Oracle 9*i* Applications Server
설치 및 데모구축 설명서
(Oracle 9iAS 1.0.2.2 기준)

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ORACLE

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1. Introduction

본 문서는 예전에 작성된 “초보자를 위한 iAS설정 및 Demo 가이드” 의 3차 개정판으로 Oracle 9i Applications Server (1.0.2.x) 를 기준으로 설치방법과 설치후 각 module 별 configuration, demo 환경을 설명한 것으로 Oracle 9i Application Server 를 처음 대하는 일반 사용자도 쉽게 설치/테스트 할 수 있도록 기술한 문서이다. 그외 Apache 및 Oracle 관련한 기술들을 초급개발자 수준으로 참조하기 쉽게 정리하였다.

그리고 여기에 나오는 내용들은 필자가 고객지원시 꼭 필요하다고 생각되는 내용뿐만 아니라 Oracle의 Metalink 에 등록된 자료중 사용자들이 알아야할 사항들을 정리한 것이다. 그외 한국오라클 직원 여러분들의 팁들도 여기에 정리한 것으므로 그분들의 노력에도 감사하다는 말씀을 이 문서를 통해 전달하는 바이다.

마지막으로 아직 이 문서는 완전한 것이 아니므로 필요에 따라서 추가되는 부분도 있을 것이므로 http://otn.oracle.co.kr 에 수정된 내용을 계속 update할 예정이므로 많은 관심을 가져 주기 바란다.

참고로 여기서 작업된 내용들은 모두 viewlet builder를 이용하여 만들어 놓았으므로 자가학습형태의 자료를 원한다면 연락바란다.

1.1 Oracle 9iAS 소개

Oracle 9iAS 는 인터넷 애플리케이션의 모든 요구를 수용할 수 있는 다양한 개발 접근방법과 산업부문의 최신 표준기술 및 프로그램 개발 언어를 지원하는 플랫폼을 제공하며, Enterprise Information Portal을 구성하고 운영할 수 있는 완벽한 솔루션을 제공하여 통합용 프레임워크 및 기업정보의 안전한 액세스, 개인별 환경 및 서비스 일치를 제공하여 포탈 운영 및 확장을 보장해준다. Oracle 9iAS는 이러한 정보 및 애플리케이션을 일반 웹브라우저 뿐만아니라 무선휴대단말기등의 이동장치에 전달할 수 있는 독특한 무선기능을 제공한다. 그리고 웹 및 데이터베이스 캐시 기능을 제공하여 웹사이트의 성능과 확장성을 향상시켜 주며, 전략적 의사결정을 지원할 필요가 있는 중요한 비즈니스 인텔리전스 데이터의 추출 및 분석이 가능한 통합 비즈니스 인테리전스 솔루션을 제공한다.

다음은 Oracle 9iAS의 기능을 소개한 도식화한 그림이다.

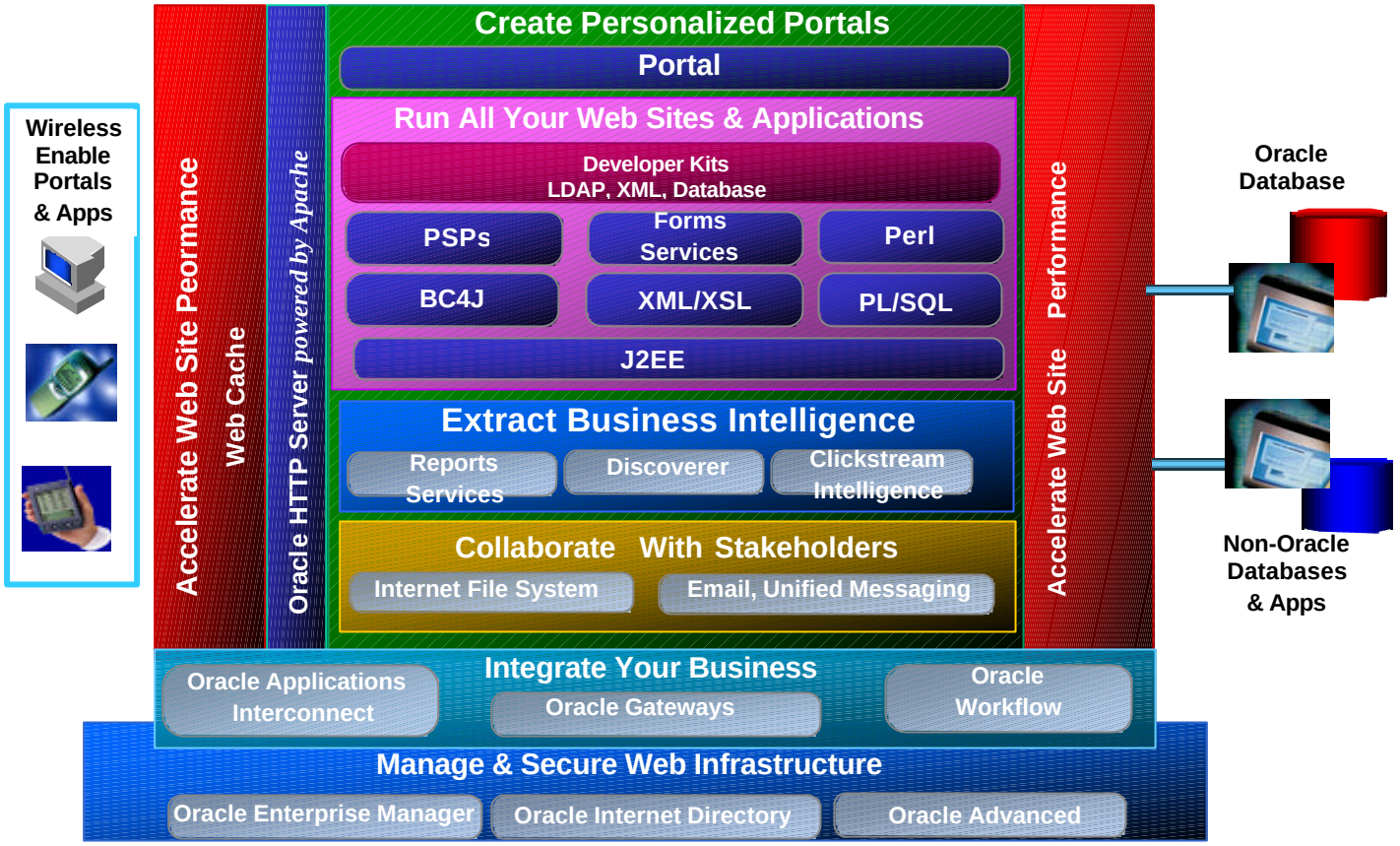


그림 1 Oracle9iAS 구성도

2. Oracle 9iAS 설치준비

2.1 System Requirements

현재 Oracle 9iAS는 Windows NT/2000 을 포함하여 거의 모든 Unix OS 와 Linux 용으로 포팅되어 있으므로 설치전 필요한 하드웨어 / 소프트웨어의 요구사항은 Installation guide를 참조하기 바란다.

2.1.1 Hardware Requirements

Windows

Hardware Items	Required
CPU	Intel 호환 486 이나 그이상 Processor
Memory	128M RAM
Disk Space	- Minimal (HTTP only): 650MB - Standard Edition : 1.6GB - Enterprise Edition : 2.56GB
Temp Disk Space	500MB

Solaris

Hardware Items	Required
CPU	Sparc Processor
Memory	128MB RAM
Disk Space	- Minimal (HTTP Only) : 650MB - Standard Edition : 1.6GB - Eenterprise Edition : 3.30 GB

2.1.2 Software Requirement

Windows

Software Items	Version
Operating System	- Microsoft Windows NT ServicePack 3 (minimum) or 5 (recommanded) - Microsoft Windows 2000
Virtual Memory	약 360MB

Solaris

Software Items	Version
Operating System	**Solaris 2.6** Motif Runtime patch: 105284-20 or higher Kernel Jumbo patch: 105181-20 or higher Linker patch: 107733-06 or higher Libthread patch: 105568-16 or higher Libc patch: 105210-27 or higher

Software Items	Version
	XIM patch: 106040-13 or higher
	Solaris 2.7 Libthread patch: 106980-10 or higher Kernal cluster patch106541-09 or higher /kernal/fs/sockfs patch: 109104-01 or higher /usr/lib/fs/fsck patch: 107544-02 or higher Motif Runtime patch: 107081-19 or higher XIM patch: 107636-03 or higher OpenWindows patch: 108376-03 or higher
	Solaris 2.8 None required at this time

2.2 Pre-Installation Tasks

2.2.1 Deinstall/ cleanup

Install전, 이전에 잘못 설치되었거나 이전 버전의 iAS 버전이 있으면 Oracle Universal Installer를 이용하여 Deinstall한다. 특히 Windows System의 경우 Deinstall한 후에 Registry 정리를 확인하기 위해 Reboot 도 가능하면 해주는 것이 좋다.

Windows NT / 2000

1. ORACLE_HOME 디렉토리의 모든 file 들을 삭제한다.
2. 레지스트리 에디터인 regedit을 이용하여 모든 Oracle Service들을 삭제한다.

   HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001.

   HKEY_LOCAL_MACHINE\SYSTEM\ControlSet003.

   HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet

3. Oracle9i Application Server에 관계된 모든 PATH 환경변수를 제거한다.

   (시작 -> 설정 -> 제어판 의 시스템 아이콘에서 환경 탭 페이지의 PATH 변수에서 Oracle 9I AS에 관련된 것을 제거)

2.2.2 Backend Database 준비

Oracle 9iAS Database Cache를 위한 Original Database의 Listener.ora와 tnsnames.ora 를 준비한다.

Oracle 9iAS 의 Database Cache를 설치하려 한다면 Original Database를 tnsnames.ora 와 Original Database에서의 listener.ora 준비작업이 필요하다.

Oracle 9iAS Configuration assistant에서 사용될 sysdba로 연결될 remote password file을 설정한다.

Origin Database에서는 remote password file을 설정해 주어야 한다.

orapwd file=<filename> password= <password> entries=<counts>

☞ **Notes : Windows 의경우 <ORACLE_HOME>\database 에 위치하고 Solaris 등의 Unix 에서는 <ORACLE_HOME>/dbs 에 위치한다.**

Oracle 9iAS Portal 설치를 위한 Tablespace 를 준비한다.

Oracle 9iAS 부터는 Oracle Portal Configuration 이 기본적으로 포함되어 있으며 이를 위해 System tablespace 와 Portal 이 설치될 User의 Tablespace 가 추가적으로 필요하다. System tablespace 의 경우 약 100MB, User Tablespace 의 경우 약 150MB를 늘려 주어야 한다.

```
```

위 SQL 을 이용하여 필요한 만큼의 양을 tablespace add한다. 간단히 resize명령을 이용하면 쉽다.

```
Alter database datafile '<file_name>' resize 300m;
```

그리고 충분한 크기의 online redo log 를 준비하는 것이 좋다. 현재 크기의 redo log를 좀 더 큰 redo log로 준비하려면 오라클 고객지원 홈페이지의 내용을 참조하라.

http://www.oracle.co.kr/rc/owa/rcbul.Dselect?ino=10292

2.3 Service Port 점검

설치전 Oracle 9iAS에서 사용되는 TCP Port 를 알아두는 것이 도움될 것이다.

Application	Port
Oracle HTTP Server	7777 (Unix), 80 (Windows), 443 (SSL) , httpd.conf 8007 (Jserv) jserv.conf
OEM Website	3339, oem.conf
DB Listener	1521, 2481 (IIOP), 2482 (SSL)
Web Cache	1100, 4000,4001,4002 webcache.xml
Forms Server	9001
Reports Server	1950
OC4J	8888, 23791 (rmi)

3. Installation Details

3.1 Instructions for Installation

3.2 Installation Matrix

3.2.1 9iAS 설치 옵션별 Component구성표

Component	Minimal	Standard	Enterprise
Oracle HTTP Server	X	X	X
Oracle Portal-to-Go	X	X	X
Oracle Portal	X	X	X
Oracle Web Cache			X
Oracle Internet File System		X	X
Oracle 8i JVM		X	X
Oracle Database Cache			X
Oracle Discoverer 3i Viewer			X
Oracle Forms Services Oracle Reports Services			X
Oracle BC4J	X	X	X
Oracle LDAP Developer's Kit		X	X
Oracle Database Client Developer's Kit	X	X	X
Oracle XML Developer's Kit	X	X	X
Oracle Advanced Security		X	X
Oracle Enterprise Manager Client	X	X	X
Oracle Management Server			X
OC4J* (별도설치)	X	X	X

3.3 Configuration Tools

각 설치 방법에 따라서 사용할 수 있는 Configuration Tool이 있다.

3.3.1 HTTP Server Only (Minimal Install)

1. Net8 Configuration Assistant

2. Starting web server in non-SSL mode on port 7777 (in Solaris) / Starting Oracle HTTP service (on port 80 in Windows NT)

3. Oracle Portal 3.0 Configuration Assistants

3.3.2 Standard Edition (SE)

1. Net8 Configuration Assistant

2. Oracle Database Configuration Assistant

3. Starting web server in non_SSL mode on port 7777 (in Solaris) / Starting Oracle HTTP service (on port 80 in Windows NT)

4. Oracle Portal 3.0 Configuration Assistants

3.3.3 Enterprise Edition (EE)

1. Oracle Database Cache Configuration Assistant

2. Oracle Web Cache Configuration Assistant

3. Oracle Portal 3.0 Configuration Assistant

4. Starting web server in non_SSL mode on port 7777 (in Solaris) / Starting Oracle HTTP service (on port 80 in Windows NT)

5. Starting Forms Server (Not a tool in NT. ORCA installer will start the service)

6) Starting Reports Server(Not a tool in NT,ORCA installer will start the service)

7. Starting Discoverer 4iViewer Server(Not a tool in NT. ORCA installer will start the service. This is not a selectable item in Windows NT)

8. Oracle Management Server

3.3.4 Installation 후에 가능한 Configuration Tools

iFS Configuration Assistant

Command : <ORACLE_HOME>/ifs1.1/bin/ifsconfig.bat on Windows

<ORACLE_HOME>/ifs1.1/bin/ifsconfig.sh on Solaris

Note: The ftp server's default port# is 21. It should be changed so that it does not conflict with the default port#.

3.3.5 OUI밖에서 사용가능한 Configuration Tools

1. Net8 Configuration Assistant : Will add later

2. Oracle Database Configuration Assistant : <ORACLE_HOME>/bin/dbassist (For Solaris)
<ORACLE_HOME>\bin\DBAssist.bat (For Windows)

3. Oracle Portal 3.0 Configuration Assistant : <ORACLE_HOME>/assistance/opca/launch.sh
(launch.sh on Solaris and launch.bat on Windows)

4. Oracle Database Cache Configuration Assistant : <ORACLE_HOME>/bin/wtacca -create -typical

Note: To deconfigure Database Cache : <ORACLE_HOME>/bin/wtacca -deinstall

5. Oracle Management Server : <ORACLE_HOME>/bin/emca

6. iFS Configuration Assistant : <ORACLE_HOME>/ifs1.1/bin/ifsconfig.sh (ifsconfig.sh on Solaris and ifsconfig.bat on Windows)

3.4 Oracle 9iAS 1.0.2 Enterprise Edition 설치 화면 snapshot

Windows

<cdrom>/isetup.exe

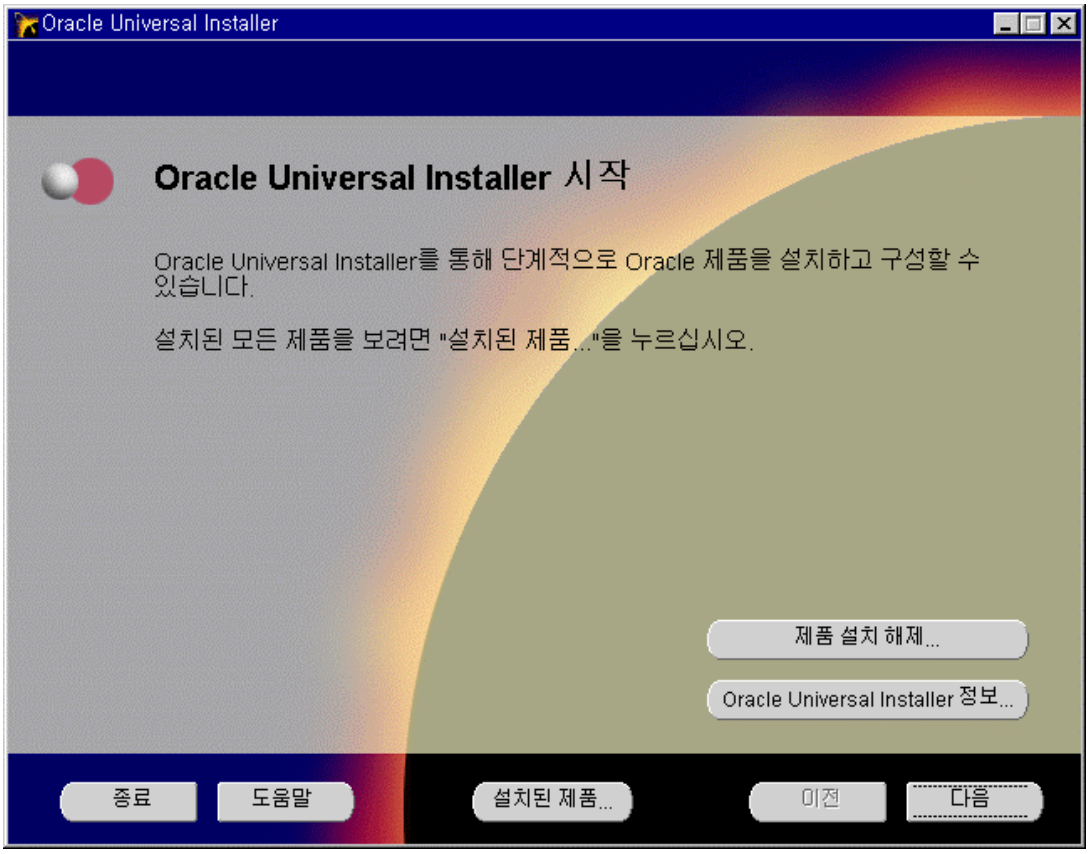
Unix

%/<cdrom>/runInstaller

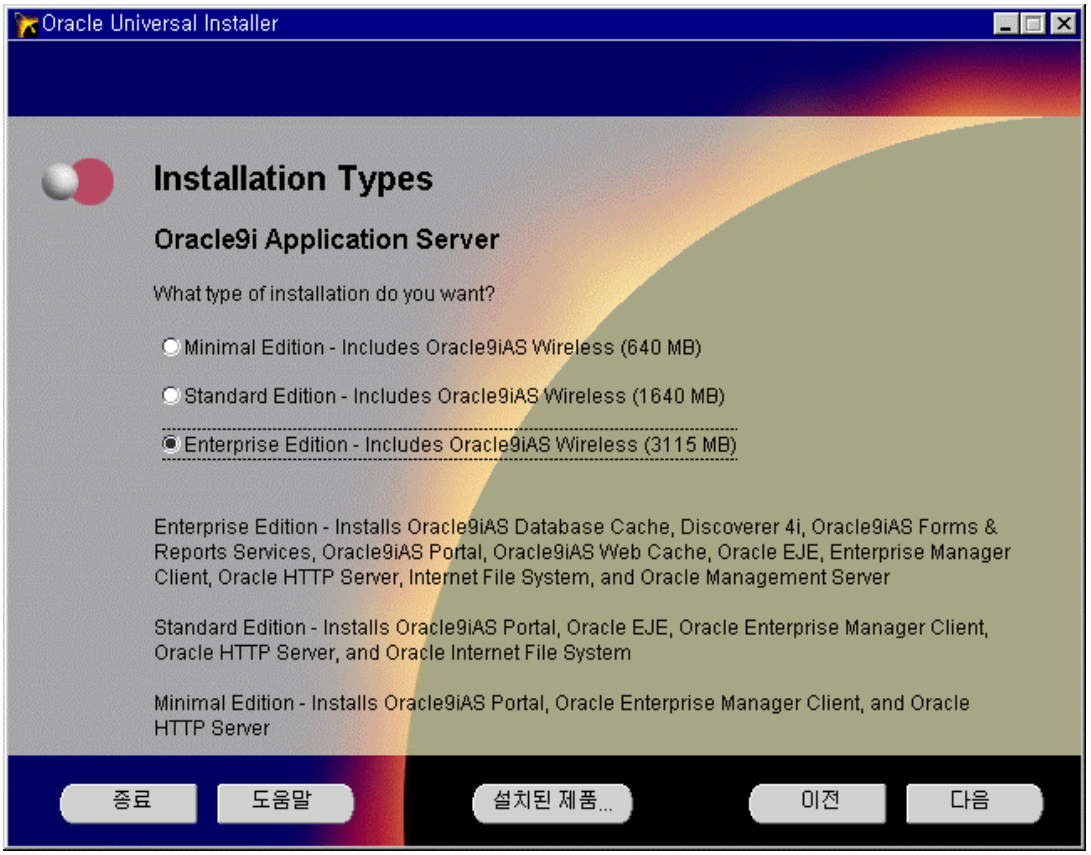
3.4.1 Oracle Universal Installer

1. 설치 도움말의 표시 여부 (Web Browser가 필요)

2.



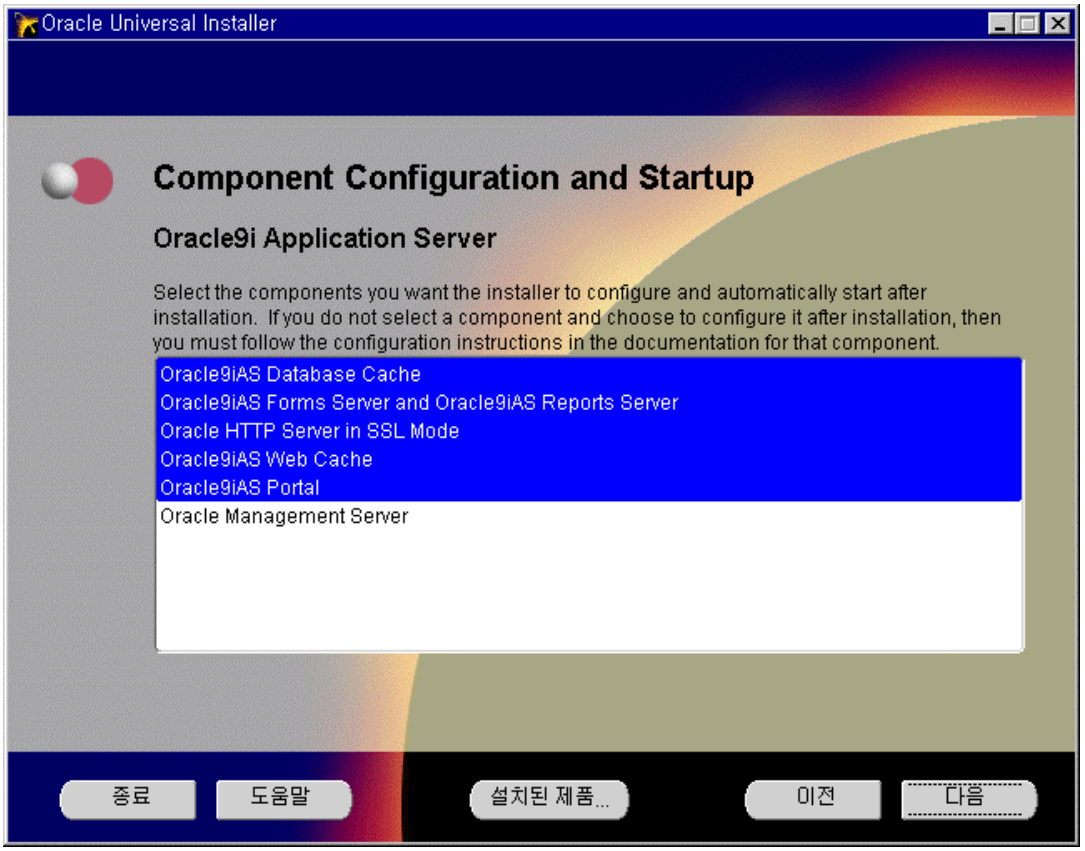
3. **일반적인** Web Service**일 경우는** Minimal Edition**으로 설치한다**.



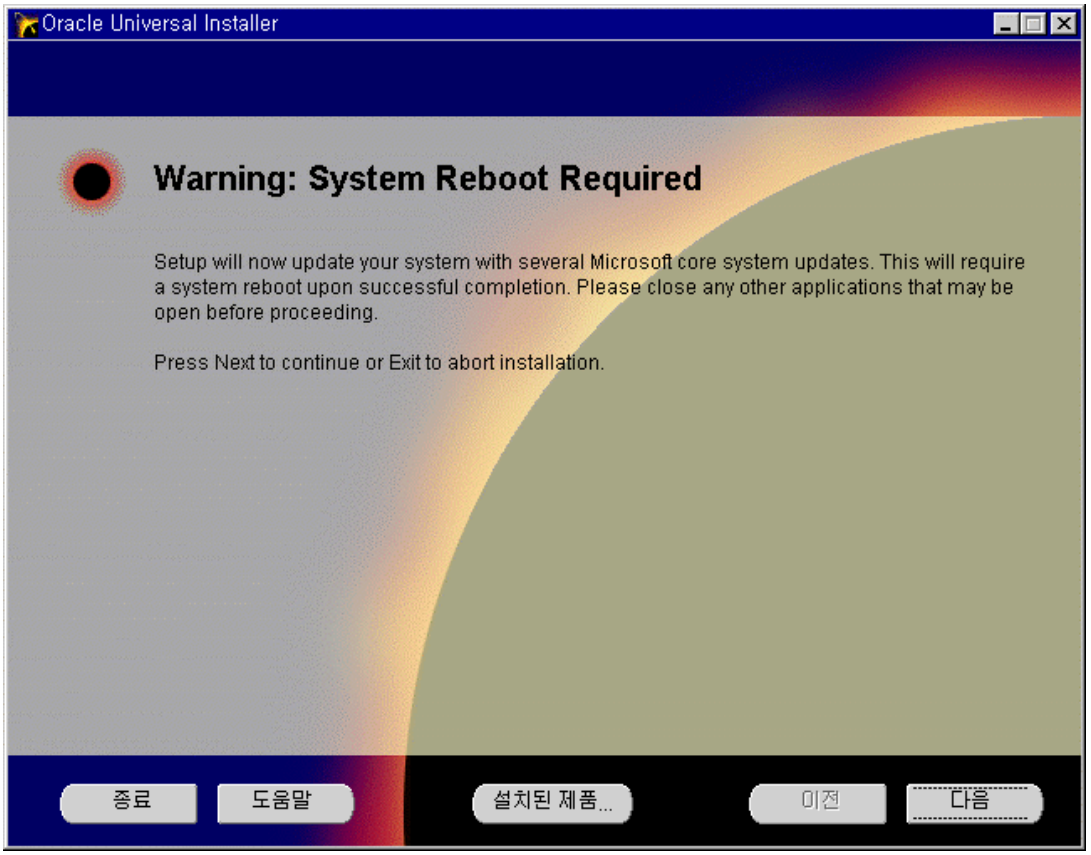
4. Oracle 9iAS Core부분의 설치 directory

Oracle 9iAS component들중 forms, report server 와 discoverer 4i plus 부분이 설치될 곳

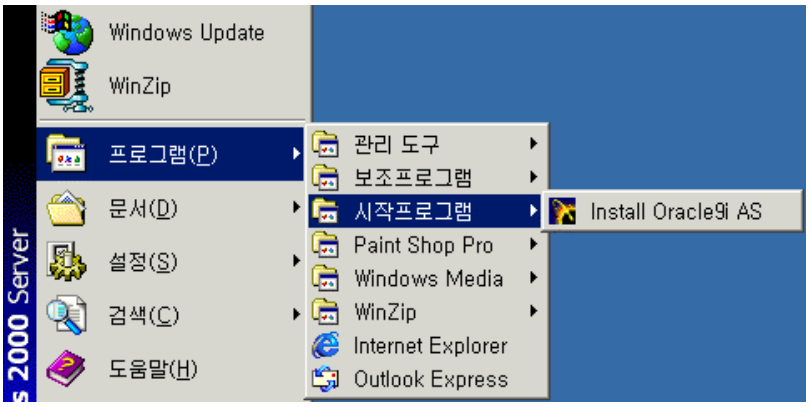
4. S/W 설치후 Configuration Wizard 선택



5. Windows NT의 경우 system reboot 이 필요하다.

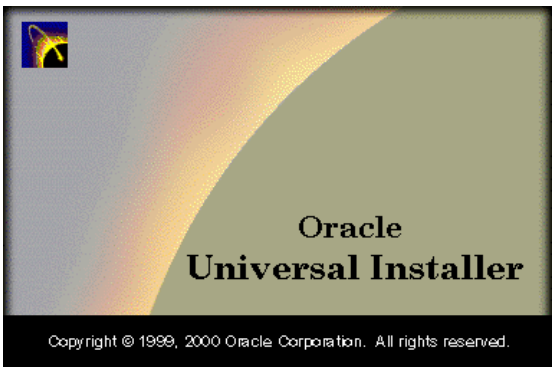


6. Window NT 경우 reboot을 필요로 한다. 5번 이후 Reboot 되며, reboot 후 꼭 Administrator 로 Log-on 하여야 한다. Windows 2000 의 경우 system reboot 은 필요하지 않다.



3.4.2 General Configuration / Software Install

7. Reboot 후 Administrator user로 Log-on 하지 않으면 OUI 화면에서 멈춰버린다.



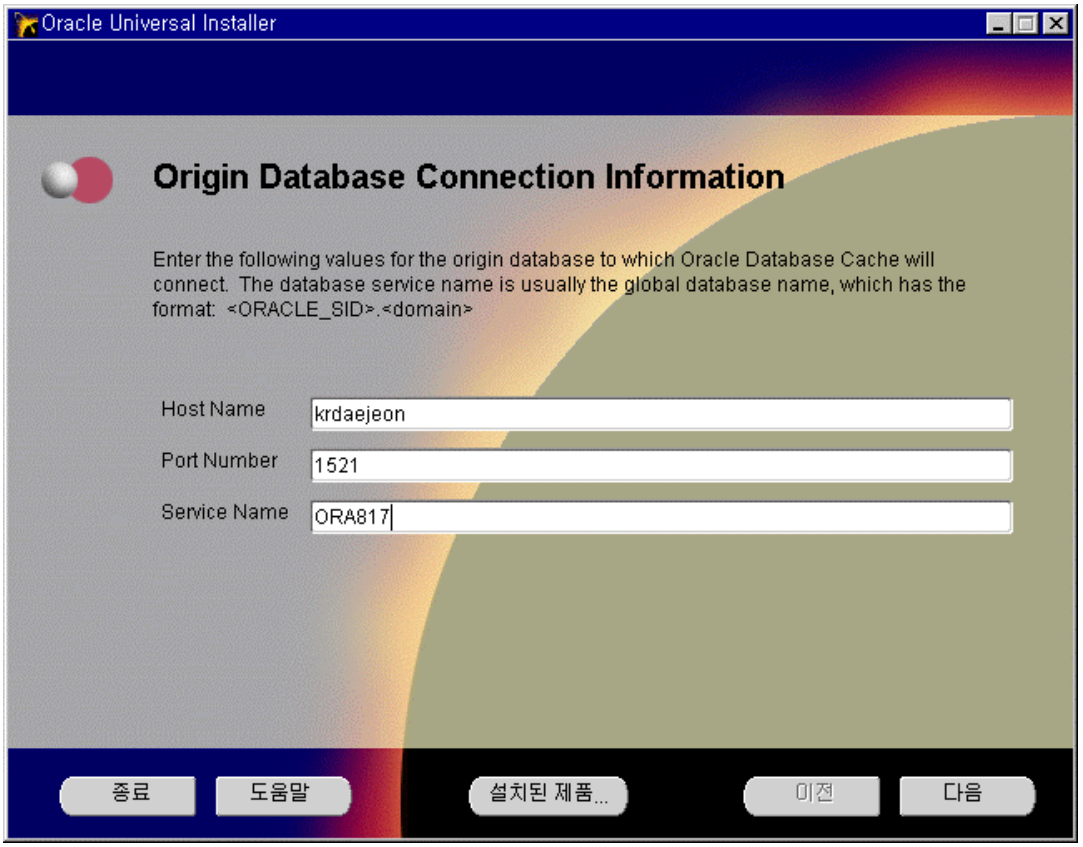
또, 여러 번 iAS 를 설치하다가 실패하였을 경우, OUI 실행시 화면이 멈춰버릴 수 있는데 이때 Regedit 을 실행하여 다음을 확인한다. (9iAS 1.0.2.0)

HKEY_LOCAL_MACHINE->SOFTWARE->ORACLE->iAS Install->Install Status

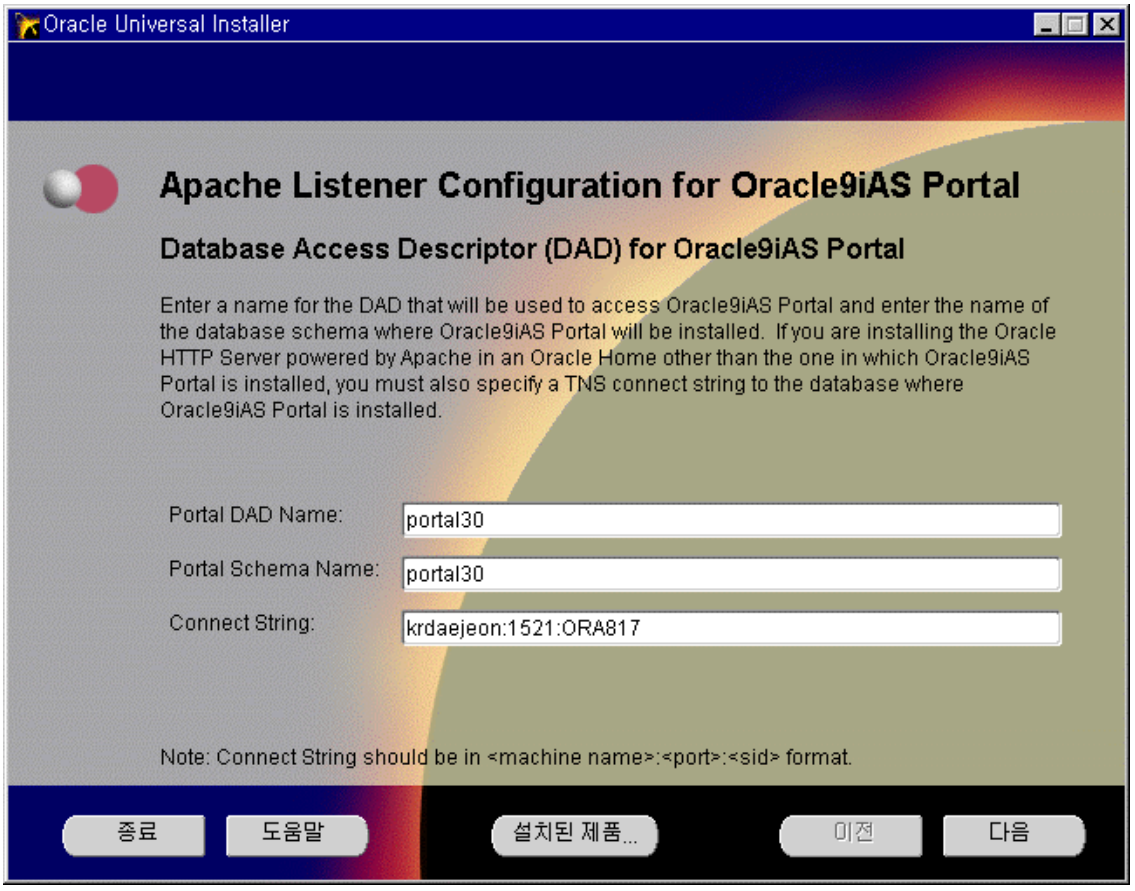
이 키가 있으면 삭제후 다시 실행하면 된다.

위와 같이 했음에도 오래걸린다면 Installation Type의 선택종류에 따라 OUI의 실행시간이 다를 수 있다. 9iAS Enterprise Edition 을 선택했다면 차한잔의 여유를 갖고 기다리는 것이 좋다.

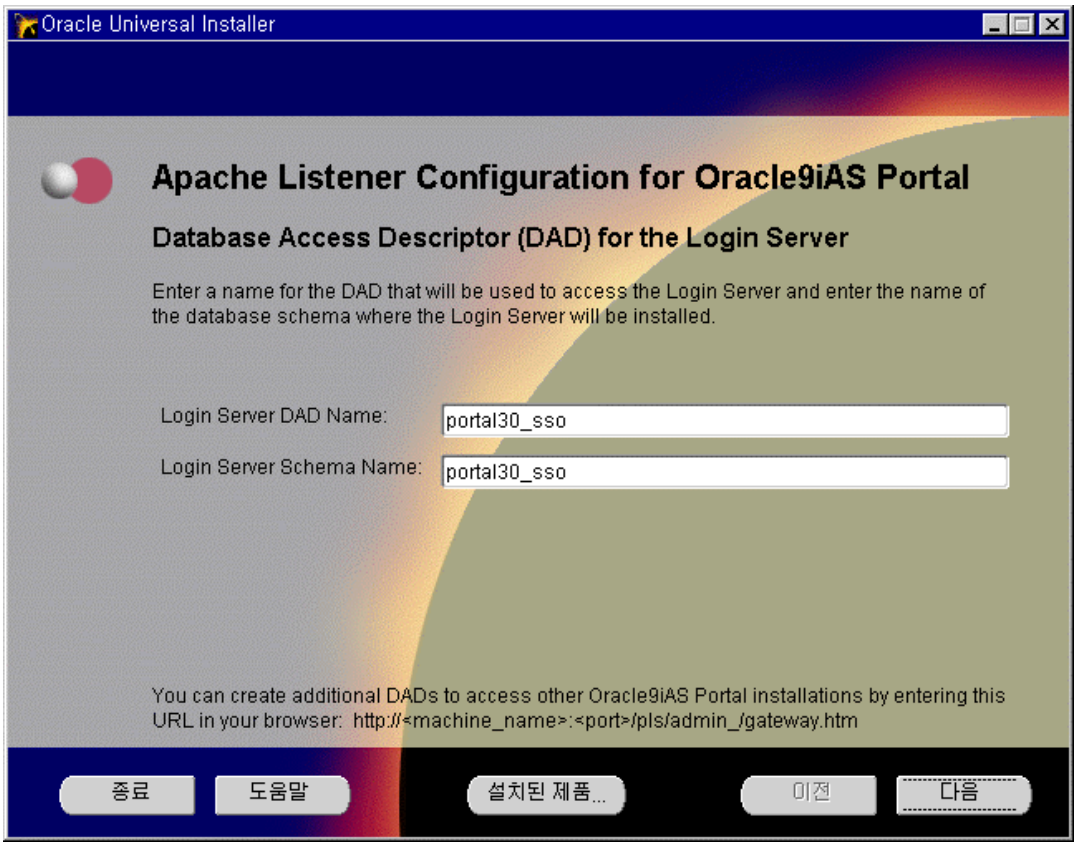
8. Oracle Database Cache 사용을 위한 Source DB에 대한 설정



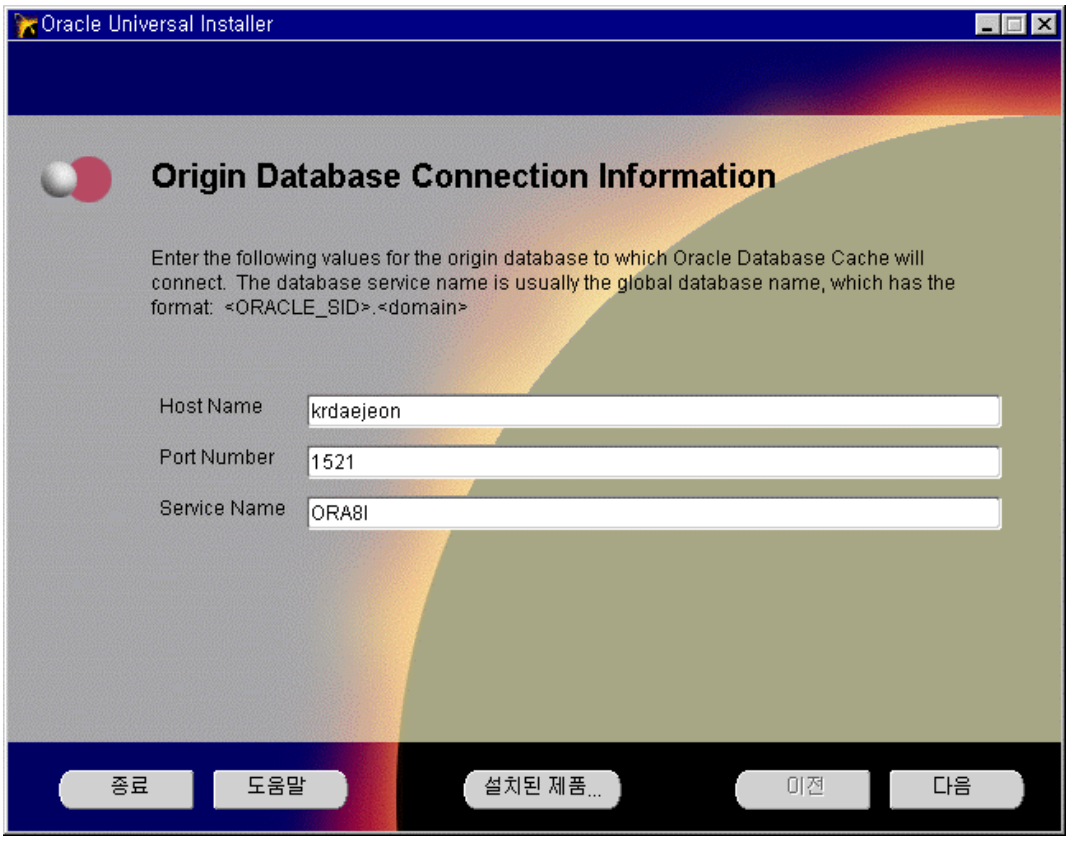
9. Oracle 9iAS Portal 3.0을 위한 설정

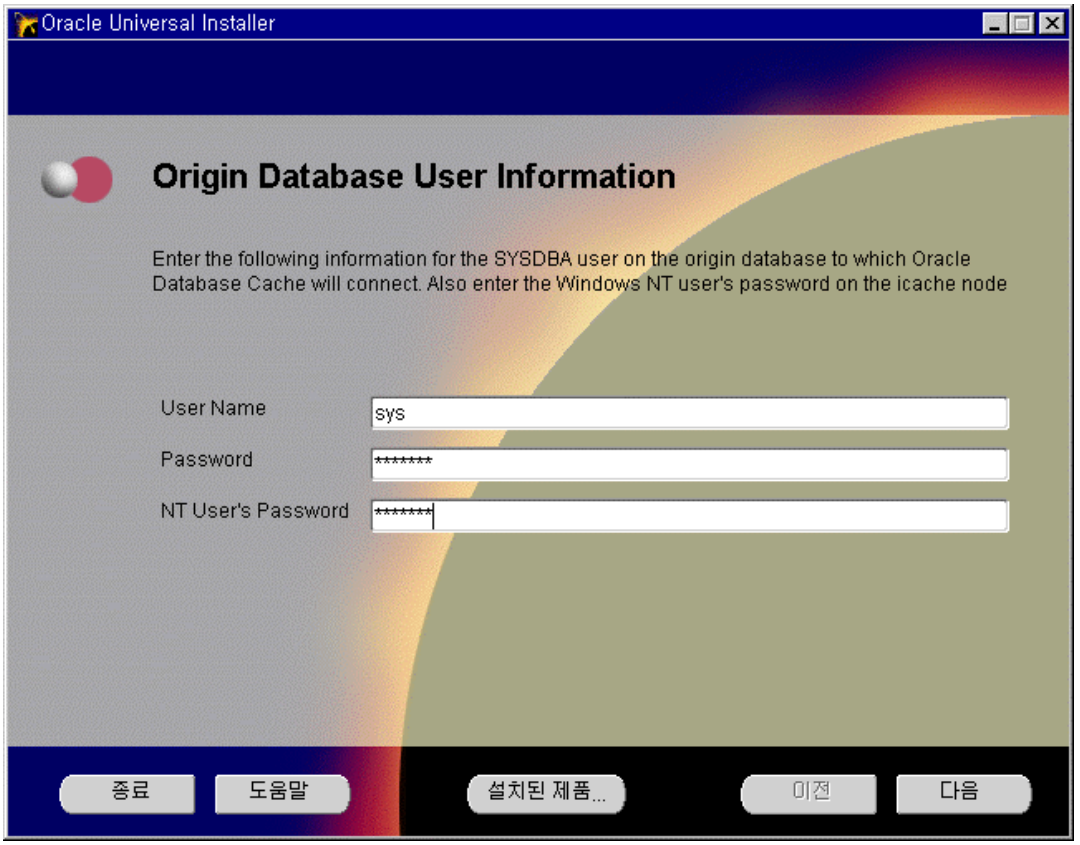


10. Oracle iPortal Single Sign On User용 DAD

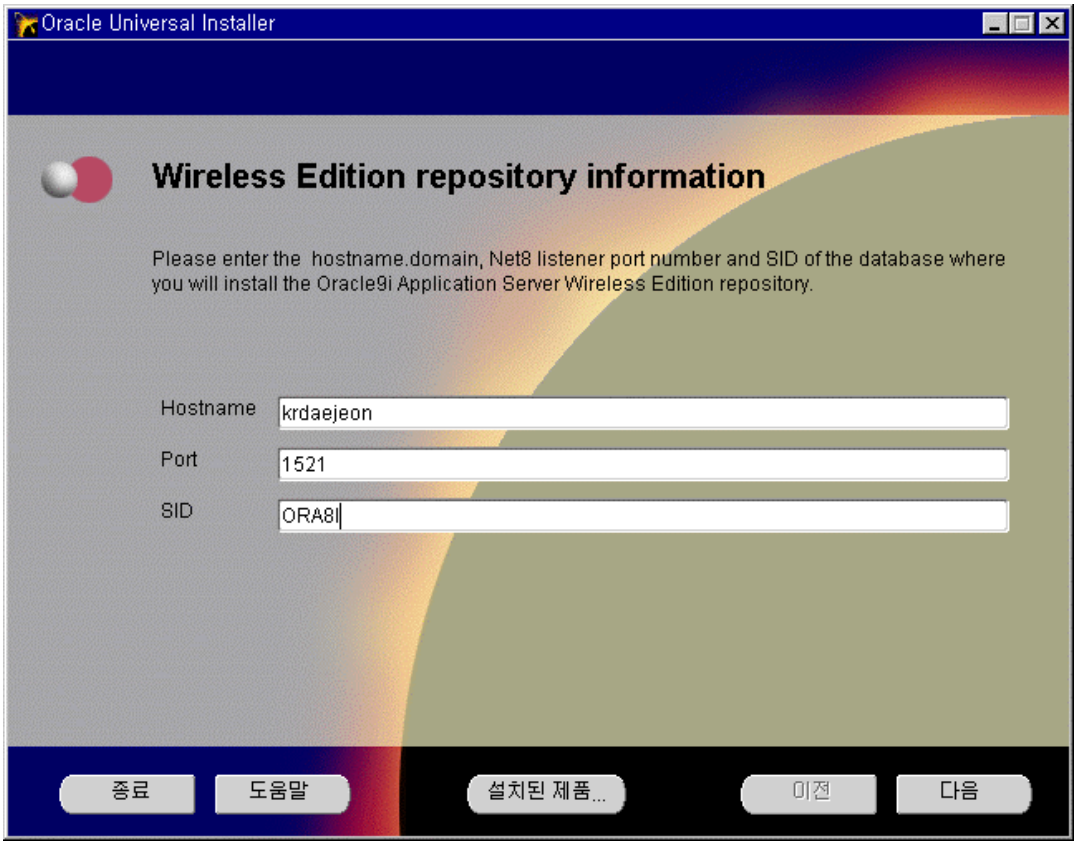


11. Oracle Database Cache에서 연결될 Source DB 와 SYSDBA 계정등록

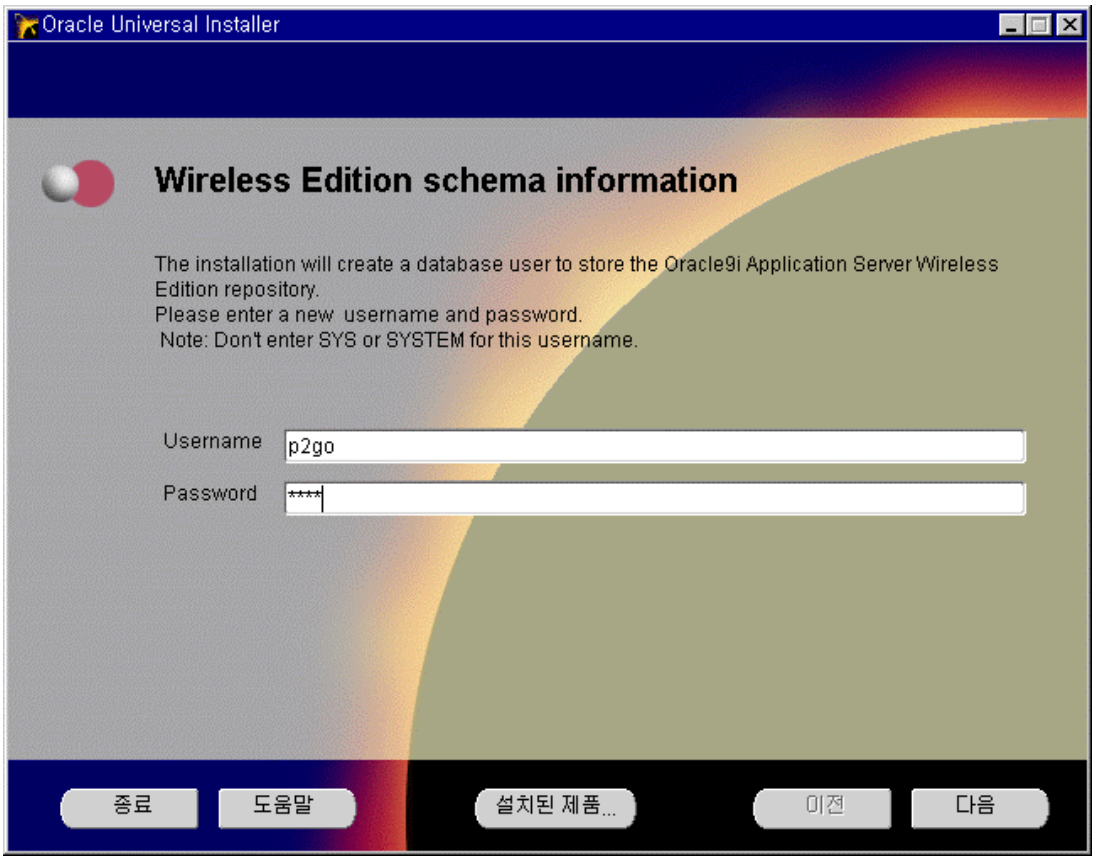




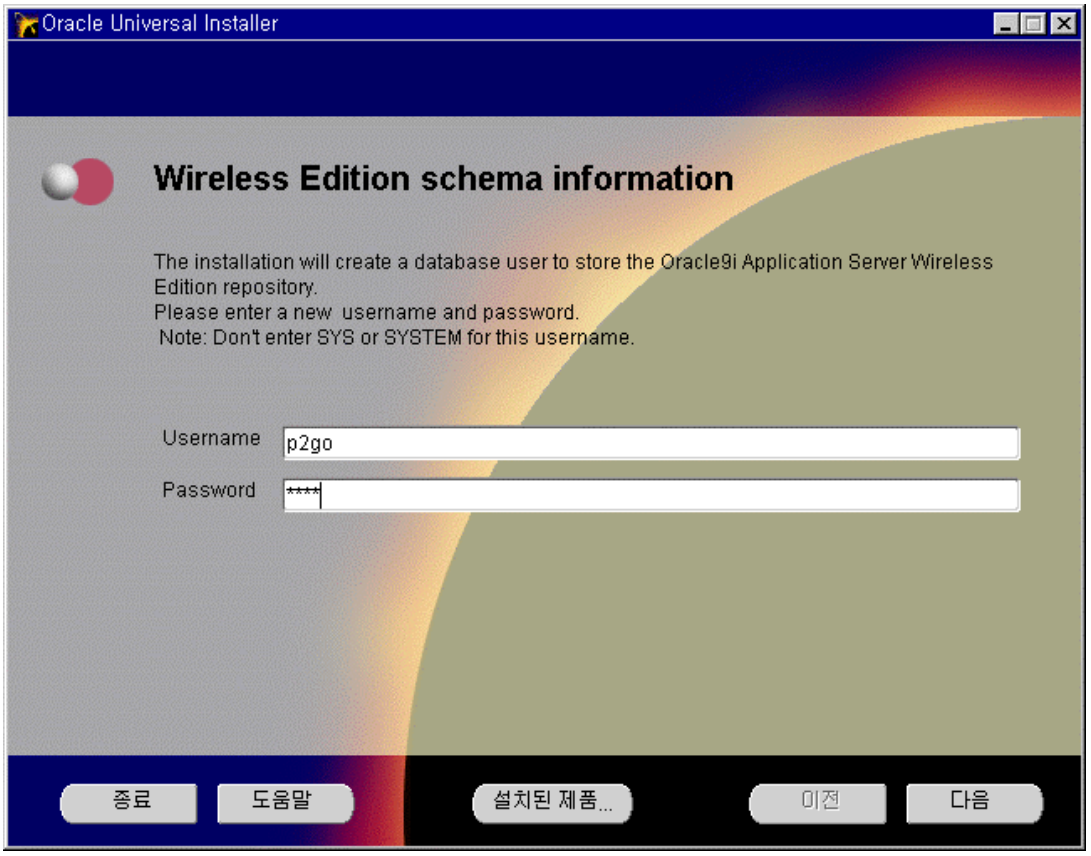
12. Oracle Portal-to-Go Server(9iAS Wireless Edition 참조) 를 위한 DB Repository 등록화면



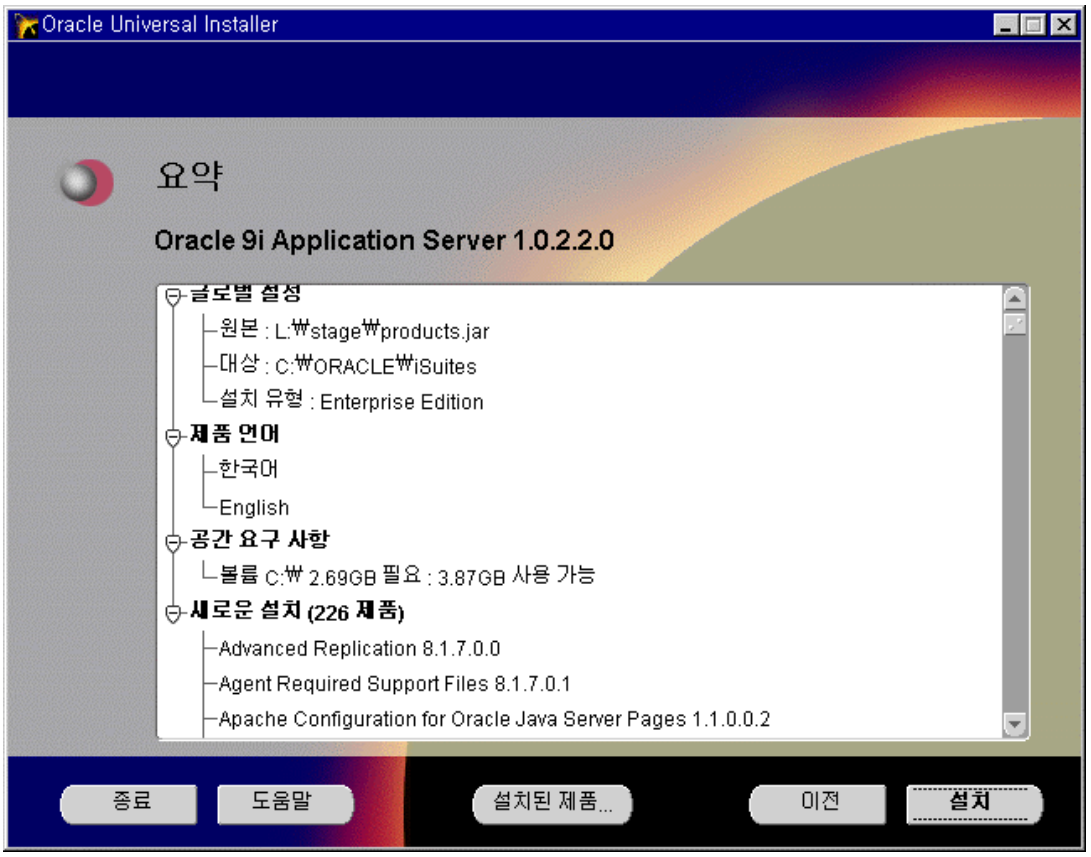
13. Portal-to-Go schema 등록



14. Portal-to-Go Repository DB의 SYSTEM Password 등록

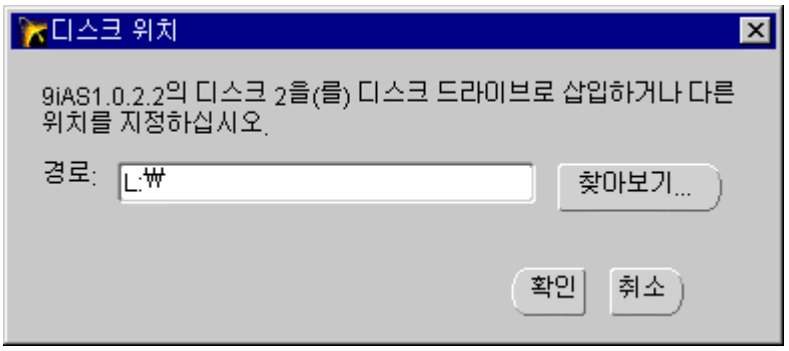


15. **기본 설치에 관한 등록정보 요약**



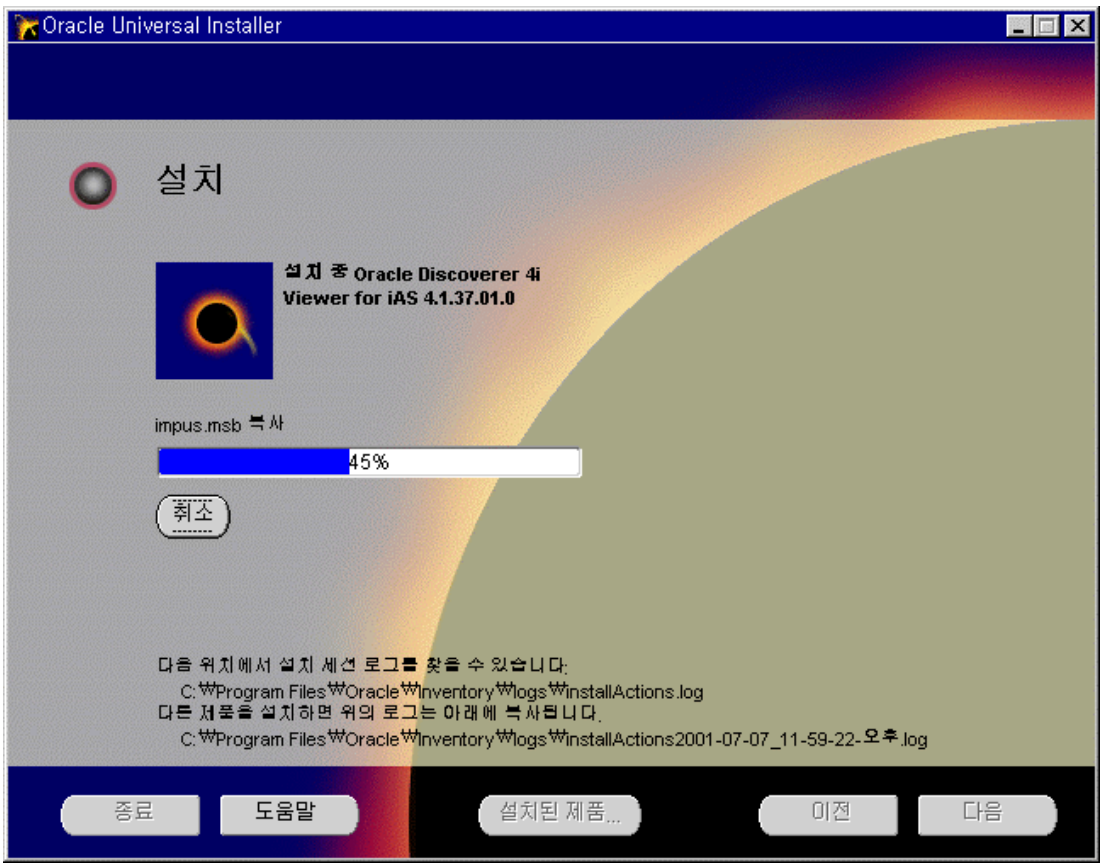
16.

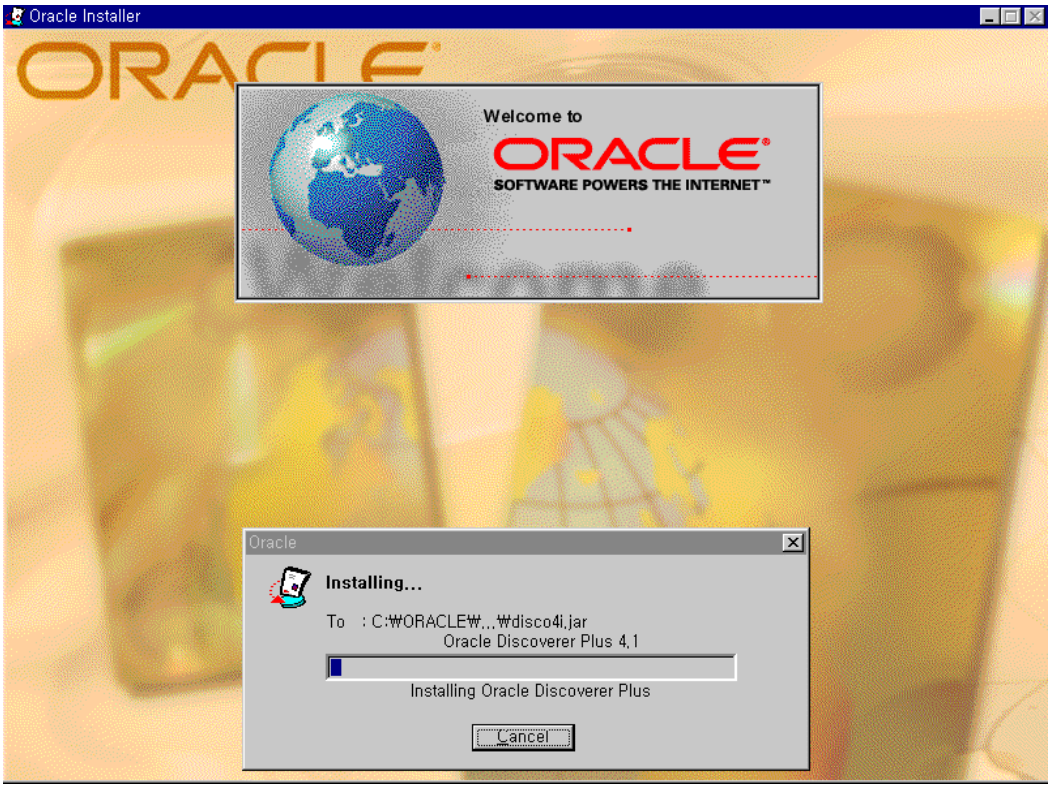
17. Platform 의 종류에 따라서 적게는 3장 , 많게는 6장의 CD-ROM 이 필요하다.



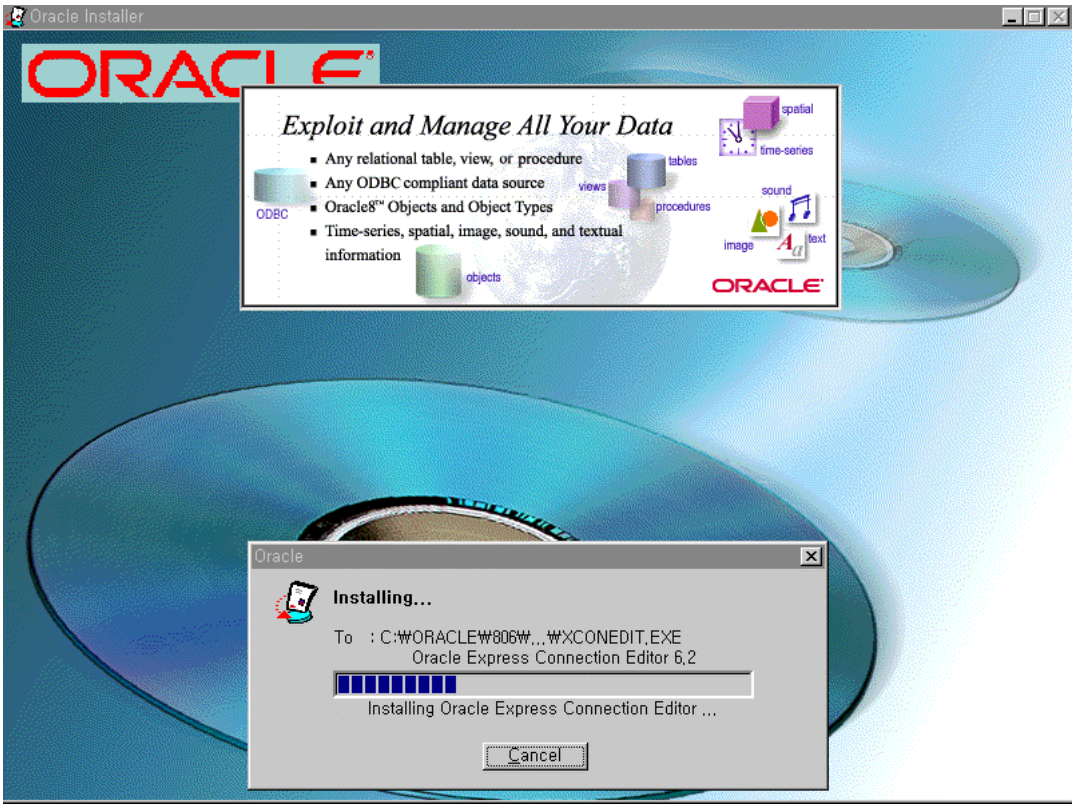
설치 Tip : Unix의 경우 OUI인 runInstaller 실행시 CDROM이 mount된 위치에서 실행하지 말고 다른 directory에서 절대 Path를 지정하여 실행할 수 있도록 한다.

18. Oracle Discoverer Plus 4i



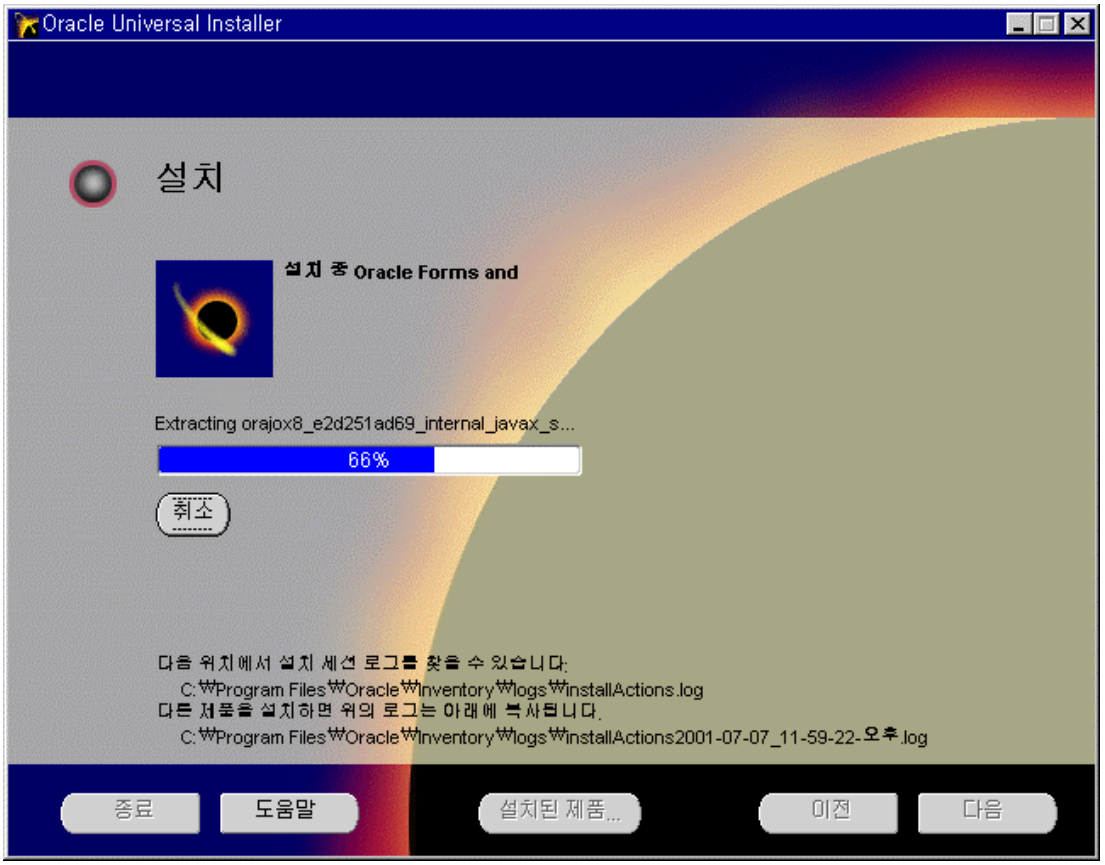


19. 9IAS 1.0.2.2 에는 Oracle Developer (Oracle Forms, Oracle Report) 6i r2 patchset 4 가 설치되어 있다.

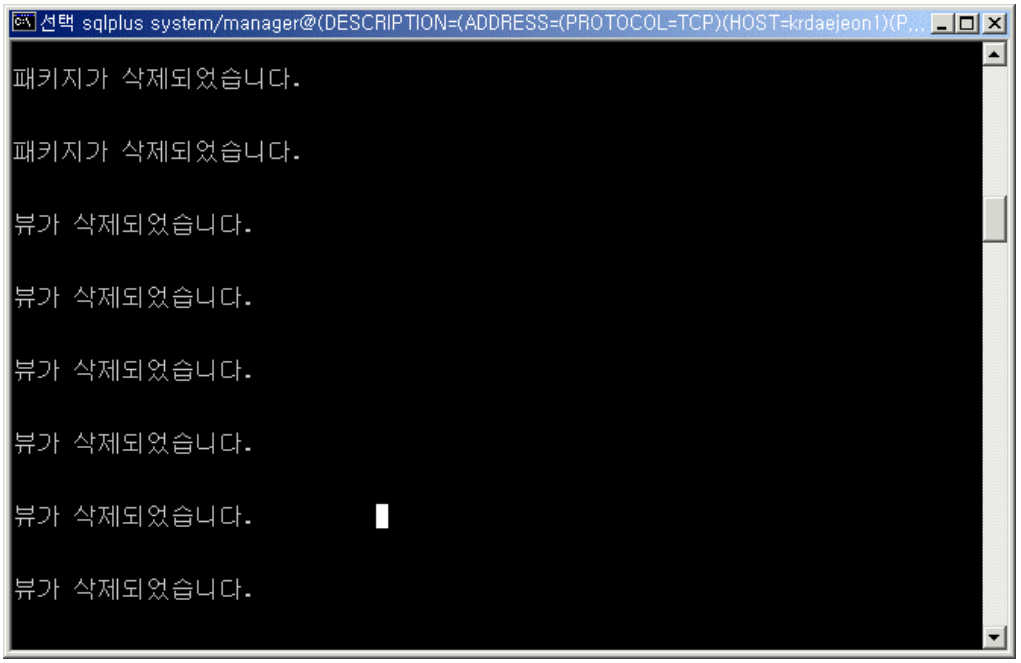


Notes : iAS 8i의 경우 Forms Server, Report Server Install시 Client 용 Module도 포함되었는데 iAS 1.0.2 의 경우 빠져 있으므로 Oracle Developer 의 Builder들이 필요하면 해당 Platform용 Developer Client 를 다시 설치하여야 한다. Windows 용의 경우 Oracle 9I DS 를 구매하면 된다.

설치중 이거나 Forms Server 실행중 "NLS subsystem could not be initialized .. " 와 같은 메시지가 나오면 $ORACLE_HOME/forms60 밑의 Message file들을 $ORACLE_HOME/dbs 로 복사한후 다시 실행하면 문제없다.



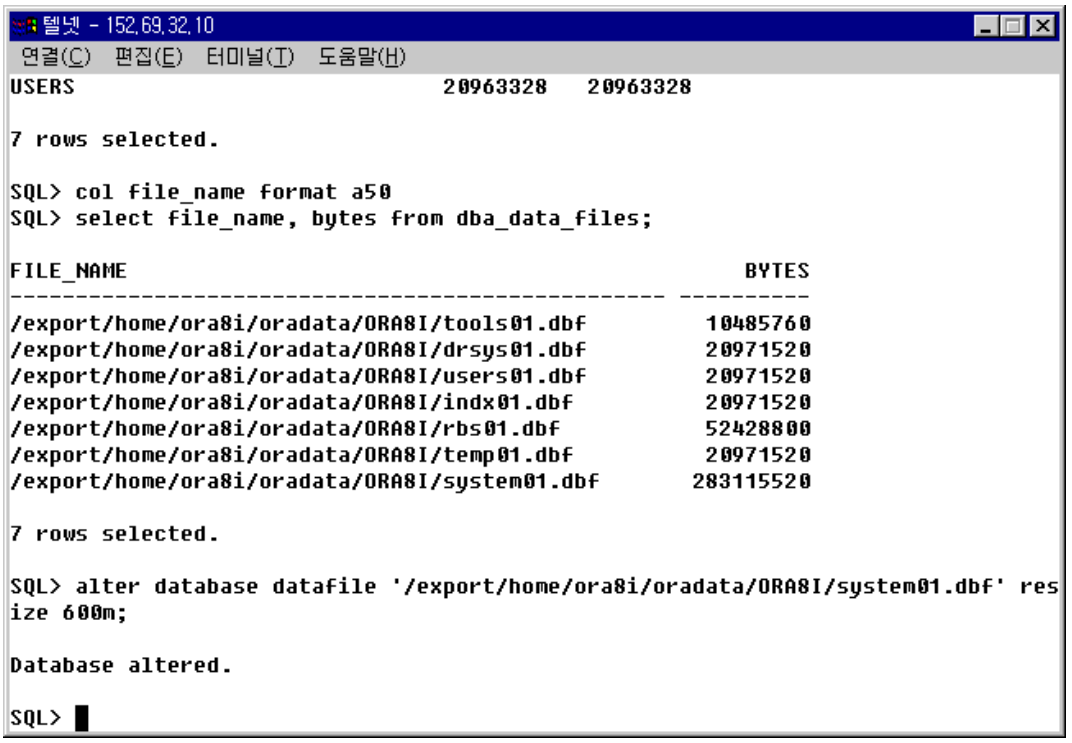
20. Portal-TO-GO Repository Install



3.4.3 Oracle 9iAS Portal Setup

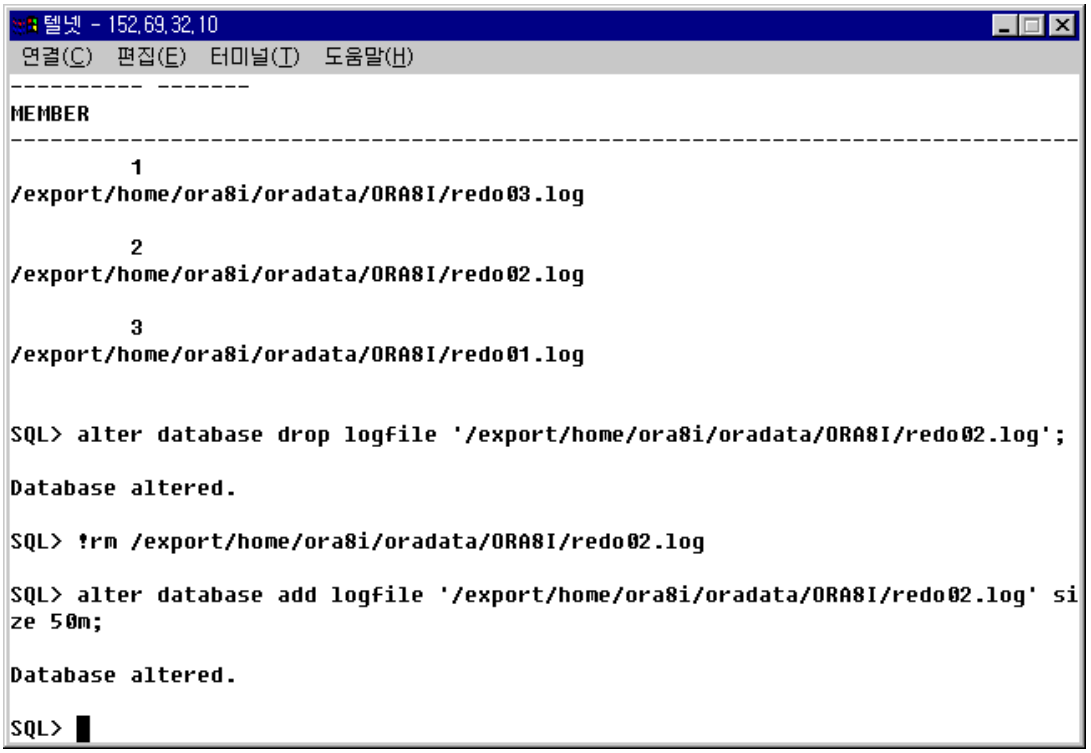
설치전 선행작업

21. Portal 을 위한 공간 확보 : system 200MB 추가, Users 150M 이상 추가



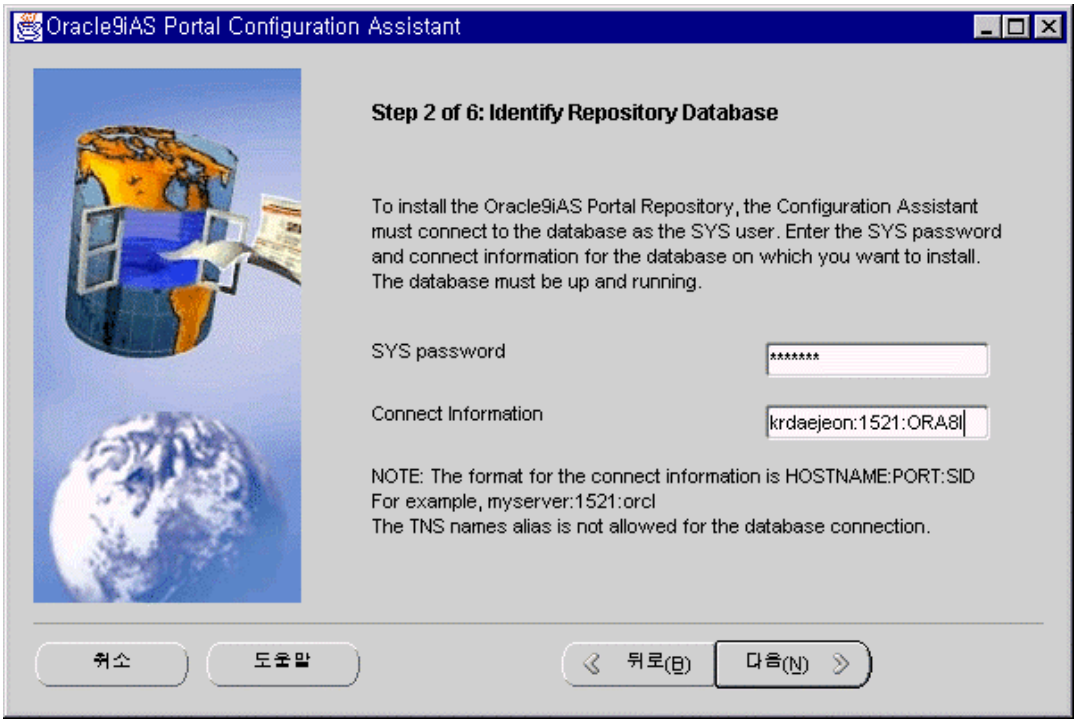
마찬가지로 Users tablespace 도 resize 또는 datafile add를 한다.

22. Portal 설치시 Database 에 많은 내용들이 저장되므로 필요에 따라 archive log mode를 중지하거나 Online redo log size를 크게하여 log file switching의 부담을 줄인다.

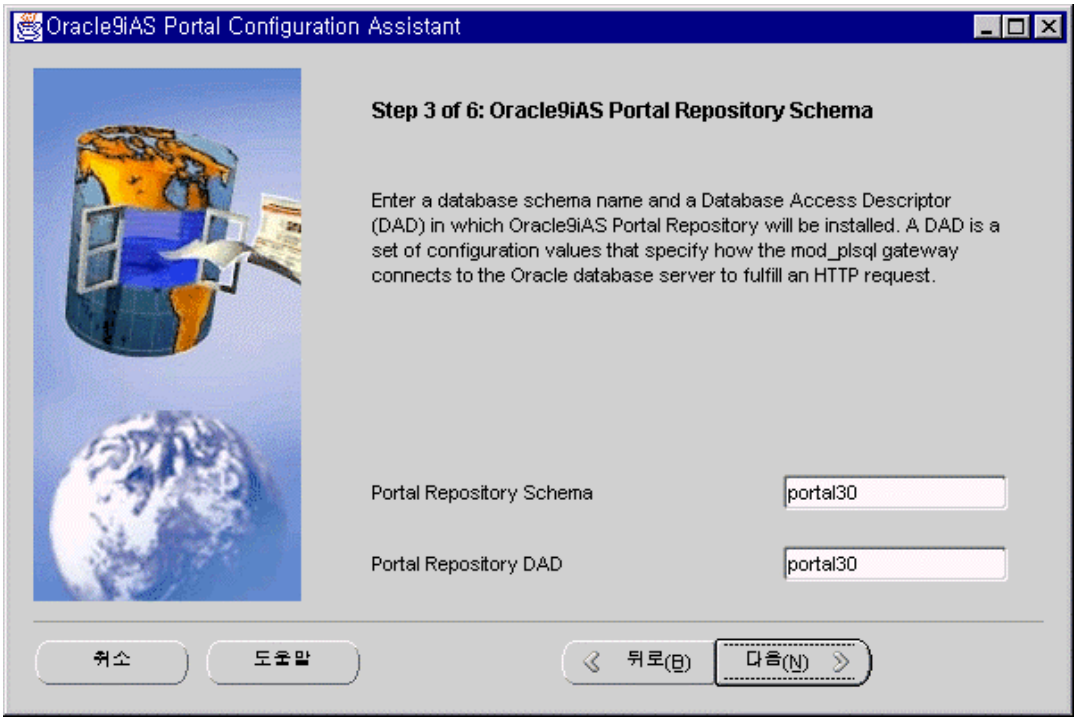


26. iAS 1.0.2 이상에서는 Oralce iPortal 이 9iAS에 통합되었다는 것이다. 이것의 설치시간도 만만치 않으므로 좋은 사양의 DB Server가 준비되지 않았다면 커피한잔의 여유를 갖는 것이 좋을 듯 싶다. 하지만 설치된 이후의 iAS기능에는 감탄할 것이다.

27. Oracle iPortal Package가 설치될 DB 설정



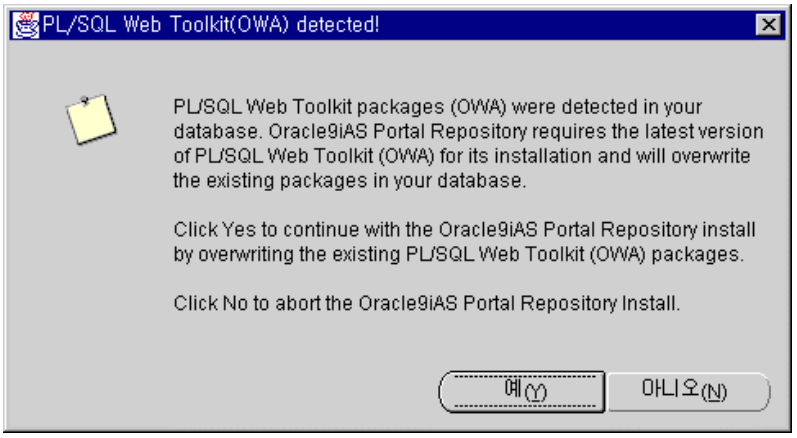
28. Oracle iPortal **스키마 설정 (이미 설정하였던 내용을 변경하고자 한다면 수정)**



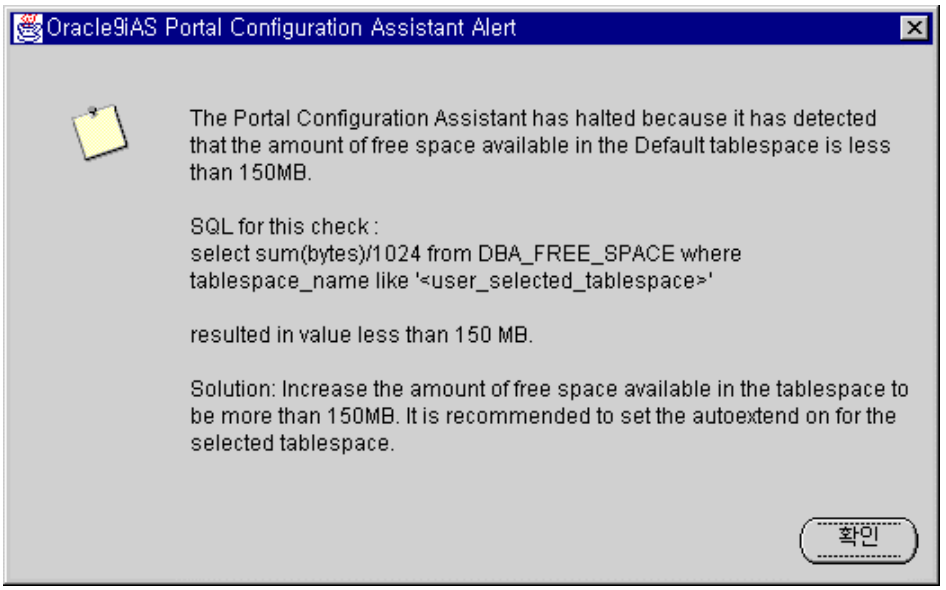
29. Oralcle iPortal SSO **스키마 설정**

30. **도움말 화면에도 나와 있듯이 기본 테이블스페이스 에 적어도** 150M**의 빈 영역이 없으면 설치되지 않는다. 그리고 여유있게** System **테이블스페이스도** 100M**정도 확보 해둔다.(** 만약 Auto Extend **로 설정해두었다면 해당** directory**의 남은 공간 검사도 필요할 것이다.)**

31. **만약 이전에** OWA Package**들이 설치되었다면 다음 화면이 나타날 것이며** Oralce iPortal **을 사용할 것이라면 덮어쓰기를 하여야 한다.**

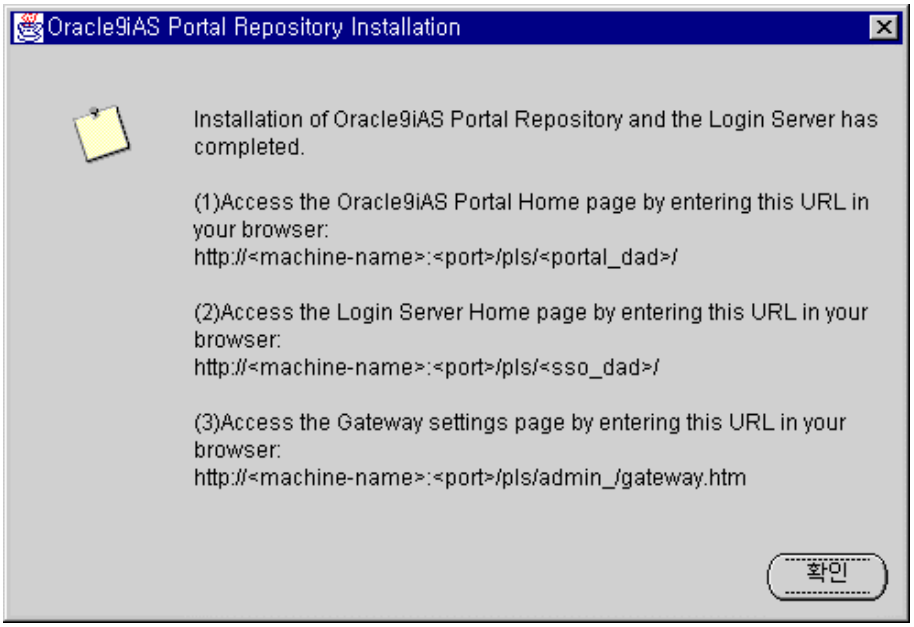


만약 지정된 tablespace**에** free space**가 부족하면** alert**화면이 표시**



32. Oracle Portal **설치 종료**

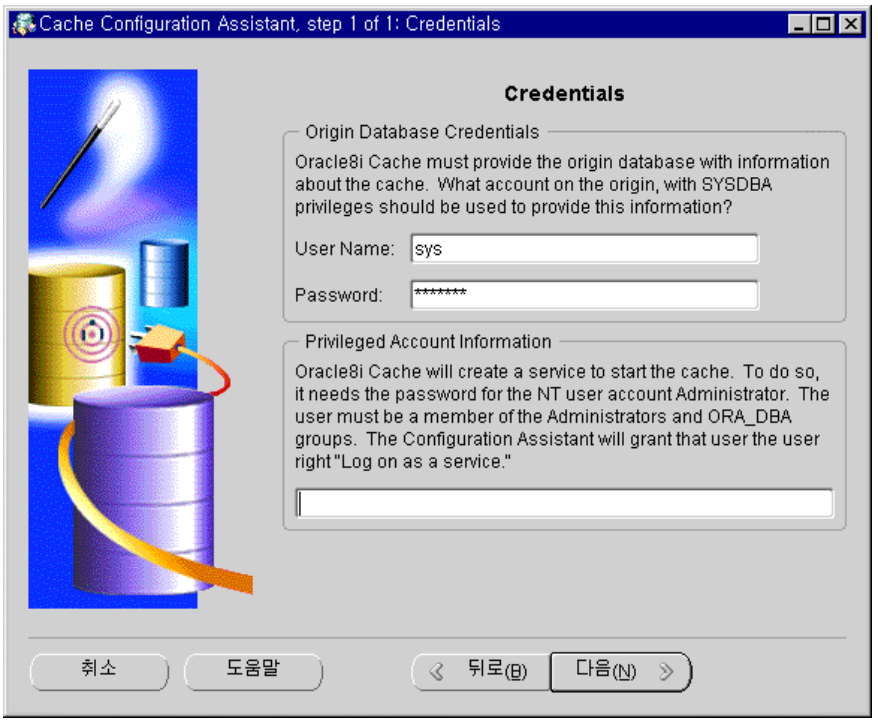
33. 해당 url로 Portal 테스트를 해본다.



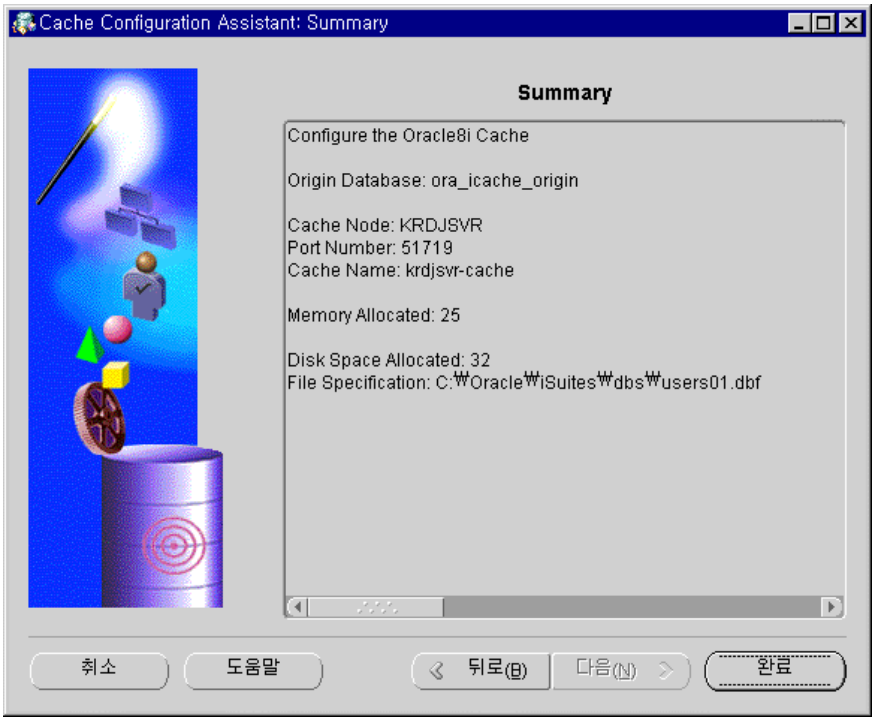
3.4.4 Oracle Database Cache 설정 도움화면

1. Oracle Database Cache 도 마찬가지로 DB 및 Oracle JVM이 설치되므로 충분한 디스크공간과 메모리를 확보하여야 한다.(만약 Local Server를 이용하여 DB/Web 서비스를 동시에 하는 경우에는 과감히 이부분을 Skip 할것)

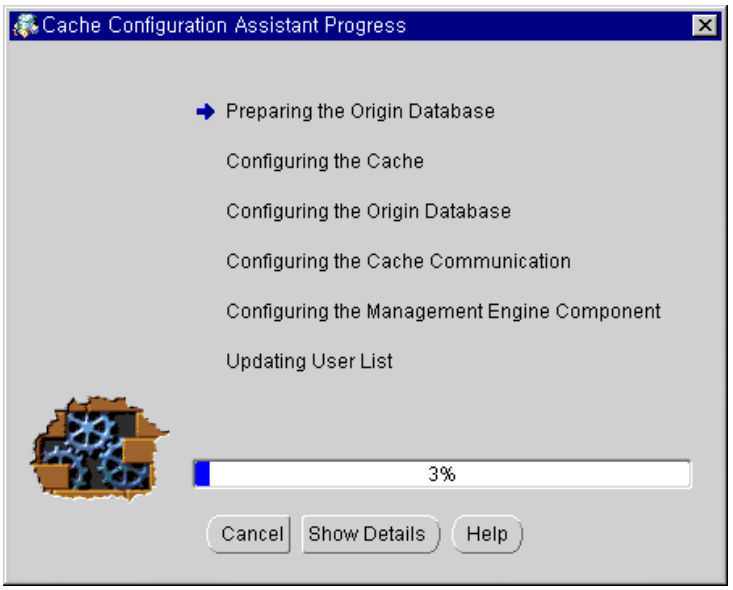
2. Oracle Database Cache Admin



3.

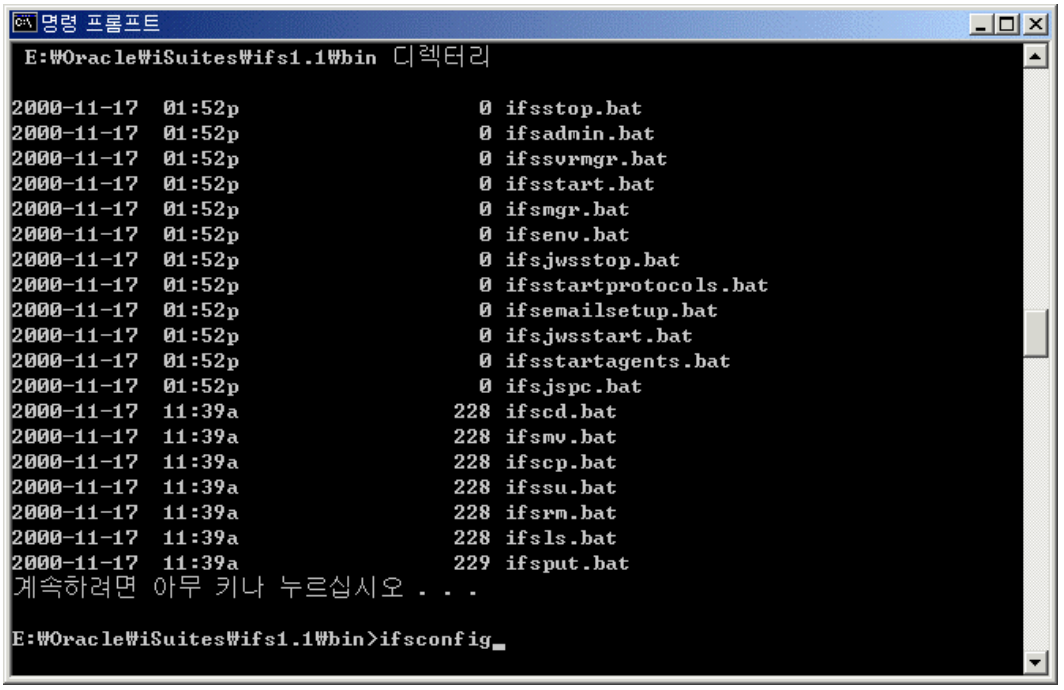


4.



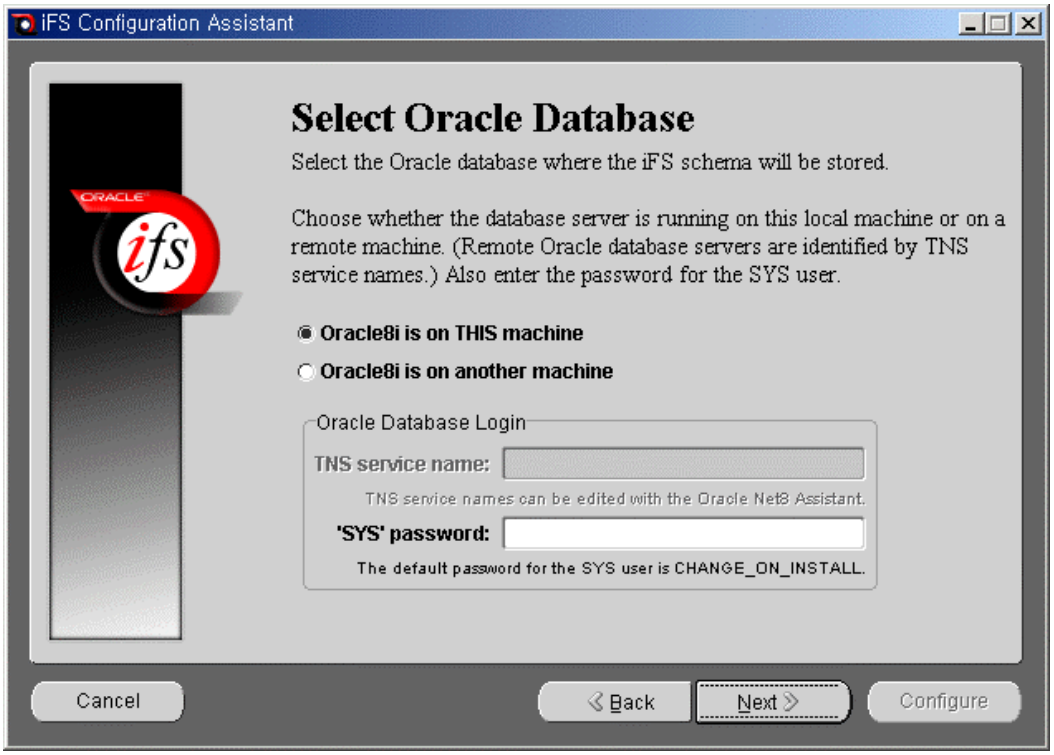
3.4.5 Oracle 9iAS Internet File System

1. Oracle 9iAS 설치후 Setup 을 위해서는 <IAS_HOME>/ifs1.1/bin 으로 이동

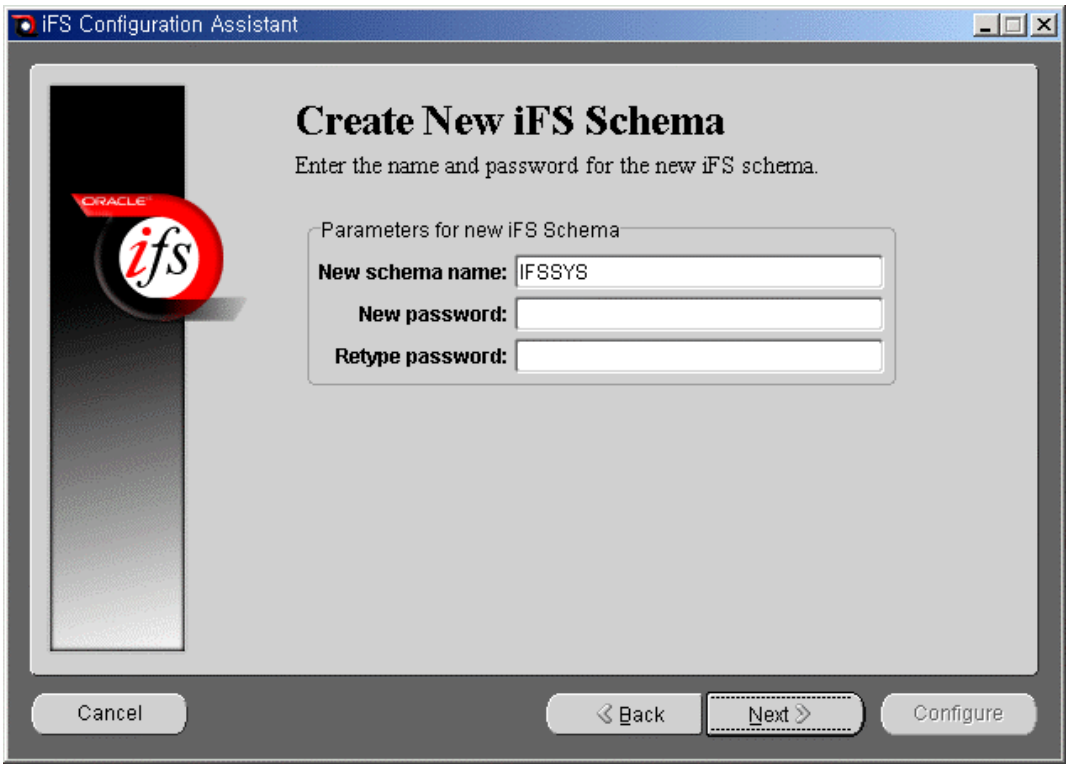


2. **ifsconfig 를 실행**

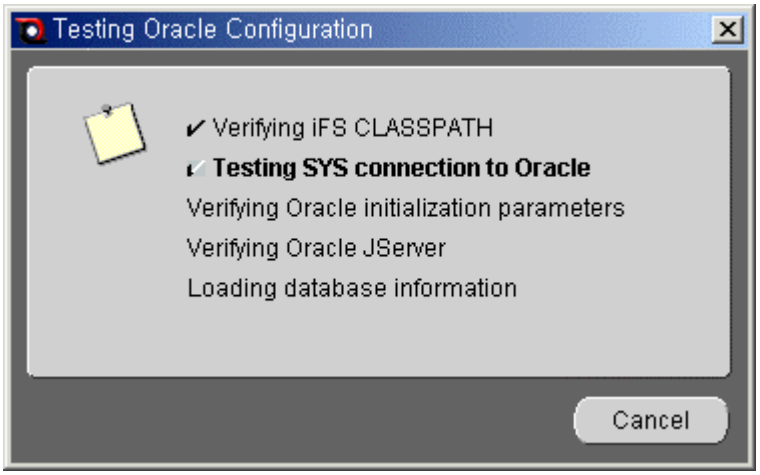
3.


iFS Configuration Assistant
Select Oracle Database
Select the Oracle database where the iFS schema will be stored.
Choose whether the database server is running on this local machine or on a remote machine. (Remote Oracle database servers are identified by TNS service names.) Also enter the password for the SYS user.
Oracle8i is on THIS machine
Oracle8i is on another machine
Oracle Database Login
TNS service name:
TNS service names can be edited with the Oracle Net8 Assistant.
'SYS' password:
The default password for the SYS user is CHANGE_ON_INSTALL.
Cancel
Back
Next
Configure

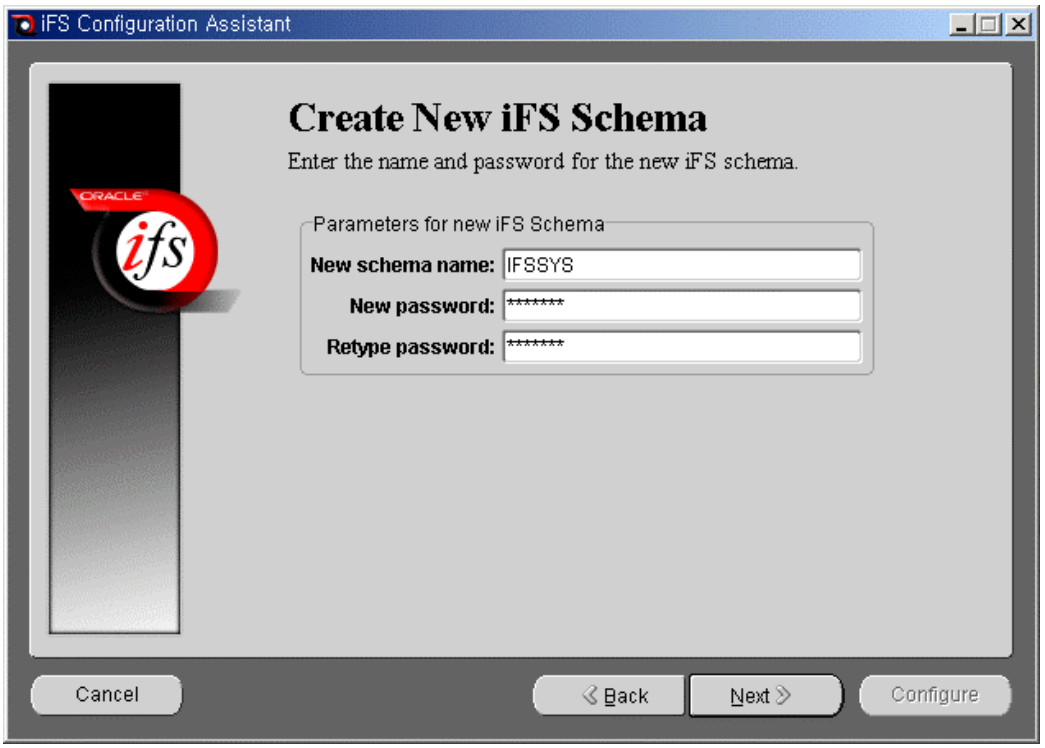
4.


iFS Configuration Assistant
Create New iFS Schema
Enter the name and password for the new iFS schema.
Parameters for new iFS Schema
New schema name:
IFSSYS
New password:
Retype password:
Cancel
Back
Next
Configure

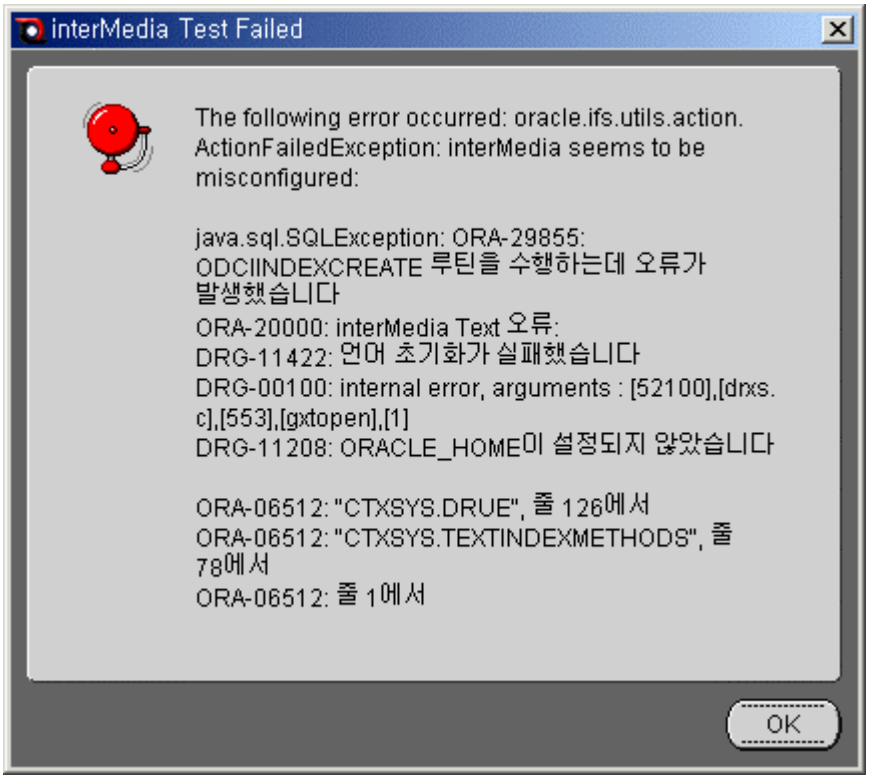
5.

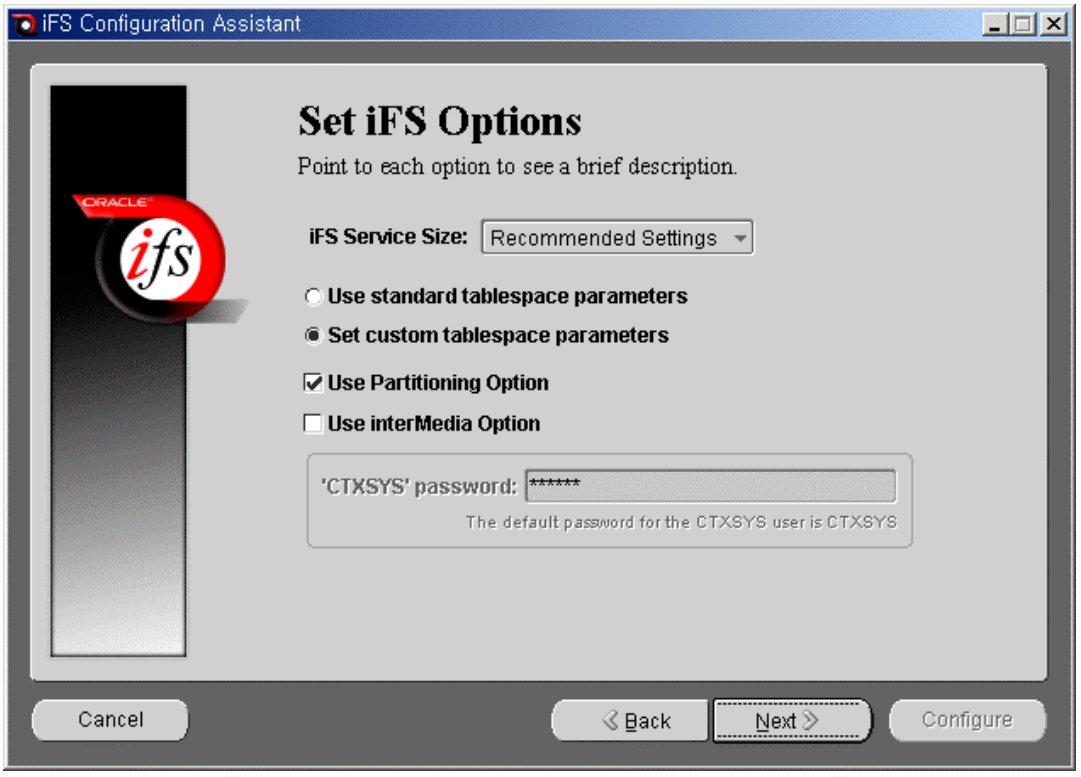


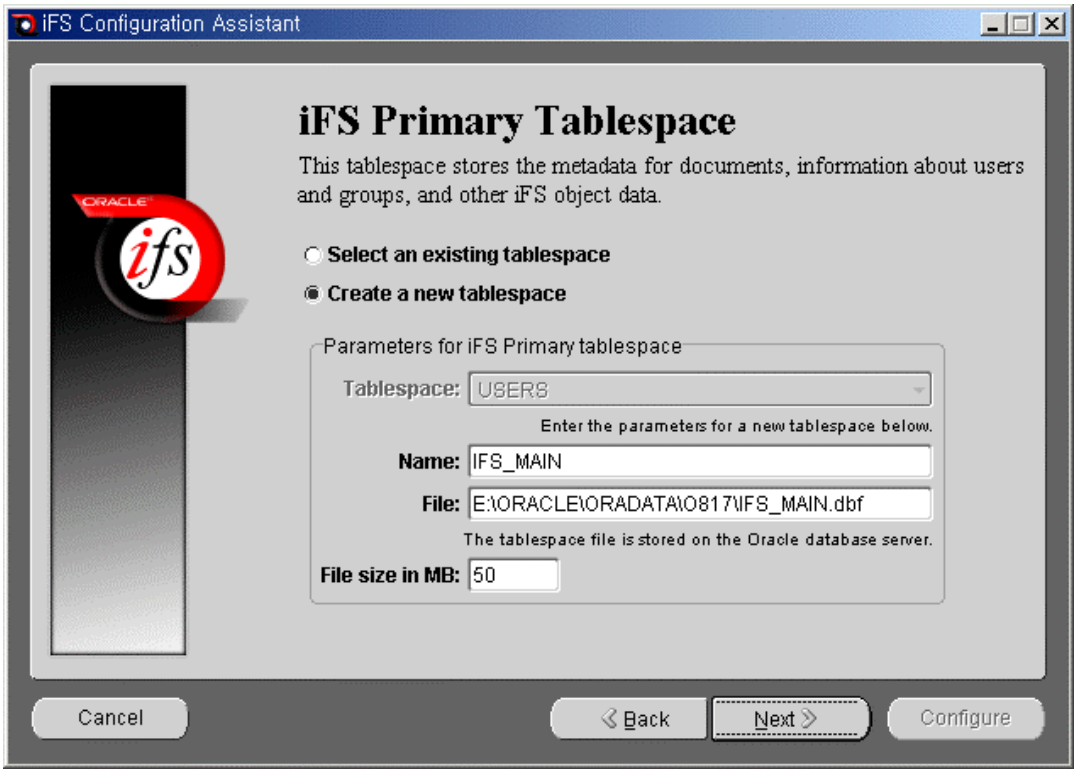
6.

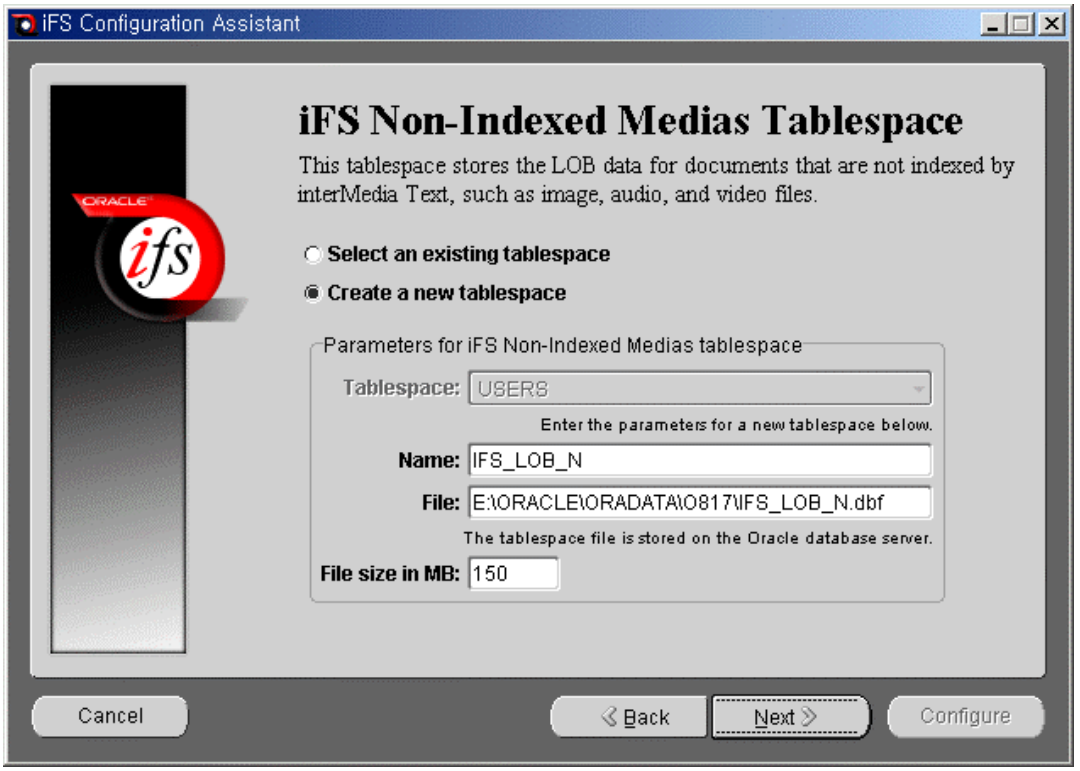


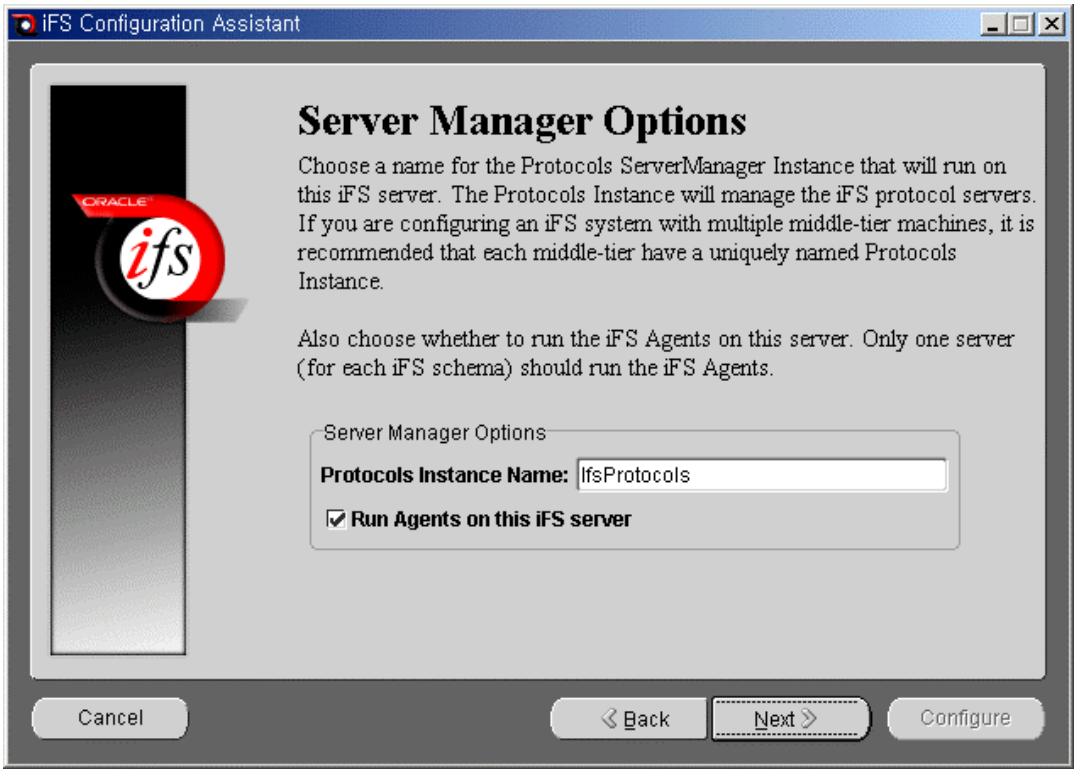
7. iFS는 기본적으로 Oracle interMedia 기능을 이용하므로 interMedia Text설정이 잘못 되어 있으면 다음과 같은 Error가 발생할 수 도 있다.

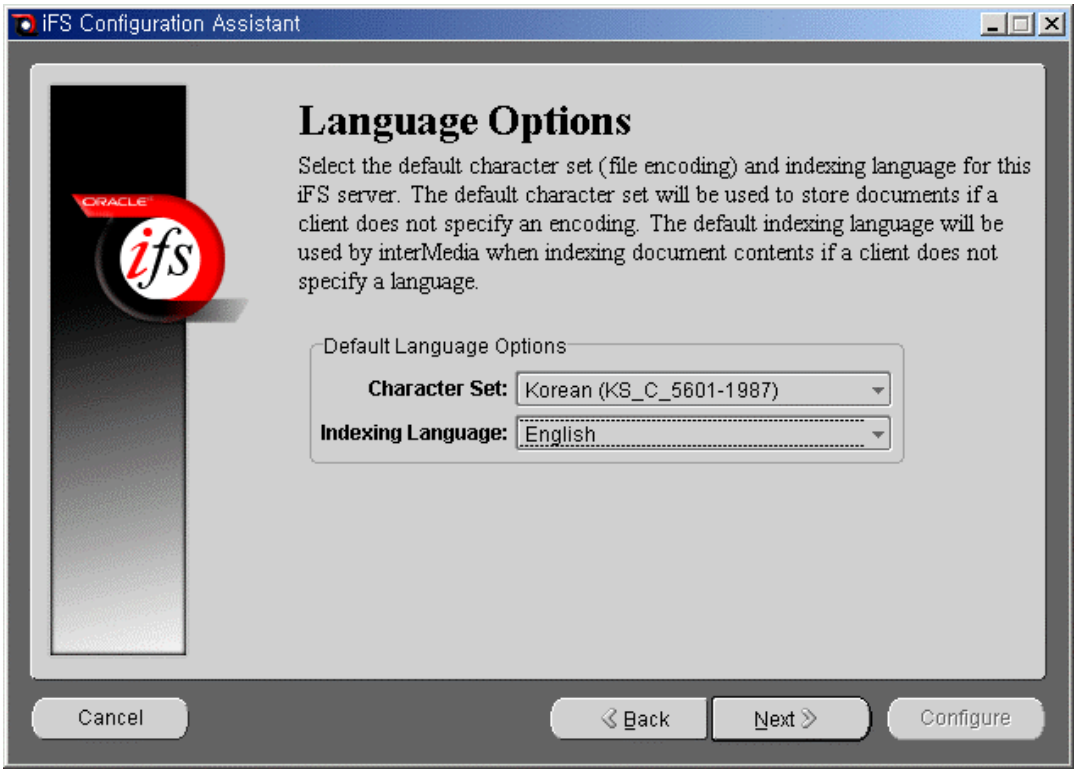

interMedia Test Failed
The following error occurred: oracle.ifs.utils.action.
ActionFailedException: interMedia seems to be
misconfigured:
java.sql.SQLException: ORA-29855:
ODCIINDEXCREATE 루틴을 수행하는데 오류가
발생했습니다
ORA-20000: interMedia Text 오류:
DRG-11422: 언어 초기화가 실패했습니다
DRG-00100: internal error, arguments : [52100],[drxs.
c],[553],[gxtopen],[1]
DRG-11208: ORACLE_HOME이 설정되지 않았습니다
ORA-06512: "CTXSYS.DRUE", 줄 126에서
ORA-06512: "CTXSYS.TEXTINDEXMETHODS", 줄
78에서
ORA-06512: 줄 1에서
OK

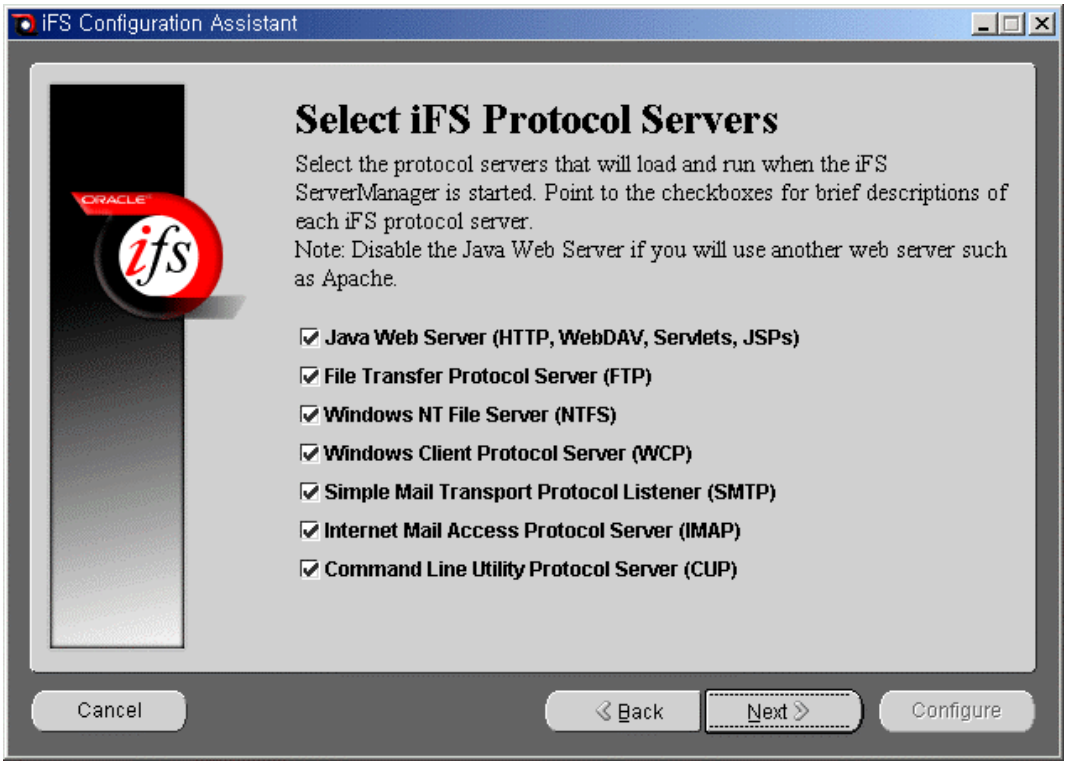

iFS Configuration Assistant
Set iFS Options
Point to each option to see a brief description.
iFS Service Size:
Recommended Settings
Use standard tablespace parameters
Set custom tablespace parameters
Use Partitioning Option
Use interMedia Option
'CTXSYS' password:
******
The default password for the CTXSYS user is CTXSYS
Cancel
Back
Next
Configure

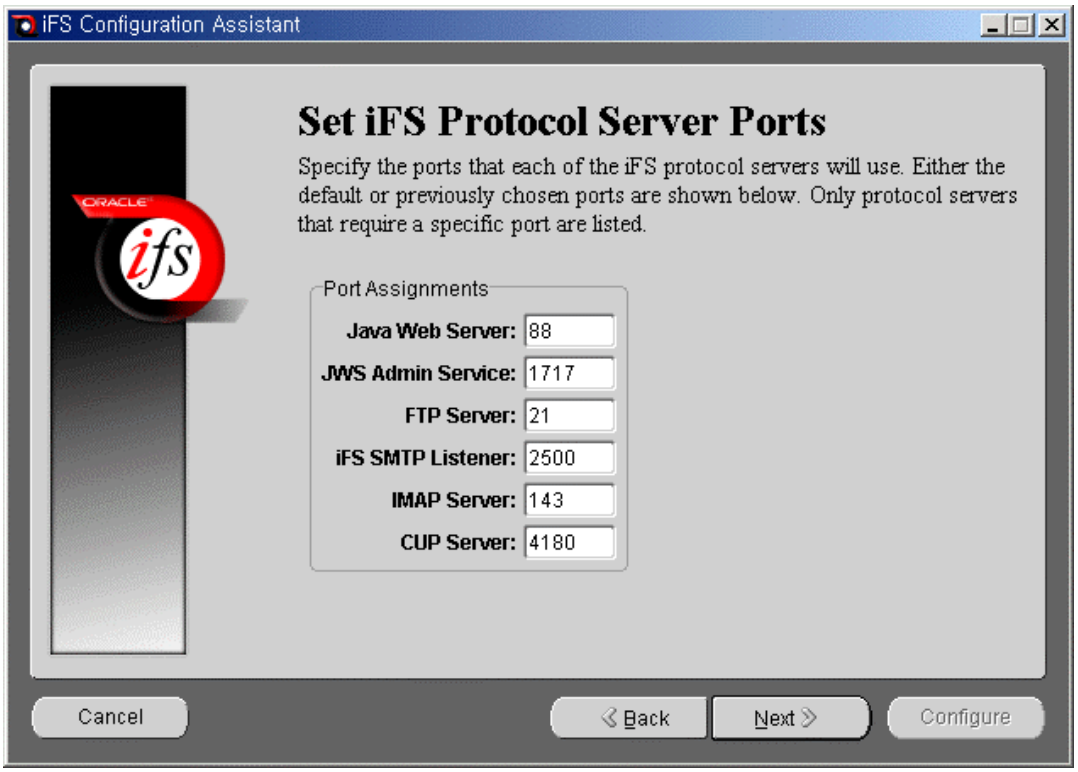

iFS Configuration Assistant
iFS Primary Tablespace
This tablespace stores the metadata for documents, information about users and groups, and other iFS object data.
Select an existing tablespace
Create a new tablespace
Parameters for iFS Primary tablespace
Tablespace: USERS
Enter the parameters for a new tablespace below.
Name: IFS_MAIN
File: E:\ORACLE\ORADATA\O817\IFS_MAIN.dbf
The tablespace file is stored on the Oracle database server.
File size in MB: 50
Cancel
Back
Next
Configure

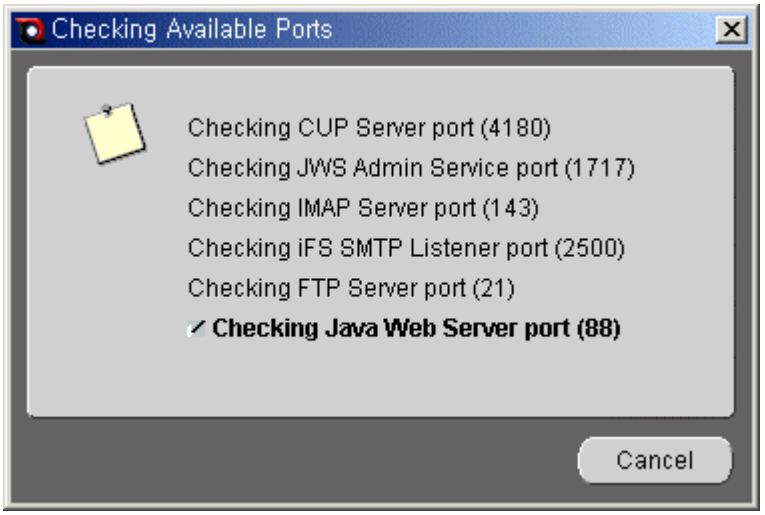

iFS Configuration Assistant
iFS Non-Indexed Medias Tablespace
This tablespace stores the LOB data for documents that are not indexed by interMedia Text, such as image, audio, and video files.
Select an existing tablespace
Create a new tablespace
Parameters for iFS Non-Indexed Medias tablespace
Tablespace: USERS
Enter the parameters for a new tablespace below.
Name: IFS_LOB_N
File: E:\ORACLE\ORADATA\O817\IFS_LOB_N.dbf
The tablespace file is stored on the Oracle database server.
File size in MB: 150
Cancel
Back
Next
Configure


iFS Configuration Assistant
Server Manager Options
Choose a name for the Protocols ServerManager Instance that will run on this iFS server. The Protocols Instance will manage the iFS protocol servers. If you are configuring an iFS system with multiple middle-tier machines, it is recommended that each middle-tier have a uniquely named Protocols Instance.
Also choose whether to run the iFS Agents on this server. Only one server (for each iFS schema) should run the iFS Agents.
Server Manager Options
Protocols Instance Name: IfsProtocols
Run Agents on this iFS server
Cancel
Back
Next
Configure


iFS Configuration Assistant
Language Options
Select the default character set (file encoding) and indexing language for this iFS server. The default character set will be used to store documents if a client does not specify an encoding. The default indexing language will be used by interMedia when indexing document contents if a client does not specify a language.
Default Language Options
Character Set: Korean (KS_C_5601-1987)
Indexing Language: English
Cancel
Back
Next
Configure

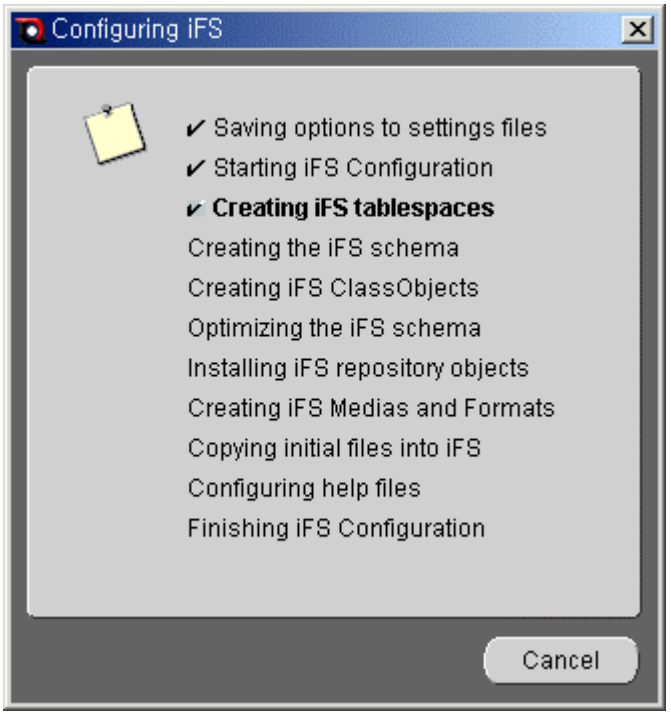

iFS Configuration Assistant
Select iFS Protocol Servers
Select the protocol servers that will load and run when the iFS ServerManager is started. Point to the checkboxes for brief descriptions of each iFS protocol server.
Note: Disable the Java Web Server if you will use another web server such as Apache.
Java Web Server (HTTP, WebDAV, Servlets, JSPs)
File Transfer Protocol Server (FTP)
Windows NT File Server (NTFS)
Windows Client Protocol Server (WCP)
Simple Mail Transport Protocol Listener (SMTP)
Internet Mail Access Protocol Server (IMAP)
Command Line Utility Protocol Server (CUP)
Cancel
Back
Next
Configure

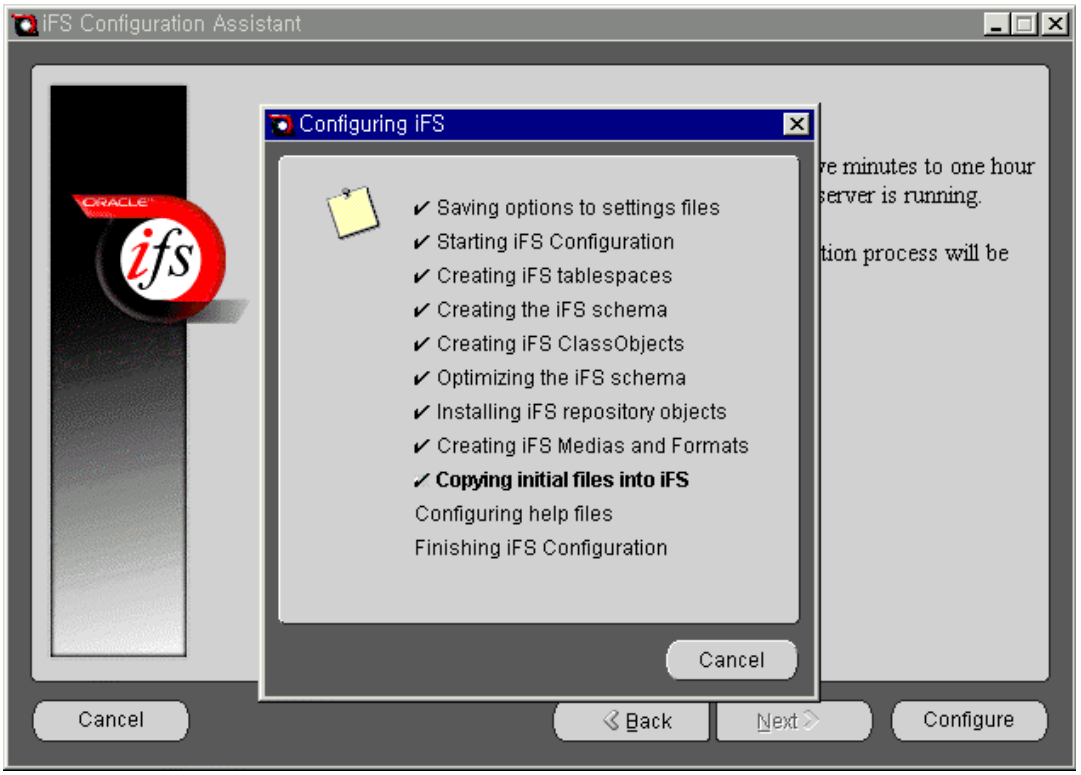

iFS Configuration Assistant
Set iFS Protocol Server Ports
Specify the ports that each of the iFS protocol servers will use. Either the default or previously chosen ports are shown below. Only protocol servers that require a specific port are listed.
Port Assignments
Java Web Server: 88
JWS Admin Service: 1717
FTP Server: 21
iFS SMTP Listener: 2500
IMAP Server: 143
CUP Server: 4180
Cancel
Back
Next
Configure

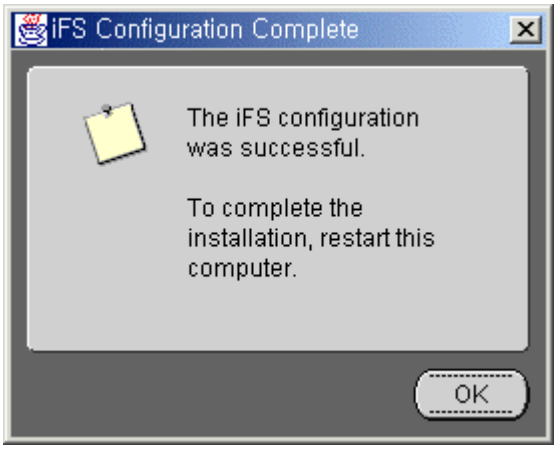

Checking Available Ports
Checking CUP Server port (4180)
Checking JWS Admin Service port (1717)
Checking IMAP Server port (143)
Checking iFS SMTP Listener port (2500)
Checking FTP Server port (21)
Checking Java Web Server port (88)
Cancel

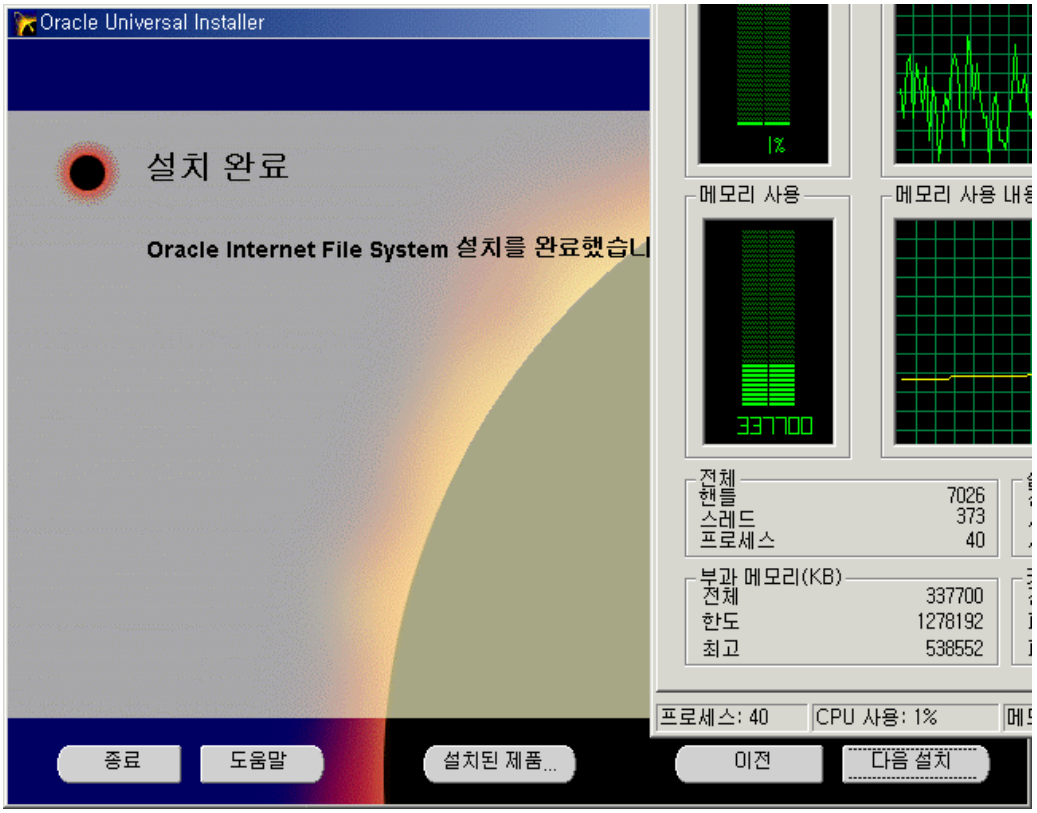
iFS Configuration Assistant
Configure iFS Email
Configure the following options for iFS e-mail. Point to each option for a brief description.
Email Configuration
iFS Email Domain:
kr.oracle.com
Cancel
Back
Next
Configure

iFS Configuration Assistant
Begin iFS Configuration
The configuration process can take anywhere from five minutes to one hour depending on the machine where the Oracle database server is running.
Log files with detailed information about the configuration process will be written to the following files:
e:\Oracle\iSuites\ifs1.1\log\IfsConfigOut.log
e:\Oracle\iSuites\ifs1.1\log\IfsConfigSql.log
Click the Configure button to continue.
Cancel
Back
Next
Configure


Configuring iFS
✔ Saving options to settings files
✔ Starting iFS Configuration
✔ Creating iFS tablespaces
Creating the iFS schema
Creating iFS ClassObjects
Optimizing the iFS schema
Installing iFS repository objects
Creating iFS Medias and Formats
Copying initial files into iFS
Configuring help files
Finishing iFS Configuration
Cancel


iFS Configuration Assistant
Configuring iFS
✔ Saving options to settings files
✔ Starting iFS Configuration
✔ Creating iFS tablespaces
✔ Creating the iFS schema
✔ Creating iFS ClassObjects
✔ Optimizing the iFS schema
✔ Installing iFS repository objects
✔ Creating iFS Medias and Formats
✔ Copying initial files into iFS
Configuring help files
Finishing iFS Configuration
Cancel
ve minutes to one hour
server is running.
tion process will be
Cancel
Back
Next
Configure


iFS Configuration Complete
The iFS configuration was successful.
To complete the installation, restart this computer.
OK

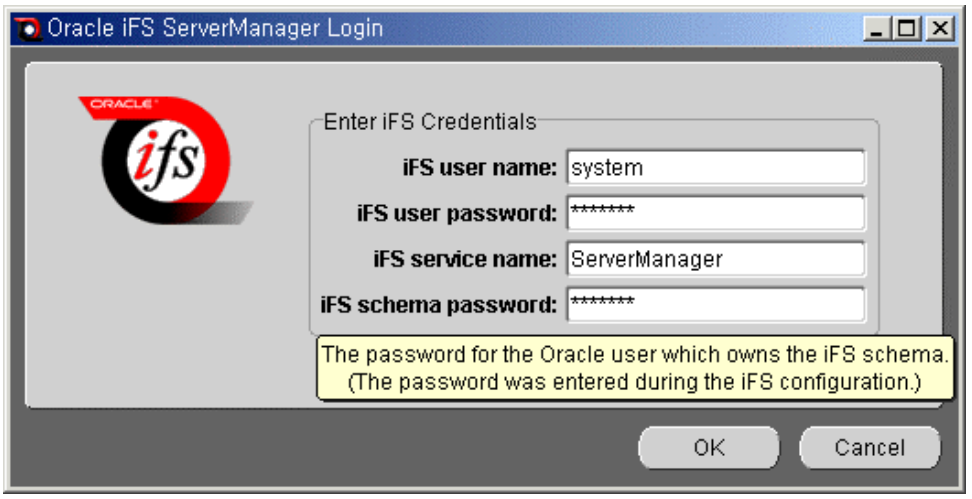


Notes : iFS User : system

Password :

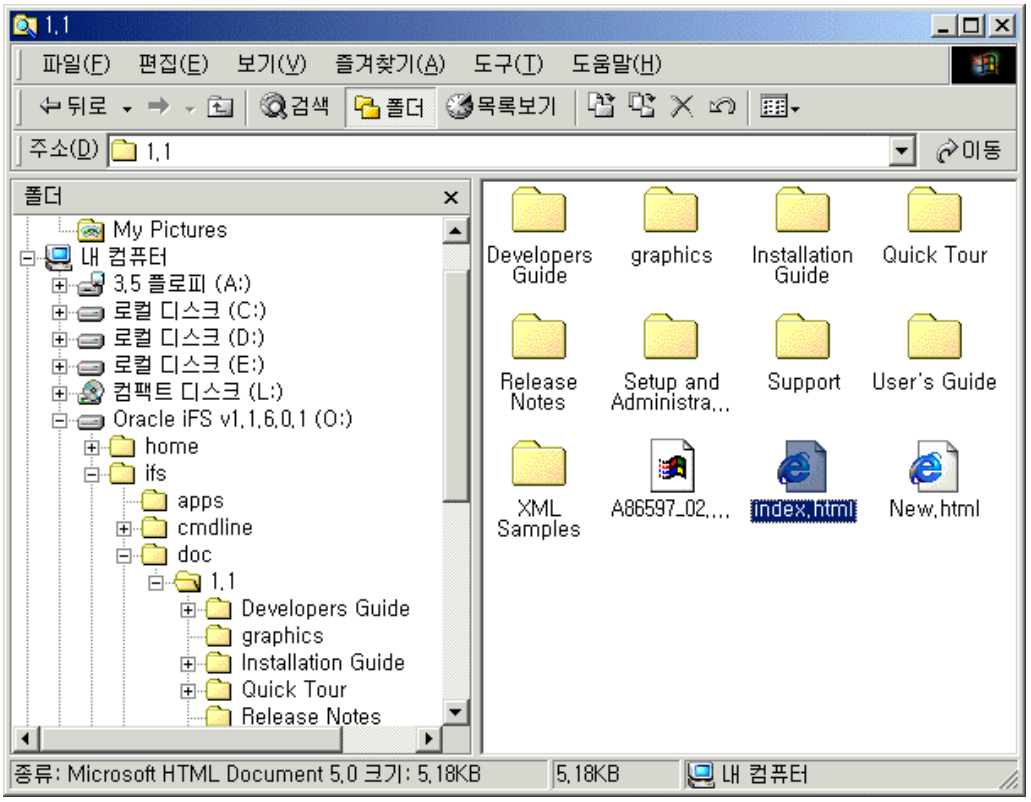
Default Service : ServerManager

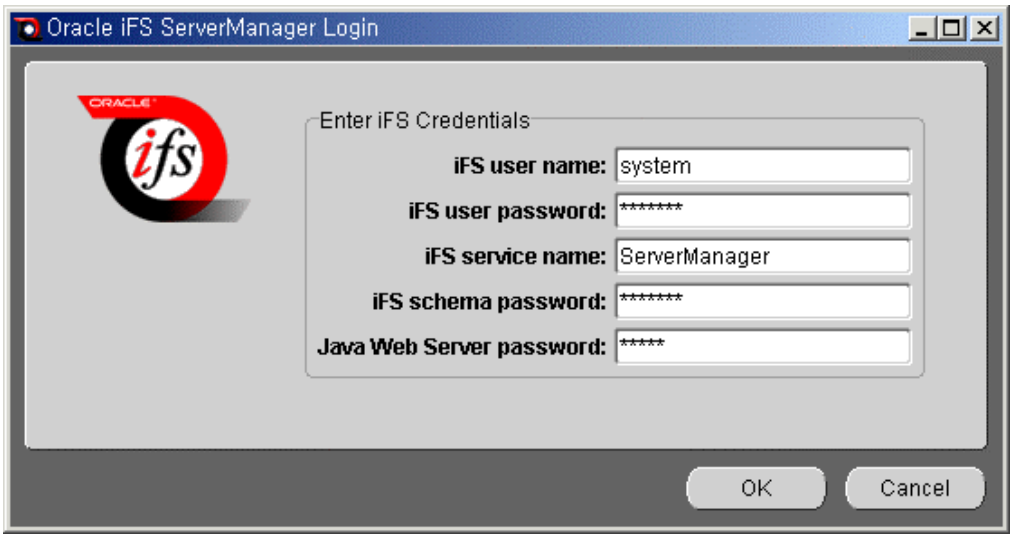
IFS Schema : ifssys



iFS Login Test

Windows Network Drive 테스트





3.4.6 OID Install

OID 및 Admin 실행

1. OID DB, Listener 실행

지금부터 connect parameter에는 oid db의 tns alias를 넣어주면된다.

setenv NLS_LANG American_America.UTF8

oidmon connect=oid start

oidctl connect=oid server=oidldapd instance=1 configset=0 start

2. oidadmin

dialogue box에서 [add] 선택

host : hostname

port : 389

Oracle Directory Manager Connect에서

user : cn=orcladmin

password : welcome (만약 OID설치시 변경하였으면 그것을 사용)

oidctl connect=oid server=oidldapd instance=1 stop

oidmon connect=oid stop

4. Client CD

Client CD is for Windows Platforms only.

The win32 client CD for 9i Application Server contains the following products:

Oracle Portal-to-Go Client 1.0.2.2.0a

Oracle OEM for iCache Client 1.0.2.0.0.1115

4.1. Oracle Portal-to-Go Client Requirements

Oracle Portal-to-Go client 설치시 필요한 요구사항은 다음과 같다.

Hardware Items	Required
Operating System	Windows NT 4.0 (with Service Pack 4.0) or higher
CPU	Pentium 266
Memory	At least 64 MB RAM for running both the Oracle Portal-to-Go Service Designer and Portal-to-Go Web Integration Developer; at least 32 MB RAM for running the Portal-to-Go Service Designer.
Disk Space	40 MB for running both the Oracle Portal-to-Go Service Designer and Portal-to-Go Web Integration Developer; at least 20 MB for running the Portal-to-Go Service.
JDK 1.2.2	The client system requires JDK 1.2.2. You can install JDK 1.2.2 for Windows NT from the client CD-ROM. You should ensure that the JDK directory is the first entry in the system environment path

5. Post Installation

5.1.Component Test Matrix

Component	Test	Type
Oracle HTTP Server	Run http://<host>:<port>/	All
cgi-bin	Run http://<host>:<port>/cgi-bin/printenv	All
mod_perl	Run http://<host>:<port>/perl/printenv	All
mod_plsql		All
mod_ose		SE+EE
Oracle HTTP Server (SSL_Enabled)	Run https://<host>:<port>/	All
FastCGI		
mod_ssl	Run https://<host>:<port>/demo All	All
Servlet	Run http://<host>:<port>/servlet/IsItWorking/	All
JDBC	Under <oracle home>/jdbc/demo	All
SQLJ	Under <oracle home>/sqlj/demo	All
Oracle JSP(OJSP) Demo	Run demo http://<host>:<port no>/demo All	All
OSE		
BC4J	Run Demo http://<host>:<port>/bc4j.html	All
Oracle JSP(OJSP) on Server Side	Under <oracle home>/javavm/demo	All
OC4J		All
Forms	Run http://<host>:<port>/dev60html/runform.htm	EE
EJB	Under <oracle home>/javavm/demo	SE+EE
CORBA	Under <oracle home>/javavm/demo	SE+EE
JNDI	Under <oracle home>/javavm/demo	SE+EE
JMS	Under <oracle home>/rdbms/demo	EE + SE
XDK		
iFS	Run http://<host>:<port>/ifs/files Log on as system/manager	SE+EE
WAP/Portal-to-go		All
Web Integration Server	Run http://<host>:5555 Log on as Administrator/manage	All
Web Cache	Run http://<host>:1100 Run http://<host>:4000	EE
Database Cache(iCache)		EE
Reports	Run http://<host>:<port>/dev60html/runrep.htm	EE
Discoverer	Run http://<host>:<port>/servlet/discoservlet	EE
OMS		EE
OEM Client	Run http://<host>:3339	All

6. 다이나믹 웹사이트, 포탈 및 애플리케이션의 구축 및 적용

6.1 Oracle HTTP Server

6.1.1 Start Oracle HTTP Server

iAS 설치후 별다른 설정없이 곧바로 실행가능하며 Port 지정 및 기타 설정방법은 다음에 설명하겠다.

Unix :

Inetd 에 의한 방법과 standalone 형태로 시작할 수 있다.

Inetd

Unix Internet Deamon을 이용한 것으로 테스트만을 위한 것으로 생각하면 좋을 것이다. 실제 설정해서 사용해보면 standalone 보다 상당히 느리다는 것을 느낄 수 있다.

IAS 를 구동하기 위한 간단한 shell을 작성

```
# cat ias
#!/bin/sh
PERL5LIB=/disk7/share/ias10/Apache/perl/lib/5.00503:/disk7/share/ias10/Apache/perl/lib/site_per
l/5.005
ORACLE_HOME=/disk7/share/ias10
LD_LIBRARY_PATH=/disk7/share/ias10/lib:/usr/lib
export PERL5LIB ORACLE_HOME LD_LIBRARY_PATH
/disk7/share/ias10/Apache/Apache/bin/httpds -d /disk7/share/ias10/Apache/Apache
```

Httpds.conf 에서 ServerType 지시자를 inetd로 설정
/etc/inetd.conf 에서
httpd stream tcp nowait root /disk7/share/ias10/Apache/Apache/bin/ias
/etc/services 에서
httpd 80/tcp httpd
inetd process id를 찾아 다시 실행시키면 된다.

```
# ps –ef|grep inetd
root   158     1   0   Aug  14  ?          0:00  /usr/sbin/inetd  –s
# kill –HUP 158
```

Standalone

default로 7777port를 사용하며 1024 port이내의 port를 지정하여 실행하려면 root user로 실행하면된다.

$cd $ORACLE_HOME/Apache/Apache/bin

$httpdsctl [start|stop|restart|graceful|startssl]

NT :

서비스에서 시작하는 방법 (시작->설정->제어판->서비스 -> Oracle<ServerName>HTTPServer 시작)

Command line

C:\> net start <service name>

또는,

직접실행(시작->프로그램->Oracle iAS->Oracle HTTP Server->Start HTTP Server Powered by Apache),

Command Line

C:\> start $ORACLE_HOME\Apache\Apache\apache –k [start|shutdown|restart|graceful]

6.1.2 Check Oracle HTTP Server for statically linked modules

Apache 는 Dynamic Shared Object (DSO) 와 Static Linked module형태로 Web Server에 새로운 기능들을 추가할 수 있다. Apache binary 에 static으로 적재된 module 들의 list를 확인하려면

Solaris: *$ORACLE_HOME/Apache/Apache/bin/httpds -l* (*i*AS 1.0.0)

*$ORACLE_HOME/Apache/Apache/bin/httpd -l (i*AS *1.0.2)*

NT: *$ORACLE_HOME/Apache/Apache/apache -l*

http_core.c
mod_so.c
mod_jserv.c
mod_perl.c

6.1.3 Check for Successfully startup

Log file directory 점검

iAS 가 실행되면 해당 Parent Process ID를 httpds.pid에 저장되며, web server 운영시 생성되는 각각의 Log 들은httpds.conf에 지정된 LogLevel과 SSLLogLevel에 따른 log 정보들이 httpds_error_log와 httpds_access_log file에 저장된다.

각 Logfile들의 위치는 다음과 같다.

$ORACLE_HOME/Apache/Apache/logs/httpds_error_log.
$ORACLE_HOME/Apache/Apache/logs/httpds_access_log
$ORACLE_HOME/Apache/Apache/logs/httpds_ssl_engine_log
$ORACLE_HOME/Apache/Apache/logs/httpds_ssl_request_log
$ORACLE_HOME/Apache/Apache/logs/httpds.id
$ORACLE_HOME/Apache/Jserv/logs/jserv.log

Check processes

Unix환경에서 Apache server가 실행되면 6개의 httpds process들과 1개의 java process 가 실행된다.

NT 환경에서는 작업관리자로 확인해보면 2개의 Apache.exe process와 1개의 java.exe 가 구동된다.

Test Default Page

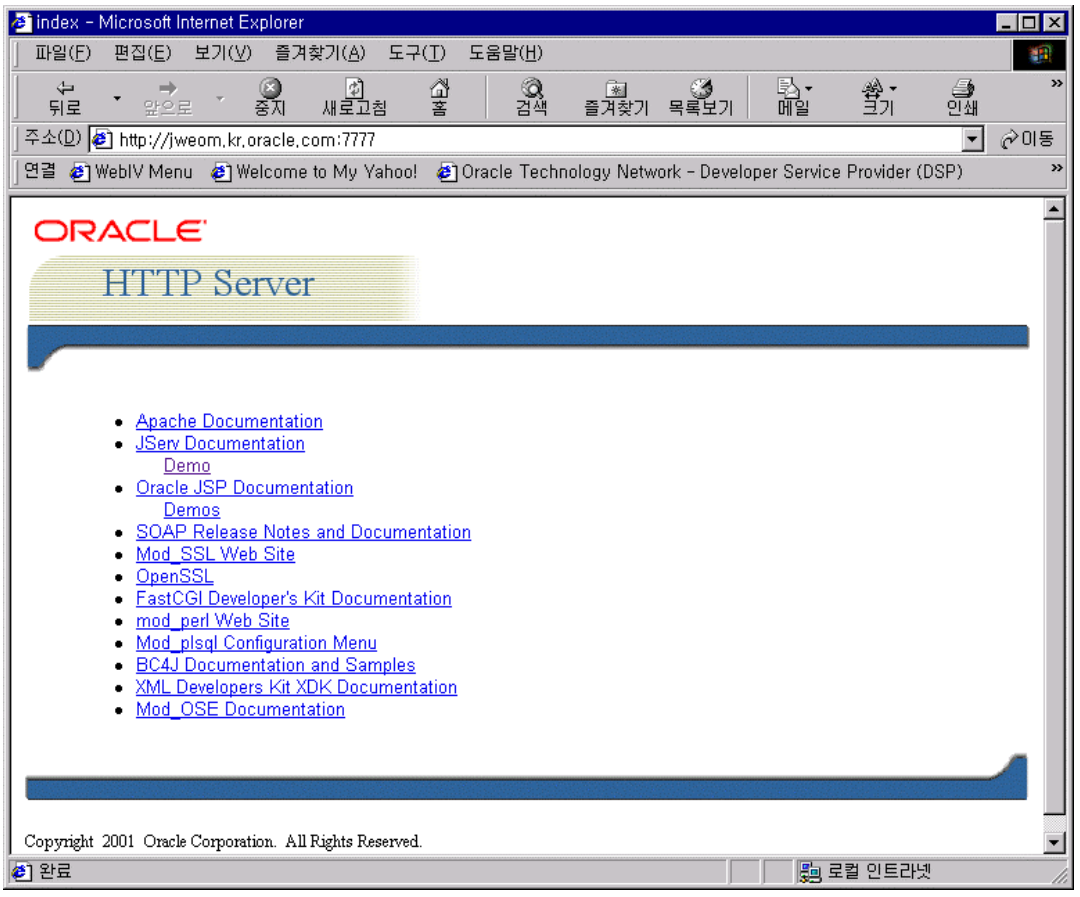
IAS 실행후 Web browser를 통해 iAS 에 접속한다. OAS 에서는 기본적으로 ip address 로 접속하려면 OAS의 network parameter에 해당하는 ip를 등록해주어야 하지만 apache는 굳이 그럴 필요는 없다.

그리고 HTTP default port인 80 번 port를 사용하지 않는다면 httpds.conf의 Port 를 확인해서 해당 Port로 접속하여야 할 것이다.

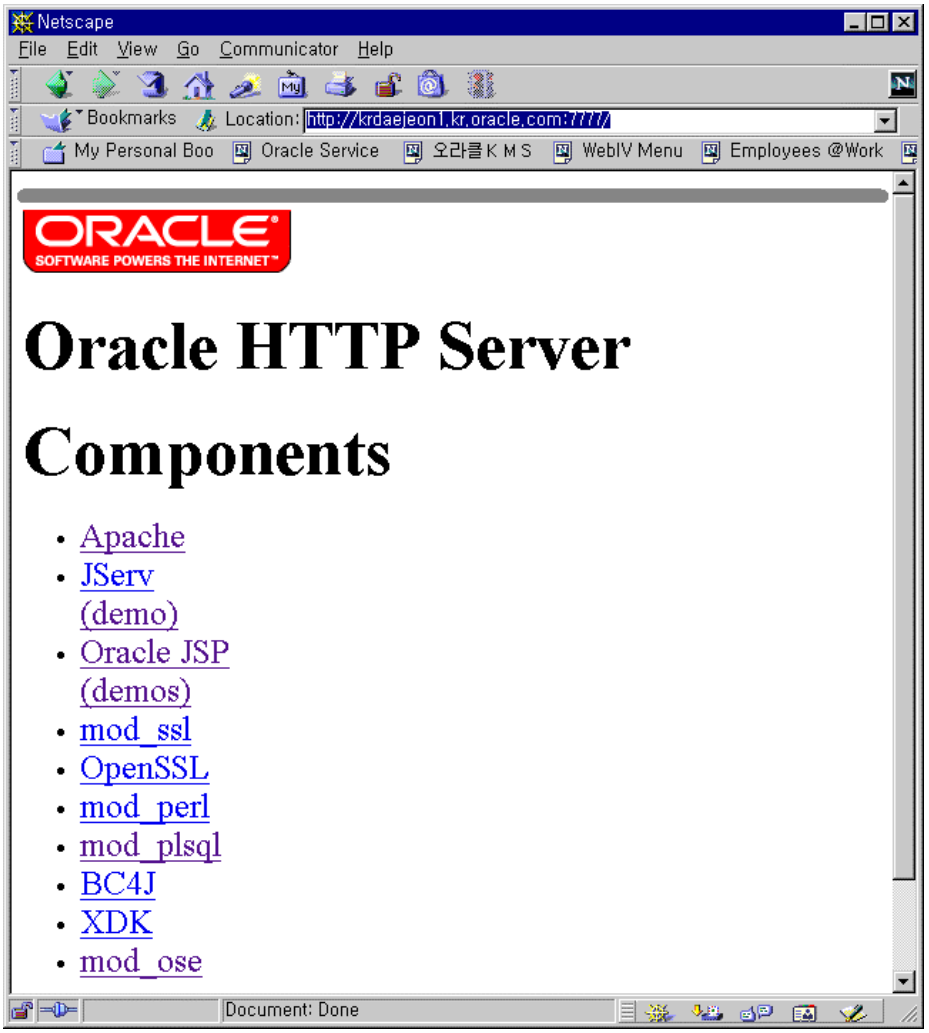
http://<ServerName>:<Port>/

만약 Unix에서의 경우 SSL option을 이용하여 실행하려면 SSL의 default port가 443이므로 root user로 실행명령을 주어야 함은 당연할 것이다.

Oracle 9iAS 1.0.2.2 초기화면



Oracle 9iAS 1.0.2.1 이하의 초기화면



6.1.4 Configure Oracle HTTP Server

지금부터는 Oracle HTTP Server 에서와 관련된 configuration file과 기본적으로 제공되는 module (apache, mod_jserv, mod_perl, mod_plsql, ojsp, xdk) 들의 설정하고 Test하는 과정을 알아보자.

여기서 설명되는 것들은 실행에 필요한 필수적인 부분만을 포함하였으므로 설명되지 않는 것들은 관련 문서들을 찾아 보도록 하자.

Apache

이 문서에서는 Apache 초보사용자가 알아야 할 필수적인(?) 것만 설명할 것이므로 iAS실행후 default page에 접속하면 Apache user's guide가 있으므로 참조하기 바란다.

Apache 의 기본 configuration file $ORACLE_HOME/Apache/Apache/conf/httpds.conf

Oracle 관련 확장 configuration file
$ORACLE_HOME/Apache/Apache/conf/oracle_apache.conf

httpds.conf

Section 1: Global Environment

ServerType standalone
-> inetd 형태나 daemon(standalone) 형태로 web serivce
ServerRoot "/disk7/share/ias10/Apache/Apache"
-> Apache 의 conf, logs 기타 설정이 포함됨 기본 directory root를 표시
PidFile /disk7/share/ias10/Apache/Apache/logs/httpds.pid
-> Service실행후 Apache Parent Process ID가 담긴 file
ScoreBoardFile /disk7/share/ias10/Apache/Apache/logs/httpds.scoreboard
-> Apache Process 간의 통신을 하기위해 정의한 file
LoadModule ssl_module libexec/mod_ssl.so
AddModule mod_ssl.c
-> Apache 에 Dynamic Shared Object 형태로 사용자의 추가기능을 지정

Section 2: 'Main' server configuration

Port 5050
-> standalone 형태로 service시 Port를 지정
<Directory "/disk7/share/ias10/Apache/Apache/htdocs">
-> OAS의 Document Root와 같음
DirectoryIndex index.html
-> 각 디렉토리에서 특정 file을 지정하지 않을 경우 기본으로 불려지는 homepage file 복수로도 지정가능
LogLevel warn
-> Apache Log Information의 수준을 지정
LogFormat "%h %l %u %t \"%r\" %>s %b \"%{Referer}i\" \"%{User-Agent}i\"" combined
LogFormat "%h %l %u %t \"%r\" %>s %b" common
-> combined 는 OAS의 xlf 형태, common 은 clf 형태임
CustomLog /disk7/share/ias10/Apache/Apache/logs/httpds_access_log common
-> Log file의 format 과 file을 지정
Alias /hr-img/ "/disk7/share/ias10/Apache/Apache/htdocs/img/"
-> OAS의 virtual directory 지정과 같다. 다만 Alias는 일반 Document directory를 지정
<Directory "/disk7/share/ias10/Apache/Apache/htdocs/img/">
Options Indexes MultiViews
AllowOverride None
Order allow,deny
Allow from all
</Directory>
-> 해당 Directory에 대한 Access수준을 나타내며 여기에는 Host, Domain, File, User, Group 등에 대한 제한을 둘 수 있다. 위에서 Allow from 에 "all" 대신 IP나 Domain 을 지정하면 해당IP나 Network Segment, 그리고 Domain 에서만 접근할 수 있다.
ScriptAlias /cgi-bin/ "/disk7/share/ias10/Apache/Apache/cgi-bin/"
-> 일반적인 CGI 가 저장된 directory 에 대한 virtual path이다 . OAS의 경우 virtual direcotry 에 "C" flag를 사용해던 것이다.
* Alias 로 지정된 Directory라 하더라도 CGI가 사용될 수도 있다. 자세한 사항은 Apache User's Guide를 확인하기 바란다.
ErrorDocument 404 /error.html
->Client가 Web Browser에서 Server로 요청한 문서나 내용에 대한 Server return Code에 따라 사용자가 수정된 다른 Page를 보여주는 기능

Section 3: Section 3: Virtual Hosts

OAS 의 Network 부분에 해당하는 것으로 Apache에서는 IP Based / Name Based Virtual host로 구분을 하는데 가장 큰 차이점은 여러 개의 IP를 사용하느냐이다. Oracle HTTP Server 에서는 Virtual Hosts지정할 수 있는 개수를 110개로 제한하였다.

이 부분에 대한 설명은 User's Guide 나 아래의 홈페이지를 참조하면 좋을 것이다. 마지막 chapter에서 소개하겠다.

http://www.apache.kr.net/documents/name-virtual.html

http://www.apache.kr.net/documents/vhost-story.html#understanding

마지막으로 Apache 1.3에서 추가된 directive인 Include를 사용하여 Jserv와 Oracle 관련한 설정file로 지정한 부분이다.

```
# Include the configuration files needed for jserv
include "/disk7/share/ias10/Apache/Jserv/etc/jserv.conf"
# Include the Oracle configuration file for custom settings
include "/disk7/share/ias10/Apache/Apache/conf/oracle_apache.conf"
```

oracle_apache.conf

```
include   "/disk7/share/ias10/Apache/modplsql/cfg/plsql.conf"
include "/disk7/share/ias10/Apache/xdk/admin/xml.conf"
include "/disk7/share/ias10/Apache/Ojsp/conf/ojsp.conf"
```

6.1.5 CGI Application

일반적으로 C/C++, Perl을 많이 사용하며 iAS에서는 기본적으로 cgi-bin 이라는 virtual directory 가 명시되어 있다. Pro*C를 설치하였다면 $ORACLE_HOME/precomp/demo/proc/sample3.pc를 간단히 수정하여 web application용으로 만들어보자.

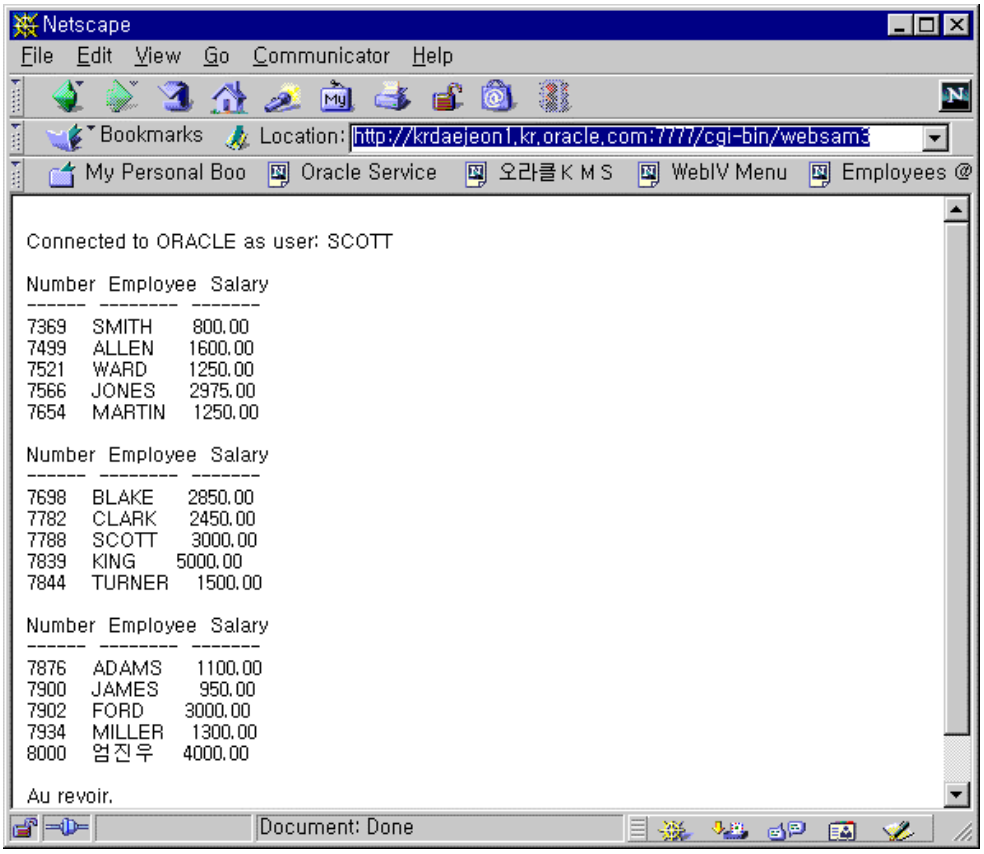
아래와 같이 Sample3.pc 의 line 60 –64 부분을 삽입하여 websam3.pc로 저장

```
56  void main()
57  {
58      int   num_ret;                  /* number of rows returned */
59
60      printf("Content-type:text/plain \n\n");
61
62      putenv("ORACLE_HOME=/disk5/app/ora817/product/8.1.7");
63      putenv("ORACLE_SID=ORA817");
64      putenv("LD_LIBRARY_PATH=/disk5/app/ora817/product/8.1.7/lib");
```

위와 같이 하는 이유는 Oralce HTTP Server가 nobody로 실행될 때 nobody User는 환경변수를 같지 못하게 되므로 꼭 넣어주어야 한다.

$make –f demo_proc.mk websam3.pc

Apache configuration file에서 설정한 cgi-bin directory로 복사한다.



6.1.6 Fastcgi

기존의 CGI의 단점을 보완할 수 있는 기능을 보강하여 제작된 CGI API로 대부분의 프로그래밍 언어에 독립적인 library이다.

특징을 살펴 보면

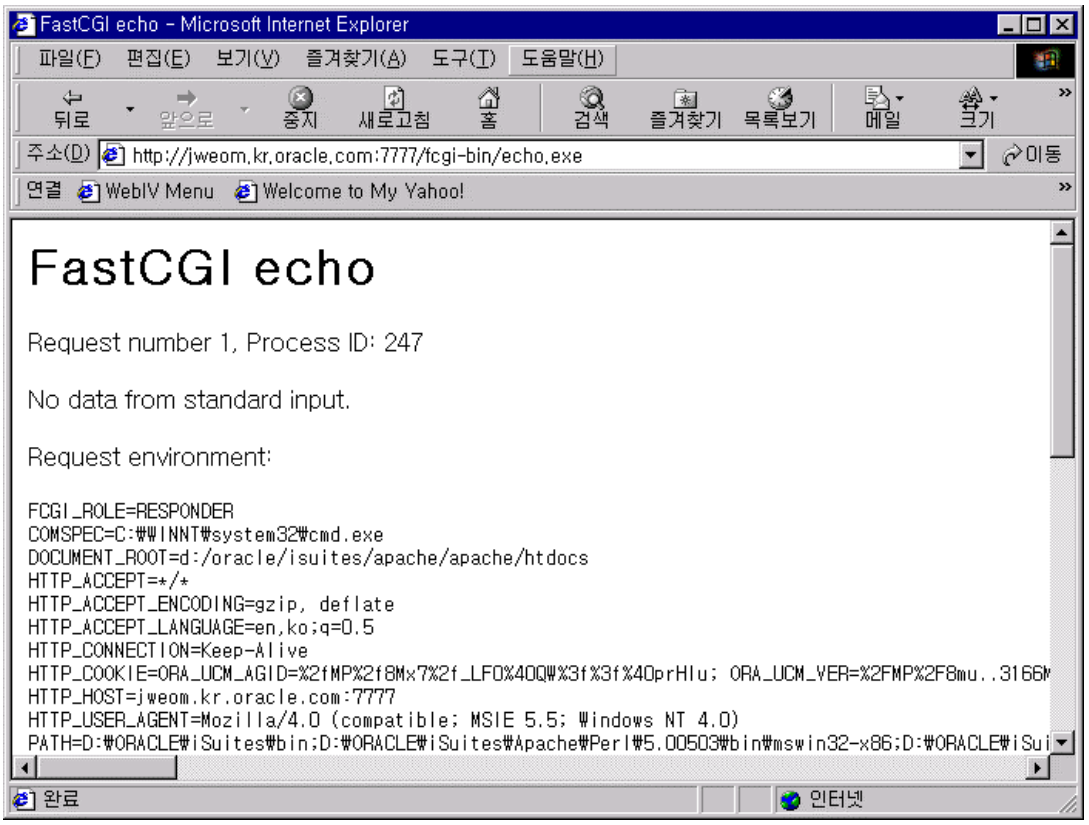
1. CGI의 가장 큰 단점인 Request별 단일 Process Service를 보강하여 Multiple Request에 대해 재 사용가능한 FastCGI Processes 구조를 갖고 있고,

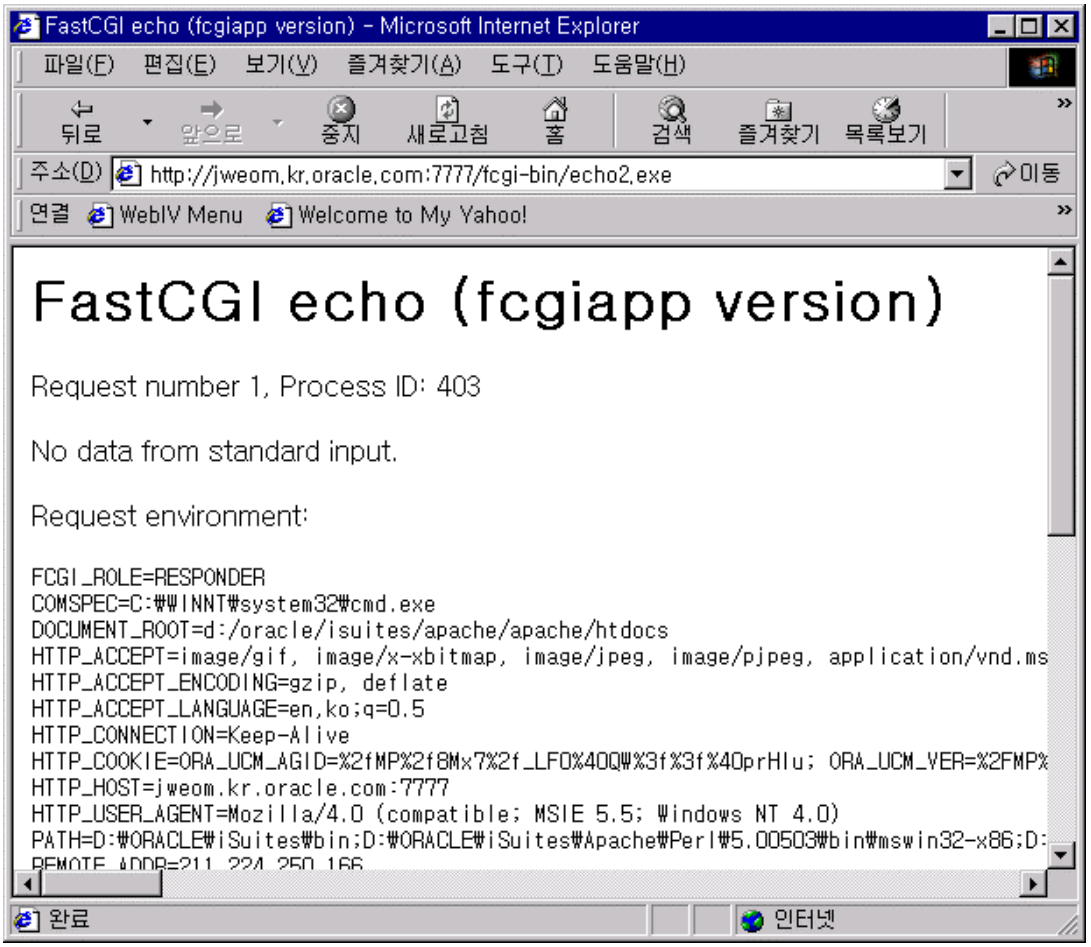
2. 기존 CGI Application 으로부터 쉽게 전이 할 수 있고,

3. 프로그래밍 언어에 독립적이고,

4. 특히 분산 환경도 지원해준다.

최신의 뉴스는 http://www.fastcgi.com 에서 참조하기 바란다.


FastCGI echo - Microsoft Internet Explorer
파일(F) 편집(E) 보기(V) 즐겨찾기(A) 도구(T) 도움말(H)
뒤로 앞으로 중지 새로고침 홈 검색 즐겨찾기 목록보기 메일 크기
주소(D) http://jweom.kr.oracle.com:7777/fcgi-bin/echo.exe
이동
연결 WebIV Menu Welcome to My Yahoo!
FastCGI echo
Request number 1, Process ID: 247
No data from standard input.
Request environment:
FCGI_ROLE=RESPONDER
COMSPEC=C:₩WINNT₩system32₩cmd.exe
DOCUMENT_ROOT=d:/oracle/isuites/apache/apache/htdocs
HTTP_ACCEPT=*/*
HTTP_ACCEPT_ENCODING=gzip, deflate
HTTP_ACCEPT_LANGUAGE=en,ko;q=0.5
HTTP_CONNECTION=Keep-Alive
HTTP_COOKIE=ORA_UCM_AGID=%2fMP%2f8Mx7%2f_LFO%40QW%3f%3f%40prHlu; ORA_UCM_VER=%2FMP%2F8mu..3166M
HTTP_HOST=jweom.kr.oracle.com:7777
HTTP_USER_AGENT=Mozilla/4.0 (compatible; MSIE 5.5; Windows NT 4.0)
PATH=D:₩ORACLE₩iSuites₩bin;D:₩ORACLE₩iSuites₩Apache₩Perl₩5.00503₩bin₩mswin32-x86;D:₩ORACLE₩iSui
완료
인터넷


FastCGI echo (fcgiapp version) - Microsoft Internet Explorer
파일(F) 편집(E) 보기(V) 즐겨찾기(A) 도구(T) 도움말(H)
뒤로 앞으로 중지 새로고침 홈 검색 즐겨찾기 목록보기
주소(D) http://jweom.kr.oracle.com:7777/fcgi-bin/echo2.exe
이동
연결 WebIV Menu Welcome to My Yahoo!
FastCGI echo (fcgiapp version)
Request number 1, Process ID: 403
No data from standard input.
Request environment:
FCGI_ROLE=RESPONDER
COMSPEC=C:₩WINNT₩system32₩cmd.exe
DOCUMENT_ROOT=d:/oracle/isuites/apache/apache/htdocs
HTTP_ACCEPT=image/gif, image/x-xbitmap, image/jpeg, image/pjpeg, application/vnd.ms
HTTP_ACCEPT_ENCODING=gzip, deflate
HTTP_ACCEPT_LANGUAGE=en,ko;q=0.5
HTTP_CONNECTION=Keep-Alive
HTTP_COOKIE=ORA_UCM_AGID=%2fMP%2f8Mx7%2f_LFO%40QW%3f%3f%40prHlu; ORA_UCM_VER=%2FMP%
HTTP_HOST=jweom.kr.oracle.com:7777
HTTP_USER_AGENT=Mozilla/4.0 (compatible; MSIE 5.5; Windows NT 4.0)
PATH=D:₩ORACLE₩iSuites₩bin;D:₩ORACLE₩iSuites₩Apache₩Perl₩5.00503₩bin₩mswin32-x86;D:
REMOTE_ADDR=211.224.250.166
완료
인터넷

6.1.7 Mod_perl

iAS사용자들의 perl script를 사용하는 방법은 두가지로 쓸 수 있다. Os 에 설치되어 있는 Perl Interpreter를 이용하는 방법과 Apache module인 mod_perl을 이용하는 방법이다.

6.1.7.1 CGI 형태로 사용하는 방법

Httpds.conf 에서 perl script가 있는 곳에 virtual directory 를 지정

ScriptAlias /cgi-bin/ "/disk7/share/ias10/Apache/Apache/cgi-bin/"

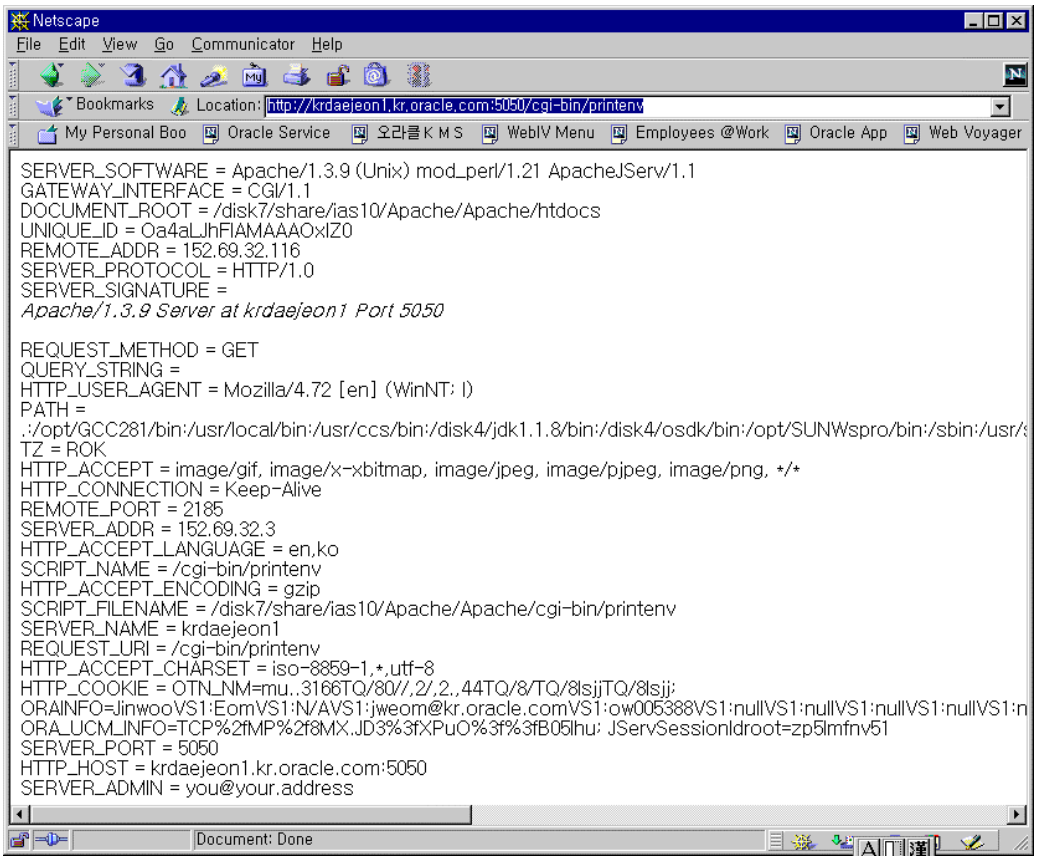
$cat $ORACLE_HOME/Apache/Apache/cgi-bin/printenv

```
#!/usr/local/bin/perl

print "Content-type: text/html\n\n";
while (($key, $val) = each %ENV) {
        print  "$key  =  $val<BR>\n";
}
```

PERL의 환경을 확인해보려면 다음과 같이 명령을 준다.

$perl -V

http://krdaejeon1.kr.oracle.com/cgi-bin/printenv



만약 Oracle DB와 연동된 Perl Script를 작성하려면 DBI , DBD 를 미리 설치하여야 한다.
예전 OAS에서는 DBI, DBD Package가 함께 포함되어 있었는데 iAS에는 포함되어 있지 않다.
DBI, DBD관련자료는 KMS 또는 http://www.cpan.org 에서 확인 할 수 있다. Perl Package들은 다음과 같은 방법으로 설치한다.

```
$perl    Makefile.pl
$make
$make test
$make install
```

perl Makefile.pl 하게되면 미리 설치되어야할 Package들의 목록들이 나온다. 그러면 해당 패키지를 먼저 설치하면 된다.

이런 일련의 작업을 하려면 OS에 C compiler와 PERL 이 설치되어 있어야 한다.

특히 Windows NT 에서 Visual C++ 가 설치되어 있어야 하므로 PERL을 사용하는 고객사이트에서 이러한 것도 고려해야 한다.

6.1.7.2 Mod_Perl 설정방법

Oracle DB를 연동하려면 Perl CGI와 마찬가지로 DBI, DBD package가 설치되어 있어야 한다.

그리고 httpdsctl shell script내의 PERL5LIB 를 iAS가 설치되어 있는 perl에 맞게 수정한다.

$ORACLE_HOME/Apache/Apache/bin/httpdsctl

```
PERL5LIB=/disk7/share/ias10/Apache/perl/lib/5.00503:
        /disk7/share/ias10/Apache/perl/lib/site_perl/5.005 ; export PERL5LIB
```

$ORACLE_HOME/Apache/Apache/conf/httpds.conf

```
Alias /perl/ "/disk7/share/ias10/Apache/Apache/perl/"
PerlModule Apache
PerlModule Apache::Registry
<Location /perl>
        SetHandler    perl-script
        PerlHandler Apache::Registry
        AddHandler perl-script .pl
        Options +ExecCGI
        PerlSendHeader On
</Location>
```

$ORACLE_HOME/Apache/Apache/perl/scott.pl

```
# package scott;
use DBI;
# sql*net 사용시 connect()의 첫번째 인수에 tns string을 사용
$dbh = DBI->connect("ora816", "scott", "tiger", "Oracle") || die $DBI::errstr;
$stmt = $dbh->prepare("select * from emp where empno < 8000 order by empno") ||
die $DBI::errstr;
$rc = $stmt->execute() ||die $DBI::errstr;
$nrows = $stmt->rows();
print "Content-type: text/plain\n\n";
print "Query will return $nrows rows\n\n";
while (($a1, $a2, $a3, $a4) = $stmt->fetchrow()) { print "$a1 $a2 $a3 $a4 \n"; }
warn $DBI::errstr if $DBI::err;
die "fetch error: " . $DBI::errstr if $DBI::err;
$stmt->finish() || die "can't close cursor";
$dbh->disconnect() || die "can't log off Oracle";
```

이 script **의** permission**을 변경한다**.

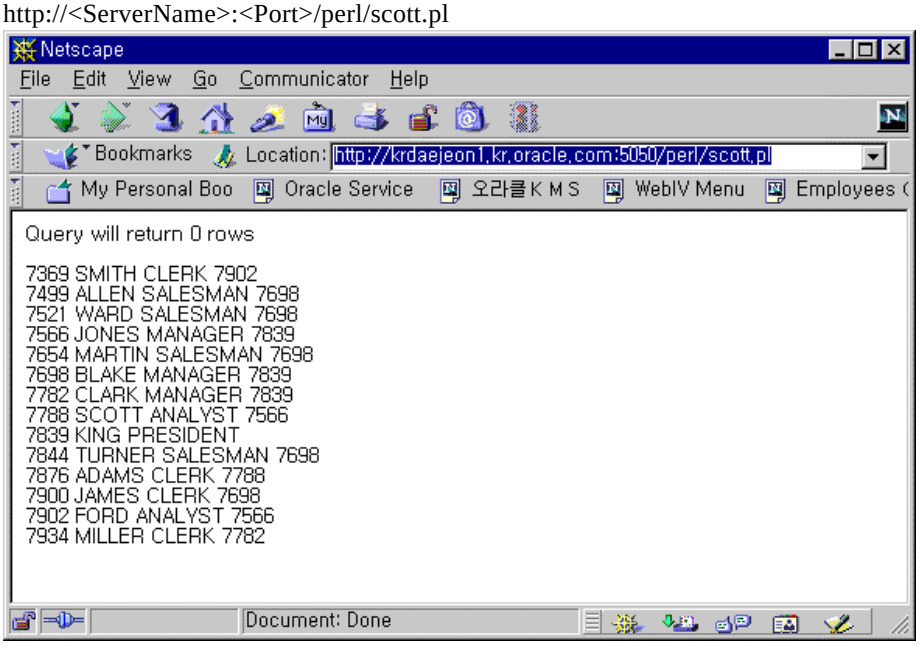
$ chmod +x scott.pl

다음과 같은 방법으로 우선 test**하여 본다**.

```
krdaejeon1# perl -s scott.pl
Content-type: text/plain

Query will return 0 rows

7369 SMITH CLERK 7902
7499 ALLEN SALESMAN 7698
7521 WARD SALESMAN 7698
7566 JONES MANAGER 7839
7654 MARTIN SALESMAN 7698
7698 BLAKE MANAGER 7839
7782 CLARK MANAGER 7839
7788 SCOTT ANALYST 7566
7839 KING PRESIDENT
7844 TURNER SALESMAN 7698
7876 ADAMS CLERK 7788
7900 JAMES CLERK 7698
7902 FORD ANALYST 7566
7934 MILLER CLERK 7782
```

원하는 결과가 나오면 Web browser**로도 확인해본다**.

http://<ServerName>:<Port>/perl/scott.pl



6.1.8 Mod_plsql

OAS 의 PLSQL Cart 기능을 수행하는 Apache 용 Module 이다.

http://<ServerName>:<Port>/pls/admin_/gateway.htm 으로 접속하여 설정을 변경할 수 있다.

$ORACLE_HOME/Apache/modplsql/cfg/plsql.conf
$ORACLE_HOME/Apache/modplsql/cfg/wdbsvr.app

6.1.8.1 Plsql Web Tool Kit 설치

OAS 와 마찬가지로 Oracle DB에 OWA ToolKit 을 설치하여야 한다. (Oracle 7.3.4 이상)

$ cd $ORACLE_HOME/Apache/modplsql/owa
$ sqlplus sys/manager

iAS 1.0.1 이상

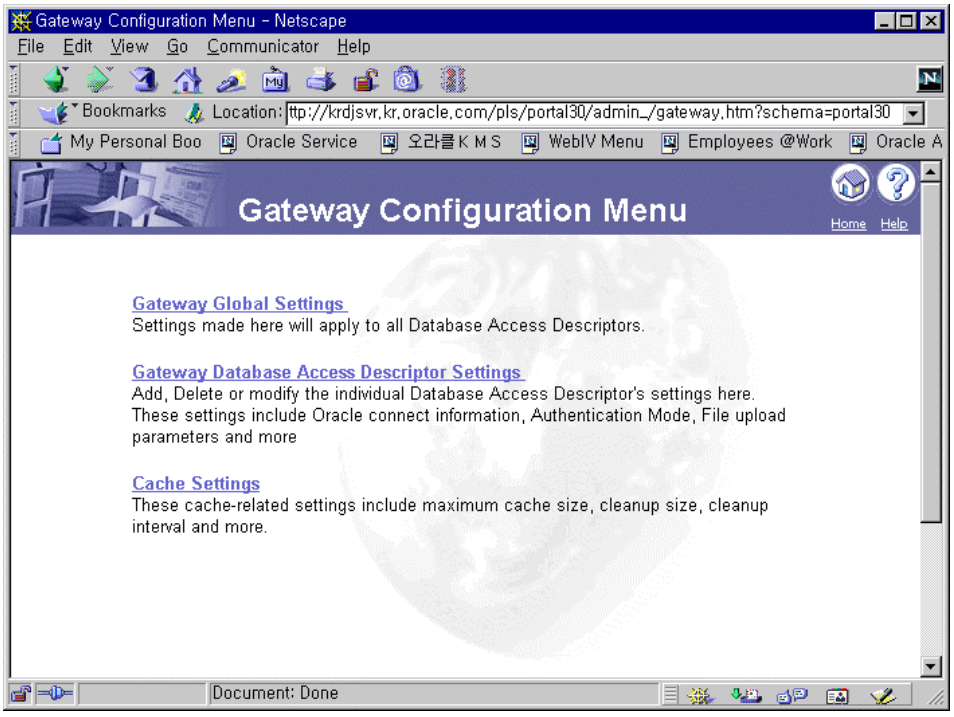
SQL>@owaload log_file

iAS 1.0

SQL>@owaload sys_passwd owa_user owa_passwd default_tablespace temp_tablespace connect_string log_file

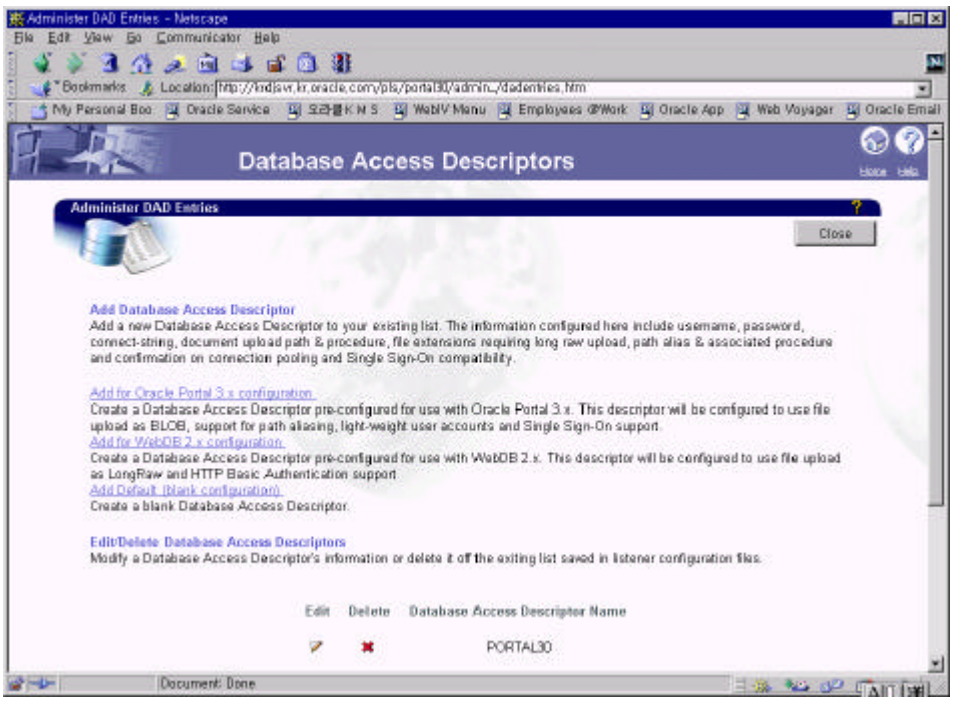
6.1.8.2 DAD 설정

mod_plsql의 설정페이지로 접속해보자 http://<ServerName>:<Port>/pls/admin_/gateway.htm

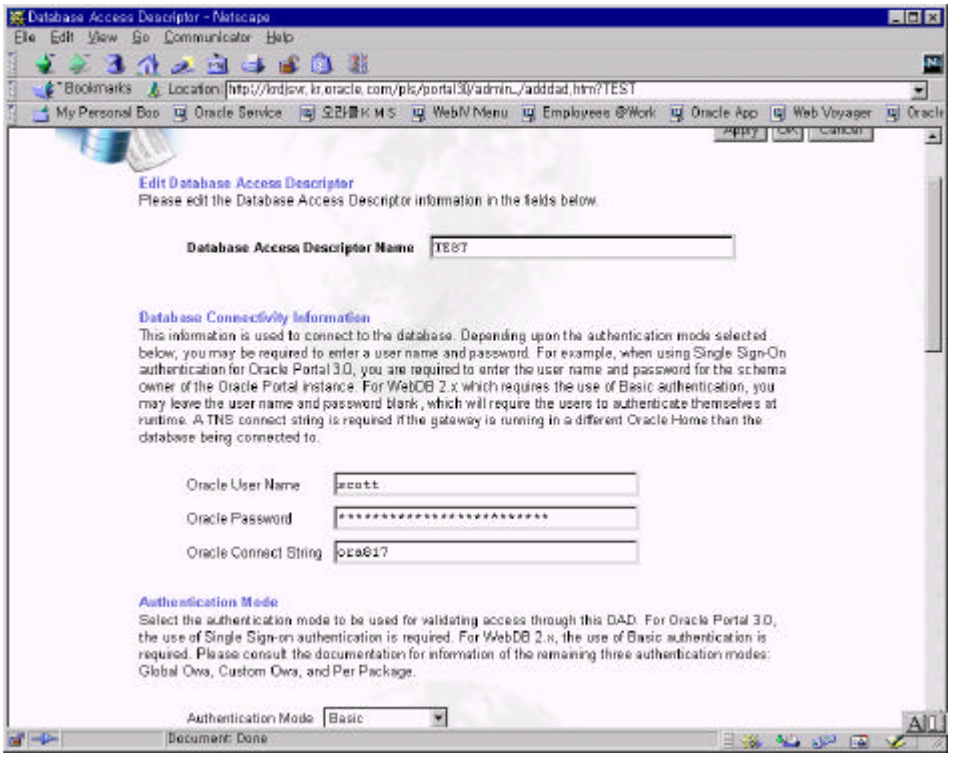


OAS의 DAD를 추가했던 것처럼 Gateway Database Access Decriptor Settings를 선택

Database Access Descriptor Name : TEST
Oracle User name : scott
Oracle Password : tiger
Oracle Connect String : ora817
Authentication Mode : Basic
Default (Home) Page : home



Add Default (blank configuration) 선택



[참고] Authentication Mode가 SSO일때 Default Page지정을 schema.[procedure등]으로 했을때 URL접근시 schema 를 빼면 Error가 발생할 것이다.

http://krdjsvr.kr.oracle.com/pls/portal30/portal30.home => OK

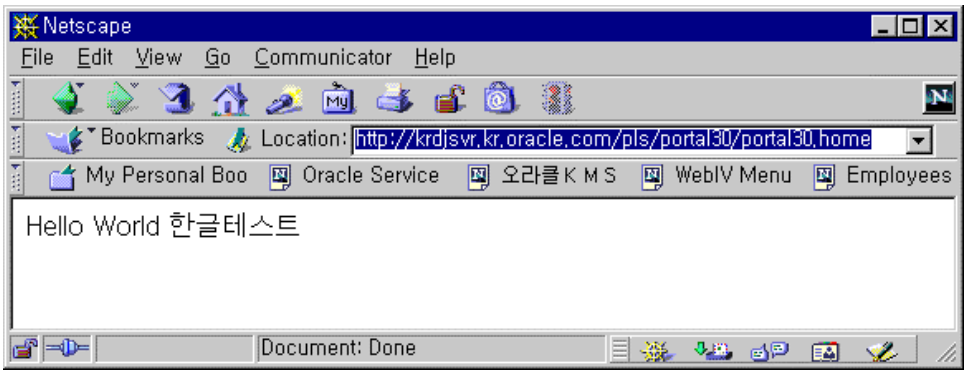
http://krdjsvr.kr.oracle.com/pls/portal30/home => Error

물론, Authentication Mode가 Basic인 경우에는 두가지 모두 OK

```
$sqlplus scott/tiger
SQL>create or replace procedure home as
Begin
        Htp.p('Hello World 한글테스트');
End;
```

http://<ServerName>:<Port>/pls/test/home 또는 Gateway Global Setting을 하였으면,

http://<ServerName>:<Port>/pls



여기서의 /pls는 plsql.conf 에서 Location directive의 pls 이므로 굳이 pls로 하지않고 다른 것으로 바꾸거나 추가하려면 <Location /plsql> …. </Location>을 추가하면 된다.

6.1.8.4 Mod_plsql Debug

ias에서 plsql module의 에러를 확인하려면 wdbsvr.app에 다음 내용을 포함시킨다.

```
debugModules=all
LoggingLevel=Debug
```

6.1.8.5 Migrating OAS PL/SQL Cartridge using flexible parameter passing to MOD_PLSQL

참조 : <Note:124474.1>

Title: Migrating OAS PL/SQL Cartridge using flexible parameter passing to MOD_PLSQL

Flexible parameter passing can be used in OAS PL/SQL cartridge i.e. HTML forms can be used from which any number of elements can be selected. Overloaded procedures can be used to handle each possible combination but OAS makes it possible to define/invoke a procedure regardless of which elements were chosen. In the query string all the name-value pairs are passed to the procedure, and it has the following signature:

```
proc_name(
      num_entries   IN  NUMBER,
      name_array     IN  OWA.vc_arr,
      value_array   IN  OWA.vc_arr,
      reserved       IN  OWA.vc_arr)
```

where:

proc_name is the name of the PL/SQL procedure that you are invoking.
num_entries specifies the number of name-value pairs in the query string.
name_array specifies the names from the query string.
value_array specifies the values from the query string.
reserved is not used.

Example

```
CREATE OR REPLACE PROCEDURE first
 IS
BEGIN
   htp.formOpen('second');
      htp.formText('p_param1');
      htp.para;

     htp.formSelectOpen('p_param2', cattributes=>'multiple');
         htp.formSelectOption('one');
         htp.formSelectOption('two');
         htp.formSelectOption('three');
      htp.formSelectClose;
      htp.para;
     htp.formHidden('p_param3', 'hidden');
      htp.formSubmit(cvalue=>'Submit');
   htp.formClose;
END;
/

CREATE OR REPLACE PROCEDURE second
 (NUM_ENTRIES IN NUMBER
 ,NAME_ARRAY IN owa.vc_arr
 ,VALUE_ARRAY IN owa.vc_arr
 ,RESERVED IN owa.vc_arr
 )
 IS
BEGIN
  htp.p('Number of parameters: ' || TO_CHAR(num_entries));
   htp.br;
  htp.p('Name and value of the parameters:');
  FOR i IN 1..name_array.count LOOP
     htp.p('Name: ' || name_array(i));
      htp.br;
     htp.p('Value: ' || value_array(i));
      htp.br;
   END LOOP;
   htp.br;
```

```
END;
/
```

If we run the above example using mod_plsql we get the following message:

```
second: SIGNATURE (parameter names) MISMATCH

VARIABLES IN FORM NOT IN PROCEDURE: P_PARAM1,P_PARAM2,P_PARAM3

NON-DEFAULT VARIABLES IN PROCEDURE NOT IN FORM:
NUM_ENTRIES,NAME_ARRAY,VALUE_ARRAY,RESERVED


  DAD name: www_proba
  PROCEDURE   : second
  URL             : http://hostname:port/pls/DAD/second
  PARAMETERS :
  ============
  P_PARAM1:
     joke
  P_PARAM2:
     two
  P_PARAM3:
     Hidden
```

Solution Description

In order to use use flexible parameter passing with mod_plsql the procedure name has to be prefixed with a '!'. So the form generating procedure has to be modified in the following way:

```
CREATE OR REPLACE PROCEDURE first
  IS
BEGIN
   htp.formOpen('!second');
      htp.formText('p_param1');
      htp.para;

     htp.formSelectOpen('p_param2',  cattributes=>'multiple');
         htp.formSelectOption('one');
         htp.formSelectOption('two');
         htp.formSelectOption('three');
      htp.formSelectClose;
      htp.para;
     htp.formHidden('p_param3',  'hidden');
      htp.formSubmit(cvalue=>'Submit');
   htp.formClose;
END;
/
```

This four-parameter signature procedure is supported for backward compatibility, but mod_plsql also provides a way to use procedures with a two-parameter signature, which is recommended because it provides improved performance. See also mod_plsql documentation.

6.1.8.6 OAS 사용자의 PLSQL Tool kit Virtual Path 변경

OAS를 사용했던 고객들이 plsql application등록시 virtual path를 /app 등으로 설정하였다면 iAS로 URI 변환시 다소 어려움이 있을 것이다. 하지만 이것은 mod_rewrite를 이용해서 간단히 해결할 수 있다.

예1) httpds.conf

```
RewriteEngine on
RewriteRule ^/app/(.*)$ /pls/jweon/$1 [PT]
```

예2) OAS PL/SQL Application 의 Virtual Path 가 /myapp1/plsql , /myapp2/plsql 로 설정되어 있었다면

```
RewriteRule   ^/myapp1/plsql/(.*)$    /pls/myapp1/$1  [PT]
RewriteRule   ^/myapp2/plsql/(.*)$    /pls/myapp2/$1  [PT]
```

이렇게 하면 performance 에 거의 영향없고 source 수정도 없이 migration 할 수 있다.

참조 : WebIV Note:108660.1, Apache User's Guide 의 mod_rewrite 부분

Tip) Virtual Host사용시 위의 Rewrite 기능이 수행되지 않으면 <VirtualHost> .. </VirtualHost> 내부에 예 1)과 같이 RewriteEngine, RewriteRule을 각각 포함시킨다.

6.1.8.7 PLSQL Admin Page에 암호설정하기

iAS에는 OAS의 Node Manager와 같은 PLSQL Admin Page가 있지만 특별히 암호화 Page로 설정되어 있지 않으므로 다음과 같이 Apache의 인증방법을 이용하여 설정할 수 있다.

DAD를 설정하는 pl/sql admin page (http://[hostname]:[port]/pls/[default dad]/admin_/gateway.htm)

"/pls/[...]/admin_" URI를 포함하는 모든 page에 암호설정하기 위해

$ORACLE_HOME/Apache/modplsql/cfg/plsql.conf 에 다음과 같이 추가

```
<LocationMatch "/pls(.*)admin_">
   AuthType Basic
   AuthName "Restricted Access"
    AuthUserFile "/disk7/share/ias10/Apache/Apache/bin/krdaejeon1_pwd"
   AuthGroupFile  "/disk7/share/ias10/Apache/Apache/bin/krdaejeon1_group"
   Require valid-user
</LocationMatch>
```

6.1.8.8 암호화설정에 대한 다른 방법

Using the PL/SQL Gateway authentication schemes

There are three types of authentications:

* Static Authentication where username/password are hard coded as part of the DAD in the configuration file and thus when you use that DAD, you are always forced to work out of the username schema defined in the config file.

* Dynamic Authentication where the username/password information isn't present as part of the DAD in the configuration file, and thus the user is prompted for this information.

* Single-Sign-On

There is a provision to restrict access to your PL/SQL Gateway configuration area, e.g. http://[hostname]:[port]/pls/admin_/gateway.htm

This is done by changing the parameter "administrators" in your [WVGATEWAY] section of wdbsvr.app. This parameter is set to "all" by default, and can be set to a list of comma separated values indicating the list of users which will have access to the gateway.htm page.

For e.g. setting "administrators=scott,system" allows only users "scott" and "system" to access gateway.htm.

In order to get prompted for a password you need to access the "admin_" pages thru a DAD with "dynamic authentication" enabled (no user/password specified). You also may want to make this DAD your default DAD by setting the parameter "defaultDAD" in the [WVGATEWAY] section of wdbsvr.app. This allows calling

http://[hostname]:[port]/pls/admin_/gateway.htm

(would otherwise give you "document contained no data") instead of

http://[hostname]:[port]/pls/[DADnouser&passwd]/admin_/gateway.htm

Notes:

Do not specify users as administrators for which a DAD with static authentication exists (even if its not your default DAD). Otherwise by acessing a URL like

http://[hostname]:[port]/pls/[DADwithscott&passwd]/admin_/gateway.htm

would get you access as scott (if scott is specified as administrator)

Be aware that the "administrators=username" can actually take values like "administrators=username@tns_alias". This way only user "username" which connects to database with alias "tns_alias" can access the admin page.

So if you designate user "scott" in database "db1" as the administrator, this will ensure that user "scott" of database "db2" cannot access the admin page.

Pros:

PLSQL gateway's way of dealing with authentication is to use a cookie (WDB_GATEWAY_LOGOUT) in conjuction with the Basic Authentication info. This allows you to de-authenticate(!) by running the built-in command "logmeoff".

i.e. http://[hostname]:[port]/pls/[DADusedforauth]/logmeoff.

You have to specify the DAD!!! (http://[hostname]:[port]/pls/logmeoff would give an error!)

Cons:

The specified administrators can not be the same users used in a static DAD unless you want to open a backdoor (see note above). If you set the DAD used for auth to be the default DAD, your application URL eventually needs to contain the DAD name (if using a different DAD)

You can use the Apache "rewrite" methods to alias a URL (see <Note:108660.1>)

6.1.9 Mod_jserv

Apache 에 Java Servlet Engine을 추가한 기능이다. IAS 1.0.2.x에서는 Jserv 1.1과 Servlet 2.0 을 사용하고 있으므로 Servlet 2.2 spec 이상이 필요한 경우 Oracle Servlet Engine 혹은 Oracle 9iAS Container for J2EE (OC4J) 를 이용하는 것이 좋을 것이며 이들에 대해서는 후반에 설명되어 질 것이다.

$ORACLE_HOME/Apache/Jserv/conf/jserv.conf
$ORACLE_HOME/Apache/Jserv/conf/jserv.properties
$ORACLE_HOME/Apache/Jserv/servlets/zone.properties

jserv.conf

Apache에서 Jserv module에 대한 설정file이다.

ApJServManual off
  -> Apache가 실행되면서 기본적으로 servlet engine을 구동시킴
ApJServProperties /disk7/share/ias10/Apache/Jserv/etc/jserv.properties
  -> Jserv의 Java관련 설정부분
ApJServLogFile /disk7/share/ias10/Apache/Jserv/logs/jserv.log
ApJServLogLevel notice
  -> Jserv 실행관련 log information level과 log file 지정
ApJServDefaultPort 8007
  -> Jserv Protocol이 사용되는 default port (listening port)
ApJServMount /servlets /root
  -> root zone에서 지정된 servlet을 /servlets url을 이용하여 호출하려 함

root zone을 지정한 설정file은 jserv.properties file을 살펴보면 zone.properties 임을 알 수 있으며 사용자가 작성한 servlet들이 담긴 directory들은 repositories=/disk7/share/ias10/Apache/Jserv/servlets 와 같이 지정될 수 있다.

<Location /jserv/>
  SetHandler jserv-status
  order deny,allow
  deny from all
  allow from localhost
</Location>

-> apache listener의 server-status와 같이 jserv의 상태를 monitoring 하는 기능으로 localhost 에서만 호출가능함 을 알 수 있다.

jserv.properties

# Execution parameters
wrapper.bin=/disk7/share/ias10/Apache/jdk/bin/java
  -> 만약 사용자정의의 JVM을 사용하려면 해당 위치를 지정하면된다.
wrapper.classpath=/disk7/share/ias10/Apache/Jserv/libexec/ApacheJServ.jar
wrapper.classpath=/disk7/share/ias10/Apache/Jsdk/lib/jsdk.jar
  -> Jserv 를 사용할 때 꼭 이것들이 지정되어 있어야 하며 추가적으로 wrapper.classpath 에 사용자가 등록하려는 jar file을 등록하면 된다. 다만 이것이 변경되었을 경우 autoloading 은 되지 않는다. autoloading을 허용하려면 해당 zone의 properties file 에 등록하면 된다.

General parameters

port=8007

Servlet Zones parameters

zones=root

-> 사용자 zone을 추가하려면 zones=root,myzone 과 같이 추가하고 properties file을 지정, jserv.conf에 ApJServMount /myservlet /myzone 과 같이 servlet url을 등록하면 된다.

root.properties=/disk7/share/ias10/Apache/Jserv/etc/zone.properties

Logging parameters

log=true

log.file=/disk7/share/ias10/Apache/Jserv/logs/jserv.log

zone.properties

List of Repositories

repositories=/disk7/share/ias10/Apache/Jserv/servlets

-> 사용자가 작성한 Servlet들을 등록

Classloader parameters

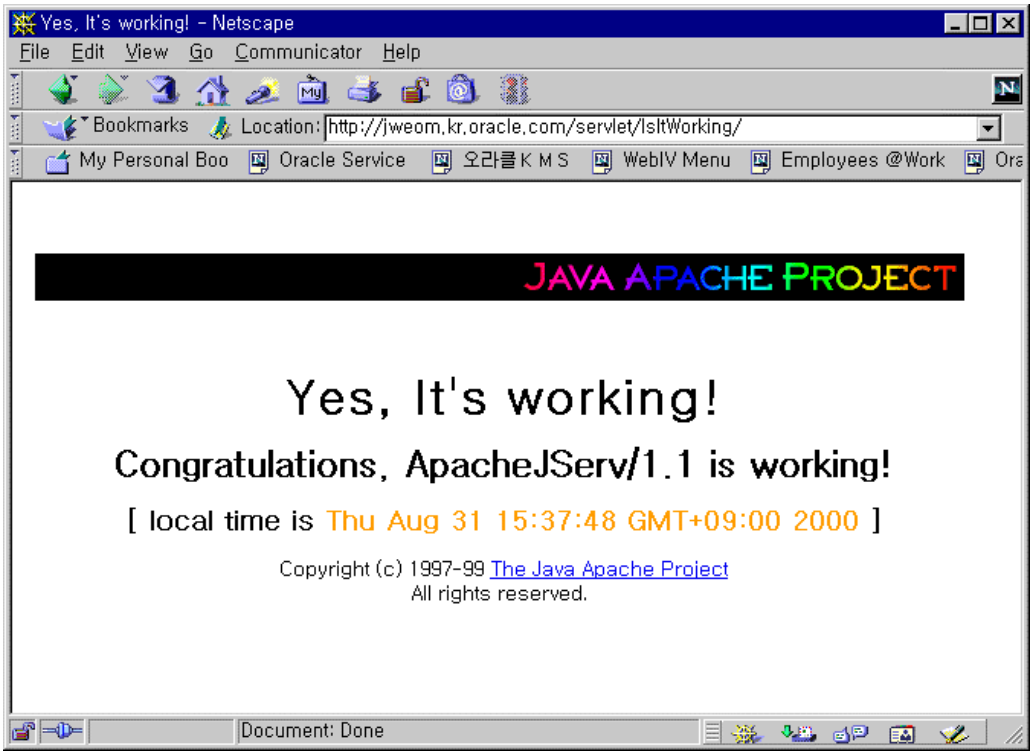
autoreload.classes=true

autoreload.file=true

-> Repoitories의 class또는 jar file이 변경되어졌을 때 autoloading을 허용 (개발시 이것을 꼭 설정하되 운영시 performance 를 고려하여 false로 하면 좋다.)

9iAS default page의 Jserv (Demo)

http://<ServerName>:<Port>/servlet/IsItWorking



iAS/Jserv JVM 에서 memory heap size 변경하기

Apache Jserv를 이용하면서 운영단계에서 항시 모니터링을 하여야 할 부분이며 JVM 에서 요구되는 충분한 memory가 확보되지 않으면 여러가지 문제가 수반될 수 있다.
parameter에는 initial / maximal memory heap 크기를 지정할 수 있으며 운영되는 JVM 의 version 별도 사용하는 parameter 가 다르므로 주의하여야 한다.

해당하는 parameter 는 **jserv.properties** 에 넣어준다.

For Java 1.1:
wrapper.bin.parameters=-msN
wrapper.bin.parameters=-mxN

For Java 1.2 or 1.3:
wrapper.bin.parameters=-XmsN
wrapper.bin.parameters=-XmxN

Note: N 은 byte 단위이며 K를 붙이면 kilobytes, M을 붙이면 megabytes를 표시한다.

Java version	Minimal init	Minimal max	Default initial	Default Max
1.1	1 K		1 M	16 M
1.2	1 K		1 M	64 M
1.3	1 M	2 M	2 M	64 M

이 값들은 9iAS 운영중 DMS (Dynamic Monitoring Service) 를 통해 적절한 값으로 변경해 줄 필요가 있다.

본 문서의 6.6.4.3 을 참조하세요.

How to Configure Apache Jserv For Multiple JVMs for Load Balancing

Note:120741.1

Multiple JVM의 Load Balancing을 위한 Apache Jserv Configuration 방법은 동일서버 혹은 다른 서버에 설정하는 두가지 방법으로 나누어 볼 수 있다.

1. MULTIPLE JVMS ON SAME SERVER

Apache allows you work with a few JVMs. Each JVM can require considerable memory and processor resources. If you execute more copies of Apache Jserv on a same virtual host, each JVM needs a dedicate port. The configuration files can be identical except for the port numbers.

The following example shows how to configure Apache JServ with multiple JVMs for each servlet zone:

```
<IfModule mod_jserv.c>
        ApJServManual on
        ApJServDefaultProtocol ajpv12
        ApJServMount /servlets1 ajpv12://localhost:9001/jvm1
  ApJServMount /servlets1 ajpv12://localhost:9001/jvm2
        ApJServLogFile /db/jserv/apache/logs/mod_jserv.log

<Location /status/jserv/>
  SetHandler jserv-status
     order deny,allow
  allow from all
</Location>

</IfModule>
```

The request containing /servlets1 are managed by the zone jvm1, which listens on port 9001.

The request containing /servlets2 are managed by the zone jvm2, which listens to port 9002.

Two instances of the JVM must be launched, one which listens on port 9001 and the other on port 9002

For example, two properties files:

java org.apache.jserv.JServ /usr/local/apache/conf/jvm1.properties

java org.apache.jserv.JServ /usr/local/apache/conf/jvm2.properties

2. MULTIPLE JVMS ACCROSS DIFFERENT SERVERS

For use multiple JVMs on e different servers, Apache JServ must be in Manual Mode. Using multple servers allows management transfer from the main JVM towards other computers. You can thus combine the use of NT, Solaris, Linux, and/or HP by configuring the iAS Jserv.conf file like this:

```
<IfModule mod_jserv.c>
        ApJServManual on
        ApJServDefaultProtocol ajpv12
        ApJServMount /servlets1 ajpv12://server1/zone1
  ApJServMount /servlets2 ajpv12://server2/zone2
        ApJServLogFile /db/jserv/apache/logs/mod_jserv.log

<Location /status/jserv/>
   SetHandler jserv-status
      order deny,allow
  allow from all
</Location>

</IfModule>
```

With the above configuration, the requests starting with /servlets1 are to be managed by the instance of Apache Jserv on the server1. The requests starting with /servlets2 managed by the instance of Apache Jserv on the server2.

Of course, you must install Apache Jserv on the 2 servers and configure the zone and properties files for the Jserv engine. In certain cases, it is also necessary to indicate address IP of the server Web in the input security.allowAddresses of the properties file of the engine of each servlet.

Another example of Jserv.conf file using the load balanced JVMs:

```
<IfModule mod_jserv.c>
ApJServManual on
ApJServDefaultProtocol ajpv12

ApJServShmFile logs/jserv_shm
ApJServBalance set1 JVM1
ApJServBalance set1 JVM2
ApJServBalance set1 JVM3
ApJServBalance set1 JVM4

ApJServHost JVM1 ajpv12://127.0.0.1:8017
ApJServHost JVM2 ajpv12://127.0.0.1:8016
ApJServHost JVM3 ajpv12://127.0.0.1:8015
ApJServHost JVM4 ajpv12://127.0.0.1:8014
ApJServRoute JS1 JVM1
ApJServRoute JS2 JVM2
ApJServRoute JS3 JVM3
ApJServRoute JS4 JVM4

ApJServMount /root balance://set1/root
ApJServMount /servlets balance://set1/root
ApJServMount /servlet balance://set1/root

<Location /status/jserv/>
   SetHandler  jserv-status
      order  deny,allow
  allow  from  all
</Location>

</IfModule>
```

.

6.1.10 Mod_ose

12장 OSE Oracle Servlet engine (OSE) 와 mod_ose 설정 방법 을 참조하세요.

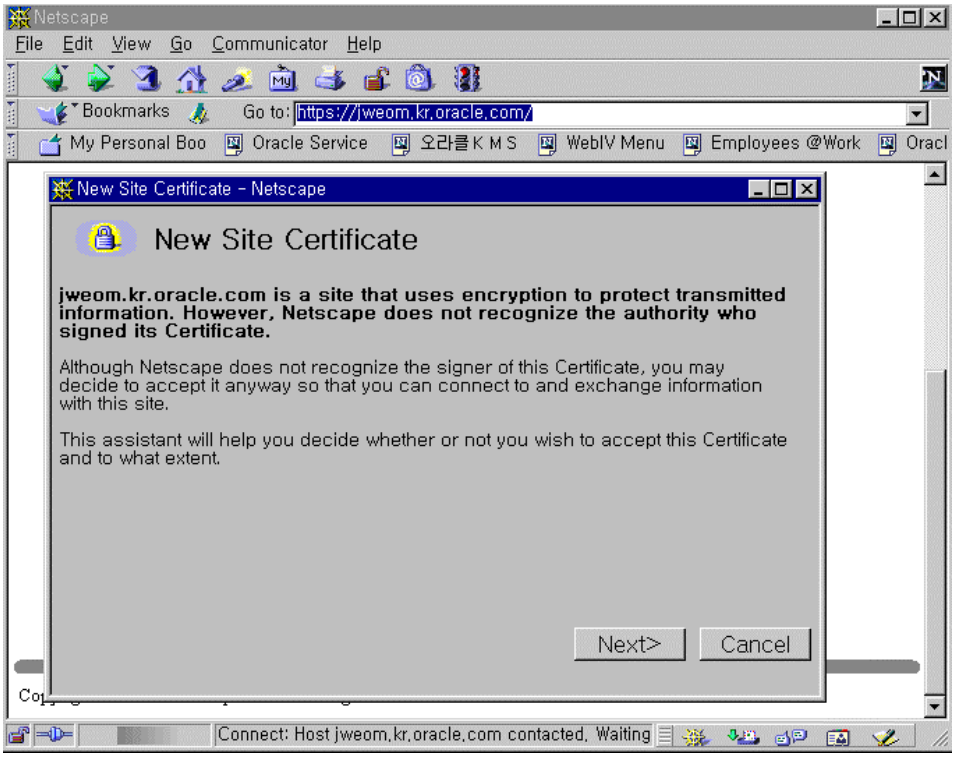
6.1.11 Mod_ssl / OpenSSL Utility

VeriSign과 같은 CA에서 인증서를 받아서 SSL을 테스트하여야 하지만 iAS에서는 SSL을 Test하기 위한 인증서가 있으므로 다음과 같이 접속해보자

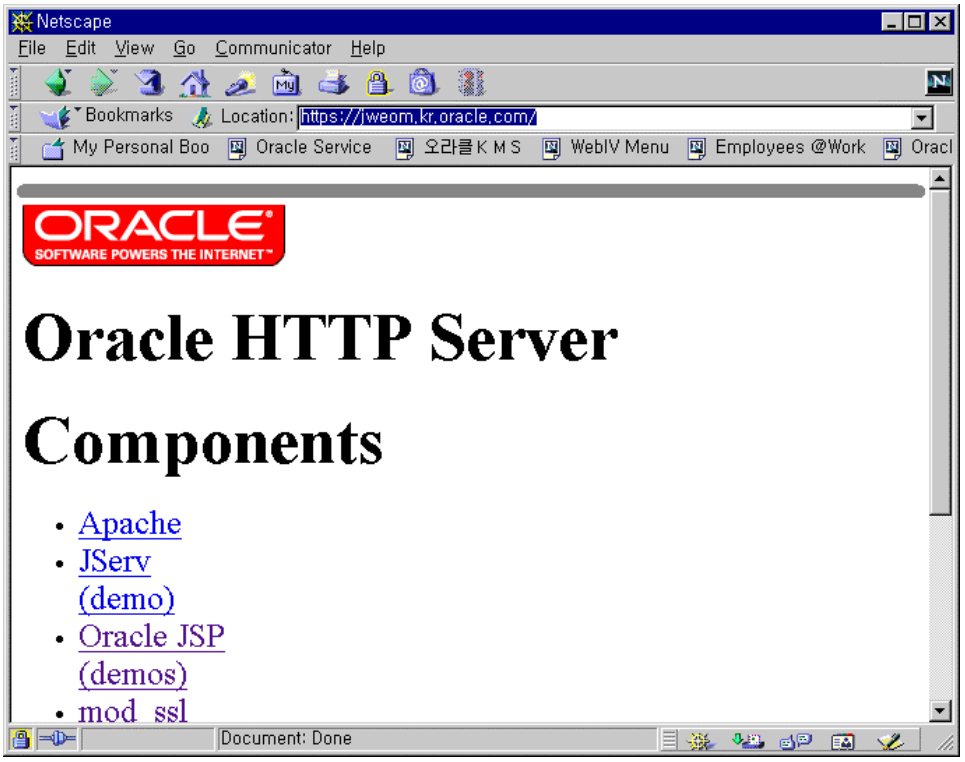
https://<ServerName>:<Port>/

Unix의 경우 SSL을 포함시켜 Start 를 하려면

$ httpdsctl startssl



접속후 자물쇠가 닫혀있음을 알수 있다.



CSR **생성방법**

Openssl **을 이용하여 생성할 수 있다**.

$ORACLE_HOME/Apache/open_ssl/bin

```
krdaejeon1% openssl req -config ./openssl.cnf -newkey rsa:1024 -keyout key.pem -out req.pem
Using configuration from ./openssl.cnf
unable to load 'random state'
What this means is that the random number generator has not been seeded with much random data.
Consider setting the RANDFILE environment variable to point at a file that 'random' data can be
kept in.
Generating a 1024 bit RSA private key
.....+++++
.....+++++
writing new private key to 'key.pem'
Enter PEM pass phrase:
Verifying password - Enter PEM pass phrase:-----
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
----- Country Name (2 letter code) [AU]:KR
State or Province Name (full name) [Some-State]:
Locality Name (eg, city) []:taejeon
Organization Name (eg, company) [Internet Widgits Pty Ltd]:oracle
Organizational Unit Name (eg, section) []:taejeon office
Common Name (eg, YOUR name) []:jweom
Email Address []:jinwoo.eom@oracle.com
```

```
Please enter the following 'extra' attributes
to be sent with your certificate request
A challenge password []:
An optional company name []:
krdaejeon1%
Country Name (2 letter code) [AU]:KR
State or Province Name (full name) [Some-State]:
Locality Name (eg, city) []:taejeon
Organization Name (eg, company) [Internet Widgits Pty Ltd]:oracle
Organizational Unit Name (eg, section) []:taejeon office
Common Name (eg, YOUR name) []:jweom
Email Address []:jinwoo.eom@oracle.com

Please enter the following 'extra' attributes
to be sent with your certificate request
A challenge password []:
An optional company name []:
krdaejeon1%
```

key.pem 과 req.pem 이 생성된다. Key.pem은 Private Key에 해당하는 것이고 req.pem 을 CSR 이라고 한다.

Req.pem의 내용중 첫줄과 마지막줄을 삭제한 것을 www.verisign.com 과 같은 CA에 보내 인증을 받는다.

http://www.verisign.com 의 Web site service -> Free Trial 을 선택해서 질문에 답한다.

```
-----BEGIN CERTIFICATE REQUEST-----
MIIB1TCCAT4CAQAwgZQxCzAJBgNVBAYTAktSMRMwEQYDVQQIEwpTb21lLVN0YXRl
MRAwDgYDVQQHEwd0YWVqZW9uMQ8wDQYDVQQKEwZvcmFjbGUxFzAVBgNVBAsTDnRh
ZWplb24gb2ZmaWNlMQ4wDAYDVQQDEwVqd2VvbTEkMCIGCSqGSIb3DQEJARYVamlu
d29vLmVvbUBvcmFjbGUuY29tMIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQCn
29VrZ85Tbr9L2UpB5iYmcyoEZK8tcFDB5JIkP55UYD7O7xFfM/HM/Zo1Tw2SFwe7
cNOVRY0UZqInShDi8MTAVH2ZtL0E4iJSiu5Bv2koS4En4gKFo2NGtyhov+ADGg5i
FtQ1Wn78EIatvhcouy0Map2S84zCuJzzAW30ZwrvowIDAQABoAAwDQYJKoZIhvcN
AQEEBQADgYEAesPoYYNSJLQscs4I06h5CTy2/piNbaTOm7Lx+NdPJ7MQKaT0Lwgw
KX2IDgnLmtzlOgpYWDhOPAWdfCbDREeO99woS6perScl9XPQxZRnbZtRE2BN87Y1
VU9ICU7iDDJ0OBljCeLQ7AdUOXyQJ8/9s7aw2YjCM8VPfhvjOIvcYdY=
-----END CERTIFICATE REQUEST-----
```

Reply가 오면 그 내용(인증서)을 server.crt란 이름의 file로 생성

```
-----BEGIN CERTIFICATE-----
MIICVTCCAf8CECFwTsXPIIq6EyUMPQfRtRkwDQYJKoZIhvcNAQEEBQAwgakxFjAU
BgNVBAoTDVZlcmlTaWduLCBJbmMxRzBFBgNVBAsTPnd3dy52ZXJpc2lnbi5jb20v
cmVwb3NpdG9yeS9UZXN0Q1BTIEluY29ycC4gQnkgUmVmLiBMaWFiLiBMVEQuMUYw
RAYDVQQLEz1Gb3IgVmVyaVNpZ24gYXV0aG9yaXplZCB0ZXN0aW5nIG9ubHkuIE5v
IGFzc3VyYW5jZXMgKEMpVlMxOTk3MB4XDTAwMDgzMTAwMDAwMFoXDTAwMDkxNDIz
NTk1OVowbjELMAkGA1UEBhMCS1IxEzARBgNVBAgTClNvbWUtU3RhdGUxEDAOBgNV
BAcUB3RhZWplb24xDzANBgNVBAoUBm9yYWNsZTEXMBUGA1UECxQOdGFlamVvbiBv
ZmZpY2UxDjAMBgNVBAMUBWp3ZW9tMIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKB
gQCn29VrZ85Tbr9L2UpB5iYmcyoEZK8tcFDB5JIkP55UYD7O7xFfM/HM/Zo1Tw2S
Fwe7cNOVRY0UZqInShDi8MTAVH2ZtL0E4iJSiu5Bv2koS4En4gKFo2NGtyhov+AD
Gg5iFtQ1Wn78EIatvhcouy0Map2S84zCuJzzAW30ZwrvowIDAQABMA0GCSqGSIb3
DQEBBAUAA0EAftO86VnXRdLpVF6QNsbVwpPDecWbSmdBG3Aki3Sr0094zF7RcXky
h8yxdsuGRJEiv9g0qgGhmh8bOizeQPWMCg==
-----END CERTIFICATE-----
```

$ORACLE_HOME/Apache/Apache/conf/httpds.conf

SSLCertificateFile /disk7/share/ias10/Apache/open_ssl/bin/server.crt

SSLCertificateKeyFile /disk7/share/ias10/Apache/open_ssl/bin/key.pem

```
krdaejeon1# ./httpdsctl startssl
Apache/1.3.9 mod_ssl/2.4.10 (Pass Phrase Dialog)
Some of your private key files are encrypted for security reasons.
In order to read them you have to provide us with the pass phrases.

Server krdaejeon1:443 (RSA)
Enter pass phrase:

Ok: Pass Phrase Dialog successful.
./httpdsctl startssl: httpd started
```

```
D:\ias10\Apache\Apache>apache -k start
[Thu Aug 31 21:02:30 2000] [warn] Loaded DSO modules\mod_dav\mod_dav.dll uses pl
ain Apache 1.3 API, this module might crash under EAPI! (please recompile it wit
h -DEAPI)
[Thu Aug 31 21:02:30 2000] [warn] pid file d:/ias10/apache/apache/logs\httpd.pid
 overwritten -- Unclean shutdown of previous Apache run?
Apache/1.3.12 mod_ssl/2.6.4 (Pass Phrase Dialog)
Some of your private key files are encrypted for security reasons.
In order to read them you have to provide us with the pass phrases.
Server JWEOM:443 (RSA)
Enter pass phrase:
Ok: Pass Phrase Dialog successful.
Apache/1.3.12 (Win32) ApacheJServ/1.1 DAV/1.0.1 mod_ssl/2.6.4 OpenSSL/0.9.5a mod
_perl/1.22 running...
```

6.1.12 MultiPort Listen / Virtual Host

이 부분은 좀 더 자세히 알아보아야 하겠지만 여기서는 간단히 개념과 사용방법만을 기술한다.

6.1.12.1 MultiPort Listen

하나의 Configuration file로 여러 Port에서 웹서비스를 하려면 Listen를 이용하여 서비스하거나 Vitual Host 지정없이 다른 Network 의 IP Address로도 web service를 받을 때 사용한다.

예)

```
Port 80
Listen 80
Listen 81
Listen 82
```

위와 같이 지정되어 있으면 해당 IP Address의 Port 80 ~ 82로 web service를 할 수 있다.
또는 특정 Network Interface 와 Port를 이용해 service를 하려면

```
Listen 192.170.2.1:80
Listen 192.170.2.5:8000
```

와 같이 사용한다.

6.1.12.2 Virtual Host

Multi Interface card나 혹은 virtual domain 을 이용하여 service가 필요할 때 하나의 Configuration file을 가지고 설정하려면 다음과 같이 한다.

$cat /etc/hosts

krdaejeon1 krdaejeon1.kr.oracle.com krdaejeon2 krdaejeon2.kr.oracle.com

httpds.conf

```
----------
<VirtualHost krdaejeon2.kr.oracle.com>
    ServerAdmin webmaster@oracle.com
    DocumentRoot "/disk7/share/ias10/Apache/Apache/htdocs 2"
    ServerName krdaejeon2
    ErrorLog logs/krdaejeon2-error_log
    CustomLog logs/krdaejeon2-access_log common
</VirtualHost>
```

Name Based Virtual Host를 운영할 때 문제를 최소화 하기 위해서는 다음과 같은 규칙을 지킨다.

1. <VirtualHost> 안에서는 IP 주소를 사용

2. Listen 안에서는 IP 주소를 사용

3. BindAddress 안에서는 IP 주소를 사용.

4. 모든 가상 호스트는 확실히 ServerName 을 포함.

Mod_plsql 이용시 주의점

혹시 mod_plsql 을 사용할 때 RewriteRule이 VirtualHost 내에 지정하지 않았을 경우 적용되지 않는 경우가 있는데 이때는 <VirtualHost> … </VirtualHost> 내에 RewriteRule을 포함시키면 문제가 없다.

Multiple Apache Listener 설정방법

추가된 내용 참조

6.1.12.3 Apache Jserv를 사용하는 Apache Virtual Hosting 설정법 (Oracle 9iAS 1.0.2.1)

1. 기존 configuration file들을 backup 한다.

Oracle 9iAS 1.0.2.1
$ORACLE_HOME/Apache/Apache/conf/httpd.conf
$ORACLE_HOME/Apache/Jserv/etc/jserv.conf
$ORACLE_HOME/Apache/Jserv/etc/jserv.properties
$ORACLE_HOME/Apache/Jserv/etc/zone.properties

Notes: Windows의 경우 <ORACLE_HOME>\Apache\Jserv\conf* Jserv관련 file들이 있고, zone.properties 는 <ORACLE_HOME>\Apache\Jserv\servlets directory에 있다.

2. Virtual Hosting 을 위해 별도의 jserv.properties file들을 준비한다.

cp $ORACLE_HOME/Apache/Jserv/etc/jserv.properties
$ORACLE_HOME/Apache/Jserv/etc/jserv1.properties

cp $ORACLE_HOME/Apache/Jserv/etc/jserv.properties
$ORACLE_HOME/Apache/Jserv/etc/jserv2.properties

3. 별도의 zone.properties file 을 준비한다.

cp $ORACLE_HOME/Apache/Jserv/etc/zone.properties
$ORACLE_HOME/Apache/Jserv/etc/vhost1.properties

cp $ORACLE_HOME/Apache/Jserv/etc/zone.properties
$ORACLE_HOME/Apache/Jserv/etc/vhost2.properties

4. Virtual Hosting을 위한 두개의 Directory를 준비한다. $ORACLE_HOME/vhost1 and $ORACLE_HOME/vhost2

5. $ORACLE_HOME/vhost1 directory에 index.html file 을 생성한다.

```
<html>
<head>
   <meta name="Author" content="minimax">
 </head>
<body>
<H1>Welcome to vhost1 </H1>
</body>
</html>
```

6. $ORACLE_HOME/vhost2 directory에 index.html file을 생성한다.

```
<html>
<head>
   <meta name="Author" content="minimax">
</head>
<body>
<H1>Welcome to vhost2 </H1>
</body>
</html>
```

7. $ORACLE_HOME/Apache/Apache/conf/httpd.conf 에 다음을 추가한다.

```
NameVirtualHost 152.69.32.116

# directives for vhost1
<VirtualHost 152.69.32.116>
  ServerName minimax1.kr.oracle.com
  DocumentRoot /oracle/ias/vhost1
  <Directory /oracle/ias/vhost1 >
    order allow,deny
    allow from all
  </Directory>
  <IfModule mod_jserv.c>
    ApJServDefaultHost minimax1.kr.oracle.com
    ApJServMount /servlets ajpv12://localhost:8007/vhost1
  </IfModule>
</VirtualHost>
# directives for vhost2
<VirtualHost 152.69.32.116>
  ServerName minimax2.kr.oracle.com
  DocumentRoot /oracle/ias/vhost2
  <Directory /oracle/ias/vhost2 >
    order allow,deny
    allow from all
  </Directory>
  <IfModule mod_jserv.c>
    ApJServDefaultHost minimax2.kr.oracle.com
    ApJServMount /servlets ajpv12://localhost:8008/vhost2
  </IfModule>
</VirtualHost>
```

8. $ORACLE_HOME/Apache/Jserv/etc/jserv.conf 에 다음과 같이 수정

```
ApJServManual on
#This will set the Jserv in the manual mode.
```

9. jserv1.properties에 다음과 같이 수정

port=8007
#(change the port number , if it is different)
zones=vhost1
#(By default zones is set to root , please change it to vhost1)
vhost1.properties=/oracle/ias/Apache/Jserv/etc/vhost1.properties
#(In the file it may be with root.properties, please change this line)

10. jserv2.properties에 다음과 같이 수정

port=8008
#(Change the port number, if it is different)
zones=vhost2
#(By default zones is set to root, please change it to vhost1)
vhost2.properties= /oracle/ias/Apache/Jserv/etc/vhost2.properties
#(In the file it may be with root.properties, change this line to the above)

11. vhost1.properties file 에 다음을 추가

repositories=/oracle/ias/vhost1

12. vhost2.properties file 에 다음을 추가

repositories=/oracle/ias/vhost2

13. /oracle/ias/vhost1 directory 에 vhost1.java sample program 작성 :

---create a java file Hello.java---

```
 import javax.servlet.*;
 import javax.servlet.http.*;

public class vhost1 extends HttpServlet {

public void doPost ( HttpServletRequest req, HttpServletResponse res )throws ServletException,
java.io.IOException {
  res.setContentType("text/html");
java.io.PrintWriter out = new java.io.PrintWriter(res.getOutputStream());

    out.println("<HTML>");
    out.println("<BODY>");
  out.println("Servlet output from vhost1”);
    out.println("</BODY>");
    out.println("</HTML>");
    out.flush();
    out.close();
 }
public void doGet( HttpServletRequest req, HttpServletResponse res )throws ServletException,
java.io.IOException {
   doPost( req,res);
 }
}
```

---end of code---

Compile this file:

javac -classpath $ORACLE_HOME/Apache/Jsdk/lib/jsdk.jar vhost1.java

14. /oracle/ias/vhost2 directory 에 vhost2.java 을 작성 :

---create a java file Hello.java---

```
 import javax.servlet.*;
 import javax.servlet.http.*;

public class vhost2 extends HttpServlet {

 public void doPost ( HttpServletRequest req, HttpServletResponse res )throws ServletException,
java.io.IOException {
  res.setContentType("text/html");
 java.io.PrintWriter out = new java.io.PrintWriter(res.getOutputStream());
    i++;
   out.println("<HTML>");
   out.println("<BODY>");
  out.println("Servlet output from vhost2);
   out.println("</BODY>");
   out.println("</HTML>");
   out.flush();
   out.close();
 }
 public void doGet( HttpServletRequest req, HttpServletResponse res )throws ServletException,
java.io.IOException {
   doPost( req,res);
 }
}
```

Compile this file:

javac -classpath $ORACLE_HOME/Apache/Jsdk/lib/jsdk.jar vhost2.java

15. Oracle 9iAS 를 stop시킨다.

apachectl stop

16. $ORACLE_HOME/Apache/Apache/bin/startJServ.sh 를 수정한 후 Start

(Please open the $ORACLE_HOME/Apache/Apache/bin/startJServ.sh

script file for more information on this on how to set the

classpath and the properties file etc.)

17. Access the following URL's:

1. http://minimax1.kr.oracle.com:7777/

This should display Welcome to vhost1

2. http:// minimax2.kr.oracle.com:7777/

This should display Welcome to vhost2

3. http:// minimax1.kr.oracle.com:7777/servlets/vhost1

This should display Servlet output from vhost1.

4. http:// minimax2.kr.oracle.com:7777/servlets/vhost2

This should display Servlet output from vhost2.

5. http:// minimax1.kr.oracle.com:7777/servlets/vhost2

Should Display :

Not Found

The requested URL /servlets/vhost2 was not found on this server.

As vhost2 is only available in minimax1.kr.oracle.com

18. For stopping the Apache use

stopJServ.sh

6.1.12.4 Apache Jserv를 사용하는 Apache Virtual Hosting 설정법 (Oracle 9iAS 1.0.2.2)

Oracle 9iAS 1.0.2.1 및 이전 Version 에 비해 상당히 편하게 사용할 수 있다. Oracle 9iAS 1.0.2.2에 추가된 mod_oprocmgr 에 의해 기존의 Apache Jserv 설정과는 다소 다르게 된다.

아래 항목중 8번 항목을 유의해보면 된다.

1. 기존 configuration file들을 backup 한다.

$ORACLE_HOME/Apache/Apache/conf/httpd.conf
$ORACLE_HOME/Apache/Jserv/etc/jserv.conf
$ORACLE_HOME/Apache/Jserv/etc/jserv.properties
$ORACLE_HOME/Apache/Jserv/etc/zone.properties

Notes: Windows의 경우 <ORACLE_HOME>\Apache\Jserv\conf* Jserv관련 file들이 있고, zone.properties 는 <ORACLE_HOME>\Apache\Jserv\servlets directory에 있다.

2. Virtual Hosting 을 위해 별도의 jserv.properties file들을 준비한다.

cp $ORACLE_HOME/Apache/Jserv/etc/jserv.properties
$ORACLE_HOME/Apache/Jserv/etc/jserv1.properties

cp $ORACLE_HOME/Apache/Jserv/etc/jserv.properties
$ORACLE_HOME/Apache/Jserv/etc/jserv2.properties

3. 별도의 zone.properties file 을 준비한다.

cp $ORACLE_HOME/Apache/Jserv/etc/zone.properties
$ORACLE_HOME/Apache/Jserv/etc/vhost1.properties

cp $ORACLE_HOME/Apache/Jserv/etc/zone.properties
$ORACLE_HOME/Apache/Jserv/etc/vhost2.properties

4. Virtual Hosting을 위한 두개의 Directory를 준비한다. $ORACLE_HOME/vhost1 and $ORACLE_HOME/vhost2

5. $ORACLE_HOME/vhost1 directory에 index.html file 을 생성한다.

```
<html>
<head>
   <meta name="Author" content="minimax">
 </head>
<body>
<H1>Welcome to vhost1 </H1>
</body>
</html>
```

6. $ORACLE_HOME/vhost2 directory에 index.html file을 생성한다.

```
<html>
<head>
   <meta name="Author" content="minimax">
</head>
<body>
<H1>Welcome to vhost2 </H1>
</body>
</html>
```

7. $ORACLE_HOME/Apache/Apache/conf/httpd.conf 확인.

별도의 설정이 필요없다.

```
NameVirtualHost 152.69.32.116

# directives for vhost1
<VirtualHost 152.69.32.116>
  ServerName minimax1.kr.oracle.com
  DocumentRoot /oracle/ias/vhost1
  <Directory /oracle/ias/vhost1 >
    order allow,deny
    allow from all
  </Directory>
</VirtualHost>
# directives for vhost2
<VirtualHost 152.69.32.116>
  ServerName minimax2.kr.oracle.com
  DocumentRoot /oracle/ias/vhost2
  <Directory /oracle/ias/vhost2 >
    order allow,deny
    allow from all
  </Directory>
</VirtualHost>
```

8. $ORACLE_HOME/Apache/Jserv/etc/jserv.conf 확인

```
ApJServManual auto
ApJServGroup group3 1 1 /oracle/ias/Apache/Jserv/conf/jserv1.properties
ApJServGroup group4 1 1 /oracle/ias/Apache/Jserv/conf/jserv2.properties
ApJServGroupMount /app1 balance://group3/vhost1
ApJServGroupMount /app2 balance://group4/vhost2
```

Notes: 예전 버전과 다른 부분이 ApJServManual auto, ApJServGroup, ApJServGroupMount, ApJServGroupSecretKey **등이다**.

Load balancing**과** High Availability **설정에 상당히 용이해졌다**.

9. jserv1.properties에 다음과 같이 수정

port=
# port 항목을 null 로 하게 되면 임의의 port 를 사용하며, port pool 을 설정해도 된다.
zones=vhost1
#(By default zones is set to root , please change it to vhost1)
vhost1.properties=/oracle/ias/Apache/Jserv/etc/vhost1.properties
#(In the file it may be with root.properties, please change this line)

10. jserv2.properties에 다음과 같이 수정

port=
# null로 설정한다면 다른 jserv.properties 설정을 고려하지 않아도 된다.
zones=vhost2
#(By default zones is set to root, please change it to vhost1)
vhost2.properties= /oracle/ias/Apache/Jserv/etc/vhost2.properties
#(In the file it may be with root.properties, change this line to the above)

11. vhost1.properties file 에 다음을 추가

repositories=/oracle/ias/vhost1

12. vhost2.properties file 에 다음을 추가

repositories=/oracle/ias/vhost2

13. /oracle/ias/vhost1 directory 에 vhost1.java sample program 작성 :

---create a java file Hello.java---

```
 import javax.servlet.*;
 import javax.servlet.http.*;

public class vhost1 extends HttpServlet {

public void doPost ( HttpServletRequest req, HttpServletResponse res )throws ServletException,
java.io.IOException {
  res.setContentType("text/html");
 java.io.PrintWriter out = new java.io.PrintWriter(res.getOutputStream());

    out.println("<HTML>");
    out.println("<BODY>");
   out.println("Servlet output from vhost1”);
    out.println("</BODY>");
    out.println("</HTML>");
    out.flush();
    out.close();
 }
public void doGet( HttpServletRequest req, HttpServletResponse res )throws ServletException,
java.io.IOException {
    doPost( req,res);
 }
}
```

---end of code---

Compile this file:

javac -classpath $ORACLE_HOME/Apache/Jsdk/lib/jsdk.jar vhost1.java

14. /oracle/ias/vhost2 directory 에 vhost2.java 을 작성 :

---create a java file Hello.java---

```
 import javax.servlet.*;
 import javax.servlet.http.*;

public class vhost2 extends HttpServlet {

public void doPost ( HttpServletRequest req, HttpServletResponse res )throws ServletException,
java.io.IOException {
  res.setContentType("text/html");
java.io.PrintWriter out = new java.io.PrintWriter(res.getOutputStream());
    i++;
    out.println("<HTML>");
    out.println("<BODY>");
  out.println("Servlet output from vhost2);
    out.println("</BODY>");
    out.println("</HTML>");
    out.flush();
    out.close();
 }
public void doGet( HttpServletRequest req, HttpServletResponse res )throws ServletException,
java.io.IOException {
   doPost( req,res);
 }
}
```

Compile this file:

javac -classpath $ORACLE_HOME/Apache/Jsdk/lib/jsdk.jar vhost2.java

15. Oracle 9iAS 를 stop시킨다.

apachectl stop

16. Oracle 9iAS 를 start 시킨다.

apachectl start

17. Access the following URL's:

1. http://minimax1.kr.oracle.com:7777/

This should display Welcome to vhost1

2. http:// minimax2.kr.oracle.com:7777/

This should display Welcome to vhost2

3. http:// minimax1.kr.oracle.com:7777/app1/vhost1

This should display Servlet output from vhost1.

4. http:// minimax2.kr.oracle.com:7777/app2/vhost2

This should display Servlet output from vhost2.

5. http:// minimax1.kr.oracle.com:7777/app2/vhost2

This should display Servlet output from vhost2.

이 부분을 정리한다면 모든 Virtual Host**내에서의** Jserv Mount directory**는 공용될 수 있음을 알 수 있다**.

6.1.13 운영중 Log file 초기화하기

apache 문서에 보면 access log file은 10,000 requests에 대해 약 1M 정도의 크기로 증가한다고 되어 있다. 따라서 Web Master가 주의하지 않으면 access_log가 커져 system에 영향을 주는 경우가 있다. 이 때 Web server 를 중지시키지 않고 web log file을 초기화 시키려면 Unix의경우 SIGUSR1 로 kill 명령을 수행시킨 후 restart 하게 되면 된다. 이러한 방법으로 apache에서는 다음과 같은 명령을 줄 수 있다.

```
% mv access_log access_log.old
% apachectl graceful
```

위 와 같이 하면 새로운 access_log file로 web log 정보가 쌓이게 된다.

apache에서는 rotatelog 라고 하는 간단한 utility가 있는데 OAS 에서 log file의 size를 일정량으로 하여 archive file들을 만들 수 있는데 이와 유사한 기능이라고 보면 된다. 다만 이것은 log file의 순환일자를 지정하는 방식으로 사용된다. 마지막의 cron을 이용하는 것이 운영중 사용할 수 있는 방법이다.

rotatelogs

```
$ORACLE_HOME/Apache/Apache/conf/httpds.conf
TransferLog "|/disk7/share/ias10/Apache/Apache/bin/rotatelogs
                    /disk7/share/ias10/Apache/Apache/logs/access_log 86400"
```

위와 같이 하면 1일 (60*60*24) 주기로 logfile의 조각이 access_log.nnnn 의 형식으로 생성되는데 access_log file이 split되지 않고 시간별로 split된 file들이 생기므로 access_log에 대한 것은 따로 관리해 주어야 한다. nnnn의 경우 1970년을 기준으로 현재까지의 누적초이다.

Cronolog

rotatelogs의 file name처럼 미리 정해진 것이 아니고 사용자가 date function을 이용한 다양한 file명을 정의할 수 있는 점에서 cronolog를 사용하면 좋을 것이다.

```
CustomLog "|/path/to/cronolog --symlink=/usr/local/apache/logs/access_log
                    /usr/local/apache/logs/%Y/%m/access_log" combined
```

참고 : http://www.ford-mason.co.uk/resources/cronolog/

Cronjob을 이용한 실용적인 방법

```
#!/bin/sh
cd /disk1/iportal/Apache/Apache/logs
# Get date in yyyy-mm format
DATE=`date '+%Y-%m-%d:%H:%M'`
# Rotate the log
mv access_log access_log-$DATE
/disk1/iportal/Apache/Apache/bin/apachectl graceful
# Wait a 10 seconds
sleep 10
# Resolve hostnames and compress
logresolve < access_log-$DATE | gzip > access_log-$DATE.gz
# Remove the unresolved version
rm -f access_log-$DATE
```

krdaejeon1% crontab -l

00 02 * * 0 /disk1/iportal/Apache/Apache/bin/rotate_log_resolv (매주 일요일 새벽 2시에 실행)

또는, 굳이 DNS resolve가 필요없는 경우

```
#!/bin/sh
SERVERDIR="/disk1/iportal/Apache/Apache"
DATE=`date '+%Y-%m-%d:%H:%M'`
# STEP 1: Backup the logs
# Do this for every log type you have (i.e., add another line for
# error_log, another for referer_log, etc.)
mv $SERVERDIR/logs/access_log $SERVERDIR/logs/access_log-$DATE
# STEP 2: Restart the server
$SERVERDIR/bin/apachectl graceful
# STEP 3: Compress the logs backed up in Step 1
/usr/local/bin/gzip $SERVERDIR/logs/access_log-$DATE
```

필자의 경우는 이 방법을 사용한다.

만약 위와 같이 web log를 gzip utility를 이용해서 압축하였을 경우 web log분석시 analog 의 configuration에서 다음 option을 포함시킨다.

UNIX: UNCOMPRESS *.gz,*.Z /usr/local/bin/gzcat

WINNT: UNCOMPRESS *.gz ("c:\Program Files\gzip\gzip" –cd)

6.1.14 Server Side Include

필요에 따라 Static문서를 dynamic하게 생성할 경우가 있다 특히 메뉴화면과 내용문서를 나누어서 만든 뒤에 한번에 보여주는 경우이다. 특히 이렇게 만들어진 문서의 수가 많을 경우에 유용하게 쓰인다.

$ORACLE_HOME/Apache/Apache/conf/httpds.conf

```
Alias /ssi/ "/disk7/share/ias10/Apache/Apache/ssi/"
<Directory "/disk7/share/ias10/Apache/Apache/ssi">
    AddHandler server-parsed .shtml
    Options +Includes
</Directory>
```

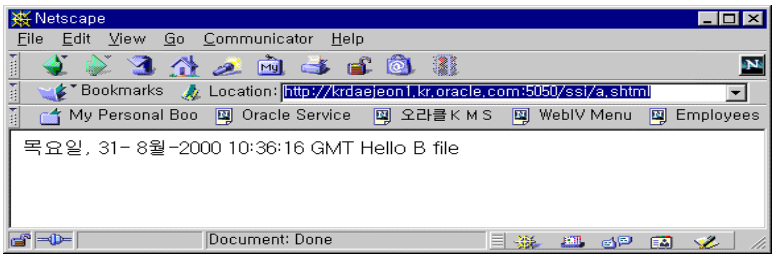
a.shtml

```
<!--#echo var="DATE_GMT" -->
Hello
<!--#include file="b.html" -->
```

b.html

```
<html>
B file
</html>
```

http://<ServerName>:<Port>/ssi/a.shtml



6.1.15 9iAS HTTP Listener 추가설정하기

Note:135231.1

기존에 Oracle 9iAS가 설치되어 운영중일 때 추가적인 Listener를 구동하여 서비스를 할 때 필요한 configuration 방법과 Unix상에서 쉽게 Listener를 관리할 수 있는 script를 소개한다.

Listener를 추가로 설정할 경우, mod_plsql, mod_jserv등의 기능들을 동일하게 가져가는 법과, 이러한 추가기능들도 다르게 가져가는 법으로 나눌 수 있다.

1. 공통된 Apache module 설정을 이용하기

이 방법은 많은 접속자 사이트인 경우 별도의 Port를 이용하거나 개발등의 이유로 동일한 환경을 이용할 때 사용할 수 있다.

Apache configuration file 준비하기

Httpds.conf file (iAS 8I) 나 httpd.conf (9iAS) 의 복사본을 configuration directory (<ORACLE_HOME>/Apache/Apache/conf) 에 다음과 같은 이름으로 복사한다.

httpds_<list>.conf

where:

<list> represents a short arbitrary name for the listener

e.g. httpds_www2.conf

The example 'apctl' script (provided as Appendix A) accepts an additional listener name parameter which is used to determine which of the multiple listener configuration files should be used.

The following illustrates lines changed after duplicating the

httpds.conf file to become httpds_www2.conf:

```
LockFile /iAS/Apache/Apache/logs/httpds_www2.lock
PidFile /iAS/Apache/Apache/logs/httpds_www2.pid
ScoreBoardFile /iAS/Apache/Apache/logs/httpds_www2.scoreboard
```

```
ErrorLog  /iAS/Apache/Apache/logs/httpds_error_log_www2
CustomLog  /iAS/Apache/Apache/logs/httpds_access_log_www2  common
ErrorLog  /iAS/Apache/Apache/logs/httpds_error_log_www2
TransferLog  /iAS/Apache/Apache/logs/httpds_access_log_www2
CustomLog  /iAS/Apache/Apache/logs/httpds_ssl_request_log_www2 \
          "%t %h %{SSL_PROTOCOL}x %{SSL_CIPHER}x \"%r\" %b"
ErrorLog  /iAS/Apache/Apache/logs/httpds_error_log_www2
TransferLog  /iAS/Apache/Apache/logs/httpds_access_log_www2
```

NOTE: The above lines are scattered at various locations in the conf file and the duplicate parameters are located in various Virtual Host or SSL specific configuration sections.

For consistency, apply the additional prefix at every location (even in those sections not currently being used). It is likely to be necessary to un-comment some lines so that default values do not result in all listeners sharing the same file.

JSERV NOTE: Since each listener configuration in this approach utilizes the same module configuration files, it may be sensible to configure MOD_JSERV not to attempt to start Servlet Engines automatically. Doing so will avoid error messages from the second and subsequent listeners reporting that they cannot start an additional instance of the Servlet engine since the port is already in use.

If you elect to manually start the servlet engine then set the ApJServManual parameter in the jserv.conf file to ON. To aid manual startup of the Servlet Engine please see the example script provided by Note:123533.1, "Example script to manually start the JVM for the MOD_JSERV servlet engine"

If you are happy to remember that some errors about failure to start the Servlet JVM these should be expected when multiple listeners share the same JSERV.CONF file, then it should not be harmful to leave the ApJServManual parameter at it's default OFF value.

Apctl 사용방법

For example:

```
% apctl start www2
```

starts the listener whose configuration is specified in the file

httpds_www2.conf, whereas:

```
% apctl start
```

will still start the default listener i.e. the one specified by

the file httpds.conf.

To ensure complete separation of the listeners from one another, it is necessary to make modifications to the newly copied configuration file so that files tracking information unique to each listener (e.g. lock an PID files) do not overlap.

Searching through the file for 'httpds' will help highlight the parameters which should be changed. Again adding a _<LIST> suffix these parameters is a sensible approach to guaranteeing uniqueness.

TIP: To further differentiate between configuration files and log files the 'apctl' script (see Appendix A) allows an alternate naming convention for listener configuration files.

In the even an environment variable APCTL_USE_SUBDIR is set to the value 'TRUE' the listener config file will be expected to retain the name httpds.conf, but be located in a sub-directory of the same name as the listener, e.g. Apache/conf/www2/httpds.conf

In this case, the listener log files such as error and xlf logs will also be located beneath the default log location (relative to the configuration root) but will be in a sub-directory with the name associated with that listener.

For further details about the operation of the example 'apctl' script, please see the comments embedded within the script itself.

2. 다른 Apache module configuration 을 이용한 Multiple Listener 구성하기

This is probably the more complex of the two cases and is really the same as supporting two entirely different web sites from the same set of binaries. An example here would be to facilitate two small development teams working on the same web server host.

In this case not only are the listener configuration files different but they must reference different sets of configuration files for each of the modules (e.g. MOD_PLSQL, MOD_JSERV etc.)

In this case, the recommended approach is to duplicate the whole ORACLE_HOME/Apache directory to an additional location outside of the ORACLE_HOME directory:

```
% cp -r $ORACLE_HOME/Apache /web/config1
```

After having done this, detailed inspection of all configuration files will be needed to identify modifications necessary to use only configuration files from within the new directory tree.

Starting with the listener, configuration file (httpds.conf) locate any match in the file which points to the original configuration directory and modify it to point to the new configuration root directory.

It should be possible to achieve this using the search and replace capabilities of a suitable editor such as vi or emacs. However, caution should be taken to ensure that references to binary files (e.g. libraries referenced by LoadModule directives) remain pointing to their original location.

Next, recursively inspect all configuration files which the httpds.conf file references with an 'include' directive and any file which is also included by this file.

The following is a list of files (relative to the root of the newly copied directory tree) which should be examined in this way:

- Apache/conf/oracle_apache.conf
- Jserv/etc/jserv.conf
- Jserv/etc/jserv.properties
- Jserv/etc/zone.properties
- Ojsp/conf/ojsp.conf
- modplsql/cfg/plsql.conf

NOTE: The above list is not intended to be exhaustive so it is advisable to begin by traveling to each configuration directory and using a tool such as grep to list any occurrence of the path to the original configuration root. Then, for each match found, edit the file where that match was contained and review in the context of this file if the change should be made.

To support this approach, the 'apctl' script (see Appendix A) uses an optional environment variable 'APCTL_CONFIG_ROOT' which can be used to specify the path to the root of the configuration hierarchy which should be used.

For further details about the operation of the example 'apctl' script, please see the comments embedded within the script itself.

TIP: To help ensure that all settings have been correctly modified it can be useful to:

- temporarily rename the original configuration root so that any references to these configuration files will no longer be found;

- startup and test the newly duplicated configuration and test the base functionality of the various modules to ensure that they still work as expected;

- review all log files for evidence of any errors indicating that files cannot be found to ensure that the cause of these errors is not a reference which should have been updated to point to the new directory;

3. ‘apctl’ script

To ensure that documentation about the operation of this script is always available, notes about it's usage and operation have been embedded as comments within the script itself.

- - - - - - - - - - - - - - Code begins here - - - - - - - - - - - - -

```
#!/bin/sh

#########################################################################
# Script: APCTL
# ---------------------------------------------------------------------
# Extended APACHECTL script supporting startup of multiple
# listeners running on different ports as identified by
# files of the format 'httpds_<LISTENER NAME>.conf
#
# This file is a modified version of the APACHECTL script.
# It will not be maintained wih respect to any changes made
# to that base script.
#
# WARNING
# -------
# This script is provided for educational purposes ONLY.
# It is merely an example of convenient way to identify a HTTPS.CONF
# file other than the standard file 'httpds.conf'
#
# The reader of this script is advised of his responsibility to
# ensure that the configuration file for the additional listener
# does what is expected and no more.
#
# For example, if the configuration file for an additional listener
# still has an include directive which reads the oracle_apache.conf
# file, then a second attempt to automatically start a Servlet Engine
# may be invoked, which may lead to undesirable side effects.
#
# Also, this script is a modified version of the utility 'apachectl'
# and will not be maintained with respect to future changes made to
# the script on which it is based.
#
# ENVIRONMENT VARIABLES
# ---------------------
# The script is dependant on or it's behaviour modified by the
# following ENVIRONMENT VARIABLES:
#
#       ORACLE_HOME
#           should  be set to the root directory of the iAS installation.
#
#       APCTL_CONFIG_ROOT
#        specifies a directory to be used as the root directory from
#        which all listener related configuration files and log files
#        will be located. If this environment variable is not set the
#         default of $ORACLE_HOME/Apache/Apache will be used.
#
#       APCTL_USE_SUBDIR
#        when set to TRUE indicates that the LISTENER NAME argument to
#            this script should be used to identify a subdirectory beneath
```

```
#        the configuration area which contains a file httpds.conf for
#         that listener, e.g. httpds_<LISTENER NAME>.conf
#           When  not set to TRUE indicates that the LISTENER NAME argument
#        to this script should be used to determine the name of the
#         configuration file, e.g. httpds_<LISTENER NAME>.conf
#
#       APCTL_DIR_CAPS
#        when set to TRUE specifies that sub-directory names below the
#         APCTL_CONFIG_ROOT directory should be capitalised e.g.
#        $APCTL_CONFIG_ROOT/Apache/a directory to be used as the root
#         directory from which to get
#
#########################################################################

#########################################################################
# FUNCTION debug_info
#########################################################################

debug_info()
{
     echo  "ConfigRoot=${ConfigRoot}"
     echo  "ListConfigDir=${ListConfigDir}"
     echo  "LogDir=${LogDir}"
     echo  "APCTL_DIR_CAPS=${APCTL_DIR_CAPS}"
     echo  "ListRootAbs=${ListRootAbs}"
     echo  "ListRootRel=${ListRootRel}"
     echo  "LogRootAbs=${LogRootAbs}"
     echo  "LogRootRel=${LogRootRel}"
     echo  "CONF_FILE=${CONF_FILE}"
     echo  "CONF_FILE_ABS=${CONF_FILE_ABS}"
     echo  "CONF_FILE_REL=${CONF_FILE_REL}"
     echo  "HTTPD=${HTTPD}"
     echo  "PIDFILE=${PIDFILE}"
}

#############################################
### ENSURE ORACLE_HOME IS SET APPROPRIATELY ##
#############################################

MSG="Ensure ORACLE_HOME is set to a valid directory for your iAS installation"

if [ -z "${ORACLE_HOME}" ]
then
     echo  "ERROR:  $MSG"
      exit  0
else
    if [ ! -d ${ORACLE_HOME} ]
     then
           echo "ERROR: $MSG"
          exit  0
     fi
fi

#########################################################################

ServerRoot="${ORACLE_HOME}/Apache/Apache"
ConfigRoot=${APCTL_CONFIG_ROOT:-$ServerRoot}

ListConfigDir="conf"
LogDir="logs"
```

```
if [ "${APCTL_DIR_CAPS}" = "TRUE" ]
then
    ListConfigDir=`echo ${ListConfigDir}|tr -s '[:lower:]' '[:upper:]'`
    LogDir=`echo ${LogDir}|tr -s '[:lower:]' '[:upper:]'`
fi

ListRootAbs="${ConfigRoot}/${ListConfigDir}"
ListRootRel="${ListConfigDir}"

LogRootAbs="${ConfigRoot}/${LogDir}"
LogRootRel="${LogDir}"

##########################################################################
###
### Identify which configuration scheme is to be used for
### configuration files:
###
### (1) Configuration files maintained beneath different directory
###       structures for each logical listener;
### (2) All config files in same directory, distinguished by a
###       _LIST_NAME suffix e.g. httpds_www2.conf
###
### USE_SUBDIR=false to use $ServerRoot/conf/${LIST_NAME}.conf
### USE_SUBDIR=false to use $ServerRoot/logs/${LIST_NAME}.pid
##########################################################################

USE_SUBDIR=false
if [ "${APCTL_USE_SUBDIR}" = "TRUE" ]
then
      USE_SUBDIR=true
fi

##########################################################################

PERL5LIB=${ORACLE_HOME}/Apache/perl/lib/5.00503:${ORACLE_HOME}/Apache/perl/lib/site_
perl/5.005; export PERL5LIB

##########################################################################

if [ -z "$LD_LIBRARY_PATH" ]
then
      LD_LIBRARY_PATH=$ORACLE_HOME/lib
      export  LD_LIBRARY_PATH
else
      LD_LIBRARY_PATH=$ORACLE_HOME/lib:${LD_LIBRARY_PATH}
      export  LD_LIBRARY_PATH
fi

WV_GATEWAY_CFG=$ORACLE_HOME/Apache/modplsql/cfg/wdbsvr.app
export WV_GATEWAY_CFG

LYNX="lynx -dump"
#ulimit -n 1024
STATUSURL="http://localhost/server-status"

##########################################################################

usage()
{
cat <<EOF
```

```
usage:
$0 start|stop|restart|fullstatus|status|graceful|configtest|help <Listener>

% $0 start
% $0 start foo

start         - start  httpd
startssl    - start httpd with SSL enabled
stop           - stop  httpd
restart     - restart httpd if running by sending a SIGHUP or start if
                    not  running
fullstatus - dump a full status screen; requires lynx and mod_status
enabled
status      - dump a short status screen; requires lynx and mod_status
enabled
graceful    - do a graceful restart by sending a SIGUSR1 or start if
not running
configtest - do a configuration syntax test
help           - this  screen
Listener    - specifies listener to start

EOF
ERROR=2
exit $ERROR
}

##############################################################################

########
# main #
########

ERROR=0
ARGV="$@"

if [ "x$ARGV" = "x" ] ; then
      usage
fi

##############################################################################
# Following applies if listener name supplied from command line
# ListenerName ($2) is stored in $LIST_NAME
##############################################################################

if [ $# -gt 1 ]
then
      LIST_NAME=$2

    if ( ${USE_SUBDIR} = true )
      then
            CONF_FILE="${LIST_NAME}/httpd.conf"
            PIDFILE="${LogRootAbs}/${LIST_NAME}/httpd.pid"
      else
            CONF_FILE="httpds_${LIST_NAME}.conf"
            PIDFILE="${LogRootAbs}/httpds_${LIST_NAME}.pid"
      fi

      CONF_FILE_ABS="${ListRootAbs}/${CONF_FILE}"
      CONF_FILE_REL="${ListRootRel}/${CONF_FILE}"

    if [ ! -f "${CONF_FILE_ABS}" ]
```

```
      then
            echo "ERROR! non existant configuration file '${CONF_FILE_ABS}'"
           exit 0
      fi

    if [ "${ServerRoot}" = "${ConfigRoot}" ]
      then
          HTTPD="$ServerRoot/bin/httpd -d $ServerRoot -f
            ${CONF_FILE_REL}"
      else
          HTTPD="$ServerRoot/bin/httpd -d $ServerRoot -f
            ${CONF_FILE_ABS}"
      fi

else
    if [ "${ServerRoot}" = "${ConfigRoot}" ]
      then
           HTTPD="$ServerRoot/bin/httpd -d $ServerRoot"
            PIDFILE="$ServerRoot/logs/httpd.pid"
      else
          HTTPD="$ServerRoot/bin/httpd -d $ServerRoot -f
            ${ListRootAbs}/httpds.conf"
            PIDFILE="${LogRootAbs}/httpds.pid"
      fi

fi

##########################################################################

if [ "${APCTL_DEBUG}" = "TRUE" ]
then
      debug_info
fi

##########################################################################

for ARG in $1
do
    # check for pidfile
    if [ -f $PIDFILE ] ; then
     PID=`cat $PIDFILE`
    if [ "x$PID" != "x" ] && kill -0 $PID 2>/dev/null ; then
          STATUS="httpd (pid $PID) running"
            RUNNING=1
      else
         STATUS="httpd (pid $PID?) not running"
            RUNNING=0
      fi
      else
    STATUS="httpd (no pid file) not running"
      RUNNING=0
      fi

     case $ARG in
      start)
     echo "$HTTPD"
    if [ $RUNNING -eq 1 ]; then
            echo "$0 $ARG: httpd (pid $PID) already running"
            continue
      fi
     if $HTTPD ; then
```

```
        echo "$0 $ARG: httpd started"
  else
        echo "$0 $ARG: httpd could not be started"
        ERROR=3
  fi
        ;;
# in the following two cases, eliminates "-f /...configFileFullPath" entries.
  -f)
        ;;
  /*)
  ;;
  startssl|sslstart|start-SSL)
 if [ $RUNNING -eq 1 ]; then
        echo "$0 $ARG: httpd (pid $PID) already running"
        continue
  fi
 if $HTTPD -DSSL ; then
        echo "$0 $ARG: httpd started"
  else
        echo "$0 $ARG: httpd could not be started"
        ERROR=3
  fi
  ;;
  stop)
 if [ $RUNNING -eq 0 ]; then
        echo "$0 $ARG: $STATUS"
        continue
  fi
 if kill $PID ; then
        echo "$0 $ARG: httpd stopped"
  else
        echo "$0 $ARG: httpd could not be stopped"
        ERROR=4
  fi
  ;;
  restart)
 if [ $RUNNING -eq 0 ]; then
        echo "$0 $ARG: httpd not running, trying to start"
       if $HTTPD ; then
        echo "$0 $ARG: httpd started"
        else
        echo "$0 $ARG: httpd could not be started"
        ERROR=5
        fi
  else
      if $HTTPD >/dev/null 2>&1; then
      if kill -HUP $PID ; then
          echo "$0 $ARG: httpd restarted"
        else
          echo "$0 $ARG: httpd could not be restarted"
              ERROR=6
        fi
        else
        echo "$0 $ARG: configuration broken, ignoring restart"
        echo "$0 $ARG: (run 'apachectl configtest' for details)"
        ERROR=6
        fi
  fi
  ;;
  graceful)
 if [ $RUNNING -eq 0 ]; then
```

```
            echo "$0 $ARG: httpd not running, trying to start"
          if $HTTPD ; then
            echo "$0 $ARG: httpd started"
            else
            echo "$0 $ARG: httpd could not be started"
            ERROR=5
            fi
      else
          if $HTTPD >/dev/null 2>&1; then
          if kill -USR1 $PID ; then
              echo "$0 $ARG: httpd gracefully restarted"
            else
              echo "$0 $ARG: httpd could not be restarted"
                 ERROR=7
            fi
            else
            echo "$0 $ARG: configuration broken, ignoring restart"
            echo "$0 $ARG: (run 'apachectl configtest' for details)"
            ERROR=7
            fi
      fi
      ;;
      status)
    $LYNX $STATUSURL | awk ' /process$/ { print; exit } { print } '
      ;;
      fullstatus)
     $LYNX $STATUSURL
      ;;
      configtest)
    if $HTTPD -t $2 $3; then
            :
      else
            ERROR=8
      fi
      ;;
     *) usage
      ;;

      esac
done


- - - - - - - - - - - - - - - - Code ends here - - - - - - - - - - - - -
```

4. apctl 사용예제

```
% apctl start www2
/oracle/ias/Apache/Apache/bin/httpd -d /oracle/ias/Apache/Apache -f conf/httpds_www2.conf
/oracle/ias/Apache/Apache/bin/apctl start: httpd started

% apctl stop www2
/oracle/ias/Apache/Apache/bin/apctl start: httpd stopped
%
```

6.1.16 Apache Jserv의 Manual Start 방법

Oracle 9iAS 1.0.2.1 이하 버전에서 Apache Jserv를 여러 개 사용할 경우 쓸 수 있는 유용한 script 를 소개한다.

Notes : 123533.1

환경변수 설정

ORACLE_HOME=<location of home for iAS binaries>

LD_LIBRARY_PATH=${ORACLE_HOME}/lib:<standard ld entries>

jservctl shell script 에서 CONFIG_ROOT 부분을 수정

CONFIG_ROOT="/oracle/ias/Apache"

Notes: 이 shell script는 Oracle Support Services에서 지원되지 않는다.

% chmod ug+rx jservctl

사용자 jserv.properties file을 준비

%cp jserv.properties jserv_<jvm name>.properties

shell script

```
--------------- Code begins here ---------------
#!/bin/ksh

# ======================================================================
# SCRIPT: jservctl
#
# This script helps administor the Apache JSERV servers which are
# essentially a servlet engine running inside a JVM.
#
# DISCLAIMER
# ----------
# This script is provided by Oracle Support as an example of one
# methodology which streamlines the support and startup of multiple
# Apache Jserv servlet engines. Although this script has been tested
# within support for basic correctness, it is intended for educational
# purposes only and no support is provided for it's use.
#
# CONFIGURATION
# -------------
# Before running this script you will need to make modifications to
# configure it so that it can find needed files in the locations where
# they are installed at your location.
#
# The approach and operation of this script is described in the
# CONFIGURATION OVERVIEW section. If you are using this script for the
# first time please read this section to gain a better understanding
# of how the script is intended to work. If you have already run the
# script successfully and are already somewhat familiar with how it
# works then the CONFIGURATION ROOT DIRECTORY section.
#
# SYNTAX
# ------
# jservctl start <jvm_name>
# jservctl stop  <jvm_name>
# jservctl version <jvm_name>
# jservctl options <jvm_name>
# jservctl help
# jservctl -h
#
```

```
# where:
#
# <jvm_name> - indicates a naming convention used to identify the
#              correct targets for configuration and log files.
#
# CONFIGURATION OVERVIEW
# ----------------------
# The script distinguishes between the following two areas within the
# installation heirarchy:
#
# (a) binaries, libraries and core configuration files
#     These are all expected to remain in the same location relative
#     to the ORACLE_HOME;
#
# (b) per instance configuration files
#     These are specific to one instance of the Apache listener
#     or specific to one instance of the Apache JServ Servlet Engine;
#
# The following sections discuss these concepts further and identify
# where the script expects to find key configuration files within the
# installation and configuration roadmaps respectively.
#
# (a) binaries, libraries and core configuration files
#     -----------------------------------------------
#     Only the configuration directory is assumed to have moved.
#     The following directories are all assumed to be in the same
#     position relative to the ORACLE_HOME directory:
#
#     ${ORACLE_HOME}
#     |
#     |- Apache
#        |
#        |- jdk
#        |- jsdk
#        |  |
#        |  |- lib
#        |     |
#        |     |- jsdk.jar
#        |
#        |- jserv
#        |  |
#        |  |- libexec
#        |     |
#        |     |- jsdk.jar
#        |
#        |- jdk
#
# (b) per instance configuration files
#     -------------------------------
#     Although a default iAS installation locates these files within
#     distinct sub-directories which are located within the main
#     ORACLE_HOME these files are logically distinct and can safetly
#     be located beneath a direcyory which is located completely
#     outside of the ORACLE_HOME.
#
#     It is also possible, to have these files owned by a different
#     UNIX user, provided that:
#
#     - the user owning the per instance configuration files has
#       sufficient file priviliges on the ORACLE_HOME, such as being
#       member of the same UNIX group;
#     - the user has set up the following environment variables with
#       values consistent with those in the user account which
#       installed the iAS software and owns the ORACLE_HOME:
#
#         ORACLE_HOME=<location of home for iAS binaries>
#         LD_LIBRARY_PATH=${ORACLE_HOME}/lib:<standard ld entries>
#         ORACLE_SID=<database sid>
#
#     NOTE: It is assumed that at least ORACLE_HOME and LD_LIBRARY_PATH
#           are set as indicated regardless of whether this is from
#           the environment of a newly created UNIX user or by
#           the user who owns the iAS installation. In the latter case
#           these UNIX environment variables should already be set
#           appropriately by default.
#
#     The location of the top directory used as the root of the
#     directory heirarchy under which all per instance configuration
```

```
#     files are stored is specified by the CONFIG_ROOT parameter
#     embedded within this script, as described in the section
#     CONFIG_ROOT DIRECTORY below.
#
# CONFIGURATION ROOT DIRECTORY
# ----------------------------
# The script assumes that all configuration files are located in a
# fairly rigidly defined directory heirarchy located beneath a common
# directory as specified by the CONFIG_ROOT variable below.
#
# The following directory structure is assumed:
#
#   ${CONFIG_ROOT_DIR}
#    |
#    |- JSERV
#    |  |
#    |  |- ETC
#    |  |  |
#    |  |  |- jserv.conf
#    |  |  |- jserv_<jvm_name>.properties
#    |  |
#    |  |- LOGS
#    |     |
#    |     |- jvm_<jvm_name>.log
#    |
#    |- APACHE
#       |
#       |- CONF
#       |  |
#       |  |- httpds_<list_name>.conf
#       |
#       |- LOGS
#          |
#          |- httpds_<list_name>.pid
#          |- httpds_<list_name>_access_log
#          |- httpds_<list_name>_error_log
#
# CREATION OF A CONFIGURATION ROOT DIRECTORY
# ------------------------------------------
# The initial configuration root directory can be created by manually
# creating the directory structure described above and copying the
# default configuration files as a starting point for further
# modification.
#
# The default file equivalent of the files identified in the above
# roadmap would be found in a corresponding position within the
# $ORACLE_HOME/Apache directory tree, except that the directory
# names are not capitalized.
#
# ===========================================================================

DEBUG="N"
CONFIG_ROOT="/oracle/ias/Apache"

###########################################################################
# DO NOT MODIFY ANYTHING BELOW THIS POINT
###########################################################################

# ---------------------------------------------------------------------
# FUNCTION display_syntax
# ---------------------------------------------------------------------

function display_syntax
{
   echo ""
   echo "SYNTAX"
   echo "------"
   echo "jservctl start <jvm_name>"
   echo "jservctl stop  <jvm_name>"
   echo "jservctl version <jvm_name>"
   echo "jservctl options <jvm_name>"
   echo "jservctl help"
   echo "jservctl -h"
   echo ""
}

# ---------------------------------------------------------------------
# FUNCTION validate_command
```

```
# ------------------------------------------------------------------

function validate_command
{
typeset -u COMMAND
ERR1="${PROGNAME}! ERROR: validate_command RECEIVED NULL INPUT"
ERR2="${PROGNAME}! ERROR: validate_command RECEIVED UNKNOWN COMMAND"
JSERV_COMMAND="ERROR"

   if [[ "$#" = "0" ]]
   then
      echo ${ERR1}
      display_syntax
      exit -1
   fi

   COMMAND=$1

   if [[ "${COMMAND}" = "START" ]]
   then
      JSERV_COMMAND=""
   fi

   if [[ "${COMMAND}" = "STOP" ]]
   then
      JSERV_COMMAND="-s"
   fi

   if [[ "${COMMAND}" = "VERSION" ]]
   then
      JSERV_COMMAND="-v"
   fi

   if [[ "${COMMAND}" = "OPTIONS" ]]
   then
      JSERV_COMMAND="-V"
   fi

   if [[ "${COMMAND}" = "HELP" ]]
   then
      JSERV_COMMAND="HELP"
   fi

   if [[ "${COMMAND}" = "-H" ]]
   then
      JSERV_COMMAND="HELP"
   fi

   if [[ "${JSERV_COMMAND}" = "ERROR" ]]
   then
      echo ${ERR2}
      exit -1
   fi

   if [[ "${DEBUG}" = "Y" ]]
   then
       echo "${PROGNAME}: JSERV_COMMAND = ${JSERV_COMMAND}"
   fi

}

#########################################################################

PROGNAME=${0##*/}
JSERV_COMMAND=$1
JSERV_NAME=$2
JSERV_ARGS=$3

validate_command ${JSERV_COMMAND}

if [[ "${JSERV_COMMAND}" = "HELP" ]]
then
   display_syntax
   exit 0
fi

APACHE_HOME="${ORACLE_HOME}/Apache"
```

```
JDK_HOME="${APACHE_HOME}/jdk"
JSDK_HOME="${APACHE_HOME}/Jsdk"
JSERV_HOME="${APACHE_HOME}/Jserv"

JSDK_JAR="${JSDK_HOME}/lib/jsdk.jar"
JSERV_JAR="${JSERV_HOME}/libexec/ApacheJServ.jar"
JSERV_CLASS_NAME="org.apache.jserv.JServ"

APACHE_LOG_DIR="${CONFIG_ROOT}/APACHE/LOGS"
CLASSPATH="${CLASSPATH}:${JSDK_JAR}"
CLASSPATH="${CLASSPATH}:${JSERV_JAR}"
export CLASSPATH

JSERV_CFG_DIR=${CONFIG_ROOT}/Jserv/etc
JSERV_LOG_DIR=${CONFIG_ROOT}/Jserv/logs

properties_file=${JSERV_CFG_DIR}/jserv_${JSERV_NAME}.properties
JSERV_LOG_FILE=${JSERV_LOG_DIR}/jserv_${JSERV_NAME}.log

if [[ "${DEGUG}" = "Y" ]]
then
   echo "${PROGNAME}: JSERV_LOG_FILE=${JSERV_LOG_FILE}"
fi

if [[ ! -f ${properties_file} ]]
then
   echo "${PROGNAME} : ERROR! properties file '${properties_file}' \
   does not exist"
   echo "${PROGNAME} : ERROR! properties file '${properties_file}' \
   does not exist"  >> ${JSERV_LOG_FILE}
   exit 0
fi

if [[ "${DEBUG}" = "Y" ]]
then
   MSG="${PROGNAME}: CLASSPATH=${CLASSPATH}"
   echo "${MSG}"
   echo "${MSG}" >> ${JSERV_LOG_FILE}

   MSG="${PROGNAME}: properties_file=${properties_file}"
   echo "${MSG}"
   echo "${MSG}" >> ${JSERV_LOG_FILE}

   MSG="COMMAND LINE:"
   echo "${MSG}"
   echo "${MSG}" >> ${JSERV_LOG_FILE}

   MSG="${JDK_HOME}/bin/java ${JSERV_CLASS_NAME} $properties_file \
   ${JSERV_COMMAND} 2>> ${JSERV_LOG_FILE} &"
   echo "${MSG}"
   echo "${MSG}" >> ${JSERV_LOG_FILE}
fi

${JDK_HOME}/bin/java ${JSERV_CLASS_NAME} $properties_file \
${JSERV_COMMAND} 2>> ${JSERV_LOG_FILE} &
sleep 3
```

---------- Code ends here ----------

shell script 사용방법

```
% jservctl help

SYNTAX
------
jservctl start <jvm_name>
jservctl stop  <jvm_name>
jservctl version
jservctl options
jservctl help
jservctl -h
%
```

```
% jservctl version jvm_a
Server version: ApacheJServ/1.1
%

% jservctl options jvm_a
Server version: ApacheJServ/1.1
Turbo mode: true
Profile mode: false
%

% jservctl start jvm_a
Server version: ApacheJServ/1.1
%

% jservctl stop jvm_a
Signal sent.
%
```

6.2 Web Server Security

6.2.1 Basic Authentication

Web Server에 접근되는 User들을 인증하여 Web Service를 원할 경우, 여러가지 사용자 인증방법이 있는데 iAS에서의 방법을 알아보자.

Basic Authentication

password file 생성

% $ORACLE_HOME/Apache/Apache/bin/htpasswd [-c] password_file username

생성할 때만 –c 를 붙여주면 된다.

$cat krdaejeon1_pwd
minimax:wqbXiF0PcTlbE
jweom:bqMfZjmIdycs6

password string은 Base64로 encoding되어져 있으며 많은 사용자들을 등록하려면 DBM을 사용하는 것이 performance에 좋을 것이다.

group file 생성

$cat krdaejeon1_group
group1: minimax
group2: jweom

group 에는 여러 user가 등록될 수 있으며 vi 와 같은 text editor로 group을 생성하여 htpasswd로 생성한 password file내의 user들을 등록하면 된다.

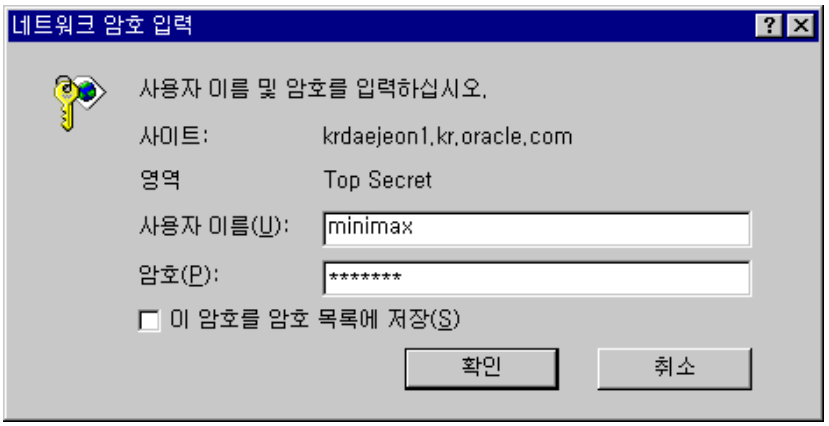
httpds.conf 변경

$ORACLE_HOME/Apache/Apache/conf/httpds.conf

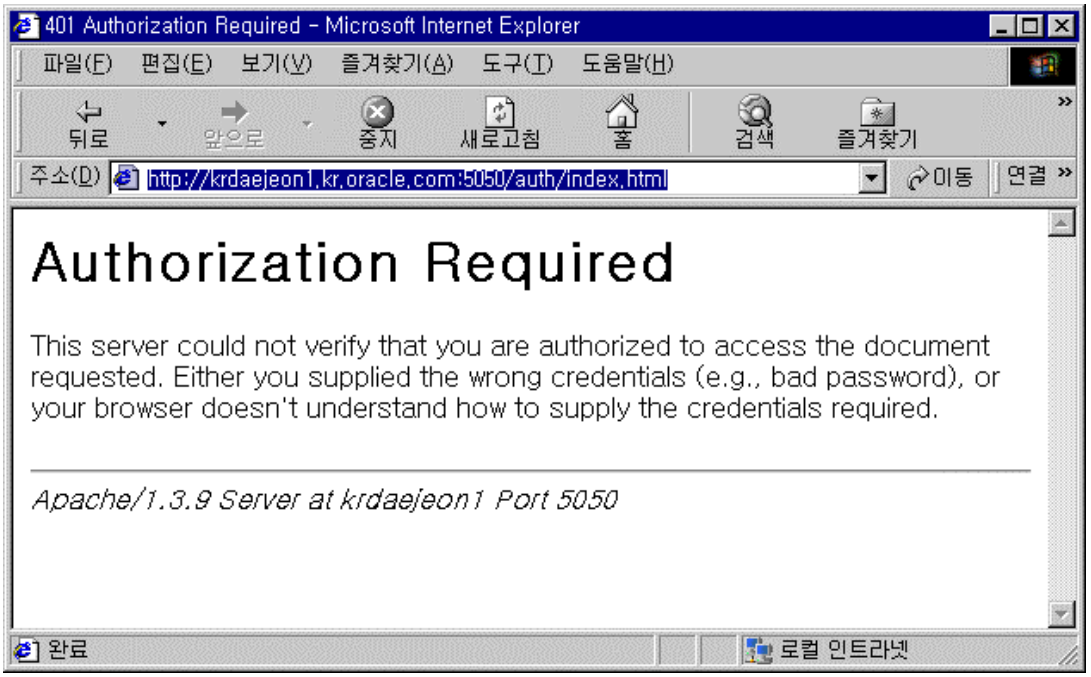
```
Alias /auth/ "/disk7/share/ias10/Apache/Apache/auth/"
<Directory "/disk7/share/ias10/Apache/Apache/auth">
    Authtype Basic
    AuthName "Top Secret"
    AuthUserFile "/disk7/share/ias10/Apache/Apache/bin/krdaejeon1_pwd"
    AuthGroupFile "/disk7/share/ias10/Apache/Apache/bin/krdaejeon1_group"
    Require valid-user
</Directory>
```

자 그러면 해당 web page로 접속해보자.

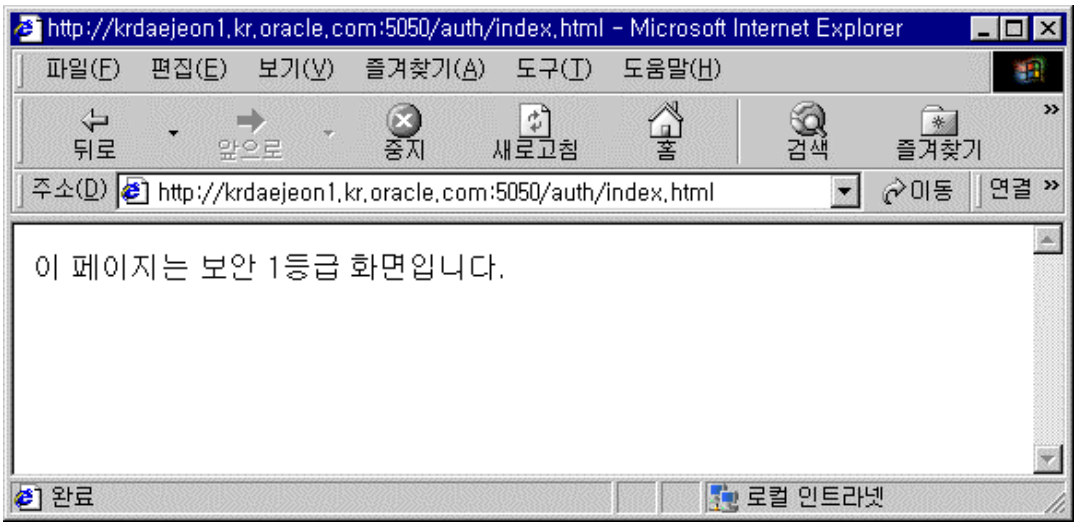
http://<ServerName>:<Port>/auth/index.html



만약 username / password**가 잘못 입력되면 다음과 같은 메시지가 나올 것이다.**



Web Server**의 정상적인 사용자일 경우 페이지가 보여질 것이다.**



httpds.conf에서 사용자 인증방법은 다음과 같다.

require valid-user : password file에 등록된 모든 사용자
require userlists …. : 나열된 사용자들만 접근 가능
require group grouplists : 나열된 그룹에 속한 사용자들은 접근 가능

6.2.2 Web Server로의 접근 제한

apache에서는 mod_access 라는 module을 이용하여 directory, location, files 등의 directive에 hostname 혹은 ip를 이용하여 web server로의 접근을 제한할 수 있습니다. 그리고 mod_rewrite를 이용해서도 가능합니다.

6.2.2.1 mod_access를 이용한 방법

관련된 지시자

AllowOverride : Limit를 포함시키면 됨
예) AllowOverride Limit
AllowOverride All

Order : deny 와 allow 명시할 때 ',' 외에 white space가 들어가 있으면 syntax에러 발생
예) order deny,allow # 제한된 접근정책이 필요할 경우
order allow, deny # 일부 접근제한할 경우

Deny: 접근을 제한 시킴
예) deny from all # 모두 제한
deny from 152.69.32.5 # 특정한 ip제한
deny from .microsoft.com # 특정 domain모두 제한

Allow : 접근을 허용
예) allow from all # 모두 허용
allow from 152.69.32.5 # 특정한 ip허용
allow from .microsoft.com # 특정 domain모두 허용

사용예

```
# 특정 ip만 허용하는 방법
<Directory / >
        AllowOverride All
        Options Indexes FollowSymLinks ExecCGI
        order deny,allow
        deny from all
        allow from 152.69.32.151 152.69.32.3
 </Directory>
# 특정 domain을 제한하는 방법
 <Directory / >
        AllowOverride All
        Options Indexes FollowSymLinks ExecCGI
        order allow,deny
        allow from all
        deny from .microsoft.com
</Directory>
```

6.2.2.2 mod_rewrite를 이용한 방법

특정 IP에서의 접근을 제한하고, 제한할 IP들을 file로 처리할 때

임의의 file hosts.deny 에 해당 IP를 기술

```
152.69.32.5 -
152.69.32.6 -
```

httpd.conf 에 다음과 같은 조건을 이용한다.

```
RewriteMap      hosts-deny txt:/disk5/app/ora817/product/8.1.7/Apache/Apache/bin/hosts.deny
RewriteCond     ${hosts-deny:%{REMOTE_HOST}|NOT-FOUND} !=NOT-FOUND [OR]
RewriteCond     ${hosts-deny:%{REMOTE_ADDR}|NOT-FOUND} !=NOT-FOUND
RewriteRule     ^/.*    -    [F]
```

허용하려면 RewriteRule의 [F] 부분을 [T]로 바꾸면 된다

간단히 REMOTE_ADDR을 이용하려면

```
RewriteCond %{REMOTE_ADDR}     ^152\.69\.32\.6$
RewriteRule     ^/.*    -    [F]
```

Virtual Host를 이용하는 경우 RewriteCond, RewriteRule 등을 각각의 VirtualHost directive내에포함시켜야 한다.

사용예

```
<VirtualHost 152.69.32.3:7777>
        ServerAdmin  webmaster@krdaejeon1.kr.oracle.com
         DocumentRoot "/disk5/app/ora817/product/8.1.7/Apache/Apache/htdocs"
        ServerName  krdaejeon1.kr.oracle.com
        RewriteEngine  On
        RewriteRule  ^/scott/plsql/(.*)$   /pls/ora8/$1  [PT]
        #  RewriteMap       hosts-deny txt:/disk5/app/ora817/product/8.1.7/Apache/Apache/bin/hosts.deny
        #  RewriteCond     ${hosts-deny:%{REMOTE_HOST}|NOT-FOUND} !=NOT-FOUND [OR]
        #  RewriteCond     ${hosts-deny:%{REMOTE_ADDR}|NOT-FOUND} !=NOT-FOUND
        RewriteCond  %{REMOTE_ADDR}     ^152\.69\.32\.6$
        RewriteRule     ^/.*    -    [F]
        ErrorLog  logs/krdaejeon1-error_log
        CustomLog  logs/krdaejeon1-access_log  common
</VirtualHost>
```

3. allow / deny 에서는 network/netmask를 이용한 방법도 가능합니다.

   매뉴얼을 참고하세요.

6.3 Web Log 관련

Web Site를 운영하면서 과연 얼마만큼의 사용자가 Homepage에 접속했는지가 또 어느 부분의 자료를 많이 보는지등의 홈페이지 사용자의 성향등을 분석할 수 있는 도구들로 Web Log Analyzer 가 있다. 요즘은 이러한 것도 Marketing의 한 수단으로 사용하여 CRM (고객관계관리) 에서는 ClickStream 이라는 형태로 분석도구로써 자리잡고 있다.

WebTrend 등의 유명한 업체와 국산품등 많이 있지만 필자는 주로 Freeware인 analog를 많이 쓰고 , 요즘에는 자체 Graphic Chart기능을 내장한 Webalizer 를 사용하고 있다.

6.3.1 Analog 사용하기

6.3.1.1 analog파일구성

analog (실행 file)
analog.cfg (configuration file)
웹로그 file (각 web server 의 로그 file)
report.html (결과 file)

물론, configuration / log / output file은 모두 지정할 수 있다.

그리고, 3rd party의 지원 s/w 로 helper application이 있으며 document를 참조해보면 도움이 많이 될 것이다. 개인적으로는 "Report Magic for Analog" 가 가장 좋아 보이며 (이것도 Freeware), analog와 함께 사용시 WebTrends의 Log Analyzer와 비슷한 기능을 갖는다.

6.3.1.2 DOWNLOAD

Windows 95, NT, 98, MAC OS, OS/2, Linux등 미리 compile 된 형태의 실행file로 설치하면 가장 간단하고 Source file도 제공되므로 Unix용으로도 사용가능.

http://www.analog.cx/analog_413w32.zip

source 도 제공 (unix, windows용) 하므로 많은 도움이 될것이다.

(단, licence 문서를 확인해보는 것이 바람직)

http://www.analog.cx/anlg413.zip

=> 최근의 Version은 4.13이다.

6.3.1.3 설치및 실행

Windows Platform 에서 사용하기

analog_413w32.zip file 을 임의의 directory 에 푼다.

analog.cfg file을 편집기로 연 후, 분석할 로그파일을 지정해준다.

```
LOGFILE D:\ias10\Apache\Apache\logs\access_log
OUTFILE d:\ias10\Apache\Apache\log\index.html
LANGUAGE KOREAN
LANGFILE lang/kr.lng
IMAGEDIR /logimages/
HOSTNAME "[대전사무소 - 작은꼬마]"
```

analog 를 실행하여 결과물을 생성한다.

Web server에 생성된 결과를 조회해 볼수 있는 directory를 등록한후 restart.

```
Alias /logimages/  "d:\analog 4.13\images/"
Alias /log/  "d:\ias10\Apache\Apache\log/"
```

접속통계를 조회한다.. (http://jweom.kr.oracle.com/log/)

UNIX에서 사용하기 (예) SOLARIS 2.X)

source file (analog-4.13.tar.gz) 의 압축을 푼다.

Compile 전 analog를 자신의 시스템 환경에 맞게 수정

analog는 default directory로 /usr/local/analog-4.13/를 사용하므로

source file중 analhead.h 를 수정 한다.

```
#ifndef ANALOGDIR
#define ANALOGDIR "/disk7/analog/"
#endif
```

위의 tip과 같이 하여 analog를 compile하면 windows 환경처럼 현재 directory 에서 configuration file를 사용하고 결과물도 현재 directory를 사용할 수 있다.

자신의 compiler를 이용하여 compile한다.

* ANSI-C mode를 사용하며 Makefile 을 수정

```
$vi Makefile
gcc 사용시
        CC = gcc
        CEXTRAFLAGS = -O
        DEFS = -DNEED_STRCMP
        LIBS = -lnsl
SUN WORKSHOP Compiler 사용시
        CC = cc
        CEXTRAFLAGS = -Xa
        DEFS = -DNEED_STRCMP
        LIBS = -lnsl
  $make
```

아직 (make install) 을 지원하지 않아 사용자가 2번에서 지정해주었던 ANALOGDIR로 생성된 실행FILE analog와 기타 file들을 복사하여야 한다. (만약 쉽게하려면 tar file을 풀때 설치될 directory로 직접 풀어서 사용한다.

(analog anlgform.html anlgform.pl analog.cfg docs/ examples/ images/ lang/ logfile.log)

analog.cfg file을 편집기로 연 후, 분석할 로그파일과 기타 사항을 지정해준다.

```
LOGFILE /disk7/share/ias10/Apache/Apache/logs/httpds_access_log
OUTFILE    /disk7/share/ias10/Apache/Apache/log/index.html
LANGUAGE KOREAN
LANGFILE lang/kr.lng
IMAGEDIR /logimages/
HOSTNAME "[대전사무소 - krdaejeon1]"
```

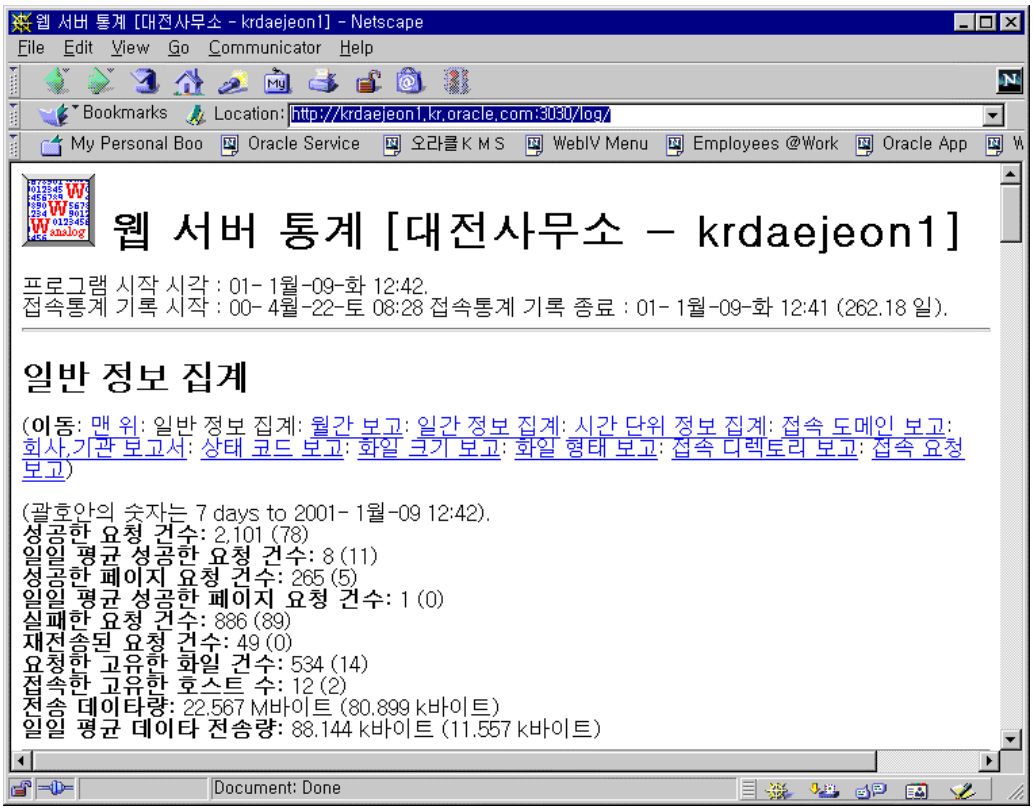
analog 를 실행하여 결과물을 생성한다.

Web server에 생성된 결과를 조회해 볼수 있는 directory를 등록한후 restart.

```
Alias /log/ "/disk7/share/ias10/Apache/Apache/log/"
Alias /logimages/ "/disk7/analog/images/"
```

접속통계를 조회한다. (http://krdaejeon1.kr.oracle.com:3030/log/)

6.3.1.4 접속통계 조회화면



6.3.1.4 분석가능한 내용

일반 정보 집계: 월간 보고: 일간 정보 집계: 시간 단위 정보 집계: 접속 도메인 보고: 회사,기관 보고서: 상태 코드 보고: 화일 크기 보고: 화일 형태 보고: 접속디렉토리 보고: 접속 요청 보고

일반 정보 집계

(괄호안의 숫자는 7 days to 2001- 1월-09 12:42).
성공한 요청 건수: 2,101 (78)
일일 평균 성공한 요청 건수: 8 (11)
성공한 페이지 요청 건수: 265 (5)
일일 평균 성공한 페이지 요청 건수: 1 (0)
실패한 요청 건수: 886 (89)
재전송된 요청 건수: 49 (0)
요청한 고유한 화일 건수: 534 (14)
접속한 고유한 호스트 수: 12 (2)
전송 데이타량: 22.567 M바이트 (80.899 k바이트)
일일 평균 데이타 전송량: 88.144 k바이트 (11.557 k바이트)

월간 보고

각각의 단위는 () 표시 : 3 페이지 요청 이나 일부분.

월:	요청수:	페이지수:	
2000 4월:	872:	95:	++++++++++++++++++++++++++++++++++
2000 5월:	32:	1:	+
2000 6월:	0:	0:	
2000 7월:	66:	18:	++++++
2000 8월:	233:	46:	++++++++++++++++
2000 9월:	109:	12:	++++
2000 10월:	19:	4:	++
2000 11월:	113:	17:	++++++
2000 12월:	579:	67:	++++++
2001 1월:	78:	5:	++

가장 많이 접속한 달: 2000 4월 (95 페이지 요청).

일간 정보 집계

각각의 단위는 () 표시 : 3 페이지 요청 이나 일부분.

요일:	요청수:	페이지수:	
일:	726:	74:	++++++++++++++++++++++++++
월:	156:	18:	++++++
화:	162:	31:	++++++++++++
수:	165:	14:	+++++
목:	771:	93:	++++++++++++++++++++++++++++++++
금:	97:	24:	++++++++
토:	24:	11:	++++

시간 단위 정보 집계

각각의 단위는 () 표시 : 2 페이지 요청 이나 일부분.

시:	요청수:	페이지수:	
0:	23:	8:	++++
1:	20:	7:	++++
2:	7:	1:	+
3:	0:	0:	
4:	0:	0:	
5:	0:	0:	
6:	0:	0:	
7:	0:	0:	
8:	26:	11:	++++++
9:	109:	24:	++++++++++++
10:	56:	17:	+++++++++
11:	217:	39:	++++++++++++++++++++
12:	382:	42:	++++++++++++++++++++

```
13:      10:        2: +
14:      68:       12: ++++++
15:     102:       17: +++++++++
16:      96:        4: ++
17:     110:       17: +++++++++
18:     175:       17: +++++++++
19:     367:       46: ++++++++++++++++++++++++
20:     220:        8: ++++
21:      53:        9: +++++
22:      37:        7: ++++
23:      23:        3:++
```

접속 도메인 보고

```
목록: 도메인, sorted by 트래픽의 양.
요청수: 바이트(%): 도메인
------: ---------: ------
 2101:       100%: 도메인 이름을 찾지 못한 주소
```

회사,기관 보고서

```
목록: 회사,기관, sorted by 요청수.
요청수: 바이트(%): 소속
------: ---------: ----
  2101:       100%: 도메인 이름을 찾지 못한 주소
```

상태 코드 보고

```
목록: 상태코드, 숫자정렬.
요청수: 상태 코드
------: ---------
 1706: 200 OK
    1: 206 Partial content
   49: 302 Document found elsewhere
  394: 304 Not modified since last retrieval
    2: 400 Bad request
    9: 401 Authentication required
   42: 403 Access forbidden
  720: 404 Document not found
   89: 500 Internal server error
    9: 501 Request type not supported
   15: 503 Service temporarily unavailable
```

화일 크기 보고

```
크기: 요청수: 바이트(%):
-----------: ------: ---------:
          0:    396:         :
   1b-   10b:     14:         :
  11b-  100b:    224:      0.05%:
 101b-   1kb:    671:      1.47%:
  1kb-  10kb:    679:      8.59%:
 10kb-100kb:    111:      9.01%:
100kb-   1Mb:      3:      1.76%:
  1Mb-  10Mb:      3:     79.11%:
```

화일 형태 보고

목록: 확장자 with at least 0.1% 트래픽의 양, sorted by 트래픽의 양.

요청수: 바이트(%): 확장자

```
------: ---------: ------
     2:     41.53%: .jar
     1:     37.59%: .exe  [Executables]
   953:      4.24%: .gif  [GIF graphics]
    67:      3.80%: .html [Hypertext Markup Language]
    63:      2.57%: .htm  [Hypertext Markup Language]
    62:      2.44%: .js   [JavaScript code]
    97:      2.04%: .jpg  [JPEG graphics]
   135:      1.92%: directory
   288:      1.13%: .jsp
   138:      0.96%: 확장자 없음
    62:      0.85%: .css  [Cascading Style Sheets]
    16:      0.21%: .php3
     3:      0.17%: .php
   214:      0.56%: [표시 안함: 22 확장자]
```

접속 디렉토리 보고

목록: 디렉토리 with at least 0.01% 트래픽의 양, sorted by 트래픽의 양.

요청수: 바이트(%): 디렉토리

```
------: ---------: --------
    30:     79.42%: /oem_webstage/
   457:      3.70%: /webapp/
   339:      3.46%: /jspsamples/
   157:      2.28%: /manual/
   141:      2.23%: /pls/
    34:      1.29%: /doc/
   194:      1.23%: 루트 디렉토리
    35:      1.19%: /jspdocs/
    16:      1.00%: /xsql/
   202:      0.98%: /images/
   121:      0.66%: /OnlineOrders_html/
    22:      0.65%: /hr-img/
    33:      0.60%: /tr-img/
    20:      0.45%: /php/
    10:      0.22%: /jservdocs/
     3:      0.19%: /log/
    82:      0.10%: /perl/
    27:      0.09%: /cgi-bin/
    25:      0.07%: /srini/
    27:      0.07%: /jsp/
    31:      0.05%: /servlets/
    11:      0.03%: /servlet/
    62:      0.02%: /logimages/
    22:      0.02%: [표시 안함: 6 디렉토리]
```

접속 요청 보고

목록: 화일 with at least 20 요청, sorted by 요청수.

요청수: 바이트(%): 마지막으로 접속한 시각: 파일

```
------: ---------: ----------------------: ----
    60:      0.47%:           01/ 1월/ 8 11:26: /
    53:      0.39%:           00/11월/13 16:05: /server-status
    49:      0.35%:           00/11월/13 16:05:    /server-status?refresh=10
    50:      0.05%:           00/12월/28 14:44:
/jspsamples/samples/hellouser/hellouser.jsp
```

```
  12:     0.01%:      00/12월/28 14:44:    /jspsamples/samples/hellouser/hellouser.jsp?
                                                newName=%BE%F6%C1%F8%BF%EC
  11:     0.01%:      00/12월/28 09:34:    /jspsamples/samples/hellouser/hellouser.jsp?
                                                newName=%BE%C8%B3%E7%C7%CF%BC%BC%BF%E4.
  49:     0.81%:      00/12월/28 14:43: /webapp/cabo/images/cabo_styles.css
  49:     0.28%:      01/ 1월/ 8 11:26: /oraclelogo.gif
  42:         :       00/ 9월/21 17:15: /perl/scott.2.pl
  14:         :       00/ 9월/21 17:00:    /perl/scott.2.pl?hidden_value=1
  26:     0.13%:      00/12월/28 11:24: /jspsamples/samples/lottery/lotto.jsp
  26:     0.05%:      00/ 9월/21 17:15: /perl/scott.1.pl
  25:     0.05%:      00/12월/28 12:31: /webapp/cabo/images/pixel_color3.gif
  25:     0.03%:      00/12월/28 11:24: /jspsamples/samples/lottery/images/cream.jpg
  25:     0.03%:      00/12월/28 12:31: /webapp/jsp/container_tabs.jsp
  23:     0.03%:      00/12월/28 12:31:    /webapp/jsp/container_tabs.jsp?tc=tbc
  23:     0.05%:      00/12월/28 12:31: /webapp/cabo/images/pixel_gray5.gif
  22:         :       00/12월/28 12:31: /webapp/cabo/images/pixel_color6.gif
  20:     0.07%:      00/ 9월/21 17:38: /cgi-bin/envvar.cgi
  20:     0.03%:      00/12월/28 15:02: /pls/scott/scott.home
1586:    97.55%:      01/ 1월/ 9 12:41: [표시 안함: 471 파일]
```

6.3.1.5 특징

1. 거의 대부분의 platform에서 실행가능하다.
2. 가로막대 챠트(실제는 이미지로 보여줌)로 예쁘게 보여줌
3. 거의 모든 부분을 configuration file을 조정할 수 있다.

   웹로그 의 column 지정및 결과물의 형태 수정.
4. 결과 분석에 걸리는 시간이 상당히 짧다.
5. 미리 정의 된 웹로그 형태 (clf xlf 및 netscape, apahce, iis)및 사용자 지정 형태 (xlf)가 지원
6. 챠트 style도 지정가능
7. Web browser 에서 직접 log를 분석할 수 있는 FORM interface와 CGI program 제공
8. anlgform.pl / anlgform.html
9. 다른 helper application들이 제공된다.
10. 생성된 문서들에 대한 해당국가별 언어로도 제공

    LANGUAGE KOREAN
    LANGFILE lang/kr.lng
11. 여러개의 웹로그 file지정가능 (wild card 포함)

    LOGFILE logfile.log,xlf.log*

    지정시 "," 앞뒤에 white space가 포함되면 안되며 OAS 에서 logfile 크기가 일정량 이상이면 xlf.log.1,xlf.log.2등으로 archive file이 생기는데 이럴 경우 편리함.
12. Dynamic 한 OUTPUT file 명이 지원

OUTFILE krdaejeon_%Y%M.html (krdaejeon_199910.html)
OUTFILE krdaejeon_%y%M.html (krdaejeon_9910.html)

6.3.1.6 Helper Application

* Document를 참조

Report Magic for Analog

위에서 소개된 Analog를 지원하는 Helper Application 으로 web log 결과를 다양한 그래프 모양으로 보여주는 프로그램이다. 현재 GD Graphic Library를 사용하므로 한글은 볼 수 없다.

http://www.reportmagic.com/

1. 설치형태

source package / Windows binary package / Mac binary 가 있다.

2. Windows Binary package 형태의 설치

http://www.reportmagic.com/rm2.03xw.exe

임의의 direcotry 에 설치

3. 실행방법

a. 순서 "나. 2 번"에서 analog.cfg 의 내용을 변경

OUTPUT COMPUTER (* DEFAULT 로 HTML 이다)

OUTFILE report.dat (Report Magic for Analog 의 default file)

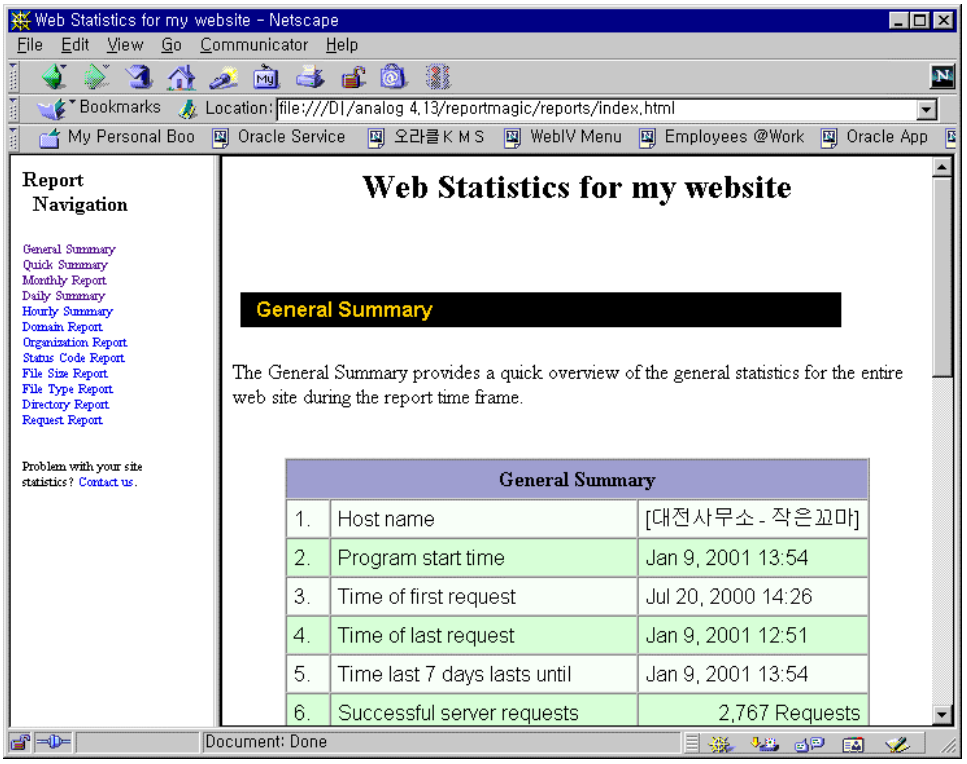
b. analog 실행

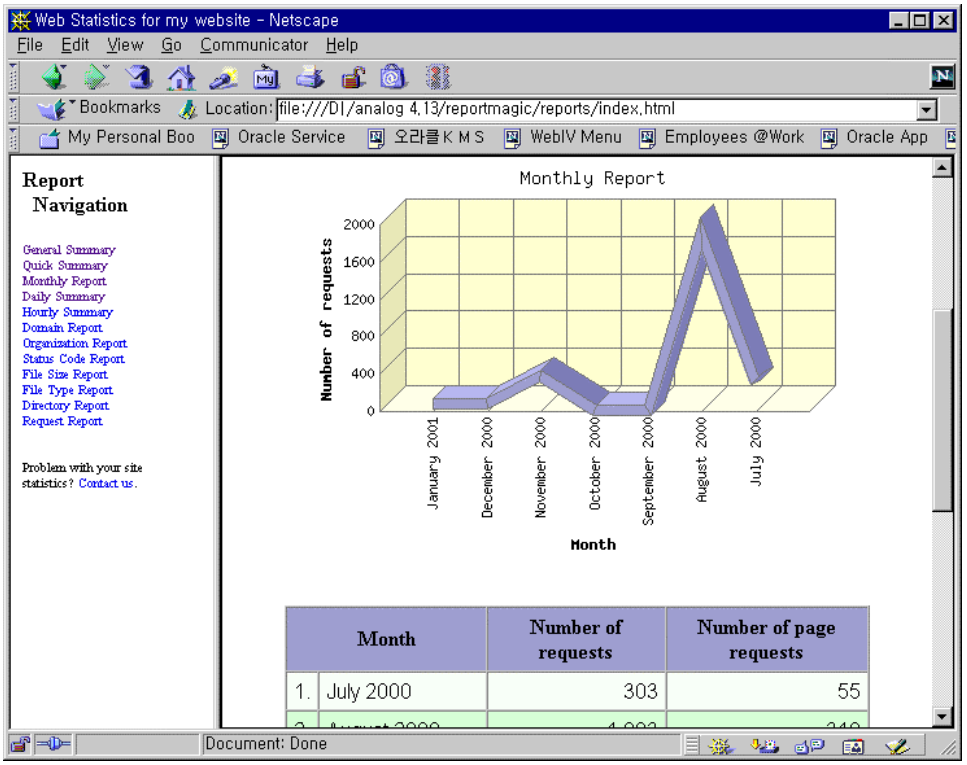
c. 생성된 report.dat 를 Report Magic for Analog (rmagic) 가 있는 디렉토리로 이동

d. rmagic 을 실행

e. 현재 디렉토리에 reports 라는 디렉토리가 생성되며 그 아래에 그래프가 포함된 HTML문서가 생성된다.

f. index.html 파일을 열어보면 된다.


Web Statistics for my website - Netscape
File Edit View Go Communicator Help
Bookmarks Location: file:///D|/analog 4.13/reportmagic/reports/index.html
My Personal Boo Oracle Service 오라클 K M S WebIV Menu Employees @Work Oracle App
Report Navigation
General Summary
Quick Summary
Monthly Report
Daily Summary
Hourly Summary
Domain Report
Organization Report
Status Code Report
File Size Report
File Type Report
Directory Report
Request Report
Problem with your site statistics? Contact us.
Web Statistics for my website
General Summary
The General Summary provides a quick overview of the general statistics for the entire web site during the report time frame.
General Summary
1. Host name [대전사무소 - 작은꼬마]
2. Program start time Jan 9, 2001 13:54
3. Time of first request Jul 20, 2000 14:26
4. Time of last request Jan 9, 2001 12:51
5. Time last 7 days lasts until Jan 9, 2001 13:54
6. Successful server requests 2,767 Requests
Document: Done


Web Statistics for my website - Netscape
File Edit View Go Communicator Help
Bookmarks Location: file:///D|/analog 4.13/reportmagic/reports/index.html
My Personal Boo Oracle Service 오라클 K M S WebIV Menu Employees @Work Oracle App
Report Navigation
General Summary
Quick Summary
Monthly Report
Daily Summary
Hourly Summary
Domain Report
Organization Report
Status Code Report
File Size Report
File Type Report
Directory Report
Request Report
Problem with your site statistics? Contact us.
Monthly Report
Number of requests
2000
1600
1200
800
400
0
January 2001
December 2000
November 2000
October 2000
September 2000
August 2000
July 2000
Month
Month
Number of requests
Number of page requests
1. July 2000 303 55
Document: Done

6.3.2 Webalizer

간단한 사용법과 Graphic Chart 기능이 기본적으로 제공되며 Freeware이다. Unix Binary는 http://www.webalizer.org 에서 download받으면 되며,

windows용은 http://www.medasys-lille.com/webalizer/ 에 가면 구할 수 있다. 현재 Version은 2.1.06이며 Korean Version 도 있으니 참조하길 바란다.

6.3.2.1 환경설정

배포되는 binary file에 sample.conf 를 수정해서 webalizer.conf로 준비하면 된다.

수정부분

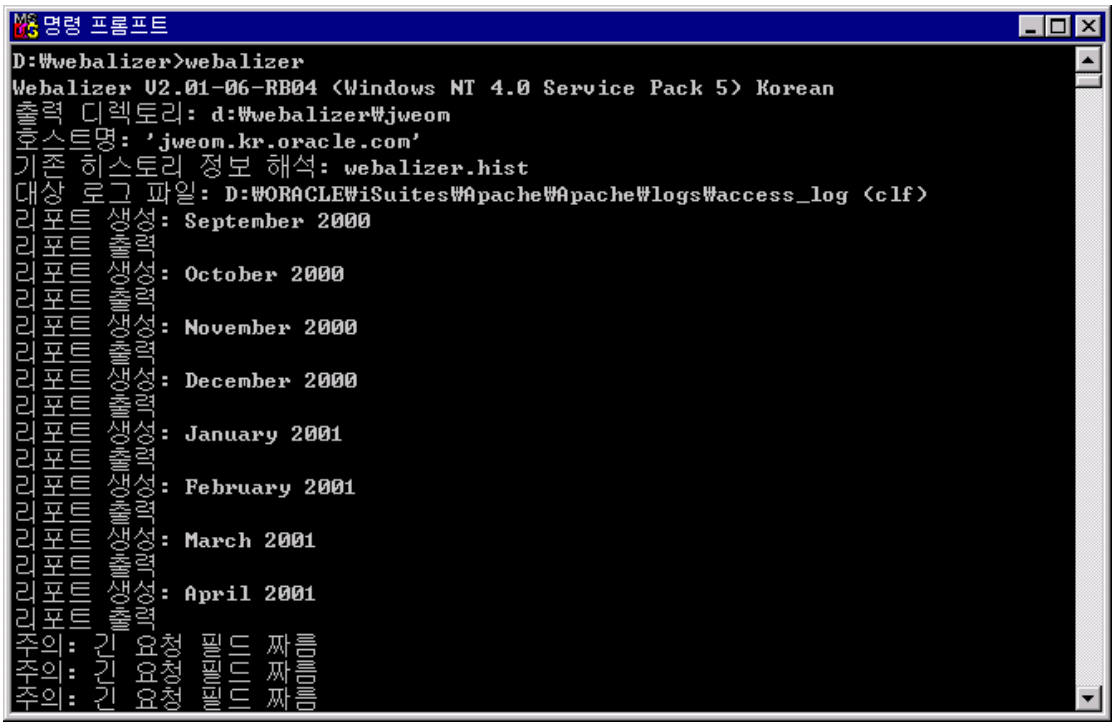
LogFile D: \ ORACLE \ iSuites \ Apache \ Apache \ logs \ access_log
LogType 칠
OutputDir d: \ webalizer \ jweom
HostName jweom.kr.oracle.com

Windows 환경에서의 Virtual Host / Scheduling 에 대한 부분은 다음을 참조하면 될 것이다.

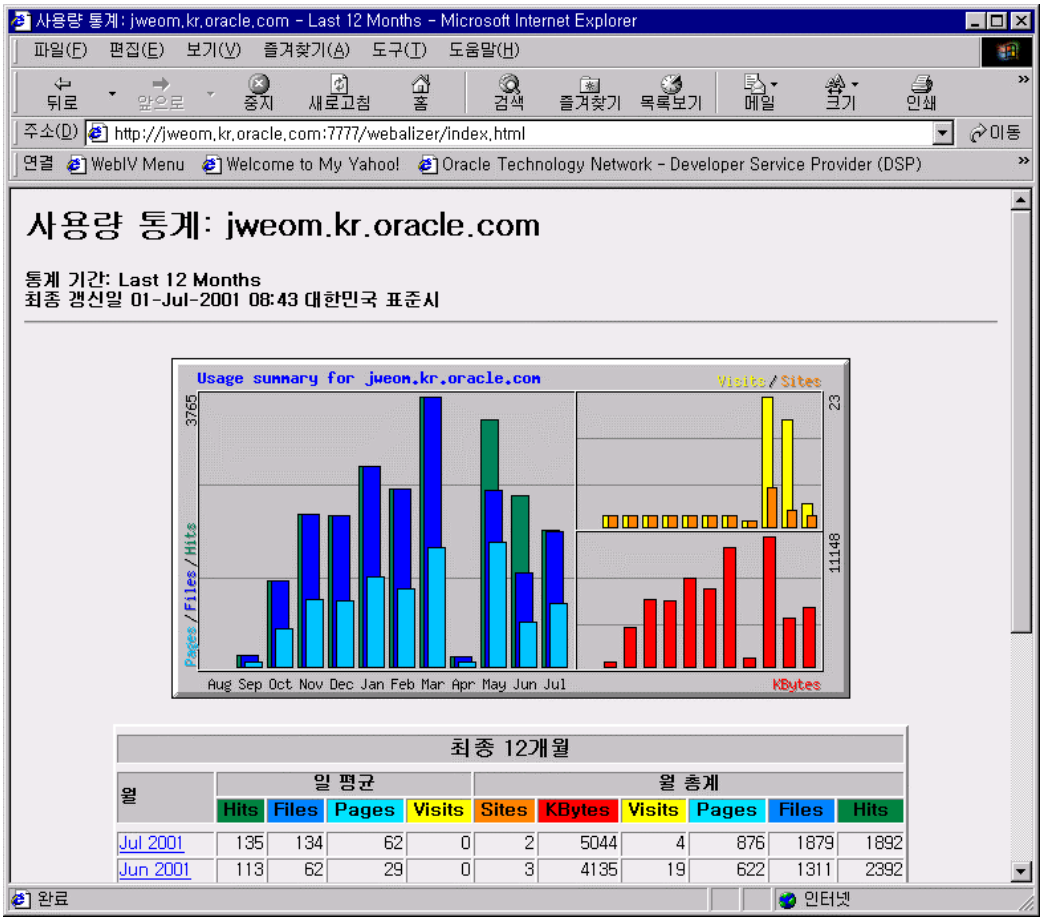
http://www.geocities.com/danilody/webalizer/windows.html

6.3.2.2 실행방법

<Webalizer_Home>\webalizer

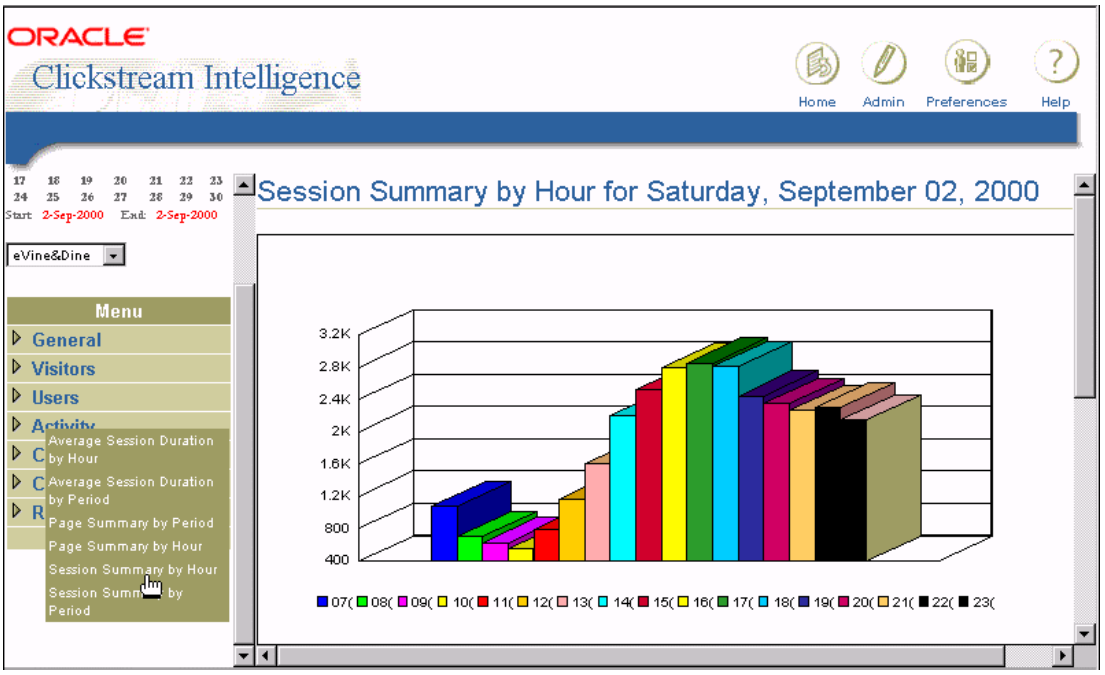


6.3.2.3 결과 화면



6.3.3 Oracle9iAS Clickstream

현재는 Oracle Warehouse Builder의 Component로 포함되어져 있지만 9iAS 2.0에서는 기본적으로 9iAS에 적재될 기능이다.


ORACLE
Clickstream Intelligence
Home
Admin
Preferences
Help
17 18 19 20 21 22 23
24 25 26 27 28 29 30
Start 2-Sep-2000 End 2-Sep-2000
eVine&Dine
Menu
General
Visitors
Users
Activity
Average Session Duration by Hour
Average Session Duration by Period
Page Summary by Period
Page Summary by Hour
Session Summary by Hour
Session Summary by Period
Session Summary by Hour for Saturday, September 02, 2000
3.2K
2.8K
2.4K
2K
1.6K
1.2K
800
400
07(08(09(10(11(12(13(14(15(16(17(18(19(20(21(22(23(

6.4 Apache GUI Manager

OAS 사용자들의 iAS로 옮겨 오면서 Admin 홈페이지가 없어 진것에 대해서 많이 아쉬워 할 것이다. iAS 1.0.2 에서는 OEM에 Apache의 Process Monitoring과 Log viewer는 포함을 시킨다고는 하지만 Configuration Editor는 포함하고 있지 않다. IAS 2.0 Plan에 보면 Servlet과 JSP를 이용하여 Remote Configuration이 가능한 기능을 포함시킨다고 하니 조금만 기다리면 될 것이다.

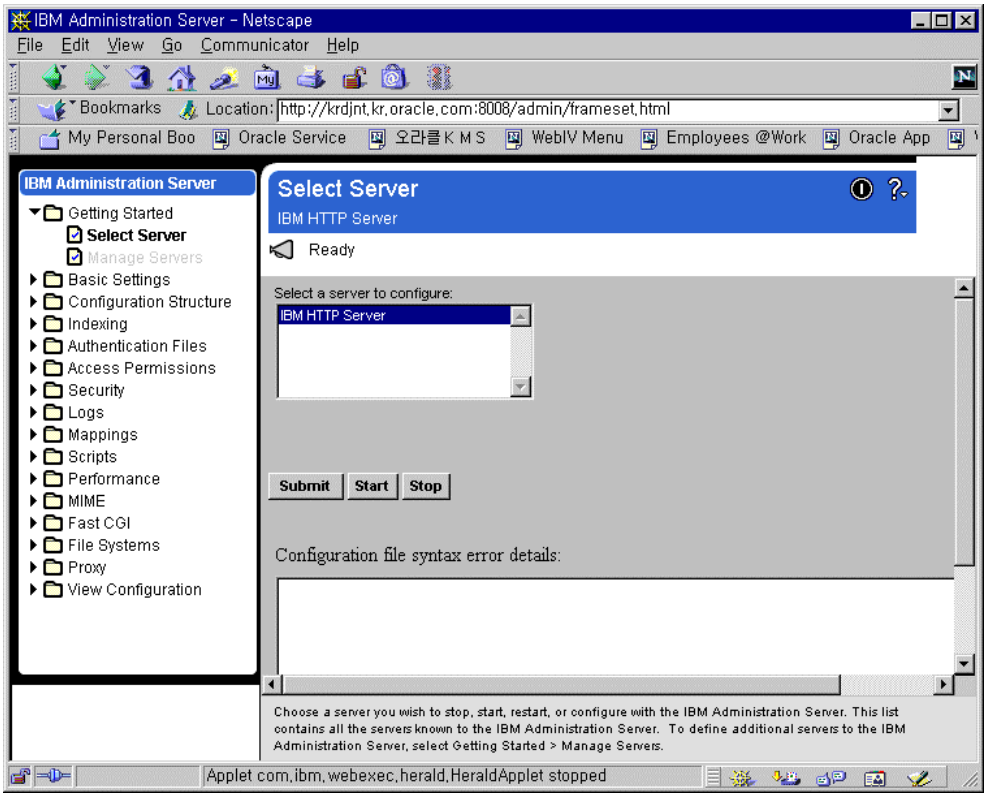
Apache GUI Project는 다음에서 확인하면 된다.
http://gui.apache.org
http://www.apache.org/related_projects.html

이번에는 여러 Apache GUI Manager 들과 공개용인 Comanche 의 Screen Snapshot을 보자.

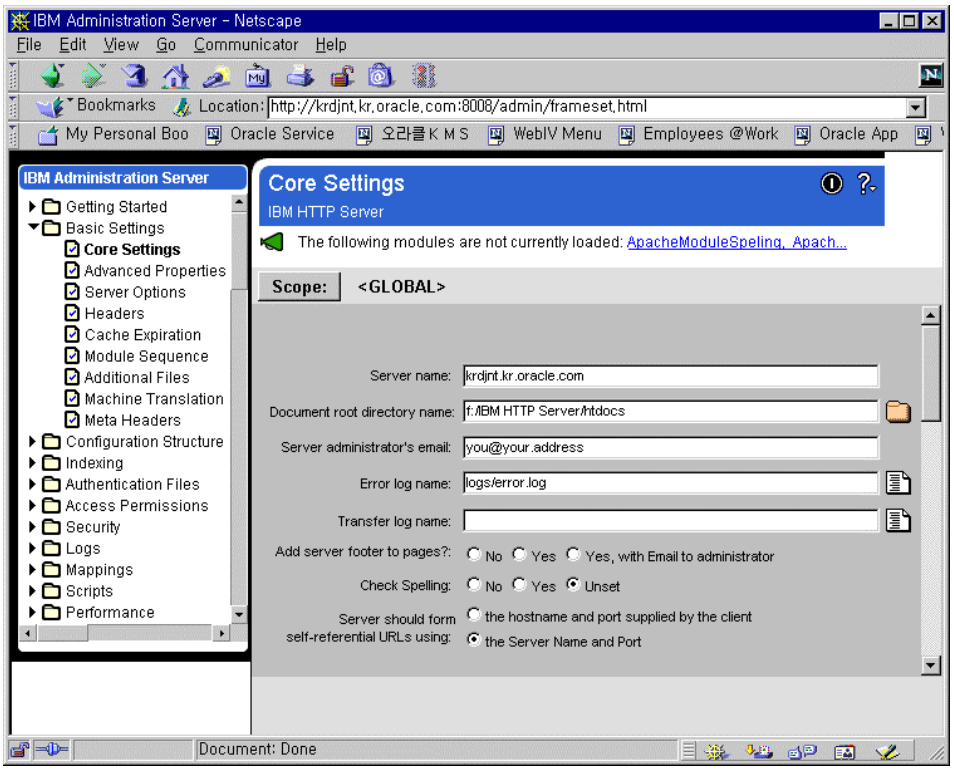
IBM HTTP Server (http://www.ibm.com)
Vision for Apache (http://www.focus-array.com)
Comanche (http://www.comanche.org)

6.4.1 IBM HTTP Server

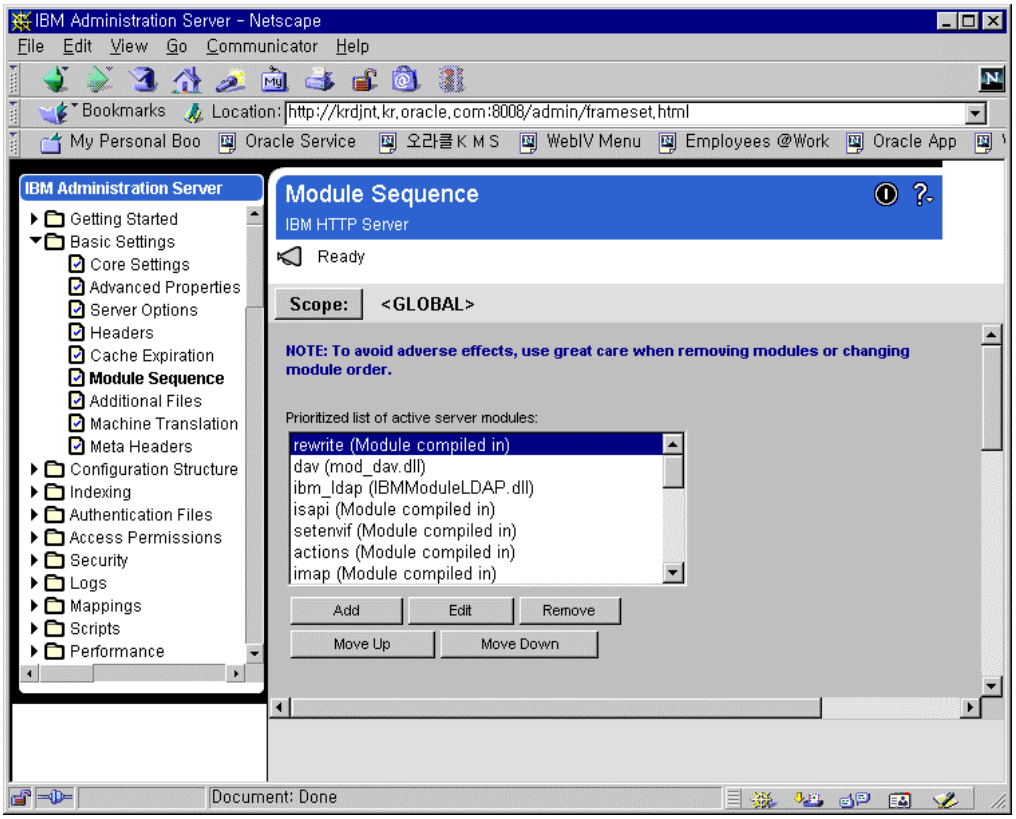
Remote Server start



Apache Core configuration

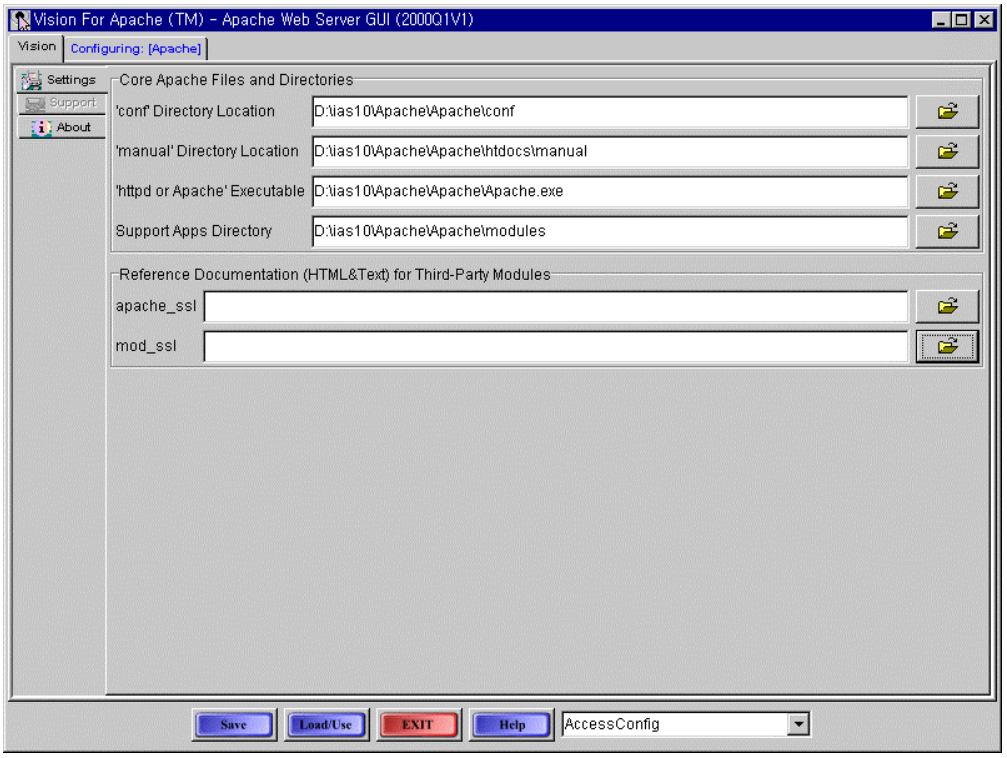


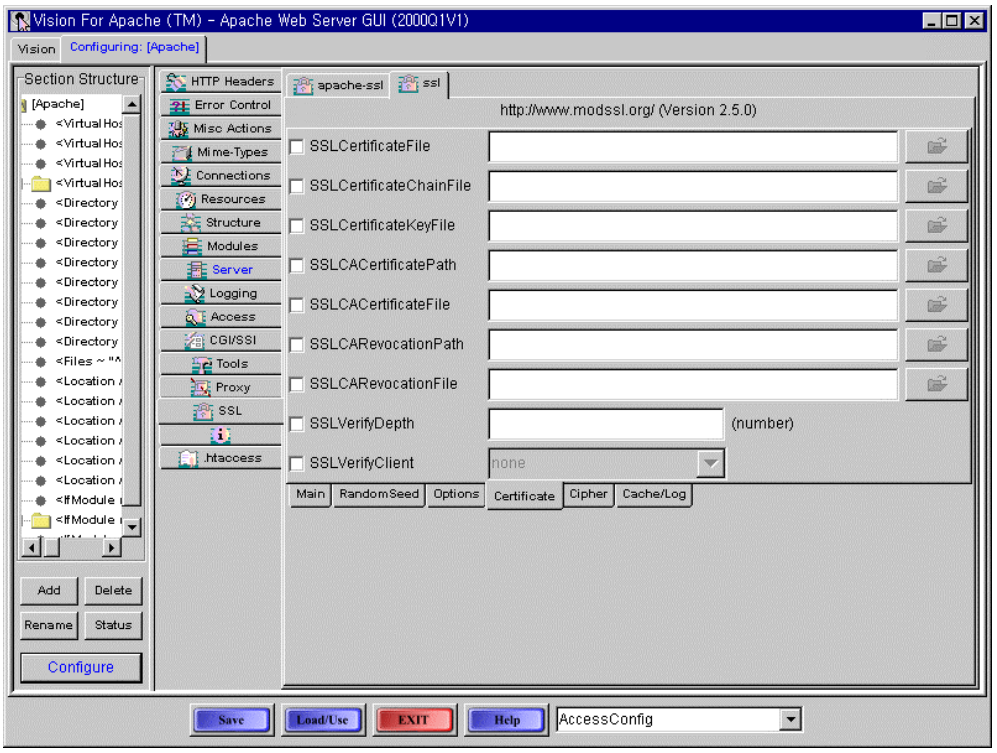
module 관리기능

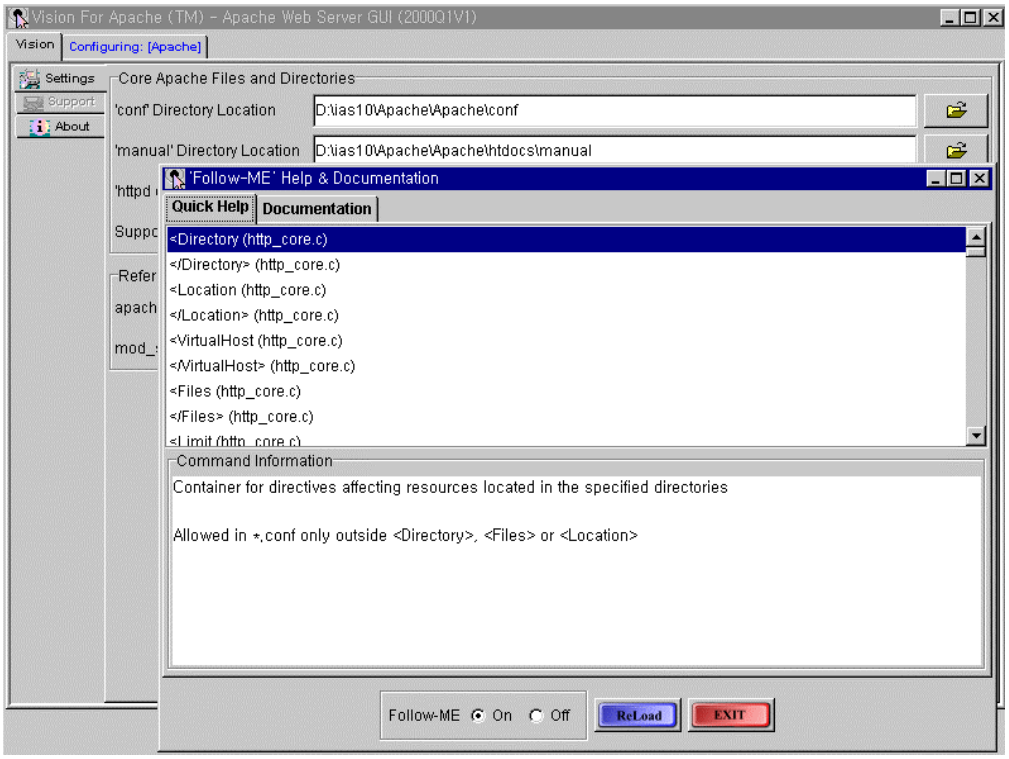


6.4.2 Vision for Apache

개인 사용자의 경우 무료이며 리모트 서버를 지원하는 Vision Professional 은 유료

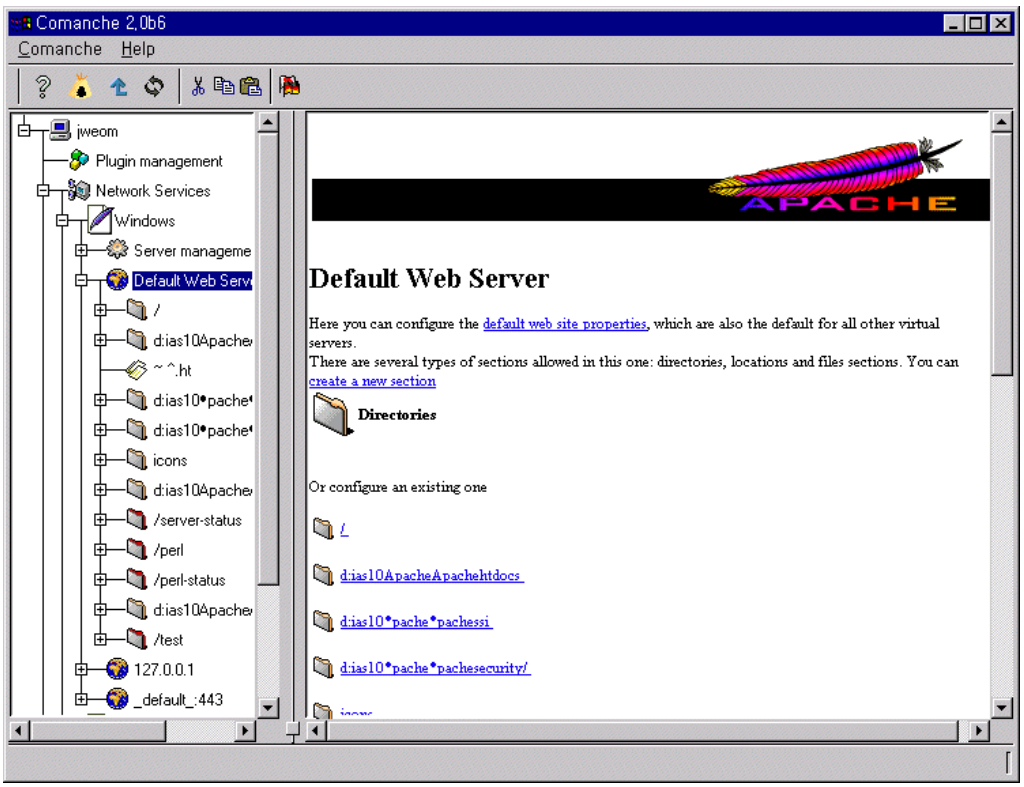


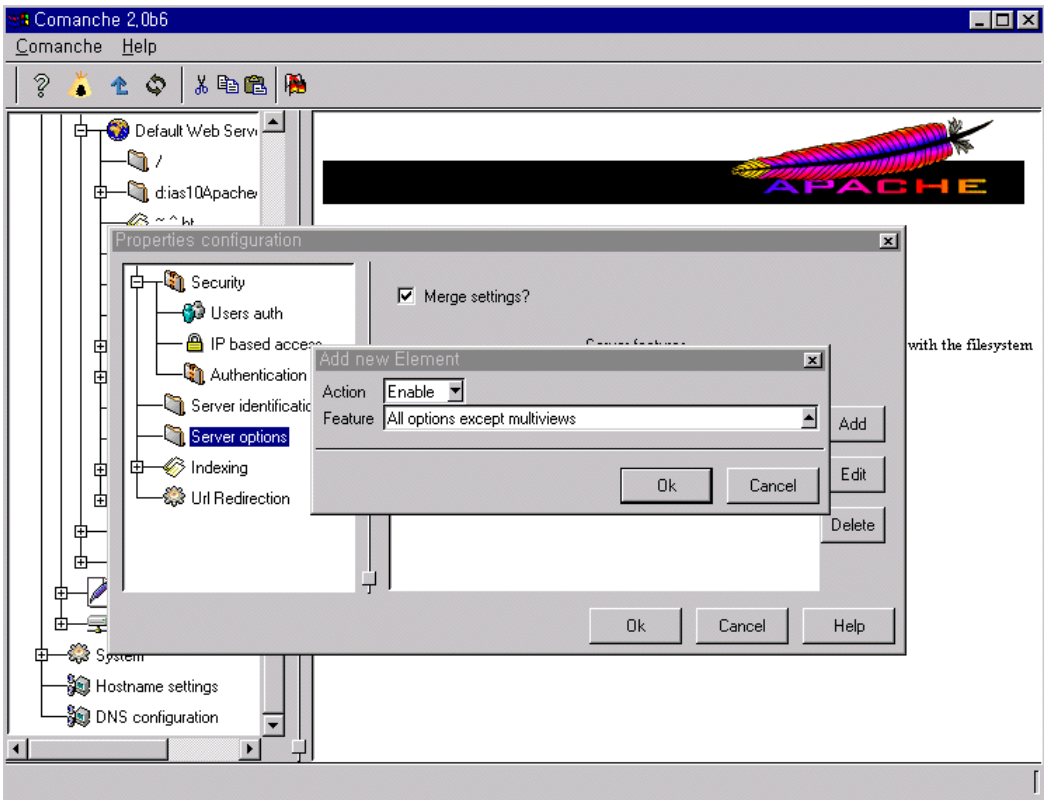


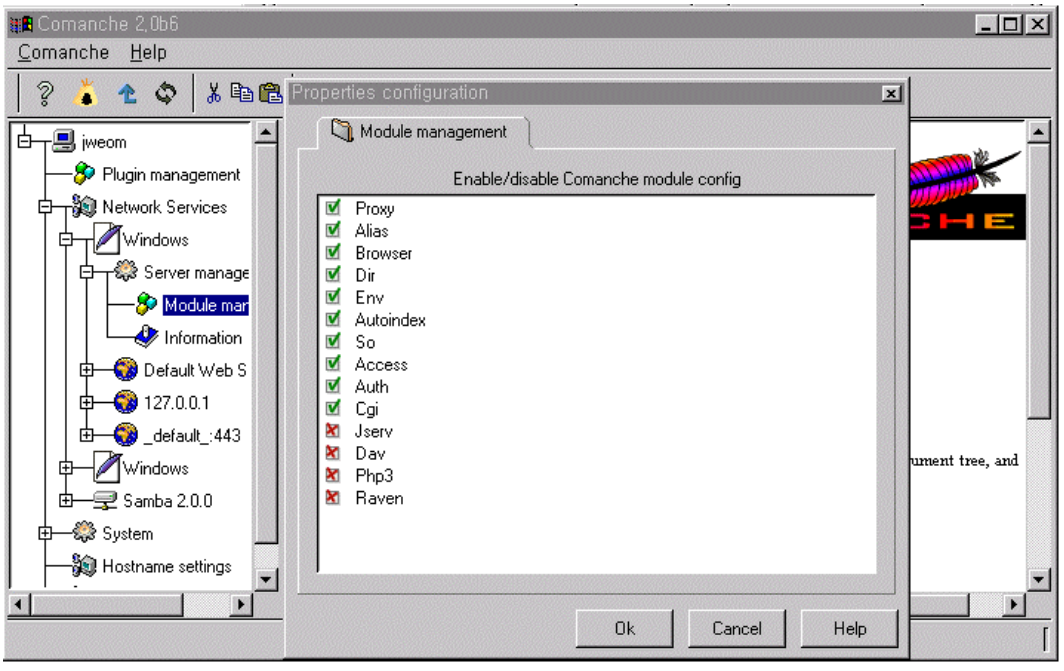


6.4.3 Comanche (Configuration Manager for Apache)

Local webserver만 관리할 수 있고 아직 개발중에 있다.




Comanche 2.0b6
Comanche Help
Default Web Serv
/
d:ias10Apache
Properties configuration
Security
Users auth
IP based acces
Authentication
Server identificatic
Server options
Indexing
Url Redirection
Merge settings?
with the filesystem
Add new Element
Action Enable
Feature All options except multiviews
Add
Edit
Delete
Ok
Cancel
Ok
Cancel
Help
System
Hostname settings
DNS configuration


Comanche 2.0b6
Comanche Help
Properties configuration
jweom
Plugin management
Network Services
Windows
Server manage
Module mar
Information
Default Web S
127.0.0.1
default:443
Windows
Samba 2.0.0
System
Hostname settings
Module management
Enable/disable Comanche module config
Proxy
Alias
Browser
Dir
Env
Autoindex
So
Access
Auth
Cgi
Jserv
Dav
Php3
Raven
Ok
Cancel
Help

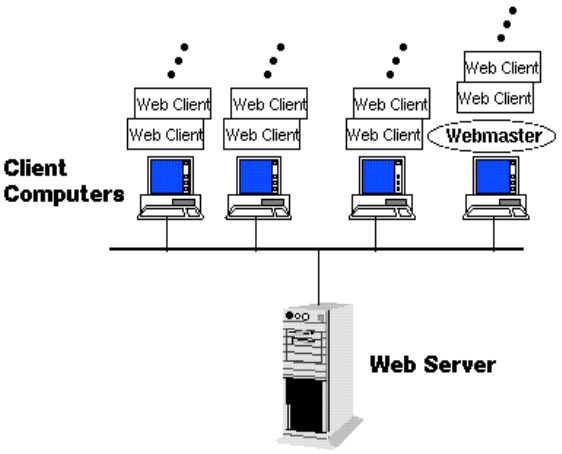
6.5 Stress Test 방법

Apache 의 bin directory에 보면 ab (apache bench) 라는 조그마한 Stress Test tool 이 있다. 그리고 Freeware로 잘 알려진 Webstone, MS Web Application Stress Tool 그리고 Netbench등의 많은 Stress Test tool들이 있다. 참고로 OTN에 가보면 WebHammer라는 Stress Tool도 있다.

6.5.1 ab

```
krdaejeon1% ab -n 100 -c 100 http://krdaejeon1.kr.oracle.com:8081/cgi-bin/printenv
This is ApacheBench, Version 1.3a
Copyright (c) 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net
Copyright (c) 1998-1999 The Apache Group, http://www.apache.org/

Server Software:          Apache/1.3.12
Server Hostname:          krdaejeon1.kr.oracle.com
Server Port:              8081

Document Path:            /cgi-bin/printenv
Document Length:          891 bytes

Concurrency Level:        100
Time taken for tests:     3.318 seconds
Complete requests:        100
Failed requests:          0
Total transferred:        103200 bytes
HTML transferred:         89100 bytes
Requests per second:      30.14
Transfer rate:            31.10 kb/s received

Connnection Times (ms)
                  min     avg     max
Connect:            0       0       0
Processing:       282    1606    3048
Total:            282    1606    3048
```

6.5.2 WebStone



예전에 KMS에 등록한 내용으로 간단히 설치와 사용법을 설명하겠다.

WEBSTONE은 STRESS TEST 하려는 WEB SERVER가 있을경우 이것에 가상의 다수 CLIENT (WEBCLIENT) 로 접속하는 방식을 취하고 있고 이러한 WEBCLIENT에게 명령을 행하는 MASTER MACHINE (WEBMASTER)의 구조로 구성되어 있다.

여기서는 간단히 여러분의 노트북으로 테스트할 수 있는 Win NT의 설치법을 설명한다.

6.5.2.1 준비물

webstone 2.5 : http://www.mindcraft.com/webstone

unix

source compile을 하시거나 준비된 binary로 설치하십시요. NT와 마찬가지로 Perl은 설치되어 있어야 한다.

NT

다음과 같은 Utility를 설치한다.

Ataman TCP Remote Login Service (SHAREWARE) : http://www.ataman.com

Perl 5 : http://www.activestate.com/ (FREEWARE)

6.5.2.2 설치

1. webstone 설치전 Perl 5 for Winnt (webmaster machine 만) 를 설치한다.

http://www.activestate.com/ActivePerl/download.htm

2. webstone 은 rexec 를 사용하므로 shareware인 Ataman TCP Remote Login Service program 을 설치한다.

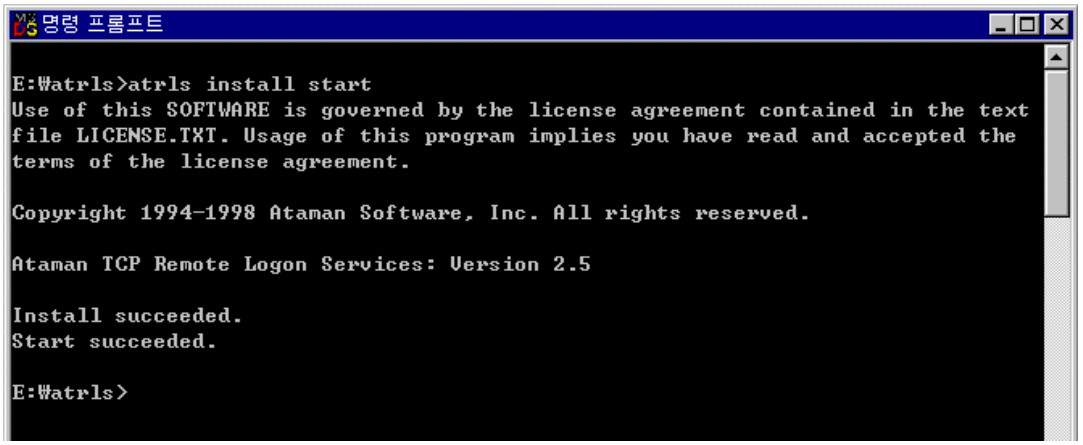
http://www.ataman.com/atrls/atrls_cv.zip

(rexec를 수행하여야 하므로 webmaster / webclient machine모두 설치해준다.)

atrls 설치

a. atrls_cv.zip 을 적당한 directory 에 푼다.

b. c:\atrls>atrls install start



c. Control panel 에서 "Ataman TCP R L. Services를 선택후 사용user를 등록한다.

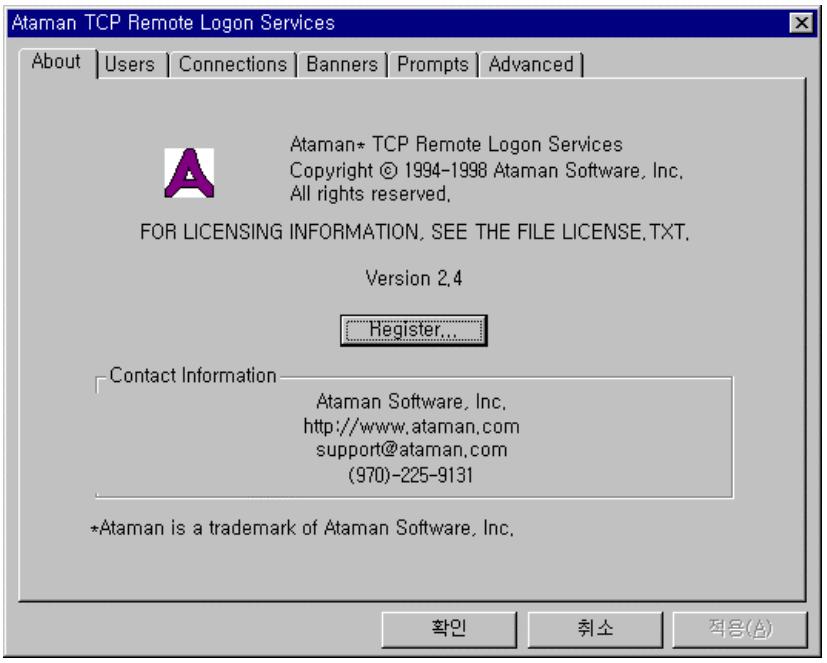
단, 해당 user들은 NT 사용자 관리자에 등록된 user 이다. 그리고 user 권한에 대한

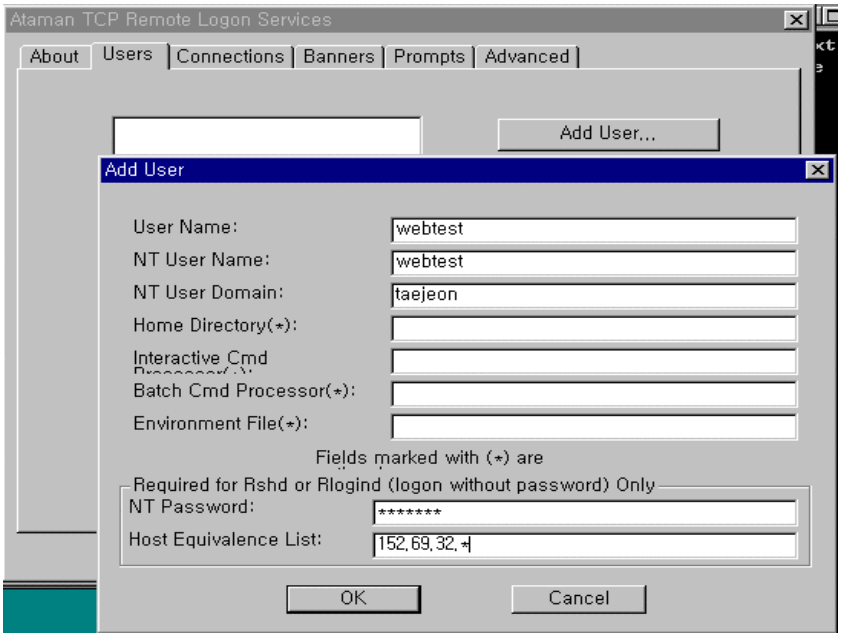
문제를 피하려면 Administrator 권한을 준다.

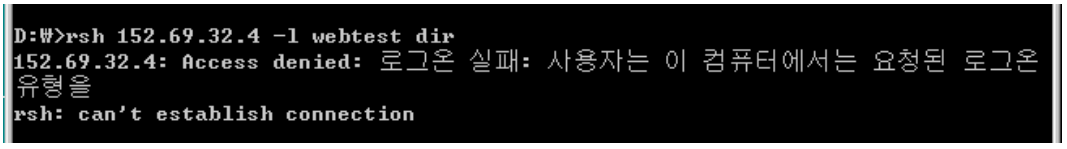
user와 password는 NT 사용자관리자 에 등록된 사항과 동일하게 등록한다.

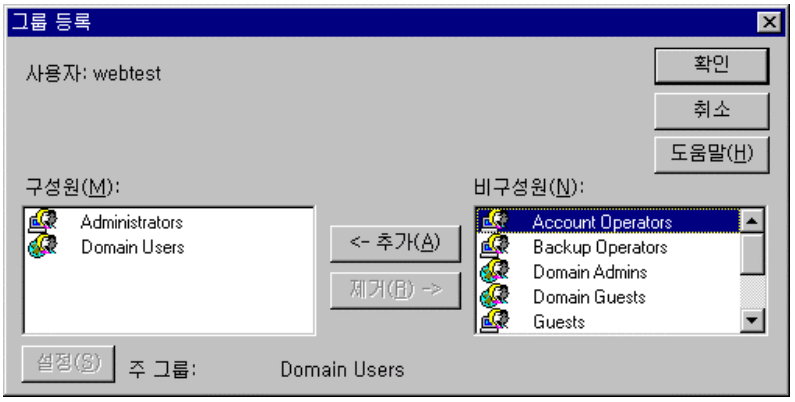
특히 Domain controller 에 등록되어 있는 MACHINE의 user경우 user domain 항목을 넣어야 한다.

Host Equivalence List 에는 WebStone의 WebMaster IP나 Network Group을 입력한다.







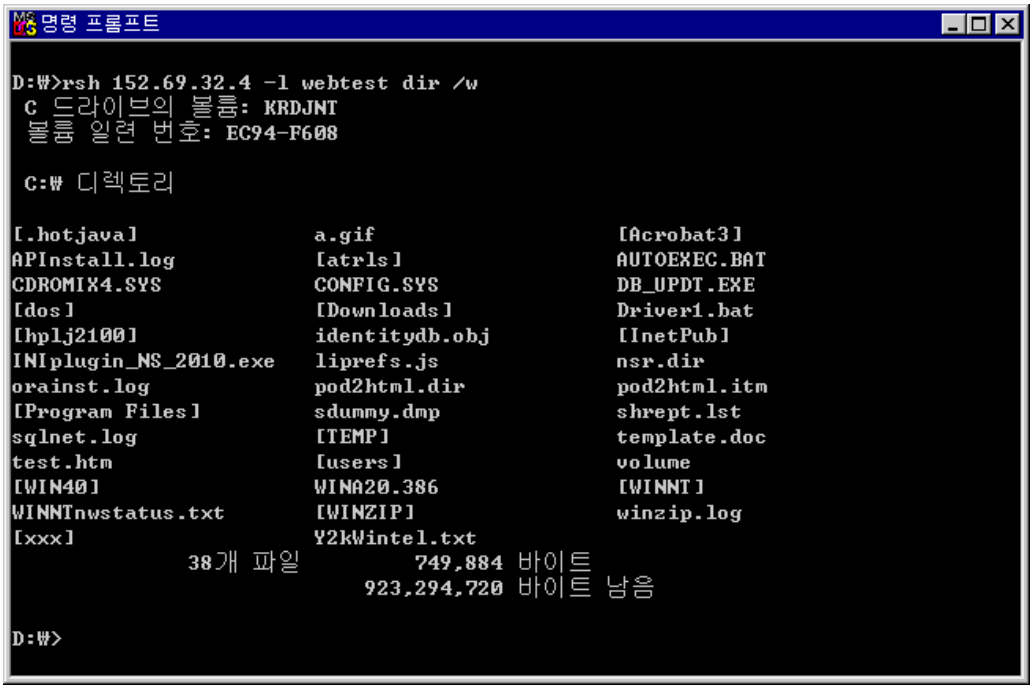


d. **간단한 테스트**

WebMaster **쪽에서** WebClient**로** rsh**로 명령을 주려면** atrls **에 등록된** user (webtest) **로 다시 로그온하여야 한다**.

WebMaster PC**의** Dos Prompt **창에서 다음과 같이 명령을 준다**.

위와 같은 메시지는 webclient**쪽에 등록된** user**가** administrator **권한이 없어서 그렇다**. **정상적으로 수행하였다면 다음과 같이 나온다**.



3. webstone 2.5 을 download받은 뒤 적당한 directory에 압축을 푼다.

ftp://ftp.mindcraft.com/pub/webstone/ws25_nt40.zip

6.5.2.3 WEBSTONE 테스트환경 준비 (설정 file 준비)

A. TESTBED

이것은 WEBSTONE의 configuration file로 테스트방법과 webclient에 대한 정의등이 포함되어 있으므로 꼭 작성

c:\webstone\conf directory의 testbed.nt 를 이용할 것.

중요 parameter 예>

```
ITERATIONS="2"
MINCLIENTS="50"
MAXCLIENTS="100"
CLIENTINCR="10"
TIMEPERRUN="2"
SERVER="krdaejeon1"
PORTNO=5555
CLIENTS="152.69.32.180 152.69.32.181"
CLIENTACCOUNT=webtest
CLIENTPASSWORD=webtest
```

B. DUMMY HTML FILE

stress test시 network traffic을 산출하기 위한 static file로 Size별 (500 bytes ~ 5m) file들을 생성하며 다음의 명령을 통해서 만들어짐.

c:\webstone>webstone -genfiles

이렇게 생성한 file을 web server의 service directory로 복사한다.

C. FILELIST

Stress test를 하려는 webserver의 URI를 등록하는 file

c:\webstone\conf> 에서 filelist 를 준비. 보통 filelist.standard 를 filelist로 복사

```
# @(#)filelist.standard 1.3
# Filelist for WebStone 2.5 Standard Run Rules, same as filelist.sample
/file500.html 350 #500
/file5k.html  500 #5125
/file50k.html 140 #51250
/file500k.html  9 #512500
/file5m.html  1 #5248000
/xxx/plsql/hr.person?iempno=7839  100
/xxx/plsql/hr.tree                100
/xxx/plsql/hr.person?iempno=7788  100
/xxx/plsql/hr.person?iempno=7654  100
/xxx/plsql/hr.person?iempno=7566  100
/xxx/plsql/hr.person?iempno=7782  100
```

6.5.2.4 Stress Test

a. webstone을 실행한다.

이 명령를 수행하면 webmaster 는 등록 webclient들에게 webclient.exe 라는 프로그램을 복사한 후 filelist의 내용을 testbed에 등록한 방법 (접속사용자수 및 반복횟수 등등) 으로 stress 명령을 내린다.

* 이 과정에서 webclient로 file copy 에러가 발생하면 ataman 의 user등록이나 등록된 user의 권한등을 살펴봐야 한다.

c:\webstone>webstone

b. 결과를 확인

각각의 결과는 c:\webstone\bin\runs\[id] directory의 "run" file에 있으니 참고바람.

c. 최종결과 확인

c:\webstone>webstone -results

d. 참고로 unix에서는 결과에 대하여 graph로 볼수 있는 [webstone -gui]가 있지만 WinNT에서는 않되므로 excel등을 이용하여 문서화한다.

이렇게 Stress Test를 할 때 Webserver 쪽에서는 analog등의 Web Log Analyzer로 시간대별 request 수 등을 점검하고, DB Server 쪽에서는 ORA script 또는 statpack 을 이용하 DB Monitoring을 수행한다.

6.5.2.5 Configuration file 예제

== filelist ==========

```
# @(#)filelist.standard 1.3
# Filelist for WebStone 2.5 Standard Run Rules, same as filelist.sample
/file500.html     350        #500
/file5k.html      500        #5125
/file50k.html     140        #51250
/file500k.html    9          #512500
/file5m.html      1          #5248000
/xxx/plsql/hr.person?iempno=7839   100
/xxx/plsql/hr.tree                 100
/xxx/plsql/hr.person?iempno=7788   100
/xxx/plsql/hr.person?iempno=7654   100
/xxx/plsql/hr.person?iempno=7566   100
/xxx/plsql/hr.person?iempno=7782   100
```

== testbed ==========

```
ITERATIONS="1"
MINCLIENTS="20"
MAXCLIENTS="50"   => webserver로의 동시 connection 수로 각 client에서는
                                    maxclients / webclient수 로 접속을 시도.
CLIENTINCR="10"   => 증가분
TIMEPERRUN="3"    => 회당 stress 시간 (분)
SERVER="krdaejeon1.kr.oracle.com"
PORTNO=80
RCP=copy
CLIENTS="152.69.32.4 152.69.32.116"
CLIENTACCOUNT=webtest
CLIENTPASSWORD=webtest
        FIXED_RANDOM_SEED=true
        CLIENTPROGFILE=C:\temp\webclient.exe
        CLIENTOS=Dos
```

6.5.2.6 결과 예

== 각 결과 (run) ==========

```
WebMaster name = jweom.kr.oracle.com

Client 0: 152.69.32.4    # Processes: 40
    Webserver: krdaejeon1.kr.oracle.com Webmaster: 152.69.32.116:4345
Waiting for READY from 40 clients
All READYs received
Sending GO to all clients
All clients started at Tue Feb 15 22:36:57 2000
Waiting for clients completion...
Reading results ........................................
All clients ended at Tue Feb 15 22:40:01 2000

==============================================================================
=
Page # 0                    <= File List 의 첫번째 URI이다.

Total number of times page was hit 790
790 connection(s) to server, 0 errors

                              Average      Std Dev      Minimum      Maximum

Connect time (sec)           0.014304     0.015565     0.001130     0.086639
Response time (sec)          0.738546     0.672079     0.006919     2.365689
Response size (bytes)             757            0          757          757
Body size (bytes)                 500            0          500          500

395000 body bytes moved + 203030 header bytes moved = 598030 total
Page size 500
==============================================================================
=
중략…
==============================================================================
=
Page # 7

Total number of times page was hit 212
212 connection(s) to server, 0 errors

                              Average      Std Dev      Minimum      Maximum

Connect time (sec)           0.012867     0.013406     0.001256     0.071030
Response time (sec)          4.101605     1.920579     0.751269    11.861147
Response size (bytes)            1514            0         1514         1514
Body size (bytes)                1347            0         1347         1347

285564 body bytes moved + 35404 header bytes moved = 320968 total
Page size 1347
==============================================================================
=
중략…
==============================================================================
=
WEBSTONE 2.5b results:
Total number of clients:          40
        Test time:                          3 minutes
        Server connection rate:          19.13 connections/sec
        Server error rate:                0.00 err/sec
        Server thruput:                    1.95 Mbit/sec
        Little's Load Factor:             39.75
        Average response time:             2.077 sec
        Error Level:                       0.00 %
```

Average client thruput: 0.05 Mbit/sec
Sum of client response times: 7154.52 sec
Total number of pages read: 3444

3444 connection(s) to server, 0 errors

	Average	Std Dev	Minimum	Maximum
Connect time (sec)	0.014187	0.015239	0.001130	0.087475
Response time (sec)	2.077387	2.090351	0.006919	26.154249
Response size (bytes)	12712	157190	757	5243141
Body size (bytes)	12488	157188	500	5242880

43009595 body bytes moved + 770605 header bytes moved = 43780200 total

== **최종결과예** (c:\webstone>webstone -results) ==========

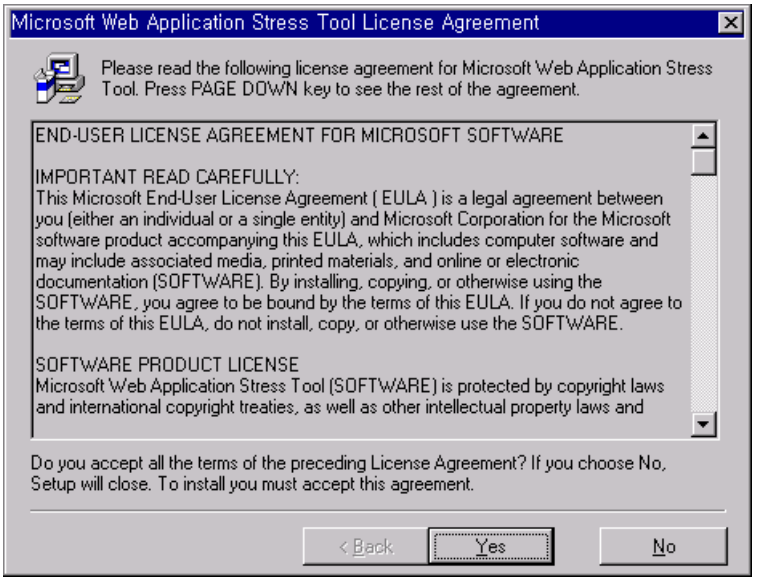
Timestamp	Total number of clients	Server connection rate	Little's Load Factor	Average response time	Error Level	Average client thruput
1000115_2117	20	21.90	19.89	0.9080	0.0000	2.09
1000115_2120	30	15.12	29.61	1.9590	0.0000	1.52
1000115_2123	40	14.92	39.13	2.6220	0.0000	1.68
1000115_2126	50	15.78	48.65	3.0820	0.0000	1.77
1000115_2137	20	33.86	19.97	0.5900	0.0000	2.94
1000115_2140	30	14.47	29.57	2.0430	0.0000	1.47
1000115_2143	40	11.69	38.89	3.3270	0.0000	1.48
1000115_2146	50	13.41	47.91	3.5740	0.0000	1.64
1000115_2208	20	21.49	19.67	0.9150	0.0000	1.54
1000115_2211	30	24.14	29.88	1.2380	0.0000	2.20
1000115_2214	40	24.16	38.56	1.5960	0.0100	1.89
1000115_2217	50	24.14	48.21	1.9970	0.0200	1.92
1000115_2230	20	18.64	19.68	1.0560	0.0000	1.38
1000115_2233	30	19.17	29.65	1.5470	0.0000	1.84
1000115_2236	40	19.13	39.75	2.0770	0.0000	1.95
1000115_2240	50	18.73	49.11	2.6210	0.0100	1.69

6.5.3 MS Web Application Stress Tool

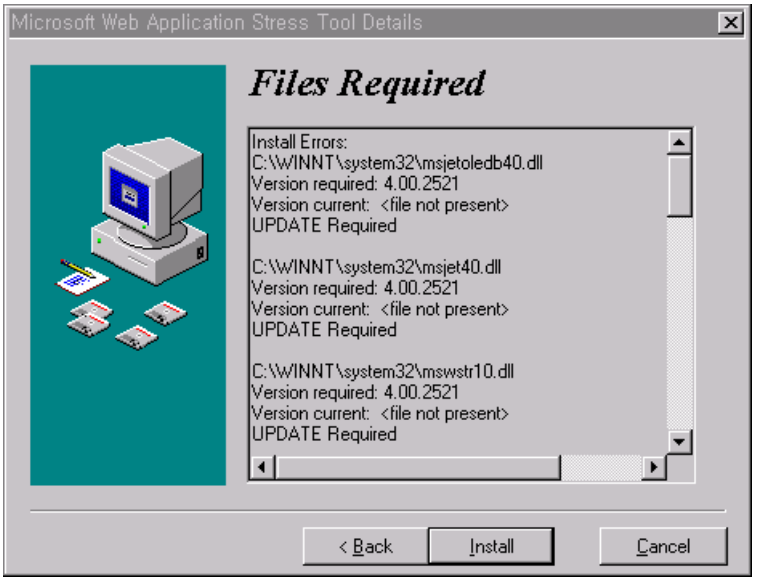
WebStone과는 달리 GUI Tool이 제공되어 편리하며 특히 POST Method, Cookie등도 사용할 수 있으므로 유용하게 쓸 수 있다.

6.5.3.1 Installation

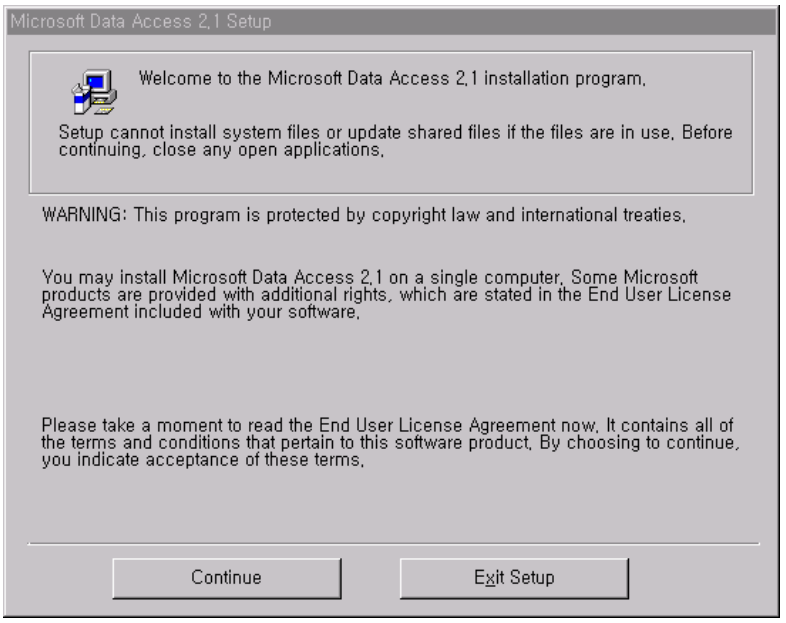
1.



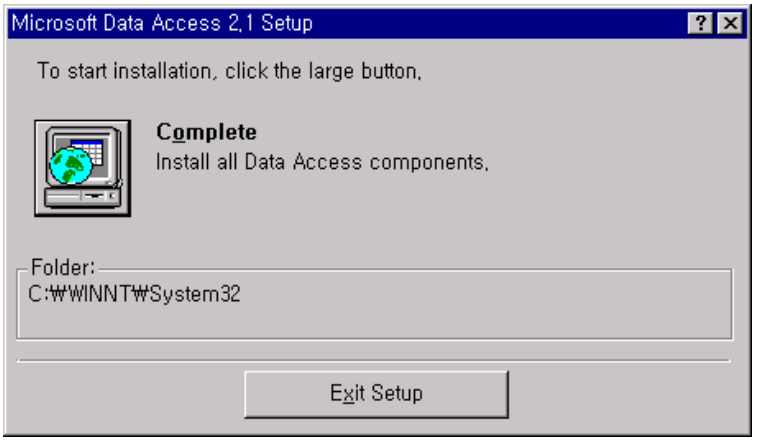
2.



3.


Microsoft Data Access 2.1 Setup
Welcome to the Microsoft Data Access 2.1 installation program.
Setup cannot install system files or update shared files if the files are in use. Before continuing, close any open applications.
WARNING: This program is protected by copyright law and international treaties.
You may install Microsoft Data Access 2.1 on a single computer. Some Microsoft products are provided with additional rights, which are stated in the End User License Agreement included with your software.
Please take a moment to read the End User License Agreement now. It contains all of the terms and conditions that pertain to this software product. By choosing to continue, you indicate acceptance of these terms.
Continue
Exit Setup

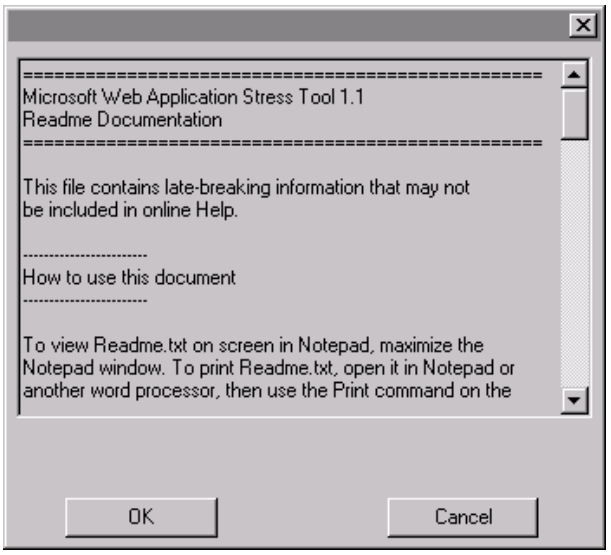
4.


Microsoft Data Access 2.1 Setup
To start installation, click the large button.
Complete
Install all Data Access components.
Folder:
C:₩WINNT₩System32
Exit Setup

5.

Microsoft Data Access 2.1 Setup
Microsoft Data Access 2.1 Setup was completed successfully.
OK

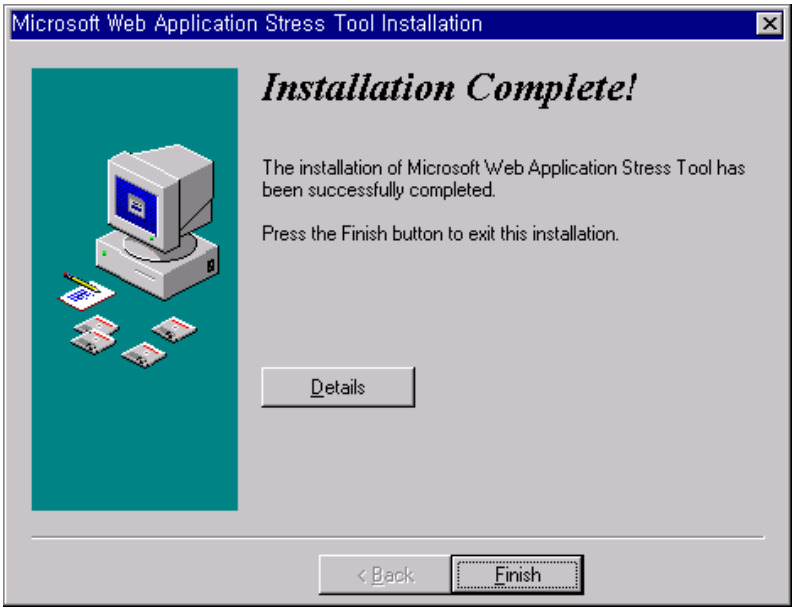
6.


==========
Microsoft Web Application Stress Tool 1.1
Readme Documentation
==========
This file contains late-breaking information that may not
be included in online Help.

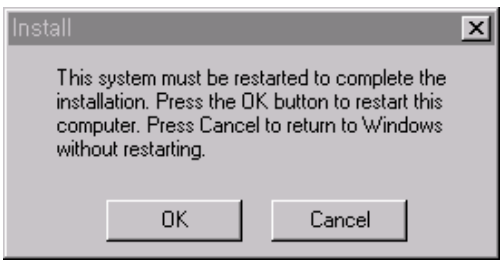
How to use this document

To view Readme.txt on screen in Notepad, maximize the
Notepad window. To print Readme.txt, open it in Notepad or
another word processor, then use the Print command on the
OK
Cancel

7.


Microsoft Web Application Stress Tool Installation
Installation Complete!
The installation of Microsoft Web Application Stress Tool has been successfully completed.
Press the Finish button to exit this installation.
Details
< Back
Finish

8.

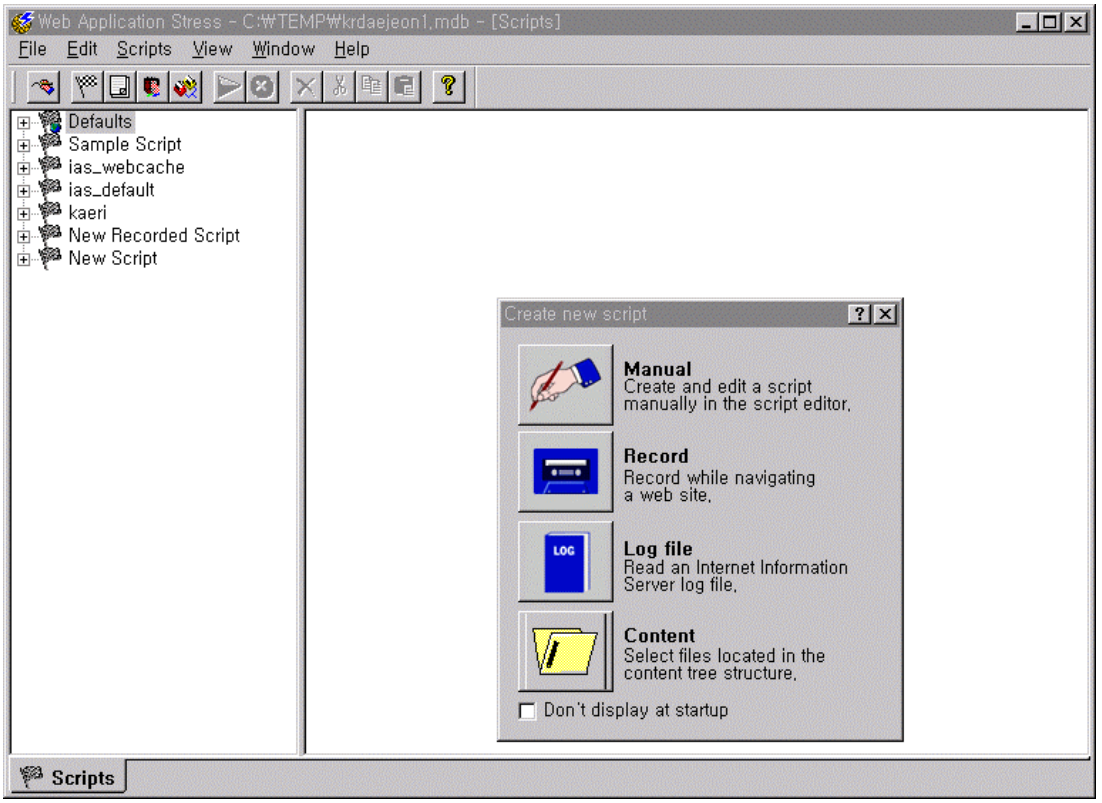

Install
This system must be restarted to complete the installation. Press the OK button to restart this computer. Press Cancel to return to Windows without restarting.
OK
Cancel

6.5.3.2 Stress test할 환경 수집

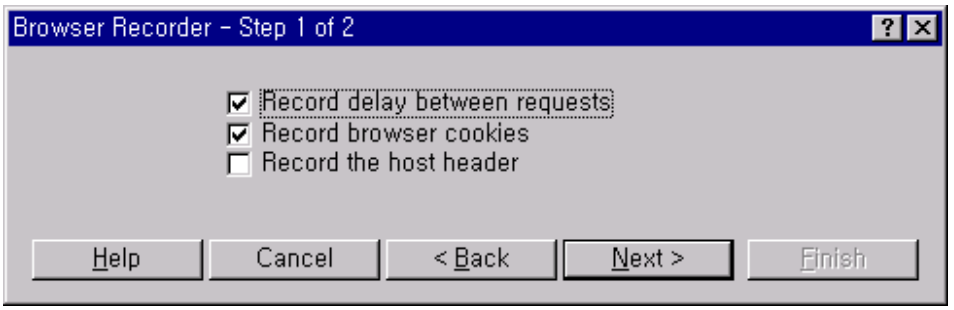
Stress Test하려는 Web Site의 Request URL을 수집한다. MS Web Application Stress Tool은 Record라는 편리한 기능이 있어 "Record" 버튼을 선택한후 Wizard가 종료되면 MS Explorer를 이용하여 Browsing된 URL이 모두 Stress Test할 URL로 기록된다.

1. MS Web Applicatin Stress Tool을 시작하여 Create new Script를 선택한다.

2. Record 버튼을 선택

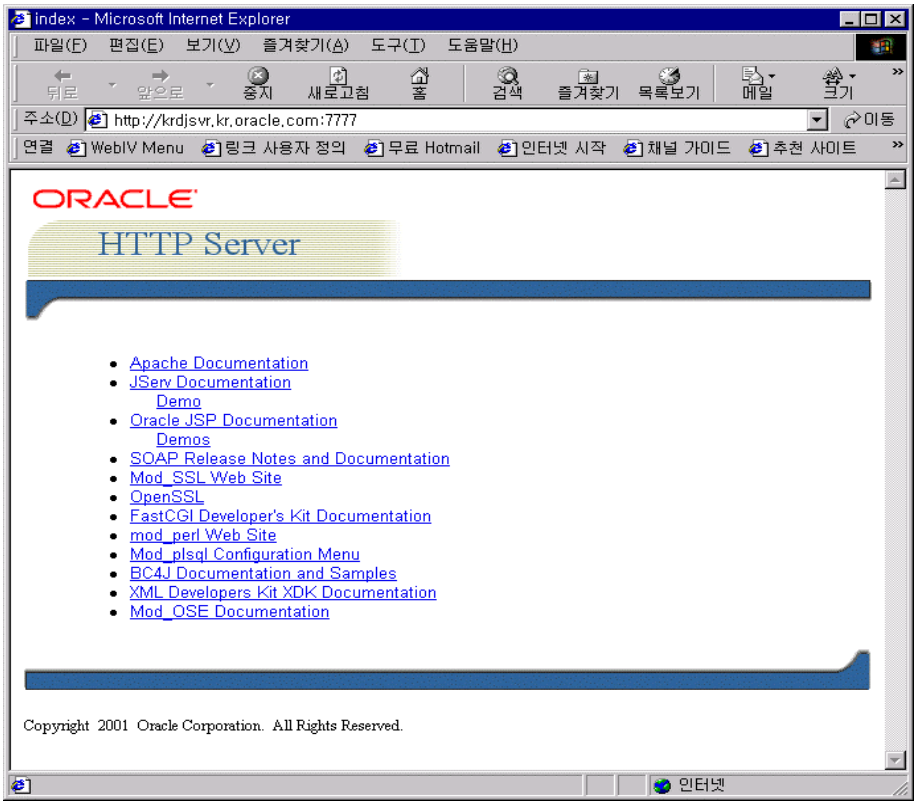


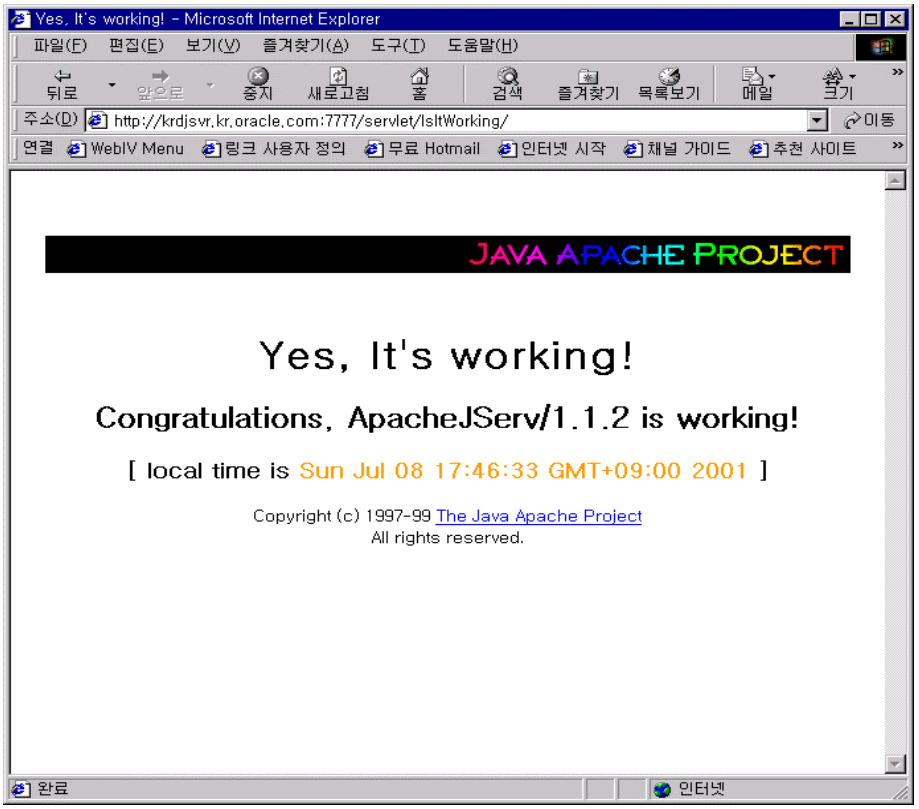
3. Record Wizard에서 다음과 같이 Check box를 선택



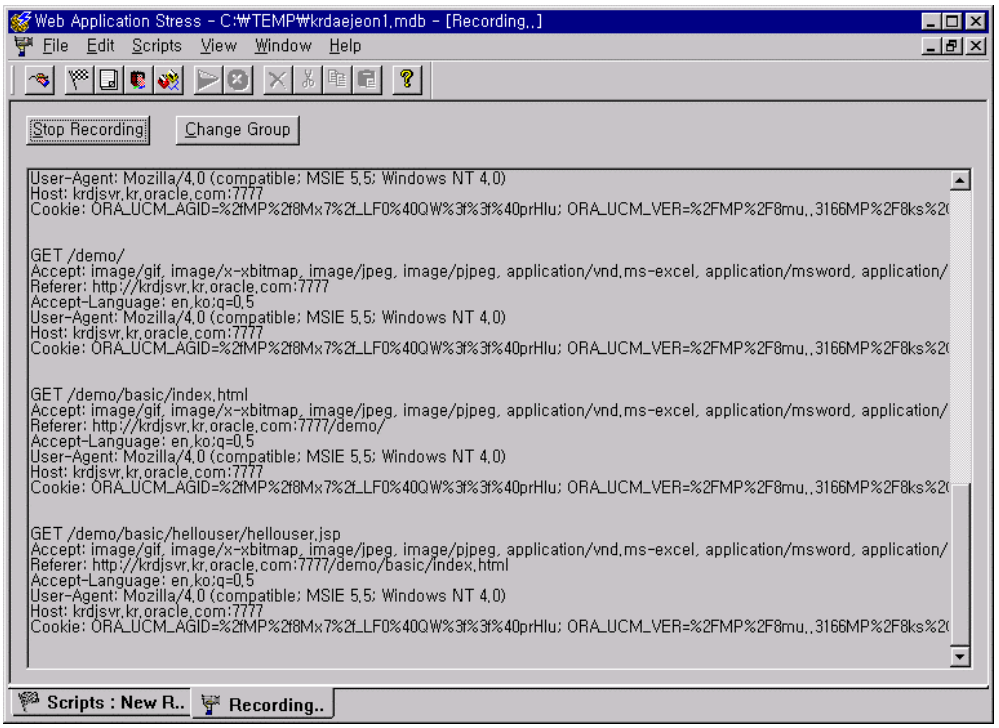
4. Record Wizard를 종료하면 자동으로 MS Explorer가 실행된다. 만약 다른 Web Browser가 실행되면 종료시키고 MS Explorer를 실행시킨다.

5. Stress Test하려는 Website를 surffing한다.

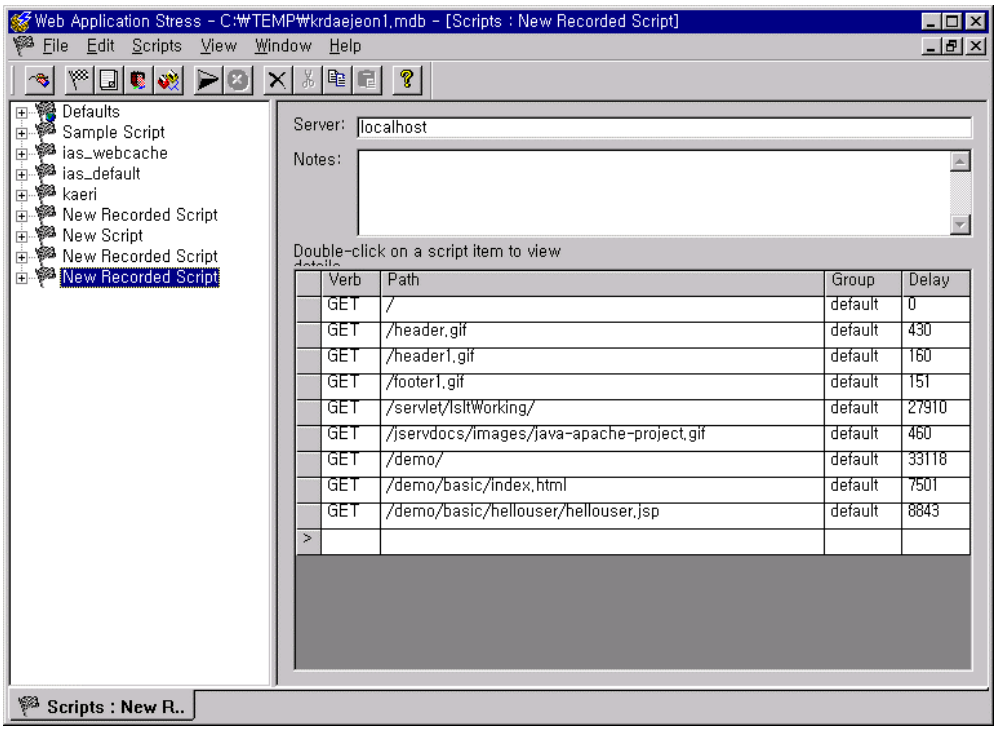




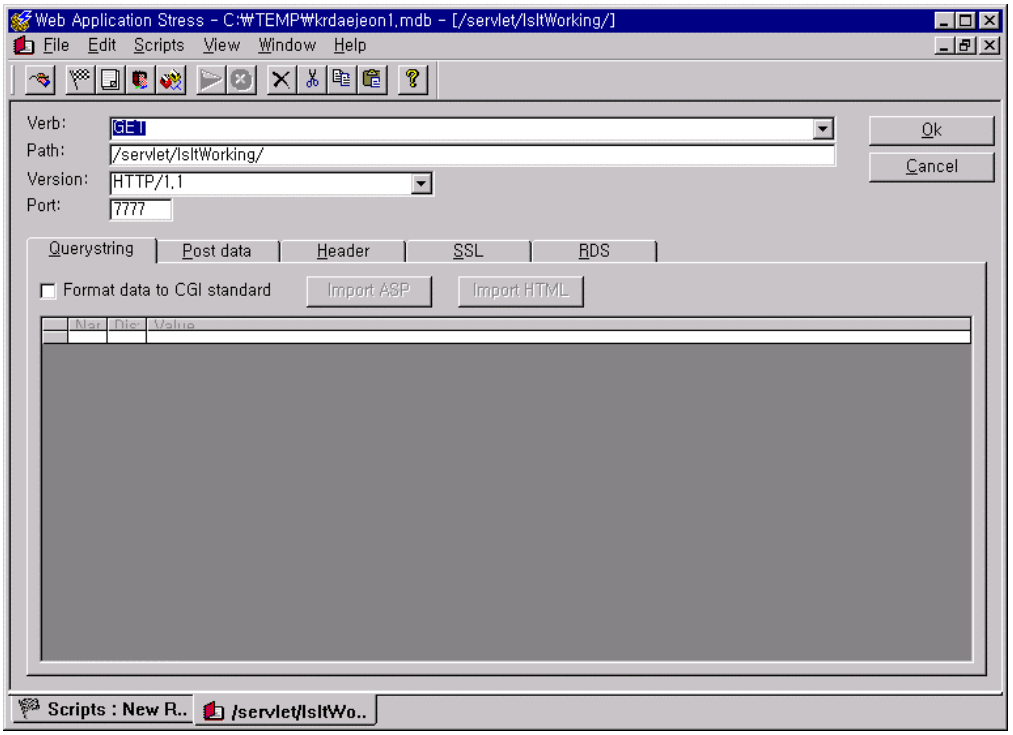
6. Web Surffing 이 되는 동안 MS Web Application Stress Tool에는 다음과 같이 기록된다. 여기에는 GET, POST method등도 가능하며 User Cookie정보도 저장가능하다.



7. Recording이 종료된후 다음과 같이 기록된 화면을 볼 수 있다.

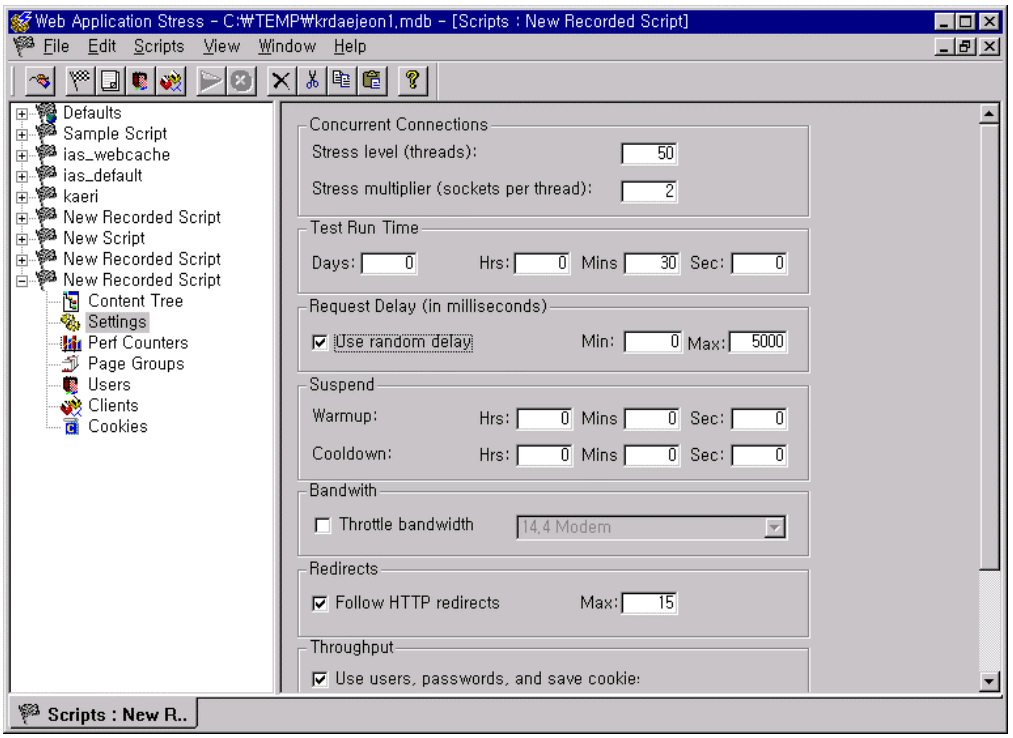


8. 각 URL별로 기록된 내용을 확인하려면 해당 record에서 double click한다.



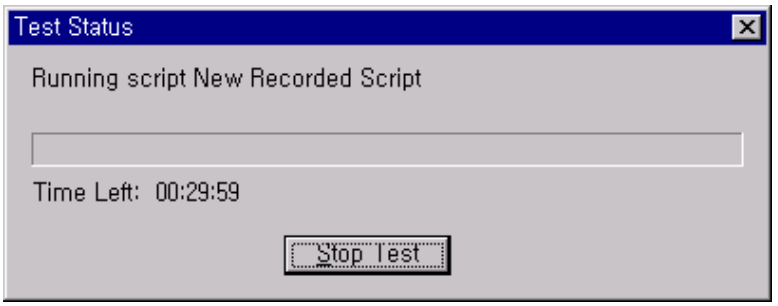
6..5.3.4 Stress Test 환경설정

여기서는 Stress Test할 환경에 대해 설정을 한다. 모의 테스트할 가상 단말기수를 설정하거나 Stress Test할 시간, 각 Request 사이의 시간간격등을 설정한 후 Stress Test에 들어가게 된다.

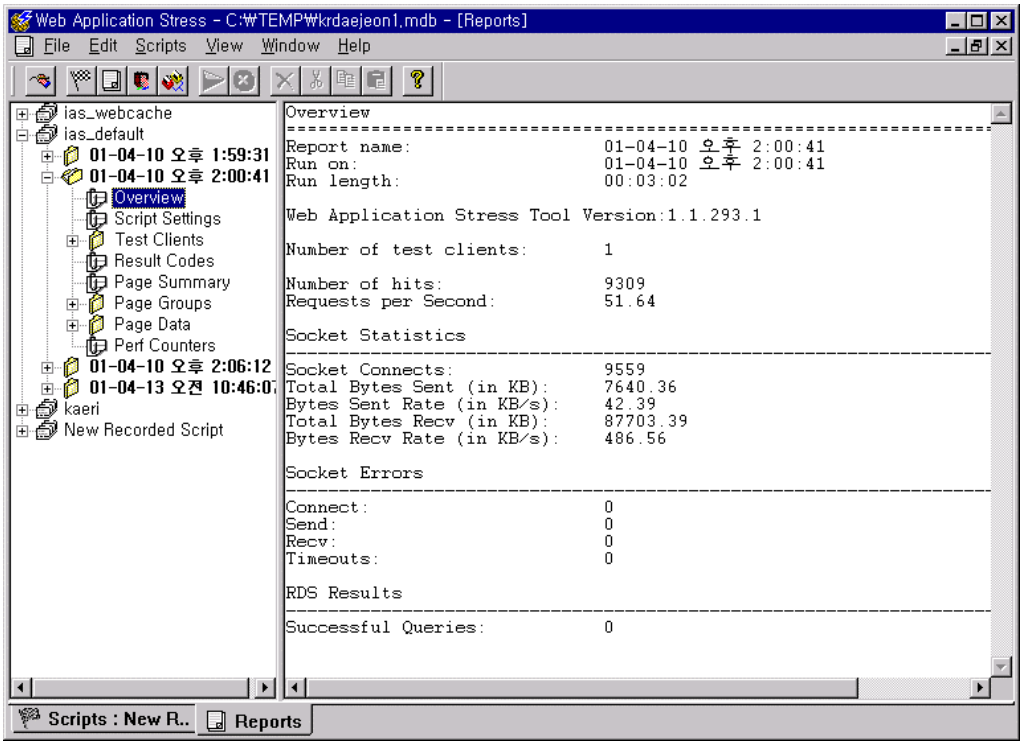


-

6.5.3.5 Stress Test 시작



6.5.3.6 Stress Test 결과 Report


Web Application Stress - C:₩TEMP₩krdaejeon1.mdb - [Reports]
File Edit Scripts View Window Help
ias_webcache
ias_default
01-04-10 오후 1:59:31
01-04-10 오후 2:00:41
Overview
Script Settings
Test Clients
Result Codes
Page Summary
Page Groups
Page Data
Perf Counters
01-04-10 오후 2:06:12
01-04-13 오전 10:46:07
kaeri
New Recorded Script
Overview
Report name: 01-04-10 오후 2:00:41
Run on: 01-04-10 오후 2:00:41
Run length: 00:03:02
Web Application Stress Tool Version:1.1.293.1
Number of test clients: 1
Number of hits: 9309
Requests per Second: 51.64
Socket Statistics
Socket Connects: 9559
Total Bytes Sent (in KB): 7640.36
Bytes Sent Rate (in KB/s): 42.39
Total Bytes Recv (in KB): 87703.39
Bytes Recv Rate (in KB/s): 486.56
Socket Errors
Connect: 0
Send: 0
Recv: 0
Timeouts: 0
RDS Results
Successful Queries: 0
Scripts : New R..
Reports

6.6 Monitoring

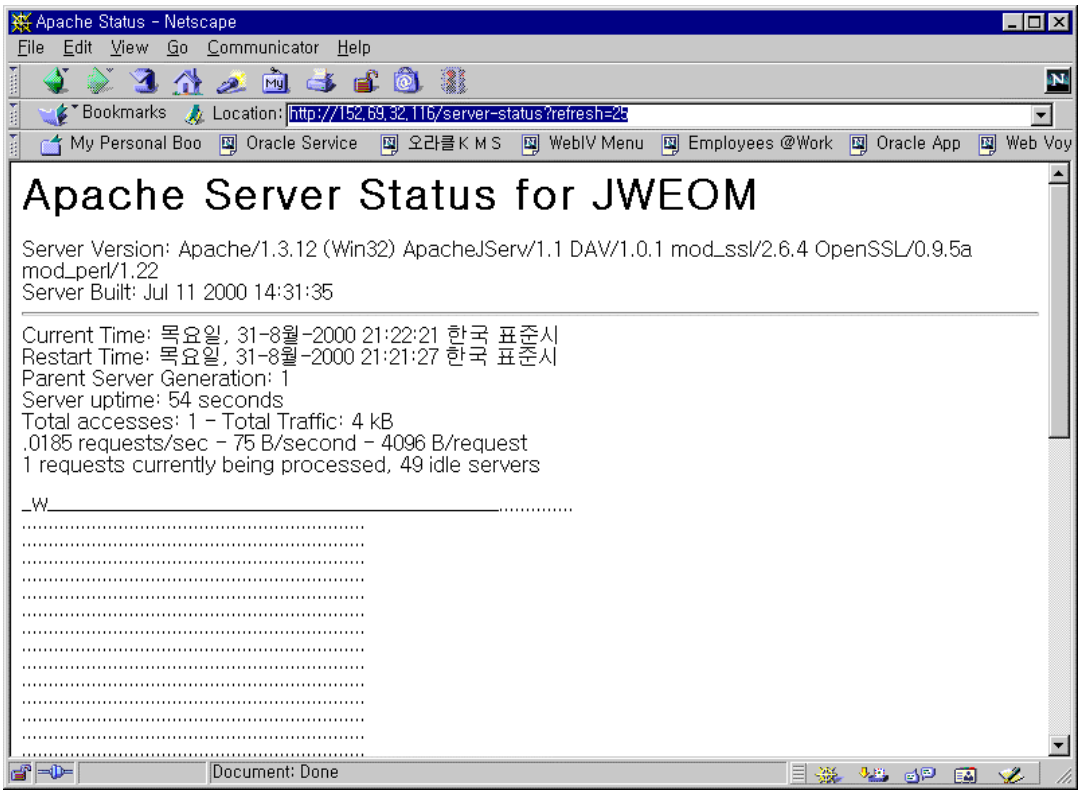
OAS 4.0.* 에서는 NodeManager에서 Listener/Application 에 대한 Monitoring기능이 있었다. Apache도 마찬가지로 비슷한 기능을 수행하는데 이러한 종류에는 Apache Listener status, Jserv status, perl status 들이 있다.

6.6.1 Apache Listener Status

Httpds.conf

```
ExtendedStatus On
<Location /server-status>
    SetHandler server-status
    Order deny,allow
    Deny from all
    Allow from all
</Location>
```

http://<ServerName>:<Port>/server-status
http://<ServerName>:<Port>/server-status?refresh=25
-> 25초마다 한번씩 server-status 확인하는 방법

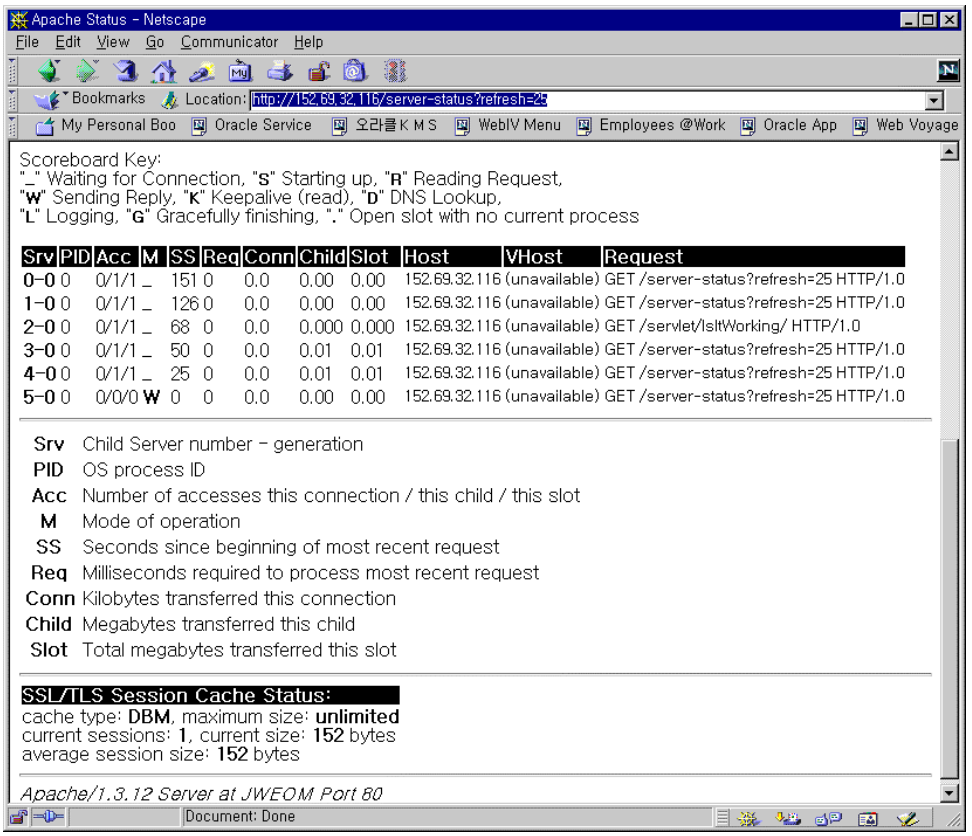


* 여기서 중요한 사항은 각 slot 에 대한 설명을 나타내는 Scoreboard key의 상태이다.

해당 slot에 대한 설명은 아래화면에서 보는 것과 같이 접속된 user들의 httpds process에서의 상태를 읽어 보면 쉽게 알수 있고 이것을 관찰하는 것이 최고의 tuning point가 될 것이다.

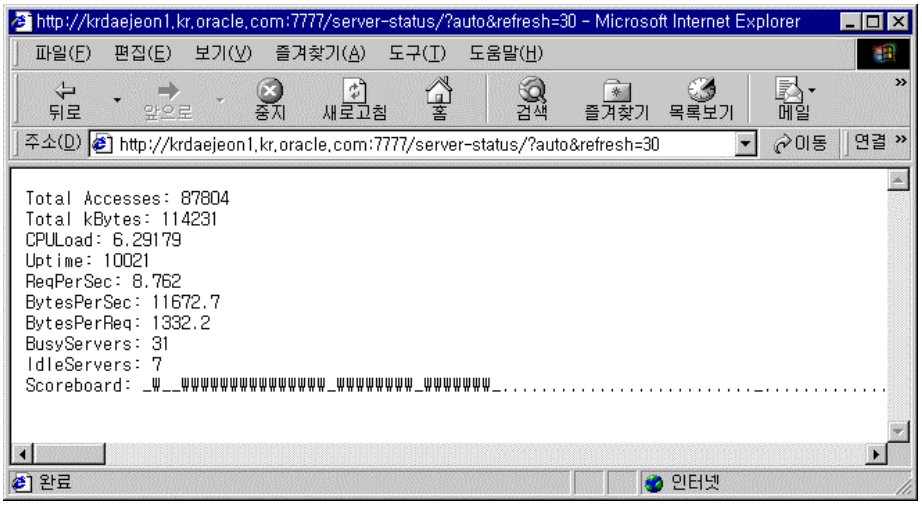
관심깊게 보아야 할 directive 는 **MaxKeepAliveRequests, MaxClients, MinSpareServers, MaxSpareServers,StartServers** 등이며 불특정 다수의 사용자가 접속되는 web site에서는 MaxKeepAliveRequests 값을 MaxClients에 비해 낮추는 것이 좋다.

MaxKeepAliveRequests 값은 당연히 MaxClients 값보다 작아야 한다. OAS에 비해 좋은 점은 해당 Process 들이 어떤 작업 을 하고 있는지 아래 화면의 Request Column 을 보면 쉽게 할 수 있어 Debugging도 쉽다.



log_server_status

iAS 1.0.2부터는 log_server_status 라는 Perl Script가 있어서 위의 server-status에 대한 offline용 monitoring tool이 제공된다. 이것을 cron에 등록하여 이용하게 되면 시간별 server의 상태를 기록할 수 있다.



log_server_status 는 위 그림과 같이 http://<server>:<port>/server-status/?auto 의 형식으로 호출되며 이 script를 수정하여 사용하여야 한다.

수정예) log_server_status

```
#!/disk1/iportal/Apache/perl/bin/perl
중략....
$wherelog = "/disk1/iportal/Apache/Apache/status/";  # Logs will be like "/var/log/graph/19960312"
$server = "krdaejeon1.kr.oracle.com";           # Name of server, could be "www.foo.com"
$port = "7777";                          # Port on server
$request = "/server-status/?auto";      # Request to send
중략 ....
          print S "GET $request\n";
          while (<S>) {
                    $requests=$1 if ( m|^BusyServers:\ (\S+)|);
                    $idle=$1 if ( m|^IdleServers:\ (\S+)|);
                    $number=$1 if ( m|sses:\ (\S+)|);
                     $cpu=$1 if (m|^CPULoad:\ (\S+)|);
           }
          print OUT "$time:$requests:$idle:$number:$cpu\n";
}
```

위와 같이 $wherelog, $server, $port, $request를 운영환경에 맞게 바꾸어 주고, 이 script가 수행하려면 shell에 PERL5LIB 환경변수를 지정하여 PERL Library들을 참조할 수 있게 한다.

```
krdaejeon1% env|grep PERL
PERL5LIB=/disk1/iportal/Apache/perl/lib/site_perl/5.005/sun4-solaris
```

Log_server_status 를 cron에 등록하여 server monitoring을 할 수 있도록 한다.

```
krdaejeon1% crontab -r
krdaejeon1% cat status
0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,
30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51,52,53,54,55,56
,57,58,59 * * * * /disk1/iportal/Apache/Apache/bin/log_server_status
krdaejeon1% crontab status
```

수행결과 예) Log file 명은 현재날짜로 생성된다.

```
000317:::: ✍ $request가 잘못지정되었음
000410:22:15:50002:3.77479
000515:37:0:51614:3.89552
000619:25:12:53201:4.01936
003900:-1:-1:-1:-1:connect: Connection refused ✍ Webserver down
```

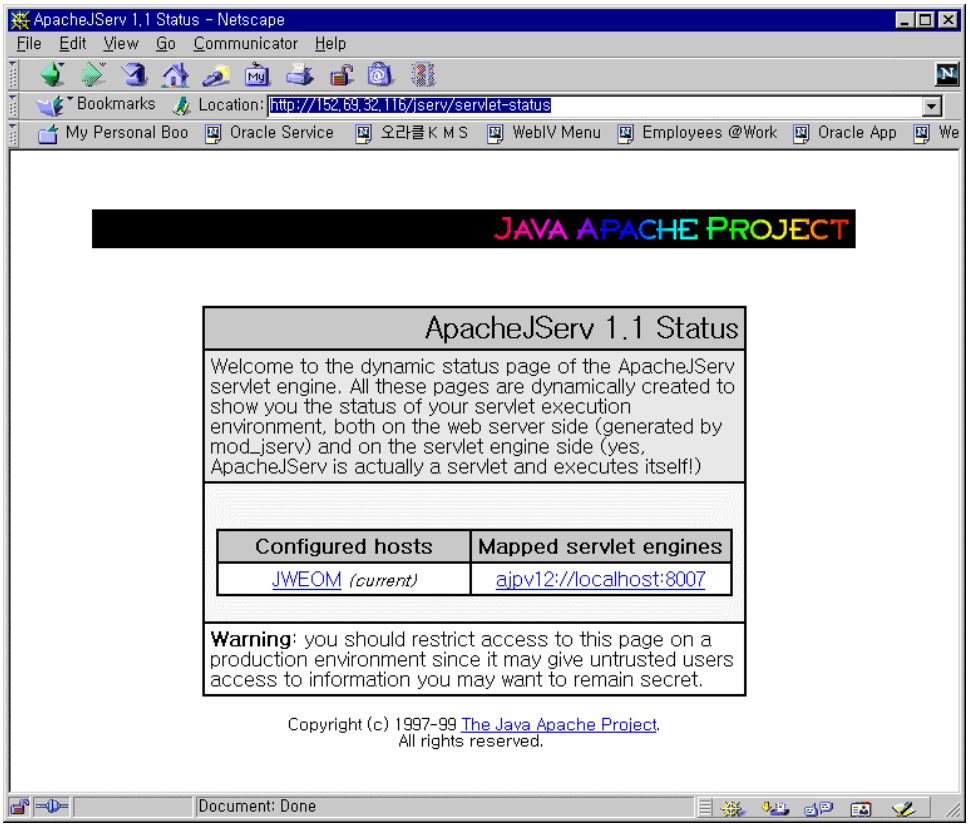
Format : $time:$requests:$idle:$number:$cpu"

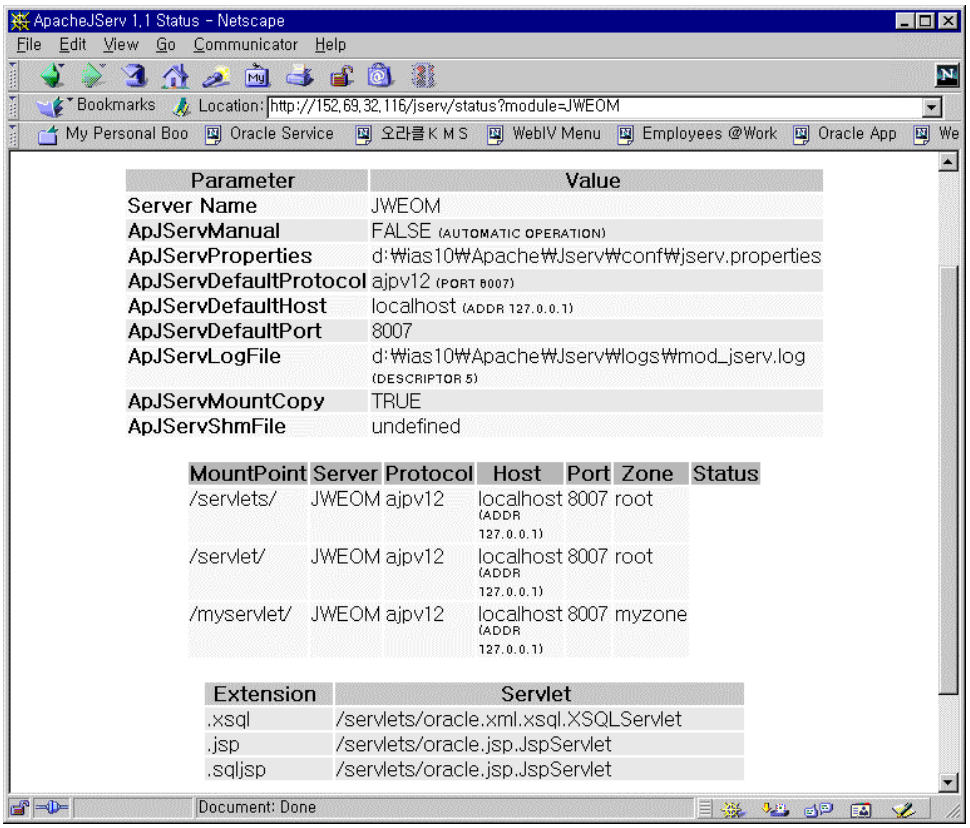
Web Browser 에서도 확인할 수 있지만 기록하려는 항목을 Perl Script를 수정하여 logging할 수 있다.

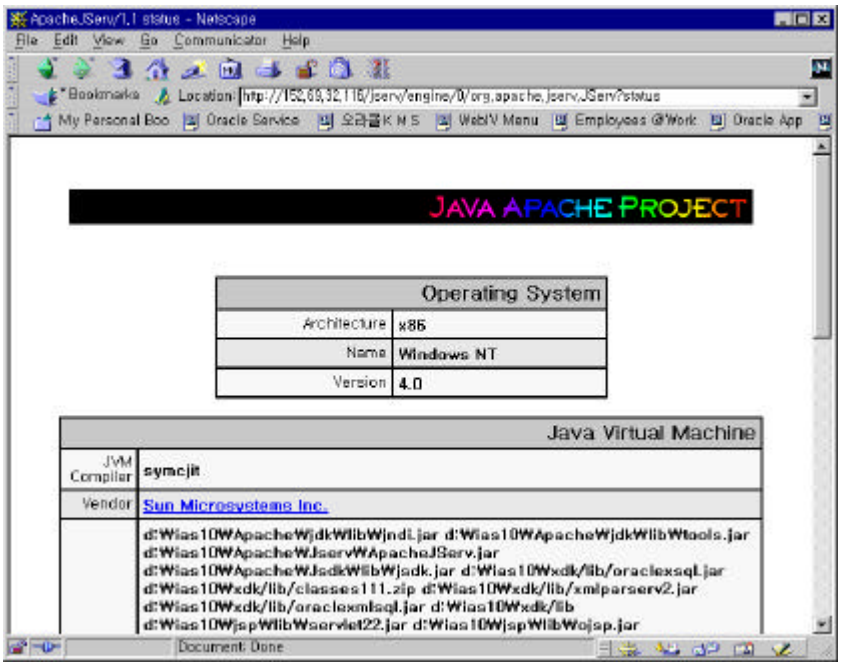
6.6.2 Jserv Status

```
<Location /jserv/>
  SetHandler jserv-status
  order deny,allow
  deny from all
  allow from all
</Location>
```

http://<ServerName>:<Port>/jserv/jserv-status
http://<ServerName>:<Port>/jserv/status?module=JWEOM
http://<ServerName>:<Port>/jserv/engine/0/
http://152.69.32.116/jserv/engine/0/org.apache.jserv.JServ?status


ApacheJServ 1.1 Status - Netscape
File Edit View Go Communicator Help
Bookmarks Location: http://152.69.32.116/jserv/servlet-status
My Personal Boo Oracle Service 오라클 K M S WebIV Menu Employees @Work Oracle App We
JAVA APACHE PROJECT
ApacheJServ 1.1 Status
Welcome to the dynamic status page of the ApacheJServ servlet engine. All these pages are dynamically created to show you the status of your servlet execution environment, both on the web server side (generated by mod_jserv) and on the servlet engine side (yes, ApacheJServ is actually a servlet and executes itself!)
Configured hosts
Mapped servlet engines
JWEOM (current)
ajpv12://localhost:8007
Warning: you should restrict access to this page on a production environment since it may give untrusted users access to information you may want to remain secret.
Copyright (c) 1997-99 The Java Apache Project.
All rights reserved.
Document: Done


ApacheJServ 1.1 Status - Netscape
File Edit View Go Communicator Help
Bookmarks Location: http://152.69.32.116/jserv/status?module=JWEOM
My Personal Boo Oracle Service 오라클 K M S WebIV Menu Employees @Work Oracle App We
Parameter
Value
Server Name
JWEOM
ApJServManual
FALSE (AUTOMATIC OPERATION)
ApJServProperties
d:₩ias10₩Apache₩Jserv₩conf₩jserv.properties
ApJServDefaultProtocol
ajpv12 (PORT 8007)
ApJServDefaultHost
localhost (ADDR 127.0.0.1)
ApJServDefaultPort
8007
ApJServLogFile
d:₩ias10₩Apache₩Jserv₩logs₩mod_jserv.log (DESCRIPTOR 5)
ApJServMountCopy
TRUE
ApJServShmFile
undefined
MountPoint Server Protocol Host Port Zone Status
/servlets/ JWEOM ajpv12 localhost (ADDR 127.0.0.1) 8007 root
/servlet/ JWEOM ajpv12 localhost (ADDR 127.0.0.1) 8007 root
/myservlet/ JWEOM ajpv12 localhost (ADDR 127.0.0.1) 8007 myzone
Extension
Servlet
.xsql
/servlets/oracle.xml.xsql.XSQLServlet
.jsp
/servlets/oracle.jsp.JspServlet
.sqljsp
/servlets/oracle.jsp.JspServlet
Document: Done



6.6.3 Jserv Resource Monitor (mod_oprocmgr)

9iAS 1.0.2.2부터 추가된 기능으로 좀 더 쉬운 Jserv VM 관리와 Watchdog 기능을 내장하고 있다.

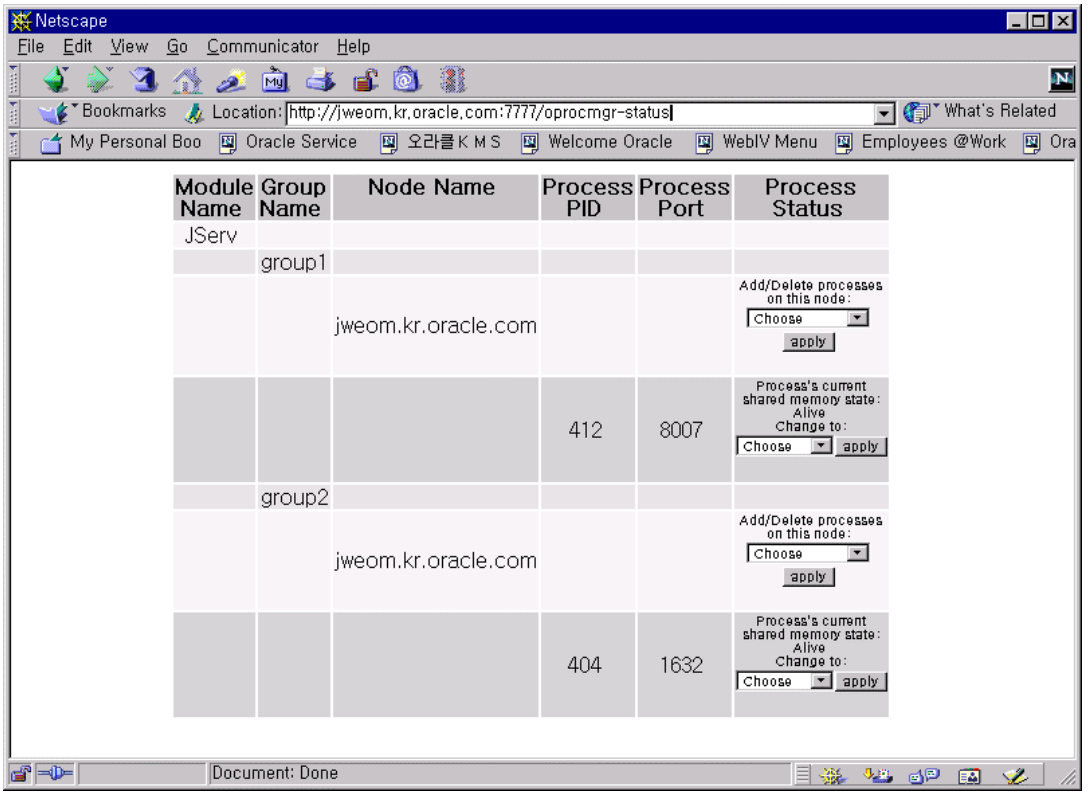
기존의 mod_jserv에 Process Management, Multiple JVM Configuration, System Administration, Flexible architecture 기능들이 보강된 것이다.

Httpd.conf

```
<IfModule mod_oprocmgr.c>
   ProcNode jweom 7777
   <Location /oprocmgr-service>
      SetHandler oprocmgr-service
   </Location>
   <Location /oprocmgr-status>
      SetHandler oprocmgr-status
   </Location>
</IfModule>
```

jserv.conf

```
ApJServManual auto
ApJServGroup group1 1 1 D:\ORACLE\iSuites\Apache\Jserv\conf\jserv.properties
ApJServGroupMount /servlet balance://group1/root
ApJServGroupMount /servlets balance://group1/root
ApJServGroupMount /dms balance://group1/root
ApJServGroupMount /dmsJServ balance://group1/root
```



6.6.4 DMS (Dynamic Monitoring Service)

Oracle 9iAS 1.0.2.1 이상에 추가된 Monitoring Tool로는 DMS (Dynamic Monitoring Service) 가 추가되었다. 이것은 Apache Listener는 물론 Apache Jserv process에 대한 monitoring이 가능하다.

DMS 통계정보는 iAS내에서 자동적이고 연속적으로 이용가능하고 DMS의 부하는 거의 무시 (1%미만) 할 만 하다.

아직 현재 버전에서는 DMS에서 나온 통계자료가 GUI Tool에 의해 분석되지는 않지만 곧 발표될 9iAS 2.0 에서는 포함되어 질 예정이다.

6.6.4.1 DMS 로 Website 모니터링하기

모니터링 도구

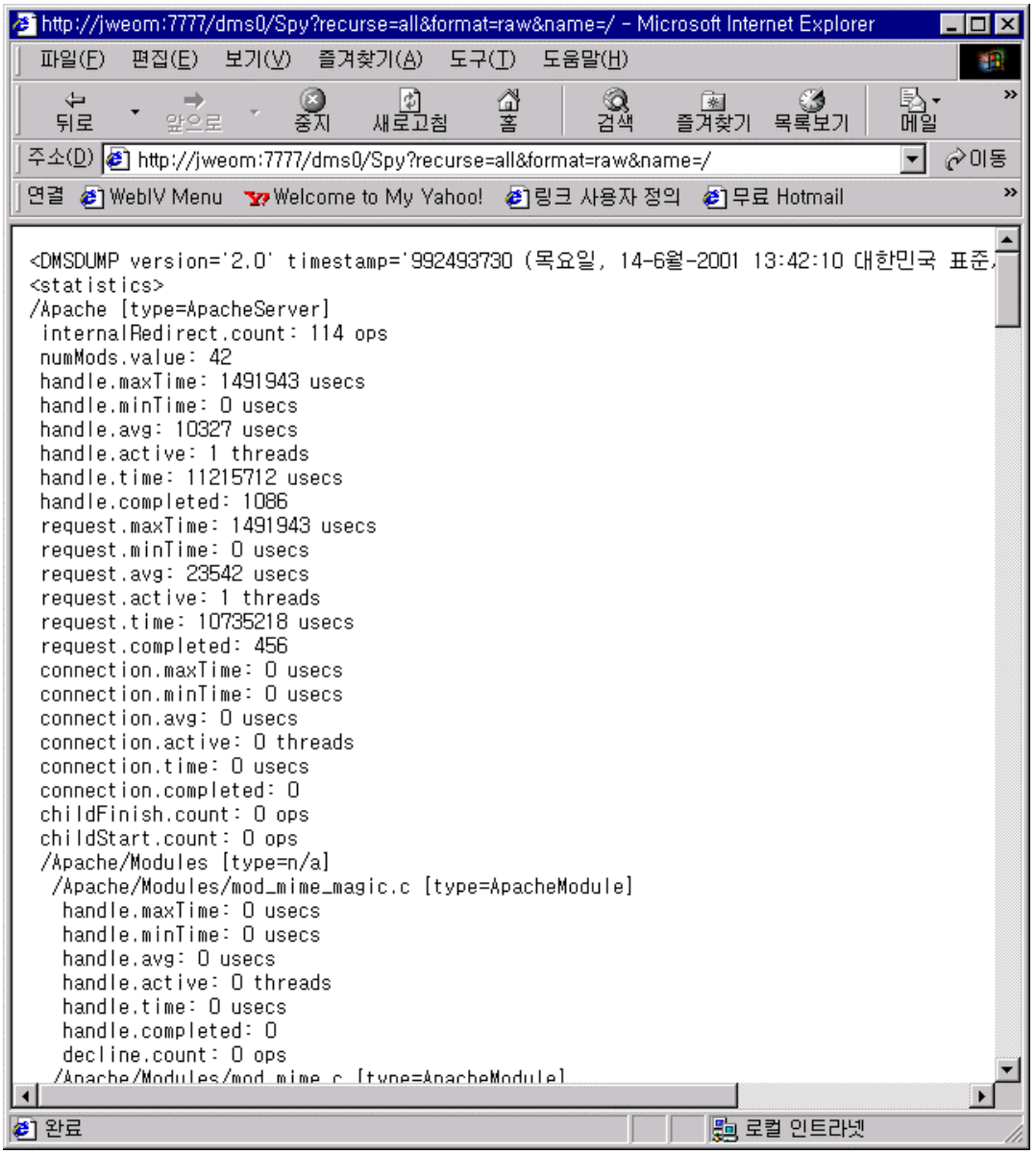
Spy Service

Flexmon :일정기간내의 특정 통계정보를 모니터링하는 command –line 도구

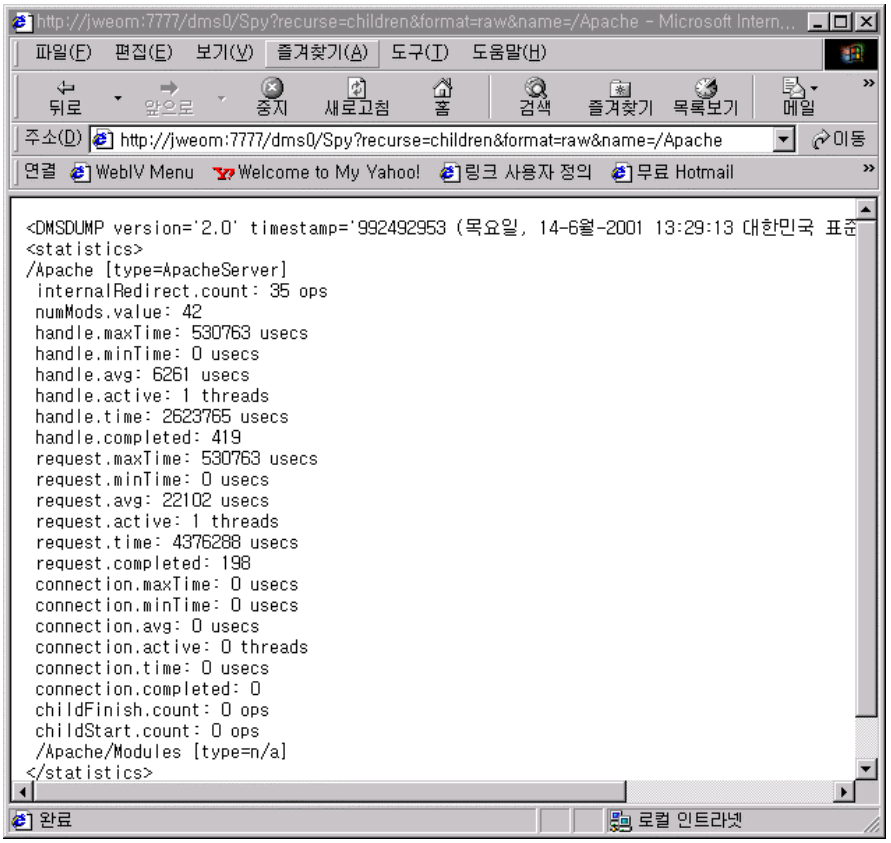
DmsGrab : Website에서 매 15분간 모든 정보를 수집하는 Java program이다.

6.6.4.2 Apache 통계정보

http://myhost:myport/dms0/Spy?recurse=all&format=raw&name=/



http://myhost:myport/dms0/Spy?recurse=children&format=raw&name=/Apache



6.6.4.3 Apache Jserv 통계정보

Oracle 9iAS 1.0.2.1

http://myhost:myport/dms1/Spy

Oracle 9iAS 1.0.2.2

http://myhost:myport/<servlet>/Spy

Notes: ApJServGroupMount 로 설정된 mountpoint 별로 각각 모니터링할 수 있다.

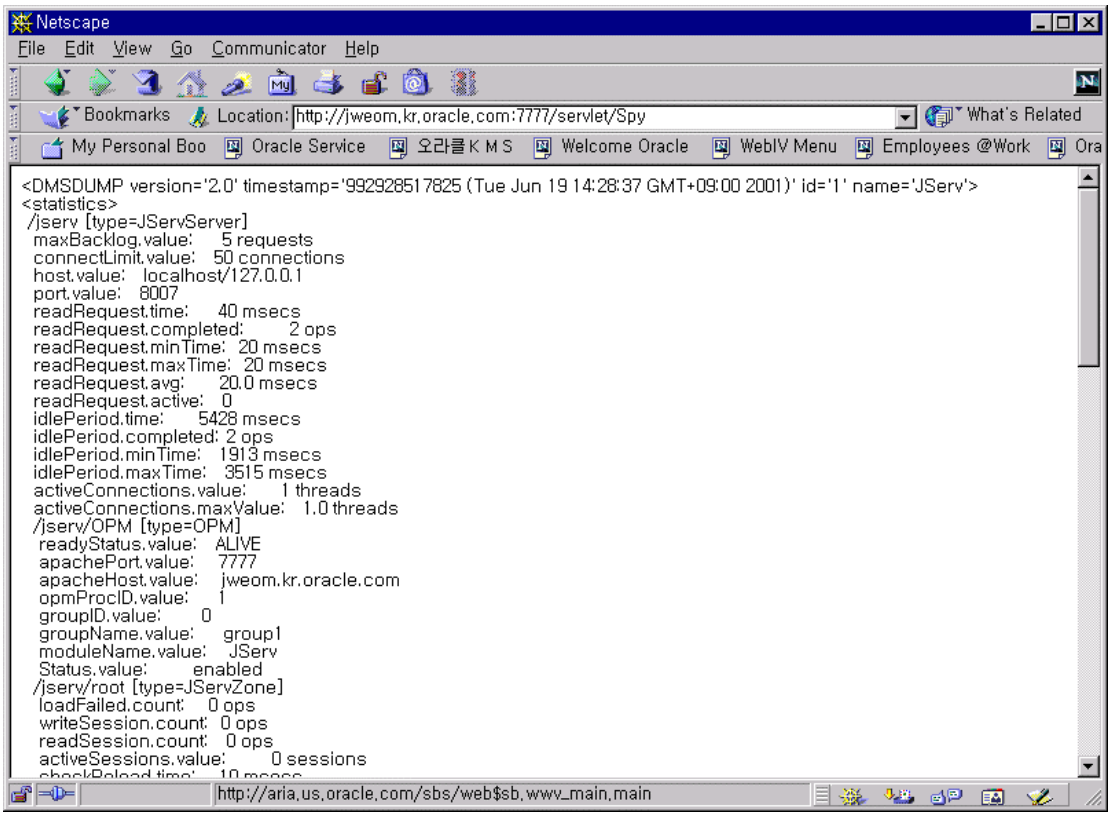
JVM 통계정보 보기

for Oracle 9iAS 1.0.2.1

http://jweom.kr.oracle.com:7777/dms1/Spy?recurse=children&format=raw&name=/JVM

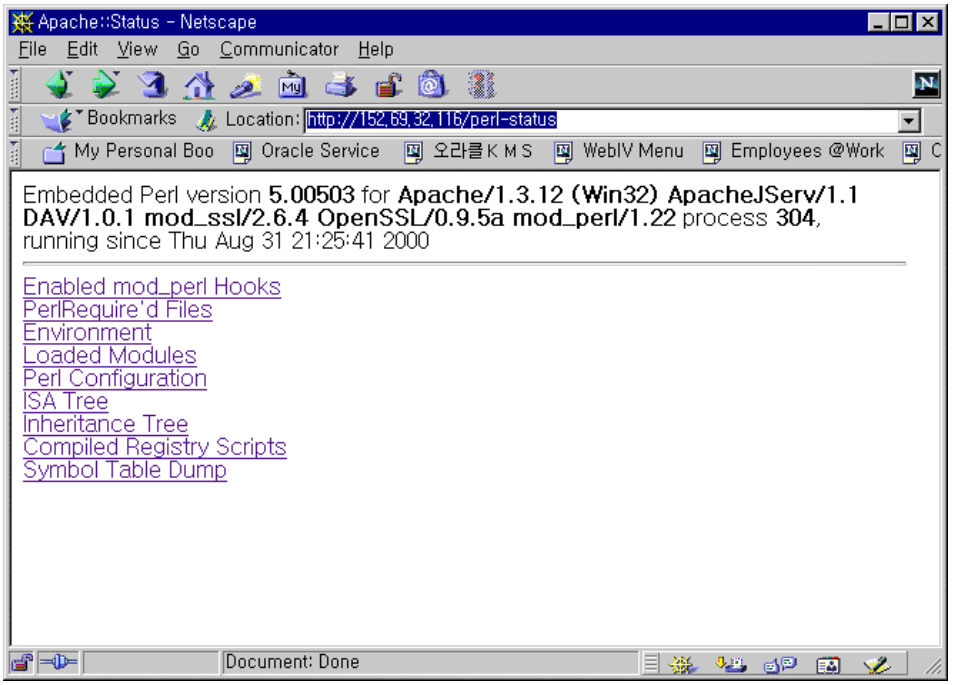
for Oracle 9iAS 1.0.2.2

http://jweom.kr.oracle.com:7777/servlet/Spy?recurse=children&format=raw&name=/JVM



6.6.5 Perl Status

```
<Location /perl-status>
    SetHandler  perl-script
    PerlHandler  Apache::Status
    order  deny,allow
    deny  from  all
    allow  from  all
</Location>
```



6.7 PHP 사용하기

6.7.1 사용환경

OS : solaris 2.6 (기타 Unix) , Windows Platform

iAS : 1.0.x

Oracle RDBMS : 7.x 이상

6.7.2 apxs 이해하기

Apache User's Guide의 Dynamic Shared Object (DSO) support 를 참조해보세요.

6.7.3 iAS 에서 apxs script의 수정

iAS(1.0.0) 에 packaging된 apxs는 설치시 사용자의 환경에 맞게 수정되지 않는 문제로 직접 수정해주어야 한다. 하지만 iAS 1.0.2 에서는 가능하다.

예)

```
krdaejeon1% diff apxs.org apxs
71c71
< my $CFG_TARGET           = 'httpd';           # substituted via Makefile.tmpl
---
> my $CFG_TARGET           = 'httpds';          # substituted via Makefile.tmpl
78,82c78,82
< my $CFG_PREFIX          = '/usr/local/apache';        # substituted via APACI install
< my $CFG_SBINDIR         = '/usr/local/apache/bin';   # substituted via APACI install
< my $CFG_INCLUDEDIR     = '/usr/local/apache/include'; # substituted via APACI install
< my $CFG_LIBEXECDIR     = '/usr/local/apache/libexec'; # substituted via APACI install
< my $CFG_SYSCONFDIR      = '/usr/local/apache/conf';   # substituted via APACI install
---
> my $CFG_PREFIX   = '/disk7/share/ias10/Apache/Apache'; # substituted via APACI install
> my $CFG_SBINDIR= '/disk7/share/ias10/Apache/Apache/bin'; #substituted via APACI install
>my $CFG_INCLUDEDIR='/disk7/share/ias10/Apache/Apache/include';# substituted via APACI install
>my $CFG_LIBEXECDIR = '/disk7/share/ias10/Apache/Apache/libexec'; #substituted APACI install
> my $CFG_SYSCONFDIR = '/disk7/share/ias10/Apache/Apache/conf';# substituted via APACI install
```

6.7.4 EAPI를 위한 apache header 추가

iAS에서 지원하는 dso module들중 mod_ssl, mod_rewrite등은 EAPI for Apache 기능을 사용하여 apxs를 이용한 DSO추가시 해당 header 를 참조한다. 이들 module들은 Ralf S. Engelschall 라는 유명한 개발자에 의해서 작성되었으며 ap_ctx.h ap_hook.h ap_mm.h 등의 patch 를 포함하고 있다.

IAS1.0.0 에서 왜 이것들이 빠져 있는지 알수 없지만 이것들이 있어야 Oracle HTTP Server power by Apache 의 dso 기능들을 이용할 수 있다. (KMS 에 등록하였으니 down받으세요.)

참고 : iAS 1.0.2 이상의 경우 EAPI for apache source가 포함되어 있다.

6.7.5 Oracle OCI Header추가

PHP에서 Oracle Function을 사용하기 위해 $ORACLE_HOME/rdbms/demo 와 $ORACLE_HOME/rdbms/public (8.0.x의 경우 $ORACLE_HOME/plsql/public) 에서 oratypes.h , ocidfn.h, ociapr.h, ociextp.h 등이 복사하여야 한다. IAS 1.0.0 에는 포함되어 있지 않지만 iAS 1.0.1이상에는 포함되어 있다. 따라서 iAS1.0.0(HTTP Only)로 설치한 Oracle Home directory를 이용하면 oci*.h 가 없으므로 Oralce RDBMS에서 복사해 와야 할 것이다

6.7.6 PHP 설치

Unix 환경 (PHP 3.0.x, PHP 4.0.x)

php source를 푼 directory에서 다음과 같은 option을 추가해 주어야 할 것이다.

--with-apxs , --with-oracle , --with-oci8

예) compile

```
1. % ./configure --with-apxs=/disk7/share/ias10/Apache/Apache/bin/apxs \
     --with-config-file-path=/disk7/share/ias10/php3 --prefix=/disk7/share/ias10/php3 \
     --with-oracle=/disk7/share/ias10 --with-oci8=/disk7/share/ias10
2. % make
3. % make install
4. % cp php3.ini-dist /disk7/share/ias10/php3/php3.ini
   ( php 4.0.x 의경우 php.ini-dist )
```

Windows NT (PHP 3.0.x)

Windows Platform용의 PHP3용은 www.php.net 에서 download받으면 oracle driver가 포함되어져 있으나 PHP3의 경우 Apahe에서는 CGI형태로 밖에 설정되지 않으며 PHP4용은

www.php4win.de 에서 download받을 수 있으며 Windows용 Apache의 Module형태로도 등록할 수 있다.

PHP 3.0 download

http://php.net/download-php3.php

2. 임의의 directory에 압축을 푼다.

예) c:\php3

3. 풀린 file중 php3.ini-dist 를 수정하여 System directory (%WINDOWS%) 에 php3.ini 로 저장시킨다.

 # php3.ini 중 중요parameter :

short_open_tag: <? ?> tag를 허용
doc_root : virtual path로 지정된 php3 file을 못찾을때 기본적으로 가져오는 directory (manual 의 security 관련부분을 참조 할 것)
extension_dir : php의 확장 module이 있는 directory
extension : php의 확장된 module 명

예) php3.ini 의 일부

```
;;;;;;;;;;;;;;;;;;;;;;;;;;
; Paths and Directories ;
;;;;;;;;;;;;;;;;;;;;;;;;;;
include_path = c:\php3
doc_root = d:\ias10\Apache\Apache\php
user_dir =
;upload_tmp_dir =
upload_max_filesize = 2097152
extension_dir = c:\php3
```

```
;;;;;;;;;;;;;;;;;;;;;;
; Dynamic Extensions ;
;;;;;;;;;;;;;;;;;;;;;;
extension=php3_oci73.dll
extension=php3_oci80.dll
```

Windows NT (PHP 4.0.x)

1. PHP4.0 download (php 4.0.4)

http://www.mm4.de/php4win/mod_php4_win32/

2. 임의의 directory에 압축을 푼다.

예) c:\php4

3. 풀린 file중 php.ini-dist 를 수정하여 System directory (%WINDOWS%) 에 php.ini 로 저장시킨다. 그리고php4를 apache module로 등록한다면 php4ts.dll 를 Windows System Directory 에 복사하여야 한다.

iAS의 module관리를 위해 <php4 directory>/sapi/php4apache.dll 을 iAS의 modules directory로 복사. (선택사항)

 # php4.ini 중 중요parameter :

short_open_tag: <? ?> tag를 허용
doc_root : virtual path로 지정된 php4 file을 못찾을때 기본적으로 가져오는 directory (manual 의 security 관련부분을 참조 할 것)
extension_dir : php의 확장 module이 있는 directory
extension : php의 확장된 module 명

예) php4.ini 의 일부

```
;;;;;;;;;;;;;;;;;;;;;;;;;;;
; Paths and Directories ;
;;;;;;;;;;;;;;;;;;;;;;;;;;;
include_path = c:\php4
doc_root = d:\ias10\Apache\Apache\php
user_dir =
;upload_tmp_dir =
upload_max_filesize = 2097152
extension_dir = c:\php4\extensions

;;;;;;;;;;;;;;;;;;;;;;;;
; Dynamic Extensions ;
;;;;;;;;;;;;;;;;;;;;;;;;
extension=php_oci8.dll
extension=php_oracle.dll
```

6.7.7 iAS Configuration

PHP설치가 끝나게 되면 httpds.conf 에 자동으로 php관련 module 설정이 포함 될것이다.

Unix Configuration

예) httpds.conf (Unix)

```
LoadModule php3_module
libexec/libphp3.so
AddModule mod_php3.c
AddType application/x-httpd-php3 .php3 .php
AddType application/x-httpd-php3-source .phps
```

Windows Configuration

예) httpd.conf (Windows NT, PHP3 CGI)

```
AddType application/x-httpd-php3 .php3  .php
AddType application/x-httpd-php3-source .phps
Action application/x-httpd-php3 "/php/php.exe"
ScriptAlias /php/ "c:/php3/"
Alias /php3/ "d:\ias10\Apache\Apache\php/"
```

예) httpd.conf (Windows NT , PHP4 module)

```
LoadModule php4_module modules\php4apache.dll
AddModule mod_php4.c
AddType application/x-httpd-php .php4
    Alias /php3/ "d:\ias10\Apache\Apache\php/"
```

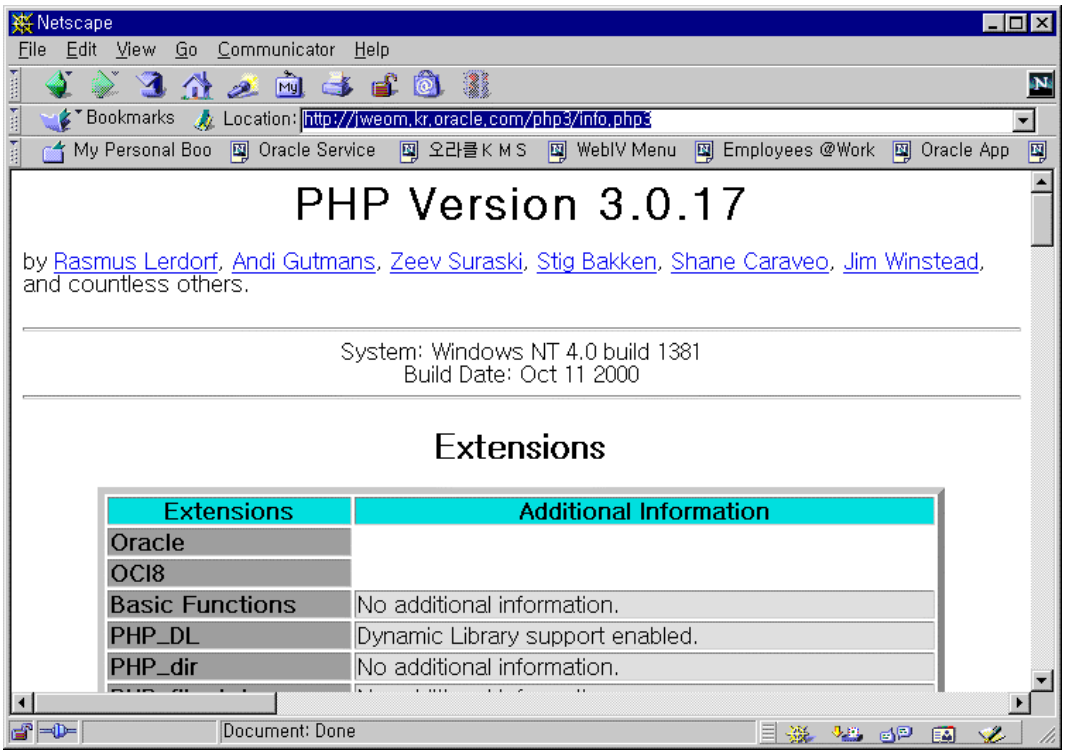
iAS를 Restart 한다.

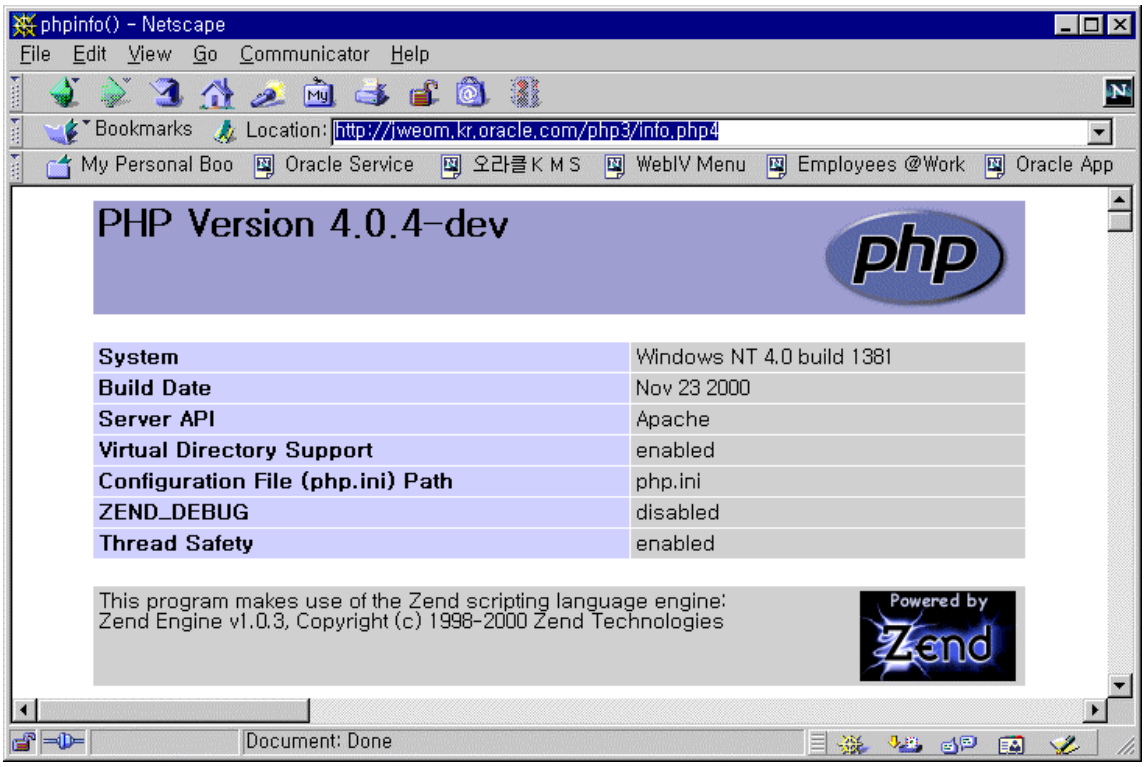
```
% PHP compile중 다음 메시지는 참조하라.
+-------------------------------------------------------------------+
| Notice:                                                           |
| If you encounter <defunc> processes when using a local Oracle-DB  |
| please recompile PHP and specify --enable-sigchild when configuring|
| (This problem has been reported un Linux using Oracle >= 8.1.5)   |
+-------------------------------------------------------------------+
```

6.7.8 PHP Test

예 1) info.php3

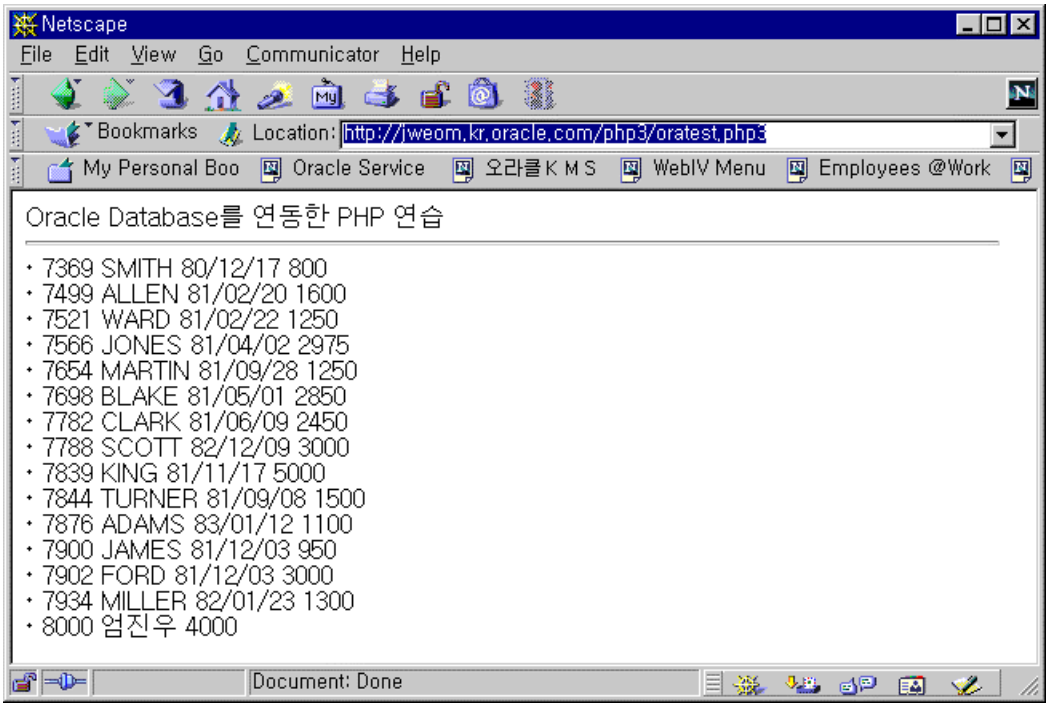
```
<html>
<?phpinfo()?>
</html>
```





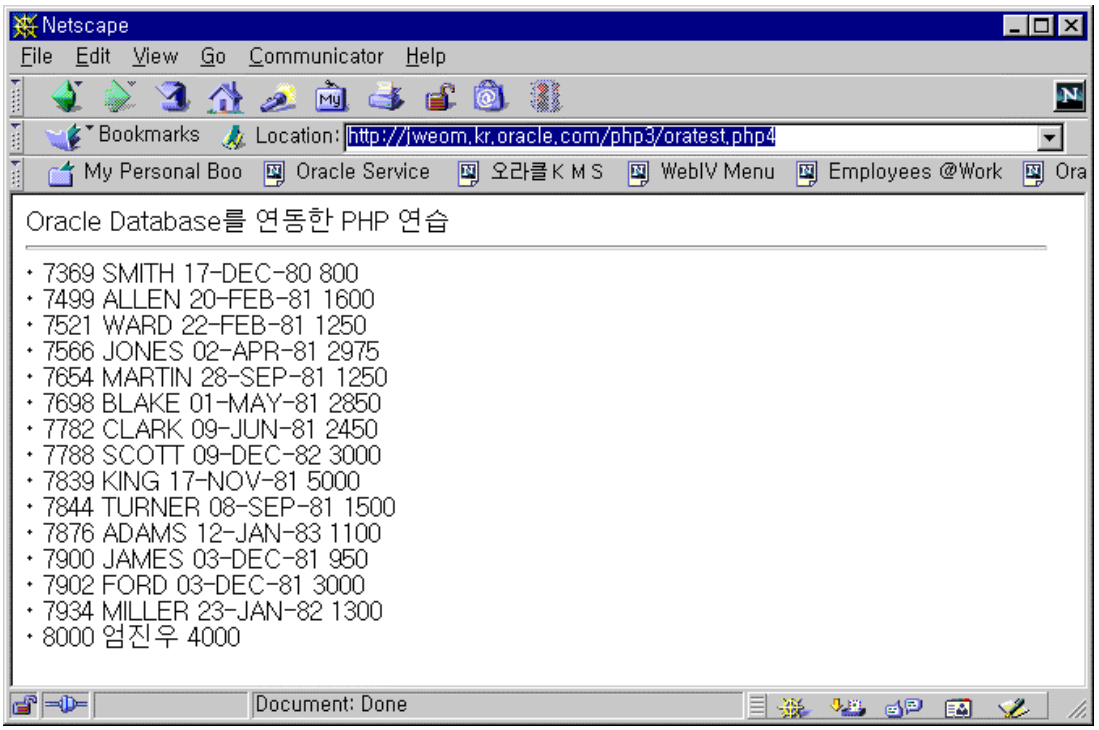
예 2) oracle_test.php3

```
<html>
<body bgcolor=#ffffff>
Oracle Database를 연동한 PHP 연습 <br>
<hr>
<script language=php>
   /* $conn = ora_logon("scott", "tiger"); */
    $conn = Ora_Logon("scott@ora817", "tiger");
    $curs = ora_open($conn);
   $sql = "select empno, ename, hiredate, sal from emp";
    $rset = ora_parse($curs, $sql, 8);
     ora_exec($curs);
    $rset = ora_fetch($curs);
    while( $rset == true ){
            $var1 = ora_getcolumn($curs, 0);
            $var2 = ora_getcolumn($curs, 1);
            $var3 = ora_getcolumn($curs, 2);
            $var4 = ora_getcolumn($curs, 3);
           echo("<li> $var1 $var2 $var3 $var4 ");
            $rset = ora_fetch($curs);
     }
     ora_close($curs);
     ora_logoff($conn);
</script>
</body>
</html>
```



예 3) oratest.php4 (OCI **함수이용**)

```
<html>
<body bgcolor=#ffffff>
Oracle Database를 연동한 PHP 연습 <br>
<hr>
<?php
 //    $conn = OCILogon("scott", "tiger", "jweom");
       $conn = OCILogon("scott", "tiger");
      $stmt = OCIParse($conn, "select empno, ename, hiredate, sal from emp");
        OCIExecute($stmt);
 //    while( OCIFetchInto($stmt, &$col) ) {
 //           echo("<li> $col[0] $col[1] $col[2] $col[3] ");
       while( OCIFetchInto($stmt, &$col, OCI_ASSOC+OCI_RETRUN_NULLS ) ) {
            echo("<li>". $col["EMPNO"]." ". $col["ENAME"]." ". $col["HIREDATE"]." ".
                $col["SAL"] );
       }
       OCIFreeStatement($stmt);
       OCILogoff($conn);
?>
</body>
</html>
```



6.7.9 PHP3, PHP4 Module비교

PHP4 Module로 실행했을때 PHP3보다 상당히 빠른 Response Time을 보임.

6.7.10 Tip

Tip 1

여러 번 PHP module을 compile하였다면 가능한 source directory의 config.cache를 삭제한 후 recompile을 시도하라.

Tip 2

--with-oracle , --with-oci8 로 Oracle과 연동할 때 가능하면 iAS의 홈에 있는 ORACLE_HOME을 참조하도록 한다. 어차피 iAS를 계속 사용하여야 한다면……

6.8 다중 listener 지원

(IIS : PLSQL, Servlet , JSP)

6.9 Oracle 9iAS JAVA

6.9.1 Apache Jserv Guide

Apache Jserv Servlet Zone Setting

Apache Jserv에서 Servlet Zone을 새로 작성하는 경우는 보통, 개발자들의 업무영역에 따라 zone을 만들어 관리할 때 사용한다. 여기서는 zone을 새로 추가하고 servlet을 작성하여 서비스하는 것을 알아보자.

Zone 추가 (예, myzone)

$ORACLE_HOME/Apache/Jserv/conf/jserv.conf

ApJServMount /myservlet /myzone

$ORACLE_HOME/Apache/Jserv/conf/jserv.properties

zones=root, myzone

Configuration file for each servlet zone (one per servlet zone)

Syntax: [servlet zone name as on the zones list].properties=[full path to configFile] (String)

Default: NONE

Note: if the file could not be opened, try using absolute paths.

root.properties=/disk7/share/ias10/Apache/Jserv/servlets/zone.properties

myzone.properties=/disk7/share/ias10/Apache/Jserv/myzone/zone.properties

Myzone properties 생성

 # List of Repositories

repositories=/disk7/share/ias10/Apache/Jserv/myzone/servlets

-> 사용자가 작성한 Servlet들을 등록

 # Classloader parameters

autoreload.classes=true

autoreload.file=true

Servlet 생성

$ cd /disk7/share/ias10/Apache/Jserv/myzone/servlets

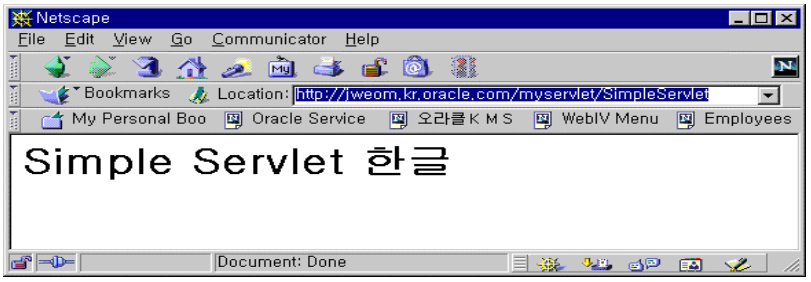
```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
public class SimpleServlet extends HttpServlet {
    public void doGet ( HttpServletRequest   request,
                                HttpServletResponse  response )
                                throws  ServletException,  IOException
    {
         PrintWriter    out;
        response.setContentType("text/html;  charset=euc-kr");
        out  =  response.getWriter();
       out.println("<H1> Simple Servlet  한글  </H1>");
         out.close();
    }
}
```

Servlet compile

$ javac SimpleServlet.java

Servlet 호출

http://<ServerName>:<Port>/myservlet/SimpleServlet



6.9.2 Apache Jserv 환경설정 점검

단계별 Apache Jserv Module 테스트하기 \

[1] Determine if the Apache HTTPD process is running and servicing requests for static HTML.

(a) From a browser, request the following URL:

http://<host>.<domain>:<port>/

(By default iAS is configured on port 7777)

(b) If the above step does not return a HTML page then check that the Apache HTTPD process is running:

% ps -ef|grep ${ORACLE_HOME}|grep httpd

(c) If the above returns no matches from the UNIX process table then:

- ensure that you are using the correct set of environment variables to administer the iAS product stack;

- attempt to start the Apache listener using:

'apachectl start';

- re-check the process table for httpd processes:

% ps -ef|grep ${ORACLE_HOME}|grep httpd

(d) If after the above steps the httpd process still does not show in the process table, run:

% apachectl configtest

and explore any warnings returned by reviewing and editing the listener configuration file:

$ORACLE_HOME/Apache/Apache/conf/httpd.conf

Continue correcting errors until the configtest output shows the following:

% apachectl configtest

Syntax OK

[2] Determine if the intended Servlet Engine is running.

(a) Run the following command:

% ps -ef|grep ${ORACLE_HOME}|grep 'org.apache.jserv'

NOTE: due to line length restrictions observed by the 'ps' command the output of the command may not show enough to match the full 'org.apache.jserv' specified as the grep pattern.

In the event that the above command fails on your system, try running:

% ps -ef|grep ${ORACLE_HOME}|grep

and scrutinizing the output for some left portion of 'java org.apache', before deciding whether or not there are any Servlet Engines running.

(b) If the 'ps' command reveals evidence that a Servlet Engine is running, check to ensure that it is the one that was expected, by looking at the status of the TCP/IP port on which that Servlet Engine will be looking for requests.

Each servlet engine listens for requests on the network interface and port identified by the 'bindaddress' and 'port' parameters within the 'jserv.properties' configuration file:

```
bindaddress=myhost.mydomain.com

port=8007
```

Use the defined port number in the following 'netstat' command to see if there is a process LISTENING on that port:

```
% netstat -a|grep 18007
  sunburn.us.oracle.com.18007      *.*      0      0      0      0  LISTEN
```

Note which hostname is depicted in the first column to see if this is the fully qualified hostname or 'localhost', as show below:

```
% netstat -a|grep 18007
  localhost.18007                  *.*      0      0      0      0  LISTEN
```

The first column should match the value of the 'bindaddress' directive specified in the 'jserv.properties' file.

NOTE: to allow this servlet engine to be referenced by multiple remote hosts the bindaddress parameter should be set to '*':

```
bindaddress=*
```

(c) If no process is listening on that port, then review the MOD_JSERV log file for warnings and errors which occurred while attempting to auto start the servlet engine.

The MOD_JSERV log file is identified by the 'ApJServLogFile' directive in 'jserv.conf'. By default this will be:

```
${ORACLE_HOME}/Apache/Jserv/logs/jserv.log
```

Review this file and attempt to resolve the errors identified in this file. For example, the following is a typical error which the port that the servlet engine would like to attach to is already in use:

```
[13/06/2000 14:23:58:528 EDT] ApacheJServ/1.1: Exception creating the server socket:
java.net.BindException: Address already in use
```

[3] If the intended servlet engine is not running, but there are no errors in the MOD_JSERV log file, then identify from the log file whether any attempt was made to startup a Servlet Engine and confirm via the jserv.conf file whether MOD_JSERV is configured not to automatically start the servlet engine.

(a) Regardless of any specific message in the MOD_JSERV log about problems starting the servlet engine, diagnostic error messages are displayed each time MOD_JSERV attempts to start the servlet engine.

Look for the existence of log entries which include 'wrapper', such as the following:

[13/11/2000 16:15:56:110] (INFO) wrapper: Java VM is not responding (PID=7882)

Any entries of this nature confirm that an attempt was made to start the servlet engine.

(b) If there are no log entries to confirm that an attempt was made to start the servlet engine then:

- confirm that MOD_JSERV has not been configured to automatically start the Servlet Engine, by checking in the file:

$ORACLE_HOME/Apache/Jserv/etc/jserv.conf

that the parameter 'ApJServManual' is set to On.

- Either:

(i) modify this parameter so that MOD_JSERV will automatically start the servlet engine:

ApJServManual=Off

--- OR ---

(ii) utilize a script to manually start the servlet engine, as described in:

Note:123533.1

"Example script to manually start the JVM for the

MOD_JSERV servlet engine"

[4] Configure the MOD_JSERV status page, to provide additional diagnostics through the eyes of the MOD_JSERV cartridge.

The MOD_JSERV cartridge provides an additional request handler 'jserv-status' which provides invaluable information about the status of MOD_JSERV and any servlet engine it is configured to access.

Since the low level information supplied by the 'jserv-status' handler could be taken advantage of by a would be hacker, it is by default disabled. To enable this information to be accessed by browser, the 'jserv.conf' file should be modified to uncomment the following configuration directive:

```
<Location  /jserv/>
    SetHandler  jserv-status
    order  deny,allow
   deny  from  all
   allow  from  us.oracle.com
 </Location>
```

NOTE: to decrease concerns over reduced security the 'allow from' directive can be used to restrict access to:

- the hostname or ip address of a single PC in the network where the browser will be running;

- the domain name of a group of machines where the browser will be allowed to run;

- set to 'localhost' to ensure that access is provided only to a browser running directly on the machine where the Apache Listener is running;

Once enabled, status information about MOD_JSERV and mapped servlet engines can be accessed via the URL:

http://<host>.<domain>:<port>/jserv/

This information should be checked for consistency with your expectation of what is defined in the configuration files. In the event that any of the settings do meet expectations, close scrutiny should be placed on the relevant configuration file to see if there are multiple directives for the same parameter such that the value supplied by the last directive in that file might be over writing the first.

6.9.3 Apache JServ의 Performance Tuning Point

iAS설치후 Apache Jserv 로 서비스할 수 없을 때 (Internal Server Error)

You have succesfully installed iAS (release 1.0.x) and can access HTML files. But when trying to access any servlet (e.g. IsItWorking demo servlet which comes with iAS) you get:

Internal Server Error The server encountered an internal error or misconfiguration and was unable to complete your request.

Looking in mod_jserv.log (<ORACLE_HOME>/Apache/Jserv/logs),

you see following lines:

[date time] (EMERGENCY) ajp12: can not connect to host 127.0.0.1:8007
[date time] (EMERGENCY) ajp12: connection fail
[date time] (ERROR) an error returned handling request via protocol "ajpv12"

Solution Description

Open Apache JServ Configuration File "jserv.properties"

(<ORACLE_HOME>/Apache/Jserv/etc or <ORACLE_HOME>\Apache\Jserv\conf)

and check setting of wrapper.bin=

It has to point to existing JVM, e.g.:

wrapper.bin=/oracle/app/oracle/product/ias/Apache/jdk/bin/java

The following things were done to improve the situation:

The Network adapters where set to autoconf, which gave a boost of 500 Kb/s for second attempt requests. The Server-service was changed from FileServer to NetworkServer. The suggestions in the Oracle HTTP Performance guide have been followed, and TCP has been tuned the following way:

.

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Tcpip\Parameters:

- DisableLargeSendOffload=0, enable large sends for TCP/IP.

- Parameters/MaxFreeTWTcbs=1098000, sets maximum number of TIME_WAIT tcbs to 1,098,000.

- MaxHashTableSize=0x10000, sets TCB hash table size to 65,536 entries, default 512.

- MaxSendSegments=0x1000, max TCP segments sent consecutively to a destination, default 64.

- Parameters/MaxUserPort=0xfffe, sets maximum open ports to 65534.

- Parameters/NumTcbTablePartitions=64, sets number of independent TCB table segments, default 4.

- Parameters/TcpTimedWaitDelay=60, sets TIME_WAIT parameter to 60 seconds

(non-RFC 1122), default is 240.

@ - Parameters/TcpWindowSize=65535, sets TCP send/receive window size,

default 8192

Apache and modules tuning

JServ tuning

zone.properties => autoreload.classes = false, autoreload.file = false (default values are true)

jserv.conf => ApJServVMTimeout 60 (default value is 30)

PL/SQL tuning:

wdbsvr.app => Comment out the line debugModules = all,

Set "reuse = yes" in all the database entries

Stress Test시 (EMERGENCY) ajp12: can not connect to host 127.0.0.1:8007 문제

1. (EMERGENCY) ajp12: can not connect to host 127.0.0.1:8007

2. (EMERGENCY) ajp12: connection fail

Problem Description

When a HTTP client submits a request to Servlet engine, the request is dispatched from mod_jserv to the JServ Java runtime. mod_jserv is loaded in httpd and httpds. In iAS, it is statically linked in the listener. Either way, mod_jserv communicates with JServ Java runtime via Ajp protocol. By default, the JServ Java runtime has only 5 outstanding listening sockets. If there is no outstanding listen sockets in the JServ Java runtime, mod_jserv would log the following message and won't retry by default:

(EMERGENCY) ajp12: can not connect to host 127.0.0.1:8007

(EMERGENCY) ajp12: connection fail

Solution Description

To enable the retry mechanism in ajpv12_handler, the user can specify an un-documented property in jserv.conf:

Retry 30 times

ApJServRetryAttempts 30

Explanation

For each retry, ajpv12_handler sleeps for 1 second (hard code) and logs "ajp12: can not connect to ...". After n tetries, if mod_jserv still cannot connect to JServ Java runtime, then it will log the following message:

ajp12: connection fail

By increasing the value of ApJServRetryAttempts in jserv.log, mod_jserv can retry connecting to the JServ runtime under heavy load. Hence, it won't log "ajp12: connection fail" message. However, it would still log the "ajp12: can not connect to host ..." message for each retry.

Further settings

For Java JServ runtime, you can also increase the number of listen sockets by adding the following properties in jserv.properties:

Number of listen sockets

security.backlog=50

The maximum number of socket connections JServ may handle simultaneously. Makesure the OS has enough file descriptors to allow this number:

#Max number of socket connections

security.maxConnections=100

6.9.5 9iAS의 startJserv.sh 활용하기

Oracle 9iAS 1.0.2.1 이하 의 Apache Jserv 를 여러 개 수행하려면 jserv.conf에서 ApJServManual 를 off 로 한 후에 <ORACLE_HOME>/Apache/Apache/bin 의 startJserv.sh 을 사용하면 된다.

Oracle 9iAS 1.0.2.2 이상에서는 mod_oprocmgr 의 지원으로 Apache Jserv 를 여러 개 동시에 관리할 수 있으므로 사실상 필요없는 script 일 수 있다.

6.9.6 Servlet 을 이용한 간단한 Stress test 방법

```
import java.io.*;
import java.net.*;

class StressTest extends Thread {
        String url1, file;
        public StressTest(String url , String file) {
                this.url1 = url;
                this.file = file;
         }

        public void run() {
                 try {

                        OutputStream to_file;
                       to_file = new FileOutputStream(file);
                       URL url = new URL(url1);
                       String protocol = url.getProtocol();
                        if (!protocol.equals("http"))
                      throw new IllegalArgumentException("URL must use 'http:' protocol");
                       String host = url.getHost();
                       int port = url.getPort();
                      if (port == -1) port = 80;
                       String filename = url.getFile();
                      Socket socket = new Socket(host, port);
                       InputStream from_server = socket.getInputStream();
                        PrintWriter to_server =
                        new PrintWriter(new OutputStreamWriter(socket.getOutputStream()));

                       to_server.println("GET " + filename +" HTTP/1.0\n");
                         to_server.flush();

                       byte[] buffer = new byte[4096];
                         int bytes_read;
                      while((bytes_read = from_server.read(buffer)) != -1)
                       to_file.write(buffer, 0, bytes_read);

                         socket.close();
                         to_file.close();
                 }
                catch (Exception e)
                         System.err.println(e);

                 }
         }


        public static void main(String[] args) {

        if ((args.length != 1) && (args.length != 3)) {

              System.out.println("Wrong number of arguments !!  Syntax is java StressTest url filename
threads");
                System.exit(0);

         }
                for (int i = 0; i < Integer.parseInt(args[2]) ; i++) {

                        StressTest t = new StressTest(args[0] ,args[1]+i);
                         System.out.println("Firing Thread " +i);
                          t.start();
                }
        }
}
```

Usage : java StressTest http://bldel56.in.oracle.com/servlet/TestConnection dd.txt 5

This creates text files as dd.txt0 , dd.txt1 ... dd.txt5. You can open the files in a text editor for checking whether the request is sucessful or not.

How To Test:

==========

1. Invoke sql*plus and issuse the query after starting the servlet engine.

select sid , serial#, username , program from v$session where program like 'JDBC%';

You should see 2 rows after loading the firstservlet.

2. java StressTest http://bldel56.in.oracle.com/servlet/TestConnection dd.txt 2

3. Run the query from sql*plus select sid , serial#, username , program from v$session where program like 'JDBC%';

You should see two rows.

4. java StressTest http://bldel56.in.oracle.com/servlet/TestConnection dd.txt 4

5. Run the query from sql*plus select sid , serial#, username , program from v$session where program like 'JDBC%';

You should see four rows.

6. java StressTest http://bldel56.in.oracle.com/servlet/TestConnection dd.txt 6

7. Run the query from sql*plus select sid , serial#, username , program from v$session where program like 'JDBC%';

You should see 6 rows for some time once the servlet execution is finished the connection should be 5 as we set the max connections as 5.

6.9.7 Servlet

Servlet 의 Life-Cycle

PURPOSE

The purpose of this article is to explain life-cycle of servlets and provide an example of Java servlet that handles concurrent client requests, manages threads and resources correctly and outputs the most often used HTTP parameters.

SCOPE & APPLICATION

This bulletin is useful for Java Developers who would like to understand how life-cycle of servlets and threads are managed by servlet engines, and what request properties and HTTP parameters are most often utiliezed in servlets.

LIFE-CYCLE OF SERVLETS

A servlet is a small Java program that runs within a context of a Web Server. Servlets receive and respond to requests from clients, usually across HTTP protocol.

Servlet life-cycle is separated in three different stages:

1. Initialization
2. Execution
3. Destruction

Life-cycle methods that belong to these stages are specified by the javax.servlet. Servlet interface, which is implemented directly or indirectly by all servlets. These methods are called at specific times by the servlet engine in a particular order during a servlet's life-cycle.

1. Initialization

The init() method of a servlet is called when a servlet is initialized and placed into service. The servlet engine calls this method exactly once for each servlet. The servlet will not be able to handle any requests until the init() method has completed successfully. The ServletConfig object passed by the servlet engine to a servlet represents the configuration information and contains initialization parameters and a reference to the ServletContext object, which gives the servlet information about the server environment. The following sample init() methods shows how to use ServletConfig and ServletContext objects to get servlet initia-lization parameters from the servlet engine and save them for further processing.

```
ServletConfig servletConfig;
ServletContext servletContext;
Hashtable servletParameters = new Hashtable();

public void init(ServletConfig servletConfig) throws ServletException
{ String st;

    super.init(servletConfig);
   this.servletConfig = servletConfig;
   this.servletContext = servletConfig.getServletContext();
   servletContext.log(servletInstanceNumber+". LifeCycleServlet: init");

  for(Enumeration e = servletConfig.getInitParameterNames(); e.hasMoreElements();)
   { st=e.nextElement().toString();
       servletParameters.put(st,servletConfig.getInitParameter(st));
    }
}
```

2. Execution

The service() method carries out a single request from the client. Basically two methods,doGet() and doPost() are to be used to receive requests from clients and send repsonse to back. Either one or both of these methods can be defined and used as an entry point in a servlet. The servlet engine receives all request parameters that are used to construct a ServletRequest object. This object is used by the servlet to gather all needed information about the request made by the client such as the client's IP address, the port through which the request came in and many other interesting parameters that you can use in servlets programming. The servlet uses the ServletResponse object to return output to the client. The service() method is called multiple times to execute the servlet's logic.

3. Destruction

When a servlet application is being shutdown, the destroy() method is called to cleanup any resources allocated during initialization. No other method of the servlet will be executed before destroy() method is called after shutdown. This method will be called exactly once and waits until all working threads finish its operation.

Threads

Servlets typically run inside multi-threaded servlet engines such as Apache/Jserv bundled with Oracle9i Application Server, which can handle multiple service requests concurrently. Each instance of a servlet can be given multiple threads of execution. The servlet must handle concurrent requests and synchronize access to shared resources. The example below shows how to manage threads and resources within servlets.

TOOLS REQUIRED

To develop servlets for any servlet engine, you will need a compiler, a debugger, and other tools needed for servlet development. Oracle's JDeveloper and Sun's JDK and JSDK are tools that can be used when developing servlets. This program was created with Oracle JDeveloper 3.1.1.2 using JDK 1.2.2 and tested with Oracle HTTP Server (Apache/Jserv) servlet engine which is part of Oracle9i Application Server.

EXAMPLE

This example servlet logs which method is being called by the servlet engine during the servlet's life-cycle, displays request properties and initialization parameters, and scores the number of threads within the service method. The service is delayed by 10 seconds so that we could try and examine how the servlet behaves, when it must serve a new request within this time of period.

```
import java.io.*;
import java.util.*;
import javax.servlet.*;
import javax.servlet.http.*;

public class LifeCycleServlet extends HttpServlet
{
  static int servletInstanceCounter = 0;
  int servletInstanceNumber = ++servletInstanceCounter;
   int requestNumber;

   ServletConfig servletConfig;
   ServletContext servletContext;
  Hashtable servletParameters = new Hashtable();

  /* Initialize global variables */
  public void init(ServletConfig servletConfig) throws ServletException
  { String st;

      super.init(servletConfig);
     this.servletConfig = servletConfig;
     this.servletContext = servletConfig.getServletContext();
     servletContext.log(servletInstanceNumber+". LifeCycleServlet: init");

    for(Enumeration e = servletConfig.getInitParameterNames(); e.hasMoreElements();)
     { st=e.nextElement().toString();
```

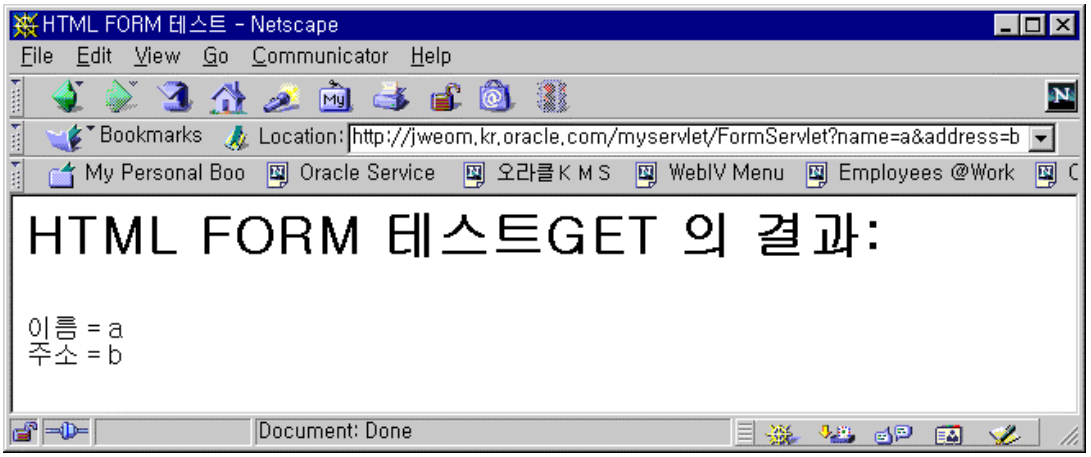
```
        servletParameters.put(st,servletConfig.getInitParameter(st));
      }
   }

  private int threadCounter;

  private synchronized void threadStart()
  { threadCounter++; }

  private synchronized void threadStop()
   { threadCounter--;
     if(threadCounter == 0 && isServletDestroyed()) notifyAll(); }

  private synchronized int getThreadCounter()
  { return(threadCounter); }

  private boolean servletDestroyed;

  private synchronized boolean isServletDestroyed()
  { return(servletDestroyed); }

  private synchronized void servletDestroy(boolean b)
  { servletDestroyed = b;}

  public synchronized void destroy()
   { servletDestroy(true);
      while(getThreadCounter()>0)
     try { wait(); } catch(InterruptedException e) {}
      servletContext.log(servletInstanceNumber+". LifeCycleServlet: destroy");
   }

  /* Process the HTTP Get request */
  public void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException
    {
       threadStart();
      servletContext.log(servletInstanceNumber+". LifeCycleServlet: service");

       response.setContentType("text/html");
     PrintWriter out = new PrintWriter (response.getOutputStream());

       out.println("<html>");
       out.println("<head><title>LifeCycleServlet</title></head>");

       out.println("<PRE><STRONG>"+getClass().getName()+"</STRONG>");
     out.println("Number of servlet instances: "+servletInstanceNumber);
     out.println("Number of requests: "+(++requestNumber));
     out.println("Number of threads: "+threadCounter);
       out.println();

      out.println("<STRONG>Initialization parameters</STRONG>");
     for(Enumeration ee = servletParameters.elements(), ek = servletParameters.keys();
ek.hasMoreElements();)
     { out.println(ek.nextElement()+" - "+ee.nextElement()); }
      out.println(); out.flush();

      out.println("<STRONG>Client properties</STRONG>");
     out.println("Client address: "+request.getRemoteAddr());
     out.println("Client machine: "+request.getRemoteHost());
      out.println(); out.flush();
```

```
 out.println("<STRONG>Server properties</STRONG>");
out.println("Server name: "+request.getServerName());
out.println("Server port: "+request.getServerPort());
 out.println(); out.flush();

 out.println("<STRONG>Request properties</STRONG>");
out.println("Character encoding: "+request.getCharacterEncoding());
out.println("Request length: "+request.getContentLength());
out.println("Request type: "+request.getContentType());
out.println("Request protocol: "+request.getScheme());
out.println("Used protocol: "+request.getProtocol());
 out.println(); out.flush();

 out.println("<STRONG>Request parameters</STRONG>");
Enumeration e = request.getParameterNames();
 while(e.hasMoreElements())
{ String name = (String)e.nextElement();
   String[] value = request.getParameterValues(name);
   out.print(name+" = ");
  for(int i = 0; i < value.length; i++) out.print(value[i]+" ");
    out.println();
 }
 out.println(); out.flush();

 out.println("<STRONG>HTTP Header</STRONG>");
e = request.getHeaderNames();
 while(e.hasMoreElements())
{ String name = (String)e.nextElement();
   String value = request.getHeader(name);
   out.println(name+" = "+value);
 }
 out.println(); out.flush();

 out.println("<STRONG>HTTP properties</STRONG>");
 out.println("Security: "+request.getAuthType());
out.println("HTTP type: "+request.getMethod());
out.println("Request virtual path: "+request.getPathInfo());
out.println("Request physical path: "+request.getPathTranslated());
 out.println("Request parameters: "+request.getQueryString());
 out.println("User: "+request.getRemoteUser());
out.println("Client session id: "+request.getRequestedSessionId());
 out.println("Request URI: "+request.getRequestURI());
 out.println("Servlet path: "+request.getServletPath());
 out.println(); out.flush();

  out.print("Waiting");
for(int i = 0; i < 10; i++)
 { if(isServletDestroyed()) break;
     try
    { Thread.currentThread().sleep(10000);
   } catch (InterruptedException ie) {}
    out.print("."); out.flush();
  }

  out.println("</PRE>");
  out.println("</body></html>");
  out.close();

  threadStop();

//servletContext.log("LifeCycleServlet doGet() ends.");
```

```
    }

  /* Process the HTTP Post request */
  public void doPost(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException
    {
       doGet(request,response);
    }

  /* Process the HTTP Put request */
  public void doPut(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException
   { }

  /* Process the HTTP Delete request */
  public void doDelete(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException
    {
      servletContext.log("LifeCycleServlet doDelete() begins...");
      servletContext.log("LifeCycleServlet doDelete() ends.");
    }

  /* Get Servlet information */
  public String getServletInfo()
    {
      return "LifeCycleServlet Information";
    }
}
```

한글 문자에 대한 Encoding

```
import java.util.*;
import java.io.*;
import java.net.*;
import javax.servlet.*;
import javax.servlet.http.*;
public class FormServlet extends HttpServlet {
     String name, address;
    public void doGet ( HttpServletRequest req,HttpServletResponse res)
          throws ServletException, IOException          {
           res.setContentType("text/html; charset=euc-kr");
          PrintWriter out = res.getWriter();
           out.println("<html><head><title>HTML FORM 테스트"+"</title></head>");
           out.println("<body><h1>"+"HTML FORM 테스트"+req.getMethod()+" 의 결과:
</h1><p>");
            out.println("<br>이름 = "+toHangul(req.getParameterValues("name")[0]) );
            out.println("<br>주소 = "+toHangul(req.getParameterValues("address")[0]) );
            out.println("</body></html>");
            out.close();
      }
    public void doPost(HttpServletRequest req, HttpServletResponse res)
        throws ServletException , IOException        {
          doGet(req, res);
      }

    public static String toHangul(String str)      throws UnsupportedEncodingException
      {   if (str == null)
                return null;
          return new String (str.getBytes("8859_1"), "KSC5601");
      }
```



6.9.8 JDBC

Servlet 에서 JDBC 2.0 Connection Pool / Cache 활용하기

Overview

This article contains an example of how to implement a cache of pooled connections in a Servlet in the middle tier. It explains the Connection Pooling and Connection Caching implementations of the Oracle JDBC 2.0 driver provided by Oracle with an 8.1.6 database.

The JDBC 2.0 implementation provides interfaces for Connection Pooling, but does not implement these interfaces itself. They must be implemented by the JDBC 2.0 vendor to provide the Connection Pooling functionality.

The javax.sql.ConnectionPoolDataSource interface outlines the standard functionality of connection pool data sources, which are factories for pooled connections. Oracle JDBC 2.0 implements the ConnectionPoolDataSource interface with the oracle.jdbc.pool.OracleConnectionPoolDataSource class.

Pooled Connection

A pooled connection instance is an instance of a class that implements the standard javax.sql.PooledConnection interface. The getConnection() method specified by this interface returns a logical connection instance that acts as a temporary handle to the physical connection, as opposed to encapsulating the physical connection, as does a non-pooling connection instance.

Oracle JDBC 2.0 implements the Pooled Connection interface with the oracle.jdbc.pool.OraclePooledConnection class. Each time a pooled connection instance getConnection() method is called, it returns a new connection instance that exhibits the default behavior, and closes any previous connection instance that still exists, and had been returned by the same pooled connection instance.

Connection Cache

A Connection Cache is built on top of Connection Pooling and is one more level of abstraction. Connection Pooling as such is not always useful and powerful. It provides the foundation and infrastructure needed to implement an effective Connection Cache. Unless the application is simple, it would need a Cache in most cases.

JDBC 2.0 does not mandate a Connection Cache to be implemented by the JDBC 2.0 vendor. But Oracle has implemented a connection cache by providing a class oracle.jdbc.pool.OracleConnectionCacheImpl. The application requests a connection through the getConnection() method of the connection cache instance.

The OracleConnectionCacheImpl class includes a maximum cache size that can be set using the setMaxLimit. The default value is 1.

The OracleConnectionCacheImpl class supports two schemes, known as cache schemes, for situations where the application has requested a connection, all existing pooled connections are in use, and the maximum number of pooled connections in the cache has been reached.

dynamic

In the dynamic scheme, which is the default, new pooled connections can be created above and beyond the maximum limit, but each one is automatically closed and freed as soon the logical connection instance that it provided is no longer in use.

fixed with no wait

In the 'fixed with no wait' scheme, the maximum limit cannot be exceeded. Requests for connections when the maximum has already been reached return null.

Set the cache scheme by invoking the setCacheScheme() method of the OracleConnectionCacheImpl instance. Use one of the following class static constants as input:

DYNAMIC_SCHEME

FIXED_RETURN_NULL_SCHEME

For Connection Pooling and Connection Caching, classes12.zip and jndi.zip must be included in the classpath. Package oracle.jdbc.pool must be imported which includes all the classes of for Connection Pooling and Connection Caching.

Program Notes

In the example below, a servlet creates a Cache of pooled connections using the cache scheme FIXED_RETURN_NULL_SCHEME. The maximum number of connections is three. More than three connections at a time are not possible. Once the connection is closed, it is returned back to the cache and can be reused.

SAMPLE CODE

```
import java.io.*;
import java.sql.*;
import javax.servlet.*;
import javax.servlet.http.*;
import javax.sql.*;
import oracle.jdbc.driver.*;
import oracle.jdbc.pool.*;

public class Pooljdbc2 extends HttpServlet{
```

```
private OracleConnectionPoolDataSource ocpds;
private OracleConnectionCacheImpl ods;

public void init(ServletConfig config) throws ServletException {
      super.init(config);
     try {
        ocpds =new OracleConnectionPoolDataSource();
         ocpds.setURL("jdbc:oracle:thin:@bldel52:1522:v816");

        // ocpds.setUser("scott");
        // ocpds.setPassword("tiger");

       // Associate it with the Cache
       ods = new OracleConnectionCacheImpl(ocpds);

       // Set the Max Limit
        ods.setMaxLimit (3);

       // Set the Scheme
        ods.setCacheScheme (OracleConnectionCacheImpl.FIXED_RETURN_NULL_SCHEME);
      }
    catch (Exception e) {
      throw new UnavailableException(this, "Couldn't create connection pool");
      }
 }

public void doGet(HttpServletRequest req, HttpServletResponse res)
                                    throws ServletException, IOException {
    Connection con = null;
     res.setContentType("text/plain");
    PrintWriter out = res.getWriter();
     out.println("Updating salary");

     try {
         con = ods.getConnection("scott","tiger");

        // Turn on transactions
          con.setAutoCommit(false);

         Statement stmt = con.createStatement();
       stmt.executeUpdate("UPDATE EMPBIG SET SAL = (SAL - 10) ");
       stmt.executeUpdate("UPDATE EMPBIG SET SAL = (SAL + 10) ");
          con.commit();
         out.println("Salary updated");
          con.close();
      }
    catch (Exception e) {

       // Any error is grounds for rollback
          try
               con.rollback();
          }
        catch (Exception ignored) { }
       out.println("No more connections available, try later");
     }
 }

public void destroy() {

      try
          ods.close();
```

```
        }
      catch (Exception ignored) { }
    }
}
```

Explanation

If the classpath is too big may cause the problem i.e the JVM may not get invoked.

Creating a global database connection pool in servlets

PURPOSE

This article explains how to create a global connection pool which will be accessed by all other servlets.

One of the most expensive database operations is establishing a connection to the database. If the database and servlet engine are located at two geographical locations the connection might take much longer.

It is benefical to allocate certain pre-connected sessions to the database and use them when it is required.

The 8.1.6 JDBC drivers supports a connection pooling.

This article uses the connection pooling using Oracle 8.1.6 JDBC drivers.

The connection pooling can be divided in three different types in a servlet.

1. Establishing a connection in the init section.

The problem with this method , is that if you have say 200 servlets which uses the database then there will be 200 connections to be opened on the DB server.

A common mistake is to create a single connection in the initialization section (run only once) of a servlet to be reused for each invocation of the servlet, avoiding the startup timing requirement.

While there is nothing to prevent this from being implemented and it usually functions for a

single user, it will wreak havoc once placed under a load where concurrent "hits" cause two or more threads to run at the same time.

2. Establishing a connection in the doGet method or doPost menthod and disconnecting at the end of the methods.

This takes lot of time. Every time the servlet is invoked it has to make a connection and disconnect at the end.

3. Using a global database connection pooling.

For example, if you had 200 servlets and a 50 user license for your database, you might want to set up a global shared pool with a max pool size of 50 and a min pool size of 20.

Intially there will be 20 connection to the database. Once the load is incresed to say > 20 then additonal connections will be made to the database up to 50.

The fist servlet is a dummy servlet which makes some intial connection to the database.

The first servlet need to be loaded by the servlet engine during the startup of the servlet engine.

The other servlets will make use of the the connections created by this servlet.

The StressTest.java is a simple java application which simulates the simultaneous load on the servlet engine.

StressTest.java

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
import java.util.*;
import java.sql.*;
import oracle.jdbc.driver.*;
import oracle.jdbc.pool.*;

public class InitConnection extends HttpServlet {

        public static final String TITLE = "Yes, It's working!";
          public   Connection conn = null;
          public OracleConnectionCacheImpl ods =null;

         public void init (ServletConfig config) throws ServletException
           {
                    super.init(config);
                   try {
                                ods        = new OracleConnectionCacheImpl();
                                 ods.setURL("jdbc:oracle:thin:@varuna:1521:V816");
                                 ods.setUser("scott");
                                 ods.setPassword("tiger");
                                 System.out.println("Ravi");
                  // Set the Max Limit
                                 ods.setMinLimit(2);
                                ods.setMaxLimit (5);
```

```
                    Connection conn = null;
                  }
                catch (Exception e) {
                  e.printStackTrace();}
          }

        public void service (HttpServletRequest request, HttpServletResponse response)
          throws ServletException, IOException
          {
                    response.setContentType("text/html");
                  PrintWriter out = response.getWriter();
                  String server = getServletConfig().getServletContext().getServerInfo();
                  // write the data
                  String value = null;
                   value = request.getHeader("User-Agent");
                  int i = value.indexOf("MSIE");
                 if (i == -1 )       out.println("<P> The browser is  Netscape");
                    else
                     out.println("<P> The browser is  MS IE");
                    }
}
```

TestConnection.java

```
import java.io.*;
import java.util.*;
import javax.servlet.*;
import javax.servlet.http.*;
import java.sql.*;
import oracle.jdbc.driver.*;
import oracle.jdbc.pool.*;

public class TestConnection extends HttpServlet {

        public void doGet(HttpServletRequest req, HttpServletResponse res)
         throws ServletException, IOException {
                    res.setContentType("text/html");
                  PrintWriter out = res.getWriter();

                  ServletContext context = getServletContext();
                  Servlet name = context.getServlet("InitConnection");
                   InitConnection t1 = (InitConnection) name;

          try {
                              Connection conn = t1.ods.getConnection();
                             Statement stmt = conn.createStatement ();
                           ResultSet rset = stmt.executeQuery ("select sid , serial#, username ,
program from v$session where audsid = userenv('SESSIONID') ");
                            Thread.sleep(10000); // Wait for some time for holding the connection
                               while (rset.next ()) {
                                       out.println ("<BR>" +rset.getString (1) +"...." +rset.getString
(2)+"...." +rset.getString (3)+"...." +rset.getString (4));
                                  }
                                  rset.close();
                                  stmt.close();
                                  conn.close();
                  } catch (Exception e) {e.printStackTrace();
                    }
          }
```

}

How to use JDeveloper's Connection Manager in servlets

The purpose of this article is to show how to use Oracle Connection Manager on the middle-tier such as Oracle9i Application Server by providing an example of a Java servlet that uses JDBC connection requested from Connection Manager to query records from the database and outputs the most often used Connection Manager properties.

SCOPE & APPLICATION

This bulletin is useful for Java Developers who would like to leverage Oracle Connection Manager in servlets. It also provides necessary steps to deploy the example servlet and Connection Manager to Oracle9i Application Server.

WHAT IS CONNECTION MANAGER

Oracle Connection Manager bundled with Oracle JDeveloper and Oracle9i Application Server is responsible for creating and managing JDBC-based connections. It allows connection objects to be shared without requiring individual objects to explicitly know about each other. Individual objects are able to request connections by name from Connection Manager, where possible, Connection Manager will reuse existing connection objects that have already been created earlier.

Connection Manager also allows users to request a "private", non-shared connection. This allows users with special needs access to their own connection object, without worrying about resource contention with other unknown objects.

The classes and interfaces of Oracle Connection Manager are packaged into a single package namely oracle.jdeveloper.cm.

Major classes and their functionalities:

- ConnectionManager: responsible for creating and managing JDBC-based connections.

- ConnectionWrapper: generic object which is returned by ConnectionMananger.

- ConnectionDescriptor: used to describe connections.

PROMPTING BEHAVIOR:

By default, Connection Manager will always prompt for username and password. However, this behaviour may not always be appropriate as in the case of servlets. The getConnection() methods allow for customization of prompting behaviour to prompt for information at all. The ConnectInfoPrompter describes how Connection Manager expects to be able to prompt users for security information.

To alter Connection Manager's prompting behaviour not to prompt for information at all, use the following statement:

cw = cm.getConnection("Connection1",(ConnectInfoPrompter) null);

HOW TO INITIALIZE CONNECTION MANAGER:

The init() method of a servlet is called when a servlet is initialized and placed into service. The servlet engine calls this method exactly once for each servlet. This is an ideal place to get a reference to a ConnectionManager instance.

```
public void init(ServletConfig config) throws ServletException
 {
    super.init(config);
   cm = ConnectionManager.getInstance();
 }
```

HOW TO DEPLOY CONNECTION MANAGER UNDER iAS

The 'connectionmanager.zip' contains all of the classes and interfaces required by Oracle Connection Manager. It is to be found in the $IAS_HOME/Apache/BC4J/lib directory. The 'connectionmanager.zip' must be available on the CLASSPATH. The 'jserv.properties' file contains the following CLASSPATH related entry for Connection Manager by default:

wrapper.classpath=/disk1/app/oracle/product/9iAS/Apache/BC4J/lib/connectionmanager.zip

The connection information is stored in a properties file namely 'connections.properties' by default. The JDeveloper IDE automatically creates this file as part of the deployment process. Upon request, Connection Manager reads the information from the properties file in order to instantiate a connection. The physical location of the properties file must be added to the CLASSPATH of Apache/JServ. To do this open the 'jserv.properties' file in the $IAS_HOME/Apache/Jserv/etc directory for editing and add a new 'wrapper.classpath' entry to point to the 'connections.properties' file where it is physically located. For example:

wrapper.classpath=/disk1/app/web/servlet

Warning: Be sure that another jar file that contains the 'connections.properties' is not before this classpath specification!

The 'connections.properties' file managed by JDeveloper might look like as follows:

```
CM_NumConnections=1
CM_Connection1=password\=manager\r,defaultBatchValue\=1\r,ConnectionType\=JDBC\r,
ConnectionName\=O8i_JDBC_THIN_T817_SCOTT\r,user\=scott\r,DeployPassword\=true\r,
URL\=jdbc\\\:oracle\\\:thin\\\:@www.company.com\\\:1521\\\:ORCL\r,
remarksReporting\=false\r,JdbcDriver\=oracle.jdbc.driver.OracleDriver\r,
defaultRowPrefetch\=10\r,Role\=Normal
```

TOOLS REQUIRED

To develop servlets for any servlet engine, you will need a compiler, a debugger, and other tools needed for servlet development. Oracle's JDeveloper and Sun's JDK and JSDK are tools that can be used when developing servlets. This program was created with Oracle JDeveloper 3.2 using JDK 1.2.2 and tested with Oracle HTTP Server (Apache/Jserv) servlet engine which is part of Oracle9i Application Server.

EXAMPLE

This example servlet shows how to use Oracle Connection Manager in servlets and displays the most often used Connection Manager parameters.

```
import javax.servlet.*;
import javax.servlet.http.*;

import java.io.*;
import java.util.*;
import java.sql.*;
import oracle.jdbc.driver.*;

import oracle.jdeveloper.cm.*;
import oracle.jdeveloper.cm.ConnectionManager;
import oracle.jdeveloper.cm.ConnectionDescriptor;
import oracle.jdeveloper.cm.ConnectInformationDialog;

public class ConnectionManagerServlet extends HttpServlet
{

  private Connection conn;
  private ConnectionManager cm;
  private ConnectionWrapper cw;
  private ConnectionDescriptor cd;

  private Statement stmt;
  private ResultSet rset;

 public void init(ServletConfig config) throws ServletException
  {
     super.init(config);
    cm = ConnectionManager.getInstance();
  }

  public void destroy()
  {
     super.destroy();
   cd = null; cw = null; cm = null;
  }

 public void doGet(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException
  {
     response.setContentType("text/html");
    OutputStreamWriter osw = new OutputStreamWriter(response.getOutputStream());
    PrintWriter out = new PrintWriter (response.getOutputStream());
     out.println("<html>");
```

```
        out.println("<head><title>ConnectionManagerServlet</title></head>");

        try
        {
        // Replace ConnectionName with value from connections.properties file
         cw = cm.getConnection("ConnectionName",(ConnectInfoPrompter) null);
         conn = (Connection) cw;
          cd = cw.getDescriptor();

          out.println("<PRE><STRONG>Connection Manager parameters</STRONG>");
           out.println();
          out.println("Connection name: "+cd.getConnectionName());
          out.println("Connection type: "+cd.getConnectionType());
          out.println("JDBC Driver....: "+cd.getJdbcDriver());
          out.println("Deployed URL...: "+cd.getURL());
           out.println("Username.......: "+cd.getUsername());
           out.println("Password.......: "+cd.getPassword());
            out.println();

          stmt = conn.createStatement();
         rset = stmt.executeQuery("SELECT ENAME, SAL FROM EMP");

           while(rset.next())
         {  out.print(rset.getString(1)+" - ");
              out.print(rset.getDouble(2));
             out.println();  }

      } catch (CMException e) { e.printStackTrace(); }
        catch (SQLException e) { e.printStackTrace(); }
          finally
        {  if(rset != null)
           {  try {  rset.close(); }
              catch (SQLException e) {  e.printStackTrace();  }
              }
            if(stmt != null)
           {  try {  stmt.close(); }
              catch (SQLException e) {  e.printStackTrace();  }
              }
            if(conn != null)
           {  try {  conn.close(); }
              catch (SQLException e) {  e.printStackTrace();  }
              }
          }

        out.println("</body></html>");
        out.close();
    }

   public void doPost(HttpServletRequest request, HttpServletResponse response) throws
ServletException, IOException
    {
       doGet(request,response);
    }

   public String getServletInfo()
    {
      return "ConnectionManagerServlet Information";
    }
}
```

6.9.9 SQLJ

SQLJ를 사용하려면 다음과 같은 class library가 필요하다.

SQLJ Translator (translator.zip)

SQLJ Runtime library (runtime.zip)

Oracle JDBC 2.0 compliant driver

6.9.10 Oracle JVM

6.9.11 Oracle Java Server Pages (OJSP)

자주 변경되는 Beans와 연동되는 OJSP 를 위한 환경설정법

일반 JSP 만을 처리할 때와는 달리 JSP 안에서 beans 를 사용할 때에는 iAS 를 기동한 상태에서는 beans 화일들을 변경해도 JSP에 변경된 내용이 Browser를 Reload하더라도 적용되지 않는다. 변경된 내용을 곧바로 사용자가 볼 수 있도록 하는 방법으로 "WEB-INF" Directory의 설정이다. OJSP Developer's guide에 보면 application'root directory라고 명시되어 있다.

JSP가 있는 해당 directory에 global.jsa 가 있을 때

Application 명시된 Web Server 의 directory (예 Apache의 Alias 등으로 mapping된 directory.)

Web Server 의 Document Root directory

이렇게 명시된 WEB-INF directory아래의

/WEB-INF/classes/*.class , /WEB-INF/lib/*.jar or *.zip (압축되지 않은..) 에 대해서 변경사항을 반영한다.

예)

httpds.conf 에 추가
Alias /jsptest/ "/disk7/share/ias10/Apache/Jserv/myzone/jsp/"

"/disk7/share/ias10/Apache/Apache/Jserv/myzone/jsp/WEB-INF" directory 생성
"/disk7/share/ias10/Apache/Apache/Jserv/myzone/jsp/WEB-INF/classes" 생성
"/disk7/share/ias10/Apache/Apache/Jserv/myzone/jsp/WEB-INF/lib" 생성
classes 밑에 sample bean (myBean.java)생성

myBean.java

```
public class myBean {
    private String name = "World";
    public void setName(String name) {
       this.name = name;
     }
    public String getName() {
       return name;
     }
}
```

%javac myBean.java

hello.jsp

```
<%@ page contentType="text/html;charset=EUC-KR" %>
<jsp:useBean id="hello" class="myBean" scope="page" />
<html>
<head><title>Ojsp -  Bean TEST </title></head>
<body><h1>JSP-Bean 테스트</h1><br>
<%  out.println("Hello " + hello.getName());  %>
</body>
</html>
```

Test : http://krdaejeon1.kr.oracle.com/jsptest/hello.jsp

myBean.java 변경후 Compile

Test : Browser Reload

OJSP의 Application Marker & Event Handler

OJSP configuration 방법 소개시 일부 설명을 하였지만 OJSP에서는 이것을 통해 JSP에서의 DB Connection Pool 기능을 구현할 수 있다.

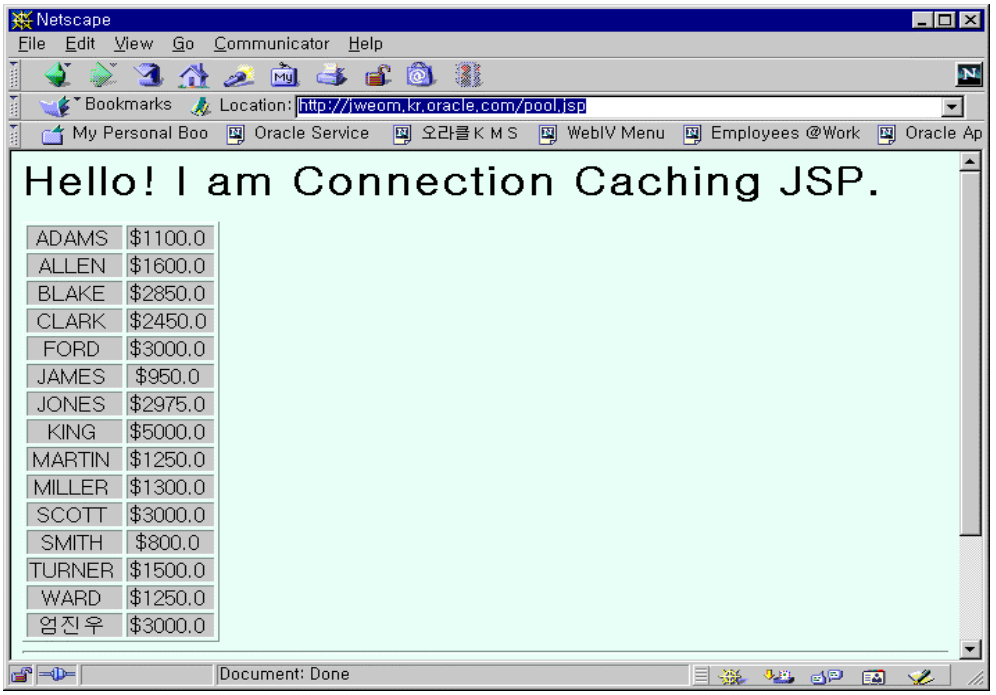
http://jweom.kr.oracle.com/jspsamples/ojspext/events/synopsis.htm 설명을 참조

global.jsa

```
<jsp:useBean id="cods" class="oracle.jdbc.pool.OracleConnectionCacheImpl"
scope="application" />
<event:application_OnStart>
<%
    cods.setURL("jdbc:oracle:thin:@krdaejeon1.kr.oracle.com:1555:ORA8IR2");
    cods.setUser("scott");
    cods.setPassword("tiger");
    cods.setMaxLimit(10);
%>
</event:application_OnStart>
```

Connection Pool sample

```
<%@ page import="java.sql.*, javax.sql.*, oracle.jdbc.pool.*" %>
<%@page contentType="text/html;charset=EUC-KR"%>
<BODY BGCOLOR=EOFFFO>
 <H1> Hello!  I am Connection Caching JSP. </H1>
<%
     try {
       Connection conn = cods.getConnection();

       Statement stmt = conn.createStatement ();
      ResultSet rset = stmt.executeQuery ("SELECT ename, sal " +
                                                "FROM scott.emp ORDER BY ename");
%>
          <TABLE BORDER=1 BGCOLOR="C0C0C0">

<%         while (rset.next()) {
%>
        <TR> <TD ALIGN=CENTER> <%= rset.getString(1) %> </TD>
              <TD ALIGN=CENTER> $<%= rset.getDouble(2) %> </TD>
            </TR>
<% }
%>
        </TABLE>
<%
        rset.close();
        stmt.close();
        conn.close();

    } catch (SQLException e) {
       out.println ("<PRE>" + e + "</PRE> \n <P>");
    }
%>
<hr><p>
<h3> 1. jserv.properties에 wrapper.classpath=d:\ias10\Apache\jdk\lib\jndi.jar 등록 </br>
2. 꼭 global.jsa 와 같은 directory에 저장 </br>
3. Apache jserv가 종료될때 반환 </h3>
</BODY>
```



6.9.12 Oracle Servlet Engine (OSE)

12장을 참조하세요.

6.9.13 Business Components For Java (BC4J)

6.10 Oracle 9iAS PLSQL

Oracle PL/SQL

6.10.2 File Upload /Download

OAS 4.0.X 에서부터 지원된 File Upload/download기능은 안정성과 File upload size문제가 있었으나 iAS에서는 많이 좋아 진 것 같다. 기존 OAS 4.0.x 사용자들이 iAS로 Upgrade할 때 OWA_CONTENT Table에 대한 Migration Utility 인 oas2ias 를 사용하면 된다.

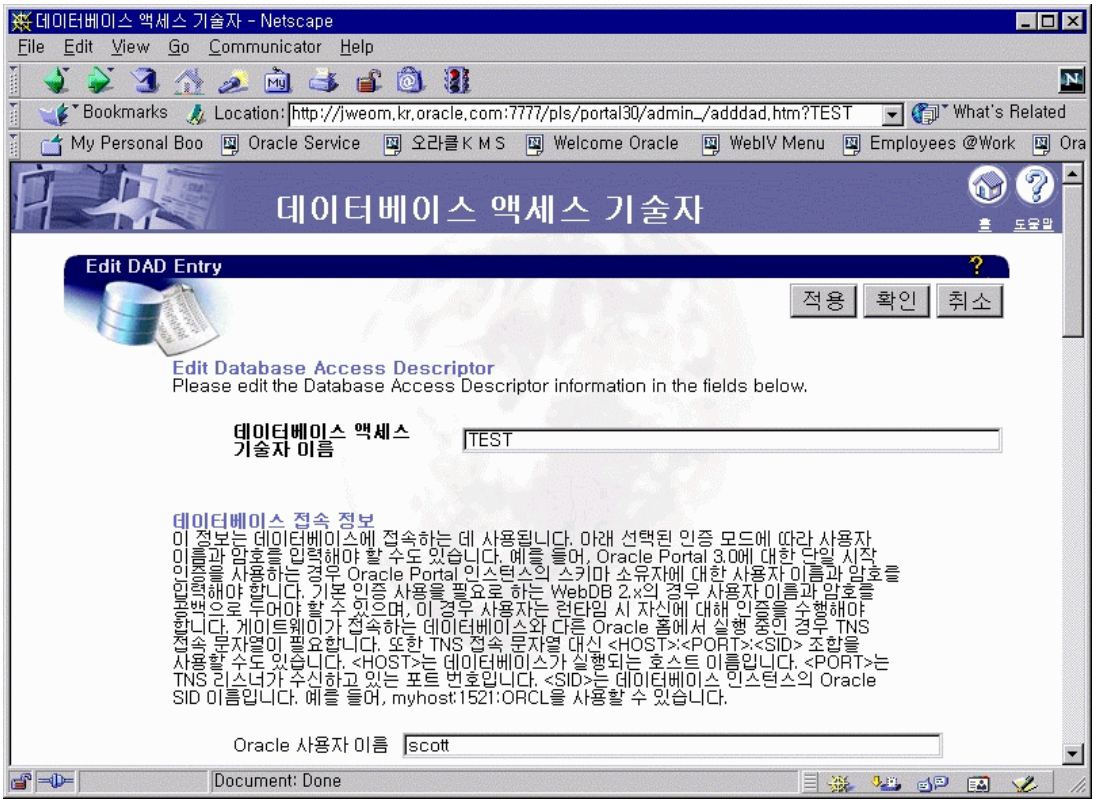
여기서는 간단한 upload table을 생성하고 upload/download package를 작성하여 실행해 보겠다.

DAD 등록화면에서 document관련 정보 수정

http://<hostname>:<port>/pls/admin_/gateway.htm

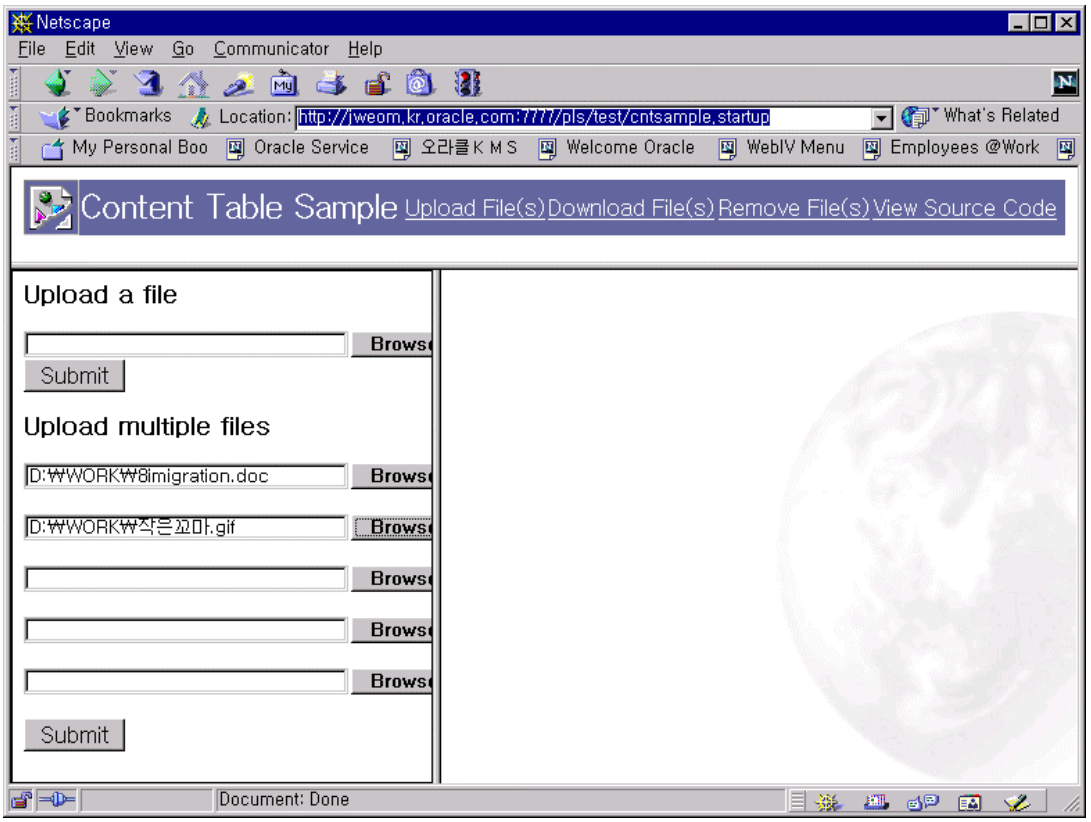
DAD관리 화면에서 Document Access information 부분을 살펴보면,

```
Parameter                          Value
---------------------------------  ------------------
Database Access Descriptor Name     <DAD> <- 사용자 임의 지정
Oracle User Name                    scott
Oracle Password                     tiger
Oracle Connect String               <TNS ALIAS> <- tnsnames.ora
Authentication Mode                Basic
Default (Home) Page                cntsample.startup
Document Table                     tab_upload
Document Access path               docs
Document Access Procedure           cntsample.process_download
Extensions to be uploaded as LONG RAW  null (8.1미만의 경우 * )
```

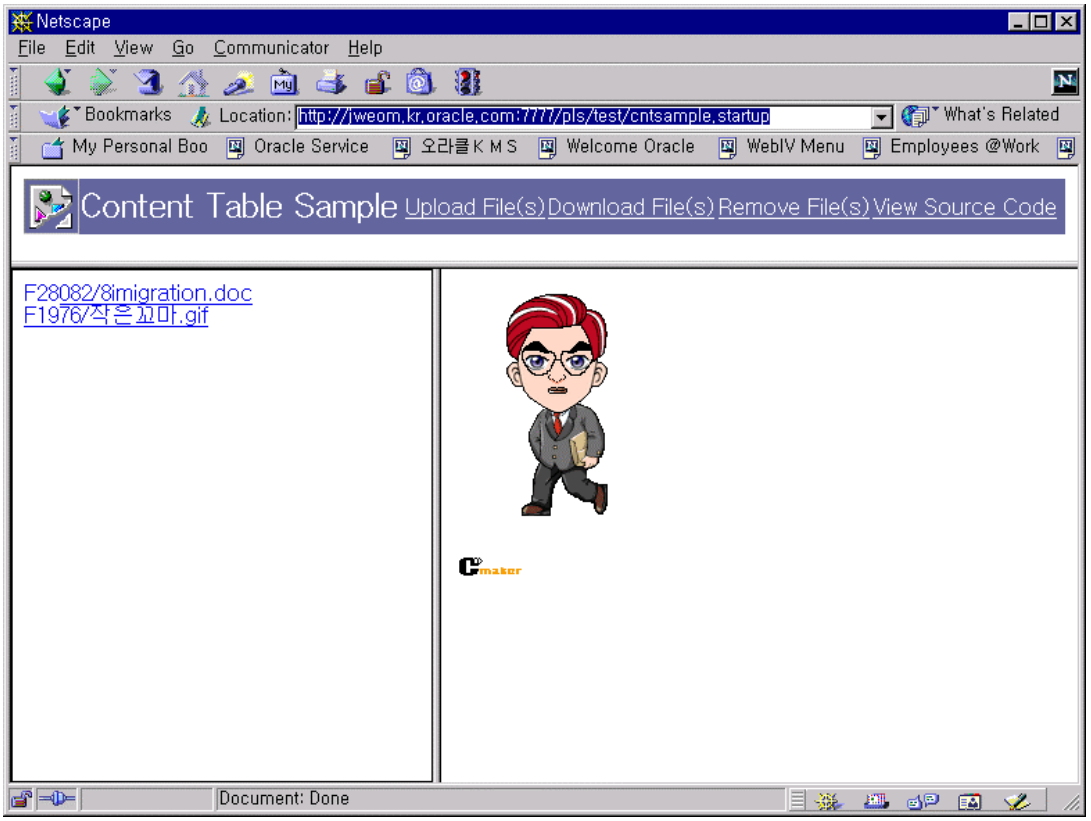


File upload /download 테스트

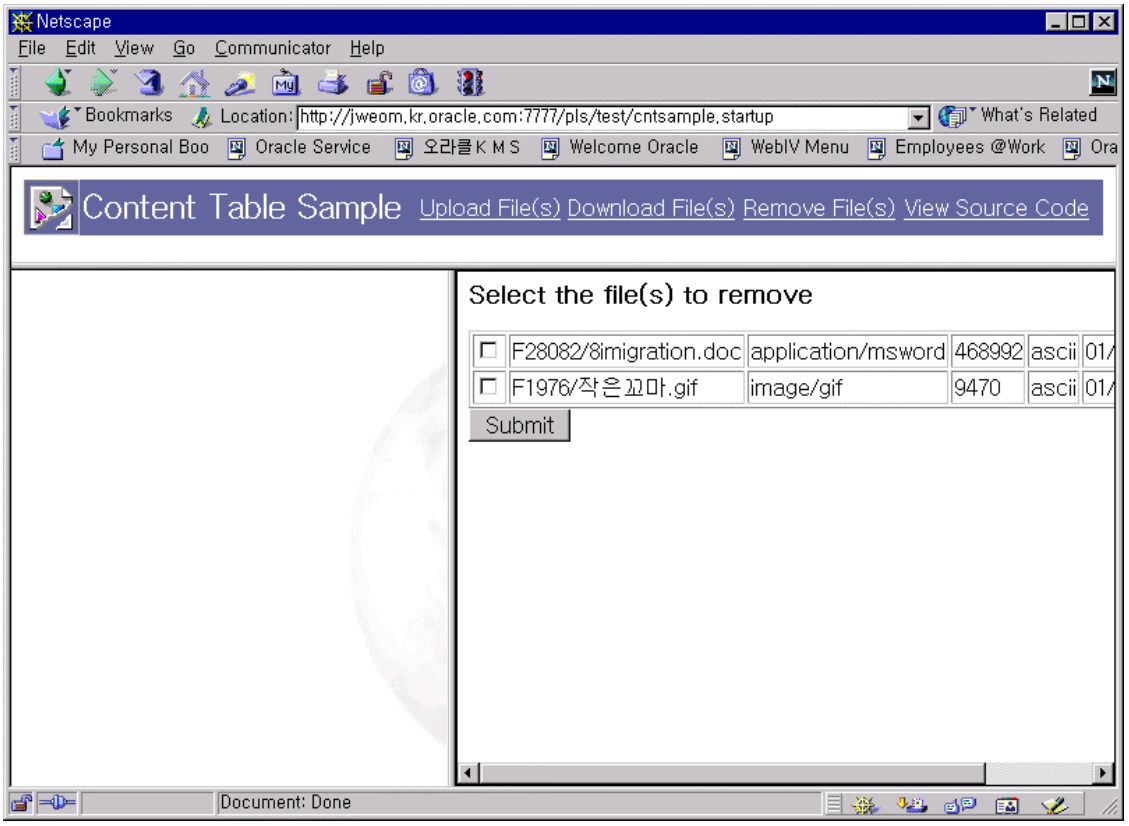
File upload



File download



file remove



File upload / download sample procedure

```
create table tab_upload
    name varchar2(256) not null,
    mime_type varchar2(128) null,
    doc_size number null,
    dad_charset varchar2(128) null,
    last_updated date null,
    content_type varchar2(128) null,
    content long raw null,
    blob_content blob null
);
```

```
CREATE OR REPLACE PACKAGE cntsample AS
   PROCEDURE startup;
 PROCEDURE menu;
 PROCEDURE dummy;
 PROCEDURE upload_form;
 PROCEDURE upload(name IN owa.vc_arr);
 PROCEDURE download_form;
 PROCEDURE download(p_file IN VARCHAR2);
 PROCEDURE process_download;
 PROCEDURE remove_form;
 PROCEDURE remove(p_file IN owa.vc_arr);
END;

/
```

```
CREATE OR REPLACE PACKAGE BODY cntsample  AS

PROCEDURE startup IS
BEGIN
 -- This procedure only creates a simple frameset.
  htp.htmlOpen;
 htp.framesetOpen(crows => '72,*');
    htp.frame(csrc => 'cntsample.menu', cname => 'frame1', cscrolling => 'NO');
     htp.framesetOpen(ccols => '40%,*');
       htp.frame(csrc => 'cntsample.dummy', cname => 'frame2', cscrolling => 'NO');
       htp.frame(csrc => 'cntsample.dummy', cname => 'frame3', cscrolling => 'AUTO');
      htp.framesetClose;
  htp.framesetClose;
  htp.htmlClose;
EXCEPTION
   WHEN OTHERS THEN
      htp.p(sqlerrm);
    RETURN;
END;

PROCEDURE menu IS
BEGIN
 -- This procedure creates a simple menu from which the end user can make his choice.
  htp.htmlOpen;
 htp.bodyOpen(cattributes => 'TEXT="#FFFFFF" LINK="#FFFFFF" ALINK="#FFFFFF" VLINK="#FFFFFF"');
 htp.tableOpen(cattributes => 'BORDER="0" CELLSPACING="0" CELLPADDING="0" WIDTH="100%"
BGCOLOR="#666699"');
  htp.tableRowOpen;
 htp.tableData(htf.img(curl => '/joo_img/go.gif'));
 htp.tableData(htf.fontOpen('#FFFFFF', 'arial,helvetica','+2')||'Content Table Sample'||htf.fontClose);
 htp.tableData(htf.anchor2(curl => 'cntsample.upload_form', ctext => 'Upload File(s)', ctarget => 'frame2'));
 htp.tableData(htf.anchor2(curl => 'cntsample.download_form', ctext => 'Download File(s)', ctarget => 'frame2'));
 htp.tableData(htf.anchor2(curl => 'cntsample.remove_form', ctext => 'Remove File(s)', ctarget => 'frame3'));
 htp.tableData(htf.anchor2(curl => 'owa_util.showsource?cname='||owa_util.get_procedure, ctext => 'View Source Code',
ctarget => 'frame3'));
  htp.tableRowClose;
  htp.tableClose;
  htp.bodyClose;
  htp.htmlClose;
EXCEPTION
   WHEN OTHERS THEN
      htp.p(sqlerrm);
    RETURN;
END;

PROCEDURE dummy IS
BEGIN
 -- This procedure shows an empty page with a background image. It is used in the frameset startup.
  htp.htmlOpen;
 htp.bodyOpen(cbackground => '/images/bg-earth.jpg');
  htp.bodyClose;
  htp.htmlClose;
EXCEPTION
   WHEN OTHERS THEN
      htp.p(sqlerrm);
    RETURN;
END;
```

```
PROCEDURE upload_form IS
 BEGIN
  htp.header(3,'Upload a file');
 -- This procedure creates a simple HTML form that lets the end user upload his file(s).
 htp.formOpen(curl => 'cntsample.upload', cmethod => 'POST', cenctype => 'multipart/form-data');
 htp.p('<INPUT TYPE="FILE" NAME="name">');
  htp.formSubmit;
  htp.formClose;
  htp.para;
 htp.header(3,'Upload multiple files');
 htp.formOpen(curl => 'cntsample.upload', cmethod => 'POST', cenctype => 'multipart/form-data');
 htp.p('<INPUT TYPE="FILE" NAME="name">');
  htp.br;
 htp.p('<INPUT TYPE="FILE" NAME="name">');
  htp.br;
 htp.p('<INPUT TYPE="FILE" NAME="name">');
  htp.br;
 htp.p('<INPUT TYPE="FILE" NAME="name">');
  htp.br;
 htp.p('<INPUT TYPE="FILE" NAME="name">');
  htp.br;
  htp.formSubmit;
  htp.formClose;
 EXCEPTION
  WHEN OTHERS THEN
    htp.p(sqlerrm);
  RETURN;
 END;

 PROCEDURE upload(name IN owa.vc_arr) IS
 /* This procedure can upload both one single file as well as multiple files.
    The actual upload is done by the listener. You simply initialize the process
    by providing the file to be uploaded. */
 i BINARY_INTEGER := 0;
 BEGIN
  LOOP
  i := i + 1;
  IF name(i) IS NOT NULL THEN

     htp.p(name(i)||' uploaded');
      htp.br;
    ELSE
      NULL;
   END IF;
  END LOOP;

 EXCEPTION
  WHEN NO_DATA_FOUND THEN
    NULL;
  WHEN OTHERS THEN
    htp.p(sqlerrm);
  RETURN;
 END;
```

```
PROCEDURE download_form IS
 -- This procedure shows you which files can be downloaded, and allows you to do so.
 CURSOR c1 IS
  SELECT name,mime_type,doc_size,last_updated from tab_upload order by last_updated desc;
 doc_path VARCHAR2(255) DEFAULT owa_util.get_cgi_env('DOC_ACCESS_PATH');
 BEGIN
   htp.htmlOpen;
   htp.bodyOpen;


  FOR l1 IN c1 LOOP
   htp.anchor2(curl => doc_path || '/' || l1.name, ctext => l1.name, ctarget => 'frame3');
     htp.br;
  END LOOP;

   htp.bodyClose;
   htp.htmlClose;
 EXCEPTION
  WHEN OTHERS THEN
     htp.p(sqlerrm);
   RETURN;
 END;


 PROCEDURE process_download IS
    script_name VARCHAR2(255) DEFAULT owa_util.get_cgi_env('SCRIPT_NAME');
    path_info    VARCHAR2(255) DEFAULT owa_util.get_cgi_env('PATH_INFO');
     pos              NUMBER;
     v_filename    VARCHAR2(255);
 BEGIN
    script_name := script_name || path_info;
    pos := INSTR(script_name, 'docs');
    script_name :=   SUBSTR(script_name, pos+5, length(script_name)-pos-4);
    v_filename := script_name;

   SELECT name INTO v_filename FROM tab_upload
       WHERE UPPER(name) = UPPER(v_filename);

     wpg_docload.download_file(v_filename);
 EXCEPTION
   WHEN OTHERS THEN
       v_filename := null;
 END process_download;


 PROCEDURE download(p_file IN VARCHAR2) IS
  BEGIN
 /*
 The actual download is handled by the PL/SQL gateway based on the settings
 in your DAD. The code below simply initialize the process by specifying which file to get.
  */
  htp.p('File Name (Oracle Korea) : ' || p_file );
   wpg_docload.download_file(p_file);

  EXCEPTION
   WHEN OTHERS THEN
   htp.p('File Name (Oracle Korea) : ' || p_file );
     htp.p(sqlerrm);
   RETURN;
 END;
```

```
PROCEDURE remove_form IS
-- This procedure creates an HTML form that lets the end user delete unwanted files.
CURSOR c1 IS
 SELECT name, mime_type, doc_size, dad_charset, last_updated, content_type FROM tab_upload;
BEGIN
 htp.header(3,'Select the file(s) to remove');
 htp.formOpen(curl => 'cntsample.remove', cmethod => 'POST');
 htp.tableOpen(cborder => 'BORDER=1');
 FOR l1 IN c1 LOOP
    htp.tableRowOpen;
   htp.tableData(htf.formCheckbox(cname => 'p_file', cvalue =>l1.name));
    htp.tableData(l1.name);
    htp.tableData(l1.mime_type);
    htp.tableData(l1.doc_size);
    htp.tableData(l1.dad_charset);
    htp.tableData(l1.last_updated);
    htp.tableData(l1.content_type);
    htp.tableRowClose;
 END LOOP;
 htp.tableClose;
 htp.formSubmit;
 htp.formClose;
EXCEPTION
   WHEN OTHERS THEN
      htp.p(sqlerrm);
    RETURN;
END;
PROCEDURE remove(p_file IN owa.vc_arr) IS
-- The procedure removes the file(s) that the end user has selected for deletion.
i BINARY_INTEGER := 0;
BEGIN
 LOOP
 i := i +1 ;
 htp.p(p_file(i)||' removed');
 htp.br;
 DELETE FROM tab_upload WHERE name = p_file(i);
 END LOOP;
EXCEPTION
   WHEN NO_DATA_FOUND THEN
      NULL;
   WHEN OTHERS THEN
      htp.p(sqlerrm);
    RETURN;
END;

END;

/

show errors;
```

6.10.3 Oracle PL/SQL Server Pages (PSP)

Oracle 8.1.6 부터 추가된 PSP기능을 이용하여 PSP Script file을 작성해보고 Oracle DB로 loading하여 Browser로 호출하는 과정을 살펴본다.

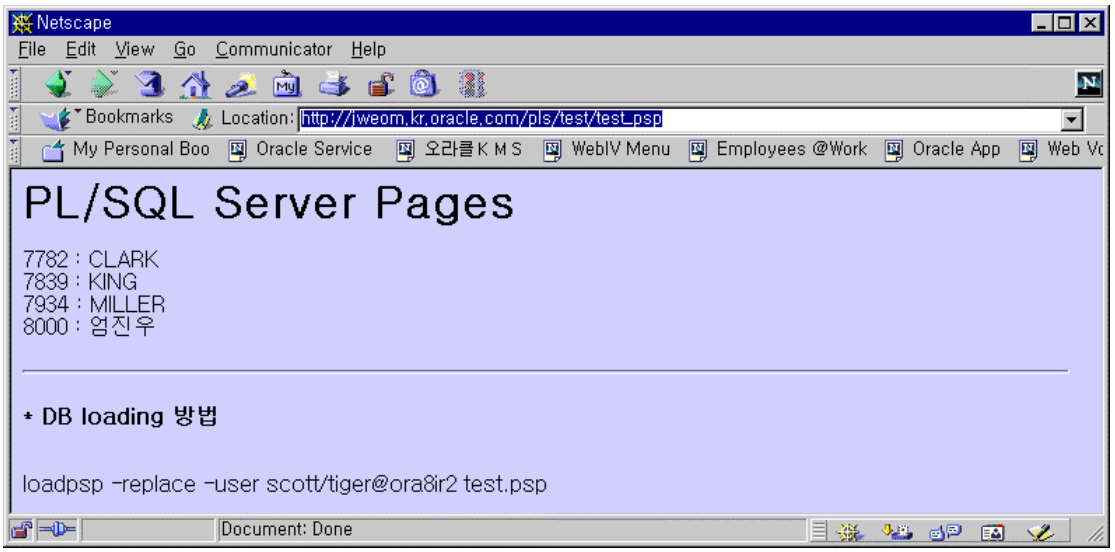
```
<%@ page language="PL/SQL" %>
<%@ plsql procedure="test_psp" %>
<%@ plsql parameter="p1" type="varchar2" default="10" %>
<%! v_color varchar2(10) := '#CCCCFF' ; %>
<body bgcolor="<%= v_color %>">
<h1> PL/SQL Server Pages </h1>
<% for x in ( select * from emp where deptno=p1 ) loop %>
<%= x.empno %> : <%= x.ename %> <br>
<% end loop; %>
<p><hr>
<h4>* DB loading 방법</h4><br>
loadpsp -replace -user scott/tiger@ora8ir2 test.psp
</body>
```

Oracle DB 로 loading

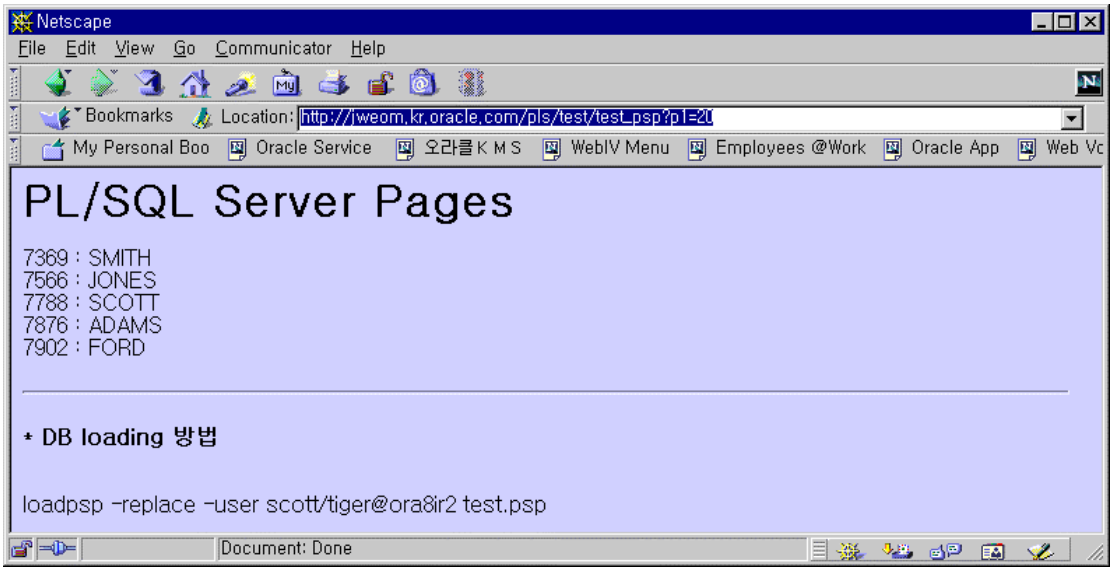
$ loadpsp –replace –user scott/tiger@ora8ir2 test.psp

Browser 로 호출

http://<ServerName>:<Port>/pls/test/test_psp



http://<ServerName>:<Port>/pls/test/test_psp?p1=20

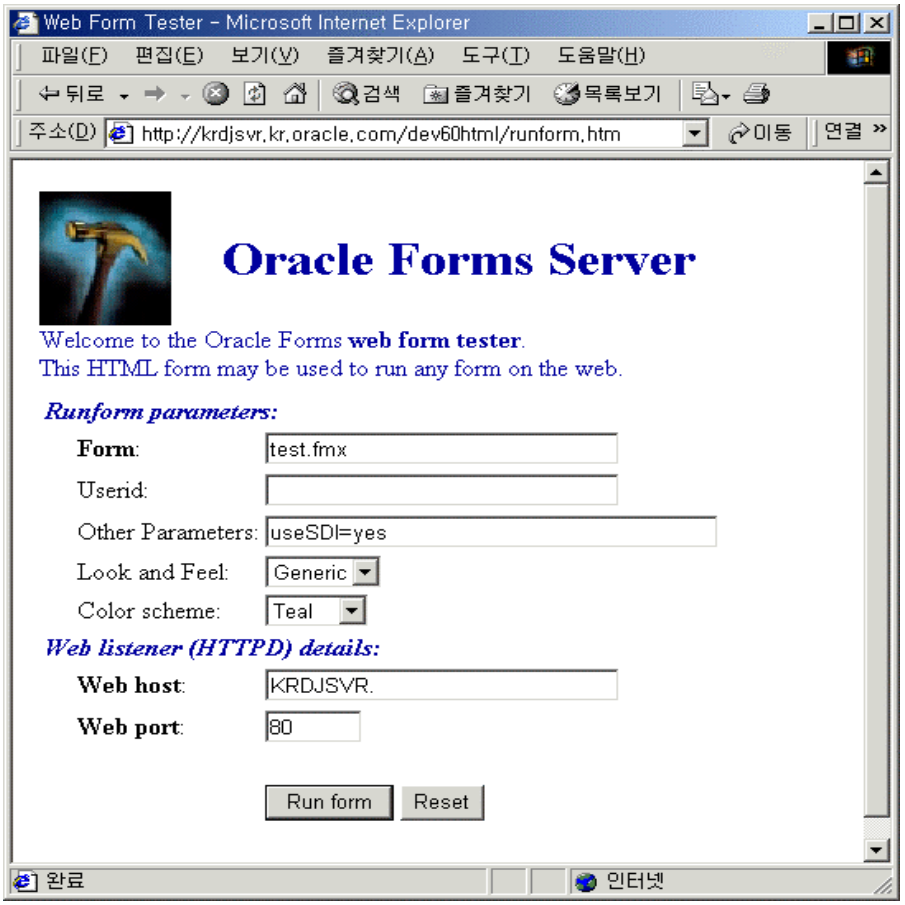

Netscape
File Edit View Go Communicator Help
Bookmarks Location: http://jweom.kr.oracle.com/pls/test/test_psp?p1=20
My Personal Boo Oracle Service 오라클 K M S WebIV Menu Employees @Work Oracle App Web Vc
PL/SQL Server Pages
7369 : SMITH
7566 : JONES
7788 : SCOTT
7876 : ADAMS
7902 : FORD
* DB loading 방법
loadpsp -replace -user scott/tiger@ora8ir2 test.psp
Document: Done

6.11 Oracle 9iAS Forms

6.11.1 Oracle Forms Server Test

http://<ias sever >:[port]/dev60html/runform.htm

1. iAS에 Forms 관련 설정이 제대로 되었다면 다음과 같은 화면이 나와야 한다.



만약 나오지 않는다면 <iAS Oracle Home>/Apache/Apache/conf/oracle_apache.conf 에 다음이 포함 되었는지 확인

Windows NT & 2000

```
include "C:\Oracle\806\conf\6iserver.conf"
```

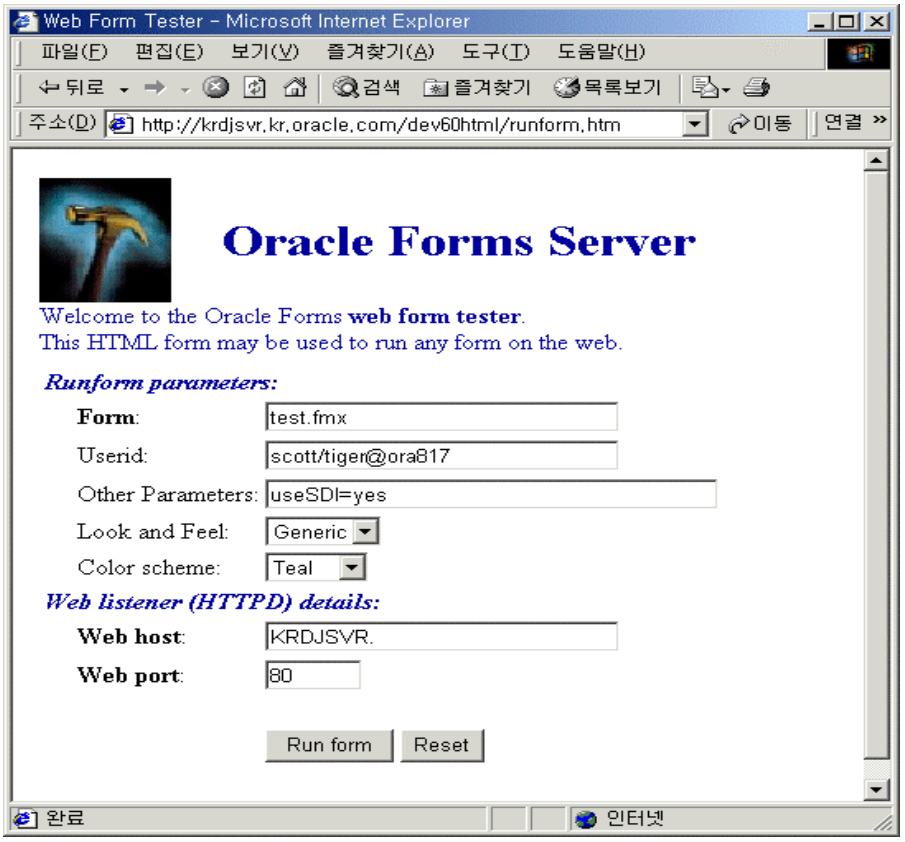
Unix

```
include "/disk1/iportal/6iserver/conf/6iserver.conf"
```

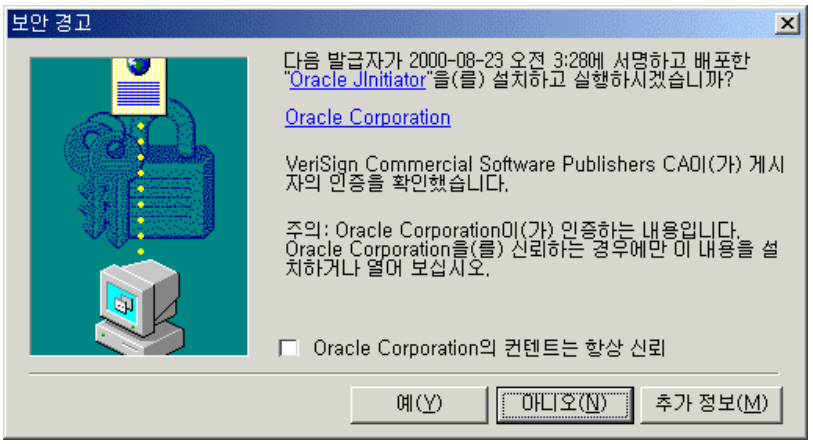
또, 상단의 화면을 보면 Web Listener (HTTPD) details 부분의 Web host : KRDJSVR. 처럼 Host Name 이 대문자로 나온 경우 Oracle iPortal 로 접속할 경우 WWC-41439 Error가 발생하니 미리 미리 iAS configuration file인 httpd.conf 의 ServerName 부분을 소문자로 바꾸어 주시기를….

Notes 130310.1

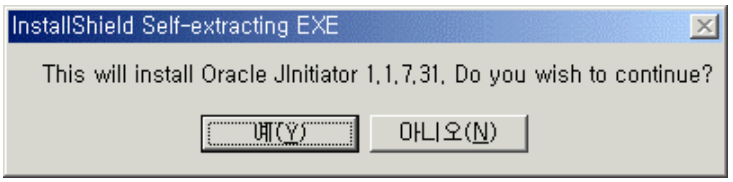
2. Form Server 를 테스트하기 위해 사용자 접속환경에 맞게 입력한 후 "Run form" 버튼을 누른다.



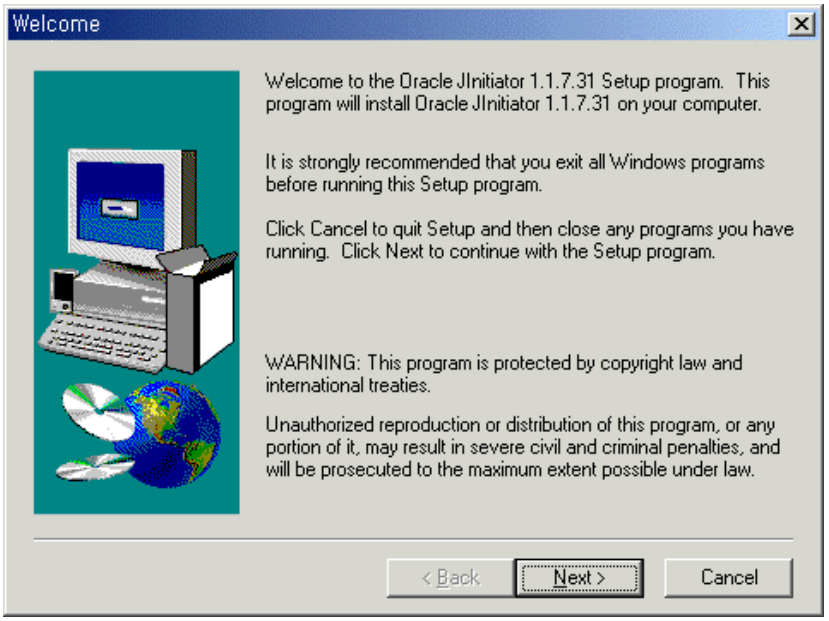
3. Forms Server로 Application을 실행하려면 Client에 Oralce Jinitiator 1.1.17.31이 필요하며 이것은 iAS 버전에 따라 다르므로 다음과 같은 화면이 나오면 download받는다.



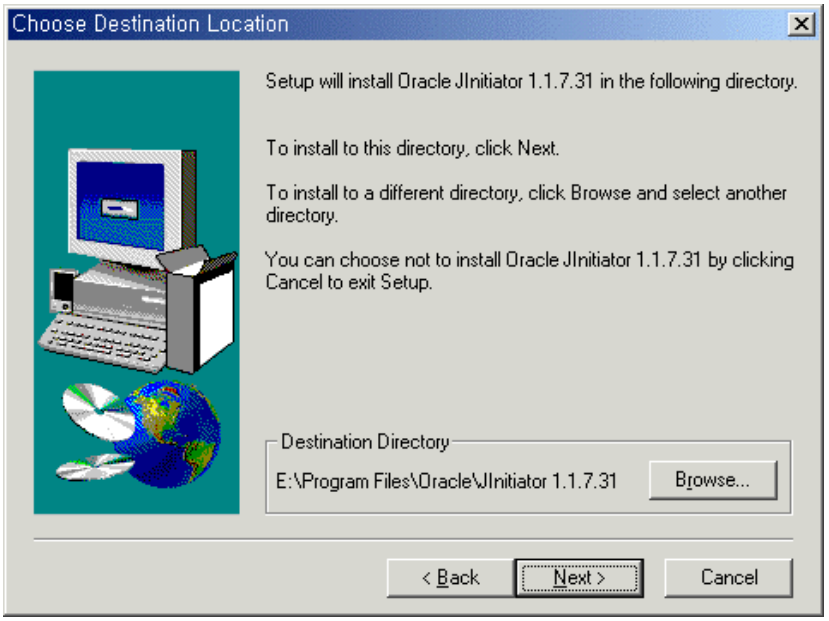
4.



5. Oralce Jinitiator **설치화면 (이때 모든** Web Browser**는 종료한다**.)

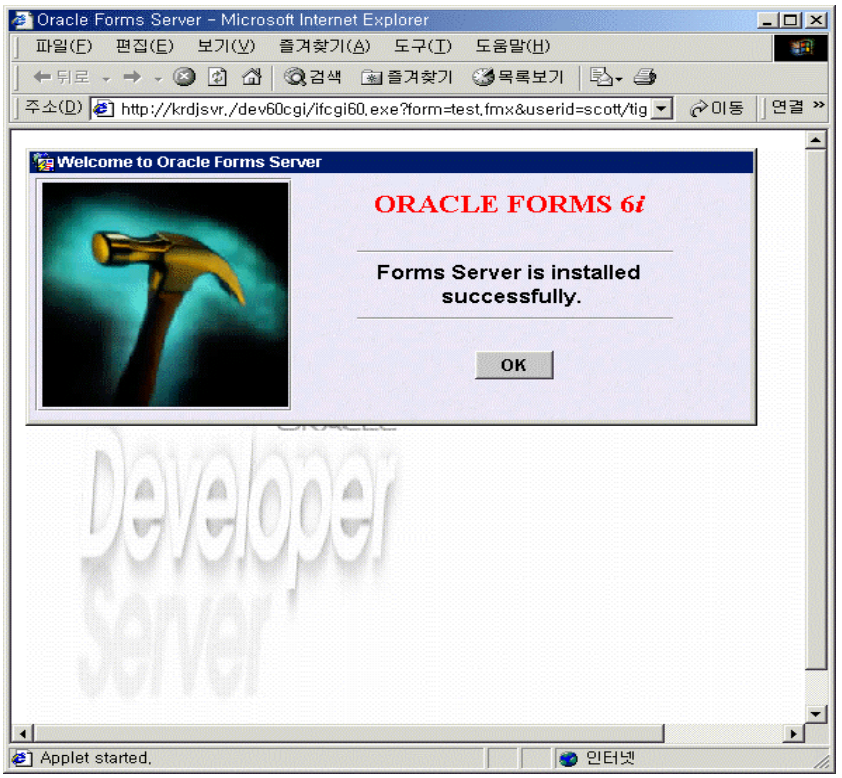


6.



7. Oracle Jinitiator **설치후 다시** runform.html **을 호출하여** Forms Application **이 제대로 수행되는 지 살펴본다**. http://krdjsvr.kr.oracle.com/dev60html/runform.html **을 입력**

8. **다음 화면이 나오면 정상이다.**



6.12 Developer Kit

6.12.1 Oracle Database Developer Kit (DB및 J2EE (JMS, SQLJ, JDBC, JNDI))

6.12.2 Oracle XML Developer Kit (XDK)

Oracle XML Developer Kit 으로 OTN에서 최신의 XDK를 받아서 설치하는 것이 좋다. 특히 XML관련된 Sample 코드 및 interMedia 와 연관된 유용한 자료들을 참조하라.

참조 : http://technet.oracle.com/tech/xml/xsql_servlet/index.htm

$ORACLE_HOME/xdk/admin/xml.conf
$ORACLE_HOME/xdk/admin/xml.properties
$ORACLE_HOME/xdk/lib/XSQLConfig.xml

xml.conf

```
# Associate .xsql extension to XSQL Servlet
ApJServAction .xsql /servlets/oracle.xml.xsql.XSQLServlet
# Define /xsql/ alias
Alias /xsql/ "/disk7/share/ias10/Apache/xdk/"
```

xml.properties

```
# Oracle XSQL Servlet
wrapper.classpath=/disk7/share/ias10/Apache/xdk/lib/oraclexsql.jar
# Oracle JDBC (8.1.6)
wrapper.classpath=/disk7/share/ias10/Apache/xdk/lib/classes12.zip
# Oracle XML Parser V2 (with XSLT Engine)
wrapper.classpath=/disk7/share/ias10/Apache/xdk/lib/xmlparserv2.jar
# Oracle XML SQL Components for Java
wrapper.classpath=/disk7/share/ias10/Apache/xdk/lib/oraclexmlsql.jar
# XSQLConfig.xml File location
wrapper.classpath=/disk7/share/ias10/Apache/xdk/lib
```

XSQLConfig.xml

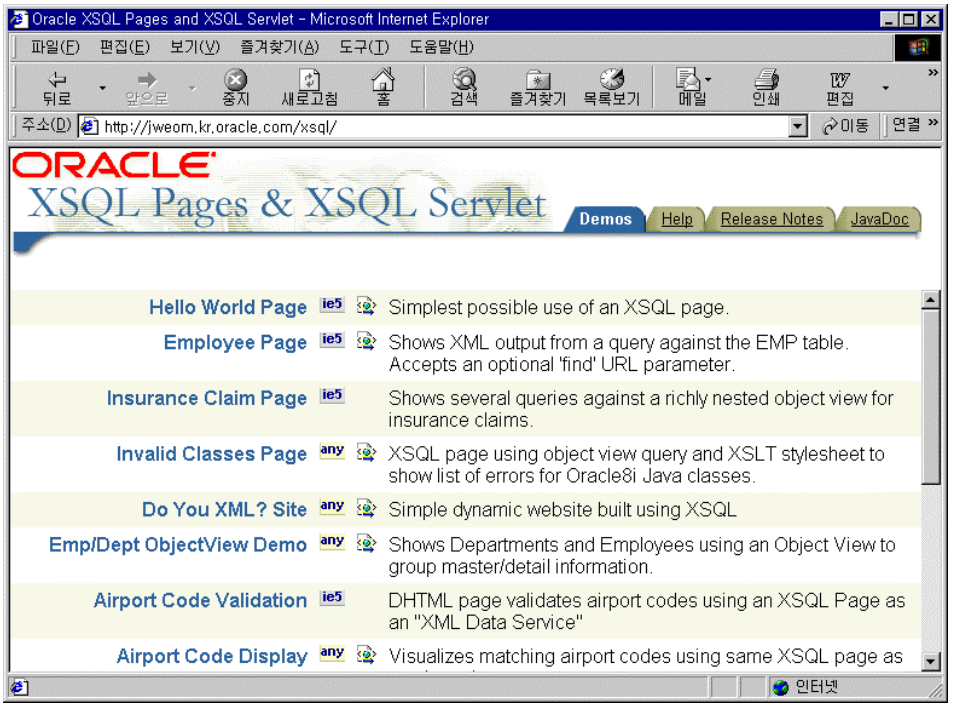
DB Connection에 관계된 설정file로 XSQL Servlet사용시 꼭 수정해주어야 한다.

```
<connectiondefs>
    <connection name="demo">
      <username>scott</username>
      <password>tiger</password>
      <dburl>jdbc:oracle:thin:@krdaejeon1:1555:ORA8IR2</dburl>
      <driver>oracle.jdbc.driver.OracleDriver</driver>
    </connection>
</connectiondefs>
```

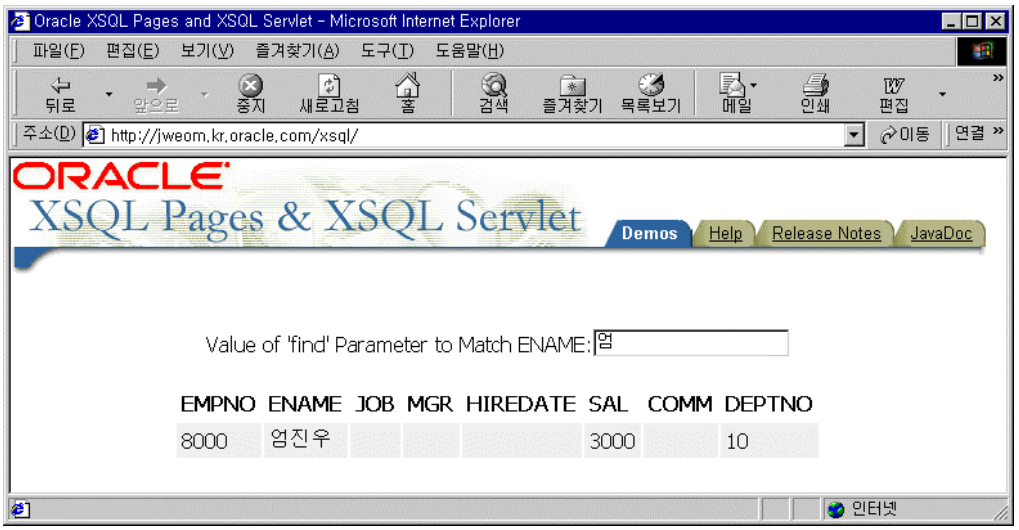
6.12.2.1 XSQL Servlet을 체험해보자.

XML관련 데모를 하기위해서는 MS Internet Explorer 5.0 또는 Netscape Browser 6.0 이상을 사용하여야 한다.

http://<ServerName>:<Port>/xsql/



Employee Page를 선택하여 Oracle DB에서 Data를 조회하는지 확인하자.



6.12.3 Oracle LDAP Client Toolkit

6.13 Oracle Internet File System

7. Aggregate Content into Portals

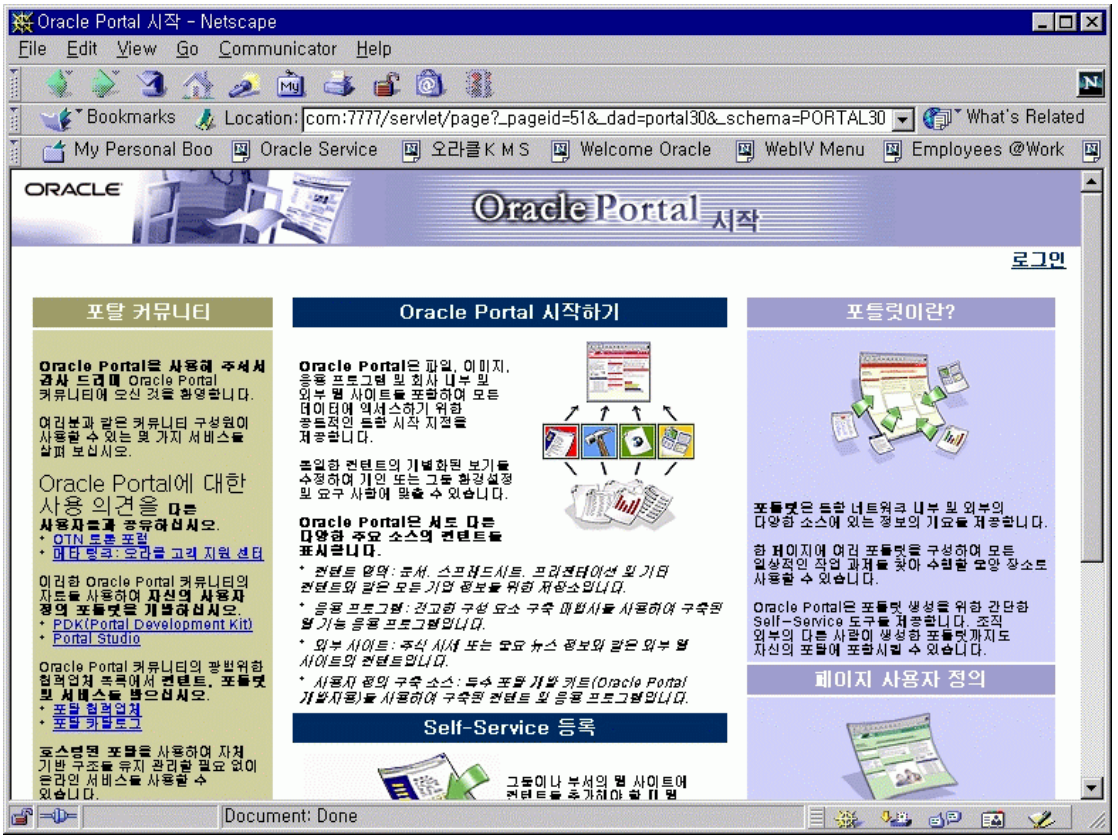
7.1 Oracle9iAS Portal

기존의 WebDB가 iAS에 통합되면서 iPortal로 이름이 바뀌었다. WebDB의 기능은 초보자도 쉽게 Dynamic WEB Application을 구축할 수 있게 도와주는 개발도구이며 DB 관리도구이다.

아래에는 Marketing에서 소개하는 자료이다.

Oracle iAS용 Oracle Portal은 엔터프라이즈 포탈을 구축 및 설치하기 위한 브라우저 기반 환경을 제공합니다. 이 웹 인터페이스는 사용이 쉬우며 각 사용자에게 필요한 비즈니스 정보, 웹 컨텐트 및 애플리케이션을 체계적이고 커스터마이즈된 뷰로 제공합니다. 셀프 서비스 퍼블리싱 기능은 엔드 유저가 모든 유형의 문서 또는 웹 컨텐트를 전세계 사용자에게 게시하고 공유할 수 있도록 지원함으로써 웹 마스터 병목현상을 덜어 줍니다.

Oracle Portal은 핵심 포탈 개발 및 관리 기능 뿐만 아니라, 애플리케이션 및 비즈니스 정보를 통합하기 위해 증설 가능한 프레임웍을 제공합니다. 이 프레임웍은 오라클 고유의 포틀렛(Portlet) 기술에 기반하고 있습니다. 포틀렛은 재사용할 수 있는 인터페이스 컴포넌트로서 웹 기반 자원에 대한 액세스를 제공합니다. 모든 웹 페이지, 애플리케이션, 비즈니스 인텔리전스 리포트, 결합된 컨텐트 피드, 호스트된 소프트웨어 서비스 또는 기타 자원들은 포틀렛을 통해 액세스할 수 있기 때문에 포틀렛이 Oracle Portal 서비스로서 커스터마이즈 및 관리가 가능합니다.



7.1.1 Single-SignOn Login Server 설정

기본적으로 설치되는 Portal Server에 Login Server가 등록되며 만약 접속시 WWC-41439 Error가 발생한다면 httpd.conf의 ServerName을 확인해보기 바란다.

Unix (예 csh)

setenv IAS_HOME /oracle/ias
setenv ORACLE_SID ORA817
cd $IAS_HOME/portal30/admin/plsql
ssodatan -w http://krdaejeon1:7777/pls/portal30/ -l http://krdaejeon1:7777/pls/portal30_sso/ -s portal30 -p portal30 -o portal30_sso -d portal30_sso -e portal30_sso_ps -c ORA817

Windows

set IAS_HOME=c:\oracle\isuites
set ORACLE_SID=ORA817
cd %IAS_HOME%\portal30\admin\plsql
ssodatan -w http://jweom:7777/pls/portal30/ -l http://jweom:7777/pls/portal30_sso/ -s portal30 -p portal30 -o portal30_sso -d portal30_sso -e portal30_sso_ps -c ORA817

7.1.2 한국어 Portal페이지등록

Portal 에서 추가 Language 설치방법

Oracle Portal 페이지에 추가적인 언어를 설치하려면 <IAS_HOME>\portal30\admin\plsql directory에서 langinst script를 실행한다.

langinst.cmd [-s portal_schema] [-p portal_password] [-o sso_schema] [-d sso_password] [-c connect_string] [-l language] [-available]

Unix (csh)

cd $IAS_HOME/portal30/admin/plsql
setenv ORACLE_SID ORA817
langinst.csh –s portal30 –p portal30 –o portal30_sso –c ORA817 –l ko –available

WINNT:

set IAS_HOME=d:\oracle\isuites
cd %IAS_HOME%
set ORACLE_SID=ORA817
langinst.cmd -s portal30 -p portal30 -o portal30_sso -c ORA817 -l ko -available

7.1.3 온라인도움말

Portal 에서 온라인 도움말 설치방법

<IAS_HOME>/portal30/admin/plsql/wwu directory에서

contimp –s portal30 –p portal30 –o portal_help –m reuse –u database_user –
d ../../../doc/site/hlp30ca.dmp –c ORA817

Windows

set NLS_LANG=AMERICAN_AMERICA.US7ASCII

cd %ORACLE_HOME%\portal30\admin\plsql\wwu

contimp -s portal30 -p portal30 -o portal_help -m reuse -u database_user -d ..\..\..\doc\site\hlp30ca.dmp -
c ORA817

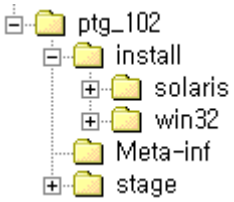
8. 웹사이트의 무선 접속 및 포탈 기능

8.1 Oracle9iAS Wireless

이 내용은 한국오라클 technet site (http://otn.oracle.co.kr) 에 등록된 내용을 옮겨 놓은 것임을 밝혀 둔다.

8.1.1 설치를 시작하기 전에

1. Download받은 Stage를 압축해제

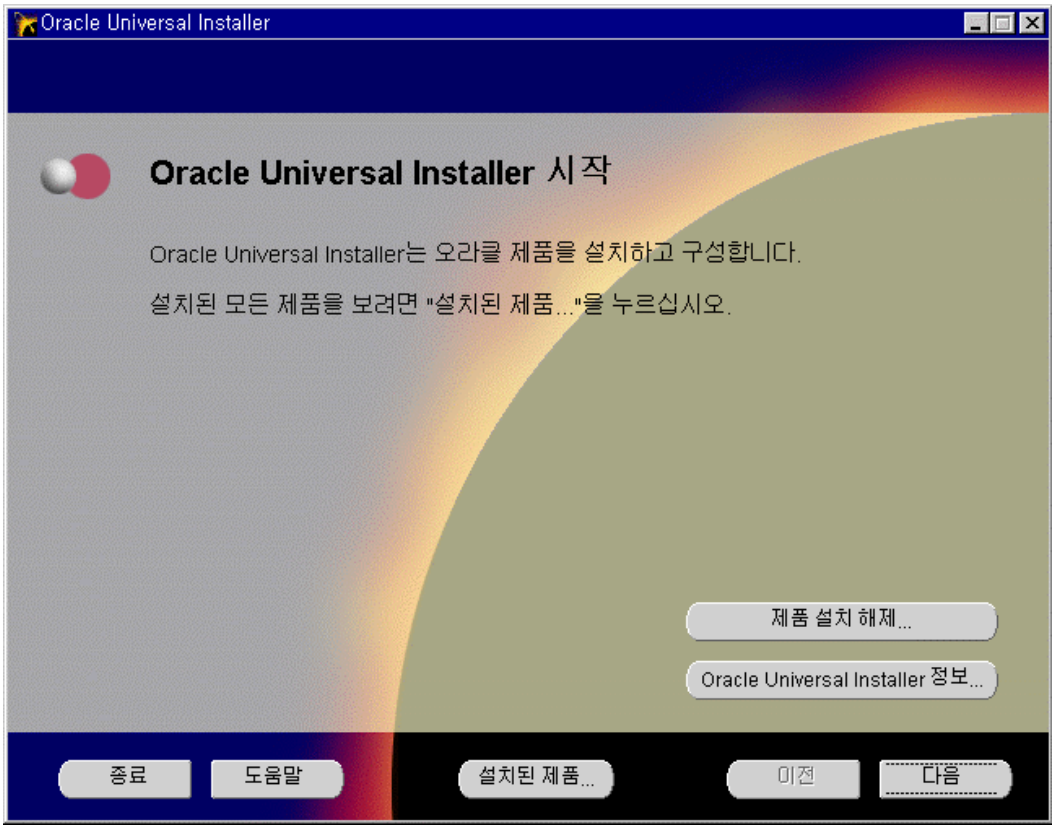


Oracle Technet에서 다운로드 받은 iAS Wireless Edition를 임시 디렉토리에 압축을 풉니다. 보통 jar파일의 형태로 제공되므로 WinZip을 이용하여 풀거나 jdk에 들어있는 jar를 이용하여 압축을 풉니다.

설치 프로그램은 install/win32/setup.exe 입니다.

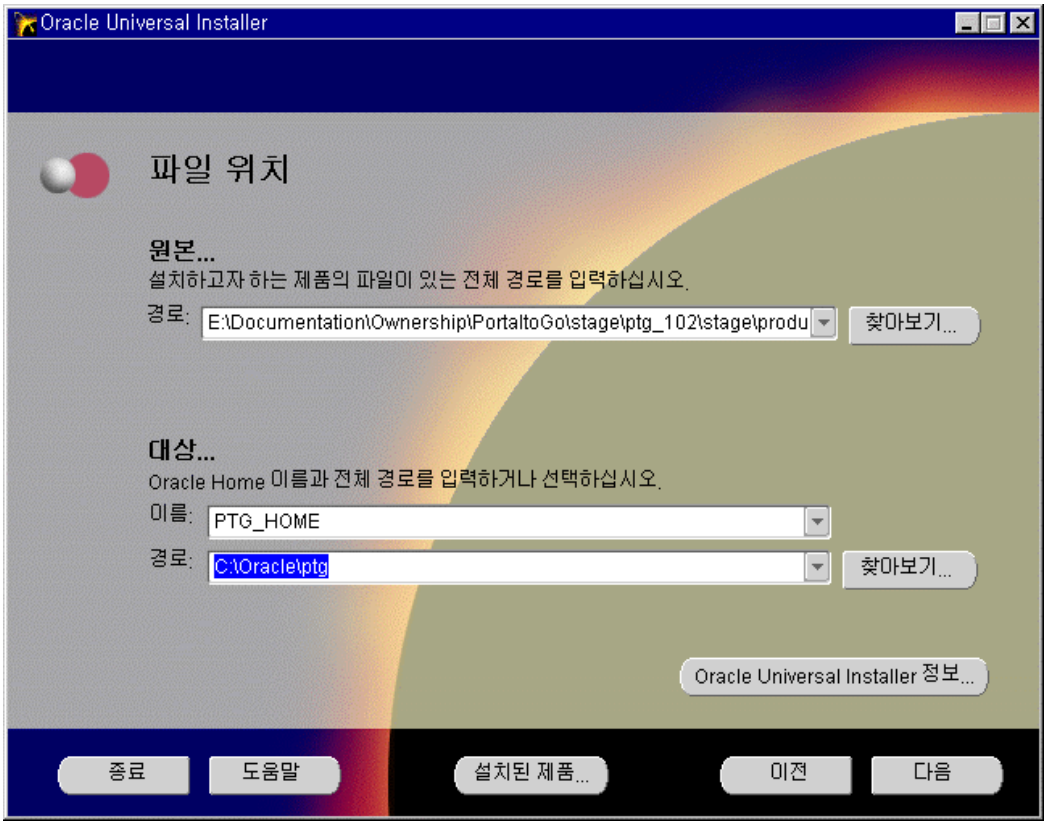
8.1.2 설치

1. Installer 기동



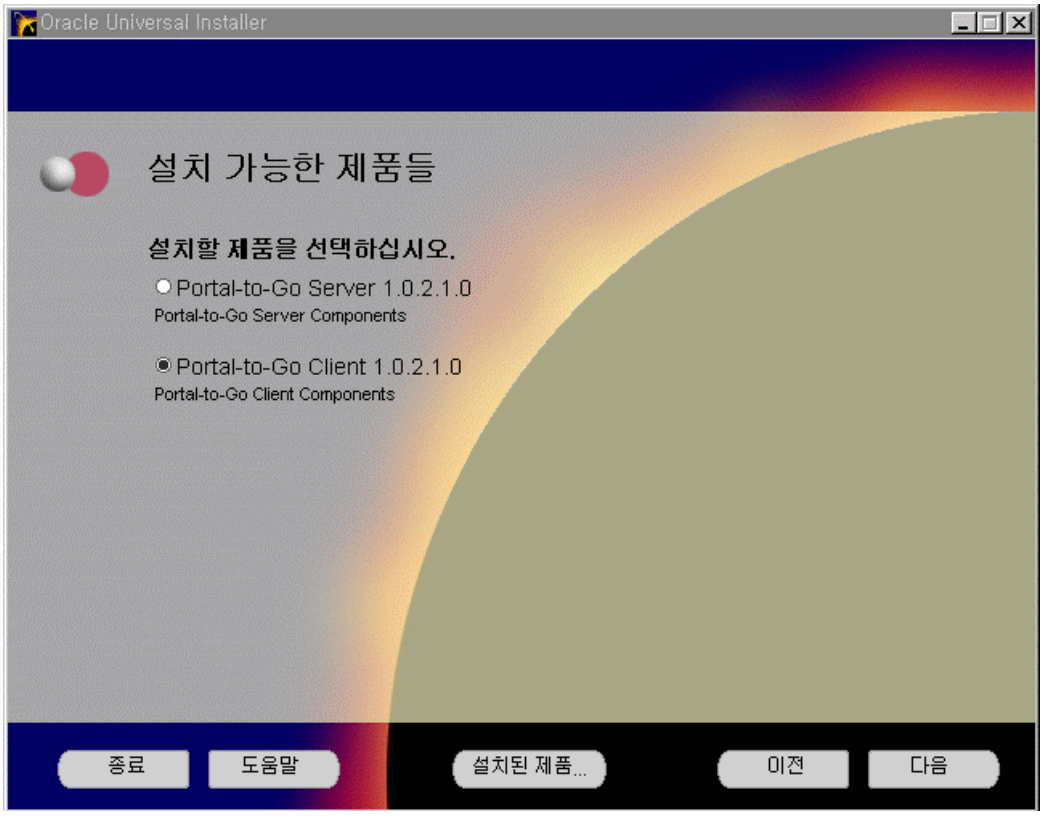
다음을 누릅니다.

2. Oracle Home을 결정



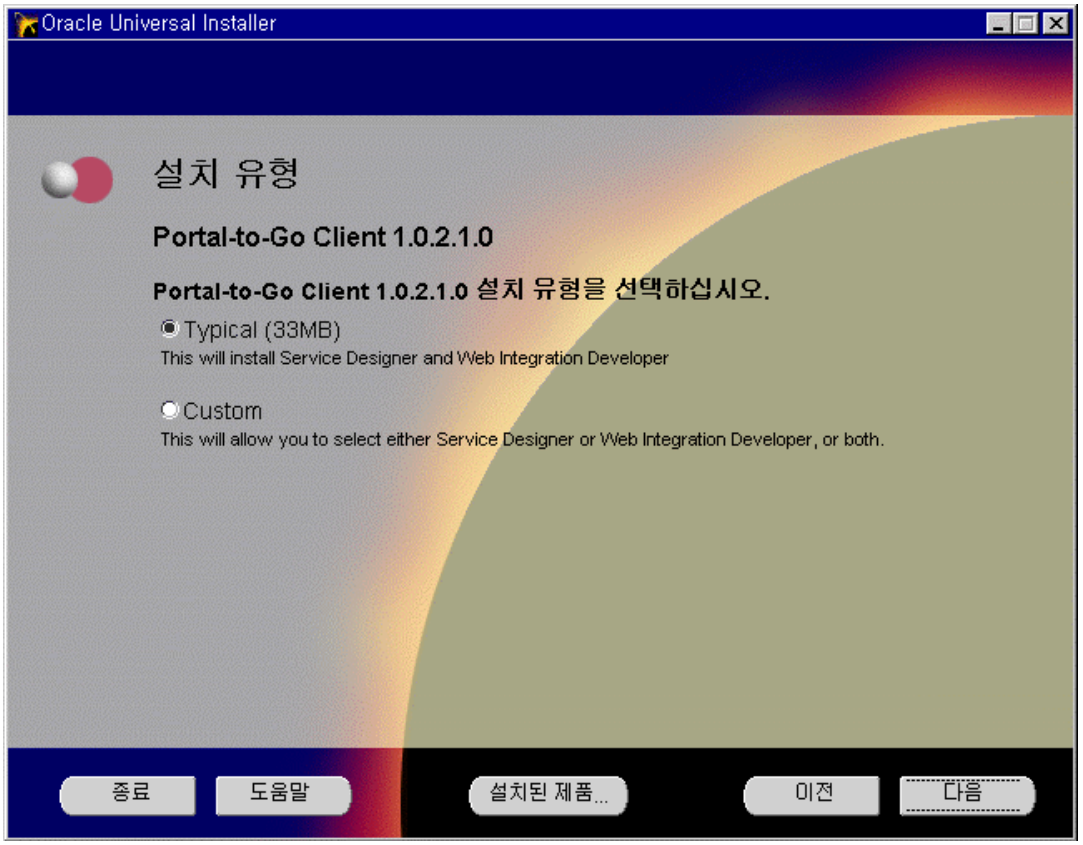
"원본"의 경로 란에는 디폴트로 나온값을 그대로 사용합니다. "대상"의 "이름"란에는 어느 Oracle Home에 iAS Wireless Edition을 install할 것인지를 선택해 줍니다. iAS Wireless Edition을 위한 Oracle Home이 해당 머신에 있다면 그것으로 선택해주어도 되고, 그렇지않으면 중복되지 않게 따로 이름을 하나 정해주어도 됩니다. 예를 들어 iASWE_HOME이라는 Oracle Home이름을 지어주고 그 경로는 c:\iASWE\ 등으로 정해주면 됩니다. 만약 client를 설치하려는 머신에 iASWE Server가 이미 설치되어 있다면 같은 Oracle Home을 사용하도록 하는 것이 관리하기에 편합니다.

3. 설치할 제품 선택



Portal-to-Go Client 1.0.2.1을 선택하고 다음을 누릅니다. .

4. 설치 방법 선택



Typical을 선택합니다.

Typical을 선택하면 두 가지의 iASWE Component (Service Designer, Web Integration Developer)를 모두 설치해 주고, Custom을 선택하게 되면 각각을 설치 할 것인지 말것인지를 물어보게 됩니다.

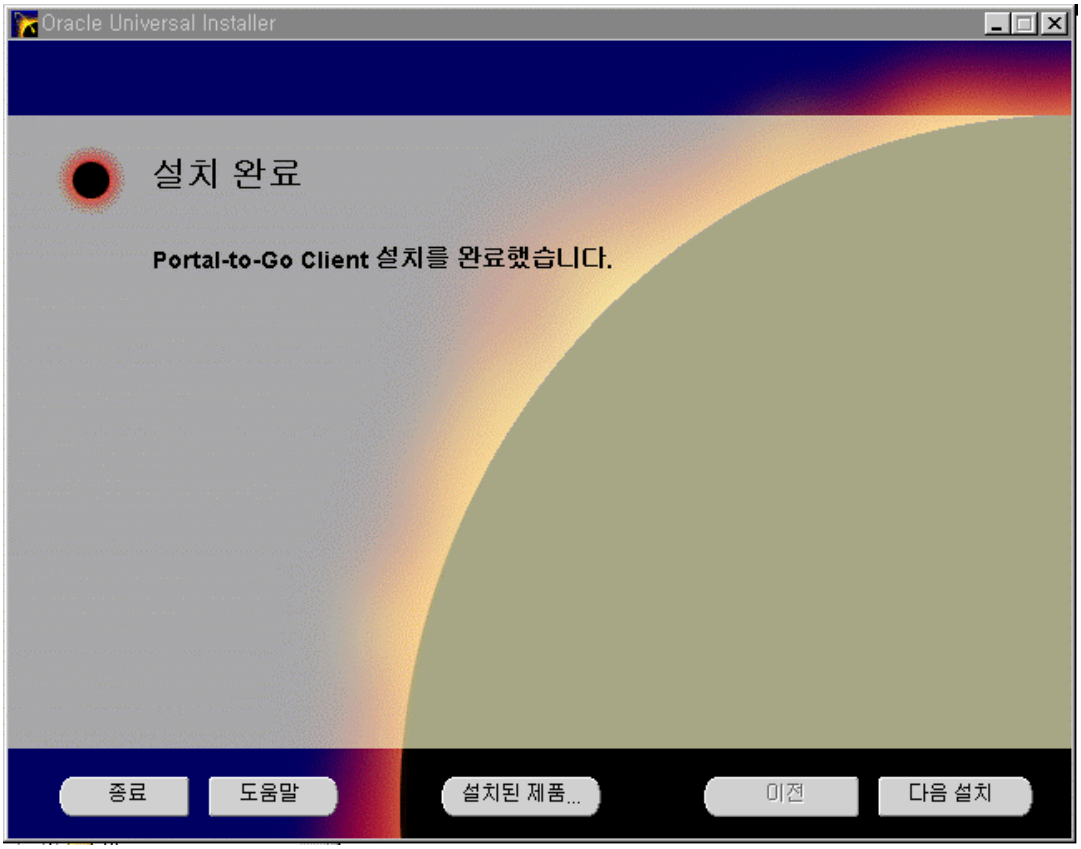
5. 요약 페이지

앞에서 선택한 내용들을 보여줍니다. 다음을 누르면 파일 설치가 시작됩니다.

6. 설치 시작

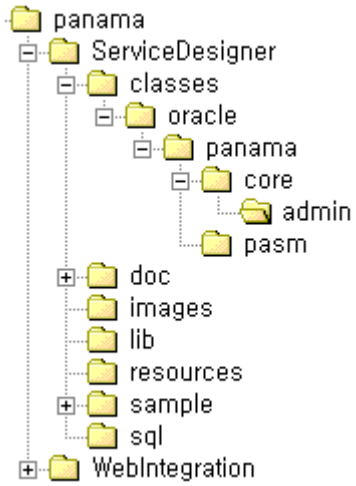
설치 중... 금방 끝납니다.

7. 설치 완료



8.1.3 Client 설정 하기 1 - Service Designer

1. System.properties파일 설정



위 그림처럼 panama\ServiceDesigner\classes\oracle\panama\core\admin\ 의 위치에 있는 System.properties파일을 열어 db.connect.string 부분을 다음과 같이 수정해 줍니다.

db.connect.string=Username/Password@Hostname:port:SID

여기서 Username과 Password는 Repository DB의 iASWE을 위한 Schema User의 username과 password이고, Hostname은 Repository DB가 있는 머신의 이름 혹은 ip를 적어주면 됩니다. port번호는 Repository DB의 Listener의 port번호로, 이 값은 Repository DB의 listener.ora파일을 열어보면 알 수 있습니다. 그냥 DB를 설치하면 Default로 1521입니다. SID는 Repository DB의 SID입니다. 예를 들어,

panama102/panama102@machine1.oracle.com:1521:ora816

과 같이 설정합니다.

위의 파라미터 설정에서도 알 수 있듯이, iASWE의 Client는 어느 Repository에 접속할것인지를 알기위해 System.properties파일의 db.connect.string값을 사용합니다.

System.properties파일에는 이 이외에도 많은 설정값들이 있습니다. .

2. run.bat 파일

만약 Client를 설치한 머신에 jdk1.2의 java.exe가 PATH에 포함되어 있다면 이 과정은 생략해도 됩니다. 그렇지 않다면 PATH에 추가시켜주거나, panama\ServiceDesigner 디렉토리에 있는 run.bat파일을 열어 수정해줍니다.

run.bat파일의 마지막 부분을 열어보면 다음과 같이 되어있습니다.

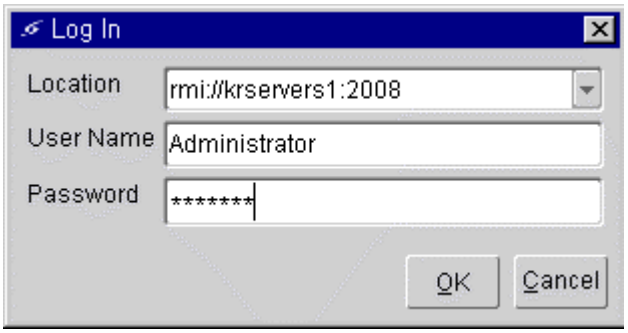
```
java -classpath %PASD_CP% oracle.panama.pasm.PASM
```

이것을 다음과 같이 고칩니다.

```
<JDK1.2_HOME\bin\java -classpath %PASD_CP% oracle.panama.pasm.PASM
```

3. 실행 확인

이제 Client의 설정이 끝났습니다. 도스창을 하나 열어 panama\ServiceDesigner\run.bat을 수행하거나 [시작]/Oracle for Windows NT/Portal-to-Go/ServiceDesigner를 선택하여 ServiceDesigner를 기동시켜 봅니다.

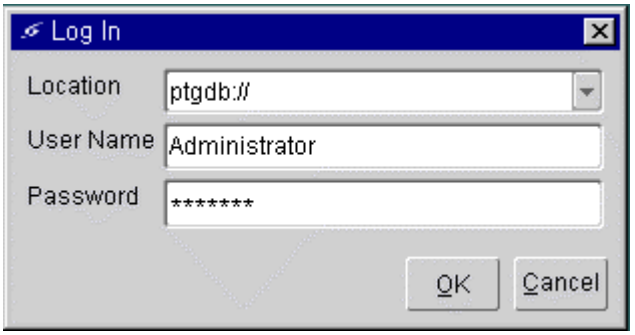


ServiceDesigner를 실행시키면 기동되면서 왼쪽 그림과 같은 창이 하나 뜨는데, 각 부분에는 다음과 같이 적어줍니다.

Location Locationrmi://<iAS_Server_Machine_Name:port
Username Username Administrator
Password Password manage

port번호는 설치후 특별히 바꾸지 않았다면 Default로 2008 입니다. . Location값은 예를 들어 다음과 같이 됩니다.

rmi://myserver.oracle.com:2008



혹은, System.properties파일의 db.connect.string값을 제대로 수정하셨다면 그냥 ptgdb://라고만 하셔도 됩니다. Username과 Password값은 대소문자를 구분하므로 유의하시기 바랍니다. .

<중요

이렇게 접속하기전에는 반드시 iASWE Server가 기동중이어야 합니다. 즉, iASWE Server를 설치한 머신의 Setting이 끝나있고 Start HTTP Server...를 실행하여 이미 Web Server가 떠 있어야 한다는 의미입니다.

<중요

위의 "Location"부분에 적어주는 것은 두가지가 있습니다. 즉 두가지 방법으로 Repository DB에 접속을 한다는 의미입니다. .

가 방금 위에서 설명한 것처럼 rmi://myserver.oracle.com:2008

rmi://myserver.oracle.com:2008

로 접속하는 것입니다. 이렇게 접속할 때에는 IASWE Client는 iASWE Server의 RMI Server를 통하여 Repository DB를 간접적으로 ACCESS하게 됩니다. 이 때는 iASWE Client가 System.properties파일의 db.connect.string값에 관계없이 동작합니다. 즉 앞의 과정에서

System.properties의 db.connect.string값을 제대로 수정하지 않았다하더라도 Client를 사용할 수 있습니다. 또한 iASWE Server를 통해서 db를 access하므로 Server가 제대로 동작하고 있어야 하겠지요.

두번째는 Location값으로 그냥 ptgdb://라고 입력하는 것입니다. . 이렇게 되면 iASWE Client는 iASWE Server와 무관하게 곧바로 Repository DB로 접속합니다. . System.properties파일의 db.connect.string 정보를 가지고 곧바로 JDBC connection을 맺는 것이지요.

두가지 접속방법의 장단점이 있습니다만 오라클에서는 rmi접속을 사용할 것을 권장하고 있습니다. .

<참고

ptgdb:// 로 접속을 시도 하였을때 Service Designer가 곧바로 죽어버리는 경우가 있습니다. 이러한 경우에는 보통 System.properties파일의 정보가 잘못된 경우가 대부분입니다. 이때는 db.connect.string값이 제대로 되어있는지, 그리고 Repository DB가 제대로 동작하고 있는지, Repository DB의 Listener가 제대로 리스닝하고 있는지를 확인해 보아야 합니다. 이상이 없는데도 접속을 시도하면 곧바로 Service Designer가 죽어버린다면 System.properties파일의 어딘가 잘못된 것이므로 iASWE Server의 동일한 디렉토리 위치에 있는 System.properties파일을 그대로 복사해 와서 Service Designer의 System.properties를 덮어써버리면 됩니다.

8.1.4. Client 설정 하기 2 - Web Integration Developer

1. 실행 확인 도스창을 하나 열어 panama\WebIntegration\Developer\bin\developer.bat 을 실행하거나 [시작]/Oracle for Windows NT/Portal-to-Go/WebIntegrationDeveloper 를 선택하여 실행 시켜봅니다. 실행이 되면 일단은 된 것이고, 필요하다면 proxy설정을 해줍니다. proxy설정은 메뉴의 Edit/Preference/Configuraton 을 누르면 바꿀수 있습니다. 2. 한글 문제 수정 인스톨 후 Web Integration Developer를 사용하여 한글이 있는 웹 페이지를 액세스 해 보면 한글이 모두 깨어지는 것을 발견할 수 있습니다. 이러한 문제의 해결 방법은 Step 4.의 "Web Integration Developer의 한글 문제 해결하기"를 참고 하시기 바랍니다.

9. 캐시기능을 이용한 웹사이트 성능향상

Web Cache

Database Cache

Object Caching Service for Java (OCS4J)

9.1 Web Cache

9.1.1 Web Cache 설정

0. Oracle Web Cache는 별도로 upgrade가 가능하므로 otn에서 최신 version을 download받아 설치한다.

1. Oracle Web Cache Manager를 구동시킨다.

% webcachectl start

Or, from the Services Control Panel on NT.

2. Web Browser를 이용하여 Oracle Web cache administration page로 접속한다.

http://hostname.domainnameOfWebCacheMachine:4000/webcacheadmin

(administrator/administrator)

For Oracle Web Cache to act as a virtual server for a website, configure Oracle Web Cache with information about the website, including the host names of the application Web servers. In addition, specify a listening port from which Oracle Web Cache can receive browser requests.

To configure Oracle Web Cache with Web site information:

3. Configure the application Web servers for the Web site:

a. In the navigator pane,

select Administering Web Sites > Application Web Servers.

The Application Web Servers page appears in the right pane.

b. In the Application Web Servers page, choose Add.

The Edit/Create Application Web Server page dialog box appears.

c. In the Hostname field, enter the hostname of the application Web server.

d. In the Port field, enter the listening port from which the application Web server will receive Oracle Web Cache requests.

e. In the Capacity field, enter the number of concurrent connections that the application Web server can sustain.

Optionally, configure an additional listening port from which Oracle Web Cache will receive browser requests. Oracle Web Cache listens on port 1100 by default. It may be necessary to add an additional listening port if you want to assign Oracle Web Cache a port that an application Web server was previously listening on.

a. In the navigator pane, select Administering Web Sites >

Oracle Web Cache Listen Ports.

The Oracle Web Cache Listen Ports page appears in the right pane.

b. In the Oracle Web Cache Listen Ports page, choose Add.

The Edit/Create Oracle Web Cache Listen Ports page dialog box appears.

c. In the Oracle Web Cache IP Address field, enter the IP address of the computer running Oracle Web Cache.

d. In the Oracle Web Cache Listen Port field, enter the listening port from which Oracle Web Cache will receive Web browser requests for the Web site. Ensure this port number is not already in use.

e. Choose Submit.

In the Oracle Web Cache Manager main window, choose Apply Changes, and stop and start webcache with the commands "webcachectl stop" and "webcachectl start".

(or from the Services Control Panel on NT)

Point you browser to the URL to WebCache port...

http://hostname.domainnameOfWebCacheMachine:1100/

Or, if configured WebCache on port 80...

http://hostname.domainnameOfWebCacheMachine/

...and you should see the index.html of your site.

Note: If on the same machine, you cannot have the webcache and your website on the same port(s), otherwise the second one will fail to start. Setting the Web Cache to port 80, and pointing it to a webserver that is listening on a different port not in use is the most common setup.

9.1.2 Troubleshooting

WEBCACHE LISTENER CAN NOT START WHEN ORACLE_HOME STARTS

When starting the webcache listeners using webcachectl start, I get the following errors:

$ ./webcachectl start

Oracle Web Cache, Version 2.0.0.1.0

@ Copyright: Oracle Corporation, 1999-2001

Admin Server failed to start

Oracle Web Cache couldn't start.

Solution Description

Create a symbolic link e.g. /webcache to point to the root directory of your ORACLE_HOME

e.g. /ora1

ln -s /ora1 /webcache

Now open the webcachectl script and change the ORACLE_HOME entry to point to the path starting with the symbolic link (e.g. /webcache/app/oracle/product/webcache)

After doing so the webcache daemon can be started using:

$ ./webcachectl start

Explanation

There is a bug 1849408 which causes the webcache daemon not to start when the ORACLE_HOME starts with /ora

Run the WebCache listener on a port below 1024.

Intended for customers and support analysts who are attempting to run the WebCache listener on a port below 1024.

Oracle Web Cache Failed to Initialize

You have completed a new installation of Oracle WebCache on a Unix based operating system and configured your WebCache listener to run on a port below 1024. When attempting to start the WebCache you receive and error:

Error: Oracle WebCache Cache failed to initialize

Error: The server could not initialize.

Since you are attempting to run a process on a port below 1024, the process requires root privileges. The root.sh script that comes with Oracle 9iAS does not set these privileges for the WebCache listener. To fix the problem use the following steps:

1). Access your webcache administration page (by default on port 4000) and change the "process identity" to nobody/nobody.

2) Login to your Unix server as the user who installed WebCache and su root.

3) chown root <Webcache Home Directory>/webcache/bin/webcached

4) chmod a+s <Webcache Home Directory>/webcache/bin/webcached

5) exit

6) webcachectl start.

9.2 Database Cache

Installing Oracle Database Cache

The installation of the Oracle Database Cache involves following stages:

1. Preparing the Origin Database

2. Installing the Oracle8i Cache

3. Installing the Oracle8i Cache Manager for OEM

1. Preparing the Origin Database:

The origin database for the Oracle database cache should be decided before installing the Oracle database cache software. This is mandatory because, the Oracle database cache software installation creates the necessary tnsnames.ora files based on this.

a. Creating Password file for the origin database

+ Shut down the origin database

+ Set the following parameter in the init.ora file:

```
remote_login_passwordfile=Exclusive

                or

remote_login_passwordfile=Shared
```

+ Create the password file in the origin database's $ORACLE_HOME/dbs directory as follows:

```
$orapwd file=orapwSID password=passwd entries=5
```

+ Startup the Origin database

b. Setting up External Listener

Add the following listener to your listener.ora file. The only change to be done on this is the oracle_home.

```
External_procedure_listener=
    (address_list=
        (address= (protocol=ipc) (key=extproc_key))
    )

Sid_list_external_procedure_listener=
    (sid_list=
        (sid_desc=
            (sid_name=extproc_agent)
            (oracle_home=/u01/app/oracle/product/8.1.6)
```

```
## Enter your Oracle home here
                                (program=extproc)
                        )
                )
```

Start this listener:

```
$ lsnrctl start external_procedure_listener

LSNRCTL for Solaris: Version 8.1.6.0.0 - Production on 10-AUG-2000 14:48:21

(c) Copyright 1998, 1999, Oracle Corporation.  All rights reserved.

Starting /u01/app/oracle/product/8.1.6/bin/tnslsnr: please wait...

TNSLSNR for Solaris: Version 8.1.6.0.0 - Production
System parameter file is /u01/app/oracle/product/8.1.6/network/admin/listea
Log messages written to /u01/app/oracle/product/8.1.6/network/log/externalg
Listening on: (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(KEY=extproc_key)))

Connecting to (address=(protocol=ipc)(key=extproc_key))
STATUS of the LISTENER
------------------------
Alias                        external_procedure_listener
Version                      TNSLSNR for Solaris: Version 8.1.6.0.0 - Production
Start Date                   10-AUG-2000 14:48:21
Uptime                       0 days 0 hr. 0 min. 0 sec
Trace Level                  off
Security                     OFF
SNMP                            OFF
Listener Parameter File    /u01/app/oracle/product/8.1.6/network/admin/lista
Listener Log File            /u01/app/oracle/product/8.1.6/network/log/externg
Services Summary...
  extproc_agent            has 1 service handler(s)
The command completed successfully
$
```

Also startup the normal listener listening on a port.

Add the following entry to the tnsnames.ora file to connect to the above listener:

```
extproc_connection_data=
                (description=
                        (address=(protocol=ipc)  (key=extproc_key))
                         (connect_data=(sid=extproc_agent))
                )
```

Check that this connect string is fine by using tnsping utility:

```
$ tnsping extproc_connection_data

TNS Ping Utility for Solaris: Version 8.1.6.0.0 - Production on 11-AUG-2000 11:5

(c) Copyright 1997 Oracle Corporation.  All rights reserved.

Attempting to contact (address=(protocol=ipc)(key=extproc_key))
OK (100 msec)
```

c. Granting Necessary Privileges to a DBA User

The Oracle8i Cache Configuration Assistant requires an Oracle user with SYSDBA user for the operations on the the origin database. SYS is the default user used by the configuration assistant and hence make sure you that SYS has SYSDBA privilege.

```
$ svrmgrl

Oracle Server Manager Release 3.1.6.0.0 - Production

Copyright (c) 1997, 1999, Oracle Corporation.  All Rights Reserved.

Oracle8i Enterprise Edition Release 8.1.6.1.0 - Production
With the Partitioning option
JServer Release 8.1.6.1.0 - Production

SVRMGR> connect internal
Connected.
SVRMGR> grant sysdba to sys;
Statement processed.
SVRMGR>
```

2. Installing the Oracle Database Cache

a. Installing the Cache Software

The software has to be installed from the Oracle8i Cache media. The current version 1.0 is bundled with the Internet Application Server 1.0.0.0.0.

Invoke the installer from the Oracle iAS CD. Note you need to have XTerm environment to invoke the installer. There is no character mode to run the installer.

```
./runInstaller
```

In the Installation Type window, select Enterprise Edition to install Oracle8i Cache, Oracle Jserver, Oracle HTTP Server. You cannot install Oracle8I Cache alone in this version. The total space required for this option is 3.08Gb.

Also make sure you have at least 500Mb temp space, else set the environment variable TMP to point to a directory which has more than 500Mb space.

During the installation, the installer asks for the origin database details like

-- Machine name

-- Database name

-- the listener port number

These data are used to configure the tnsnames.ora file of the cache machine.

The tnsnames.ora created would be as follows:

```
ora_icache =
  (DESCRIPTION =
     (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = IPC)(KEY = icache))
     )
     (CONNECT_DATA =
       (SID = icache )
     )
  )


ora_icache_origin =
  (DESCRIPTION =
     (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = oracle8i)(PORT = 1529))
     )
     (CONNECT_DATA =
       (SERVICE_NAME = G816 )
     )
  )
```

b. Configuring the Cache Database

At the end of the installation, the Oracle Database Cache configuration assistant is invoked.

Or the configuration assistant can be invoked manually to set up later:

```
$ $ORACLE_HOME/bin/wtacca -create -option
```

where option can be typical or custom.

The following are the data required by the configuration assistant:

Screen 1. Origin Database Credentials

* SYSDBA username and password of the origin database

Note: You need not give the connect string for the origin database in this screen, it is automatically picked up from the $ORACLE_HOME/network/admin/tnsnames.ora file. This screen does not take up the connect string. (See known issues below)

Screen 2. Cache Information (only in case of Custom option)

* Cache Node on which the cache database is going to reside
* The port number through which the cache is going to be administered
* The name of the cache. The default is 'Machine_name-cache'

Screen 3: Cache Size (only in case of Custom option)

* Memory to be allocated for Cache (default is 25M)
* Disk Space allocated for the Cache (default is 32M)
* The Cache DataFile Specification. (default is $ORACLE_HOME/dbs/users01.dbf)

Screen 4: Summary

* This contains the summary of all of the above

Screen 5: Cache Configuration Assistant Progress

* Preparing the Origin Database
* Configuring the Cache
* Configuring the Origin Database
* Configuring the Cache Communication
* Configuring the Management Engine Component
* Updating User List

If the progress fails, it would report a "Processing Failed" and the error can be seen by clicking on the Show Detail button.

The installation log files can be found in $ORACLE_HOME/install directory.

Now the Oracle Database Cache is ready for use.

3. Installing the Oracle Database Cache for OEM

The Oracle8i iCache is available with the DBA studio of OEM 2.2 or above. If you do not have an installation already, then you can install the same on MS Windows platforms using the Oracle8i Cache Manager for OEM CD shipped with the IAS 1.0.0.0.0 CD pack. This can be applied on OEM 2.1 as well.

Complete the Installation using the Oracle8i Cache Manager for OEM Installation Guide.

Recreating a Cache Database

There are times when you would like to:

a. Recreate the existing Oracle8i cache database

b. Recreate the Oracle8i cache database with a different origin database

Basic Operations:

1. Remove all the cached tables from the cache database using the OEM

2. Shutdown the cache database using the 'cachshut' command

3. Drop the user ORACACHE and ORACACHE$ users from the origin database

a. Recreate the Existing Oracle8i Cache Database

---

1. Start up the Oracle8i Cache Configuration Assistant

$wtacca -create -option

where option is 'typical' or 'custom'

2. Complete the creation of the Oracle8i cache database

b. Changing the Origin Database

---

1. Edit the tnsnames.ora file of the Oracle8i cache.
2. Change the description for 'ora_icache_origin' to point to the new origin database.
3. Prepare the new origin database as mentioned in <Note:117145.1> - Installing Oracle8i Cache
4. Invoke the Oracle8i Cache Configuration Assistant as mentioned above and complete the creation of the Oracle8i cache database.

Caution:

---

1. Dropping the Oracache user would drop all the cached tables from the cache database. Make sure that you want to delete the cache database before doing this.

2. Never delete the database, control and log files found in $ORACLE_HOME/dbs of the icache database. Deleting these files is NOT a step to recreate or

drop the icache database. If these files are deleted, the entire Oracle8i cache software has to be reinstalled as these are the files created by during the installation.

Create Oracle8i cache after failure during installation

Before going though creation steps, make sure that the origin database is up and running and you can ping oracle server

The following steps has to be carried out to create Oracle8i cache

1. You need to modify TNSNAME.ORA file which create during installation of Oracle8i cache under %ORACLE_HOME%\netowkr\admin as follows

```
ORA_ICACHE_ORIGIN =
  (DESCRIPTION =
    (ADDRESS_LIST =
     (ADDRESS = (PROTOCOL = TCP)(HOST = <new host>)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SID = <sid>)
     (SERVER = DEDICATED)
    )
  )
```

2. Test the above alias using

```
tnsping ora_icache_origin
```

3. Run the following command from DOS session

```
wtacca -create -custom
```

4. Enter username and password for origin database with sysdba privileges

5. Enter administrator password to create the required services for cache

6. Proceed with creation

Note: you will get WTE-1592 error while system trying to process the phase "Update User List" <Bug:1463140>

7. Update user list by doing the following:

1. Load DBA Studio (Standalon)
2. Add Origin database (File --> Add database to tree)
3. Use local TNSNAMES.ORA option
4. Choose origin database and connect with sys account
5. Double click the over "Caches"
6. Start cache by clicking on cache database and change "Cache State"
7. Right click on cache from tree abd select "Update User List"

Preinstallation Check List for DB Cache on Windows NT

Items to be Checked on Icache Machine

==========

1. Recommended RAM between 512 meg and 1 gig.

2. Middle tier platform only. There should not be other Oracle products running on the machine icache will be installed on.

3. Stop all background processes that are running

4. Login as Administrator and make sure the user Administrator is assigned to the ora_dba and administrator groups.

5. Make sure the Administrator has a password assigned.

6. Verify the icache machine has connectivity to the origin machine, and the origin computer has connectivity with the icache computer.

Items to be Checked on Origin Machine

==========

1. Check the Oracle temp table spaces to make sure there is at least 20 megs assigned

2. Stop and restart the database to make sure the database is fully started without errors.

3. Stop and restart the listener. Use the lsnrctl utility to check the status. There should be a service for both the origin database and the external procedure?

4. While in lsnrctl, set the display mode to verbose and verify the database is registered with the listener.

5. Next verify the tnsnames.ora is configured for external procedures. Use the alias extproc_connection_data and connect with SQL*Plus. SQL*Plus should return an ORA-3113 if external procedures are configured correctly.

6. Check the c:\Temp directory to make sure it is shared with full permissions.

7. Make sure the OS user (Administrator) is assigned to the ora_dba and administrator groups.

8. Variables TMP and TEMP should be set to c:\temp

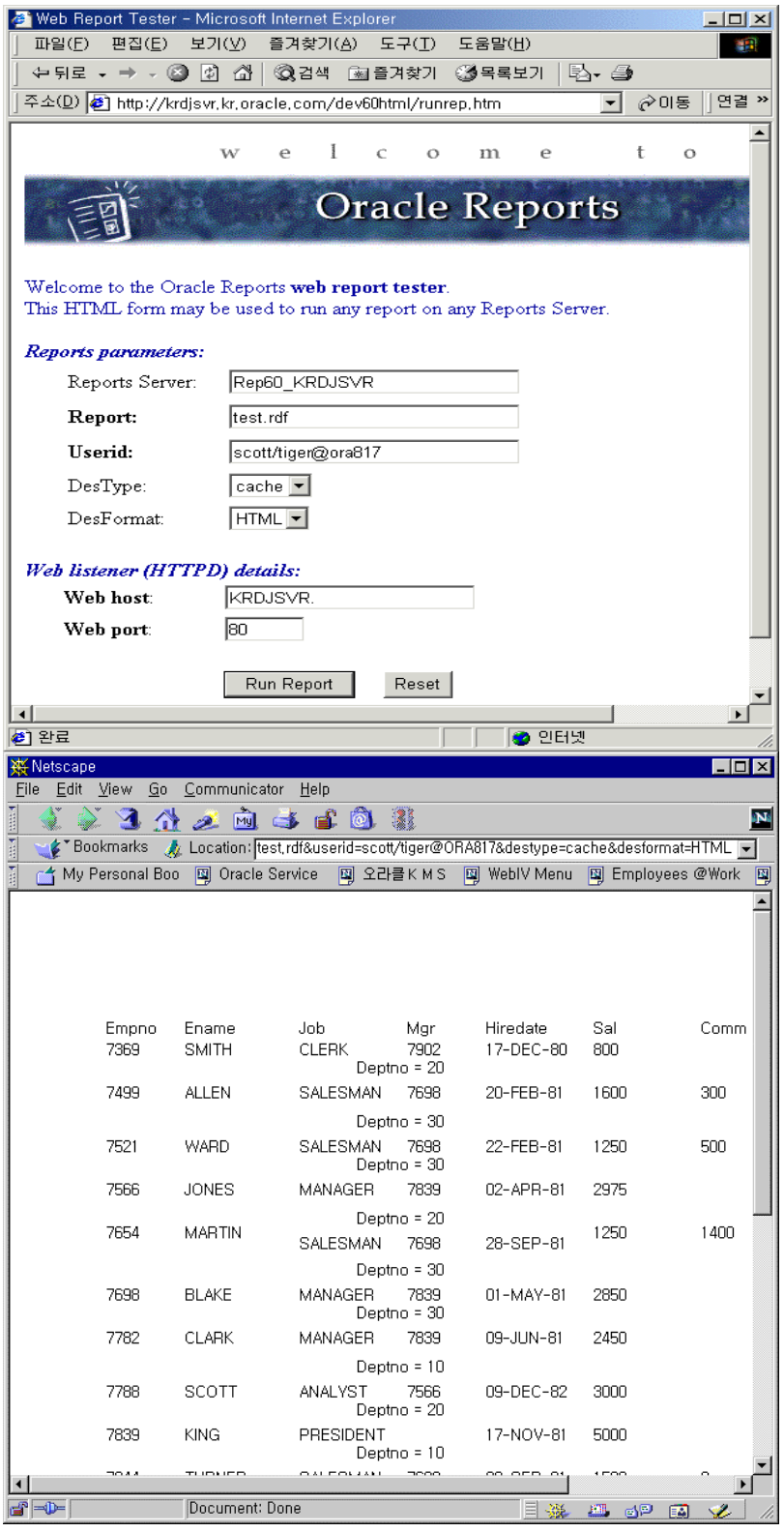
9. Install Service Pack 6 (SP6)

9.3 Object Caching Service for Java

10. 비즈니스 인텔리전스 추출

10.1 Oracle9iAS Reports

10.1.1 Oracle Report Server Test



10.1.2 RWServlet 사용법

10.1.3 Report Security

The purpose of this document is provide instructions for the installation of the integration of reports security into Oracle Portal 3.0. Read the whole document throughly before starting.

A Detailed overview with a step by step guide to the use of Report Security in Oracle Portal is available as a White Paper at http://technet.oracle.com/products/reports called Security Tips in Oracle Reports Services Release 6i with Oracle Portal Release 3.0

Installing Report Security Integration with Oracle Portal

==========----------==========

STEP 1

Although Report Security integration was supported with Oracle Portal from reports version 6.0.8.11.x, there were a number of problems with the installation scripts. You need Patch 4 with Patch 1710849 (available on metalink) or Patch 5 (when available)

STEP 2

The reports security should be run into a clean installation of Oracle Portal. That is, one which does not have a previous version of the report security from a previous release or earlier patch or base release.

STEP 3

Create the following roles manually
RW_ADMINISTRATOR
RW_DEVELOPER
RW_BASIC_USER
RW_POWER_USER
then grant RW_ADMINISTRATOR to PORTAL30;

STEP 4

To install the report security you need to run the script rwwwvins.sql

This script is available in {ORACLE_HOME}\report60\server\security and not in the directory {ORACLE_HOME}\report60\server as specified in the documentation. This has been logged as a documentation bug

You will get the error:

```
BEGIN :l_verstr := wwv_standard_util.get_version; END;
                                                  *
ERROR at line 1:
ORA-06550: line 1, column 38:
PLS-00302: component 'GET_VERSION' must be declared
ORA-06550: line 1, column 7:
PL/SQL: Statement ignored
```

This call gets the version of portal you have installed and runs the relevant scripts this is expected and as it fails it will automatically run the 3.0 scripts. If you have any other version e.g. Webdb 2.2 or 2.1 this will work and therefore runs the correct script.

STEP 5

Once the script has been run successfully in Portal under the Administer tab instead of seeing 'Report Server Administration' you may see the following:

Missing string(reports_security_desc) language(us) domain (wwc) sub_domain (sec)

The links should still valid and you can define report servers and reports successfully but all of the titles are incorrect.

Solution on NT/2000

This problem should have been fixed in patch 4 so please contact Oracle Support if you see this.

Solution on UNIX

(see bug 1650642):

a. deinstall by running the script rwdeinst.sql. as follows:

```
$ sqlplus /nolog @rwdeinst.sql
```

b. Then, run the sqlldr command, make sure you are in the

$ORACLE_HOME/reports60/admin/security/ directory and set your

environment to the run the database utilities. Then issue the command:

$ sqlldr userid=portal30/portal30@<connectstring> control=repus30.ctl

where <connectstring> is the value you entered for your tnsnames.ora entry in the previous two script prompts.

c. Then run the original pl/sql installation script again:

$ sqlplus /nolog @rwwwvins.sql

Explanation:

The sqlloader command in pl/sql installation scripts failed to run, and sqlloader doesn't populate all NLS strings into database table therefore it has to be run manually.

10.2 Oracle9iAS Discoverer Viewer

10.2.1 Discoverer viewer 설치확인

1. Launch the ‘ Services’ window from the Control Panel.

2. Only the following Oracle Services need to be reset for Automatic Startup:

- ? OracleDiscoverer4i
- ? OracleiDSDataTNSListener
- ? OracleiSuitesAgent
- ? OracleiSuitesDataGatherer
- ? OracleiSuitesHTTPServer
- ? OracleServiceORCL

3. The Service **OracleiDSDataHTTPServer** should be set stopped and set to manual startup.

4. Reboot the system.

5. We must manually register the Discoverer Services with the application server’ s object request broker.

6. From the ‘ Start’ menu, run ‘ Programs ✍ Oracle Discoverer Server 4i Setup ✍ **Register Collector’**. When completed, you may close the DOS windows.

7. From the ‘ Start’ menu, run ‘ Programs ✍ Oracle Discoverer Server 4i Setup ✍ **Register Preferences**’. When completed, you may close the DOS windows.

8. From the ‘ Start’ menu, run ‘ Programs ✍ Oracle Discoverer Server 4i Setup ✍ **Register Session**. When completed, you may close the DOS windows

10.2.2 Setting Up Discoverer

Installing the Tutorial Data:

Discoverer comes with a tutorial. This tutorial enables people to train informally to use its many features. Tutorials are available for both End Users and Administrators. In this section, we are going to install the tutorial data, which will serve as a basis for this review. Before beginning, you must have access to a database account with ‘ System’ level privileges. These are required only to install the new data, and not to run queries.

The tutorial installation is described in detail in Chapter 4 of the **Discoverer Administration Guide**. The basic steps are copied here for your convenience.

1. Discoverer Start the Administration Edition.

If you are using Windows 95 or Windows NT, choose **Oracle Discoverer 4 ✍ Discoverer Administration Edition** from the Start menu.

2. This displays the Connect to Oracle Discoverer Administration Edition dialog box. Specify a Username/password with DBA privileges. For a default Oracle 8.1.6 installation, this could be **System/Manager@orcl**.

Leave the Connect field blank if you are logging into your default database (local machine).

If you are logging into an Oracle database that is not your default database, specify the appropriate Oracle Net8 connect string. See your database administrator if you do not know the connect string.

3. Click Connect.

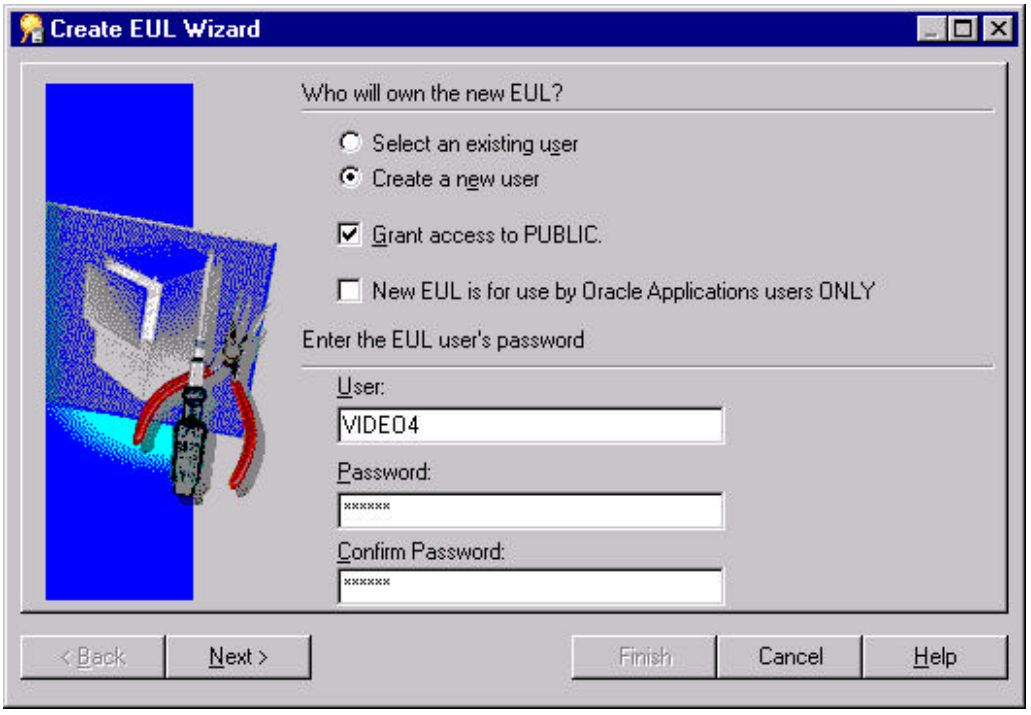
4. If this is the first time you are logging in to Discoverer, you will receive a warning that "**You do not have access to any End User Layer [EUL]...Do you want to create an EUL Now?**".

Click on [**Yes**] to enter the EUL Manager dialog box..

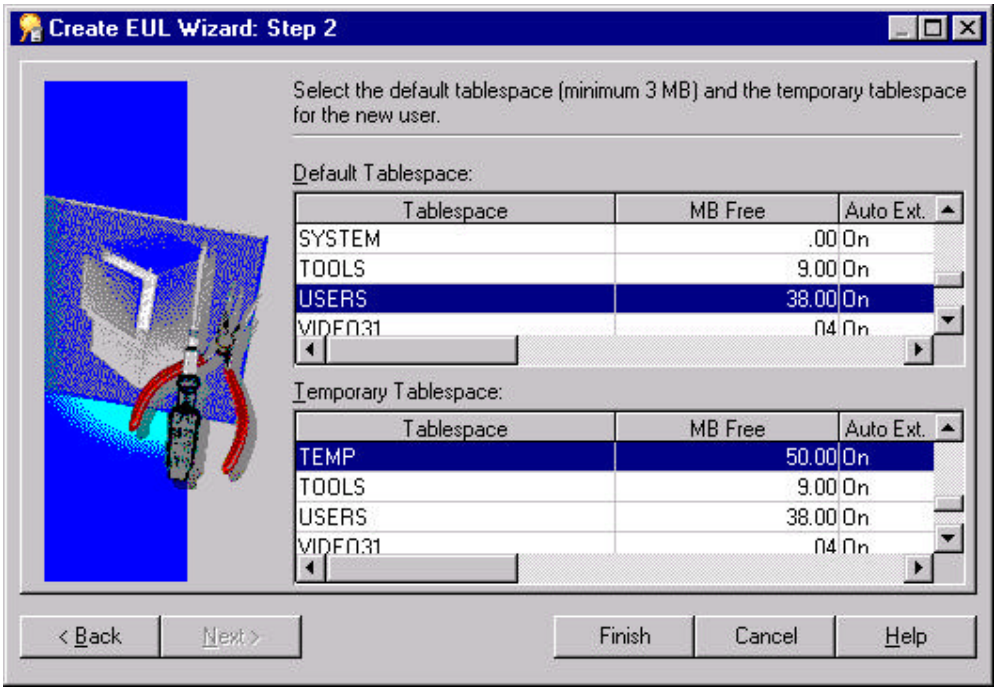
5. Within the EUL Manager, click on [**Create an EUL**] to begin.

6. The Create EUL Wizard opens. Use this wizard to create your user ID for this tutorial. Make the following selections and text entries:

- Select Create a new user.
- In the User field, specify VIDEO4
- In the Password field, repeat your user ID (VIDEO4), and confirm it.



7. Click [**Next**]. This displays the Create EUL Wizard: Step 2.



8. Select the default and temporary tablespaces. For example, select USERS as your default tablespace and TEMP as your temporary tablespace.

9. Click [**Finish**].

10. When complete, the Discoverer Administration Edition displays a message telling you that the EUL has been created successfully. Click OK.

11. You have successfully created an EUL.

The Discoverer Administration Edition asks if you want to install the tutorial in the EUL. Click [**Yes**].

This displays the Install Tutorial Wizard: Step 1. Note that your tutorial user ID is in the EUL text box.

12. Click [**Next**].

13. This displays the Install Tutorial Wizard: Step 2. Note that VIDEO4 is specified in the User field. In the Password field, specify **VIDEO4**.

14. Click [**Finish**].

15. When Discoverer Administration Edition has completed the installation, a message tells you that the tutorial data has been installed. Click [**OK**].

16. You are then asked if you want to connect as the owner of the EUL that you have just created. Click [**Yes**].

17. The **Load Wizard** opens automatically. Select '**Open an Existing Business Area**' to see the Video Tutorial business area.

Install End User Layer Analysis Workbooks

The Discoverer End User Layer (EUL) also serves as a repository for user defined queries, usage statistics, and Discoverer privileges, providing valuable feedback on query performance, query volume, usage patterns, etc.. This information is readily accessible through ad-hoc reporting or predefined reports.

Discoverer includes a series of pre-defined worksheets to assist Administrators in analyzing query patterns and EUL content. The installation procedure for this workbook is described in **Appendix B** of the **Discoverer Administration Guide.** For simplicity, these steps are also detailed below:

1. Use SQL*Plus to run the SQL file 'EUL4.sql' as the EUL Owner,
For example:

C:\SQLPlus

or from:

Start ✍ Programs ✍ Oracle - iDSData ✍ Application Development ✍ SQL*Plus

2. At the "Enter User Name" prompt:

<eul owner>/<eul owner password>

where <eul owner>>/<eul owner password> is **video4/video4** based upon the previous section

3. At the prompt, type the following:

SQL> Start *D*:\{ORACLE HOME}\discvr4\sql\EUL4.sql

Where {ORACLE HOME} is the path to where Discoverer Administration is installed, and 'D' is the drive letter you installed to. The {Oracle Home} should be 'Oracle\806' based upon the preceding installation instructions.

4. This creates some custom PL/SQL functions required by the Discoverer V4 EUL business area.

5. **Exit** the SQL session.

6. Start Discoverer Administration Edition. (Start ✍ Programs ✍ Oracle Discoverer 4 ✍ Discoverer Administration Edition)

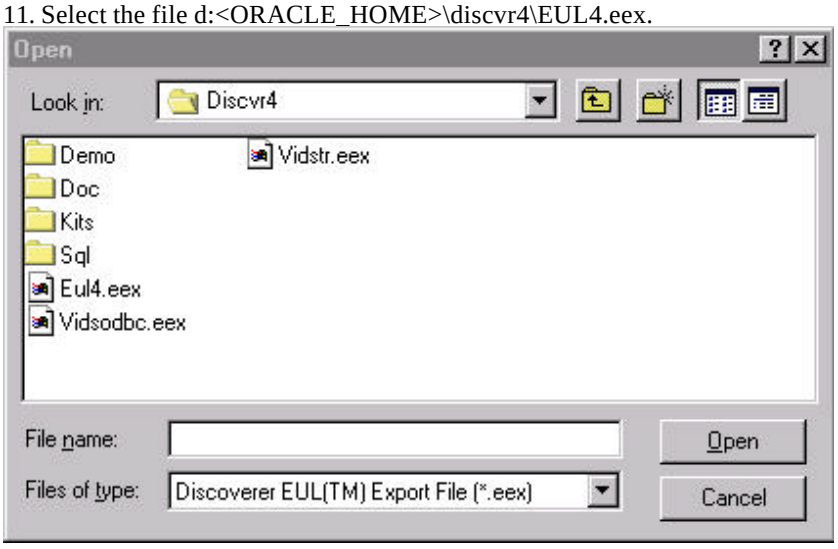
7. Connect as the EUL owner. If you followed the installation 'tips' above, this will be Video4/Video4.

8. At the Load Wizard, hit [Cancel].

9. From the menu bar, select **File** ✍ **Import**.

10. The Import Wizard is displayed. Click on the [**Add**] button.

11. Select the file d:<ORACLE_HOME>\discvr4\EUL4.eex.



12. Click [**Open**]

13. Accept the defaults, and Click [**Next**] to continue.

14. Click [**Start**] to begin the import.

15. When you see the `**Import Successful**' message, Click [**Finish**]. This completes the import.

16. You may exit Discoverer Administration.

The Eul Data Definition and Query Statistics workbooks are now accessible from the Discoverer clients: Discoverer Desktop, Discoverer Plus, and Discoverer Viewer. We will run these later in our review.

Summary Management - Setup

Discoverer Administrators require additional database privileges if they are to use the Automated Summary Management features. Procedures to grant these privileges are described in **Chapter 2.2** of the **Discoverer Administration Guide - "Summary Management".**

If you are connecting to an existing data source, you should review this chapter in its entirety to ensure that you are set up correctly. If you installed the database according to the directions above, the relevant steps are replicated below for your convenience. Please contact your system administrator if you have any questions regarding this, or need additional assistance.

Privileges

1. From the ' Start' menu, choose Start ✍ Run. Type in SVRMGRL. A DOS Window will appear.

2. At the prompt, type **CONNECT INTERNAL**

3. Issue the following command to grant select access on required system objects:

SQL> grant select on v_$parameter to public;

4. If you are connecting to an existing database and wish to enable query prediction, verify that the following privileges have been granted:

SQLDBA> grant select on v_$session to public;

SQLDBA> grant select on v_$sesstat to public;

5. Type '**Exit'** to end your session.

6. Log onto SQL*Plus as the Administrator. From the start menu, select Start ✍ Programs ✍ Oracle - iDSData ✍ Application Development ✍ SQL Plus

7. In the Log On window, enter '**System'** for the user name and '**Manager'** as the password. Click on [**OK**] to connect.

8. Execute the following SQL statement:

SQL> *@D:*\Oracle\806\discvr4\sql\eulasm.sql

where ' D:' is the drive letter where you installed Oracle iDS.

9. At the prompt to "**Enter Value for User Name:"** type '**Video4'**, where VIDEO4 is the user we created when we installed the Tutorial Data.

Confirming that DBMS_JOBS is Installed

The Oracle Batch Manager is utilized to enable the scheduling of updates to summary tables and materialized views. The following steps determine if this is set up correctly. *You will only need to perform this check these quotas if you are connecting to an existing database. The default installation above supports this facility.*

1. Within the SQL Plus window you previously opened, Execute the following SQL statement:

SQL> select * from all_objects where object_name='DBMS_JOB' and object_type = 'PACKAGE';

If the statement returns no rows, use your DBA SQLDBA (Oracle 7.2) or SVRMGRL (Oracle 7.3 or later) to create the necessary packages. Please refer to chapter 5 of the Discoverer Administration Guide for further details.

Determining Tablespace Quotas

A user must have enough quota in their default tablespace to create summary tables. You will only need to check these quotas if you are connecting to an existing database.

1. Return to your SQL Plus session.

2. At the prompt

SQL> select * from dba_ts_quotas where username = <user>;

where <user> is the userid of the person using the Administration Edition, i.e. VIDEO4. Unlimited tablespace is represented by a ' -1' .

3. Reset the Tablespace Quotas by issuing the following SQL statement:

SQL> alter user <user> quota <n> on <tablespace>;

where <user> is the userid of the person using the Administration Edition where <n> is the quota in K(ilobytes) or M(egabytes) or Unlimited where <tablespace> is the default tablespace name e.g. USERS

Checking Object/Schema Name

A user should not have an object in their schema with the same name as their username. *This step is only necessary if you are connecting to an existing database.*

1. To check that this is not the case, login to SQL*Plus as the user and issue the following command:

SQL> select object_name from user_objects where object_name = <user>;

Database Initialization Parameters

To enable summary management, we need to make the following modifications. This step applies to both existing databases as well as a locally installed database.

1. Locate INIT<SID>.ORA. The file INITORCL.ORA is located in <ORACLE_HOME>\database. The <SID> in this case is ORCL. If you installed the database on the server following these instructions, you can locate it in D:\ORACLE\iDSData\database\initORCL.ora where ' D:' is the drive letter where you installed the database.

2. Edit the file to include the following lines:

- timed_statistics = TRUE

- ? job_queue_processes = 2
- ? job_queue_interval = 600 (Note: this is equivalent to 10 minutes)

3. Close the file and save your changes.

4. Shut down and restart the server to effect this change.

12.2.3 Discoverer Viewer on DHCP

The Oracle9*i*AS installation process assumes that the target server has a fixed IP address. However, most Oracle field employees are running under DHCP.

The following configuration changes have enabled Discoverer Viewer to work in this environment. Please note that this method is not officially supported, and may affect other 9*i*AS applications.

disco4iviewer.properties

The disco4iviewer.properties file defines the servlet used by the Discoverer Viewer. This file is located in {*OracleiASHome}*\Apache\Jserv\servlets. If you followed the instructions above, you will find this file in:

D:\ORACLE\iSuites\Apache\Jserv\servlets

where ‘D:’ is the drive letter you installed to.

1. Make a copy of file disco4iviewer.properties.

2. Open file disco4iviewer.properties.

3. Scroll to the bottom of the file, until you see the section **“# Lines for disco4iviewer.properties**”

4. For each line that begins “**servlet.Viewer.initArgs**”, there is a url of the format “http://*machinename:port#*/disco4iv/...”

5. Modify the *machinename* to be *machinename.domain*. For example:

Before:

servlet.Viewer.initArgs=config=http://mlstern-lap:80/disco4iv/html/disco4iv.xml

After:

servlet.Viewer.initArgs=config=http://mlstern-lap.us.oracle.com:80/disco4iv/html/disco4iv.xml

Where ‘mlstern-lap’ is the machine name and ‘us.oracle.com’ is the domain name.

6. Save your changes and exit.

httpd.conf

The httpd.conf file defines listener environment used by 9iAS and the Discoverer Viewer servlet. This file is located in {*OracleiASHome}*\Apache\Apache\conf. If you followed the instructions above, you will find this file in:

D:\ORACLE\iSuites\Apache\Apache\conf

where ‘ D:’ is the drive letter you installed to.

1. Make a copy of file httpd.conf.

2. Open file httpd.conf.

3. Search for the string “**ServerName**”.

4. Modify the ServerName from *MachineName* to *MachineName.Domain*. For example:

ServerName MLSTERN-LAP to

ServerName MLSTERN-LAP.us.oracle.com

5. Save your changes and exit.

6. Stop the service OracleiSuitesHTTPServer.

7. Restart the service OracleiSuitesHTTPServer.

10.2.4 Discoverer Viewer Test

Discoverer Viewer should be executable via url:

http://*MachineName.Domain*/discoverer4i/viewer

where the *MachineName.Domain* is the ServerName provided in step 4 above.

11. 웹 인프라 관리

11.1 Oracle Enterprise Manager

11.2 Oracle Internet Directory

12. Oracle Servlet Engine와 mod_ose설정방법

- ORACLE 8.1.7 & 9IAS 1.0.2.X

12.1 Introduction

12.1.1 Overview

Oracle 8.1.7 (Oracle 8I R3) 부터 Oracle Servlet Engine(OSE)이 기본적으로 제공되고 있으며 Oracle HTTP Server 의 mod_ose module은 Apache와 OSE를 연결해 주는 module이다. 이것은 Apache와 OSE 사이의 Protocol로써 Net8 상의 HTTP Tunneling을 사용한다. 모든 request 에 대해 connection을 종료하는 Mod_jserv와 달리 mod_ose는 stateful application에 대한 client 접속에 대해 OSE와 connection 을 유지한다.

여기서 간단히 Oracle Servlet Engine에 대한 기능을 소개한다.

1. Servlet 2.2 spec, JSP 1.1 spec 에 호환
2. OSE' JNDI namespace내에서 servlet publish
3. Stateful, Stateless servlet지원
4. Stateful servlet의 database session지원
5. Apache web server의 mod_ose를 이용한 access가능

12.1.2 OSE 설정 절차

1 Oracle 8I, Net8 설정

2 Session shell을 이용하여 DB 접속

3 Web Service 생성

4 Web Domain 생성

5 Web Service Endpoint 생성

- 5.1 Oracle Net8 Listener (HTTP Service dynamically register to listener)
- 5.2 Oracle Net8 Listener (HTTP Service statically configured it listener.ora)
- 5.3 Oracle Dispatcher directly
- 5.4 Oracle HTTP Server (Apache) and mod_ose

6 Servlet Contexts 생성

7 Servlet Publication

8 데모

12.2 Oracle 8i, Net8 설정

12.2.1 Oracle 8i 설정예

기본적으로 Oracle Jserver, MTS 환경이 되어 있어야 한다.

Init.ora

```
shared_pool_size = 50M 이상 ( MTS 설정시 더 크게 )
java_pool_size = 20M 이상 ( EJB 사용시 더 크게 )
compatible = 8.1.0

mts_dispatchers = "(PROTOCOL=TCP)"
mts_dispatchers = "(PROTOCOL=TCP)(PRE=oracle.aurora.server.SGiopServer)"

# OSE Endpoint statically configured in listener.ora
# TCP dispatcher (generic) for OSE access over listener
mts_dispatchers = "(ADDRESS=(PROTOCOL=TCP))(DISPATCHERS=1)"
# TCP dispatcher (for myWebServer service only) for OSE access over listener
mts_dispatchers = "(ADDRESS=(PROTOCOL=TCP))(DISP=1)(PRE=http://myWebService)"

# OSE endpoint using dispatcher only
# mts_dispatchers = "(ADDRESS=(PROTOCOL=TCP)(PORT=8080))(DISP=1)(PRE=http://admin)"
mts_dispatchers =
"(ADDRESS=(PROTOCOL=TCP)(PORT=8080))(DISP=1)(PRE=http://myWebService)"

# OSE endpoint for apache mod_ose
mts_dispatchers = "(ADDRESS=(PROTOCOL=TCP))(DISPATCHERS=1)(SERVICE=MODOSE)"

mts_dispatchers = "(PROTOCOL=TCP)(PRE=oracle.aurora.server.SGiopServer)"
# Uncomment the following line when your listener is configured for SSL
# (listener.ora and sqlnet.ora)
# mts_dispatchers = "(PROTOCOL=TCPS)(PRE=oracle.aurora.server.SGiopServer)"
```

12.2.2 Net8 설정 예

Listener.ora

```
LISTENER =
  (DESCRIPTION_LIST =
    (DESCRIPTION =  (ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROC1))   )
    (DESCRIPTION =  (ADDRESS = (PROTOCOL = TCP)(HOST = jweom)(PORT = 1521)) )
   (DESCRIPTION =  (ADDRESS = (PROTOCOL = TCP)(HOST = jweom)(PORT = 1521))
          (PROTOCOL_STACK =   (PRESENTATION = http://myWebService) )   )
    (DESCRIPTION =   (ADDRESS = (PROTOCOL = TCP)(HOST = jweom)(PORT = 2481))
     (PROTOCOL_STACK =  (PRESENTATION = GIOP)  (SESSION = RAW) )   )
  )

SID_LIST_LISTENER =
  (SID_LIST =
    (SID_DESC =
       (SID_NAME = PLSExtProc)  (ORACLE_HOME = E:\ora817) (PROGRAM = extproc)   )
    (SID_DESC =
      (GLOBAL_DBNAME = MINIMAX)  (ORACLE_HOME = E:\ora817)
       (SID_NAME = MINIMAX)   )
  )
```

Tnsnames.ora

```
# TNSNAMES.ORA Network Configuration File: E:\ora817\network\admin\tnsnames.ora
# Generated by Oracle configuration tools.

MINIMAX.KR.ORACLE.COM =
  (DESCRIPTION =
    (ADDRESS_LIST  = (ADDRESS = (PROTOCOL = TCP)(HOST = jweom)(PORT = 1521))   )
    (CONNECT_DATA  = (SERVICE_NAME = MINIMAX) )
  )

EXTPROC_CONNECTION_DATA.KR.ORACLE.COM =
  (DESCRIPTION =
    (ADDRESS_LIST  = (ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROC1)) )
    (CONNECT_DATA  = (SID = PLSExtProc) (PRESENTATION = RO) )
  )

INST1_HTTP.KR.ORACLE.COM =
  (DESCRIPTION =
    (ADDRESS_LIST =
     (ADDRESS = (PROTOCOL = TCP)(HOST = jweom)(PORT = 1521))
     )
    (CONNECT_DATA =
     (SERVER = SHARED) (SERVICE_NAME = MODOSE) (PRESENTATION = http://admin)
     )
  )
INST2_HTTP.KR.ORACLE.COM =
  (DESCRIPTION =
    (ADDRESS_LIST =
     (ADDRESS = (PROTOCOL = TCP)(HOST = jweom)(PORT = 1521))
     )
    (CONNECT_DATA =
     (SERVER = SHARED) (SERVICE_NAME = MODOSE)
       (PRESENTATION = http://myWebService)
     )
  )
```

12.2.3 Java 개발 DB User에 권한부여하기

일반 DB User로 java 관련 class를 Oracle Jserver에 생성하려면 적당한 권한이 필요.

SQL> grant javasyspriv (또는 javauserpriv) to scott;

그리고, Oracle Servlet Engine에서 사용할 Document Root 를 File System 에 생성하려면 dbms_java.grant_permission 를 이용한다.

SQL> exec dbms_java.grant_permission('SCOTT',
' SYS:java.io.FilePermission','f:\9ias\demo\test.txt','read');

12.2.4 Javac 를 이용하거나, servlet , sqlj, ejb 로 개발하기위한 class들

<ORACLE_HOME>\lib\aurora_client.jar;
<ORACLE_HOME>\lib\aurora_server.jar;
<ORACLE_HOME>\ lib\vbjapp.jar;
<ORACLE_HOME>\ lib\vbjorb.jar;
<ORACLE_HOME>\lib\sqlj\lib\runtime.zip;
<ORACLE_HOME>\jdbc\lib\translator.zip;
<ORACLE_HOME>\ jdbc\lib\classes12.zip;
<ORACLE_HOME>\jdbc\lib\jndi.zip;
<ORACLE_HOME>\ lib\servlet.jar;.

12.2.5 Note

Oracle Jserver 설정전에 <ORACLE_HOME>/javavm/readme.txt 를 참조

Oracle Jserver 설정은 <ORACLE_HOME>/ javavm/jahome/Settings.properties 를 참조

12.3 Session Shell 이용하기

12.3.1 Session Shell 이란

Sess_sh (session shell) 은 database instance의 session namespace를 관리하기 위한 Oracle 8i tool 이다.

```
Syntax

sess_sh -user user -password password -service serviceURL

-user specifies the user name of the schema.
-password specifies the password for the specified user name.
-service specifies the URL of the database whose session namespace is to be
"opened" by sess_sh. The serviceURL parameter should have one of the three
following forms:
    sess_iiop://host:port:sid
    jdbc:oracle:type:spec
    http://host[:port]
Following are some general examples:
    sess_iiop://localhost:2481:orcl
    jdbc:oracle:thin:@myhost:1521:orcl
    http://localhost:8000
```

실행예)

```
C:\>sess_sh -u sys/manager -s sess_iiop://jweom:2481:MINIMAX
--Session Shell--
--type "help" at the command line for help message
$ exit

C:\>sess_sh -u sys/manager -s jdbc:oracle:thin:@jweom:1521:MINIMAX
--Session Shell--
--type "help" at the command line for help message
$
```

12.3.2 Web Service 생성

Syntax
$ createwebservice [options] <service_name>
-root <location>
[-properties <prop_groups>]
[-ip]
[-virtual]
<location> JNDI location for the web service configuration.

예)
$ createwebservice -root /webdomains webserver -properties "debug=true
>servlet.class=SCOTT:customer.CustMain details=default"

실행예)

$ createwebservice -root /myWebServer myWebService

참고
destroyservice [-all] <service_name>
createserver **또는** createwebservice**로 만들어진 것 정의된 서비스**, endpoint**를 해제하고**, endpoint**를 삭제**

예) $ destroyservice webserver

12.3.3 Web Domain 생성

Service**에는 여러개의** web domain**을 포함할 수 있으며**, web domain**에는 설정에 관계된 정보와** servlet context, realm, log**등이 저장되어 있다**.

서비스방식에 따라 single domain service, multi domain service**가 있다**. multi domain service**는 기존의** web server**에서** virtual host**등에 해당하는 부분등이 포함된다**.

Syntax
createwebdomain [options] <domain_name>
[-docroot <location>]
[-properties <prop_groups>
<location> The location of the servlet static pages for this webdomain's default context. Other context's docroot location is specified in the createcontext command.

예)
createwebdomain /mywebserver

데모)
$ createwebdomain -docroot f:\9ias\demo /myWebServer

참고
destroywebdomain <domain_name>
webdomain내의 servlet context 들도 삭제된다.
예)
destroywebdomain /webserver

12.3.4 Web Service Endpoint

Web Service network entity를 endpoint라 칭하며, 각 web service는 적어도 하나의 endpoint가 있고 각각은 하나이상의 HTTP Listener나 HTTP Dispatcher와 연관된다.

HTTP Endpoint를 이용한 Oracle8i OSE연결 option들

a. Oracle Net Listener
- HTTP Service dynamically register to listener
- HTTP Service statically configured it listener.ora

b. Oracle Dispatcher directly
c. Oracle HTTP Server (Apache) and mod_ose

Syntax
addendpoint [options] <service> <name>
[-listener <lsnr>]
[-net8]
[-interface <int_spec>]
[-port <port_num>]
[-register]
[-ssl]
[-threads <min> <max>]
[-timeout <seconds>]

예)
addendpoint -port 8080 -threads 3 5 -timeout 300 webserver endpt1

✍ HTTP Service dynamically register to listener

```
$ addendpoint -port 1521 myWebService endpt_static

INIT.ORA
#  1. TCP dispatcher (generic) for OSE access over Listener
#       mts_dispatchers = "(ADDRESS=(PROTOCOL=TCP))(DISPATCHERS=1)"
#  2. TCP dispatcher (for myWebServer service only) OSE access over Listener
#       mts_dispatchers =
"(ADDRESS=(PROTOCOL=TCP))(DISP=1)(PRE=http://myWebService)"
LISTENER   :
#      Listener static configuration for myWebServer running in OSE
#      (ADDRESS = (PROTOCOL = TCP)(HOST = ukp15002)(PORT =1521))
#      (PROTOCOL_STACK = (PRESENTATION = http://myWebService))
#
TNSNAMES   :   No setup
```

✍ HTTP Service statically configured it listener.ora

```
$ addendpoint -port 1522 -register myWebService endpt_dynamic

INIT.ORA
#     1. TCP dispatcher (generic) for OSE access over Listener
mts_dispatchers = "(ADDRESS=(PROTOCOL=TCP))(DISPATCHERS=1)"
#     2. TCP dispatcher (for myWebServer service only) OSE aces over Listener
mts_dispatchers    =
"(ADDRESS=(PROTOCOL=TCP))(DISP=1)(PRE=http://myWebService)"
LISTENER   : No setup
TNSNAMES   : No setup
```

✍ Oracle Dispatcher directly

```
$ addendpoint -port 8080 myWebService endpt_disp

INIT.ORA
#     HTTP dispatcher for direct access to OSE (for myWebServer service only)
mts_dispatchers = "(ADDRESS=(PROTOCOL=TCP)(PORT=8080))(DISP=1)
          (PRE=http://myWebService)"

LISTENER   : No setup
TNSNAMES   : No setup
```

✍ Oracle HTTP Server (Apache) and mod_ose

```
$ addendpoint -net8 myWebService    endpt_ose

INIT.ORA
#     TCP dispatcher for access over Apache mod_ose
mts_dispatchers =
"(ADDRESS=(PROTOCOL=TCP))(DISP=1)(SERVICE=MODOSE)"

LISTENER  : Generic TCP listener on any port (example 1521)
TNSNAMES    :
INST2_HTTP =
  (DESCRIPTION =
    (ADDRESS_LIST =
     (ADDRESS = (PROTOCOL = TCP)(HOST = jweom)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVER = SHARED)
      (SERVICE_NAME = MODOSE)
      (PRESENTATION = http://myWebService)
    )
  )
```

<ORACLE_HOME>/Apache/Apache/conf/mod__ose.conf

```
LoadModule  ose_module          modules/orajipa8i.dll
<IfModule mod_ose.c>
AuroraService inst2_http
#
# Context for VPATH /myWebApp/
#
<Location /myWebApp/ >
AddHandler aurora-server snoop
</Location>
<Location /myWebApp/* >
SetHandler aurora-server
</Location>
<Location /myWebApp/myHelloServlet >
SetHandler aurora-server
</Location>
</IfModule
```

참고
rmendpoint <service> <name>
service의 endpoint를 제거하고 listener에서 endpoing 를 해제
예)
$ rmendpoint webserver endpt1

12.3.5 Servlet Contexts

URL의 URI 부분에서 같은 Virtual path를 사용하는 servlet, configuration parameter, JSP, 그리고 file system의 static 문서들의 집합을 표시

Syntax
createcontext [options] <domain_name> <context_name>
-virtualpath <path>
[-recreate]
[-properties <prop_groups>]
[-docroot <location>]
[-stateless]
예)
createcontext -virtualpath /SCOTT -docroot /private/scott/html /ScottRoot ScottContext

```
$ createcontext -virtualpath /myWebApp -docroot f:\9ias\demo /myWebServer myWebApp
```

참고
destroycontext <context_name>
webdomain 의 저장된 모든 servlet, servlet context, servlet configuration들을 삭제

12.3.7 Servlet Publication

Oracle8i 에 loadjava나 create java등으로 load된 servlet classes 등은 session shell 의 publishservlet 명령에 의해 servlet context 로 publish될 수 있다. 이렇게 publishing 된 servlet은 servlet context 의 subdirectory안에 JNDI object로 생성된다.

Servlet 작성

예) Hello.java

```
==================================
  import javax.servlet.*;
   import javax.servlet.http.*;

  public class Hello extends HttpServlet {
   int i =0 ;
  public void doPost ( HttpServletRequest req, HttpServletResponse res )throws
ServletException, java.io.IOException {
    res.setContentType("text/html");
   java.io.PrintWriter out = new java.io.PrintWriter(res.getOutputStream());
      i++;
      out.println("<HTML><BODY>");
    out.println("This is the Servlet from Database Hit is "+ i);
      out.println("</BODY></HTML>");
      out.flush();
      out.close();
  }
 public void doGet( HttpServletRequest req, HttpServletResponse res )throws
ServletException, java.io.IOException {
     doPost( req,res);
  }
 }
```

Servlet Compile

```
F:\9ias\demo>javac Hello.java
```

Servlet Load

```
F:\9ias\demo>loadjava -r -f -v -u scott/tiger@minimax Hello.class
initialization complete
loading  : Hello
creating : Hello
resolver :
resolving: Hello
```

Servlet publication

Syntax
publishservlet [options] <context_name> <servlet_name> <class_name>
[-virtualpath <path>]
[-stateless]
[-reuse]
[-properties props]
예)
publishservlet -virtualpath /hello /websdomains/contexts/default helloServlet SCOTT:HelloWorld

데모)
$ publishservlet -virtualpath /myHelloServlet /myWebServer/contexts/myWebApp myHelloServlet SCOTT:Hello

참고
unpublishservlet <context_name> <servlet_name>

실행권한 주기

$ chown -R SCOTT /myWebServer
$ chmod -R +rwx SCOTT /myWebServer

12.4 데모하기

http://jweom.kr.oracle.com:1522/index.html

http://jweom.kr.oracle.com:1522/myWebApp/myHelloServlet

http://jweom.kr.oracle.com:8080/index.html

http://jweom.kr.oracle.com:8080/myWebApp/myHelloServlet

http://jweom.kr.oracle.com/myWebApp/myHelloServlet

13.Oracle 9I AS Container for J2EE

- Oracle9iAS and J2EE Overview
- OC4J Server 설치 및 테스트
- Overview of Configuration files
- Basic ConfigurationTasks
  - Setting Up an Oracle DataSource
  - Naming / JNDI
  - Setting Up OC4J with Apache
  - Running simple Servlet, JSP and EJB
  - Setting Up Security
  - Setting Up RMI over HTTP
  - Setting up JMS Queue
- Packaging and Deploying J2EE Applications
  - Using JARs, WARs and EAR files
- Basics of HTTP Clustering and Load-Balancing

13.1 Oracle9iAS and J2EE Overview

Oracle 9iAS Release 1.0.2.2에서 새로 제공되는 JDK VM기반의 J2EE Container로 다음과 같은 기능이 제공된다.

- Complete J2EE 1.2 and partial J2EE 1.3 implementation
- Lightweight
- Small memory footprint
- High Performance
- XML file based configuration for all aspects of server, web server and applications
- Simplified installation, configuration, deployment and administration
- Auto deployment and “Hot” deployment of J2EE Applications
- Clustering, Load balancing and Fail-over of Web Applications

13.2 OC4J Server 설치 및 테스트

13.2.1 Requirements

OC4J를 사용하려면 JDK 1.2.2_07 이나 1.3.xxx 를 사용할 때 더욱 안정적으로 사용할 수 있다. 설치후 install directory, lib/ subdirectory, EAR, WAR, ejb-jar files 을 각 configuration file의 정의에 의해 적재할 수 있으므로 CLASSPATH에 추가하지 않아도 된다.

13.2.2 기본 설치방법

```
% cd $ORACLE_HOME

% unzip oc4j.zip

%  cd  j2ee/home        (<oc4j-home> 기본 디렉토리임)

% java -jar orion.jar –install
```

Directory Structure
<oc4j-home>

- *application-deployments/*
- *applications/*
- *config/*
- *database/*
- *lib/*
- *log/*
- *default-web-app/*

13.2.3 기본설정으로 테스트하기

13.2.3.1 Default Startup

```
% java –jar orion.jar
```

"Oracle9iAS (1.0.2.2) Containers for J2EE initialized"

notes : j2ee/home/config 에 위치한 default configuration file (server.xml) 로 OC4J가 실행되며 –config option 을 이용해 다른 configuration file을 지정해도 된다.

% java –jar orion.jar –config /mypath/server.xml

notes: /mypath내에 있는 server.xml로 OC4J가 실행됨

D:\oc4j\j2ee\home>java -jar orion.jar
A nonfatal internal JIT (3.10.107(x)) error 'Relocation error: NULL relocation target' has occurred in :
'org/apache/crimson/parser/Parser2.maybeComment (Z)Z': Interpreting method.
Please report this error in detail to http://java.sun.com/cgi-bin/bugreport.cgi
Oracle9iAS (1.0.2.2) Containers for J2EE initialized

% java -jar -Djava.compiler=NONE orion.jar

13.2.3.2 OC4J 테스트하기

http://localhost:8888/

http://localhost:8888/servlet/HelloWorld

초기화면 이미지

13.2.3.3 다른 Port로 수정해서 실행하기

J2ee/home/config/default-web-site.xml

13.2.4 OC4J 실행방법

13.2.4.1 Default Startup

% java -jar orion.jar

13.2.4.2 Advanced Startup options

% java -jar orion.jar <options>

option list:

-config <file> default config/server.xml 이 아닌 다른 server configuration file로 start
-validateXML Configuration parameter를 점검
-out [file] Standard Output (system.out) 을 file로 기록
-err [file] Standard Error (system.err) 를 file로 기록
-install OC4J 설치후 admin password를 기록함.
-userThreads Enables context lookup support from user-created threads.
-config Specifies the location of the server.xml file.

-console Administration Console 을 구동 (하지만 이것을 사용할 경우 OC4J가 구동중이면 Error가 발생하므로 가능하면 admin.jar를 이용하여 console을 사용할 것)
-quiet Standard output message를 중지
-version Version 을 출력하고 종료됨
-help Help 메시지를 보여줌

13.2.5 OC4J Server 종료하기

13.2.5.1 정상적인 종료방법

% java -jar admin.jar ormi://<host>:<port> <admin_id> <admin_password> -shutdown

13.2.5.2 강제적인 종료방법

% java -jar admin.jar ormi://<host>:<port> <admin_id> <admin_password> -shutdown *force*

option

<host> hostname

<port> <oc4j-home>/config/rmi.xml 에서 지정한 rmi-server port로 default port는 23791

<admin_password> OC4J install 시 지정한 admin 의 password 로 <oc4j-home>config/principals.xml 을 참조

13.2.6 OC4J Server 관리하기

13.2.6.1 명령행에서 관리 옵션

% java -jar admin.jar ormi://<host><port> <admin_id> <admin_password> <options>

option list:

ormi://<host>:<port> : 기본 Port 번호는 23791 이며 이 설정은 rmi.xml 에 지정된 값을 사용한다.

-shutdown

OC4J Server 종료하기 .

-restart

OC4J Server 재구동하기. 이 명령 수행전 OC4J server가 실행되어져야 한다.

-deploy -file <EAR> -targetPath <remote_node_path>

Deploys (redeploys) an application. Supply application information in the following sub-switches:

-file: enterprise archive to deploy
-deploymentName: application deployment name

-targetPath: path on the remote node to deploy archive into. Default is applications directory.

-bindWebApp <app_deploy_name> <web_app_name> <web_site_name> <context_root>

Binds a Web application to the specified site and root.

-installDataSource

Installs a new DataSource. Supply information within the following sub-switches

-jar: path to the JAR file containing the driver that is to be added to the server' s library.

-url: The JDBC database URL

-location: The namespace location for the raw source. For example, jdbc/DefaultPooledDS.

-pooledLocation: The namespace location for the pooled source. For example, jdbc/DefaultPooledDS.

-xaLocation: The namespace location for the XA source. For example, jdbc/xa/DefaultXADS.

-cmtLocation: The namespace location for the CMT source.

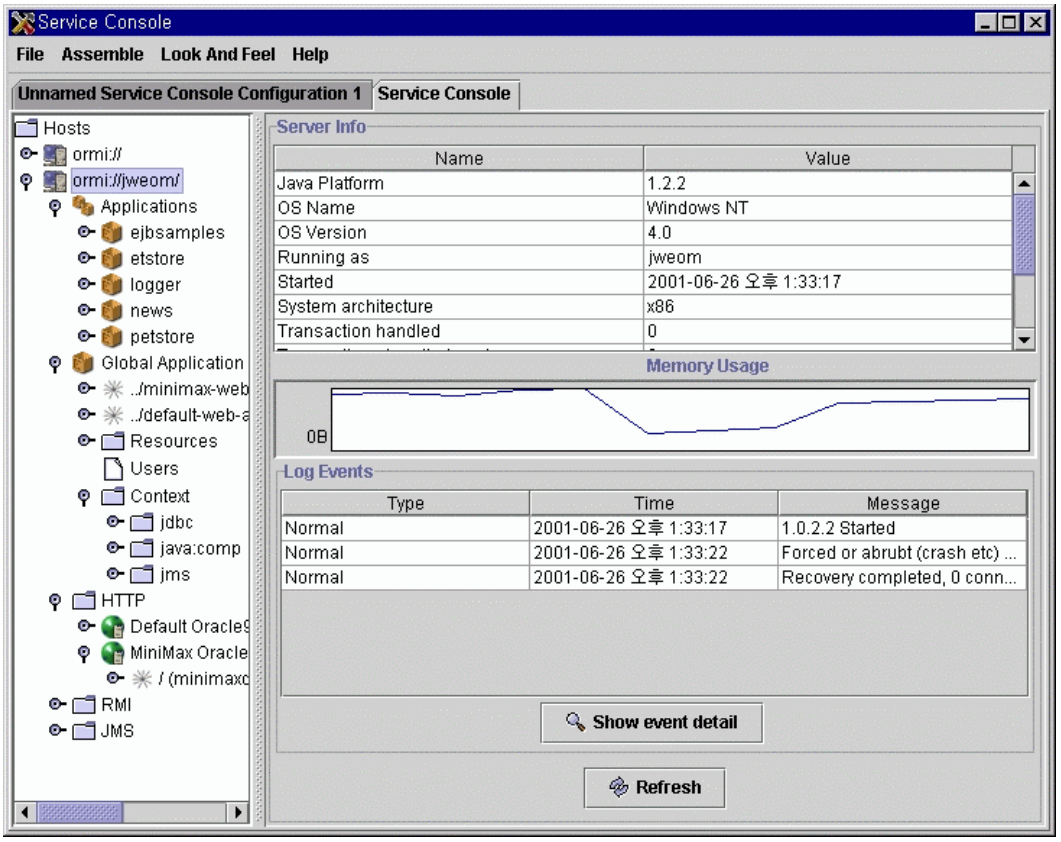
For example, jdbc/DefaultDS. This is the source usually used by applications.

-application <name>

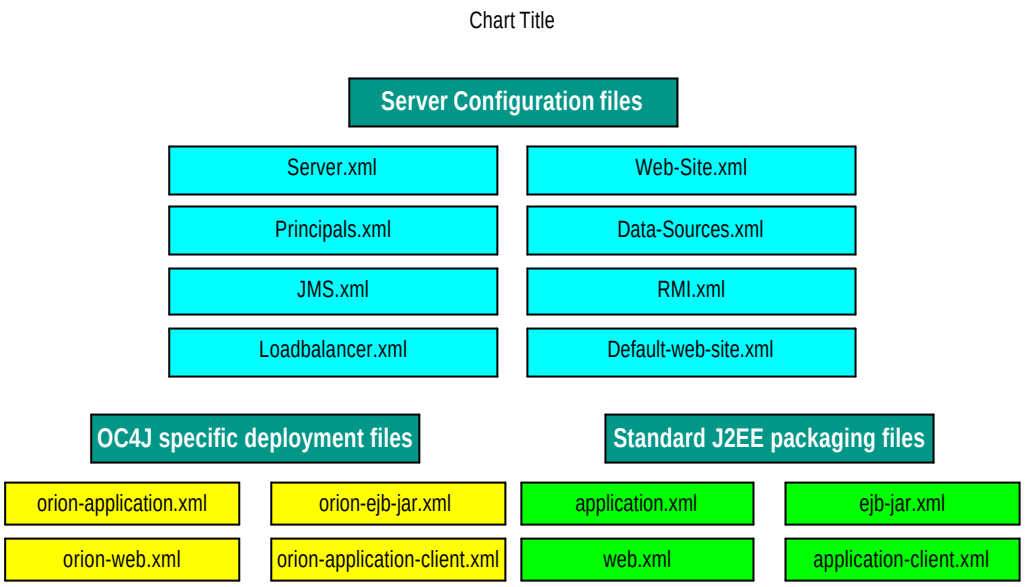
-connectionDriver: The JDBC database driver class. For example, ' com.mydb.Driver',

13.2.7 Console GUI 사용하기

%java –jar orionconsole.jar


Service Console
File
Assemble
Look And Feel
Help
Unnamed Service Console Configuration 1
Service Console
Hosts
ormi://
ormi://jweom/
Applications
ejbsamples
etstore
logger
news
petstore
Global Application
../minimax-web
../default-web-a
Resources
Users
Context
jdbc
java:comp
jms
HTTP
Default Oracle9
MiniMax Oracle
/ (minimaxc
RMI
JMS
Server Info
Name
Value
Java Platform
1.2.2
OS Name
Windows NT
OS Version
4.0
Running as
jweom
Started
2001-06-26 오후 1:33:17
System architecture
x86
Transaction handled
0
Memory Usage
0B
Log Events
Type
Time
Message
Normal
2001-06-26 오후 1:33:17
1.0.2.2 Started
Normal
2001-06-26 오후 1:33:22
Forced or abrubt (crash etc) ...
Normal
2001-06-26 오후 1:33:22
Recovery completed, 0 conn...
Show event detail
Refresh

13.3 Overview of OC4J Configuration Files



13.3.1 OC4J Configuration Files Relationship

server.xml
|_____rmi.xml
|_____application.xml
|_____principals.xml
|_____global-web-applicatioin.xml
|_____default-web-site.xml
|_____default-web-app
|_____web-app
_____secure-web-site.xml
| |_____default-web-app
| |_____web-app
|_____additional-web-site.xml
|_____default-web-app
|_____web-app

13.3.2 Overview of the Server.xml

13.3.2.1 *Server.xml* 에 포함된 정보들

Server configuration information

global application
global web application

default web site served.
The library-path
Maximum number of HTTP connections
Logging settings
Java compiler settings
Cluster ID
Transaction timeout
SMTP host
Pointers to data-sources, rmi, jms XML files
And your applications entries

Example of Server.xml

```
<application-server>
        application-auto-deploy-directory="<auto-deploy-ears>
        application-directory="../applications"
        deployment-directory="../application-deployments"

        <rmi-config path="./rmi.xml" />
        <jms-config path="./jms.xml" />
        <log> <file path="../log/server.log" /> </log>

        <global-application name="default" path="application.xml" />

        <global-web-app-config path="global-web-application.xml" />
        <web-site path="./default-web-site.xml" />

        <application auto-start="true" deployment-directory="<dir>" parent="<parentApps>"
        <application name="news" path="../applications/news.ear" />
        <application name="petstore" path="../applications/petstore.ear" />
</application-server>
```

13.3.3 Overview of [Default-]Web-Site.xml

***Default-web-site.xml*, *Web-site.xml* contain configuration for each web-site served including:**

Hostname/IP, virtual hosts settings for this site, port to listen
Default web application for the site
.*war* file name and *root context* for web applications
The access-log format
Settings for user web applications
SSL configuration

Example Web-Site.xml

```
<web-site host="<hostname>" port="<n>" cluster-island="1" display-name="<WebSite>"
secure="false" use-keep-alives="true"
      virtual-hosts="<hostname>,…,<hostname>" />

<default-web-app application="defaultAppEAR" name="defaultAppWAR" shared="false"
load-on-startup="false" />
```

<web-app application="<app>" name="<web-app>" root="/root_context" shared="false" load-on-startup="false" />

<user-web-apps max-inactivity-time="n>" path="<path> />

<access-log format="<format spec>" path="<path>" suffix="<suffix>"
split="none|hour|day|week|month" />
/>

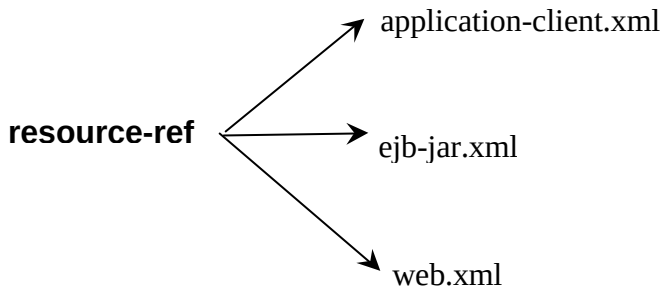
13.3.4 OC4J-Specific Deployment files

- Contain deployment information for different components
- Used by the deployer to map *environment entries*, *resources references*, and *security-roles* to actual deployment-specific values
- You can create and edit them manually but they are are automatically generated when using auto-deployment.

Example of Using OC4J-Specific Deployment file

Declaration of enterprise bean's reference to an external resource (datasource, JMS queue, mail session, etc)

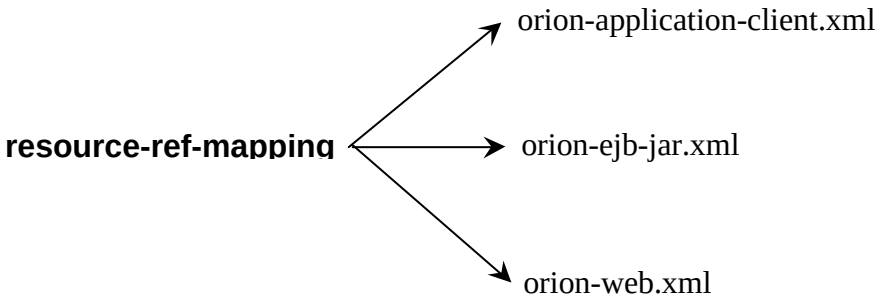
```
<resource-ref>
    <description>no description</description>
     <res-ref-name>jdbc/EstoreDataSource</res-ref-name>
     <res-type>javax.sql.DataSource</res-type>
     <res-auth>Container</res-auth>
</resource-ref>
```



The resource-ref-mapping maps a reference to an external resource such as a datasource, JMS queue, mail session (ties the resource to a JNDI-location)

<resource-ref-mapping

location="jdbc/nonPooledDS" name="jdbc/EstoreDataSource"/ >



13.4 Oracle Data Source 설정하기

13.4.1 Data-source tags

name: The displayed name of the DataSource

class-entry: The classname of the DataSource

connection-driver: "oracle.jdbc.driver.OracleDriver”

location: JNDI path to non-pooled connections

pooled-location: JNDI path to pooled connections

xa-location: JNDI path to pooled + distributed transaction aware connections

ejb-location: JNDI name for pooled + distributed transactional +

EJB-aware connections for Servlet, JSPand EJBs

url: the JDBC connection string for the database

username/password: in order to avoid hardcoding in application code

13.4.2 Example of data-sources.xml

```
<data-sources>
        <data-source
      class="com.evermind.sql.DriverManagerDataSource"
            name="Oracle"
            schema="database-schemas/oracle.xml"
            location="jdbc/nonPooledDS"
            xa-location="jdbc/xa/OracleXADS"
            ejb-location="jdbc/PooledDS”
      pooled-location="jdbc/pooled/DefaultPooledDS
            connection-driver="oracle.jdbc.driver.OracleDriver"
            username="scott"
            password="tiger"
            url="jdbc:oracle:thin:@<hostname>:1521:<ORCL SID>"
            inactivity-timeout="30"
      />
</data-sources>
```

예)

```
<?xml version="1.0"?>
<!DOCTYPE data-sources PUBLIC "Orion data-sources"
"http://xmlns.oracle.com/ias/dtds/data-sources.dtd">

<data-sources>
```

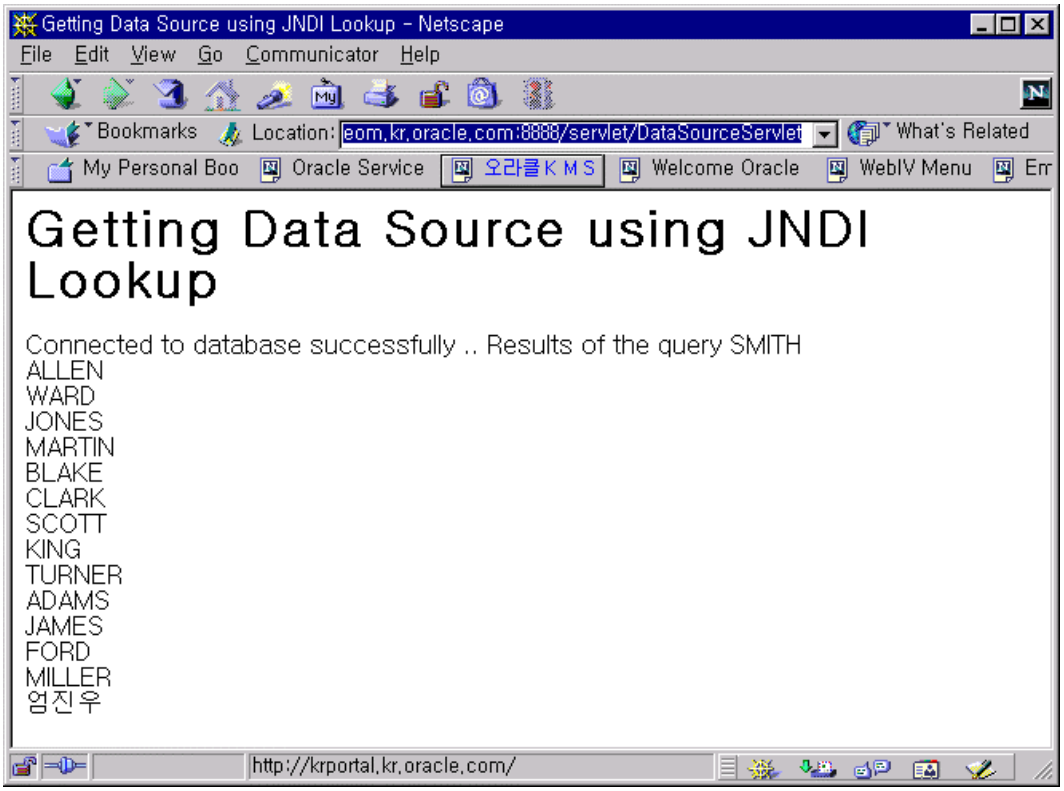
```
        <data-source
                class="com.evermind.sql.DriverManagerDataSource"
                name="OracleDS"
                location="jdbc/OracleCoreDS"
                xa-location="jdbc/xa/OracleXADS"
                ejb-location="jdbc/OracleDS"
                connection-driver="oracle.jdbc.driver.OracleDriver"
                username="scott"
                password="tiger"
                url="jdbc:oracle:thin:@jweom:1521:ORA817"
                inactivity-timeout="30"
        />
<data-sources>
```

13.4.3 Servlet Connecting to Oracle DataSource

```
import javax.servlet.*;
import javax.servlet.http.*;
import java.io.*;
import java.util.*;
import javax.naming.*;
import java.sql.*;
import javax.sql.*;

public class DataSourceServlet extends HttpServlet {
  InitialContext context = null;
  DataSource jdbcURL = null;
  Connection conn = null;

 public void init(ServletConfig config) throws ServletException {
      super.init(config);
    // Obtain connection using JNDI Lookup

     try {
    context = new InitialContext();
    jdbcURL = (DataSource) context.lookup("jdbc/OracleDS");
     }
     catch(NamingException e)
     {
        throw new ServletException("Error looking Data Source", e);
      }
  }

  public void doGet(HttpServletRequest request, HttpServletResponse response)
  throws ServletException, IOException {

     response.setContentType("text/html;charset=euc-kr");
   PrintWriter out = new PrintWriter (response.getOutputStream());
    out.println("<html>");
   out.println("<head><title>Getting Data Source using JNDI Lookup</title></head>");
   out.println("<body><H1>Getting Data Source using JNDI Lookup</H1>");
   // Connect to the database
     try {
           Connection conn = jdbcURL.getConnection();
            out.println("Connected to database successfully ..");
           Statement stmt = conn.createStatement();

          ResultSet rs = stmt.executeQuery("SELECT ename FROM emp");
```

```
            out.println("Results of the query");
           // Display Results of the SQL Query
            while ( rs.next() ) {
                        out.println( rs.getString("ename") + "<br>");
              }
              conn.close();
        }
       catch(SQLException e)
        {
          throw new ServletException("Error connecting to Database", e);
        }

     out.println("</body></html>");
     out.close();
   }
}
```

DataSource 테스트



13.5 Setting up the OC4J Server

13.5.1 Naming/JNDI

1-Environment properties namespace for Application running within the same OC4J instance

```
Properties env = new Properties();
env.put("java,naming.factory.initial",
"com.evermind.server.ApplicationClientInitialContextFactory");
…
Context context = new InitialContext (env);
```

2-jndi.properties file for remote access to OC4J JNDI tree (EJB lookup)

Application tree: java.naming.factory.initial=
com.evermind.server.ApplicationClientInitialContextFactory
java.naming.provider.url=ormi://<server>/<application>
java.naming.security.principal=<username>
java.naming.security.credentials=<password>

Global JNDI tree: java.naming.factory.initial=
com.evermind.server.RMIInitialContextFactory
java.naming.provider.url=ormi://<server>
java.naming.security.principal=<username>
java.naming.security.credentials=<password>

13.5.2 Apache와 함께 OC4J Server 사용하기

Web Service는 Oracle HTTP Server 를 사용하고 JSP, Servlet, EJB등의 서비스를 OC4J에서 사용할 경우 다음과 같이 설정한다.

Apache의 mod_proxy module을 이용하면 httpd.conf에 다음을 추가

```
<IfModule modproxy.c>
    ProxyRequests On
    ProxyPass /servlet/ http://<oc4j-host>:8888/servlet/
    ProxyPassReverse /servlet/ http://<oc4j-host>:8888/servlet/
</ifModule>
```

Note : 만약 이부분을 별도의 include file로 만든다면(file명 oc4j.conf) , httpd.conf에 "include oc4j.conf" 를 추가한다.

OC4J Server 의 Port번호는 Apache의 Port 번호와 달라야 하며, OC4J server의 Port지정은 다음에서 확인 가능

<oc4j-home>/config/default-web-site.xml

<web-site port=<port> display-name="Default OC4J WebSite" />

13.5.3 Running a Simple Servlet

13.4.3에서 만들어진 Servlet을 수행하는 방법을 소개한다.

Servlet source code 컴파일하기

% javac DataSourceServlet.java

사용자지정 혹은 Default Web Application Directory로 복사

<oc4j-home>/default-web-app/WEB-INF/classes

Servlet Alias 지정

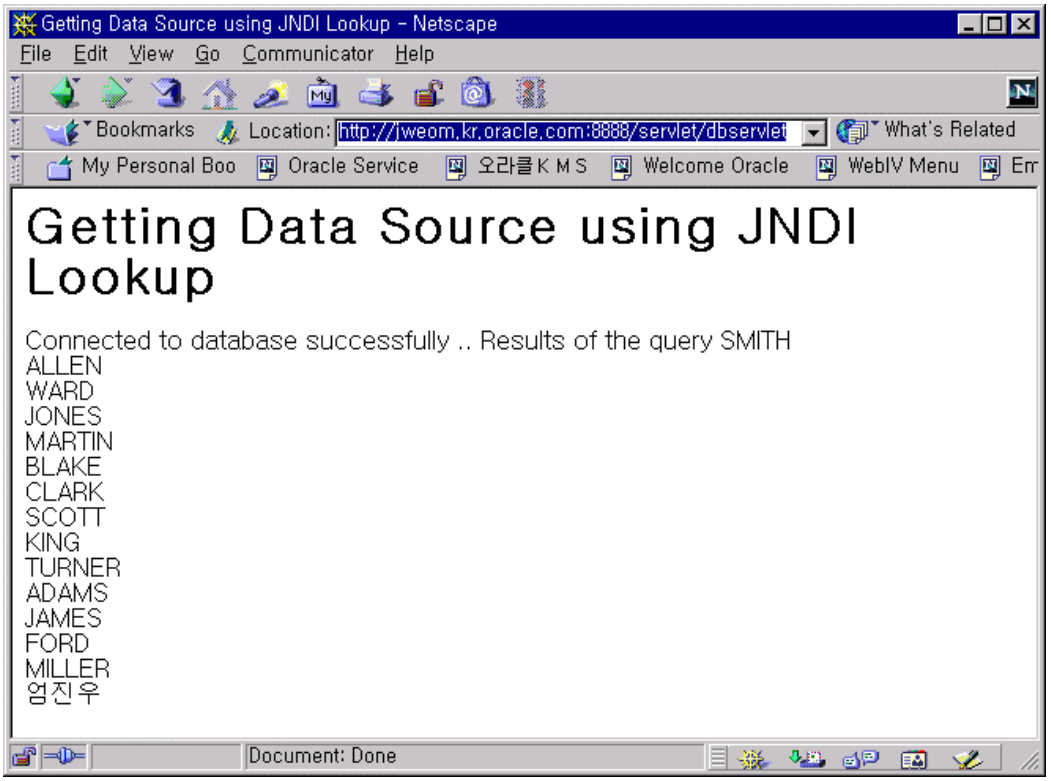
만약 Servlet Alias를 지정하려면 다음에 추가

<oc4j-home>/default-web-app/WEB_INF/web.xml

```
<servlet>
        <servlet-name>dbservlet</servlet-name>
       <servlet-class>DataSourceServlet</servlet-class>
</servlet>
```

Servlet 테스트

http://<your_machine_name>:<port>/servlet/dbservlet



13.5.4 Running a Simple JSP

JSP 생성

WelcomeUser.JSP

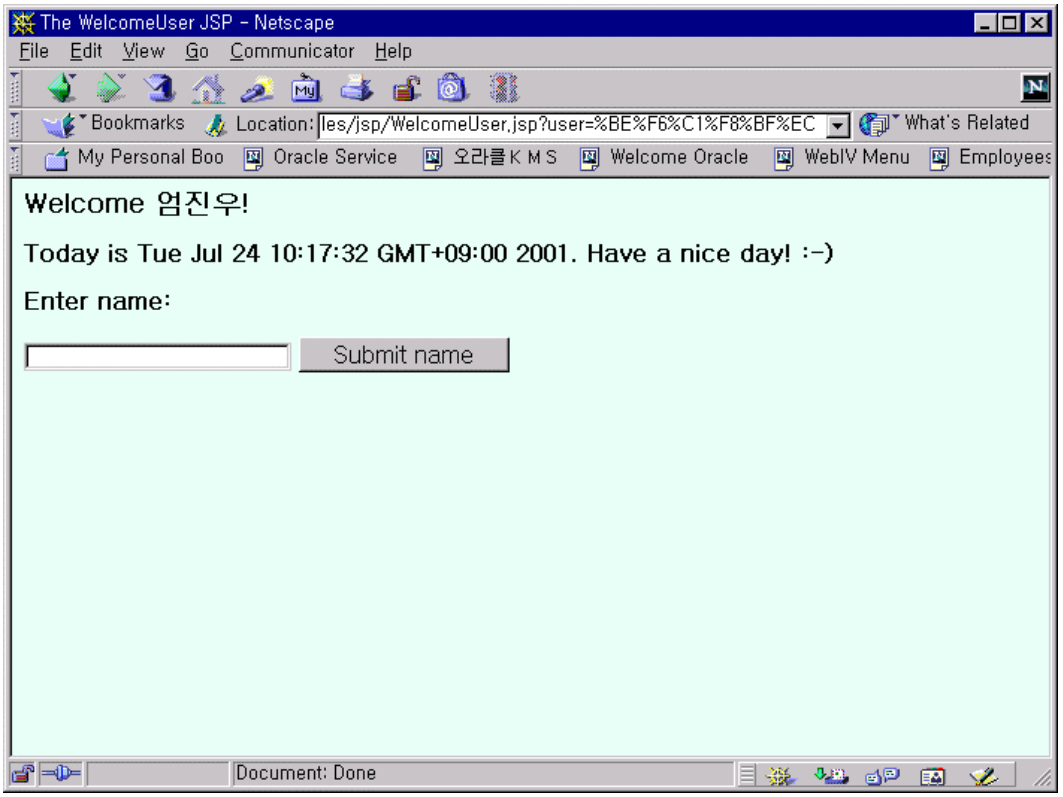
```
<HTML>
<HEAD><TITLE>The WelcomeUser JSP</TITLE> </HEAD>
<BODY    BGCOLOR="EOFFF0">
<%@ page contentType="text/html;charset=EUC-KR" %>
<%   String  user=request.getParameter("user");   %>
<H3>Welcome <%= (user==null) ? "" : user  %>! </H3>
<P><B> Today is <%= new java.util.Date() %>.
                    Have  a  nice  day!  :-)    </B></P>
        <B>Enter name:</B>
 <FORM  METHOD="get">
  <INPUT  TYPE="text"  NAME="user"  SIZE=15>
  <INPUT  TYPE="submit"  VALUE="Submit  name");
 </FORM>
</BODY>
</HTML>
```

임의의 directory또는 사용자 web-application jsp directory에 복사

<oc4j-home>/default-web-app/default-web-app/examples/jsp/

JSP Test

http://<machine_name>:<port>/examples/jsp/WelcomeUser.jsp



13.5.5 Using Tag libraries with JSP container

Oracle 9iAS 에 설치된 JML 을 이용하여 custom tag library를 사용하는 방법으로 JSP에 대한 코드를 간소화 시킬 수 있는 방법이다.

여기서는 Oracle 9iAS의 sqltaglib.tld를 사용하는 법을 소개한다.

Custom Tag library <tag_library>.tld 를 복사

<IAS_HOME>\Apache\Apache\htdocs\WEB-INF directory의 sqltaglib.tld를 <oc4j-home\default-web-app\WEB-INF 에 복사

필요한 class file 들을 복사

<IAS_HOME>\jsp\lib 의 ojsp.jar ojsputil.jar 를 <oc4j-home>\default-web-app\WEB-INF\lib에 복사

<oc4j-home>/default-web-app*/WEB-INF/web.xml* 에 해당 taglib를 등록

Example

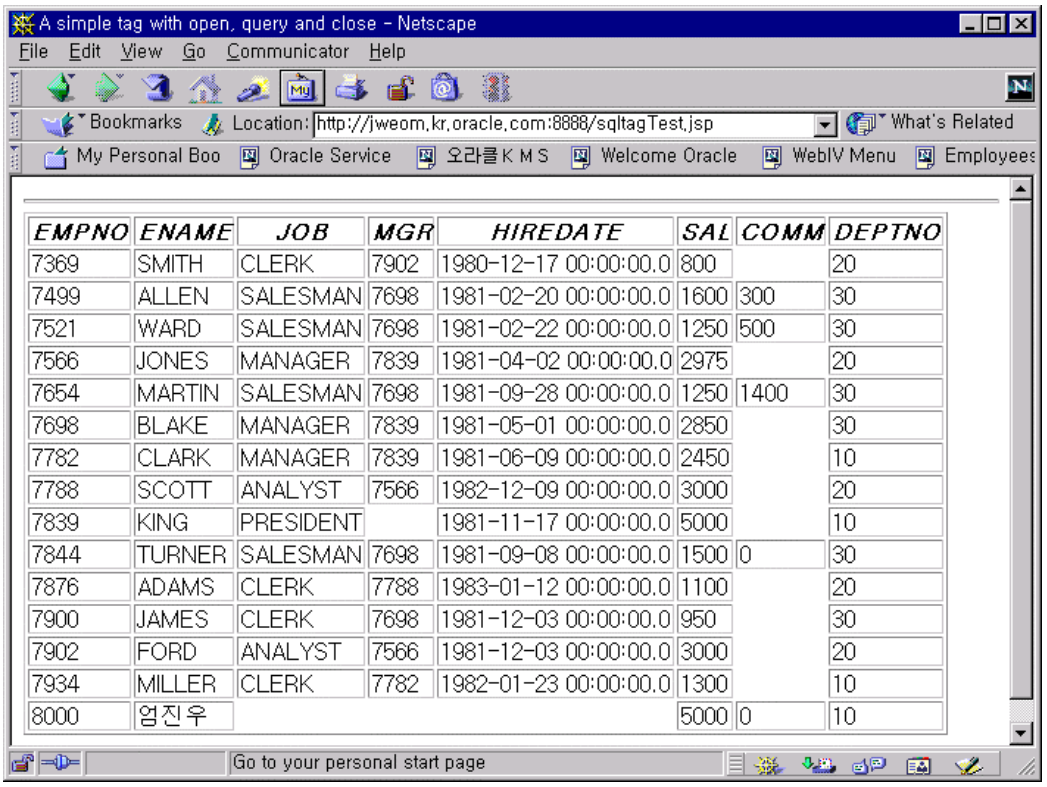
```
<taglib>
        <taglib-uri>mytags</taglib-uri>
        <taglib-location>/WEB-INF/sqltaglib.tld</taglib-location>
</taglib>
```

JSP page에서 taglib를 이용

Example

```
<%@ taglib uri="mytags" prefix="jml" %>
<%@ page contentType="text/html;charset=EUC-KR" %>
    <HTML>
      <HEAD>
      <TITLE>A simple tag with open, query and close </TITLE>
      </HEAD>
      <BODY BGCOLOR="#FFFFFF">
        <HR>
          <jml:dbOpen URL="jdbc:oracle:thin:@jweom:1521:ORA817"
            user="scott" password="tiger" connId="con1">
          </jml:dbOpen>
          <jml:dbQuery connId="con1">
            select * from EMP
          </jml:dbQuery>
          <jml:dbClose connId="con1" />
        <HR>
      </BODY>
    </HTML>
```

Tag Library를 사용한 JSP test



EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	1980-12-17 00:00:00.0	800		20
7499	ALLEN	SALESMAN	7698	1981-02-20 00:00:00.0	1600	300	30
7521	WARD	SALESMAN	7698	1981-02-22 00:00:00.0	1250	500	30
7566	JONES	MANAGER	7839	1981-04-02 00:00:00.0	2975		20
7654	MARTIN	SALESMAN	7698	1981-09-28 00:00:00.0	1250	1400	30
7698	BLAKE	MANAGER	7839	1981-05-01 00:00:00.0	2850		30
7782	CLARK	MANAGER	7839	1981-06-09 00:00:00.0	2450		10
7788	SCOTT	ANALYST	7566	1982-12-09 00:00:00.0	3000		20
7839	KING	PRESIDENT		1981-11-17 00:00:00.0	5000		10
7844	TURNER	SALESMAN	7698	1981-09-08 00:00:00.0	1500	0	30
7876	ADAMS	CLERK	7788	1983-01-12 00:00:00.0	1100		20
7900	JAMES	CLERK	7698	1981-12-03 00:00:00.0	950		30
7902	FORD	ANALYST	7566	1981-12-03 00:00:00.0	3000		20
7934	MILLER	CLERK	7782	1982-01-23 00:00:00.0	1300		10
8000	엄진우				5000	0	10

13.5.6 웹사이트 추가

1. <oc4j-home>/config/my-web-site.xml 을 생성

예)

```
<?xml version="1.0"?>
<!DOCTYPE web-site PUBLIC "Orion Web-site" "http://xmlns.oracle.com/ias/dtds/web-site.dtd">

<web-site port="8889" display-name="Minimax Oracle9iAS Containers for J2EE Web Site">
        <default-web-app application="default" name="minimaxdefaultWebApp" />
        <access-log path="../log/minimax-web-access.log" />
</web-site>
```

2. 추가된 웹사이트의 application , html file을 담을 document root directory를 생성

예)

<oc4j-home>/minimax-web-app directory 생성

3. <oc4j-home>/config/application.xml 에 web application directory 등록한다. 이때 id는 1번에서 추가한 default-web-app 의 name을 사용한다.

<web-module id="minimaxdefaultWebApp" path="../minimax-web-app" />

4. 2에서 생성한 directory에 WEB-INF direcotory를 생성하고 web.xml 을 생성한다.

   OC4J에서는 WEB-INF directory에 등록된 class등을 동적으로 reloading하며 web.xml에 등록된 내용으로 항시 Hot deploy를 수행한다.

5. 필요한 html , jsp, class 등을 2에서 생성한 directory에 복사한다.

6. <oc4j-home>/config/server.xml 에 1에서 등록한 xml file을 등록

<web-site path="./minimax-web-site.xml" />

13.5.7 Application 추가

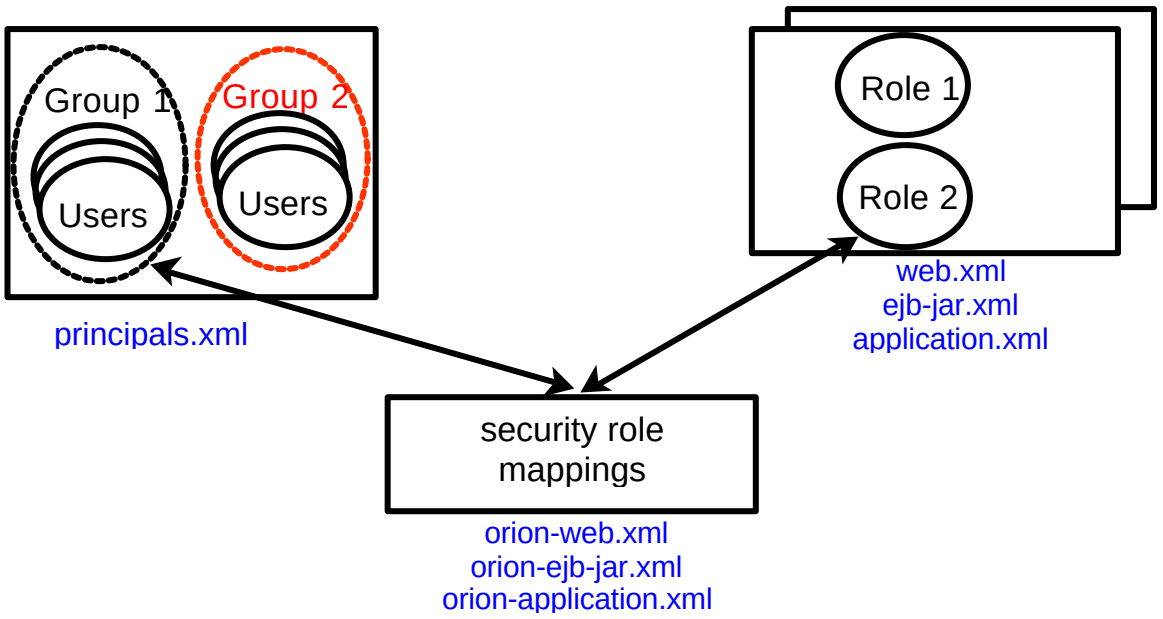
1. 추가된 별도의 Application 을 담을 directory를 준비

2. Application Directory에 META-INF 를 만들어준다.

3. META-INF directory에 application.xml 을 등록한다.

4. defaul-web-site.xml 에 application 을 추가

13.6 Security in OC4J



13.6.1 Define Users and Groups in Principals.xml

```
<group name="allusers">
        <description>Group for all normal users</description>
        <permission name="rmi:login" />
        <permission name="com.evermind.server.rmi.RMIPermission" />
</group>
...
<users>
        <user deactivated="false" locked="true|false"
             username="guest" password="welcome">
           realname="<real  name>"  username="<userName">
         <certificate-issuer> CN="<X509-CA>" </certificate-issuer>
         <certificate-serial-id> <n> </certificate-serial-id>
        <group-membership group="allusers" />
</user>
...
```

13.6.2 Set Up Logical Roles in *web.xml* or *ejb-jar.xml* or *application.xml*

```
<security-role>
        <description> ….</description>
        <role-name>VISITOR</role-name>
</security-role>
```

13.6.3 Authorization in *ejb-jar.xml*

```
<method-permission>
                <role-name>VISITOR</role-name>
        <method>
                <ejb-name>customerbean</ejb-name>
                <method-name>* </method-name>
        </method>
</method-permission>
```

Mapping Logical role to group(s) in orion-web.xml or orion-ejb-jar.xml or orion-application.xml

```
<security-role-mapping name="VISITOR">
        <group-name="allusers" />
</security-role-mapping>
```

13.6.4 Setting up SSL Certificates

Copy the <oc4j-home>/config/default-web-site.xml into

<oc4j-home>/config/ secure-web-site.xml

Add secure="true" as an attribute to the tag.

Add the keystore tag

Install the site in server.xml

<web-site path="./secure-web-site.xml" />

13.7 Overview of rmi.xml

13.7.1 Contains configuration for Remote Method Invocation

- The hostname/IP and port the RMI server binds to
- Remote servers to communicate to
- Clustering settings
- Log settings

```
<rmi-server>
      <server host="<remote-server>" username="<adminUser>" password="<passwd>" />
      <cluster host="230.0.0.1" id="<n>" password="<passwd>"
            port="9127" username="<cluster-user>" />
      <log> <file path="../log/rmi.log" /> </log>
</rmi-server>
```

13.7.2 Setting Up RMI over HTTP

Tunneling firewalls with RMI

Embed "send" data in HTTP Post

Embed "response" in HTTP Response

Deal with Firewalls and HTTP Ports

How To

1 - Add the following to config/global-web-applications.xml

```
<servlet>
    <servlet-name>rmi</servlet-name>
    <servlet-class>
        com.evermind.server.rmi.RMIHttpTunnelServlet
    </servlet-class>
</servlet>
```

2 - Prepend the RMI URL with "http:"

ormi://localhost/app becomes http:ormi://localhost/app

13.8 Overview of JMS.xml

Contains configuration for Java Messaging Service

- Hostname/IP and port that the JMS server binds to
- Queues and Topics to be bound in the JNDI tree.
- Log settings

```
<jms-server host="<host>.<domain>|<n.n.n.n>|ALL" port="9127" />
    <queue name="Demo Queue" location="jms/demoQueue">
      <description>A dummy queue</description>
    </queue>
    <topic name="Demo Topic" location="jms/demoTopic">
      <description>A dummy topic</description>
    </topic>
    <log> <file path="../log/jms.log" /> </log>
</jms-server>
```

13.8.1 Setting Up JMS Queue

1. Enables JMS in <oc4j-home>/config/server.xml

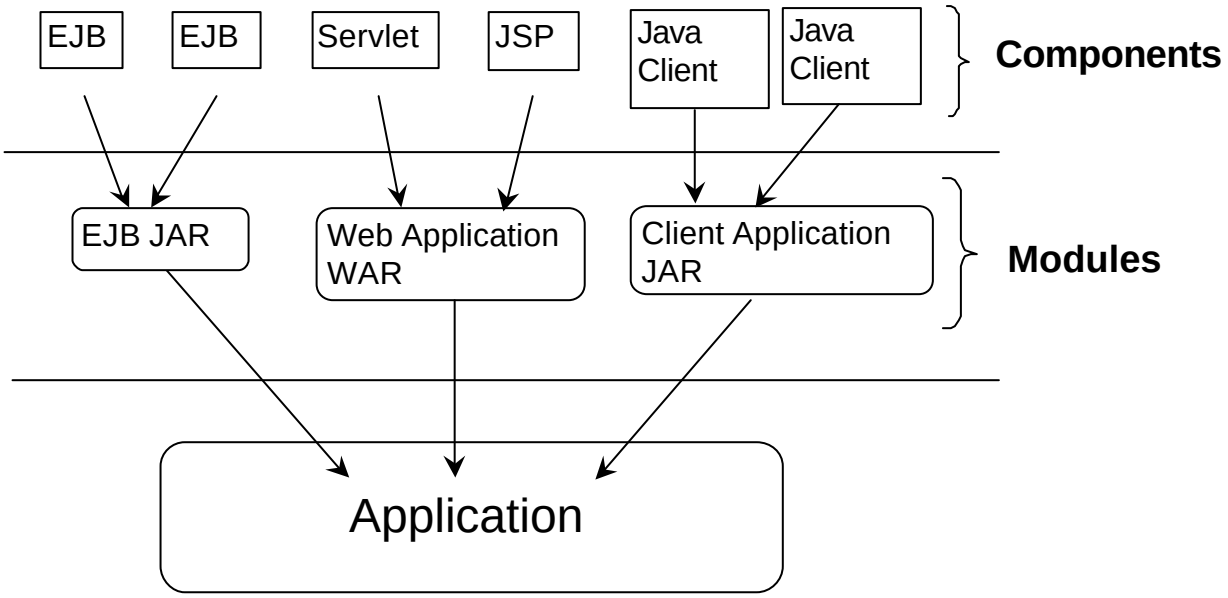
2. Define/Configure JMS queue in *<oc4j-home>/config/jms.xml*

3. Looking up JMS queue from JNDI

```
QueueConnectionFactory factory =
(QueueConnectionFactory) new InitialContext().lookup (
   "java:comp/env/jms/demoQueueConnectionFactory");

QueueConnection connection = factory.createQueueConnection();
Queue queue = (Queue) new InitialContext().lookup (
   java:comp/env/jms/demoQueue");
```

4. JMS samples in <oc4j-home>/demo/jms/

13.9 Packaging and Deploying J2EE Applications



application.xml
orion-application.xml
1 EAR file per

Web application ARchive

web.xml
orion-web.xml
a WAR file per Web

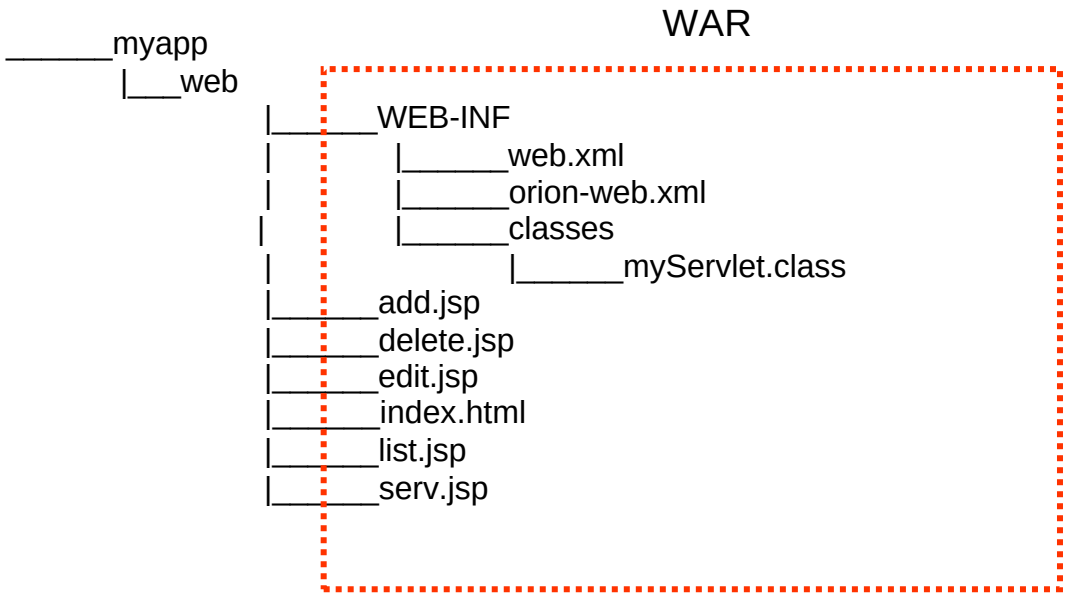
Enterprise bean ARchive

ejb-jar.xml
orion-ejb-jar.xml
a JAR file per EJB module

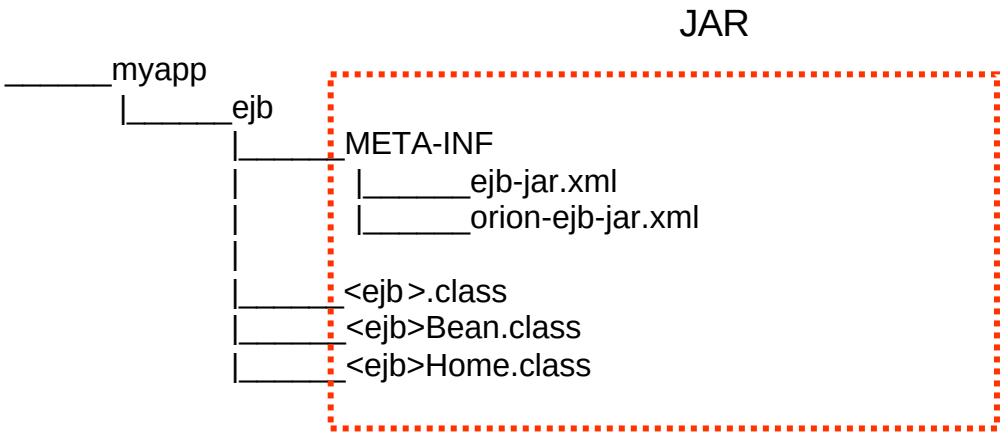
Client application ARchive

client-application.xml
orion-client-application.xml
a JAR file per Client Application module

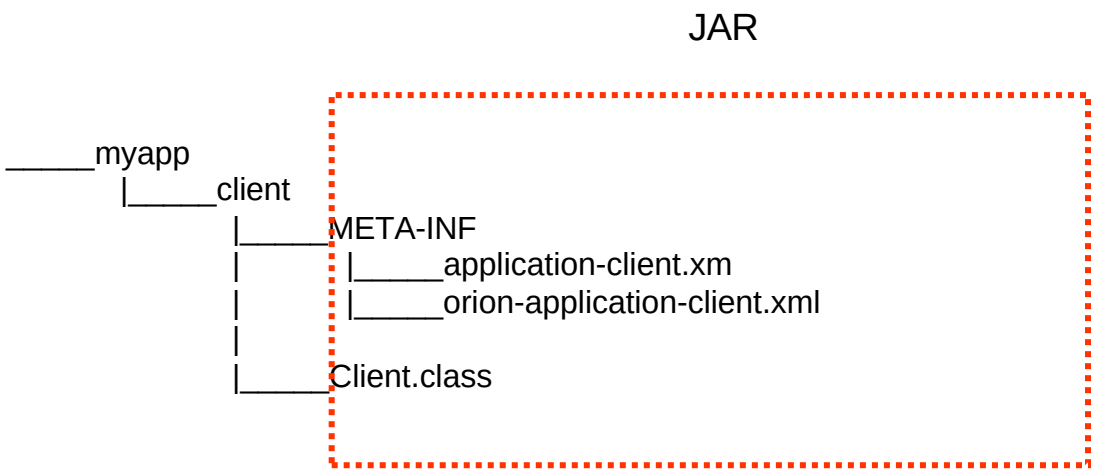
13.9.1 Web Module Structure



13.9.2 EJB Module Structure



13.9.3 Client-Application Module Structure



13.9.4 Deploying J2EE Application with OC4J

1-Package myapp as an EAR file (myapp.ear) and place it in

<oc4j-home>/applications/

2-Add the following line to *<oc4j-home>/config/server.xml*

<application name="myapp" path="../applications/myapp.ear" />

3-Add the following line to

- <oc4j-home>/config/default-web-site.xml or

- <oc4j-home>/config/<other>-web-site.xml

<web-app application="myapp" name "myapp-web" root="/<path>" />

Application.xml

<display-name>admin</display-name>

<principals path="./principals.xml" />
<module> <ejb>petstoreEjb.jar</ejb> </module>
<module>

```
        <web>
          <web-uri>petstore.war</web-uri>
          <context-root>admin</context-root>
        </web>
    </module>
<security-role>
    <role-name>administrator</role-name>
</security-role>
```

Orion-application.xml

Contains OC4J specific application settings

- Auto-creation and deletion of Database tables for CMP EJB

- Default data source for CMP EJB

- JNDI Namespace-access

- User-manager, security-role mappings

Must be placed in META-INF/ of EAR

Auto generated to applications directory in

<oc4j-home>/application-deployments

13.9.5 Hot Deployment with OC4J

OC4J는 실행중에 configuration xml 파일의 Timestamp가 변경되면 자동으로 Hot Deployment 가 일어난다.

운영중 자동배치 (Hot Deployment)가 이루어지는 경우:

server.xml 의 날짜가 변경

WAR 와 EAR 파일이 변경

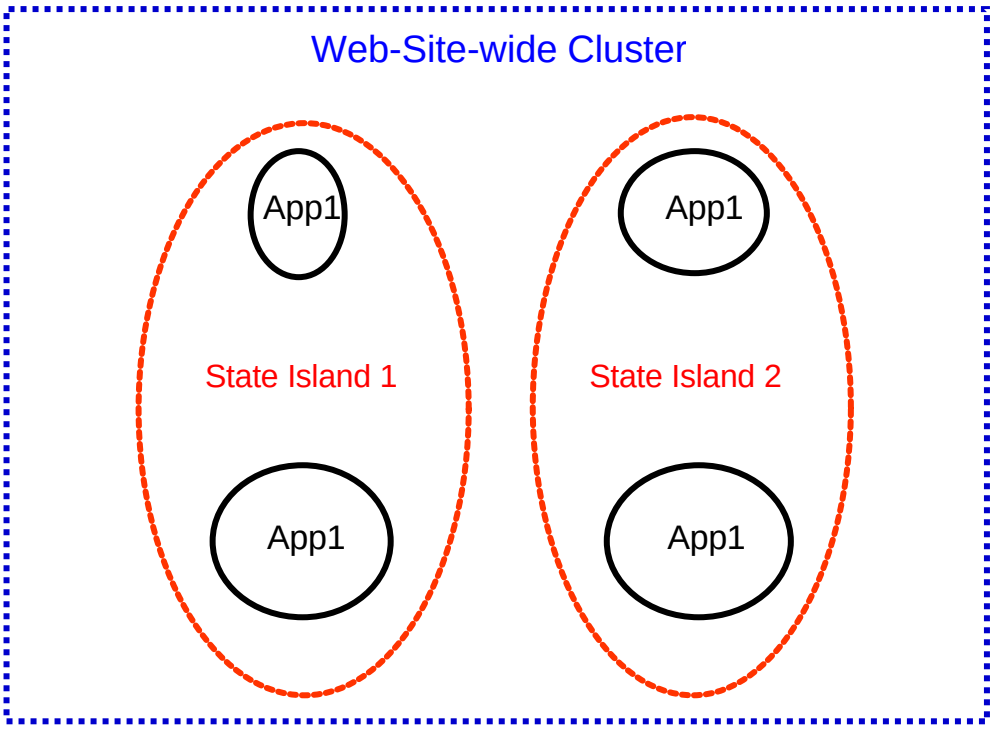
Servlet 클래스와 JSP 파일이 변경

운영중 자동배치 (Hot Deployement)가 이루어지지 않는 경우:

default-web-site.xml이 변경

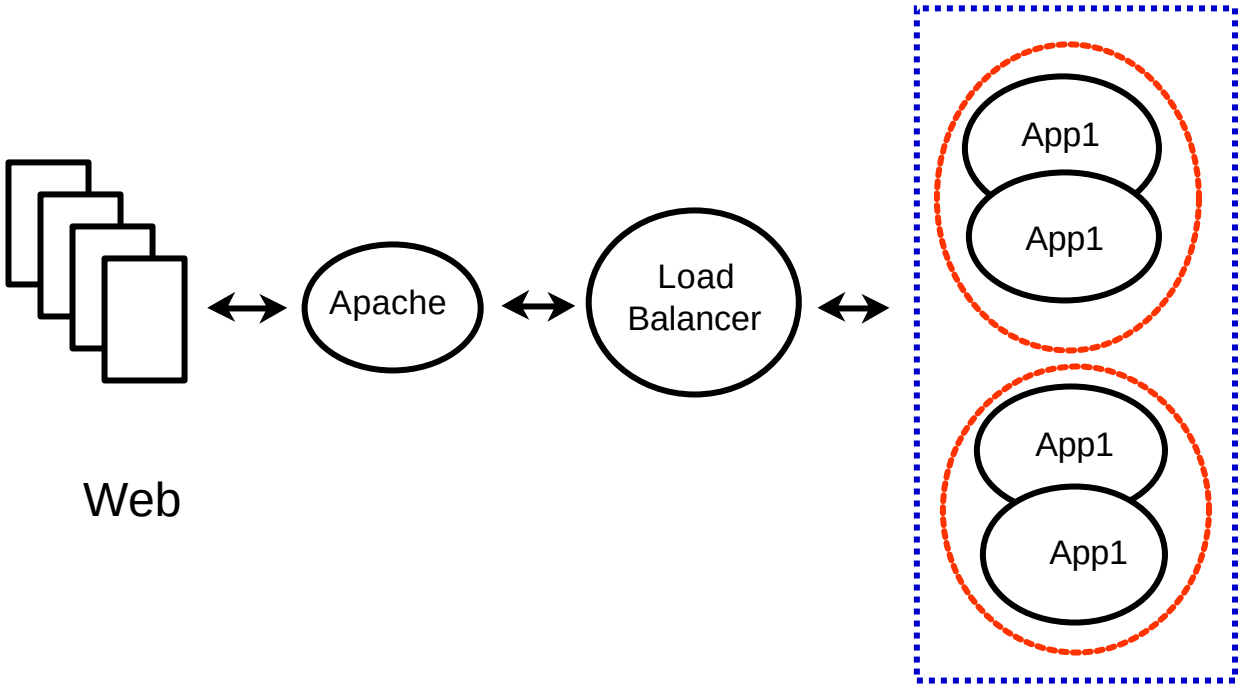
Bean 클래스가 변경

13.10 Basics of HTTP Clustering and Load-Balancing



An island replicates session state between two or more OC4J servers

A Cluster is a conglomeration of islands



13.10.1 Clustering for Fault Tolerance and Load-Balancing

Clustering requires a load-balancer, which replicates each node state to the cluster. The state is stored in-memory, not persistent

Fault-tolerance In OC4J works for both stateful and stateless requests

Stateless: OC4J redirects the client to another workig instance

Stateful: The state must be available to be failed over machine; the state is propagated to the cluster at all times. This enables another node in the same island to pick up the conversation with the client.

13.10.2 Setting Up for HTTP Application Clustering and Load-Balancing

1. Cluster로 구성할 모든 node에 OC4J와 Web Application 을 Install한다.

2. Session 상태를 복제할 수 있도록 Web Application Deployment Descriptor를 수정한다.

모든 Node의 사용자 Web Application deployment descriptor file인 orion-web.xml 에 <cluster-config/> 를 추가한다. 또는 모든 Web Application 에 등록하려면 <oc4j-home>/config/global-web-application.xml 에 <cluster-config/> tag를 추가한다.

<oc4j-home>/application-deployments/<application-name>/<web-app-name>/orion-web.xml

<oc4j-home>/config/global-web-application.xml

```
<orion-web-app>
    ….
    <cluster-config/>
    ….
</orion-web-app>
```

Load-balancer를 사용하려면 230.0.0.1 Multicast IP address 가 사용가능하여야 하고 default port는 9127 port이며 cluster id번호는 default로 IP address이다.

여기서 복제되는 data는 HttpSession data와 ServletContext data 이다.

3. cluster island를 설정한다.

Load Balancing할 Cluster Group의 member간의 Cluster Island를 동일하게 설정한다.

<oc4j-home>/config/*web-site.xml

<web-site …cluster-island="<island id#>" >

만약 cluster 구성에서 여러 개의 Island로 구성되어 있다면 각각 해당되는 Cluster Island ID를 넣어 주어야 한다.

4. 기존 OC4J Web site configuration (*web-site.xml)에 load-balancer Host 와 Port를 설정한다.

<oc4j-home>/config/*web-site.xml

```
<web-site     ..   >
    <frontend host="<balancer-host>" port="<balancer-port />"
</web-site>
```

5. 모든 Application의 <app>/WEB-INF/web.xml 에 다음 tag를 등록

<distributable/>

6. Load-balancer.xml

<load-balancer host=<host/ip> port="80|439|<port>" use-ip="true" />

<island id="x">

<backend-server host="a.b.c" port="80|443" />

<ssl-config factory="my.own.SSLServerSocketFactory" keystore="../mykeystore" keystore-password="123456" needs-client-auth="true|false"
provider="com.sun.net.ssl.internal.ssl.Provider">

<property name="paramName" value="paramValue" />

13.10.3 Load Balancer로 Web application 테스트하기

13.10.3.1 load-balancer를 구동한다.

Startup Option을 이용하거나 load-balancer.xml file에 정보를 설정한다.

java -jar loadbalancer.jar <options>

13.10.3.2 OC4J Server를 구동한다.

Load Balancer와 OC4J Server간의 정보에 대한 사항을 보려면 다음과 같은 Option을 이용하여 Start한다.

java -Dhttp.cluster.debug=true -Dcluster.debug=true -jar orion.jar

14. Trouble Shooting Guide

14.1 Oracle HTTP Server

9iAS관련 Configuration / Logfile 취합

문제발생시 iAS Configuration **과** Logfile **에 대한** snapshot**을 모으는** shell script

출처 : metalink.oracle.com (Notes 133985.1)

명령수행후 /tmp directory **에 두개의** file**이 생성됨**

iaslogs.tar.Z - iAS log files
iasconfig.tar.Z - iAS configuration files

Warning: If you have a lot of logs, or large logs, then iaslogs.tar.Z may be quite large, so ensure sufficient space is available in /tmp.

iAS administrators. Use when requested by Oracle support. Unix platforms only.

Gather snapshot of iAS configuration & logfiles

---

chmod 700 iasnapshot.sh

------------------------------ CUT BELOW HERE ------------------------------

```
#!/usr/bin/sh

# Take a snapshot of the state of an iAS install
# Andy Salt
# Version 1.0.1 - added prompts, changed to sh.

# NOTE: Needs 'tests' added to limit size of logs (tail), but currently rough
#       and ready

# Disclaimer: Oracle and I accept no liability for the use of this script
#             You are responsible for the effects of running this script.

case $# in
1)      ORACLE_HOME=$1

        # Initialise
        if test -f /tmp/iasconfig.tar.Z;
        then
                printf '\niasconfig.tar.Z already exists, removing\n'
                rm /tmp/iasconfig.tar.Z;
        fi
        if test -f /tmp/iasconfig.tar
        then
                printf '\niasconfig.tar already exists, removing\n'
                rm /tmp/iasconfig.tar
        fi
        if test -f /tmp/iaslogs.tar.Z
```

```
        then
                printf '\niaslogs.tar.Z already exists, removing\n'
                rm    /tmp/iaslogs.tar.Z
        fi
        if test -f /tmp/iaslogs.tar
        then
                printf '\niaslogs.tar already exists, removing\n'
                rm    /tmp/iaslogs.tar
        fi
        # only want to TAR relative to ORACLE_HOME
        cd $ORACLE_HOME
        # Prompt to tar and compress config files
        printf 'OK to tar and compress the configuration files (y/n) ?'
        read config
        case $config in
        y*)     printf '\nTar and compressing configuration files...\n'
                #grab the config files
                find . -name "*.app"|xargs tar cvf /tmp /iasconfig.tar
                find . -name "*.cfg"|xargs tar rvf /tmp/iasconfig.tar
                find . -name "*.conf"|xargs tar rvf /tmp/iasconfig.tar
                find . -name "*.properties"|xargs tar rvf /tmp/iasconfig.tar
                # Shrink
                compress /tmp/iasconfig.tar;;
        *)      printf '\nSkipping configuration files...\n';;
        esac
        # Prompt to tar and compress log files
        printf '\nWarning: Logs files may be rather large\n'
        printf  'OK to tar and compress the log files (y/n) ?'
        read log
        case $log in
        y*)     printf '\nTar and compressing log files...\n'

                #grab the log files
                #warning: this could be a large file
                find . -name "*.log"|xargs tar cvf /tmp/iaslogs.tar

                # Shrink
                compress /tmp/iaslogs.tar;;

        *)      printf '\nSkipping log files...\n';;
        esac

        printf '\n\n Please contact Oracle support for instructions on how to send\n'
        printf ' the diagnostic information generated\n';;

*)
        printf '\n\n Usage: iasnapshot.sh <full path to oracle home>\n';;

esac
```

14.2 mod_plsql

14.2.1 Errors when installing OWA PL/SQL toolkit to Oracle 8.0 databases

9iAS 1.0.2.0 에서 Oracle 8.0.x database에 OWA PL/SQL Toolkit 설치시

owaload.sql script 실행시 다음과 같은 error message가 나오면

```
[...]
Errors for PACKAGE OWA_CACHE:

LINE/COL ERROR
-------- -----------------------------------------------------------------
22/40    PLS-00103: Encountered the symbol "HTP" when expecting one of the
           following:
         := . ) , @ % default character
         The symbol ":=" was substituted for "HTP" to continue.

[...]
Errors for PACKAGE WPG_DOCLOAD:

LINE/COL ERROR
-------- -----------------------------------------------------------------
60/46    PLS-00103: Encountered the symbol "BLOB" when expecting one of
           the following:
         := . ) , @ % default character
         The symbol ":=" was substituted for "BLOB" to continue.

102/47   PLS-00103: Encountered the symbol "BLOB" when expecting one of
           the following:
         := . ) , @ % default character
         The symbol ":=" was substituted for "BLOB" to continue.

[...]
Errors for PACKAGE BODY HTP:

LINE/COL ERROR
-------- -----------------------------------------------------------------
630/4    PL/SQL: Statement ignored
630/8    PLS-00905: object SYS.WPG_DOCLOAD is invalid
862/10   PLS-00905: object SYS.OWA_CACHE is invalid
862/10   PL/SQL: Statement ignored
1020/10  PLS-00905: object SYS.OWA_CACHE is invalid
1020/10  PL/SQL: Statement ignored

[...]
Errors for PACKAGE BODY OWA_CACHE:

LINE/COL ERROR
-------- -----------------------------------------------------------------
35/40    PLS-00103: Encountered the symbol "HTP" when expecting one of the
           following:
         := . ) , @ % default character
```

The symbol ":=" was substituted for "HTP" to continue.

[...]
Errors for PACKAGE BODY WPG_DOCLOAD:

LINE/COL ERROR
-------- ---
45/48 PLS-00103: Encountered the symbol "BLOB" when expecting one of
the following:
:= .) , @ % default character
The symbol ":=" was substituted for "BLOB" to continue.

148/49 PLS-00103: Encountered the symbol "BLOB" when expecting one of
the following:
:= .) , @ % default character
The symbol ":=" was substituted for "BLOB" to continue.

Bug 1550152 에 대한 patch 필요

$ORACLE_HOME/Apache/modplsql/owa directory 에서 untar 한후 owaload.sql 을 재설치한다.

14.2.2 OAS에서 IAS로 Migration 후 Cookie 문제

ORA-1403 Error발생

현상은 cookie에서 NULL값을 return을 못해줘서 app 상에서 ora-1403 error 가 발생하는 경우이며 cookie setting 후에는 정상적으로 동작한다.

$ORACLE_HOME/Apache/modplsql/owa/privcook.sql file의

function get(name in varchar2) 의 return 전에 다음을 추가하고 compile 하면된다.

```
IF choc_chip.num_vals = 0 then
    choc_chip.vals(1) := '';
End if;
```

```
SQL> connect sys/manager
SQL>@privcook.sql
SQL>@?/rdbms/admin/utlrp.sql
```

14.2.3 Document Contained no data

ias10200에서 V8.0.x 사용시 procedure 실행시 size가 큰 data에 대해서 "contained no data" error 가 발생한다. 이는 plsql에서 실행된 output을 internal buffer를 통해서 mod_plsql에서 fetch하여 처리하는 과정중에 발생하는 bug (bug 1752365,1713416)

wdbsvr.app file에서 response_array_size를 (default 128)

증가시켜서 해결할 수가 있으며 9ias1.2.0.1이상에서 사용할수 있다.

14.3 Oracle 9iAS Portal

14.3.1 PORTAL 3.0.8 FORMS RUNTIME EXTREMELY SLOW

Oracle 9iAS 1.0.2.1 의 Portal 3.0.8.9.8 에만 해당되며 Portal의 Forms component를 생성한 후 실행시 상당한 속도저하가 발생되는데 이것은 Forms Object에 대한 Index가 생성되지 않아서이다. 따라서 Portal schema owner로 다음의 index들을 생성해주면 된다.

```
CREATE INDEX WWA_MODULE_BINDINGS_IDX1
    ON
        SUBSCRIBER_ID,
        MODULE_ID,
        MODULE_VERSION,
        MODULE_BLOCK_ID,
        MODULE_ATTR_ID)
/

CREATE INDEX WWA_MODULE_LOV_BINDINGS_IDX1
    ON
        SUBSCRIBER_ID,
        MODULE_ID,
        MODULE_VERSION,
        MODULE_BLOCK_ID,
        MODULE_ATTR_ID)
/
```

14.3.2 Proxy log On Failed Error code: 12538

http://[hostname]:8888/pls/admin_/gateway.htm 접속시 Proxy log On Failed Error code : 12538

Proxy log On failed.
Error code : 12538

$adapters : tcp/ip 관련 error가 발생하는 지 ?

=> 발생하게 되면

a. $ORACLE_HOME/network/lib 에서

% make -f ins_net_client.mk ntcontab.o

% make -f ins_net_client.mk install

b. $ORACLE_HOME/sqlplus/lib 에서

% make -f ins_sqlplus.mk install

c. $ORACLE_HOME/bin 에서

% genclntsh

(이때 ar 관련하여 error 가 발생하면

$ORACLE_HOME/lib/libclntsh.a 를 rename 한 후 실행)

14.3.3 Proxy log On Failed Error code: 12545

Proxy Log On failed Error code : 12545

$ORACLE_HOME/Apache/modplsql/cfg/wdbsvr.app 의 dad설정 부분의 connect_string 에 $ORACLE_HOME/network/admin/tnsnames.ora 에 등록된 tns alias 가 있는지?

14.3.4 WWC-41439

http://[hostname]/pls/admin_/gateway.htm 접속시 WWC-41439 Error 발생
Error: You cannot login because there is no configuration information stored in the enabler configuration table. (WWC-41439) 발생하면

httpd.conf 의 ServerName 을 확인한 후 service 할 domain name 으로 수정하거나 확인 후

$ORACLE_HOME/portal30/admin/plsql (iAS 1.0.2.1) 또는
$ORACLE_HOME/webdb30/admin/plsql (iAS 1.0.2.0) 에서
ssodatan 을 실행할 것

예) % ssodatan -w http://krdaejeon1.kr.oracle.com:3000/pls/portal30/ -l http://krdaejeon1.kr.oracle.com:3000/pls/portal30_sso/ -s portal30 –p portal30 -o portal30_sso -c ora817

14.3.5 portal 홈페이지 접속시 Internal Server Error 발생

Note:145401.1

Servlet Error: java.lang.NoClassDefFoundError accessing Portal home page

This fails. The browser reports an 'Internal Server Error', and the jserv.log reports an error like 'Error: java.lang.NoClassDefFoundError'.

For example:-

```
$ tail jserv.log
            at  org.apache.jserv.JServConnection.processRequest(Compiled  Code)
            at  org.apache.jserv.JServConnection.run(Compiled  Code)
            at  java.lang.Thread.run(Compiled  Code)

  [08/05/2001 16:46:45:221] (ERROR) ajp12: Servlet Error:
java.lang.NoClassDefFoundError: oracle/webdb/page/ContentUtils:
   oracle/webdb/page/ContentUtils
 [08/05/2001 16:46:45:222] (ERROR) an error returned handling request via protocol
"ajpv12"
  [08/05/2001 15:46:45:221 GMT] java.lang.NoClassDefFoundError:
oracle/webdb/page/ContentUtils
            at  org.apache.jserv.JServConnection.processRequest(Compiled  Code)
            at  org.apache.jserv.JServConnection.run(Compiled  Code)
            at  java.lang.Thread.run(Compiled  Code)
```

Resolution

Check the link is pointing to the correct version of your JDK under

$ORACLE_HOME/Apache.

For example, the example below shows the 'jdk' link is pointing to JDK 1.2.2, which is correct for iAS 1.0.2.1 on the platform in this example.

```
$ ls -la $ORACLE_HOME/Apache/jdk

lrwxrwxrwx    1 iasuk        users              12 May   9 08:44
/u03/iasuk/IAS1021ENT/Apache/jdk -> /opt/java1.2
```

However, had this been JDK 1.1.8 for example, I might expect to see the error above.

Note: Not all versions of iAS include a symbolic link to the JDK. Certain platforms provide the actual JDK.

14.3.6 9iAS 1.0.2.2 Portal 을 Oracle 9I에 설치할때

Portal Configuration Assistant 에서 ORA-28009 관련사항

Oracle 9I init.parameter 또는 spfile에서 다음의 parameter를 확인할 것

O7_DICTIONARY_ACCESSBILITY = TRUE

ORA-600 ttcgcshnd-1 using JDBC thin pre-9i to 9i database

Note 146267.1

Bug 1725012 적용

14.4 Oracle JSP

15. References

Apache User's Guide
http://www.apache.org/ , http://www.apache.kr.net
http://apache.us.oracle.com/
iAS 교육교재 및 예제
iAS 1.0.2 Manual
KMS 등록 자료와 WebiV자료들…