Orange for ORACLE
V4.0

Ware Valley

1.　　　　　…

1.1　　　　…

　　　　　　　　　　　　　　　　　　　　　　　, 　　SQL　　PL/SQL　　　　　　　　,
　　　　　　　　　　　　　　　, DBA(Database Administrator)　　　　　　　　　.
　　SQL　　PL/SQL
　　　　　　, 　　　SQL　　PL/SQL　　　　　　　　　　　　　　　　　　　.
　　　　　　　　　　(Session), SQL, 　(Lock)
　　　　　　　.

　　　　　Standard Edition/DBA Edition　　　　　　　　　.
- ✓ Standard Edition – 　　　　　　　,
- ✓ DBA Edition - Standard Edition　　DBA

1.2

> ### *Standard Edition*
　　　　/
　　　　　　　　　　　SQL
　　　　　　　SQL　　　　, 　　　　　　　,
PL/SQL　　　　　　　　PL/SQL　　　　, 　, Server　Output, 　　　Lock

SQL　　　　　　　SQL　　　, 　　, 　　, 　　, 　　　　, Server　Output

Local　　Remote(FTP)

DBMS　　Object

"tnsnames.ora"　　, 　　,
SQL　　Text
/　Oracle　Export/Import

(Excel)　　　　　Load　　Unload

SQL   Shared pool   SQL

SQL

/   Lock/Latch   , Blocking   , Waiting

Kill

,   ,

ERP   Oracle E-Business Suite

DB   Script

Oracle

> *DBA Edition*

,   ,

,   ,   ,   ,   ,   ,

&

9

Update, Insert,

Delete   /

1.3 Online Upgrade

.

.

.   Patch   ,

.

,   [   ] [

…]   [   ]   .

2

. SQL*Net (**NET8** 　　　　　　　 : **8.0.5** 　, 　　 : **8.1.7** 　)

SQL*Net 　　　　　　　　　　　　. 　, SQL*Net

SQL*Net 　　　　　　　　　　　　.

2.1

4.0 　　　　　, 　　　　　　　　.

- ✓ Windows 9x
- ✓ Windows NT
- ✓ Windows Me
- ✓ Windows 2000
- ✓ Windows XP

2.2

2.2.1

CD 　　CD-ROM

. 　　　　　　　　[　] 　　　[　] 　　　　　, "E:\SETUP" 　　　　　(
E:\ CD-ROM 　　　　　　) 　　　　　　"SETUP.EXE" 　.
[　2.1 - Setup.exe] 　　CD 　. (, .)

[2.1 - Setup.exe]
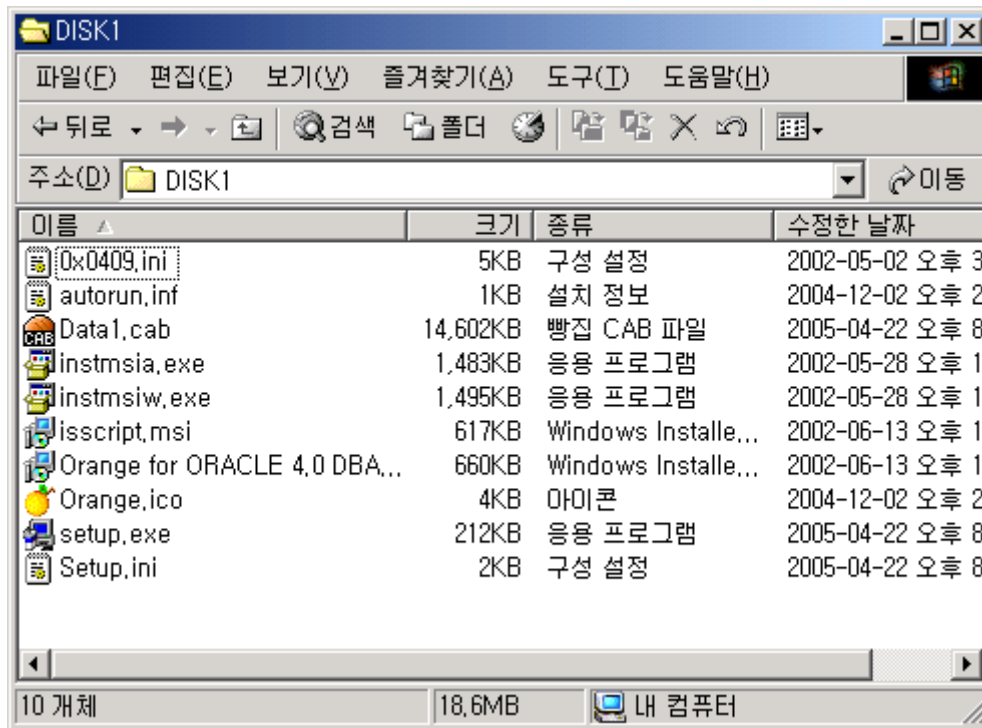
[2.2 - Preparing]

.

[2.2 - Preparing]
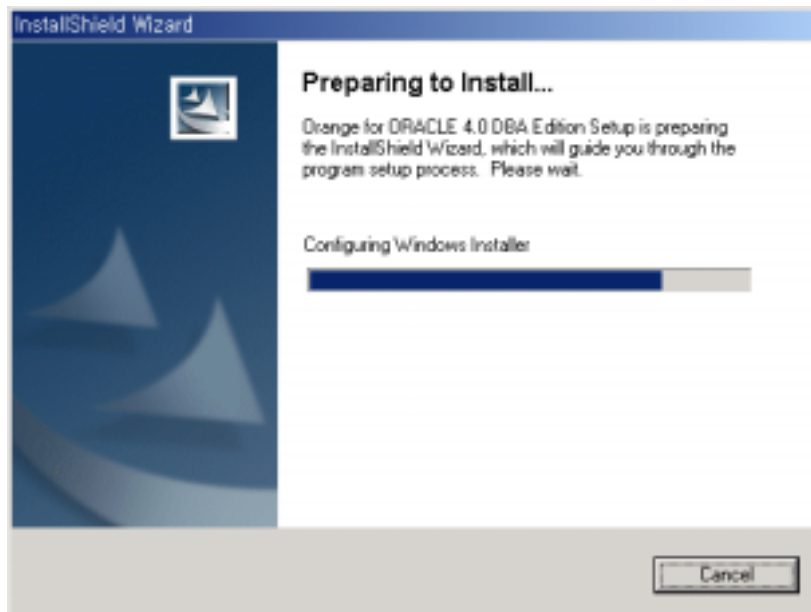
, [2.3 – Welcome]   .

[Cancel]   [Next]   .

[2.3 – Welcome]

[2.4 –   ]   .

[Yes]   .

[2.4 –   ]

[2.5 –   ]   .
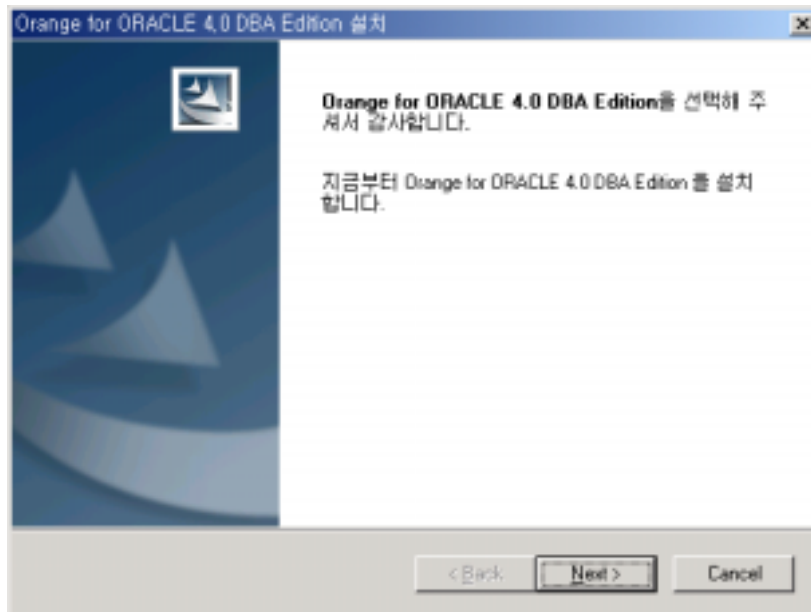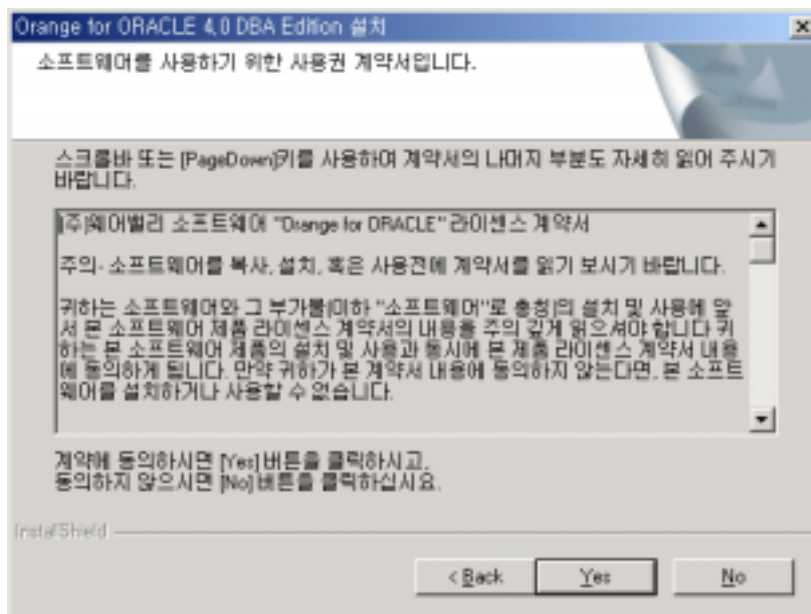
              [Browse]   .   [Next]
        .

[2.5 –   ]
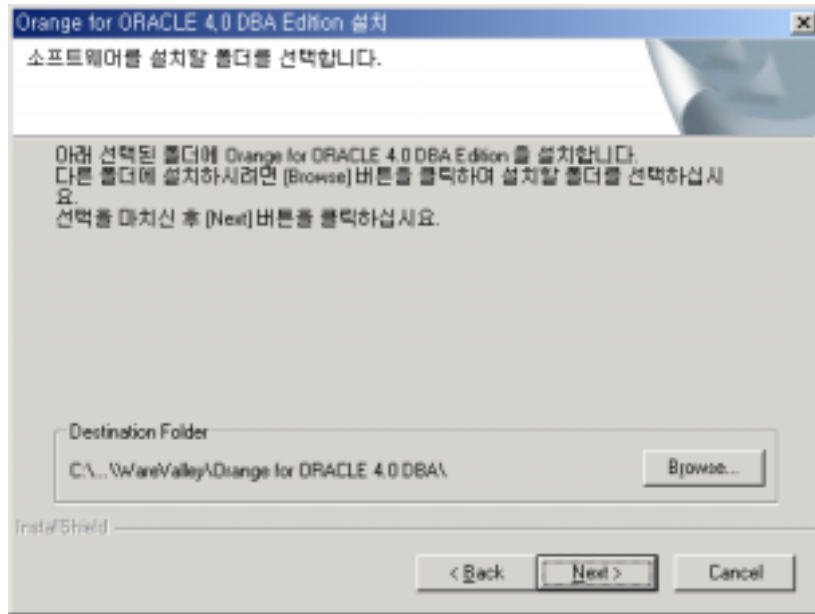
[2.6 –   ]   .
              ,   [Existing Folders]   ,
                        .   [Next]   .

[2.6 –   ]

[2.7 –   ]   .   [Typical]   ,
Component   [Custom]   .   [Next]
        .

[2.7 –   ]
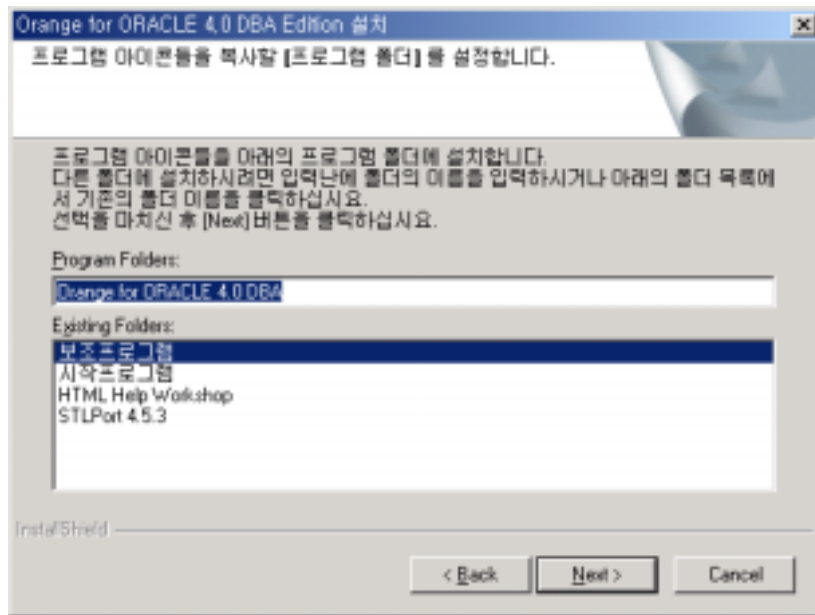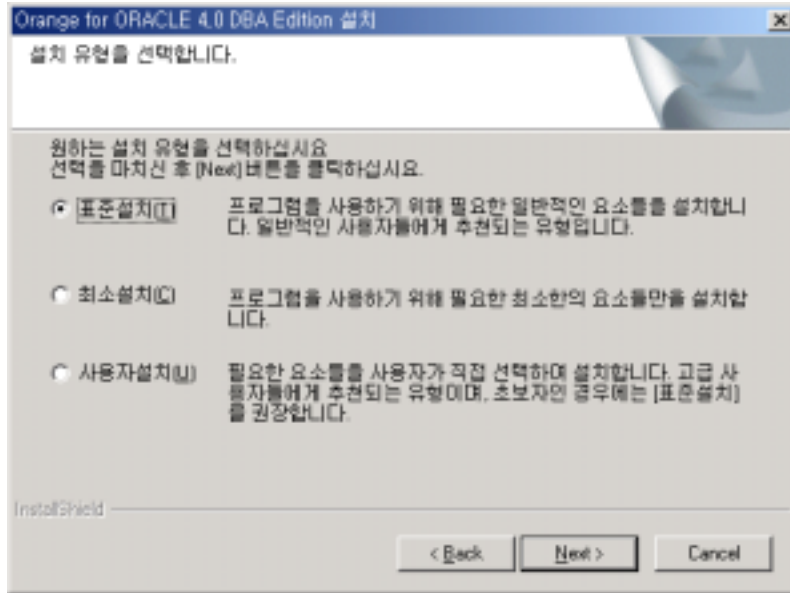
[2.8 –   ]   [Custom]   Component
        .   [Next]   .

[2.8 –   ]
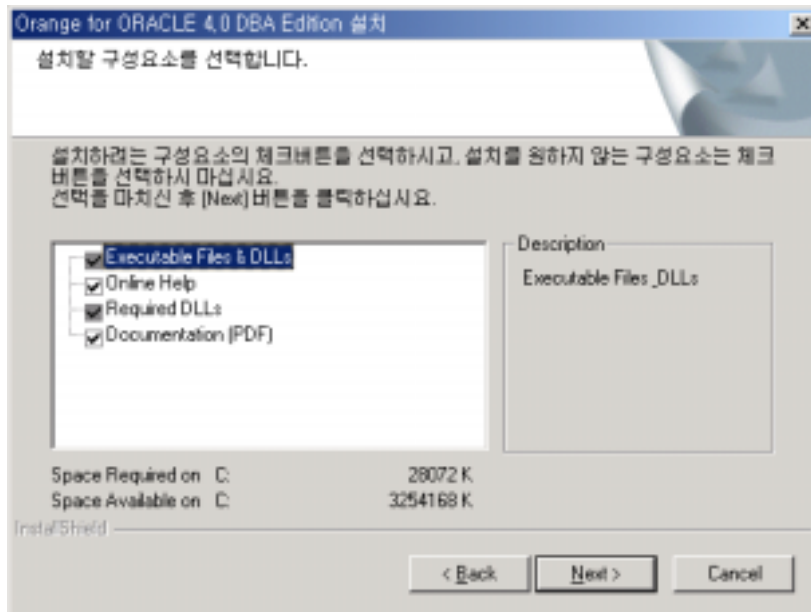
[2.9 –   ]   .

[2.9 –   ]

[2.10 –   (Online Upgrade)]

.   .
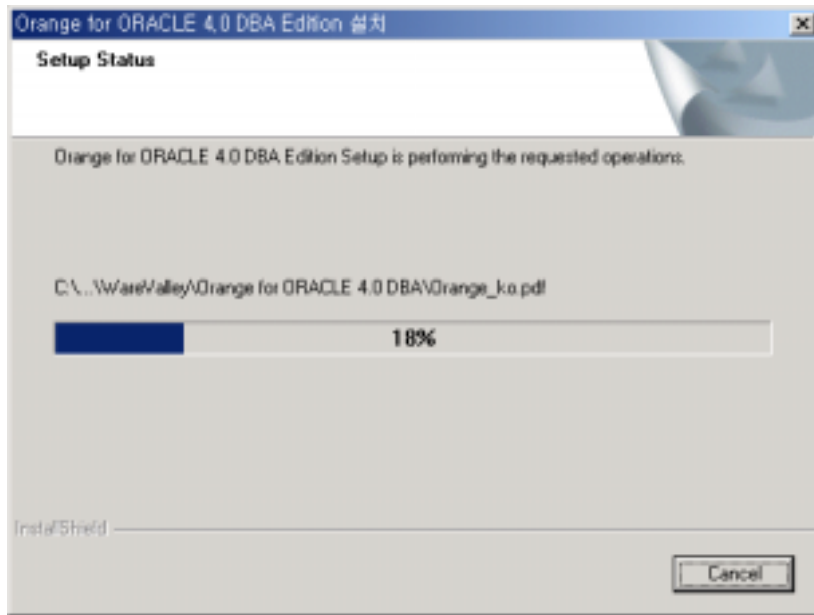
                                                        [Tools] → [Global Options…]   .
(3.2.1 Global Options   )

■   (Ask before upgrade) –

                                                                               .

■   (Always upgrade without asking) –

                                                         .

■   (Never upgrade without asking) –

                                                .

■   [   ](Upgrade check interval[Days]) –

                             .   7   .   3   10

                                        Online upgrade check

                 . (1.3 Online Upgrade   )

[2.10 –   (Online Upgrade)]
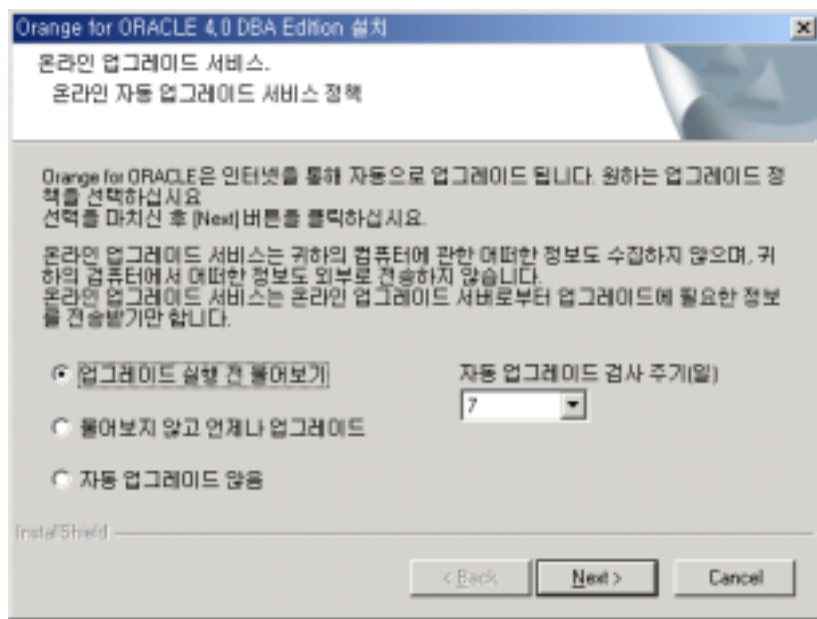
(Catalog)

.   [Next]

. Orange Configuration Admin   [2.11 – Orange Configuration Admin]   [Orange

Configuration Admin]   . (Orange Configuration Admin   2.3 Orange

Configuration Admin   )

[2.11 – Orange Configuration Admin]
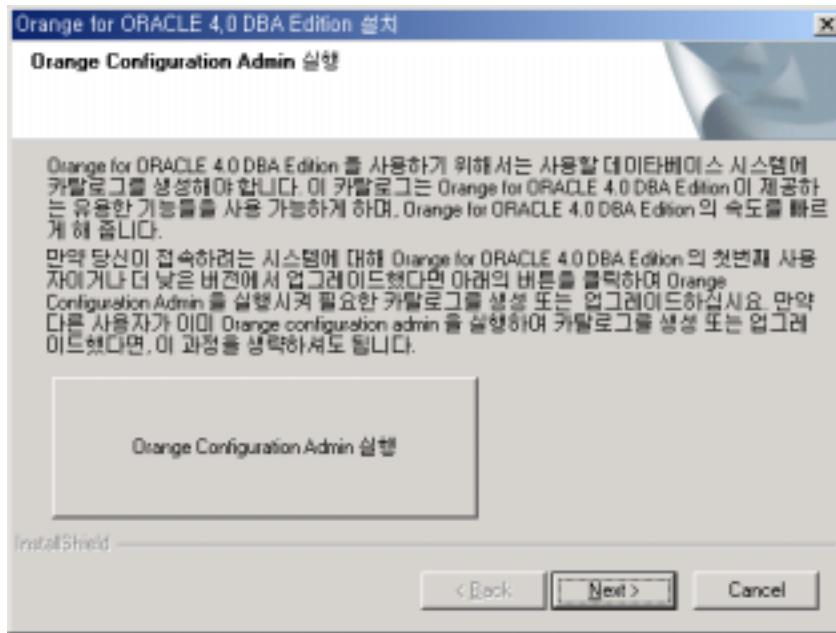
[2.12 –   ]   . [Finish]
   .

[2.12 –   ]
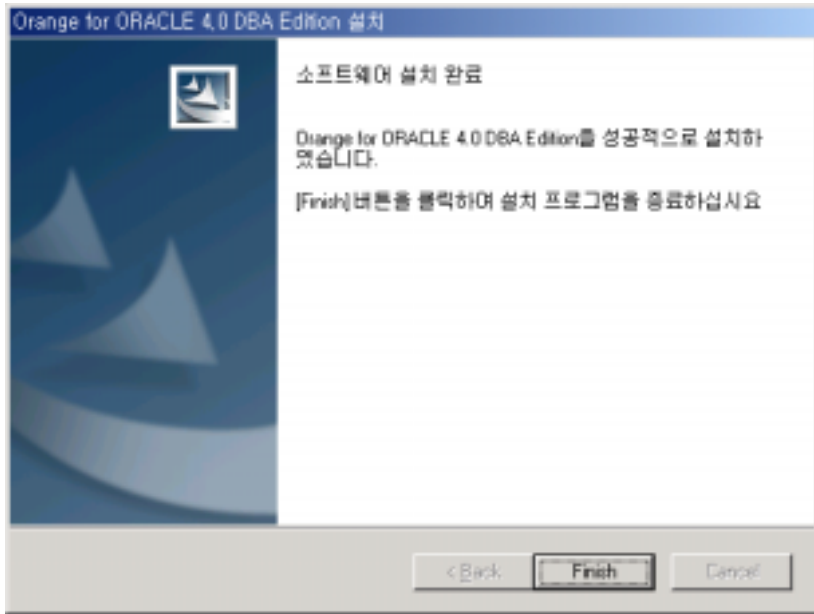
2.2.2   (Online Upgrade)

      V2.1
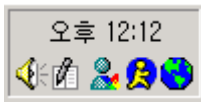
                                                                      . [2.13 –
        ]
  ,   .
                  .
                .

[2.13 –   ]

2.3 Orange Configuration Admin

                  Orange Configuration Admin

                              Orange Configuration Admin   .

Orange Configuration Admin   ,   , PL/SQL

.

DBA Edition   SYS

, Standard Edition   DBA   .

V2.2   Orange Configuration Admin   (SQL, PL/SQL, Plan,
Table Editor, Trace, Schema Browser, Description, Database Information)   .   Orange
Configuration Admin

DBA   .

2.3.1   Orange Configuration Admin

Orange Configuration Admin   [2.14 - Orange Configuration Admin   ]   [   ]
→ [   ] → [Orange for ORACLE] → [Orange Configuration Admin]   .

[2.14 - Orange Configuration Admin   ]
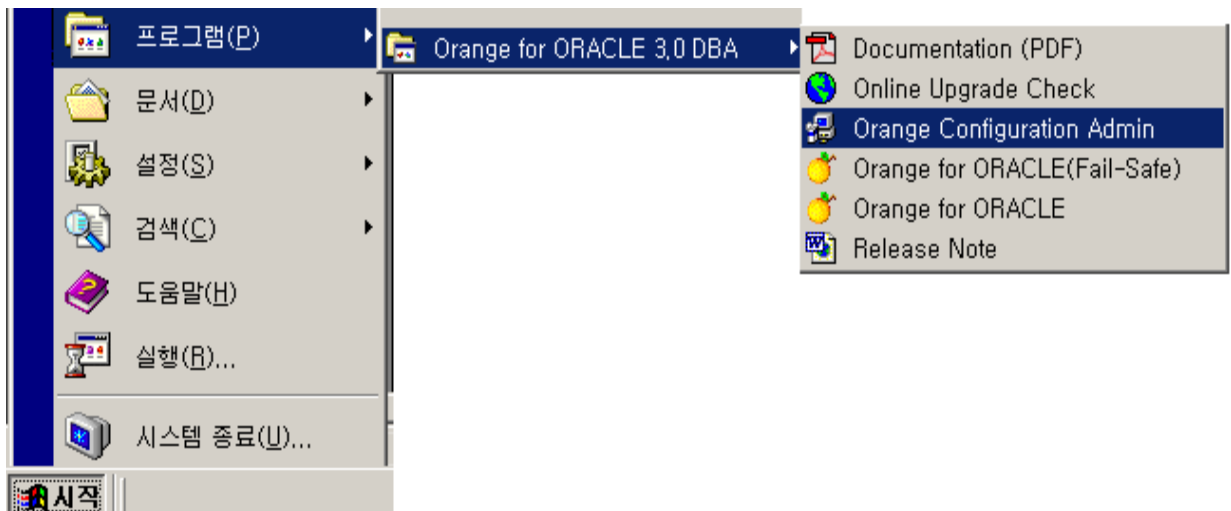
2.3.2

Orange Configuration Admin [2.15 - Orange Configuration Admin] .

[ ] .

[2.15 - Orange Configuration Admin]

2.3.3 DBMS

[2.16 - Connect to DBMS] .

Orange Configuration Admin DBA SYS, SYSTEM
. SYS, SYSTEM DBA DBA Orange Configuration Admin
.

"AS" <DEFAULT> . 9i

SYS SYSDBA SYSOPER , 9i SYS

SYSDBA . init Parameter

O7_DICTIONARY_ACCESSIBILITY=TRUE SYSDBA <DEFAULT>

. [ ] .

[2.16 - Connect to DBMS]

Orange for ORACLE DBA Edition 설치하기 위해서는 'SYS' 유저로 로그인해야 합니다.
대상 시스템에 맞는 패스워드와 서비스 이름을 입력하시오.

사용자 ID(U) [SYS]   인증 모드(A) [SYSDBA ▼]
패스워드(P) [***]
서비스 이름(S) [(LOCAL) ▼]

주의 : 오라클9i 이상의 서버를 사용하는 환경에서 'SYS'유저로서 접속하기 위해서는 인증모드에서 SYSDBA 를 선택해야 합니다.

initSID.ora 혹은 spfileSID.ora 파일에서 O7_DICTIONARY_ACCESSABILITY 파라미터가 TRUE 로 설정되어 있다면 인증모드를 '<DEFAULT>'로 사용하고 그렇지 않으면 'SYSDBA'를 사용해야 합니다.

< 뒤로(B)   다음(N) >   취소

[   ]
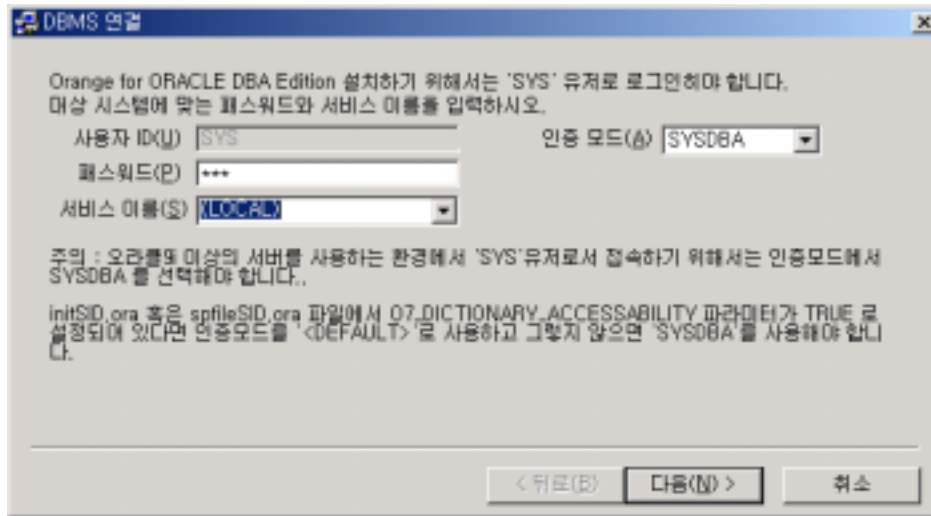
.   , Orange Configuration Admin

[2.17 - Upgrade   ]   .

[2.17 - Upgrade   ]

오렌지   ×

? 오렌지 카탈로그가 이미 이 데이타베이스에 구성되어 있습니다.
업그레이드 할까요?

예(Y)   아니오(N)

[   ]   .
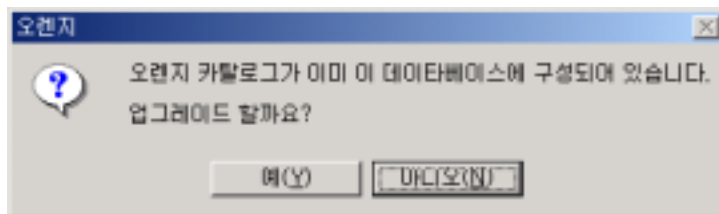
2.3.4 DBMS

[2.18 - DBMS Information]

　　　.　　　　　　　[　　]　　　　　　　　　.

[2.18 - DBMS Information]

2.3.5

[2.19 –   ]
　　　　　.
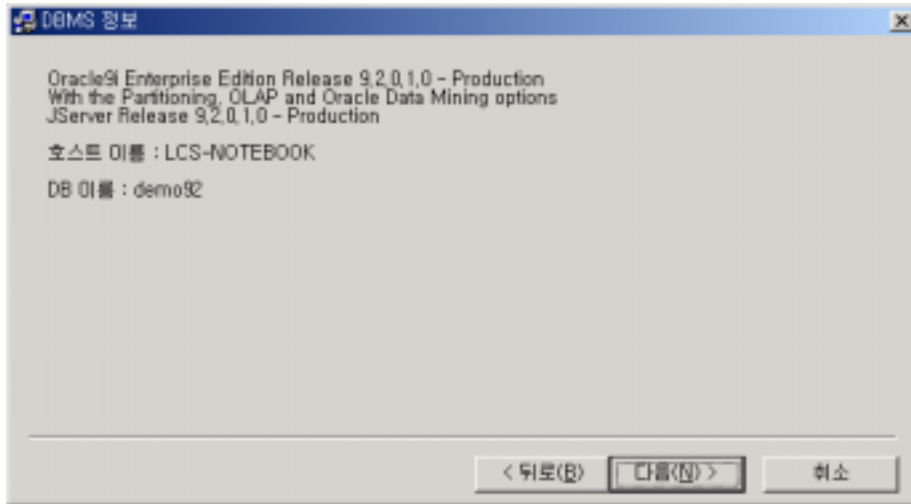
　.   TOOLS
　　　.　　　　　　　[　　]　　　　　　　　.

[2.19 –   ]

2.3.6   **DB**

[2.20 –   ]

         . SYSTEM   RBS   ,   TEMP

                 .

     .   **[   ]**   .

      [2.20 –   ]

2.3.7

[2.21 –   –   ]   **[   ]**   . [2.22 –

           ]   .

      [2.21 –   –   ]

[   ]   [   ]   . [   ]
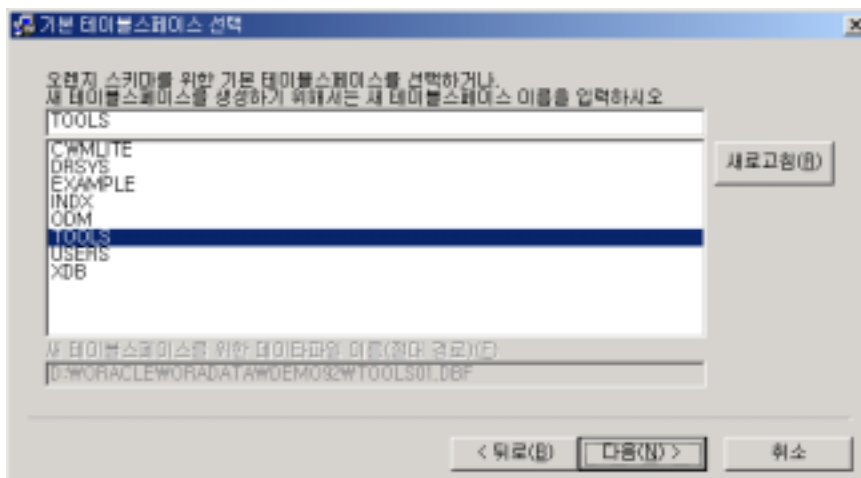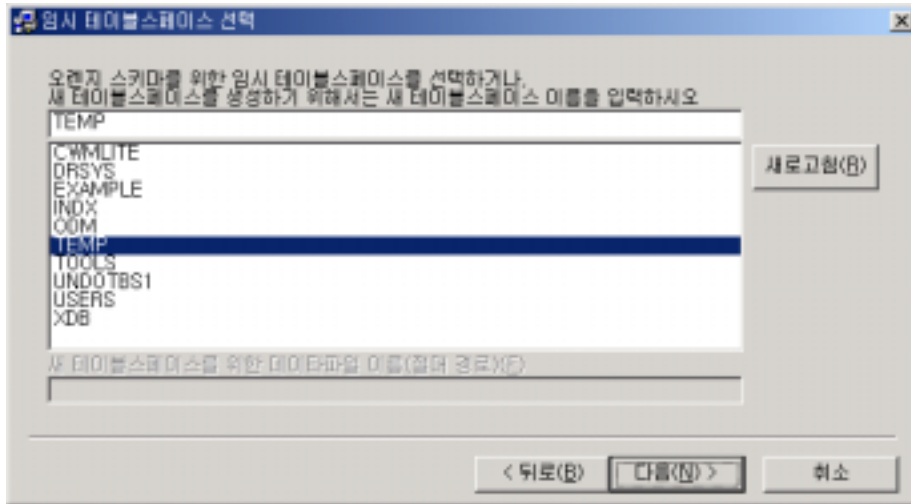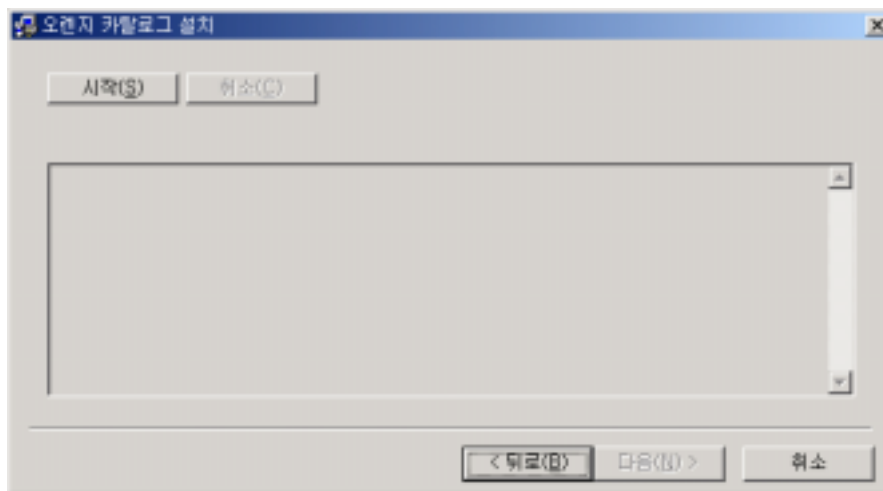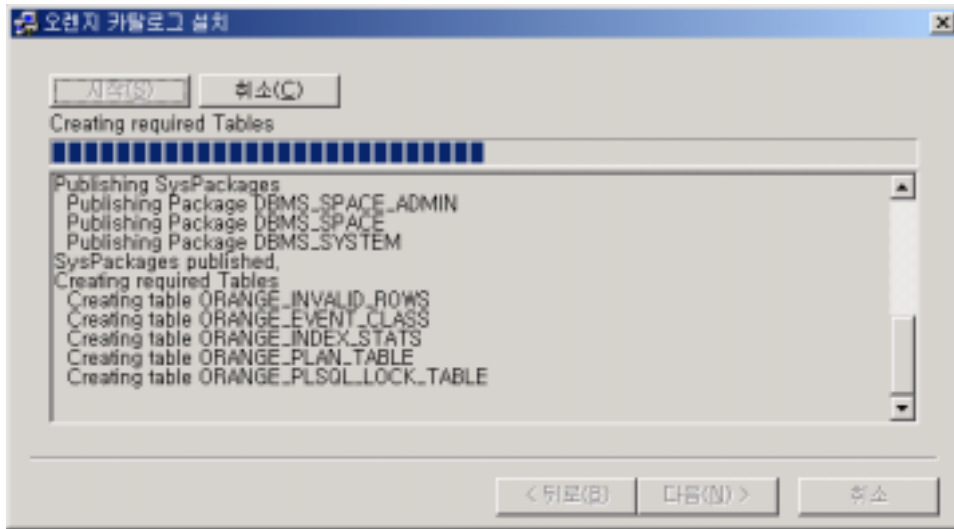
Orange Configuration Admin   .

[2.23 - Orange Configuration Admin History   ]

Configuration Admin   History   Configuration Admin
                  Configuration   Admin   .
Configuration Admin   [   ]   [2.16 - Connect to DBMS]
DBMS   .   [2.23 -
Orange Configuration Admin History   ]   [   ]   ,
                                                                        [   ]
           .

[2.23 - Orange Configuration Admin History   ]
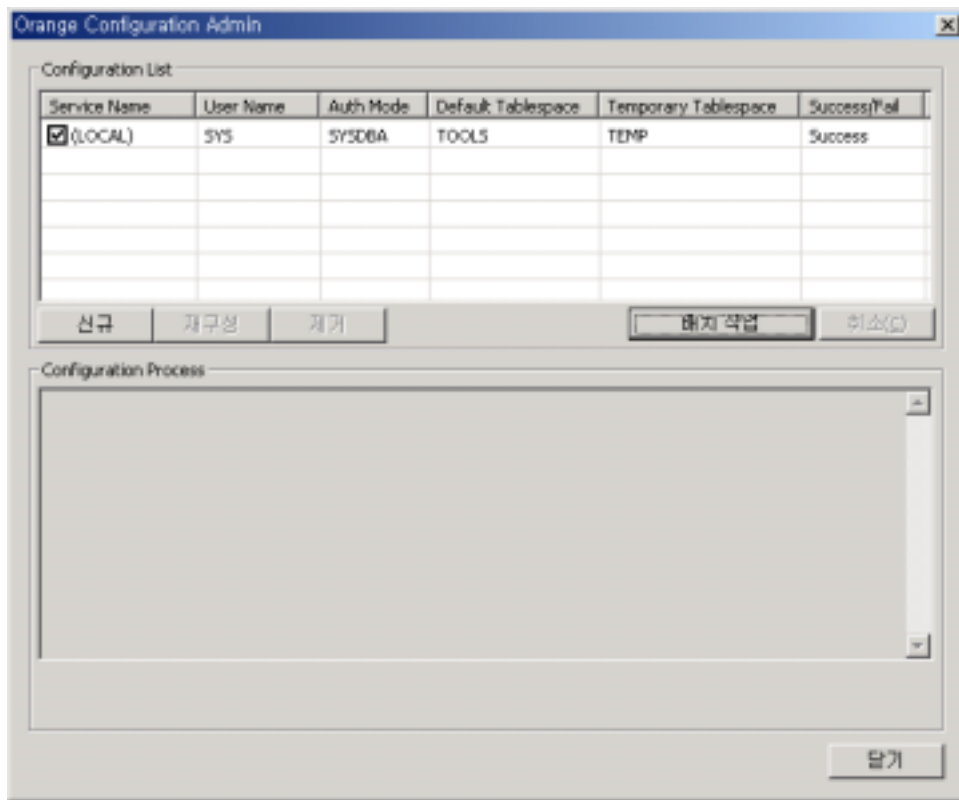
2.4 Registration Key

[　　] → [　　　　　] → [Orange for ORACLE]　　　　.

[　　2.24 – Orange for ORACLE　　　　]
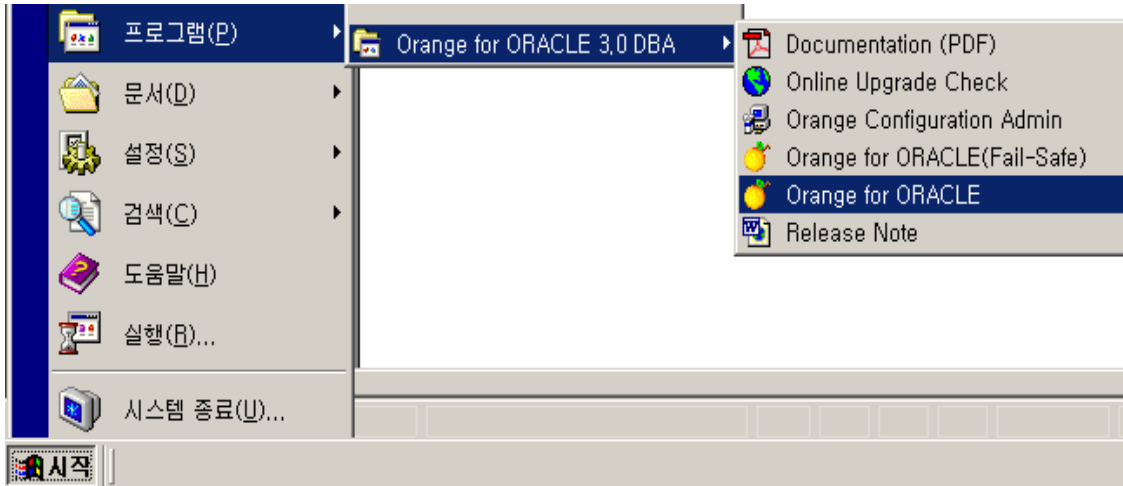
[　　2.25 - Registration Key　　]

. Product License Card

.　　　　　　　　　　　　　　　　　　　　[　　　　　　　]

.

[　　2.25 - Registration Key　　]

2.5

2.5.1

[그림 2.26 – 제어판 실행] 메뉴를 선택하여 /

.

[그림 2.26 – 제어판 실행]

[그림 2.27 – 프로그램 추가/제거]
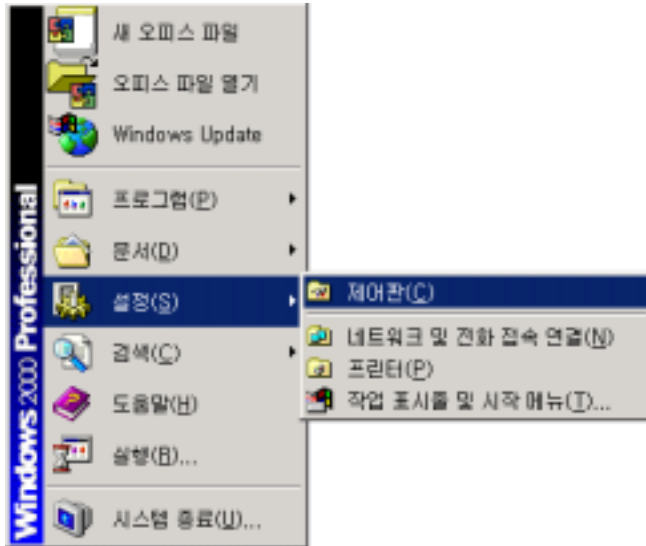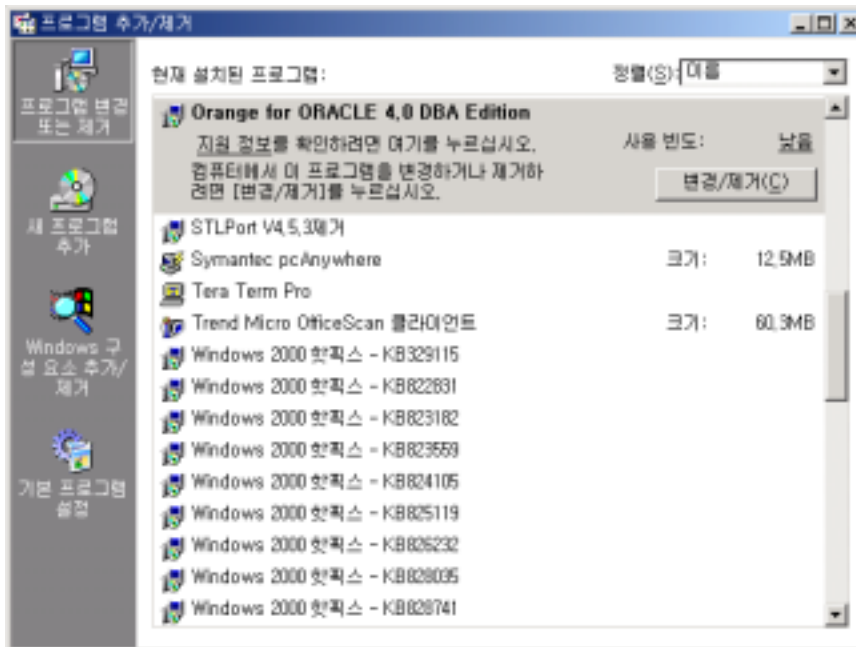
[그림 2.27 – 프로그램 추가/제거] 에서 Orange for ORACLE 4.0 를 선택한다.

2.5.2 DBMS

(ORANGE)

. [2.28 – DBMS   DB user orange   ]   DBA

SQL*Plus   "drop user"   .

SQL> DROP USER orange CASCADE ;

[**2.28 – DBMS   DB user orange**   ]

3.

3.1

3.1.1 TNS

SQL*Net   . SQL*Net

"tnsnames.ora"

.   Oracle Net8 Easy Configuration

.   DBA   .

TNS   . (17   Network Configuration

Tool   )

3.1.2 tnsnames.ora

. "File"

tnsnames.ora   .

2   tnsnames.ora

.   tnsnames.ora   .

■   (🔲)   .

■   - tnsnames.ora   TNS   .   TNS

(🔧)   TNS Name   TNS

.

■   – "Oracle8i   8   "   SID   SID

"   "   . "   "

DB server   MTS   Dedicated   .

■   –   .

TCP   . HOST   IP

. Network Ping   Ping   (🔴)

.

[3.1 – Network Ping   ]
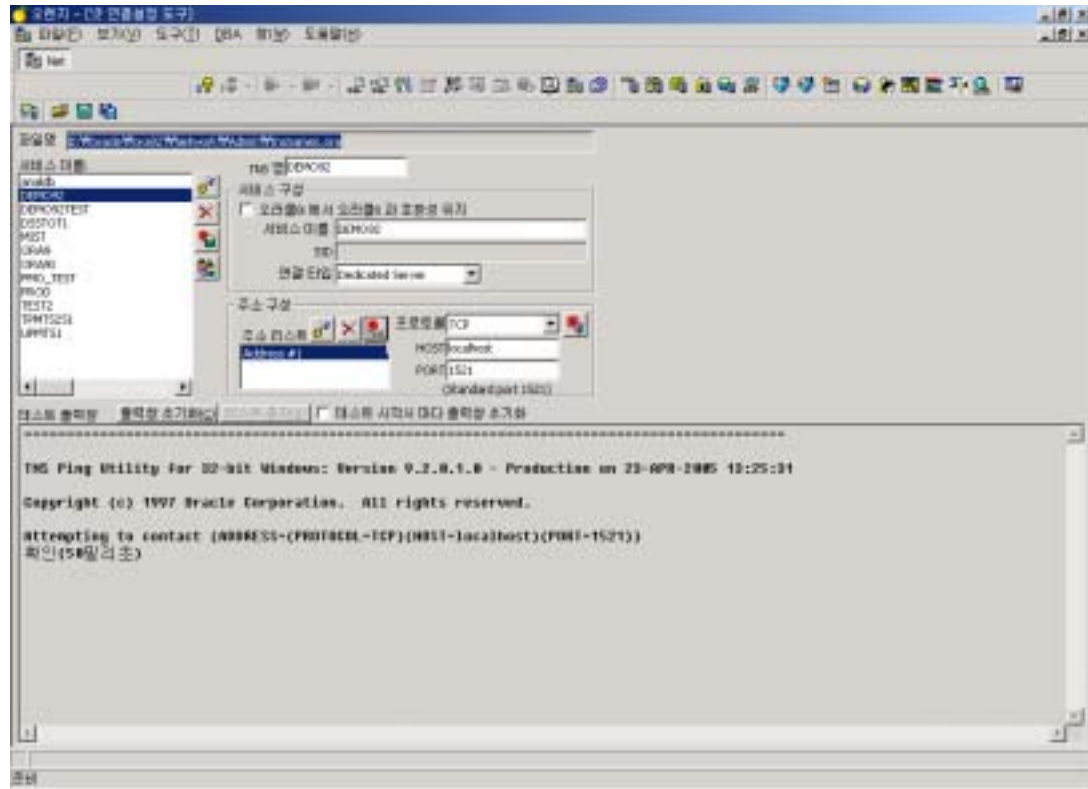
- [3.1 – Network Ping   ]   Network Ping   TNS Ping
  (TNS)   . TNS ping
  (🍱)   .   ,   scott
                                                                        scott
  (👥)   .   [3.2 –
      ]   .

37

[3.2 –   ]
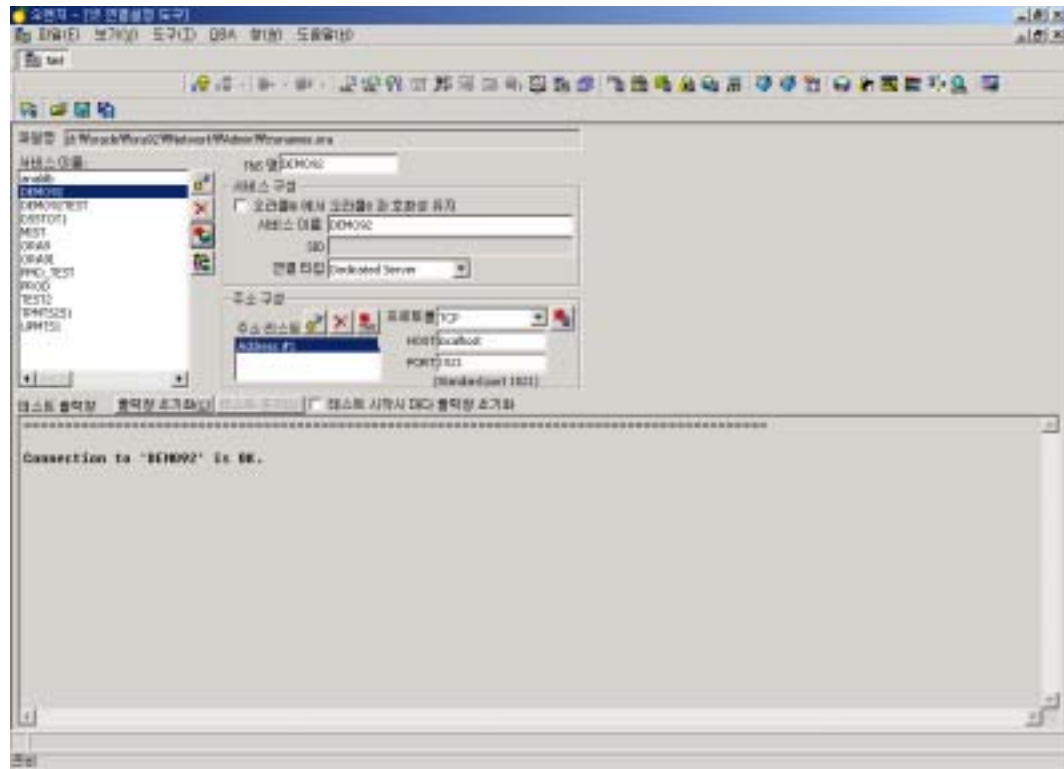
■ TNS Ping   .

()   (tnsnames.ora   )   .

3.2

           [3.3 –   ]   .   Orange for ORACLE V4.0 DBA Edition
.

[3.3 –   ]
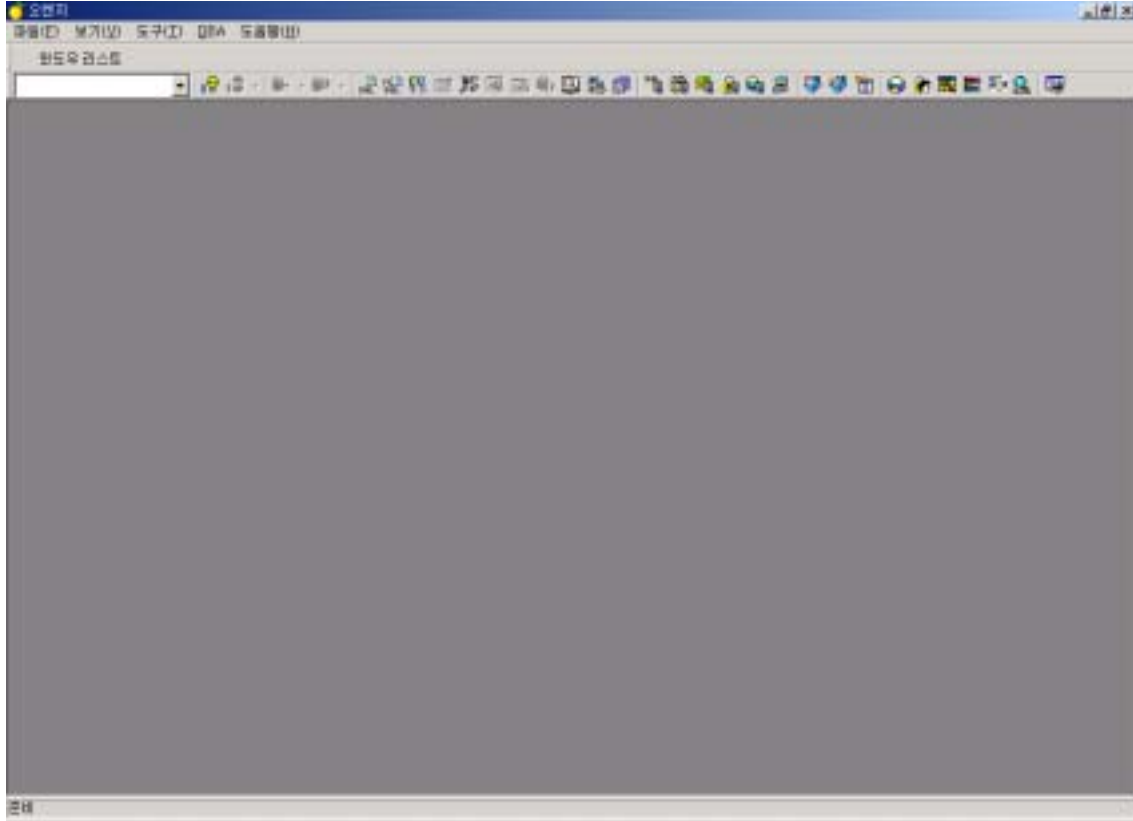
3.2.1 Global Options

           [   ] → […]   [3.4   –   ]
.

■

[3.4   –   ]
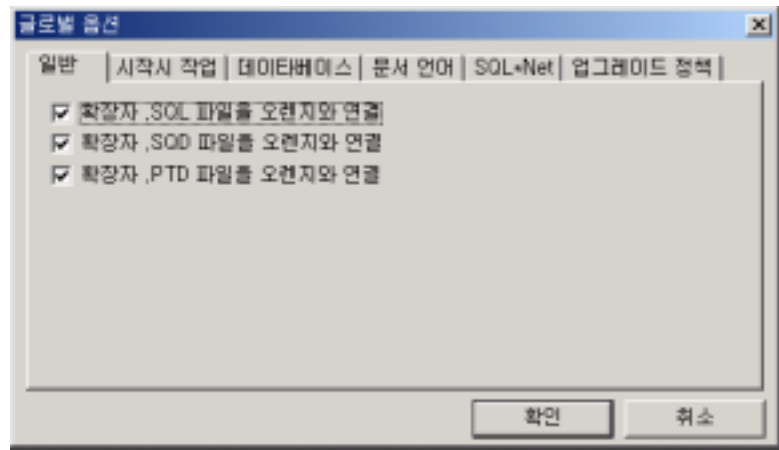
> *.SQL/SQD/PTD

.SQL, .SQD, .PTD

.

.SQL   SQL script   .SQD   Workspace (SQL

)   , .PTD   Plan Tool

Explain Plan   Trace   Schema

.

■

[3.5   –   ]

>

Logon   .

>

,   .

➢

■

[3.6   –   ]

글로벌 옵션   ☒

일반 │ 시작시 작업 │ 데이타베이스 │ 문서 언어 │ SQL*Net │ 업그레이드 정책 │

☐ 세션이 끊어졌을때 자동 연결
　(이 옵션은 새로운 세션부터 적용된다)

☐ 문장 실행시마다 자동 커밋

─ 연결 해제시 ──────────
　○ 물어보지 않기
　◉ 물어보기

─ 연결 해제 전 커밋 여부 ───
　◉ 물어보기
　○ 커밋
　○ 롤백

확인   취소

➢

,   statement
.

➢
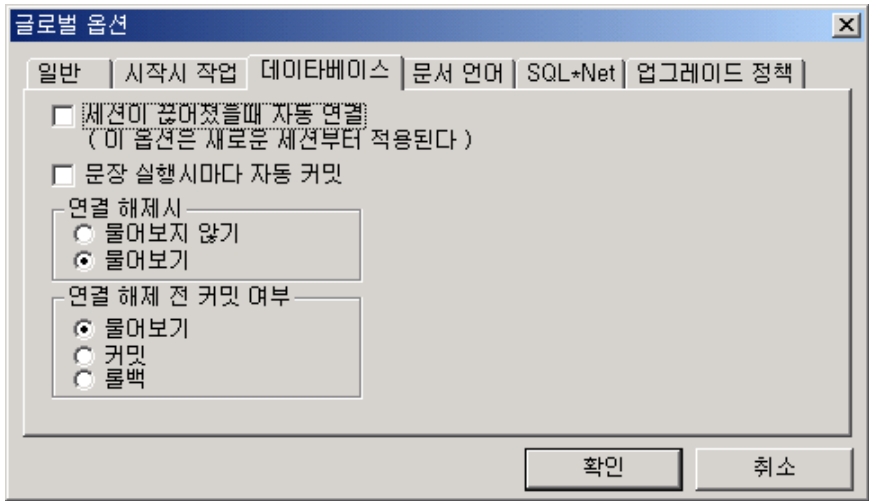
SQL Tool, Table Editor   statement   Commit   .

➢

"   "   .

➢

"   "   Commit   . "   "

Commit   "   "   Rollback   .

■

[3.7   –   ]
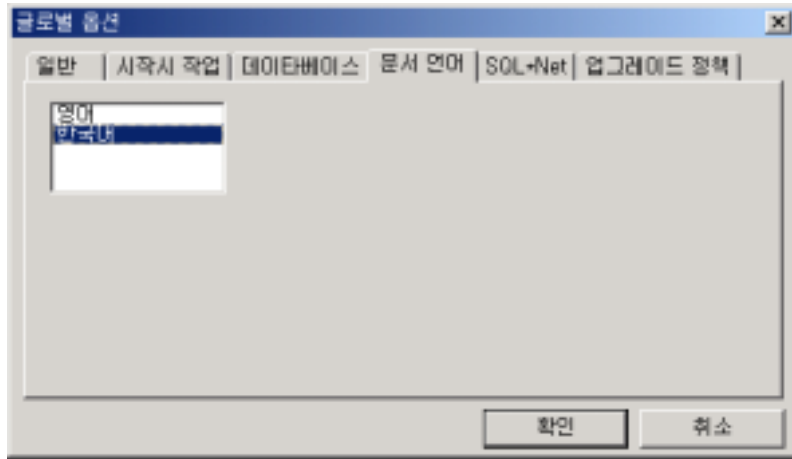
&   Guide Line   .

■   SQL*Net

[3.8 SQL*Net]
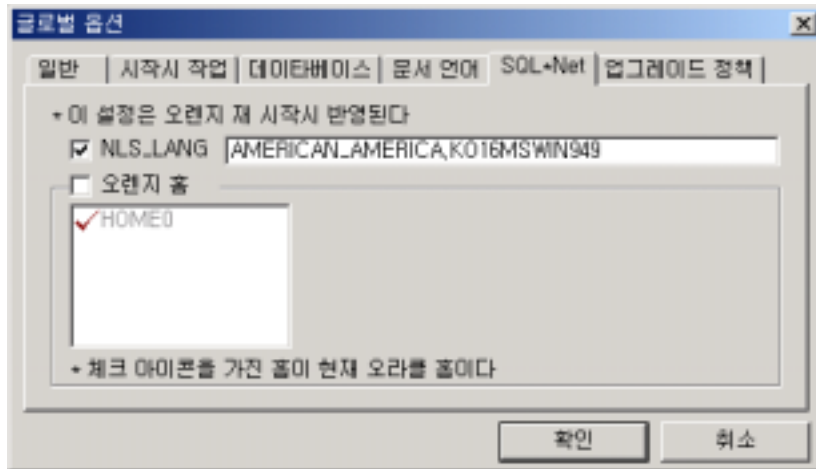
SQL*Net   Parameter   .   SQL*Net
                                      .   "Orange for ORACLE"
            . "Orange for ORACLE(Fail-Safe)"   ,
                                   .

➢   NLS_LANG

                                    NLS_LANG   .

➢

                                Home   .

"Home Selector" Home . 2 Home
Default Home Home
.

■

[3.9]
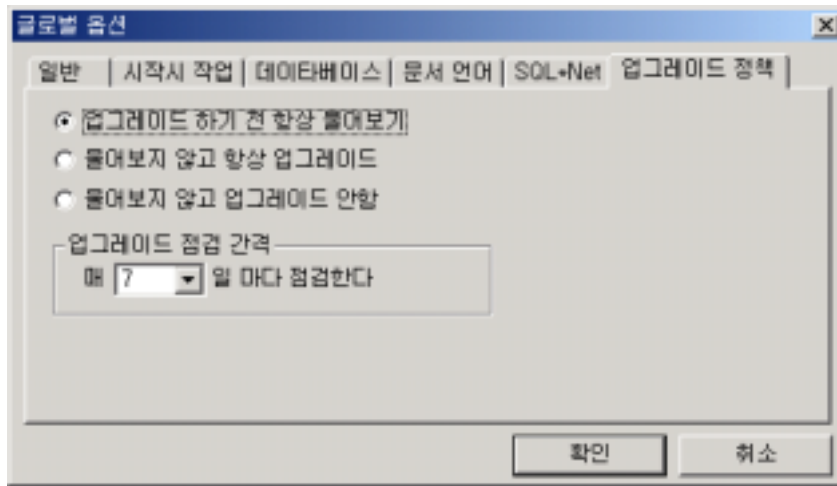
.

➢
Patch ,   .
➢
Patch ,   .
➢
.

[Online Upgrade Check]   .

➢
"   " "   "
Patch   .   3~10
.

Ware Valley

3.3 Logon

[   ] → […]   [3.10 –   ]   .
                                                 [   ]   DBMS
    .

[3.10 –   ]
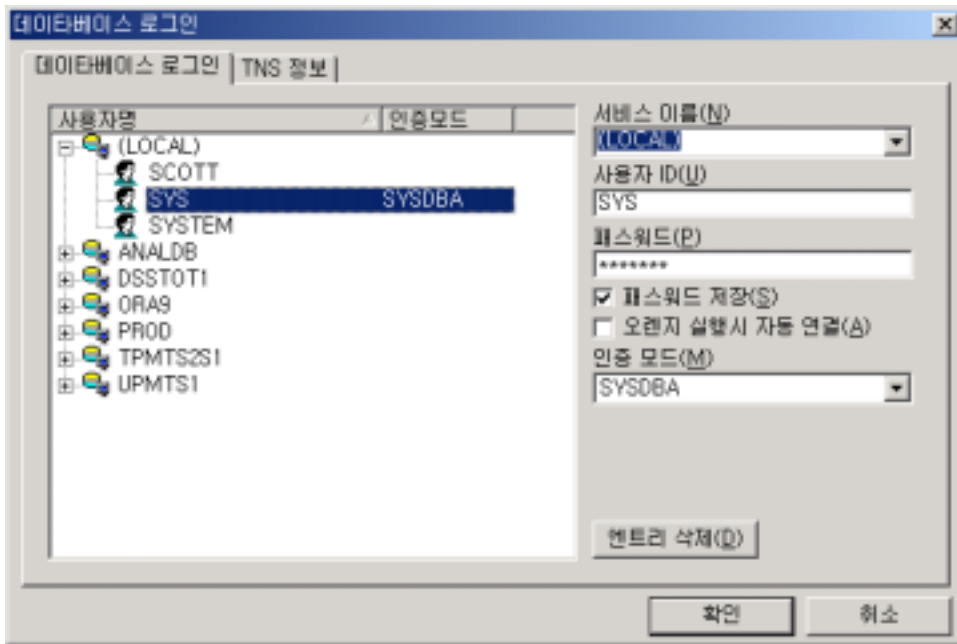
✓   – tnsnames.ora   TNS   .   TNS
                          .
✓   ID –   (30   )
✓   –   (30   )
✓   – Default, Sysdba, Sysoper   . Oracle 9i   , SYS
        SYSDBA   SYSOPER   , Oracle 8i   default   . ,
    Oracle 9i   O7_DICTIONARY_ACCESSIBILITY=TRUE   SYSDBA /
    SYSOPER   .
✓   -   .
✓   –   Entry   .
                                            ,   .

3. 4

[3.11 – DBMS   ]   .

- ✓   –   ,   .
- ✓   –   ,
                          .   .
- ✓   –   .
- ✓   –   .
- ✓   –   .
- ✓   –   .
- ✓   –   .
- ✓   –   .

[3.11 – DBMS   ]

Procedure | Function | Package | Trigger | Java
Object Table | Type | Synonym
Sequence | DB Link | Tablespace
Table | View | Index | Constraint | M-View

SYS
ACCESS$
APPLY$_CONF_HDLR_COLUMNS
APPLY$_DEST_OBJ
APPLY$_DEST_OBJ_CMAP
APPLY$_DEST_OBJ_OPS
APPLY$_ERROR
APPLY$_ERROR_HANDLER
APPLY$_SOURCE_OBJ
APPLY$_SOURCE_SCHEMA
AP$ROLE$
AQ$_MESSAGE_TYPES
AQ$_PENDING_MESSAGES
AQ$_PROPAGATION_STATUS
AQ$_PUBLISHER
AQ$_QUEUE_STATISTICS

User Info

	Item	Value
1	Username	SYS
2	User Id	0
3	Account Status	OPEN
4	Lock Date	
5	Expiry Date	
6	Default Tablespace	SYSTEM
7	Temporary Tablespace	TEMP
8	Created	2002/05/12 16:
	Initial Rsrc Consumption Group	SYS_GROUP

3.5

✓   –   .

       ,

[   ] → […]   ()   .

ID   ,

.

.

()   .

,   .

()   .

■   – SQL   , PL/SQL   ,   ,   ,   ,   ,

,   ,

✓   –

.

.   ,

,

.   ()   .

.

■   – SQL   ,   ,   ,   /   ,   ,

ERP   ,   ,   ,   ,   ,   ,

,   &   ,   ,

✓   –

,

.

■   –   ,

4. (Schema Browser)

,   (Table,
Object Table, Index, Trigger, Constraint, View, Type, Synonym, DB Link, Sequence, M-View, Procedure, Function,
Package, Java)   .

                                                                    .

                                                                    .

                                            SQL   ,   ,
                .   ,   ,
                                            .   ,   (Create)
            (Alter)   , Invalid   .
                ,   ,
                                .

                                            .

                                    .

4.1

✓
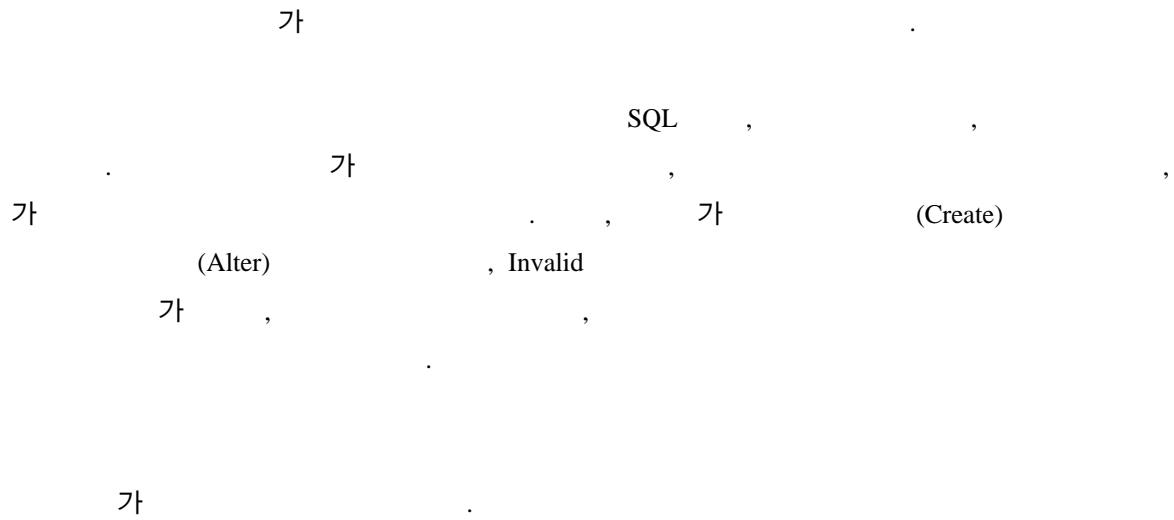
✓   (Multi-Node)

✓   (Object)   (Window)

✓

✓   Table/Cluster/Index/Synonym/DB link/Sequence   (CREATE)

✓   Table/Index   (ALTER)

✓   Source/Invalid Object

✓   Object   (DROP)

✓   Table/Index/Column Analyze

✓   Drag & Drop   SQL Editor, Description Tool, Table Editor

4.2

Change Session (   )

Refresh

Invalid   (Batch)

Object   Description

Object Column list (SQL*Plus   describe   )

View   PL/SQL   /   Tool   Source

Table

Table

Cluster

Table   View   SQL Tool

Index

Index

Synonym

DB Link

Sequence

PL/SQL   View

Object

Analyze

Object   Disable

Object   Enable

Unusable

Rebuild

4.3

4.3.1

.

.   ,

.

.

.

■   .
■   .
■   .

4.3.2

                                    ()   ,   ()
                                                                                                    .
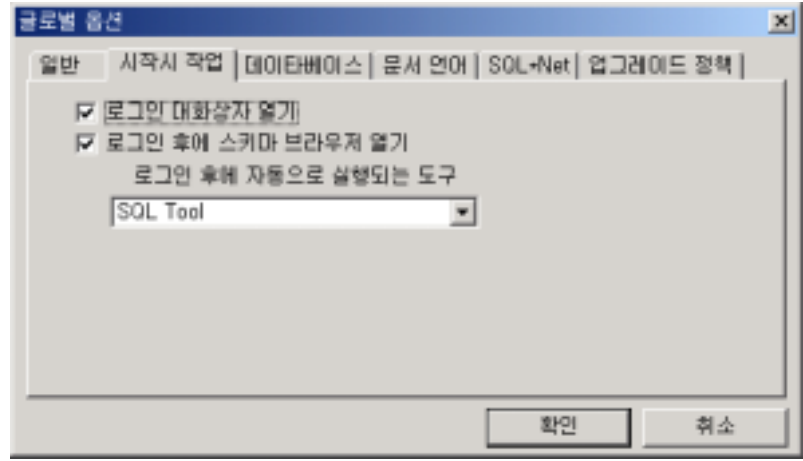■   .
■

                                                                                       .
■

                                                                                     .
■

                .

4.3.3 Table

                                                      Column, Index, Partition, Trigger, Snapshot Log, Constraint
                                                                                     .

            [TABLE]   ,
            TABLE   .   Column, Index, Trigger, Partition, Snapshot
Log, Constraint   .

■

> Column   : Column   , Nullable, Data Type, Comment
> General   :   Tablespace, Pct Free(%), Pct Used(%), …
> Storage   :   storage   (Initial , Next, Min Extents, ...)
> Stats   :   (Last Analyze, Rows, Blocks, …)
> Other   : Parallel Degree, Partition   , …
> Comment   :
> Segment   :   ,   , Extents, …

■   Column

> Column List   : Column   , Nullable, Data Type, Comment

[4.1 -   ]
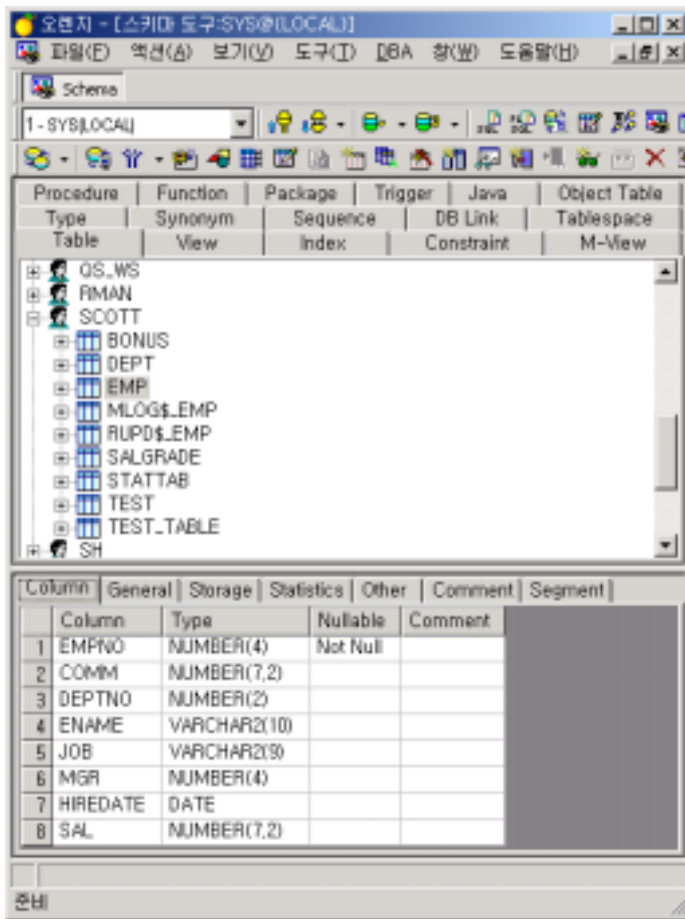
■ Index

➢ Index List   :   ,   ,   ,

[4.2 -   ]

■　　　　　　　　Trigger

　　　　　　　　　　　　　　　　　　　　　　　　　　　.

　　　　　　　　　　　　　　　　　　　　　　　　.

　　➢
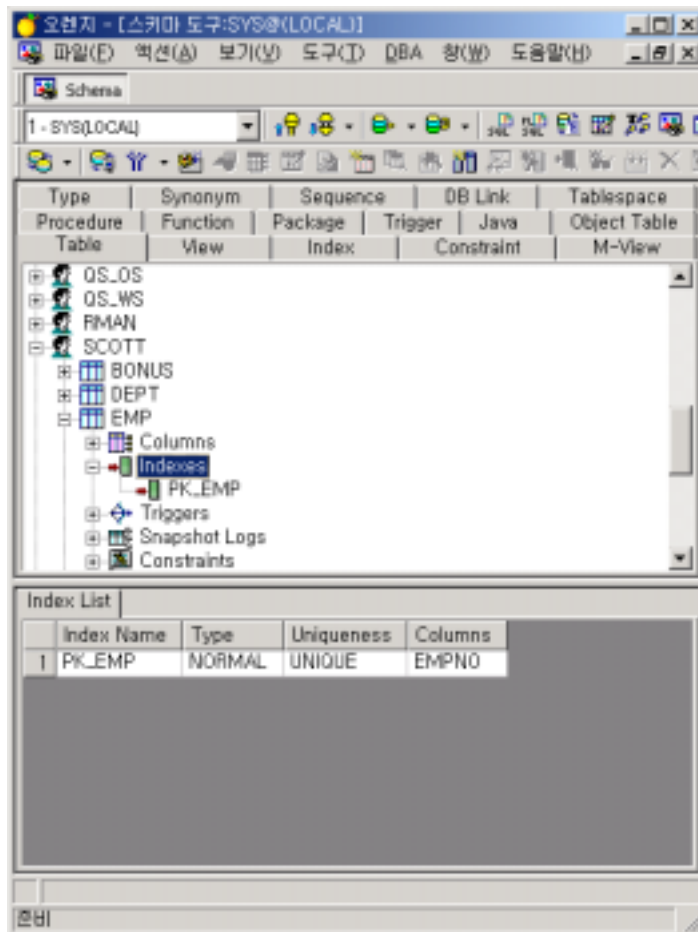
　　　　　◆　Trigger List　　　　: Name, Event, Trigger Status

[　　4.3 -　　　　　　　　　　　　　　　　　　　　　　]

➤
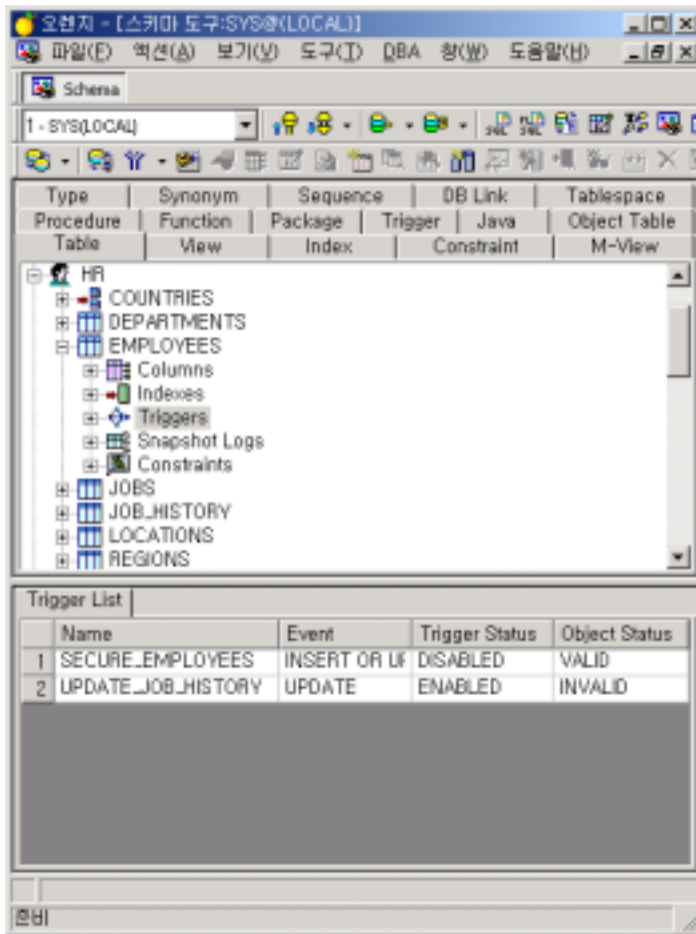
◆ General : Name, Event, Trigger Status

◆ Body :

[4.4 -]
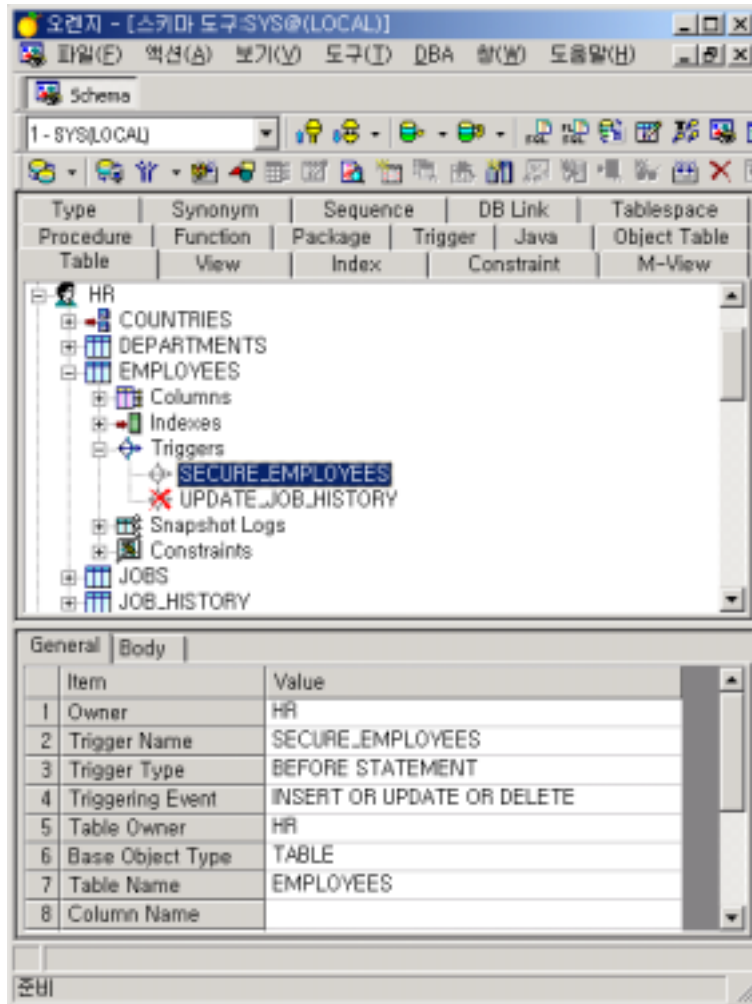
■   Snapshot Log

    ➢

        ◆   Snapshot Log List :

[4.5 -   **Snapshot Log**   ]

➢   .
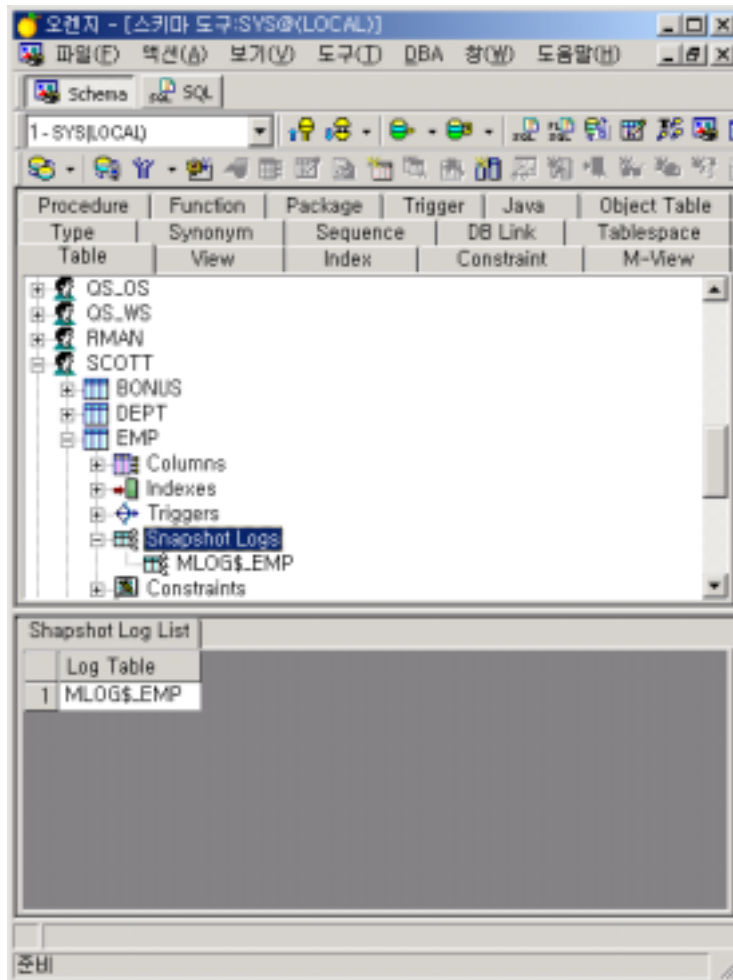
◆   General :   ,

[4.6 -   Snapshop Log   ]
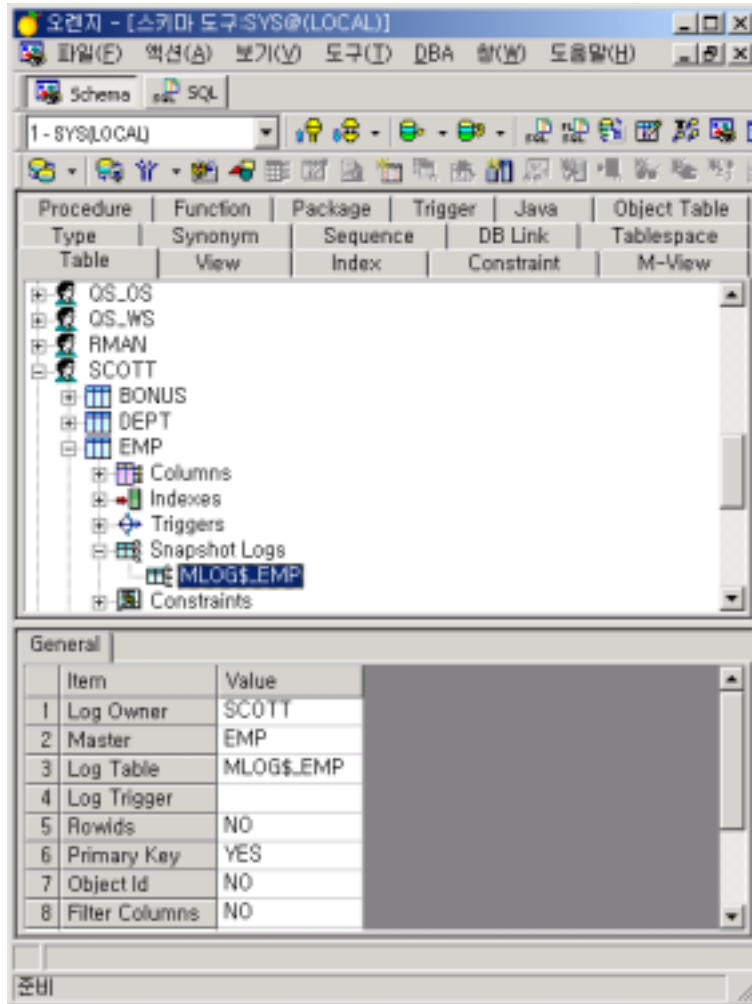
■　　　　　　　　　　　Constraint

Primary Key, Foreign Key, Unique Key, Check(NULL), Check(　　　　　　　)

➤　Constraint

◆　Constraint List　　: Constraint　, Type

[　　4.7 -　　　　　　　　　　　　Constraint　　　　　　　　]
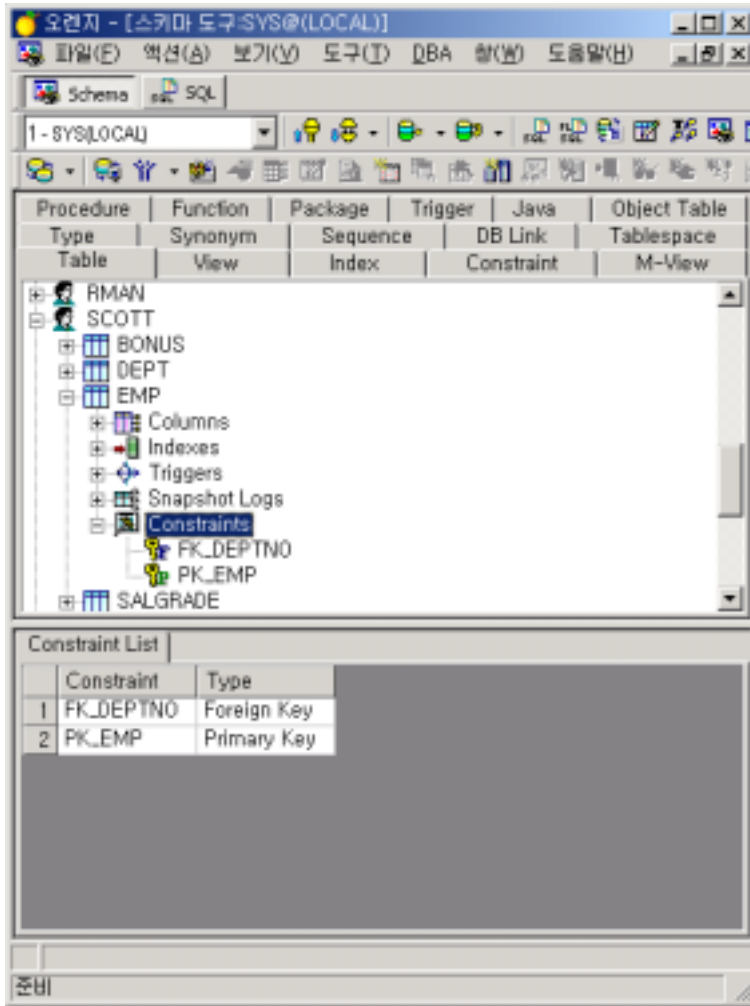
■ Partition

Partition, Subpartition

 ➢ Partitions
  ◆ Partition List : Partition , Tablespace
  ◆ Partition Key : Partition Key Column
 ➢ Partition / Subpartition
  ◆ Storage List : Partition Storage
  ◆ Partition List : Partition
  ◆ Stats List : Analyze
  ◆ Other List :
  ◆ Segment : Partition/Subpartiton , , Extents, …

[4.8 - Partition]
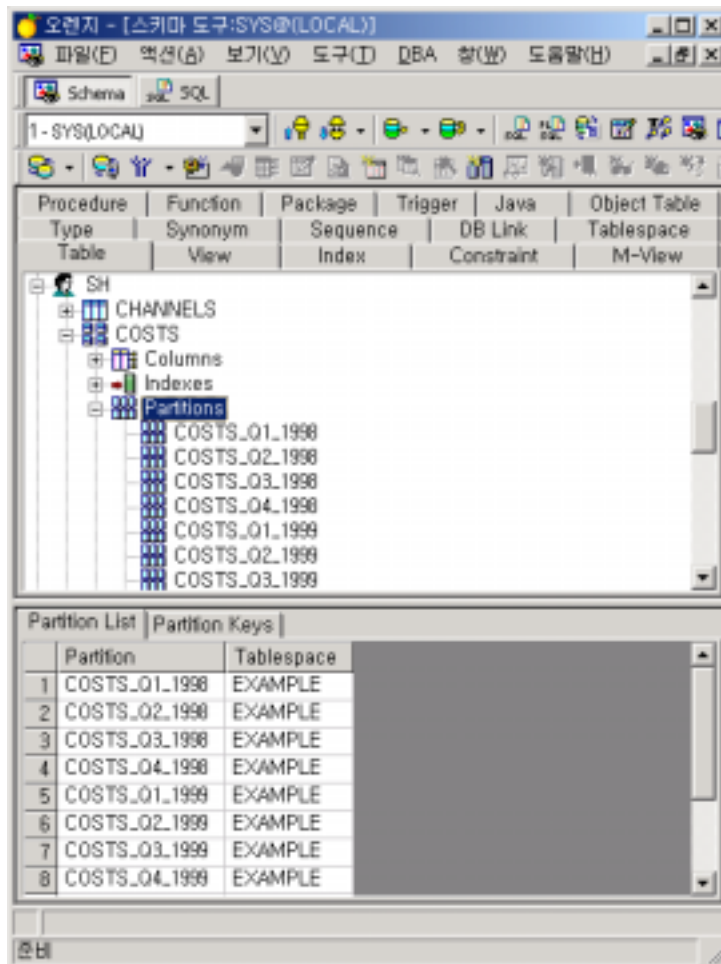
4.3.4 Object Table

Object Table   OBJECT TABLE   .

■

  ➢ Column   : Column   , Nullable, Data Type, Comment
  ➢ General   :   Tablespace, Pct Free(%), Pct Used(%)
  ➢ Storage   :   (Initial , Next, Min Extents   )
  ➢ Stats   :   (Last Analyze, Rows, Blocks   )
  ➢ Other   : Parallel Degree, Partition
  ➢ Comment   :   .
  ➢ Segment   :   ,   , Extents

[4.9 -   ]
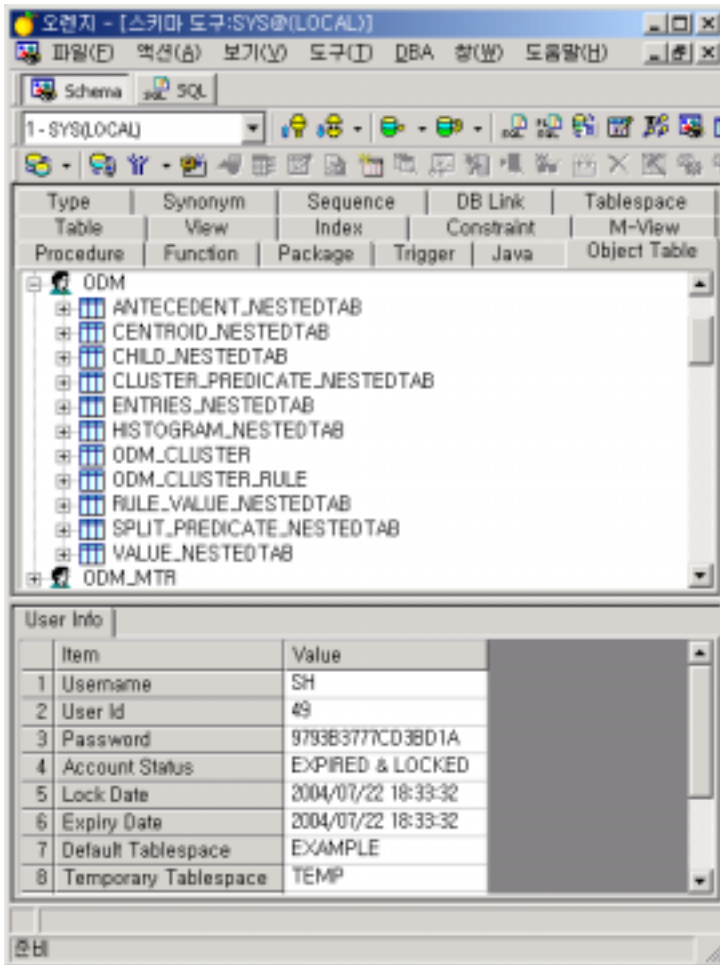
4.3.5 Index

B*tree Level   **[INDEX]**
                                                              INDEX
.

- ■
  - ➢ Column   : Column   , Length, Sort
  - ➢ General   :   Tablespace, Unique
  - ➢ Storage   :   (Initial , Next, Min Extents   )
  - ➢ Stats   :   (B*Tree Level, Leaf Blocks, Distinct Keys, Rows   )
  - ➢ Other   : Parallel Degree, Partition
  - ➢ Segment   :   ,   , Extents

[4.10 -   ]
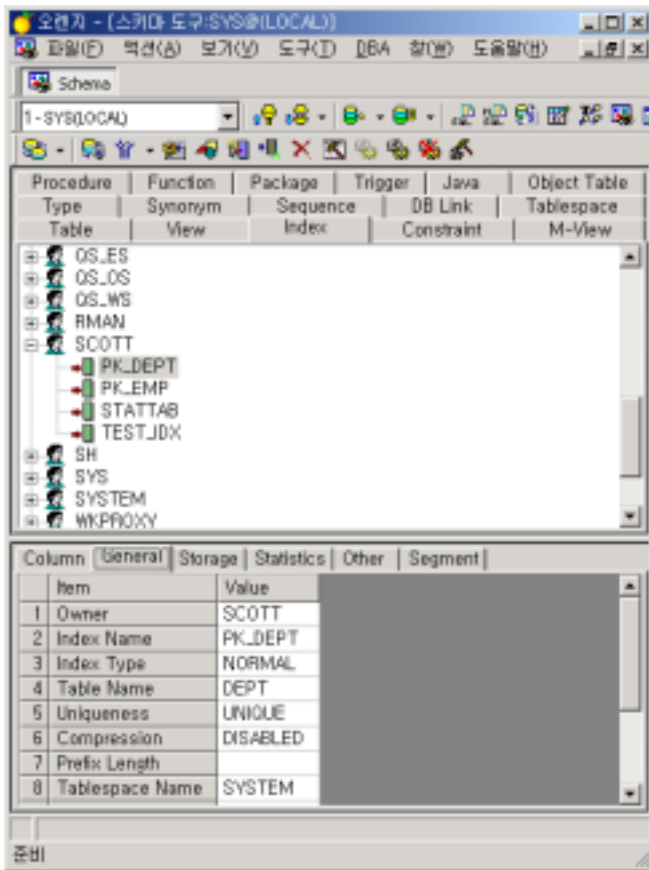
4.3.6 Trigger

[4.11 -   General   ]   (BEFORE..)
(INSERT..)   [4.12 -   Definition
          ]   .

[TRIGGER]

          TRIGGER   .

■

> General   : Type(Before..), Event(Insert..), Action Type

> Definition   :

[4.11 -   General   ]
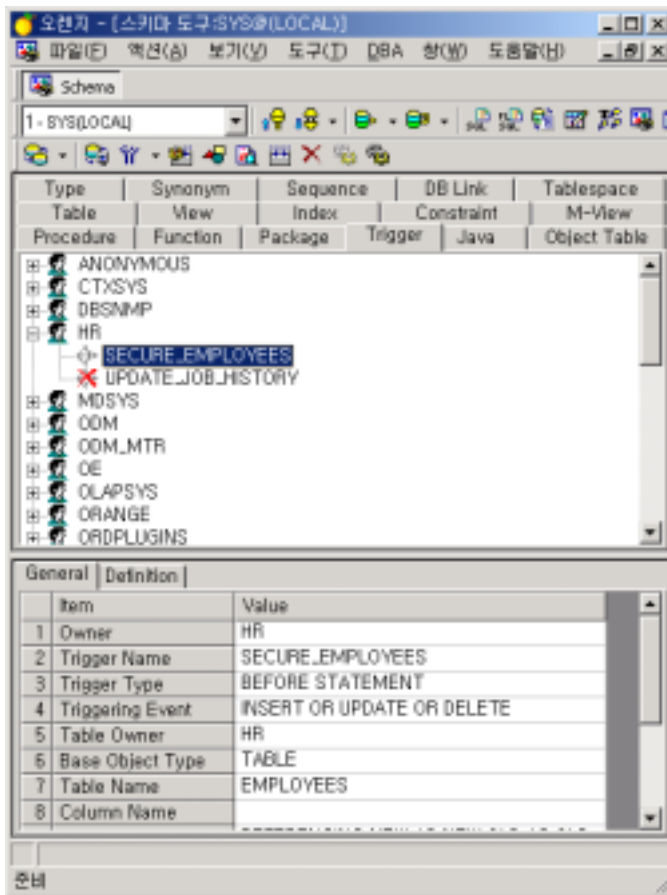
[4.12 -   Definition   ]
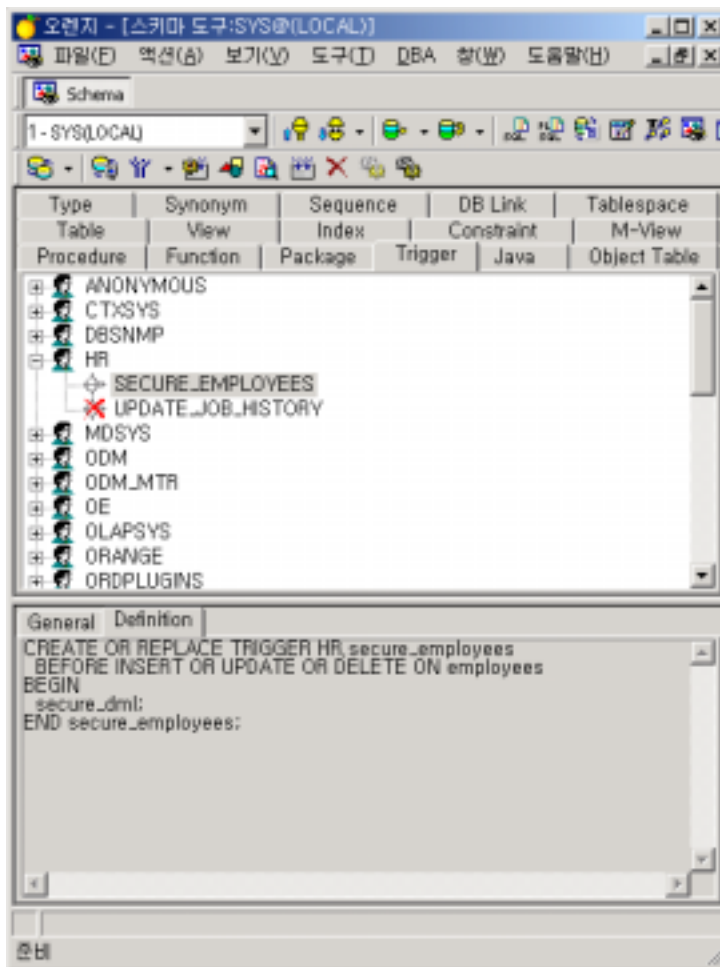
4.3.7 Constraint

                                  Constraint   Primary Key, Unique Key, Foreign Key, Check(Null),
Check(Column Value   ) Constraint   .

[CONSTRAINT]   Constraint
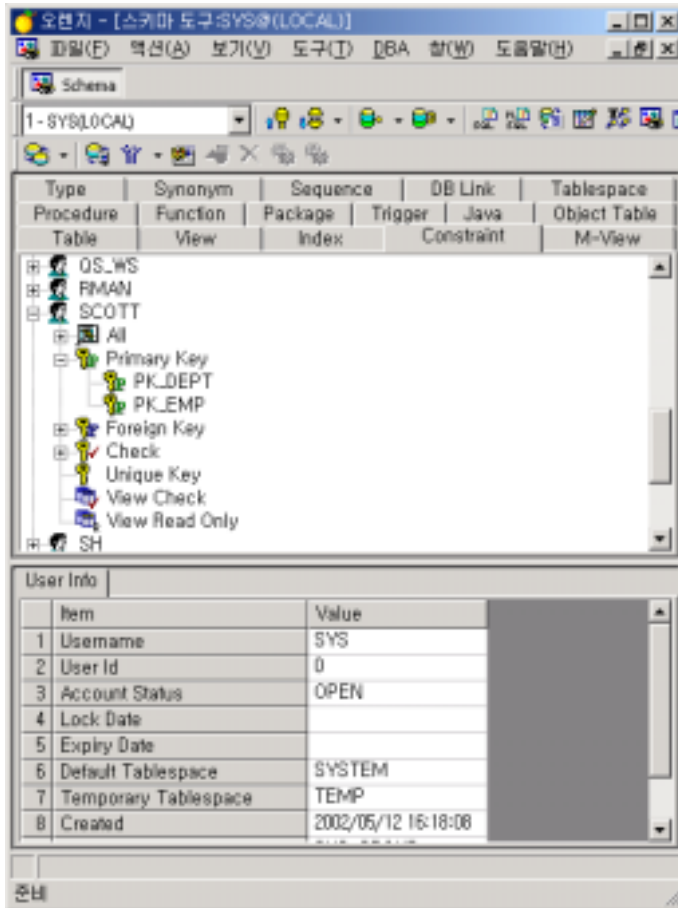
      Constraint   Constraint   .

[**4.13 - Constraint**   ]

- **Primary Key Constraint**
  - ➢ General   : Type, Status, deferrable, Deferred, Last Change
  - ➢ Constraint Columns   : Primary Key
  - ➢ Index Segment   :   Tablespace,   ,   , Default
    Storage, Extents

[4.14 - Primary Key Constraint (General)   ]
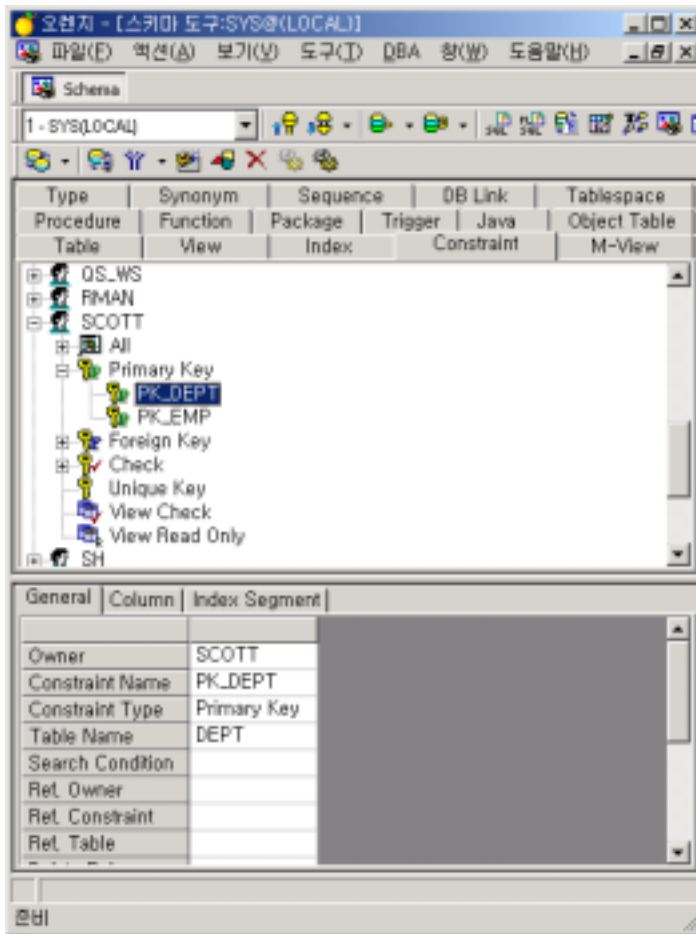
[　　4.15 - Primary Key Constraint (Constraint Columns)　　　]
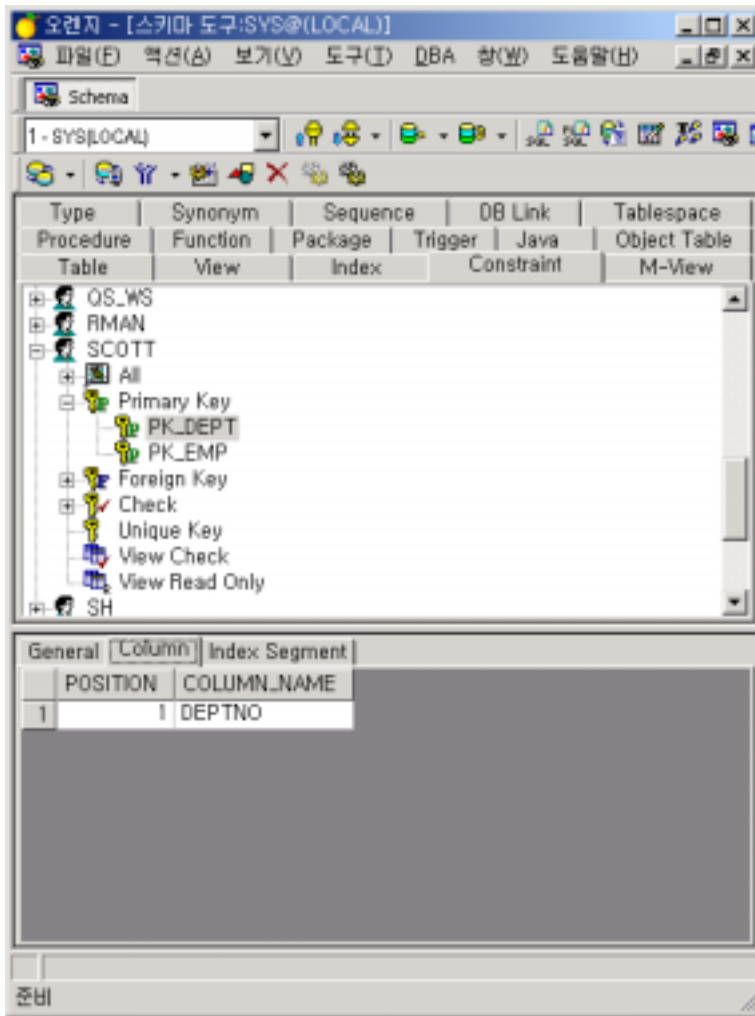
■ Foreign Key Constraint

> General : (, Constraint,), Delete Rule, Status, Deferrable, Deferred, Last Change

> Constraint Columns : Foreign Key

[4.16 - Foreign Key Constraint (Constraint Columns)]
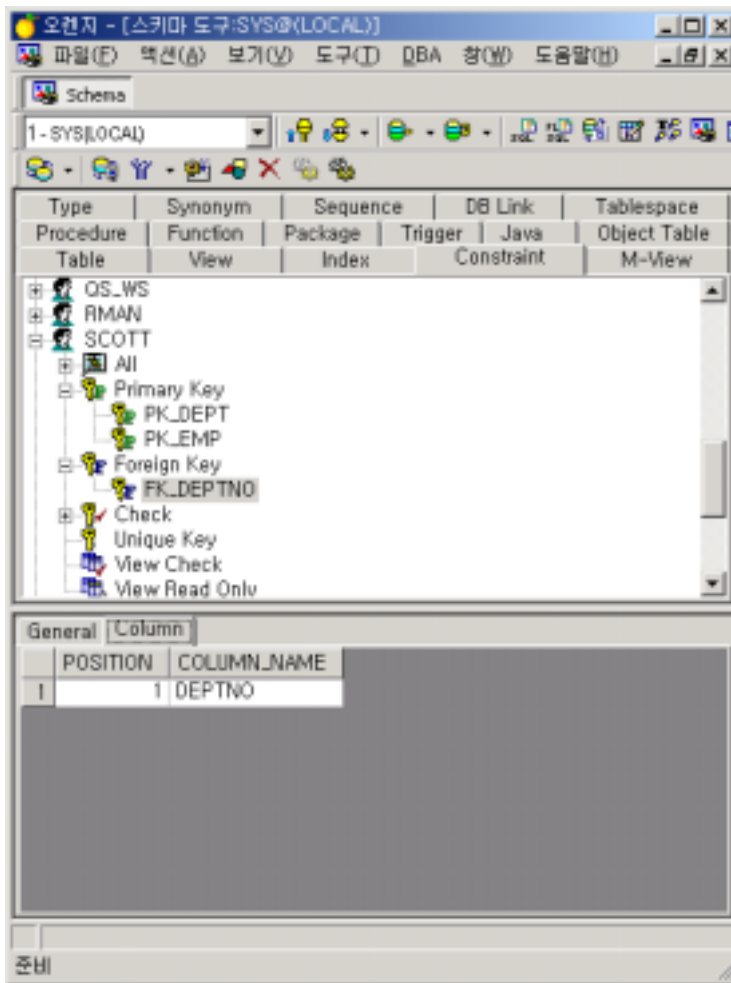
- Check Constraint
  - General : Table Name, Search Condition
  - Constraint Column : Check

[**4.17 - Check Constraint (Constraint Columns)**]
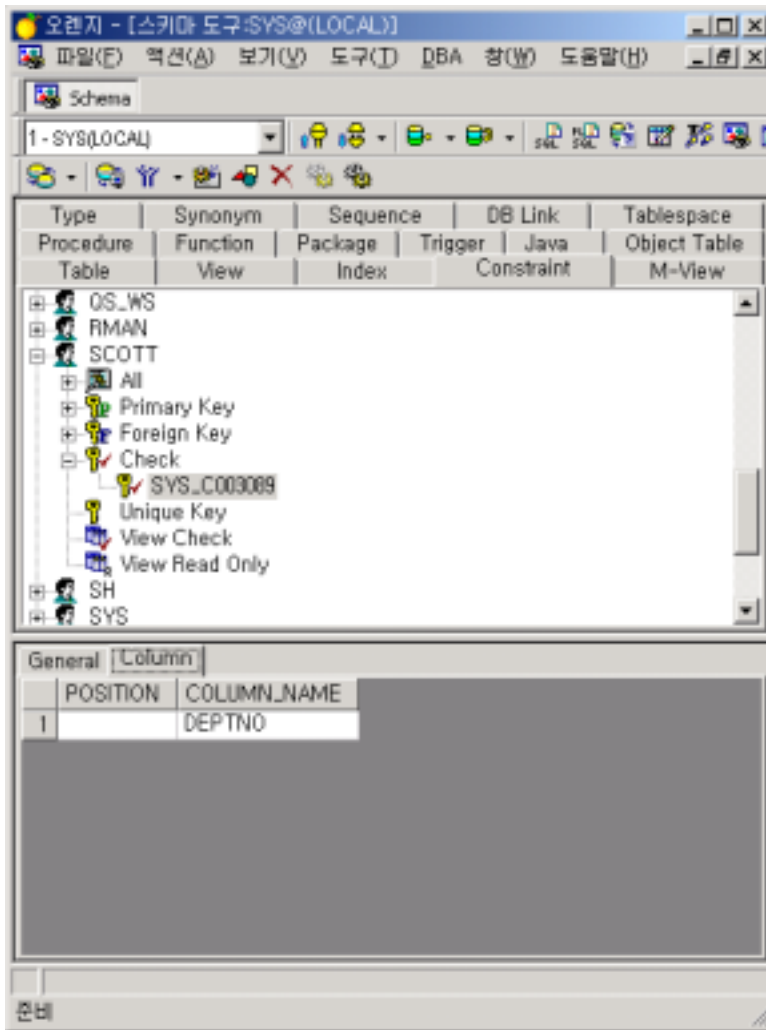
■ Unique Key Constraint

  ➢ General : Type, Status, deferrable, Deferred, Last Change

  ➢ Constraint Columns : Unique Key

  ➢ Index Segment : Tablespace, , , Default
    Storage, Extents

[4.18 - Unique Key Constraint (Constraint Columns)]

4.3.8 View

현재 선택한 데이터베이스에 있는 뷰의 정보를, 소유자별로,

뷰별로 확인할 수 있다.

[VIEW]

선택한 VIEW 의 정보를 상세하게 조회한다.
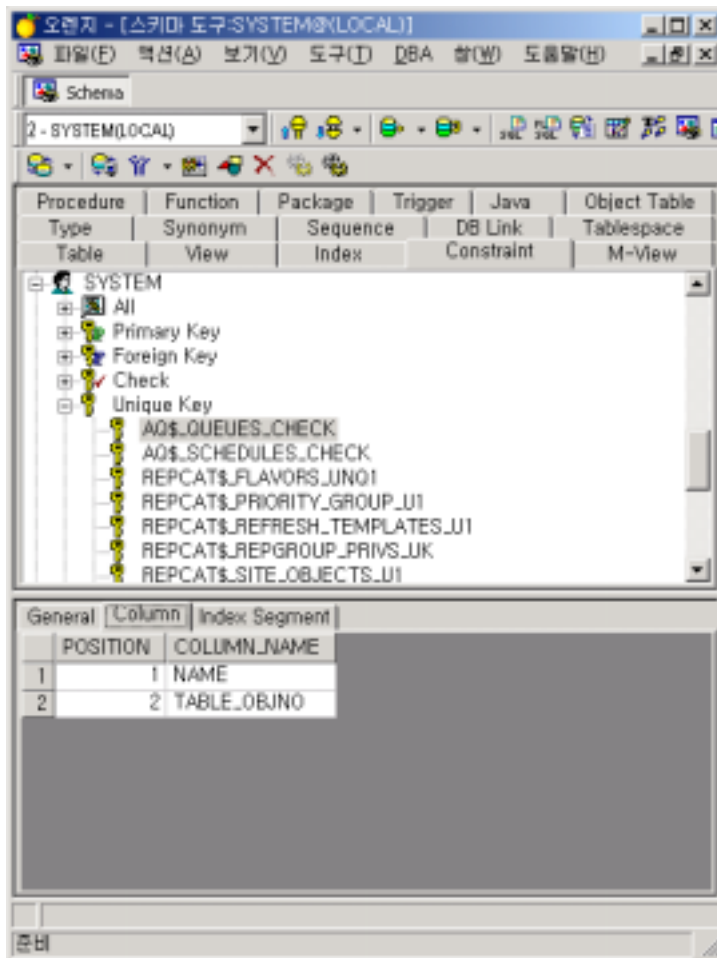
- View
  - ➢ Column   :   , Nullable, Data Type, Comment
  - ➢ General   :
  - ➢ Comment   :
  - ➢ Definition   :

[4.19 - View   ]
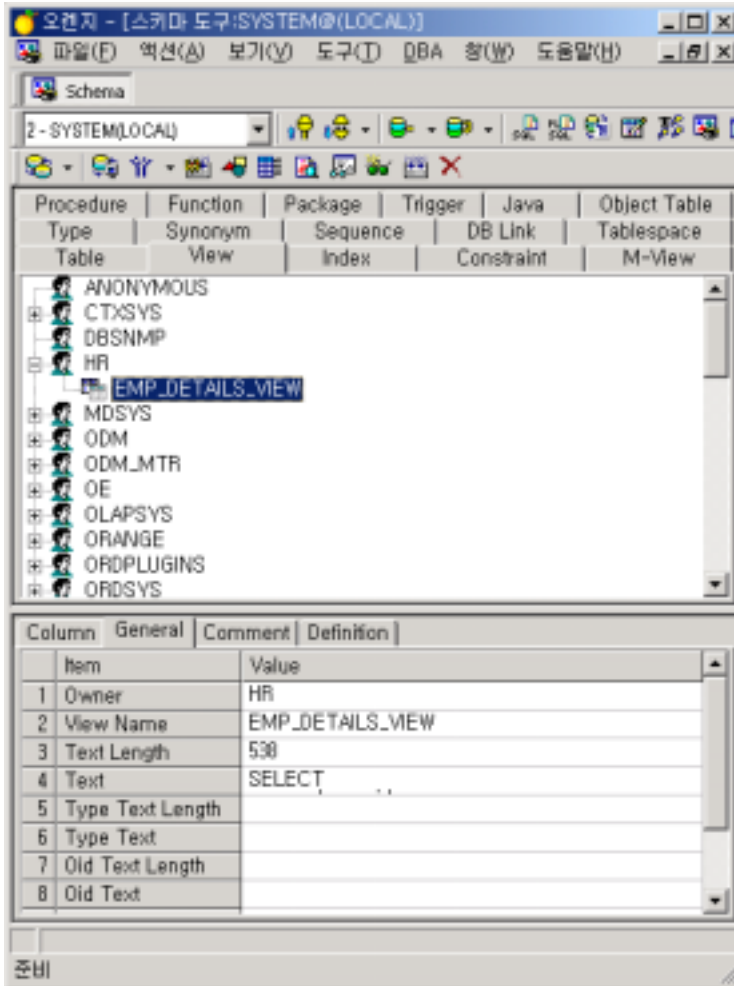
4.3.9 Type

Type   ,   ,   .

        [TYPE]   Type

                TYPE   .

- ■ Type
  - ➢ General   : Type Name, Type Object ID
  - ➢ Definition   : Type

[4.20 - Type   ]
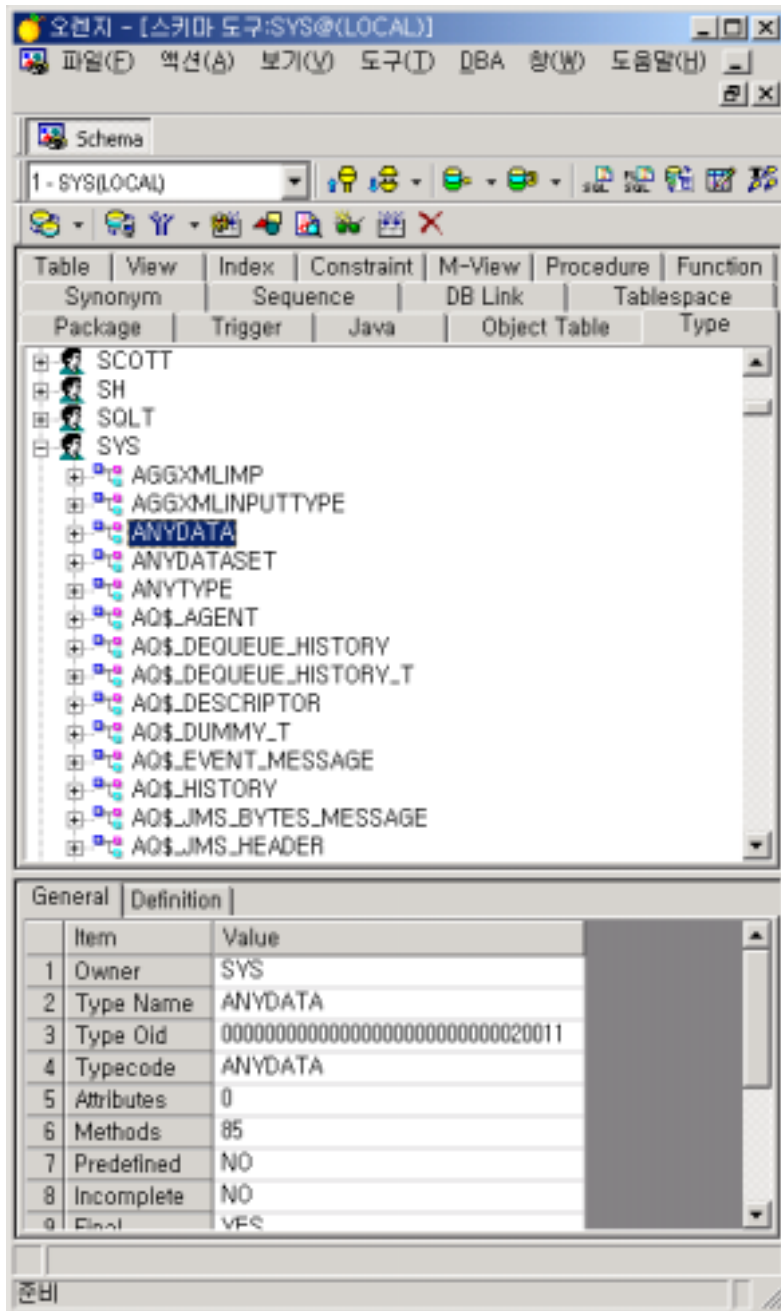
4.3.10 Synonym

Synonym

DB link   .

[SYNONYM]

Synonym   SYNONYM   .

■ Synonym

   ➢ General   : Synonym   , DB Link

[4.21 - Synonym   ]
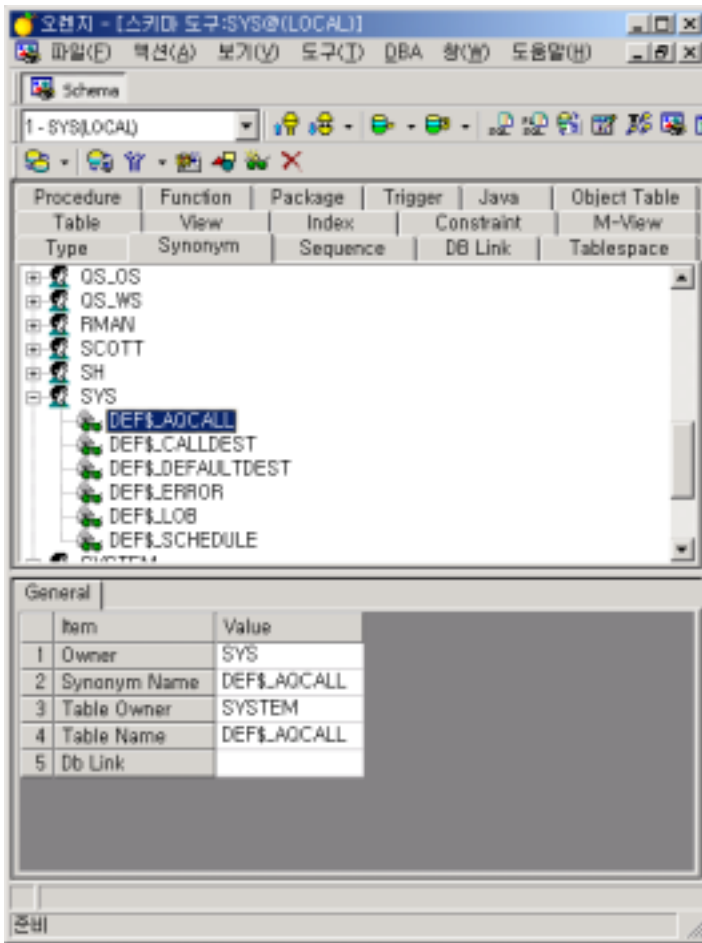
4.3.11 DB link

DB Link

.

[DB LINK]

DB Link   DB LINK   .

■   DB Link

➤   General   : DB Link   , DB Link

[4.22 - DB Link   ]

4.3.12 Sequence

　　　　　　　　，　　　　　　　　　　　　　　　　　　　，　　　　　　　　　　　　　　．

[SEQUENCE]

　　　　　　　　　　　　　　　　　　　　　SEQUENCE　　　　　　　　　　　．

■
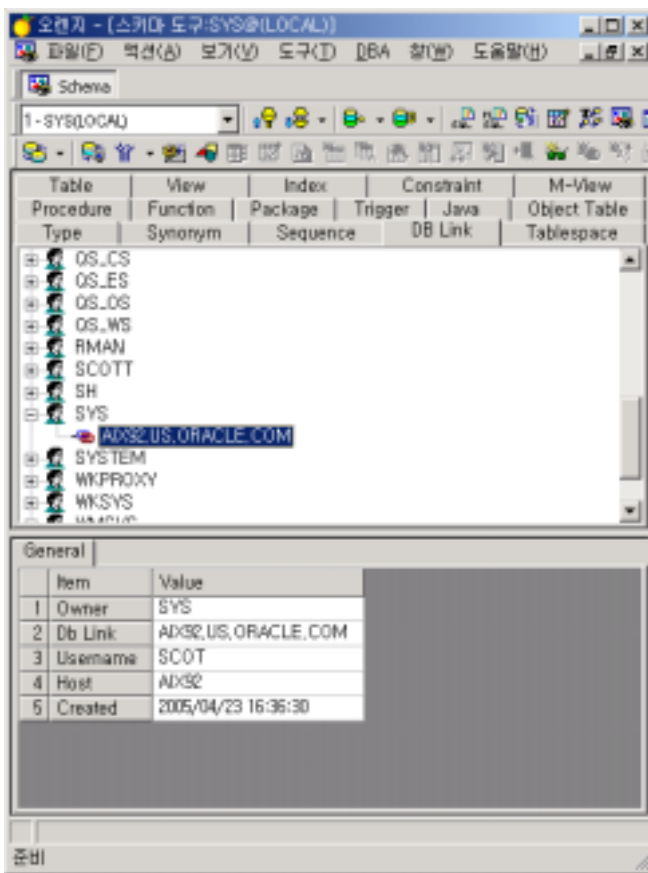
➢ General　　　: MIN, MAX,　　　　　　　　，

[　4.23 - Sequence　　　　　]
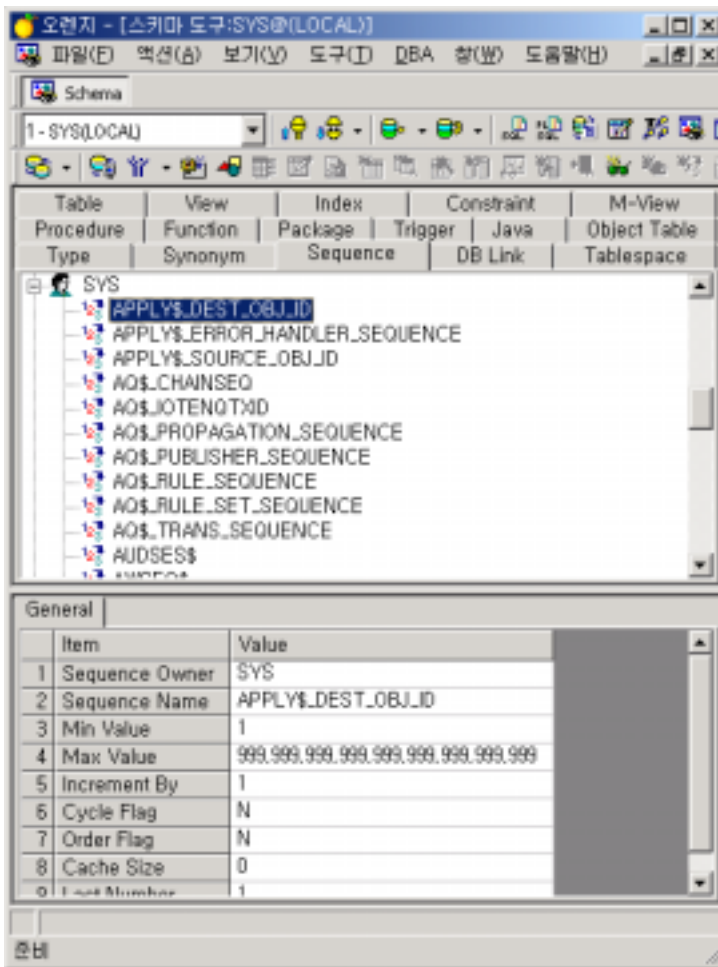
4.3.13 Materialized View

Materialized View   M-View   **[M-View]**

,

Materialized View   .

.

- Materialized View
    - General   : Owner, Updatable, Query Rewrite   ,
    - Text   : Materialized View
    - Segment   : Segment Parameter

[4.24 - Materialized View   ]
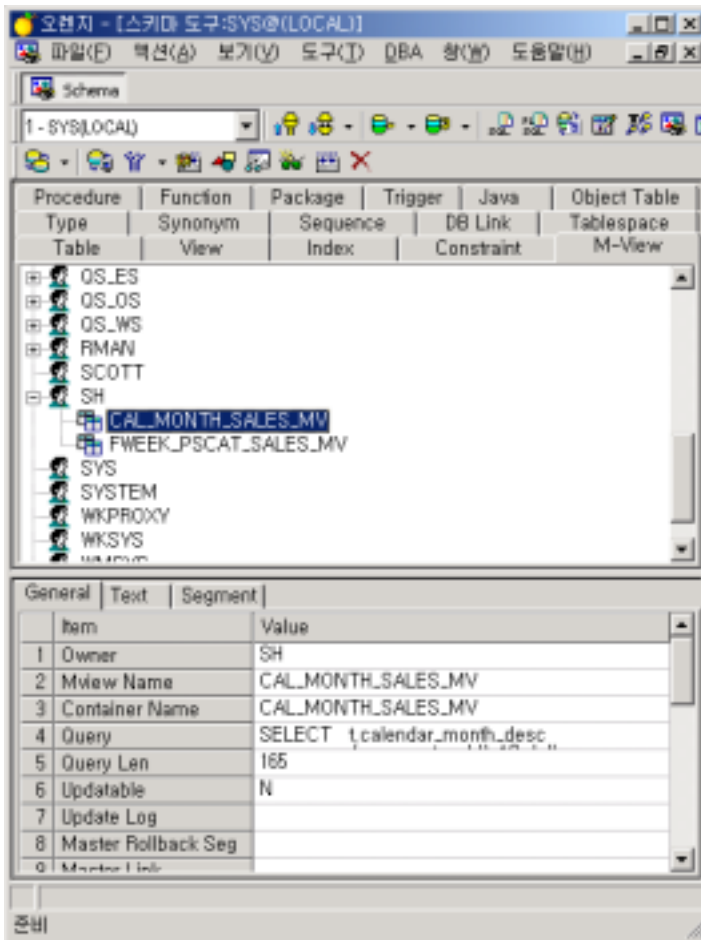
4.3.14 Procedure

PL/SQL

        ID   , Status   .

[PROCEDURE]

                                                PROCEDURE   .

- ■ PROCEDURE
  - ➢ General   :   ID   , Status
  - ➢ Definition   :

[4.25 - Procedure(General)   ]
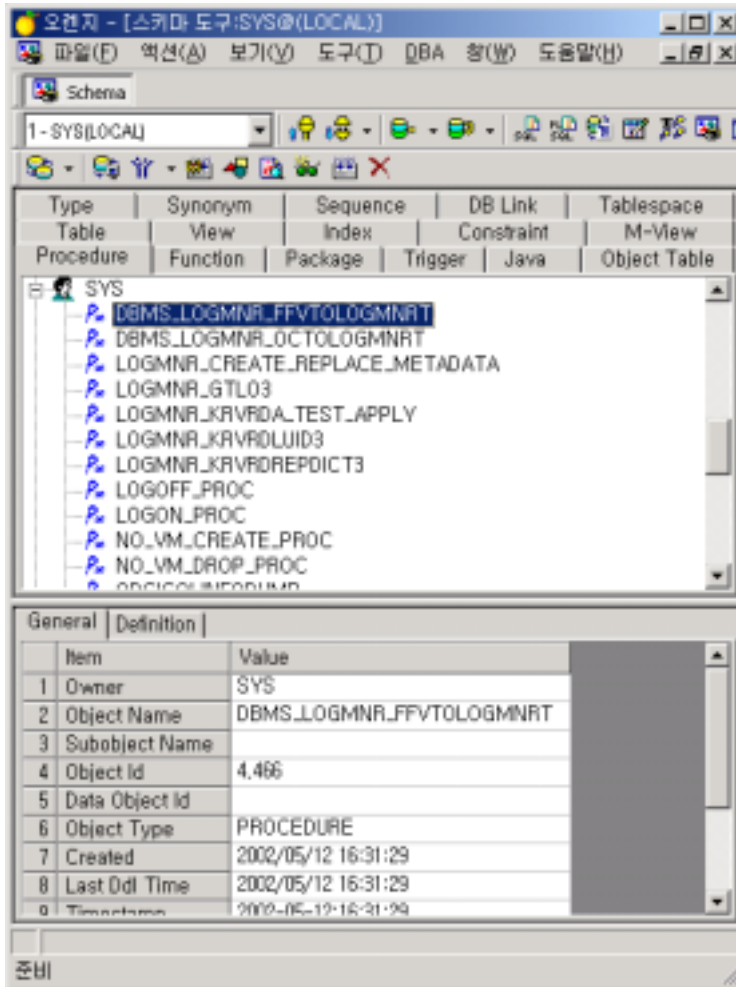
[4.26 - Procedure (Definition)   ]
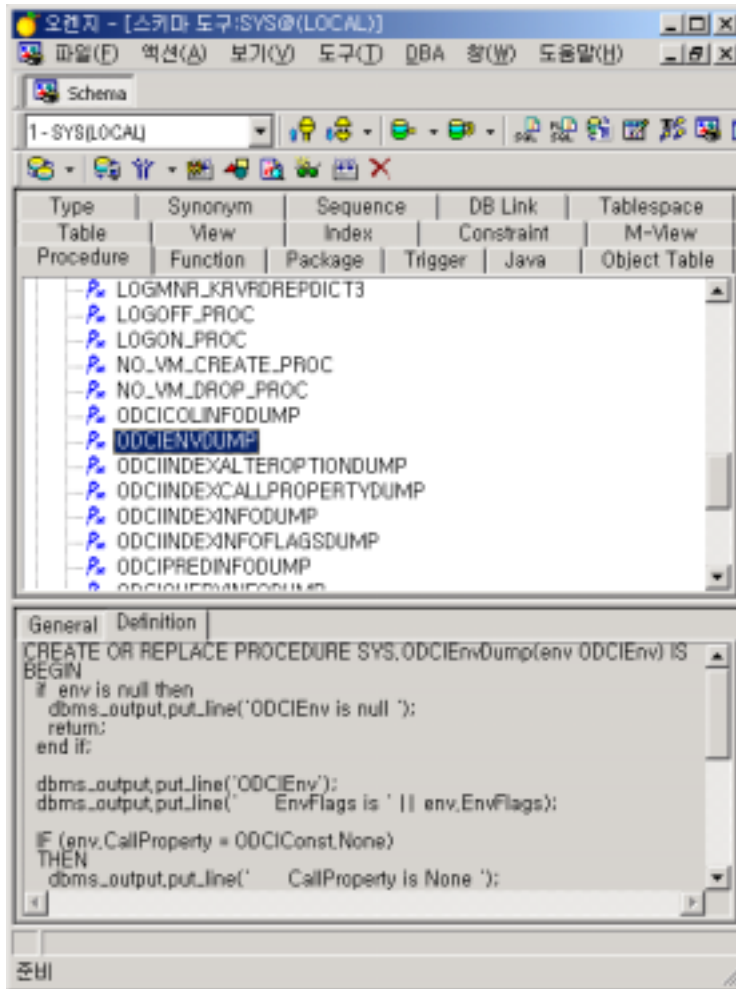
4.3.15 Function

PL/SQL   Function

 ID   , Status   .

         [FUNCTION]

Function   FUNCTION   .

- ■ Function
  - ➢ General   :   ID   , Status
  - ➢ Definition :
  - [**4.27 - Function (General)**   ]
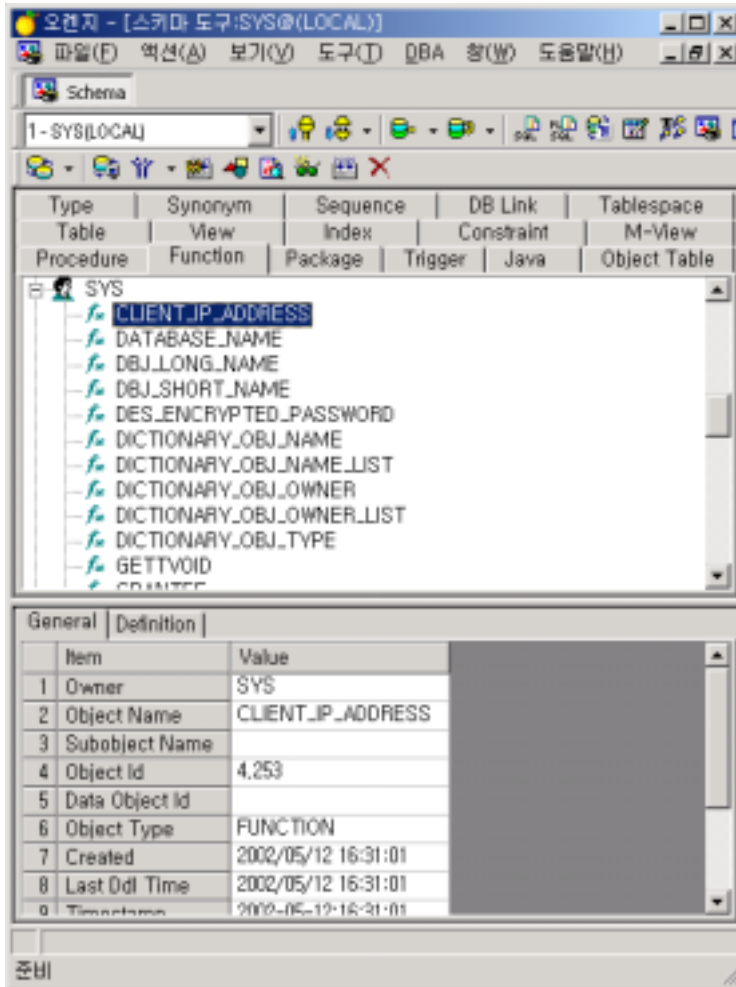
[4.28 - Function (Definition)   ]
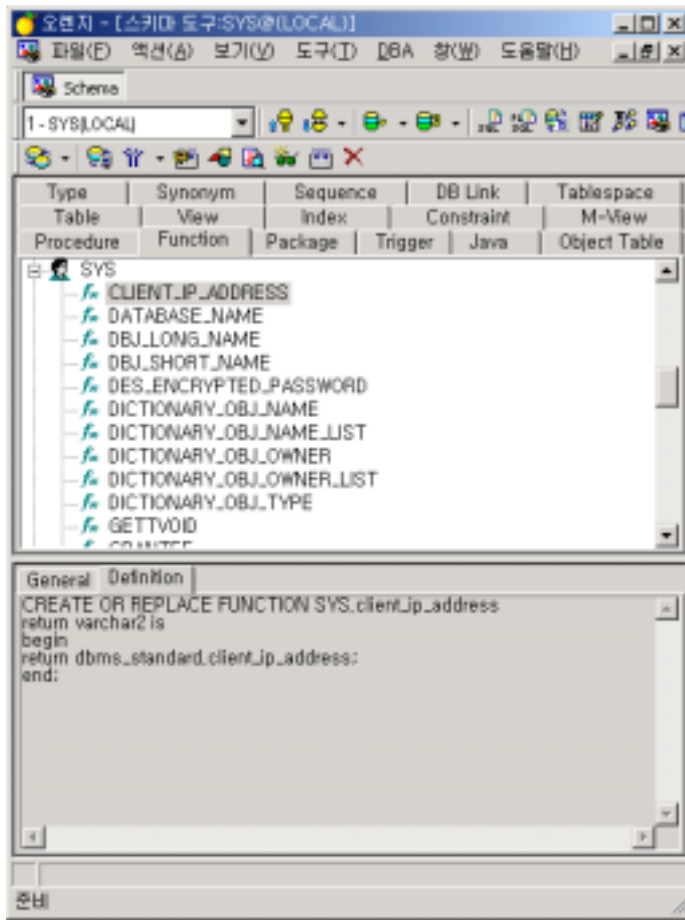
4.3.16 Package

PL/SQL

　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　.

　　　　　　　　　　　　　　　　　　　　PL/SQL

　.　　　　　　　　　　　　ID　　　　　　　, Status

　　.　　　　　　　　　　　　　　　　　**[PACKAGE]**

　　　　　　　　　　　　　　　　　　　　　PACKAGE, PACKAGE BODY

　.

- ■ PACKAGE, PACKAGE BODY

  - ➢ General　　　　:　　　　　　ID　　　　　, Status
  - ➢ Definition　　　:

  [　　4.29 - Package (General)　　　　　]
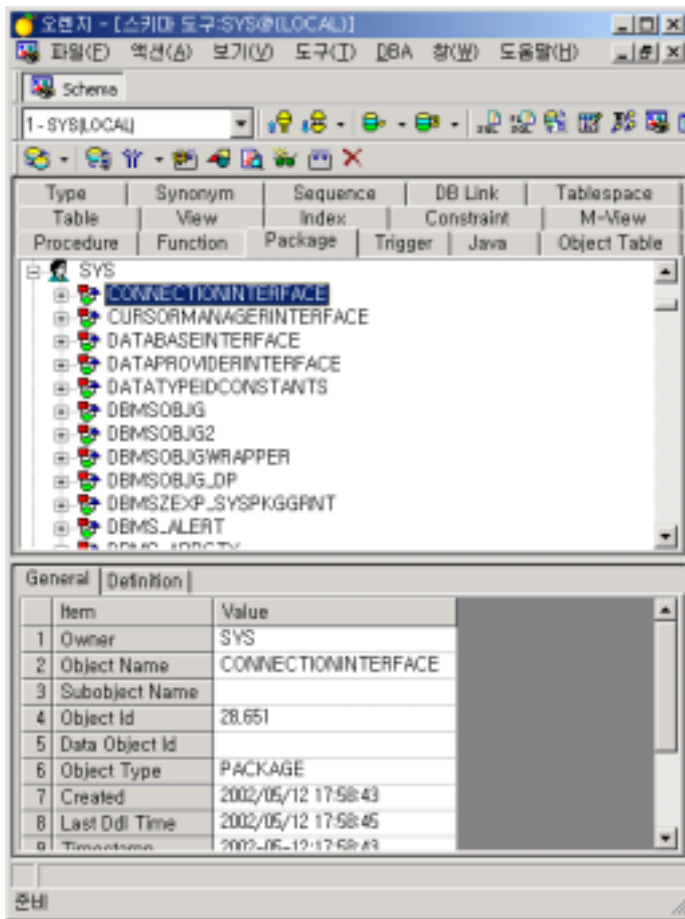
[4.30 - Package (Definition)   ]

4.3.17 Java

안에서 해당
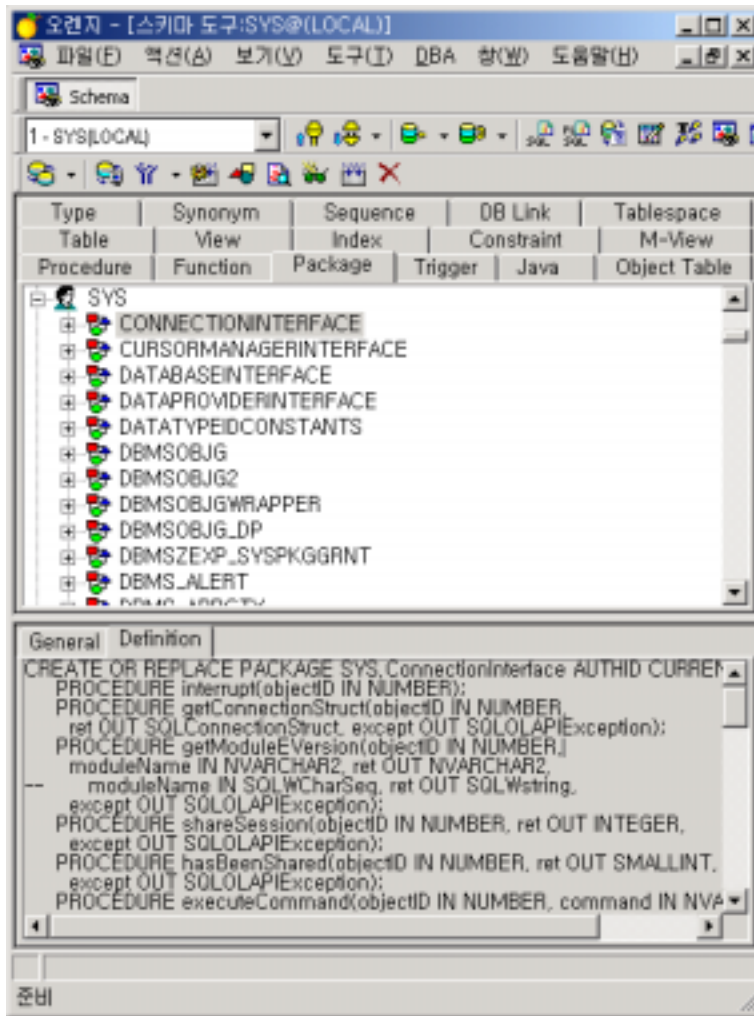
[JAVA]

JAVA Class/Source/Resource   JAVA   .

■   JAVA

   ➢ General   :   ID   , Status

[4.31 - Java   ]
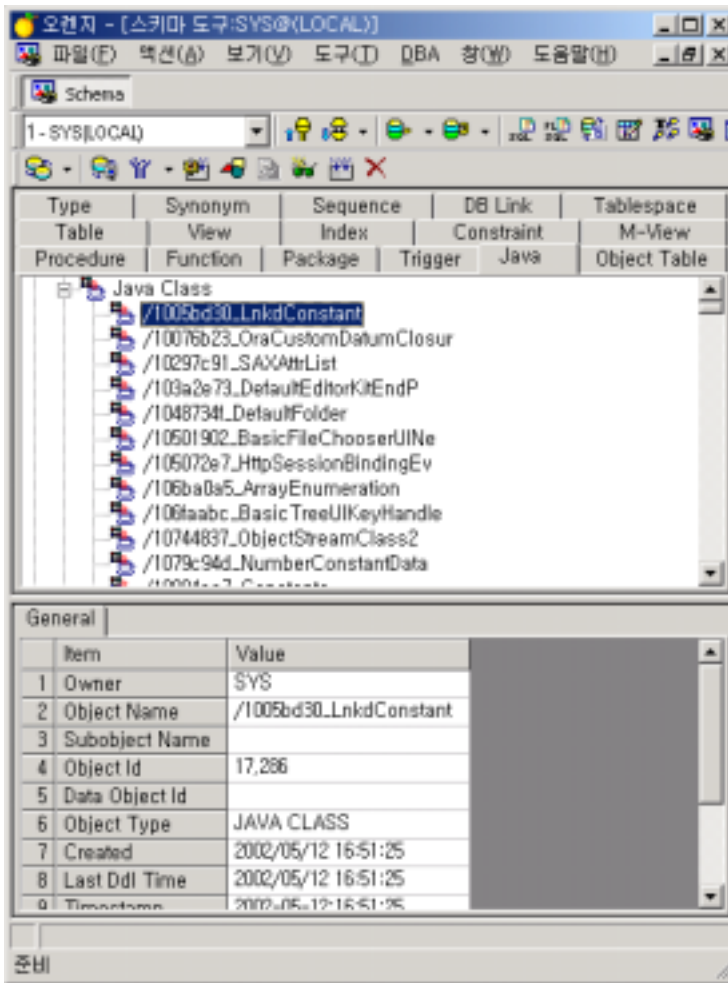
4.3.18 Tablespace

.

. **[TABLESPACE]**

.

- Tablespace
  - Tablespace : Initial, Next, Status, Type(Permanent or Temporary), ,

[4.32 - Tablespace]
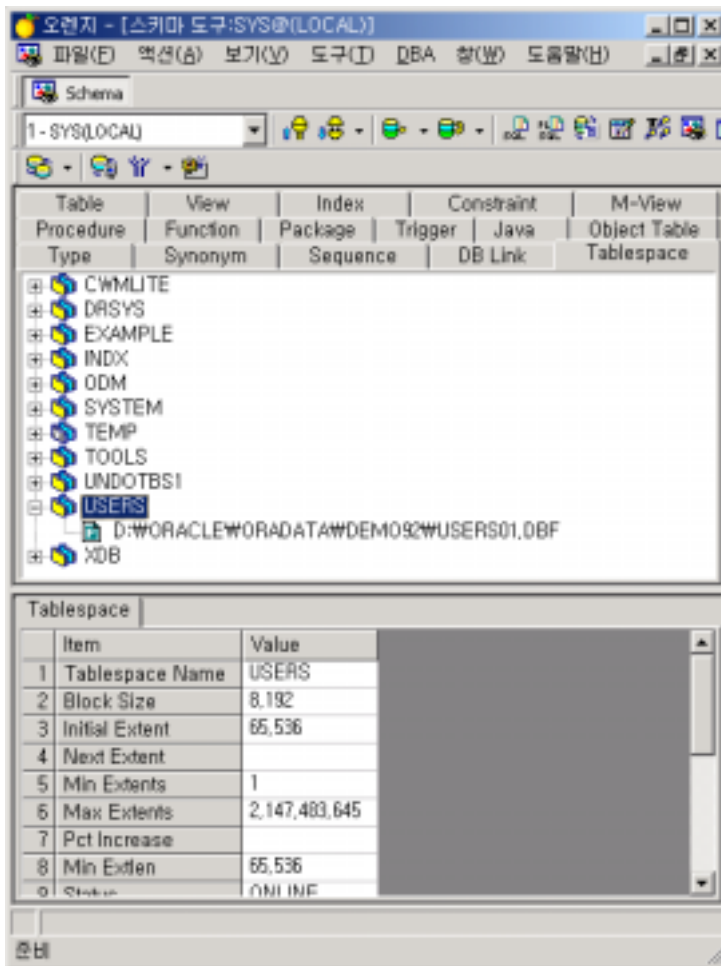
■ Tablespace

   ➢ Data File :   , Tablespace Name,   Bytes,   Blocks, Status

[4.33 - Tablespace   ]
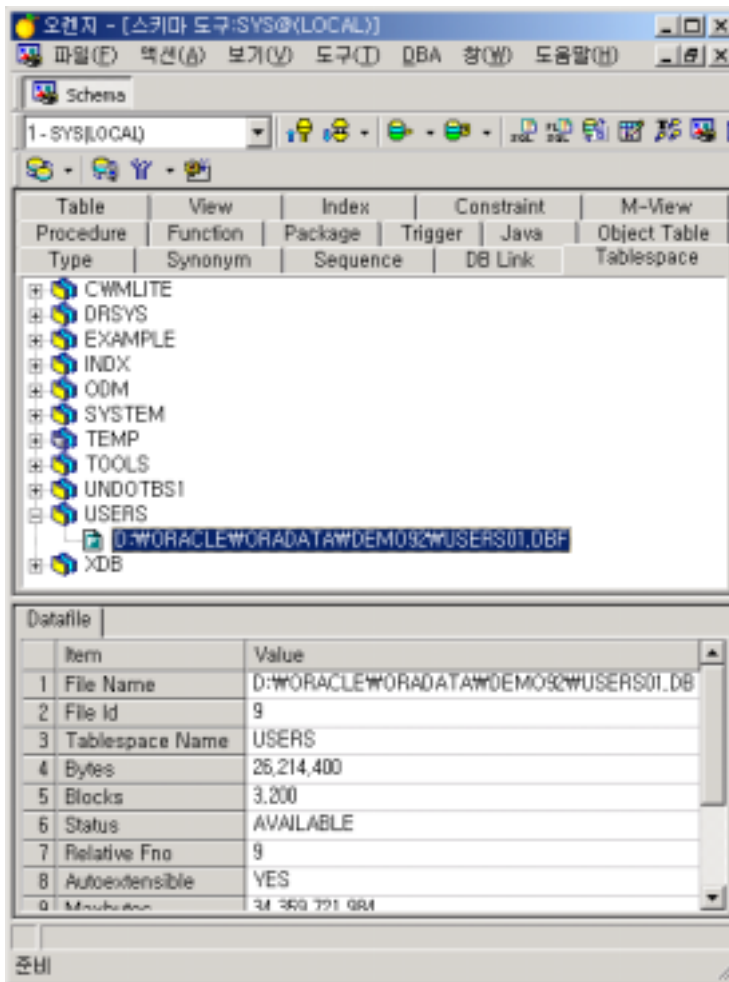
[4.34 - Temporary Tablespace   ]
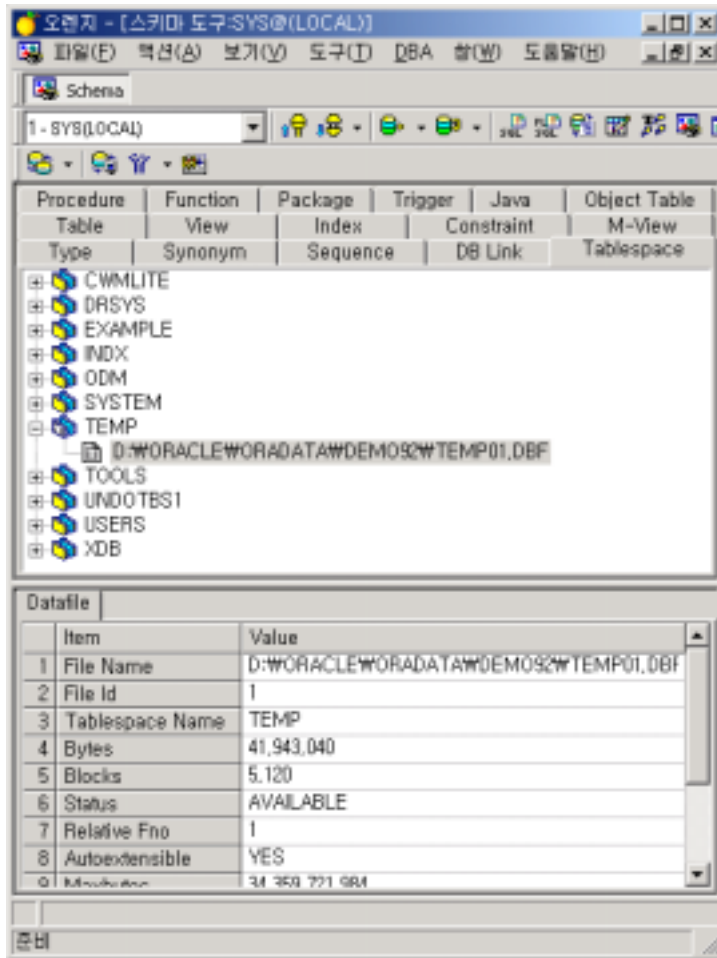
4.4 데이터베이스 객체 생성(CREATE)

4.4.1 Synonym 생성

Synonym 노드를 선택한 후 마우스 오른쪽 버튼을 누르면 나타나는 팝업 메뉴 또는 툴바의 아이콘을 클릭하면 "Create Synonym" 창이 나타나고, Synonym 을 생성할 수 있다.

■ General 탭

"as alias for" 영역에서 원본 객체를 지정하고 생성할 Synonym 의 이름을 입력한다. (Synonym Name 은 최대 30 자까지 지정할 수 있다.) Public 을 체크하면 Public Synonym 을 생성할 수 있다.

[그림 4.35 - Create Synonym 창의 General 탭]

■ Script 탭

General 탭에서 지정한 값에 해당하는 Synonym 생성 스크립트가 나타난다. [Apply] 버튼을 클릭하면 Synonym 이 생성된다.

[그림 4.36 - Create Synonym 창의 Script 탭]

4.4.2 Index

[Table]   Index   [Index]

                                                    "Create

Index"   Index   .

- **General**
  - ➢
    -       "Order"   .
    -                             Unique   Bitmap   .
  - ➢   "Attribute"   .
    - Percent Free, Initial, Next, PctIncrease, Minextents, Maxextents   "Buffer
    - Pool"   Oracle V8   .
  - ➢
    - ◆   :   30
    - ◆ Percent Free   : 0 ~ 99 (%)
    - ◆ Initial Trans/Max Trans : 1 ~ 255
    - ◆   O/S

[4.37 – Create Index   General   ]
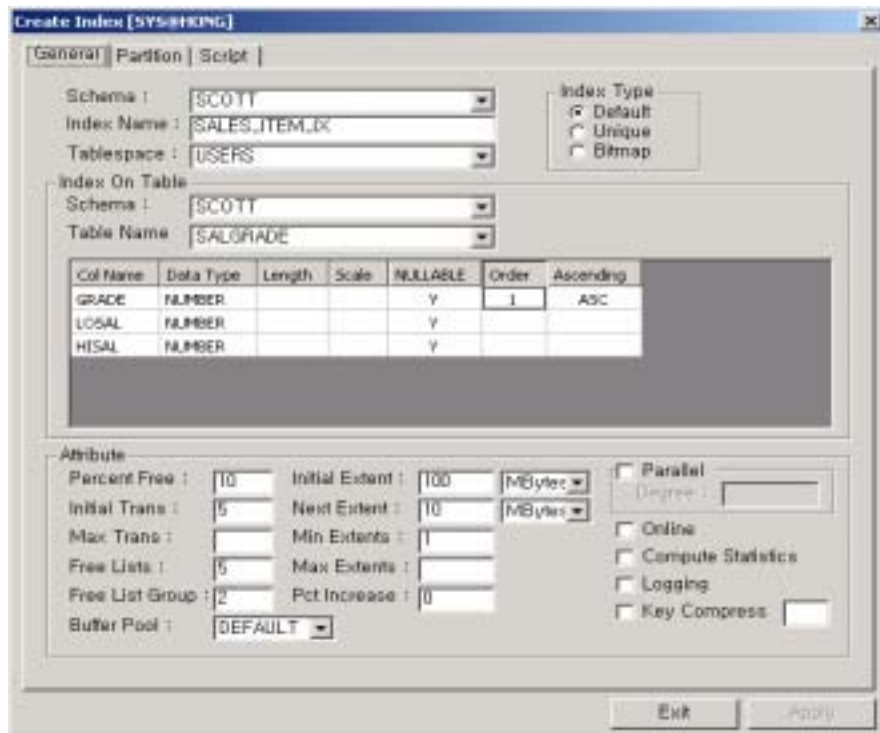
■ Index Partition

>   . "Partition Type"

               "No Partition", "Global", "Local"   ,

                 "Local"   .

        .

> [4.38 – Create Index   Partition   ]   Global   .
   [Partition Columns]

               ,   Range   .

                          ,   .

>   ⬆ ⬇,   📋,   ❌
      .

[4.38 – Create Index   Partition   ]

■ Script

➢   . [Apply]

  .
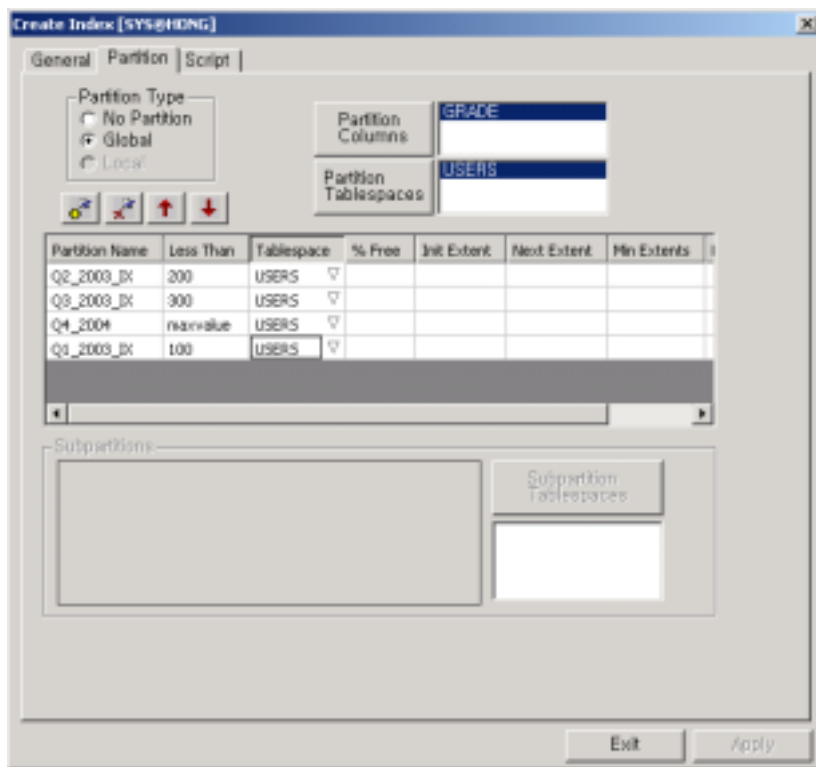
[**4.39 – Create Index   Script   ]**
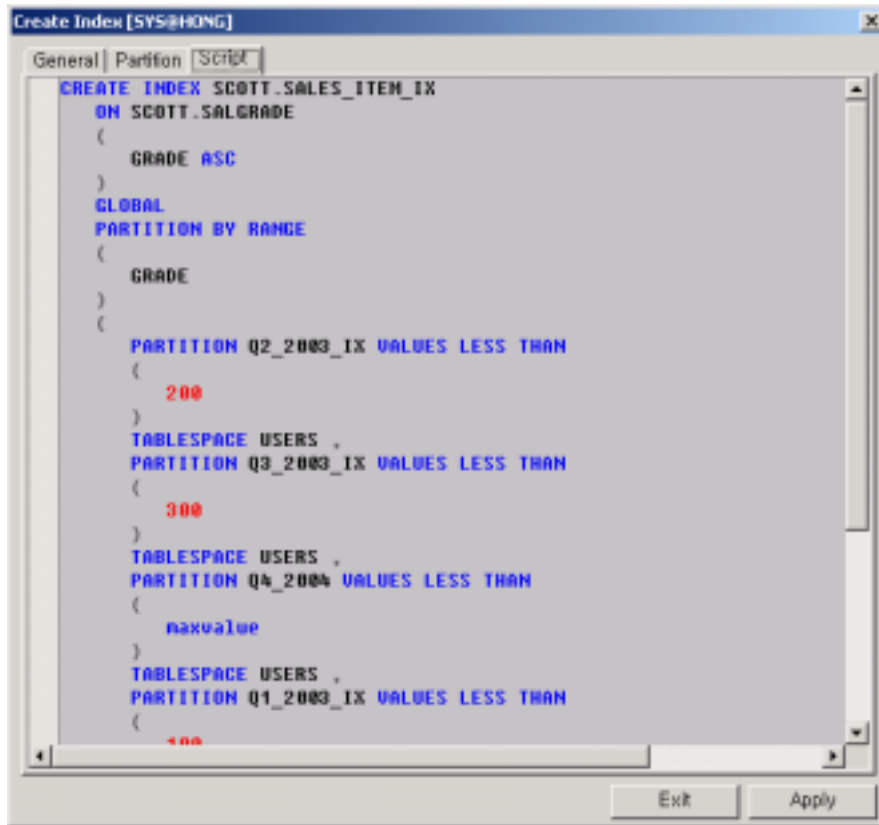
4.4.3 Table

[Table]
"Create Table"   .

- **General**
  - ➤   .
  - ➤ Attribute   . Percent Free, Percent
    Used, Initial Trans, Max Trans, Free Lists, Free List Group, Initial Extent,   .
  - ➤
    - ◆   :   30
    - ◆ Comment   :   4000
    - ◆ Percent Free   : 0 ~ 99 (%)
    - ◆ Percent Used   : 0 ~ 99 (%)
    - ◆ Initial Trans/Max Trans : 1 ~ 255
    - ◆   O/S

[4.40 – Create Table   General   ]
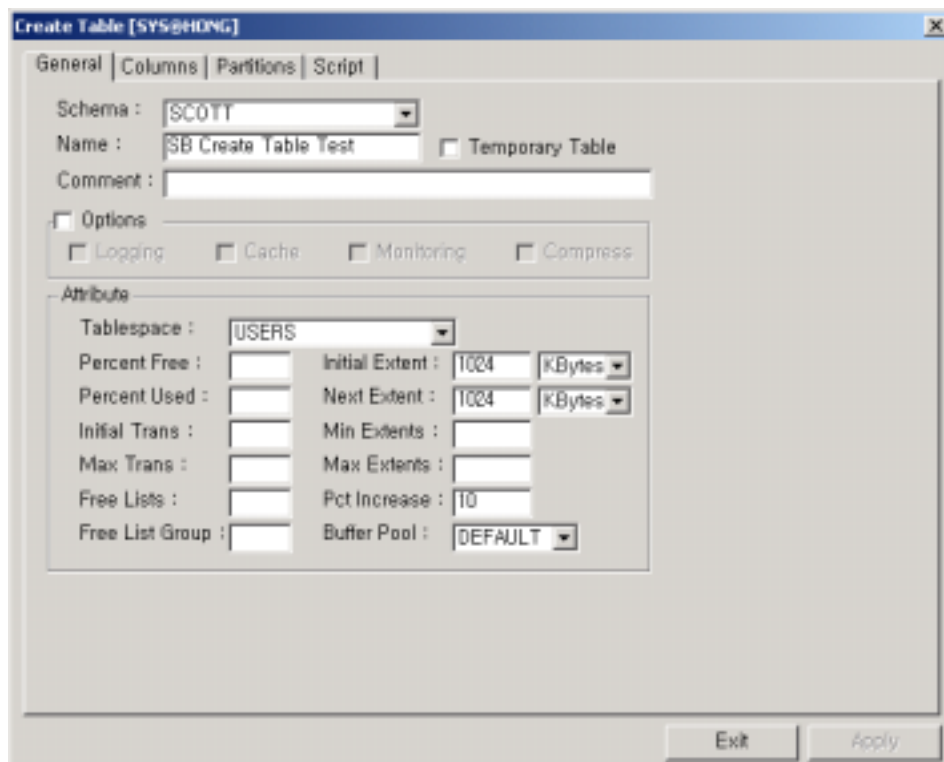
■ Columns
  ➢   .   Not Null   , Check   .

  ➢ LOB   [LOB Storage]   LOB   .

  ➢   ⬆ ⬇ ,   🔾 ,   ✖   .

  ➢ Inline Constraints   "Out of line constraint"   /   /   .

  ➢ [4.42 – Create Table   Columns   (Out of line Constraints   )]   Out of line Constraint   .   Unique/Primary/Foreign/Check Constraint   .

[4.41 – Create Table   Columns   ]
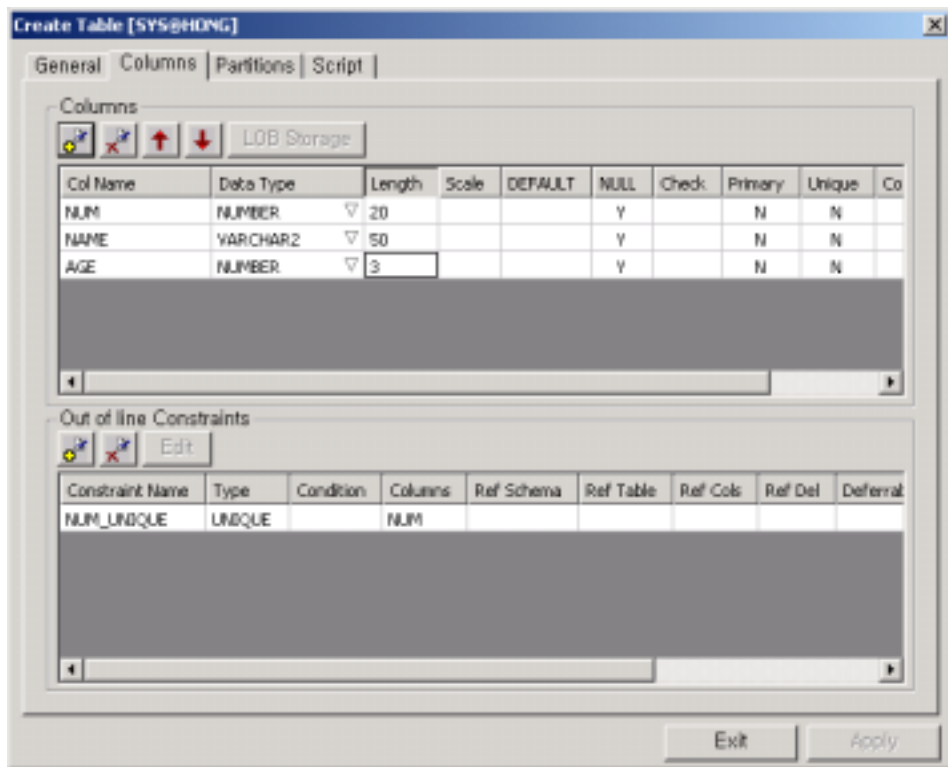
[4.42 – Create Table Columns (Out of line Constraints)]
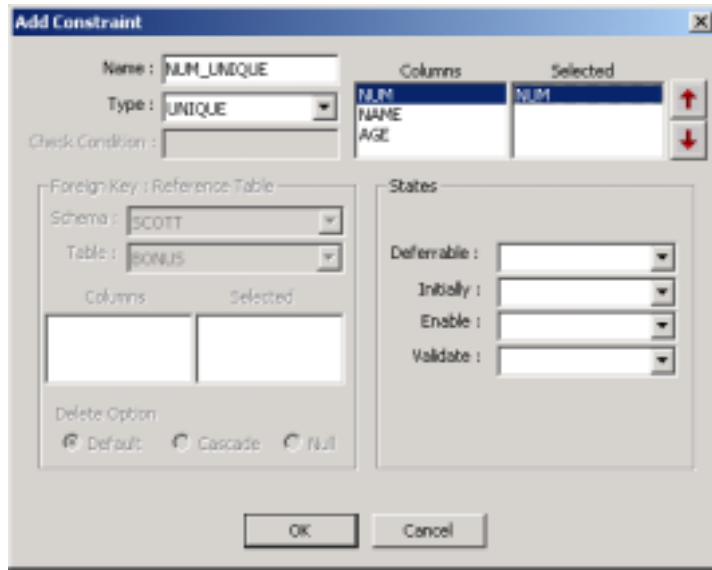
■ Table Partition

   ➢   Range Partition

           .

                                 Subpartition   "Sub-Partition Count"

                  .   1   .

   ➢   Subpartition

    "Subpartition Count"   . Sub-Partition List

                           .   SYS

   DBMS   .

[4.43 – Create Table   Partitions   (Partition Column   )]
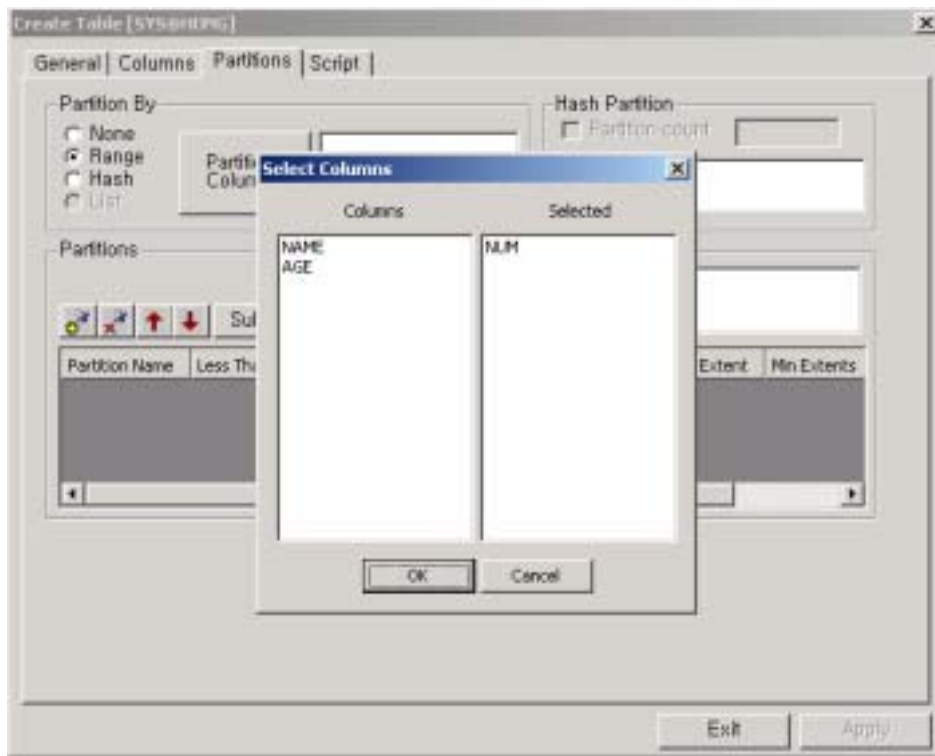
[4.44 – Create Table   Partitions   (Range   Subpartition   )]
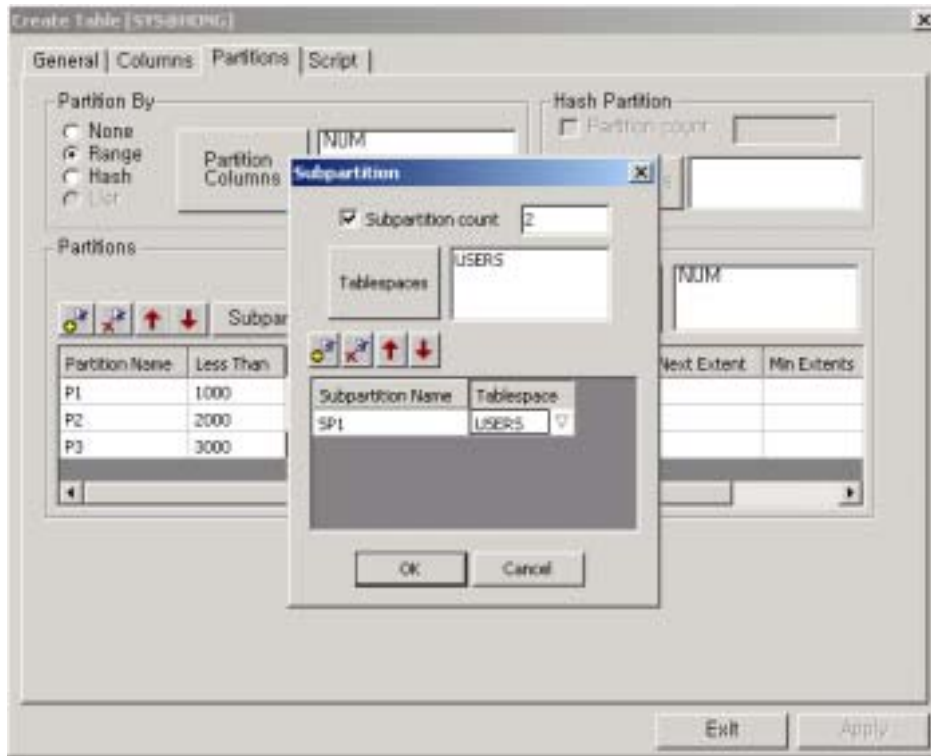
■ Script

➤   . [Apply]
                      .

[4.45 – Create Table   Script   ]
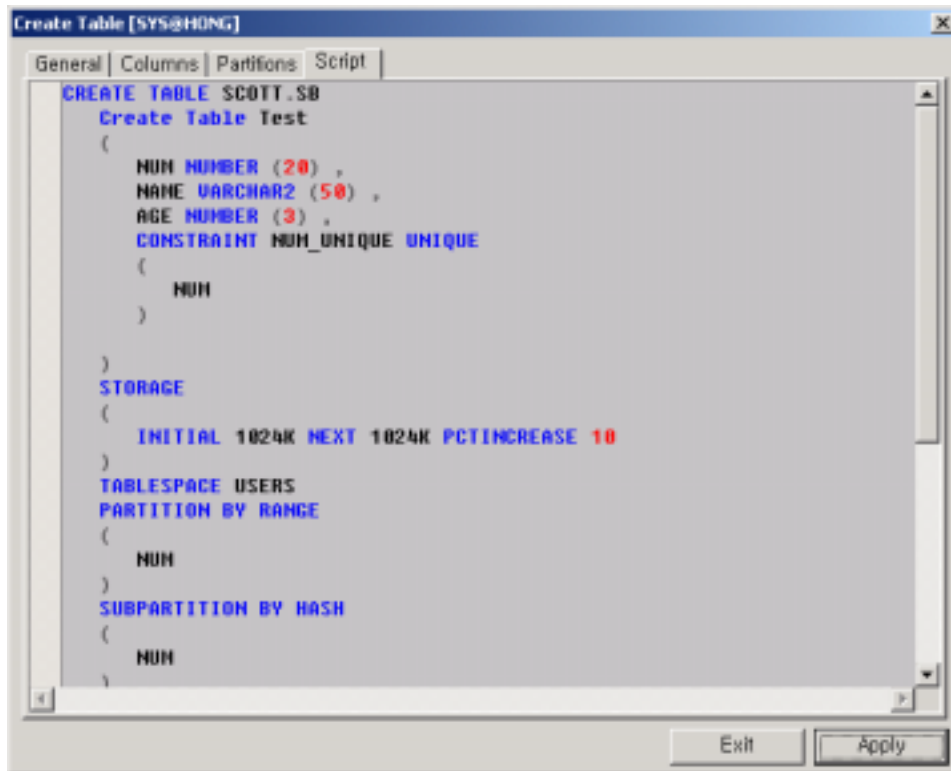
4.4.4 Sequence

[Sequence]

           "Create Sequence"

.

■ General

    ➢   Increment By, Start With, Min/Max Value   .

[4.46 – Create Sequence   General   ]

■ Script

    ➢   . [Apply]

.
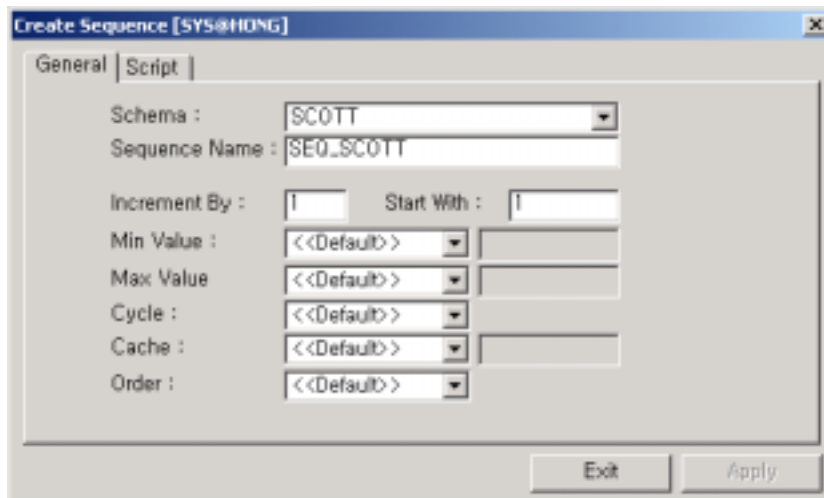
[4.47 – Create Sequence   Script   ]
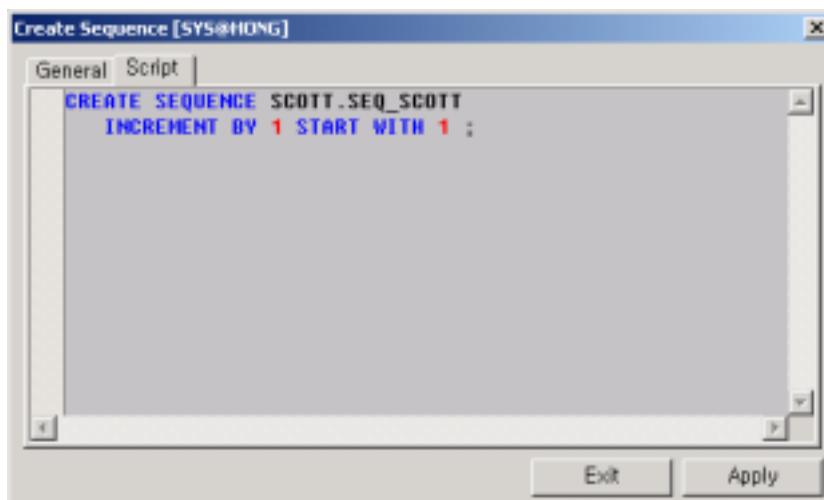
4.4.5 Cluster

[Table]

"Create Cluster"
Cluster   .

- **Cluster**
  - ➢   Cluster   ,   Column   . "Attribute"
          Cluster   Hash, Size, Cache, Parallel   .
  - ➢   ↑ ↓,   ,
          .

[4.48 – Create Cluster   Cluster   ]

■ Script

➢   Cluster   . [Apply]
                              Cluster   .

[4.49 – Create Cluster   Script   ]

CREATE CLUSTER SCOTT.CLUS_SCOTT
    (
        CT1 NUMBER (5) ,
        CT2 VARCHAR2 (20) ,
        CT3 NUMBER (10)
)
    TABLESPACE USERS ;
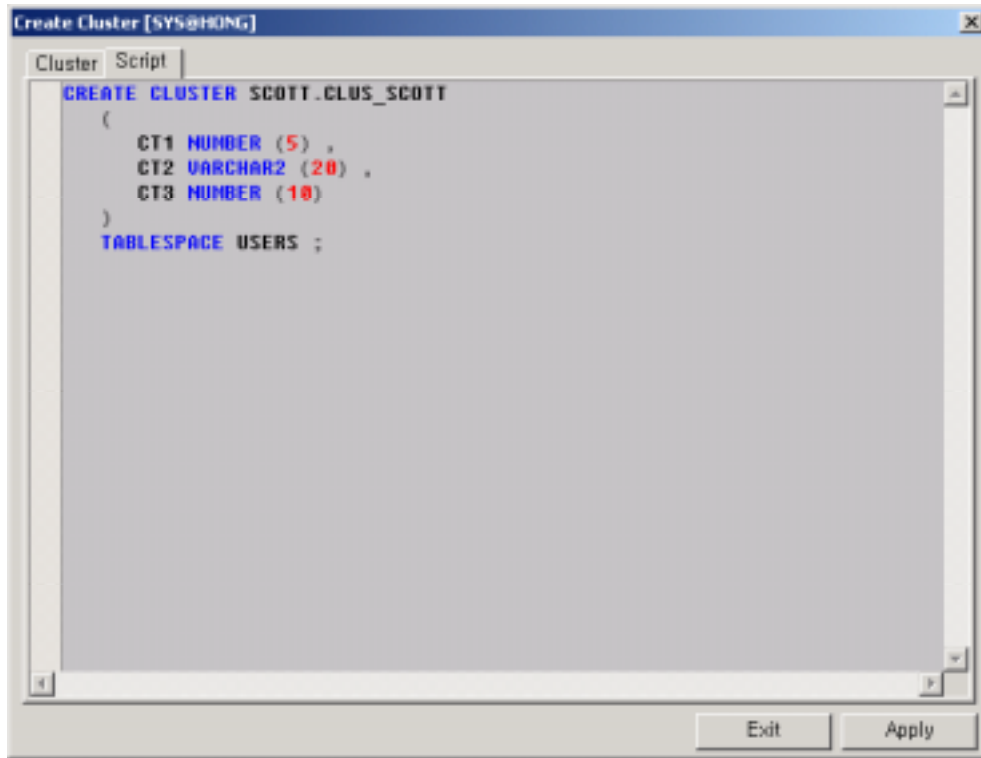
4.4.6 DB-Link

[DB Link]   DB Link

                                                                                                "Create DB Link"

DB Link   .

- **General**
  - ➢   DB Link   ,   (Shared/Public/Current User),   ID
    .

  [4.50 – Create DB Link   General   ]
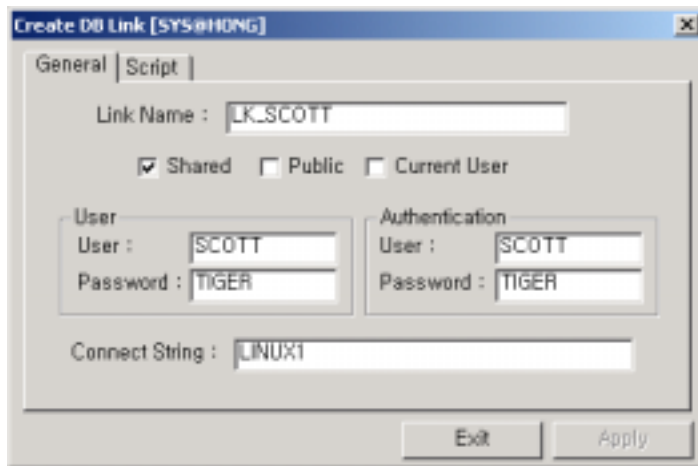
- **Script**
  - ➢   DB Link   . [Apply]
                                        DB Link   .

  [4.51 – Create DB Link   Script   ]

98
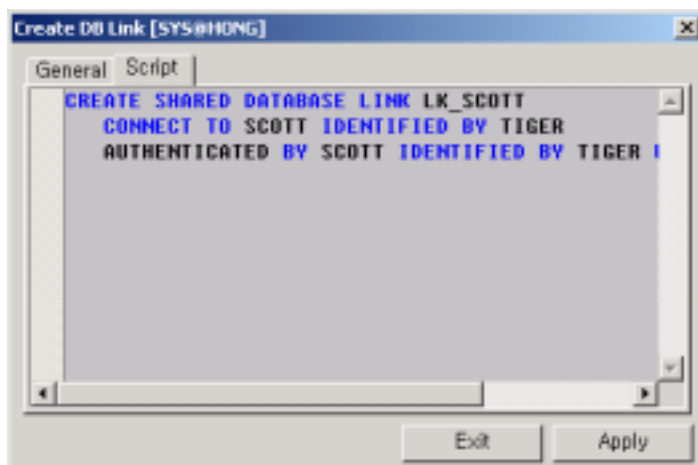
4.5   (ALTER)

4.5.1 Index

[Index]   [Table]   Index

                                                    "Alter Index"

.

■   General

> INDEX   :   .

> Attribute   :   Storage   .

> Allocate Extent   : Extent   .   Extent

                                    . Datafile

          Datafile   . Instance   OPS

   RAC   Freelist Group   Instance number   .

> Deallocate Unused   : HWM(High Water Mark)   Free Extent   .

         Keep Size   Free Extent   .

> Parallel   : Parallel Thread   .

   Parallel Degree   .

> Rebuild   : Index   .

> Usable :   /   .   .

> Logging : Logging   Redo Log File

         .

[4.52 – Alter Index   General   ]

■ Partition

➤   Partition /
Subpartition   .   General   .

[4.53 – Alter Index   Partition   ]
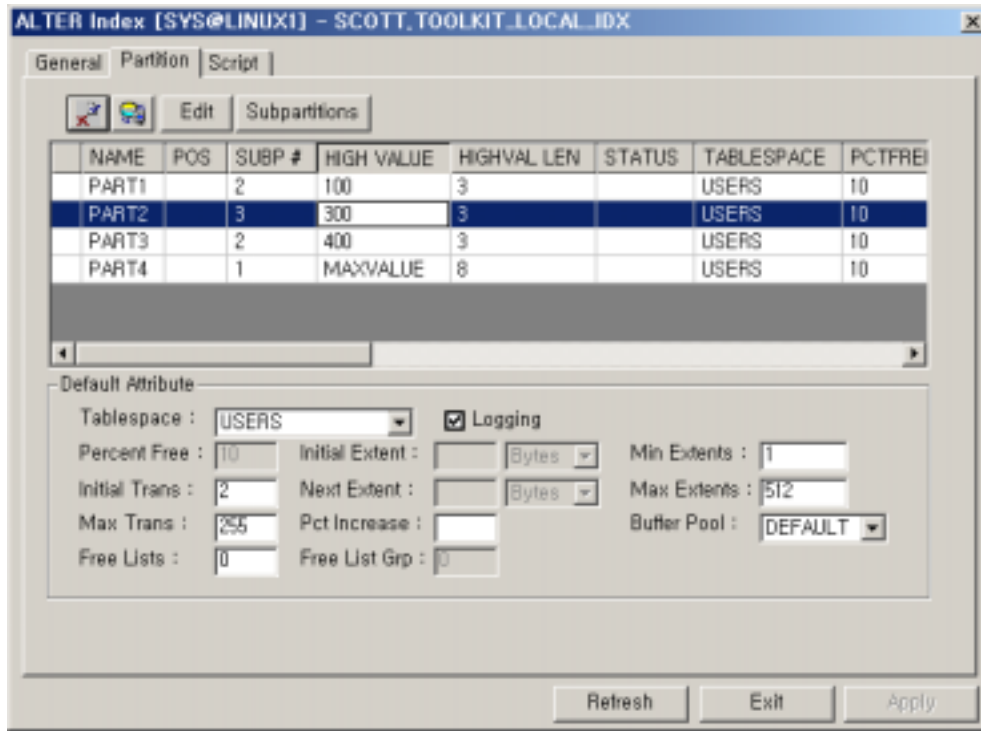
■ Script

➤ . [Apply]

[4.54 – Alter Index   Script   ]
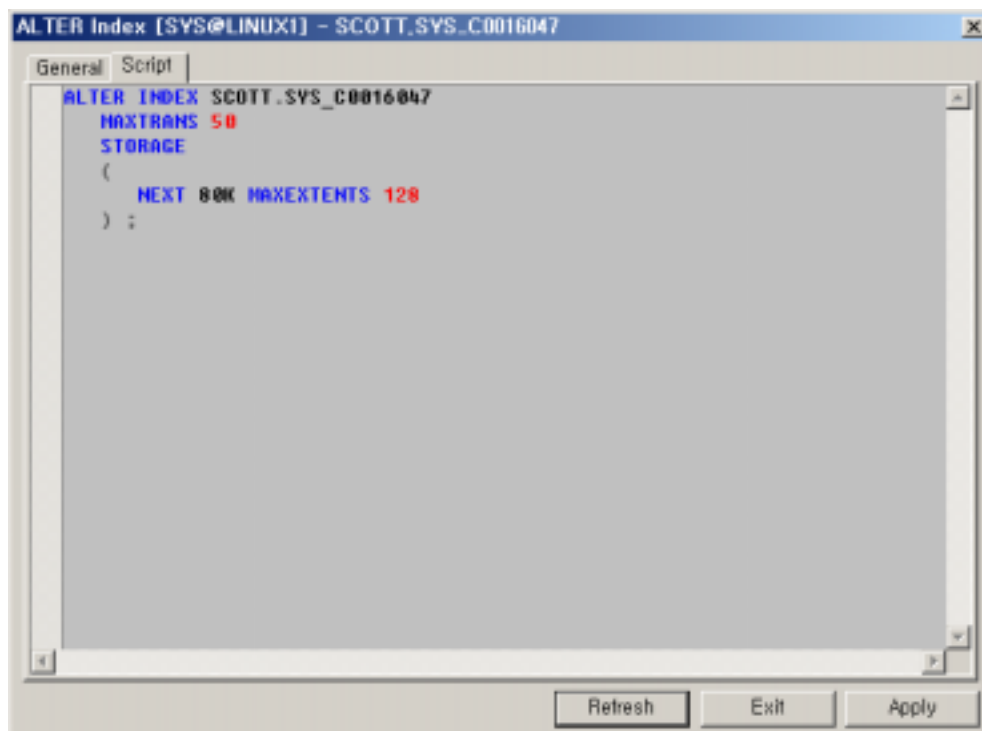
4.5.2 Table

[Table]

                                                     "Alter Table"

.

■   General

    ➢   ALTER TABLE   Storage   "Extent Allocation", "De-allocate Unused Keep"

                    . General

                       . "Table"   "Attribute"

                          Storage   .

    ➢   "Allocate Extent Group"   Extent   . "Size"

        Extent   . Datafile   Segment

                    Datafile   . Instance

        OPS   RAC   Freelist Group   Instance number   .

    ➢   "Deallocate Unused"   HWM   Free Extent   .   Keep

        Size   Free Extent   .

    ➢   "Parallel"   Table   Altering   Parallel Query   Parallel DML

                 Parallel Thread   .

        Parallel Degree   .

    ➢   "Table Lock"   DML   Table   TM Lock

          .   DDL   . Default   Table Lock

        .

    ➢   "Logging"   Redo Log File

        .

    ➢   "Cache"

                    .

    ➢   "Monitoring"

             .

[4.55 – Alter Table General]

■ Columns

➢   /   /   /Unuse   NULL

                    .

➢   LOB   [LOB Storage]   LOB

                   .

➢   🗋,   🗋,   Unuse ✕   .

[4.56 – Alter Table   Column   ]
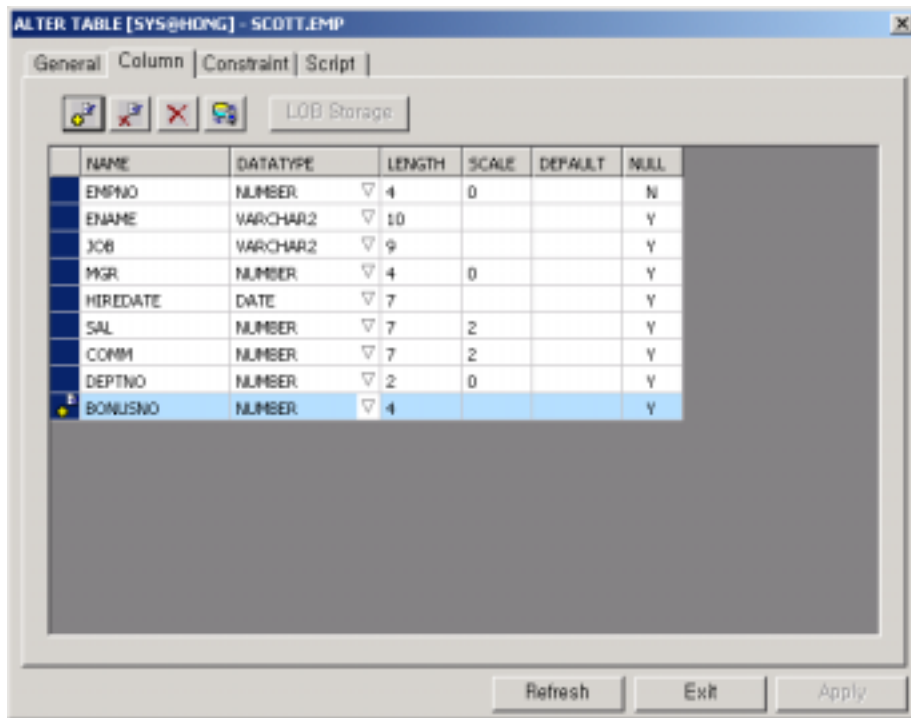
■ Constraint

➢ "Out of line Constraint" / / .

➢ Constraint 🔧, Constraint ✖ .

[4.57 – Alter Table Constraint (Constraint)]
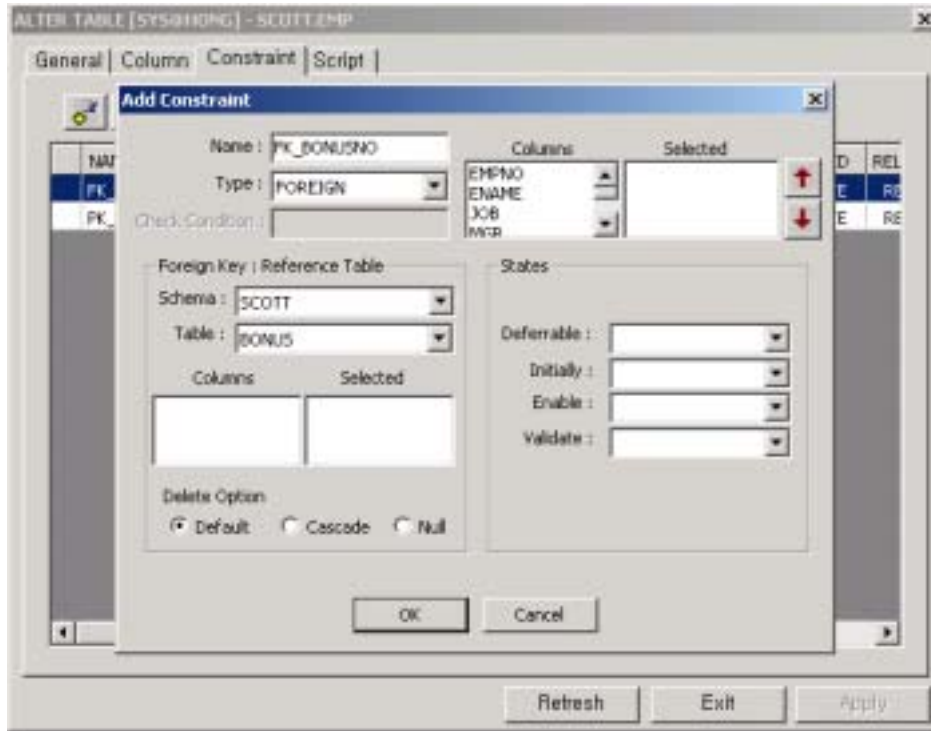
■ Script

>   . [Apply]

[4.58 – Alter Table   Script   ]
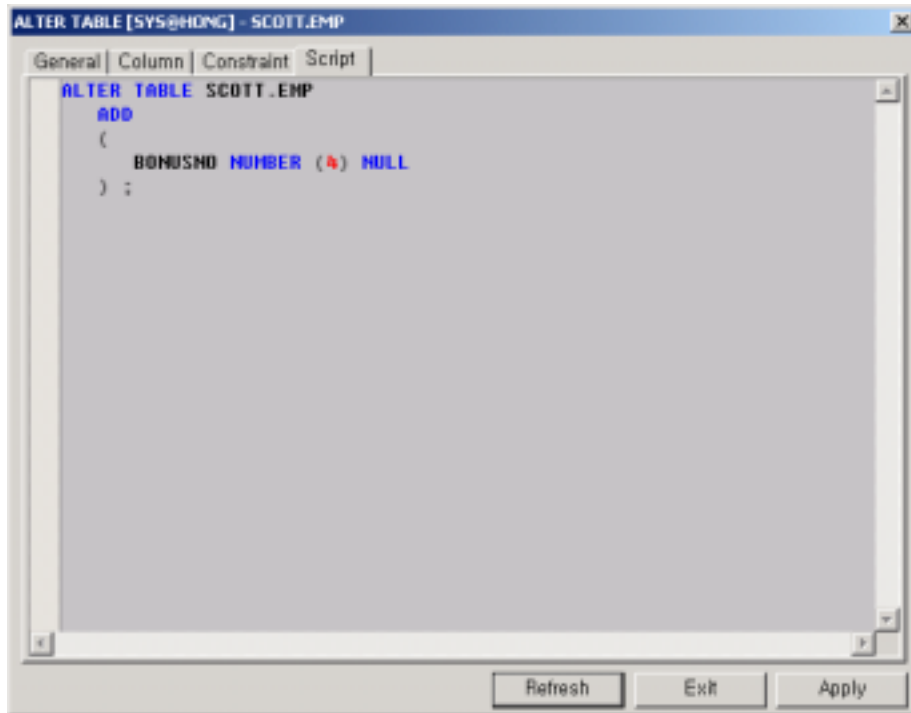
4.6 Analyze/Compile

4.6.1 Analyze

[Table]/[Index]   Analyze

                                                              "Analyze…"

Analyze   . Analyze Manager   Analyze

.

■   "Analyze Type"   "Compute"/"Estimate"/"Delete Statistics"   Estimate

Sample   . "For"

.

■   Analyze   Histogram   Bucket Size   .

[4.59 – Analyze   ]
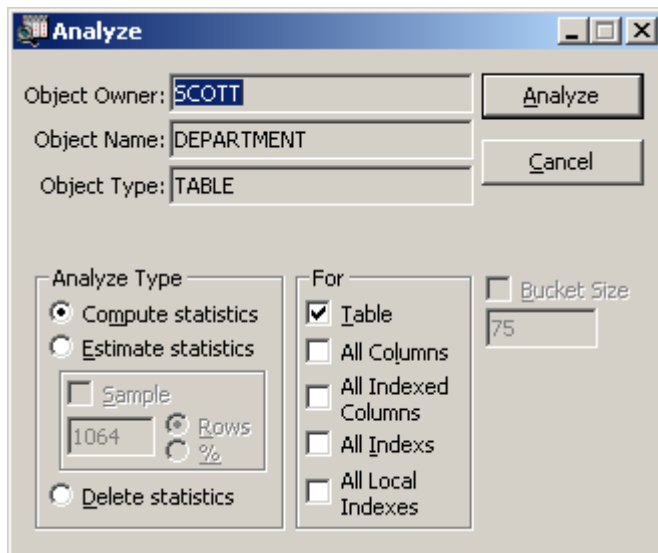
4.6.2 Compile

[Function], [Package] 　　　　　　　　　Compile 　　　　　　　　　(PL/SQL 　　　　　　　)

"Compile" 　　　　　　　Compile 　　.

DBA 　　　　　　　Invalid Object 　　　　　　　　　Compile 　　　　　　　. 　　　　[DBA] → [Invalid

　　　　] 　　　　　　　　　　　　　　　　　　　　　　　　　　　[　　4.60 – Compile invalid

objects 　　　　　　] 　　　　　　　　　　.

[　　4.60 – Compile invalid objects 　　　　　　]
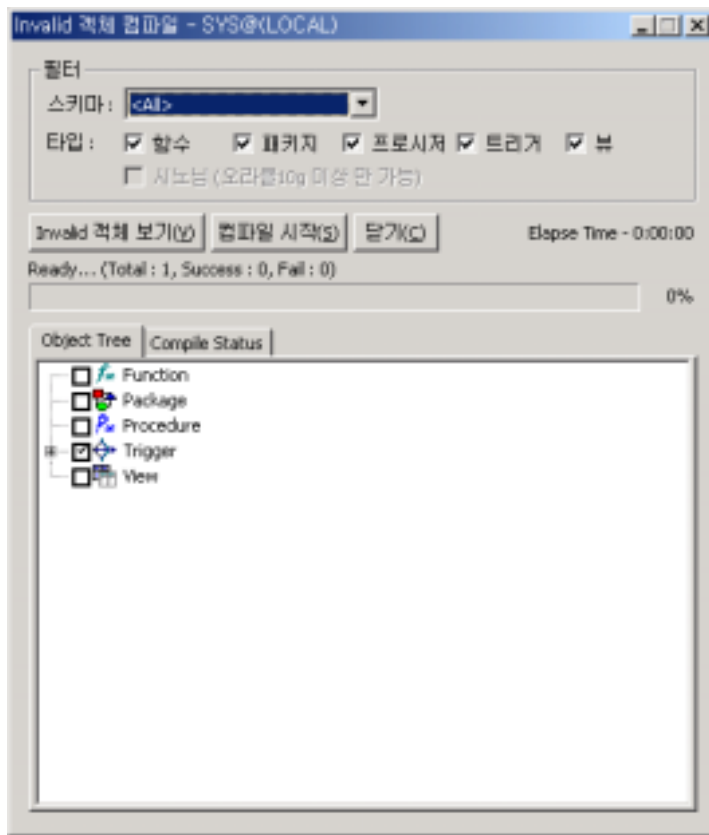
- 　　　　　　　　　　　　　: Compile 　　　　　　　　　　　　　　　　.
- [Invalid 　　　　　] 　　: Invalid Object 　　　　　　　　　　.
- [　　　　] 　　: Compile 　　　　　.
- 　　　　　: Compile 　　　(%) 　　.
- Object Tree 　: 　　Invalid 　　　　　　　　　　　　　　　　　　　　　　　　　/
　　　　　　. 　　　　　　　　　Compile 　　　　.
- Compile Status 　: 　　　　　　　　　　　　　　　　　　　.

5. 쿼리 빌더 (QUERY Builder)

쿼리 빌더는   ,   ,

                            GUI   .

           Join   SQL   , Syntax

                                              SQL   .   SQL

Tool, Plan Tool, PL/SQL Tool   ,   SQL   Return

SQL   .   Where, Group By, Order By, Having

                    . Plan Tool   .

                                        .

                                                                                                (:

            ,   :   )   (SQL   )

    .

5.1

- ✓
- ✓   Drag & Drop   GUI
- ✓
- ✓   SQL   Add-ON
- ✓   Tool Editor   SQL
- ✓   SQL Formatting
- ✓   Load
- ✓   Syntax

5.2

![icon]	, SQL Paste
![icon]		
![icon]	SQL	
![icon]	SQL Paste	
![icon]		
![icon]		
![icon]		
![icon]	Table Tree	

5.3

5.3.1

SQL Tool, Plan Tool, PL/SQL Tool   [   ] →

]   ,

.

[5.1 - SQL Tool   ]
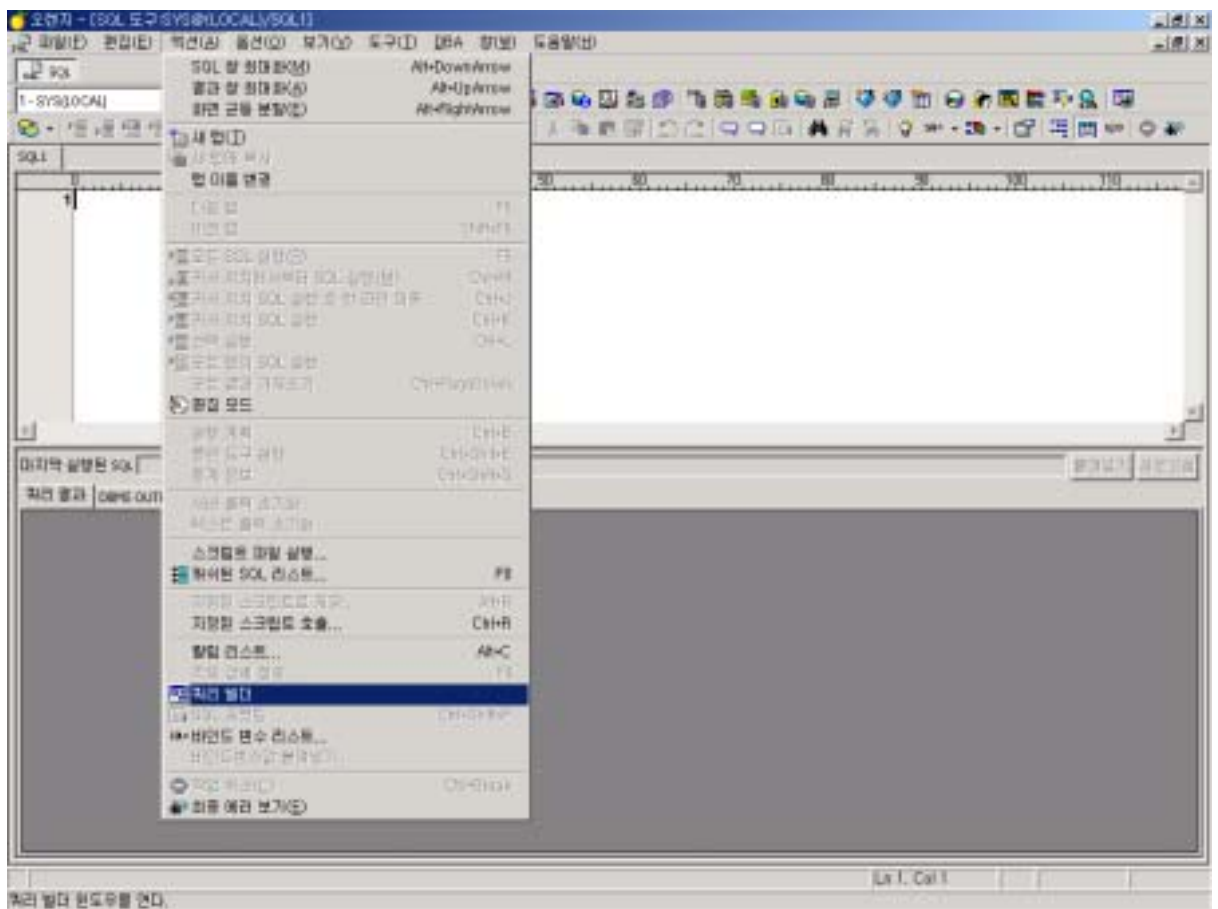
5.3.2   **SQL**

                                                         Tables, Views

                                                    .

                                     SQL   FROM

WHERE   .

SELECT

                              Select   From   Check Column

Uncheck   .

       [**5.2 -**   **SQL**   ]
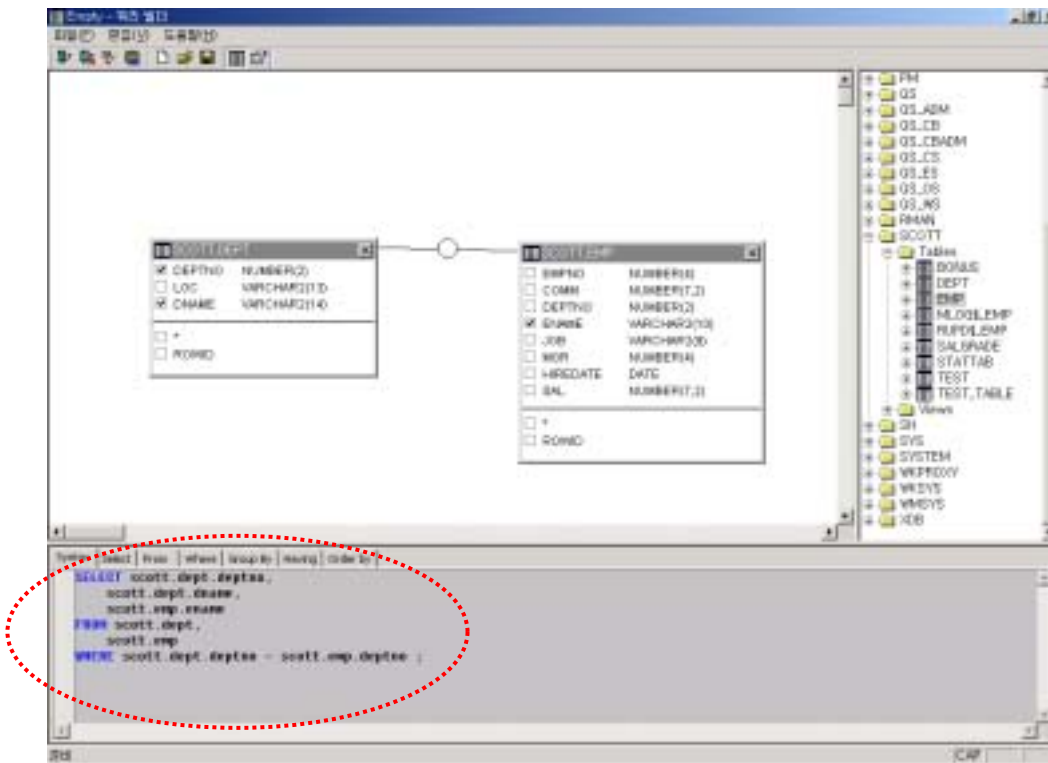
5.3.3 Relation

Tables, Views Relation

"="

[5.3 - Relation]

Outer Join

"=",
"!=" , ">" , "<" , ">=" , "<=" , "BETWEEN"

.
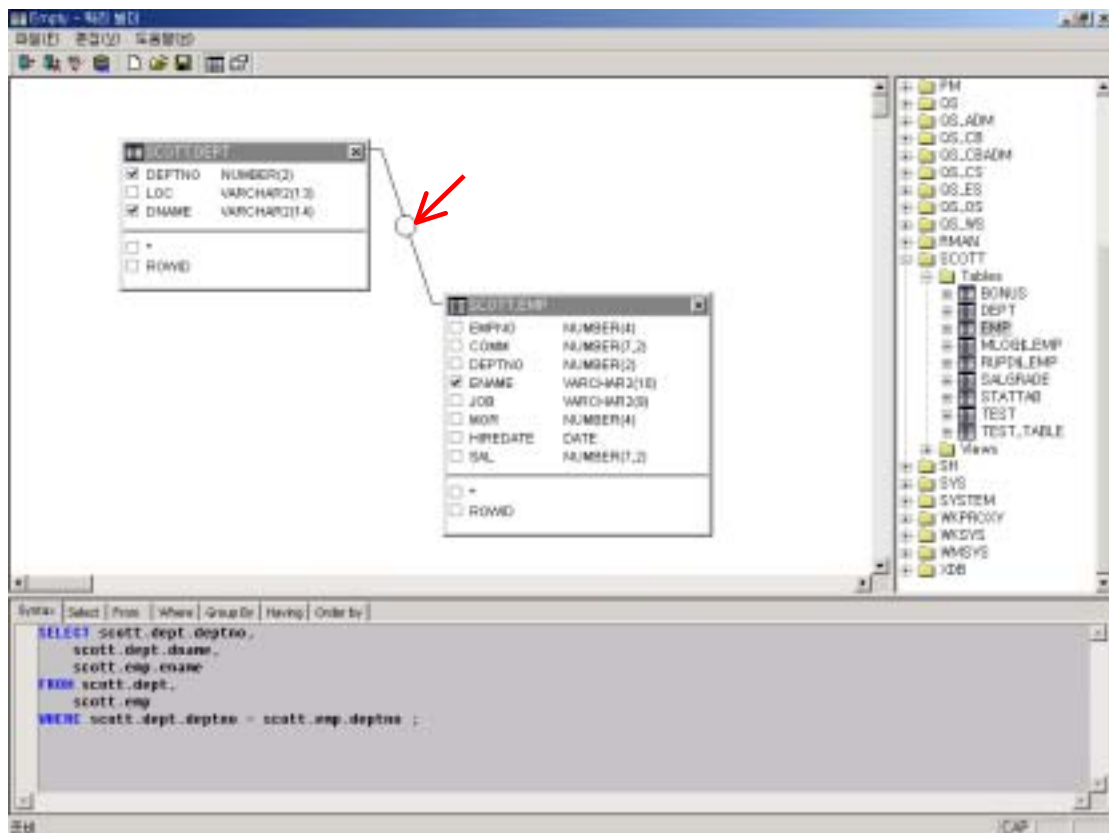
[5.3 - Relation]

[　　　5.4 - Relation 　　　　　　　　　　]
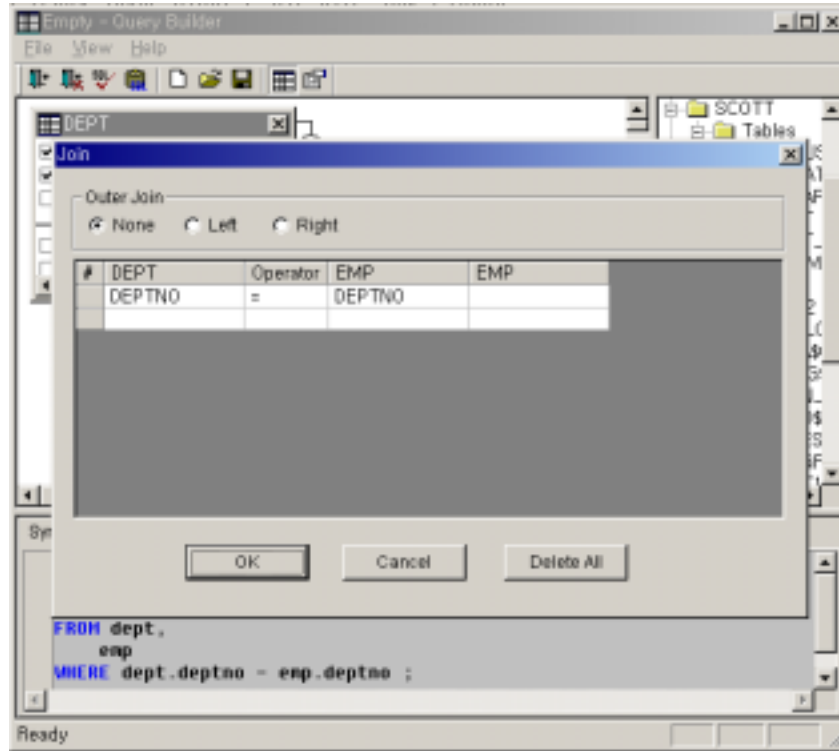
5.3.4   **Alias**   **(Select**   **)**

"SQL   "   **[SELECT]**

Alias   Alias   "F2"
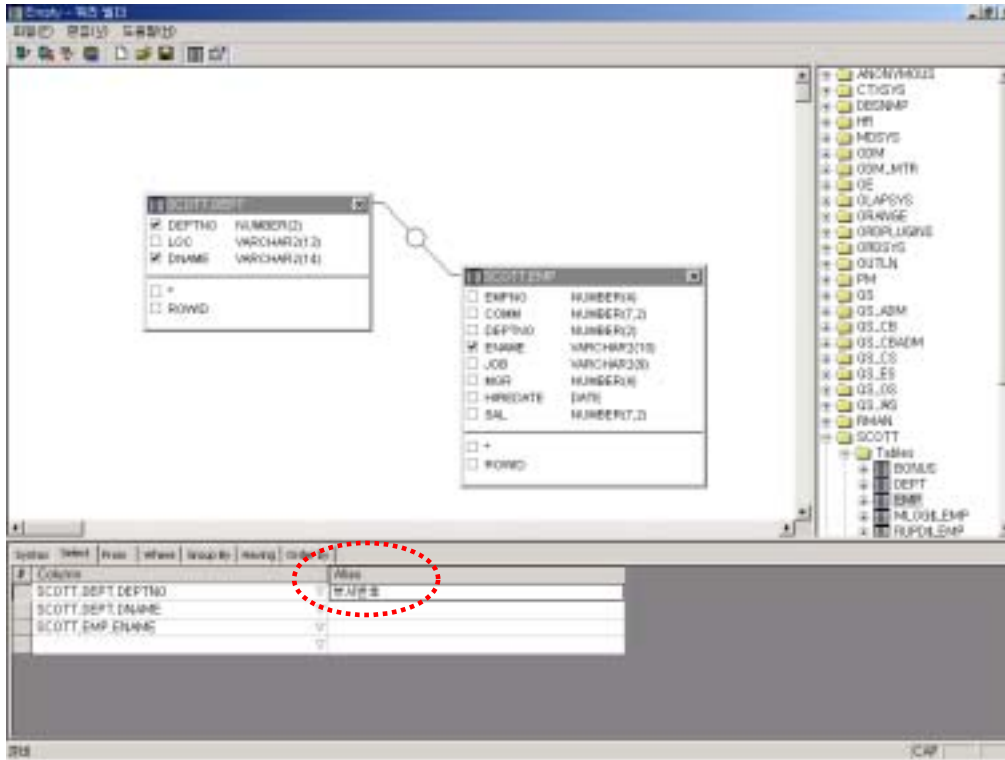
Syntax   .

[**5.5 -**   **Alias**   ]

[5.6 -   Alias   Syntax   ]
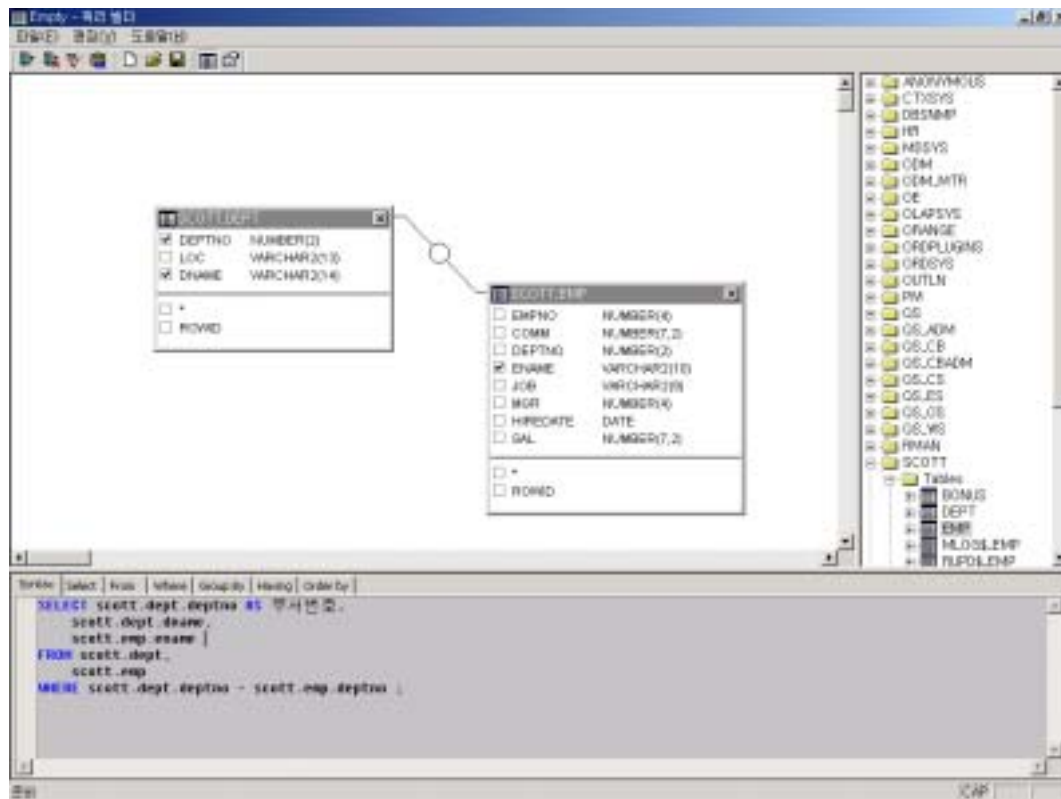
5.3.5 　　　　　　　　　 Alias

　　　　　　　　　　　　　　　　　　　　　　　　　　 "SQL 　　　 " **[FROM]**
From 　　　 Alias 　　　　　　　　 Alias 　　　　　　　　　　　 "F2"
　　　　　　　　　　　　　　 Syntax 　　　　　 .

[　　 5.7 - 　　　　　　　　 Alias 　]

5.3.6   Where

"SQL   "   **[WHERE]**   ,

,   ,
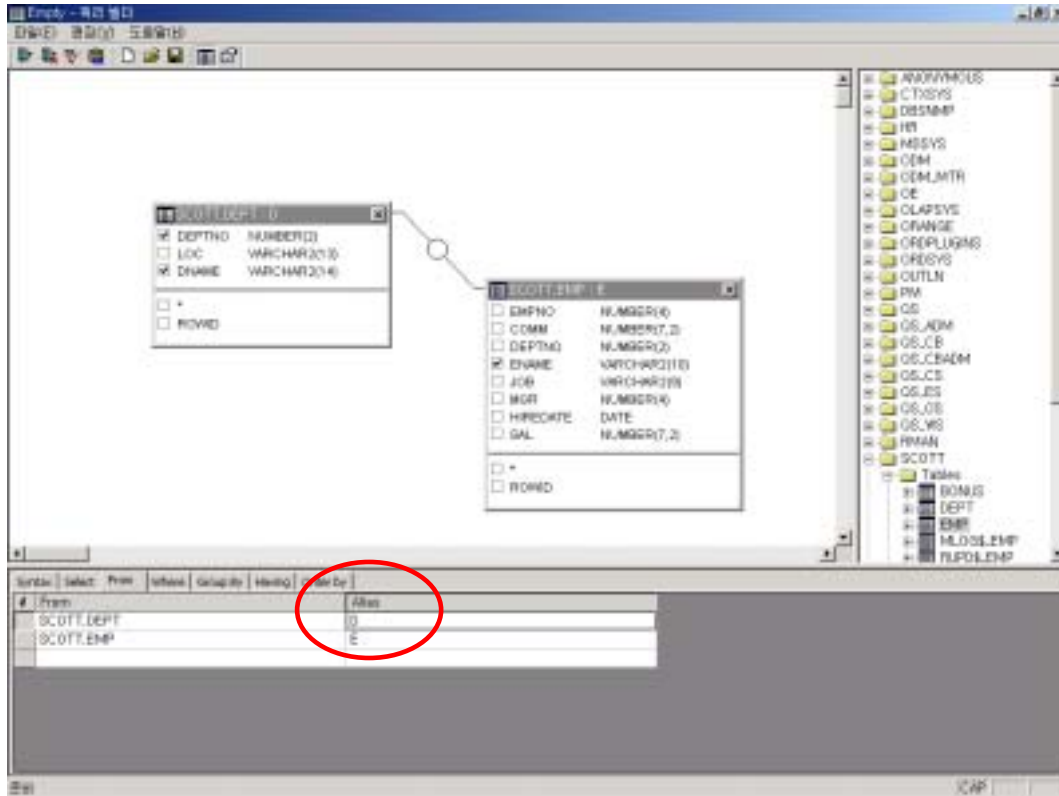
Syntax   .   **BETWEEN**

Value   **AND**   .   ) **" A(   ) AND B(   )"**

[**5.8 -**   ]
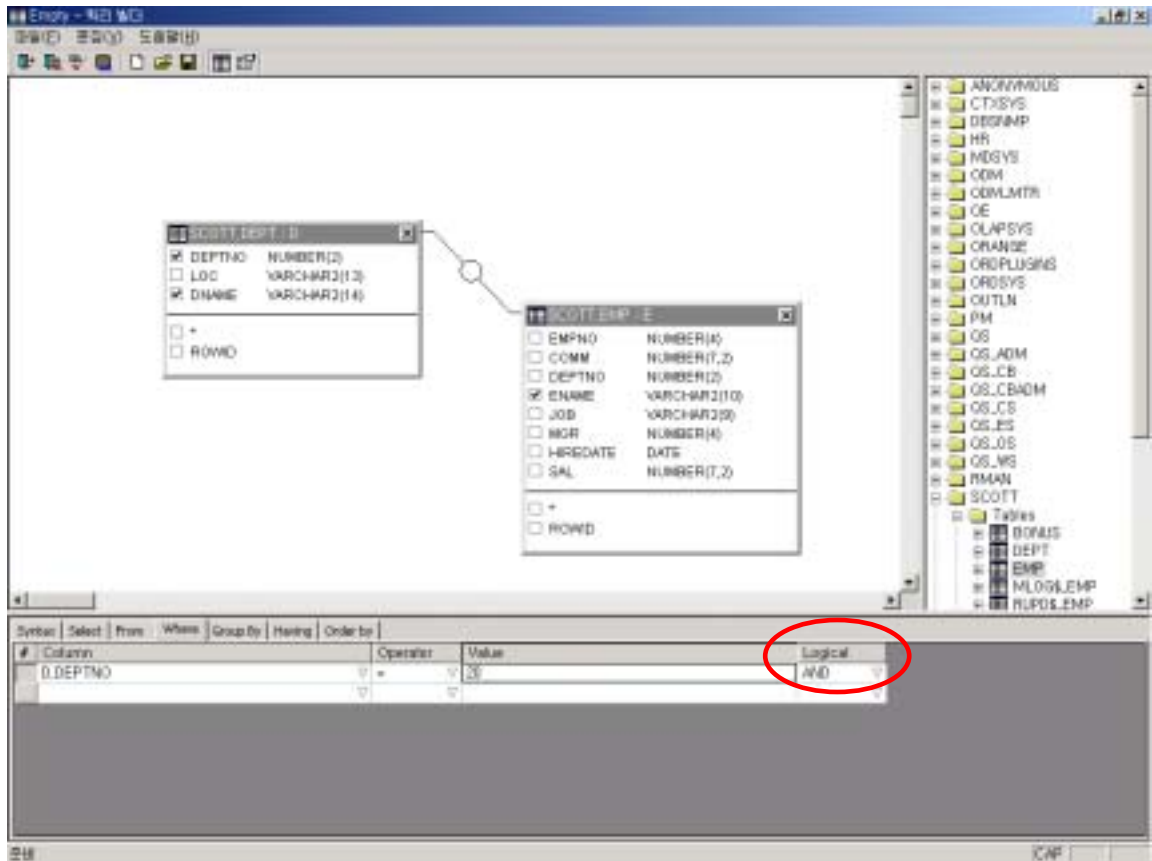
5.3.7 Group By

Group By   "SQL   "   **[SELECT]**
  sum(   )   .   Query Builder   "SQL   "   **[GROUP BY]**
                                       .

[5.9 -   ]
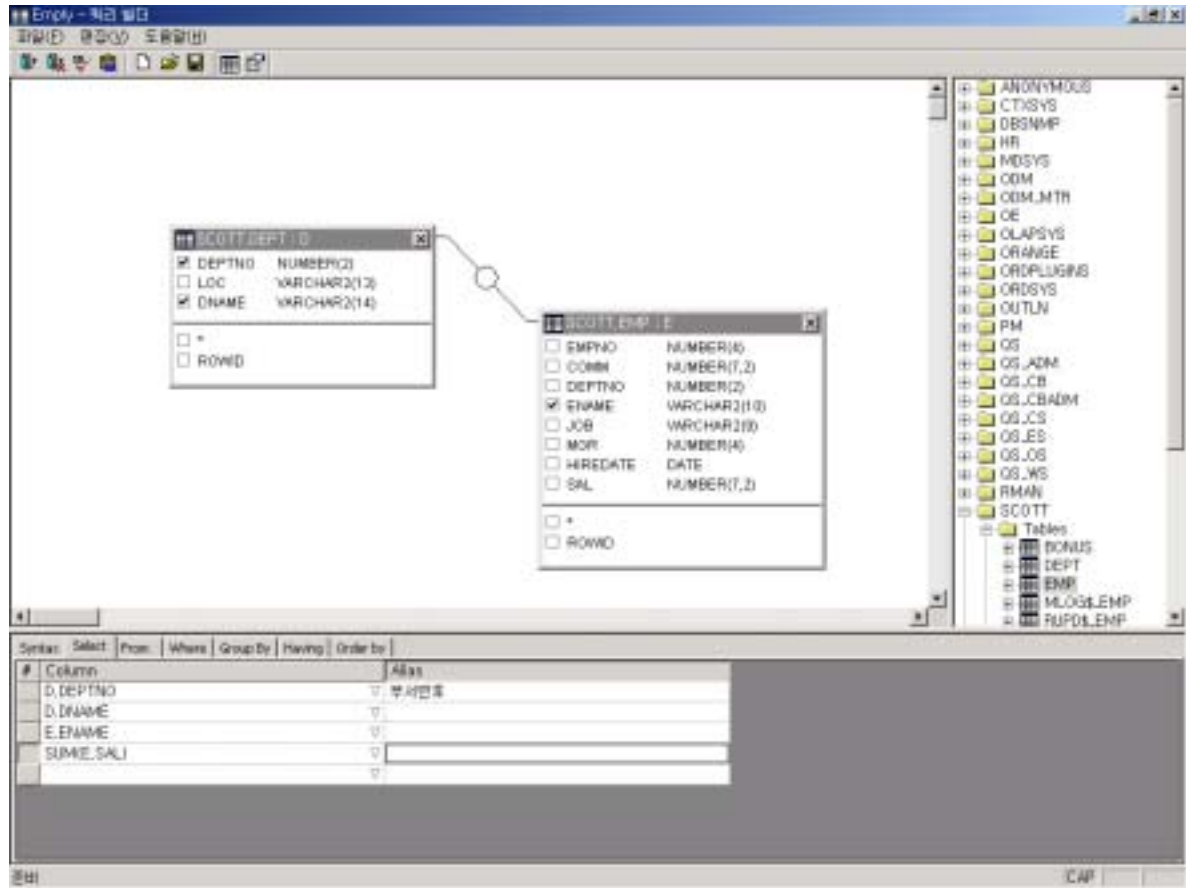
[5.10 - Group By   ]
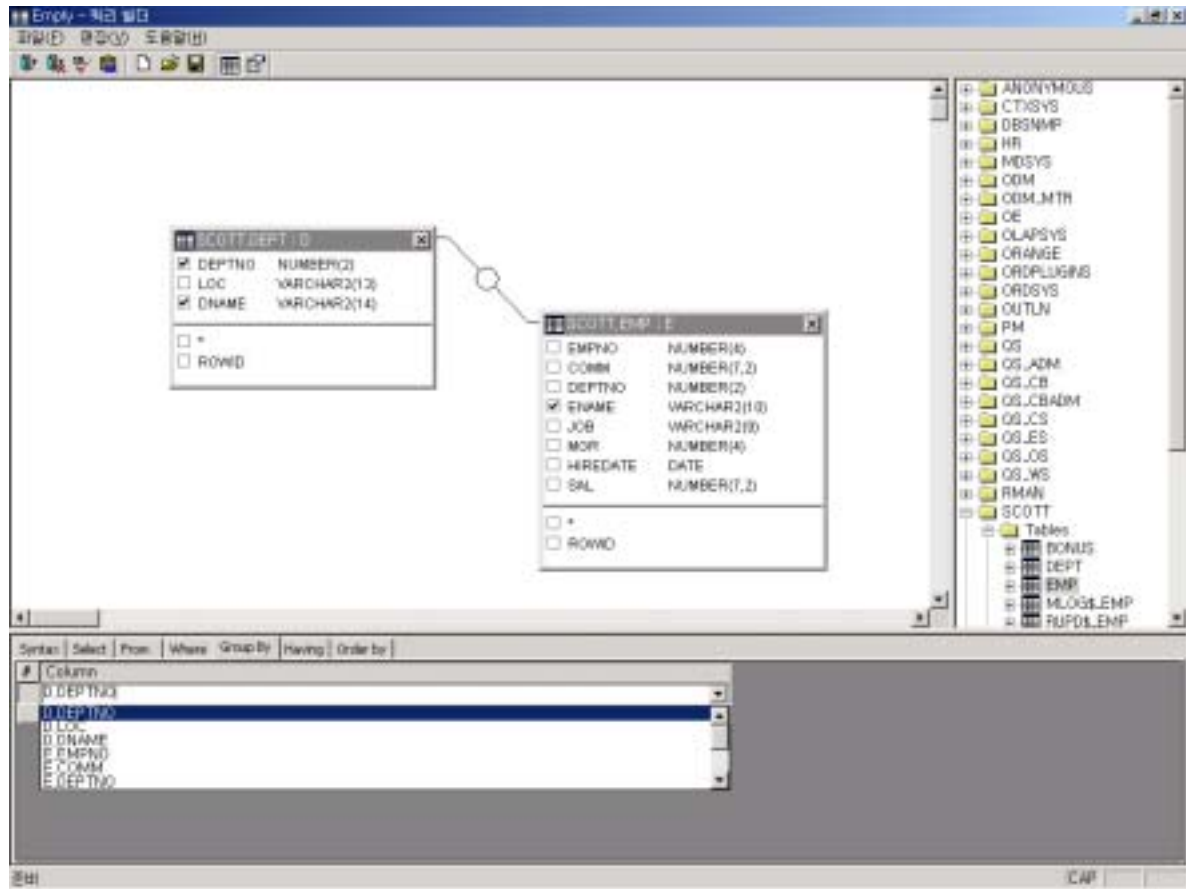
5.3.8 Having

Group By   Having   "SQL   "   **[HAVING]**
Column, Operator, Value, Logical   .

[**5.11 - Having**   ]

5.3.9 Order By

"SQL
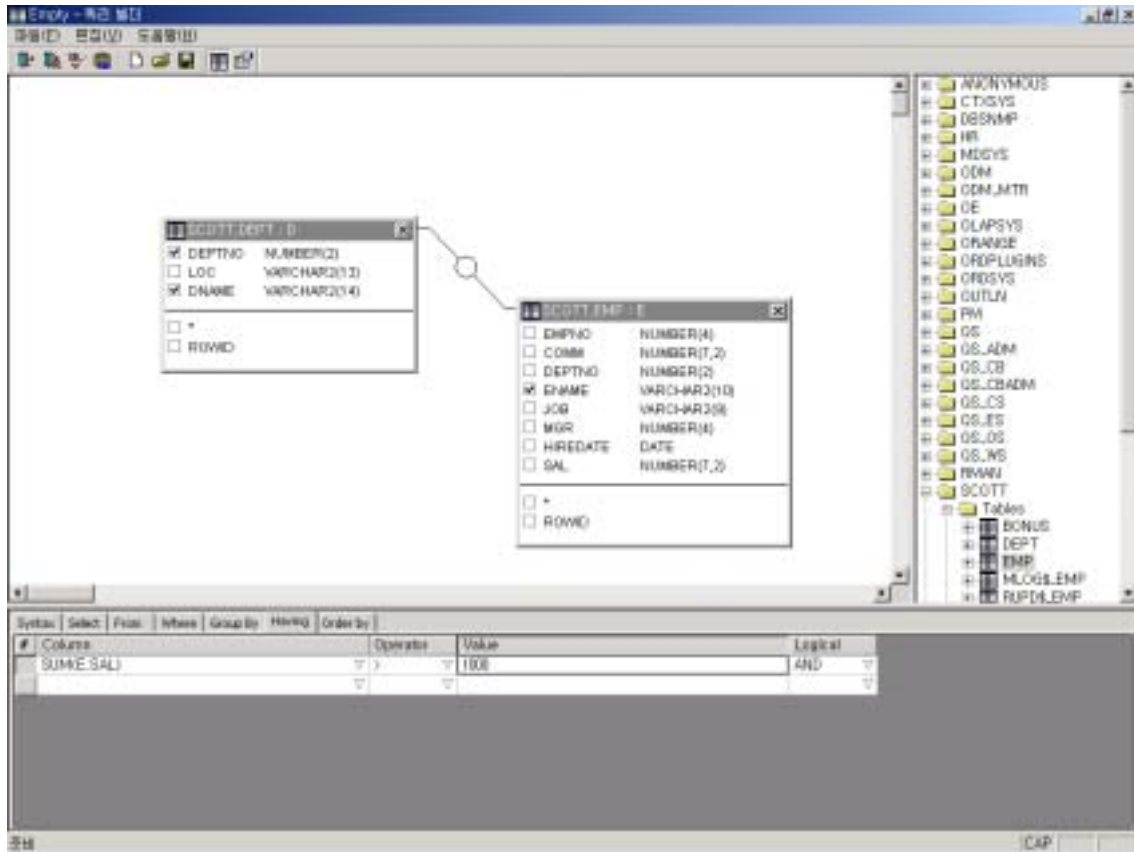
" 　**[ORDER BY]** 　　　　　　　　　Column, Sort Order 　　　　　　　　　　　，

.

[　　5.12 - Order By 　　　]
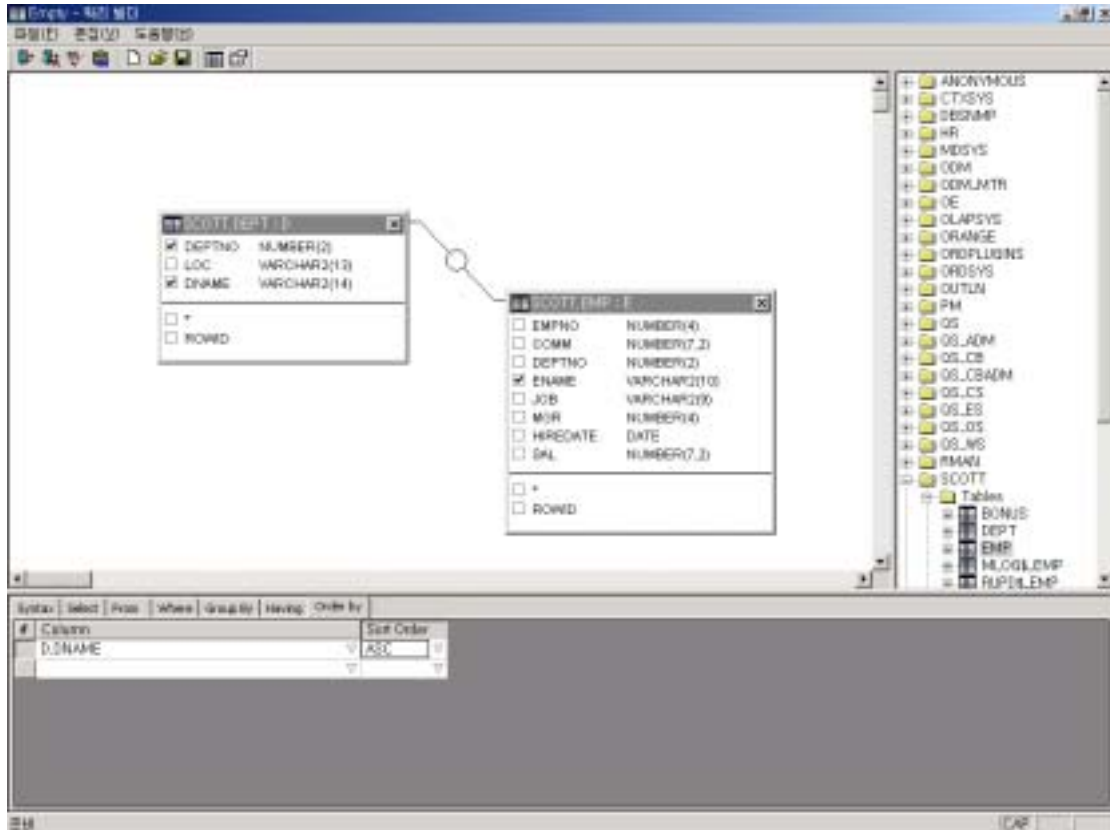
5.3.10

(OQB)

SQL 　　　　　　　　　.

5.3.11 　　　　　　　Return

SQL 　▮← 　　　　　　　　　Tool (SQL Tool, PL/SQL Tool, Plan Tool) 　　　　　.

6. Plan Tool

SQL   .
                        (RBO,CBO), RDBMS Version, HINT   , Index   ,
                        .   DBA   SQL
                                        .

            DBA   LOCAL DB, REMOTE DB
      LEVEL
(,   )
                                                      . Workspace
      ,   .

6.1 Plan Tool

- ✓   SQL(Query, DML)
- ✓
- ✓ DB Link
- ✓ Pro*C Source Code Analysis
- ✓   (Cursor)
- ✓ SQL
- ✓ SQL Trace   (TKPROF   + Client Time, Bind Value, Wait Events)
- ✓ SQL(Query)   GRID   ,
- ✓   (Bind variable)
- ✓
- ✓   SQL   (SQL Formatter)
- ✓   SQL   PLAN   MULTI-TAB
- ✓ Syntax Highlight
- ✓   Edit   (Block Comment/Uncomment, Find & Replace, Goto Line,   Matching, Bookmark, …)
- ✓ SQL   Project   (.ptd   )
- ✓ SQL   Visual Basic, PowerBuilder, C/C++, Delphi, Java, Perl

6.2 Plan Tool

SQL

SQL

Query Builder

Tab

SQL   Copy   Tab

Tab

SQL Formatting

:a=
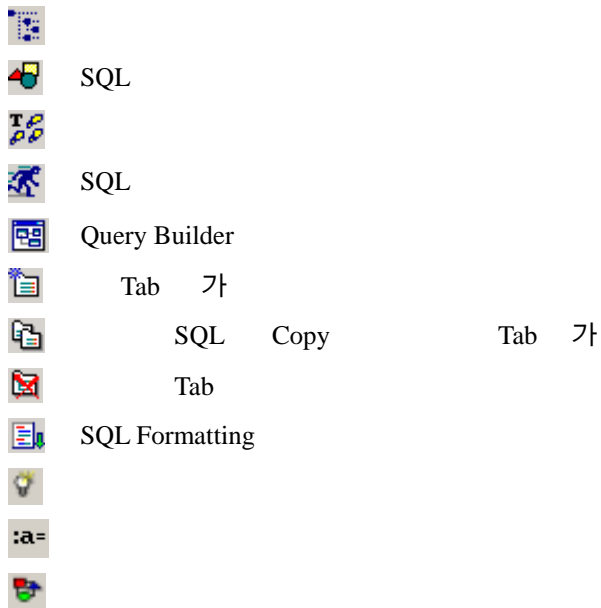
6.3 Plan Tool

Plan Tool [   ] ➔ [   ]   .

[6.1 - Plan Tool]
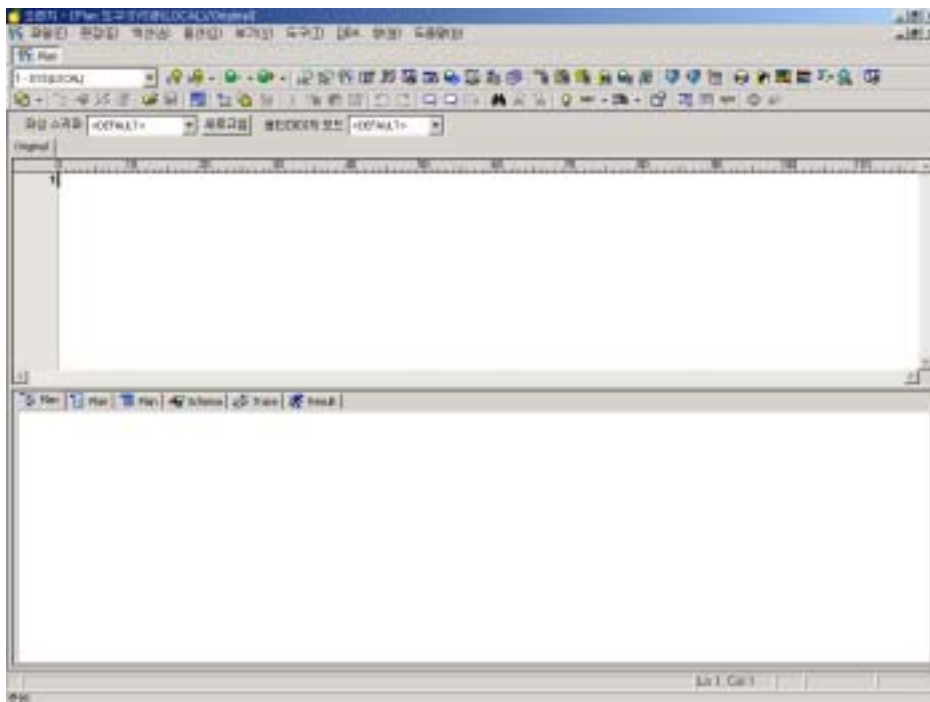
6.4

6.4.1 Parsing Schema

"   "   . Parsing Schema
"<Default>"   ,   . Parsing Schema   "<Default>"
                     "<Default>"   .

 Parsing Schema . 				 SQL Tool Plan Tool
         ,   SQL Tool   Plan Tool   .   ,
Plan Tool   Parsing Schema   "<Default>"
                              . Parsing Schema   Workspace   .

[6.2 –   ]
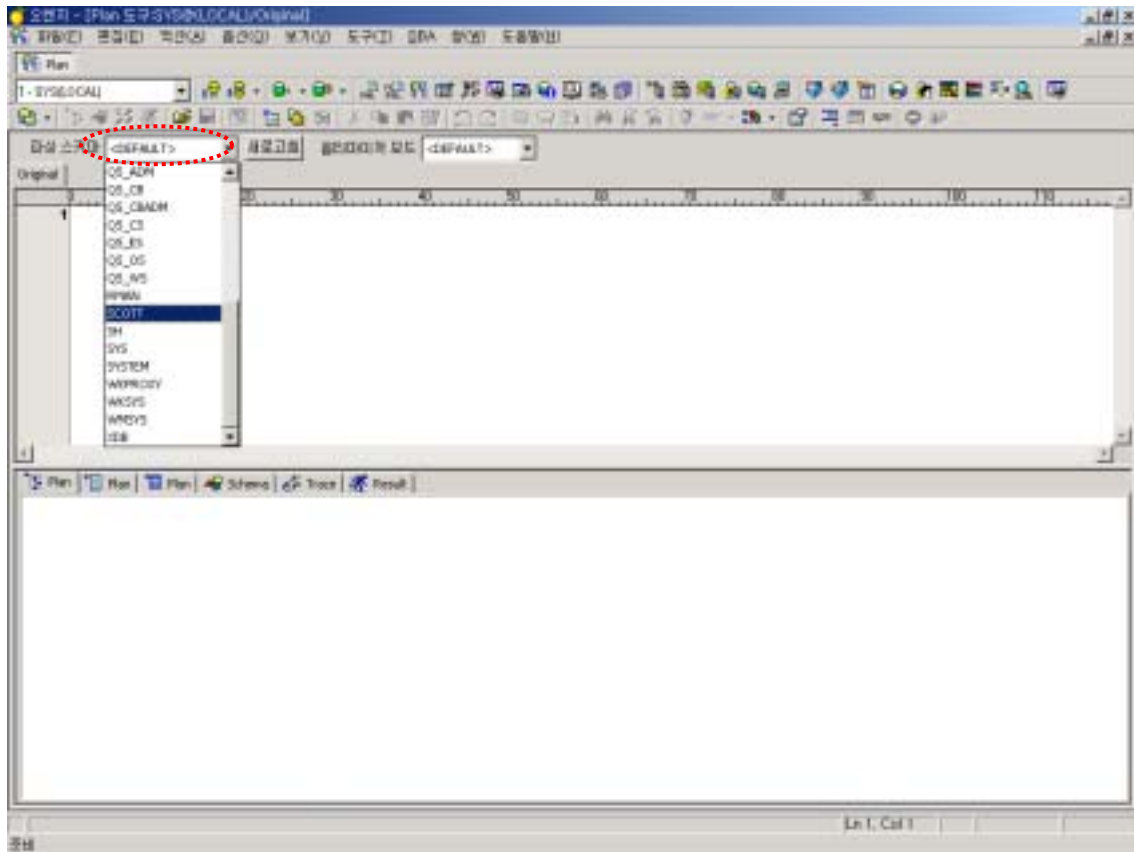
6.4.2 **Optimizer Mode**

Init.ora

"   "   .

Plan Tool   Optimizer Mode   "<Default>"   ,

. Optimizer   Mode   "<Default>"

"<Default>"   .

Optimizer Mode   .   SQL Tool   Plan Tool

,   SQL Tool   Plan Tool   .   ,

Plan Tool   Optimizer Mode   "<Default>"   Default Optimizer Mode

.   Optimizer Mode   Optimizer Mode

Database Information   [System Parameter]   [Session Parameter]   optimizer_mode parameter

. Optimizer Mode   Workspace   .

[6.3 –   ]
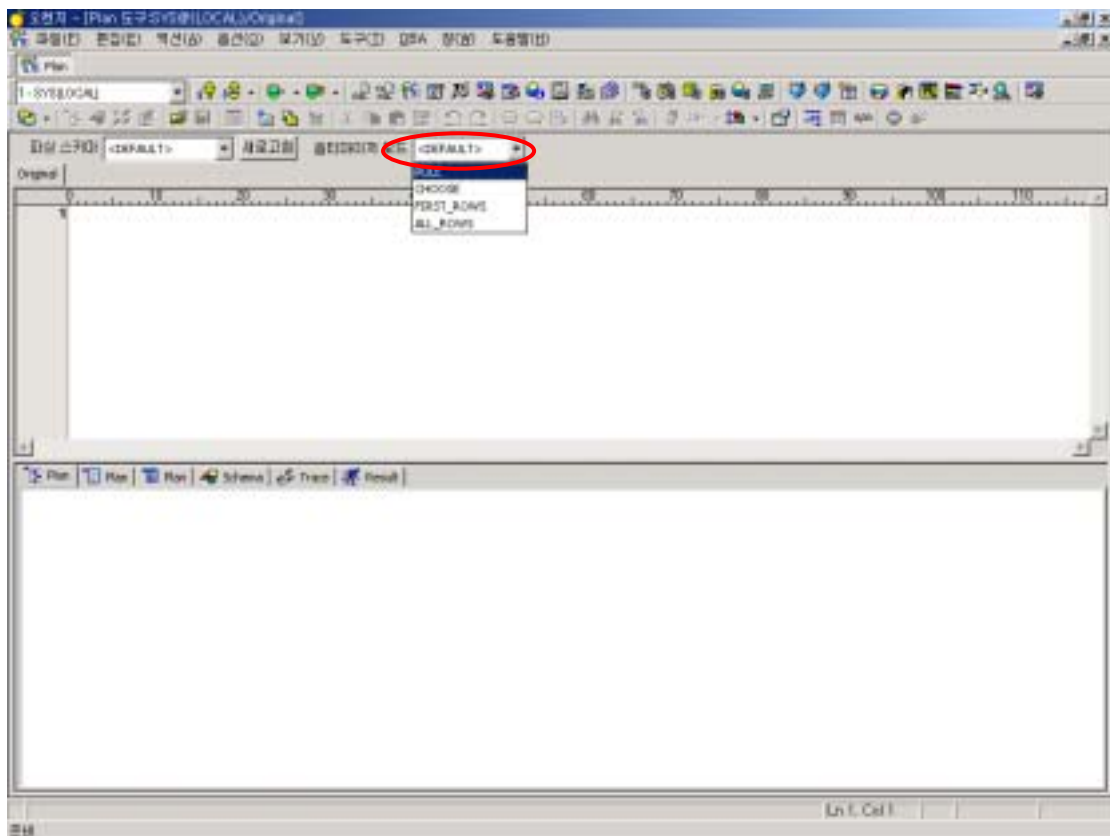
6.4.3 SQL

SQL Plan Tool

[Show Plan] ( ) . [Show Plan] (Hot Key : F5) [Plan]
SQL .

- Plan ( ), ( ), ( ) 3 .
- [6.4 –] Full
  Scan, Full Scan, Cartesian Product ,
  .

- SQL DB Link Access
  object "object@DBLink" .

[6.4 –]

,

.   .

,   ,   ,

.   ,   ,

. DB Link   DB Link   SID

.
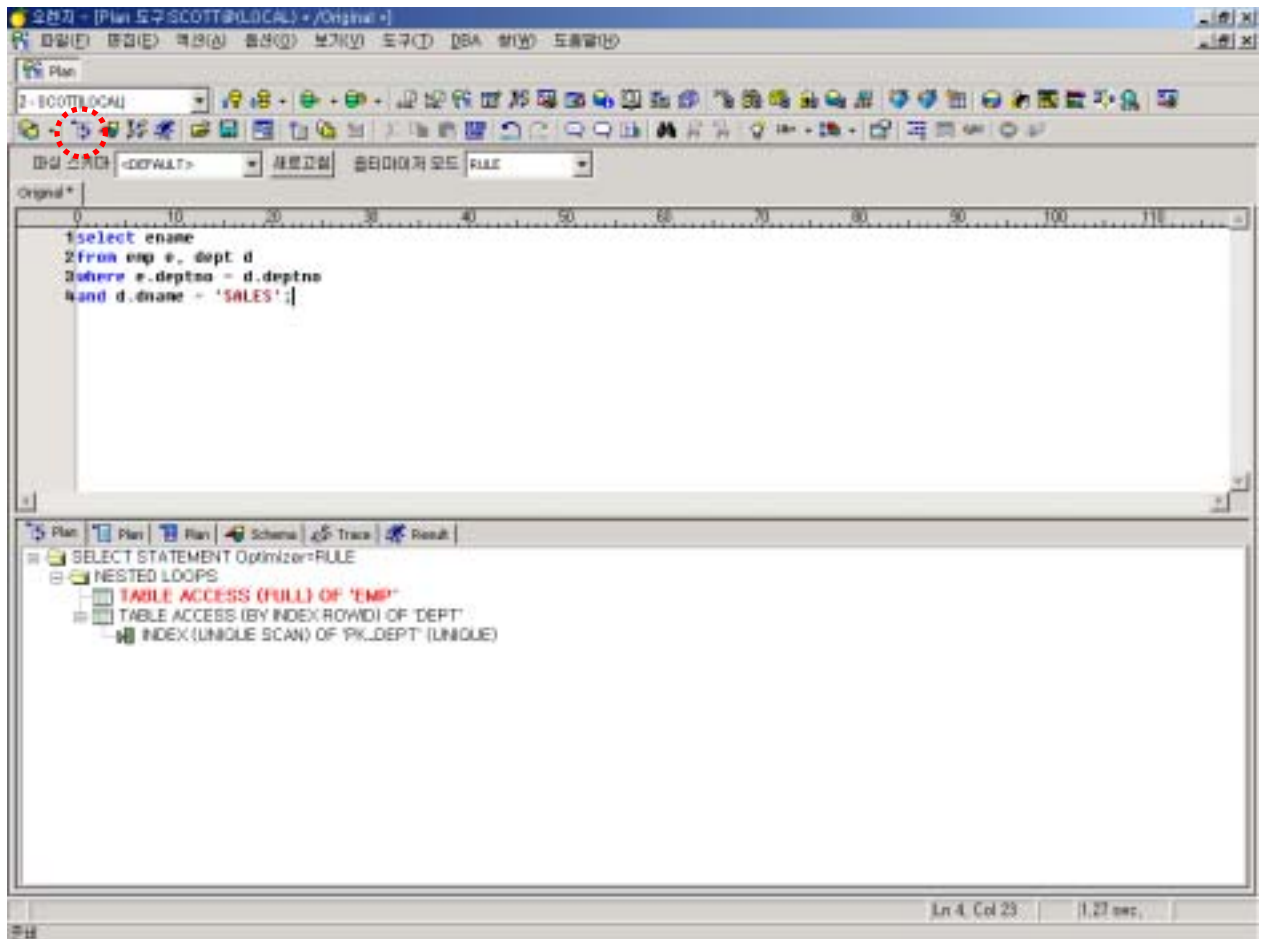
[6.5 –   ]
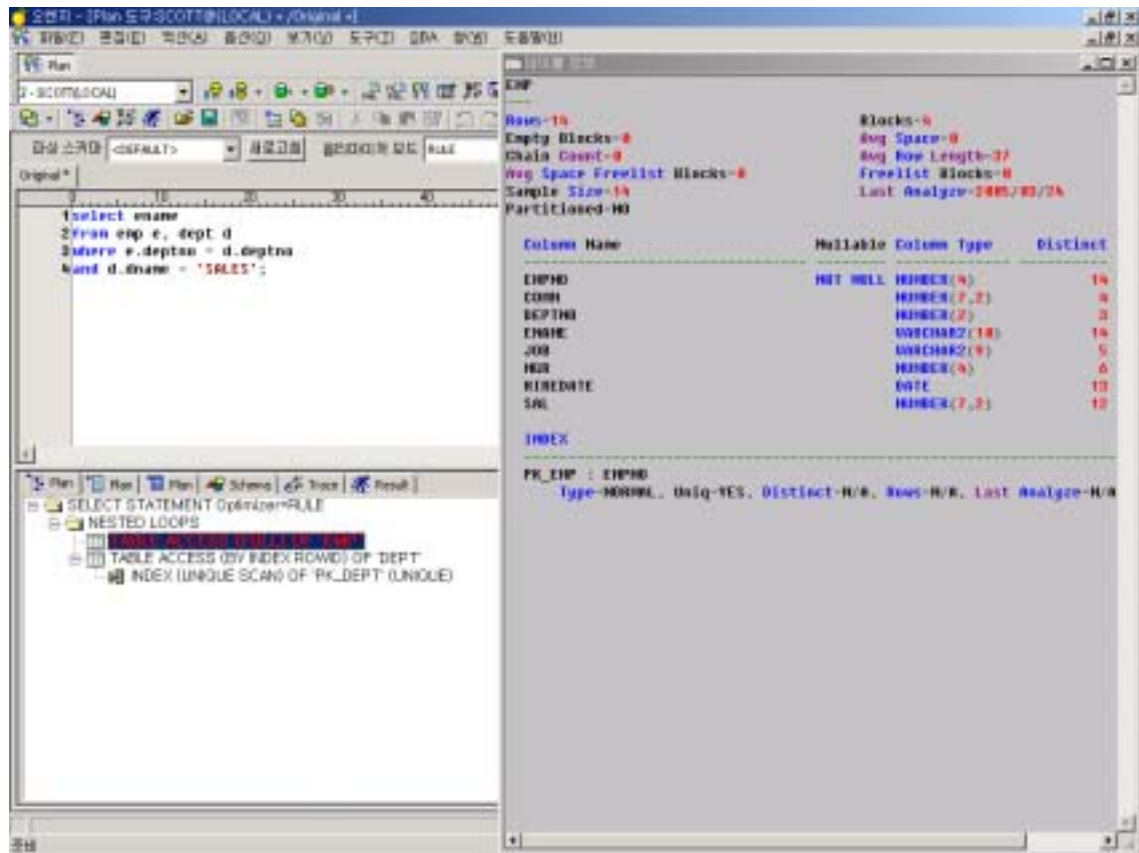
6.4.4 SQL

SQL   SQL

                      [Show Related Schema]   ( )   [Schema]

           .

[6.6 –   ]
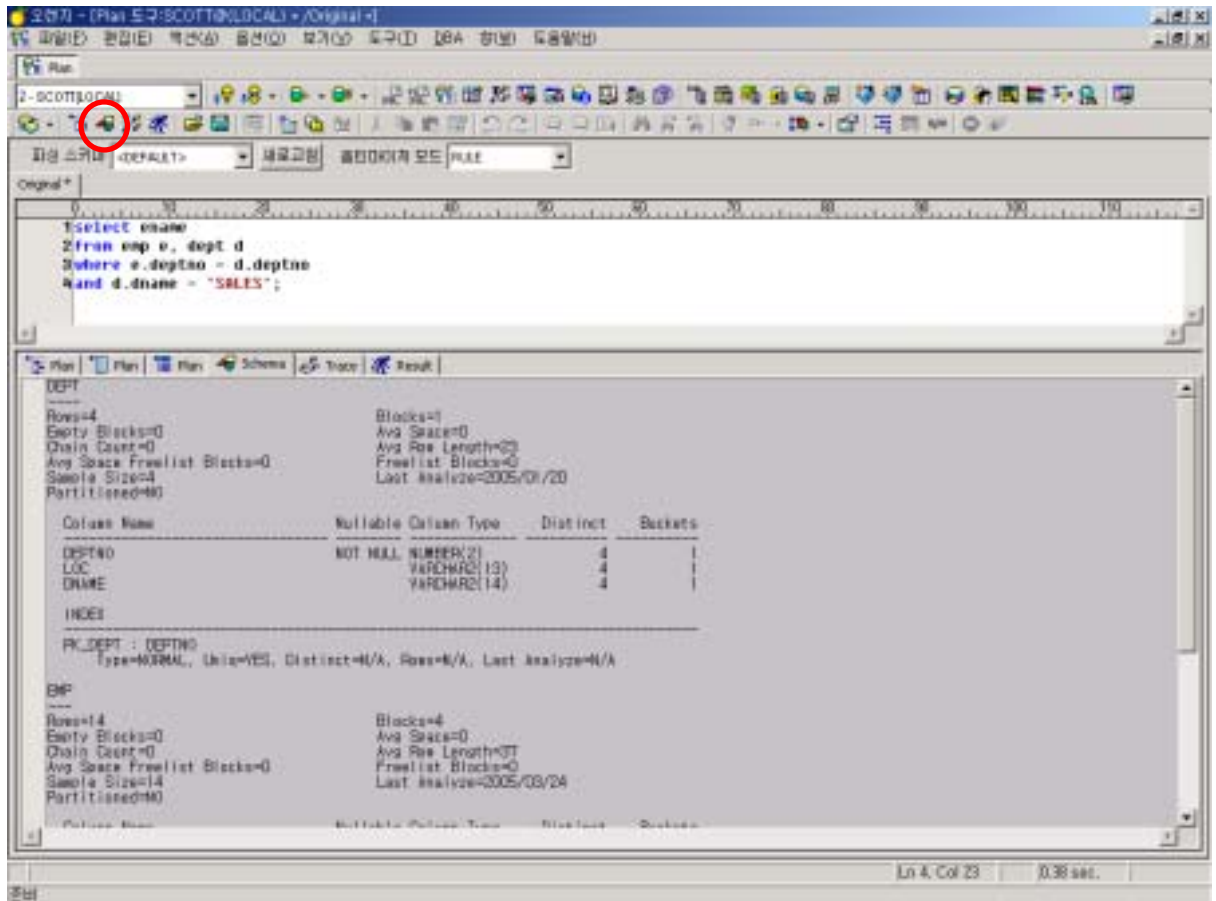
6.4.5 Pro*C Source Code Analysis

Pro*C Source Code Analysis   Pro*C   ".pc"   SQL

     .

            [Action] → [Pro*C Source Code Analysis]   [6.7 – Pro*C Source Code Analysis]

                 .   Text File   .pc

                     , PTD   .pc   .ptd

     .   .

■ Add Source Files   – ".pc"   ".pc"

      . ".pc"   [Local Pro*C Files]   ,

[Remote Pro*C Files]   ".pc"   .   FTP

            ".pc"

    .

■ Output Format –   .   Plan Tool

Workspace   PTD   Text File   .

■ Selected Pro*C File – "Add Source Files"   .pc

            . Remote Pro*C   Server Name   User Name   . [Delete]

            .pc   .

■ Execution Plan Item to Detect – ".pc"   SQL

      .   Full Table Scan   Cartesian Product

                                    .   "ALL SQLs"

    .

■ Plain Text Document Output – Output Format   Text File   . Table Information

                                    ,

                                    .

■ Folder to Save Analysis Result – PTD   .

■ Start –   .pc   .   "Selected Pro*C File"

    Success/Total   . .pc   SQL   SQL   .

      .pc   (Open Success File, Open Error File)

      .   SQL   Plan Tool,   SQL   .

                .

[6.7 – Pro*C Source Code Analysis]
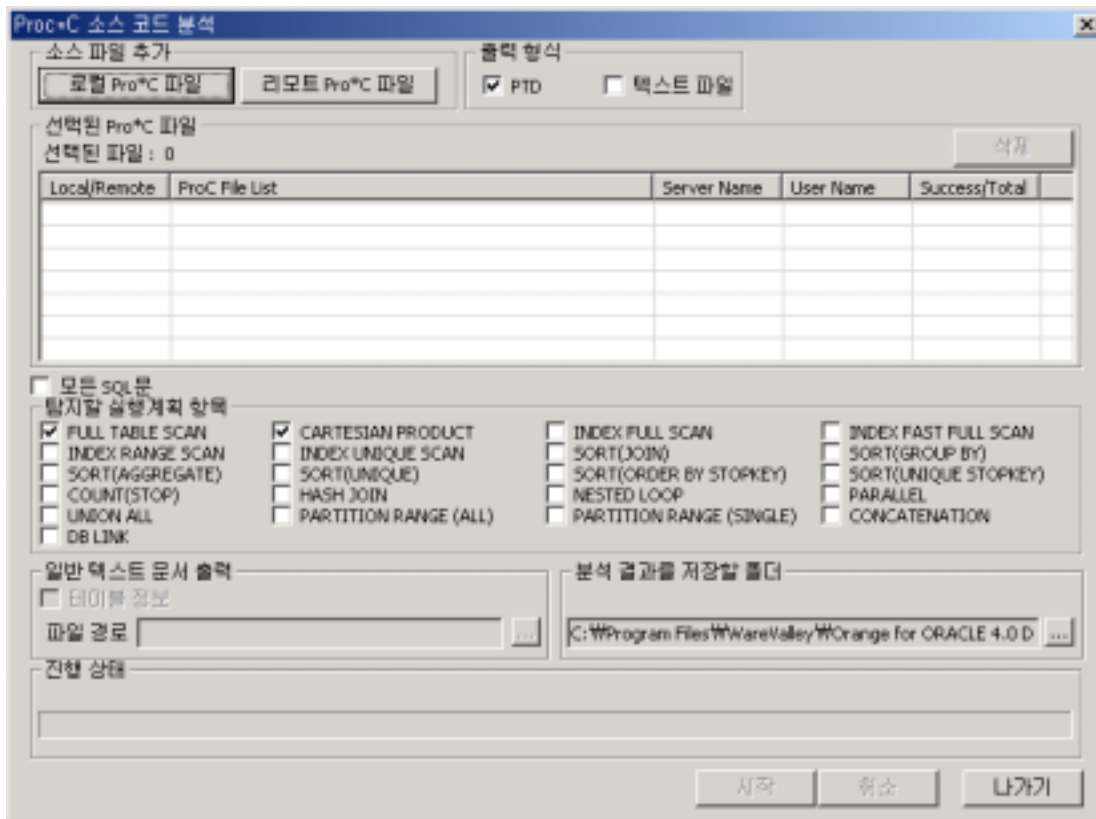
6.5

6.5.1

[   ] → [   ]   FTP

.

[6.8 – Trace Method   ]

6.5.2 Local File

.

- ■ (Windows)
- ■ Windows udump

- ■ udump NFS

    File .

    udump , "Trace Name Format" . NT
, Trace Name Format ORA%05d.TRC(: ORA00123.TRAC) , UNIX
OK .

    [6.9 – Local File]

6.5.3 FTP

FTP   FTP   , FTP

                       .
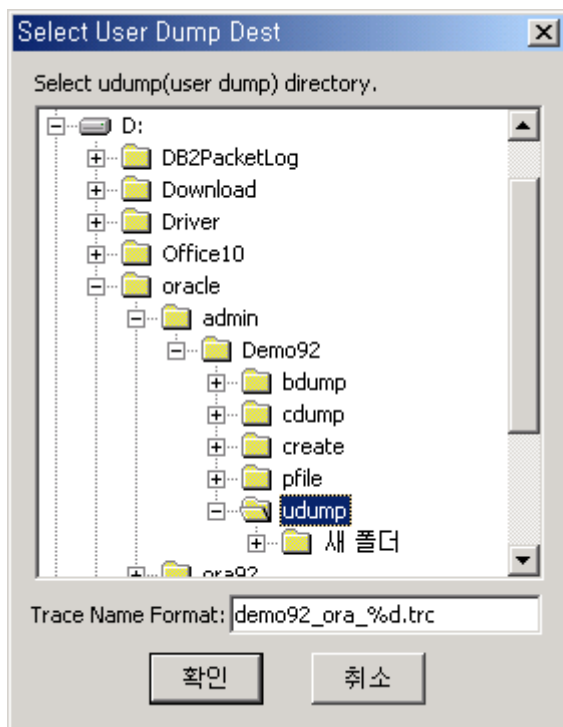
FTP   [6.10 – FTP   ]   , OS User   Password   udump   ,

                                                        . Server Name   udump dir

                      .   , User, Password   256   Port   1~65000

                      .   , Trace Name   Unix   ,   .

          udump   .   udump

                                             ora10344_ora817.trc, ora_2114_ora817.trc   [6.10 – FTP

]   . Trace Name   256   .

[6.10 – FTP   ]

FTP 로그인 정보

서버명 [   ]
사용자명 [   ]
패스워드 [   ]
포트 번호 [21]   □ 패시브 모드

udump dir [D:₩oracle₩admin₩Demo92₩udump₩]
Trace Name [demo92_ora_%d.trc]
* use %[[0]n]d format(printf format) for PID. ex) ora_%d.trc

[확인]   [취소]

6.5.4 Trace Level

                            4   Level   .

[Option] → [Trace Level]   4   Level   . Trace Level

    Level 1   .

- Level 1 :
- Level 4 : Level 1   + Bind
- Level 8 : Level 1   + Waits
- Level 12 : Level 1   + Bind   + Waits

[6.11 – Trace Level   ]
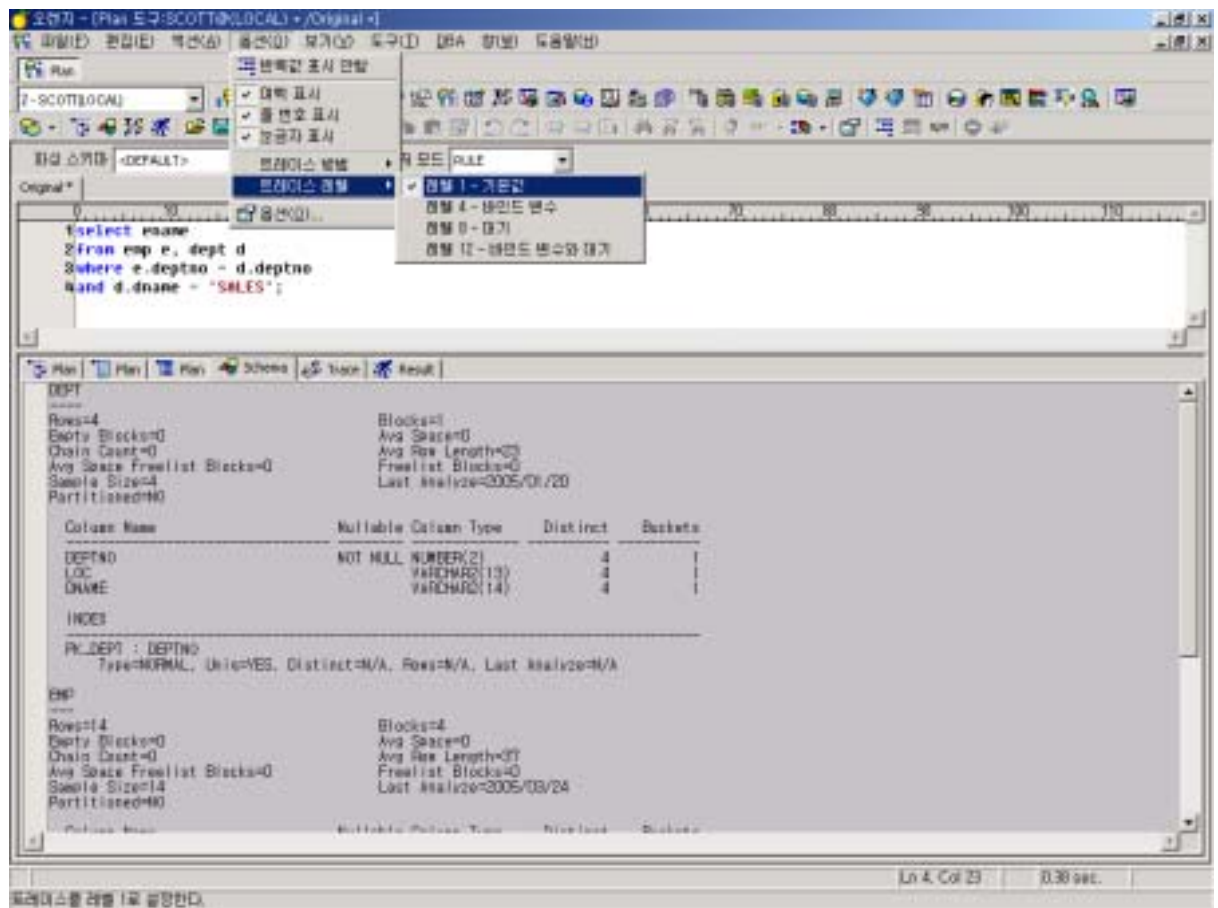
6.5.5

[Show Trace]　(🔲)　　　SQL　　　　　　　　　　[Trace]　　Parse,
Execute, Fetch　　　　　　　　SQL　　　　　　　　　　, Wait　　　,
.

[　　6.12 –　　　Trace　　　]

6.6 Plan Tool 에서 SQL 실행

SQL 문장을 작성한 후 이 문장을 실행하려면 SQL Run Icon(🏃)을 클릭합니다.
합니다.

SQL 실행의 기본 동작은 [Option] → [Options…] 메뉴에서 선택할 수 있습니다. [Database]
탭에서 설정합니다. "Fetch As Need" 옵션을 선택하면 "Initial Fetch"
에서 설정한 만큼의 Row만 가져옵니다. "Fetch as Need"

Row 를 가져온 후 나머지를 Retrieve 하려면,

[Fetch All Rows] 메뉴를 선택합니다.

[그림 6.13 – SQL 실행화면]

6.6.1 Row Viewer

Grid   ,

[Row Viewer]

Row Viewer   . (Appendix B   )

[6.14 – Row Viewer]
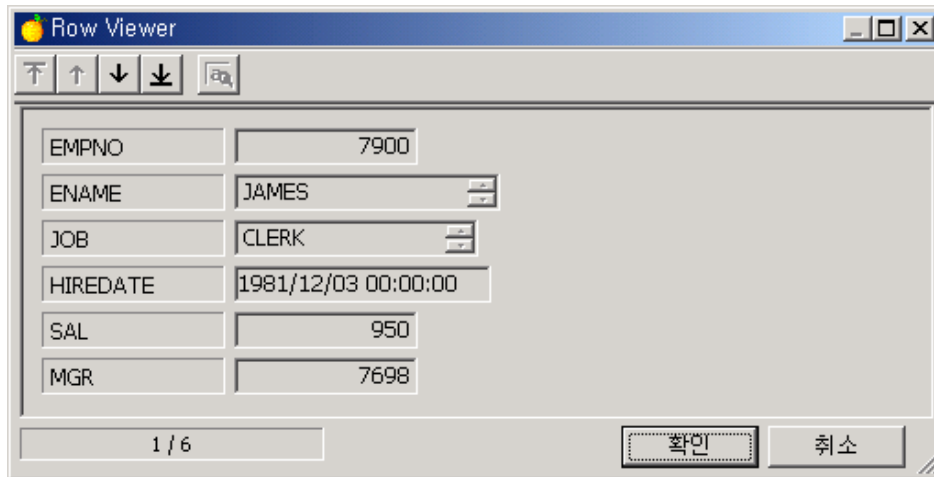
6.6.2 SQL

SQL Editor   SQL   ,

SQL   Paste   .

Copy   ,

.

■   .

▸ Visual Basic

▸ PowerBuilder

▸ C/C++

▸ Delphi

▸ Java

▸ Perl

■   [Edit] → [Copy as Programming Language Code]   SQL

.

▸ Copy as Visual Basic Code

▸ Copy as C/C++ Code

▸ Copy as PowerBuilder Code

▸ Copy as Delphi

> Copy as Java

> Copy as Perl

■   [Edit] → [Paste from Programming Language Code]

   SQL   .

> Paste from Visual Basic Code

> Paste from C/C++ Code

> Paste from PowerBuilder Code

> Paste from Delphi Code

> Paste from Java Code

> Paste from Perl Code

6.7 Workspace

Plan tool   SQL,   ,   ,   Workspace

. Workspace   .   SQL Editor   SQL

    ,   Plan,   ,   , SQL   . Workspace

                           .

6.7.1

Plan Tool   "Original"   .   ( )

      Plan   SQL   SQL

     .   SQL   Plan   ( )   .

   Plan   ( )   Plan

     .

6.7.2 Plan Tool

Workspace   .   SQL, SQL

          (,   ,   ),   ,

                         .

            SQL   Workspace   . .ptd

    ,   ,

     SQL   SQL

DBA   .

[6.15 – Workspace   ]
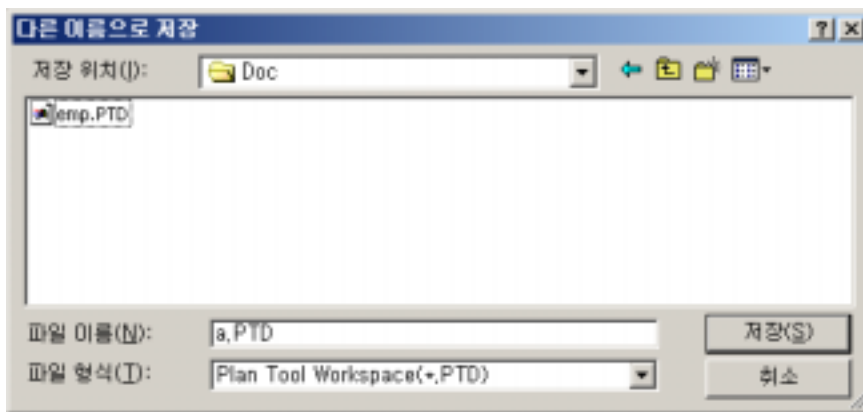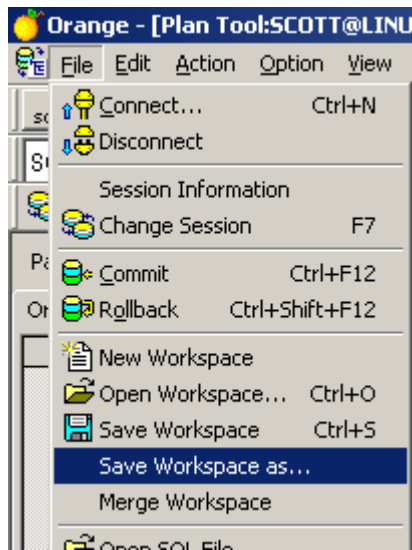
6.7.3 Workspace

[   ] → [   ]   2   Workspace   Workspace
    .

6.8 Plan Tool

6.8.1 General

Plan Tool   (default)   .
(   )   General   "   "   "   "   "   "   . Plan Table
                              (orange.orange_plan_table)

                    . Plan Table   61   .

[6.16 – Plan Tool   General   ]
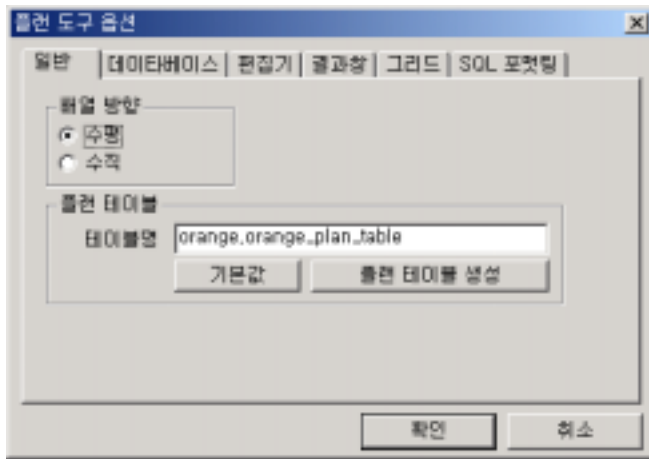
[6.17 –   Plan Tool]
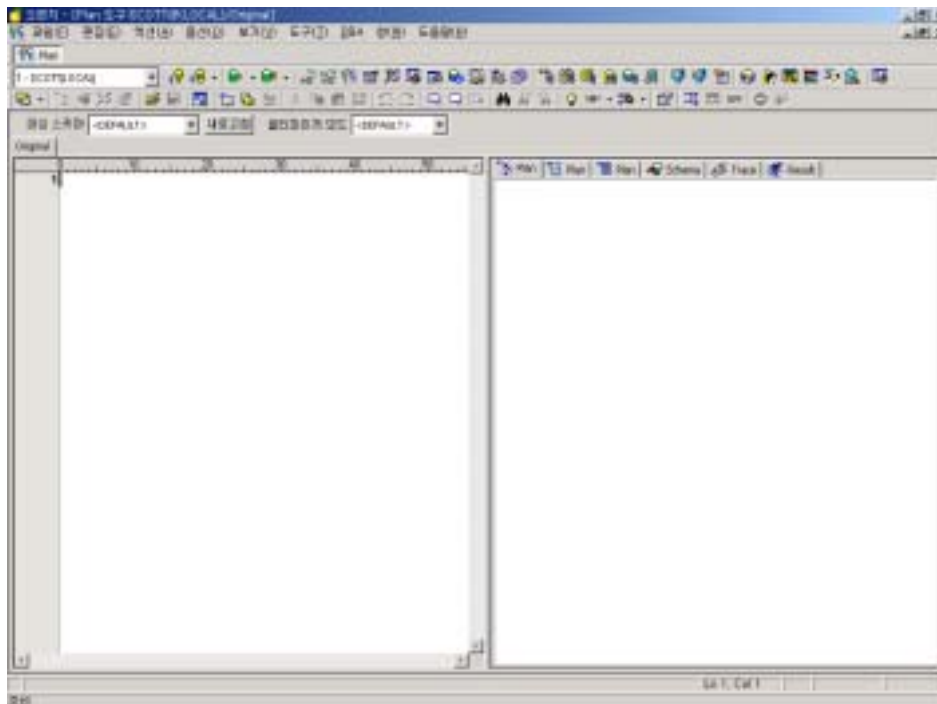
6.8.2 Database

" " Fetch .

. "Long "

Long type . " "

Initial Next . 1000 Initial 100

Next 10 100

10 . " " Bind Variable List

. " ", "Long " 1

"Initial/Next Fetch" 1 429496729 .

" " Row

Retrieve , [

] Retrieve .

[6.18 – Plan Tool]
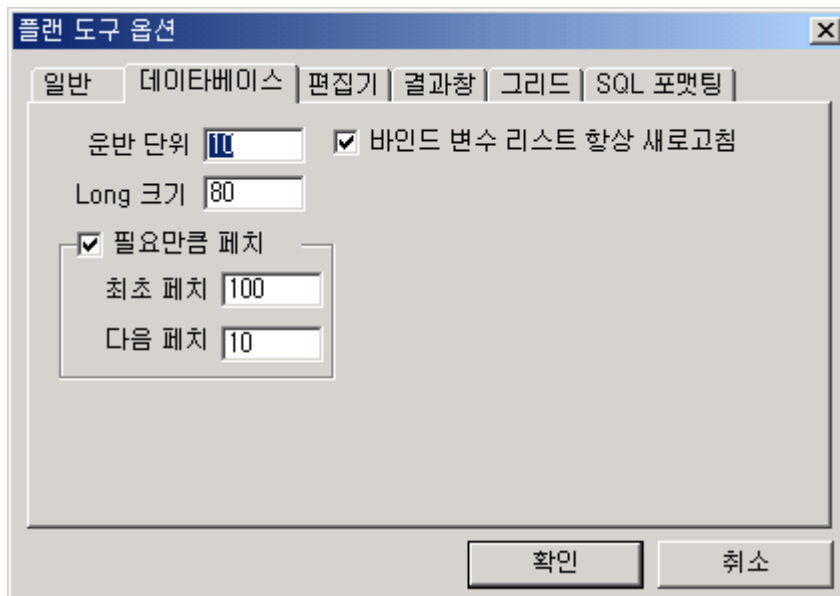
6.8.3 Editor

Plan Tool   . "   "   "   "
                    "   "   Margin   .
                              .
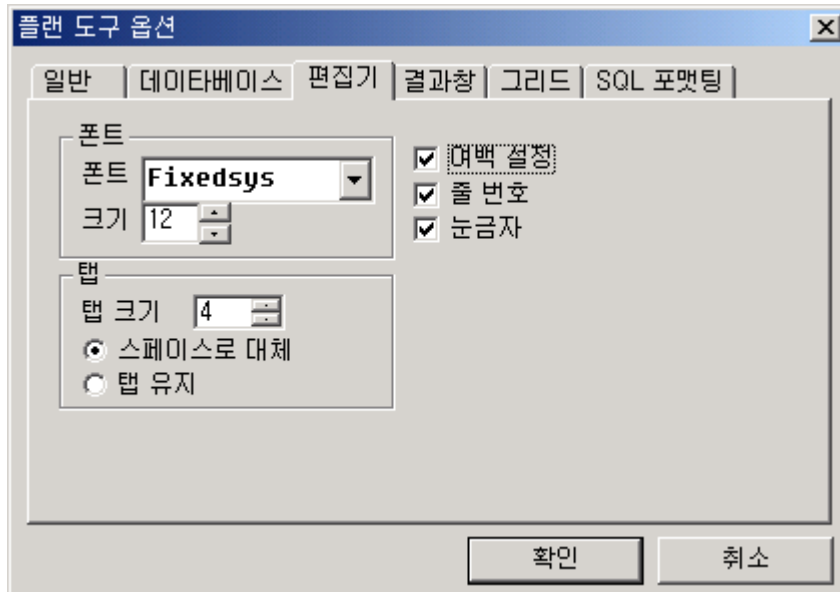
[6.19 – Plan Tool   ]

6.8.4 Result

Plan Tool   . "Fixedsys"   True Type
                                                                   .   SQL
                    .
"   "   Null   Null   . Insert
                                        Space   .
"   "   "   "
          .

[6.20 – Plan Tool   ]

6.8.5 Grid

"   "   "
   "   . "   "
                                                                                      "   "
                                                          . "   "

플랜 도구 옵션

일반 | 데이타베이스 | 편집기 | 결과창 | 그리드 | SQL 포맷팅 |

그리드 색상
☑ 지정된 배경 색상 사용
   배경 색상 [▼]

정렬
칼럼 헤더 클릭시 액션
○ 정렬   ⊙ 칼럼 선택
☐ 정렬시 대소문자 구분

확인   취소
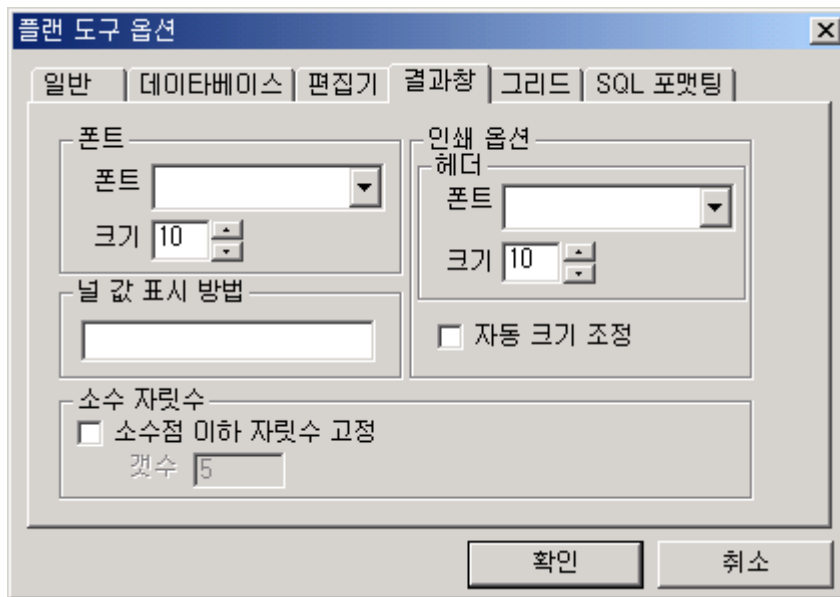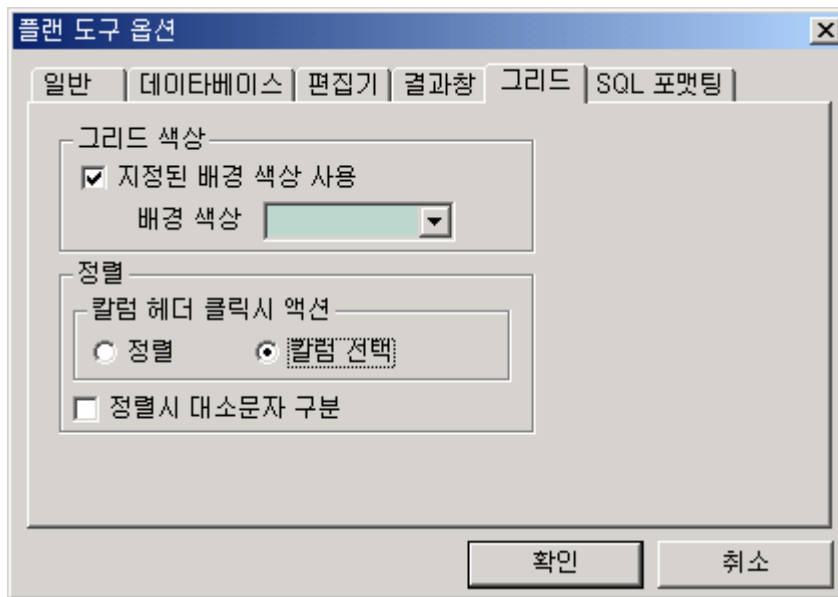
6.8.6 SQL Formatter

"Order by" "Group by"   SQL

.

[6.22 – Plan Tool   SQL   ]
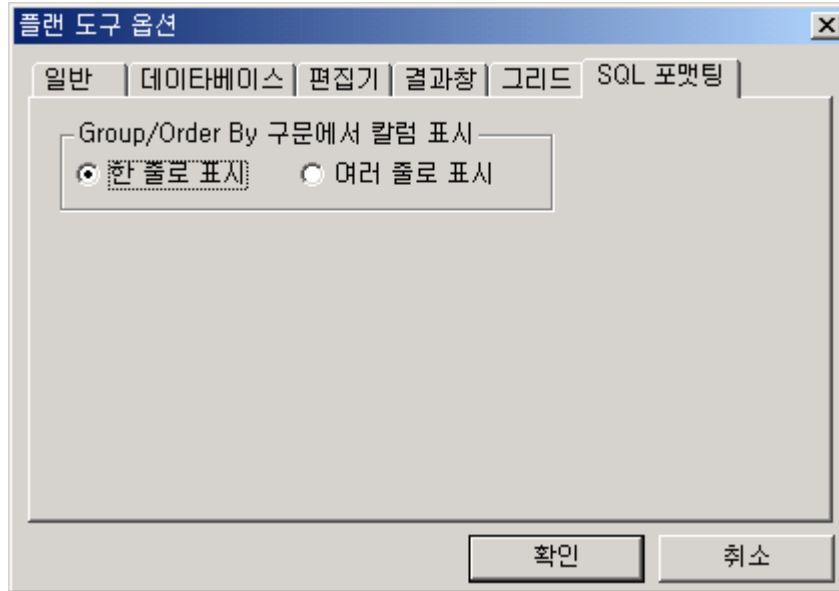
7. SQL Tool

SQL Tool   SQL   PL/SQL   .
                                                                            ,
SQL   .
            DML   DDL
    (DDL, DML)   .   Description
        SQL   . SQL
        SQL   .

7.1 SQL Tool

- ✓   SQL(DDL, Query, DML)   ,   ,   ,   SQL   ,   tab

- ✓   Workspace
- ✓   SQL   ,   ,
- ✓   SQL   GRID   , Text
- ✓   SQL   Save as EXCEL
- ✓   SQL   (SQL Formatter)
- ✓   (Bind variable)
- ✓
- ✓   Retrieve As Need
- ✓   Syntax Highlight
- ✓   Edit   (Block Comment/Uncomment, Find & Replace, Goto Line,   Matching, Bookmark, …)
- ✓   SQL   Visual Basic, PowerBuilder, C/C++, Java Delphi, Perl
- ✓   Last SQL   Display   Refresh
- ✓   Large Objects(LOBs/FILE), LONG, RAWs   Data type Selection   Save
- ✓   (Edit Mode)

7.2 SQL Tool

	F5	SQL	.		
	Ctrl+M		SQL	.	
	Ctrl+J			.	
	Ctrl+K		.		
	Ctrl +L	SQL	TEXT	.	
		SQL	.		
			.		
		SQL			
		SQL			
		Query Builder			
		SQL Formatter			
		Bind			
		SQL Template			

7.3 SQL Tool

7.3.1 SQL Tool

[   ] [   ]   [   ]   [SQL Tool]

SQL

SQL   (   )   SQL   .

7.3.2 SQL

SQL Tool   SQL(DDL, Query, DML)   ,   ,   ,   SQL
          .

                              SQL   . "   "( )   SQL   "
    "( )   , "   "( )
                                                      . "   "( )

      SQL   .
SQL   SQL   "   "( )   .   "   "( )
                  SQL   .   [7.2 -   SQL
]   .

[7.1 –   ]
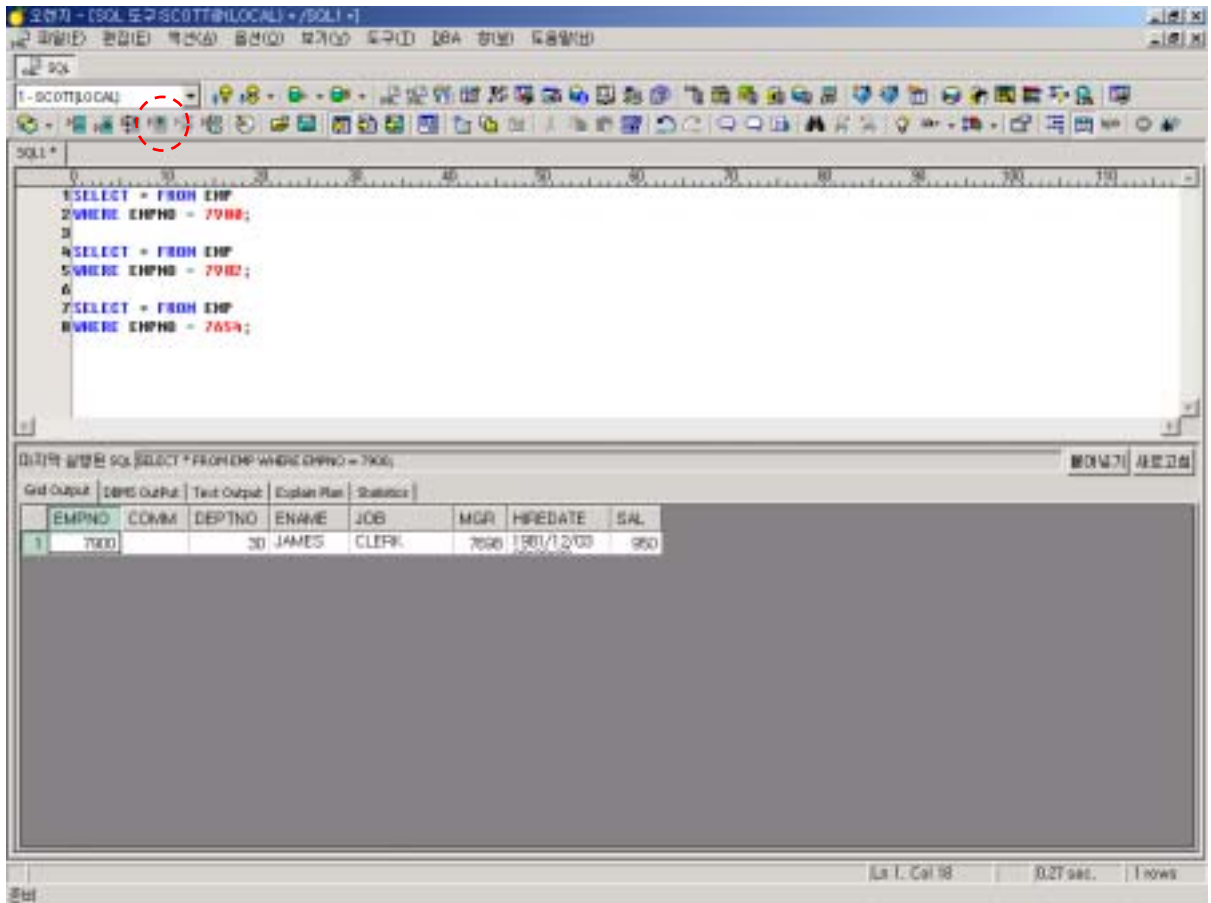
[7.2 -   SQL   ]
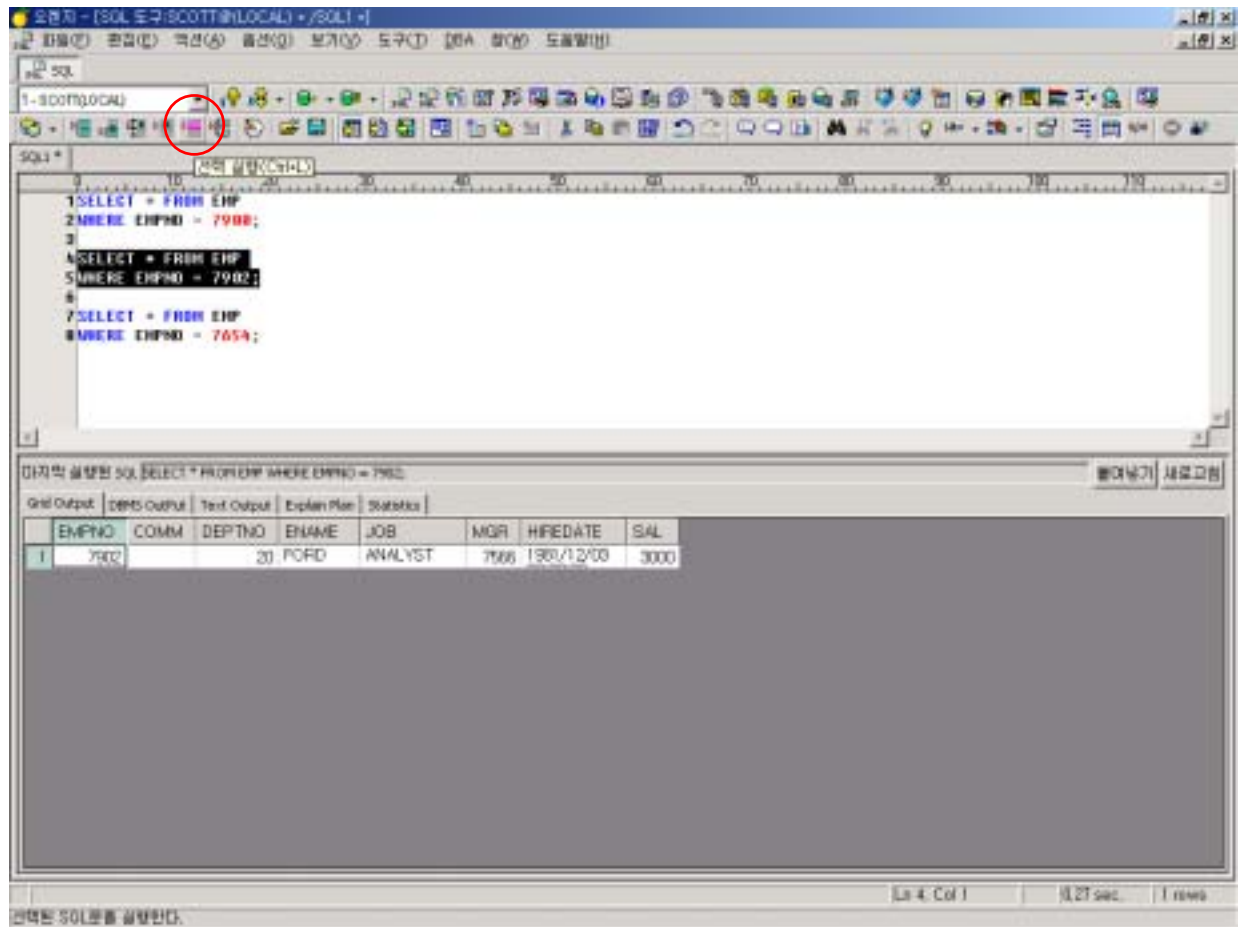
7.3.3 LOBs, LONG, RAWs

■   (character)   (CLOB, LONG)   SQL Tool

                 .   Hexa Code   , BFILE

   BFILE   .

■   Table Editor   Import, Export   . (15

   Table Editor   )

[7.3 – SQL Tool   CLOB, LONG Datatype   ]

[7.4 – SQL Tool   BLOB, BFILE Datatype   ]

■   Lob/Long   Grid   [

   7.5 – Export LOBs, LONG, RAWs   ]   [Export LOBs, LONG, RAWs]   .

              [7.6 – Column Export   ]   Column Export

   .

[7.5 – Export LOBs, LONG, RAWs   ]
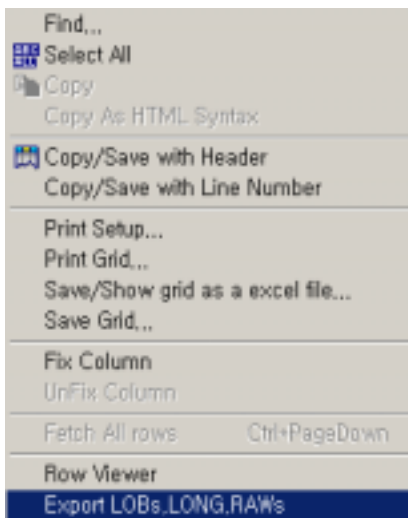
■ Column Export   Lob/Long

. "   "   . "

"   (: COL4)   "   "   . "   "

. "

"   , "   "

(: COL1)   .

. "   "   "

"   .

[7.6 – Column Export   ]
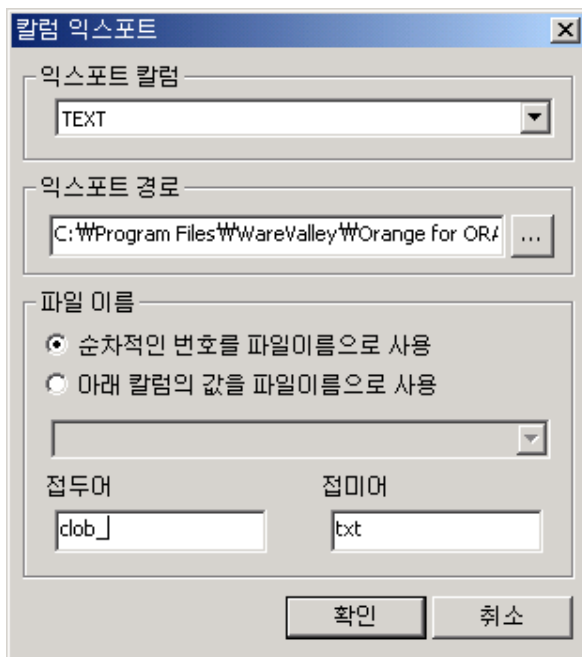
7.3.4

SQL   Grid   ( )   Text   ( )   .

DBMS_OUTPUT.PUT_LINE   [Server Output]   . Grid

     [7.7 -   SQL Tool   (Text Output)]   Text   .

- ■   Text Output   [   ] → [   ]   .
- ■   Server Output   [Action] → [   ]   .

     [**7.7 -**   **SQL Tool**   **(Text Output)]**
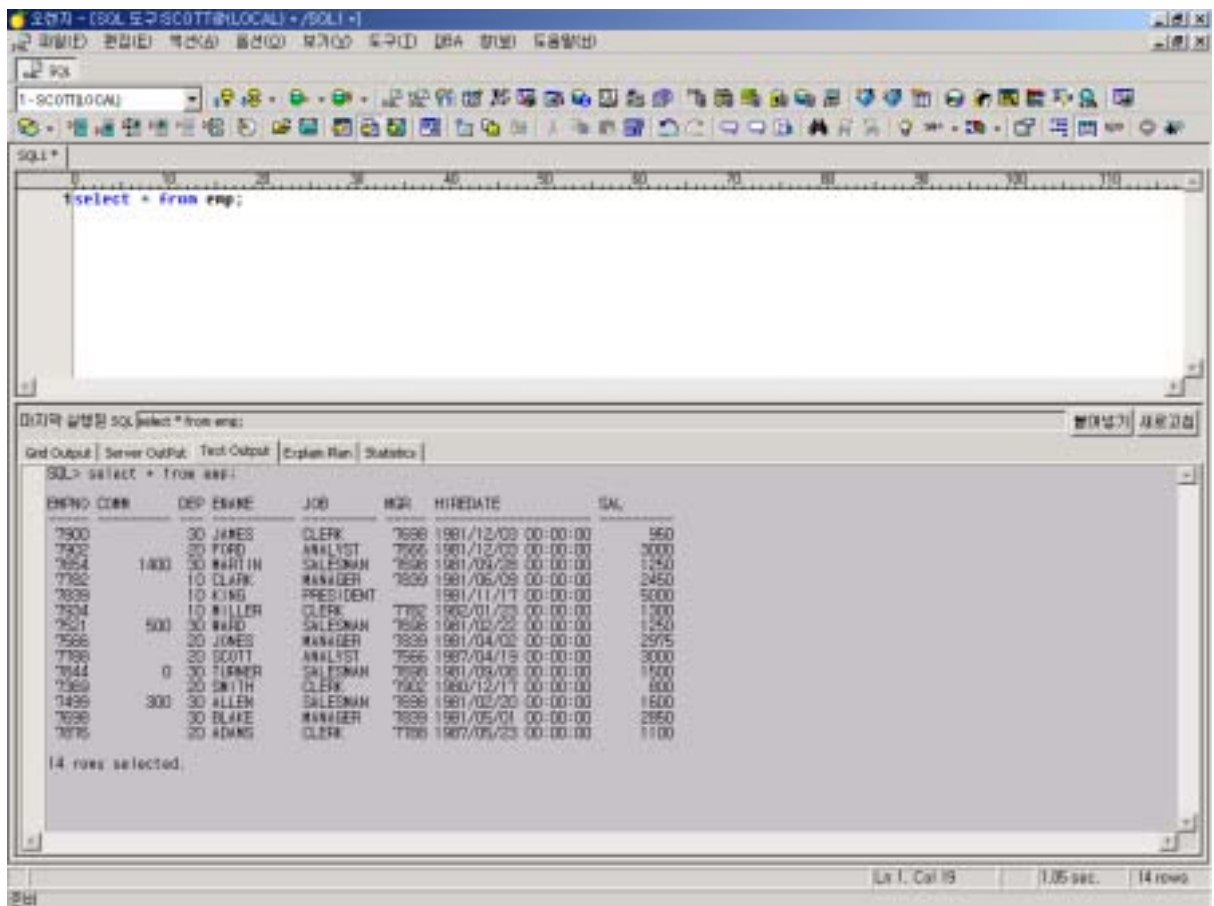
7.3.5 Row Viewer

Grid   ,

[Row Viewer]

Row Viewer   . (Appendix B   )

[7.8 -   Row Viewer]

7.3.6 　　　　　　　　　 Description

SQL　　　　　　　　　　　　　　　　, NULL　　　　,
　　　　.　　　　　　　　　　　　　　　　　　　　　　　　.

[　　　7.9 -
]　　[　　　　　　　]
　　　　　　　　　.　　　　　　"Alt+C"　　.

[　　　7.9 -　　　　　　　　　　　　　　　　　　　　　　　]

[　　　7.10 -　　　　　　　　　　　　]

7.3.7 Full Description

       Full Description (Indexes, Constraints, Storage, Partitions, Triggers, Snapshot Logs, Columns, Table Info, Object Info, Segment, Statistics, Sample Data, Script, Grants, References, Referenced By) . (Full Description 14. Description Tool)

[7.11 –]

[ ] Description Tool

. F4 .

[7.11 –]
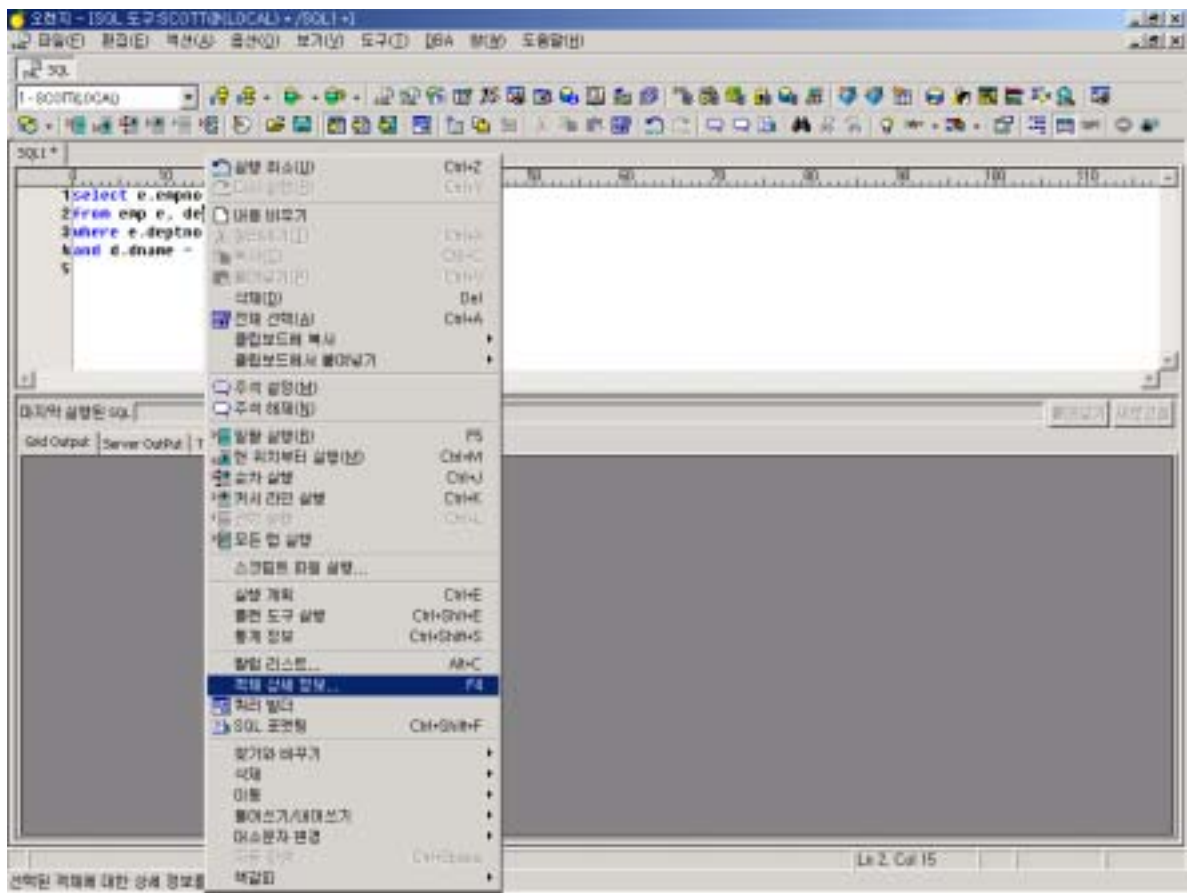
7.3.8 Comment , Uncomment

Line   "   "

"--"   "   "

SQL   .

[7.12 -   Line   ]

7.3.9 Named Script

SQL   .
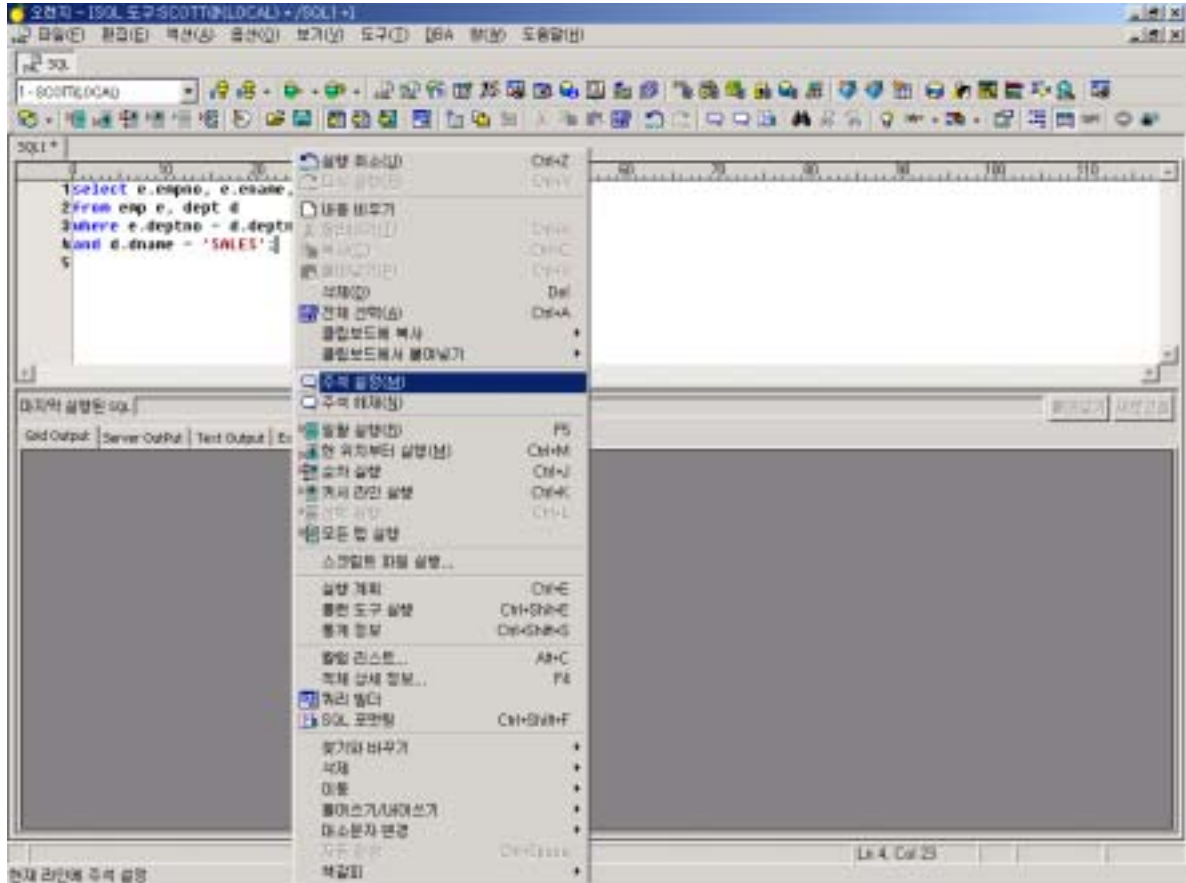
SQL   SQL   SQL   [   ]   [
        …]   "   "   .
    "Script Name"   [OK]   "   "
  .

[7.13 –   ]

[7.14 –   ]
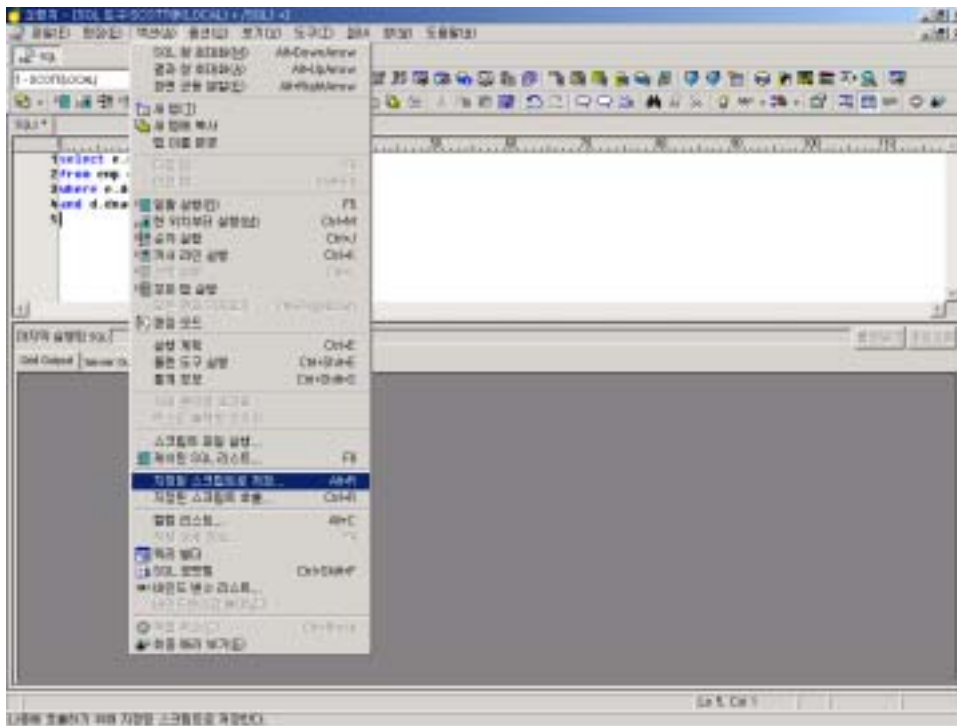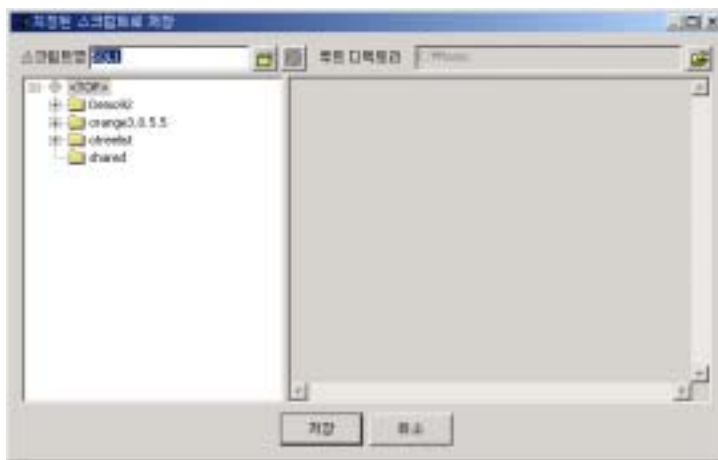
SQL   [   ]→ […]
    "   "   .
SQL   "Scripts"   ,
                                               , F2   rename,
        Script   .

[7.15 –   ]

                        SQL   [   ]   SQL   SQL
        .

[7.16 –   SQL   ]
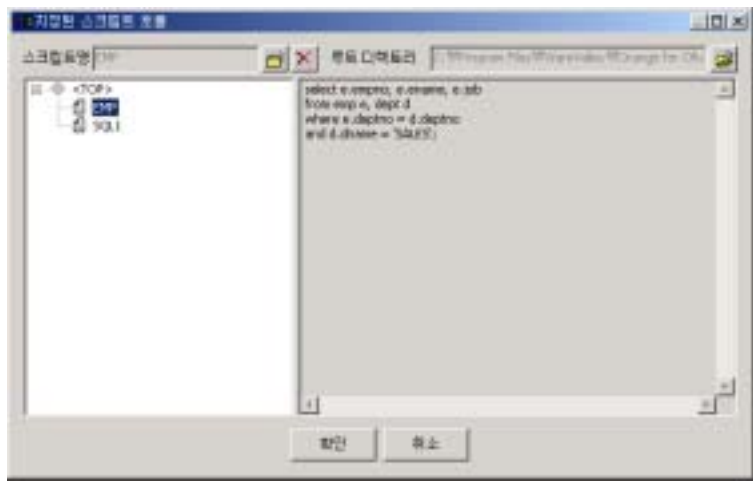
7.3.10 Cached SQL

수행된 SQL 문장에 대한 목록을 나타냅니다. [보기] → [수행된
SQL 목록…] 메뉴를 선택하거나 단축키 (F8) 키를 누르면 나타납니다.

- [SQL List] 탭에서는 수행된 SQL 문장을 확인할 수 있습니다. [SQL List] 탭에서 특정 SQL 문장을 [SQL] 탭에서 확인할 수 있습니다.

- 찾고자 하는 SQL 문장에 대한 일부의 단어를 " " 입력란에 입력한 후 [찾기] 버튼을 클릭하면 해당하는 SQL List 만을 나타내며, [찾기] 버튼을 반복해서 클릭하면 해당하는 SQL 문장을 계속해서 찾아 나타냅니다. " " 입력란에는 최대 256 자까지 입력 가능합니다.

- [비우기] 버튼을 클릭하면 선택한 SQL 문장이 제거됩니다. 선택한 SQL 문장을 제거하면 Cached SQL 에 저장된 SQL 문장도 제거됩니다.

- 여러 개의 SQL 문장을 [삭제] 하거나 한꺼번에 [모두 삭제] 할 수 있으며, 여러 문장을 선택할 경우 Shift 또는 Ctrl 키를 이용하여 선택할 수 있습니다.

[그림 7.17 – Cached SQL 화면]
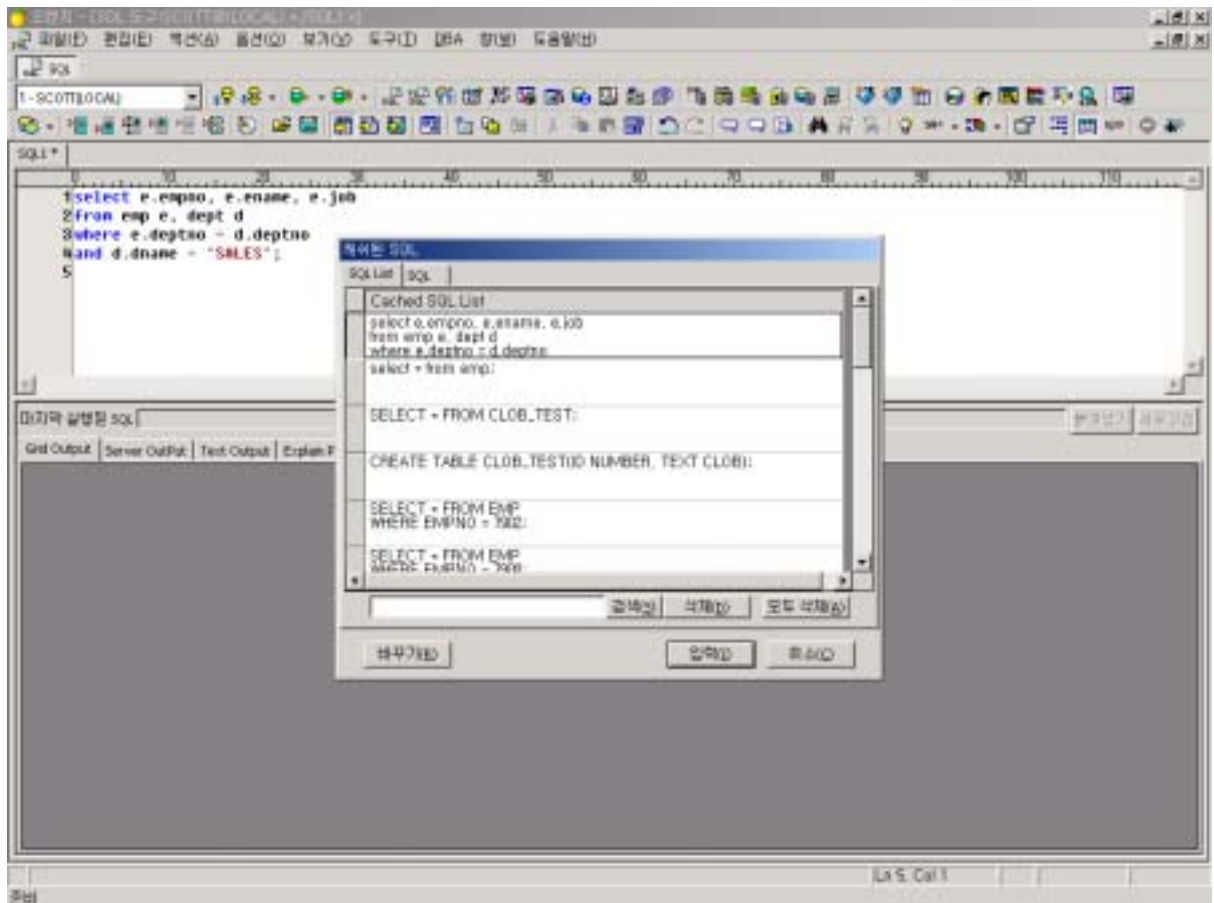
7.3.11 SQL Formatter

SQL Formatter [7.18 - Formatter SQL]

SQL [7.19 - Formatter SQL] .
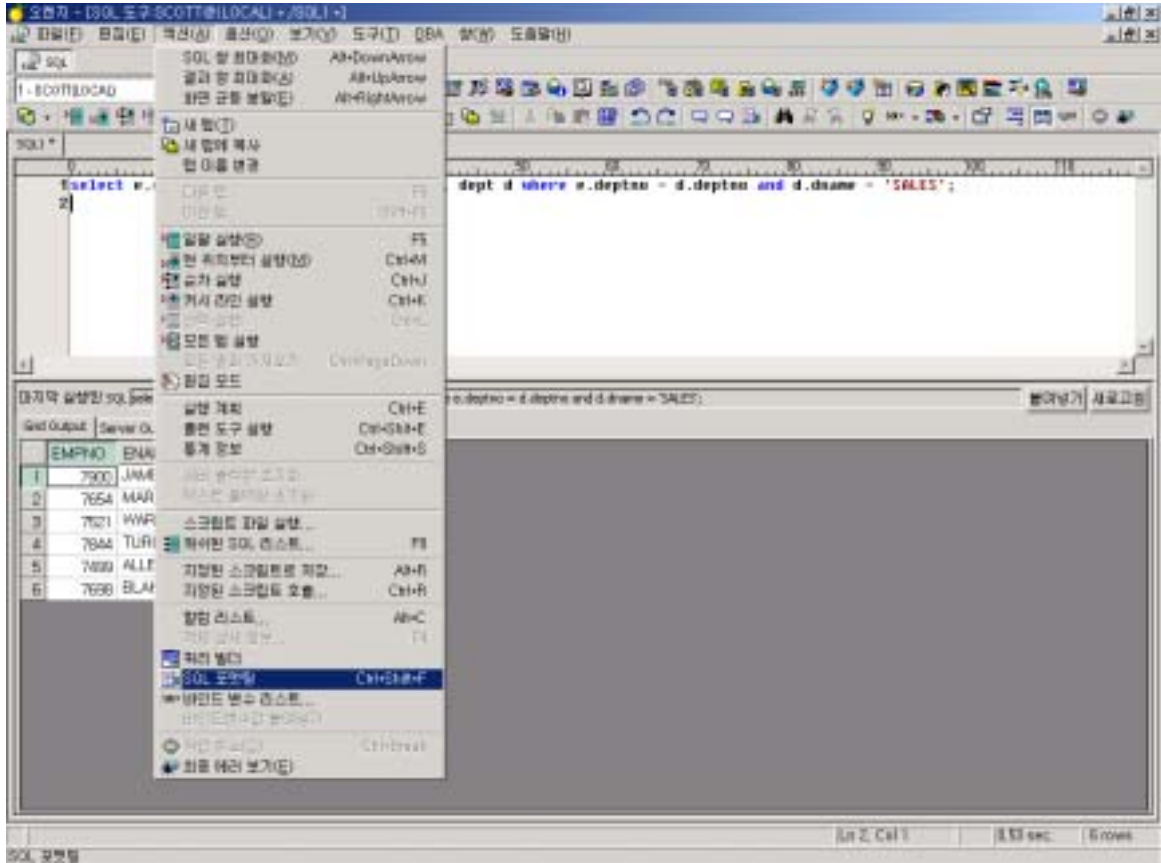
[7.18 - Formatter SQL]
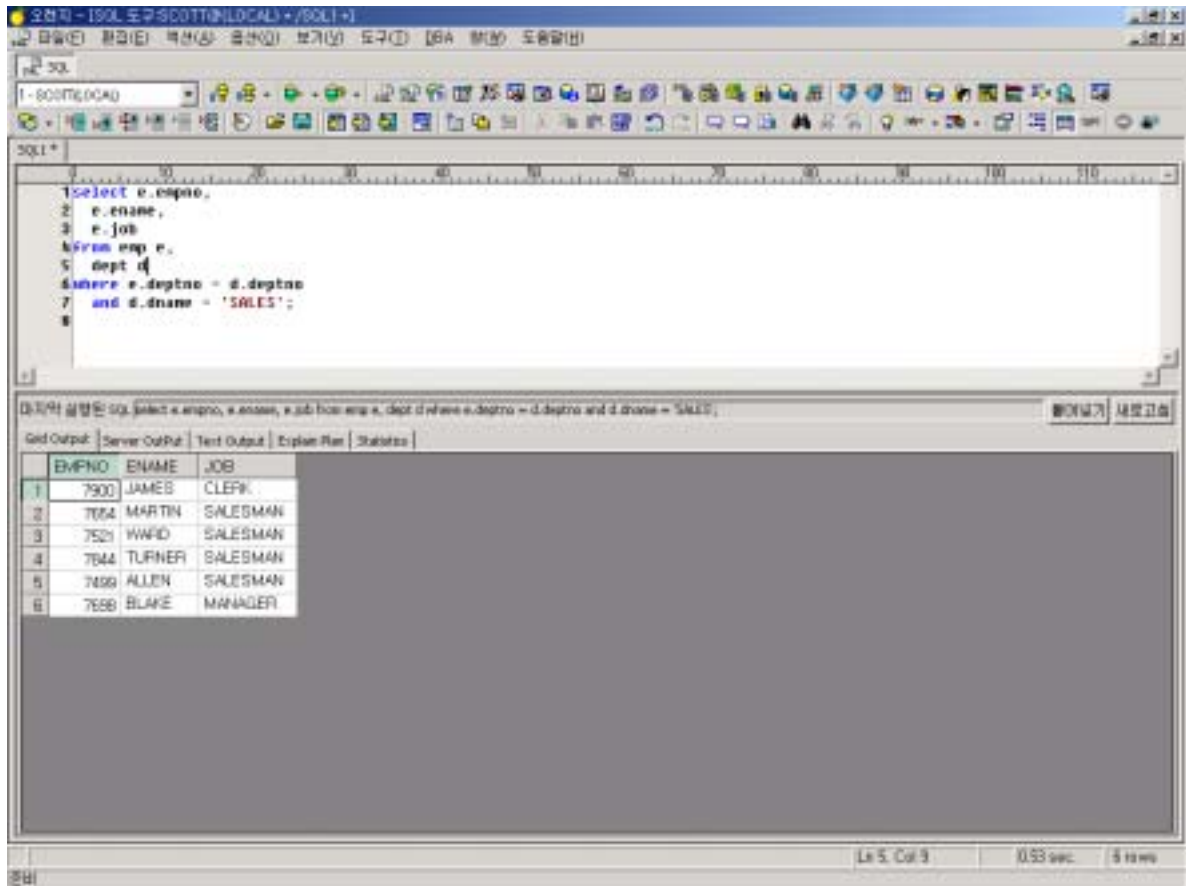
7.3.12 Refresh Last Execution Result

Orange for Oracle V2.2   SQL Editor   Result Pane   SQL
                .   Editor   SQL   Result Pane   SQL
                                        SQL   .

Last SQL   [   ]   [   ]   . [   ]

        Last SQL   Editor   Last SQL   , [   ]

        Last SQL   .

[7.20 – Display and Refresh Last Execution SQL]
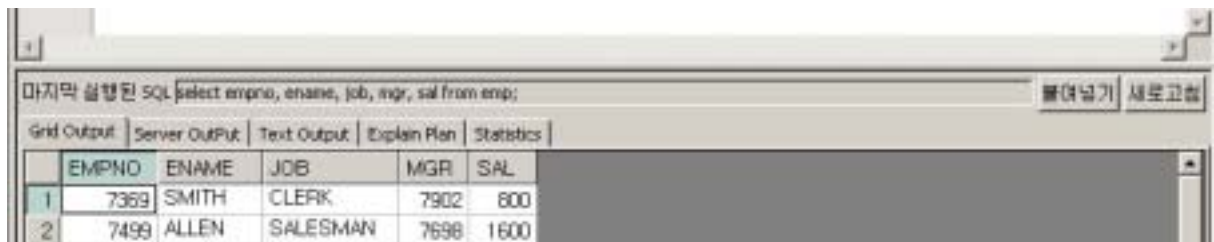
7.3.13 SQL Template

[   ]→[   ]   SQL(DML, DDL)

    DML, DDL   SQL

,   ,   SQL   .

- DML (Select, Insert, Insert Select, Update, Delete)
- DDL (Create Table, Create Table As Select, Create Index, Create View, Create Sequence, Create Synonym, Create Database Link)
- PL/SQL (Create Function, Create Procedure, Create Trigger, Create Package, Create Package Body, Create Java, Create Type, Create Type Body)
- PL/SQL Control Structure (IF-THEN, IF-THEN-ELSE, IF-THEN-ELSEIF, LOOP, WHILE-LOOP, FOR-LOOP, CURSOR-FOR-LOOP)
- Pseudo Column (CURRVAL, LEVEL, NEXTVAL, ROWID, ROWNUM)
- SQL Function (Single Row Number, Single Row Character, Single Row Date, Single Row Conversion, Miscellaneous Single Row, Aggregate, Analytic, Object Reference)

  ➢   Oracle

[7.21 – SQL Template   ]

7.3.14

, , . , ,
[ ]→[ ] 5 .

- :
- :
- :
- :
- / : ,
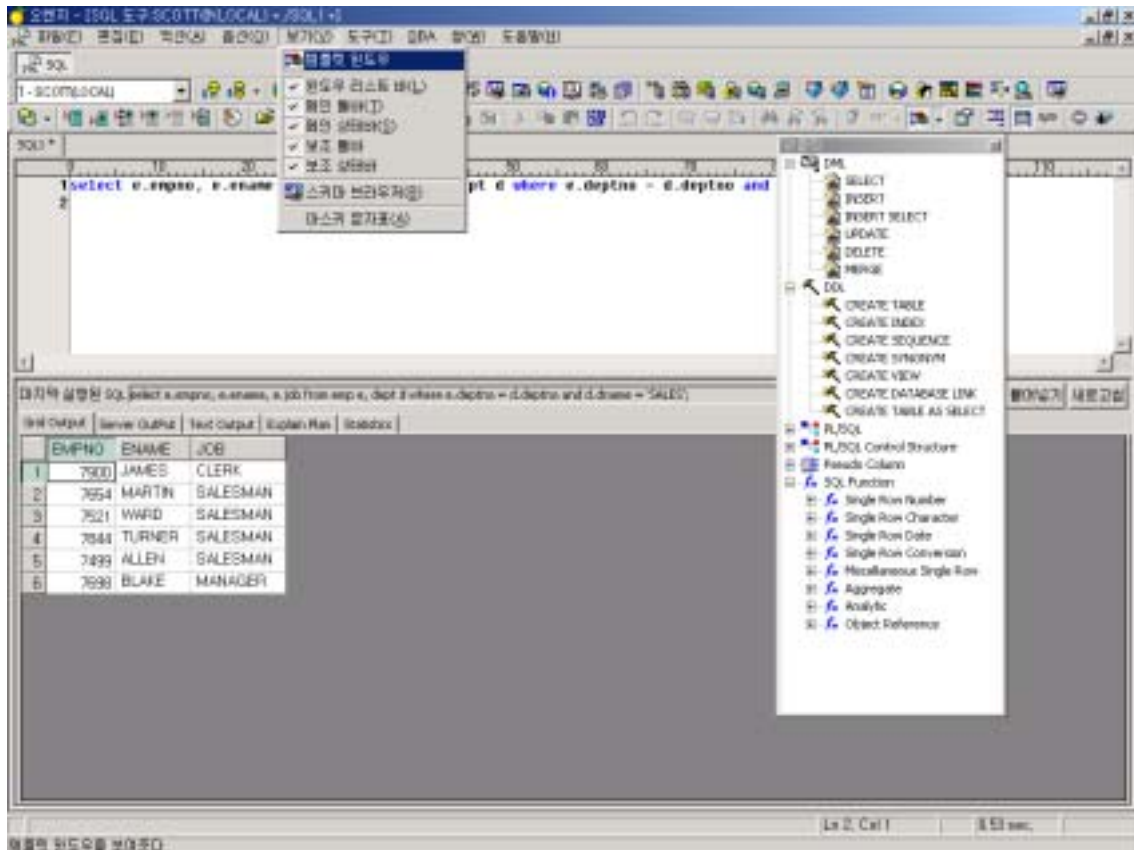
[7.22 -]
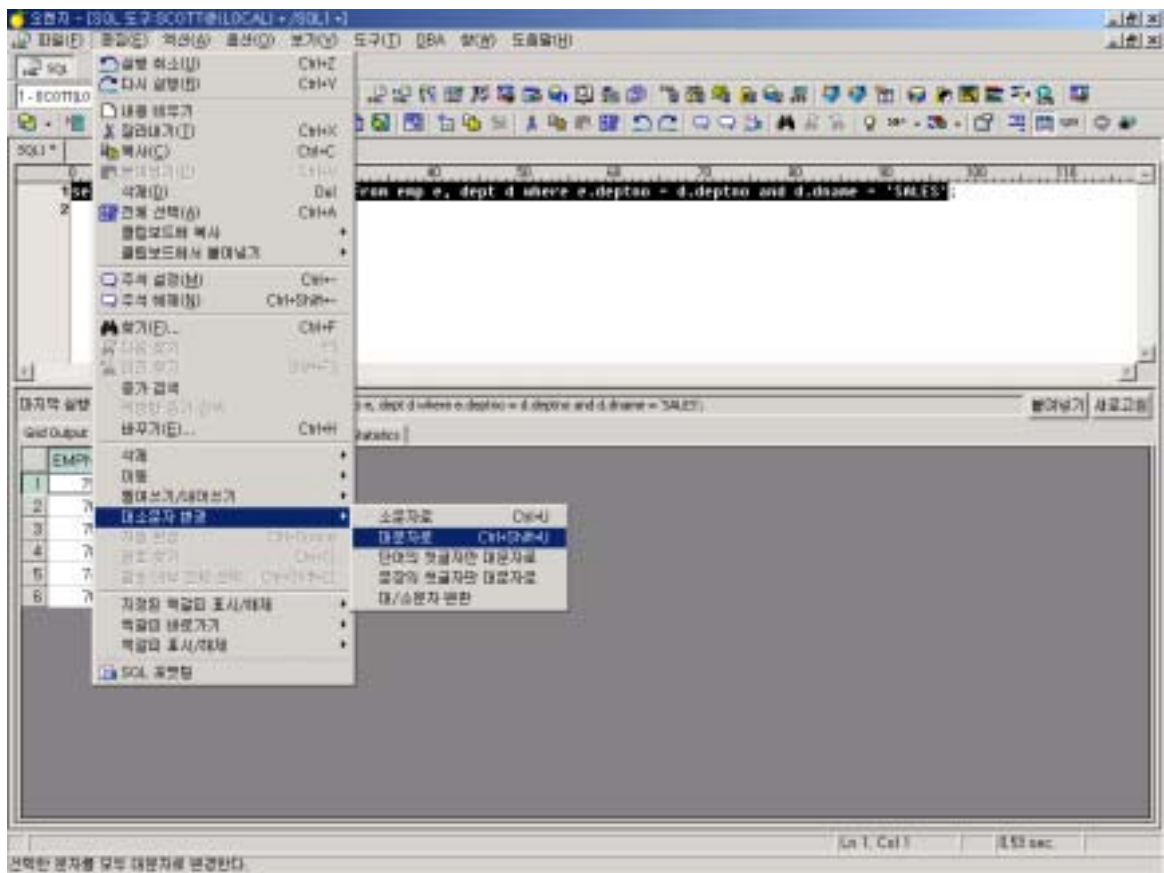
7.3.15 SQL

SQL   (Decode, Substr, Instr, Sign…)   ,
                    .   [   ]→ [   ]
              .

[7.23 -   ]

7.3.16 Bookmark

SQL   ,   SQL

            [   ]→[/   ]→[0~9]   [ALT+0~9]   [

]→[   ]→[0~9]   .

                  [   ]→[/   ]→[   ]

                    .

- ■   [   ]→[   ]   4
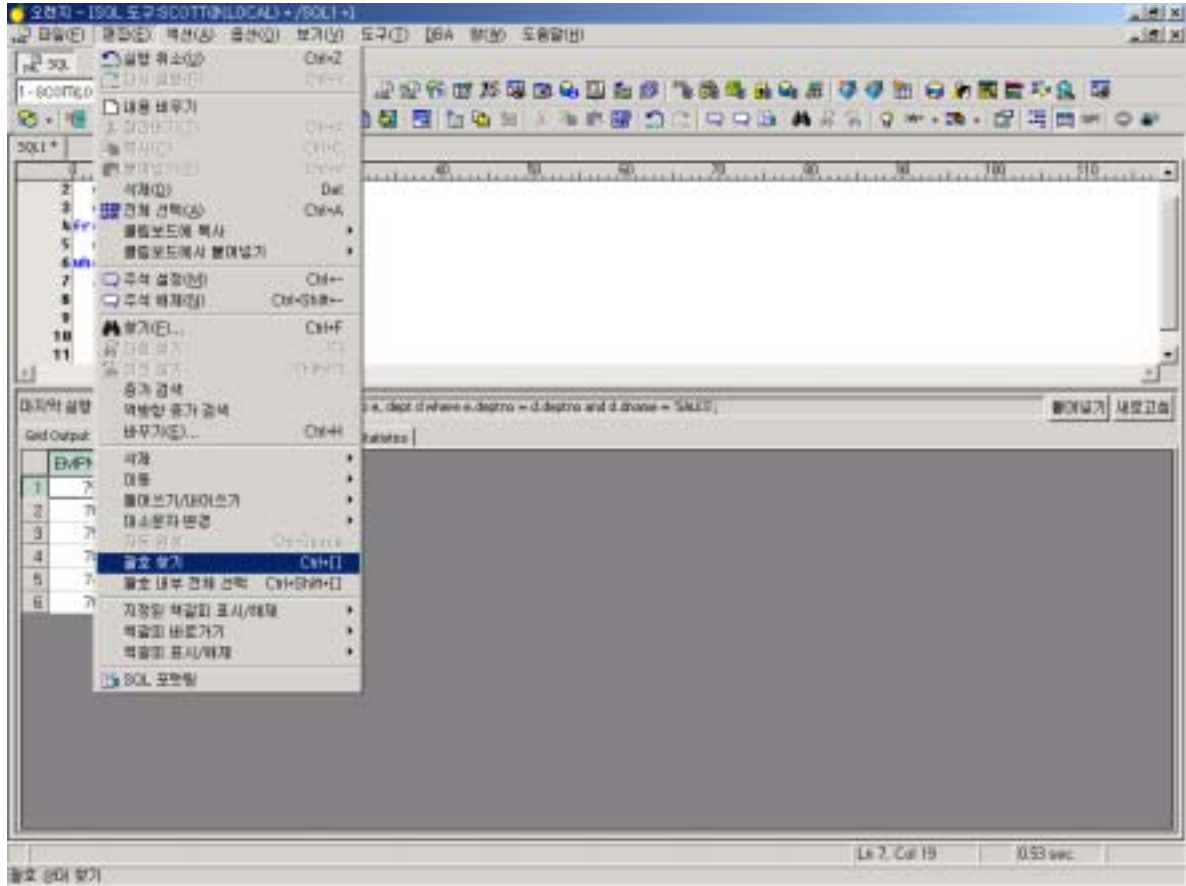
  - ➢   /   (Ctrl+F2) :   .
  - ➢   (F2) :   .
  - ➢   (Shift+F2) :   .
  - ➢   (Ctrl+Shift+F2) :   .

  [7.24   ]

7.3.17

SQL   ,   SQL

                   [   ]→[   ]

     "   "   [   ]
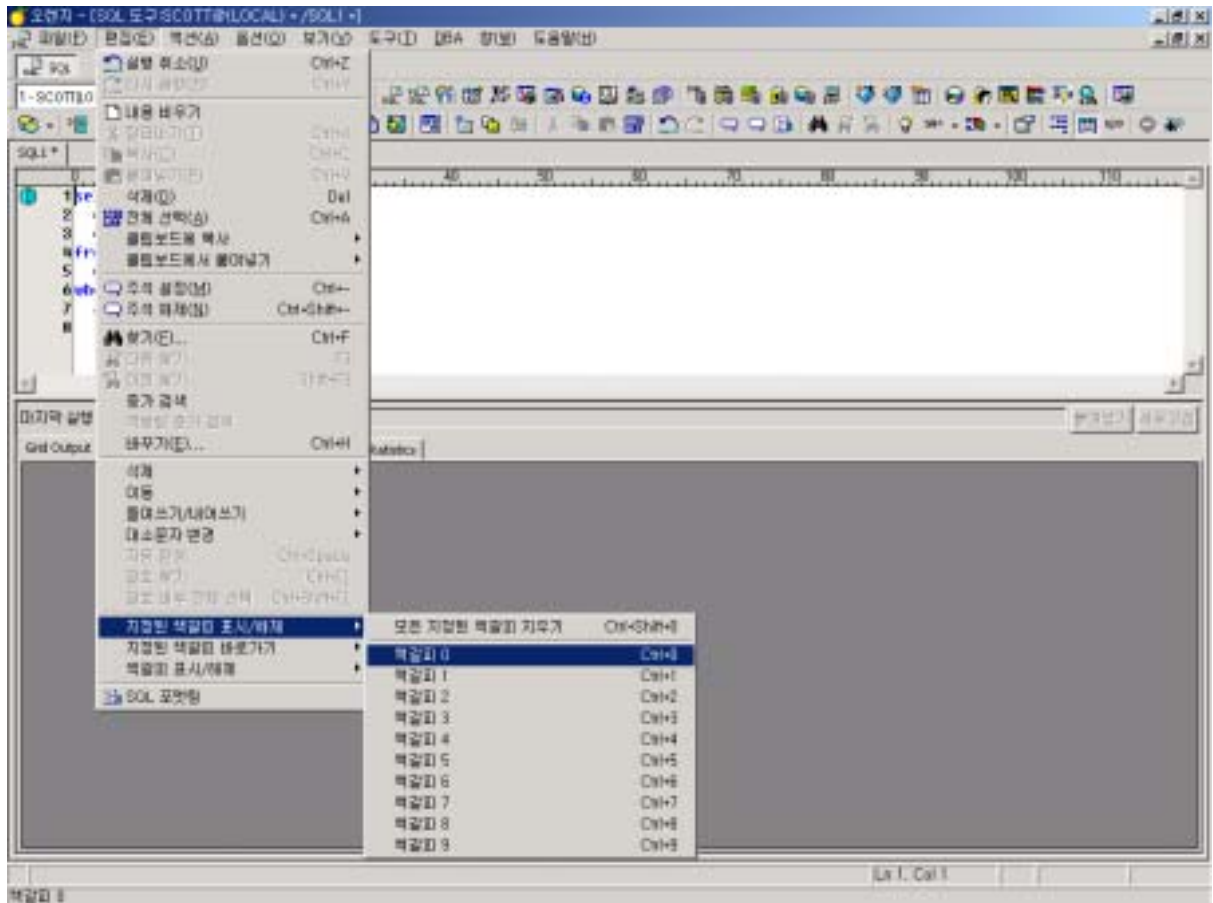
      .   "Ctrl+G"   .

    [**7.25 -**   ]

7.3.18

SQL   ,   SQL

                   [   ]→[   ]
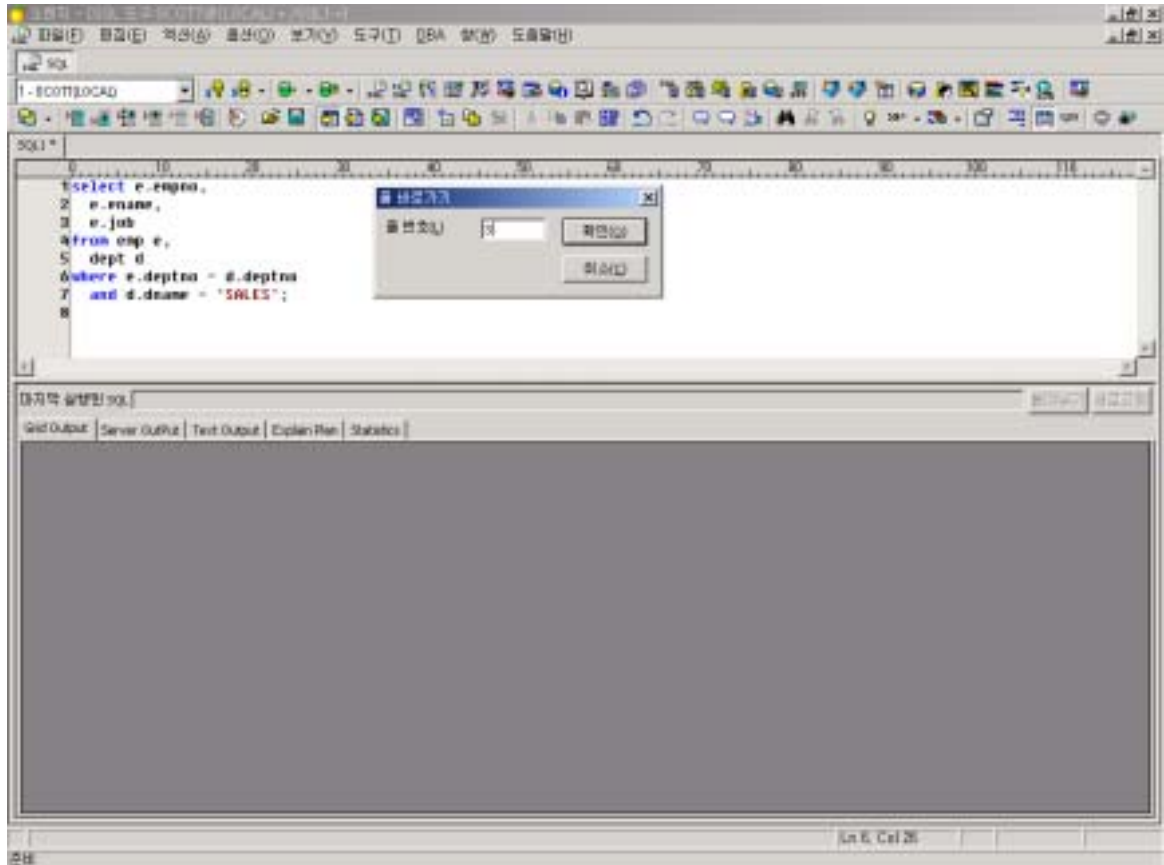
         .   "Ctrl+Shift+G"   .

7.3.19 Find

SQL   "Ctrl+F"   Find   Up, Down

.

-              (F3)
-              (Shift+F3)

[7.26 -   ]
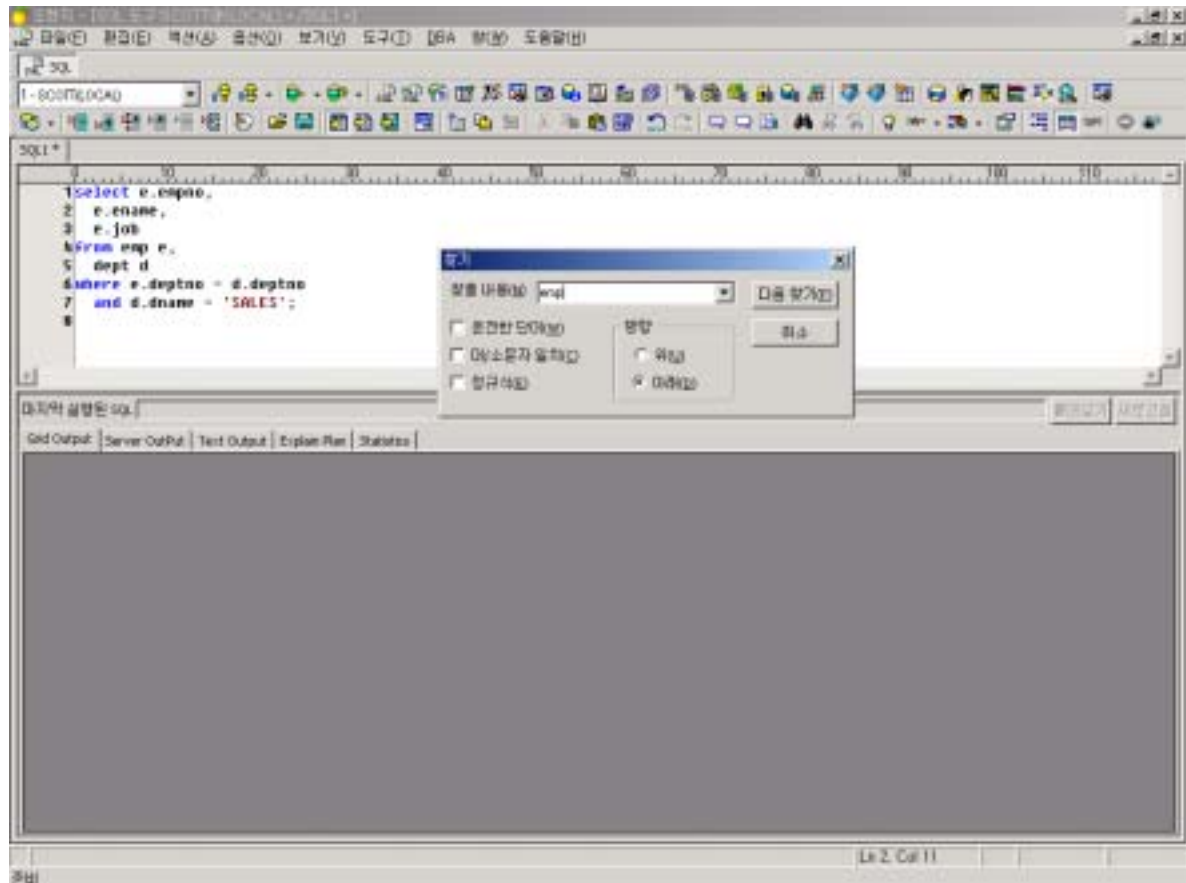
7.3.20   Replace

SQL   "Ctrl+H"   (
)   (   )   .

[7.27 -   Replace   ]
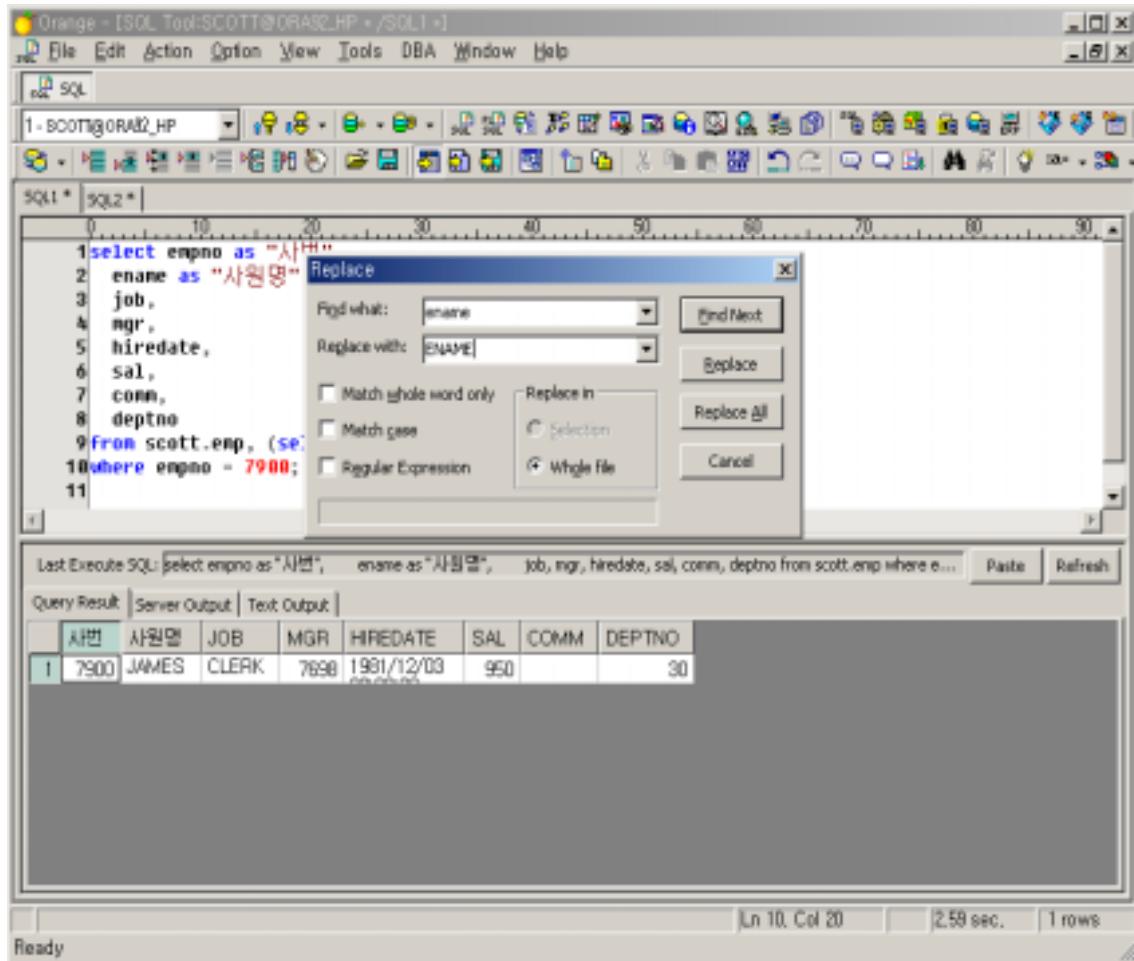
7.3.21 Bind Variable

SQL*Plus에서 Bind Variable을 사용하는 방법과 같이 List를 제공합니다. SQL에서 사용한 Bind Variable이
있는 경우 Bind Variable List에는 그 변수명과 타입이 나타나며 이 타입은 (String(Varchar2), Number,
Date, Fixed Char 중에서 선택) Value를 직접 입력할 수 있습니다.

Bind Variable List에서 선택된 SQL문장에서 사용한 변수들을 복사하여 Bind List(:a=) 아이콘을 선택하면
[Paste Bind Variables Into Editor] 메뉴를 통하여 붙여 넣을 수 있습니다. SQL문장을 수행하면 자동으로 Bind Variable를 Bind Variable
List에 붙여 넣을 수 있습니다.

[그림 7.28 – Bind Variable List 사용화면]
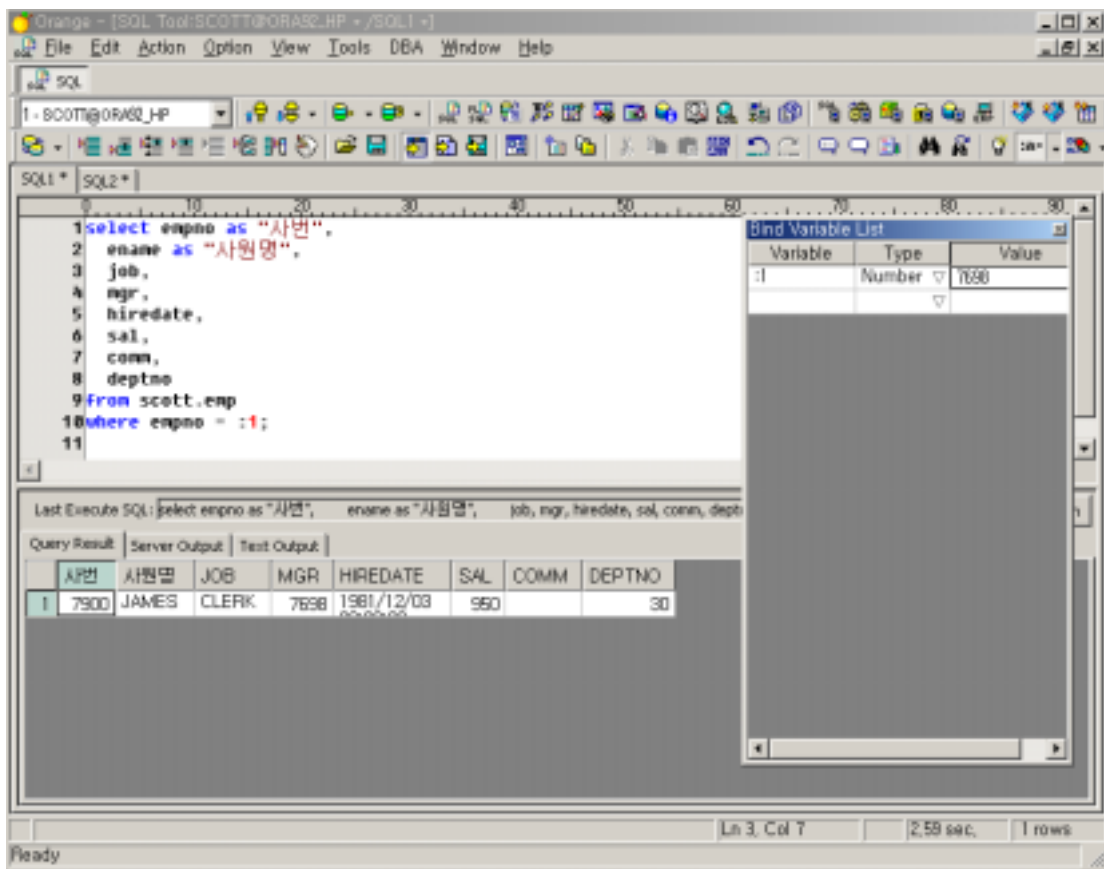
[7.29 – Bind Variable   Editor   ]
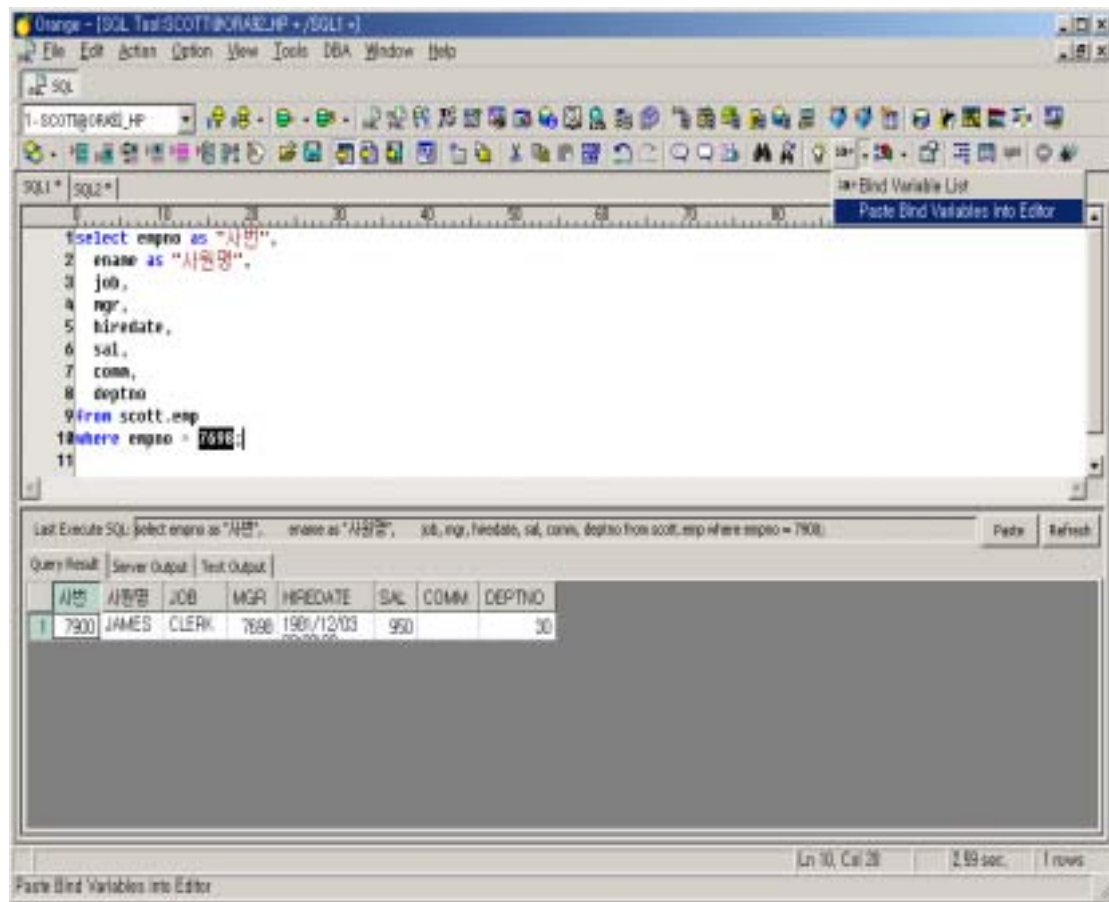
7.3.22 SQL   HINT

Hint ( ) 　　　　　 SQL 　　 HINT

HINT Group (Optimization Goal, Access Method, Join Order, Join Operation, Parallel Execution, Other)

　　　　　　　　　　 SQL 　　　　　　　　　　　　　 .

　　　　　　 .

- Optimization Goal : 　　　　　　　　　　　　　 (CHOOSE, ALL_ROWS   )
- Access Method : 　　　　　　　　　　　　 (FULL, INDEX SCAN   )
- Join Order : 　　　　　　　 (ORDERED, STAR)
- Join Operation : 　　　　　　　 (USE_NL, USE_MERGE   )
- Parallel Execution : 　　　　　　　　 (PARALLEL, NOPARALLEL   )
- Other : 　　　　　 (CACHE, NOCACHE   )

[7.30 - HINT 　　　　　　　]
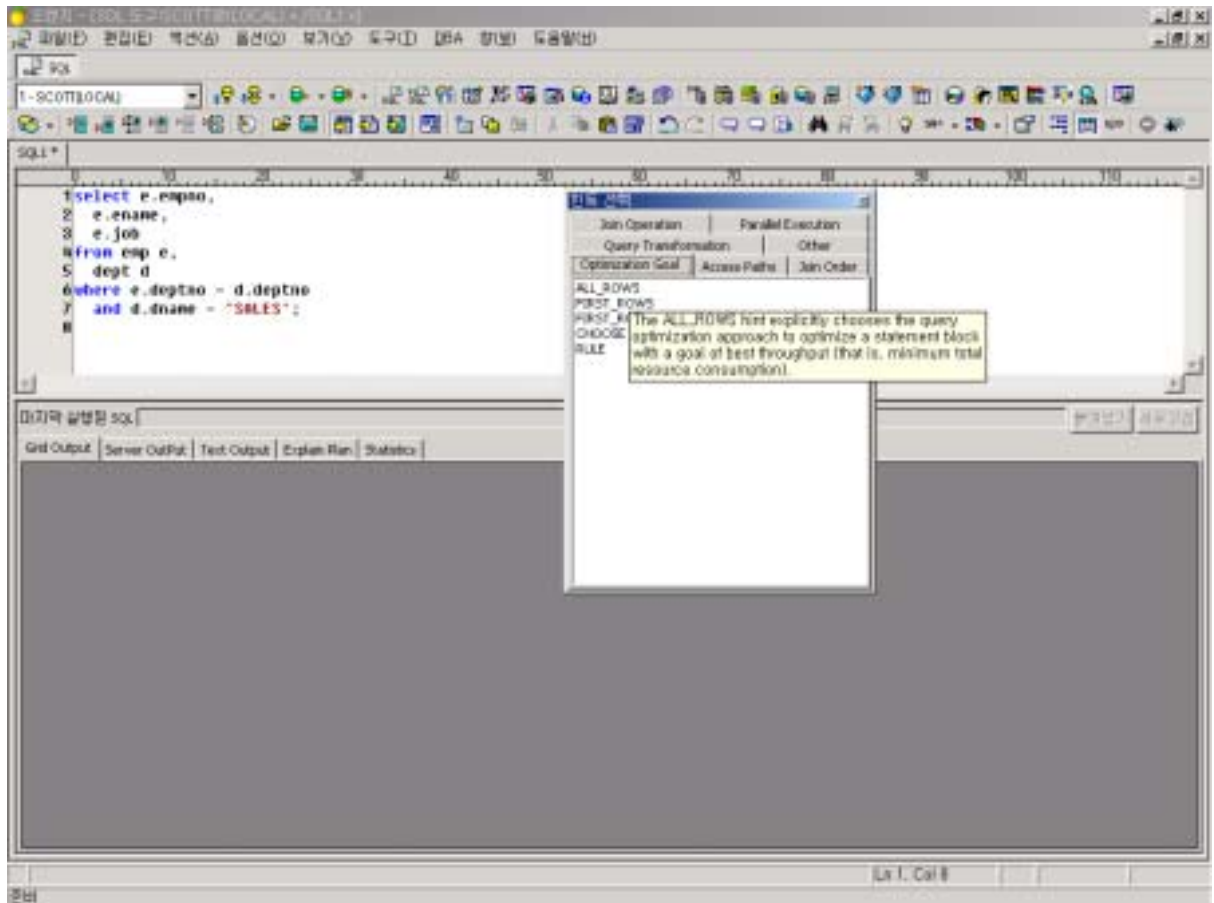
7.3.23

SQL Tool   . SQL Tool

[   ]   "   "   "   " "   "

.   .

[7.31 -   ]
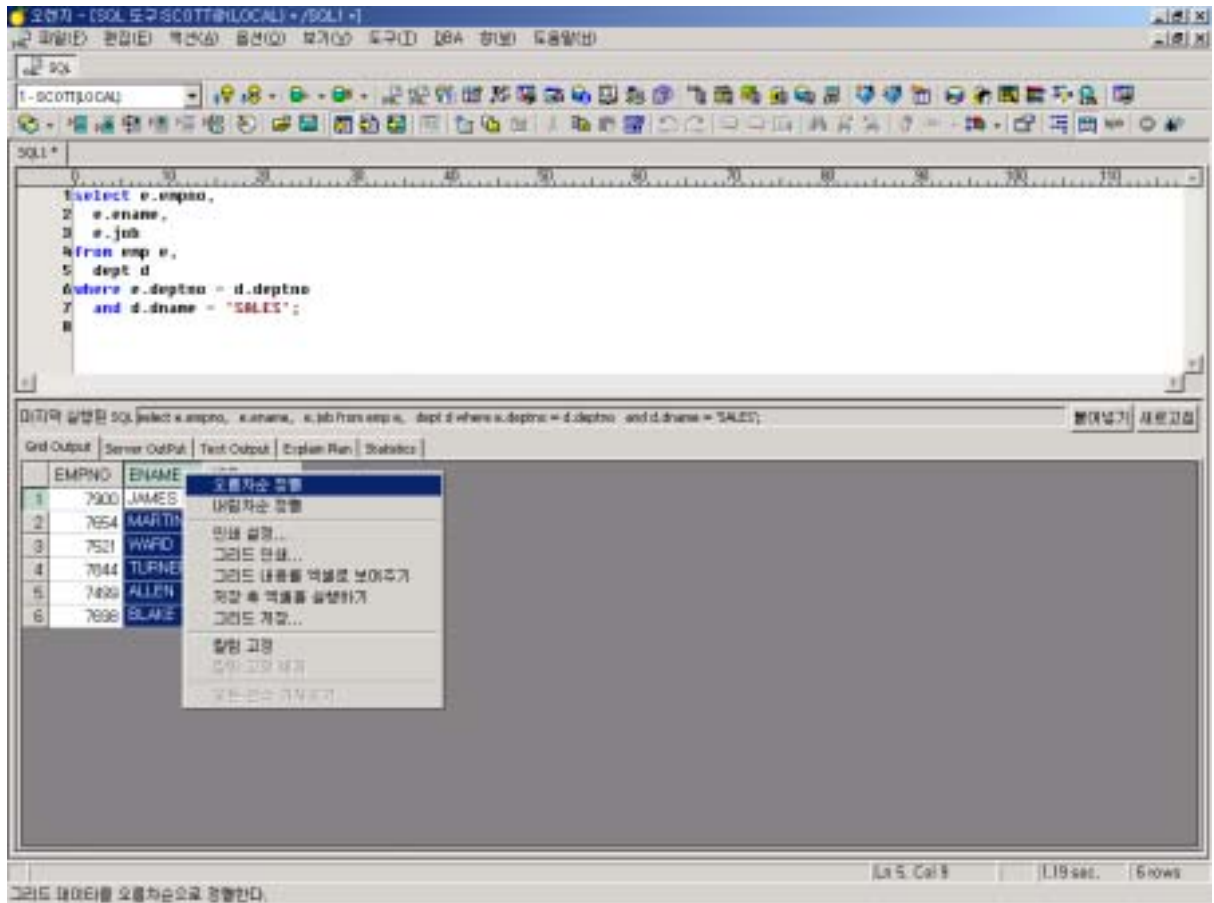
7.3.24 Commit , Rollback

SQL Tool   DML

Commit , Rollback   . DML   "   "(🔵)   "   "(🔵)

.

7.3.25 Work Space

SQL Tool   Workspace   File Mode   Workspace Mode   2   .

■   File Mode – SQL Tool   Workspace   .

          ,   ,   .

■   Workspace Mode –   Workspace   .

Workspace   (*.SQD)   , [   ] → [   ]   Workspace

                  File Mode   [   ] → […]   Workspace

                              .

Workspace   SQL   "SQL1"   .   (📋)

                  SQL   .   SQL

                      (📋)   .

          (: "SQL1*")   "   "   ,

                              .   , File Mode

        , Workspace Mode   Workspace   . Workspace

                              .

7.3.26 SQL

        SQL Editor   SQL   ,

                                              SQL   .
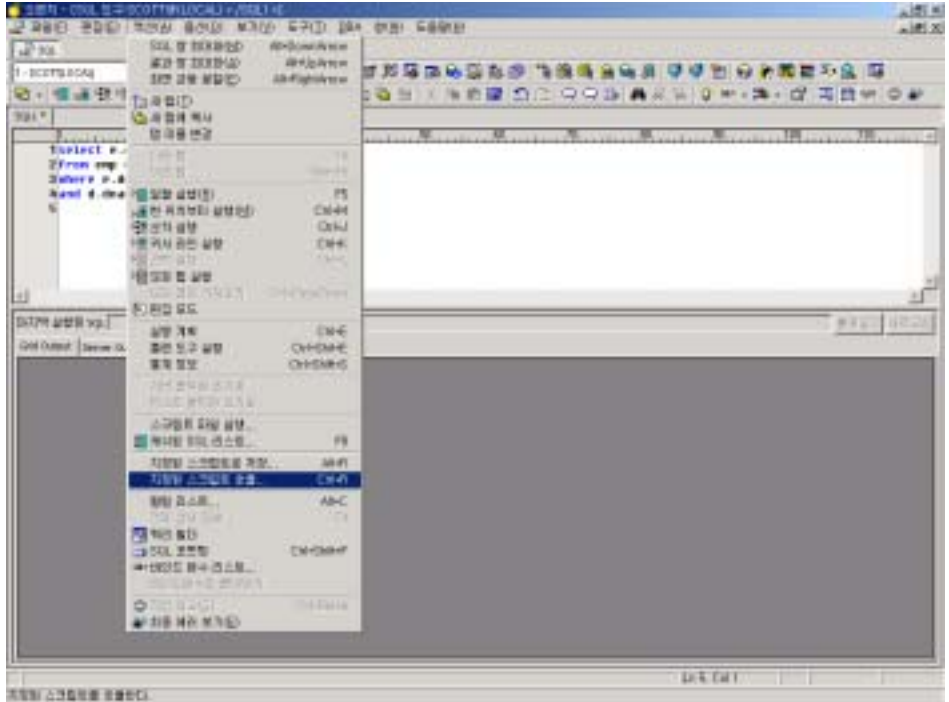
                                                        ,

                      .

■   .

    ➢   Visual Basic

    ➢   PowerBuilder

    ➢   C/C++

    ➢   Delphi

    ➢   Java

    ➢   Perl

■   SQL   .

    ➢   Copy as Visual Basic Code

    ➢   Copy as C/C++ Code

    ➢   Copy as PowerBuilder Code

    ➢   Copy as Delphi Code

    ➢   Copy as Java Code

    ➢   Copy as Perl Code

- ■   SQL .
    - ➢ Paste from Visual Basic Code
    - ➢ Paste from C/C++ Code
    - ➢ Paste from PowerBuilder Code
    - ➢ Paste from Delphi Code
    - ➢ Paste from Java Code
    - ➢ Paste from Perl Code

7.3.27   **(Edit Mode)**

SQL Tool   Editing   [7.32 – Grid Edit Mode]

(   )   .   ,

                           .   Grid   .

Edit Mode   SQL   Select   Primary Key   Unique Key + Not Null

               .   Edit Mode   Select

          ROWID   .

                                     .

From   .

                  SQL   . "   "   SQL

                           , "   ", "   "

             .

[7.32 – Grid Edit Mode]

                       (EditMode   )

Edit Mode   .

                                                                                   .

                                                                                   .

                                                                                   .

                                                                                   .

                                                                      .   ,

                                                                                   .

                                                                                   .
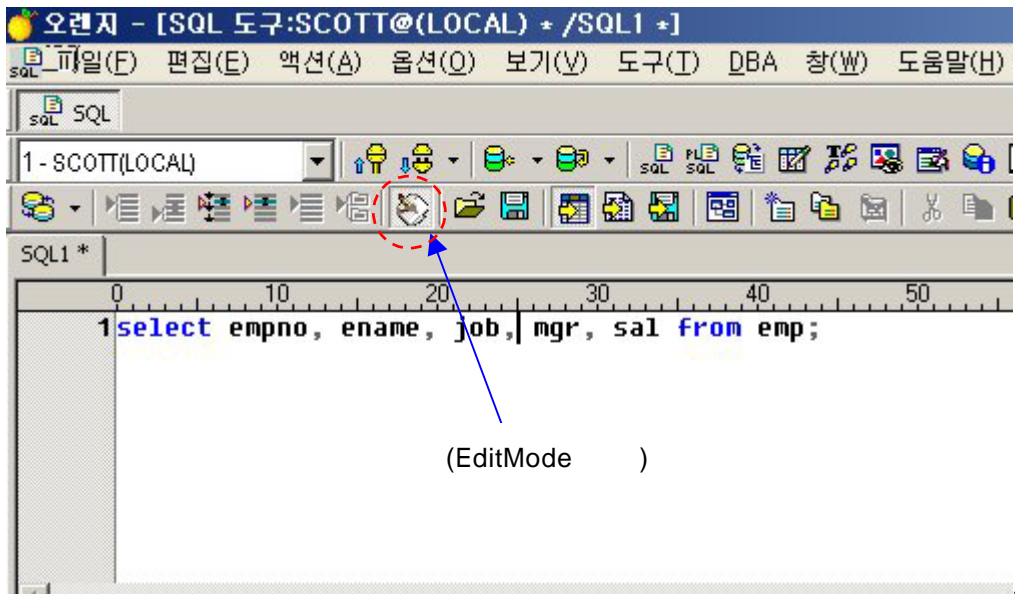
                                                                      . (Update

)

                                                                                   . (

     Update   )

     AutoAccept(   )   .

                                              Commit   .

     DB   Rollback   .

     AutoAccept

         .

                 .

                 ,   SQL
SELECT a.rowid, a.empno, a.ename, a.job, a.mgr, a.hiredate, a.sal, a.comm, a.deptno, b.dname, b.loc
FROM scott.emp a, scott.dept b
WHERE a.deptno = b.deptno;

                                   From   scott.emp   .   Select list
scott.emp   Primary Key   Unique key + Not Null
From   ROWID   .
                                   .

[7.33 –   ]

Editing   .   From   scott.emp
                    . Scott.dept   DNAME, LOC   . [
7.33 –   ]   Auto Accept(📌)   ,   ,
            .   (✚),   (✔)
                                           Commit(🖥)   .

[7.33 –   ]
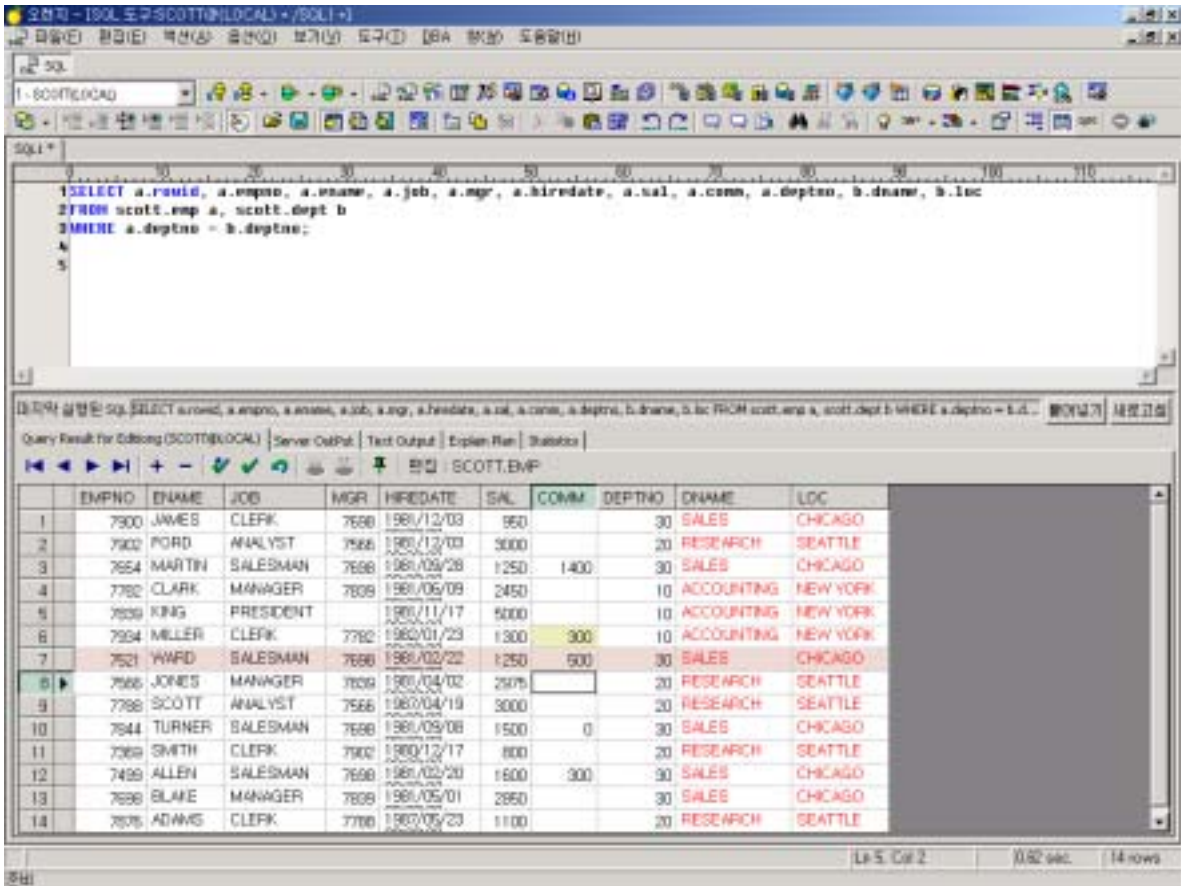
7.3.28 SQL Tool

■

"   "   Fetch   .
                 . "Long   "
           Long type   . "   "
                Initial   Next   .   "   "
           , 1000   Initial   100   Next   10
          ,   100
            10   . "   "   (:a=)
           ,   SQL Editor   Bind Variable   . "
               "   SQL Editor   Bind Variable
        . "   "   SQL Editor   SQL
              (Ask)   (Stop)   (Continue)   . "
     "   "   "   SQL
              . "   "   Error   SQL
 . "   "   (Scroll Bar)
           Row   Retrieve   ,
      [   ]   Row   .

[7.34 – SQL Tool   ]

■   – 6.8

Plan Tool   .

■
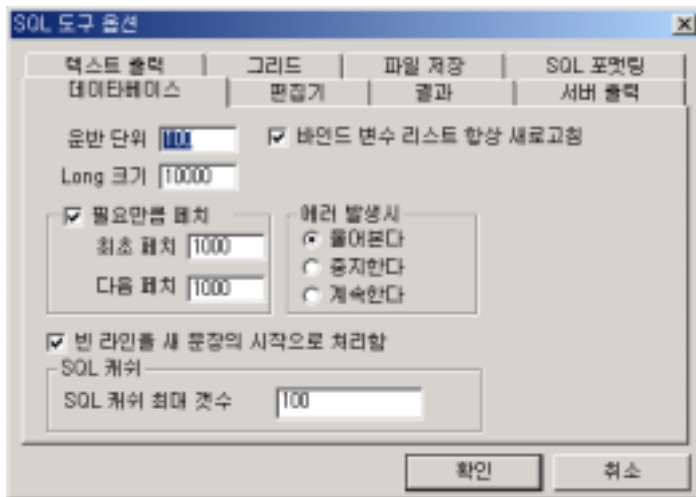
"　　　　　　　　"　　　　　　　　　　　　　　　DBMS_OUTPUT.PUT_LINE

SQL　　　　[　　　　　]　　　　　　　　　　.　"　　　　　　"

　　　　　　　　　,　"　　　　　　"

　　　　　. Never　　　　　　　　　　　　　　　Output　　　　　　　　　　　　　.　"　　　　　　"

　　　　　　　　　　　　.　"　　　　　　"

　　　　　　　　　　.　　　　　　　　　　　　　　　　　　2000 ~ 1000000

.

[　　　7.35 – SQL Tool　　　　　　　　　]

■

"　　　　　　"　　　　"　　　　　"

"　　　　　"　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　.　"

　　　　"　　　　　　10 ~ 100000　　　　　　　　　　　　　"　　　　　　　"　　9 ~ 38

.

"　　　　　　"　　　　　　Text　Output

.

.

"　　　"　　"　　　"　　　　　"　　　　　　"　　　　　SQL
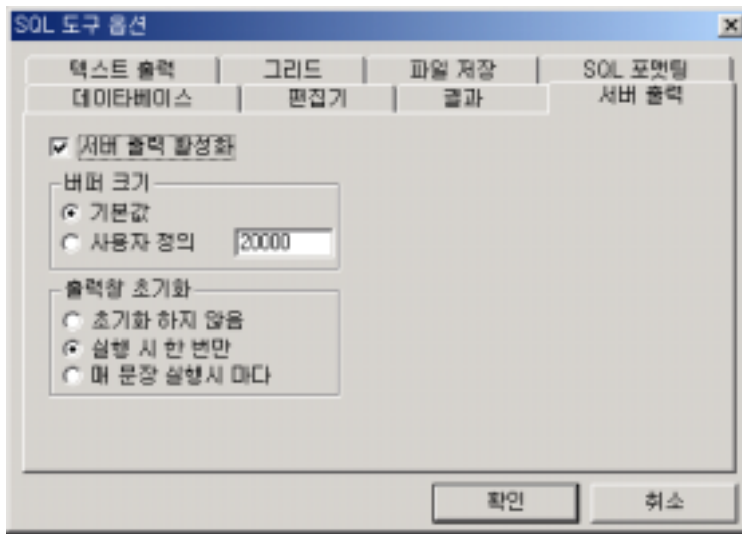
"　　　　　"　　　　　Fetch　　　　　　　　　　　.

[7.36 – SQL Tool   ]
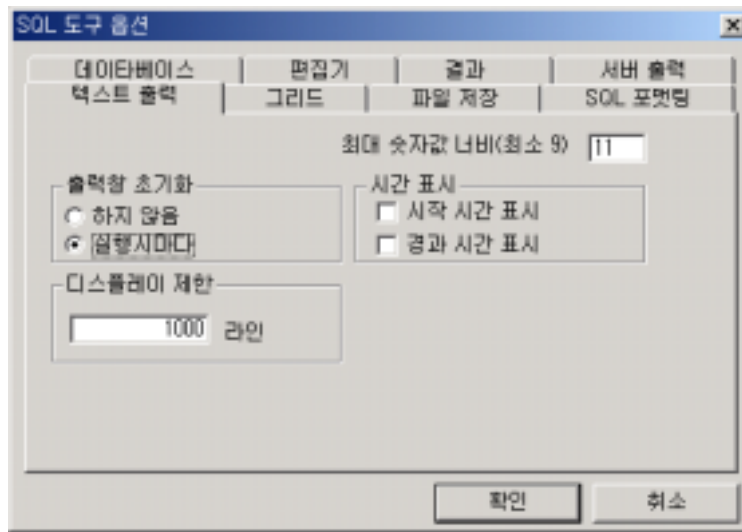
■   Grid – **6.8**

Plan Tool　　　　　Grid　　　　　.

■ File Save

“　　　　　　　”　　　　　SQL　　　　　　　　　　　　　　　　　　　　　　. “

　　　　　　　　　”　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　, “

　　　　”　　　　　Tab　　　　　　　　　　Comma　　　　　　　　　　　.

　　　　　　Excel　　　　　　　　　　.

[　　　7.37 – SQL Tool　　　　　　　　]
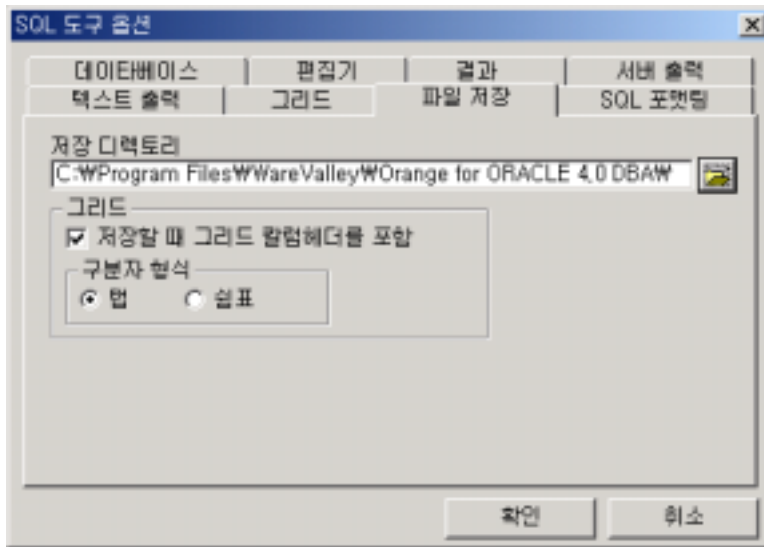
■ SQL Formatter – **6.8**

Plan Tool   SQL formatter   .

■ Result

SQL   Font   Size   .

Default NULL Text   Null   Null   .

Insert   NULL   Space

                      . "Decimal Digit"   Count

      .

[7.38 – SQL Tool   Result   ]
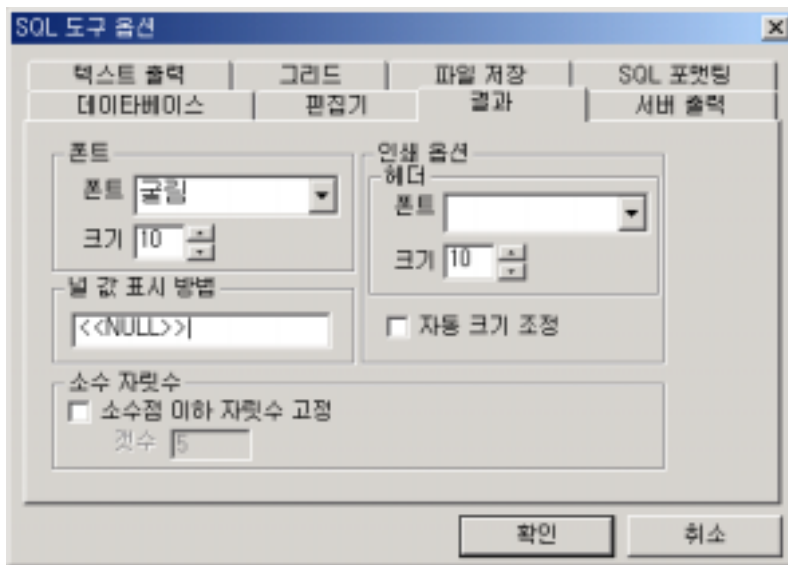
[7.39 – SQL Tool   Result   – Default NULL Text]
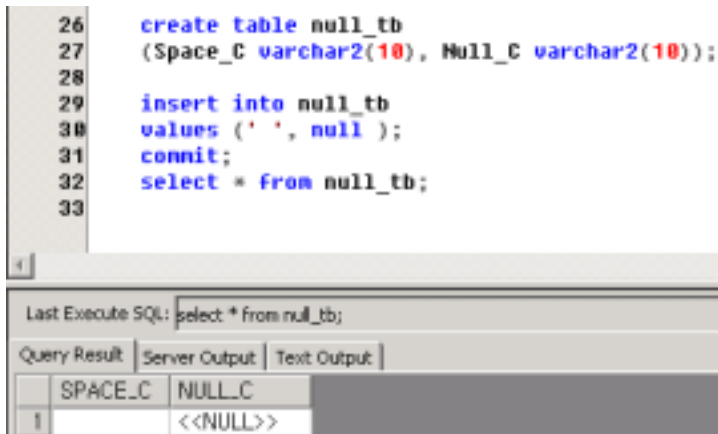
8. PL/SQL Tool

PL/SQL Tool   PL/SQL   ,   ,

       ,   .   PL/SQL

                                                          Lock

                    .   .

                                                                   SQL Tool   .

                                          .

8.1 PL/SQL Tool

- ✓   PL/SQL, Stored Procedure, Function, Package, Type, Trigger
- ✓   PL/SQL Block
- ✓   Stored Procedure   (Lock)
- ✓   Stored Procedure
- ✓   DBMS_Output
- ✓   Syntax
- ✓   Syntax Highlighting,
- ✓   Edit   (Block Comment/Uncomment, Find & Replace, Goto Line,   Matching, Bookmark, …)
- ✓   SQL   Visual Basic, PowerBuilder, C/C++

8.2 PL/SQL Tool

PL/SQL   Compile

PL/SQL   Check Out

Check Out   Check Out List

PL/SQL debugger   Debug-Compile

PL/SQL debugger

        Debugger

              Debug

Break Point   Debug

            Call Stack

Break Point

            Break Point

            Break Point

 Comment

 Uncomment

8.3 PL/SQL Tool

8.3.1   PL/SQL Tool

Tools   PL/SQL Tool   PL/SQL   ()   .

8.3.2

PL/SQL   ()   F5   PL/SQL
                                           .

[8.1 –   ]

PL/SQL을 작성할 때 (봉투) 을 이용한다.

. Function 을 선택하면 Create Function 창이 나타나며, Create Function
. Function Name 과 Argument List, Return Type 을 입력하고 [OK] 를 누르면 Function 이
.

[8.2 –   ]
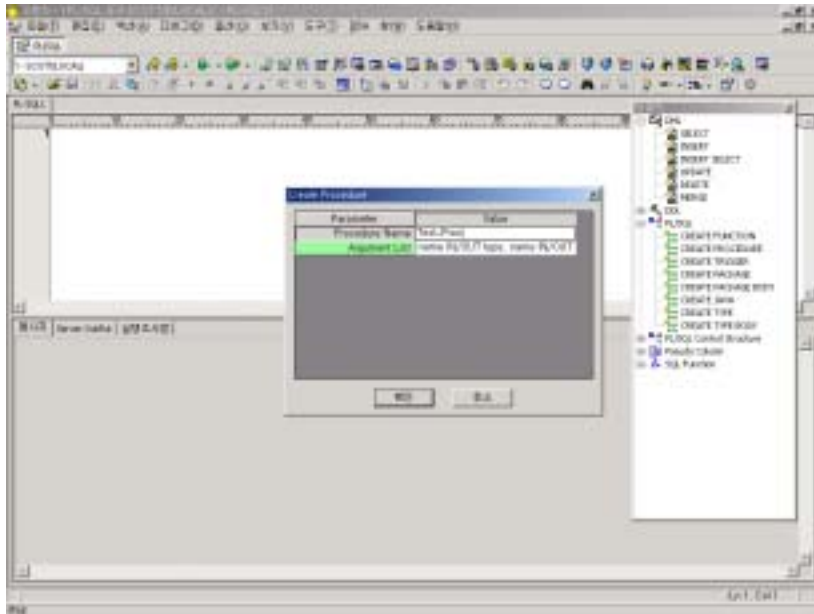
[8.3 –   ]
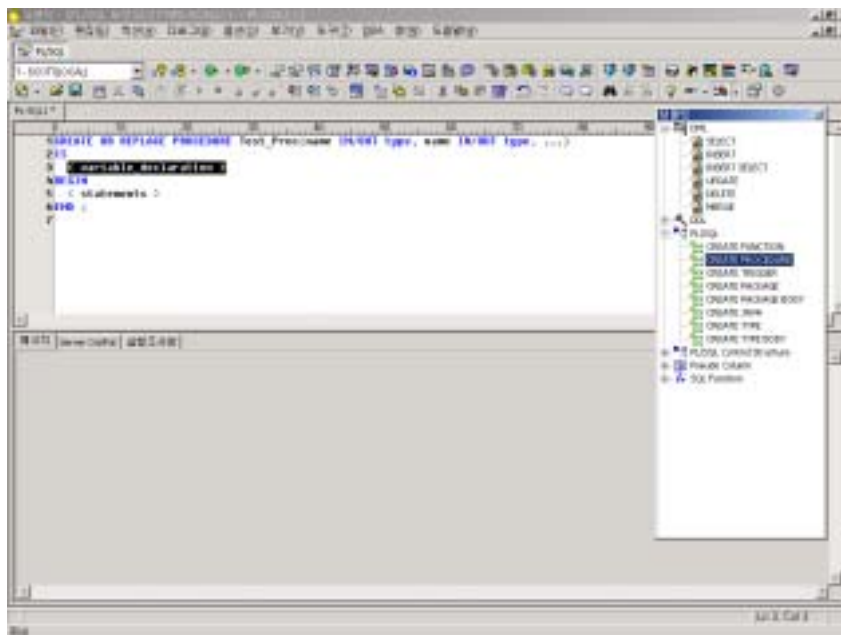
8.3.3

[   ]   [   ]   . Procedure   SQL Tool   exec
execute   , function   select   , update   . Trigger
DML   Event   .
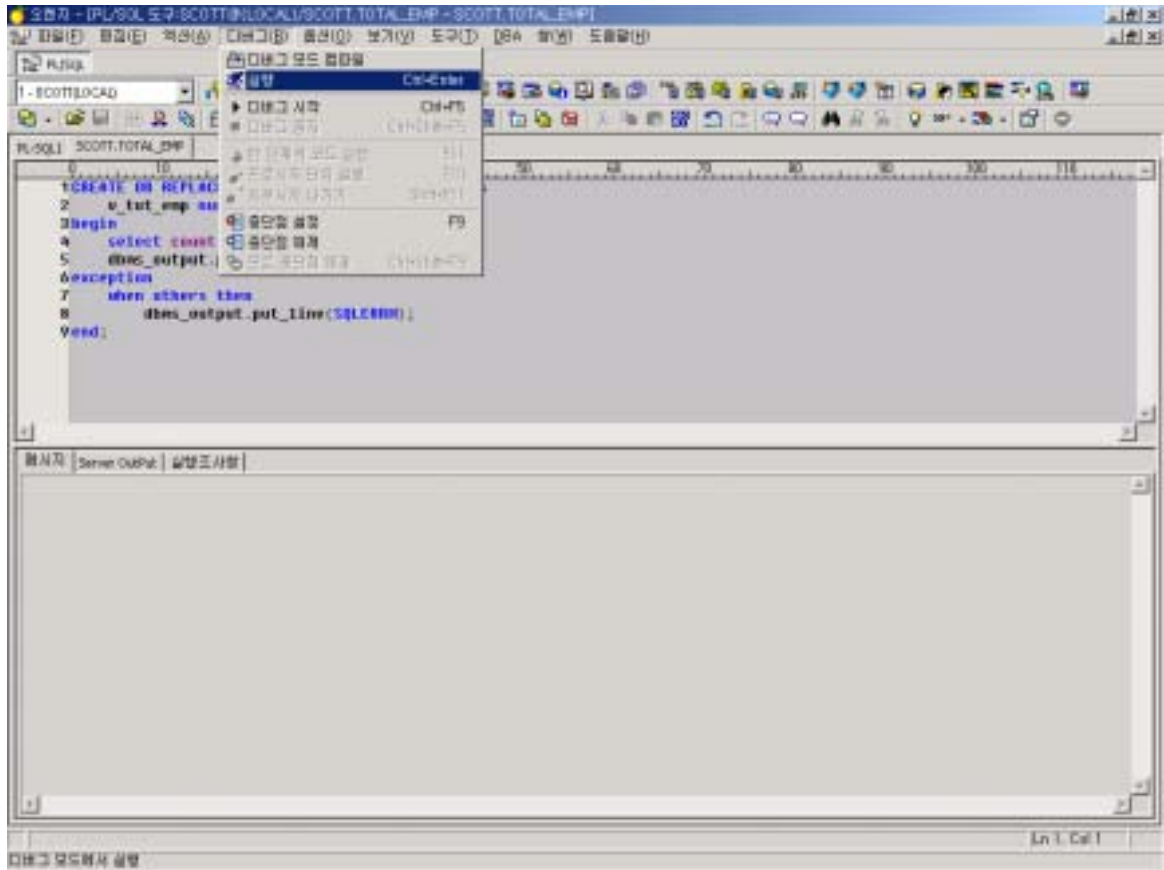
[8.4 -   ]

8.3.4

                                                 Lock

     Check Out   . Check Out   (🖳)   PL/SQL

                                        Check Out

PL/SQL   .   Check Out   PL/SQL   Check Out List

.
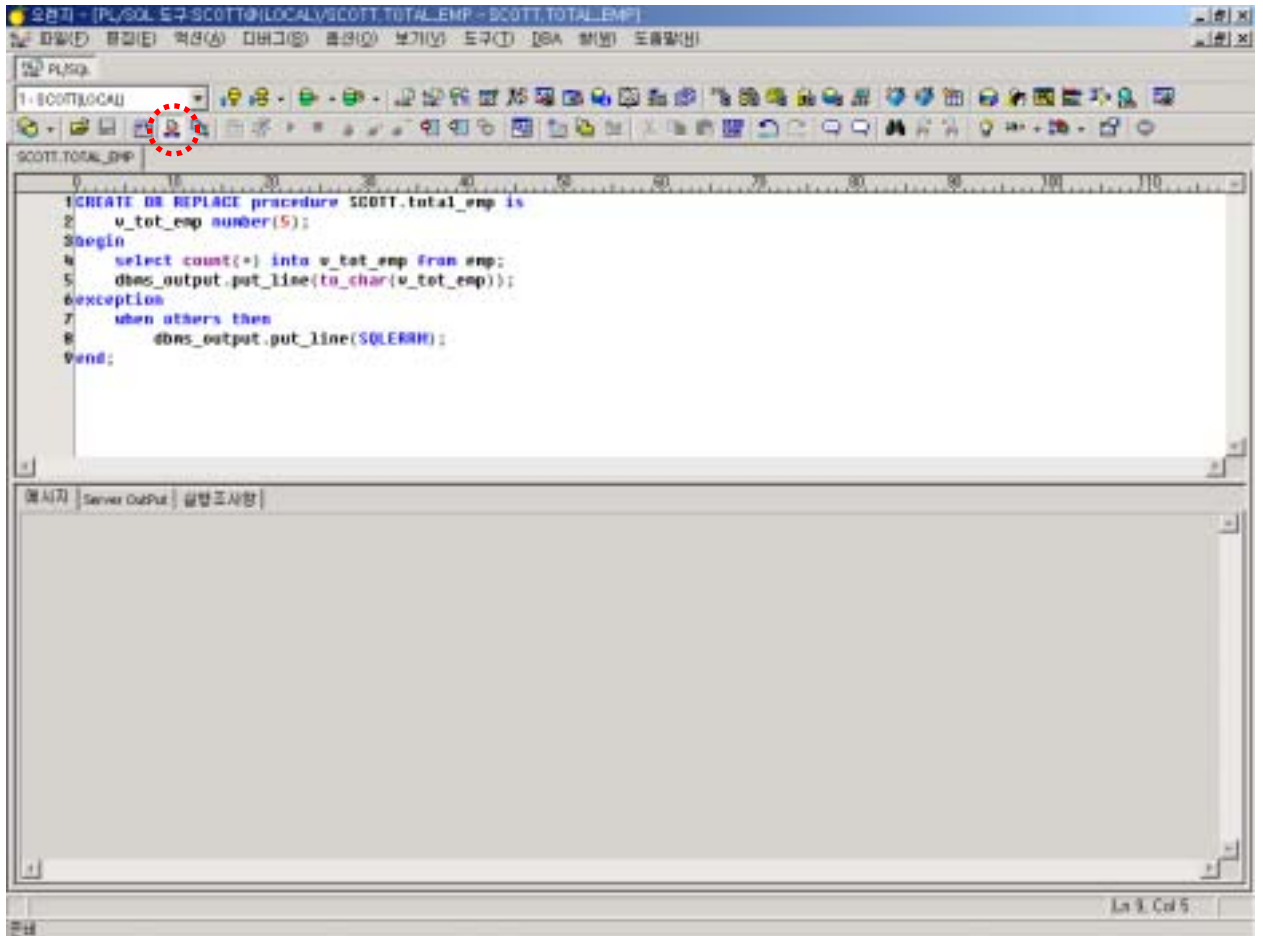
        [8.5 -   **Check Out**   ]

Schema Browser   PL/SQL

·   [   ]

·

[8.6 – Schema Browser   PL/SQL   ]
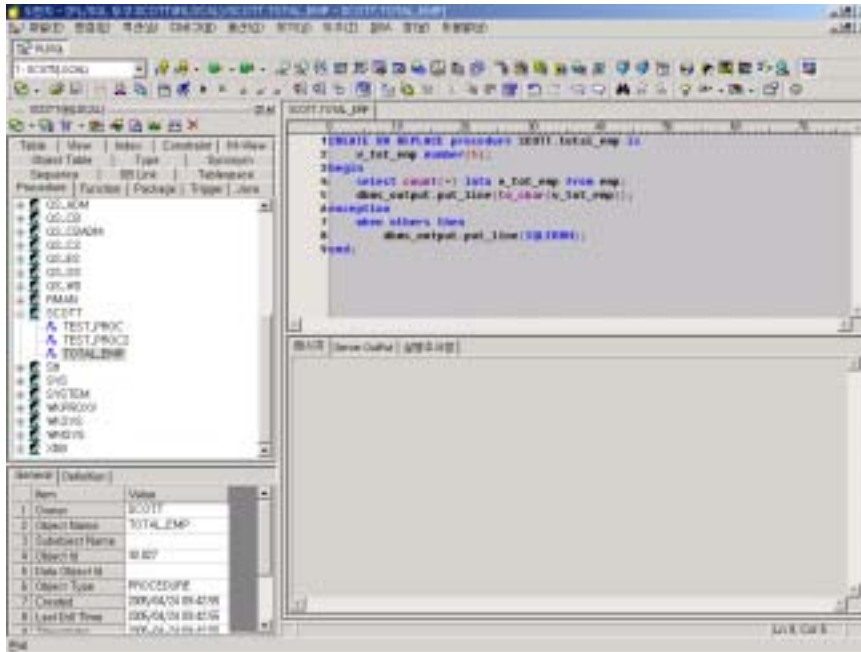
Check Out List   .

[8.7 - CheckOut List   ]
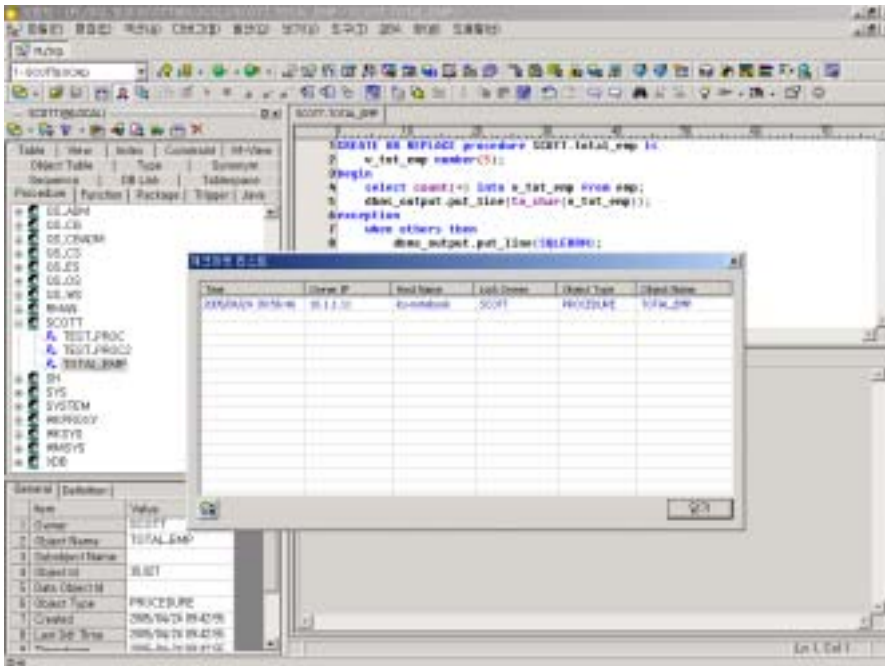
8.3.5 Editor

PL/SQL   Bookmark, Goto Line, Change Case, Find, Replace   SQL Tool
        .

8.3.6 SQL

SQL Editor   SQL   ,
                                    SQL   Paste   .
                Copy   ,
                        .

■   .

  ➢ Visual Basic
  ➢ PowerBuilder
  ➢ C/C++
  ➢ Delphi
  ➢ Java
  ➢ Perl

■ SQL   .
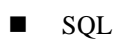
  ➢ Copy as Visual Basic Code
  ➢ Copy as C/C++ Code
  ➢ Copy as PowerBuilder Code
  ➢ Copy as Java
  ➢ Copy as Delphi
  ➢ Copy as Perl

■   SQL   Paste   .

  ➢ Paste from Visual Basic Code
  ➢ Paste from C/C++ Code
  ➢ Paste from PowerBuilder Code
  ➢ Paste from Java
  ➢ Paste from Delphi
  ➢ Paste from Perl

8.3.7 PL/SQL Debugger

Function, Procedure, Trigger PL/SQL   .

PL/SQL Debugger   Check out   Check in   (Read Only Mode:
)   .

[   ]   ()   .

                                                        .   [   ]

          "   "   . [   ]   (▶)

Debug Execution   [   ]   .

[8.8 - PL/SQL Debugger   ]

[   ]   (아이콘)

.   Break Point   [

]   (아이콘)   .

[그림 8.9 – Break Point 에서 Step over]

. [   ]   (아이콘)

Call Stack   .   [   ]   (아이콘)

.
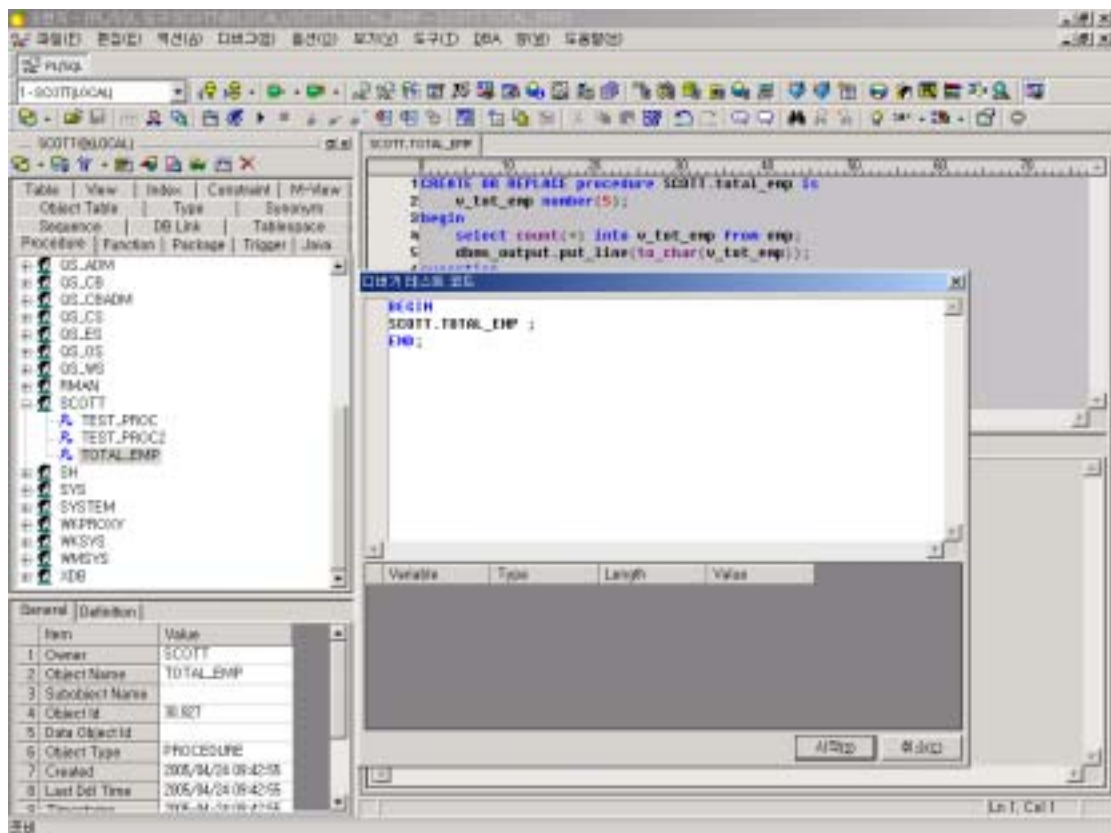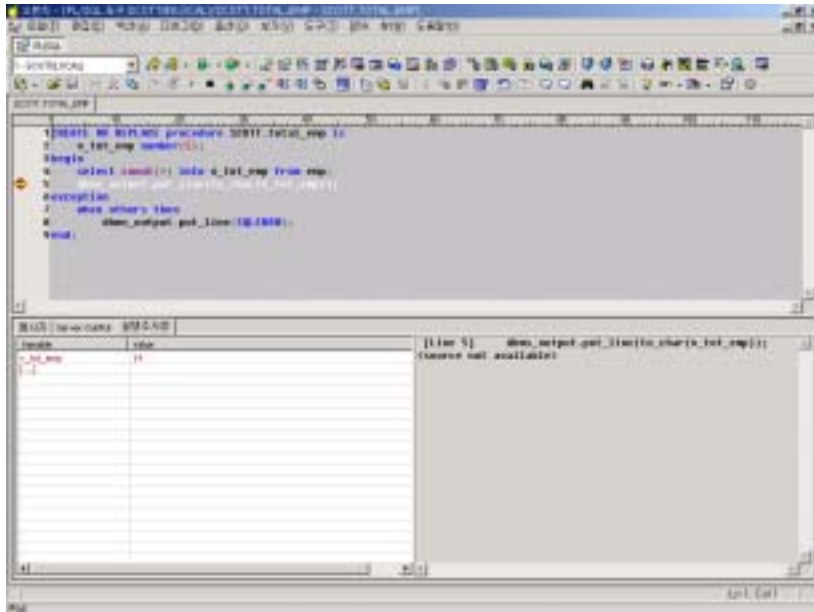
[그림 8.10 –   ]
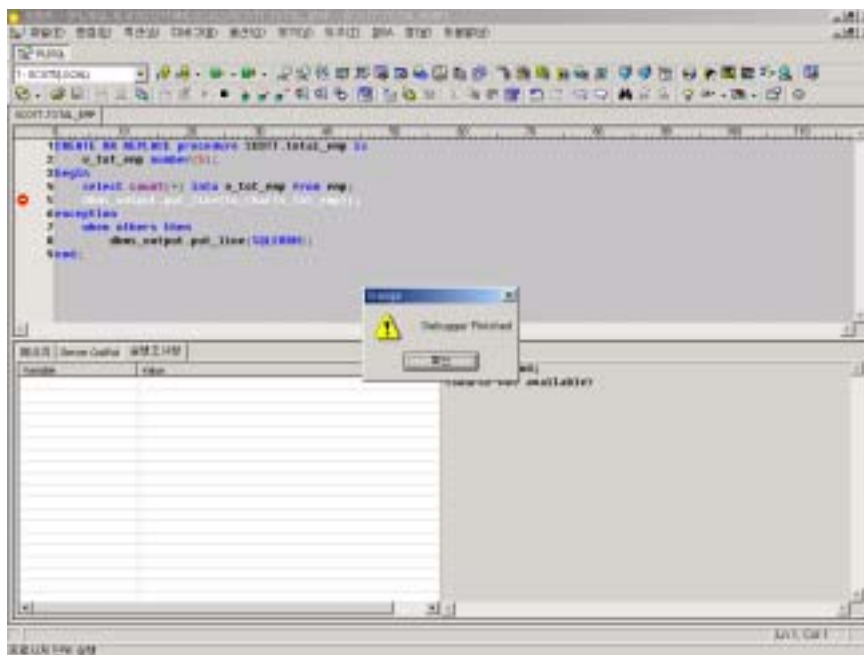
8.3.8 PL/SQL Tool Options

PL/SQL Editor   ,   ,

Server output   .

- Editor – 6.8 Plan Tool   [   ]   .
- Message –   [   ]   . Time Output
       "   "   SQL   "   "
                  Fetch   .
- Server Output – 7.3.28 SQL Tool   [   ]
- File Save – 7.3.28 SQL Tool   [   ]

9. SQL Monitor

I/O   .   SQL Monitor   SGA

SQL   I/O

SQL   .   SQL   Plan Tool

,   Session Info   ,

,   , Event   , Wait   .

9.1 SQL Monitor

- ✓   SQL
- ✓
- ✓   (,   ,   ,   , Event, Wait)
- ✓   Plan Tool
- ✓   SQL   Object Information   Report

9.2 SQL Monitor

    SQL Monitor List Refresh

    SQL

       SQL

       SQL List   Execution Plan, Statement Statistics, Related Session Statistics, Table Information

       SQL   text

    SQL Monitor   Option

      Pane   Control List   copy   Column Header

9.3 SQL Monitor

9.3.1 SQL Monitor

SQL Monitor   SQL Monitor   (   )   . [   ]   [   ]

[   ]   "   "   , "

"   "SQL Monitor"   SQL Monitor   .

SQL Monitor   Session   Connection

manager   .

9.3.2 SQL Monitor

SQL Monitor   Criteria Group, SQL Filter Group, Sort Group

                                              . Criteria Group   0

                   .

- **Criteria Group**
  - ➢ Buffer Gets :
  - ➢ Buffer Gets/Exec :
  - ➢ Executions : SQL
  - ➢ Disk Reads :   I/O
  - ➢ Include SYS User's SQL : SYS   SQL
  - ➢ Include SYSTEM User's SQL : SYSTEM   SQL
- **SQL Filter Group**
  - ➢ Include :   SQL
  - ➢ Start With :   SQL
  - ➢ End With :   SQL
- **Sort Group**
  - ➢ Buffer Gets :
  - ➢ Buffer Gets/Exec :
  - ➢ Executions :
  - ➢ Disk Reads :   I/O

[9.1 - SQL Monitor Sample   ]
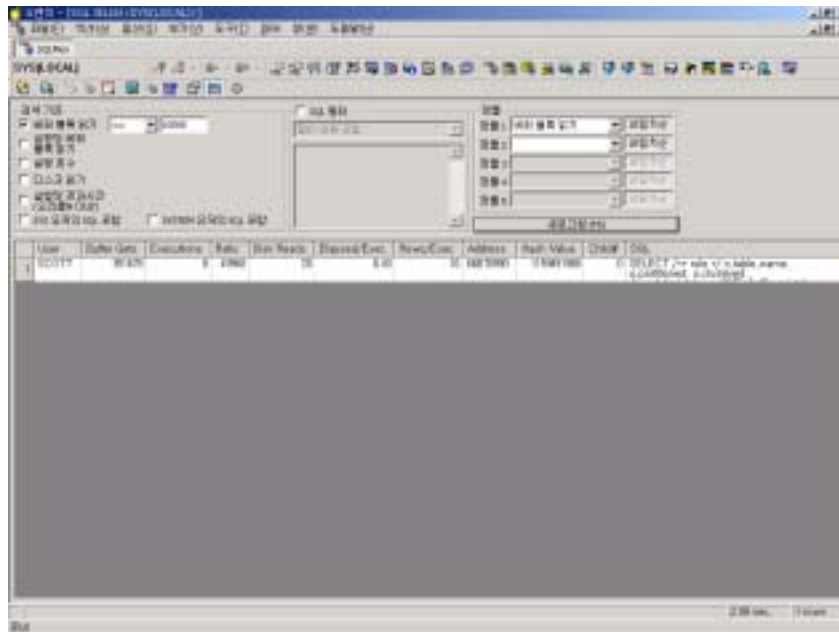
[9.2 - Criteria   ]
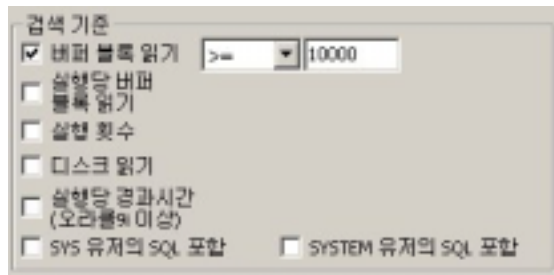
[9.3 – SQL Filter]
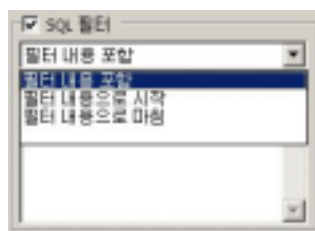
[9.4 - Sort   ]
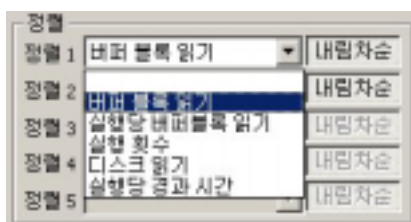
9.3.3 SQL Monitor

SQL Monitor   .

                                                                                  "   ", "   "

                   .

■

     ➢   User

     ➢   Buffer Gets

     ➢   Executions

     ➢   Ratio (Buffer Gets / Executions)

     ➢   Disk Reads

     ➢   Rows Processed

SQL Monitor   "   "   ,

     Ascending, Descending   .

                 "   ", "   "   .

[9.5 –   ]
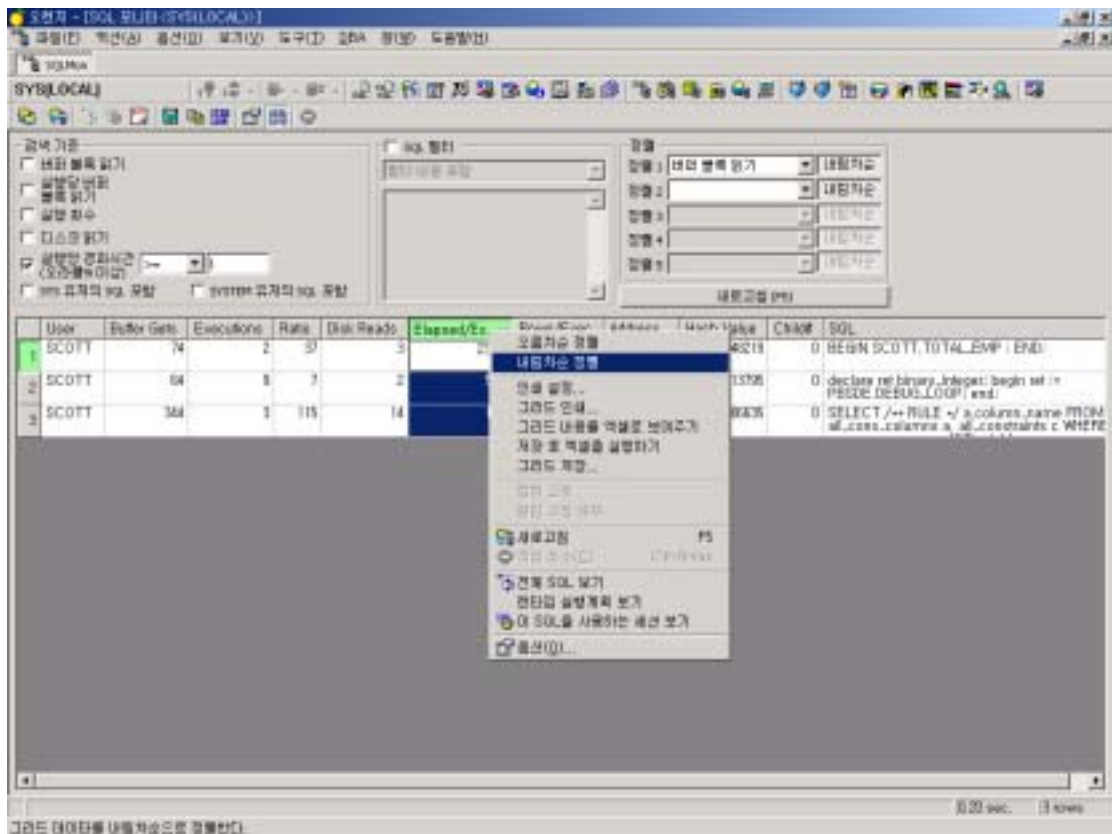
9.3.4   SQL

SQL   SQL   Row
                    "Sessions Using this SQL"   ,   "Session List"
[9.7 – Session List Window]   Row
              [9.8 – Session Information Wait TAB]   ,   ,   ,   ,
, Wait   .

[9.6 -   SQL   " Session Using this SQL"   ]
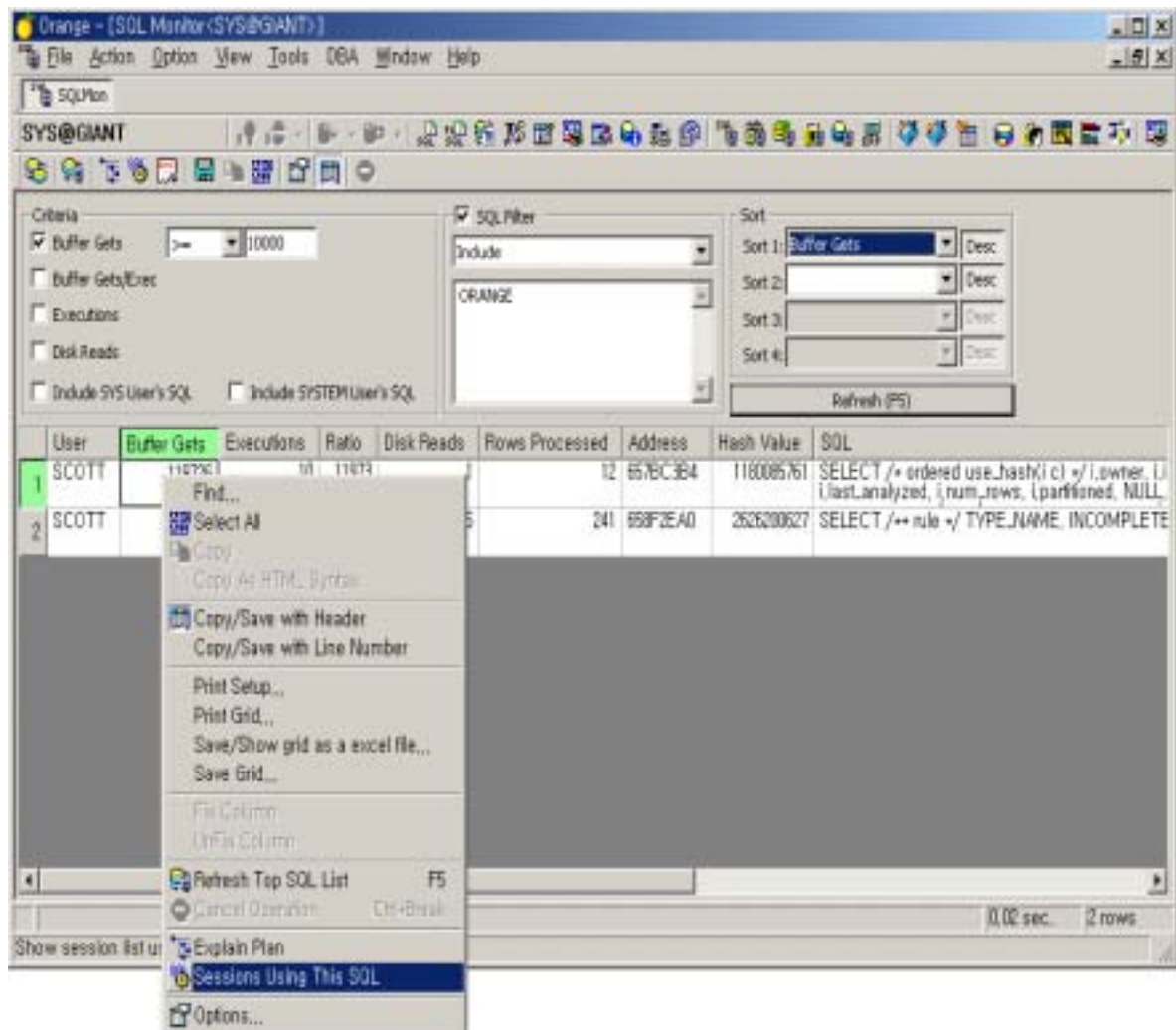
[9.7 – Session List Window]
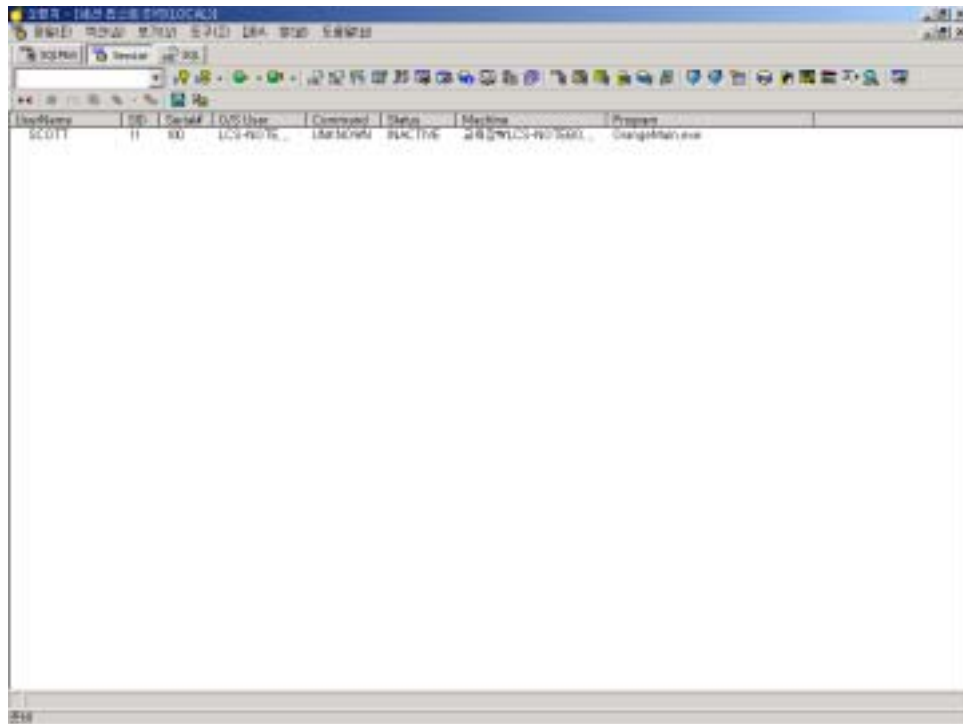
[9.8 – Session Information Wait TAB]
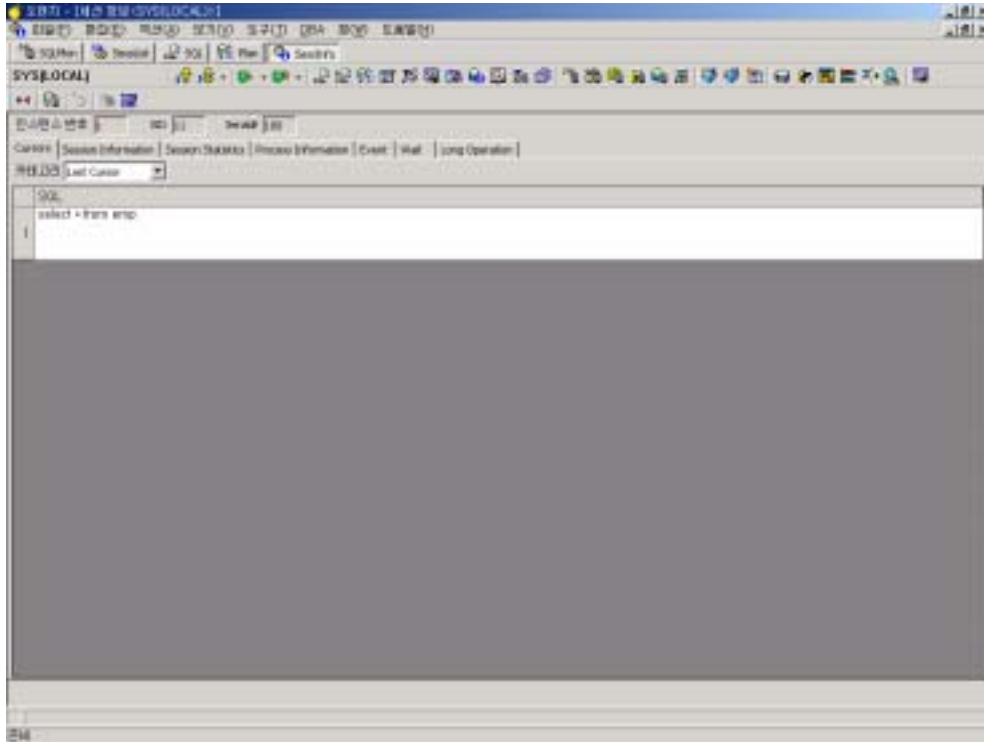
9.3.5 **Report**

SQL　　　　　　　　SQL　　　　　　　　　　　　　　　　. SQL

,　　　　　,　　　Object　　　　　　　　　. [　　] → [SQL　　…]　　　　　　　　　.

■　Report Generation Option

Range Group　　　　Report　　　　　　　　　　　　.

➢　All –　　　　　SQL　　　　Report　　　　.

➢　Selection –　　　SQL　　　　　　　　SQL　Report　　　　.

➢　Range –　　　SQL　　　　　Record　　　　　　　　　　　　　　　SQL

　　　　Report　　　　. 1　　　　　　　　　　　All　　　　　　.

■　　　　–　SQL　　　　　　　　.

■　SQL　　　　– SQL　　　　　　　　　.

■　　　　　　– SQL　　　　　　　.

■　　　　　– SQL　　　　Table

[　　9.9 – Report Generation Option]

202
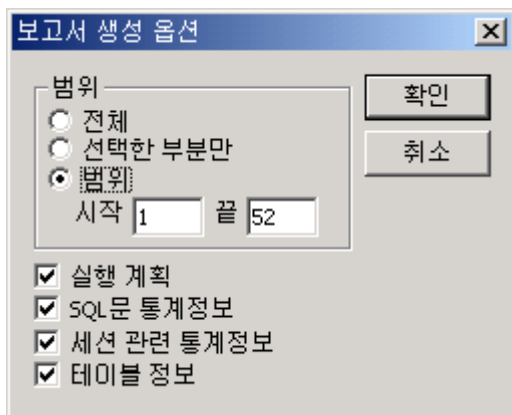
9.3.6   SQL

              SQL   Row   "   SQL   "

       ,   Plan Tool   SQL   .   SQL

                                       SQL   "   SQL   "

   .   PL/SQL   PL/SQL Tool   PL/SQL   .

[9.10 -   SQL   Plan Tool   ]
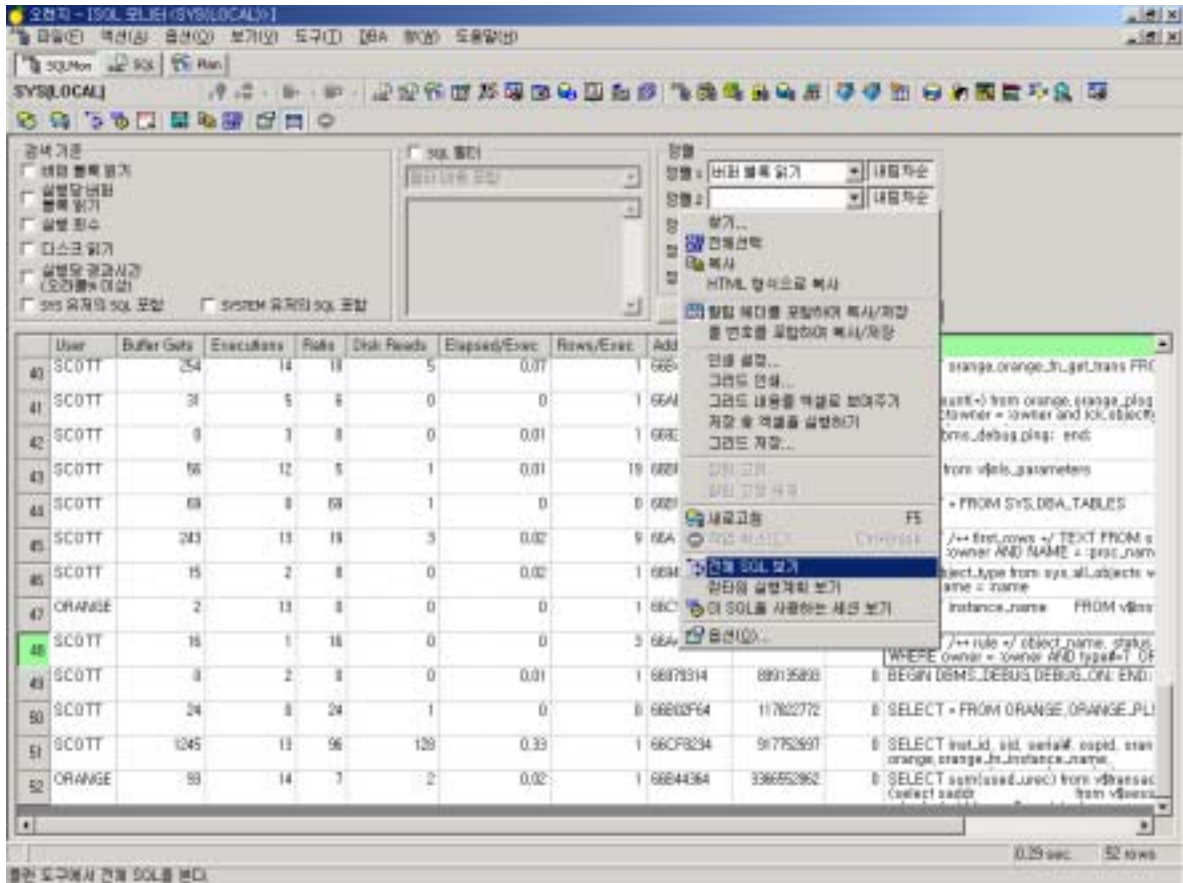
[　　9.11 -　　　SQL　　　　　　　Plan Tool　　　　　　SQL format　　　　　]
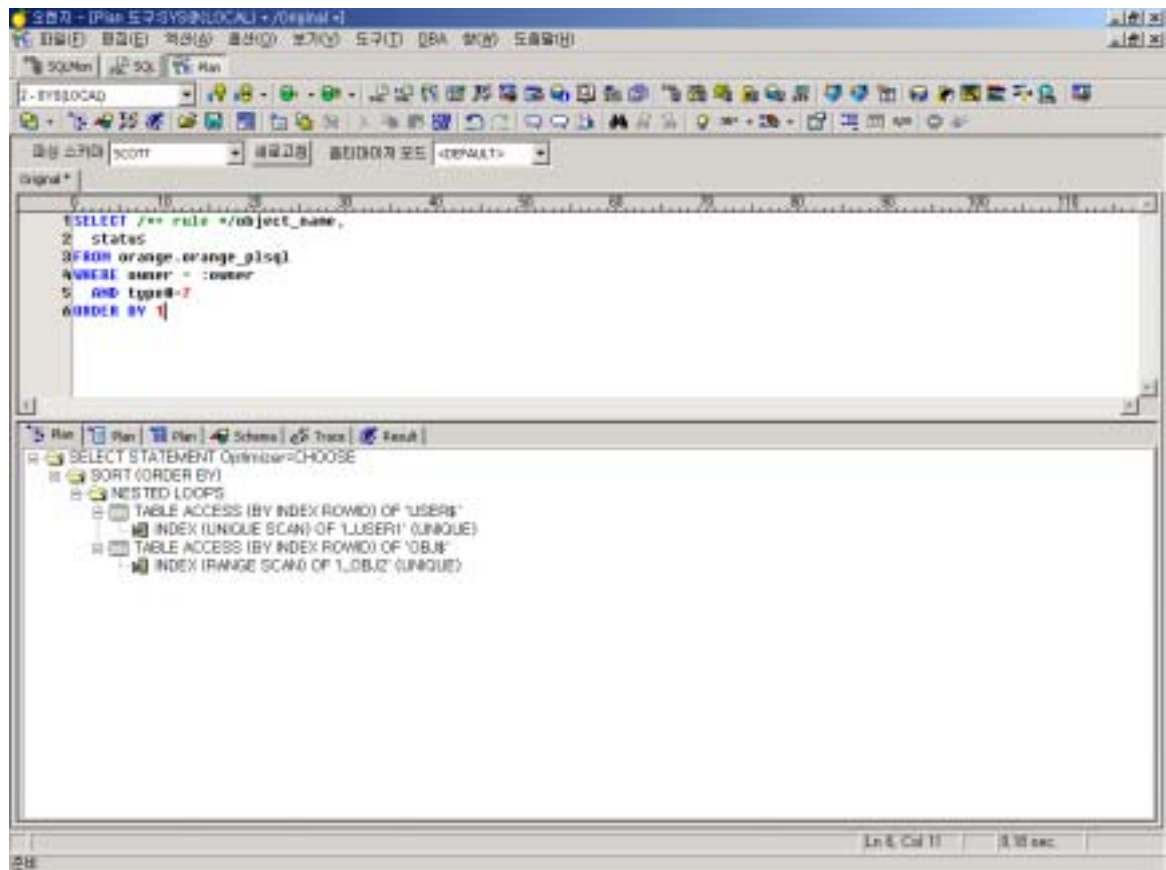
9.3.7 SQL Monitor

SQL Monitor   "   "   (🖥️)
                                                                               "

        .   "F5"   .

[9.12 - SQL Monitor   ]
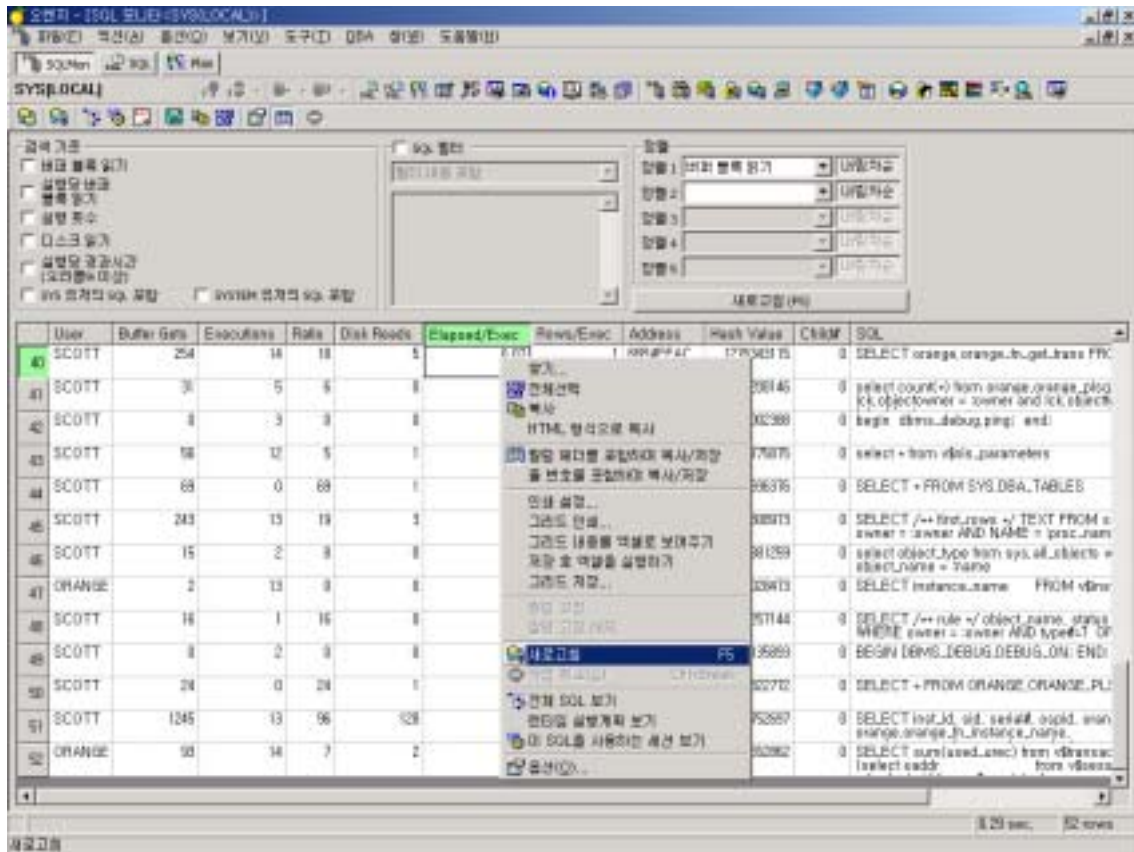
9.3.8 SQL Monitor   Option

SQL Monitor   [   ]   [   ]   .

 ■   [   ]   .

                                                                    .

                                                                                              ,

                                                          .

    [9.13 - SQL Monitor   (   )

 ■   [   ]

                    ,   .
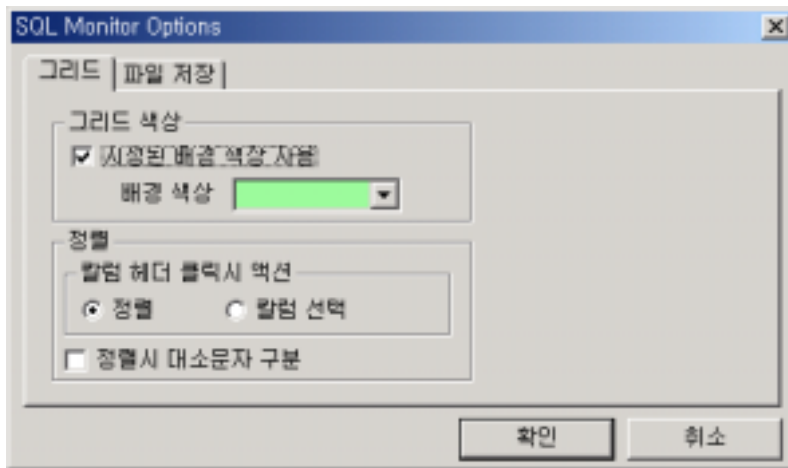
    [9.14 - SQL Monitor Options(   )]
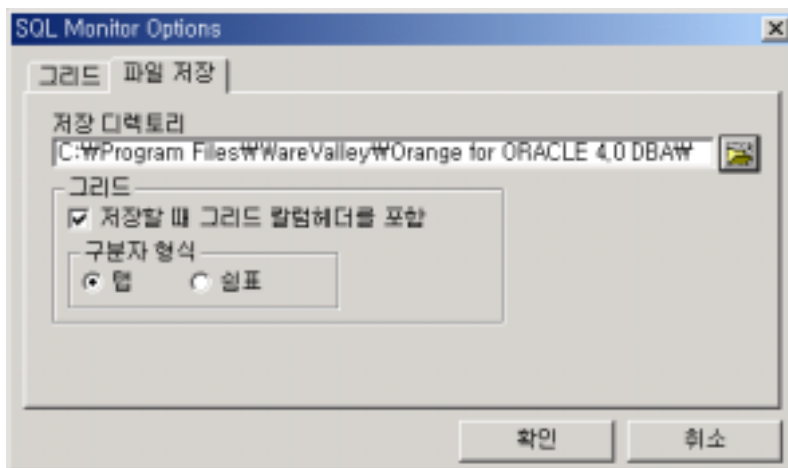
10. Session Monitor

Session Monitor   (User, Redo, Enqueue, Cache, OS, Parallel Server, SQL, Debug)

.   Kill   SQL Trace   .

                    SQL   Dynamic   Plan Tool

SQL   .

10.1 Session Monitor

- ✓
- ✓
- ✓
- ✓   (,   ,   ,   , Event, Wait)
- ✓
- ✓   Plan Tool
- ✓   Kill
- ✓   Level 1, 4, 8, 12   SQL Trace

10.2 Session Monitor

	Refresh
	SQL
	Kill
	SQL
	SQL
	Option Refresh
	(Delta)

10.3 Session Monitor

10.3.1 Session Monitor

                    Session Monitor   ( )   . [   ]   [

        ]   [   ]   "   "   , "

                    "   "Session Monitor"   Session Monitor

.

          SQL   Current SQL

.

                                                       "Module" Property

                            Tool   . [10.2 – Orange

Module]   Space Manager, Instance Monitor, Session Monitor

.

[10.1 –   Current SQL   ]

[10.2 – Orange   Module]

10.3.2 Session Monitor   Option

[   ], [   ], [   ], [   ]   .

■ [   ]

User, Redo, Enqueue, Cache, Parallel Server, SQL, Debug

.   CPU   User

"CPU used by this session"   Display   "Add"   Session Monitor

CPU   . ,   5

.

[10.3 –   ]

■　[　　]
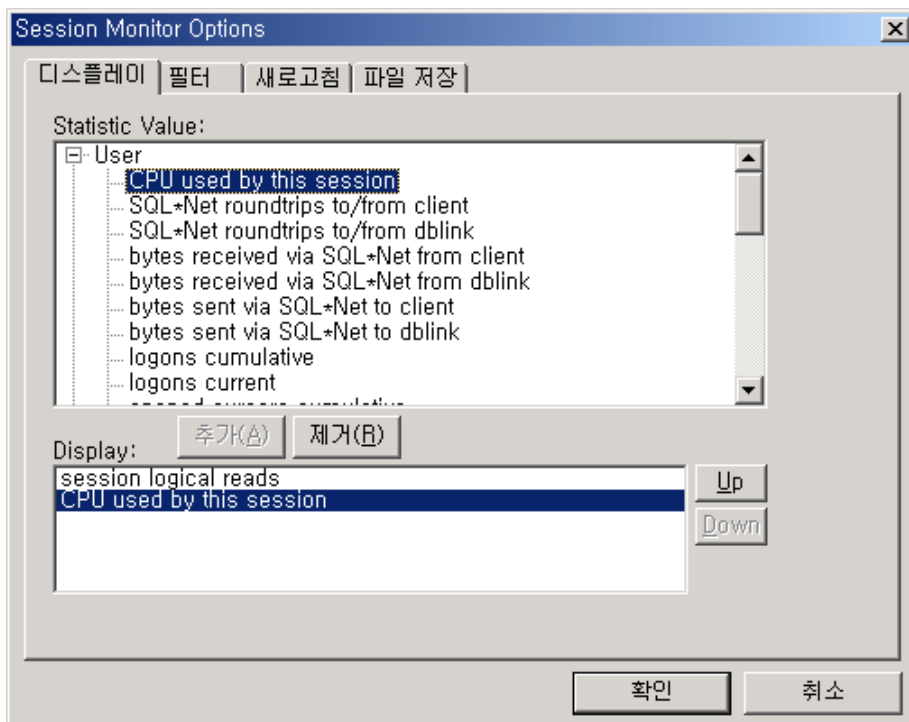
Value　　　　　　　　　　　　，　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　，

　　　　　　　　　　　　．Background Session　　　　　　　　ORACLE　　Background Process　　　　　　，Orange

Session　　　　　　　　Orange　　　　　　　　　　　　　　　Session　　　　　　　　　　　　．

　　　　　　　　　　　　　　　　　Module Filter (DBMS_APPLICATION_INFO.SET_MODULE (Module,

Action)　　　　　　　)　Program Filter (　　　　　　　　　　　　　)　　　　　　　　　　(

　　　　　　　　)　　　　　　．Module Filter　　Program Filter　　　　　　　　Exclude

　　　　　　Module　　　Program　　　　　　　　Session Monitor　　Display　　．

[　　　10.4 –　　　　　　]

■ [   ]

.
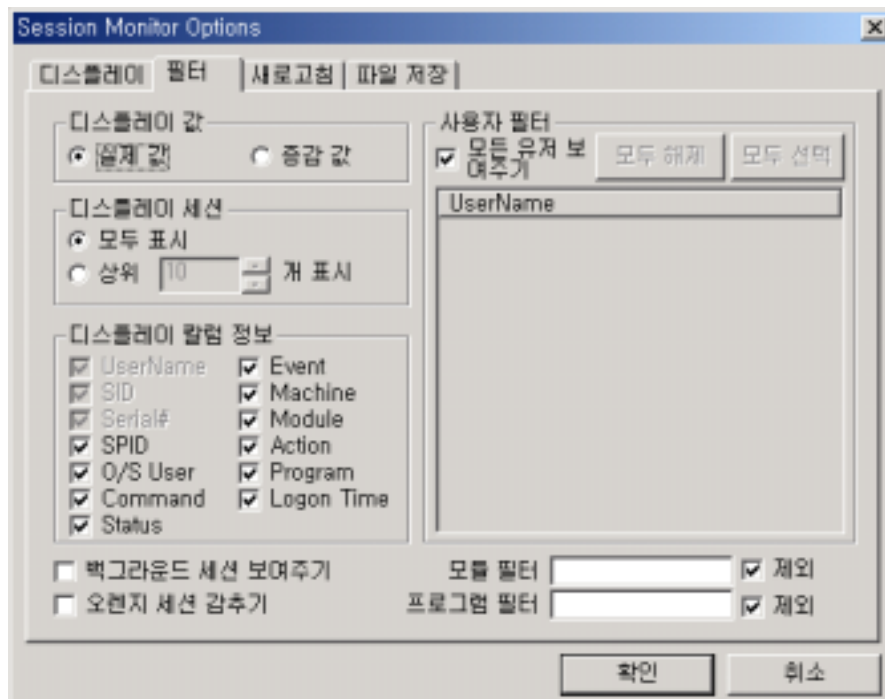
[10.5 –   ]

■ [   ]

,   .
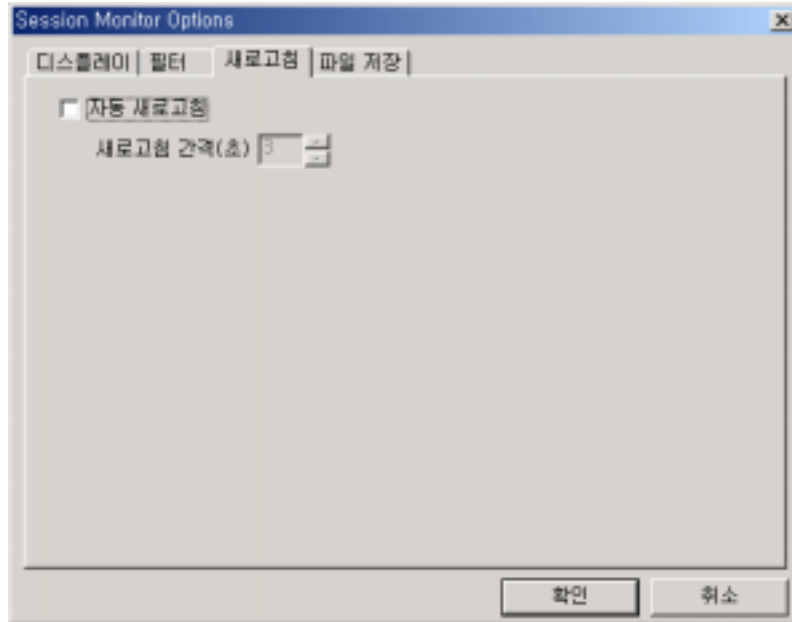
[10.6 –   ]
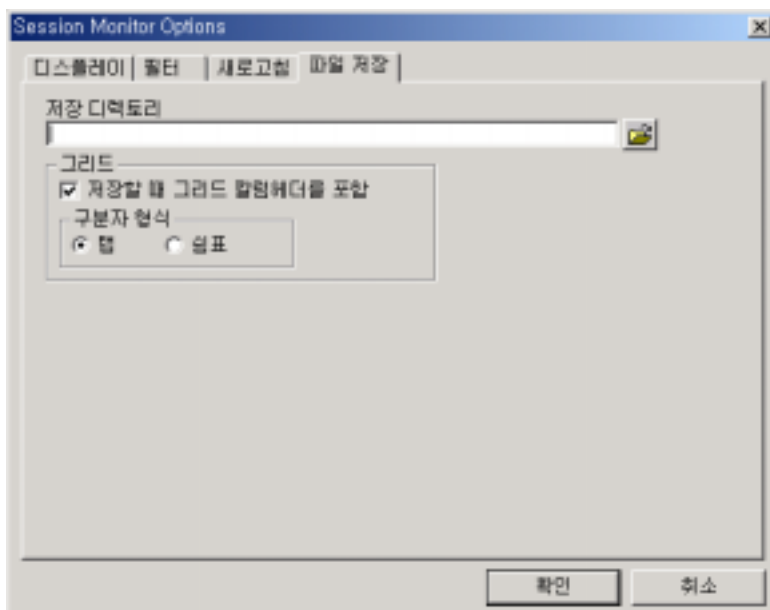
10.3.3 Session Monitor 　　 SQL Trace

- 　　　　　　　 SQL Trace 　　　　　　　　　　　　　 .
- 　　　 Trace On(🔧) 　　　　　　　　　　　　　　 SQL Trace 　　　　 .
- Trace On(🔧) 　　　　　　 Drop Down 　　　 Trace Level 　　　　　　　　　 .
- 　　　 SQL Trace 　　　　　　　 , 　　　　　 Trace On(🔧) 　　　　　　 SQL Trace 　　　　　　　　　　 .
- SQL Trace 　　　　　　　　　 DBMS 　　　　　 SQL Trace 　 Trace Tool 　　　　 .
- SQL Trace 　　　　　 Trace Off(🔧) 　　　　　　　　 SQL Trace 　　　　 .

[　　 10.7 – 　　 SQL Trace 　]
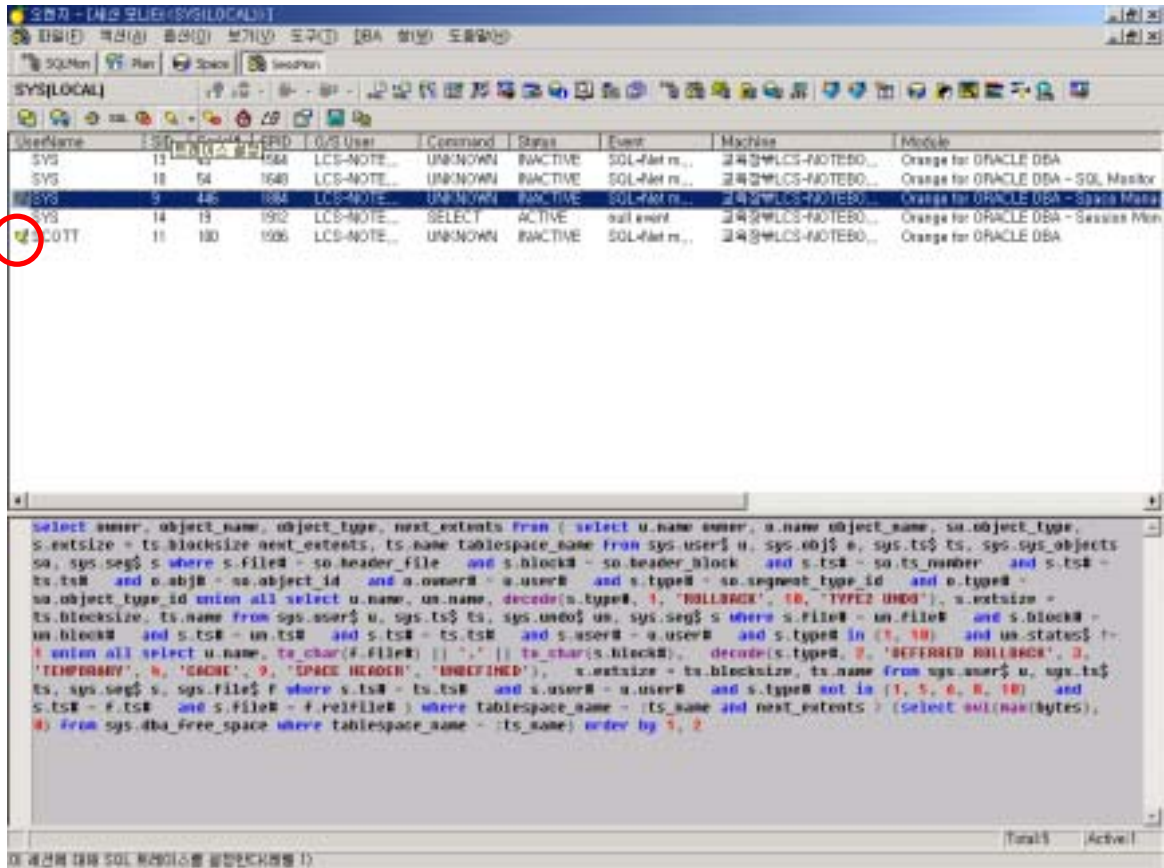
10.3.4 Session Kill

Kill   . Kill   DML   Rollback

.

[10.8 – Kill Session]

10.3.5

.

($\triangle$)

.

($\circledast$)
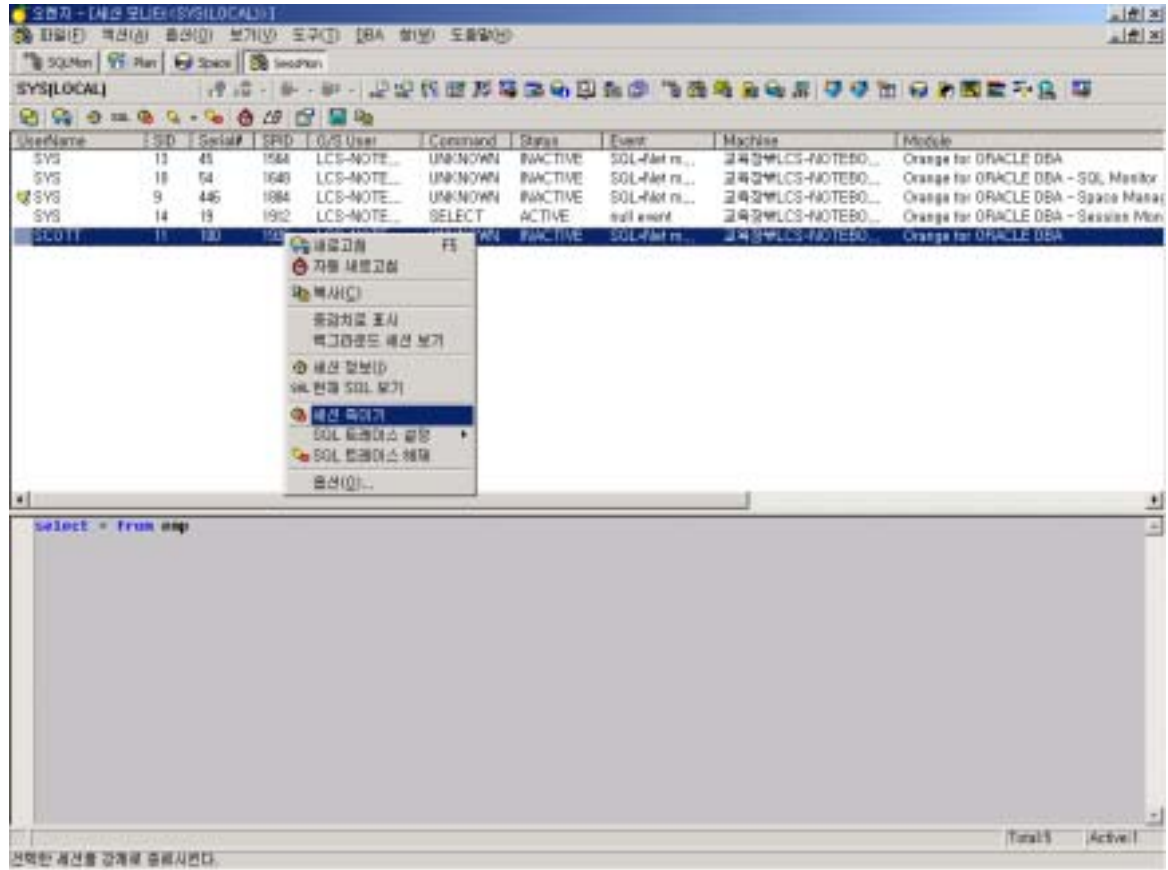
.   CPU

.

[10.9 –   (CPU used by this session)]
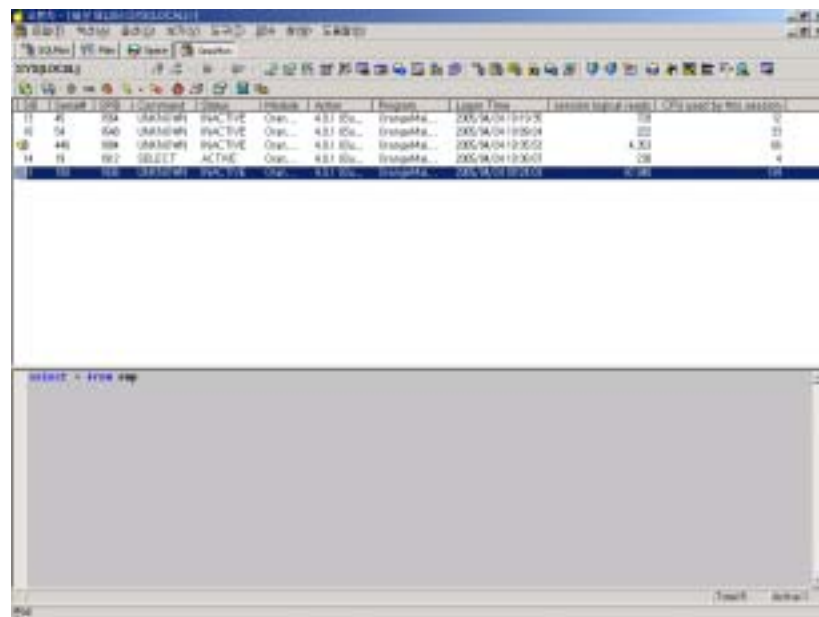
[10.10 –   (CPU used by this session)]
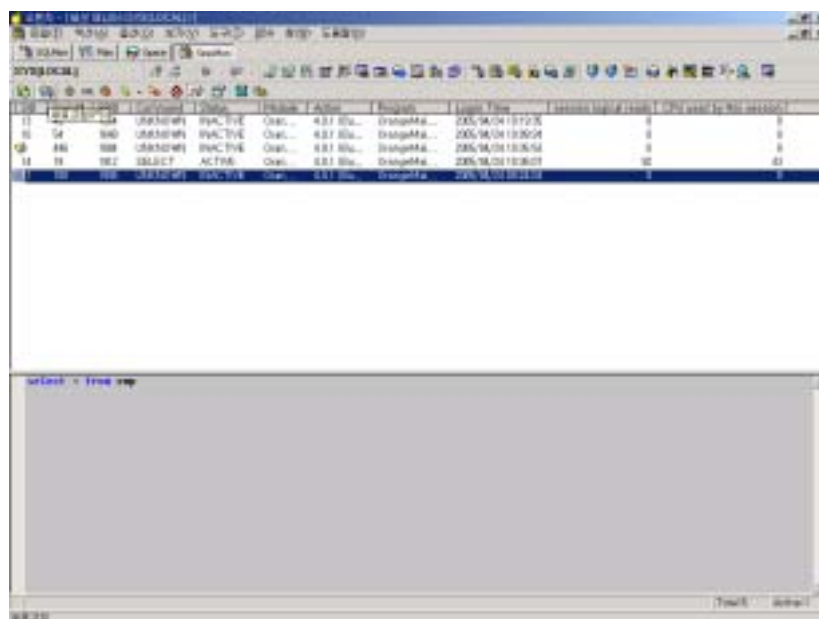
10.3.6

Session Monitor

.

- Session Info: .

  Session Info Session Info

  Session Info . (Session Info 27

  Session Info)

- PL/SQL Tool: SQL PL/SQL Session Info [ ]

  Current SQL PL/SQL .

- Plan Tool: SQL Session Info [ ] Plan

  .

[10.11 – Session Information(CPU used by this session)]
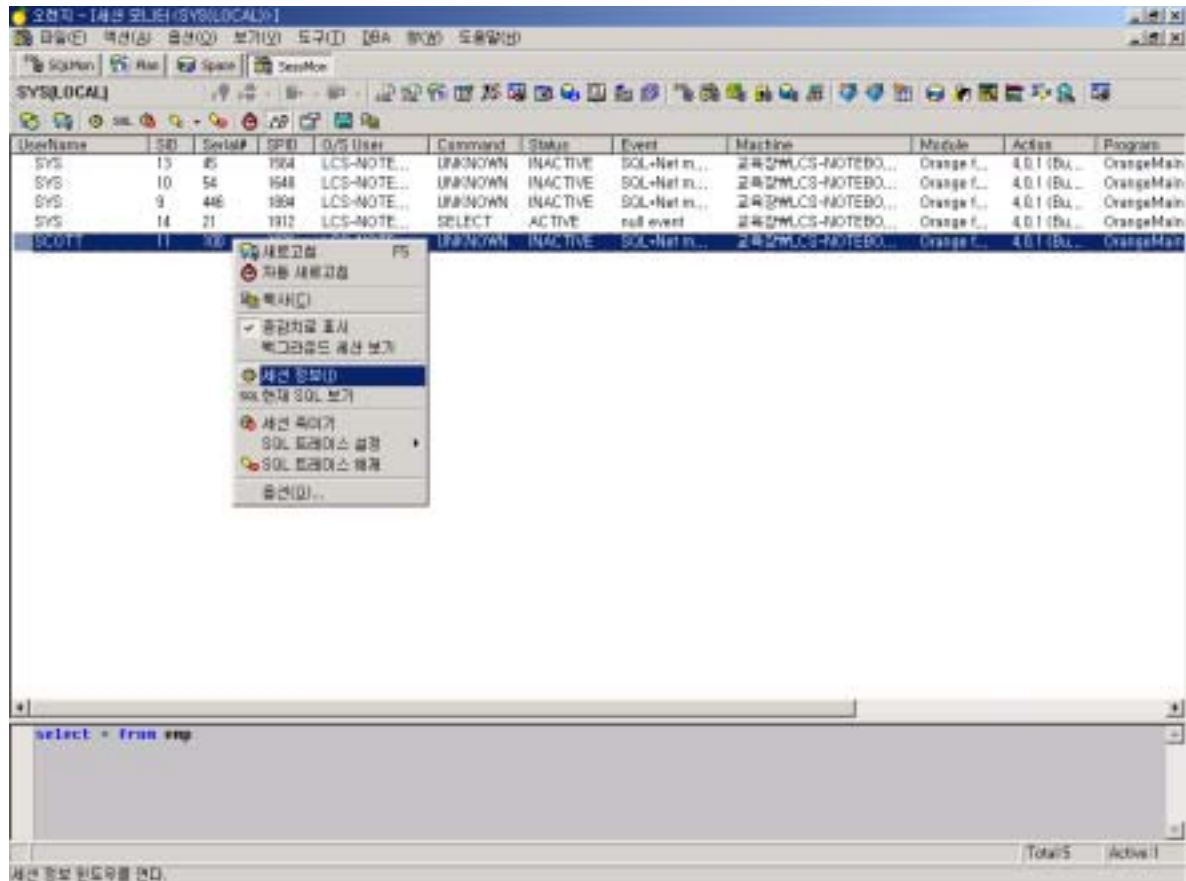
11. Lock/Latch Monitor

Lock

Lock   .   Lock Monitor   Lock Holding   Waiting
                                        Lock   .
                                Locking   Latch
Latch   Waiting Tree   Latch
      .   Session Info   Plan Tool   Lock   Latch
                                                                                            .
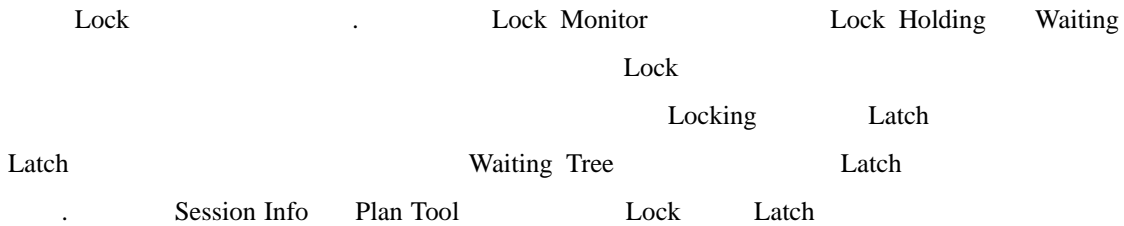
11.1 Lock Monitor

- ✓   (Lock)
- ✓   (Latch)
- ✓   Lock Holding/Waiting
- ✓   Latch Holding/Waiting
- ✓
- ✓
- ✓   Plan Tool   PL/SQL Tool
- ✓
- ✓   (,   ,   ,   , Event, Wait)
- ✓   Kill
- ✓   Level 1, 4, 8, 12   SQL Trace

11.2 Lock Monitor

	Refresh
	SQL
	Kill
SQL	
	SQL
Option	Refresh
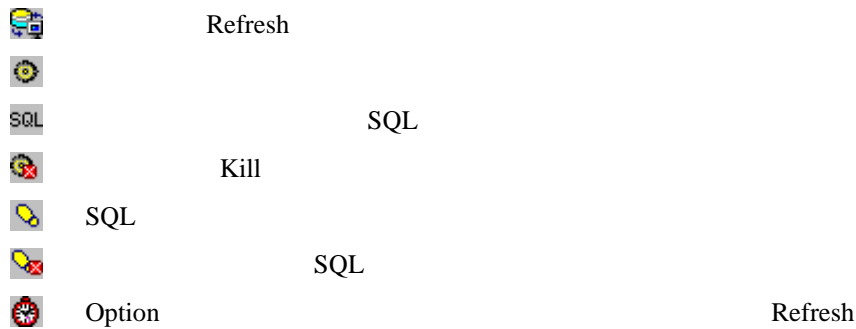
11.3 Lock Monitor

11.3.1 Lock Monitor

[   ]   [/   ]   /   (📺)

.

11.3.2 Lock   Latch

Lock Monitor   [Lock List], [Lock Holder/Waiter Tree], [Latch List], [Latch Holder/Waiter Tree]

                    "Lock List"   Lock   "Lock

Holder/Waiter Tree"   Lock Holder   Waiter   Lock Waiting   . "Latch

List"   Latch   Latch   . "Latch Holder/Waiter Tree"

Latch Holder   Waiter   .

■   [Latch List]   Latch

            . [Latch List]   Latch   Latch   Waiting

                            .

■   [Latch Holder/Waiter Tree]   Latch   Latch

                    . Latch   Waiting   Lock   Waiting   Latch

                    .   Latch

            Latch   Latch

                    .

[11.1 - Lock List]

[11.2 - Lock Holder/Waiter Tree]

[11.3 – Latch List]

[11.4 - Latch Holder/Waiter Tree]

11.3.3 Lock List

Lock List   "   "   "
      "   .   "   "   ,
                              [   ]   (sec)
                                              .

[11.5 –   ]
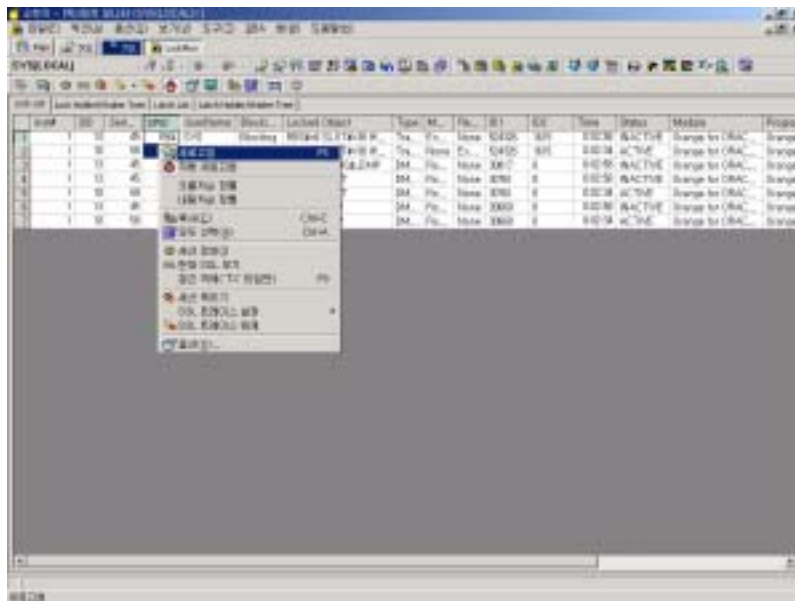
11.3.4 Lock List Sort

Lock List   "   "   "
      ”   .   .

    [11.6 - Sort   ]
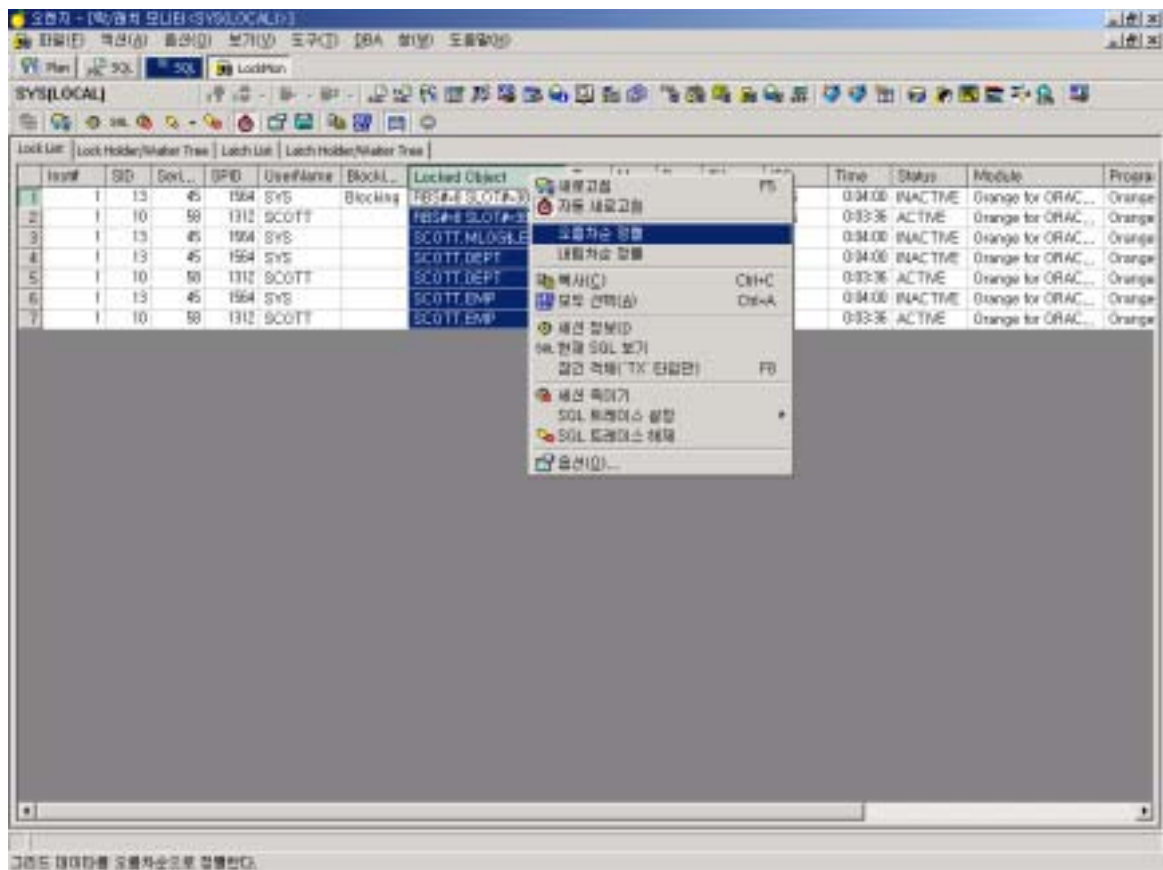
11.3.5 Lock Holding/Waiting

[11.7 - Session Information]   Lock Holding(SID 13)   Lock Waiting(SID 10)

                . SID 13   Row   ,

                            "Session Information"   (Cursors,   ,   ,

Waits)   .

[11.7 - Session Information]
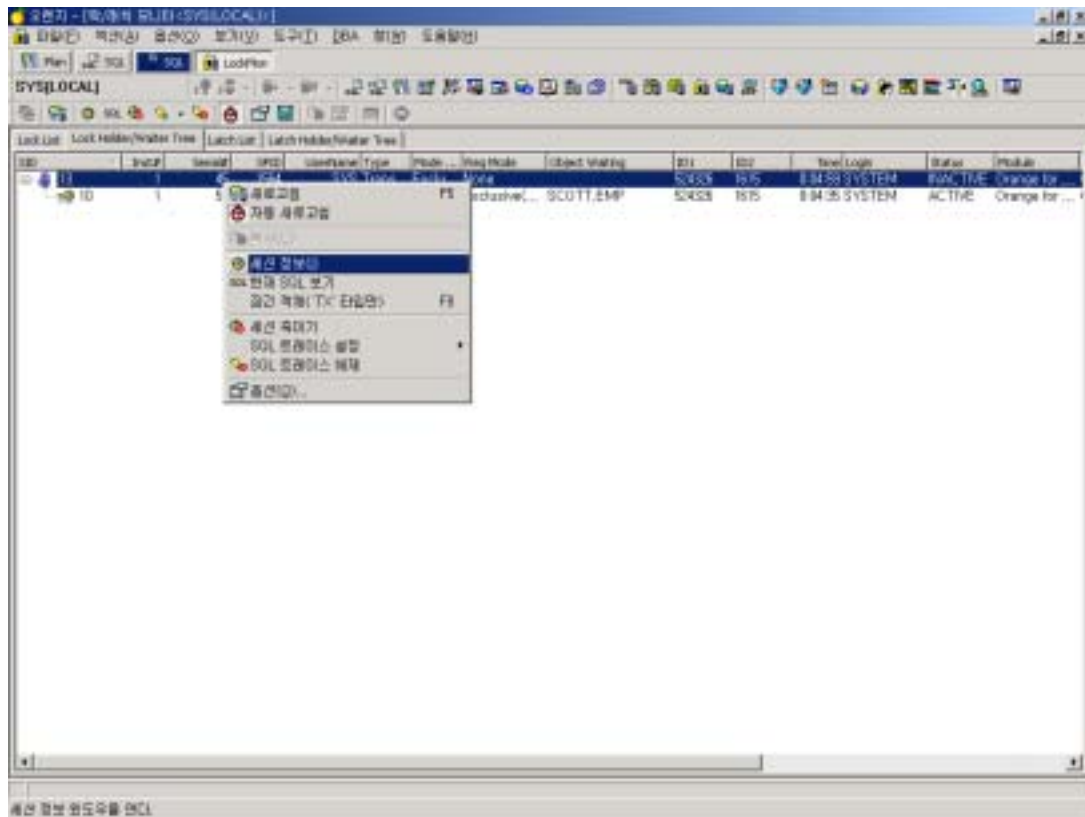
11.3.6 Lock Holding/Waiting   Kill

[11.8 - Kill Session]   Lock Holding(SID 13)   Lock Waiting(SID 10)

              Kill   Row   "Kill

Session"   .

[11.8 - Kill Session]
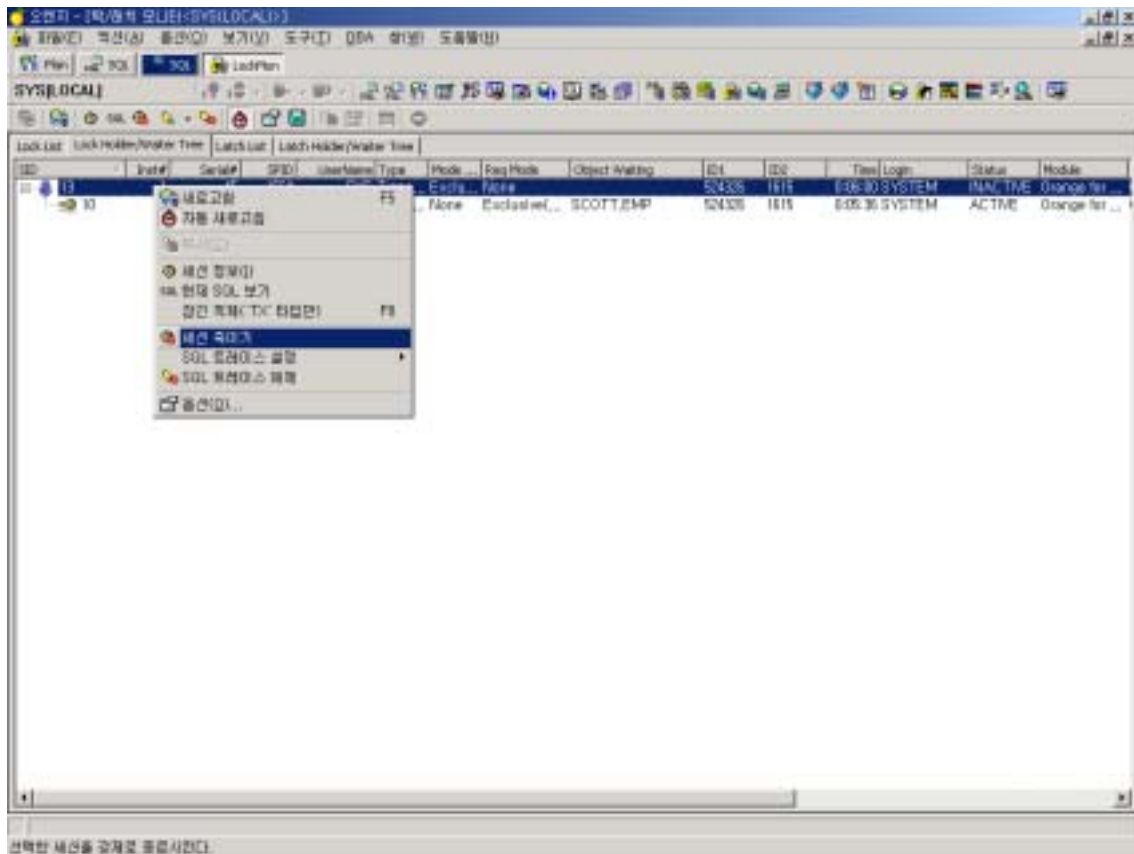
11.3.7 Lock   SQL Trace

[11.9 - Trace   ]   Lock Holding(SID13)   Lock Waiting(SID 10)
         Row   "SQL   "
                    SQL   Level   Trace   .
          .

[**11.9 - Trace   **]
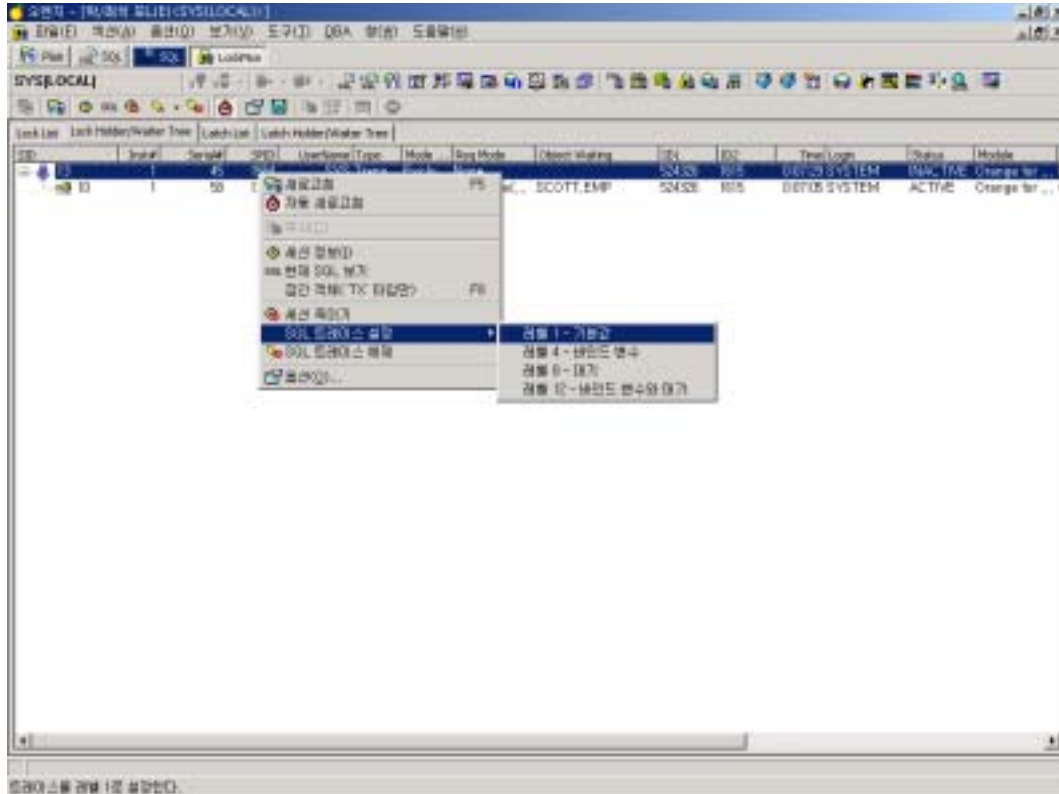
11.3.8

Lock Monitor   Session Monitor   Session Info, Plan Tool, PL/SQL Tool   Lock
                    . Lock   Latch   SQL Tool
    PL/SQL   . (10.3.6   )

11.3.9 Lock Monitor   Option

Lock Monitor   [GENERAL],[GRID],[FILE SAVE],[REFRESH]

.

■ [   ]

"Source View"   Single Instance   OPS   .

"Automatic"   OPS   .   Lock

Type   Mode   "Translate Lock Mode"   .

[11.10 – Lock Monitor Option]

■ [   ]
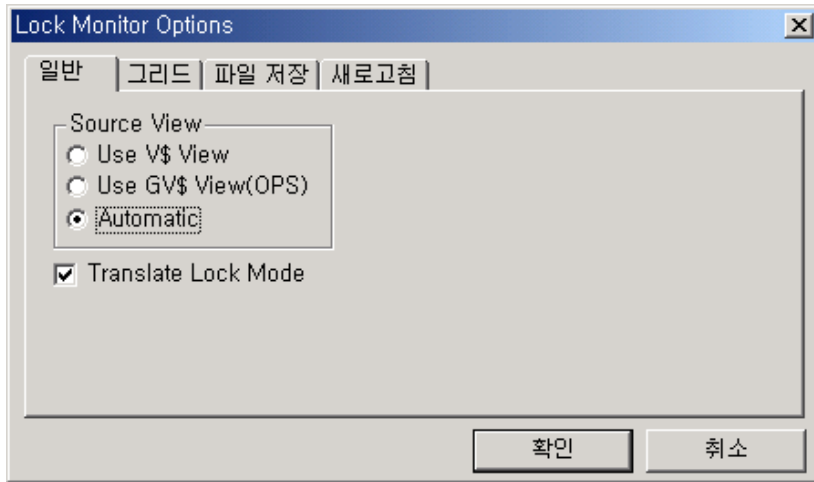
Background Color   Sort

■ [   ]

. (10.3.2

Session Monitor 　　 Option [File Save]　　　　)

■ [　　　　]

　　　　　　　　　　　　　 Refresh　　　　　　　　　　　　 . (10.3.2

Session Monitor　　Option [Refresh]　　　　)

12. Trace Tool

Trace Tool

Disk I/O

SQL   SQL   .

12.1 Trace

- ✓
- ✓   Direct Access   FTP   Access
- ✓   TKPROF   (Client Time, Bind Variable, Wait Events)
- ✓
- ✓   Raw Trace

12.2 Trace

📁	NT server
FTP	
🖧	Refresh
💾	
🖨	
📄	Raw Trace

12.3 Trace

12.3.1 Trace

Trace Tool   (🎲)   Trace Tool   .   [
    ]   [   ]   [   ]   Trace Tool
Trace Tool   .

12.3.2 Local Database / NT Server Database Trace File

Trace Method   .   [   ] → [

            ]   udump   .

ORACLE   MS-Windows NT   udump

                                                    .

[12.1 - Local Database Trace   ]
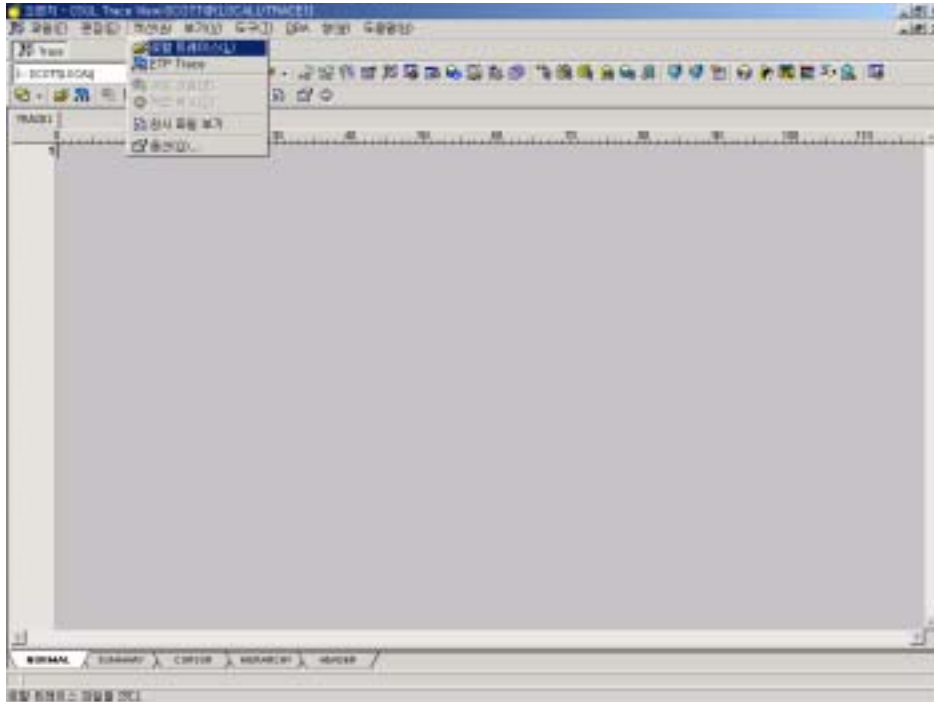
[12.2 - Local Database   ]
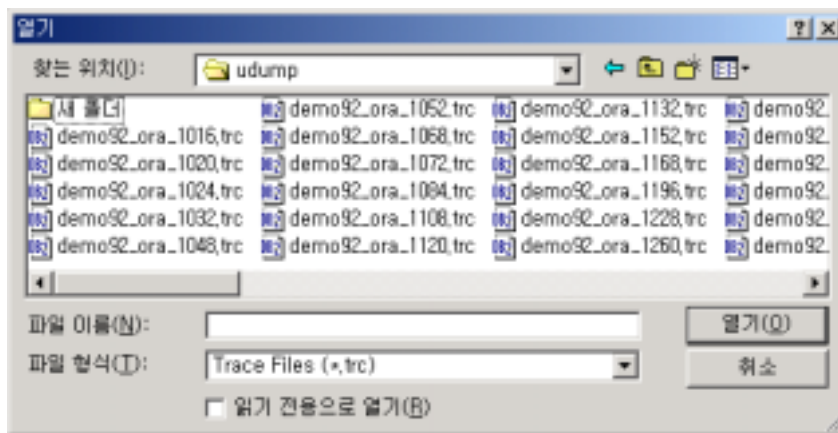
12.3.3 Remote Database Trace File

Trace Method   FTP   .   [Action] →

[FTP]   "Server Name", "O/S User Name", "Password", "Port#"

. Server Name/User Name/Password   64   Port #   1 ~ 65000

.

[12.3 - FTP Login]
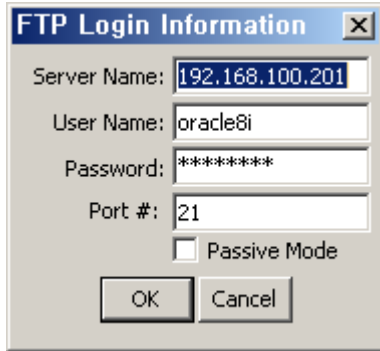
,   Orange Configuration Admin   ,

[Server Name]   tnsnames.ora   .   [OK]

FTP Browser   .   [Open]

.

[12.4 - FTP Browser]

12.3.4 Trace

(📋) 　　　　　　　　　　[　　12.5 –
　　]　　　　　　　　　　　　　　　　　　　　　　"　　", "　　", "　　" 3　　　　　　　　　　　.

[　　12.5 –　　　　　　　　　　　]
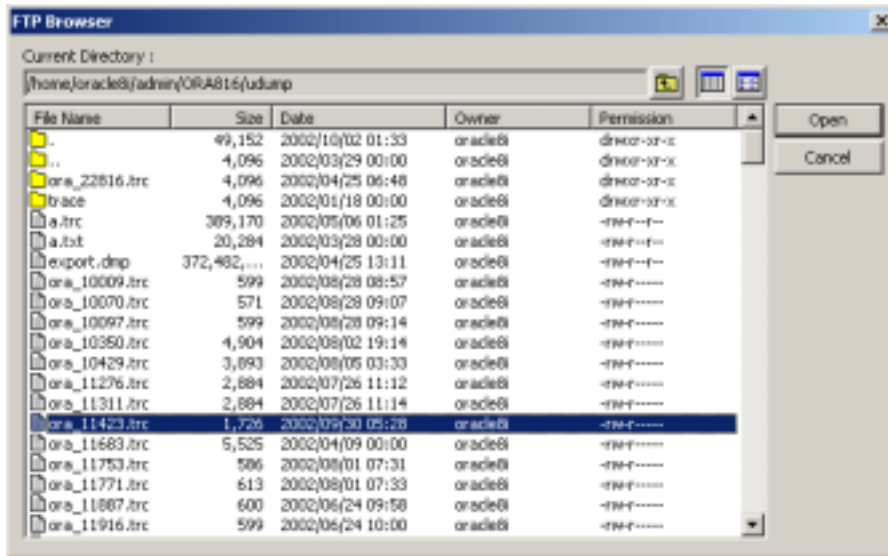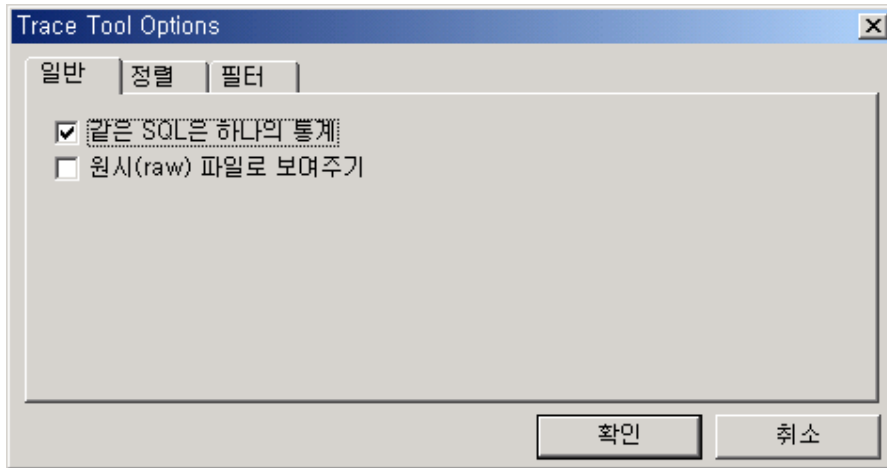
■ [　　]
[　　]　　　　　" 　　SQL 　　　　　　　　", "　　(raw)　　　　　　　　　"
　　.　　Check Button 　　　　　　　　　　　　　　　.
➢ "　　SQL　　　　　　"
➢ "　　(raw)　　　　　　"

[　　12.6 – Trace 　　　　　　　　　　]

■ [   ]

[   ]   ,   ,   ,   .   Sort1

~ Sort3   3   .   Sort   "   ", "   ", "

"   .
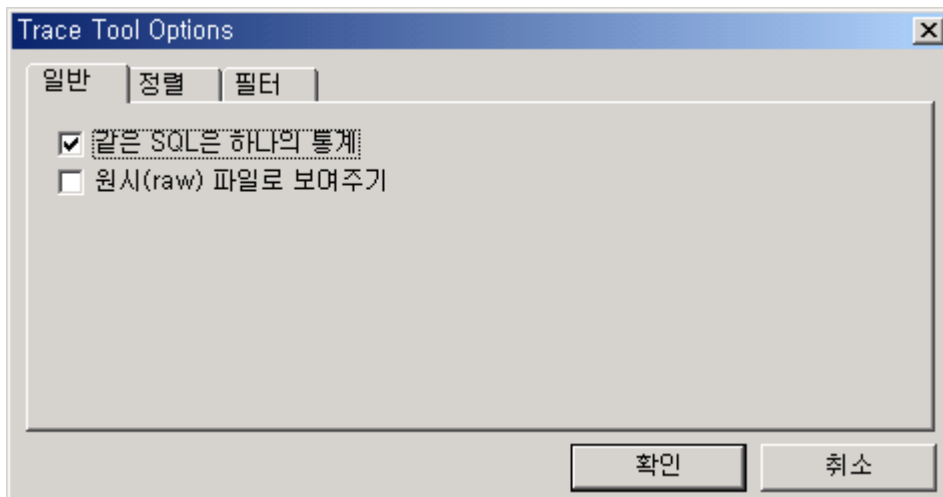
➢   "   "   <N/A>, Parse, Execute, Fetch, Total, Other

.

➢   "   "   "   "

(User, Wait Time   )   .

➢   "   "   .

.

[12.7 – Trace   Sort   ]

- [   ]
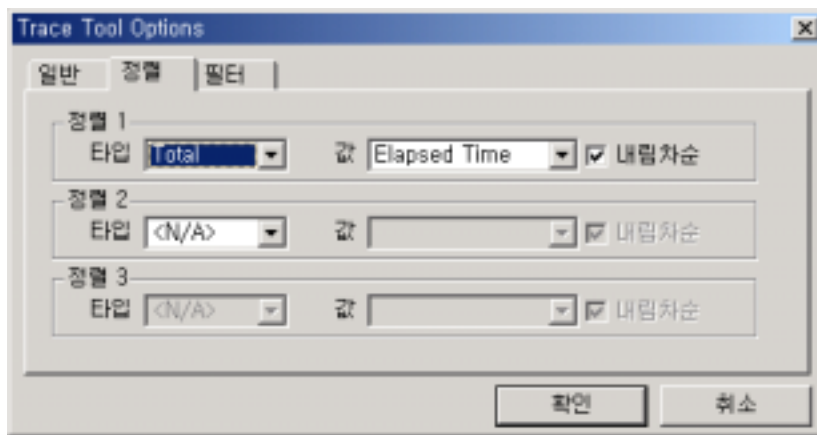
[   ]　　　　Trace　　SQL　　　　　　　　　　　　　"　　　　　　　　SQL　　　　　　　　　", "

SQL　　　　　", "SYS　　　　　SQL　　　　　"　　　　.

　　　　　　　　　　.

➢ "　　　　　　SQL　　　　　　　"

➢ "　　SQL　　　　　"　SQL　　　　　　　　　　　　　　Recursive SQL

➢ "SYS　　　　　SQL　　　　" SYS user　　　　　　　　　SQL

[　　　12.8 – Trace　　　　Filter　　　　　　　]
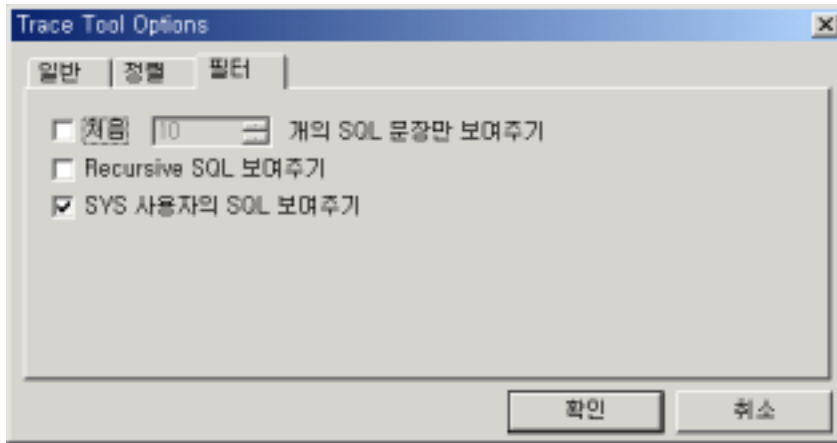
12.3.5

[12.9 –   ]   .

,   SQL   , SQL   , SQL

, Wait   ,   .

CPU Time, Elapse Time, Elapse Time for Client, Wait Time   8i

2   , 9i   3

.

[**12.9 –**   ]
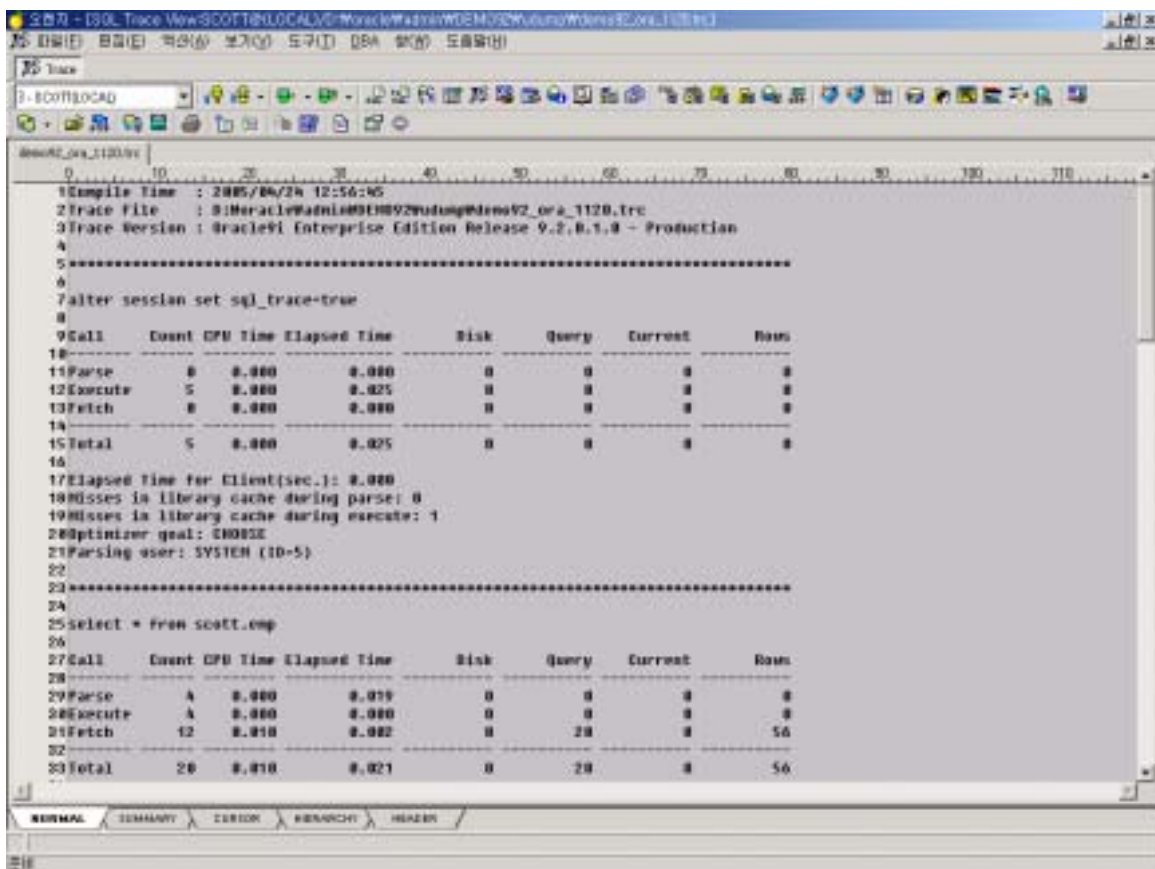
13. Database Information

(SGA, Parameter, Control File, Redo Log, Tablespace, Rollback Segment), (Archive Mode), .

[13.1 - Database Information]
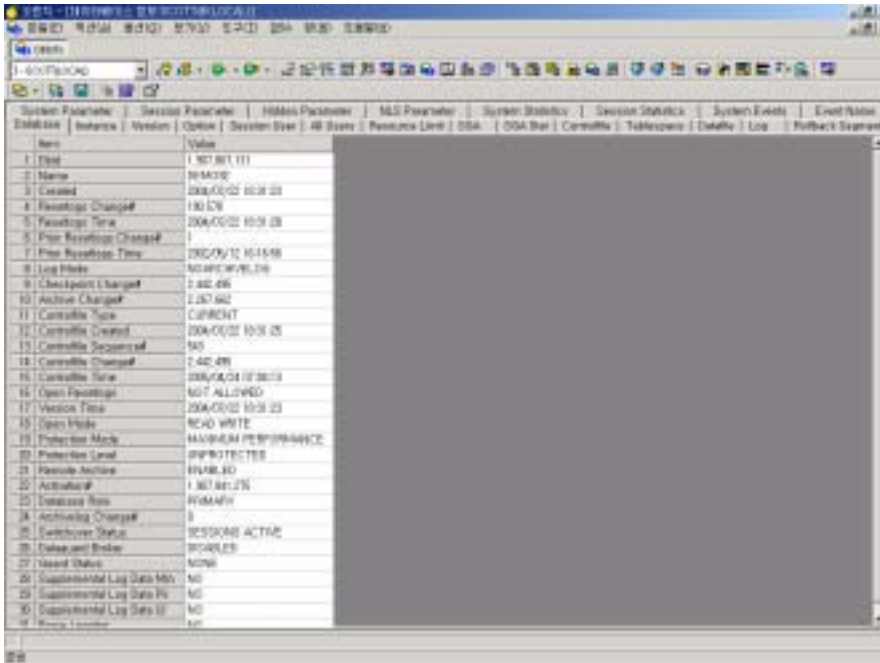
13.1 Database Information

. Database Information Database, Instance, Version, Option, Session User, All Users, Resource Limit, SGA, SGA stat, Control file, Tablespace, Data file, Log, Rollback Segment, System Parameter, Session Parameter, Hidden Parameter, NLS Parameter, System Statistics, Session Statistics, Events, Event Name 22 .

13.2 Database Information

 Refresh

 Save

 Copy

 Select All

13.3 Database Information

　　　　　　　　　　[　] [　　　　　] 　　　　[　　　　] 　　　　Database Information
　　　　　　　　　　　Database Information 　　　　. System Parameter　Events
　Filter 　　　　　　　　　　　　　　　. 　　　　　　Filter 　　　　50
　　　.

13.4 Database Information　Tab

Database Information 　　　　　22 　　　　　　　　　.
　　✓ [Database] 　　　　　　　　　　, 　　　, 　　　
　　　　　　.

　　✓ [Instance] 　　　, 　　　, 　　　　　　, 　　　　.

　　✓ [Version] 　　　　　　　　　　.
　　✓ [Option] 　　　　　　　　.
　　✓ [Session User] 　　　　　　.
　　✓ [All Users] 　　　　.
　　✓ [Resource Limit]
　　　　.

　　✓ [SGA]　　　SGA 　　　　.
　　✓ [SGA stat] 　　SGA 　　　.
　　✓ [Controlfile] 　　　.
　　✓ [Tablespace]
　　　.

　　✓ [Datafile]
　　　.

　　✓ [Log] 　　　　　,
　　　.

　　✓ [Rollback Segment] 　　　, Wait, Xacts
　　　.

　　✓ [System Parameter] 　　　.
　　　　init.ora 　　, ALTER SYSTEM
　　　. Filter 　　　　　　　　　　　　　.
　　✓ [Session Parameter] 　　.
　　　[System Parameter] 　　, ALTER SESSION
　　　. Filter

.

- ✓ [Hidden Parameter]   Hidden Parameter   .
- ✓ [NLS parameter]   NLS   .
- ✓ [System Statistics]   .
- ✓ [Session Statistics]   .
- ✓ [System Events]   . Filter
                                            .

- ✓ [Event Name]
        .

13.5

                                                           [   ] → [   ]
              .

   [   ] → [   ]   Excel
            .   ,
                                              .
                                  .

---

14. Description Tool

Description   .

,   ,   ,   ,   ,
   .

14.1 Description Tool

- ✓ Access   Type   Object   Description
- ✓   Description
- ✓ "Exact Match", "Start With", "Include String"
- ✓ Object Type   Filter
- ✓
- ✓ Object   Script
- ✓   Analyze   ,   , Grant
- ✓   Object   Reference   Object,   Object   Reference   Object
- ✓ Description Tool   , Schema Browser   Object
  Object   Description

14.2 Description Tool

14.3 Description Tool

14.3.1 Description Tool

- ■   [   ]   [   ]   [   ] Tab   Description Tool
                Description Tool   .
- ■   Description Tool   .
- ■   Tool(SQL Tool, PL/SQL Tool, Plan Tool)   "F4"
                                    .

14.3.2 Object

[SCHEMA].[OBJECT_NAME]

Schema Browser   Schema Tool

.   "   ",   "   ", "   "   3

Search Type   .

 [   ]   Object   ,

            ,   Object   ,

                                                                           .

[14.1 – Description Tool   Object   ]
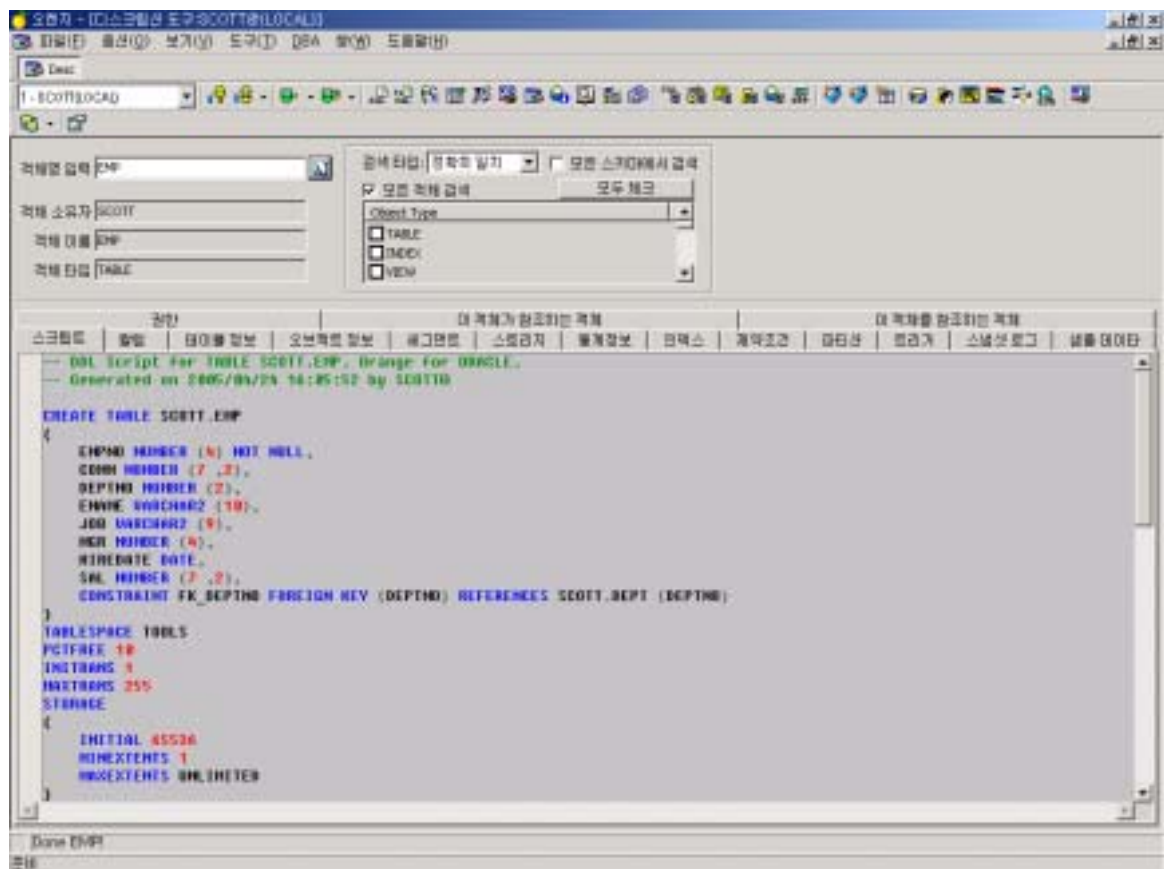
Object   Schema Browser

            .   , Description Tool   , Schema Browser   Object

        Object   Description Tool   .

14.3.3   Object

Object   .

Object   .

[14.2 –   Object   ]
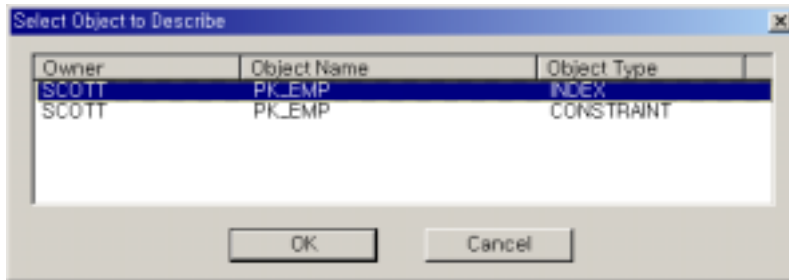
14.4 Object

Description Tool   Object   23   . Object

                      .   Object

14.4.1 Cluster

- Cluster Info
- Object Info
- Script
- Grants
- Reference
- Reference by

14.4.2 Constraint

- Constraint Info
- Column
- Object Info
- Grants
- Reference
- Reference by

14.4.3 Context

- Object Info
- Script
- Grants
- Reference
- Reference by

14.4.4 DB Link

- DB Link Info
- Script
- Grants
- Reference
- Reference by

14.4.5 Dimension

- Dimension Info
- Object Info
- Script
- Grants
- Reference
- Reference by

14.4.6 Directory

- Directory Info
- Object Info
- Script
- Grants
- Reference
- Reference by

14.4.7 Function

- Object Info
- Script
- Grants
- Reference
- Reference by

14.4.8 Index

- Index Columns
- Index Info
- Statistics
- Object Info
- Storage
- Segment
- Partition
- Script
- Reference
- Reference by

14.4.9 Index Type

- IndexType Info
- Object Info
- Script
- Grants
- Reference
- Reference by

14.4.10 Java

- Java Class Script
- Java Class Object Info
- Java Source Script
- Java Source Object Info
- Java Resource Script
- Java Resource Object Info

- ■ Grants
- ■ Reference
- ■ Reference by

14.4.11 Library

- ■ Library Info
- ■ Object Info
- ■ Script
- ■ Grants
- ■ Reference
- ■ Reference by

14.4.12 Operator

- ■ Operator Info
- ■ Object Info
- ■ Script
- ■ Grants
- ■ Reference
- ■ Reference by

14.4.13 Package

- ■ Package Script
- ■ Package Object Info
- ■ Package Body Script
- ■ Package Body Object Info
- ■ Grants
- ■ Reference
- ■ Reference by

14.4.14 Procedure

- Script
- Object Info
- Grants
- Reference
- Reference by

14.4.15 Profile

- Profile Info
- Object Info
- Script
- Grants
- Reference
- Reference by

14.4.16 Role

- Role Info
- Granted Roles
- Granted System Privileges
- Script
- Grants
- Reference
- Reference by

14.4.17 Sequence

- Sequence Info
- Object Info
- Script
- Grants
- Reference
- Reference by

14.4.18 Synonym

- Synonym Info
- Object Info
- Script
- Grants
- Reference
- Reference by

14.4.19 Table

- Column List
- Table Info
- Object Info
- Segment
- Storage
- Statistics
- Indexes
- Constraints
- Partitions
- Triggers
- Snapshot Logs
- Sample Data
- Script
- Grants
- Reference
- Reference by

14.4.20 Trigger

- Script
- Trigger Info
- Object Info
- Grants
- Reference
- Reference by

14.4.21 Type

- Type Info
- Type Object Info
- Type Script
- Type Body Object Info
- Type Body Script
- Grants
- Reference
- Reference by

14.4.22 View

- Column List
- Script
- View Info
- Triggers
- Sample Data
- Grants
- Reference
- Reference by

14.4.23 Snapshot Log(Mview Log)

- Snapshot Log Info
- Grants
- Reference
- Reference by

14.4.24   **Description**

SQL   , NULL   ,

      .   .

                                    [14.3 -

]

                         .   "Alt+C"   .

[**14.3 -**   ]
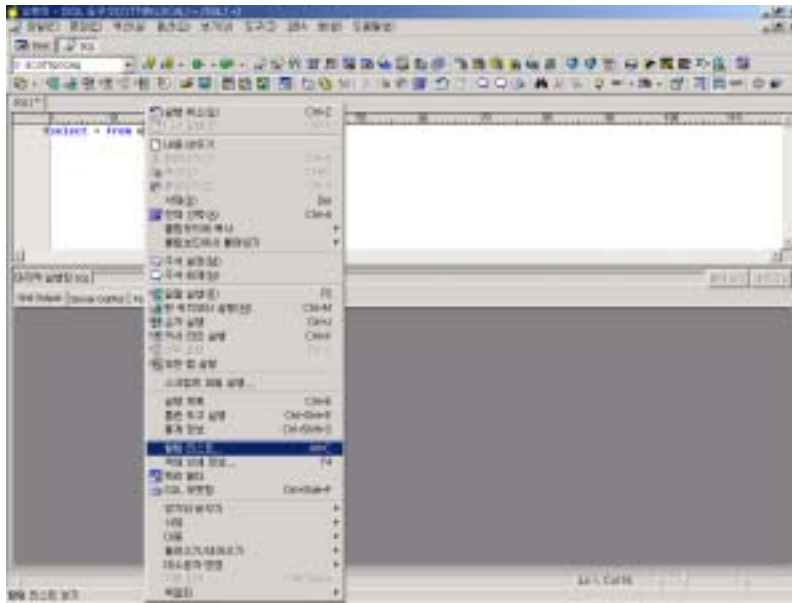
[**14.4 -**   **Column Description**]
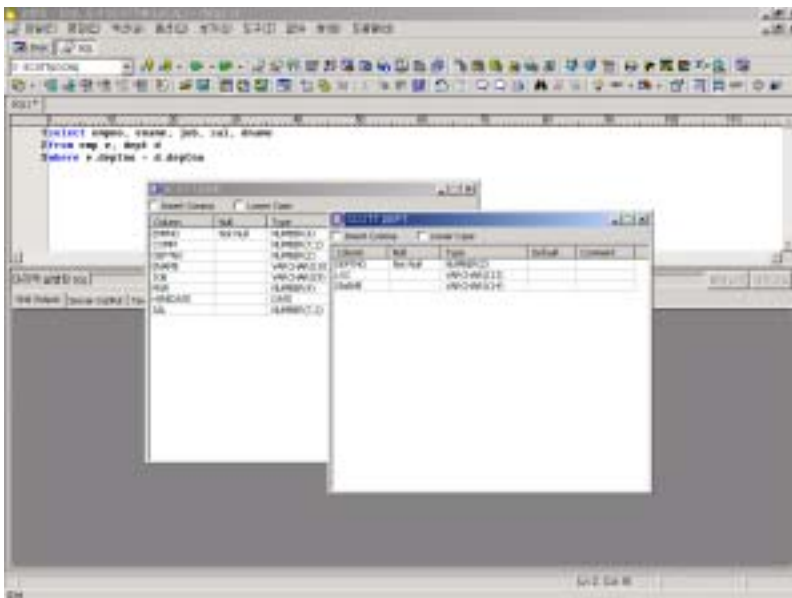
14.4.25　　　　　　　Full Description

　　　　　Full Description　　　　　　　　　　　　　　　　　(Indexes, Constraints, Storage, Partitions, Triggers, Snapshot Logs, Columns, Table Info, Object Info, Segment, Statistics, Sample Data, Script, Grants, Reference, Reference by)　　　　　　　　　　　　　　　.

　　　　　　　　　　　　　　　　　　　　　　　[　　　14.5 -
　]　　　　　　　　　　　　　　　　　　　　　　　　　Description Tool
　　　　　　　　　　　　　　.　　　　　　"F4"　　.

[　　14.5 -　　　　　　　　　　　　]
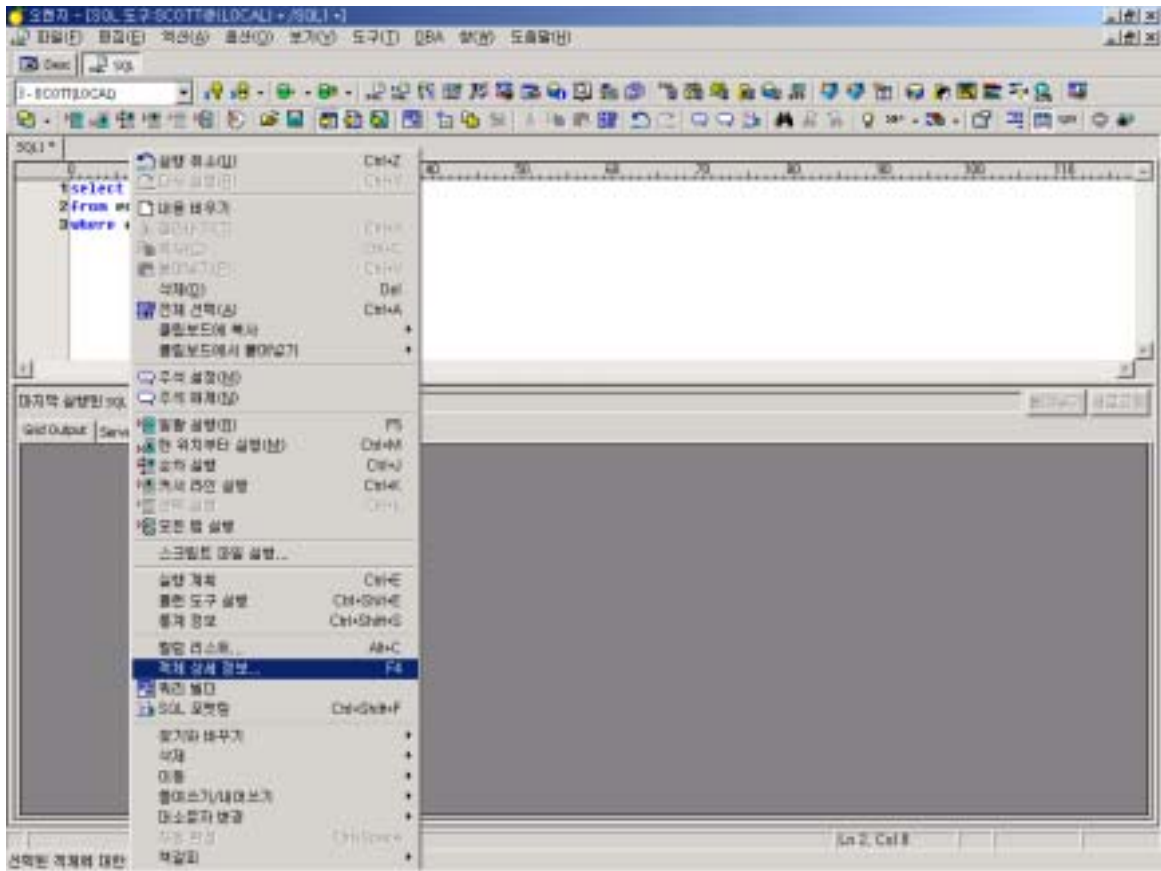
Description Tool   [14.6 -   Full Description(   )   ]
                                         , NULL   ,   .

[14.6 -   Full Description(   )   ]
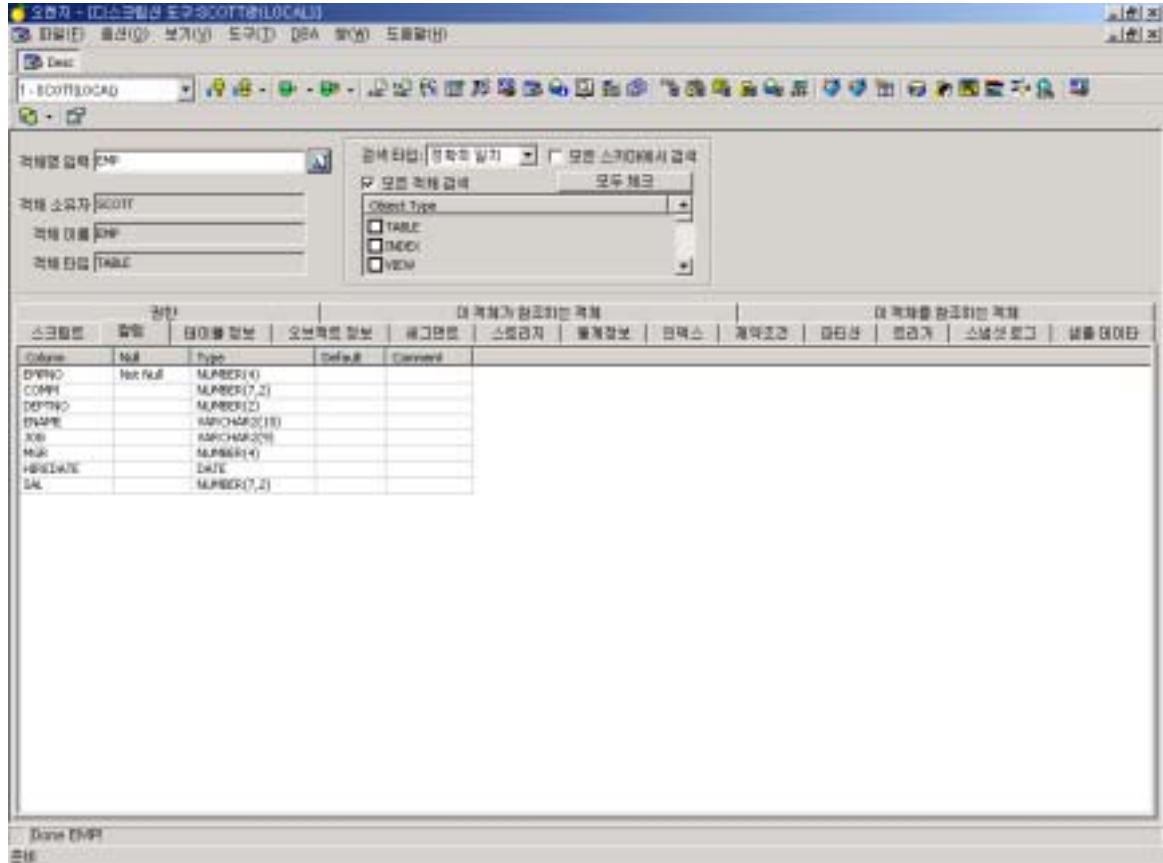
Description Tool [Table Info] ,
(Rows, Row , Empty , , Last Analyzed..) .

[14.7 - Full Description( )]

Description Tool 에서 [Object Info] 탭을 선택하면 ID 정보를 비롯하여, 생성된 시간, 마지막 DDL 시간,

상태를 확인할 수 있다.

[그림 14.8 - 디스크립션 도구의 Full Description(오브젝트 정보) 화면]
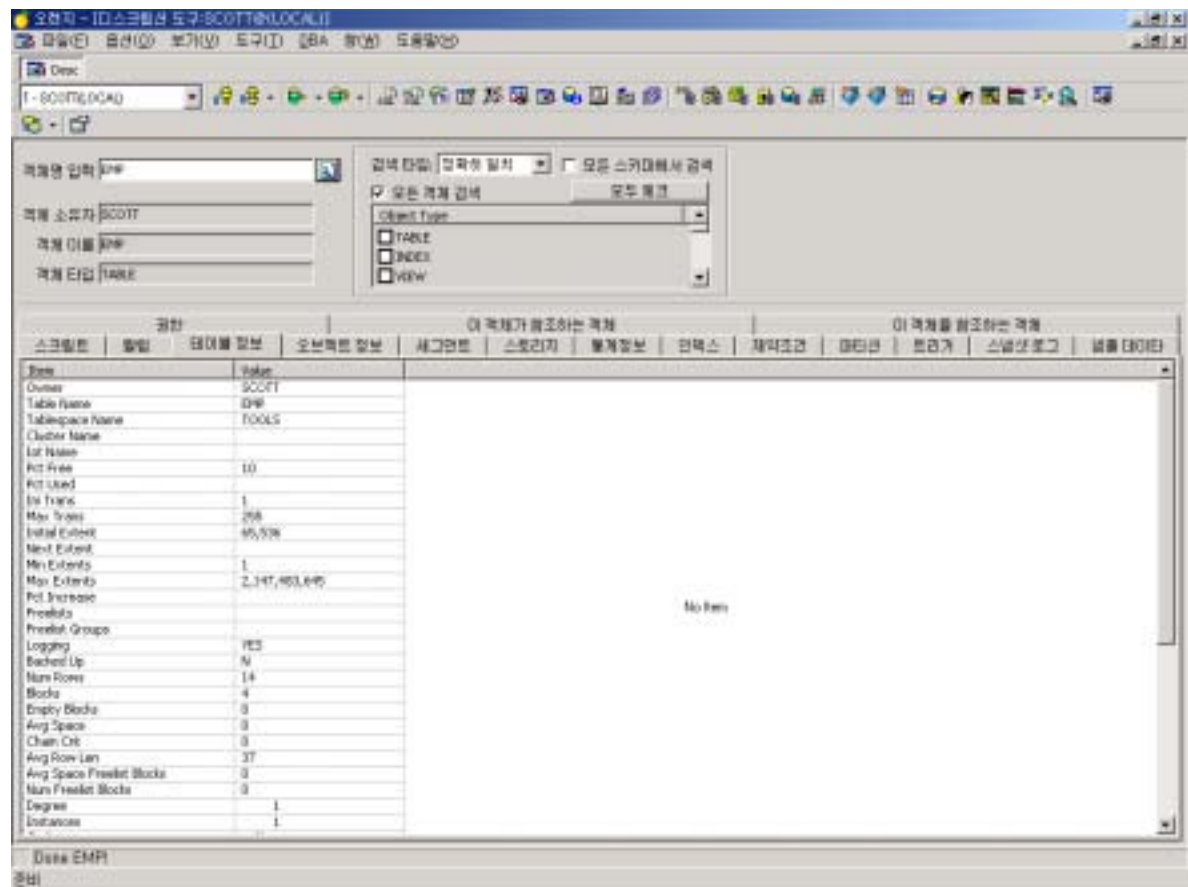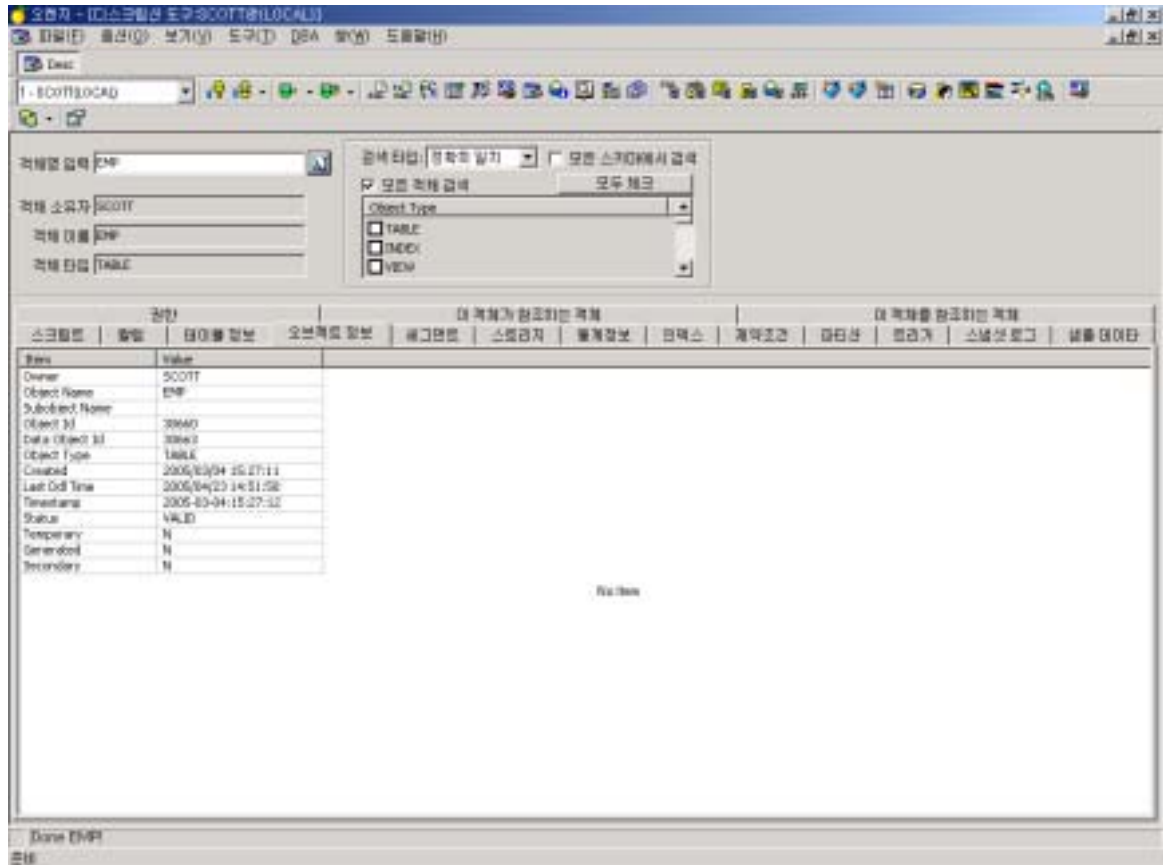
Description Tool   [Segment]   (TABLE..), Header File, Header Block,

Bytes,   Blocks   (Initial, Next..)   .

[14.9 -   Full Description(   )   ]
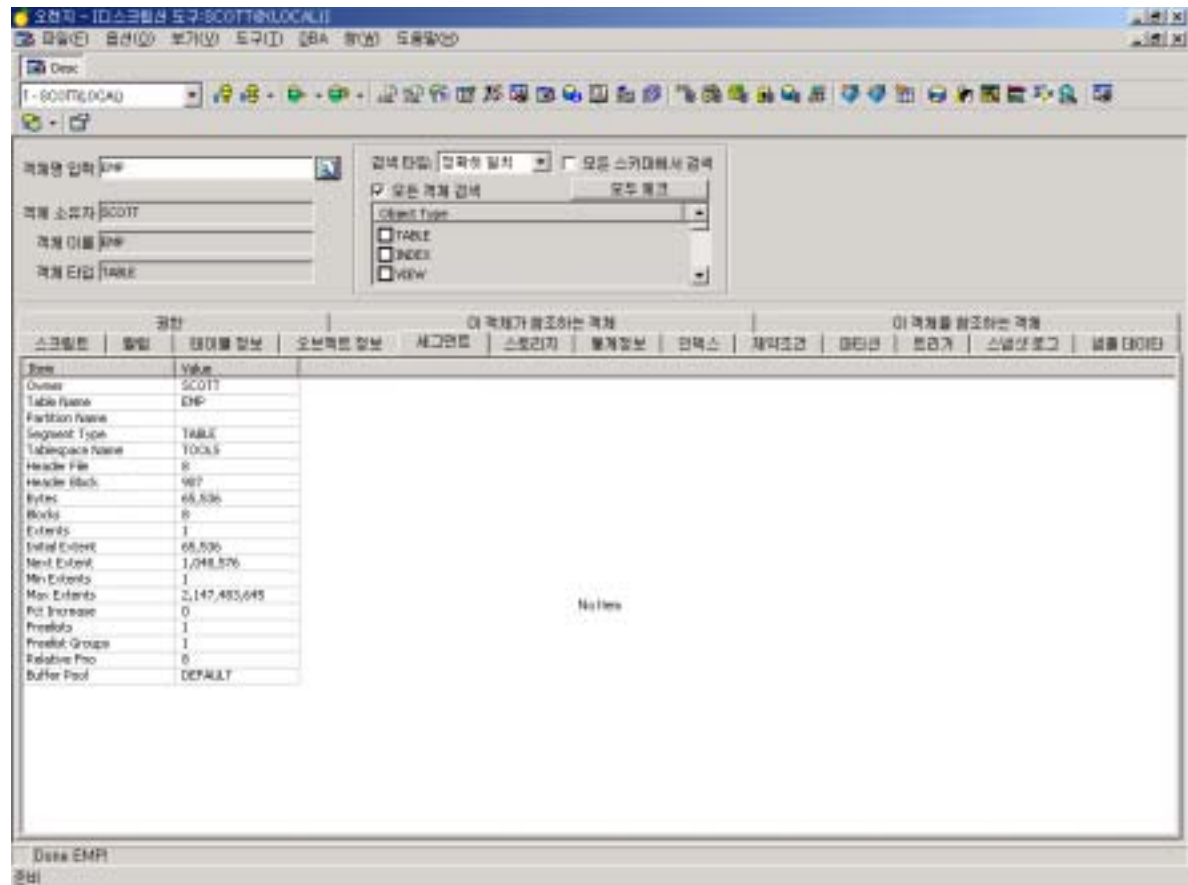
Description Tool   [   ]   Last Analyzed, Avg Space,   , Blocks, Empty Blocks,
          .

[14.10 -   Full Description(   )   ]

Description Tool 의 [Sample Data] 탭에서는 20 건의 Sample Data 를 보여준다.

[그림 14.11 - 오라지 아이디스크립션 Full Description(샘플데이터 탭 선택) 화면]

Description Tool   **[Script]**   DDL   .

[**14.12 -**   **Full Description(**   **)**   **]**
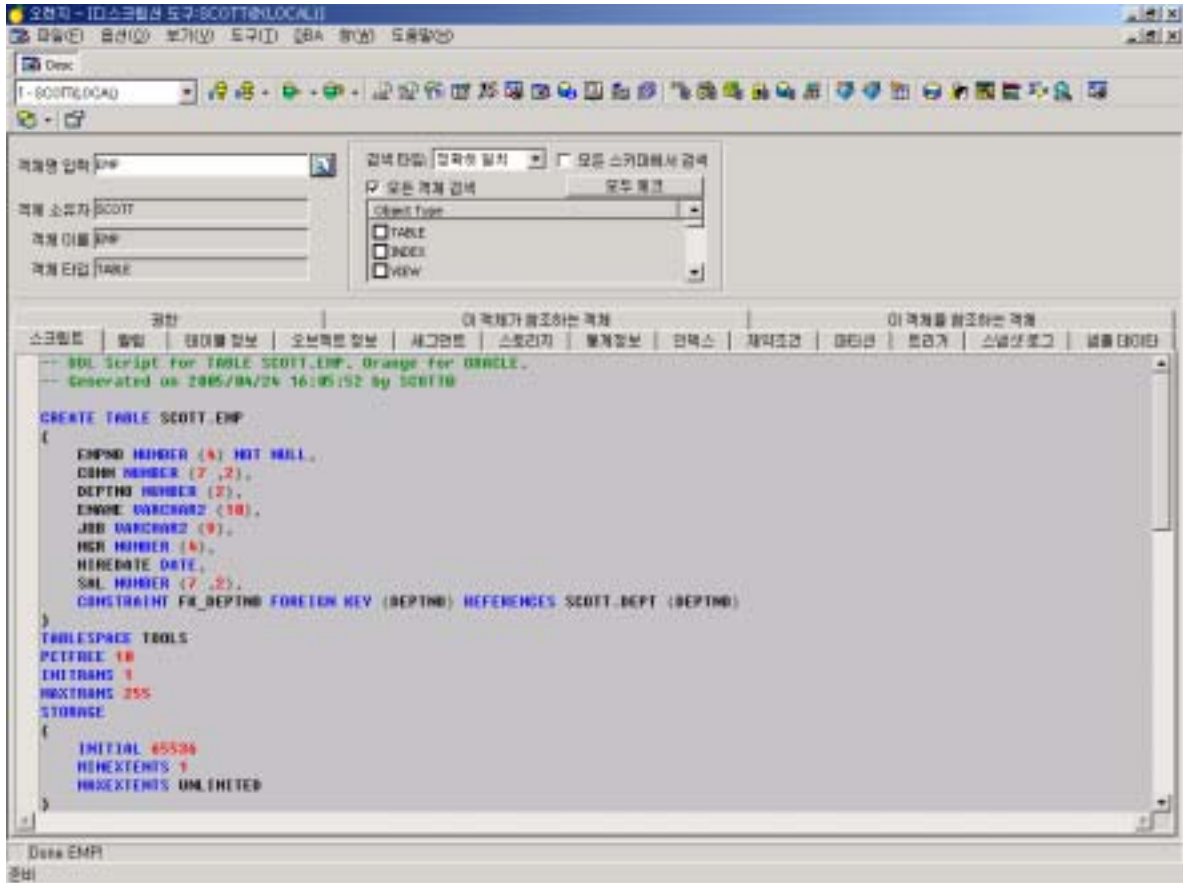
Description Tool 　　　　　　[Grants]
　.

[　　　14.13 -　　　　　　　　　　　Full Description(　　　)　　　]

Description Tool   [Reference]

.
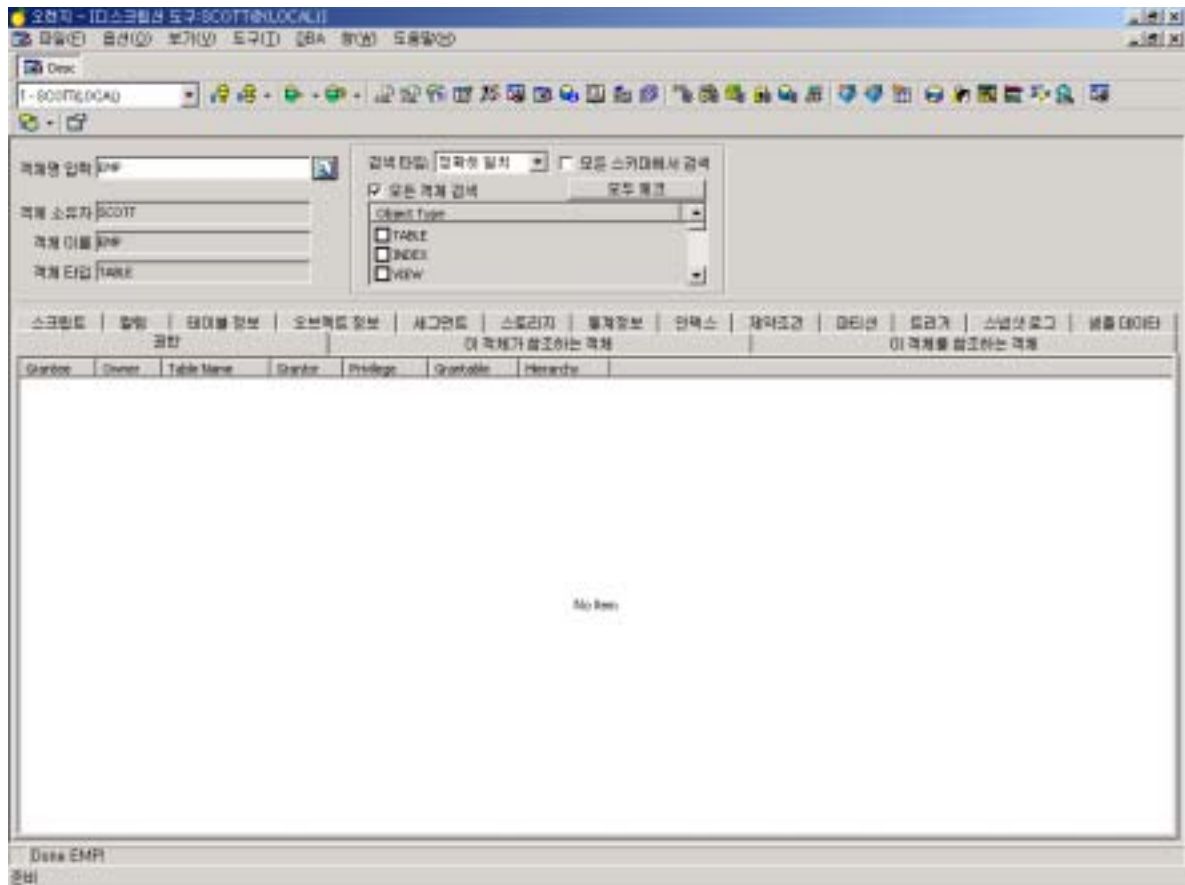
[14.14 -   Full Description(   )   ]
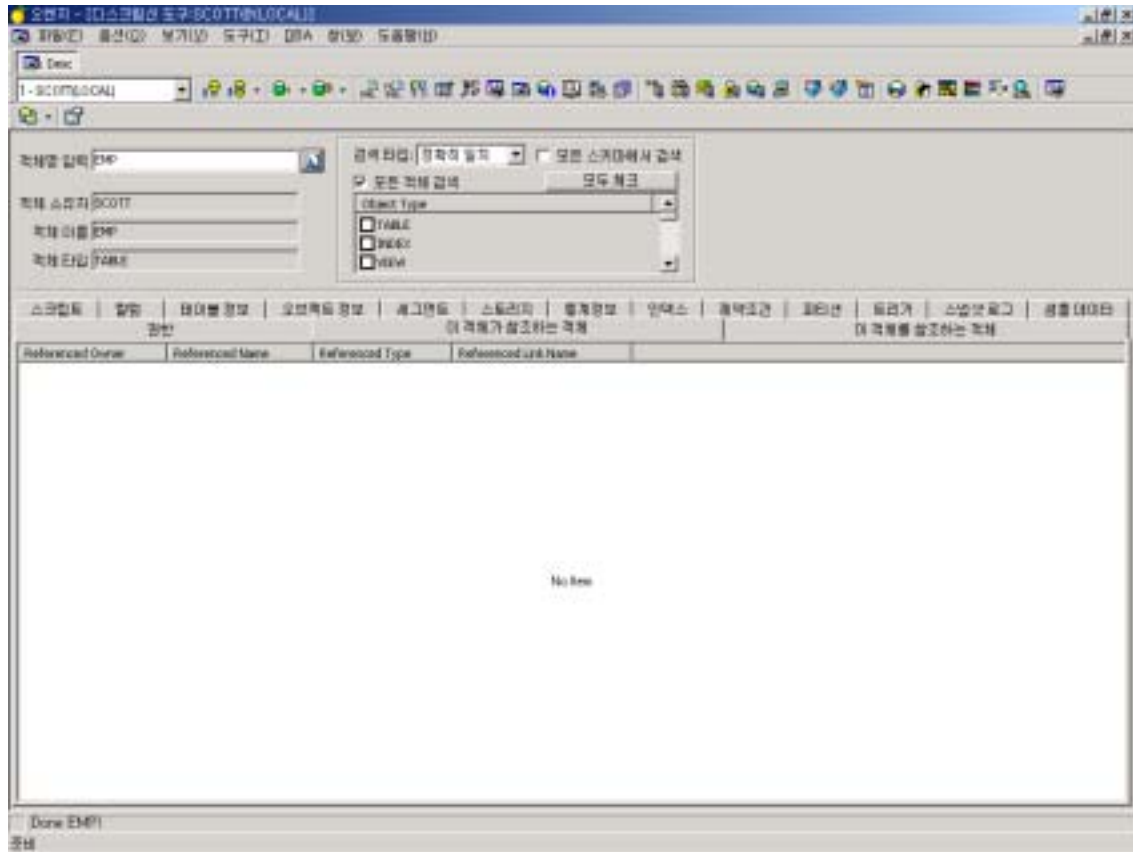
Description Tool [Reference by]

.

[14.15 - Full Description( )]

Description Tool 에서 [Indexes] 탭을 누르면 인덱스 이름, 파티션 여부, 유일성 여부,

사용가능 여부, 인덱스가 존재하는 컬럼을 확인할 수 있다.

[그림 14.16 - 오라지 Description 의 Full Description(인덱스) 화면]
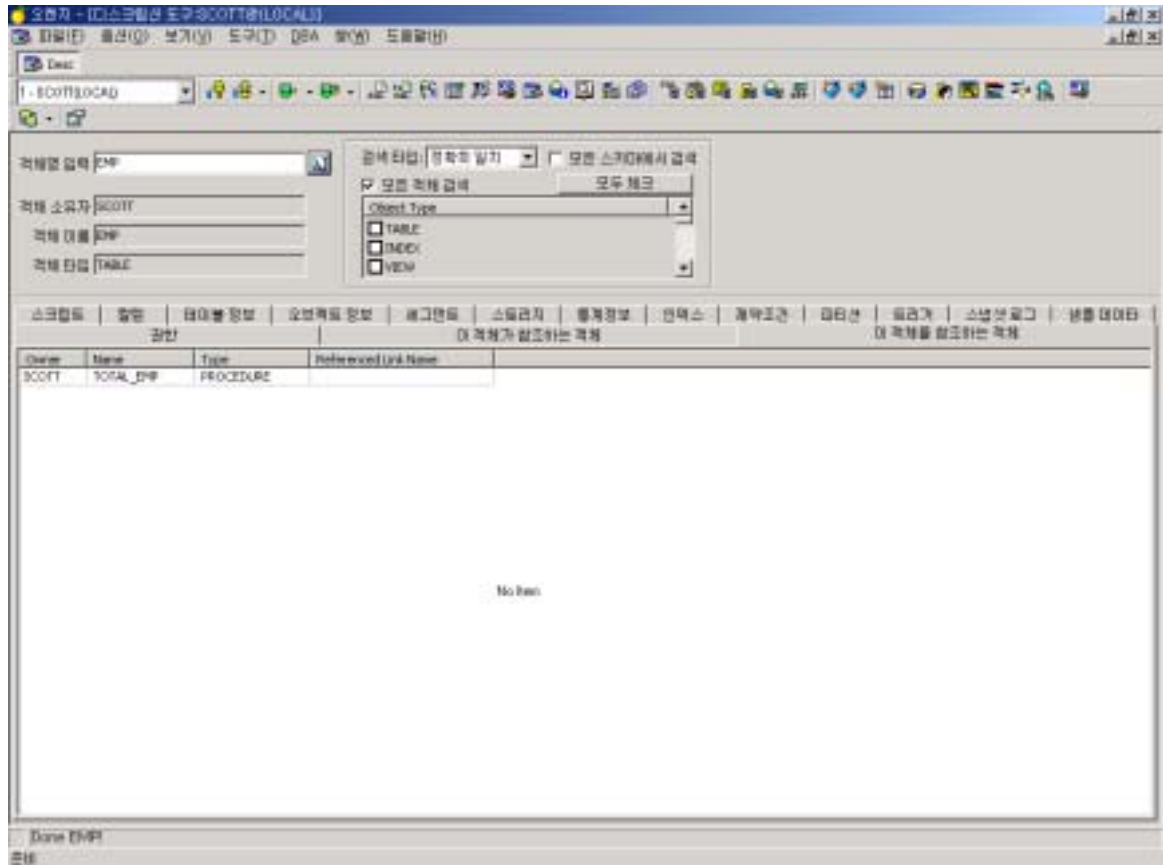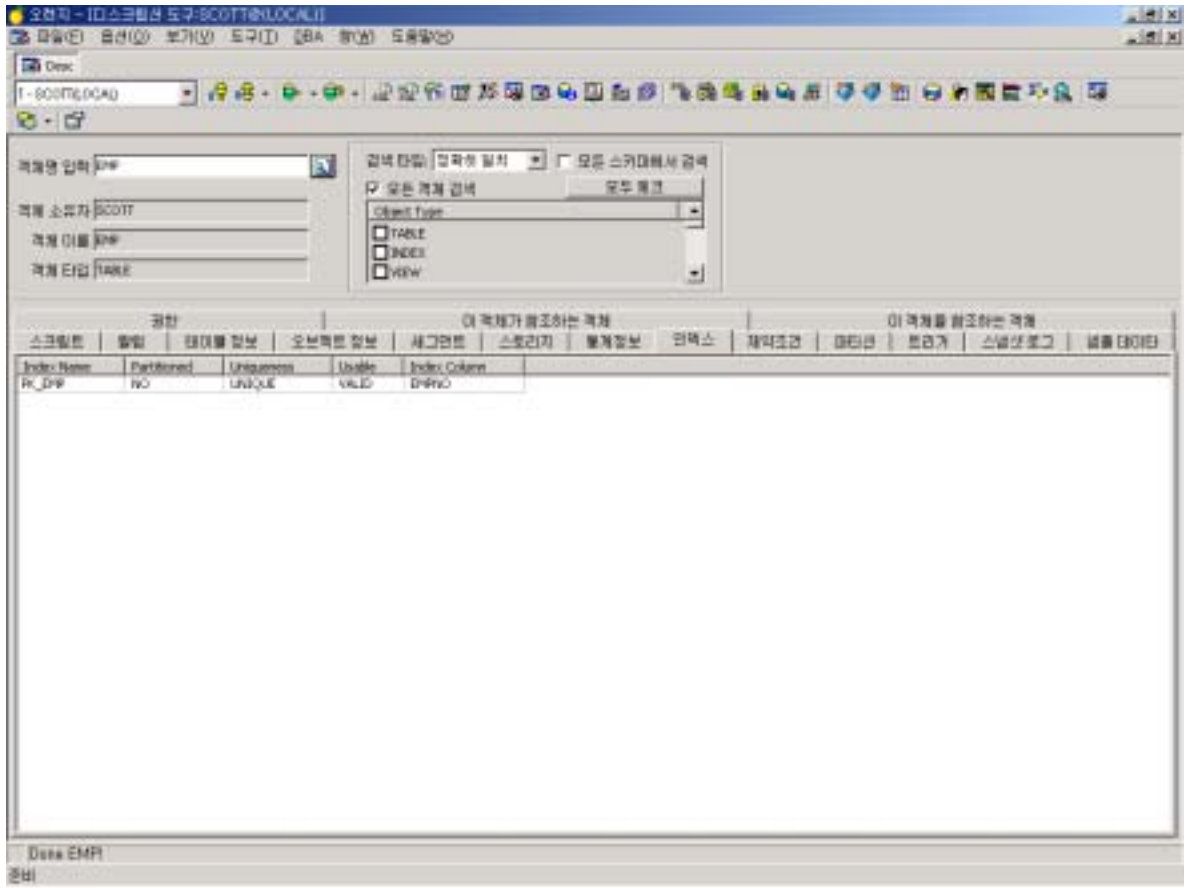
Description Tool   [Constraint]   ,   ,   .

[14.17 -   Full Description(   )   ]
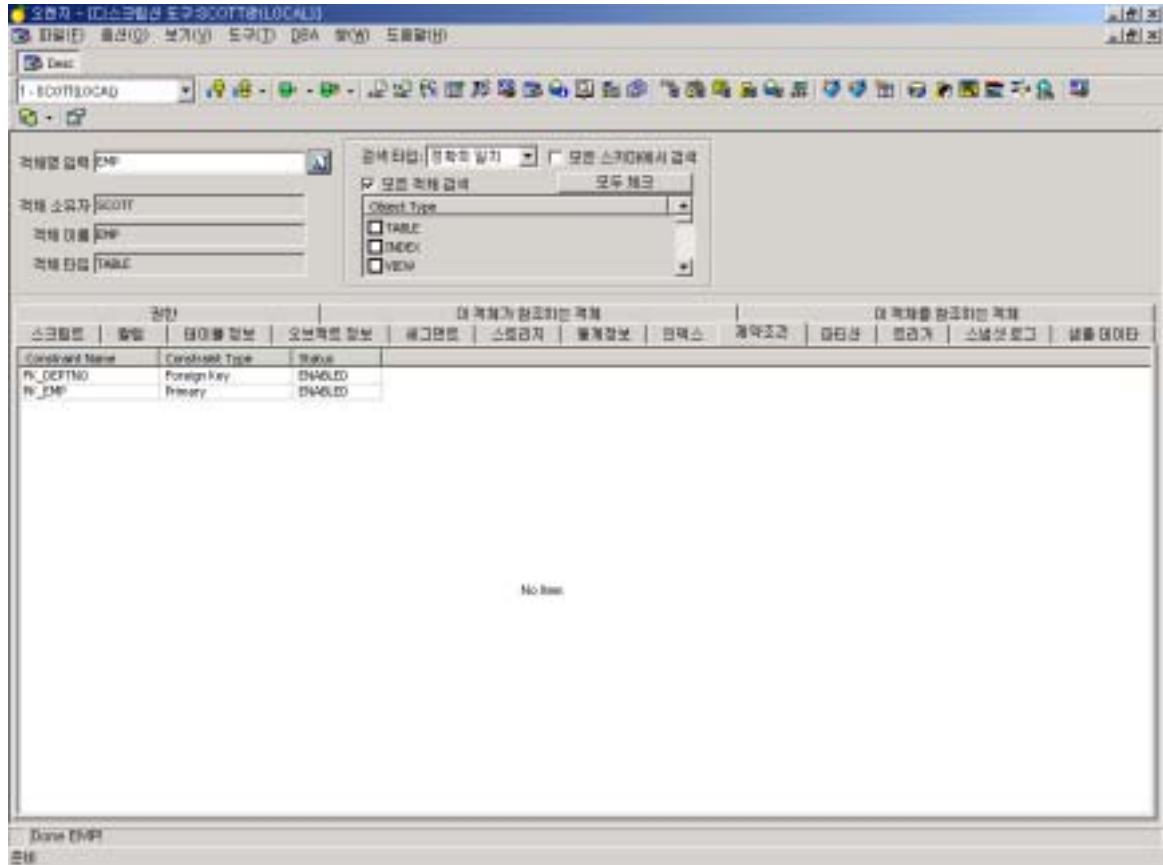
Description Tool [Storage] Next Size, , ,
, .

[14.18 - Full Description(Storage)]
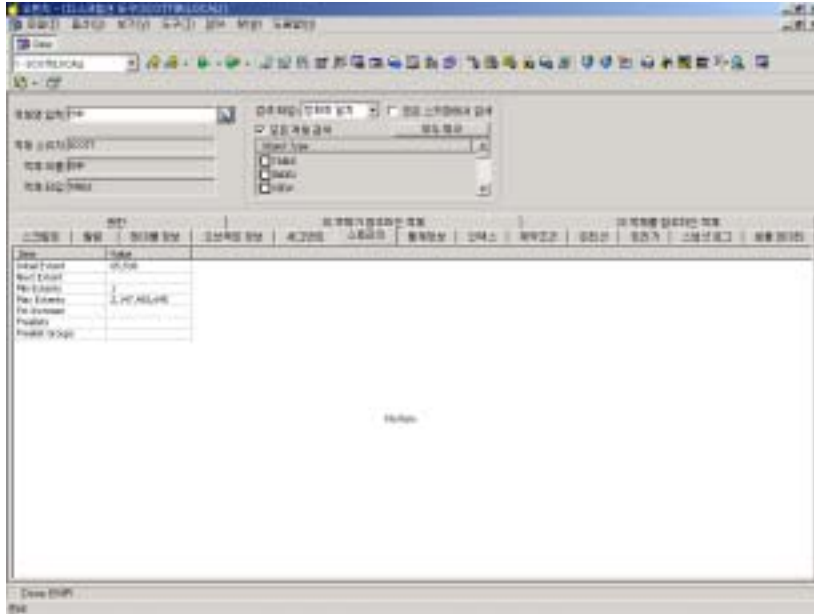
Description Tool [Partitions] .

[14.19 - Full Description( )]
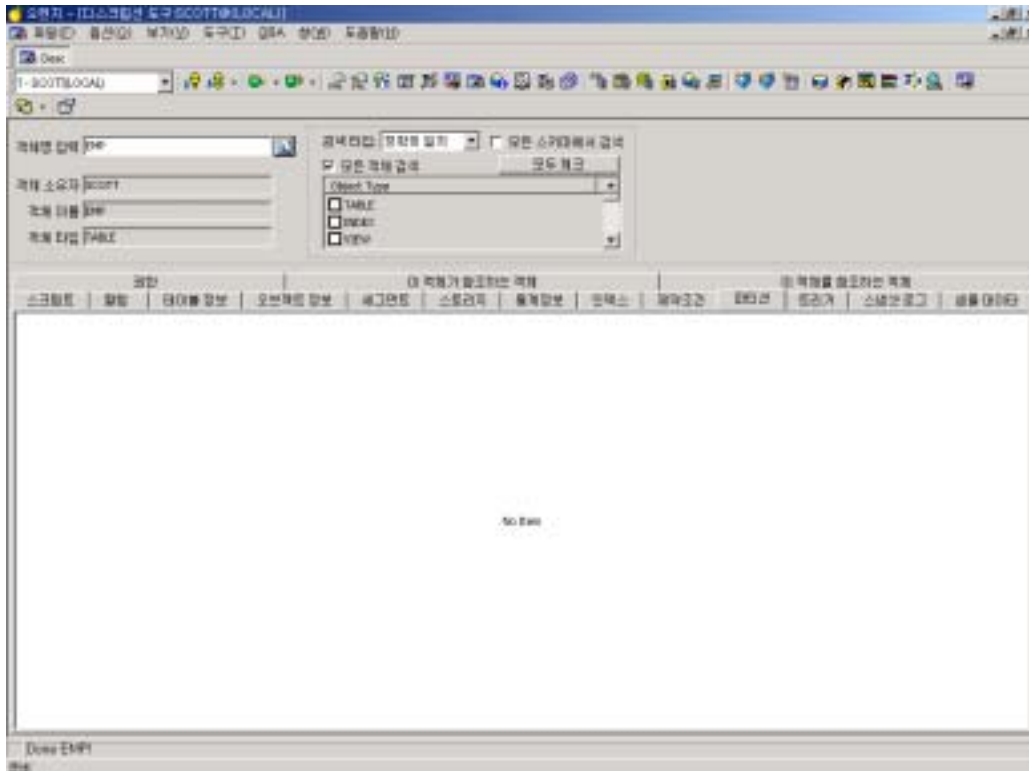
Description Tool 에서 [Triggers] 탭을 선택하면 트리거의 이름, 트리거링 이벤트, 상태,
상태를 확인할 수 있다.

[그림 14.20 - 디스크립션 도구의 Full Description(트리거) 화면]

Description Tool 에서 [Snapshot Logs] 을 선택했을 경우의 화면

입니다.
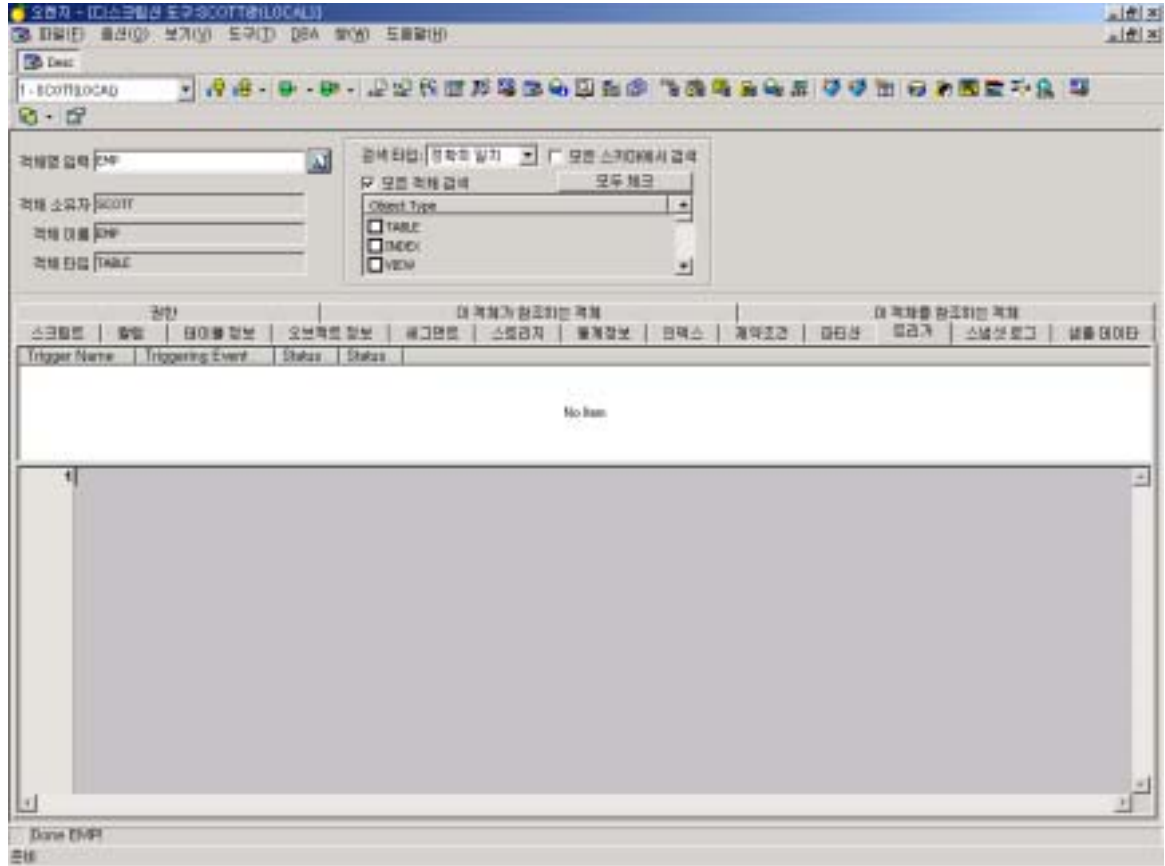
[그림 14.21 - 디스크립션 도구 Full Description(Snapshot Logs) 화면]
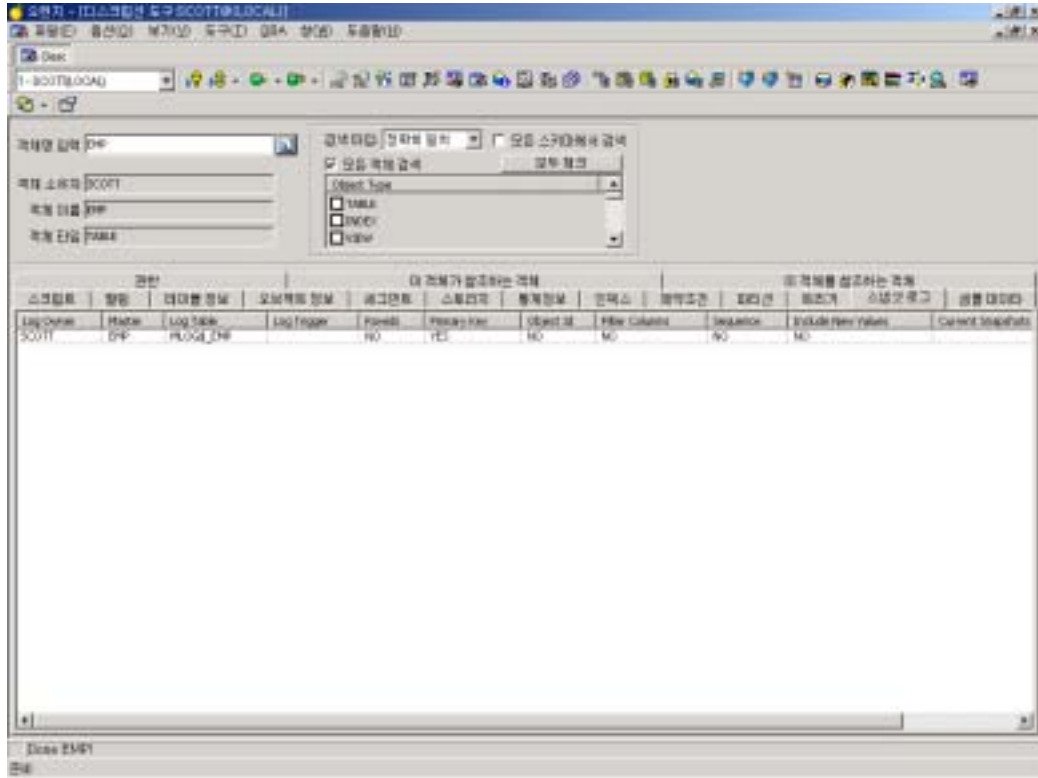
14.4.26 Description Option

Option 은 도구의 상단 Submenu 중 Options 에서 Description 도구의 옵션을 설정 합니다.

옵션은 다음과 같습니다.

[그림 14.22 – Description Tool Option (옵션 설정 화면)]
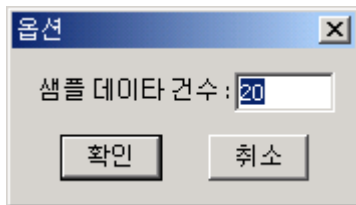
15. Table Editor

                (Delete, Insert, Update)   (Select)

         .   Commit

Rollback   .

15.1 Table Editor

- ✓ GRID
- ✓   /   /
- ✓   Row Editor
- ✓ LOBs, BFILE, RAWs   Import   Export

15.2 Table Editor

    Apply Modification

    Delete

    Undelete

    Append New Record

    Undo

    Redo

15.3 Table Editor

15.3.1 Table Editor

                [   ]   [   ]   [   ]   Table Editor

                    Table Editor   .

15.3.2

Table Editor에서 선택할 수 있는 Table은 Drop down List로

보여준다.

Where 조건에 맞는 데이터를 검색하려면 [Query]

. [Refresh Table List]

Schema Browser나 Schema Tool에서 ,

Table을 "   ." .

DML   [Query]   Refresh   .

[15.1 -   ]

15.3.3

Row

"Delete Selected Rows"   [Delete]   ()   Table Editor

"Deleted Text Color"   Row   .

.   .

[15.2 -   ]
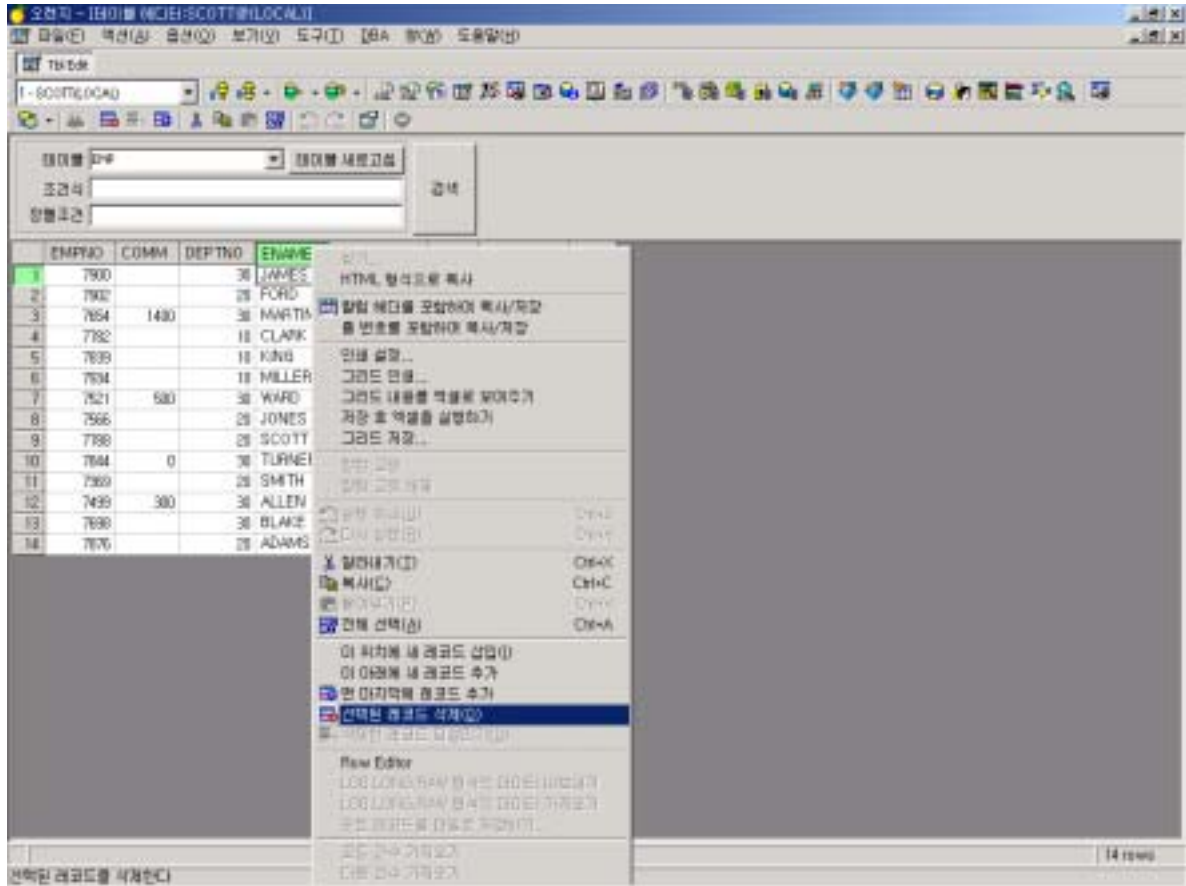
15.3.4 Undelete

Delete   Row   Undelete

"Undeleted rows"   [Undelete]   (　)   .

[15.3 -   ]
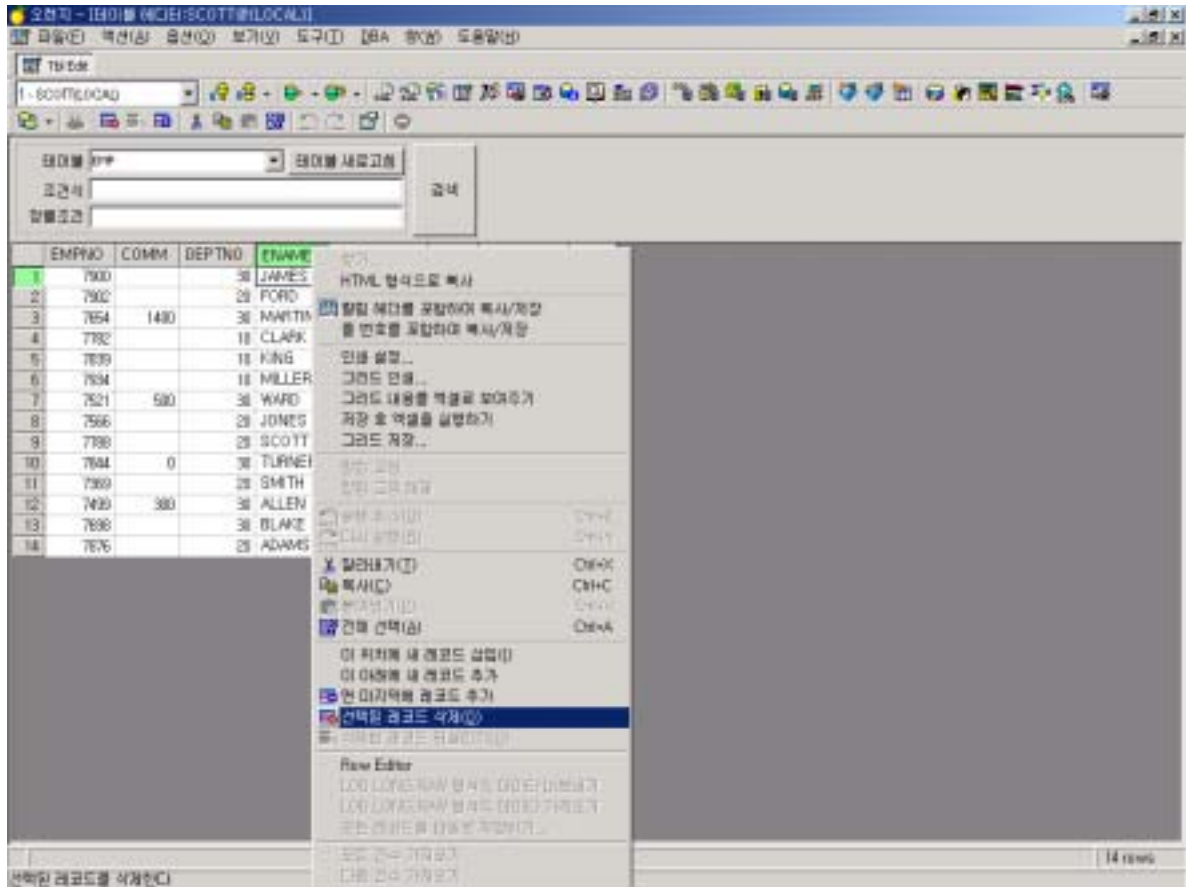
15.3.5

                                                              .   "Insert new record here,

Append new record here"   "Append new record at the end"   Row

                                      . "Insert new record here"   Row

    "Append new record here"   Row   .   DBMS

    row   .

    .

    [15.4 -   ]

15.3.6 Row Editor

 Row Editor

            .   [Row Editor]   Row Editor

       .   Row Editor   . (Appendix B   )

15.3.7 BLOB, RAW, LONG RAW   Import

BLOB, RAW, LONG RAW

"Import LOBs, LONG, Raws"   Import

.   BLOB, RAW, LONG RAW   "Import Column"

Import   . "Select Import File"   Import   [OK]

Import   .

BLOB, RAW, LONG RAW   Import

BLOB, RAW, LONG RAW   [Query]

BLOB, RAW, LONG RAW   Import   .

[15.5 – BLOB, RAW, LONG RAW Import   ]
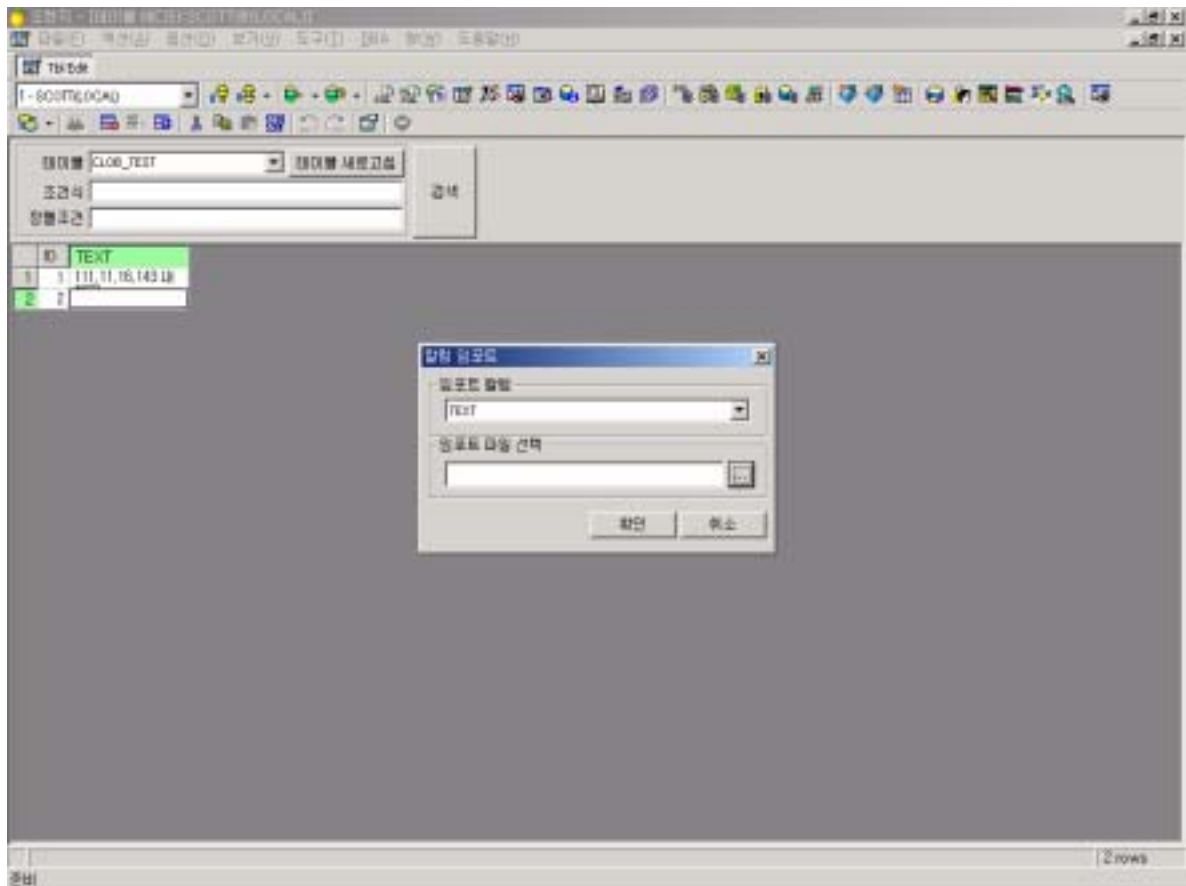
15.3.8 DML

DML   [Apply Modification]   (🍶)   . [Apply
Modification]   DML   DBMS   .
Commit   Commit   .
                                        Commit   . Table   Editor   Apply
Modification   undo(↶), redo(↷)   ,
          .

[15.6 – Apply Modification   DML   ]
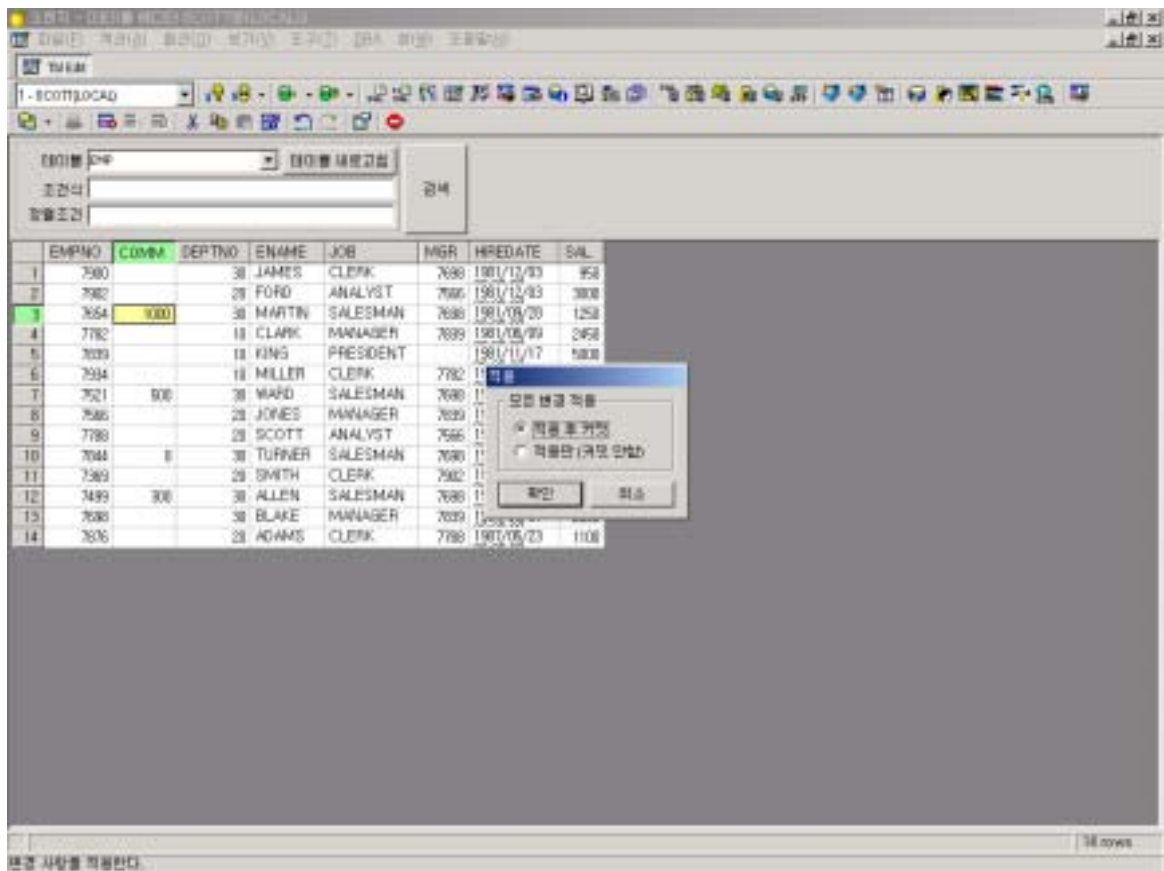
15.3.9 Table Editor Options

■ [　　]

DML　　　　　　　Rows　　Color　　　　　　　　"Color"　　　　　　　. "Color"　　　　　Updated Cell

Color, Inserted Row Color, Deleted Text Color　　　　　　　　　　　　　　　　　　　　　　　　.

[　　15.7 – Table Editor　　　　　　　　]

■ [   ]
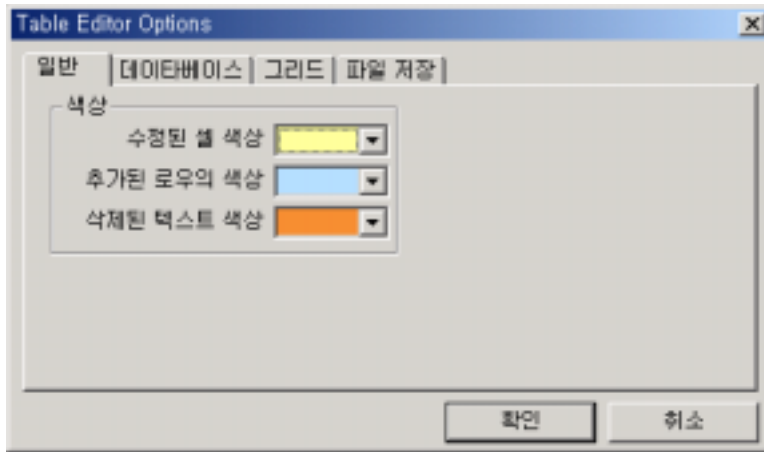
"Array Size"   Fetch   .

                                                                                    . "Long Size"

                        Long type   . "Fetch as Need"

                                Initial   Next   .   1000

                Initial   100   Next   10   100

                                        10   .

  Fetch as Need   Row

                                  Retrieve   ,

      "Fetch All rows"   .

[15.8 – Table Editor   ]

■ [　　　　　]
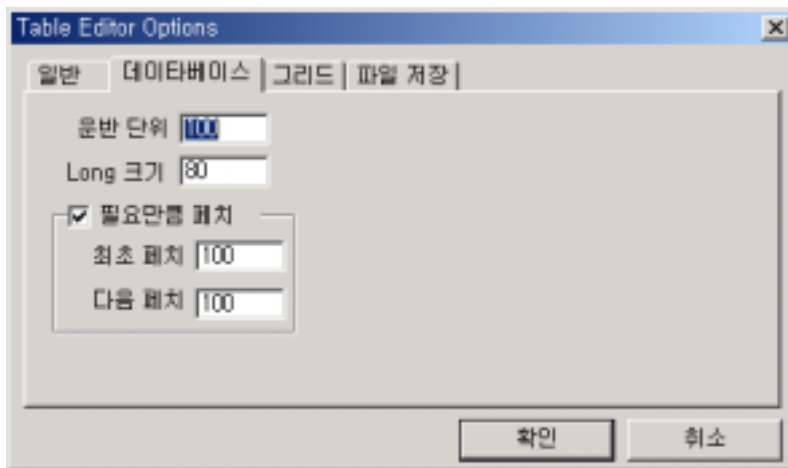
"Grid Color"　　　　　　"Sort"　　　　　　　. "Grid Color"

　　　　　　　　　　　　　　　. "Sort"　　　　　　　Header

　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　,

　　　　　　　　　　　　　　　.

[　　　15.9 – Table Editor　　　　　　　　　　　　]

■ [　　　　　　]

　　　,　　　　　　　　　　　　　　　　　.
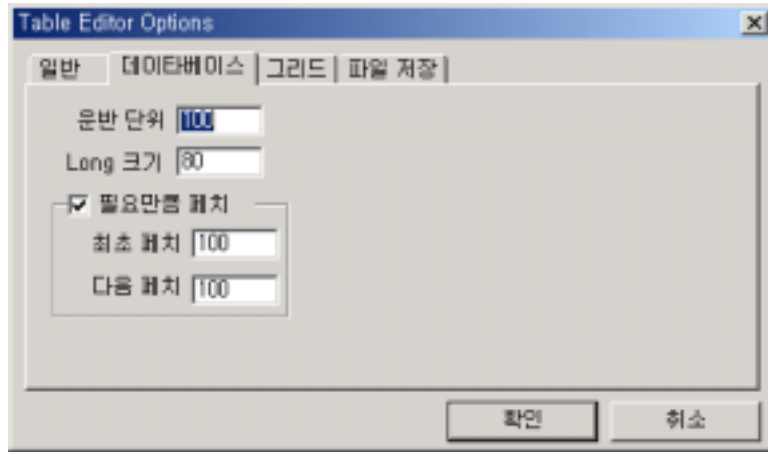
[　　　15.10 – Table Editor　　　　　　　　　　]
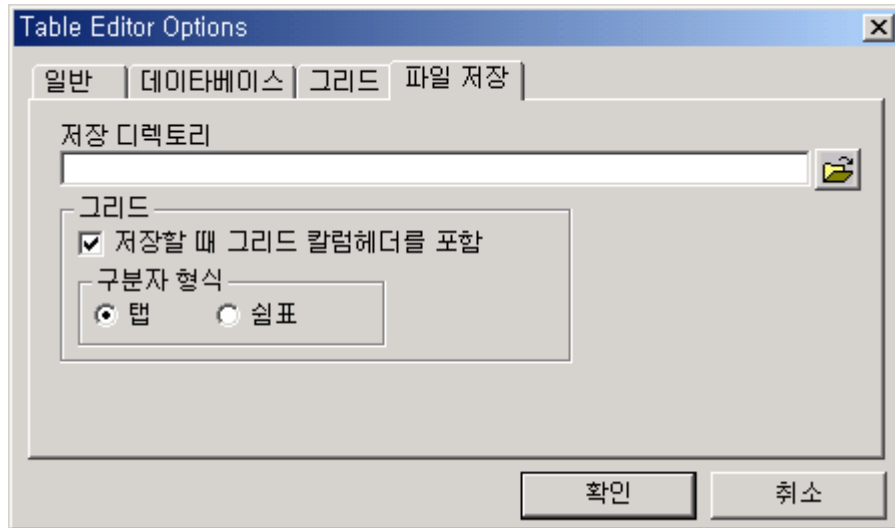
16. ERP Monitor

Oracle ERP(Oracle E-Business Suite)   ERP Monitoring
          Oracle Application   ,   .

16.1 ERP Monitor

- ✓ Request Monitoring
  - ■ Find by Request ID
  - ■ Find by User
- ✓ Job Monitoring
- ✓ Concurrent Monitoring

16.2 ERP Monitor

16.2.1 Request ID   Request

- ■ ERP Monitor(ERP)   [Request]   .
- ■   ID   (Find by ID)   (Find by User)   .
- ■ Radio   [Find by ID]   [Request ID]   ,
        Request id   Refresh   ID   .

[16.1 - Request by ID]
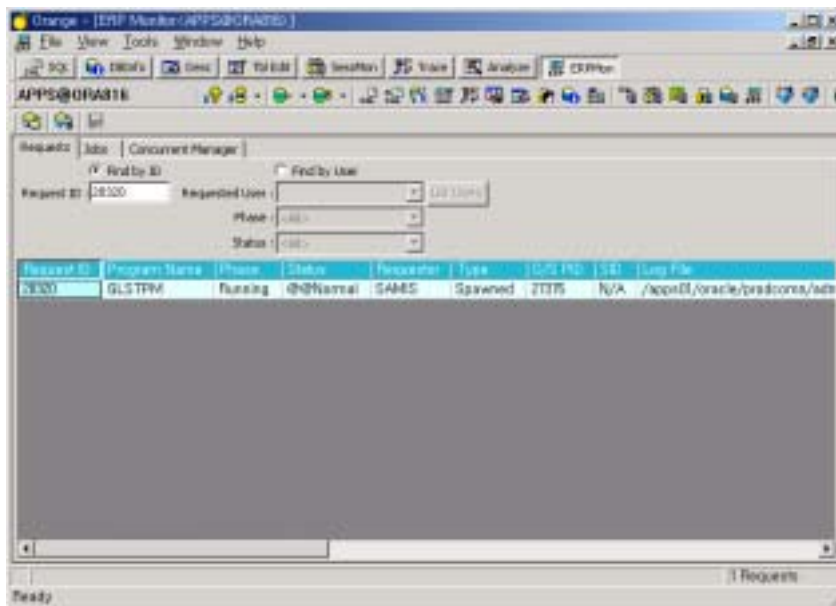
16.2.2 User   Request

■ ERP Monitor   [Request]   .

■   ID   (Find by ID)   (Find by User)   .

■ Radio   [Find by User]   [Request User], [Phase], [Status]   [List User]
                 .

■ [Requested User]   ,   , [List Users]
                       .

■ [Requested User], [Phase], [Status]   Refresh

[16.2 - Request by User]

16.2.3 Job

- ERP Monitor   [Jobs]   .
- [Refresh]   Job   .

    [16.3 – Jobs]

16.2.4 Concurrent Manager

- ERP Monitor [Concurrent Manager] .

- [Refresh] Concurrent Manager .

- [Auto Refresh] [Refresh Interval] .

[16.4 - Concurrent Manager]

17. Network Configuration Tool

Oracle SQL*Net   . Network
Configuration Tool   SQL*Net   , Ping   , TNS Ping   ,
                                                                              .

17.1 Network Configuration Tool

- ✓ Tnsnames.ora
- ✓   Host   Ping Test
- ✓ Listener   TNS Ping Test
- ✓

17.2 Network Configuration Tool

17.2.1 Network Configuration Tool

[17.1 –   ]
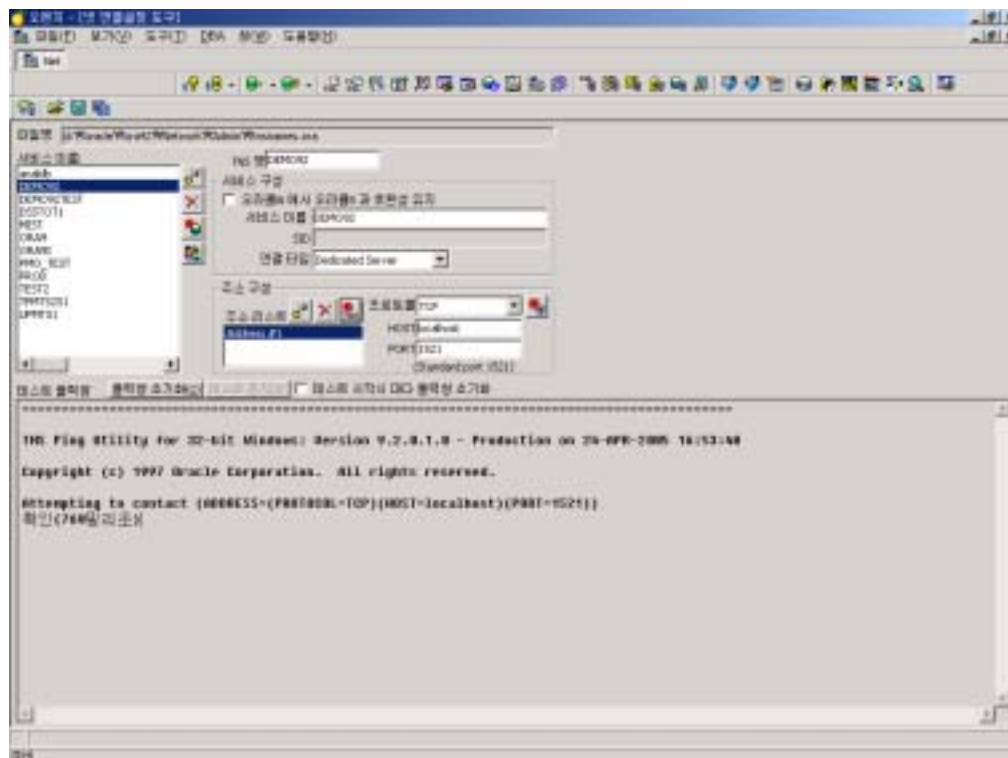
- ■ Network Configuration Tool   ,
                                          .

■   File   tnsnames.ora   ,

     "Service Names"   tnsnames.ora   .   ,

    (✕),   (   )   ( )   .

                          "scott/tiger"   ,   [   ]

    (   )   .

    30   .

■   , "Service

    Configuration"   "Compatible with Oracle8i release 8.0"   Net8

    Oracle 7.X   . Service Name   SID

                     Service Name   SID   , "Connection Type"

    Dedicated Server   Shared Server   .

■ "Address Configuration"   ( ),   (✕), TNS Ping

    (TNS)   . Protocol   TCP/TCPS/SPX/NMP/IPC

         . TCP   TCPS   , Host   PING   ( )   .

            1   32   . Host   64

    , Port   1 ~ 65000   .

■   Test Output   , TNS Ping   , Ping

             .

17.2.2 Tnsnames.ora   Load

  Network Configuration Tool   Home   tnsnames.ora   .
Network Configuration Tool   File   tnsnames.ora
     .

17.2.3 Service Name

■ "   "   (🔲)   "NewTNSnamexxth"
                              .   TNS Names

    , TNS Names   Service Names   .
■ "   "   "Compatible with oracle8i release 8.0"   SID
                          ,   "Service Name"   .
■ "   "   Shared Server, Dedicated Server, Database Default Value

                .   Database Default Value   .   Dedicated Server

                                .

[17.2 –   ]

■ "   "
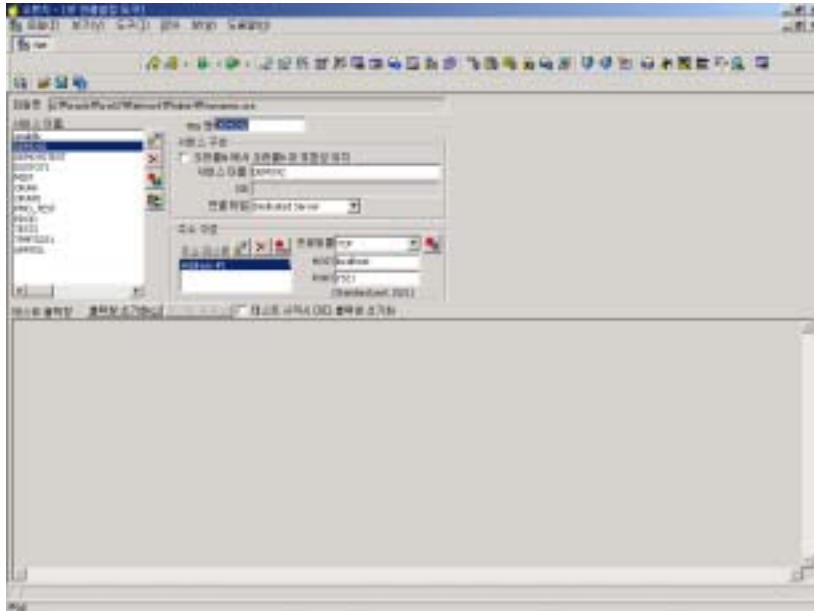
                        .   address   IP

    Host Name   .
■   ,

                        .   TCP   .
■ TCP   TCPS   ,   IP

            Host Name   .   .

                    1521   .

17.2.4

■   [Ping Test]

         ( )   .

[17.3 – Ping   ]
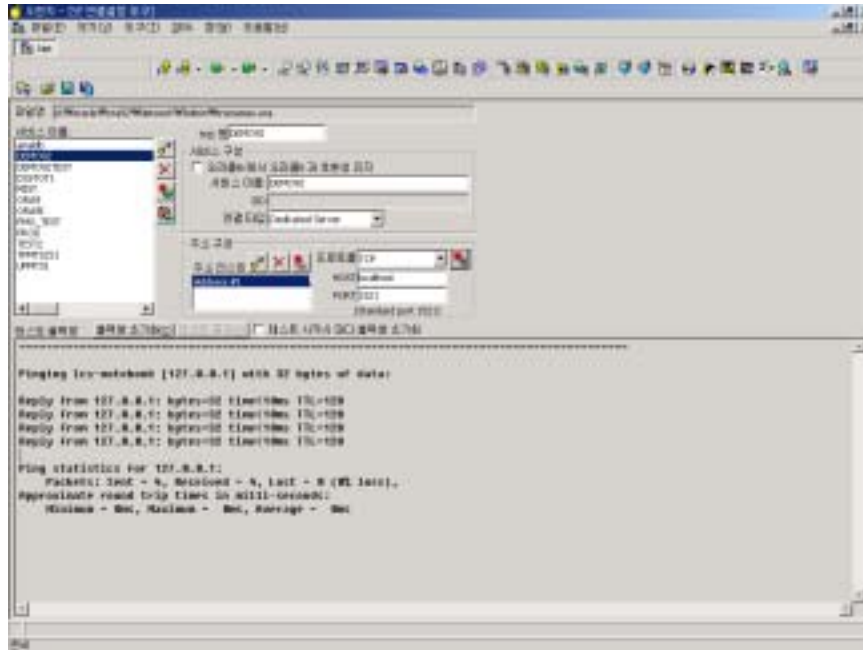
■   Ping   Net8

         [TNS Ping Test]   ( )   .

[17.4 – TNS Ping   ]

■ TNS Ping

.
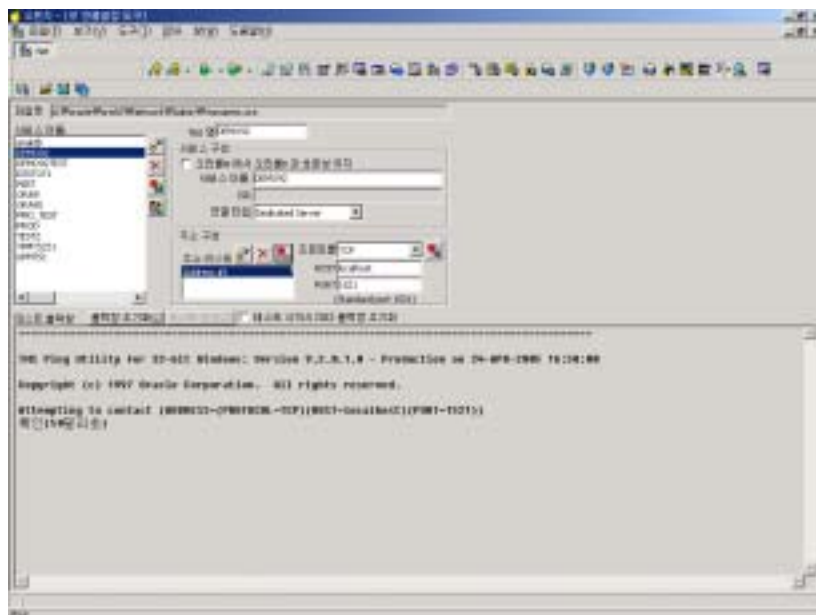
. [Database Connection Test] (🗄) .

"SCOTT" .

[Change User for Connection Test] (👥) .

[17.5 –]
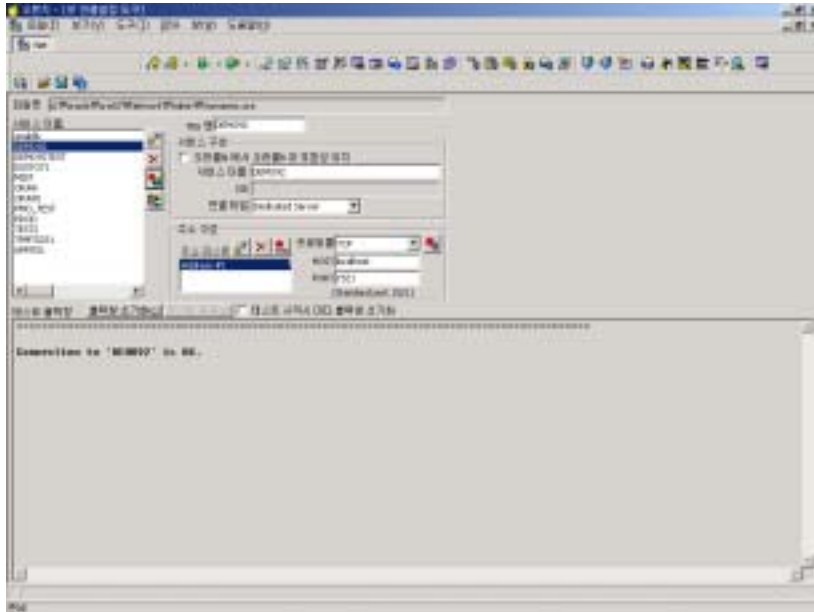
■ Ping / TNS Ping / Connection

Test Output Clear output on each test . [Clear Output], [Stop Test]

Clear .

■ [ ] (💾) .

, "tnsnames.ora" [Save As] (🔳)

.

Windows Network Configuration Tool Oracle Home

Oracle DLL Home .

Windows Application DLL Windows PATH

.

18. Space Manager

Space Manager　　　　　,　　　,　　　　,　　　　　　,

　　　　.

　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　,

Used Space / Free Space / Unused Space

　　　.

　　　　　　　　　　　　　　　,

　　　　　　　　　　　,

(⚠)

　　　　.

18.1 Space Manager

- ✓ 　　　　　　　　　　　　(　　　,　　　　　　　　　　　,　　　/　　　　　　　　Object
)
- ✓
- ✓
- ✓ 　　　　　　　　　　　(　　　,　　　　　　　　　,　　　/　　　　　Object　　　)
- ✓ 　　　　　Object　　　　　Color Map
- ✓ Schema　　Object　　　　　　　Table/Index/Cluster/Partition
- ✓ 　Object　　　　　　　Usage,　　　　　　,
- ✓ Create Tablespace
- ✓ 　　　　　　　　Coalesce
- ✓ 　　　　　Add/Resizing
- ✓ 　　　　　　　/　　　　　　　　　　　Modification
- ✓ Rollback Segment　　/　　/Online/Offline/Shrink
- ✓ Redo Log Groups　　/　　/Log Switch/　　Check Point

18.2 Space Manager

🔲 Refresh

🔲　　　　　　Coalesce

🔲

🔲

🔲

🔲

🔲　　　　　　Resize

🔲

🔲　　　　　　Shrink

🔲

🔲

18.3 Space Manager

18.3.1 Space Manager

　　　　　　　　　　[　]　[　　　　　]　　　　　　[　　　　　]　　　　　Space　Manager
[　]　　　　　　　　　　　　　　　　　　　　　　　　　Space　Manager　　　　　　.
　　　Space Manager　　　　　　Space Manager　　(🔲)　　　　　　　Space Manager　　　.
Space　Manager　　　　　　DBA　　　　　　　　,　　　　　　　Space　Manager
　　　　　　　　　　　　　.

18.3.2 Space Manager

　Space　Manager　　[Tablespaces] [Schema], [Rollback Segments], [Redo Log Groups]　　　　　　.
[Tablespaces]
　　, [Schema]
. [Rollback Segments]　　　　　　　　　　　　　　　　　　　, [Redo Log Groups]
　　　　, 　　　　　　　　　　　　　　　　.

[18.1 – Space Manager   Tablespace   ]
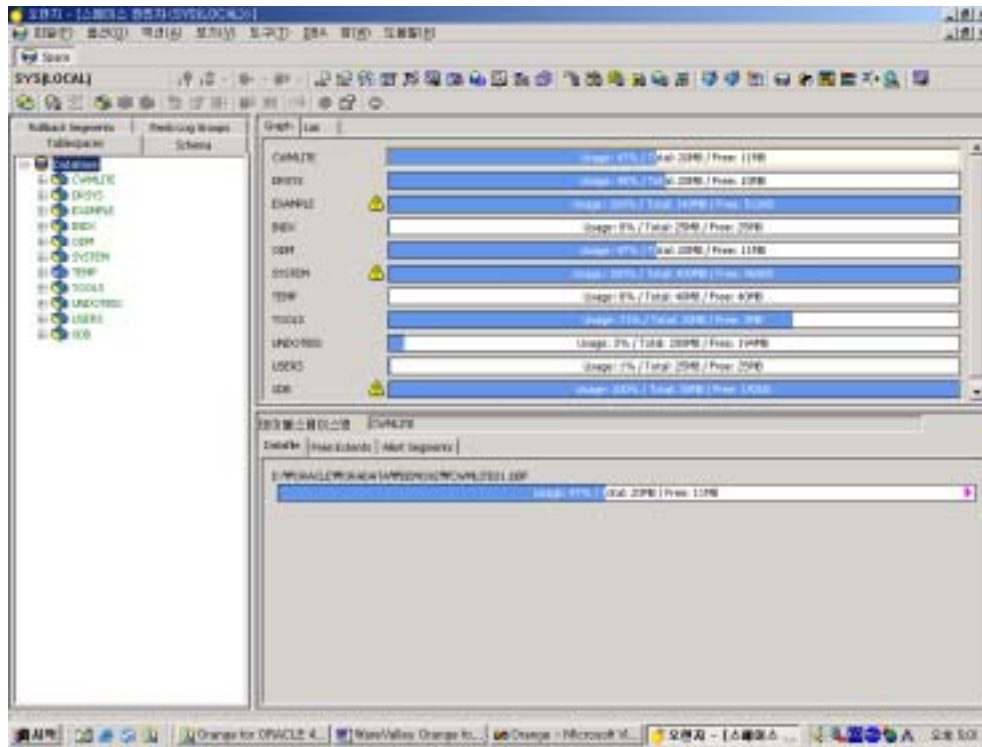
[18.2 – Space Manager   Schema   ]
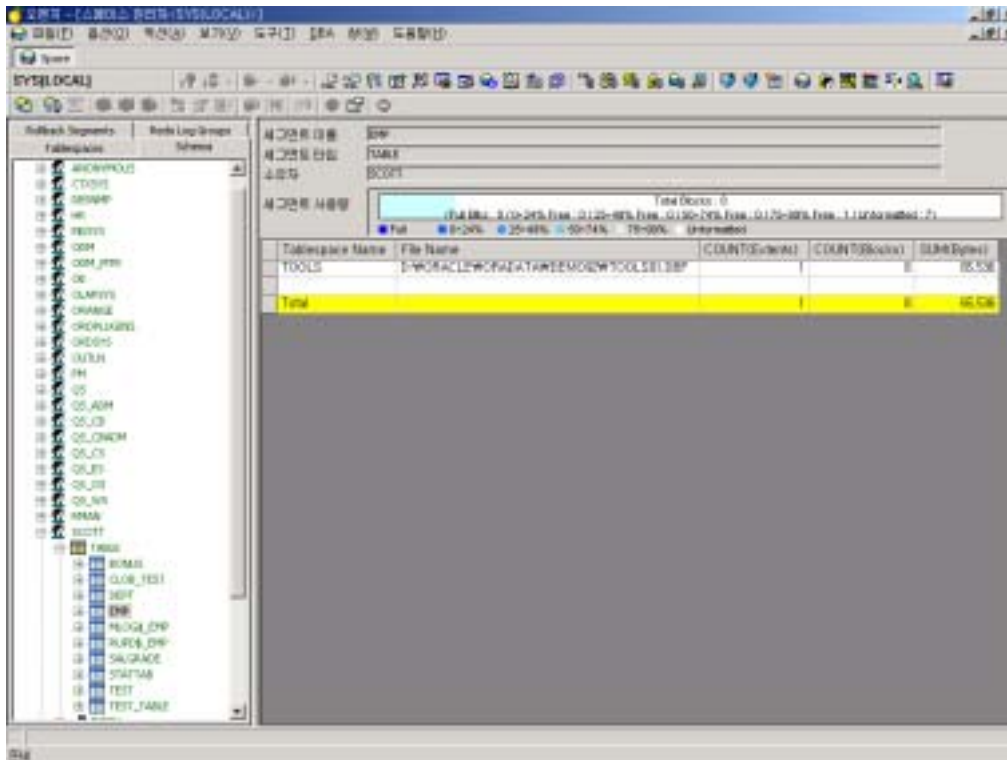
[18.3 – Space Manager   Rollback Segment   ]
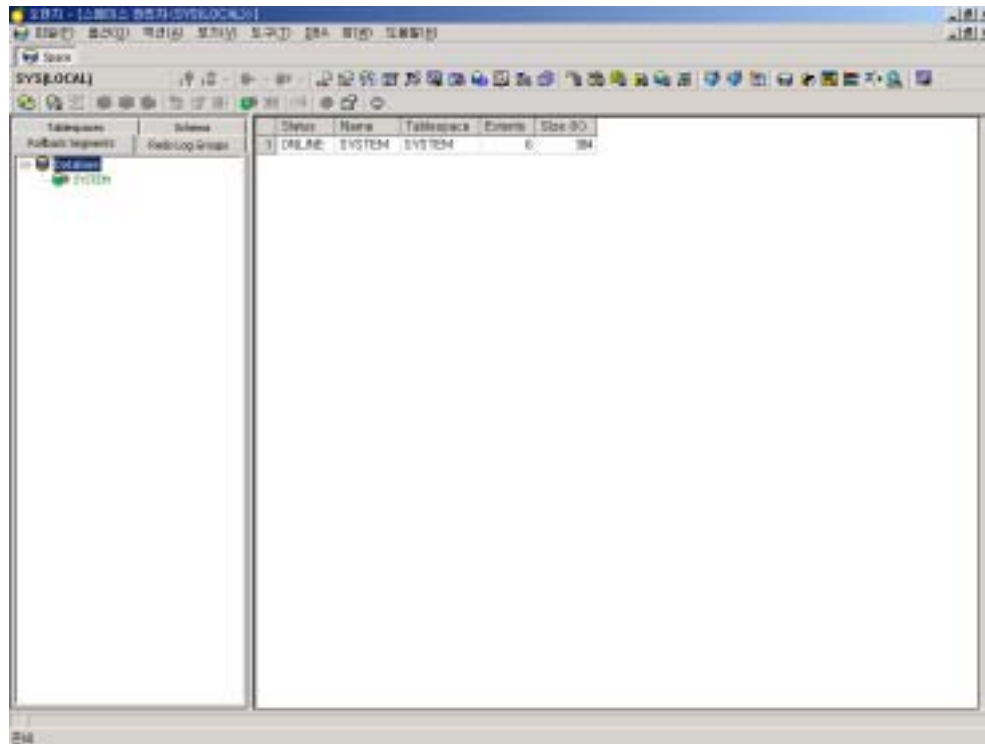
[18.4 – Space Manager   Redo Log Group   ]
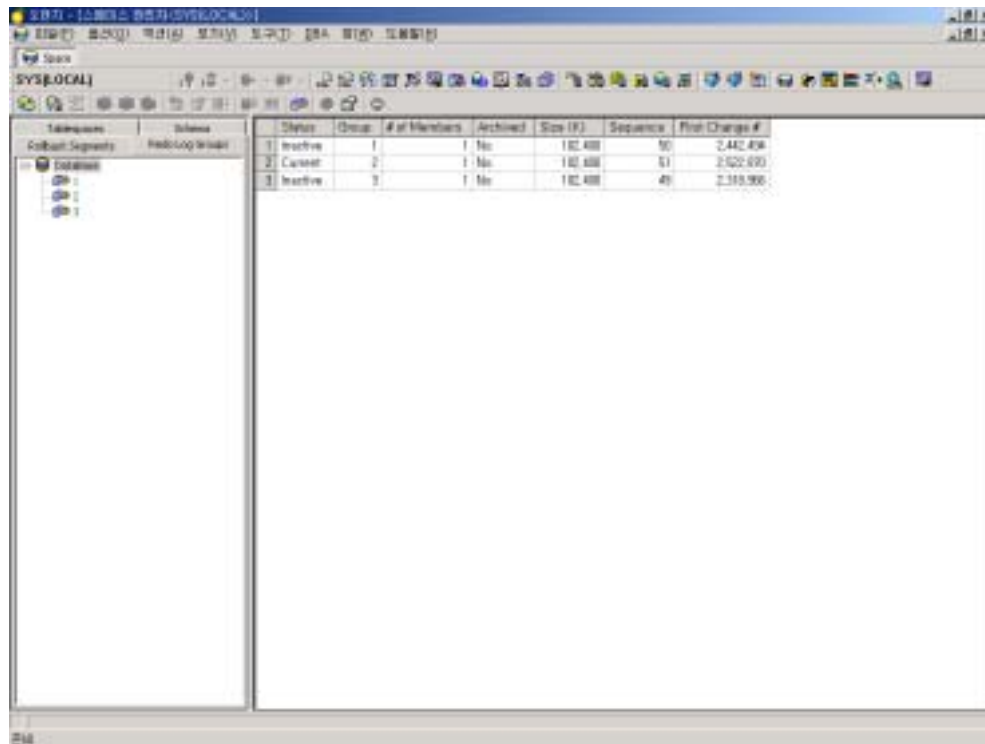
18.3.3

■ Space Manager 의 [Tablespace] 탭을 선택하면 좌측 트리에서 Database 의 테이블스페이스 정보를 확인할 수 있으며, [Graph] 탭을 선택하면 테이블스페이스의 사용량을 그래프로 확인할 수 있고, [List] 탭을 선택하면 Grid 형태로 정보를 확인할 수 있다.

■ [Graph] 탭에서 설정한 임계치 (Default : 95%) 이상으로 테이블스페이스가 사용되면 해당 테이블스페이스의 정보가 붉은색으로 표시된다.

임계치는 툴바의 환경설정 버튼 (📋) 을 선택하여 설정할 수 있다.

■ [Graph] 탭에서 경고 아이콘 (⚠) 이 나타나는 테이블스페이스는 Next Extent 를 할당 받을 수 있는 충분한 Free Extent 공간이 없는 테이블스페이스이다. 이러한 경우에는 Next 값을 조정하거나 데이터파일을 추가해주어야 한다.

■ 테이블스페이스를 선택하면 하단에 해당 테이블스페이스의 정보를 확인할 수 있다. [Datafile] 탭에서는 데이터파일의 사용량을 확인할 수 있으며, [Free Extents] 탭에서는 해당 테이블스페이스의 Free Extent 정보를 확인할 수 있다.

[그림 18.5 – 스페이스 관리자 화면]

[18.6 –   Free Extent   ]

18.3.4

■ Space Manager   [Tablespace]

, Free Extents   ,

, [Graph]   [List]

Grid   . Free Extents   [Free Extents]

[Tablespace Info]   .

■   [Graph]

.   [Type]

,   ,   , Free Space

.

. [User]

.

[18.7 –   ]

[18.8 –   -Type   ]
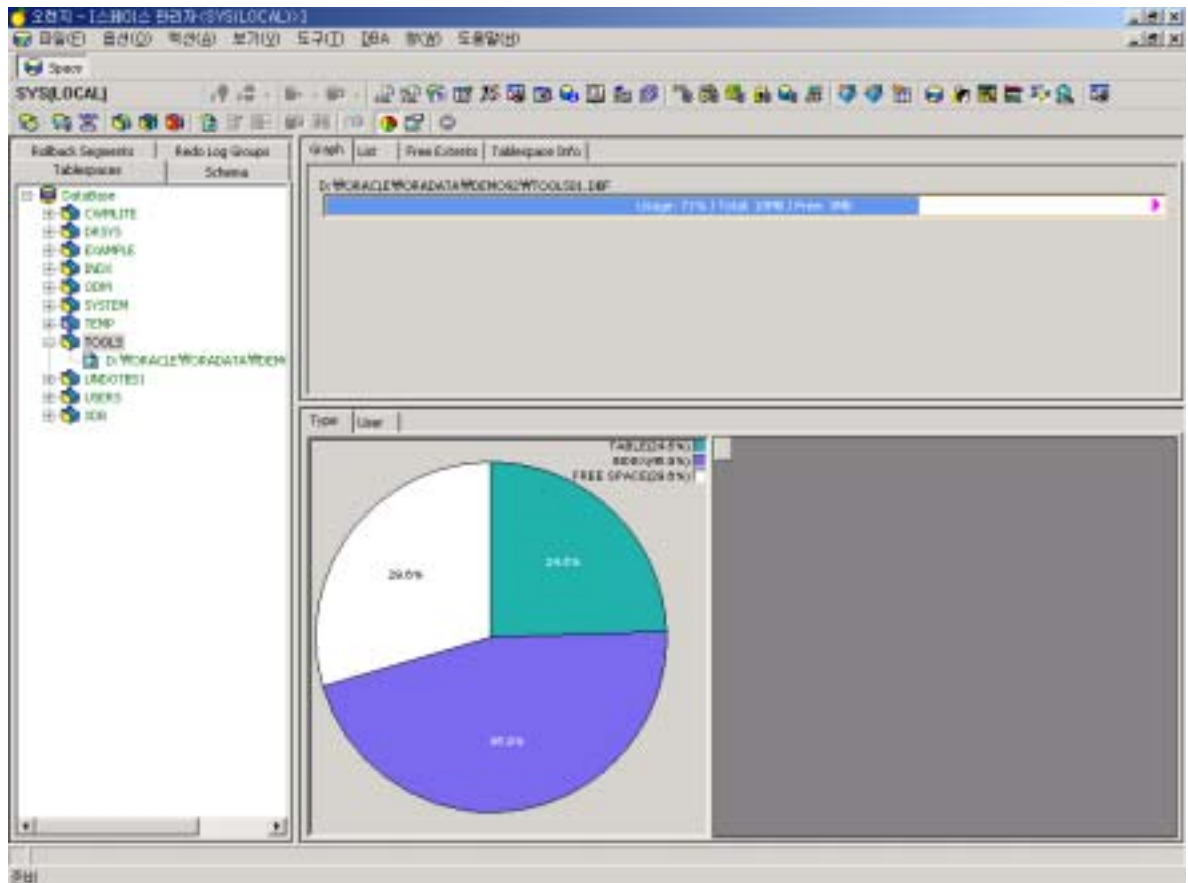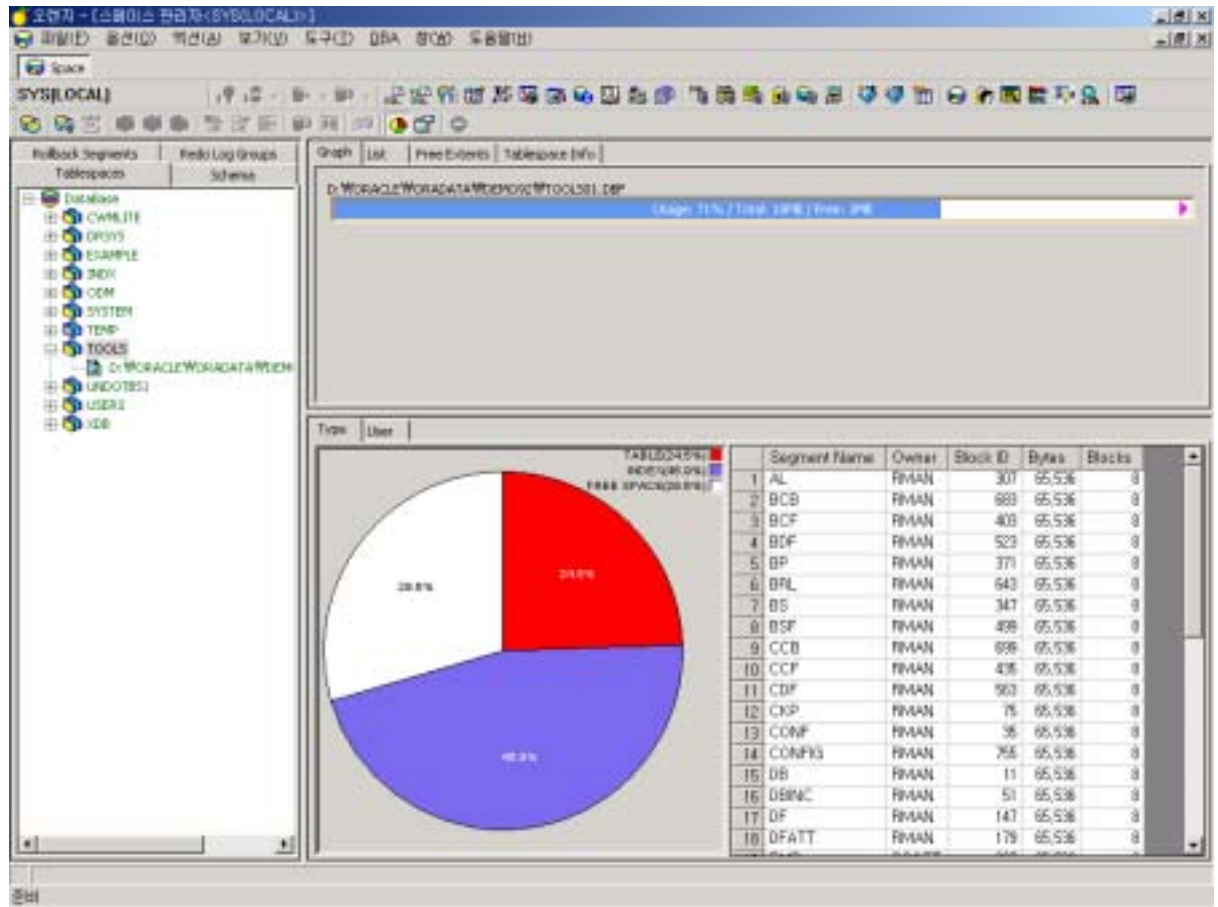
18.3.5

■　[Tablespace]

　　[Extents]

　　　, [Datafile Info]　　　　　　　Datafile　　　　, Autoextensible　　　　Datafile Status　　　　　　　　.

　　　　　　[Map]　　　　　, [Segment Info]　　　　　　　　　　　　Segment

　　　Block　　　　　　High Water Mark　　　, Unused Block

　　　　　.

■

　　　　　　　　　　　　　　　　, [Segment Info]

　　　　　　.　　　,

　　　　　　　　.

■　　　　　　　　　　　　　　　　　　　　　　　　　　　[Segment Info]

　　　,　　　　　,　　　　　　　　Used/Free/Unused　　　　　　　　.

　Used　　　　　　　Free　　　　　　　　　　Free List　　　　, 　HWM

　　Free Block　　　, Unused　　　　　　　　　　　.

[18.9 –   ]
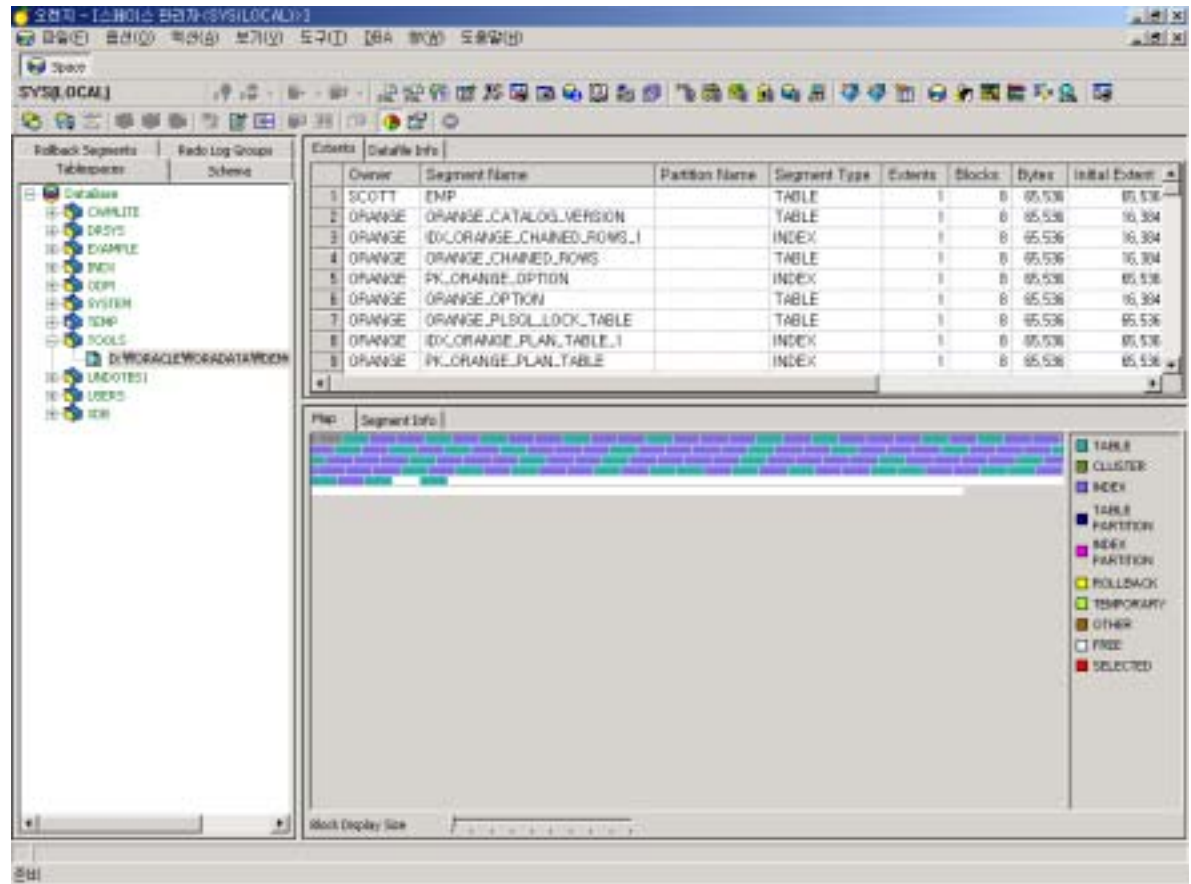
[18.10 –   ]
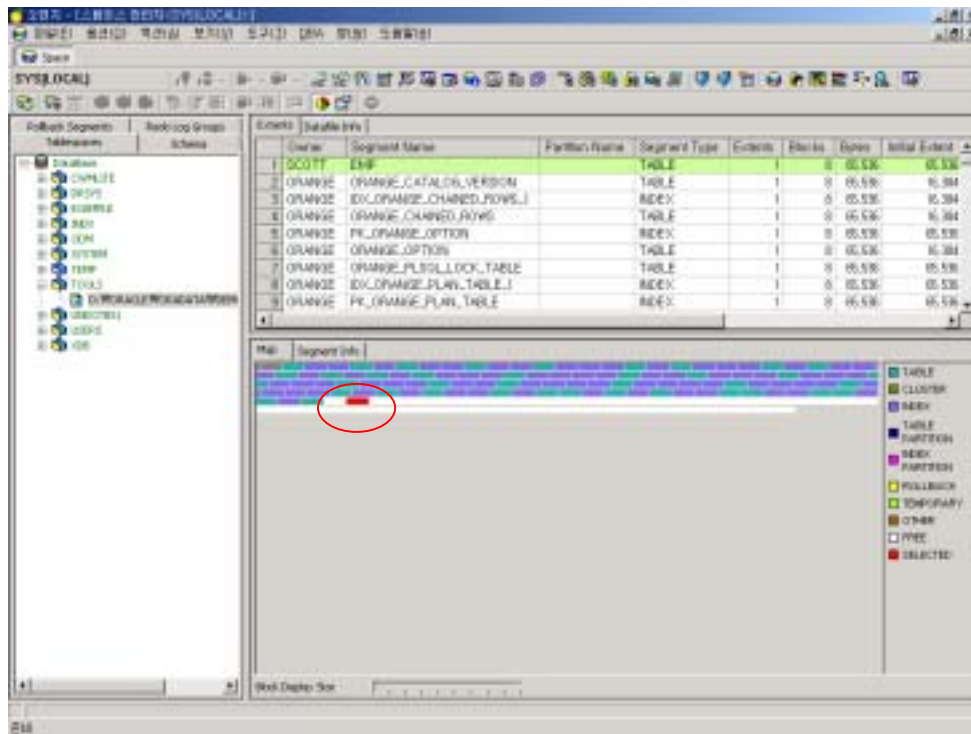
[18.11 –   ]
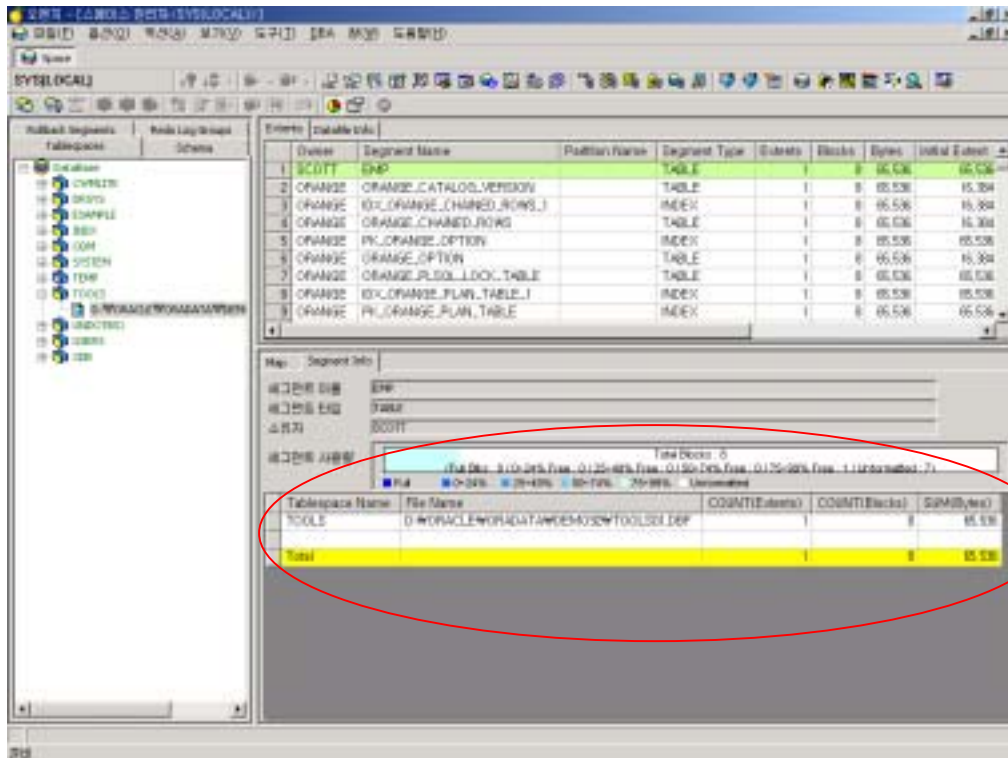
18.3.6

■ Space Manager   [Schema]

,

.   [18.3.5   ]

.   ,

,   .

[**18.12 –**   ]
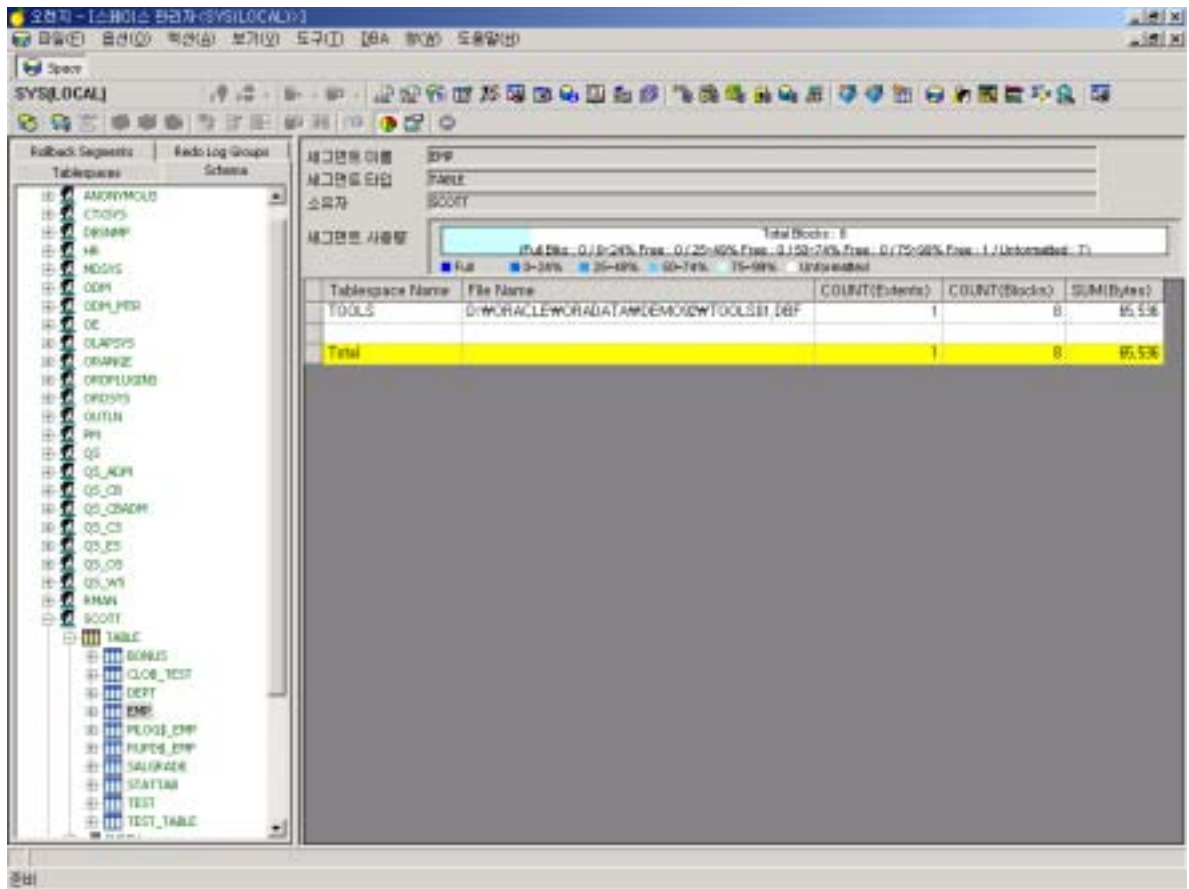
18.3.7 Tablespace Coalesce

■   Coalesce   Start Coalesce

           (🗜)   .

■ Coalesce   Stop Coalesce   (🛑)   .

■ Coalesce   .

[18.13 Coalesce   ]
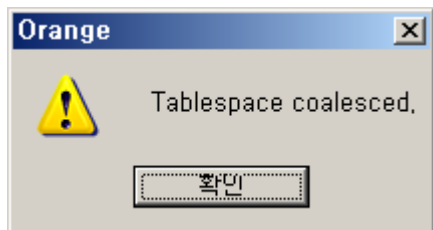
18.3.8 Tablespace

■   Add Datafile

          (📄)   .

■ Reuse   Auto extent   Next increment

            .

[18.14 -   ]
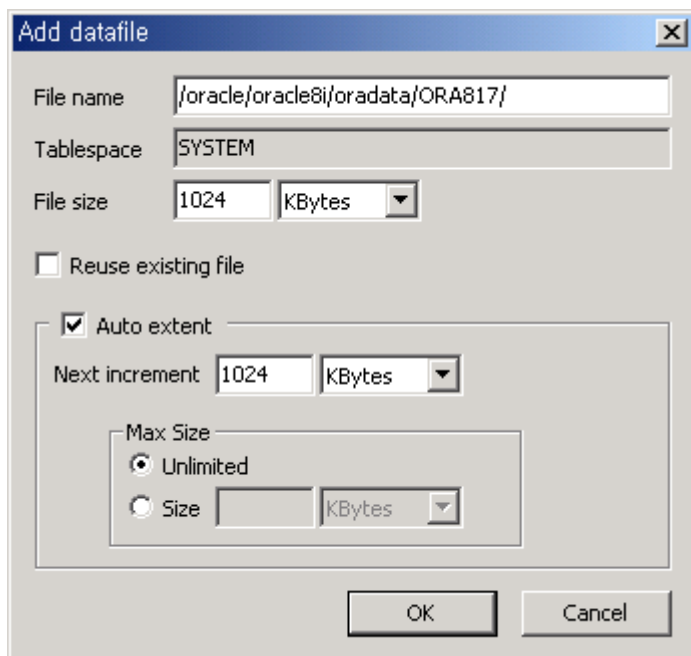
18.3.9

■

Resize () .

■ Size [OK] .

[18.15 -]
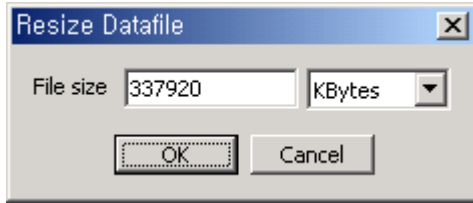
18.3.10 Tablespace

■ Tablespace [Action] – [Create Tablespace] Create
Tablespace () . Tablespace Name
Add Datafile ()
. Reuse Auto extend
[OK] .
30 , 5 .
2 Add Datafile
. Initial/Next/Min Size 0 5 ,
Min/Max Num 10 . Increment by size 0 ~ 999
.

■ Status Permanency .
Extent Management Local Dictionary Locally Management Oracle Database 8i
.

■ Locally Management – Locally Management Extent Automatic Allocate
Uniform Size . Default Automatic Oracle Extent
. Uniform Extent Extent
.

■ Segment Management – Locally Management Tablespace Segment Management
9i . Default Manual Auto
PCTUSED, FREELISTS, FREELIST GROUP Oracle .

■ Dictionary Management Tablespace – Dictionary Management Storage Parameter
. INITIAL, NEXT, PCTINCREASE, MINEXTENTS, MAXEXTENTS
. Storage Parameter Oracle Default .

■ Enable Logging – LOGGING   NOLOGGING   . NOLOGGING

Redo log   .

[18.16 - Create Tablespace   ]
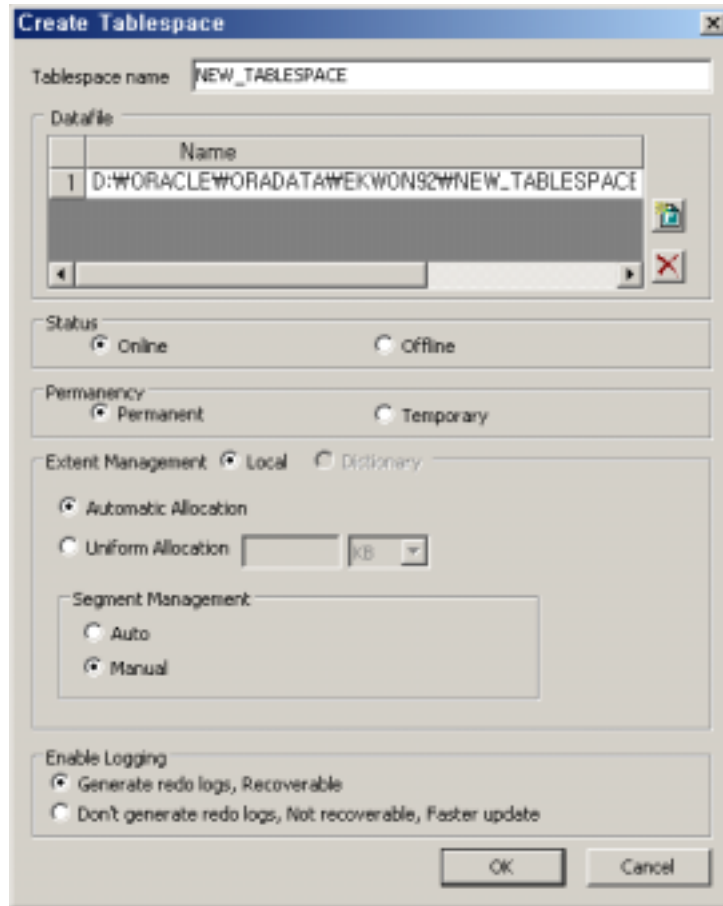
18.3.11 Tablespace Parameter

- Tablespace Parameter [Action] → [Edit Tablespace] Edit Tablespace () . Permanency Extent Management .

- Extent Management Local Dictionary .

- Enable Logging – LOGGING NOLOGGING . NOLOGGING Redo log .

[18.17 Edit Tablespace]
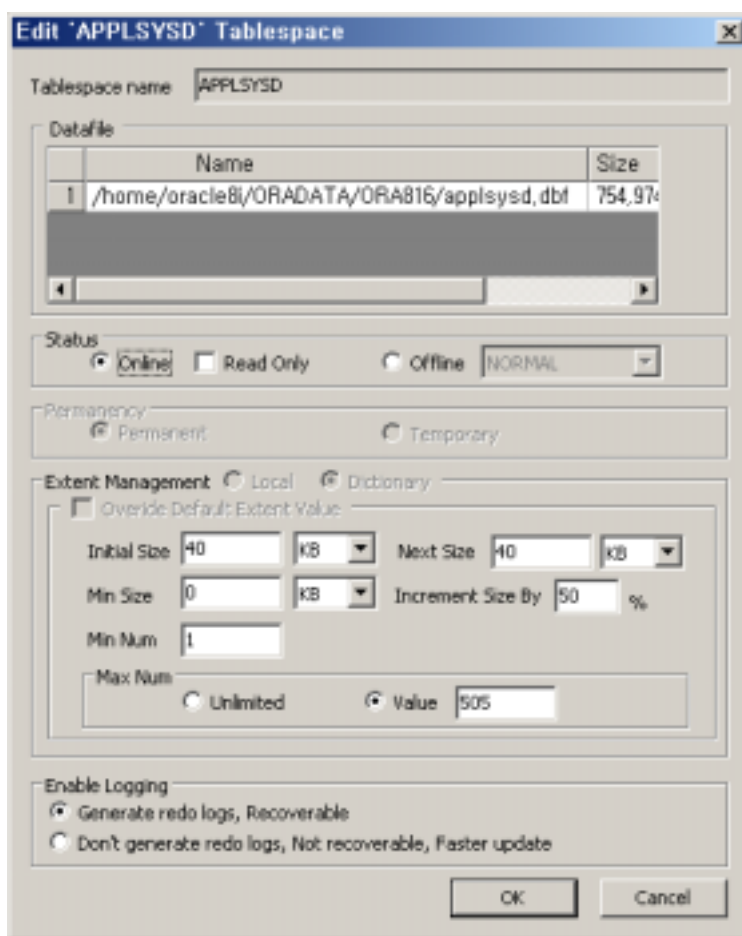
18.3.12 Datafile Parameter

■ Datafile Parameter [Action] → [Edit Datafile] Edit

Datafile (▨) . Tablespace

.

[18.18 Edit Datafile]

18.3.13 Rollback Segment

Space Manager [Rollback Segment] "Database"

Rollback Segment .

- Status : , , , Rollback Segment .
- Name : Rollback Segment .
- Tablespace : Rollback Segment .
- Extents : Rollback Segment .
- Size : Rollback Segment .

[18.19 Rollback Segments]
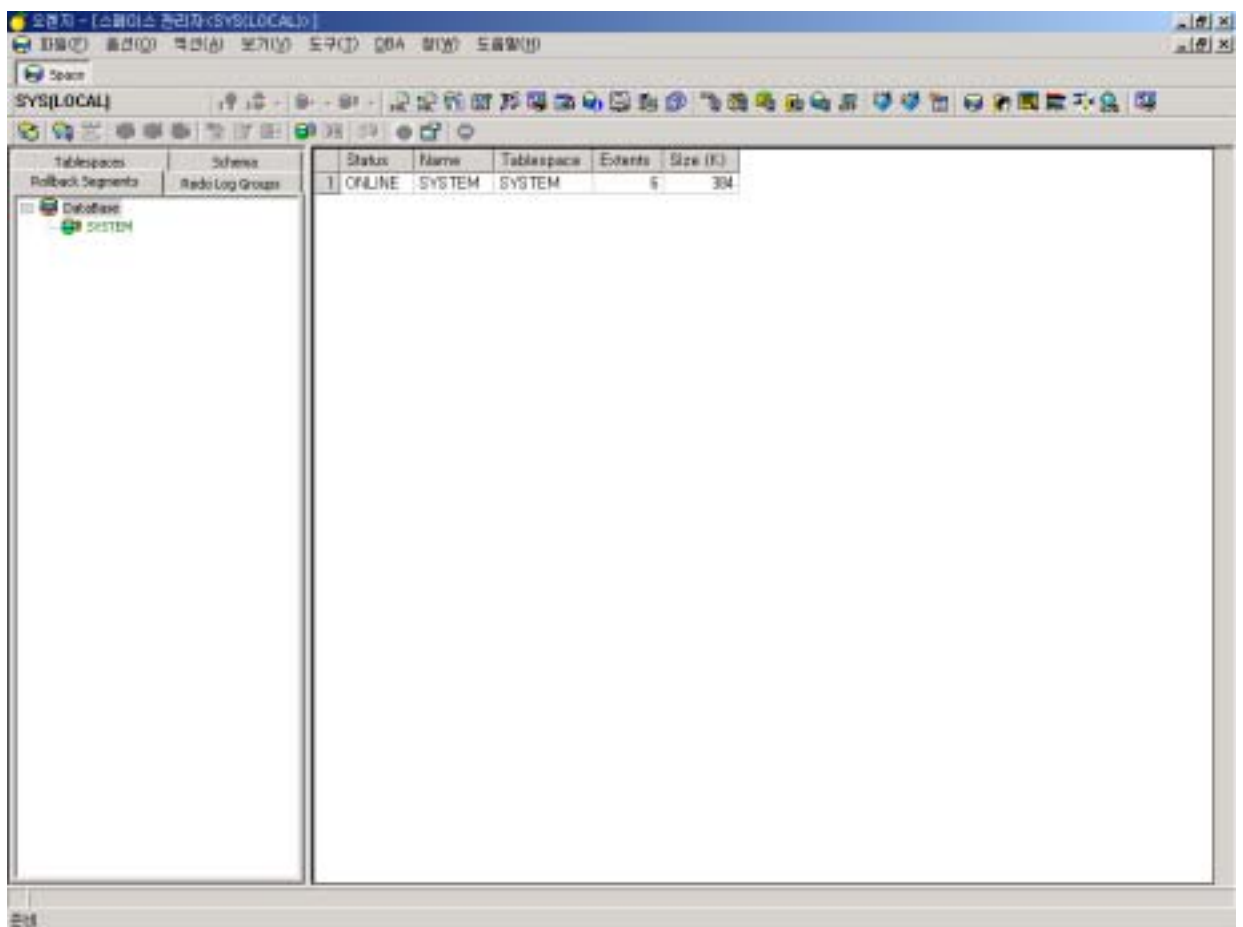
18.3.14 Rollback Segment

Rollback Segment [Action] → [Create Rollback Segment] Create
Rollback Segment ( ) Rollback Segment . Rollback
Segment .

- "General" "Name" Rollback Segment . Rollback Segment
  . Rollback Segment 30
  . "Tablespace" Rollback Segment .
  . Public Rollback Segment
  Rollback Segment .
- "Status" Rollback Segment ONLINE/OFFLINE .
- "Extents" . "Initial Size" Rollback Segment
  "Next Size" Rollback Segment "Optimal Size" Rollback
  Segment . "Min Extents" Rollback Segment
  . 2 . "Max Extents" Rollback Segment
  . .
  'Unlimited' . .
  [OK] Rollback Segment

[18.20 Create Rollback Segments Dialog]
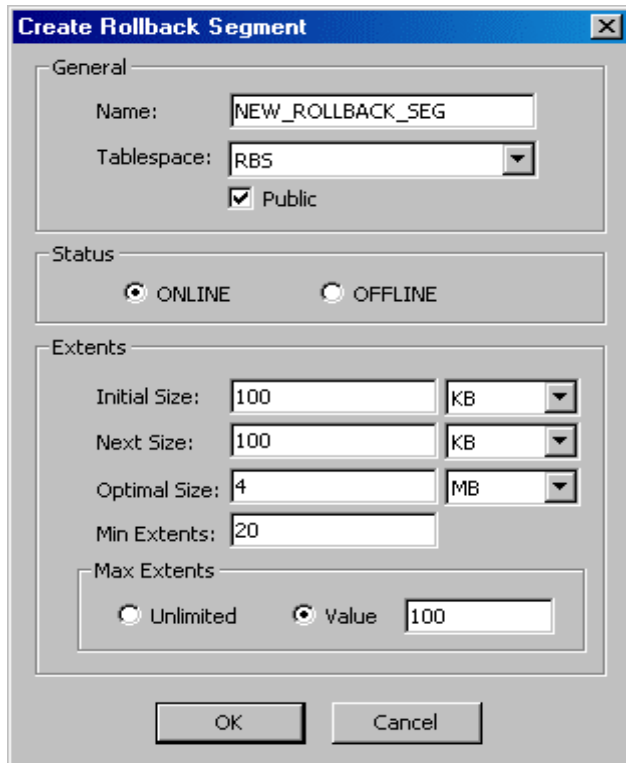
18.3.15 Rollback Segment Parameter   /

Rollback Segment Parameter   . [Rollback Segment]   Rollback Segment
                                                                    . Next Extents Size, Optimal Extents Size
                            ,   Online/Offline   Max Extents   'Unlimited'   Value
                   .   [Apply]   .

[18.21 Rollback Segments Parameter   ]
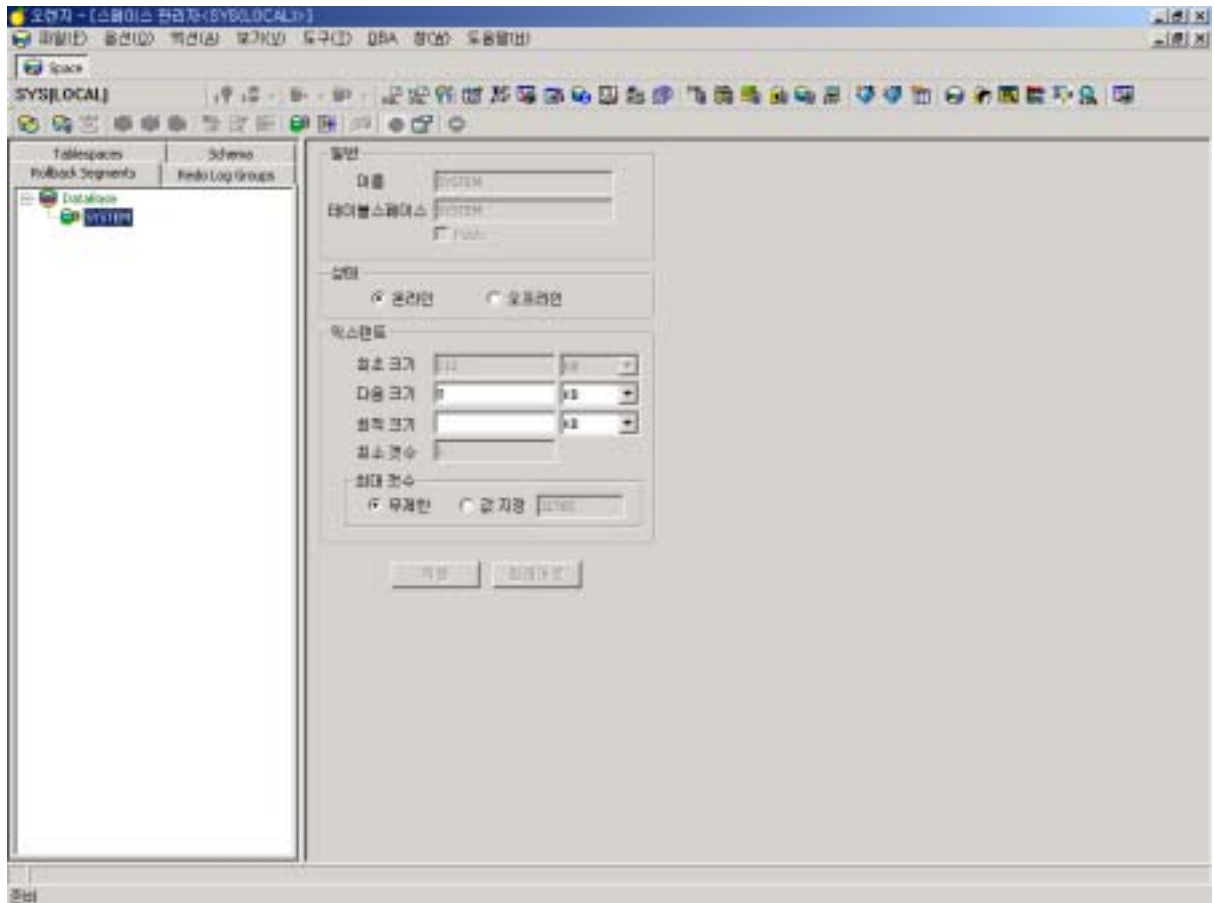
18.3.16 Rollback Segment

Rollback Segment   [18.22 Rollback Segment

　　　　　　　　　　　]   Rollback Segment

"Offline Rollback Segment"   .   Rollback Segment

　　　　.

[**18.22 Rollback Segment   **]

Rollback Segment을 온라인 상태로 변경하려면 [그림 18.23 Rollback Segment 온라인 상태로 변경]과 같이 Rollback Segment 이름에 마우스를 위치하고 마우스 오른쪽 버튼을 눌러 나타난 메뉴 중에서 "Online Rollback Segment"를 선택하면 된다.

[그림 18.23 Rollback Segment 온라인 상태로 변경]
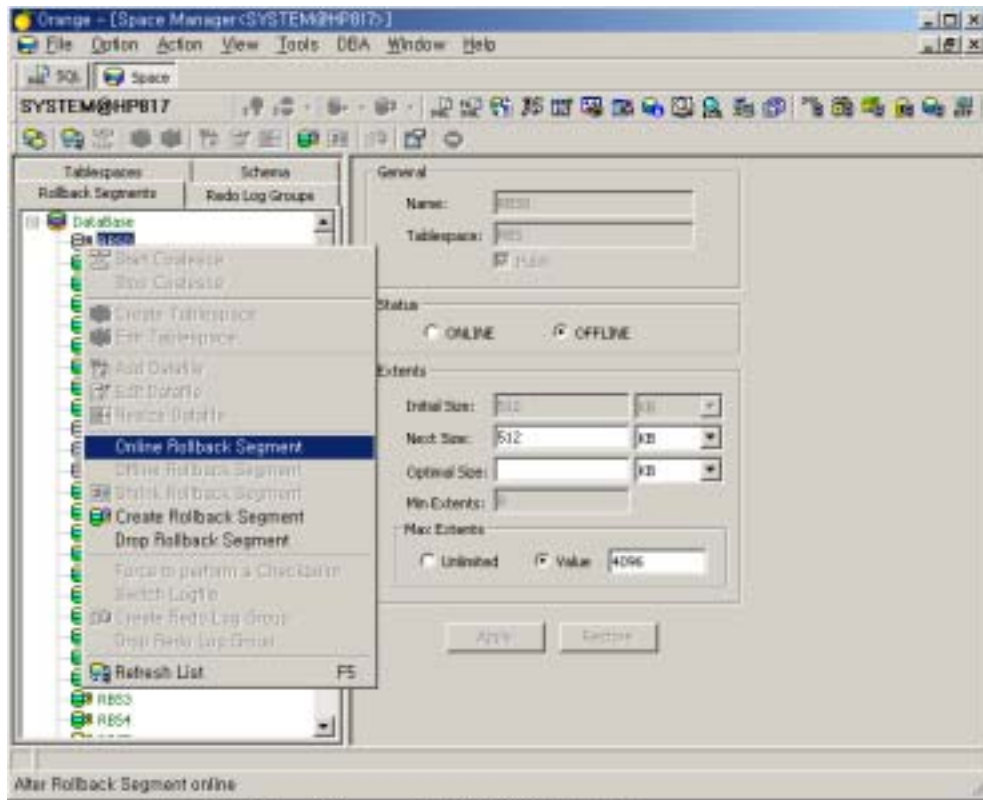
18.3.17 Rollback Segment 줄이기(Shrink)

사용 중인 Rollback Segment의 크기를 줄이려면 [Rollback Segment] 탭에서 크기를 줄이려는 Rollback Segment를 선택하고, [Action] → [Shrink Rollback Segment] 메뉴를 선택하거나 Shrink Rollback Segment 버튼()을 눌러 Rollback Segment의 크기를 줄일 수 있다. Rollback Segment의 크기를 줄일 때에는 'Optimal Size'나 Size 둘 중에서 하나를 선택한다. 주의 : 온라인 상태의 Rollback Segment만 줄일 수 있다.

[그림 18.24 Shrink Rollback Segment Dialog]
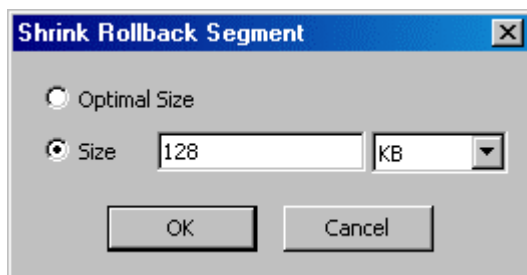
18.3.18 Rollback Segment

Rollback Segment   [Rollback Segment]   Rollback Segment

                              [Drop Rollback Segment]   .   :   Rollback

Segment   .

18.3.19 Redo Log Groups

Space Manager   [Redo Log Groups]   "Database"

                                                                             .

              .   .

- ■   Status :   ,   ,   .
- ■   Group :   .
- ■   # of Members :   .
- ■   Archived :   . ARCHIVE

                                              .

- ■   Size :   KB   .
- ■   Sequence :   .
- ■   First Change # :   SCN(System Change Number)   .

[18.25 Redo Log   ]

18.3.20 Redo Log Group

Redo Log Group을 생성하려면 [Action] → [Create Redo Log Group]을 선택하거나 Create Redo
Log Group (🖼) 아이콘을 클릭하여 Redo Log Group 생성 화면을 호출한다. Redo Log Group 생성
화면은 다음과 같다.

- ◼ "General" 그룹에서 "Group #"을 입력한다. (기본값으로, 현재 설정된 그룹
1과 2에 이어서 3이
입력된다.) "File Size"를 입력한다.
- ◼ "Redo Log Member" 그룹에서 파일을 입력한다. [Add], [Delete]
버튼으로 추가, 삭제할 수 있다.

필요한 값을 입력하고 [OK] 버튼을 누르면 Redo Log Group이 생성된다.

[그림 18.26 Redo Log Group 생성]

18.3.21 Log Switch

LGWR가 로그 파일에 기록하는 현재 로그 그룹에서 다음 로그 그룹으로 바꾸는 기능을 수행
한다. 아카이브 모드에서만 사용할 수 있다.

로그 그룹을 스위치한다. 아카이브 모드에서 사용할 수 있다. [Redo Log Group]
노드를 선택한 상태에서 [Switch Logfile] 메뉴를 선택한다.

18.3.22 Redo Log Groups

선택한 Redo Log Group을 삭제한다, [Redo Log Group] 노드를 선택하여 Redo Log Group
을 선택한 상태에서 [Drop Redo Log Group] 메뉴를 선택한다.

18.3.23 Space Manager

- (📑) . [Alert] Tablespace usage
  alert . Full
  .
  .

- [Free Extent] Tablespace Free Extents Grid
  .

- [Grid] [File Save] SQL Tool .

[18.27 – Space Manager – Alert]
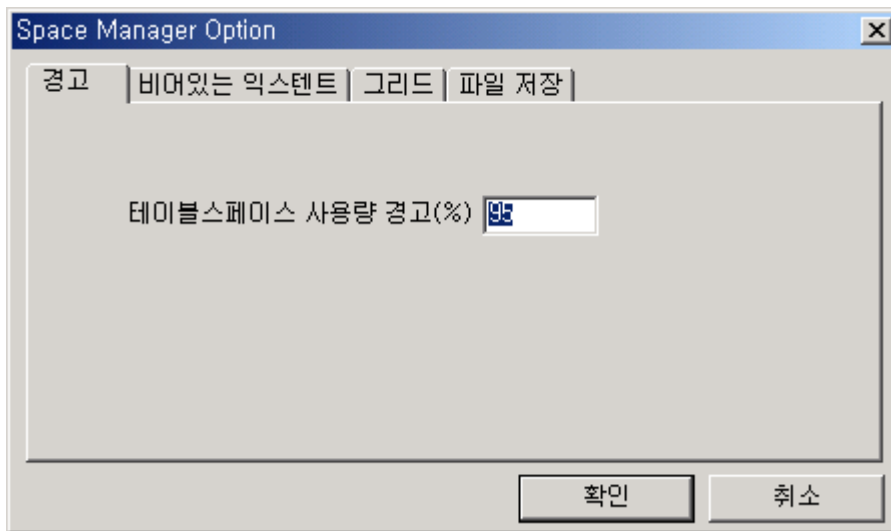
[18.28 – Space Manager – Free Extent]
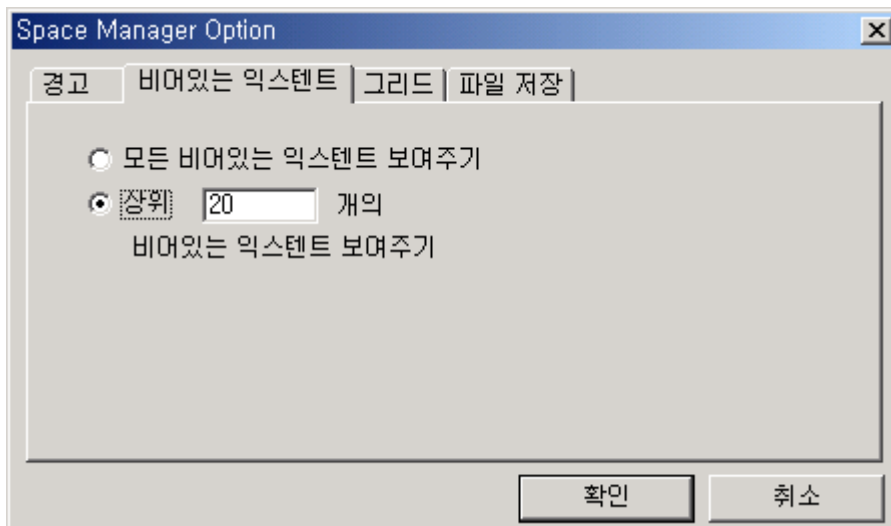
19. Security Manager

Security Manager   ,   ,   ,

                                                                                                                          .

              ,   ,   , Consumer Group   ,

                    ,   , Consumer Group   ,

                        .

19.1 Security Manager

- ✓
- ✓
- ✓   /
- ✓
- ✓   /   (Consumer Group)

19.2 Security Manager

 Refresh
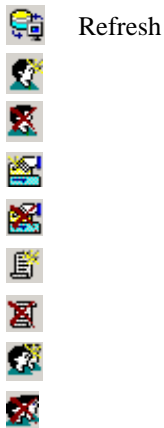
19.3 Security Manager

19.3.1 Security Manager

                              [   ] [   ]   [   ]   Security Manager

      [   ]   Security Manager

      .   Security Manager   ()   Security Manager   .

Security Manager   DBA   ,   Security Manager

Schema   .

19.3.2

Security Manager   [Users]   Users
                                   .

[19.1 –   ]

19.3.3

■ Security Manager [Users]

6 . ,

, ,

.

[19.2 – –]

■ [General] 　　　　　　　　　　　　　　　　　　, Default Tablespace, Temporary Tablespace, Profile
　　　　　　　　　.

　[Apply]　　　　　　　　　　　, 　　　　　　　　[Cancel]　　　　　　　　.

[　　19.3 –　　　　　　　　　　　　– General 　]

■   [Role]   ,

.
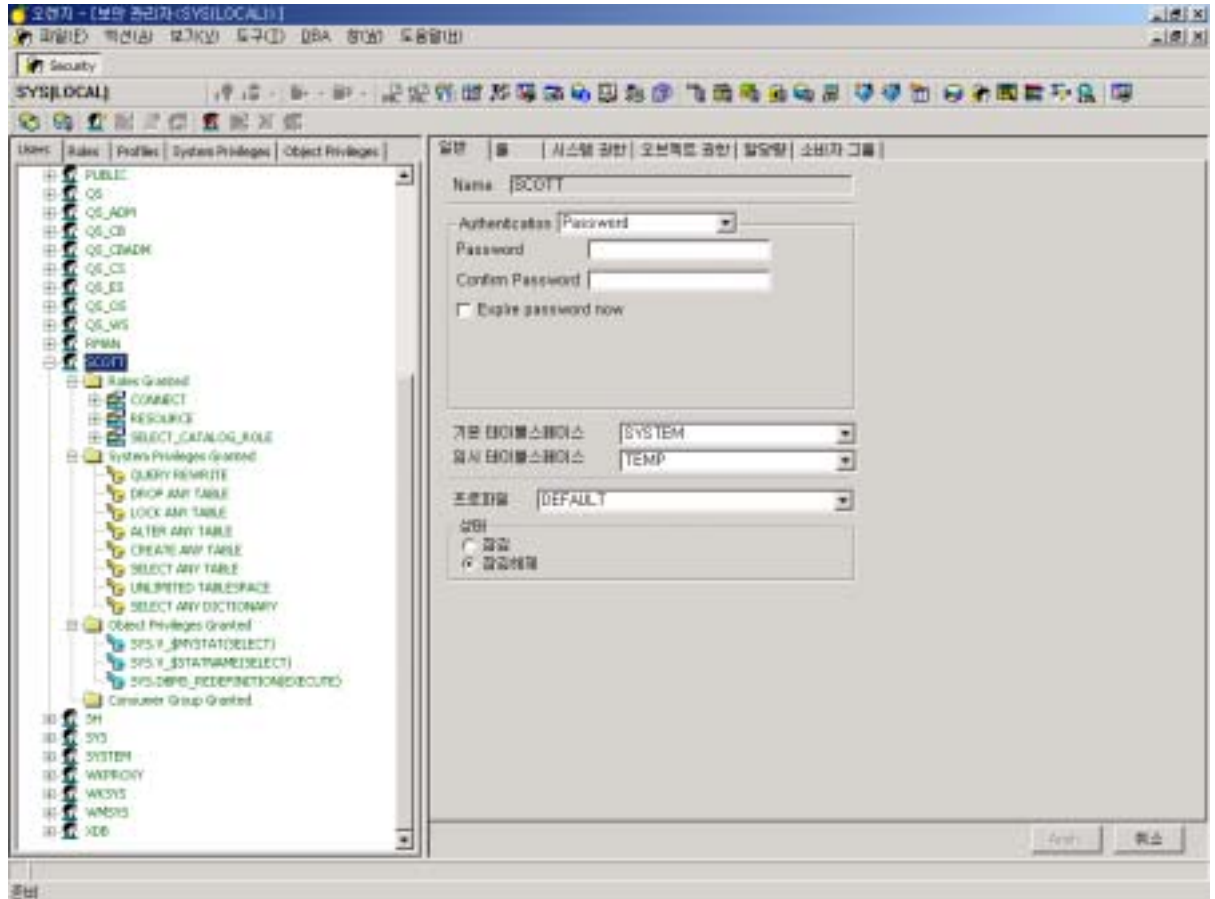
. Admin Option   Default

YES   NO

.   [Apply]   ,

[Cancel]   .

[19.4 –   – Role   ]

■ [System Privileges]

　　，　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　．
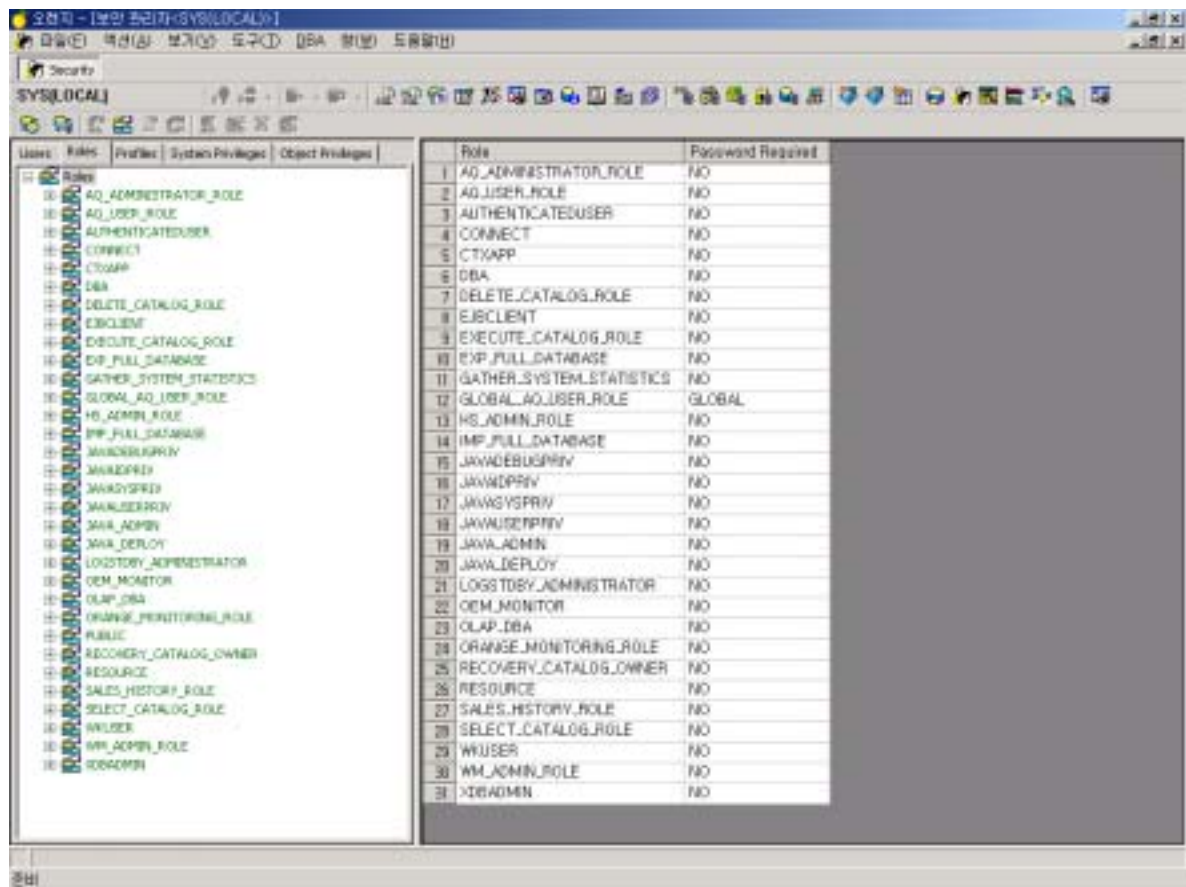
　　　　　　　　　　　　　　　． Admin Option　　　　　　　　　　　　　　　　　　　　　YES

　　　NO　　　　　　　　　　　　　　．

　　[Apply]　　　　　　　　　，　　　　　　　　[Cancel]　　　　　　　　．

[　　　19.5 –　　　　　　　　　　　 – **System Privileges**　]

■ [Object Privileges]

,

.
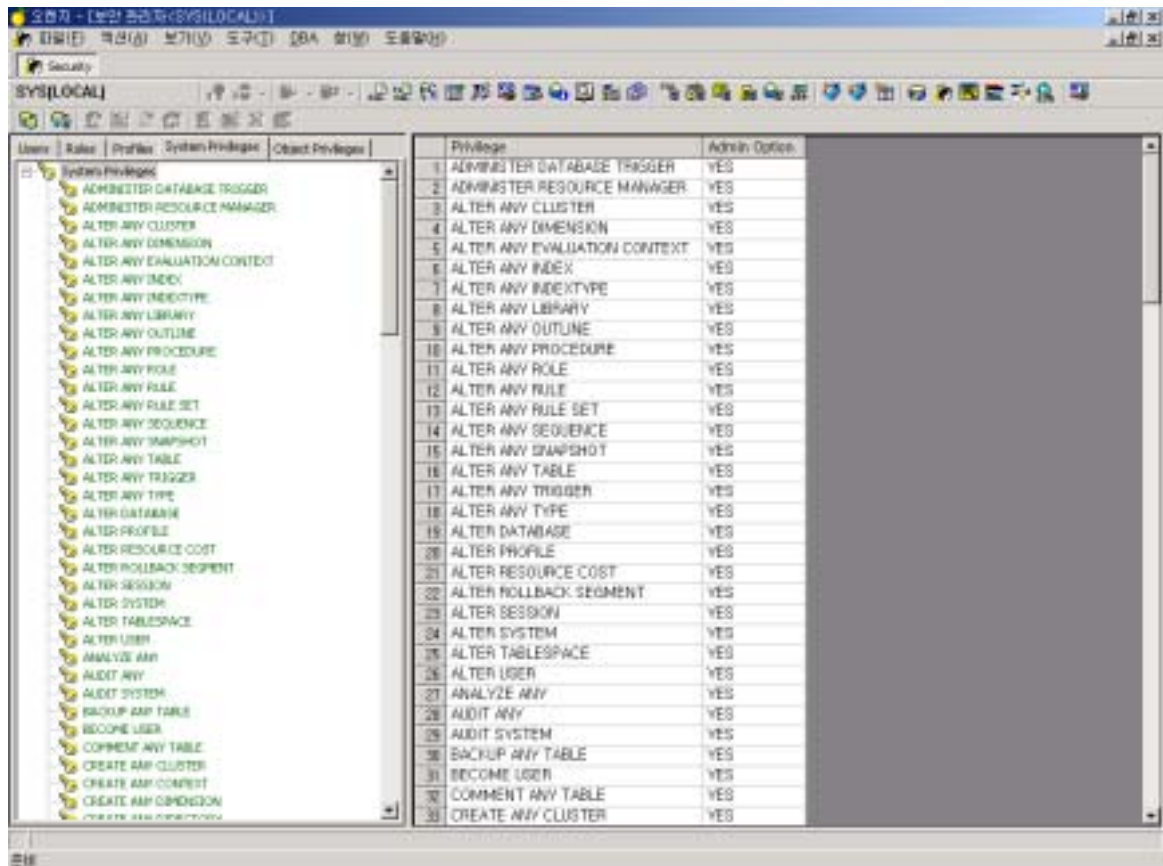
. Grantable

YES NO .

[Apply] , [Cancel] .

[19.6 – – Object Privileges]
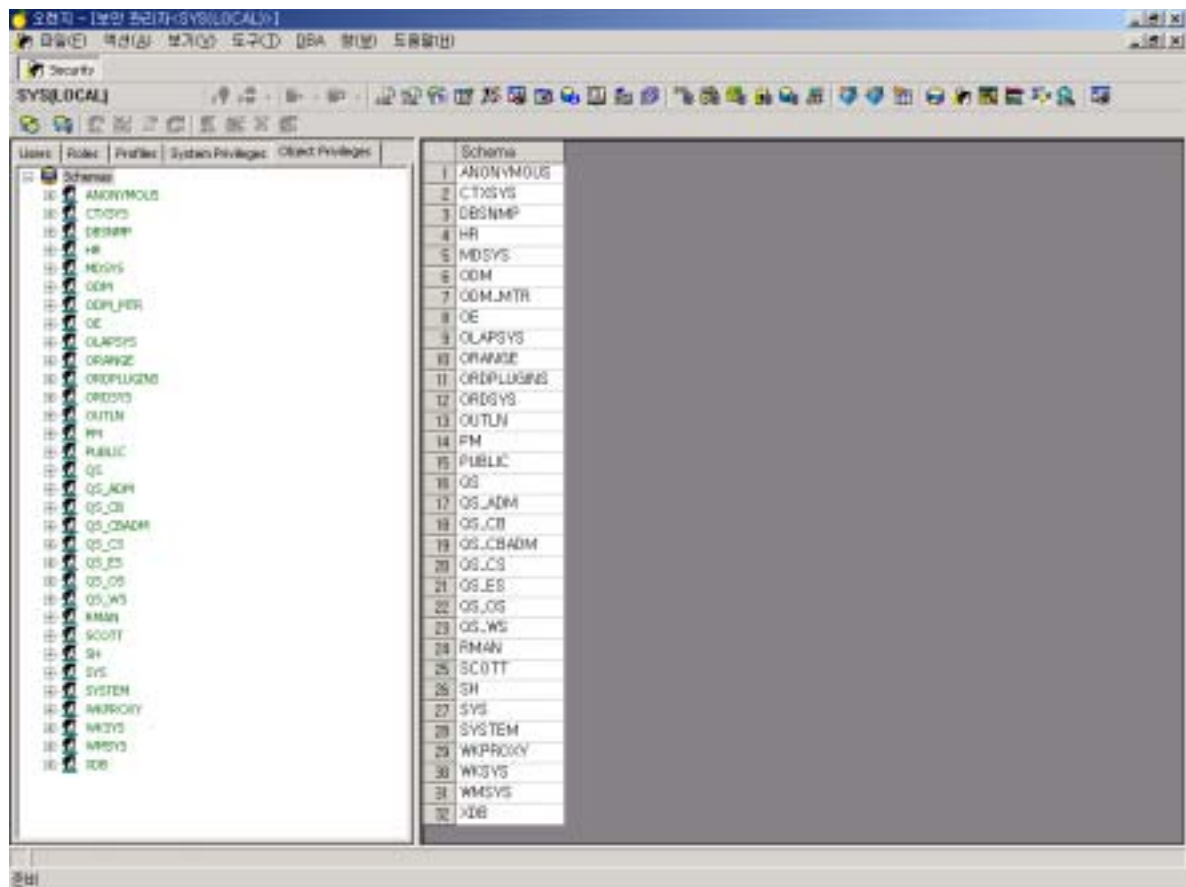
■ [Quota]　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Quota　　　　　　　　．
Quota　　　　　　　　　　　　　　　　　　　　　None, Unlimited, Value
　　　　　　, Value　　　　　　　　　　　　　　　Value　　　　　　　　　　　　　．
　　　　　　　　　　　　　　　　　　　　　　[Apply]　　　　　　　　　, 　　　　　　　[Cancel]
　　　．

[　　　19.7 –　　　　　　　　　　　　　– Quota　　]
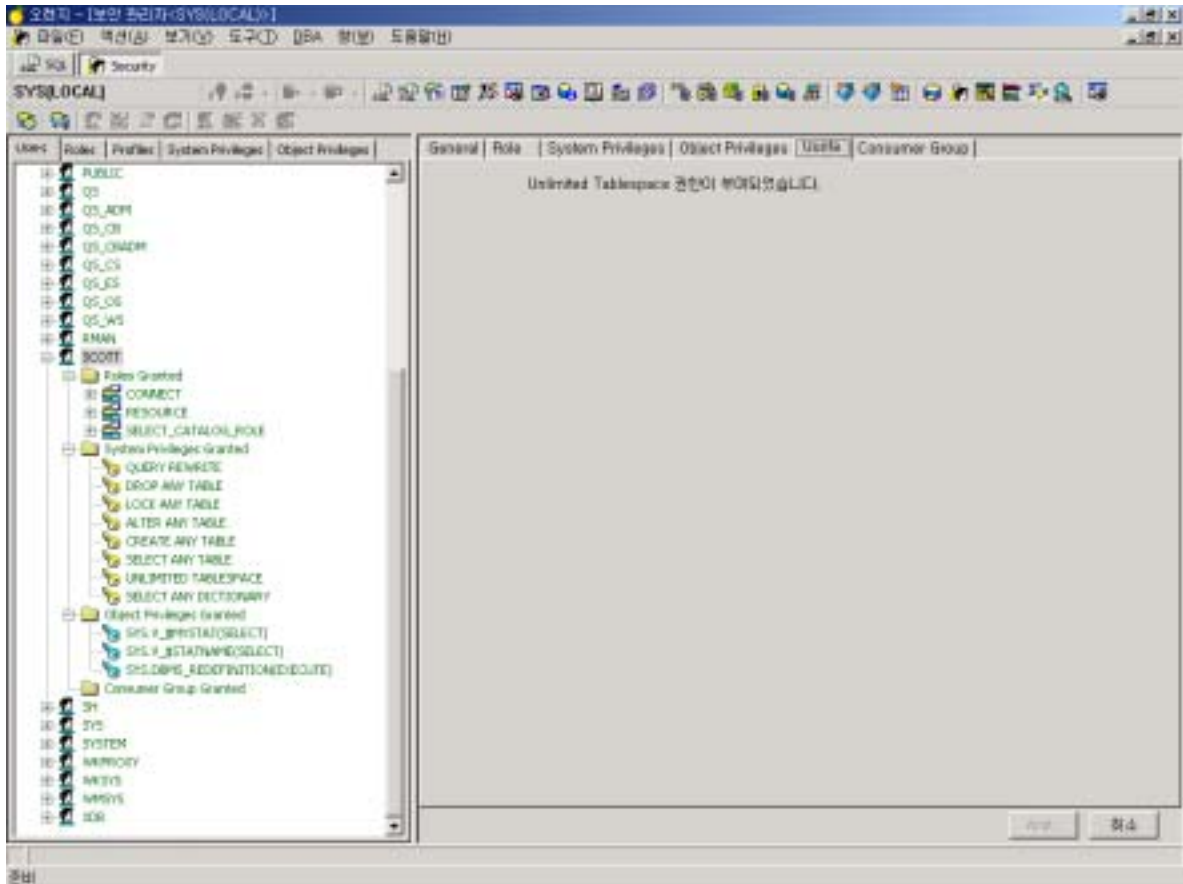
- **[Consumer Group]**   ,
   .

                    . Admin Option   Default
      YES   NO   .

                  [Apply]   ,   [Cancel]   .

[19.8 –   – Consumer Group   ]
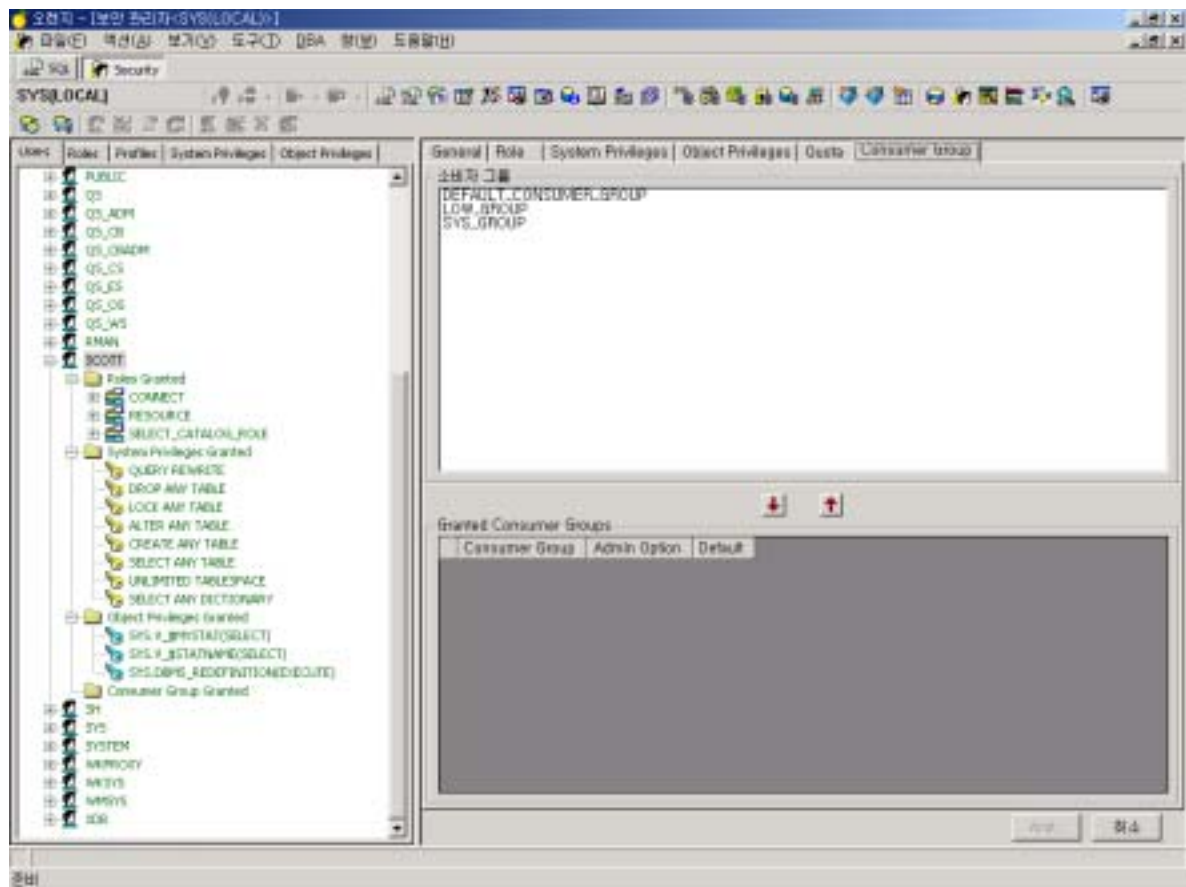
19.3.4
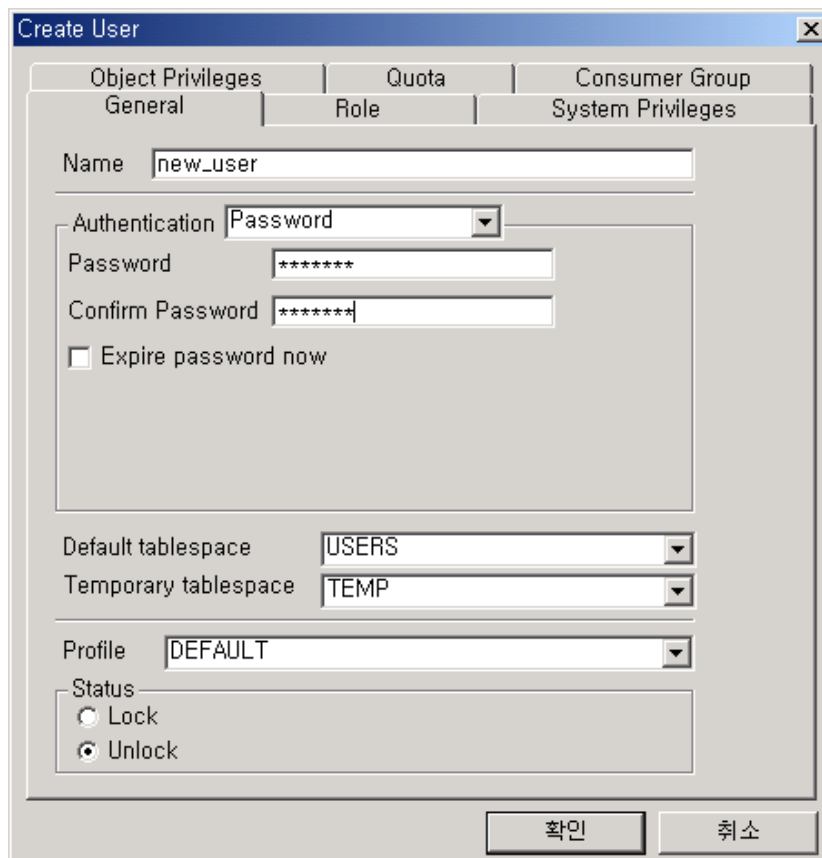
- Security Manager [Users] Create User (아이콘)
  , .
  30 .

- [Users] Drop
  User (아이콘) .

[19.9 –]

19.3.5

Security Manager   [Roles]   Roles

                               .

    [**19.10 –**   ]
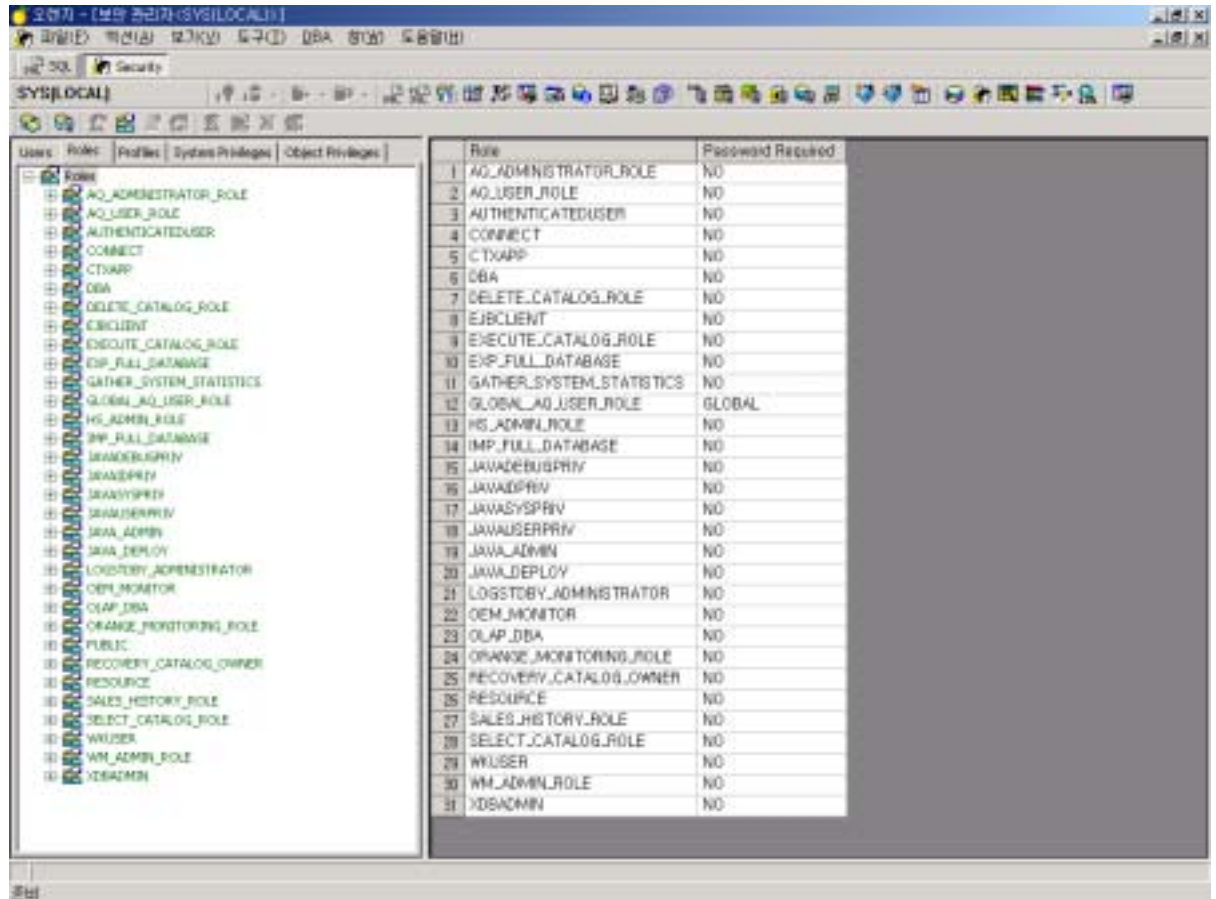
19.3.6

Security Manager [Roles]

6 .

[Quota] 5 [Grantee] . ,

, ,

.

[19.11 –]
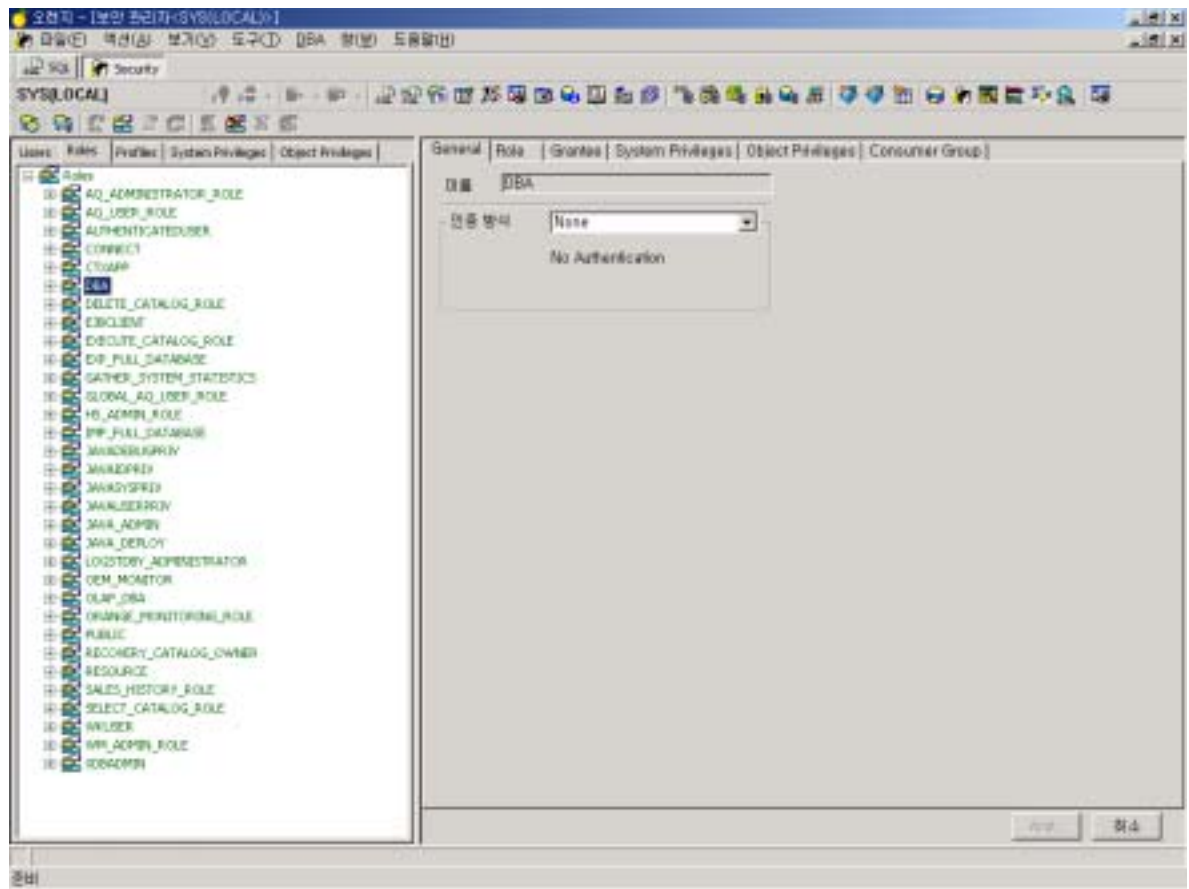
[19.12 –   ]
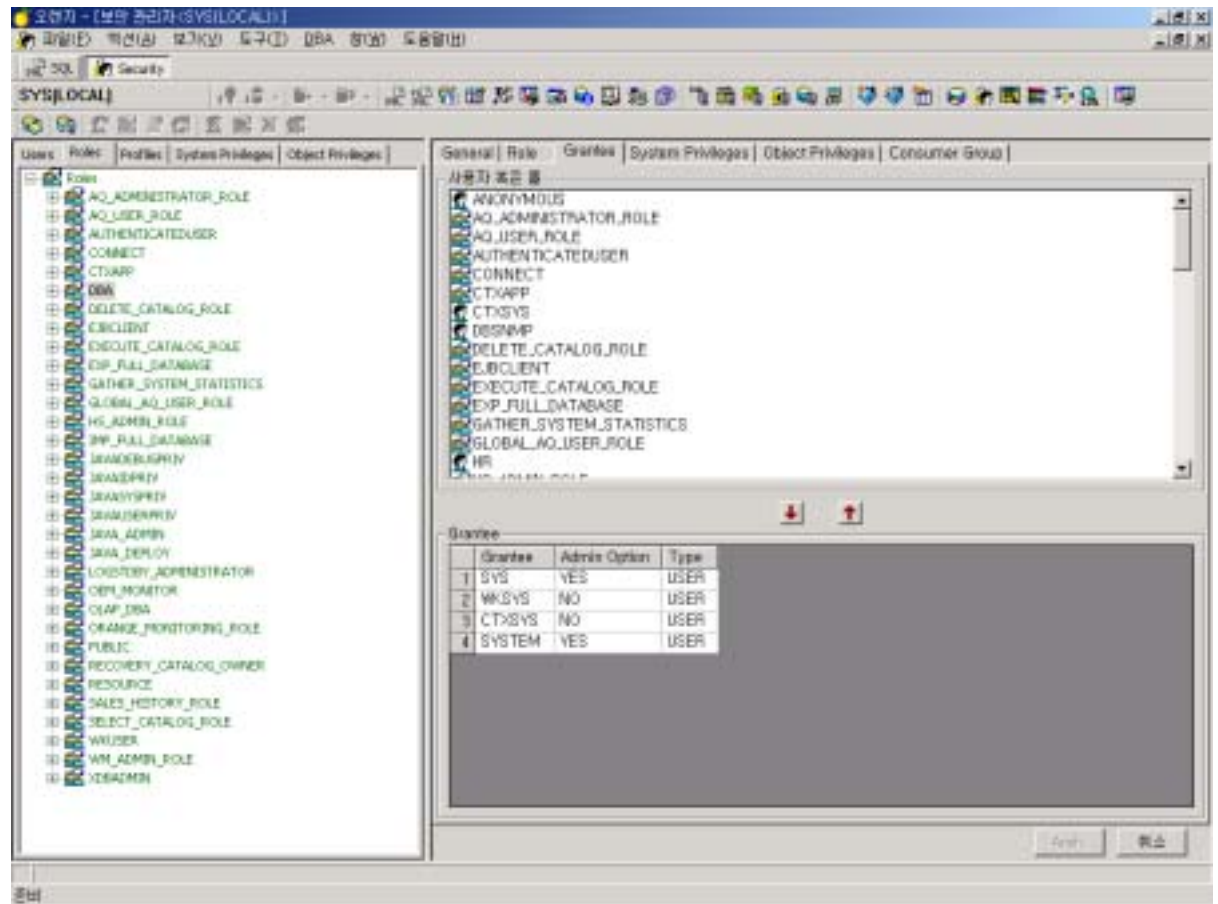
19.3.7

■   Security Manager   [Roles]   Create Role   (   )

      ,   .   30
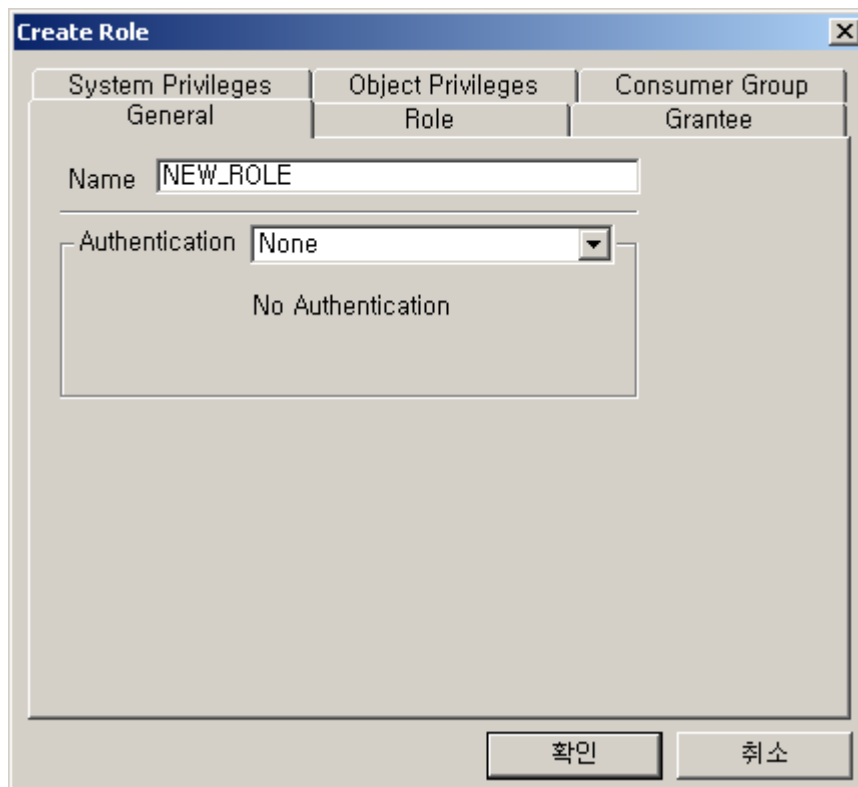
■   [Roles]   Drop Role
      (   )   .

[**19.13** –   ]

19.3.8

Security Manager [Profiles] Profiles

.

[19.14 –]
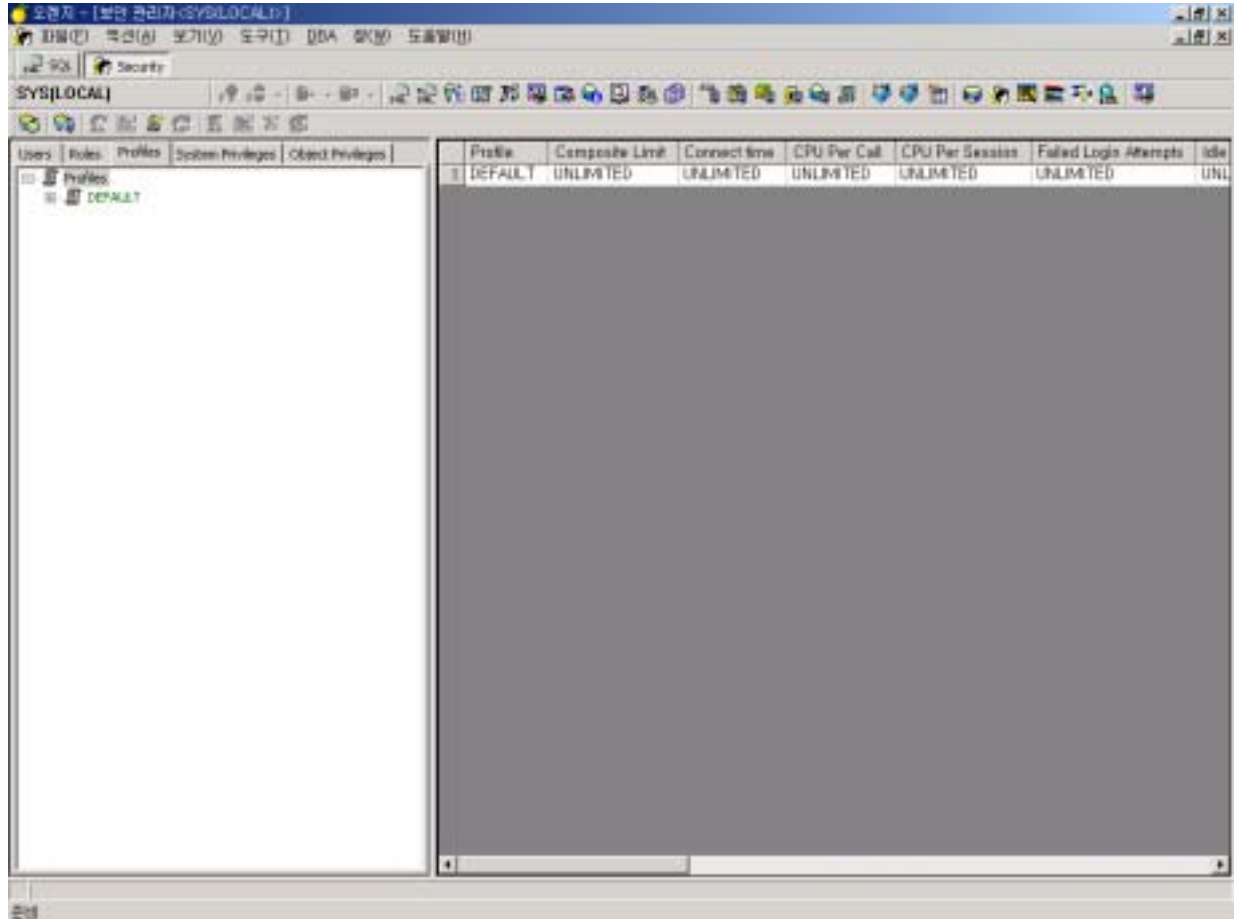
19.3.9

Security Manager [Profiles]
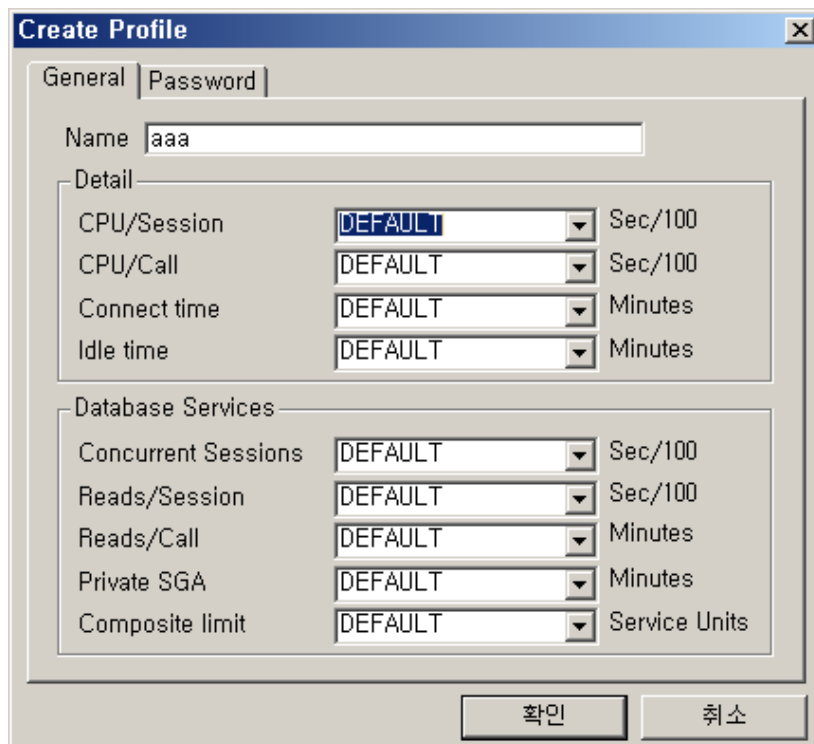
2   . [General]
[Password]   . [Profiles]
                            .

[19.15 –   ]
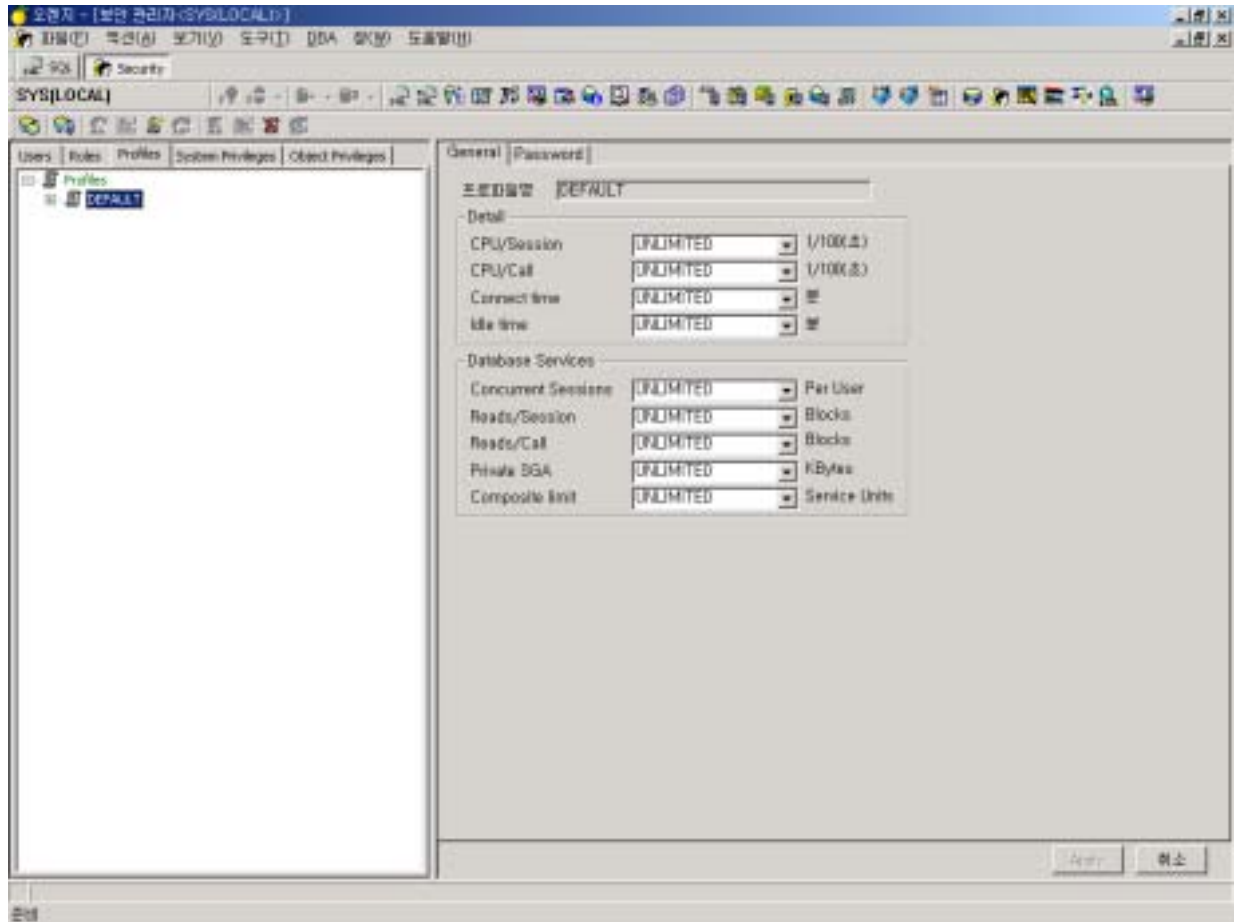
19.3.10

■ Security Manager 에서 [Profiles] 를 선택한 후 Create Profile 아이콘 (📋)

                                                              ,   .

                      30

■   [Profiles]

    Drop Profile 아이콘 (⌛)   .

    [19.16 –   ]

19.3.11   /

Security Manager   .

[Users]   [Roles]   ( )

Consumer Group Granted   ( )   Consumer Group

       .

[19.17 –   /   ]
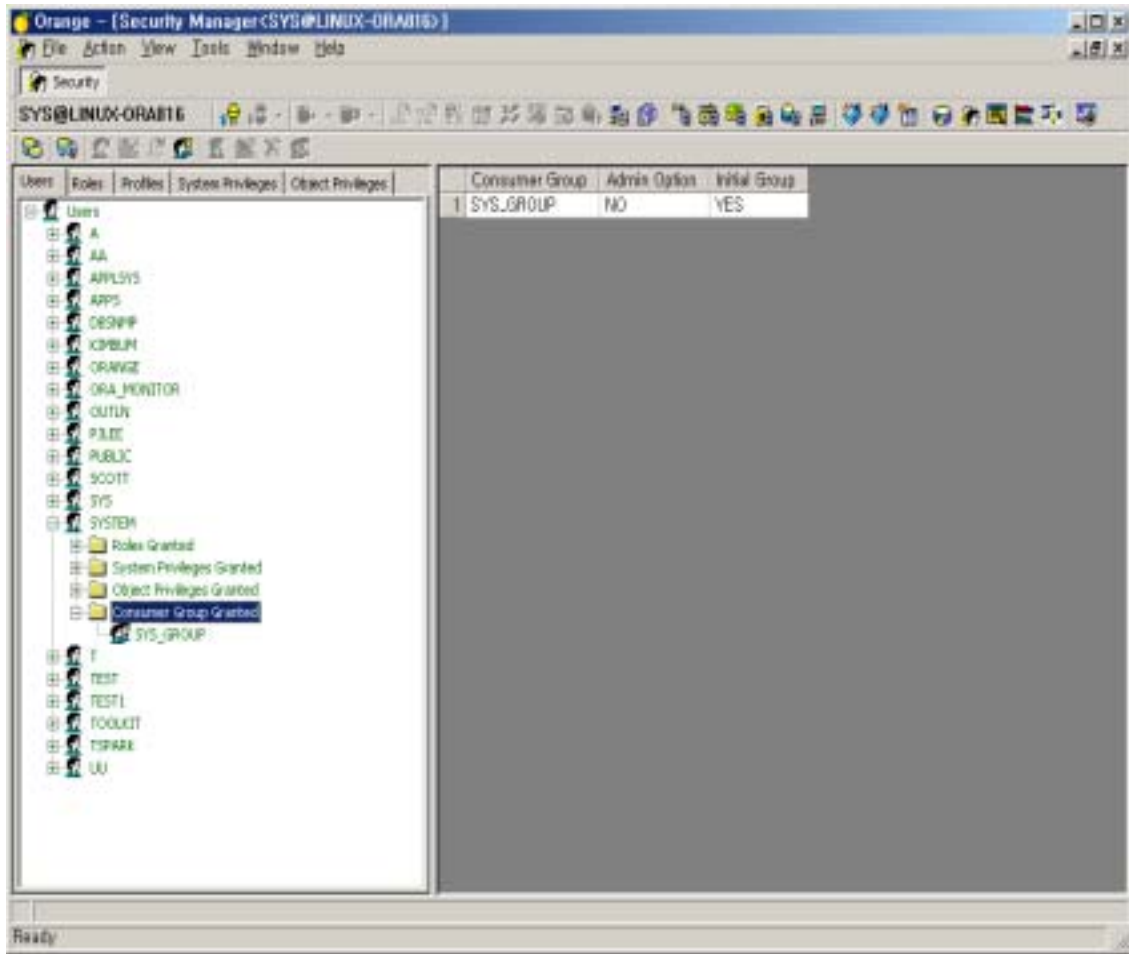
19.3.12

- [Users] 　　　 [Roles]

　　　　　　　　　　　　　　　　　　　　　　　3　　　　　　　　　　　　　　　. 3

　　[General], [User], [Role]　　　　　　　　　　　　　　　　　　　　　　　　　　　　.

- [User]　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　,

　　　　　　　　　　　　　　　　　　　　　　　　　　.

　　　　　　　　　　　　　　　　　　　,

　　　　　　　　　　　. [Role]　　　　　　　　　　[User]

　　　　　　　.

[　　　　19.18 –　　　　　　　　　　　]
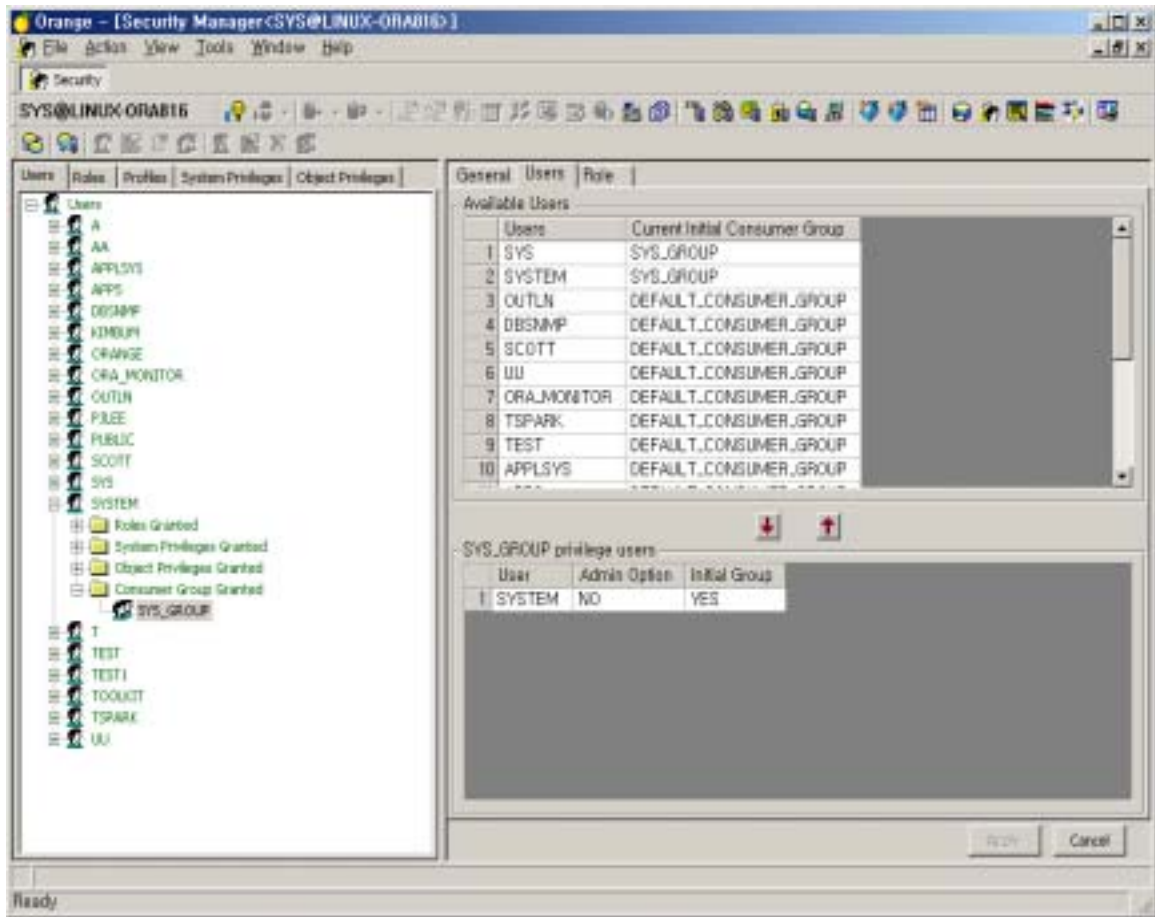
19.3.13

■ Security Manager [Users] [Roles] Consumer Group Granted
, .

Create Consumer Group () ,
. 30
.

■ [Users]/[Roles]
Drop Consumer Group () .

[19.19 –]
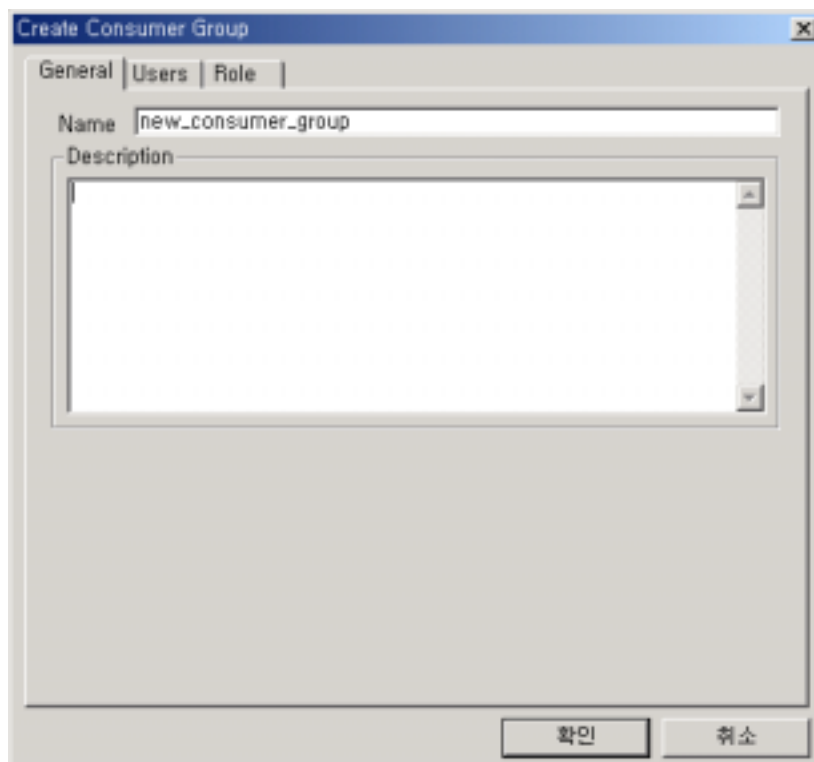
19.3.14

[System Privileges] System Privileges

.

[19.20 –   ]
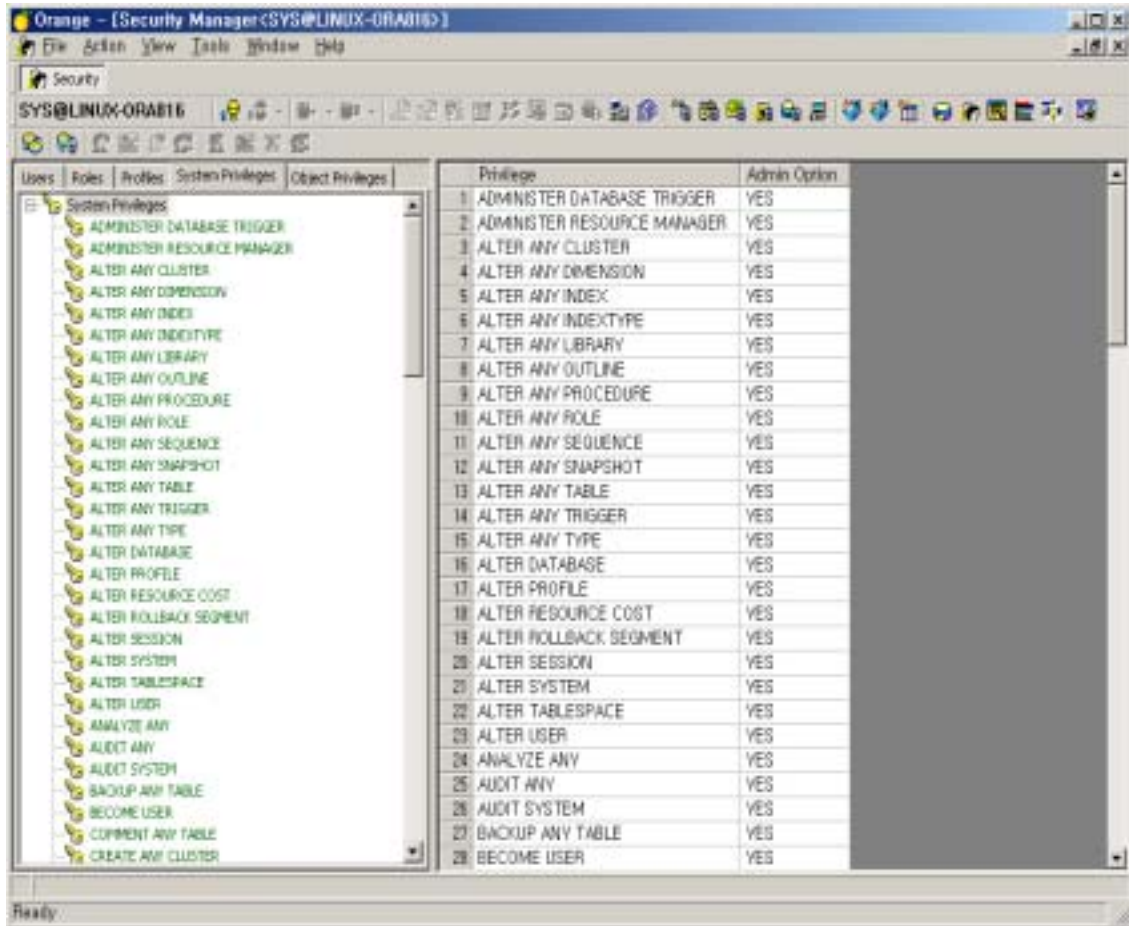
19.3.15

[System Privileges]   System Privileges

                                                                        [Users]   [Roles]

              .

[**19.21 –   **]
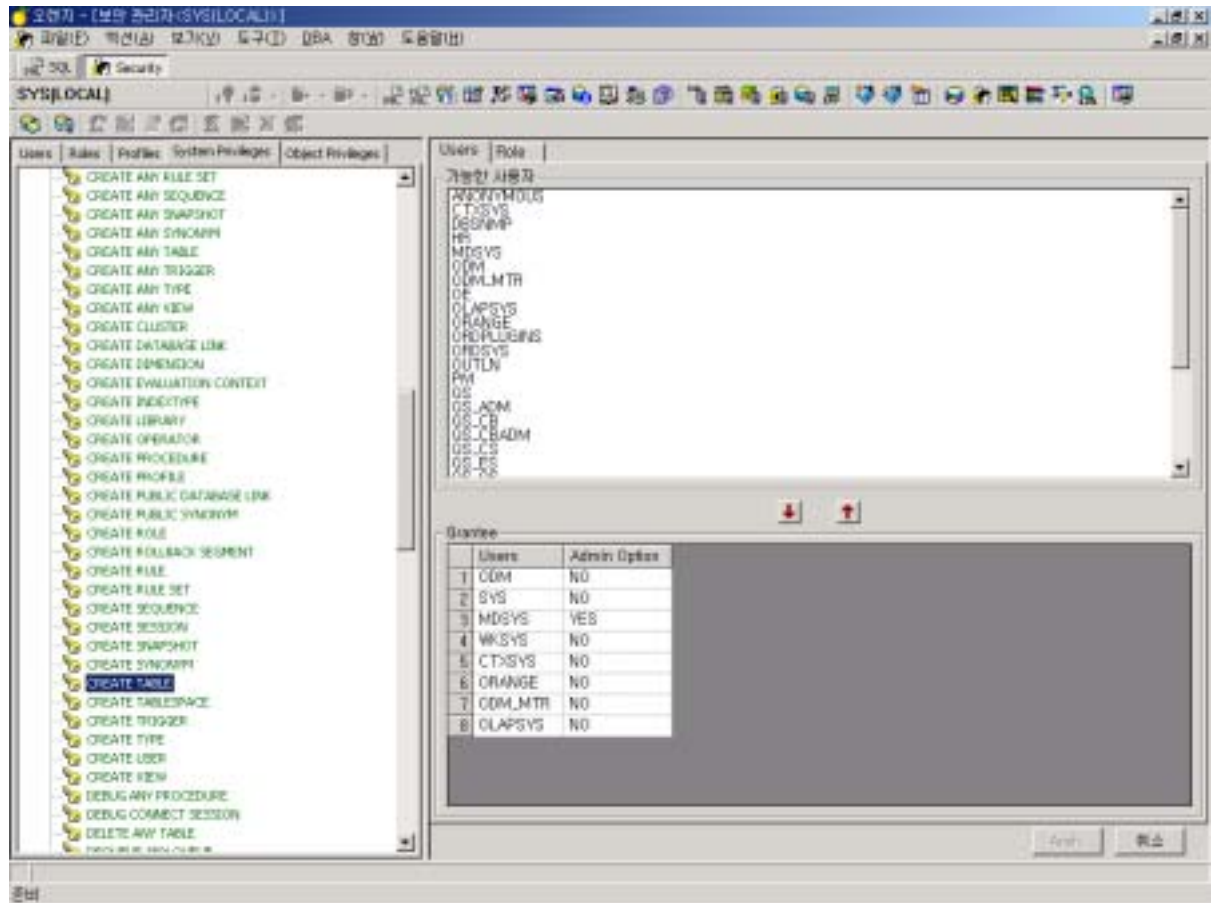
19.3.16

                                                                  ( )

                              ( )   ,

                         .   [Apply]

[Cancel]   .

      [19.22 –   ]
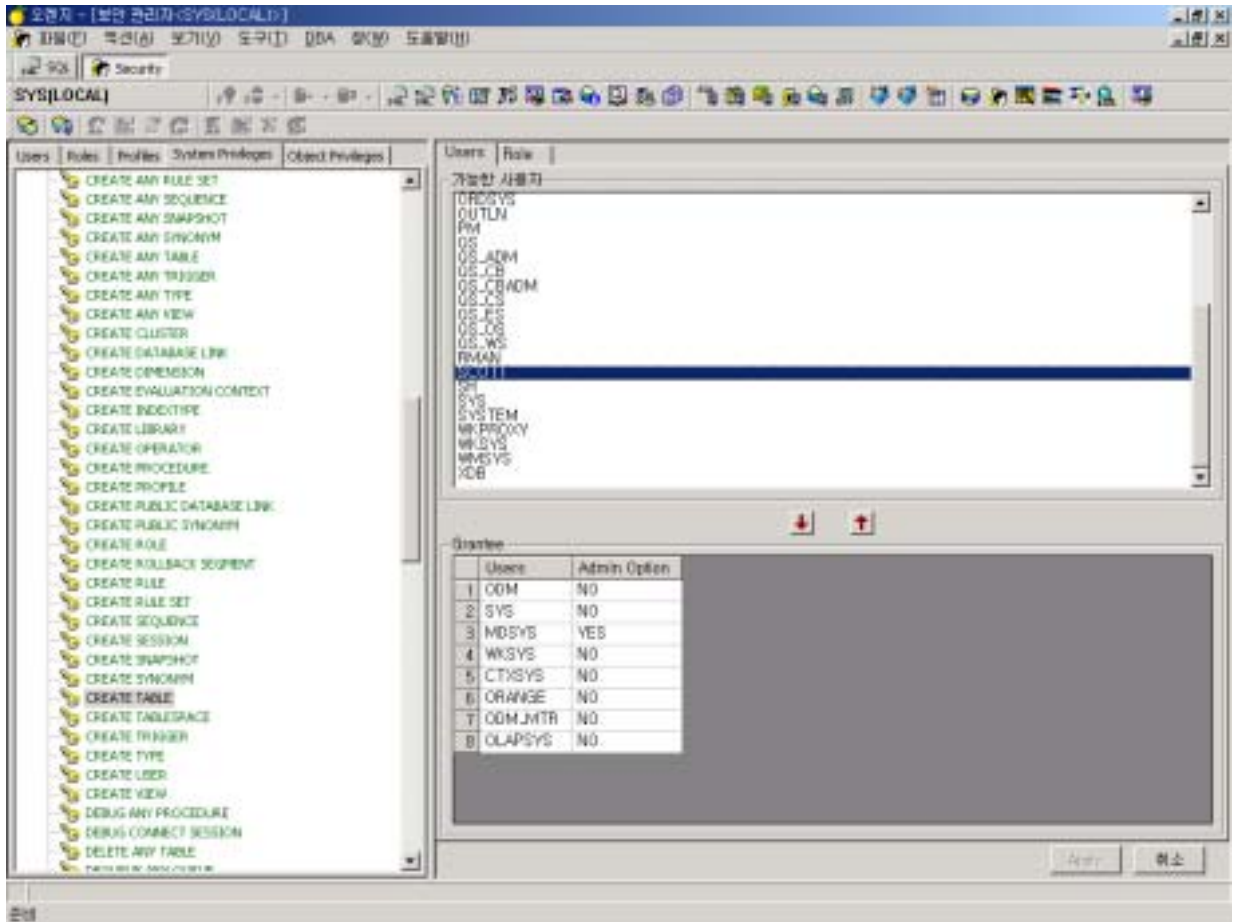
19.3.17

[Object Privileges]

.
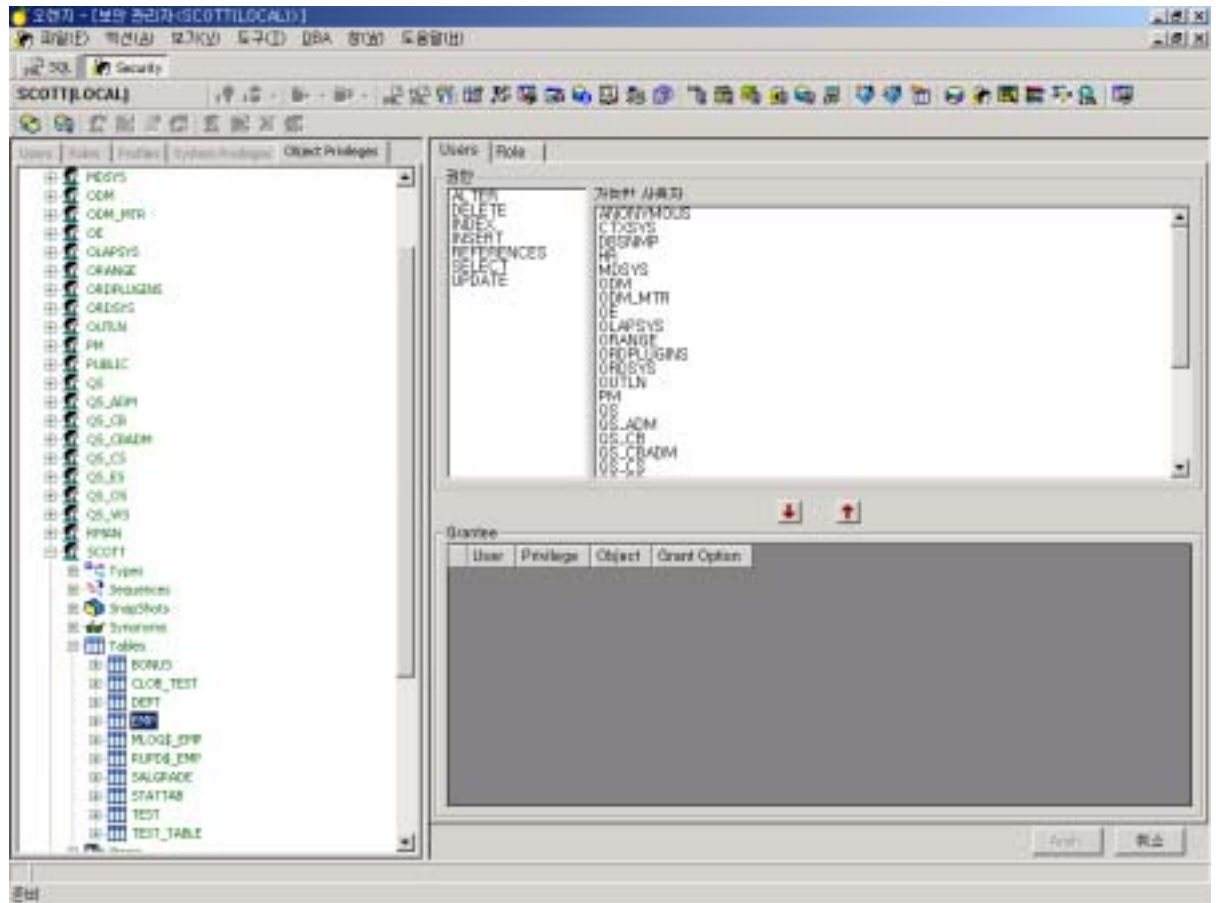
19.3.18

         (   )   (   )

     ,   .

    [Apply]   [Cancel]   .

[**19.24 –**   ]
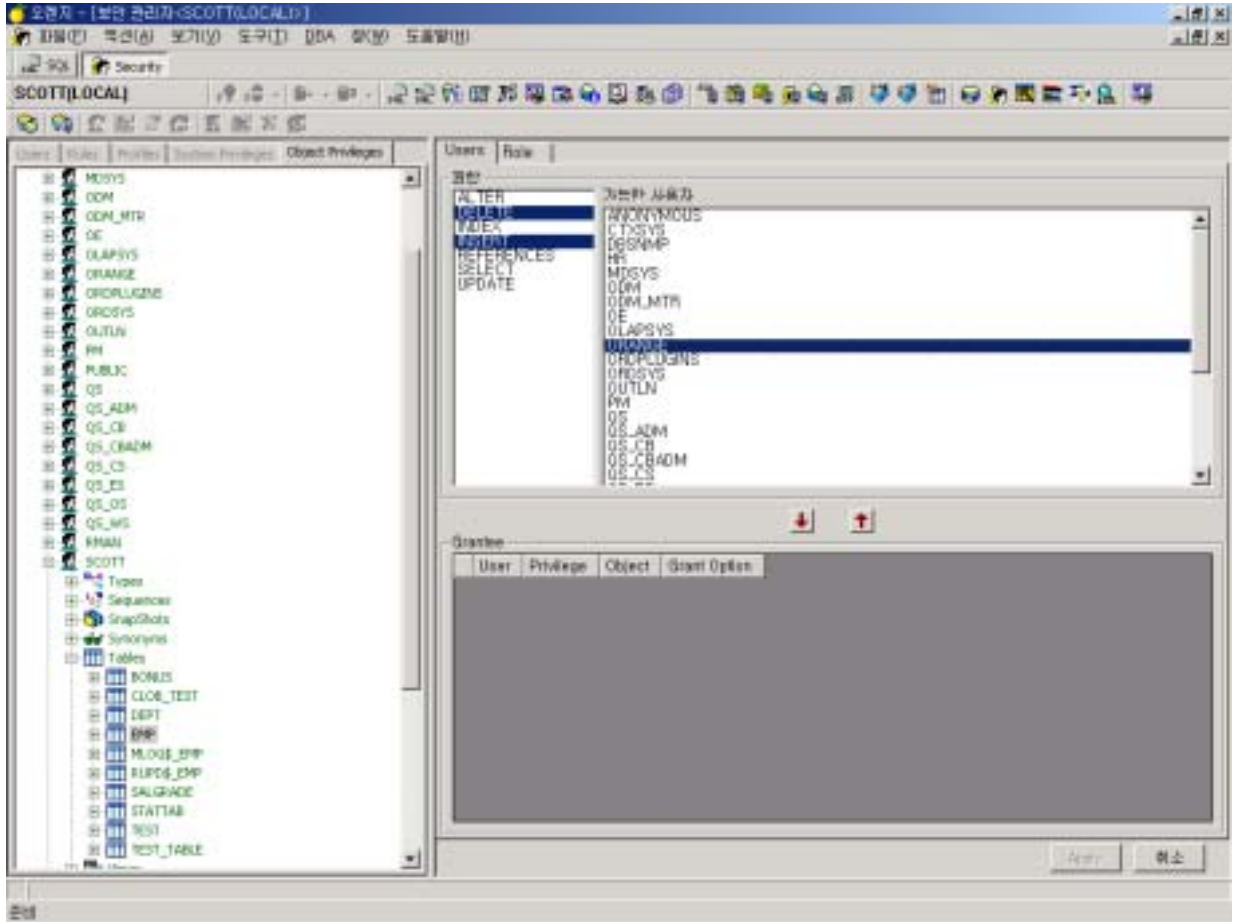
20. Transaction Monitor

"All or Nothing"   .

,

.

Transaction Monitor   ,

.

20.1 Transaction Monitor

- ✓
- ✓   Current SQL
- ✓
- ✓
- ✓   Refresh
- ✓

20.2 Transaction Monitor

🖥️   Transaction Monitor List Refresh

◉

🏷️

SQL   Current SQL

20.3 Transaction Monitor

20.3.1 Transaction Monitor

Transaction Monitor   Transaction Monitor   Sub Tool
bar   ,   Current SQL
.

■

> User Name :   Oracle

> SID : Session ID

> Serial# : Session Serial Number

> SPID : Oracle Server Process   OS Process ID

> Machine :   Machine

> Status :

> Recursive : Recursive Call

> RBS :

> Duration :   (   )

> Undo blocks :   No.

> Undo Records :   No.

> Logical IO :   Logical IO Block

> Physical IO :   Phygical IO Block

[20.1 - Transaction Monitor Sample   ]

20.3.2 Transaction Monitor

[   ]   [   ]   [   ]   Transaction   Monitor
   [   ]   Transaction   Monitor
          .   Transaction Monitor   (🖳)   Transaction Monitor   .
Transaction   Monitor   Session
Connection manager   .

20.3.3 Transaction Monitor

[20.2 –   ]
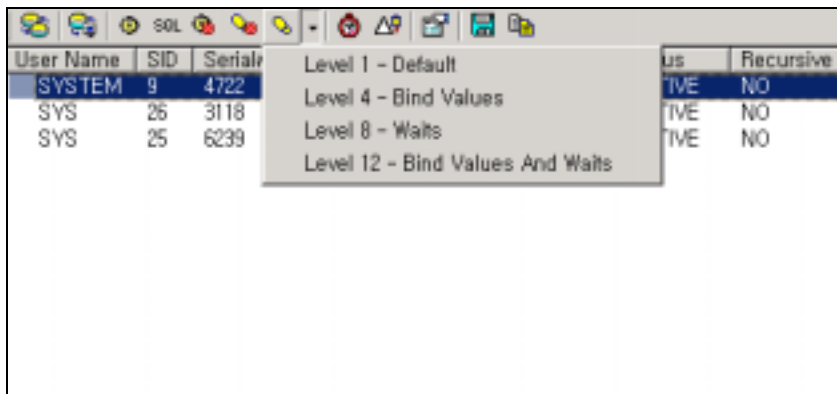
■   ,
                                          .   [20.2 –   ]   Level

   1, 4, 8, 12   .   Trace On   (🔧)
             , Session Info   (⚙)   .

■   Current SQL   (SQL)   Context   SQL Tool
       PL/SQL Tool   .

■   Save   (💾)   [File Save]
                                            , Copy   (📋)
                                                                       .

■   Auto Refresh   (⏱)   Delta Mode Display   (△⁹)
              Refresh
                      Refresh Time   (   )   .

20.3.4 Transaction Monitor   Options

          (🖼️)   [20.3 – Transaction Monitor Options(   )]
  . [Filter]   , [Refresh]
                    . [Filter]   "Display Background Session"   'Display
Orange Session"   Oracle Background Process   Orange
               . [File Save]   File   .

■   [Filter]   Display Value Group   Real Value   Delta Value   Real Value   Oracle
    Database   , Delta
    Value   Refresh interval   Refresh
    .

■   Module Filter   Program Filter   Application   Exclude
        Application   .   filter   256   .

[20.3 – Transaction Monitor Options(   )]
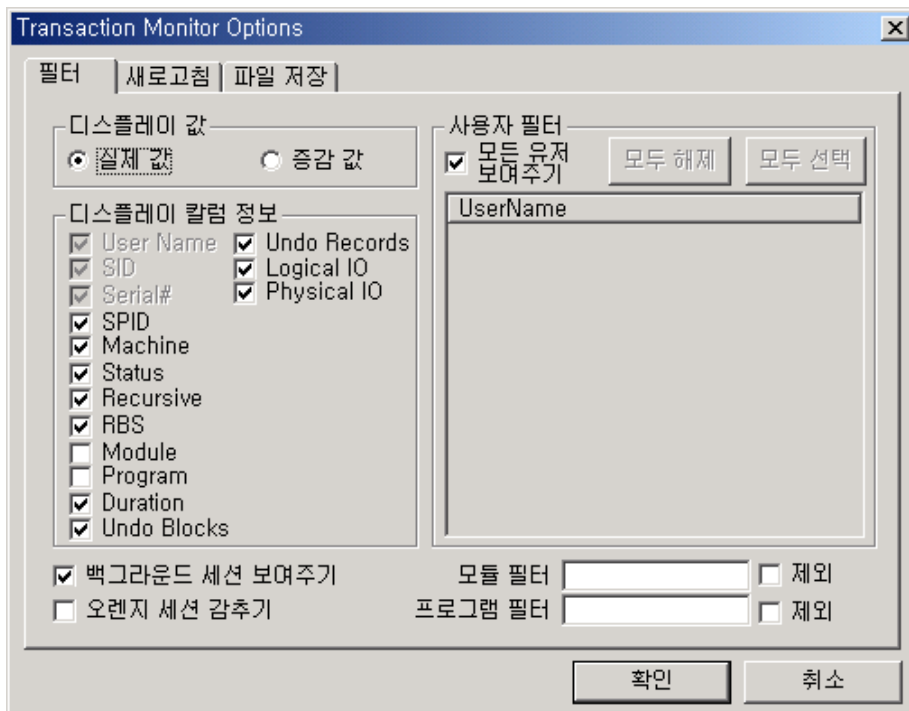
[20.4 – Transaction Monitor Options(   )]
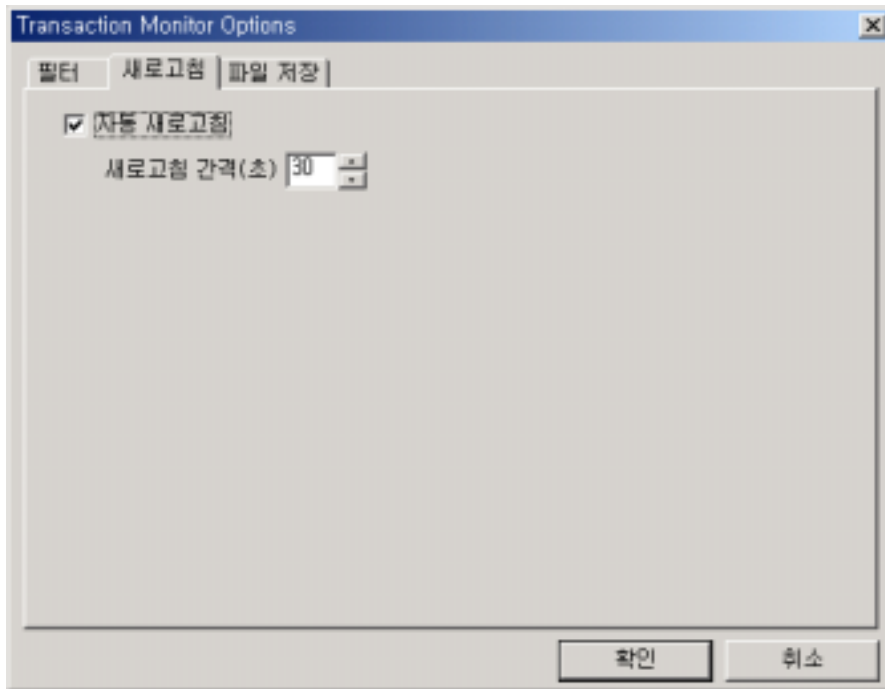
[20.5 – Transaction Monitor Options(   )]
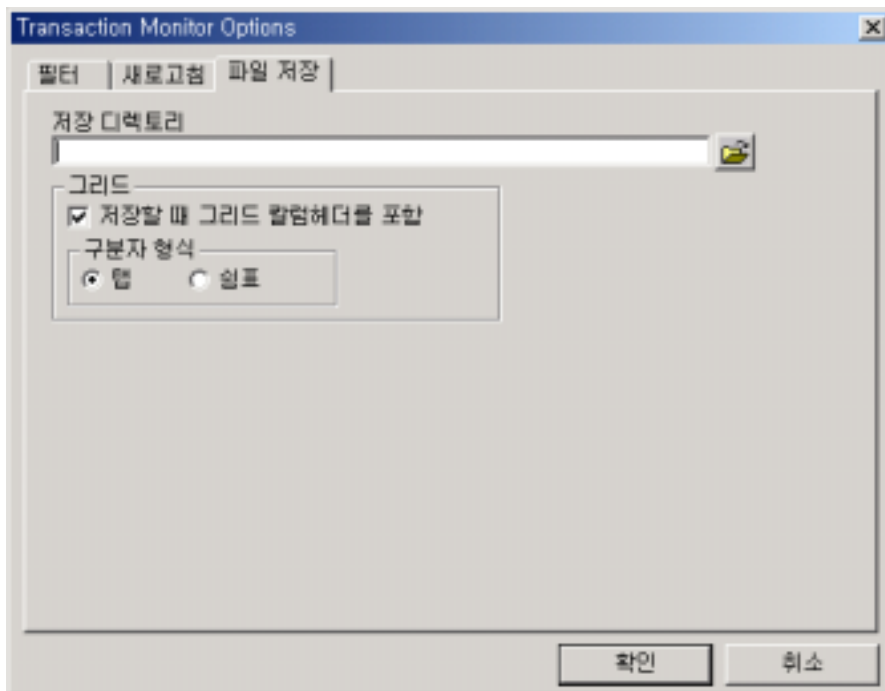
21. Instance Monitor

Instance Monitor 9 . 9
,
. Refresh
.

21.1 Instance Monitor

- ✓ Instance Display
- ✓ Refresh Interval ( )
- ✓ Time Range
- ✓ Auto Refresh
- ✓ Instance Monitor

21.2 Instance Monitor

21.2.1 Instance Monitor

Instance Monitor Instance Monitor Refresh
(Bar) 9 .

- ■ 9 .
  - ➢ Buffer Cache Hit Ratio
  - ➢ Library/Dictionary Cache Hit Ratio
  - ➢ Shared Pool Size (Total, Free GB/MB/KB/Bytes)
  - ➢ Session Count
  - ➢ Transaction Count
  - ➢ Parsing Count (Total, Free/)
  - ➢ Wait Events (/)
  - ➢ I/O (/)
  - ➢ Redo Count (Size, Write /)
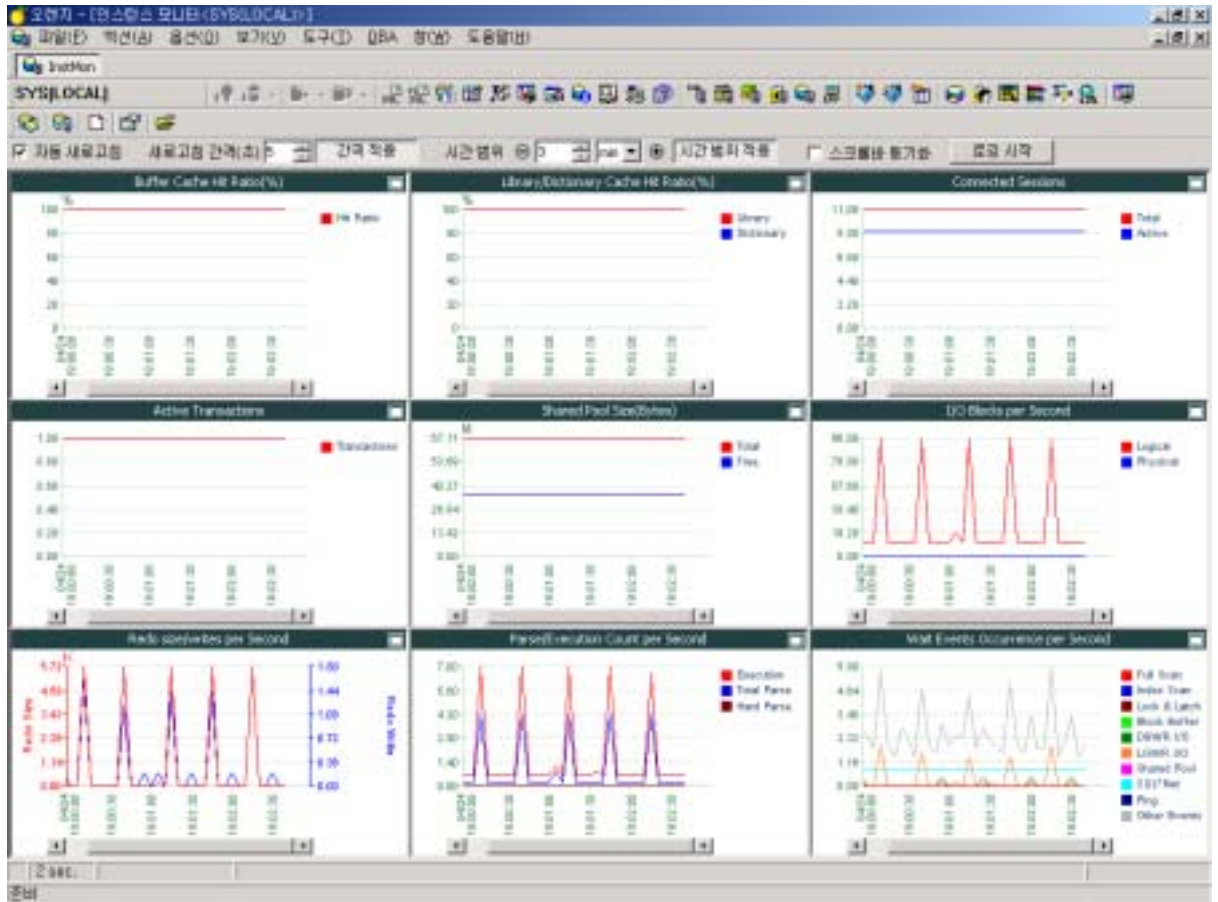
21.2.2 Instance Monitor

　　　　　　　　　　　[　　] [　　　　　　　] 　　　　　　 [　　　　　　] 　　　Instance Monitor 　　
　　[　　]　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Instance Monitor 　　
　　.　　　　Instance Monitor 　　　(🖥️) 　　　　　　　　　Instance Monitor 　　　. Instance
Monitor　　　　Session 　　　　　　　　　　　　　　　　　　　　　　Connection manager
　　　.

21.2.3 Instance Monitor Refresh

[21.2 – Refresh   ]

| Auto Refresh | Refresh Interval(sec): 1 | Apply Interval | Time Range : ⊖ 1 | min ▼ ⊕ | Apply Time Rng. | Scrollbar Sync. | Start Logging |

- Instance Monitor   [21.2 – Refresh   ]   (Bar)   Refresh   .
  "Refresh Interval(sec)"   Refresh   , [Apply Interval]   "Auto
  Refresh"   Refresh
                . Interval   1~999   .

- Instance Monitor   Time Range   .
  Range   1~1440(24   )   .

- "Scrollbar Sync"   9   .
                                                                       .

- [Start Logging]   Instance Monitor   .
                              Instance Monitor   [Log]   .
                    Net Service   .
                                    .

21.2.4 Instance Monitor

Instance Monitor   [21.3 –   ]   9
        .
                                    (🔲)   [21.4 –   ]
                    .   (🗗)   [21.3 –
    ]   .
.

[21.3 –   ]
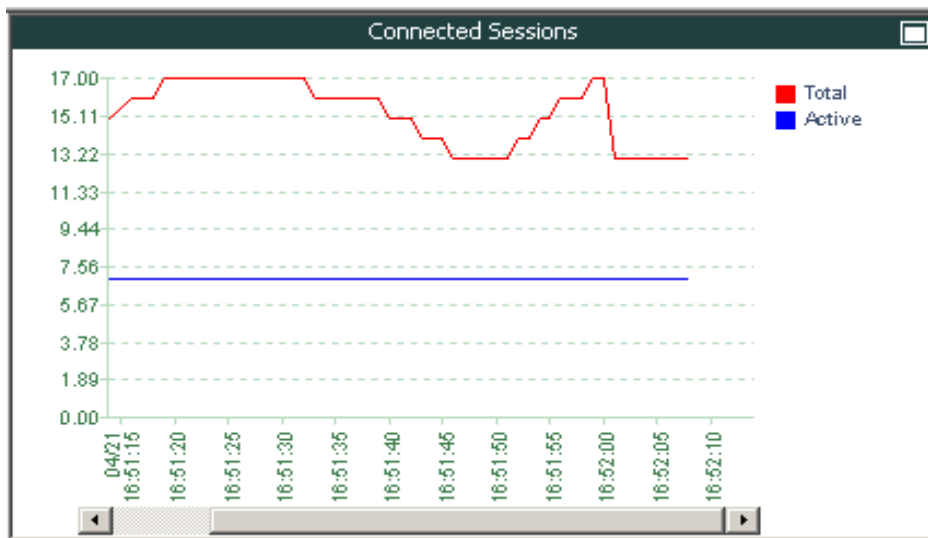
[21.4 –   ]
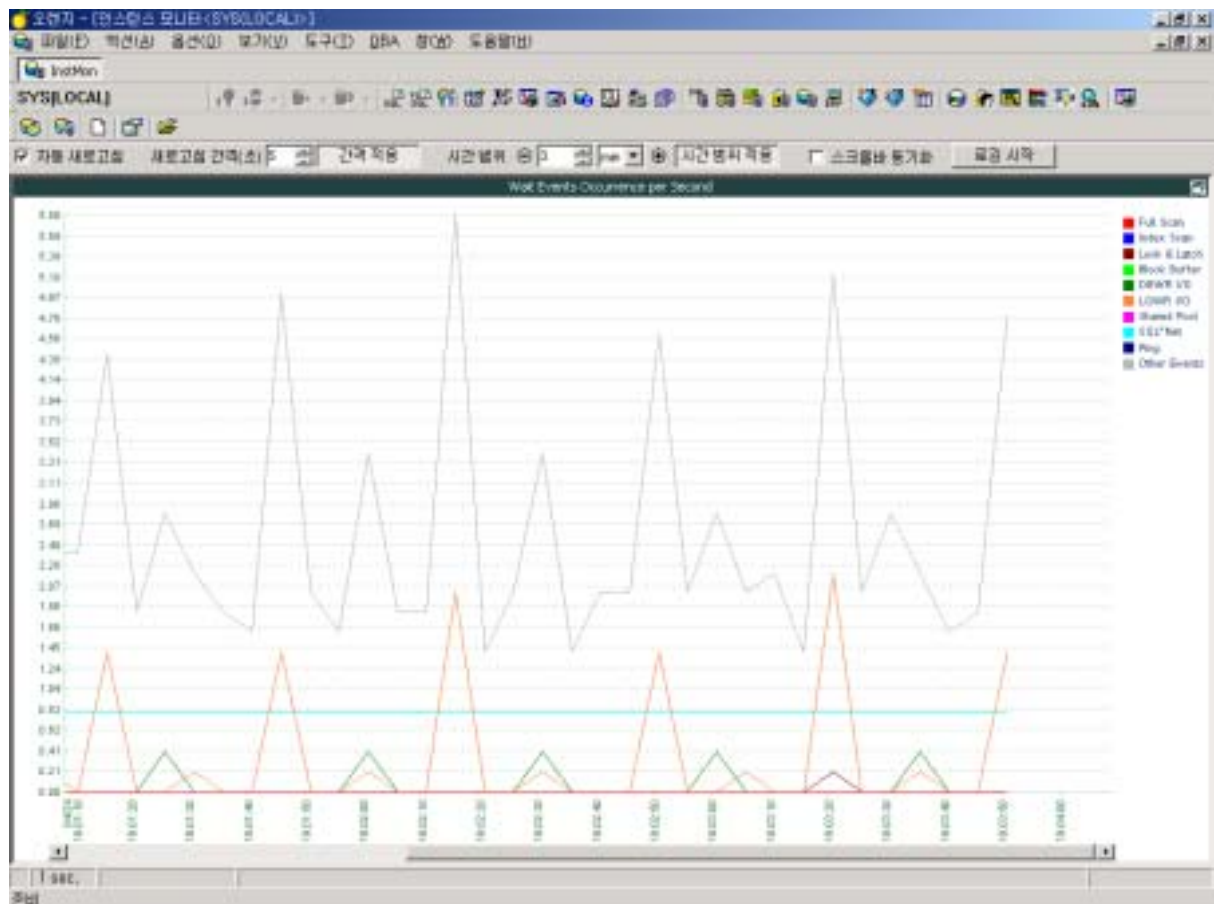
21.2.5 Instance Monitor

Load Log   (📂)   .

[21.5 –   ]
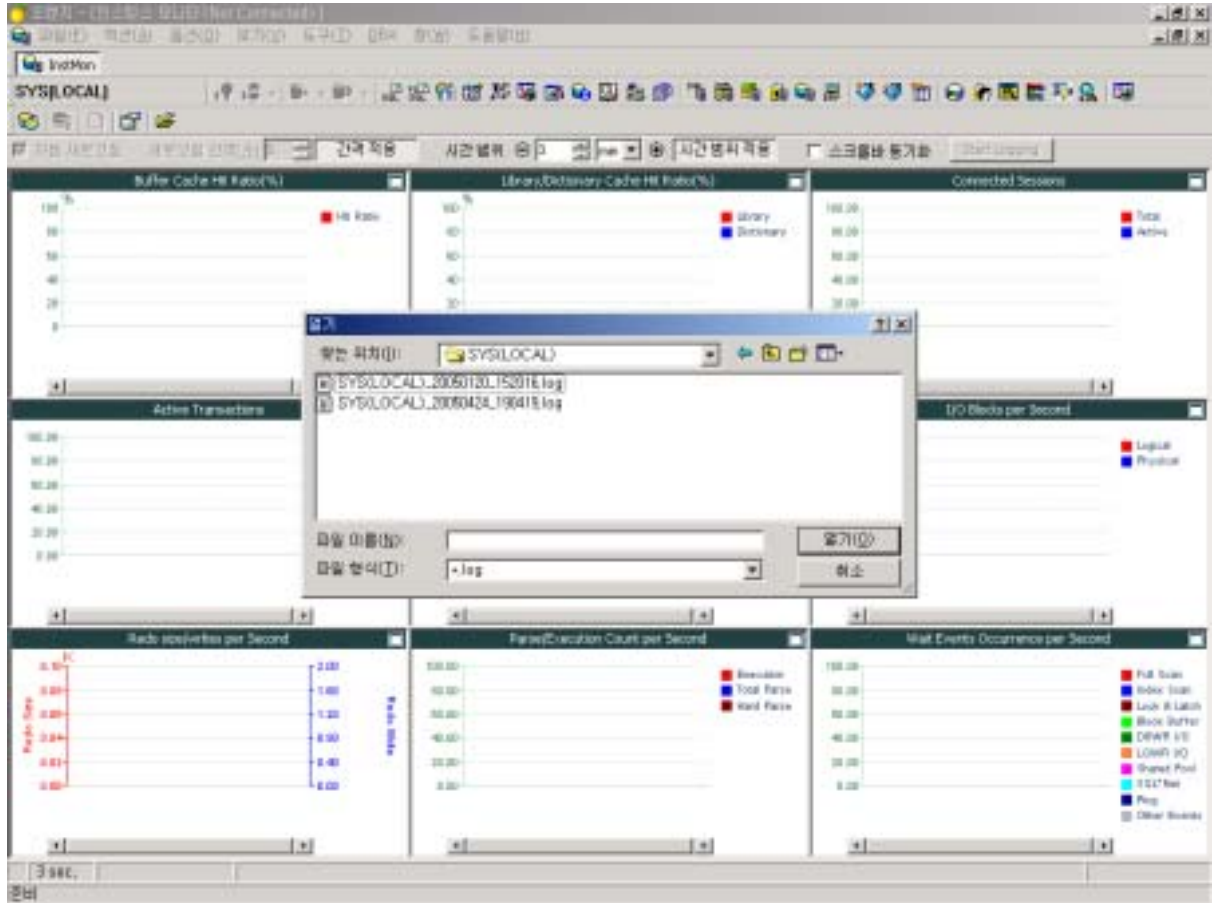
21.2.6

,   [Action] → [Clear
Content]   .   Instance Monitor   .

21.2.7 Instance Monitor

■   (🖼)   . [Display]   9

       Display   .   "Graph Name"   ,

                        ..

[21.6 – Instance Monitor   – Display   ]
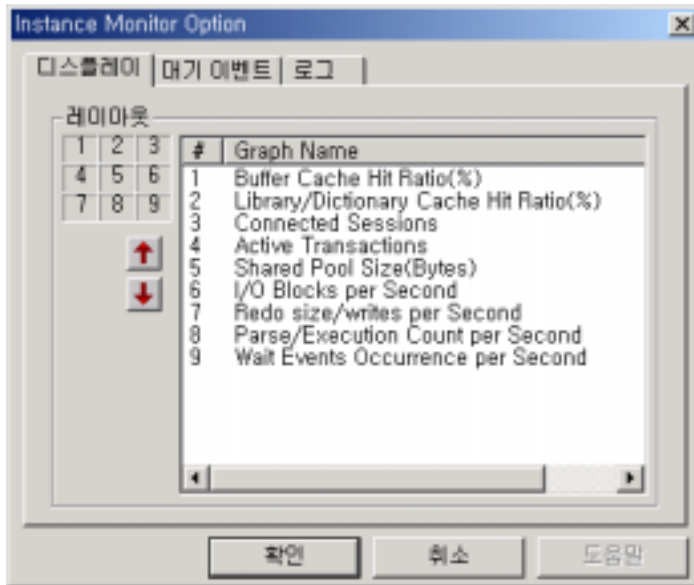
■ [Wait Events]   "Wait Events Occurrence per Second"   Event

              .   Event   "Wait Events Occurrence per Second"   .

[21.7 – Instance Monitor   – Wait Events   ]
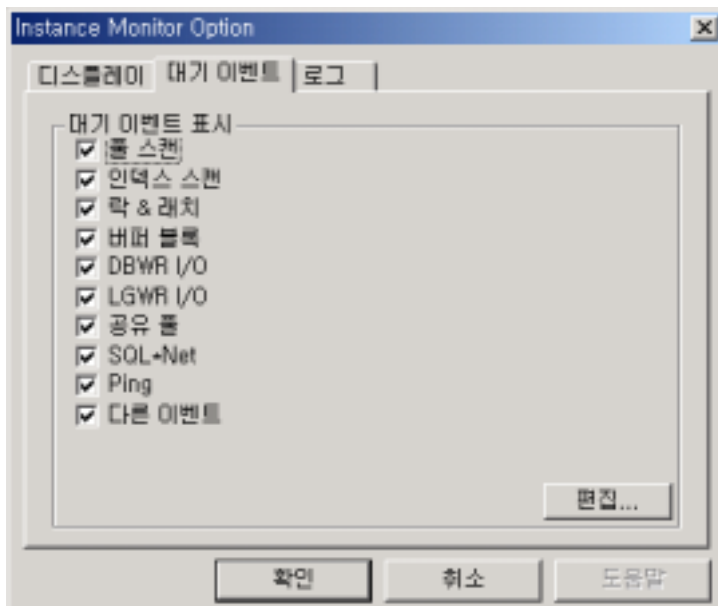
■ [Wait Events]　　　　 [Edit]　　　　　　　　 Event Class
　　　　. "Event Class & Event Lists"　　　　　 "Wait Events Occurrence per Second"
　　 Event　　　　　　　　 Event Class　　　 Wait Event List　　　　　　　　　　　.
Event Class　　　　 Wait Event List　　　 /　　　　　　　.　　　　　　 Event Class
　　. 　　　　　 Event Class　　　　　　 "Other Event Lists"　　　 Wait Event
　　　. Event Class　　　　　　　　　　　　　　　　　　　　　　.

[　　 21.8 – Edit Event Class 　　　　　]

■ [Log] 탭에서는 인스턴스 모니터의 로그를 저장할 "Log Folder" 를 지정할 수 있습니다.

Net Service 를 통해서 접속 정보를 저장합니다. DBA

샤크라 프로그램 경로를 지정합니다.

. Chakra Mode

샤크라 모드를 선택, 해제할 수 있습니다.
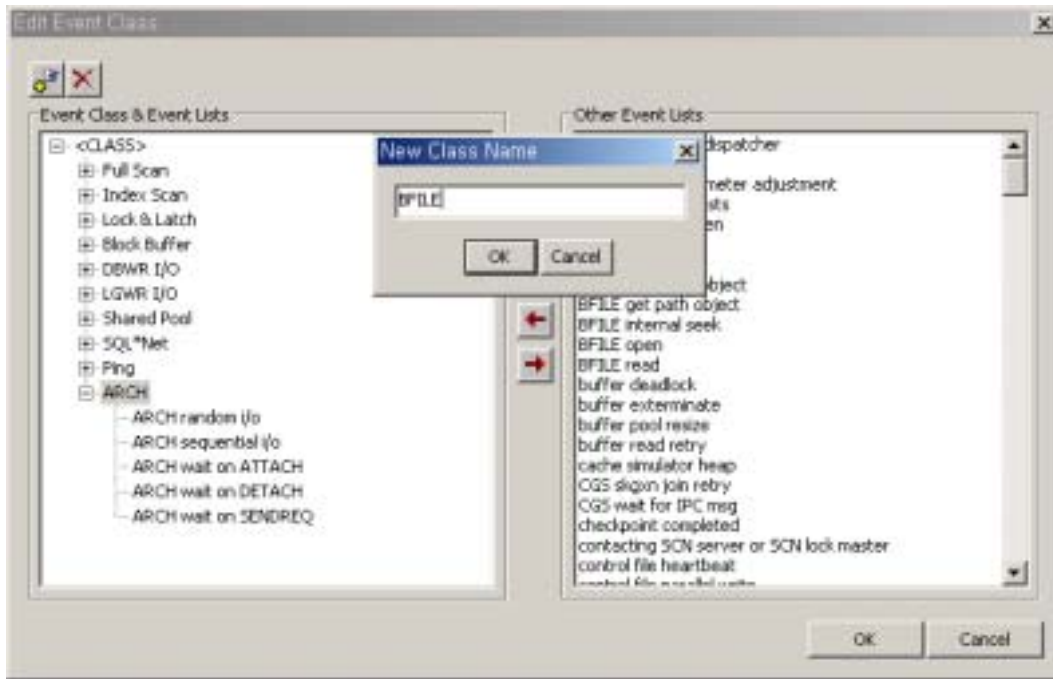
[그림 21.9 – Instance Monitor 옵션 – Log 탭]
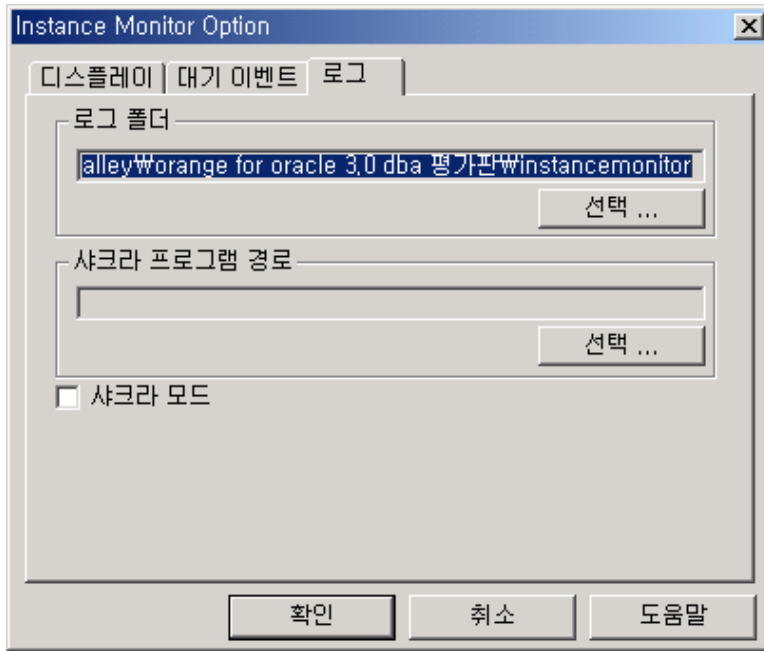
22. Graph & Report

(User, Redo, Enqueue, Cache, O/S, Parallel Server, SQL, Debug) Fixed Table X$KSUSGSTA(Kernel Service User Management Global Statistics)

(bstat/estat,…)   .

Graph & Report Tool   Pre-Defined Group   User-Defined Group   .

22.1 Graph & Report

- ✓   Document
- ✓
- ✓   SQL   User-Defined Group
- ✓   Item

22.2 Graph & Report

User Item or Group

User Item or Group

User Item

22.3 Graph & Report

22.3.1 Graph & Report

[   ] [   ]   [   ]   "
        ”   Report & Graph   [   ]
            Graph & Report   .   Graph & Report   (☰)
    Graph & Report   .

22.3.2 Predefined-Group Item

Graph & Report   "Defined SQL Scripts"   Top-Down   Pre-Defined
        User-Defined

                                        Item   Item

．

"Graph Components" X , Y
．

- ■ Pre-Defined Group Item
  - ➢ MEMORY-SGA

    SGA(System Global Area)

    Shared pool DB Block buffer, Log buffer ．

    ．

    4 Item SGA

    SGA ．
    - ◆ Library Cache Hit Ratio
      - ✧ ．
      - ✧ LIBRARY CACHE HIT RATIO :
    - ◆ Dictionary Cache Hit Ratio
      - ✧ ．
      - ✧ DICTIONARY CACHE HIT RATIO :
    - ◆ Buffer Cache Hit Ratio
      - ✧ ．
      - ✧ BUFFER CACHE HIT RATIO :
      - ✧ LOGICAL READS : Logical Read
      - ✧ PHYSICAL READS : Physical Read
    - ◆ Shared Pool Free Memory
      - ✧ Free ．
      - ✧ KBYTES : Free Memory Size
  - ➢ MEMORY-SQL

    SQL Access Item

    ．
    - ◆ Execution Count
      - ✧ SQL ．
      - ✧ EXEC_RANGE :
      - ✧ EXEC_COUNT :
    - ◆ Cache Term
      - ✧ Cache SQL
      - ✧ MIN_CACHE : Cache
      - ✧ COUNT : SQL
      - ✧ AVG_EXEC :

- Cursor Open per Transaction
  - .
  - OCC :
  - UC : COMMITS
  - AVG_CURSORS :
- Recursive to User Call Ratio
  - CALL RECURSIVE CALL
  - RC : Recursive Call
  - UC : User Call
  - RATIO : RC/UC
- Parse Count per User Call Ratio
  - Parse Count
  - PC : Parse Count
  - UC : User Call
  - RATIO : PC/UC
- Hard Parse Ratio
  - SQL
  - PCH :
  - PCT :
  - RATIO : PCH/PCT
- Cluster Key Ratio
  - Cluster Key Block Chaining
  - CKSBG : cluster key scan block gets (A)
  - CKS : cluster key scans (B)
  - BLOCKS : A / B
- Index Scan Ratio (Instance)
  - .
  - TFBR : table fetch by rowed (A)
  - TSRG : table scan rows gotten (B)
  - RATIO : A / (A+B)
- Index Scan Ratio (Session)
  - .
  - TFBR : table fetch by rowed (A)
  - TSRG : table scan rows gotten (B)
  - RATIO : A / (A+B)
- Chained Row Ratio

- ✧   Row Chaining / Migration
- ✧ TFCR : table fetch continued row (A)
- ✧ TFBR : table fetch by rowed   (B)
- ✧ TSRG : table scan rows gotten   (C)
- ✧ RATIO : A/ (A+B+C)

➤ PROCESS-USER

.

- ◆ Concurrent Process Count
  - ✧
- ◆ Concurrent Session Count
  - ✧
- ◆ Transaction count
  - ✧

➤ PROCESS-LATCH

SGA

Lock   .

.   SGA

Database Buffer,   Shared Pool,   Log Buffer

.

- ◆ Buffer Cache Latch Contention
  - ✧
  - ✧ NAME :
  - ✧ MG : misses/gets
  - ✧ IMG : immediate misses / immediate gets
- ◆ Library Cache Latch Contention
  - ✧
  - ✧ NAME :
  - ✧ MG : misses/gets
  - ✧ IMG : immediate misses / immediate gets
- ◆ Redo Latch Contention
  - ✧ Redo Latch   .
  - ✧ NAME :
  - ✧ MG : misses/gets
  - ✧ IMG : immediate misses / immediate gets

- ➢ PROCESS-ENQUEUE
  - ◆ Enqueue Resource
    - ✧
    - ✧ NAME :
    - ✧ VALUE :
- ➢ PROCESS-CHECKPOINT
  - ◆ Waiting for Checkpoint
    - ✧ LGWR
    - ✧ EVENT :
    - ✧ TOTAL_WAIT :
    - ✧ TIME_WAITED :   (hundredths of a second)
    - ✧ AVERAGE_WAIT :   (hundredths of a second)
- ➢ DISK-TABLESPACE
  - ◆ Tablespace Information
    - ✧
    - ✧ TABLESPACE NAME :
    - ✧ TOTAL :
    - ✧ USED :
    - ✧ FREE :
    - ✧ MAX :
- ➢ DISK-DATAFILE
  - ◆ File I/O
    - ✧
    - ✧ DATAFILE :
    - ✧ TABLESPACE :
    - ✧ PHYRDS :
    - ✧ PHYWRTS :
- ➢ DISK-SORT
  - ◆ Disk Sort Ratio
    - ✧
    - ✧ MEM :
    - ✧ DISK :
    - ✧ MISS RATIO :
- ➢ DISK-ROLLBACK SEGMENT
  - ◆ Rollback Segment Contention
    - ✧

- ✧ COUNT :
- ✧ TIME VALUE :
- ◆ Rollback Segment Miss Ratio
  - ✧
  - ✧ SEGMENT :
  - ✧ RATIO :
- ➢ DISK-REDOLOG
  - ◆ Redo log Buffer Space Contention
    - ✧
    - ✧ REDO LOG SPACE REQUESTS :
  - ◆ Redo log Space Waiting
    - ✧ Wait Event
    - ✧ SID :
    - ✧ EVENT :
    - ✧ SECONDS_IN_WAIT :
    - ✧ STATE : (0:waiting, -2:Unknown Time, -1:Short time,>0:Known Time)
  - ◆ Redo log File I/O Contention
    - ✧
    - ✧ EVENT :
    - ✧ TOTAL_WAIT :
    - ✧ TIME_WAITED : (hundredths of a second)
    - ✧ AVERAGE_WAIT : (hundredths of a second)
- ➢ DISK-OBJECT
  - ◆ Invalid Objects Count
    - ✧ OWNER : Invalid Object Schema
    - ✧ COUNT : Schema Invalid Object
  - ◆ Invalid Objects List
    - ✧ OWNER : Invalid Object Schema
    - ✧ OBJECT TYPE : Schema Invalid Object
    - ✧ OBJECT NAME : Schema Invalid Object
    - ✧ LAST DDL TIME : DDL
  - ◆ Large Extents
    - ✧ Extent
    - ✧ OWNER :
    - ✧ SEGMENT NAME :
    - ✧ SEGMENT TYPE :

- ◆ EXTENTS :   Extent
    - ✧ ALLOWED EXTENTS :   Extent
    - ✧ TABLESPACE NAME :   Table Space
    - ✧ INITIAL(MB) : Initial Extents
    - ✧ NEXT(MB) : Next Extents
    - ✧ TOTAL(MB) : Total Extents
    - ✧ FREELISTS : Free List
    - ✧ FREELIST GROUPS : Free Group
- ◆ MAX Next Extent
    - ✧ MAX Free Space
    - ✧ OWNER :
    - ✧ OBJECT NAME :
    - ✧ TYPE :
    - ✧ TABLESPACE NAME :   Table Space
    - ✧ MAX FREE SIZE :   Free Size
    - ✧ NEXT EXTENT : Next Extents
    - ✧ PCTINCREASE :   PCTINCREASE
- ◆ User Objects count
    - ✧
    - ✧ OWNER :
    - ✧ TAB :
    - ✧ IDX :
    - ✧ VEW : View
    - ✧ SYN : Synonym
    - ✧ SEQ : Sequence
    - ✧ TRG : Trigger
    - ✧ PRO : Procedure
    - ✧ DBL : DB Link
    - ✧ FUN : Function
    - ✧ CLU : Cluster
    - ✧ PKG : Package
    - ✧ PKB : Package Body
    - ✧ PK# : Primary Key
    - ✧ FK# : Foreign Key
- ◆ Free list Contention Ratio
    - ✧ Free list

- ✧ FREELISTS CONTENTION RATIO : Free List
- ✧ FREELISTS : Free list
- ✧ CONSISTENT GETS : Consistent Get
- ✧ PHYSICAL READS : Physical Read
- ◆ Free list Contention per Segment
  - ✧   Free List
  - ✧ SEGMENT NAME :
  - ✧ SEGMENT TYPE :
  - ✧ FREELISTS : Free List
  - ✧ WAIT TIME :
  - ✧ STATE :
- ➢ SQL*NET-GENERAL
  - ◆ SQL*NET Roundtrips
    - ✧ SQL*Net   .
    - ✧ NAME :
    - ✧ TOTAL_WAIT :
  - ◆ SQL*NET Traffic
    - ✧ SQL*Net   .
    - ✧ NAME :
    - ✧ TOTAL_WAIT :
- ➢ OPS-SESSION
  - ◆ Waiting Session
    - ✧ OPS   .
    - ✧ INST_ID :   ID
    - ✧ SID : Session ID
    - ✧ EVENT :   event
    - ✧ SECONDS :   Event
    - ✧ WAIT_TIME :
    - ✧ P1,P2,P3 :   Event   Parameter
- ➢ OPS-LOCK
  - ◆ PCM Lock Blockers
    - ✧ OPS PCM lock   (blockers)   .
    - ✧ INST_ID :   ID
    - ✧ SID : Session ID
    - ✧ LOCKP : Lock
    - ✧ GRANT LEVEL :

- ◇ REQUEST LEVEL :
- ◇ OWNING_NODE :
- ◇ LOCK_TYPE : Lock
- ◇ LOCK STATE : Lock
- ◇ SEC :
- ◆ PCM Lock Waiters
  - ◇ OPS PCM lock   (waiters)   .
  - ◇ INST_ID :   ID
  - ◇ SID : Session ID
  - ◇ LOCKP : Lock
  - ◇ SPID :   ID
  - ◇ GRANT LEVEL :
  - ◇ REQUEST LEVEL :
  - ◇ OWNING_NODE :
  - ◇ LOCK_TYPE : Lock
  - ◇ LOCK STATE : Lock
  - ◇ SEC :
- ◆ Non-PCM Lock Blockers
  - ◇ OPS Non-PCM lock   (blockers)   .
  - ◇ INST_ID :   ID
  - ◇ SID : Session ID
  - ◇ ADDR :
  - ◇ TYPE :
  - ◇ USERNAME :
  - ◇ OS_USER : OS level
- ◆ Non-PCM Lock Waiters
  - ◇ OPS Non-PCM lock   (waiters)   .
  - ◇ INST_ID :   ID
  - ◇ SID : Session ID
  - ◇ ADDR :
  - ◇ TYPE :
  - ◇ USERNAME :
- ➢ OPS-LATCH
  - ◆ Latch Holders
    - ◇ OPS Latch   (blockers)   .
    - ◇ INST_ID :   ID

◇ SID : Session ID

◇ TYPE :

◇ USERNAME :

◆ Latch Waiters

◇ OPS Latch   (waiters)   .

◇ INST_ID :   ID

◇ SID : Session ID

◇ ADDR :

◇ USERNAME :

◇ SECONDS_IN_WAIT :

➢ OPS-DLM

◆ DLM Resource Usage

◇ OPS   .

◇ INST_ID :   ID

◇ RESOURCE_NAME :   resource

◇ CURRENT_UTILIZATION :

◇ CURRENT_PCT :

◇ MAX_UTILIZATION :

◇ MAX_PCT :

◇ INITIAL_ALLOCATION :

◆ DLM Traffic Information

◇ DLM   .

◆ Lock Hit Ratio

◇ Lock Hit Ratio   .

◇ INST_ID :   ID

◇ LOCK_HIT_RATIO : Lock   hit

◆ Average Consistent Read Roundtrip Time

◇ Global Cache   CR   .

◇ INST_ID :   ID

◇ AVG_CR_ROUND_TRIP_TIME :

◆ Average Global Lock Conversion Time

◇ Global Lock Conversion   .

◇ INST_ID :   ID

◇ AVG_GL_LOCK_CONV_TIME :

◆ Top 10 Pinging Objects

◇ Pinging   10   .

- ◇ INST_ID :   ID
- ◇ NAME :
- ◇ KIND :
- ◇ FILE# :
- ◇ STATUS :
- ◇ BLOCKS : Block
- ◇ READ_PINGS : Read   Ping
- ◇ WRITE_PINGS : Write   Ping
- ◆ Top 10 Read Pinging Objects
  - ◇ Read Pinging   10   .
  - ◇ INST_ID :   ID
  - ◇ NAME :
  - ◇ KIND :
  - ◇ FILE# :
  - ◇ STATUS :
  - ◇ BLOCKS : Block
  - ◇ READ_PINGS : Read   Ping
  - ◇ WRITE_PINGS : Write   Ping
- ◆ Top 10 False Pinging Objects
  - ◇ False Pinging   10   .
  - ◇ INST_ID :   ID
  - ◇ NAME :
  - ◇ KIND :
  - ◇ FILE# :
  - ◇ STATUS :
  - ◇ BLOCKS : Block
  - ◇ READ_PINGS : Read   Ping
  - ◇ WRITE_PINGS : Write   Ping
- ◆ Top 10 Wait Event on System
  - ◇   Wait   10   .
  - ◇ INST_ID :   ID
  - ◇ EVENT :
  - ◇ TIME_WAITED :
  - ◇ TOTAL_WAITS :
  - ◇ TOTAL_TIMEOUTS :
- ◆ Cache Fusion

- ✧ Cache Fusion   .
- ✧ CR_REQUESTS : "Consistent-Read"
- ✧ CURRENT_REQUESTS :
- ✧ DATA_REQUESTS :   "C-R"
- ✧ UNDO_REQUESTS : UNDO   "C-R"
- ✧ TX_REQUESTS : UNDO   "C-R"
- ◆ Ping Ratio
  - ✧ OPS   ping   .
  - ✧ DBWR CROSS INSTANCE WRITES : "DBWR cross instance writes "
  - ✧ PING RATIO : Ping

[22.1 – Execution Count Sample   ]
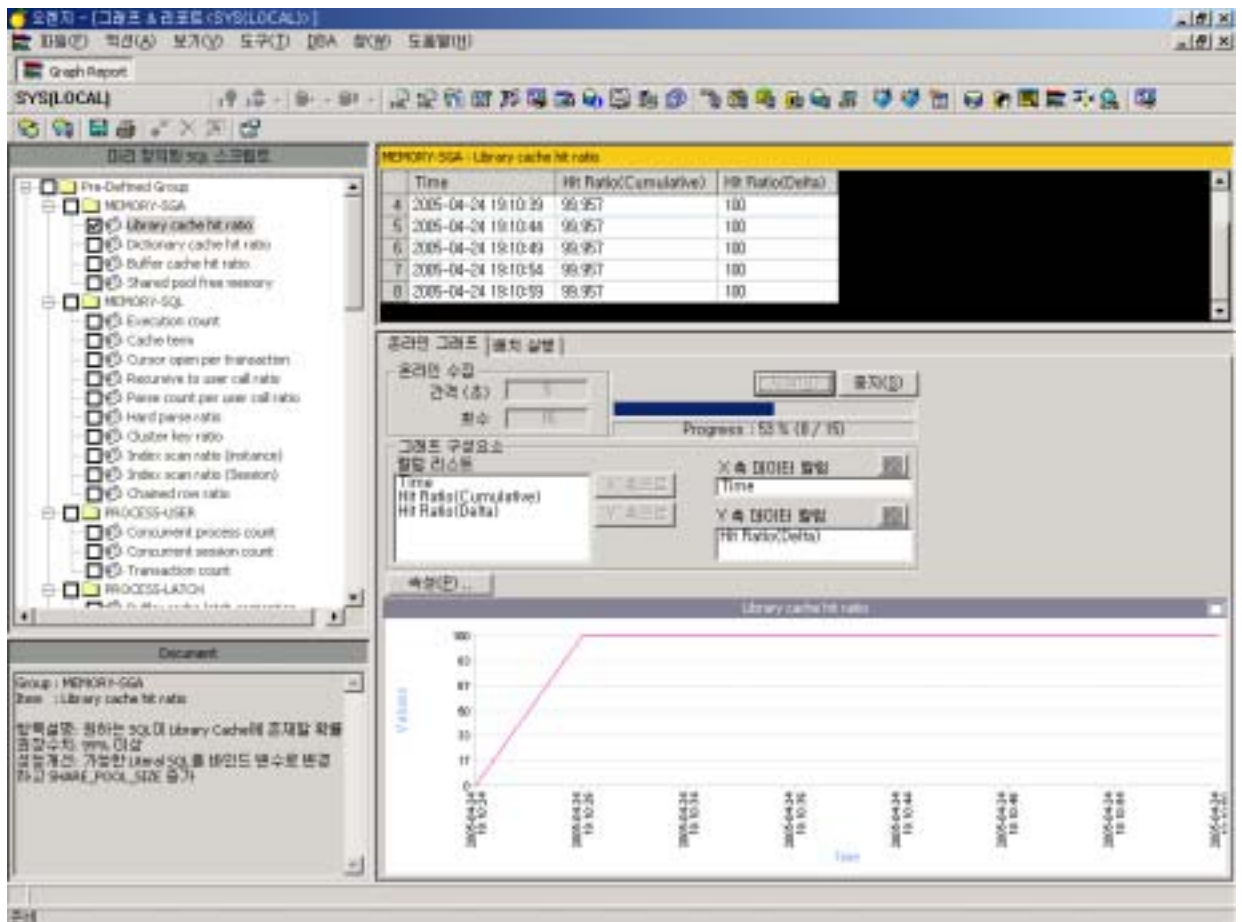
22.3.3 Pre-Defined Group Item   Snapshot

[Batch Execution]

.

Ware
Valley

■ Item Snapshot

➢ Pre-Defined Group

    .

➢ 10   100   "Snap shot Properities"   Counts
    100, Intervals (Secs)   10   .

➢ [Run]   "AllSnapShot"
    .

➢ [   ]   .

■ Item Snapshot

➢ [Stop]

    .

■ Item Snapshot

➢ 10   100   "Snap shot Properities"   Counts
    100, Intervals (Secs)   10   .

➢ Item   [Run]
    "Save Check List"   "checklist"
    .

➢ [   ]   checklist.chk
    .

➢ Check List   "Load Check List"
    [   ]   .

➢ [Run]   Snapshot   .

■ Item Snapshot

➢ [Stop]

    .
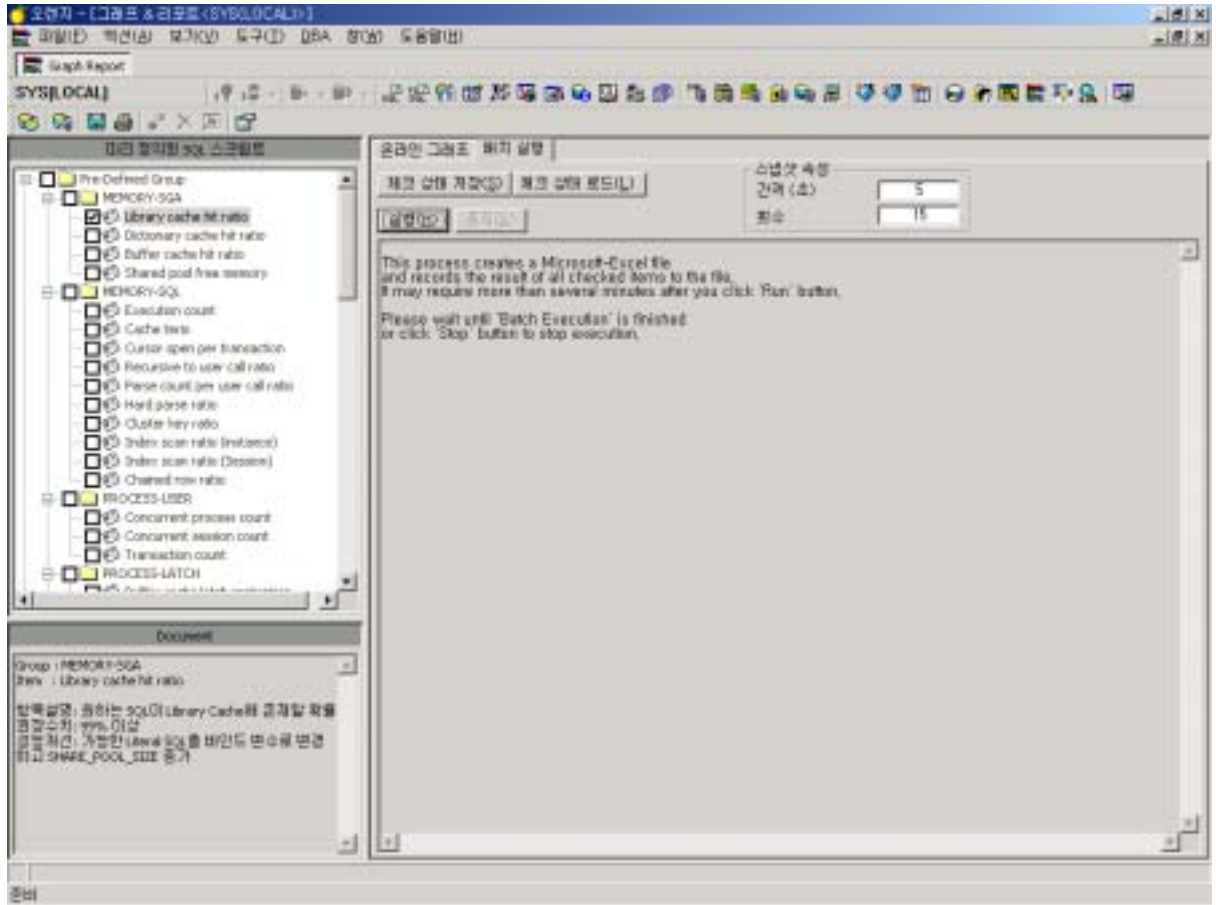
22.3.4 User-Defined Group Add

■ User-Defined Group Add

    ➢   User-Defined Group   "Add new User-Defined Group"   .

    ➢   [OK]   User-Defined Group   .

[22.3 – User-Defined Group Add   ]

22.3.5 User-Defined Group Item Add

- User-Defined Group Item Add

  ➢   User-Defined Group   "Add new User-Defined Group"   .

  ➢   Item   SQL Script, Script Note   Item   Item   SQL Script   SQL Source   Script Note   SQL   .

  ➢   [OK]   .

[　　　22.4 – User-Defined Group Item Add 　　　　　]
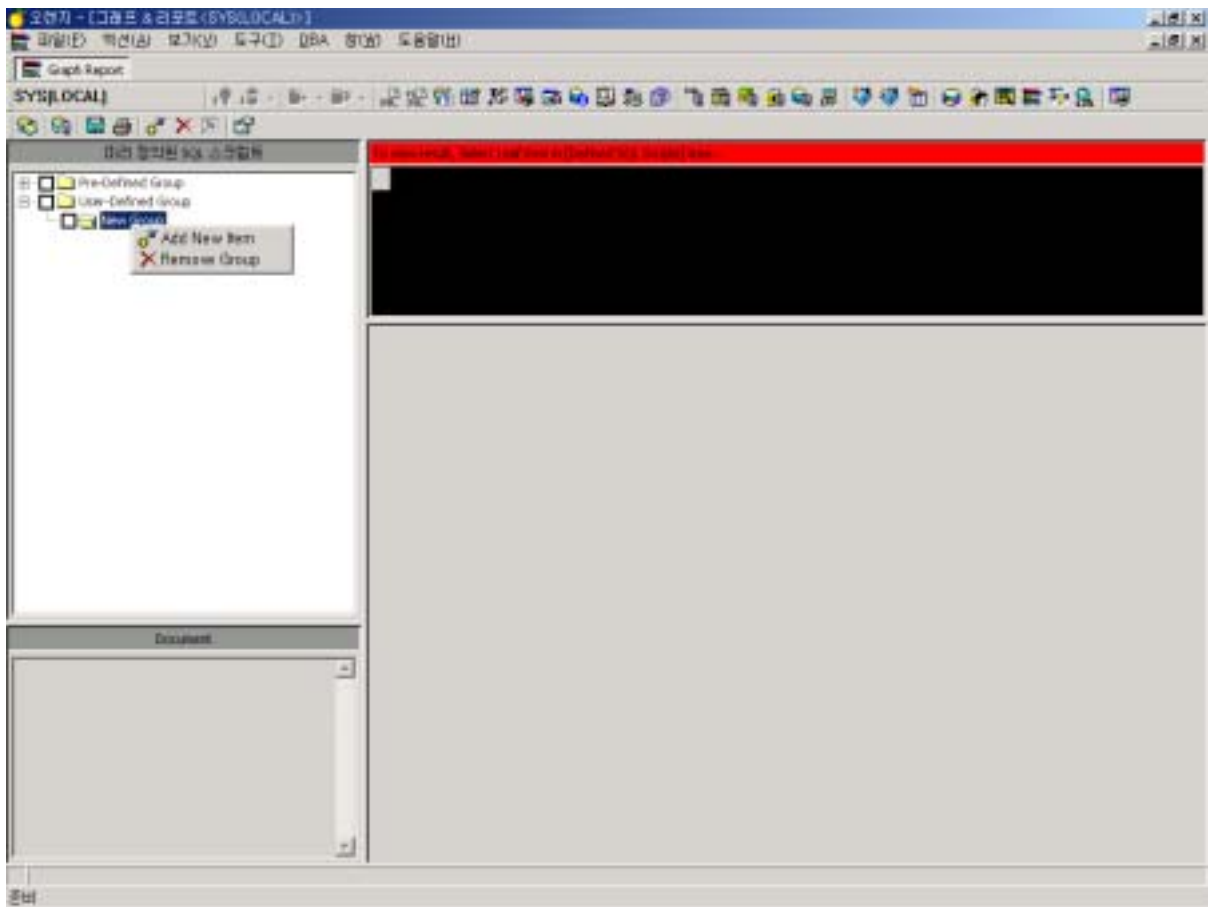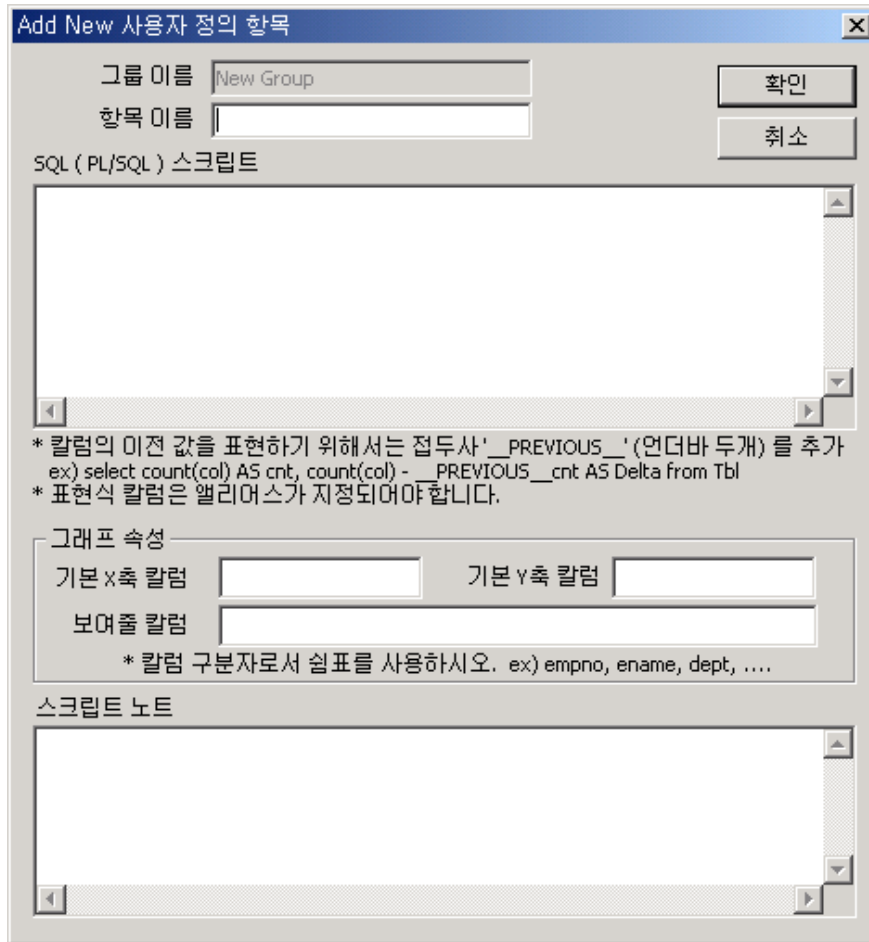
22.3.6 User-Defined Group Item

User-Defined Group Item   Item

"Remove Item"   Item   .

22.3.7 User-Defined Group Item

User-Defined Group Item   Item

"Modify Item"

                              "SQL Script"   "Script Note"   .

22.3.8 Item   Online Graph Item

Pre-Defined Group   User-Defined Group Item

Pre-Defined Group   User-Defined Group   Online Graph

[22.6 – Online Graph Item   ]
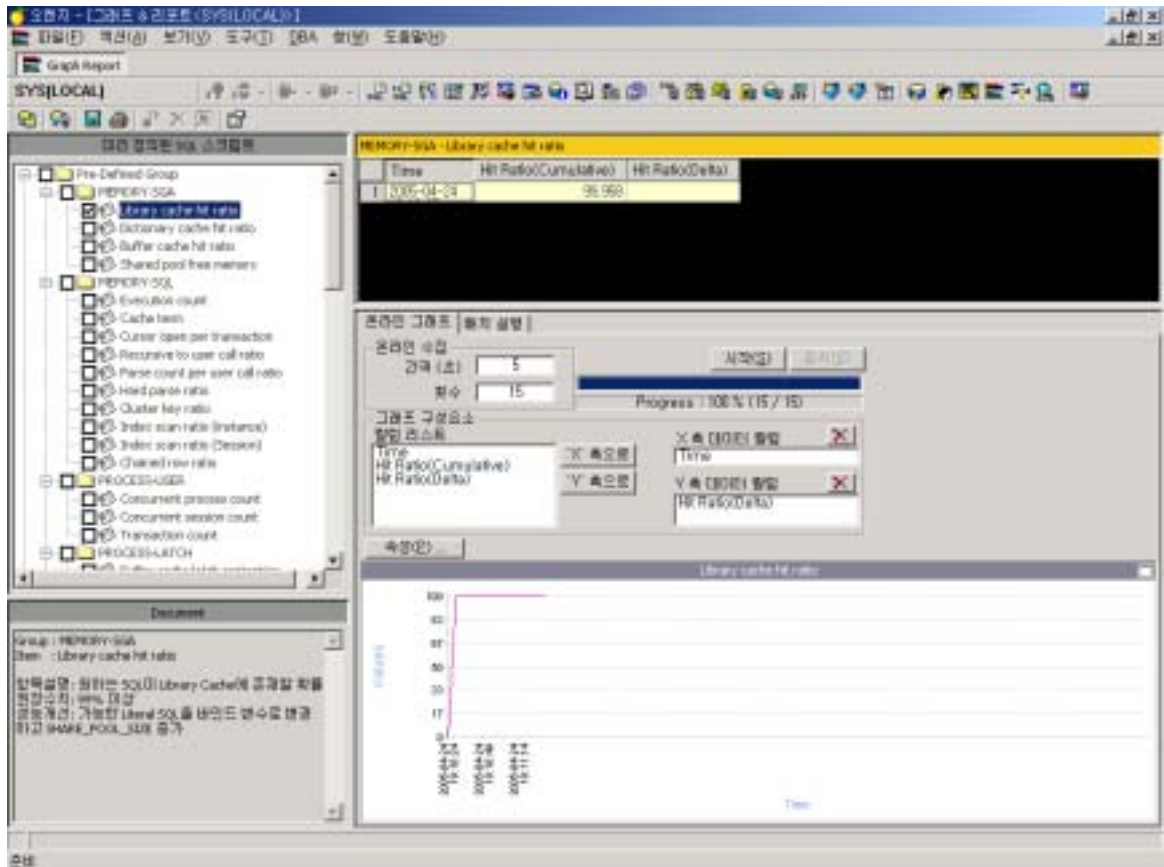
22.3.9 Item   Online Graph   ,

[Online Graph]

"Online Collect"   Box   "Period (Seconds)"
"Counts"   . Interval   Count   1   . Batch
Execution   Interval, Count   .

22.3.10 Item   Online Graph X , Y

"Graph Component"   "Column list" List Box
.

■ X   "Columns list"   [to the 'X']
X Data   .   X
Data   (X)   X Data
.

■ Y   "Columns list"   [to the 'Y']
Y Data   .   Y Data
(X)   Y Data   .

■ X Data   Y Data   .

[22.8 – Online Graph X   , Y   ]

22.3.11 Item   Online Graph

[Properties]

.

[22.9 – Online Graph   ]
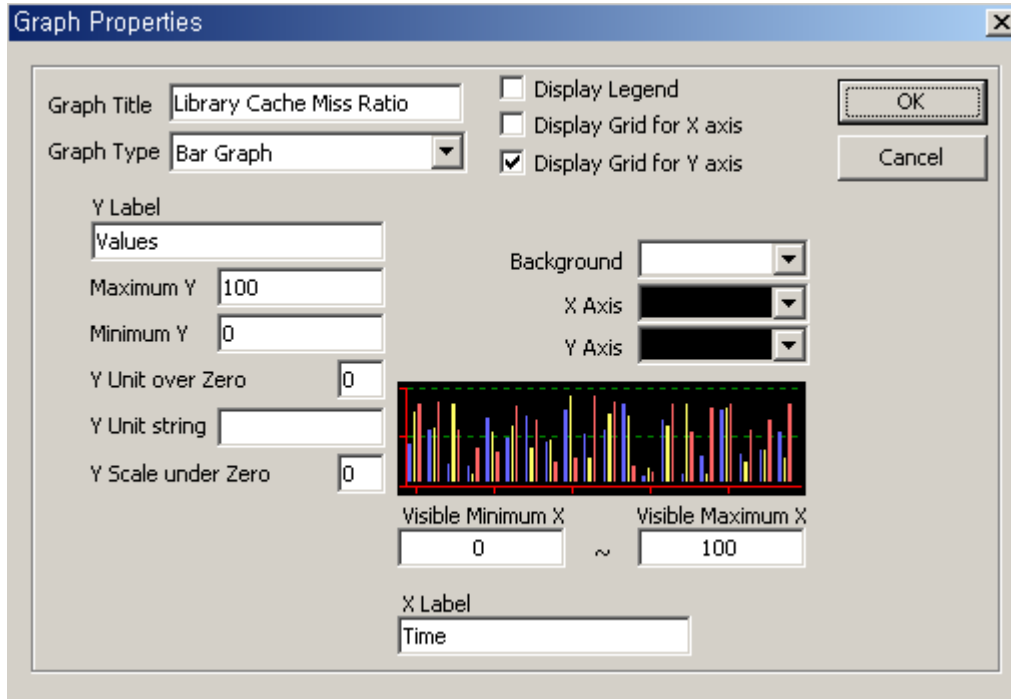
22.3.12 Item   Online Graph

"Graph Title"   .   Item   .   256
      .

22.3.13 Item   Online Graph Type

"Graph Type"   ( )   Type (Line, Bar)
      .

22.3.14 Item   Online Graph X   , Y

X   "X Label"   Y   "Y Label"   .   20
        .

22.3.15 Item   Online Graph Color(Background, X   ,Y)

Color   Box   Background(   ),
X   , Y   .

[22.10 – Online Graph Color   ]

22.3.16 Item   Online Graph X

■   . X

              "Visible Minimum X"   "Visible Maximum X"

              . 0   .

■   X   "Visible Maximum X"   "Visible Minimum X"

              . 0   .

[22.11 – Online Graph X   ]

22.3.17 Item   Online Graph Y

■   . Y

              "Minimum Y"   "Maximum Y"

        . 0   .

■   Y   "Maximum Y"   "Minimum Y"

        . 0   .

[22.12 – Online Graph Y   ]

22.3.18 Item   Online Graph Y

■ Y   1000   1   "Y Unit over Zero"   3   . 0~10
                          .

■ Y   "Y Unit string"   K   . 256
                   .

■   "Y Scale under Zero"   1   0.1
                   . 0~3   .

[22.13 – Online Graph Y   ]

Y Unit over Zero	0
Y Unit string	
Y Scale under Zero	0

22.3.19 Item   Online Graph   X, Y   Grid

■   "Display Legend"   Check Button   .
■ X   "Display Grid for X axis"   Check Button   .
■ Y   "Display Grid for Y axis"   Check Button   .

[22.14 – Online Graph   X,Y   Grid   ]

☑ Display Legend   [OK]
☑ Display Grid for X axis
☑ Display Grid for Y axis   [Cancel]

22.3.20 Item   Online Graph

Graph & Report   [Start]

.   .
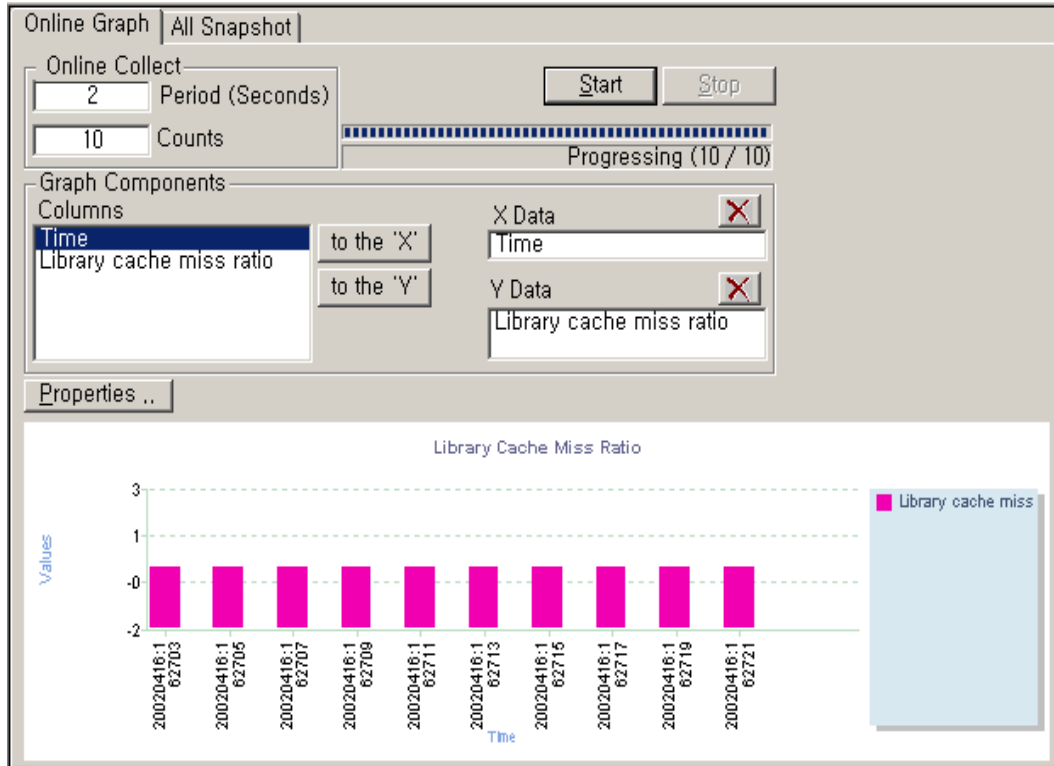
[22.15 – Online Graph   ]

22.3.21 Item   Online Graph

[Stop]

.

22.3.22 Item   Online Graph Copy

■

"Copy"   "Word, Excel, PPT"

.

[22.16 – Online Graph Copy to Word]
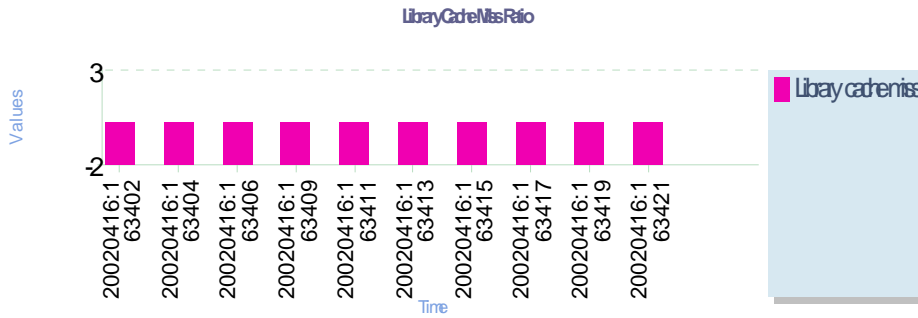
23. Health Check

Health Check Tool   (General, SGA,
Wait Event, I/O, Space, Access Type, MTS, OPS)   HTML   . Health Check Tool
                                                                                    .

23.1 Health Check

✓
✓   HTML
✓
✓
✓

     ITEM
✓
✓   HTML

23.2 Health Check

🗋
📥
🖪
🖫

23.3 Health Check

23.3.1 Health Check

     [   ]   […]   [   ]   Health Check
 [   ]   Health Check   .
   Health Check   (🔌)   Health Check   .

23.3.2 Item

■ Health Check 4
.

■ Health Check [Check Box]
.

■
[Check Box] .

[23.1 –]

23.3.3 Item

■
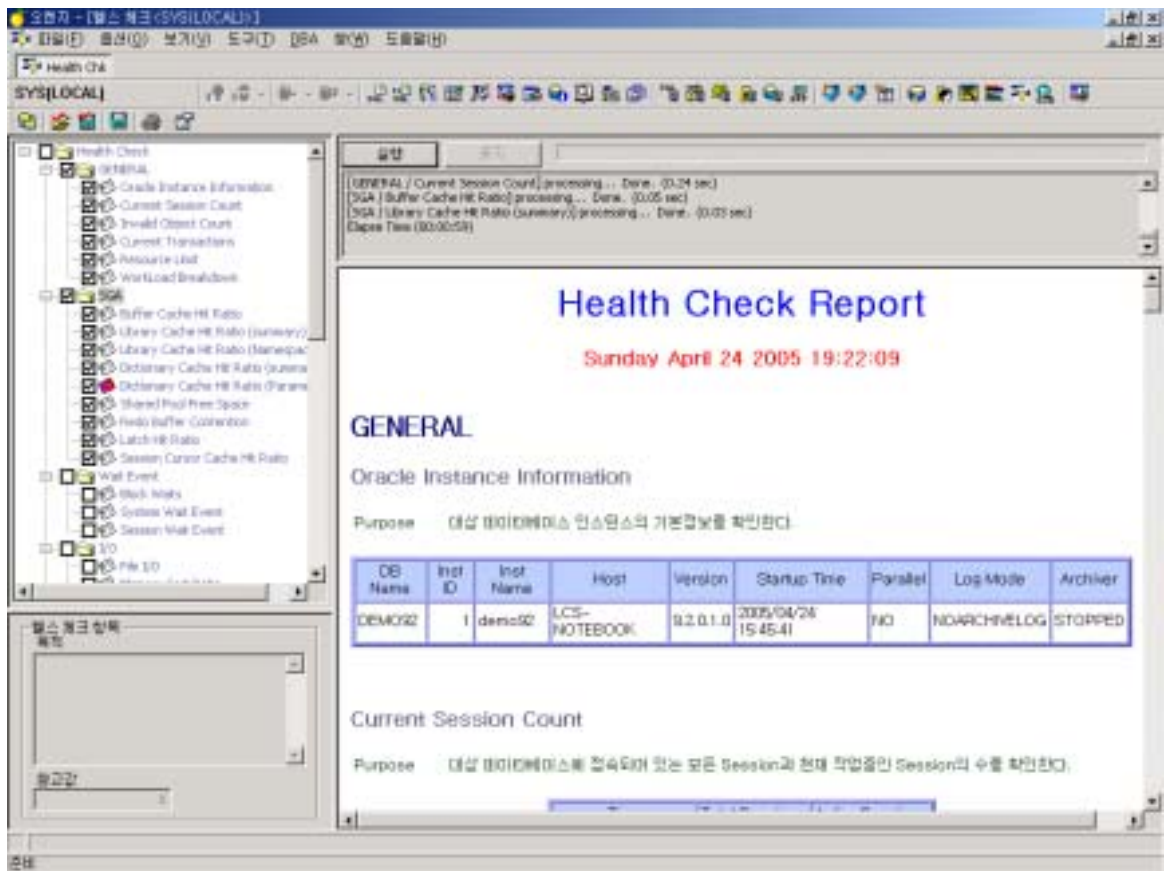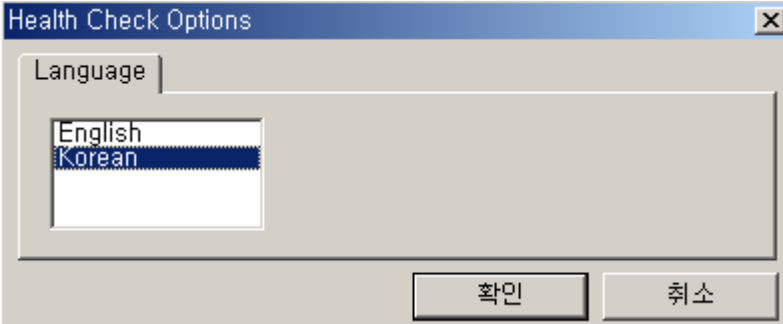
    "Reference Value"   .

                           . Reference Value   0 ~ 100   .

[23.2 –   ]

23.3.4

   Health Check   ()

                                "Korean" , "English"   [   ]

              .

[23.3 –   ]

23.3.5 Health Check

,   [Run]
.

[23.4 –   ]
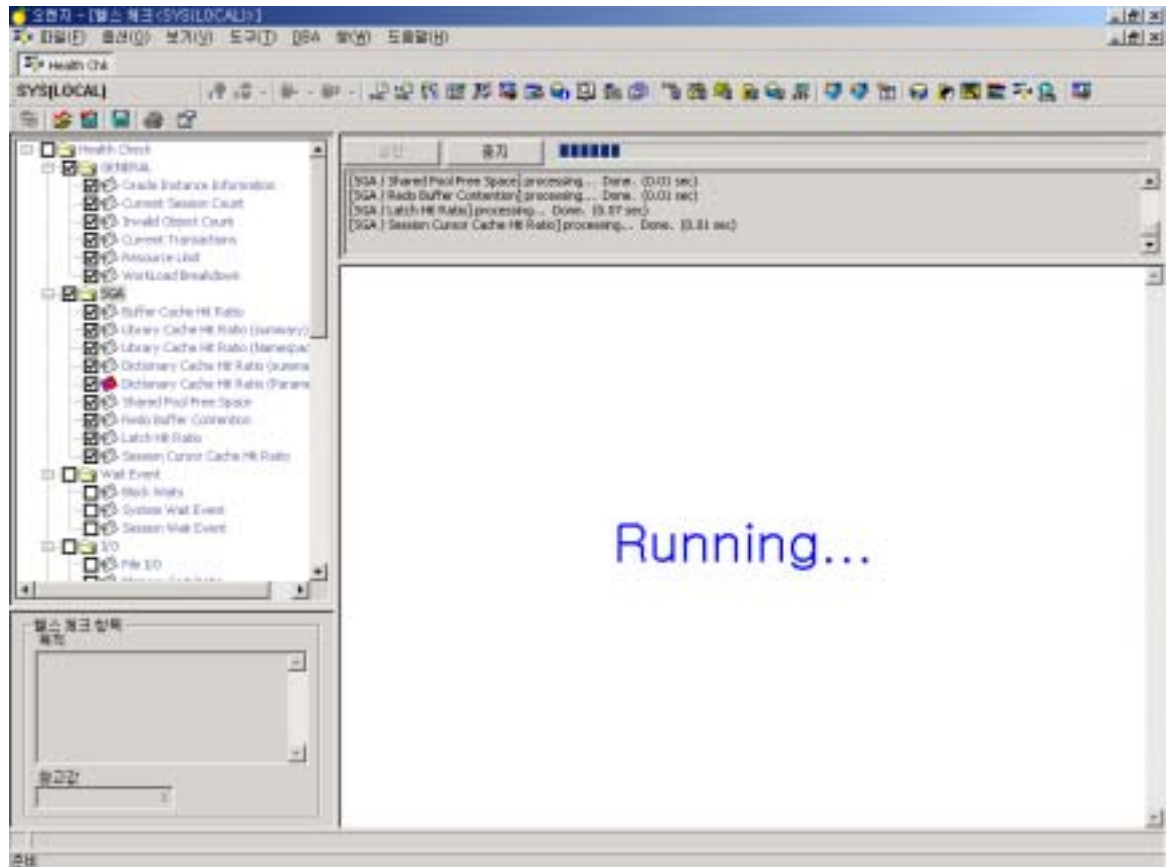
23.3.6 Health Check

Health Check   [Stop]
.

23.3.7 Health Check

. DBMS

. SGA Dictionary Hit Ratio .

parameter .

[23.5 – (Dictionary Cache Hit Ratio)]

(🖫)
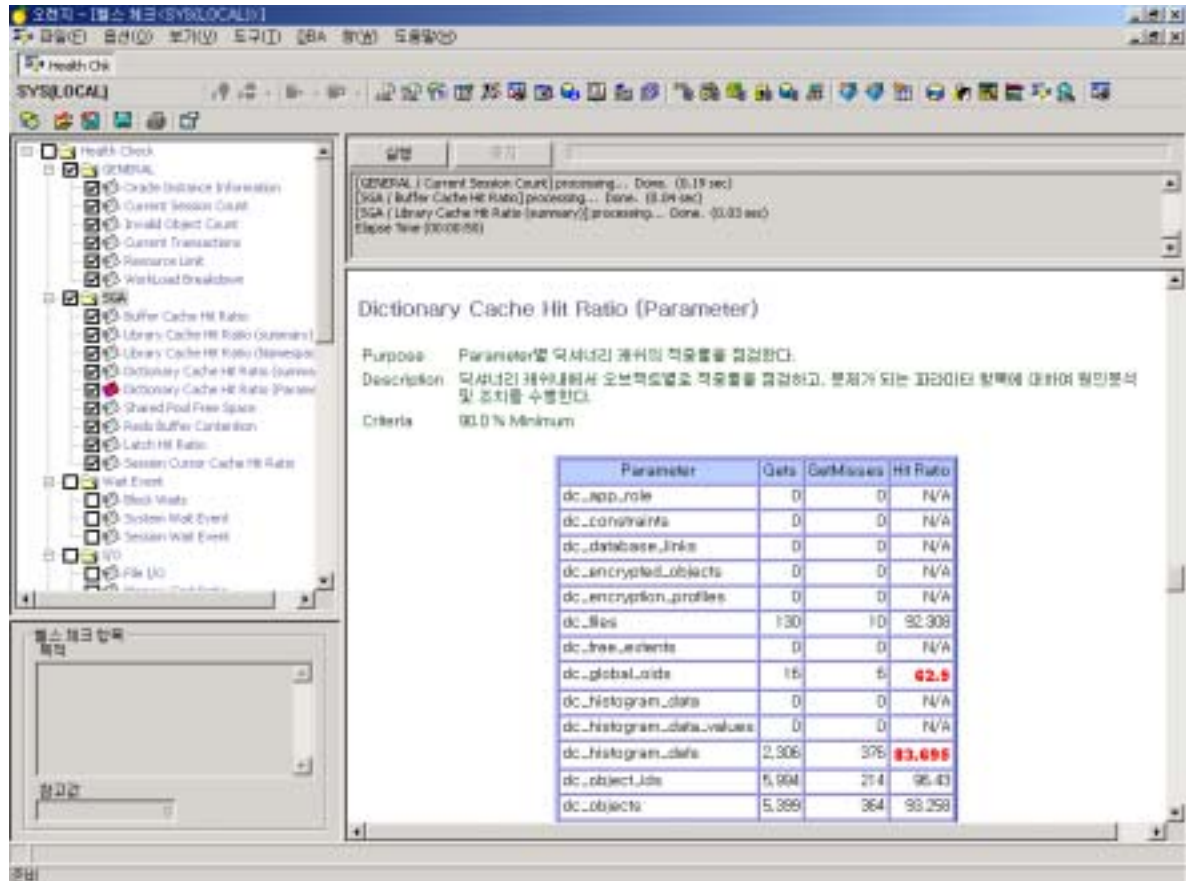
[   ]   HTML   .   "HealthCheck.html"
        .

[23.6 –   ]


```
Save Result HTML Document                                                    ? X
저장 위치(I):    📁 내 문서               ▼    ←  🗈  📑  🎐 ▾
📁 받은 파일              📁 Visual Studio Projects
📁 download
📁 filelib
📁 My eBooks
📷 My Pictures
📁 My Webs

파일 이름(N):     HealthCheck                           저장(S)
파일 형식(T):     Save Files (*.html)            ▼      취소
```
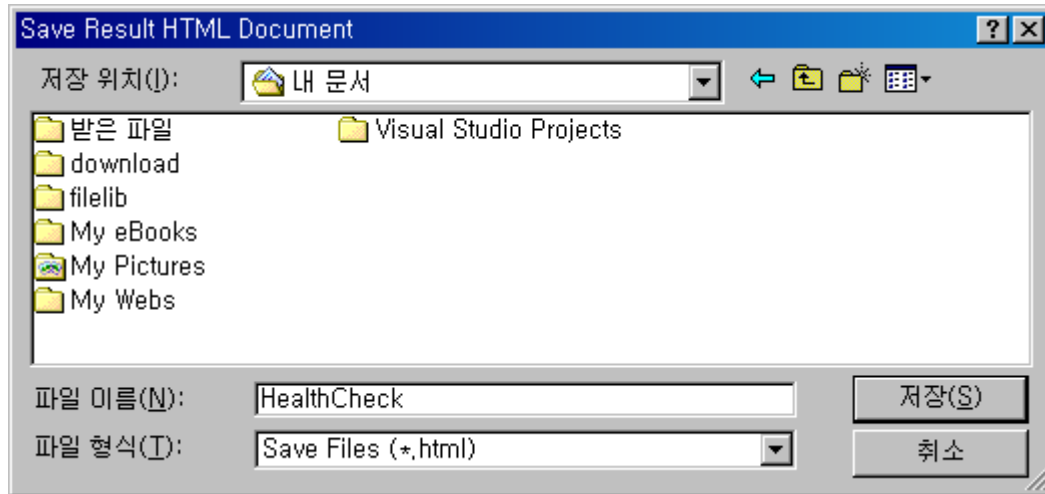
24. Export

Export 　　　　　　　 Export
Import 　　　　　　　　　　　 Export Tool 　　　　　　 Export 　　　　　　　　.

24.1 Export

- ✓ Export
- ✓ Export
- ✓ Export
- ✓ Export 　　 Incremental Type 　　　　　　 Export
- ✓ Export 　　 Scope(Full, Owner, Table)
- ✓ Export 　　　　 Grants, Indexes, Rows, Constraints

24.2 Export

🖼	Export Tool Open
❓	Command Help
💾	Dump, Log, Index File

24.3 Export

24.3.1 Export

Export 　　　(🖼) 　　　　　　　　　　 Export Tool 　　　　　　　　　　　.

24.3.2 Export

- ■ Export 　　　　　　　 Export File 　　　 Export 　　　　　　　　　　　.
- ■ " Advance Options"
  　　　　　　　　.　　　　　　　　　　　　　　　　　　　　　　　.
  " Buffer Size" 　　　　　　　　　　　　　　　　　　　　　. 　　　　　O
  10000000 　　　　　　　　　　　　　. 　　　　　　　　　　" Statistics"
  　　　　　　　　　　" Estimate( )" 　　　" Compute( )" 　　　　　　　　.
  " Incremental type" 　　　　　　　" Incremental( )" , " Cumulative( )" , " Complete(
)" 　　　　　　　　　　　　.
- ■ " Scope" 　　　　　　　　　　　　　　　" Full Database" , " Owner" , " Table"

실행한다.

- ■ "Export Contents" 에서는 "Grants(   )", "Indexes(   )", "Rows(   )",
  "Constraints(   )", "Triggers(   )", "Compress(   )", "Direct(   )",
  "Consistent(   )", "Feedback(   )"   .
- ■ [Export Now]   Export   Export   Message
  .

[24.1 – Export Tool   ]
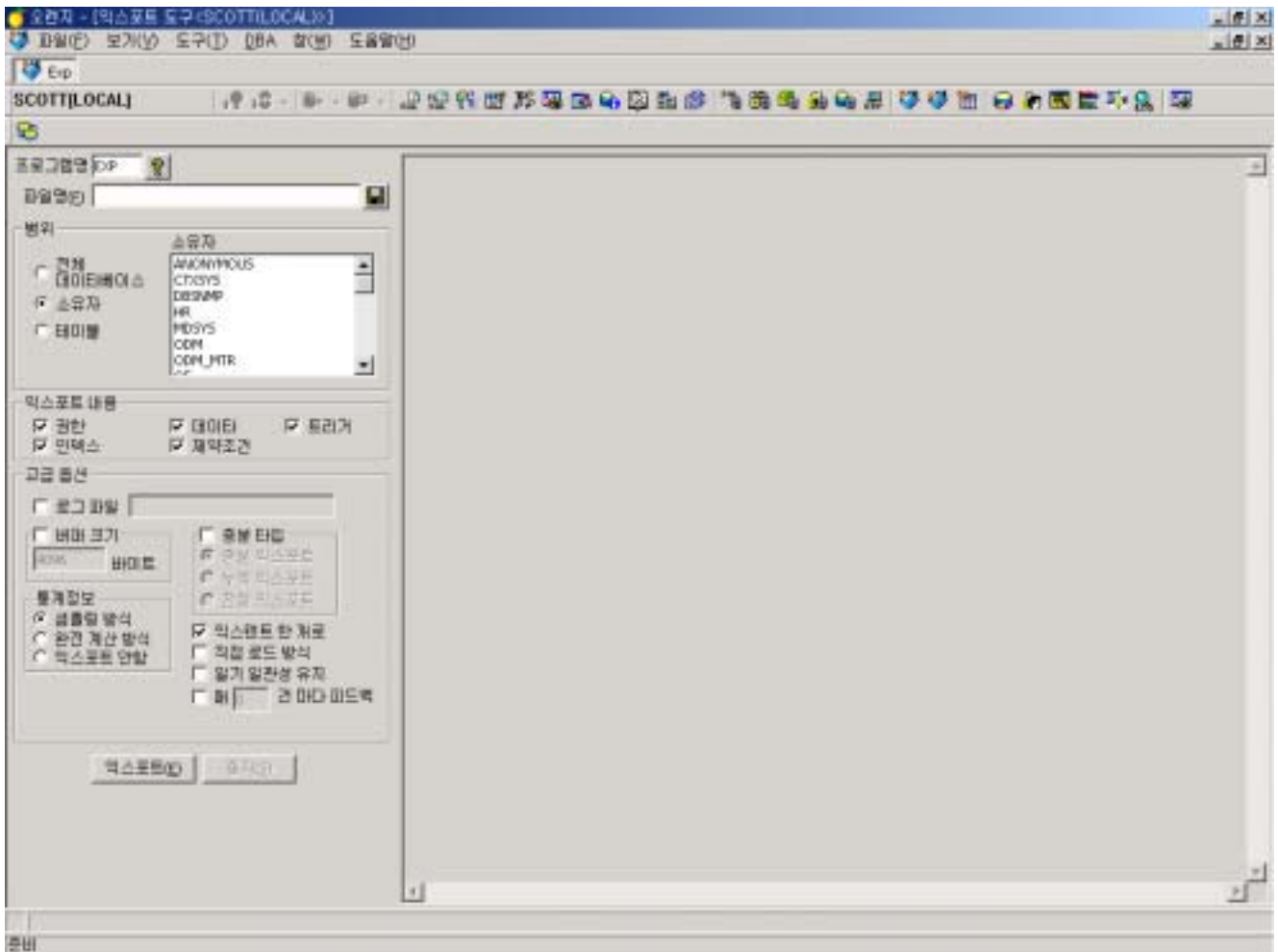
24.3.3   Export

- ■ Export   Export File   Export   .
- ■ "Scope"   Full Database   [OK]
  .

■ [Export Now]   Export   Export
  Message   .

24.3.4 User   Export

■ Export   Export File   Export   .
■ "Scope"   Owner   "Select user to Export" List Box   Export
            Table   .
■ "Select user to Export"   List Box   [OK]
            .

■ [Export Now]   User   Export   Export
              Message   .

24.3.5 Table   Export

■ Export   Export File   Export   .
■ "Scope"   Table   "Select Table to Export"   List Box
  Export   Table   .
■ "Select Table to Export"   List Box   Table   [OK]
            .

■ [Export Now]   Table   Export   Export
              Message   .

[24.2 – Export Sample   ]
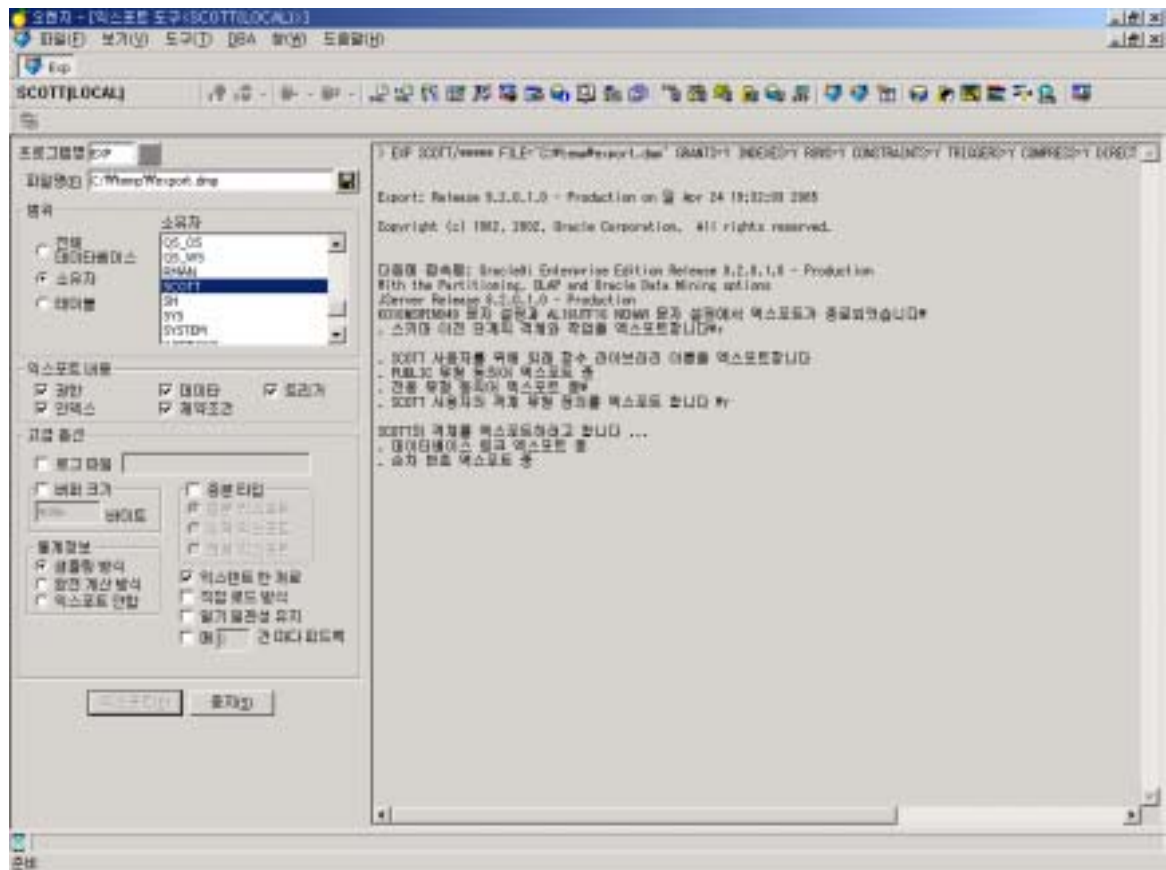
24.3.6 Export

- [Stop]   Export   .

25. Import

Export　　　　　　Export

Import　　　　　　　　　　　Import Tool　　　　　　Import　　　　　　.

25.1 Import

- ✓ Import
- ✓ Import　　　　　Size
- ✓ Import　　analyze
- ✓ Import
- ✓ Import　　　　　Grants, Indexes, Rows, Constraints

25.2 Export & Import

　　　　Import Tool Open

　　　　Export File

　　　　Command Help

　　　　Dump, Log, Index File

25.3 Import

25.3.1 Import

Import　　　　(　　)　　　　　　　　　　Import Tool　　　　　　　　.

25.3.2 Import 　　　　　Options

- ■ 　　　　　　　　　　Log File　　　　　　　　　　　　　　　　.
  　　　　　　　　　　　　　　　.

- ■ 　　　　　　　　　　　　　　　Index File
  　　　　　　.　　　　　　　　　　　　　　　.

- ■ "Incremental"　　　　　　　　　　　Import　　"System(Incremental)" , "Restore(Complete)"
  　　　　　　.

- ■ 　　　　　　　"Commit"　　　　　　　　"After each buffer(　　　　　)" , "After each
  table(　　　　　)"　　　　　　　　.

- ■ 　　Size　　"Buffer Size"　　　　Import　　　　　　　　　　　　　.

0 ~ 10000000   .

- "Scope"   Import   "Full Database", "Owner/Table"
                       .

- Feedback   Row   0 ~ 10000   .
- "Import Contents"   Import   "Grants(   )", "Indexes(   )", "Rows(   )",
  "Constraints(   )", "Ignore Errors(   )", "Just Show File(Only Export   Display)",
  "Overwrite(   )", "Analyze(Analyze   )", "Skip unusable Indexes(UNUSABLE
)","Recalculate Statistics(   )   .

[25.1 –   Import Tool   ]
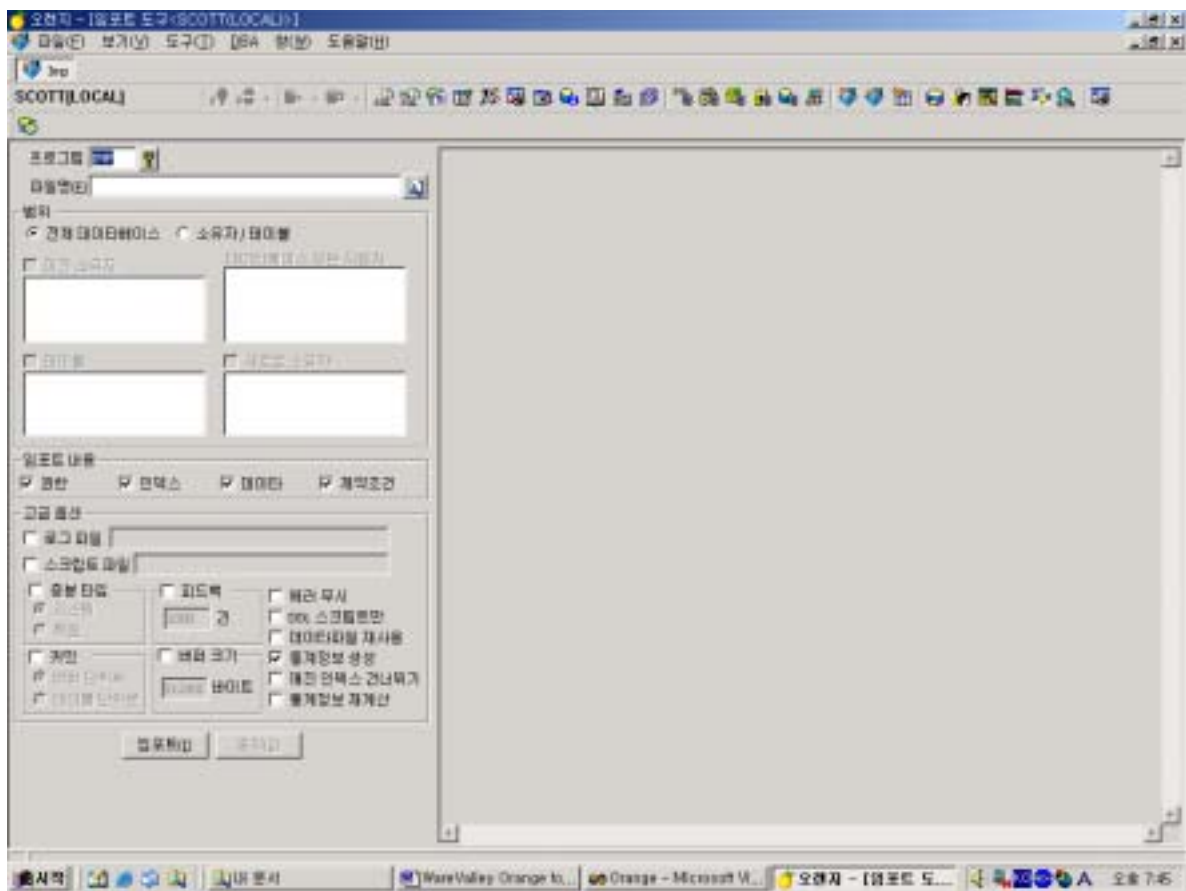
25.3.3 User/Table   Import

- Import   Import File   Import
  Import   , "Scope"
  Owner/Table   4   List Box   Enable   .

- "From User"   From User   ()   User
  ()   .

[25.2 – From User Check   ]

- From User   ()   [OK]   .
  30   .

[25.3 – From User   ]
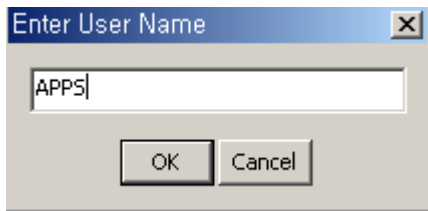
- Tables   ()
  ()   .

- ()   Import   Import
  [OK]   .   Import
  .   30   .

[25.4 – Tables Check   ]

■ 　　　　　　　Import　　　　　　　　　　　　　　　　　　　　To User
　　　　　　　　　　　(↓)　　　　　　　　　　　　　　　　　　　(✗)　　　　　　　.

[　　　25.5 – To User Check　　　　]

☑ To user　　　↓　✗

```



```
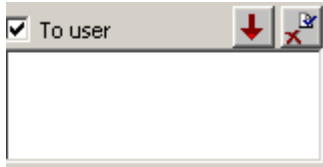
■ "All user List in Database"　　　Import　　　　　　　　　　　　　　　　(↓)
　　User　　"To User"　　　　　　　　　　.

[　　　25.6 – Import　　　　　　　　　　　　User List　　　]

All user List in Database
DBSNMP
ORANGE
OUTLN
SCOTT
SYS
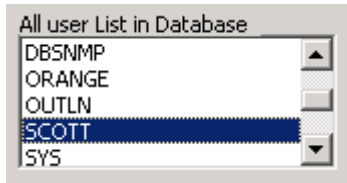
■ [Import Now]　　　　　　Import　　　　　　　　　　　　Import　　　　　Message
　　　　　.

25.3.4 Full Database Import

■ 　　Import　　　　　　　　　　　　　　　　Import File　　　Import
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　"Scope"
　　Box　　Full Database　　　　　　.
■ [Import Now]　　　　　　Import　　　　　　　　　　　　Import　　　　　Message
　　　　　.

25.3.5 Import

- Import   Import File   Import   .
- Import   .
- [Import Now]   Import   Import   Message
         .

     [25.7 – Import Sample   ]
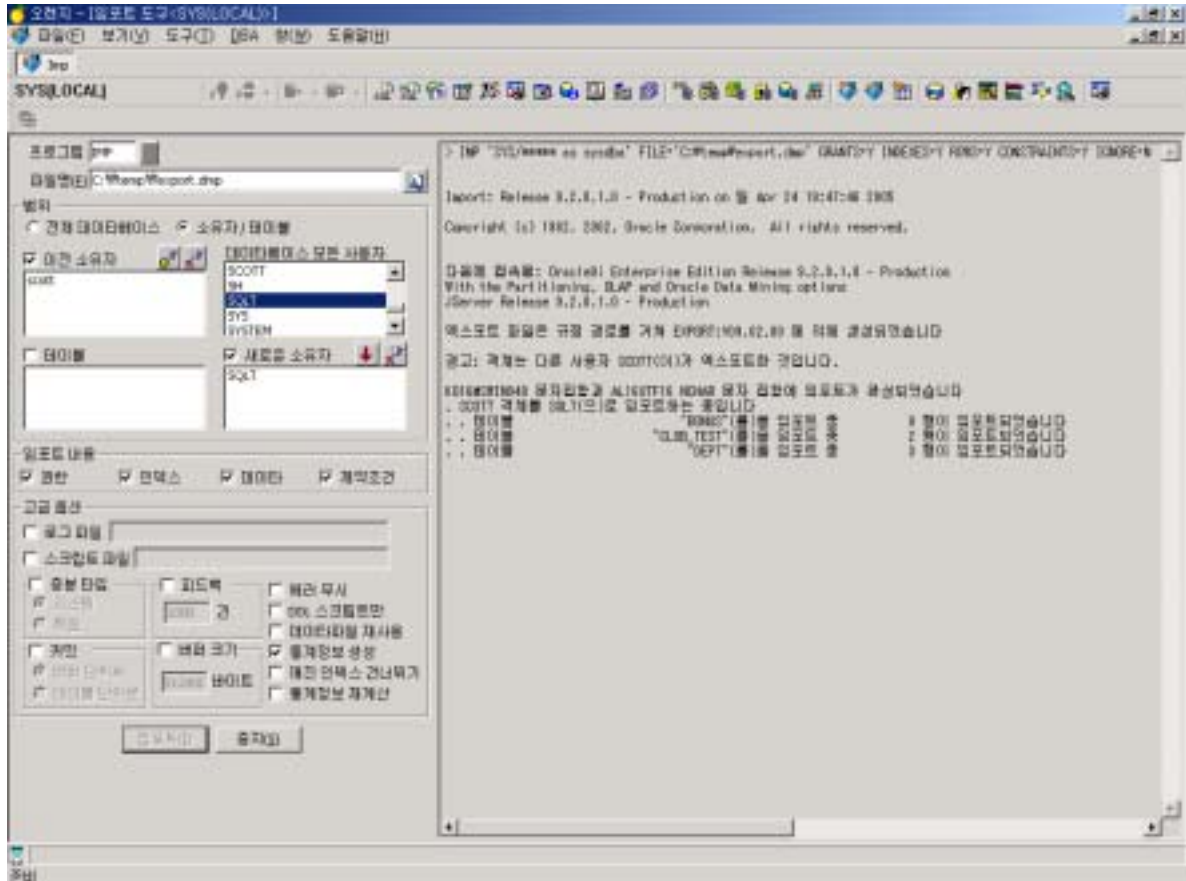
25.3.6 Import

   [Stop]   Import   .

26. Analyze Manager

Analyze Manager   ,   ,
                          .   Analyze   Analyze   .
            Bucket Size   , Parallel Analyze   .
Analyze   Analyze Script   , Analyze
                                    .

26.1 Analyze Manager

- ✓ Analyze Scope
- ✓ Analyze
- ✓ Histogram
- ✓ Parallel Degree
- ✓ Analyze Script
- ✓ Analyze   .
- ✓ All statistics Information

26.2 Analyze Manager

📂	Checked Item
💾	Checked Item

26.3 Analyze Manager

26.3.1 Analyze Manager

Analyze Manager   Analyze Manager   Sub Tool bar

Analyze   , Analyze   Analyze

.

[26.1 - Analyze Manager Sample   ]
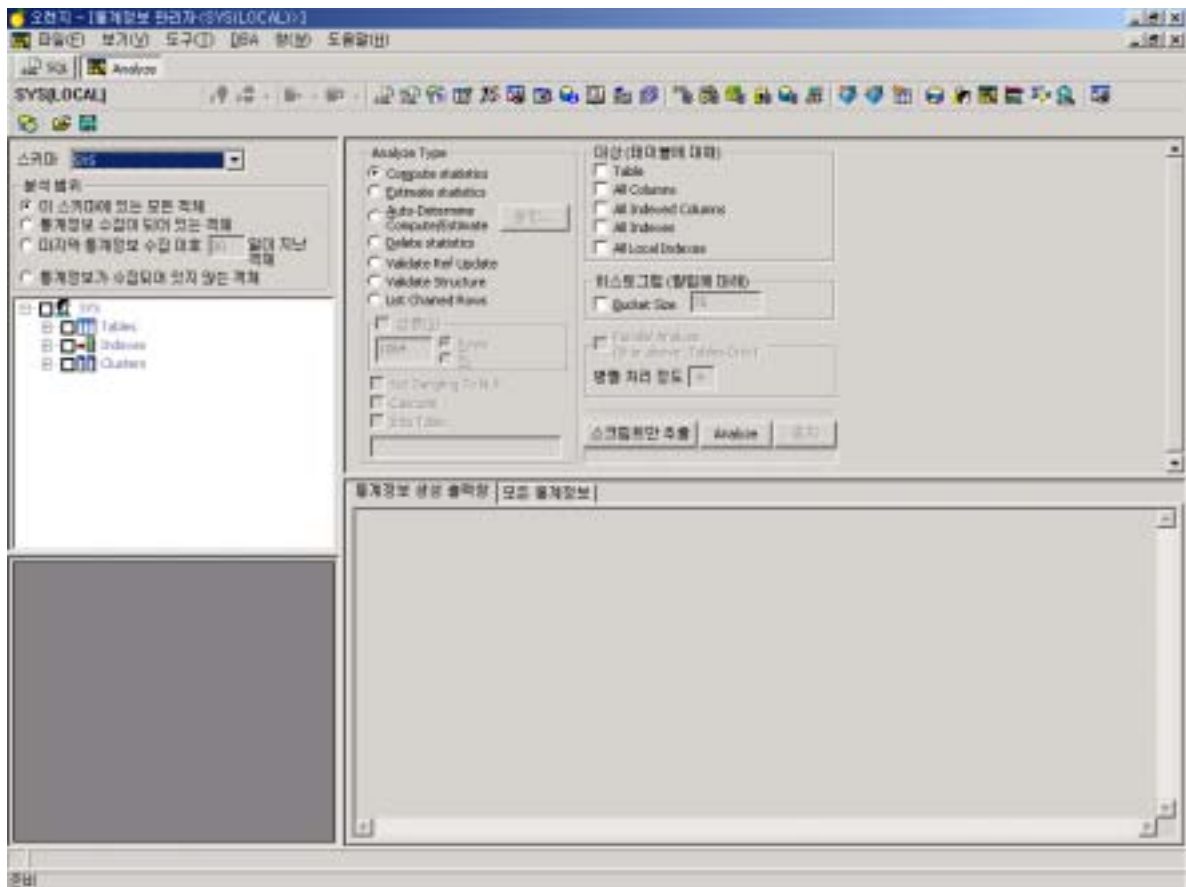
26.3.2 Analyze Manager

[   ]   [   ]   [   ]   Analyze Manager

[   ]   Analyze Manager

.   Analyze Manager   ()   Analyze Manager   . Analyze

Manager   Connection manager

.

26.3.3 Analyze

■ Analyze

[26.2 – Analyze   ] Analyze Manager   Analyze   .
         Schema   4   Analyze Scope   .   Analyze Scope
                                                                            . 4   Analyze Scope
   .

   ➢ **All Objects in this schema** :
            Analyze   .

   ➢ **Objects which have been analyzed** :   Analyze
                                 .

   ➢ **Object analyzed [] days ago or more since last analysis** :   Analyze
            (days)   .

   ➢ **Objects which are not analyzed yet** :   Analyze
                                 .

   Analyze   (🖫)   .anl
                          ,   (📂)   .

[26.2 – Analyze   ]
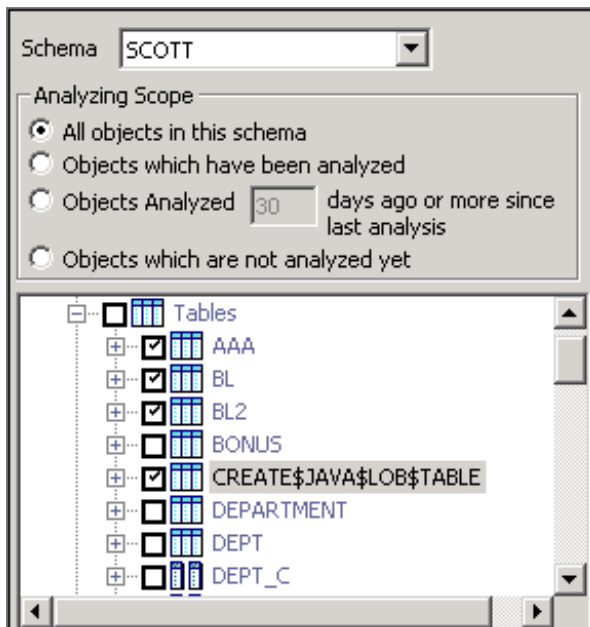
■ Analyze Type

➢ **Compute Statistics** :   .

➢ **Estimate Statistics** :   Compute Statistics   .   0

➢ **Auto Determine Compute/Estimate** :   [26.4 – Auto-Determine Compute/Estimate]   "Segment Size"   "Last Analyzed Rows Count"

    Analyze

        Analyze

    "Segment Size"   ( )

        .   "From(Bytes)"   100   "To(Bytes)" 10000
     "Compute/Estimate"   Estimate   "Sample"   10
           100 Bytes 10000 Bytes   Estimate
Analyze   . "Sample" 10%   10 Rows   "Sample"
   "Percent"   "Rows"   .   Record   ,

      ( )   .

                Analyze
  "Other Cases" "Sample Size"   .

➢ **Delete Statistics** :   .

➢ **Validate Ref Update** :   Ref(object reference)   . REF
   ROWID   . "Set Dangling To Null"
  Invalid   REF   NULL   .

➢ **Validate Structure** :   ,   , Ref   .
     "cascade"   . "Into Table"   partitioned table   .

➢ **List chained Rows** :   Chained   Migrated Row   .
  Row ROWID "Into Table"   .

[26.3 – Analyze Type   ]
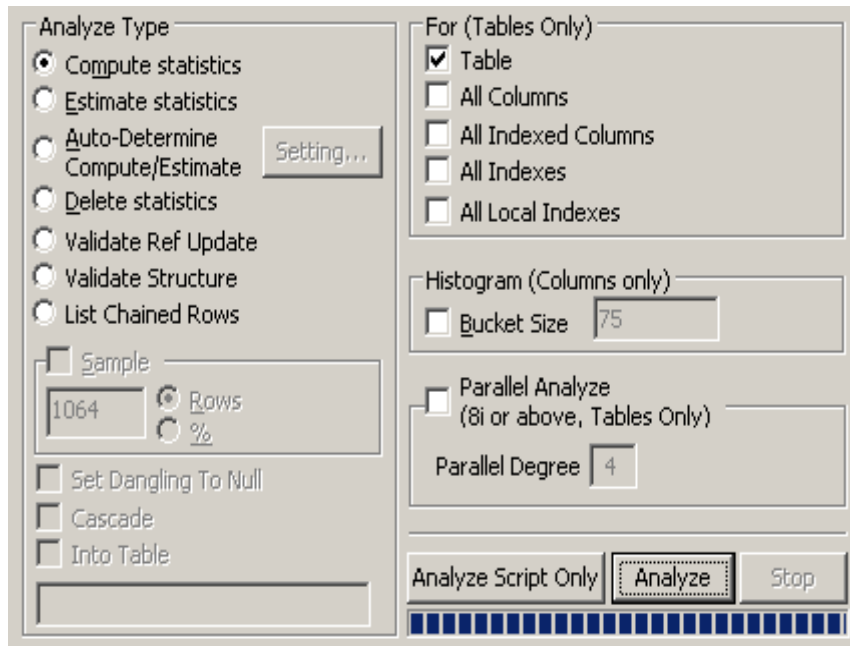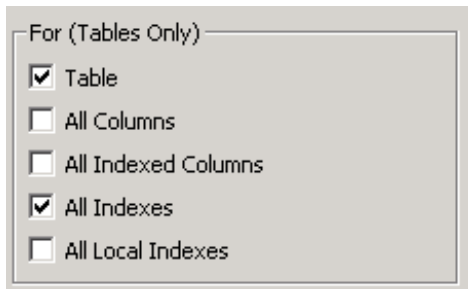
[26.4 – Auto-Determine Compute/Estimate   ]
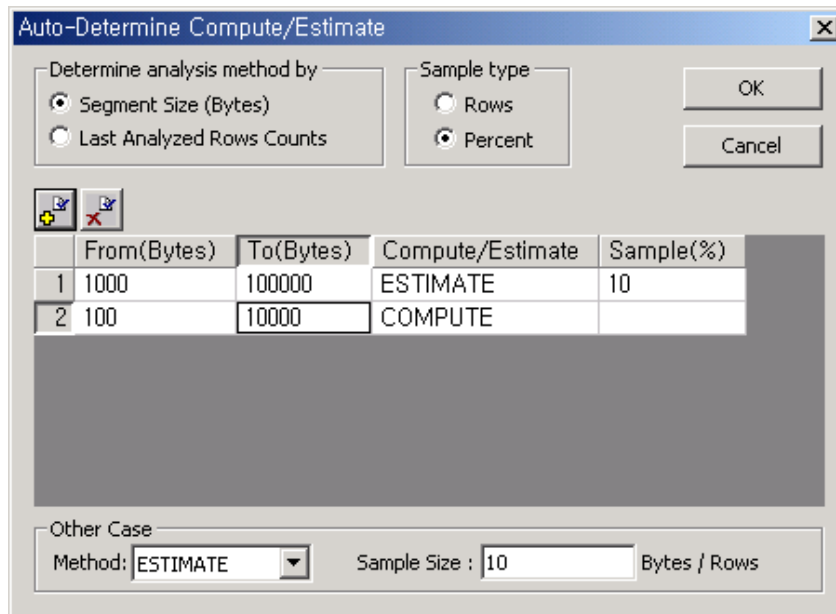
■ FOR   -   For   .

  ➢ **Table** :   .

  ➢ **All Columns / All Indexed Columns** :   Index

                                    .

  ➢ **All Indexes / All Local Indexes** :   Partition

                                    .

[26.5 – For   ]

■ Histogram, Parallel

  ➢ All Columns   All Indexed Columns   "Analyzing Scope"

                Histogram   .   Histogram   .

      Bucket Size   1   254   .

  ➢ Parallel Analyze   Table   "Compute Statistics"

          . Parallel Degree   1   . DBMS_STATS   .

[26.6 – Histogram   Parallel Option]

26.4 Analyze

✓ [Analyze Script Only]   Analyze   Analyze

.

Copy & Paste   SQL Tool   SQL*Plus

. [26.7 – analyze script output]

✓ [Analyze]   Analyze   . Analyze   DBA /
ALL / USER_[TABLES | INDEXES | CLUSTERS]   "All Statistics Informations"   Table, Index,
Cluster   . [26.8 – All Statistics Infomatioin]   .

[**26.7 – analyze script output]**

[**26.8 – All Statistics Infomatioin]**

27. Session Information

Session Information   ,   ,   , Event   , Wait
                                                .
                          .   Lock monitor, Session Monitor, Transaction Monitor, SQL Monitor
Session Information   .

27.1 Session Information

- ✓   ,   ,   ,   , Event, Wait
- ✓   SQL   Plan Tool

27.2 Session Info

Session Information Refresh

PLAN Tool

Session Information

27.3 Session Information

27.3.1 Session Information

Session Information

   Session Information   Session Information   . Lock Monitor, Session
monitor, Transaction Monitor, SQL Monitor   Session Information Tool   .

27.3.2 Session Information

Session Information   "Cursors", "Session Information", "Session Statistics", "Process Information", "Event", "Wait"   . "Event" "Wait"   Filtering
.   Filter   256   .

■   Cursors

                                    "Category"   Last Cursor, All Open Cursors
                        . Last Cursor   All
   Open Cursors   .

[27.1 –Cursors   ]
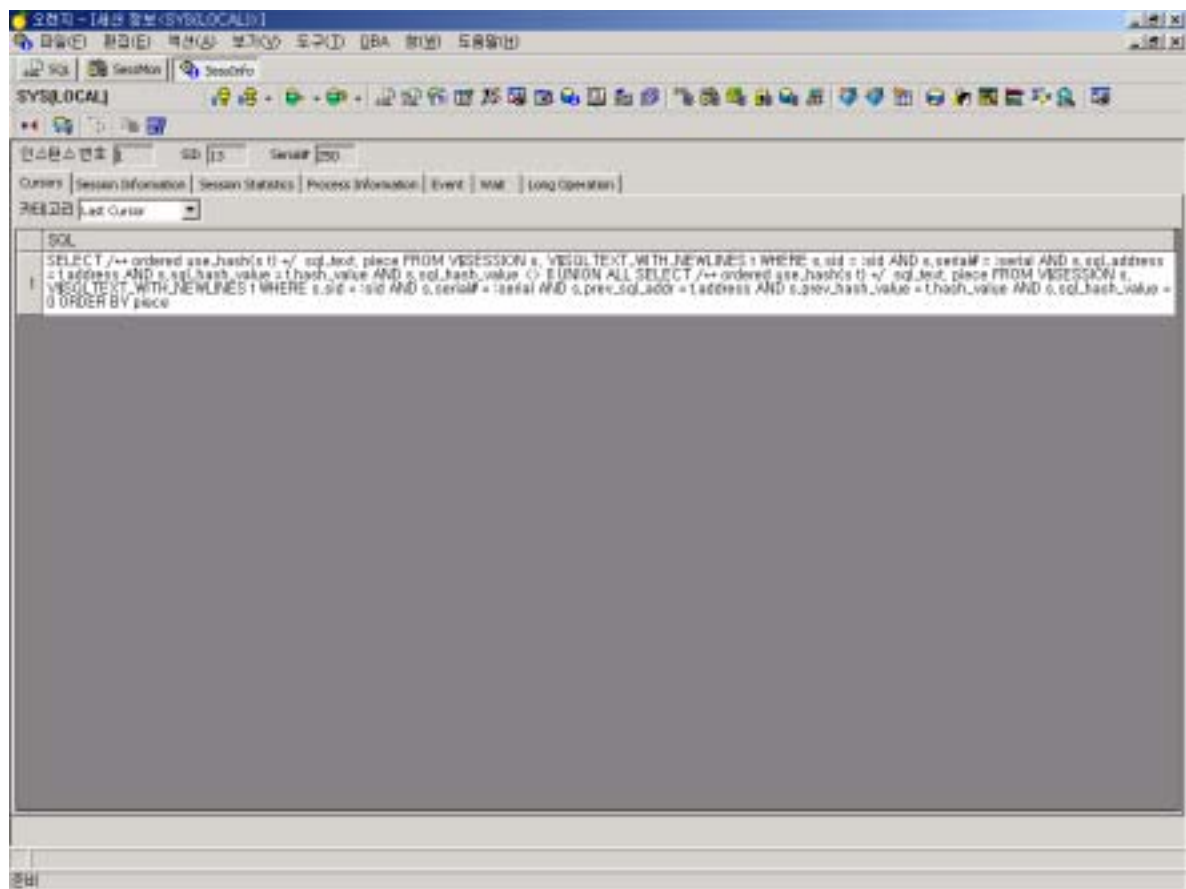
■   Session Information

(Sid, Serial#,   , SQL   )
.   .

[27.2 - Session Information   ]

■ Session Statistics

.

  ➢ Commits & Rollback

  ➢

  ➢ CPU

  ➢   ,

  ➢

  ➢   ,

  ➢ UGA

  ➢ DBWR

  ➢

[27.3 - Session Statistics   ]

■ Process Information

.

➢

➢

➢

➢

[27.4 - Process Information   ]

■ Event

.

➢

➢ Wait

[27.5 - Event   ]

■　Wait

　　　　Wait　　　　　　　　　　　.

> 　Wait

> 　　　　　　　　"db file scattered read"　　　　　P1 : FILE#

> 　　　　　　　　"db file scattered read"　　　　　P2 : BLOCK#

> 　　　　　　　　"db file scattered read"　　　　　P3 : BLOCKS

> 　　　　　　　　P1, P2, P3

[　　　27.6 – Wait　　]
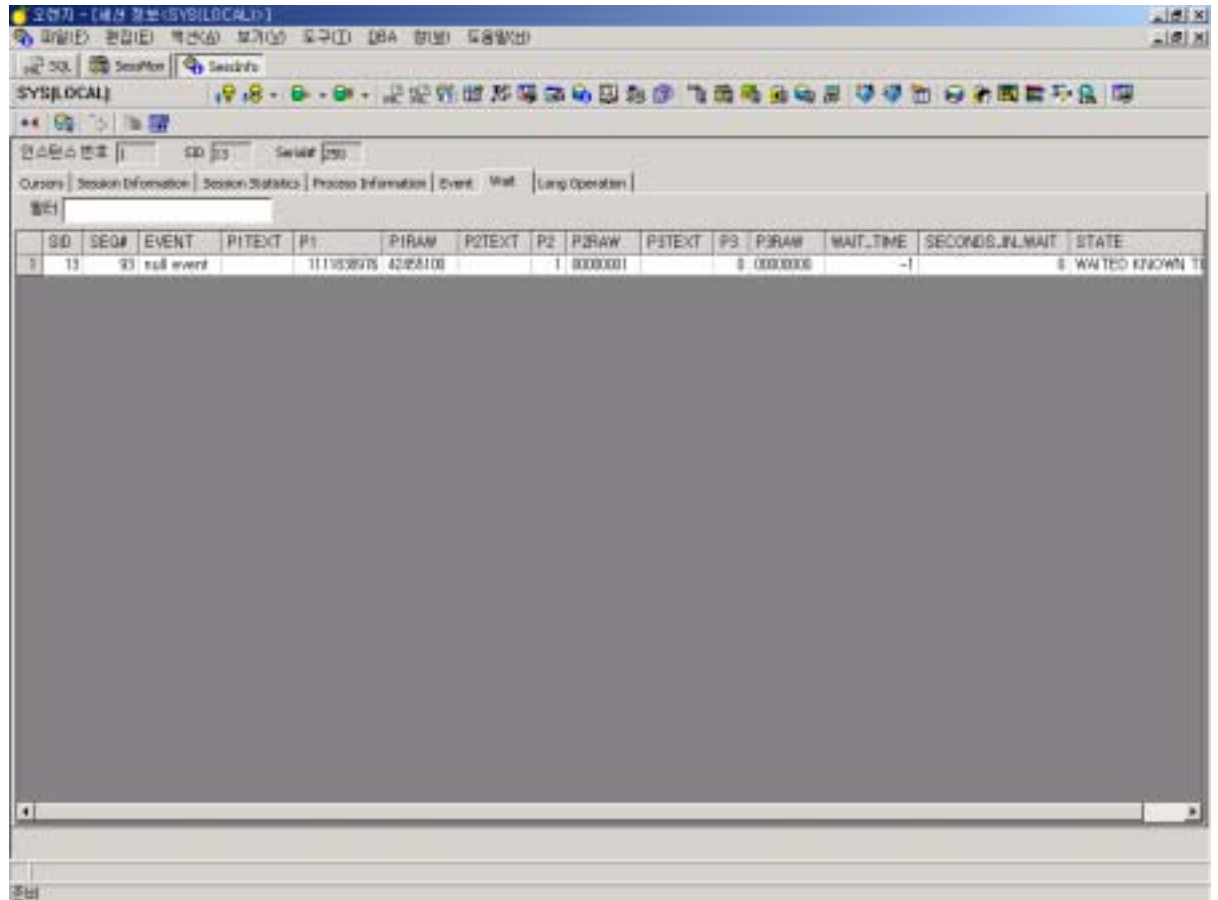
28. File Editor

SQL Tool, PL/SQL Tool, Plan Tool   Editor   .   SQL

                        .

            .

           .   File Editor   .

File Editor   , SQL Syntax   Syntax

Highlighting   SQL   .

28.1 File Editor

- ✓ Text File, SQL File
- ✓ Multi-Tab
- ✓ Line Number, Ruler

28.2 File Editor

Increase Indent

Decrease Indent

 File Editor

28. 3 File Editor

28.3.1 File Editor

File Editor [Tool] → [File Editor] , [File Editor] ()
.

28.3.2 Workspace

- File Editor Multi-Tab

  Workspace .

- Workspace OS .

  , .

  .

- .

- "Add New Tab"

  '*' .
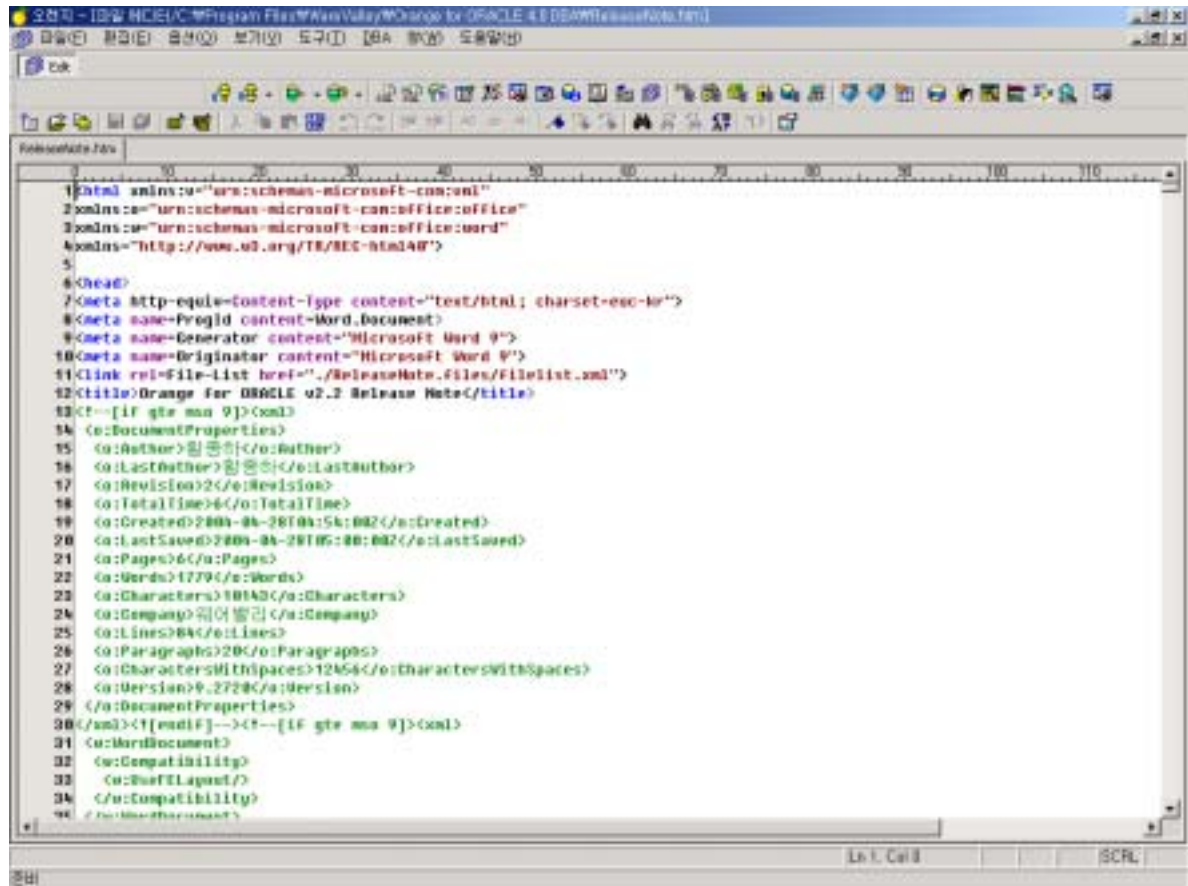
28.3.3 Syntax Highlighting

■ File Editor   SQL   PL/SQL   Syntax Highlighting   .

■ Syntax Highlighting   . SQL   PL/SQL   Syntax

   Highlighting   "SQL"   .

■   , Syntax Highlighting   .

28.3.4 File Editor

File Editor   ,   .

[28.2 - File Editor Option]
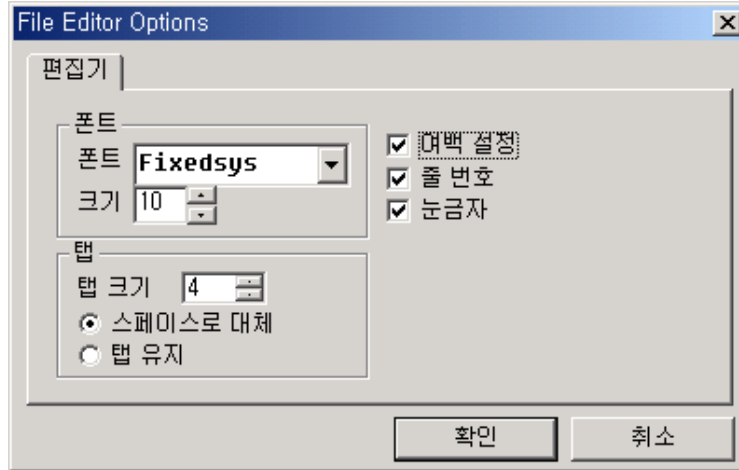
Font   .

                                                                                .

Size   Point   .

Selection Margin   ,

                                                                                .

Line Number   .   Selection Margin

                                                                      .

Ruler   .

Tab Size   Tab   .

Insert Space/Keep Tab   Tab   Space   Tab   .

28.3.5

Word wrapping

                                        .   .   .

29. Loader

Loader   ,   Oracle Database   Load
                                         Unload   . Load/Unload
          ,   .

29.1 Loader

- ✓   ,   Data Load
- ✓   ,   Data Unload
- ✓   SQL   Data Unload
- ✓   Load/Unload   Save/Load
- ✓
- ✓   "Terminated by"
- ✓   Load   Bad File
- ✓

29.2 Loader

            Load

            Save

    Load/Unload

    Load/Unload

29.3 Loader

29.3.1 Loader

                         [   ]   [   ]   [   ]   "
         "   Loader   [   ]
     Loader   .   Loader   (   )   Loader   .

29.3.2 Loader - Load

[29.1 – Load   ]
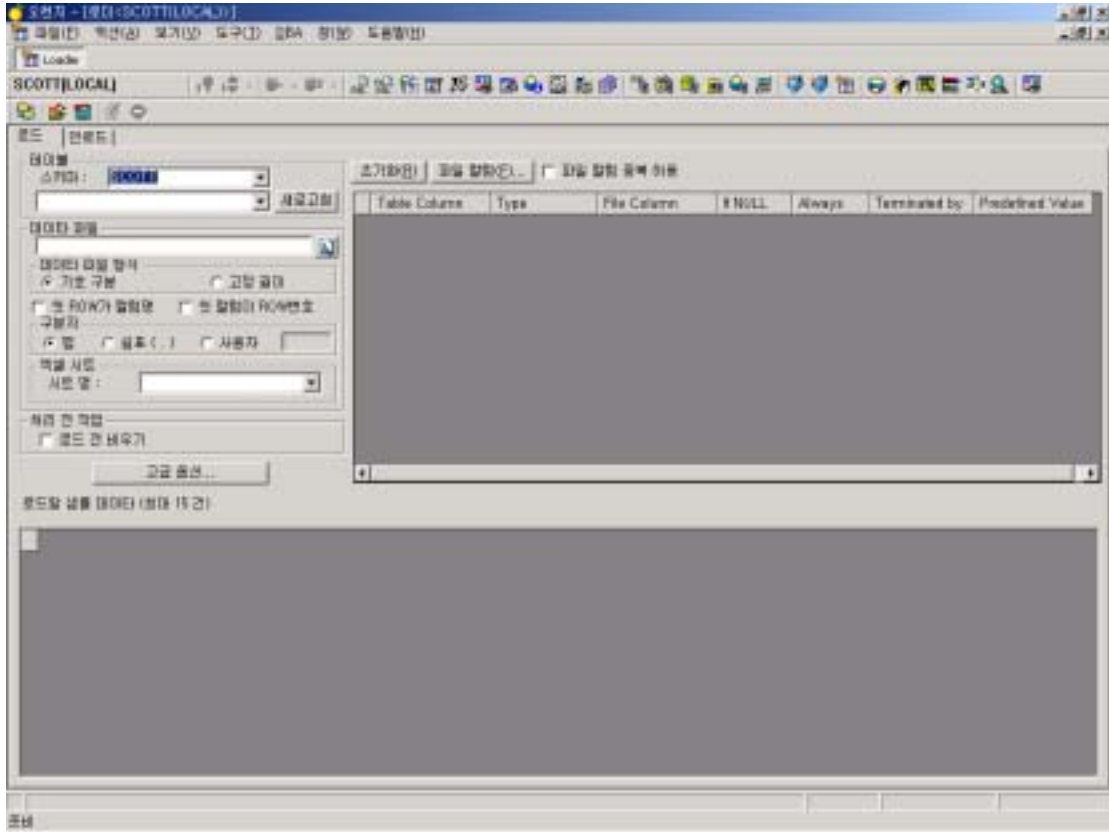
- ■ "Table"   Load   . [Refresh]

                              .

                                                      . Load   [29.1 – Load
            ]   .
- ■ "Data File"   .

    [Load File]   (🔍)   .

    "Data File Format"   .

    "Data File Format"   "Symbol Separated"

    "Fixed Width"   . "Symbol Separated"   "Separator"   "Tab"

        "Comma"   "User"

            .   [29.1 – Load   ]   "Sample data to Load"

            15   Row   .

                          .

- ■   "1ˢᵗ row is col

    name"   ,   "1ˢᵗ col is row #"   .

■ "Pre-Process" 　　　　　　　 "Truncate before loading" 　　　　　　　　　　　
　　　　　 .

■ [Advance Option] 　　　　　　　　　 "Advance Load Option" 　　　　　　　　　　　 . "Date/Time
Formats" 　　　　　　　　　　　　　　　 /
　　　 .

■ "String Format" 　　　　　　　　　　　　　　　　　　　　　　　 Normal(string),
Quotation('string'), Double Quotation("string") 　　　　　 .

■ 　　　　　　　　　　　　　　　　　　　　　　 "Lines to Load" 　　　　　　　　　 . "Lines to
Load" 　　　 1 　　　　　　　　　　 . "Commit Rows" 　　　　　　
　　　　　　　 , Array Size 　　　　　　　　　　　　 Array Processing 　　　　　　　　 .
"Commit Rows" "Array Size" 0 　　　　　　　　　　 .

■ "Error" 　　　　 "Stop after _ errors" 　　　　　　　　　　
　 . 　　　　　　　　　 Bad File
　　　[Bad File] 　　(💾) 　　　　　　　　　　　　　　　　　 "Bad File"
　 .

■

■   [29.3 – Load   File Column   ]
     Load   . "File
     Column"   .
■   [File Columns]   "File
     Column"   .
■   [Reset]   "File Column"   . "Enable File Column Duplication"
                 "File Column"   . "Table
     Column"   "Type"   Load   . "File Column"
                                                                                [none]
                      (Null)   . "If NULL"
          (Null)   "If NULL"   , "Always"
                      "Always"   . "If NULL"   "Always"
          . "Terminated by"   . "Predefined
     Value"   (Pseudo column : CURRVAL, NEXTVAL)   SYSDATE
                                    . "Predefined Value"   "File Column", "If NULL",

"Always"   .

[29.4 – Load   Fixed Width   ]
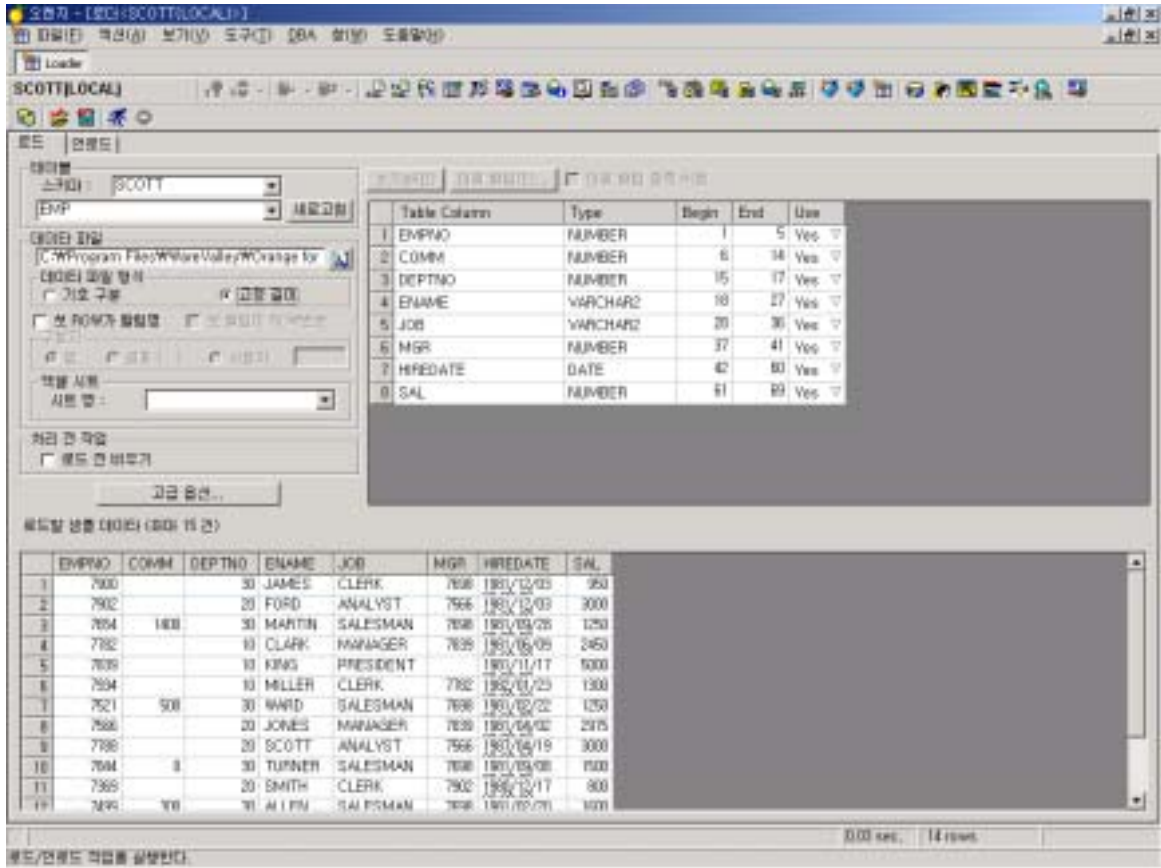
■   [29.4 – Load   Fixed Width   ]   "Fixed Width"

. "Use"

. No

(Null)   .

29.3.3 Loader - Unload

[29.5 – Unload   (Using Table)]
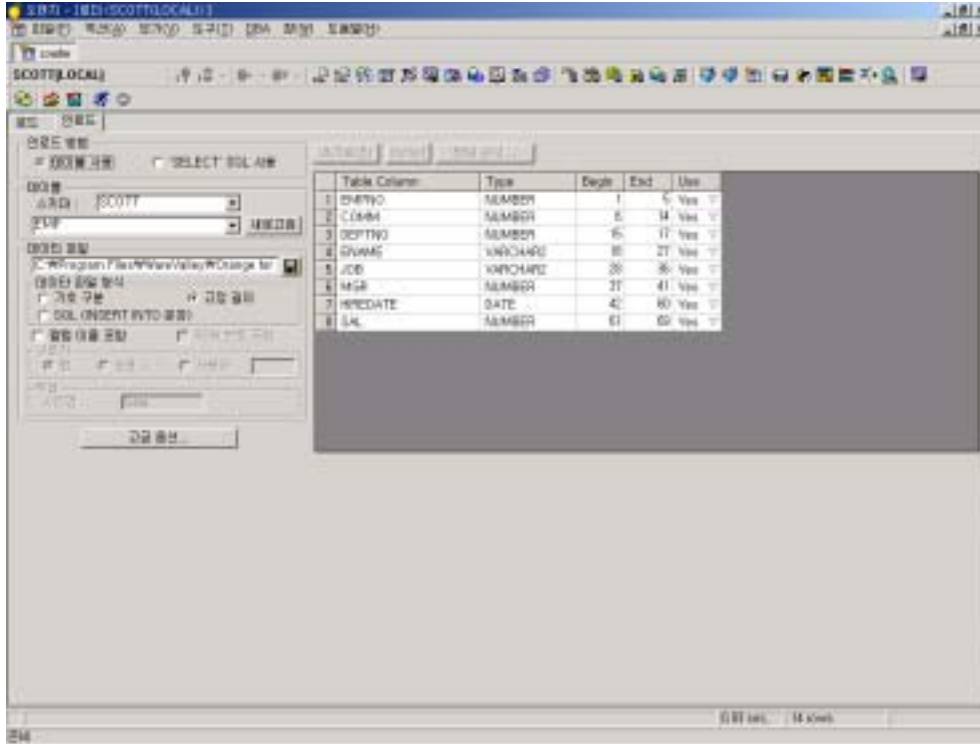
- "Unload Method"   ,

    'SELECT' SQL   . "Using 'SELECT' SQL"

        SQL   [29.5 – Unload   (Using Table)]

    .

- "Table"   . [Refresh]

    .

    .

- "Data File"

        . [Unload File]   (💾)   .

            "Data File Format"   . "Data File Format"

                        "Symbol Separated"

"Fixed Width"   . "Symbol Separated"

        "Separator"   "Tab"   "Comma"   "User"

                            'INSERT' SQL

            "Data File Format"   'SQL'   .

- "Include col

    name"   ,   "Include row #"   .

■   "Excel"

        .

[29.6 – Unload   (Using 'SELECT' SQL)]
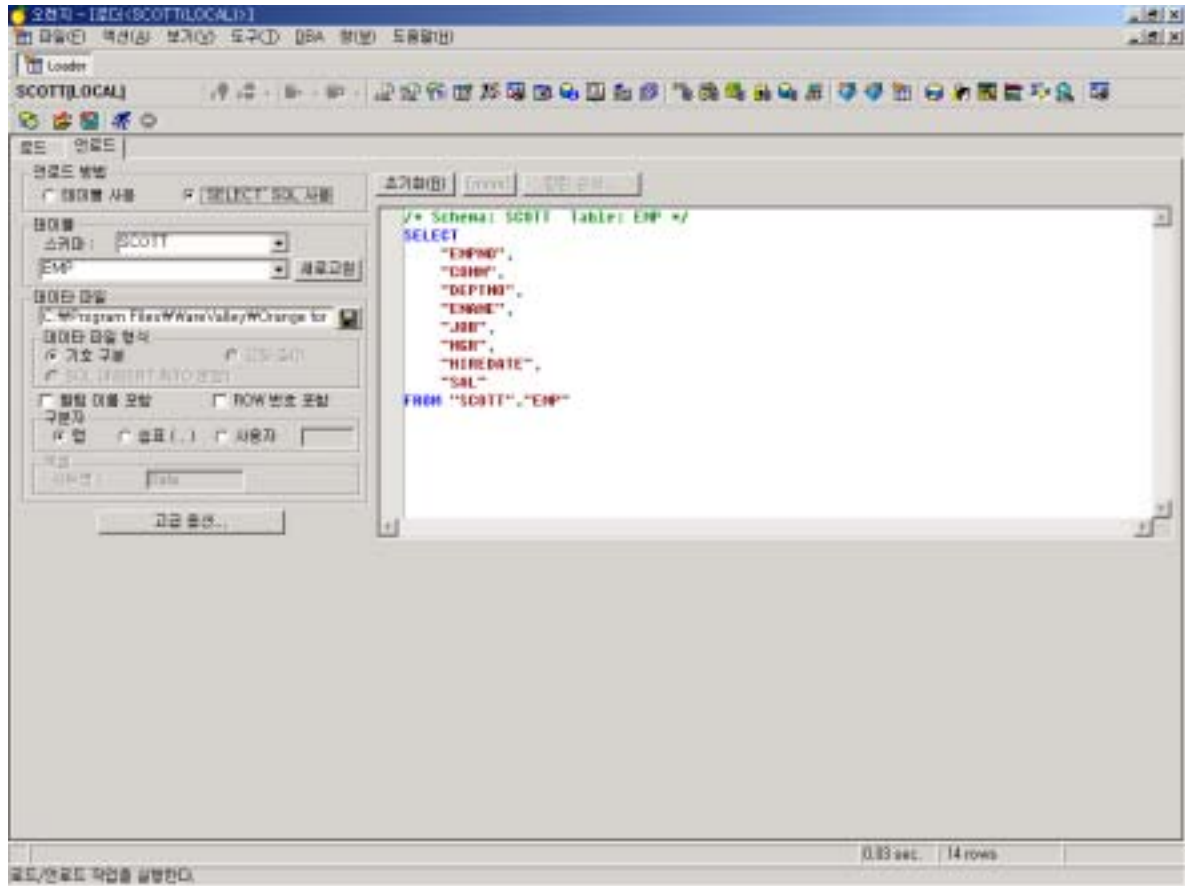
- [Advance Option]   "Advance Unload Option"   . "Date/Time
  Formats"   .
- "String Format"
  Normal(string), Quotation('string'), Double Quotation("string")   .
- "Process"   .
  "Rows"   ,   "Where"   .

- ■ [그림 29.8 – Unload 탭에서의 Column Order 설정 화면]을 참고하시기 바랍니다. [Reset] 버튼을 클릭하면 "Column Order" 설정값이 초기화됩니다.

- ■ [none] 버튼을 클릭하면 "Column Order" 설정값이 모두 [none]으로 변경됩니다. 컬럼의 순서를 지정하지 않겠다는 의미입니다. "Column Order"에서 컬럼을 선택하여 순서를 변경할 수 있습니다.

- ■ [Columns Order] 버튼을 클릭하면 테이블의 컬럼 순서와 동일하게 "File Column" 설정값이 지정됩니다.

- ■ "Type"은 해당 컬럼의 데이터 타입을 나타냅니다. "Column Order"에서 [none]을 선택하면 해당 항목은 비활성화됩니다.

- ■ "Terminated by"에는 해당 컬럼의 구분자를 입력합니다.

[그림 29.8 – Unload 탭에서의 Column Order 설정 화면]
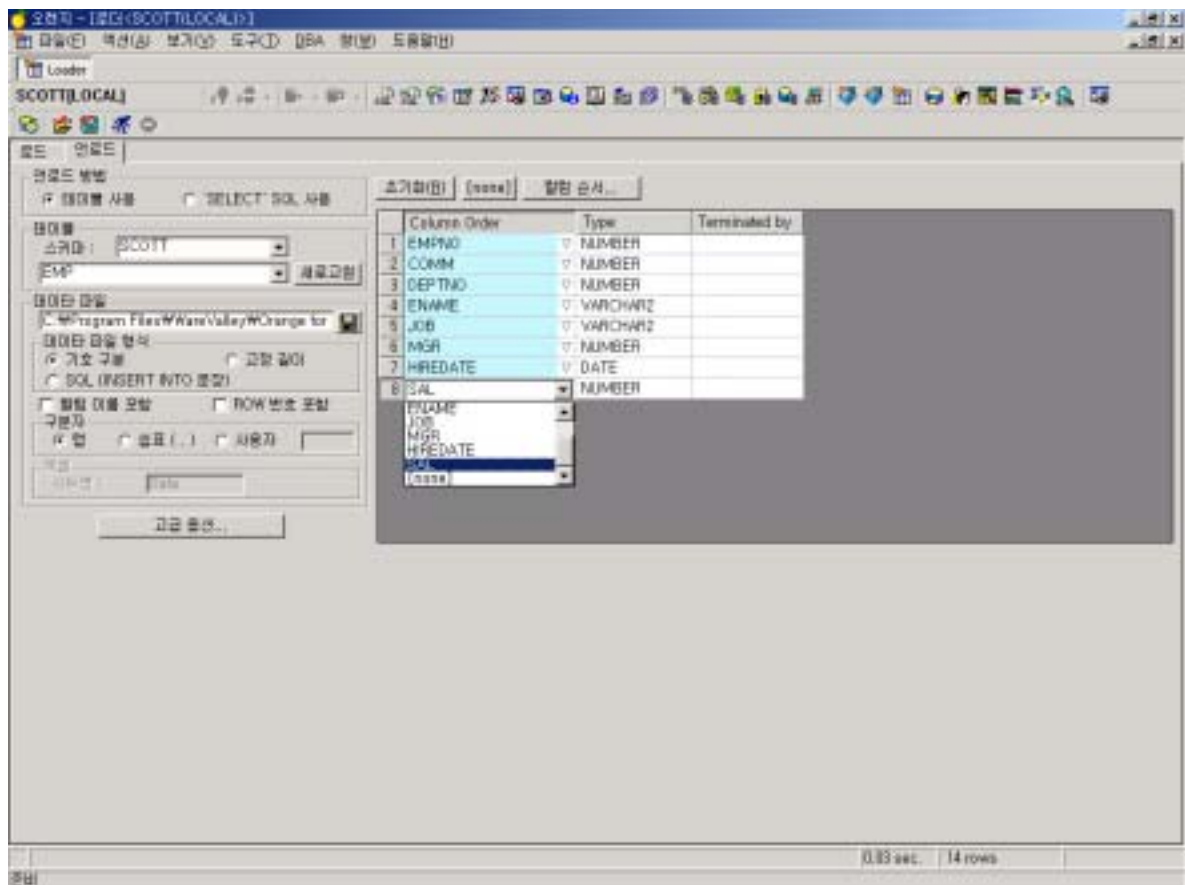
■   Fixed Width

                                   . [29.9 – Unload   Fixed Width   ]   "Use"
                                                              . No

                     .

    [29.9 – Unload   Fixed Width   ]
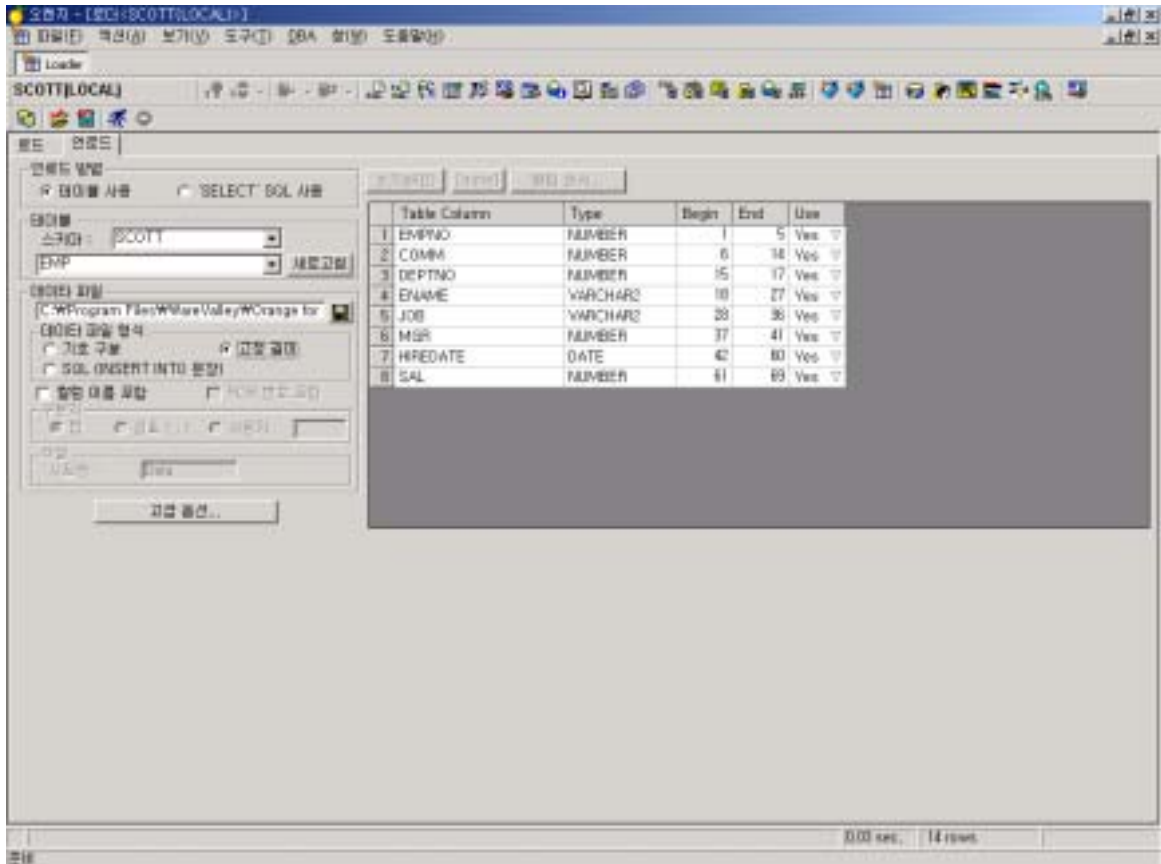
29.4

   Loader   Load/Unload   ODBC   .   ODBC

                                                              .

Load/Unload   Load/Unload
Load/Unload   .

30. Describe DB Objects

Describe DB Objects (Cluster, DB Link, Dimension, Directory, Function, Index, Index Type, Java, Library, MView, Operator, Package, Procedure, Profile, Role, Sequence, Synonym, Table, Trigger, View) Script .

30.1 Describe DB Objects

- ✓ Object   Script
- ✓
- ✓   Schema, Tablespace
- ✓ Object   Filter
- ✓   Object

30.2 Describe DB Objects

30.2.1 Describe DB Objects

[DBA] → [DB   ]   Describe DB Objects   .

30.2.2 Describe DB Objects

[   ]   Script
                    .

- ■ [   ]   Script
            .   ,
            .   !   .   .
                    .

- ■   Script   [DDL Filename]   .
- ■   "
                    "   .
- ■   "
        "   .
- ■ User   User   .   "
            ", "   "

이 기능은 다음과 같이 제공된다.

- 스키마 옵션에서 특정 객체 이름만을 추출하기 위해서는 "다음과 같은 이름이 포함된"
  체크박스를 선택한다.

- [초기화] 버튼을 누르면 모든 필터 옵션이 초기화된다. [초기화], [모두 선택]
  버튼을 통해서 전체 필터를 제어할 수 있다.

- 객체 이름을 추출할 때에는 와일드카드를 사용할 수 있는데 "다음과 같은 이름이 포함된 객체를 추출…"
  체크박스를 선택한다. 예를 들어 "ABC"로 시작하는 객체를 추출하려면 "ABC%"를 입력하고, "ABC"로
  끝나는 객체를 추출하려면 "%ABC"를 입력한다. 또한 "ABC"가 포함되는
  객체를 추출하려면 "%ABC%"를 입력한다.

[그림 30.1 – 스키마 옵션]

■ [   ]
                .

■   "   "   .

■   "   "
                .

■   "
        "   .

■   "
            "   .
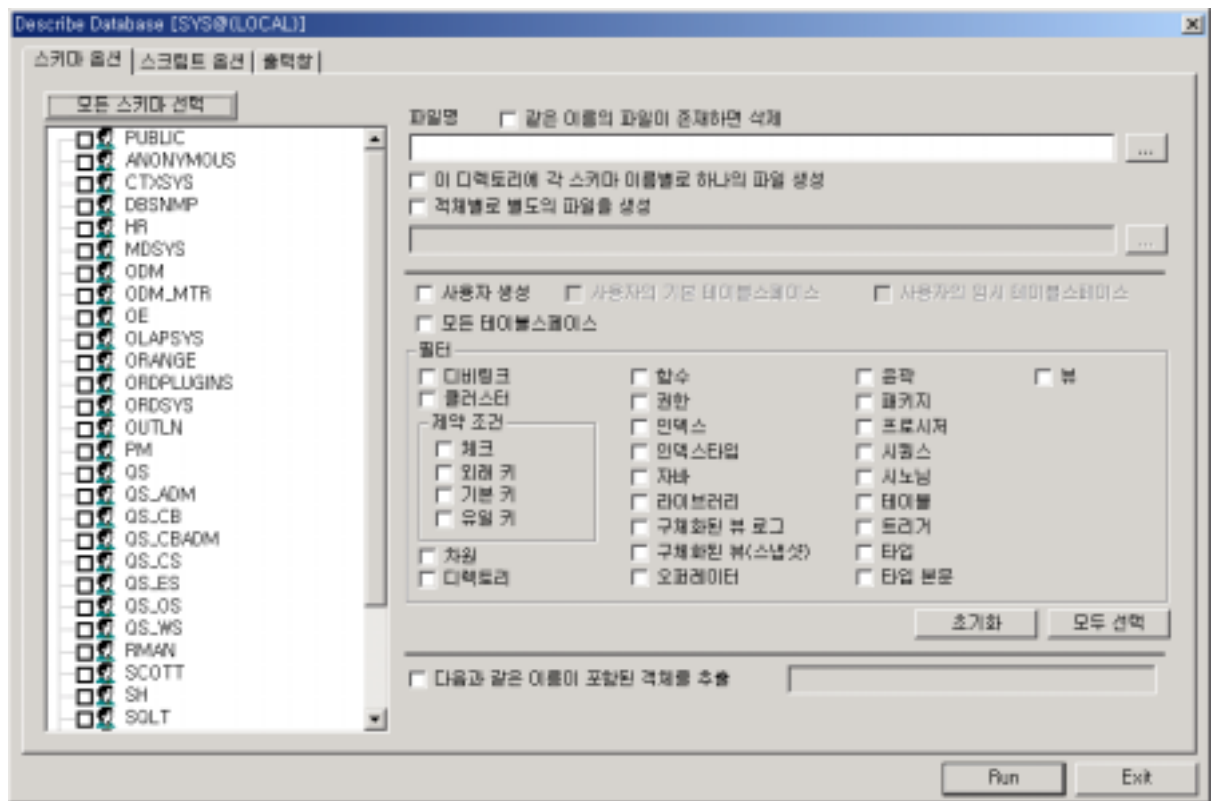
[30.2 – Script Options   ]
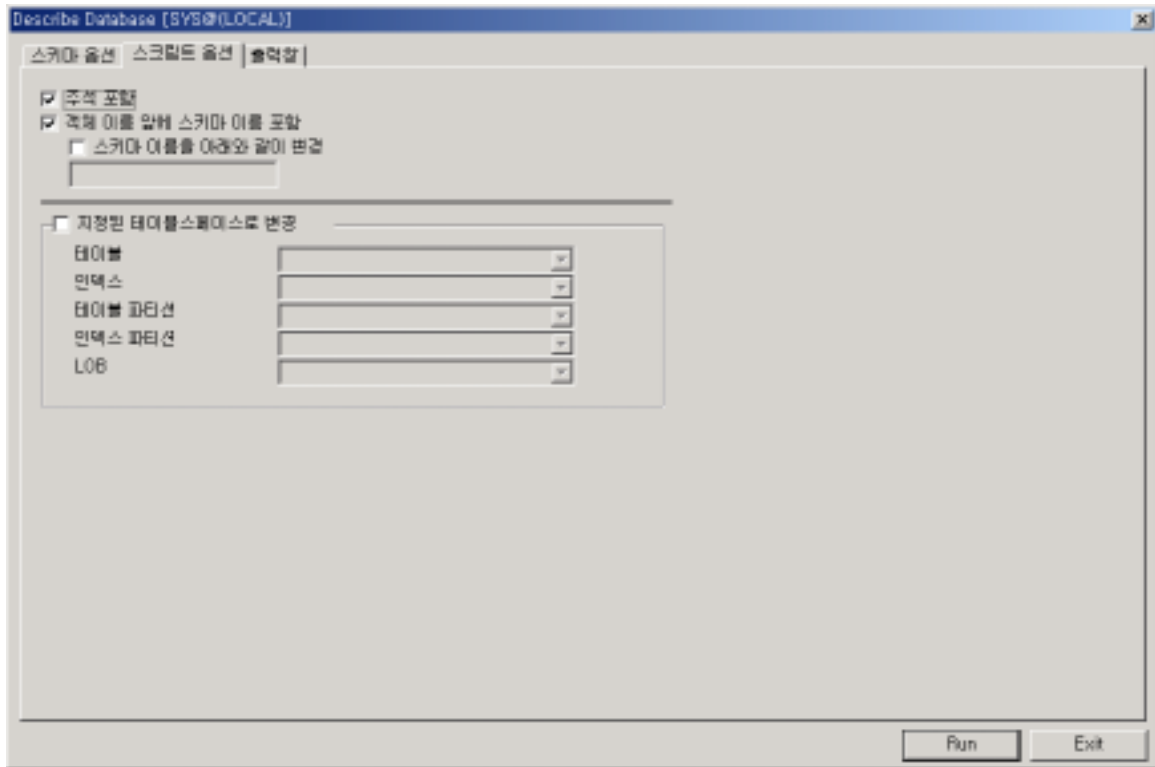
- [   ]   .
- [Run]   .

[30.3 –   ]
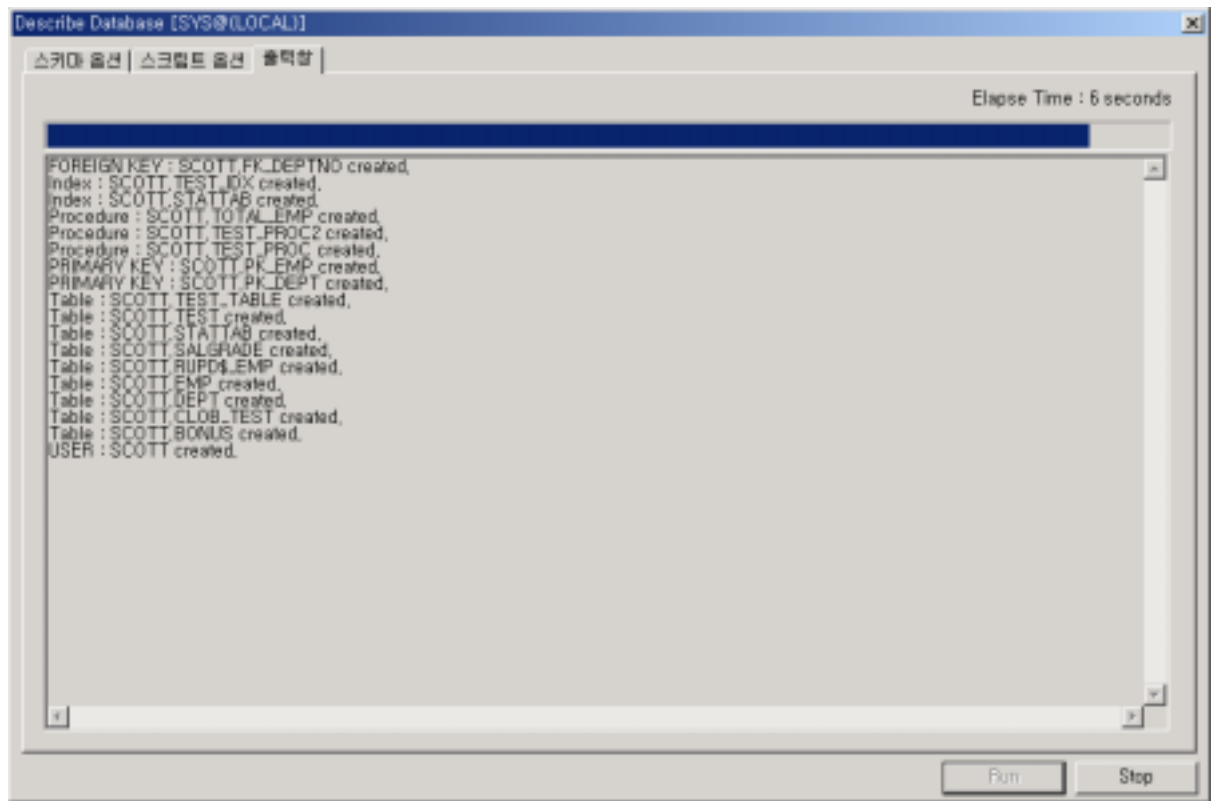
31. Log Miner Tool

Oracle Database

　　　　　　Oracle　　　　　　　　　　　　　. Oracle　　　　　　Log Miner

　　　　　　　　　　　　. Log Miner Tool　　　　　Log Miner　　　　　　　　　　　　.

　Log Miner Tool　　　　　　　　　　　　　　　Log Miner　　　　　　　　SQL Tool　　　Data
Dictionary Tool　　　　　　　　　Log Miner　　　　(v$logmnr_contents, v$logmnr_logs　　　)

　　　　　　　　　.

　Log Miner Tool　　　　　　　　　　　Oracle 8i　　　　　　　　　, DBMS_LOGMNR, DBMS_LOGMNR_D

　　　　　　　　　. Oracle 8i　　　　　　　init.ora　　　　UTL_FILE_DIR

　　　　　　　.　　　　Log Miner　　　　　　　　　　　　v$logmnr_contents,
v$logmnr_logs　　　　　　　　　　　　.

31.1 Log Miner Tool

✓　DBMS_LOGMNR_D
  ■　Dictionary Build
✓　DBMS_LOGMNR
  ■　Log Mining　Log　　/
  ■　Log Mining　　　/
  ■
✓　　　　SQL(Redo, Undo SQL)

31.2 Log Miner Tool

　　Log Mining

　　Log Mining

31.3 Log Miner Tool

( )　　　　　　　　　　　　　　　　　[DBA] → [　　　　　　　]　　　　　.

[　　31.1 – Log Miner Tool]
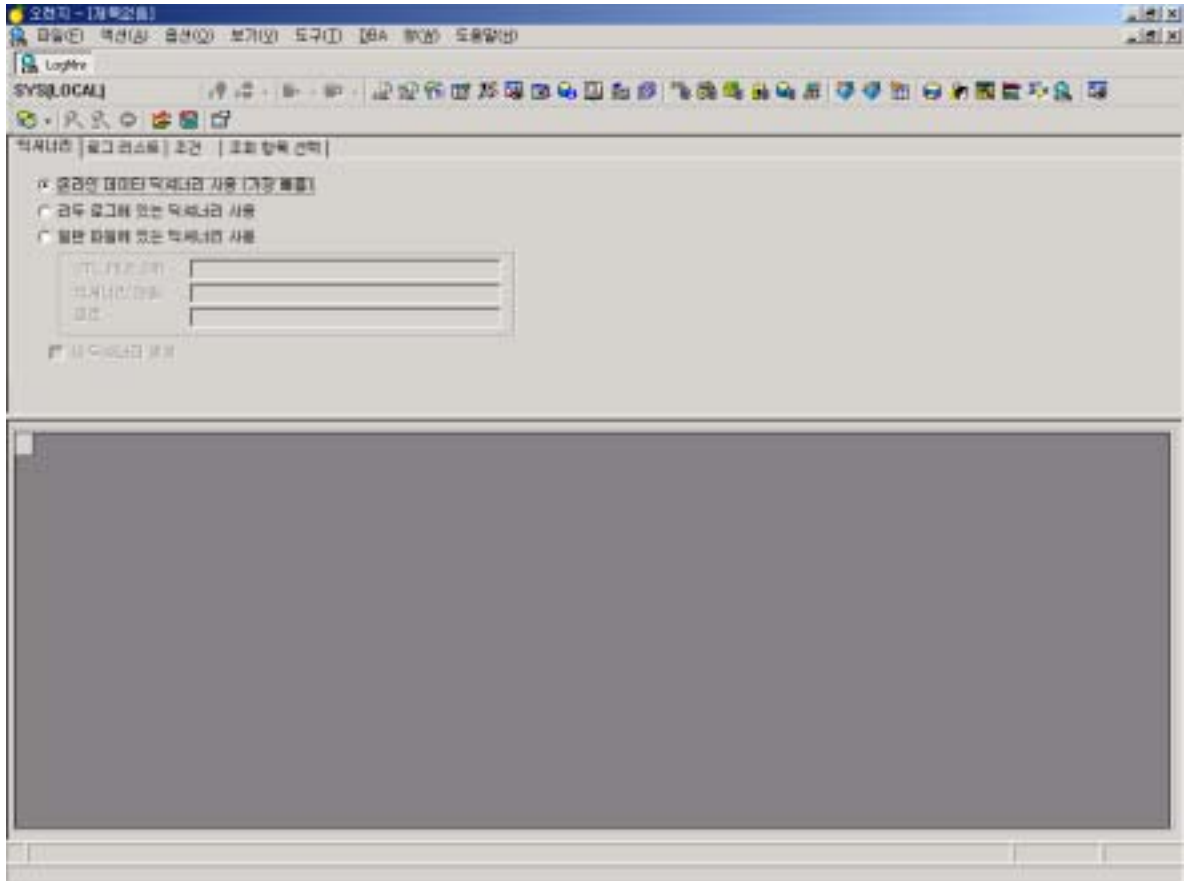
31.4 Log Miner

31.4.1 [Dictionary]

                                                            .

                     [　　　　　　]

   .

-                 (　　　　　) :

                                              . Oracle 9i

                  .

-                             :

                   .   [　　　　　　　　]

                        .

-                             :   init.ora   UTL_FILE_DIR

                      ,

  .

-                       :   "   ", "

                     "   . "   "

DBMS_LOGMNR_D.BUILD   .

                         DDL

  .

    [　　　31.2 –　　　　　　　　]
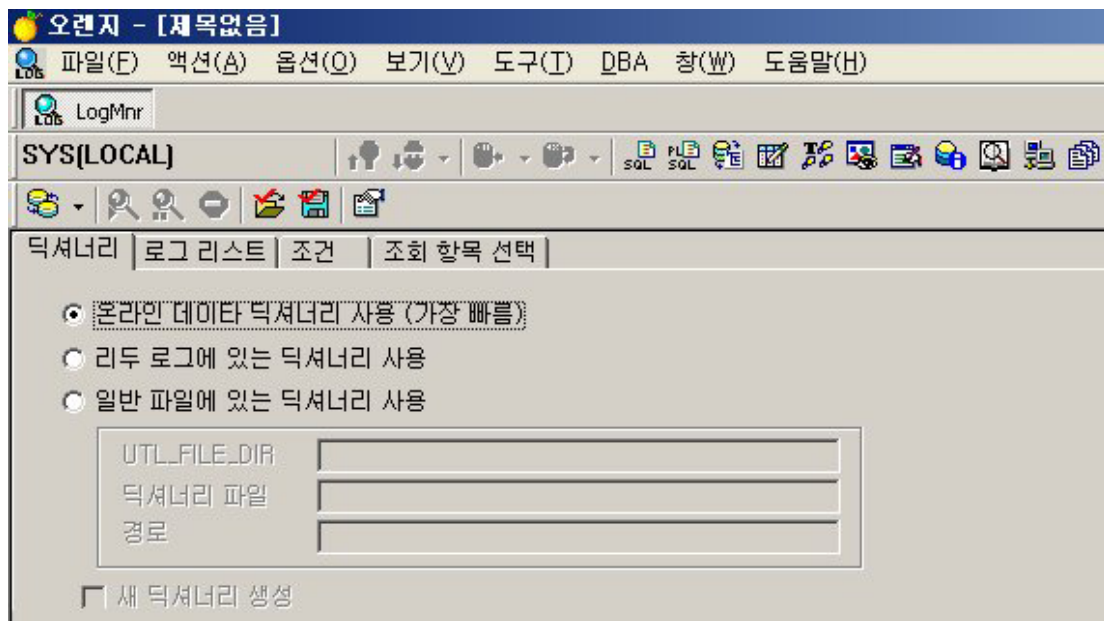
31.4.2 [Log Lists]

Log Mining   .
                                                    Log Mining   . Log
Mining   [FTP   ]   .
                        .

[31.3 –   ]
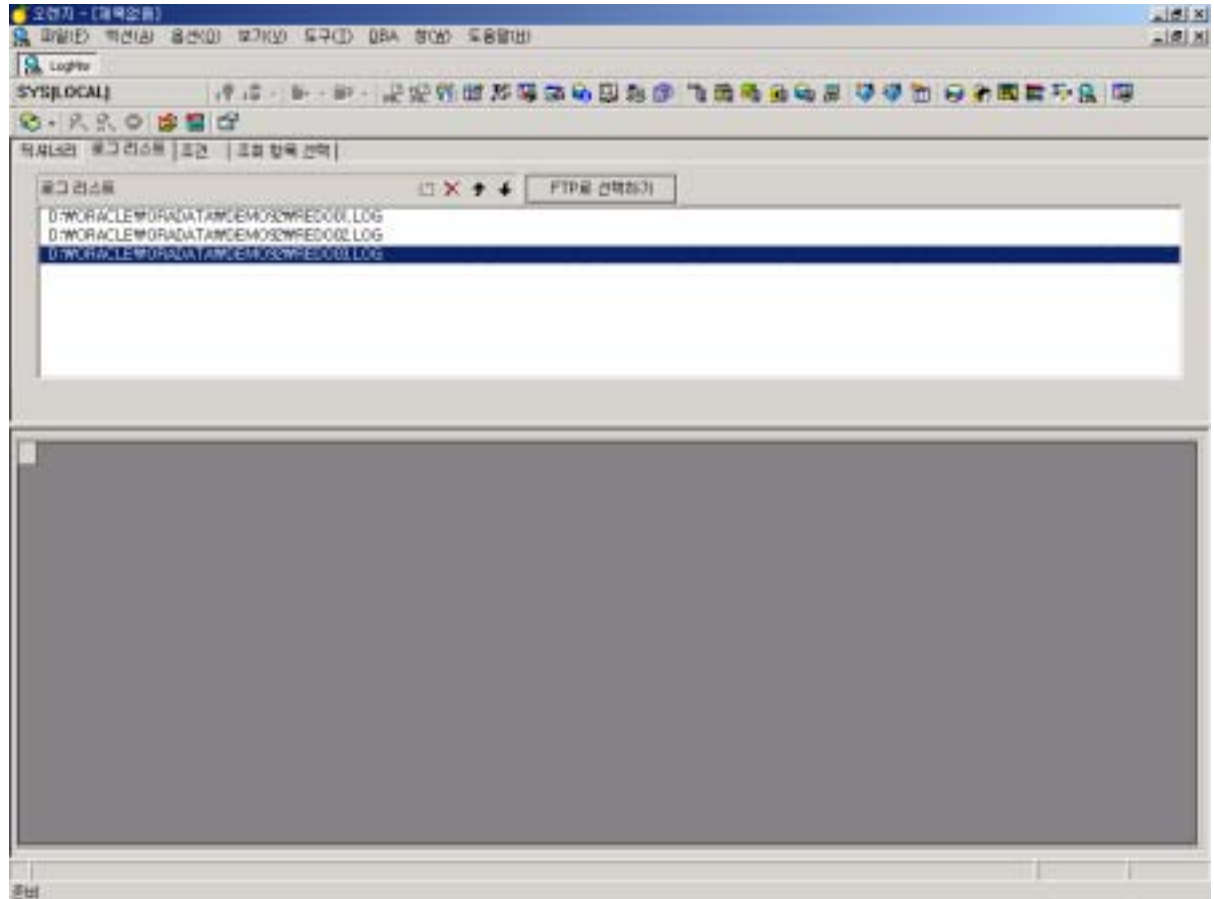
■   : [New]
                                                    .
■   : [FTP   ]
                        FTP   .

31.4.3 [Condition]

Log Mining 　　　　　SCN 　　　　　　　　　　　　　　　　　　　　　　　　　　.

　　　[　　　　　　] 　　　　　　　　　　　　　　　　　　　SCN 　　　　　　. [　　　　　　]

　　　　　　　　　　　　　　　　　　　　　　　SCN 　　　　　　　　　. V$logmnr_contents

　　　　　　　　SQL_REDO, SQL_UNDO 　　　　Log Miner 　　　　　　　　SQL

SQL_REDO 　　　　　SQL 　　　　　　SQL_UNDO

　.　　Commit 　　　　　　　　　　　　　　　　　　SQL_UNDO

　　.

　　　[　　　31.4 –　　　　]
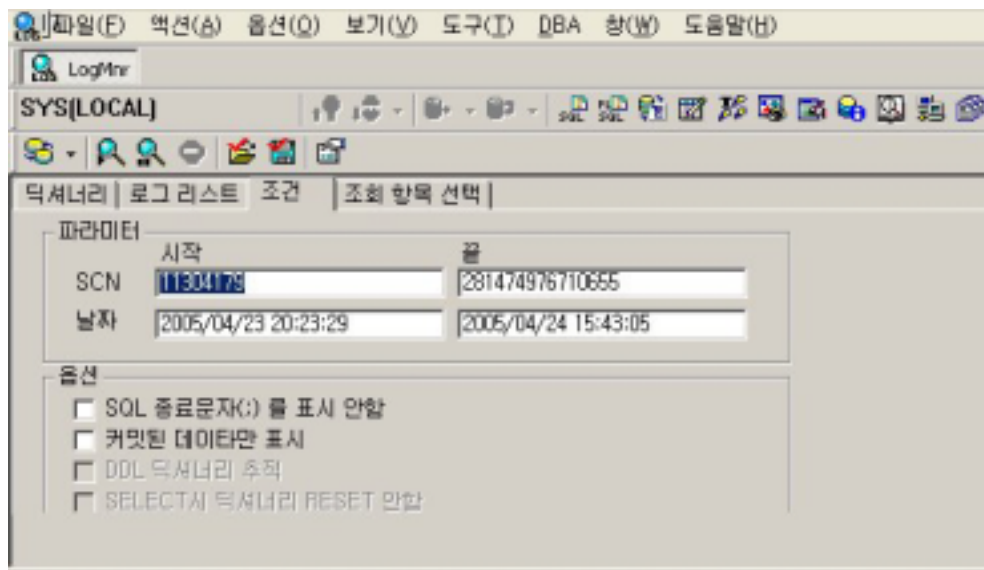
- ■ Parameters 　　　　　Mining 　　　　　　　　　.
- ■ SQL　　　　　(;)　　　　　　　: v$logmnr_contents 　　　SQL_REDO, SQL_UNDO 　　　　　　';'
  　.
- ■ 　　　　　　　　　　　: Commit 　　　　　　　　　　　　.　　　　　Commit
  　.
- ■ DDL 　　　　　　　: 　　　　　　Build 　DDL 　　　　　　　　　SQL_REDO,
  SQL_UNDO 　　　　.　　　　　　　　　　　(　　　　)
  　.
- ■ Select 　　　　　　　　　　: v$logmnr_contents
  　.　　　DDL 　　　　　　　　　　　　　.
- ■ No ROWID in Reconstructed SQL Statement : SQL_REDO, SQL_UNDO 　　　ROWID
  　.　　SQL_REDO, SQL_UNDO 　　　　　　　　.　　　　Oracle 10g
  　.
- ■ Print Pretty SQL : 　　　SQL_REDO, SQL_UNDO 　　　SQL 　　　　　　.

Oracle 10g 에서만 지원된다.

■ Continue Mining : 현재 세션에서 이전에 Log Mining 한 이력이 있는 경우에 활성화되어 이전의 Log Miner
결과에 이어서 분석할 수 있도록 한다. Oracle 10g
에서만 지원된다.

31.4.4 [Columns]

v$logmnr_contents 의 조회할 칼럼을 선택한다.

다음은 그 예이다.

[그림 31.5 – 조회 항목 선택 탭   ]
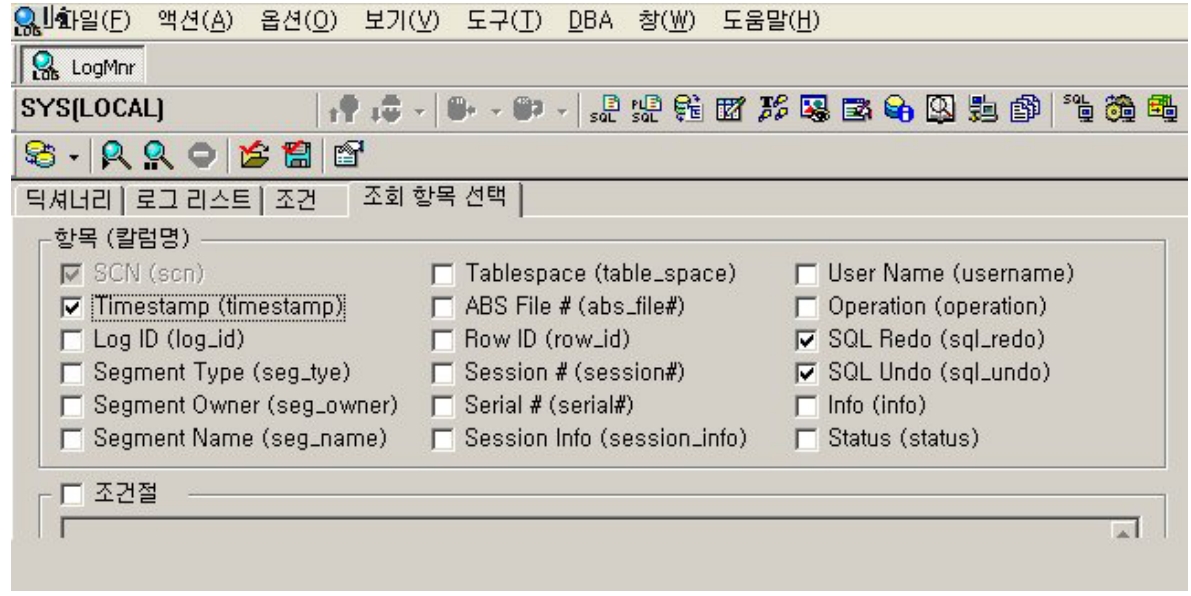
■   (칼럼명) : 조회할 항목을 선택한다.   기본적으로 SCN, Timestamp, SQL Redo, SQL Undo
가 선택되어 있다.

■   조건절 : 조회할 조건절을 입력한다.   (where)
절의 내용을 입력한다. 복잡한 조건절을 입력할 수 있다.

31.5 Log Mining Session

31.5.1 Log Mining Session

Log Miner   [31.4 Log Miner   ]

        Start LogMnr Session   (🔍)   Log Mining   .   [
        31.6 – Log Mining   ]   . Log Miner   .

[31.6 – Log Mining   ]

31.5.2

Log Miner는 SQL_REDO와 SQL_UNDO를 생성할 수 있으며 이 SQL을

. "Exec Redo SQL"을 선택하면 SQL_REDO를

SQL을 , "Exec Undo SQL"을 선택하면 SQL_UNDO의 SQL을

. SQL을

.

"Exec Undo SQL", "Exec Redo SQL"을

. "Exec Undo SQL"은 (   )   , "Exec Redo SQL"은

(   )   .

.
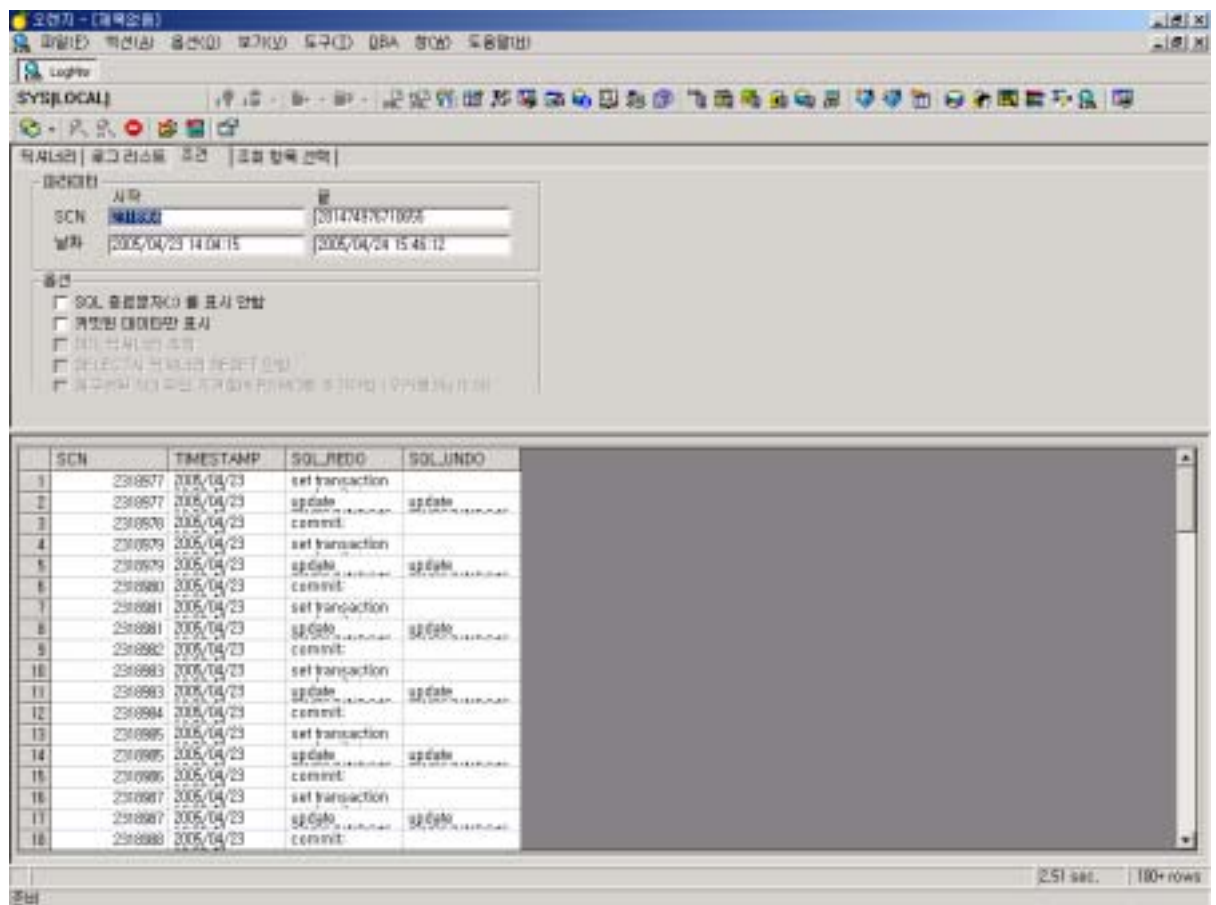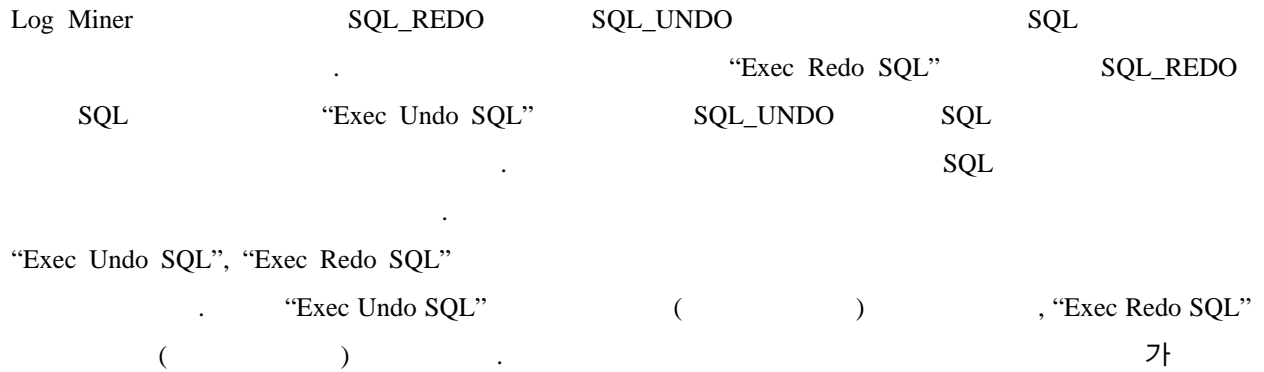
[31.7 – Log Mining   ]

31.5.3 Log Mining Session

Log Mining을   End LogMnr Session   (🔍)   Log

Mining   . Log Mining   SQL Tool   Data Dictionary Tool

. Log Mining   Log Miner

.

31.6 Log Miner

. "   ”   .

            "   ”   , 1000   100
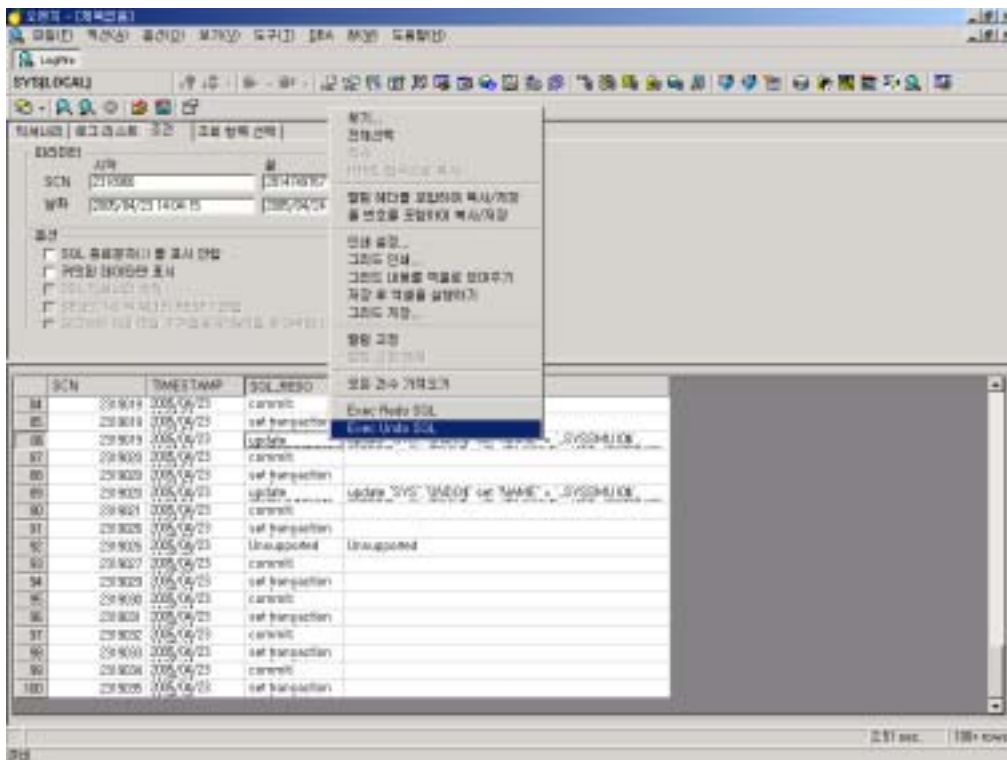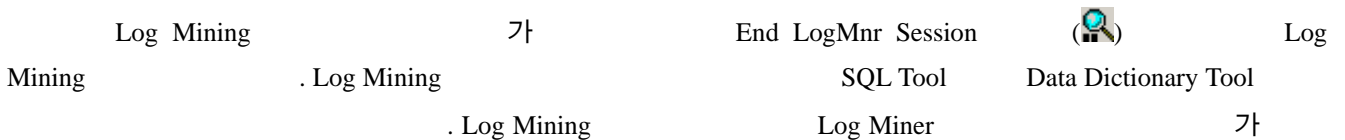
                              10   ,   100

                                              10   .

[31.8 – Log Miner   ]

32. Data Dictionary Tool

Data Dictionary Tool

.

.   ,
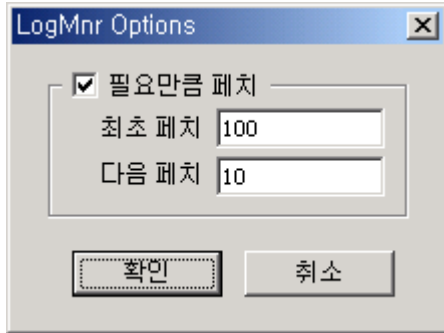
SQL

.

.

32.1 Data Dictionary Tool

✓   V$

✓   DBA_*

✓

✓   Comment, Describe

32.2 Data Dictionary Tool

32.3 Data Dictionary Tool

32.3.1 Data Dictionary Tool

[   ] [   ]   [   ]   Data Dictionary Tool
   [   ]   Data Dictionary Tool
   . Data Dictionary Tool   DBA   ,   Data
Dictionary Tool   .

32.3.2

Data Dictionary Tool   [V$ View List]   [DBA List]

                                                        Comment

.

[32.1 – V$ List   ]
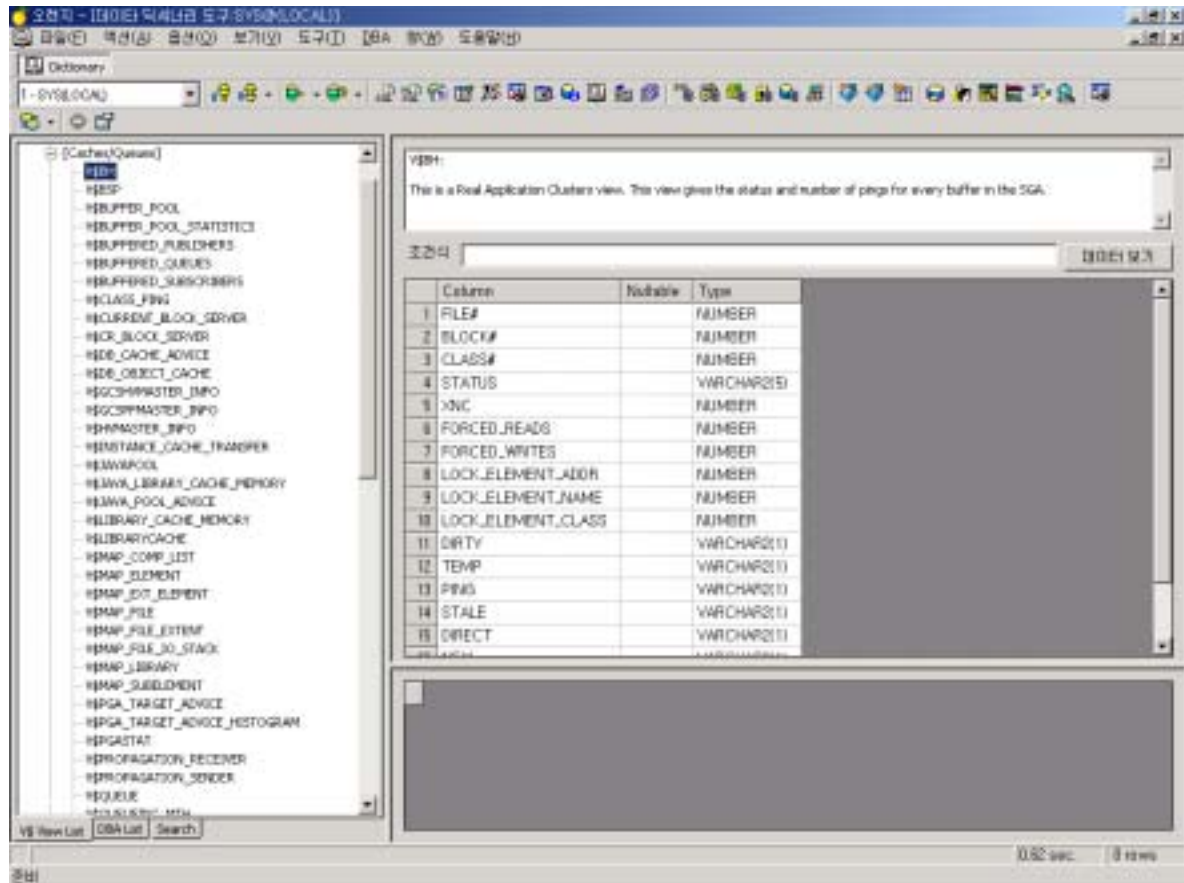
[32.2 – DBA List   ]
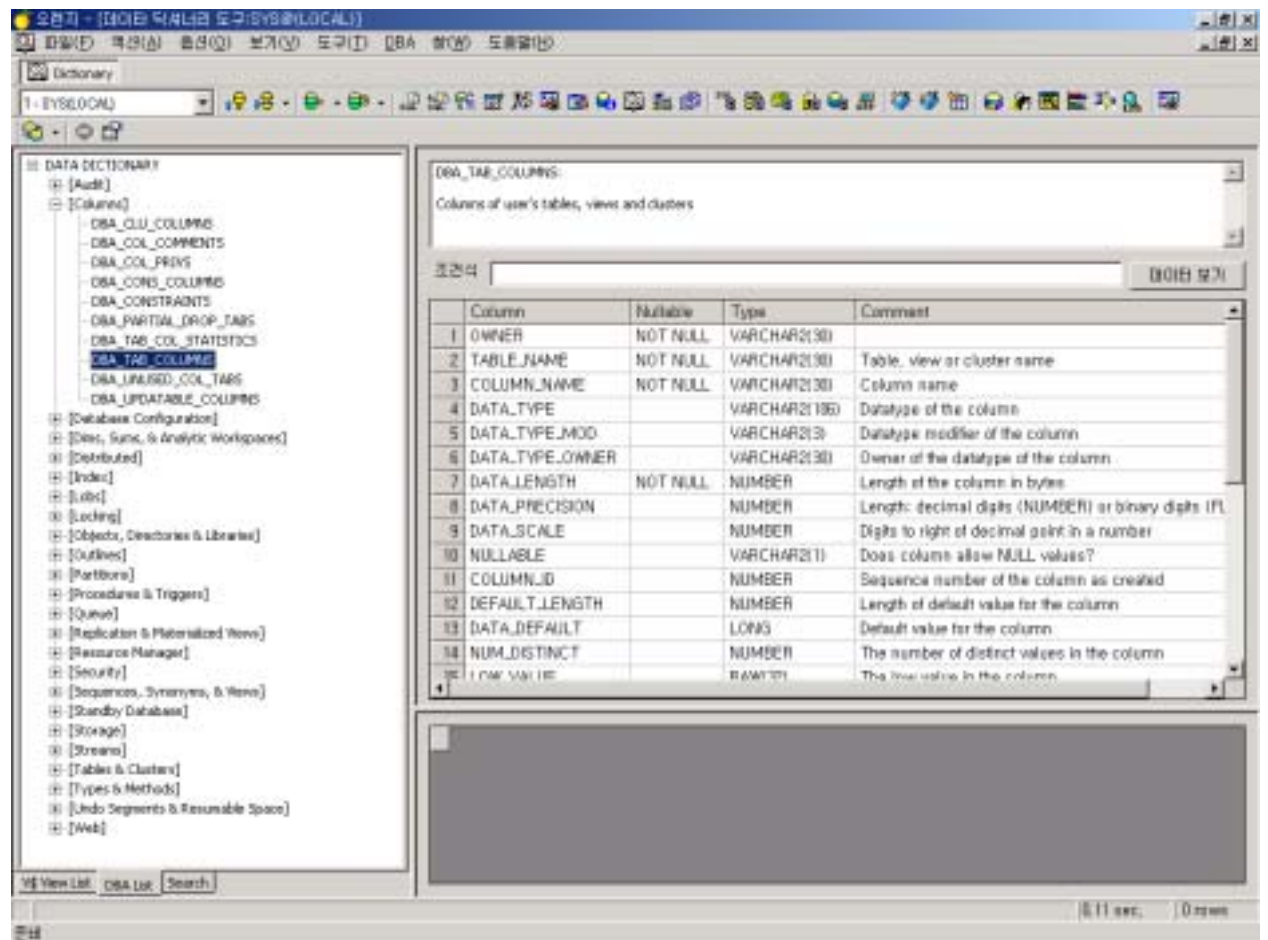
[32.1 – V$ List   ], [32.2 – DBA List   ]   [Get Data]
                                    .

                                    2   .

   Ctrl + Down Arrow   Comment/Columns

   Ctrl + Up Arrow

   Ctrl + Left Arrow   Comment/Columns

   [32.3 –   ]
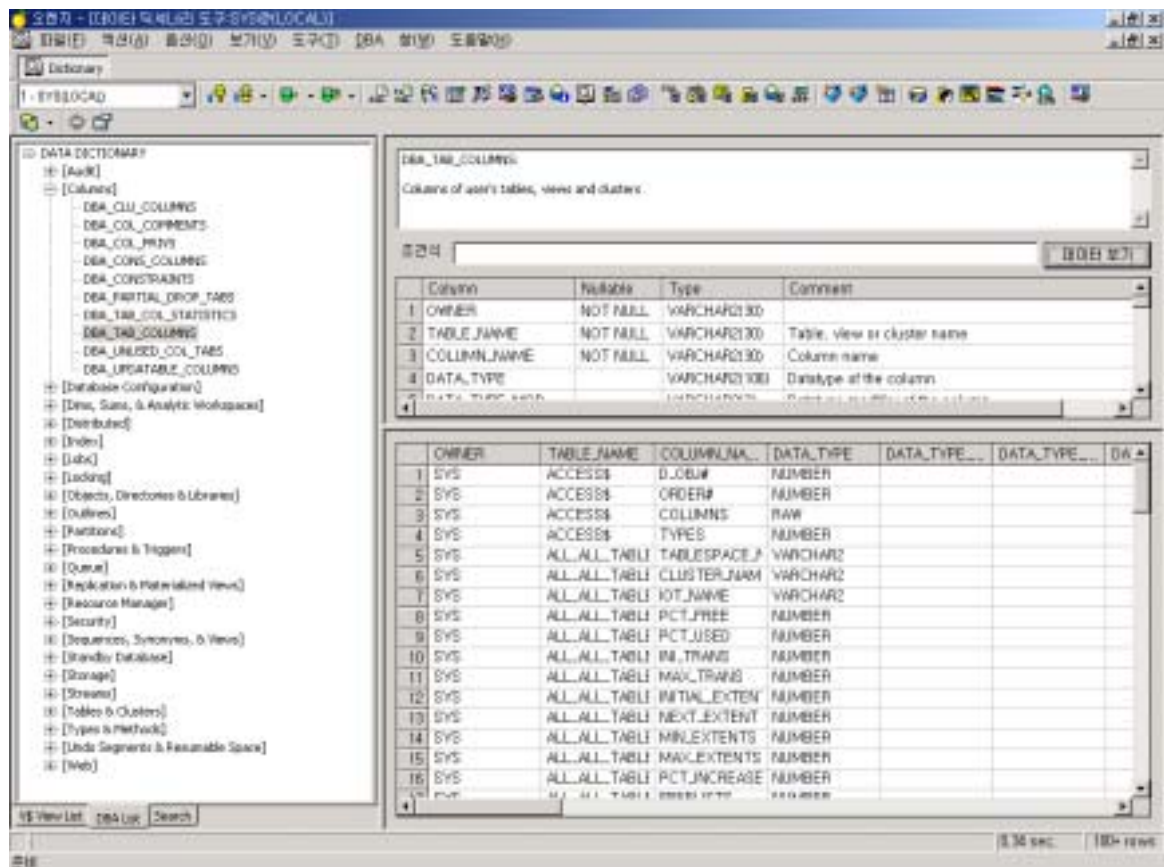
                                    Cancel(⊘)   .

32.3.3 Search

Data Dictionary Tool 　　　[V$ View List], [DBA List] 　　　　　　　　　　　　　　　　　　　　.

　　　　　　　　　　　　　　　　　　　　　.

　　　[V$ View List], [DBA List] 　　　　　　　　　　　　　　　　　　　　　　　　　[Search]

　　　　　　　　　　. [Search]

　　　　　　. [Search] 　　　　　Edit Box 　　　　　　　　　　　　　　　　　　(3　　　　　)

　　　　　　　　　　　.

　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Comment

Describe 　　　　　　　　　　　. 　　　　[Get Data] 　　　　　　　　　　　　　　　　　　.

[　　　32.4 – Search　　]
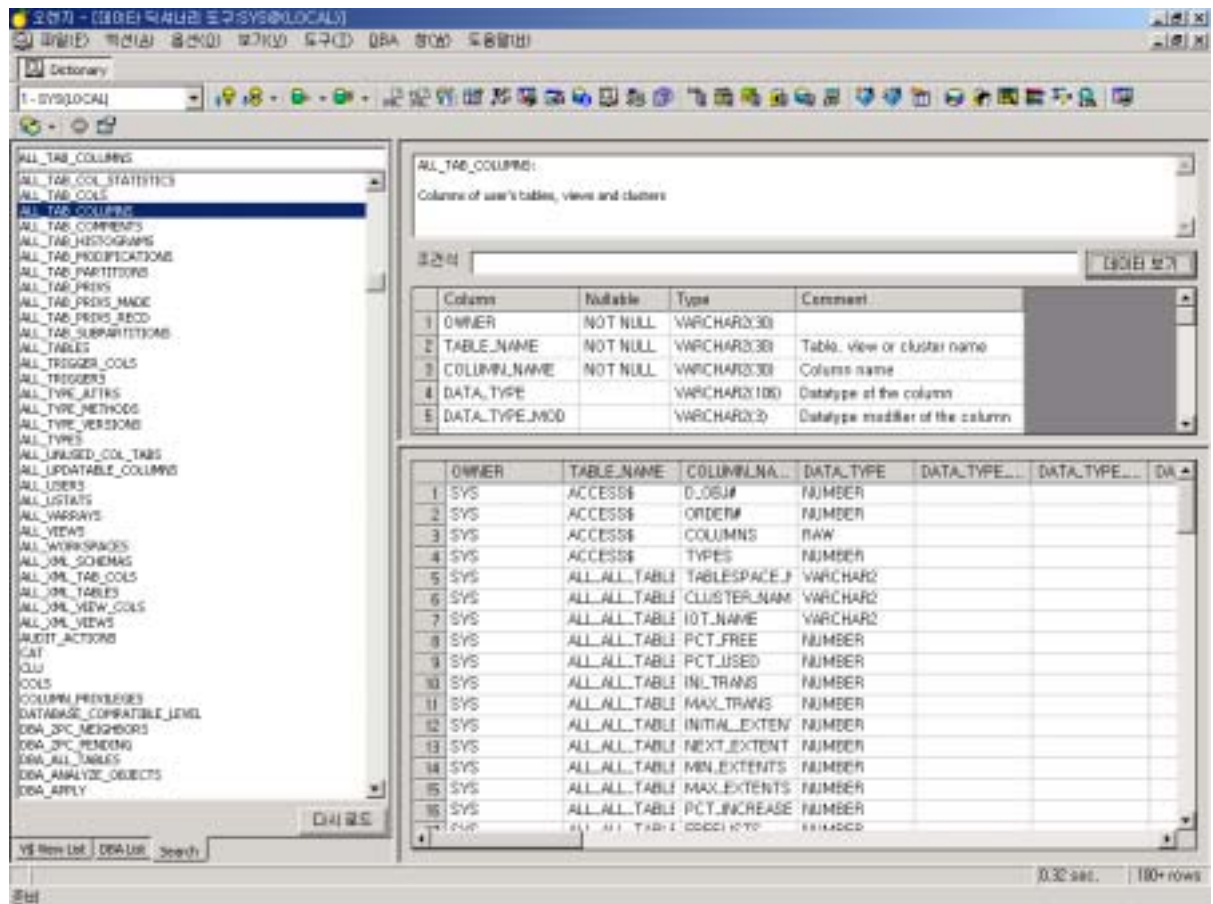
32.3.4 Options

Log Miner

A　　　　(Editor)

SQL Tool, PL/SQL Tool, Plan Tool　　　　　　　SQL　　　　　　　　　　　　　　　　　　.

A.1　Editor

✓　　　　　　　　　　　　　　　　　　　　　　　　Undo/Redo
✓　Visual Basic, C/C++, Power Builder　　　　　　Programming Language Code
✓　Find/Replace
✓　Block Shifting　　　　　　Block
✓　　　　　　　　　　　　　　　　　　Auto Complete
✓　Book Mark

A.2　Editor

A.2.1　Undo / Redo

Undo　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　.　　　　　[Edit] → [Undo]
　　　　　　　　　　Ctrl+Z　　　　　　　.

Redo　　　　　Undo　　　　　　　　　　　　　　　　　　　　　　　　　　.　　　　[Edit] →
　　　　　　　[Redo]　　　　　　　　Ctrl+Y　　　　　　　.

A.2.2　Copy & Paste

Clear Content　　　　　　　　　　　　　　　　　　　　　　　　　　.　　　[Edit] → [Clear Content]
　　　　　　　　　　　　.

Cut　　　　　　　　　　　　　　　　　Clip　Board　　　　　　　.　　　　[Edit] → [Cut]
　　　　　　　　Ctrl+X　　　　　　.

Copy　　　　　　　　　　　　　　Clip　Board　　　　　.　　[Edit] → [Copy]　　　　　　Ctrl+C
　　　　　　　　　.

Paste　　　　Clip　Board　　　　　　　　　　　　　.　　　[Edit] → [Paste]
　　　　　　　Ctrl+V　　　　　　.

Delete　　　　　　　　　　　　　　　　　　　　.　　[Edit] → [Delete]　　　　Del
　　　　　　　.

Select All　　　　　　　　　　　　　　　　　　　　　.　　[Edit] → [Select All]
　　　　　　　Ctrl+A　　　　　　.

Copy as	SQL Copy Visual Basic, C/C++, Power Builder
Programming	Code Paste . [Edit] → [Copy as Programming Language Code] →
Language Code	(Each Language) . SQL SQL
	Programming Language Code Copy ,
	Programming Language Code Copy .
	Programming Tool Ctrl+V Paste .
Paste from	Visual Basic, C/C++, Power Builder Programming Tool SQL
Programming	Copy Paste . Programming Tool
Language Code	Ctrl+C Copy , [Edit] → [Paste from
	Programming Language Code] → (Each Language) Paste .

A.2.3 Find / Replace

Find . [Edit] → [Find]

Ctrl+F .

[A.1 -   Find]
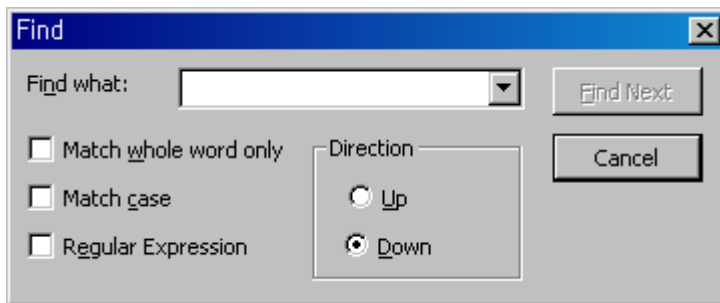
- ■ Find what :   .
- ■ Match whole world only :   .
- ■ Match case :   .
- ■ Regular Expression :   .
- ■ Up :   cursor   .
- ■ Down :   cursor   .

Find Next   .

[Edit] → [Find Next]   F3   .

Find Previous   .

[Edit] → [Find Previous]   Shift+F3   .

Find

Incremental   .   [Edit] → [Find Incremental Next]

Ware Valley

Next 선택한다.

Find

Incremental . [Edit] → [Find Incremental Previous]

Previous .

Replace . [Edit] →

[Replace] Ctrl+H .

[그림 A.2 - Replace]

- Find what : .
- Replace with : .
- Match whole word only : .
- Match case : .
- Regular Expression : .
- Selection : .
- Whole file : .
- Find next : *Find what* field .
- Replace : *Replace with* field .
- Replace all : *Find what* field *Replace with* field .
- Cancel : Replace .

A.2.4 Delete

Delete . [Edit] → [Delete] →

[Delete] Del .

Backward . [Edit]

Delete → [Delete] → [Backward Delete] Backspace .

Delete Word . [Edit] → [Delete] → [Delete Word]

Ctrl+Del .

Backward   .   [Edit]

Delete Word   → [Delete] → [Backward Delete Word]   Ctrl+Backspace   .

A.2.5 Move

Go to line   .   [Edit] → [Move] → [Go to line]

          Ctrl+G   . Go to line   Line Number

         [OK]   .

[A.3 - Go to line]

Go to last
change   [Edit] → [Move] → [Go to last change]   Ctrl+Shift+G   .

Line Down   .   [Edit] → [Move] → [Line Down]   Down

         .

Scroll Down   Editor   .   [Edit] → [Move] → [Scroll Down]

         Ctrl+Down   .

Line Up   .   [Edit] → [Move] → [Line Up]   Up

         .

Scroll Up   Editor   .   [Edit] → [Move] → [Scroll Up]

         Ctrl+Up   .

Left   .   [Edit] → [Move] → [Left]   Left

         .

Word Left   .   [Edit] → [Move] → [Word Left]

         Ctrl+Left   .

Right   .   [Edit] → [Move] → [Right]   Right

         .

Word Right   .   [Edit] → [Move] → [Word Right]

         Ctrl+Right   .

Page Up   .   [Edit] → [Move] → [Page Up]   Page

         Up   .

Page Down . [Edit] → [Move] → [Page Down]

Page Down .

Line Head . [Edit] → [Move] → [Line

Head] Home .

Editor Head Editor . [Edit] → [Move] → [Editor

Head] Ctrl+Home .

Line End . [Edit] → [Move] → [Line

End] End .

Editor End . [Edit] → [Move] → [Editor

End] Ctrl+End .

A.2.6 Shift

Increase Indent 4 . [Edit] →

[Shift] -> [Indent] Tab .

Decrease Indent 4 . [Edit] → [Shift]

→ [Decrease Indent] Shift+Tab .

A.2.7 Change Case

Lower Case . [Edit] → [Change Case] →

[Lower Case] Ctrl+U .

Upper Case . [Edit] → [Change Case] →

[Upper Case] Ctrl+Shift+U .

Capitalize

. [Edit] → [Change Case] → [Capitalize] .

Sentencize

. [Edit] → [Change Case] → [Sentencize] .

Invert Case

. [Edit] → [Change Case] → [Invert Case] .

A.2.8 Auto Complete

Auto Complete

. [Edit] → [Auto Complete]

Ctrl+Space .

A.2.9 Match Bracket

Match Bracket

　　　　　　　　　　　　　　　　　　　　.　　　　　　　[Edit] → [Match Bracket]　　　　　　　Ctrl+[　　　　　Ctrl+]

　　　　　　　　　　　　　　　　　　　　　　　　　　　.

Match　　Select

Bracket　　　　　　　　　　　　　　　　　　　　　　　　　　.　　　　　　　[Edit] → [Match Select Bracket]

　　　　　　　　　　　　Ctrl+Shift+[　　　　Ctrl+Shift+]

　　　　　　　　　　　　　　　　　　　　　　　.

A.2.10 Book Mark

Book Marks　　　　　　　　　　　　　　　　　　　　　　　　Book　Mark

　　　　　　　　　　　　　　　　　　.　　　　　　　　　　　　　　　　,　　　　　　　[Edit] → [Book

　　　　　　　　Marks] → [Book Mark 0~9]　　　　　　　　　Ctrl+0~9　　　　　　Book Mark

　　　　　　　. Book Mark　　　　　　　　　　　[Edit] → [Book Marks] → [Clear All

Bookmarks]　　　　　　　.

Goto Bookmark　　　　Book　Mark　　　　　　　　.　　　　　[Edit] → [Goto Bookmark]

　　　　　　　　Alt+0~9　　　　　　　.

Toggle　　　　　　　　　　　　Book　Mark　　　　　　　.　　　　　　　　　　　　　　　,

Bookmark　　　　[Edit] → [More Bookmarks] → [Toggle Bookmark]　　　　　Ctrl+F2　　　　　.

Next Bookmark　　　　　　　　　　Book　Mark　　　　　　　　　.　　　　[Edit] →

　　　[More Bookmarks] → [Next Bookmark]　　　F2

　　　　　　　　　　　　　Book Mark　　　　　.

Previous　　　　　　　　　Book　Mark　　　　　　　　.　　　　　[Edit] →

Bookmark　　　[More Bookmarks] → [Previous Bookmark]　　　　Shift+F2

　　　　　　　　　　　　Book Mark　　　　.

Clear　　All　　　　　　　　　Book　Mark　　　　.　　　[Edit] → [More

Bookmarks　　　Bookmarks] → [Clear All Bookmarks]　　　　Ctrl+Shift+F2　　　　.

　　　　　　　Book　Mark　　　　　　　　　[Edit] → [Book Marks] →
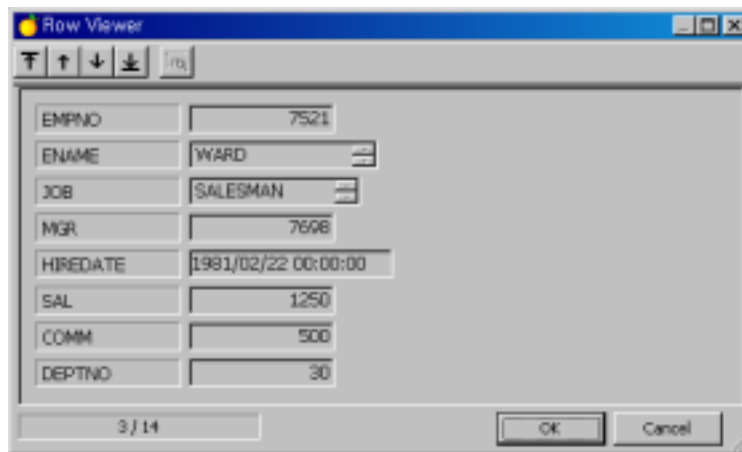
　　　[Clear All Bookmarks]　　　　　.

B. Row Viewer/Editor

Row Viewer 는 SQL Tool 이나 Plan Tool 에서 조회 결과 데이터를 한 건씩 확인할 수 있는 기능이다. Row
Editor 는 Table Editor 에서 데이터를 한 건씩 확인하거나 수정할 수 있는 기능이다. Row Editor 의 사용법은
수정 기능이 추가된 것 외에는 Row Viewer 와 동일하다.

B.1 Row Viewer/Editor

- ✓ SQL Tool, Plan Tool
- ✓ Table Editor
- ✓ ASCII, Binary, Octal, Decimal, Hexadecimal

B.2 Row Viewer/Editor
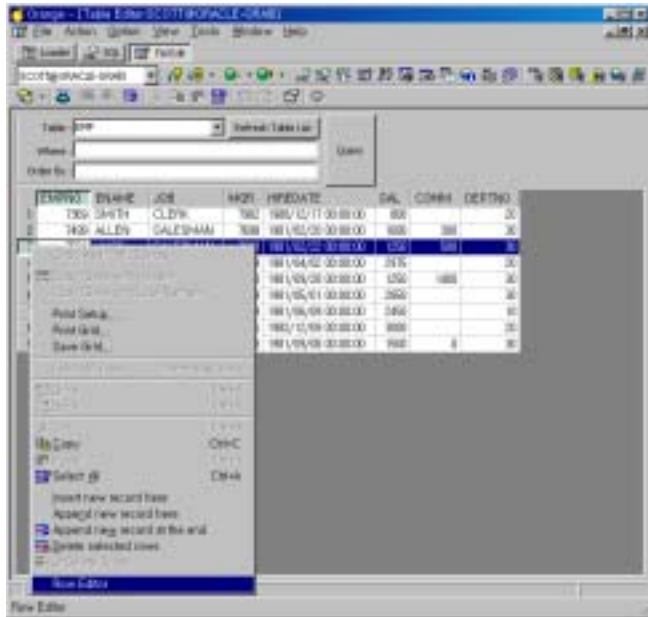
- ✓ SQL Tool 과 Plan Tool 에서 조회 결과 데이터를 Grid 에서 한 건씩 확인하려면
  [Row Viewer] 메뉴를 선택하면 Row Viewer 창이 나타난다.

  [그림 B.1 - Row Viewer]

- ✓ Table Editor 에서 데이터를 한 건씩 확인하거나 수정하려면 [Row Editor] 메뉴를 선택하면
  Row Editor 창이 나타난다.

[　　　B.2 – Row Editor　　　　　]

[　　　B.3 – Row Editor]

EMPNO	7521
ENAME	WARD
JOB	SALESMAN
MGR	7698
HIREDATE	1981/02/22 00:00:00
SAL	1250
COMM	500
DEPTNO	30

3 / 14   OK   Cancel
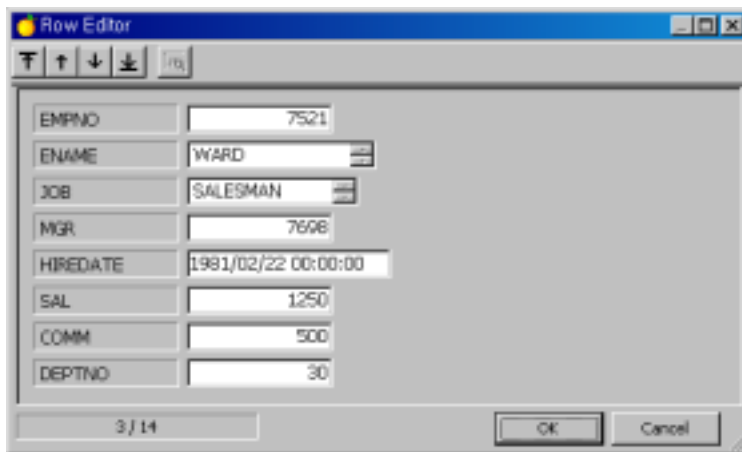
✓ Row Editor　　　　　　　　　　　　　　　　[OK]　　　　　　　　　　　　　　Table Editor
　　　　. (　　　　　　　　　　　　　Table Editor　　　　　　　　　　　　　　　　　　Undo
　　　　)

✓ 　 　　　　　　　　　　　　　　　, 　　　　　　　　　　　　　　, 　　　　　　　　　　　　　　,
　　　　　　　　　　　　　　.
　　　　　　　　　　　.

✓ 　　　　　　　　　　　　　　　　　　　　　[Show value]　　　　　　　　　
　　　ASCII, Binary, Octal, Decimal, Hexadecimal　　　　　　　　　　　　　　　.

439

[　　B.4 -　　　　　　　　　　　Hexadecimal　　　　　　　]

C. ASCII Table

ASCII Table   ASCII   .

                                               .

C.1 ASCII Table

✓ ASCII

✓

C.2 ASCII Table

✓ [View]   ASCII Table   ASCII Table   .

   [C.1 -   ASCII Table]

✓ ASCII   "Insert"

                                         .

✓ "Font"   .