

Oracle 9i R2 (9.2.0.6)
on
SUSE LINUX Enterprise Server 9
(How to Install)

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Introduction

Oracle 9iR2 (9.2.0.6) is SUSE LINUX Enterprise Server 9 (SLES 9) certified. This document will help you to install Oracle 9i R2 (9.2.0.4) on SLES 9. After installing Oracle 9iR2, apply Oracle patch set 9205/9206. If you encounter any problem, please post your questions to suse-oracle@suse.com mailing list.

Required Software and Reference Documents

Novell

- SUSE LINUX Enterprise Server 9 and Service Pack 2. You can download Eval copy from <http://www.novell.com/products/linuxenterpriseserver/eval.html>
- SUSE Linux Enterprise Server 9 Documentation
<http://www.novell.com/documentation/sles9/index.html>

Oracle

- Oracle 9i R2 (9.2.0.4) : You can download this from <http://www.oracle.com/technology/software/products/oracle9i/index.html>.

Disk1 : ship_9204_linux_disk1.cpio.gz
Disk2 : ship_9204_linux_disk2.cpio.gz
Disk3 : ship_9204_linux_disk3.cpio.gz
- Oracle 9i Database Release2 Documentation
<http://www.oracle.com/technology/documentation/oracle9i.html>

Hardware Requirements

The system must meet the following minimum hardware requirements:

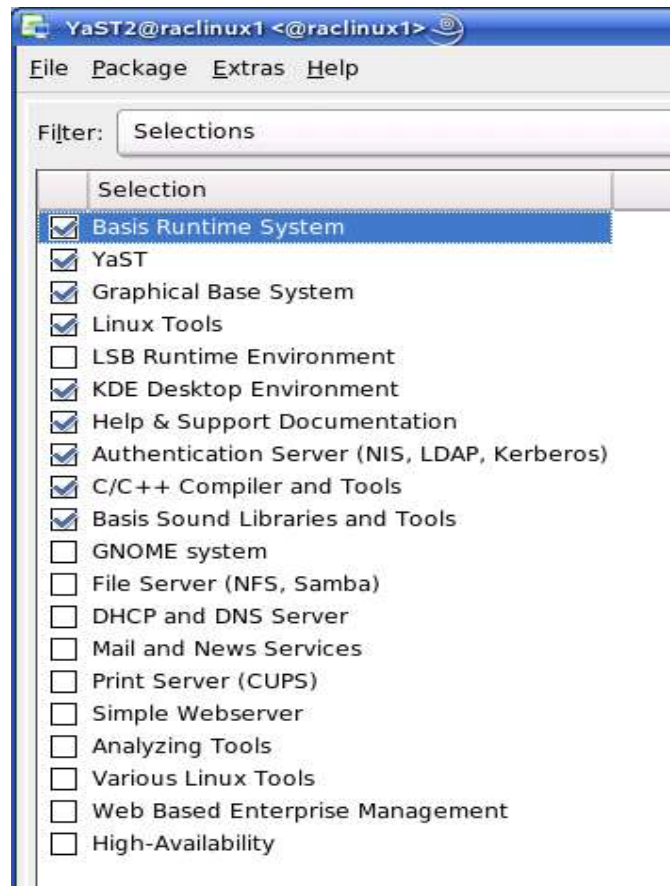
Requirement	Minimum Value
RAM	512 MB
Swap space	Approx. twice the size of RAM
Disk space in /tmp	400 MB
Disk space for software files	2.5 GB (2621440 KB)
Disk space for database files	1.2 GB

Installation Steps

1. Install SUSE LINUX Operating System

Follow Installation instructions provided in SLES9 install manual. SLES9 Installation with default packages along with “C/C++ Compiler and Tools” is sufficient for Oracle 9i R2 (9.2.0.4) install.

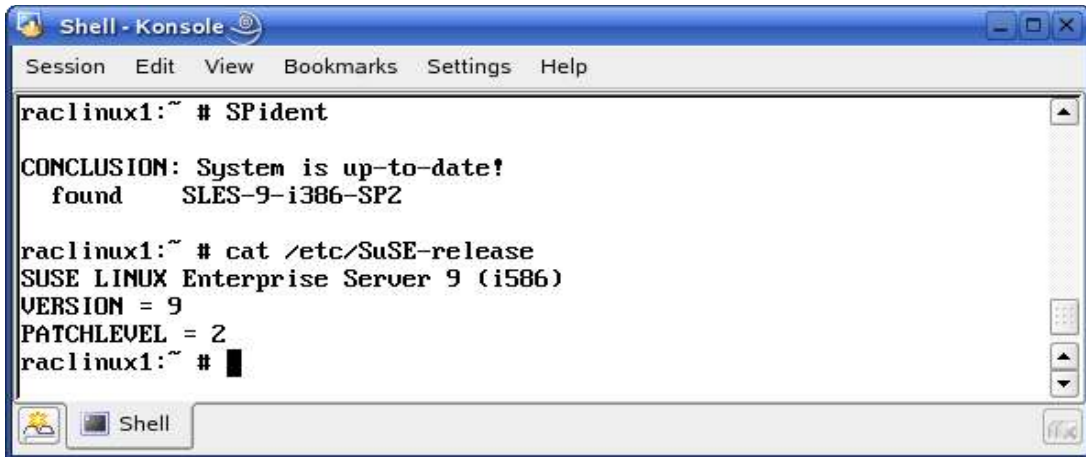
Check whether C/C++ compiler is installed. “gcc --version” will show “gcc (GCC) 3.3.3 (SUSE LINUX)”. If gcc is not installed, then use YaST to install “C/C++ Compiler and Tools”.



Note: If you are installing Oracle Database then there is no linking issue. Some of the Oracle9i tools are compiled with gcc 2.95 compiler. You may need "**gcc_old for SLES9**" for linking of those tools. gcc_old-2.95.3-175.2.i586.rpm is included in SLES 9 SP2 CD1.

2. Install SLES9 Service Pack 2 (Optional)

Please install SLES9 SP2, as it contains latest patches and updated orarun. Verify SLES9 SP2 is installed either by SPident or 'cat /etc/SuSE-release'.



```
Shell - Konsole
Session Edit View Bookmarks Settings Help
raclinux1:~ # SPident
CONCLUSION: System is up-to-date!
found SLES-9-i386-SP2
raclinux1:~ # cat /etc/SuSE-release
SUSE LINUX Enterprise Server 9 (i586)
VERSION = 9
PATCHLEVEL = 2
raclinux1:~ #
```

3. Oracle Install prerequisites

SUSE provides orarun package to automate most of the Oracle pre-install task. Refer to Oracle installation document for complete list of prerequisites.

orarun :

1. Install orarun package from SLES9 SP2 CD2. You can use YaST setup tool or manual installation instruction to install orarun package.

```
rpm -i /media/cdrom/suse/i586/orarun-1.8-109.15.i586.rpm
```

Note: orarun is also available at <http://ftp.novell.com/partners/oracle/sles-9/>

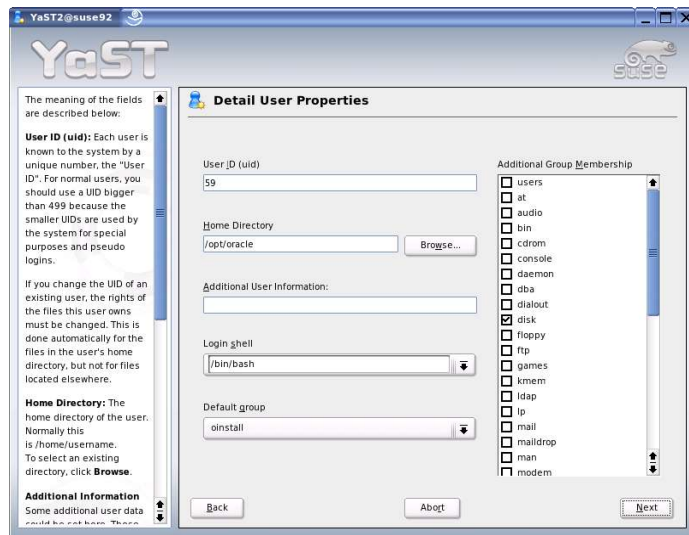
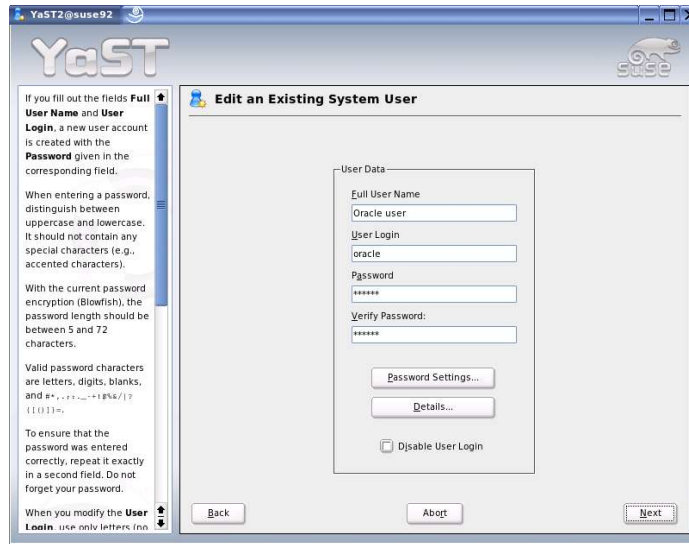
2. The account for "oracle" user is disabled. Enable it, by changing the shell for the "oracle" user from "/bin/false" to "/bin/bash", either using YaST user administration, or by editing the file "/etc/passwd".

Also, set a new password for user "oracle" i.e. "/usr/bin/passwd oracle".

You can use the SUSE setup tool YaST to accomplish above task.

```
/sbin/yast2 -> "security and Users" -> "Edit and create groups"
Select Users tab and Set System Users filter to see oracle user.
```

Following are the screen shots of "oracle" user properties:



3. Run `"/usr/sbin/rcoracle start "` to set kernel parameters. Ignore any errors.

4. Install Oracle 9iR2 (9.2.0.4)

1. Get Oracle 9iR2 (9204) Software from oracle web or use your Oracle Disks. If you have downloaded SW then gunzip and cpio files. It will create three directory Disk1, Disk2 and Disk3.

- a. `gunzip "file_name"`
- b. `cpio command: cpio -idmv < "file_name"`

2. Make sure you are logged in as **oracle** user and following variables are exported before starting Oracle 9i R2 installation. If you are using new

or arun than these variable are already exported.

```
"export LD_ASSUME_KERNEL=2.4.21"  
"export LD_PRELOAD=/usr/lib/libInternalSymbols.so"
```

4. Run Oracle installer from Disk1 directory:./runInstaller

Following install screen will appear. Follow directions carefully.



5. Installation will walk you through with self explanatory instructions. You may see some linking errors If gcc295 compiler is not used in step 2, but installation of Oracle 9iR2 database is successful. Here are screen shots:

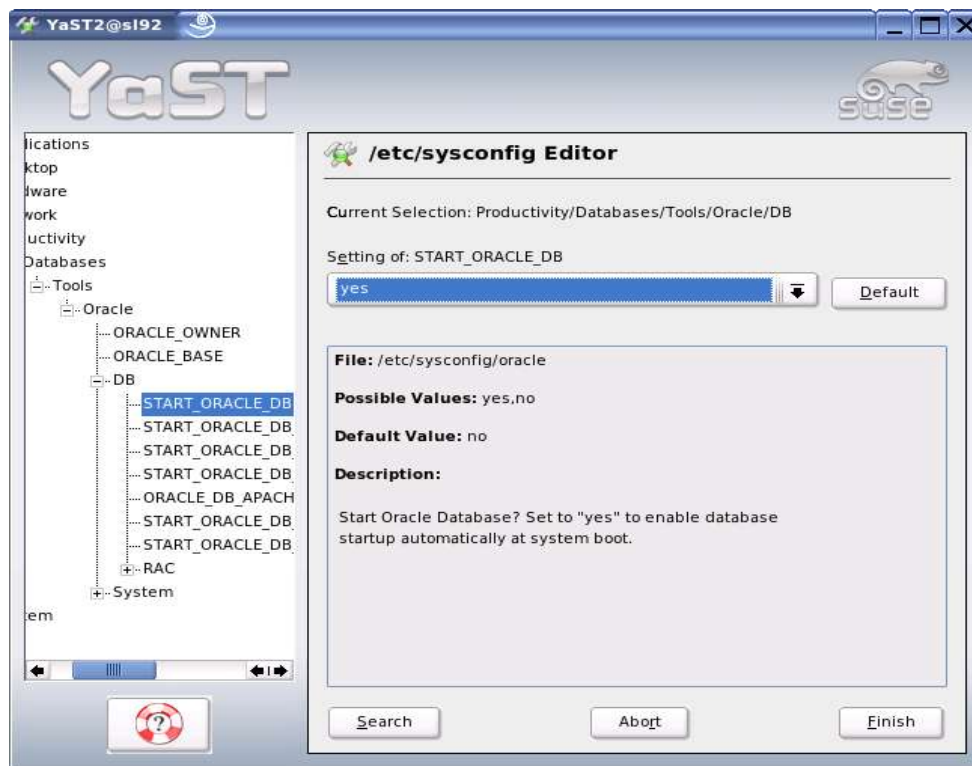




5. Oracle Database Start at boot time

1. Edit /etc/oratab entry corresponding to your database to "Y".
2. Set parameter START_ORACLE_DB="yes" in "/etc/sysconfig/oracle" file. You can edit file "/etc/sysconfig/oracle" manually or use YaST setup tool to change oracle specific parameters.

"/sbin/yast2->System->/etc/sysconfig Editor ->Productivity->Databases"



6. Oracle 9205/9206 Patch set

Follow the instructions provided in Oracle 9205/9206 patch set release document. These are available on Oracle Metalink.

Here is tested sequence for 9206 (skipping 9205):

1. Install 9.2.0.4
2. patch 3238244 : relink agent (relink oemagent)
3. patchset 9.2.0.6

This completes installation of 9iR2 on SLES9 (x86).

7. Itanium (IA64) : Oracle 9iR2 (9.2.0.5) is certified for SLES9

The following steps will help you to install Oracle 9iR2 (Itanium/IA64) on SLES9:

1. Download and Install 9iR2 (9.2.0.2.0):

- (a) Download 9202 SW

[ship_9202_ia64_Inx_Disk1.cpio.gz](#)
[ship_9202_ia64_Inx_Disk2.cpio.gz](#)
[ship_9202_ia64_Inx_Disk3.cpio.gz](#)

- (b) Ignore two link errors: ins_oemagent.mk, ins_rdbms.mk

- (c) Oracle Installer check oralnst.loc files in two different locations “/etc” and in “/var/opt/oracle”. If needed create a symbolic link:
#ln -s /etc/oralnst.loc /var/opt/oracle/oralnst.loc

2. Apply 9.2.0.5 patchset

i.e. runInstaller -ignoreSysPrereqs -invPtrLoc /etc/oralnst.loc

1. **ins_oemagent.mk**: If this error occurs then apply patch p3119415_9204_Linux-IA64.zip or edit ins_oemagent.mk file add an ld flag: -L\$(LIBHOME)/stubs and continue installation.

```
diff ins_oemagent.mk.ORIG ins_oemagent.mk:
< LDFLAGS = $(STDMODE) -L$(LIBHOME) -L$(ORACLE_HOME)/rdbms/lib
-L$(ORACLE_HOME)/network/lib
---
> LDFLAGS = $(STDMODE) -L$(LIBHOME)/stubs -L$(LIBHOME)
-L$(ORACLE_HOME)/rdbms/lib -L$(ORACLE_HOME)/network/lib
```

2. **ins_rdbms.mk**: If this error occurs, then as per Oracle metalink note 285982.1, edit env_rdbms.mk file and create two symbolic links.

```
diff env_rdbms.mk_ORIG env_rdbms.mk :
< LDFLAGS=-o $@ $(LDPATHFLAG)$(PRODLIBHOME) $(LDPATHFLAG)
$(LIBHOME) $(LDPATHFLAG)$(LIBHOME)stubs/
```



```
---
> LDFLAGS=-o $@ $(LDPATHFLAG)$(PRODLIBHOME) -lunwind -lcxa
$(LDPATHFLAG)$(LIBHOME) $(LDPATHFLAG)$(LIBHOME)stubs/

ln -sf $ORACLE_HOME/lib/libunwind.so.4 $ORACLE_HOME/lib/libunwind.so
ln -sf $ORACLE_HOME/lib/libcxa.so.4 $ORACLE_HOME/lib/libcxa.so
```

After this, click on retry and the installation continues to the end.

3. After installing 9.2.0.5 patchset you must install patch 4566648 to fix the following 2 issues:

- 4566614: BSP(BACKING STORE) VALUE SHOULD BE CHECKED BEFORE COPYING THE MEMORY SEGMENT
- 4566551: BACKING STORE (BSP) NEEDS PROPER ALIGNING FOR SLES9

There is a known issue, where creation of JavaVM fails during custom DB creation. Please use the workaround described as follows in case of custom Database creation:

Remove the following eight shared libraries from \$ORACLE_HOME/javavm/admin/ and restore them else where before starting database creation.

```
libjox9oracle_aurora_ncomp_java.so
libjox9oracle_aurora_server_tools_loadjava.so
libjox9oracle_aurora_sqljdecl.so
libjox9oracle_net_nt.so
libjox9oracle_security_jwallet.so
libjox9oracle_sql.so
libjox9org_omg_CORBA_2_3_portable.so
libjox9sun_security_action.so
```

8. AMD64 : Oracle 9iR2 (9.2.0.6) is certified for SLES9

Please make sure you install x86_64 version 9iR2 on SLES9 (x86_64). There are no known issue of installing x86 version of Oracle on SLES9 (x86_64) but it is not supported by Oracle. Please check Oracle Metalink for any update.

Oracle9i Database Release 2 (9.2.0.4.0) for Linux x86-64

1. [amd64_db_9204_Disk1.cpio.gz](#)
2. [amd64_db_9204_Disk2.cpio.gz](#)
3. [amd64_db_9204_Disk3.cpio.gz](#)

(SW:<http://www.oracle.com/technology/software/products/oracle9i/htdocs/linuxx8664soft.html>)

Installation on SLES9 SP2 should work without any problem.

Note: Universal Installer patches (4261532 & 4233179) needed for EM64T.

9. EM64T (32 bit): Summary of Installing Oracle 9iR2 (x86) on SLES9 (x86)

1. Install SLES9 (x86) with SLES9 SP1 update.
2. Install C/C++ Compiler and Tools.
3. Install gcc_old from SLES9 SP1 CD and make it as default compiler.
4. Installation of oracle 9.2.0.4 as per above instructions (DO NOT CREATE A DATABASE!)
5. Download following the oracle patches:
Patch 3810241 & Patchset 3501955 (oracle 9.2.0.5)
6. Edit the dbca script according to oracle metalink document Doc ID: Note:292278.1 to run blackdown java using native threads.
7. Start the oracle universal installer using oraparam.ini file from patch 3810241 (To detect SLES9 as supported OS)
8. Now you can create the oracle database.
9. Start netca in order to create tsnames and listener via the assistant.
10. To make Apache work create link from libbd.so.3 to libdb.so.2

10. Known Issues - Workaround

1. **Upgrade from 9201:** Follow 9201 -> 9204 -> 9206 path as direct 9201 -> 9206 is not supported by Oracle.
2. **Async I/O or Direct I/O:** If you want to use AIO, then install new libaio files (libaio-0.3.102-1.2.i586.rpm) from SLES9 SP2.
Note: You may need to apply patch # 3208258 (asynch i/o) or patch #2448994 (for direct i/o) – x86 only as x86_64 don't need these patches.
 - a. Set following parameters either by using Enterprise Manager or SQLPLUS to alter AIO parameters: disk_asynch_io=TRUE & filesystemio_options=SETALL
 - b. Relink and Restart Oracle Database Instance (dbshut, dbstart)

```
cd $ORACLE_HOME/rdbms/lib
make PL_ORALIBS=-laio -f ins_rdbms.mk asynch_on
make PL_ORALIBS=-laio -f ins_rdbms.mk ioracle
```
 - c. Verify by checking proc: if the value are increasing while using asynch i/o in your Database. i.e. cat /proc/slabinfo | grep kio

3. **dbca** problem: There are several reports of dbca issues with 9206 update.
 1. SEGMENTATION Fault: Metalink note (292278.1). modify dbca script line #124 with -native

```
$JRE_DIR/bin/jre -native -DORACLE_HOME=$OH -DJDBC_PROTOCOL=thin -mx64m -classpath $CLASSPATH oracle.sysman.assistants.dbca.Dbca $ARGUMENTS
```
 2. dbca: jre was not found in

```
"/opt/oracle/product/9.2.0/oracle.swd.jre/bin/i386/native_threads/jre"
```

Fixed this by linking 'java' to 'jre' in

```
$ORACLE_HOME/oracle.swd.jre/bin/i386/native_threads
```
4. agentctl start : **dbsonmp** leads to Segmentation Fault

After applying 9206 patch (on top of 9204 directly), you might see above problem. You may escape if you did 9204->9205->9206. Please refer Metalink Document 304655.1 for workaround.
5. If you are getting "**ORA-27125**: unable to create shared memory segment" after updating to 9206. This is caused by the fact that newer kernel like 2.6 require MLOCK privilege for hugetlb memory. Login as root and "echo 1 > /proc/sys/vm/disable_cap_mlock". Follow Doc ID: Note:293988.1 for complete detail.
6. If you are getting "**ORA-27123**: unable to attach to shared memory segment" then you forgot to set required kernel parameters.

i.e. run /usr/sbin/rcoracle start
7. Oracle Universal Installer (OUI) reports SLES9 is not supported OS:

Apply patch 3810241 - INCLUDE SLES9 AS A SUPPORTED PLATFORM FOR THE INSTALLATION
8. Oracle Universal Installer (OUI) hangs at Welcome screen.

Possible "**Num Lock**" on keyboard is on. Try again after disabling "Num Lk".
9. AMD64 Server : **libc.so.6** error

If you have installed old orarun on AMD64 server and getting libc.so.6 error, while doing "su - oracle" then comment following lines in /etc/init.d/oracle and /etc/profile.d/oracle.[c]sh

```
#test -d /lib/i686 && export LD_ASSUME_KERNEL=2.x.x
```

10. APACHE WEB SERVER FAILED TO START: Create symbolic link.

```
#ln -s /usr/lib/libdb.so.3 /usr/lib/libdb.so.2
```

11. Oracle Client Installation: Novell Linux Desktop 9

Refer Oracle 9iR2/10g Client Installation guide

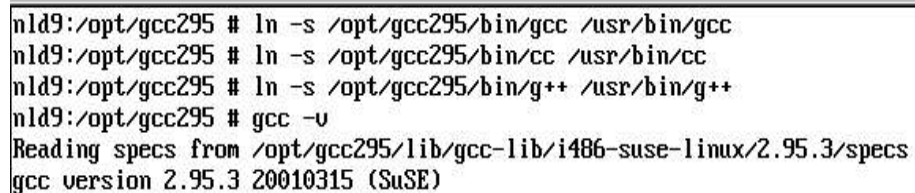
URL: http://ftp.novell.com/partners/oracle/docs/oracle_nld9_install.pdf

12. **SL 9.2/9.3 Professional Install**: If you are installing on SUSE LINUX Professional, then all the steps are similar to SLES9/9iR2. However, SL 9.3 is known to fail due to Oracle Java problem with hang "**Enterprise Manager Webserver Integr...**". To avoid this, please do custom install and deselect following component : Enterprise Manager, Apache and Legato.

13. How to Install gcc_old and make it as default compiler.

Before doing this backup your existing compiler.

```
#rpm -i gcc_old-2.95.3-175.2.i586.rpm  
  
# ln -s /opt/gcc295/bin/gcc /usr/bin/gcc  
# ln -s /opt/gcc295/bin/cc /usr/bin/cc  
# ln -s /opt/gcc295/bin/g++ /usr/bin/g++
```



```
nld9:/opt/gcc295 # ln -s /opt/gcc295/bin/gcc /usr/bin/gcc  
nld9:/opt/gcc295 # ln -s /opt/gcc295/bin/cc /usr/bin/cc  
nld9:/opt/gcc295 # ln -s /opt/gcc295/bin/g++ /usr/bin/g++  
nld9:/opt/gcc295 # gcc -v  
Reading specs from /opt/gcc295/lib/gcc-lib/i486-suse-linux/2.95.3/specs  
gcc version 2.95.3 20010315 (SuSE)
```

History:

Date	Changes
10/01/04	Initial Document created.
03/01/05	Updated with new orarun, EM64T and Known Issues
04/11/05	Updated for libaio, 9206 information, Known Issues
04/15/05	Updated Known Issues, Updated Note about orarun
07/14/05	Revamped with updated Information from SLES9 SP2.
09/29/05	Added patchset notes, IA64, AMD64 Instructions

Enjoy!