



z/OS Oracle Client Considerations

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IBM Systems

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IBM System z



Agenda

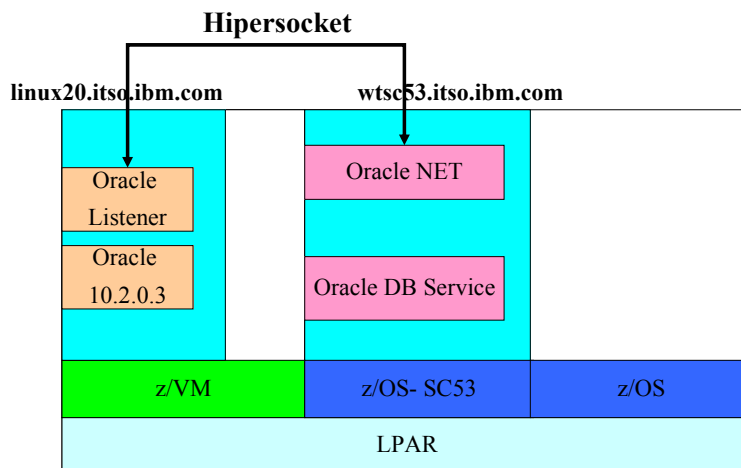
- **What is supported?**
- **Can we leave the Client programs on z/OS and move the DB to Linux?**
- **Character set issues**

IBM Systems

Metalink Note 461234.1

- Upon customer request, as new versions of IBM z/OS, CICS, and IMS are released, Oracle will test with the 10.2 terminal release for compatibility.
- Extended support customers are entitled to any updates or fixes to ensure this compatibility.
- This compatibility assurance will continue indefinitely.

Test Environment in ITSO Poughkeepsie



TNSNAMES for Linux

```
PSFT1=
  (DESCRIPTION=
    (ADDRESS=
      (PROTOCOL = TCP)
      (HOST = linux20.itso.ibm.com)
      (PORT = 1521)
    )
    (CONNECT_DATA=(SID=psft1))
  )
```

Lsnrctl on Linux

Listening Endpoints Summary...

```
DESCRIPTION= (ADDRESS= (PROTOCOL=tcp)
  (HOST=linux20.itso.ibm.com)
  (PORT=1521)) )
```

Batch job

```
//SQLPLUS EXEC PGM=SQLPLUS, PARM='/NOLOG', REGION=0M
//STEPLIB DD DISP=SHR, DSN=ORACLE.V10203.COMDLOAD
//ORA$LIB DD DISP=SHR, DSN=ORACLE.V10203.MESG
//ORA$ENV DD DISP=SHR, DSN=ORACLE.V10203.PARMLIB (ORA1ENV)
//TNSNAMES DD DISP=SHR, DSN=ORACLE.V10203.PARMLIB (TNSNAMES)
//SYSPRINT DD SYSOUT=*

Set echo on
Connect system/manager@psft1;
select table_name, owner from dba_tables
order by table_name;
exit
```

Batch Output

```
SQL> SQL> Connected.
```

```
SQL> 2
```

TABLE_NAME	OWNER
------------	-------

```
-----
```

ACCESS\$	SYS
----------	-----

ALERT_QT	SYS
----------	-----

APPLY\$ _CONF_HDLR_COLUMNS	SYS
----------------------------	-----

APPLY\$ _CONSTRAINT_COLUMNS	SYS
-----------------------------	-----

APPLY\$ _DEST_OBJ	SYS
-------------------	-----

APPLY\$ _DEST_OBJ_CMAP	SYS
------------------------	-----

APPLY\$ _DEST_OBJ_OPS	SYS
-----------------------	-----

APPLY\$ _ERROR	SYS
----------------	-----

APPLY\$ _ERROR_HANDLER	SYS
------------------------	-----

```
...
```

Batch Job User ID

- **Batch job uses TCP/IP instead of XM**
- **TCP/IP uses Unix Services**
 - ▶ Job gets dubbed
 - ▶ Must have an OMVS segment in RACF

WLM Issues

- **Batch job runs in same service class as before**
- **When connecting out through NET, there are limited resources consumed on z/OS.**
- **Elapsed time may be elongated**
 - ▶ Hipersocket recommended
 - ▶ Consider array processing
- **TSO sessions can get elongated response times, but use no service, so stay in Period 1**

Performance Management

- **You need a performance monitor for Linux**
 - ▶ Call Barton
- **RMF doesn't see the Oracle work**
- **Client code in z/OS owns the TCP/IP session**
 - ▶ Some CPU charges to Batch job
- **Network traces in z/OS and Linux**
- **Consider specifying prefetch=nnn in pre-Compiler**
- **Consider changing programs to use Array Fetch**
 - ▶ Reduce network turn-arounds

Character Sets

- **Character set for data base is specified when DB is created**
- **All character sets that can be specified must be from the same family on any given platform.**
- **z/OS is EBCDIC**
 - ▶ Default is WE8EBCDIC1047 – code page 1047
- **Linux on z uses ASCII**

Sort Order

- **At a minimum reports will be in different order.**
 - ▶ **Order By and Group By will give different results on Linux**
 - ▶ **Upper and Lower case, numerics, national chars,**

<i>Eb</i>	C1	81	C2	82	E9	A9	F1	5B	7B	7C
	A	a	B	b	Z	z	1	\$	#	@
<i>As</i>	41	61	42	62	5A	7A	31	24	23	40

SQL Issues

- **Select acct_num, balance from ledger_active where category > 'BR10' and category < '99AX'**
- **Null set returned in ASCII Oracle**
- **SQL may be hidden away in Stored Procedure**
- **Calls for a lot of Testing**

Partitioned Tables

- **Verify that Range-Partitioned tables with a character key will do what you want**
- **Some ranges are valid in EBCDIC but not in ASCII**
- **Planning and good DBA information is required**

Characters in SQL

- **If you move SQL packages to Linux**
 - ▶ **Take care about source and destination code pages**
- **For example, some FTP processes corrupt the | character (EBCDIC 4F) into a ! (EBCDIC 6A)**
- **Terminal emulators need code page support**

Consider

- **UTL_FILE processing in Linux file system**
- **Convert UTIL_FILE_DIR to Database Directory Object**
 - ▶ **CREATE DIRECTORY APP1DIR AS
'/oracle/dev/app1';**
- **Should be simpler on Linux**
 - ▶ **Can use Directory Objects in 10g on z/OS**

Redbook Planning

- **What do you want in a migration chapter?**
 - ▶ **CICS Access Manager?**
 - ▶ **Performance measurements?**
 - **z/OS**
 - **Linux**
 - ▶ **Internationalization**
 - **Character Set AL32UTF8?**
 - ▶ **?**

Thank you – Any Questions?

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