
cd /home/liguangyuan/Downloads/expc
ls -l
①首先执行./db2setup命令


liguangyuan@oc0644314035:~
IBM.
IBM DB2 10.5 for Linux, UNIX, and Windows
for Linux

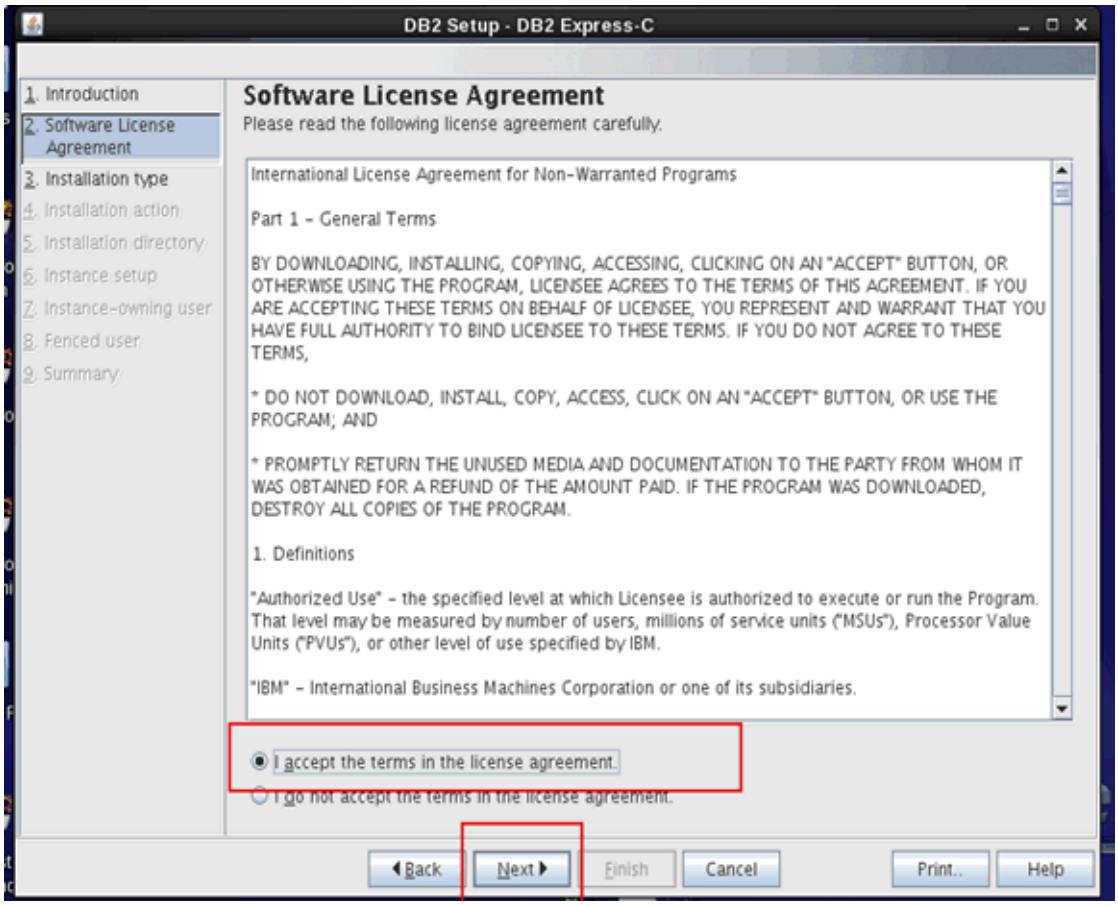
②安装一个新的


DB2 Setup Launchpad
Welcome
Welcome
Release information
Pre-installation planning
Upgrade information
Install a Product
Install Data Studio components
Exit
Install a Product as root
Click Install New to launch the DB2 Setup wizard for the desired product and to install the product to a new location.
If you want to add features to an existing product, click Work with Existing.
DB2 Express-C Version 10.5.5
DB2 Express-C Edition has the same base functionality of DB2 Enterprise Server Edition but with limits on the number of CPUs and amount of memory. DB2 Express-C Edition is targeted to meet the needs of the small and medium business (SMB) market. This product is available for Linux and Windows operating systems. If you require IBM support and maintenance for this no-charge data server, you can purchase it with a renewable 12-month subscription.
Install New
Work with Existing

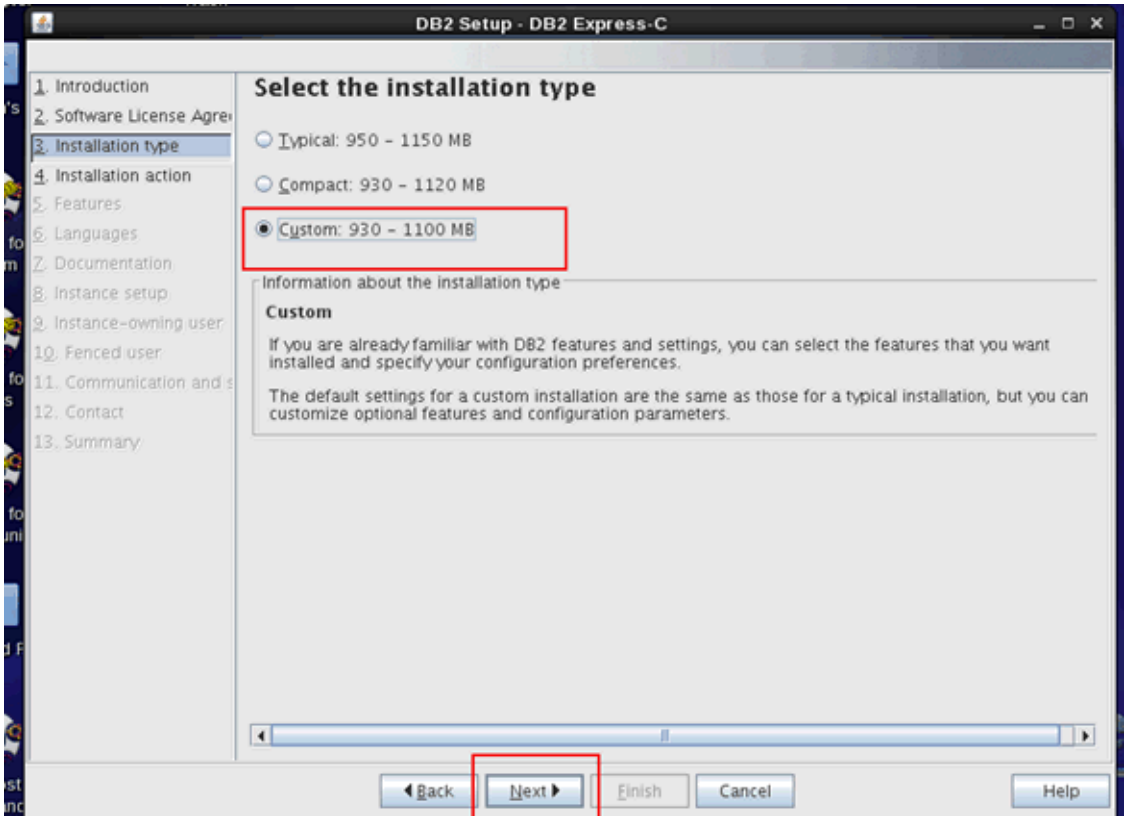
③


Trash
DB2 Setup - DB2 Express-C
1. Introduction
2. Software License Agreement
3. Installation type
4. Installation action
5. Installation directory
6. Instance setup
7. Instance-owning user
8. Fenced user
9. Summary
Welcome to the DB2 Setup wizard
The DB2 Setup wizard will install DB2 Express-C. To continue, click Next.
Next
Finish
Cancel
Help

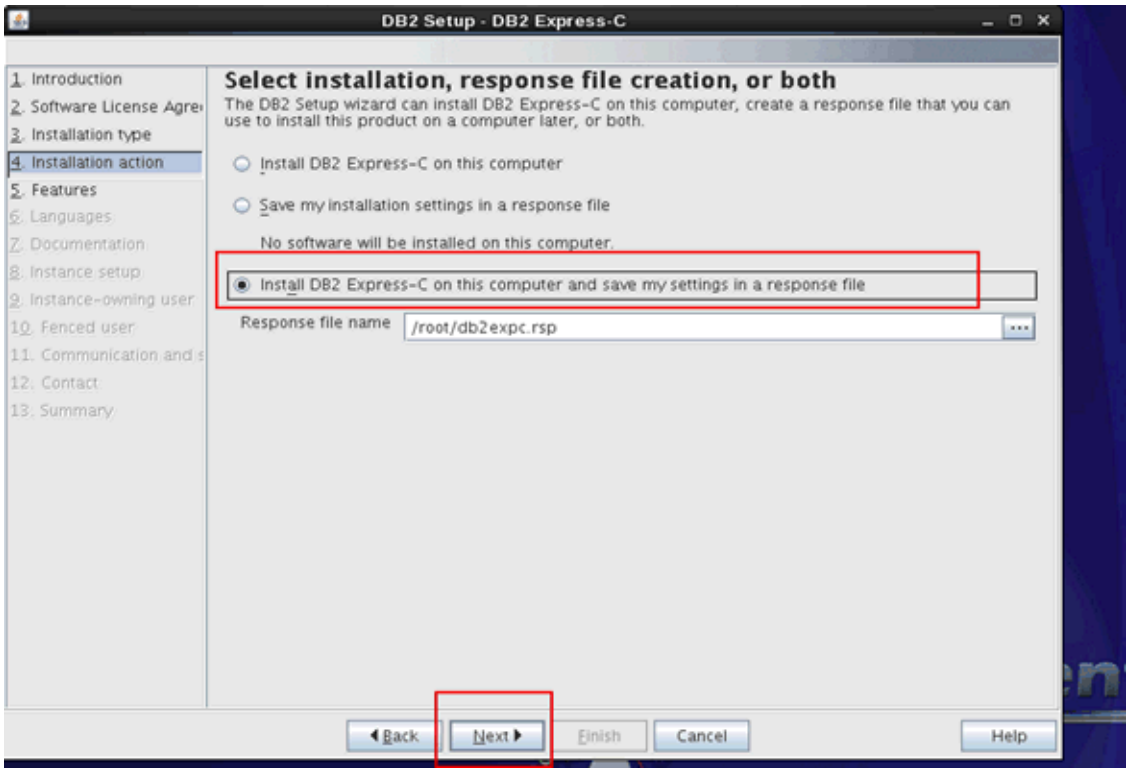
④


DB2 Setup - DB2 Express-C
1. Introduction
2. Software License Agreement
3. Installation type
4. Installation action
5. Installation directory
6. Instance setup
7. Instance-owning user
8. Fenced user
9. Summary
Software License Agreement
Please read the following license agreement carefully.
International License Agreement for Non-Warranted Programs
Part 1 - General Terms
BY DOWNLOADING, INSTALLING, COPYING, ACCESSING, CLICKING ON AN "ACCEPT" BUTTON, OR OTHERWISE USING THE PROGRAM, LICENSEE AGREES TO THE TERMS OF THIS AGREEMENT. IF YOU ARE ACCEPTING THESE TERMS ON BEHALF OF LICENSEE, YOU REPRESENT AND WARRANT THAT YOU HAVE FULL AUTHORITY TO BIND LICENSEE TO THESE TERMS. IF YOU DO NOT AGREE TO THESE TERMS,
* DO NOT DOWNLOAD, INSTALL, COPY, ACCESS, CLICK ON AN "ACCEPT" BUTTON, OR USE THE PROGRAM; AND
* PROMPTLY RETURN THE UNUSED MEDIA AND DOCUMENTATION TO THE PARTY FROM WHOM IT WAS OBTAINED FOR A REFUND OF THE AMOUNT PAID. IF THE PROGRAM WAS DOWNLOADED, DESTROY ALL COPIES OF THE PROGRAM.
1. Definitions
"Authorized Use" - the specified level at which Licensee is authorized to execute or run the Program. That level may be measured by number of users, millions of service units ("MSUs"), Processor Value Units ("PVUs"), or other level of use specified by IBM.
"IBM" - International Business Machines Corporation or one of its subsidiaries.
I accept the terms in the license agreement.
I do not accept the terms in the license agreement.
Back
Next
Finish
Cancel
Print..
Help

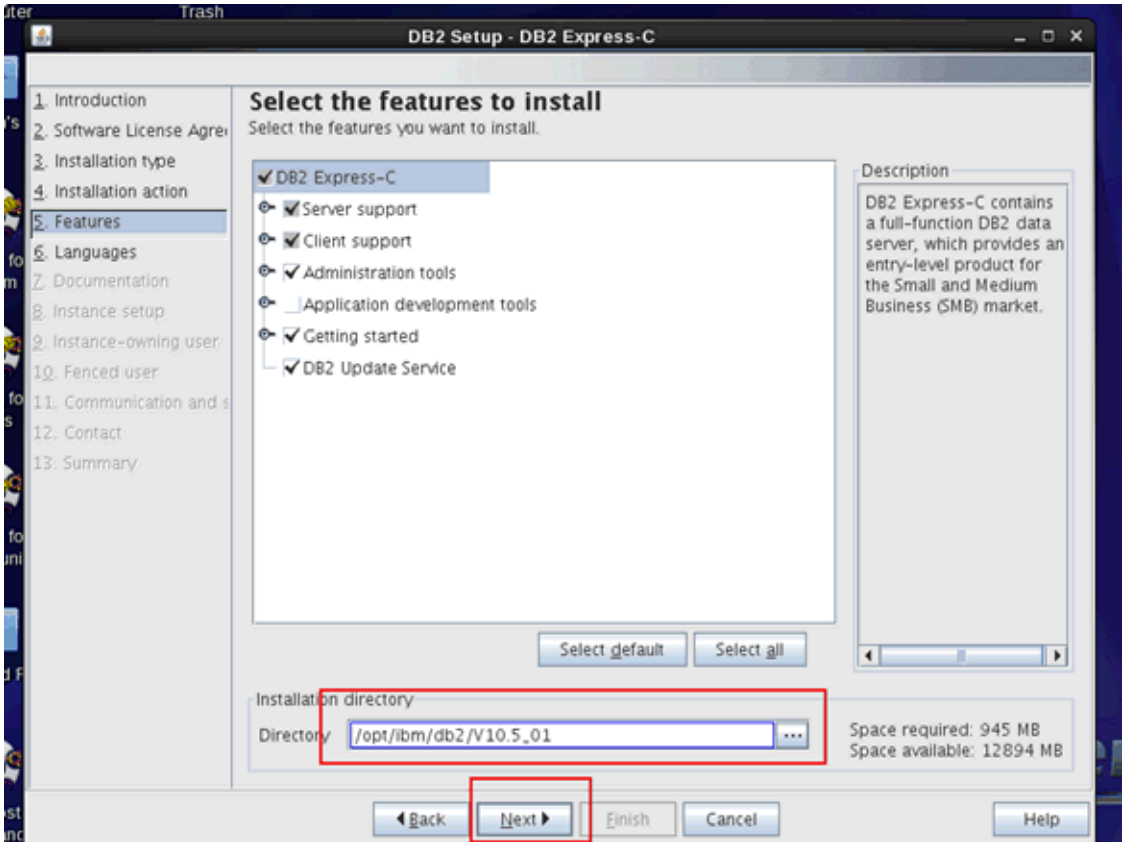
⑤定制安装、精简或者典型安装也可以



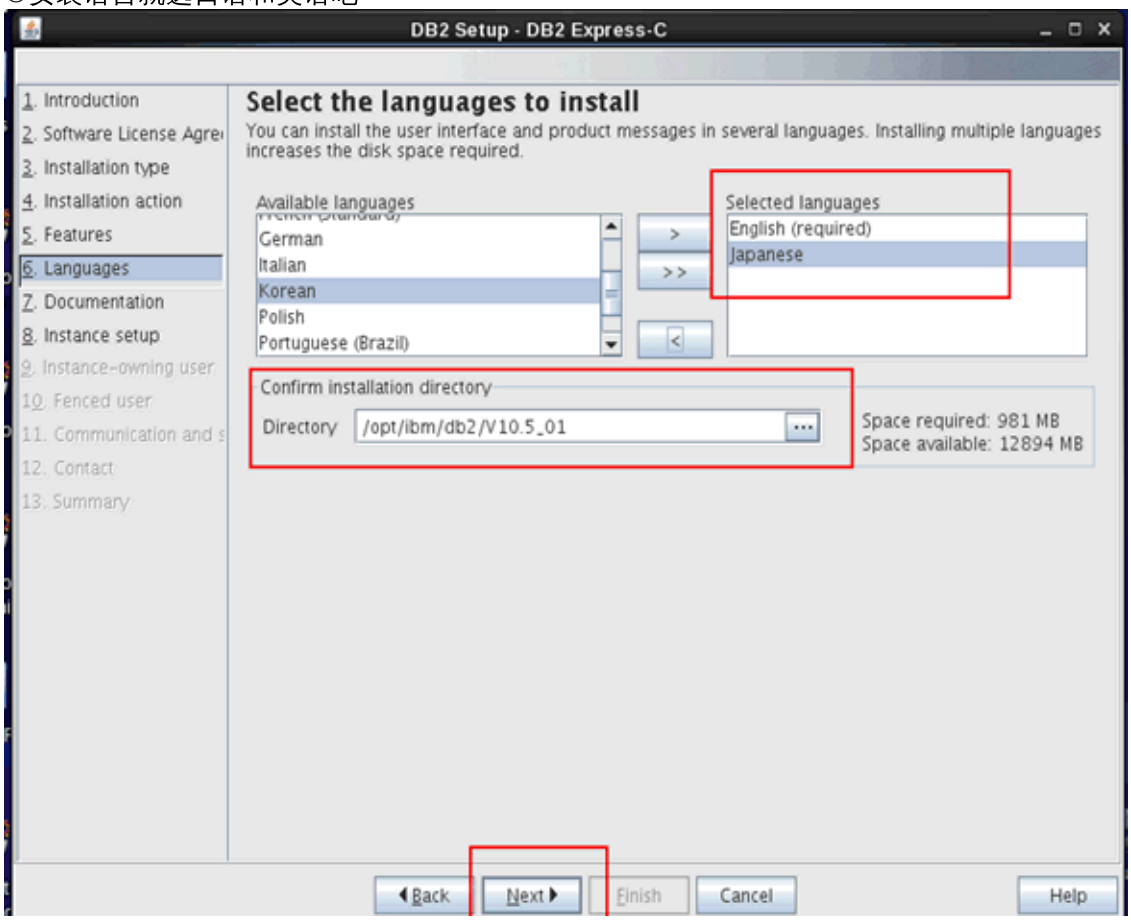
⑥安装并生成相应文件



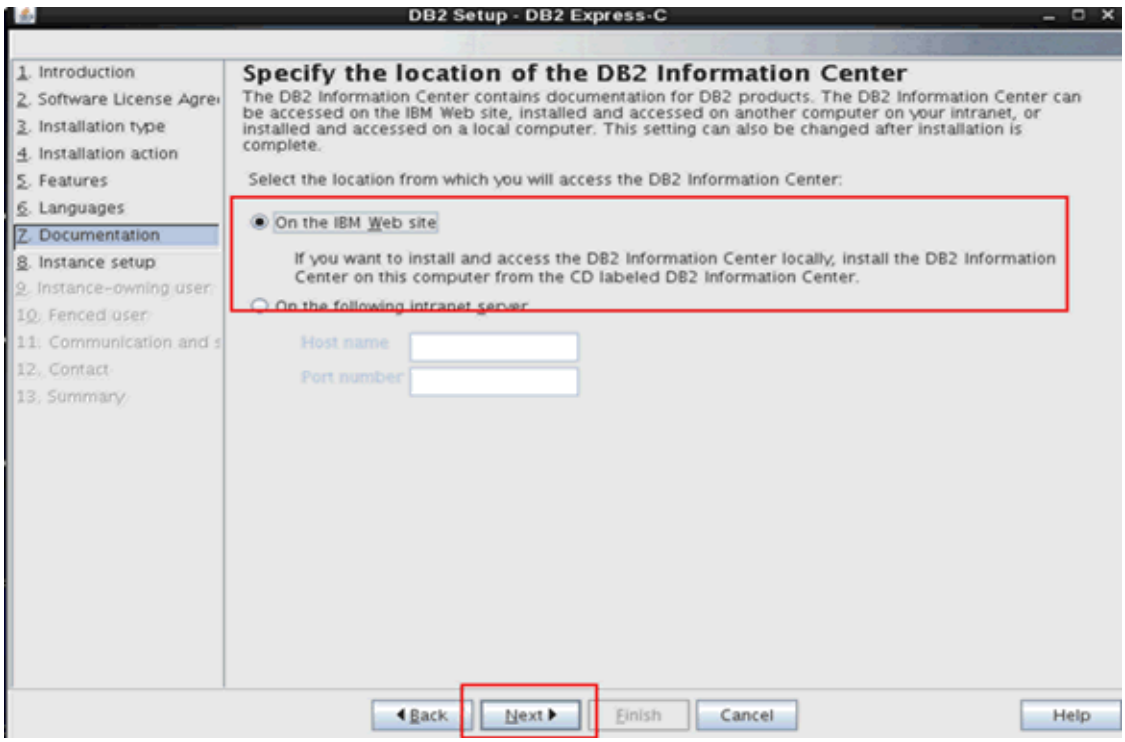
⑦安装目录输入之前创建好的/opt/IBM/db2/V10.5目录



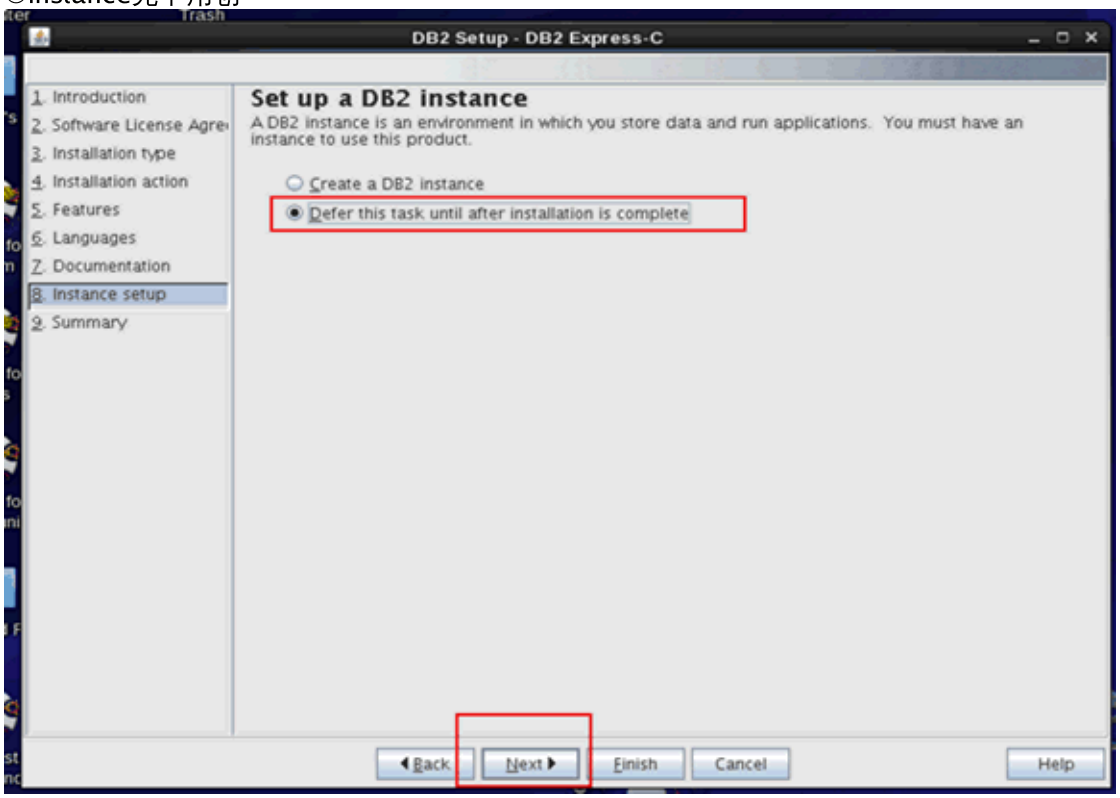
⑧安装语言就选日语和英语吧



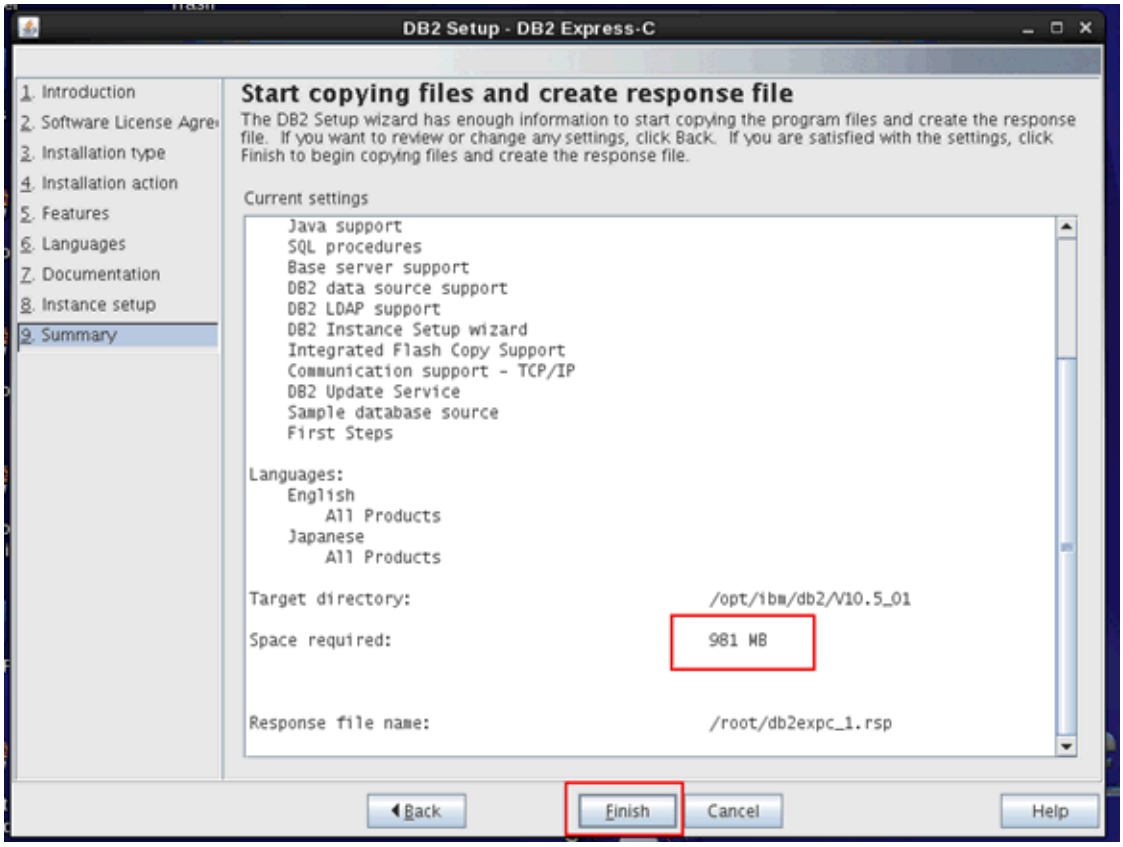
⑨



⑨instance先不用创



⑩这样就可以安装了



⑪最后安装完成要确认/tmp目录下的db2setup.log是否全部成功了

二、用db2_install安装（现在我们工作中用这种方法，以后可能不支持了）

whoami

root

cd /home/liguangyuan/Downloads/expc

./db2_install -b /opt/IBM/db2/V10.5 -p EXPC -L JP -c /home/liguangyuan/Downloads/nlpack

安装往要检查安装log里面是否都成功了

cat /tmp/db2_install.log.23199746

Installing DB2 file sets :.....Success
Setting DB2 library path :.....Success
Executing control tasks :.....Success
Updating global registry :.....Success
Updating the db2ls link :.....Success
Setting default global profile registry variables :.....Success
Initializing instance list :.....Success
Registering DB2 Update Service :.....Success
Updating global profile registry :.....Success

Post Install Recommendations

Required steps:
Set up a DB2 instance to work with DB2.

DB2 Fix Pack Update log file finished at: インストールを実行した日時

三、响应文件安装（以后推荐用的方法）

在安装包里面会有一个可用的样本响应文件，其所在的位置是db2/platform/samples，例如我的就在以下位置
ls -l /home/liguangyuan/Downloads/expc/db2/linuxamd64/samples/db2expc.rsp

由于样本响应文件里面很多条目是默认的或者是注释掉的，所以可以另外copy一份，然后编辑为我们想要的安装设置
响应文件关键字的关键字各代表的意思可以参照以下链接，其实样本响应里面也有每个参数的说明
http://www.ibm.com/support/knowledgecenter/SSEPGG_10.5.0/com.ibm.db2.luw.qb.server.doc/doc/r0007504.html?lang=zh
http://www.ibm.com/support/knowledgecenter/SSEPGG_10.5.0/com.ibm.db2.luw.qb.server.doc/doc/r0007505.html?lang=zh

whoami
root
cp -ip /home/liguangyuan/Downloads/expc/db2/linuxamd64/samples/db2expc.rsp /home/liguangyuan/Downloads/expc/db2/linuxamd64/samples/db2expc_1.rsp
ls -l /home/liguangyuan/Downloads/expc/db2/linuxamd64/samples/db2expc_1.rsp
chmod 644 /home/liguangyuan/Downloads/expc/db2/linuxamd64/samples/db2expc_1.rsp

把下面的几个关键字有注释的去掉（去掉前面的*号），然后改为下面的值
vi /home/liguangyuan/Downloads/expc/db2/linuxamd64/samples/db2expc_1.rsp
文件里面我指定了几个关键的关键字

PROD = EXPRESS_C ←指定安装db2产品的类型，EXPRESS_C的

FILE = /opt/ibm/db2/V10.5 ←指定安装路径，用上面已经创建好的路径

LIC_AGREEMENT = DECLINE ** ACCEPT or DECLINE ←接受不接受协议，选accept

INSTALL_TYPE = TYPICAL ** TYPICAL, COMPACT, CUSTOM ←安装可以选精简、典型或者定制，如果选择精简或者典型，精简或典型安装类型将忽略任何定制关键字(COMP)。

LANG = JP ** Japanese (ja_JP) ←语言就和我们生产环境一样选日语吧，英语的话都是默认安装的

因为instance id、fence id和instance那些另外创建，所以下面关于instance创建的条目给注释掉（加上*号）就可以。如果对相应文件创建instance有兴趣的话，也可以自己试一下用这方法来创建instance和DB。

*INSTANCE = DB2_INST ** char(8) no spaces
*DB2_INST.NAME = db2inst1 ** char(8) no spaces, no upper case letters
*DB2_INST.GROUP_NAME = db2iadm1 ** char(30) no spaces
*DB2_INST.HOME_DIRECTORY = ** char(64) no spaces. Valid for root installation only

*DB2_INST.PASSWORD = Replace with your password ** Valid for root installation only
*DB2_INST.AUTOSTART = YES ** YES or NO
*DB2_INST.START_DURING_INSTALL = YES ** YES or NO. Default is YES.
*DB2_INST.FENCED_USERNAME = db2sdfe1 ** char(8) no spaces, no upper case letters
*DB2_INST.FENCED_GROUP_NAME = db2fsdm1 ** char(30) no spaces

确认编辑的地方
diff /home/liguangyuan/Downloads/expc/db2/linuxamd64/samples/db2expc.rsp /home/liguangyuan/Downloads/expc/db2/linuxamd64/samples/db2expc_1.rsp

sudo su -
cd /home/liguangyuan/Downloads/expc
./db2setup -r /home/liguangyuan/Downloads/expc/db2/linuxamd64/samples/db2expc_1.rsp

按完之后看/tmp目录下的db2setup.log

db2setup.log
DB2 Setup log file started at: Wed Mar 23 02:01:40 AM 2016 EDT
==========

Operating system information: Linux 2.6.32-573.18.1.el6.x86_64.#1 SMP Wed Jan 6 11:20:49 EST 2016 x86_64
WARNING: Notification SMTP server has not been specified. Notifications cannot
be sent to contacts in your contact list until this is specified. For more
information see the DB2 administration documentation.

Product to install: DB2 Express-C
Installation type: Typical

Previously Installed Components:

Selected Components:
Base client support
Java support
SQL procedures
Base server support
DB2 data source support
DB2 LDAP support
DB2 Instance Setup wizard
Integrated Flash Copy Support
Communication support - TCP/IP
DB2 Update Service
Sample database source
First Steps

Languages:
Japanese
All Products

Target directory: /opt/ibm/db2/V10.5_1

Space required: 981 MB

Checking license agreement acceptance :.....Success
Installing: BASE_CLIENT_R

Installing: DB2_PRODUCT_MESSAGES_EN

Installing: BASE_CLIENT

Installing: JAVA_RUNTIME_SUPPORT

Installing: DB2_JAVA_HELP_EN

Installing: BASE_DB2_ENGINE_R

Installing: GSK

Installing: JAVA_SUPPORT

Installing: SQL_PROCEDURES

Installing: ICU_SUP

Installing: JAVA_COMMON_FILES

Installing: BASE_DB2_ENGINE

Installing: DB2_DATA_SOURCE_SUPPORT

Installing: LDAP_EXPLOITATION

Installing: INSTANCE_SETUP_SUPPORT

Installing: ACS

Installing: COMMUNICATION_SUPPORT_TCPIP

Installing: DB2_UPDATE_SERVICE

Installing: EDB

Installing: DB2_SAMPLE_DATABASE

Installing: CLPPLUS

Installing: FIRST_STEPS

Installing: EXPC_PRODUCT_SIGNATURE

Installing: DB2_PRODUCT_MESSAGES_JP

Installing: DB2_JAVA_HELP_JP

Installing DB2 file sets :.....Success
Executing control tasks :.....Success
Updating global registry :.....Success
Starting DB2 Fault Monitor :.....Success
Updating the db2ls and db2greg link :.....Success
Registering DB2 licenses :.....Success
The value "DB2_COMPATIBILITY_VECTOR=MYS" was set in the Profile Registry.

Setting default global profile registry variables :.....Success
Initializing instance list :.....Success
Registering DB2 Update Service :.....Success
Updating global profile registry :.....Success

Post-installation instructions

Required steps:
Set up a DB2 instance to work with DB2.

Optional steps:
To validate your installation files, instance, and database functionality, run the Validation Tool, /opt/ibm/db2/V10.5_1/bin/db2val. For more information, see "db2val" in the DB2 Information Center.

Refer to "What's new"
http://publib.boulder.ibm.com/infocenter/db2luw/v10r5/topic/com.ibm.db2.luw.wn.doc/doc/c0052035.html in the DB2 Information Center to learn about the new functions for DB2 V10.5.

Open First Steps by running "db2fs" using a valid user ID such as the DB2 instance owner's ID. You will need to have DISPLAY set and a supported web browser in the path of this user ID.

Verify that you have access to the DB2 Information Center based on the choices you made during this installation. If you performed a typical or a compact installation, verify that you can access the IBM Web site using the internet. If you performed a custom installation, verify that you can access the DB2 Information Center location specified during the installation.

Ensure that you have the correct license entitlements for DB2 products and features installed on this machine. Each DB2 product or feature comes with a license certificate file (also referred to as a license key) that is distributed on an Activation CD, which also includes instructions for applying the license file. If you purchased a base DB2 product, as well as, separately priced features, you might need to install more than one license certificate. The Activation CD for your product or feature can be downloaded from Passport Advantage if it is not part of the physical media pack you received from IBM. For more information about licensing, search the Information Center (http://publib.boulder.ibm.com/infocenter/db2luw/v10r5/index.jsp) using terms such as "license compliance", "licensing" or "db2licm".

To use your DB2 database product, you must have a valid license. For information about obtaining and applying DB2 license files, see
http://pic.dhe.ibm.com/infocenter/db2luw/v10r5/topic/com.ibm.db2.luw.qb.server.doc/doc/c0061199.html.

DB2 Setup log file finished at: Wed Mar 23 02:03:38 AM 2016 EDT
==========

info center里的使用响应文件来安装 DB2 数据库产品（Linux 和 UNIX）
http://www.ibm.com/support/knowledgecenter/SSEPGG_10.5.0/com.ibm.db2.luw.qb.server.doc/doc/t0007312.html?lang=zh

■安装完的确认
whoami
root
/opt/IBM/db2/V10.5/install/db2ls -q -a -b /opt/IBM/db2/V10.5

Install Path : /opt/IBM/db2/V10.5

Feature Response File ID Level Fix Pack Feature Description

BASE_CLIENT_R 10.5.0.5 5 Base Client Support for installation with root privileges
DB2_PRODUCT_MESSAGES_EN 10.5.0.5 5 Product Messages - English
BASE_CLIENT 10.5.0.5 5 Base client support
JAVA_RUNTIME_SUPPORT 10.5.0.5 5 Java Runtime Support
DB2_JAVA_HELP_EN 10.5.0.5 5 Java Help (HTML) - English
BASE_DB2_ENGINE_R 10.5.0.5 5 Base server support for installation with root privileges
GSK 10.5.0.5 5 Global Secure ToolKit
JAVA_SUPPORT 10.5.0.5 5 Java support
SQL_PROCEDURES 10.5.0.5 5 SQL procedures
ICU_SUP 10.5.0.5 5 ICU Utilities
JAVA_COMMON_FILES 10.5.0.5 5 Java Common files
BASE_DB2_ENGINE 10.5.0.5 5 Base server support
DB2_DATA_SOURCE_SUPPORT 10.5.0.5 5 DB2 data source support
LDAP_EXPLOITATION 10.5.0.5 5 DB2 LDAP support
INSTANCE_SETUP_SUPPORT 10.5.0.5 5 DB2 Instance Setup wizard
ACS 10.5.0.5 5 Integrated Flash Copy Support
COMMUNICATION_SUPPORT_TCPIP 10.5.0.5 5 Communication support - TCP/IP
DB2_UPDATE_SERVICE 10.5.0.5 5 DB2 Update Service
EDB 10.5.0.5 5 EnterpriseDB code
DB2_SAMPLE_DATABASE 10.5.0.5 5 Sample database source
CLPPLUS 10.5.0.5 5 Command Line Processor Plus
FIRST_STEPS 10.5.0.5 5 First Steps
EXPC_PRODUCT_SIGNATURE 10.5.0.5 5 Product Signature for DB2 Express-C
DB2_PRODUCT_MESSAGES_JP 10.5.0.5 5 Product Messages - Japanese
DB2_JAVA_HELP_JP 10.5.0.5 5 Java Help (HTML) - Japanese
-bash-4.1#

/opt/IBM/db2/V10.5/install/db2ls -q -a -b /opt/IBM/db2/V10.5 | wc -l
30

/opt/IBM/db2/V10.5/install/db2ls -q -a -b /opt/IBM/db2/V10.5 | grep -i message
DB2_PRODUCT_MESSAGES_EN 10.5.0.5 5 Product Messages - English
DB2_PRODUCT_MESSAGES_JP 10.5.0.5 5 Product Messages - Japanese

10 license的确认

安装完之后确认license，由于是express-c的，所以不会过期，像我们工作中的ese版本则要安装license
/opt/IBM/db2/V10.5/adm/db2licm -l

Product name: "DB2 Express-C"
License type: "Unwarranted"
Expiry date: **"Permanent"**
Product identifier: "db2expc"
Version information: "10.5"
Max number of CPUs: "2"
Max amount of memory (GB): "16"
Enforcement policy: "Soft Stop"

11 创建instance

■作成64bit的db2inst1
sudo su -
/opt/IBM/db2/V10.5/instance/db2icrt -u db2fenc1 db2inst1

インストールログ
DBI1446I The db2icrt command is running.

DB2 installation is being initialized.

Total number of tasks to be performed: 4
Total estimated time for all tasks to be performed: 309 second(s)

Task #1 start
Description: Setting default global profile registry variables
Estimated time 1 second(s)
Task #1 end

Task #2 start
Description: Initializing instance list
Estimated time 5 second(s)
Task #2 end

Task #3 start
Description: Configuring DB2 instances
Estimated time 300 second(s)
Task #3 end

Task #4 start
Description: Updating global profile registry
Estimated time 3 second(s)

Task #4 end

The execution completed successfully.

For more information see the DB2 installation log at "/tmp/db2icrt.log.20400".
Required: Review the following log file also for warnings or errors:
"/tmp/db2icrt_local.log.*"
DBI1070I Program db2icrt completed successfully.

■确认版本是V10.5FP5的
su - db2inst1
db2level
[db2inst1@b19lcirdb001 ~]$ db2level
DB21085I This instance or install (instance name, where applicable:
"db2inst1") uses "64" bits and DB2 code release "SQL10055" with level
identifier "0606010E".
Informational tokens are "DB2 v10.5.0.5", "s141128", "IP23633", and Fix Pack
"5".
Product is installed at "/opt/ibm/db2/V10.5".

■instance id的uif的修正
ls -ld /dbhome/db2inst1/sqllib/uif
chmod 775 /dbhome/db2inst1/sqllib/uif
ls -ld /dbhome/db2inst1/sqllib/uif

■umask从22改为77
su - db2inst1
pwd
umask
如果是22的话改为77
ls -l .bashrc
vi .bashrc
umask 77

12 instance id追加到global.reg的确认
/opt/IBM/db2/V10.5/instance/db2ilist | grep *db2inst1*
/opt/IBM/db2/V10.5/bin/db2greg -dump | grep db2inst1

如果有了的话就不用追加了
cd /var/db2/
cp -ip global.reg global.reg.$(date +'%Y%m%d.%H%M')

/opt/IBM/db2/V10.5/bin/db2greg -addinstrec service=DB2,instancename=*db2inst1*
,maintenance=0

/opt/IBM/db2/V10.5/instance/db2ilist | grep *db2inst1*
/opt/IBM/db2/V10.5/bin/db2greg -dump | grep db2inst1

13 instance的设定

■security的对应

```
ls -l /dbhome/db2inst1/sqllib/security/db2chpw
chmod 000 /dbhome/db2inst1/sqllib/security/db2chpw
ls -l /dbhome/db2inst1/sqllib/security/db2chpw
```

■fence id的确认

```
su - db2inst1

db2start
db2pd -inst -fmp
```

```
  Database Member 0 -- Active -- Up 0 days 22:54:21 -- Date
  2014-06-12-12.28.11.852196

  FMP:
  Pool Size:       1
  Max Pool Size:   200 ( Automatic )
  Keep FMP:        YES
  Initialized:     YES
  Trusted Path:    /dbhome/db2inst1/sqllib/function/unfenced
  Fenced User:     db2fenc1→就是fencedID
  Shared Memory:   0x00000002010F0420
  IPC Pool:        0x00000002010F0480
     ........................
```

```
exit
```

■作成db2diag.log的目录

```
whoami
```

root

```
ls -ltrd /dblogs
mkdir -p /dblogs/db2dump/db2inst1
chmod 755 /dblogs/db2dump
chown root:db2sysa /dblogs/db2dump
chmod 777 /dblogs/db2dump/db2inst1
chown db2inst1.db2inst1 /dblogs/db2dump/db2inst1
ls -ld /dblogs/db2dump/db2inst1
```

■注册变量的设定

```
su - db2inst1
db2start
db2set DB2COMM=tcpip
db2set DB2_PARALLEL_IO=*
db2set DB2AUTOSTART=NO
db2set -all
```

```
[i] DB2COMM=TCPIP
[i] DB2_PARALLEL_IO=*
[i] DB2AUTOSTART=YES
```

```
[g] DB2SYSTEM=b19lcirdb001
[g] DB2INSTDEF=db2inst1
```

■DBM参数的设定

```
cd /dblogs
mkdir db2audit mirror archive
chmod 755 db2audit mirror archive
chown root.db2sysa db2audit mirror archive

su - db2inst1

db2 get dbm cfg | egrep -i
"SYSADM_GROUP|SYSCTRL_GROUP|SYSMAINT_GROUP|SYSMON_GROUP|SVCENAME|SPM_NAM
E|HEALTH_MON|DIAGPATH|AUTHENTICATION|UTIL_IMPACT_LIM|JDK_PATH|SHEAPTHRES
"

db2 update dbm cfg using SYSADM_GROUP db2sysa
db2 update dbm cfg using SYSCTRL_GROUP db2cntl
db2 update dbm cfg using SYSMAINT_GROUP db2maint
db2 update dbm cfg using SYSMON_GROUP db2mon
db2 update dbm cfg using SVCENAME DB2_`whoami`
db2 update dbm cfg using SPM_NAME null
db2 update dbm cfg using HEALTH_MON OFF
db2 update dbm cfg using DIAGPATH /dblogs/db2dump/`whoami`
db2 update dbm cfg using AUTHENTICATION server_encrypt
db2 update dbm cfg using UTIL_IMPACT_LIM 10
db2 update dbm cfg using JDK_PATH /opt/IBM/db2/V10.5/java/jdk64
db2 update dbm cfg using SHEAPTHRES 0

db2 get dbm cfg | egrep -i
"SYSADM_GROUP|SYSCTRL_GROUP|SYSMAINT_GROUP|SYSMON_GROUP|SVCENAME|SPM_NAM
E|HEALTH_MON|DIAGPATH|AUTHENTICATION|UTIL_IMPACT_LIM|JDK_PATH|SHEAPTHRES
"
```

■把instance memory变为1g

```
su - db2inst1
db2 get dbm cfg | grep INSTANCE_MEMORY
db2 update dbm cfg using INSTANCE_MEMORY 262144          ←注意个
位是，每一大小4k
db2 attach to db2inst1
db2 get dbm cfg show detail | grep INSTANCE_MEMORY
db2 terminate
db2stop
db2start

db2 get dbm cfg | egrep
"SYSADM_GROUP|SYSCTRL_GROUP|SYSMAINT_GROUP|SYSMON_GROUP|DIAGPATH"
db2 get dbm cfg | egrep
"SPM_NAME|AUTHENTICATION|UTIL_IMPACT_LIM|JDK_PATH|INSTANCE_MEMORY"
exit
```

■log目录作成
whoami
root
mkdir /dblogs/active/SAMPLE
mkdir /dblogs/active/SAMPLE/NODE0000
mkdir /dblogs/mirror/SAMPLE
mkdir /dblogs/mirror/SAMPLE/NODE0000
mkdir /dblogs/archive/db2inst1

chmod 750 /dblogs/active/SAMPLE
chmod 750 /dblogs/active/SAMPLE/NODE0000
chmod 750 /dblogs/mirror/SAMPLE
chmod 750 /dblogs/mirror/SAMPLE/NODE0000
chmod 750 /dblogs/archive/db2inst1

chown db2inst1.db2maint /dblogs/active/SAMPLE
chown db2inst1.db2maint /dblogs/active/SAMPLE/NODE0000
chown db2inst1.db2maint /dblogs/mirror/SAMPLE
chown db2inst1.db2maint /dblogs/mirror/SAMPLE/NODE0000
chown db2inst1.db2maint /dblogs/archive/db2inst1

■确认
whoami
root
ls -ld /dblogs/active/SAMPLE
/opt/sudo/sudo ls -ld /dblogs/active/SAMPLE/NODE0000
ls -ld /dblogs/mirror/SAMPLE
/opt/sudo/sudo ls -ld /dblogs/mirror/SAMPLE/NODE0000
ls -ld /dblogs/archive/db2inst1

14 DB的作成

■作成DB
sudo su - *db2inst1*

这是我们手顺书作成db的命令
db2 create db SAMPLE AUTOMATIC STORAGE NO on /db/db2inst1 AUTOCONFIGURE APPLY NONE

如果想要创建一个sample用的练习db，可以用如下命令创建
db2sampl -dbpath /db/db2inst1

db2 connect to *SAMPLE*
db2 terminate

■设定DB级别的parameter
/opt/sudo/sudo su - *db2inst1*
db2 update db cfg for *SAMPLE* using LOGBUFSZ 256
db2 update db cfg for *SAMPLE* using LOCKTIMEOUT 30
db2 update db cfg for SAMPLE using NEWLOGPATH /dblogs/active/SAMPLE
db2 update db cfg for SAMPLE using MIRRORLOGPATH /dblogs/mirror/SAMPLE
db2 update db cfg for SAMPLE using logfilsiz 2000
db2 update db cfg for SAMPLE using logprimary 8

db2 update db cfg for SAMPLE using LOGSECOND 3
db2 update db cfg for SAMPLE using LOGARCHMETH1 DISK:/dblogs/archive/
db2 terminate

■解除一下自动维护的parameter
sudo su - db2inst1
db2 update db cfg for SAMPLE using AUTO_MAINT OFF
db2 update db cfg for SAMPLE using AUTO_TBL_MAINT OFF
db2 update db cfg for SAMPLE using AUTO_RUNSTATS OFF
db2 update db cfg for SAMPLE using AUTO_STMT_STATS OFF

■确认
sudo su - db2inst1
db2 get db cfg for SAMPLE | egrep
"LOGBUFSZ|LOCKTIMEOUT|NEWLOGPATH|MIRRORLOGPATH|LOGFILSIZE|LOGPRIMARY|
LOGSECONDARY|LOGARCHMETH1"

Log buffer size (4KB) (LOGBUFSZ) = 256
 Lock timeout (sec) (LOCKTIMEOUT) = 30
 Number of primary log files (LOGPRIMARY) = 8
 Changed path to log files (NEWLOGPATH) =
Path to log files = /dblogs/active/SAMPLE/NODE0000/LOGSTREAM0000/
 Mirror log path (MIRRORLOGPATH) =
/dblogs/mirror/SAMPLE/NODE0000/LOGSTREAM0000/
 First log archive method (LOGARCHMETH1) = DISK:/dblogs/archive/
 Lock timeout events (MON_LOCKTIMEOUT) = NONE

db2 get db cfg for SAMPLE | grep AUTO
```
Auto deletion of recovery objects    (AUTO_DEL_REC_OBJ) = OFF
 Automatic maintenance                       (AUTO_MAINT) = OFF
   Automatic database backup               (AUTO_DB_BACKUP) = OFF
   Automatic table maintenance             (AUTO_TBL_MAINT) = OFF
     Automatic runstats                     (AUTO_RUNSTATS) = OFF
       Real-time statistics                (AUTO_STMT_STATS) = OFF
       Statistical views                  (AUTO_STATS_VIEWS) = OFF
       Automatic sampling                    (AUTO_SAMPLING) = OFF
     Automatic statistics profiling       (AUTO_STATS_PROF) = OFF
       Statistics profile updates           (AUTO_PROF_UPD) = OFF
     Automatic reorganization                  (AUTO_REORG) = OFF
```

■设定memory的自动化

sudo su - db2inst1
db2 update db cfg for SAMPLE using SELF_TUNING_MEM ON
db2 update db cfg for SAMPLE using DFT_PREFETCH_SZ AUTOMATIC
db2 update db cfg for SAMPLE using LOCKLIST AUTOMATIC
db2 update db cfg for SAMPLE using MAXLOCKS AUTOMATIC
db2 update db cfg for SAMPLE using MAXAPPLS AUTOMATIC
db2 update db cfg for SAMPLE using PCKCACHESZ AUTOMATIC
db2 update db cfg for SAMPLE using SORTHEAP AUTOMATIC
db2 update db cfg for SAMPLE using SHEAPTHRES_SHR AUTOMATIC

■確认

db2 get db cfg for SAMPLE | egrep "SELF_TUNING_MEM|DFT_PREFETCH_SZ|MAXLOCKS|LOCKLIST|MAXAPPLS|PCKCACHESZ|SORTHEAP|SHEAPTHRES_SHR|CATALOGCACHE_SZ"

```
Self tuning memory                   (SELF_TUNING_MEM) = ON
 Max storage for lock list (4KB)              (LOCKLIST) = AUTOMATIC(9824)
 Percent. of lock lists per application       (MAXLOCKS) = AUTOMATIC(97)
 Package cache size (4KB)                  (PCKCACHESZ) = AUTOMATIC(384)
 Sort heap thres for shared sorts (4KB) (SHEAPTHRES_SHR) = AUTOMATIC(5000)
 Sort list heap (4KB)                         (SORTHEAP) = AUTOMATIC(256)
 Catalog cache size (4KB)              (CATALOGCACHE_SZ) = (MAXAPPLS*5)
 Default prefetch size (pages)         (DFT_PREFETCH_SZ) = AUTOMATIC
 Max number of active applications            (MAXAPPLS) = AUTOMATIC(40)
```

■解除backup pending

db2 backup db sample to /dev/null

■作成schema

sudo su - db2inst1
db2 connect to SAMPLE
db2 create schema db2inst1
db2 "select * from syscat.schemaauth where schemaname = 'DB2INST1'" | tr -s " "
db2 "select schemaname from syscat.schemata where schemaname = 'DB2INST1'" | tr -s " "
db2 terminate

■BIND

su - db2inst1
db2 connect to SAMPLE
cd sqllib/bnd
db2 bind @db2ubind.lst blocking all grant public

```
    LINE MESSAGES FOR db2ubind.lst
LINE    MESSAGES FOR db2ubind.lst
------  ------------------------------------------------------------------
      SQL0061W  バインド・プログラムが処理中です。

LINE    MESSAGES FOR db2clpnc.bnd
------  ------------------------------------------------------------------
      SQL0595W  分離レベル "NC" が "UR" にエスカレートされました。
            SQLSTATE=01526

LINE    MESSAGES FOR db2arxnc.bnd
------  ------------------------------------------------------------------
      SQL0595W  分離レベル "NC" が "UR" にエスカレートされました。
            SQLSTATE=01526

LINE    MESSAGES FOR db2ubind.lst
------  ------------------------------------------------------------------
      SQL0091N  バインドが、エラー "0" と 警告 "2" で終了しました。
```

db2 bind @db2cli.lst blocking all grant public

LINE MESSAGES FOR db2cli.lst
LINE MESSAGES FOR db2cli.lst
------ ---
SQL0061W バインド・プログラムが処理中です。
SQL0091N バインドが、エラー "0" と 警告 "0" で終了しました。

db2 bind db2schema.bnd blocking all grant public sqlerror continue

LINE MESSAGES FOR db2schema.bnd
LINE MESSAGES FOR db2schema.bnd
------ ---
SQL0061W バインド・プログラムが処理中です。
SQL0091N バインドが、エラー "0" と 警告 "0" で終了しました。

■public权限的剥夺
su - db2inst1
cd
db2 connect to SAMPLE
db2 "select * from syscat.dbauth where grantee='PUBLIC'"| tr -s " "
db2 "select * from syscat.tabauth where grantee='PUBLIC'"| tr -s " "
db2 "select * from syscat.schemaauth where grantee='PUBLIC'"| tr -s " "

dbauth
db2 revoke BINDADD,CONNECT,CREATETAB,IMPLICIT_SCHEMA on database from public

tabauth
db2 "select * from syscat.tabauth where grantee='PUBLIC'"| tr -s " " | awk '{print $5"."$6}' > all_table
vi all_table
↑删除最开始和结束的不需要的行
for TABLE in `cat all_table`
do
db2 "revoke select,update on table $TABLE from public"
done

schemaauth
db2 revoke createin,dropin on schema SCHEMANAME from public

确认剥夺成功
db2 "select * from syscat.dbauth where grantee='PUBLIC'"| tr -s " "
db2 "select * from syscat.tabauth where grantee='PUBLIC'"| tr -s " "
db2 "select * from syscat.schemaauth where grantee='PUBLIC'"| tr -s " "

■把所有bufferpool变为自动调整
db2 connect to SAMPLE
db2 "select BPNAME,NPAGES,PAGESIZE from sysibm.sysbufferpools"

确认 IBMDEFAULTBP的NPAGES是不是-2，不是的话进行以下设置

db2 ALTER BUFFERPOOL IBMDEFAULTBP IMMEDIATE SIZE AUTOMATIC

再次确认
db2 "select BPNAME,NPAGES,PAGESIZE from sysibm.sysbufferpools"

■把bufferpool变为NO FILE SYSTEM CACHING化

db2 get snapshot for tablespaces on SAMPLE | egrep "Tablespace name|caching"
[db2inst1@b19lcirdb001 ~]$ db2 get snapshot for tablespaces on SAMPLE | egrep "Tablespace name|caching"
Tablespace name = SYSCATSPACE
File system caching = No
Tablespace name = TEMPSPACE1
File system caching = Yes
Tablespace name = USERSPACE1
File system caching = No

结果是no的话就没必要改了

LANG=en_US
export DB2CODEPAGE=***
db2 terminate

db2 connect to SAMPLE

db2 list tablespaces | grep Name | awk '{ print $3 }' | while read TABSPACE ; do db2 connect to sample;db2 alter tablespace $TABSPACE no file system caching;done
db2 get snapshot for tablespaces on SAMPLE | egrep "Tablespace name|caching"

■Currently Committed 的设定

db2 get db cfg| grep -i cur_commit
db2 update db cfg using cur_commit on
db2 get db cfg| grep -i cur_commit

ls -ld /dblogs/db2audit

15 db2audit的设定

■设定出力audit log的目录
ls -ld /dblogs/db2audit

○作成audit的archive目录
mkdir /dblogs/db2audit/db2inst1
mkdir /dblogs/db2audit/db2inst1/archive

chown db2inst1.db2sysa /dblogs/db2audit/db2inst1
chmod 700 /dblogs/db2audit/db2inst1

○设定权限
chown db2inst1.db2sysa /dblogs/db2audit/db2inst1/archive

chmod 700 /dblogs/db2audit/db2inst1/archive

○确认权限
ls -ld /dblogs/db2audit/db2inst1
drwx------ 2 Instance db2sysa 4096 Sep 25 23:50 /dblogs/db2audit/d002pgs/

ls -ld /dblogs/db2audit/db2inst1/archive
drwx------ 2 Instance db2sysa 4096 Sep 25 23:50 /dblogs/db2audit/d002pgs/archive

■设定db2audit的范围

sudo su - db2inst1
db2audit configure scope audit status both,checking status both,objmaint status both,secmaint status both,sysadmin status both
db2audit configure scope validate status none
db2audit configure datapath /dblogs/db2audit/db2inst1
db2audit configure archivepath /dblogs/db2audit/db2inst1/archive

■db2audit的启动
sudo su - db2inst1
db2audit start

db2audit describe

$ db2audit describe
DB2 监查設定:

監査がアクティブ: "TRUE "　←←←←←←←←←ここがTRUEを確認
監査イベントのログ: "BOTH"　←←←←←←←←←ここがBOTHを確認
チェック・イベントのログ: "BOTH"　←←←←←←←←←ここがBOTHを確認
オブジェクト保守イベントのログ: "BOTH"　←←←←←ここがBOTHを確認
セキュリティー保守イベントのログ: "BOTH"　←←←←←ここがBOTHを確認
システム管理者イベントのログ: "BOTH"　←←←←←ここがBOTHを確認
妥当性検査イベントのログ: "NONE"
コンテキスト・イベントのログ: "NONE"
監査エラーで SQLCA を戻す: "FALSE "
監査データ・パス: "/dblogs/db2audit/**db2inst1**/"　←ここがdb2auditログを書き出すディレクトリ
監査アーカイブ・パス: "/dblogs/db2audit/**db2inst1**/archive/"　←ここがdb2auditログのアーカイブ先ディレクトリ

■确认log的输出

su - db2inst1
db2 connect to SAMPLE
db2 "select * from SYSCAT.DBAUTH"

ls -l /dblogs/db2audit/db2inst1/db2audit.instance.log.0
确认文件大小不是0

■archive的确认
db2audit archive to /dblogs/db2audit/db2inst1/archive

■ extract的确认
ls -ltr /dblogs/db2audit/db2inst1/archive/

(例)
$ ls -ltr /dblogs/db2audit/d122qms/archive/
合計 24
-rw------- 1 d122qms d122qms   9347 Feb 06 13:34 **db2audit.instance.log.0.*20090206133420*** ←确认文件生成
-rw-rw-rw- 1 d122qms d122qms   0 Feb 06 13:35 db2audit.instance.log.test

用上面生成的file来提取文件
db2audit extract file /dblogs/db2audit/db2inst1/archive/db2audit.instance.log.test from files /dblogs/db2audit/db2inst1/archive/db2audit.instance.log.0.yyyymmddss

○确认文件
ls -l /dblogs/db2audit/db2inst1/archive/db2audit.instance.log.test

○删除文件
rm /dblogs/db2audit/db2inst1/archive/db2audit.instance.log.test

# 16 ITCS104的对应
sudo su -
ls -l /db/db2inst1/db2inst1/NODE0000/
```
drwxr-x---   7 db2inst1 db2inst1        4096 Jun 16 17:28 SQL00001/
drwxrwxr-x   2 db2inst1 db2inst1         256 Jun 16 17:28 sqldbdir/
```

chgrp db2sysa /db/db2inst1/db2inst1/NODE0000/SQL00001
/opt/sudo/sudo ls -l /db/db2inst1/db2inst1/NODE0000/
```
drwxr-x---   7 db2inst1 db2sysa        4096 Jun 16 17:28 SQL00001/
drwxrwxr-x   2 db2inst1 db2inst1         256 Jun 16 17:28 sqldbdir/
```
※如果有SQL00002、SQL00003等目的也要修改

17 备份的设定
■把数据库设为归档日志
su - db2inst1
db2 get db cfg for sample | grep LOGARCHMETH1
db2 update db cfg for SAMPLE using LOGARCHMETH1 DISK:/dblogs/archive
db2 terminate

■确

db2 get db cfg for *SAMPLE* |egrep "LOGARCHMETH1|LOGRETAIN"

■备份
su - *db2inst1*

db2 backup db SAMPLE to /dbbackup/db2inst1
cd /dbbackup/db2inst1

db2ckbkp $BACKUPFILE

示以下信息就ok

```
   [1] Buffers processed:  ######
            Image Verification Complete - successful.
```

■diaglog的确认

cat /dblogs/db2dump/db2inst1/db2diag.log

結果

バックアップが取得されたログが記述されていればよい。

```
2005-09-14-10.00.09.718736+540 I11032A389         LEVEL: Warning
PID     : 843802               TID  : 1           PROC : db2agent
(WA06CUDB) 0
INSTANCE: d138fbp              NODE : 000         DB   : WA06CUDB
APPHDL  : 0-23                 APPID: *LOCAL.d138fbp.050914010009
FUNCTION: DB2 UDB, database utilities, sqlubSetupJobControl, probe:2025
MESSAGE : Starting an offline db backup.

2005-09-14-10.00.30.340540+540 I11422A362         LEVEL: Warning
PID     : 843802               TID  : 1           PROC : db2agent
(WA06CUDB) 0
INSTANCE: d138fbp              NODE : 000         DB   : WA06CUDB
APPHDL  : 0-23                 APPID: *LOCAL.d138fbp.050914010009
FUNCTION: DB2 UDB, database utilities, sqlubcka, probe:130
MESSAGE : Backup Complete.

2005-09-14-10.00.58.396718+540 I11785A388         LEVEL: Warning
PID     : 843812               TID  : 1           PROC : db2agent
(WA06CUDB) 0
INSTANCE: d138fbp              NODE : 000         DB   : WA06CUDB
APPHDL  : 0-24                 APPID: *LOCAL.d138fbp.050914010058
FUNCTION: DB2 UDB, database utilities, sqlubSetupJobControl, probe:2025
MESSAGE : Starting an online db backup.

2005-09-14-10.01.08.721789+540 I12174A362         LEVEL: Warning
PID     : 843812               TID  : 1           PROC : db2agent
(WA06CUDB) 0
INSTANCE: d138fbp              NODE : 000         DB   : WA06CUDB
APPHDL  : 0-24                 APPID: *LOCAL.d138fbp.050914010058
FUNCTION: DB2 UDB, database utilities, sqlubcka, probe:130
MESSAGE : Backup Complete.
```

■archive log的确认

ls -l /dblogs/archive/db2inst1/SAMPLE/NODE0000/LOGSTREAM0000/C0000000

ls -l /dblogs/active/SAMPLE/NODE0000/LOGSTREAM0000

强制archive

db2 archive log for database SAMPLE

```
DB20000I  The ARCHIVE LOG command completed successfully.
```

ls -l /dblogs/archive/db2inst1/SAMPLE/NODE0000/LOGSTREAM0000/C0000000

最后，大家可以往数据里建其他象，或者做其他方面的了。由于手做得比促，可能有点不足，如迎大家指出，
。