

Setting up a distributed database

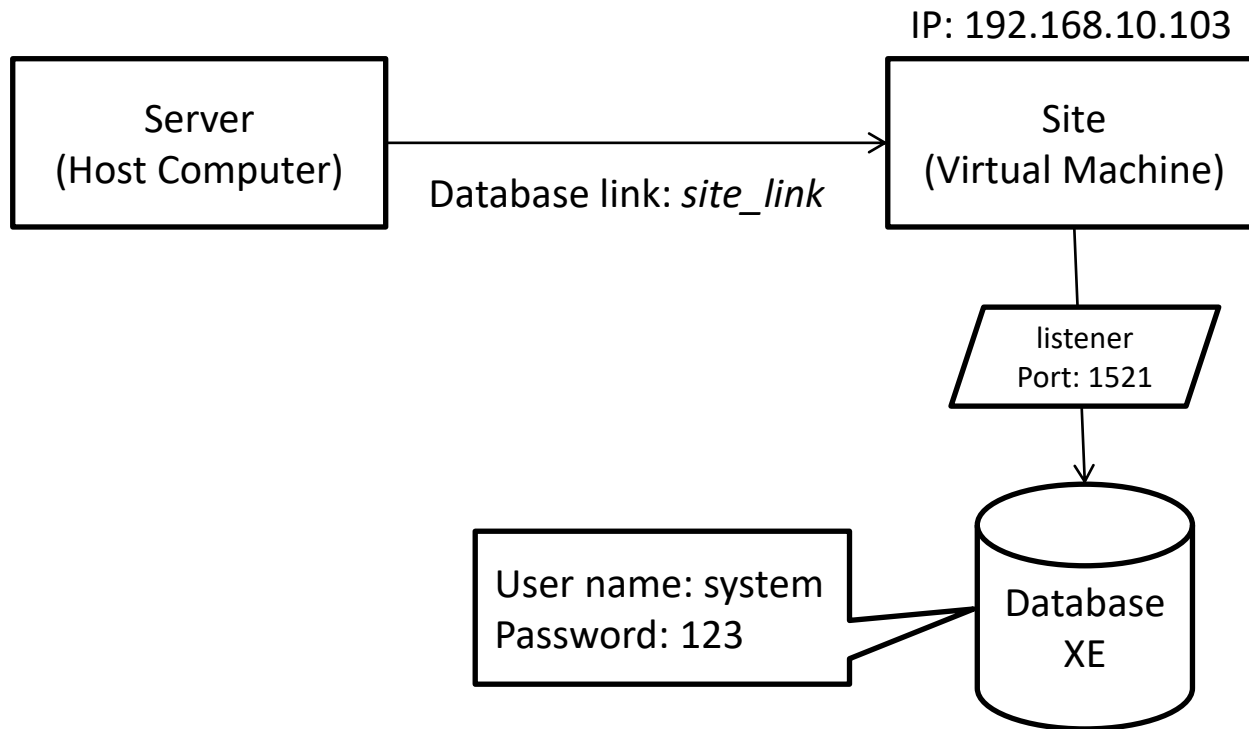
AUST | CSE 4126

What you need

- Oracle 10g
- Virtual machine.
 - You can use any VM software, i.e. [VMWare](#).
- Tutorial video: <https://youtu.be/OAnh6H7NfTY>
 - The video tutorial is detailed and has some extra materials which is summarized in this presentation.
 - So go through the video first, then follow this presentation.

Summary

- We want to access a table at a site (virtual machine) from server (host computer) using a database link.

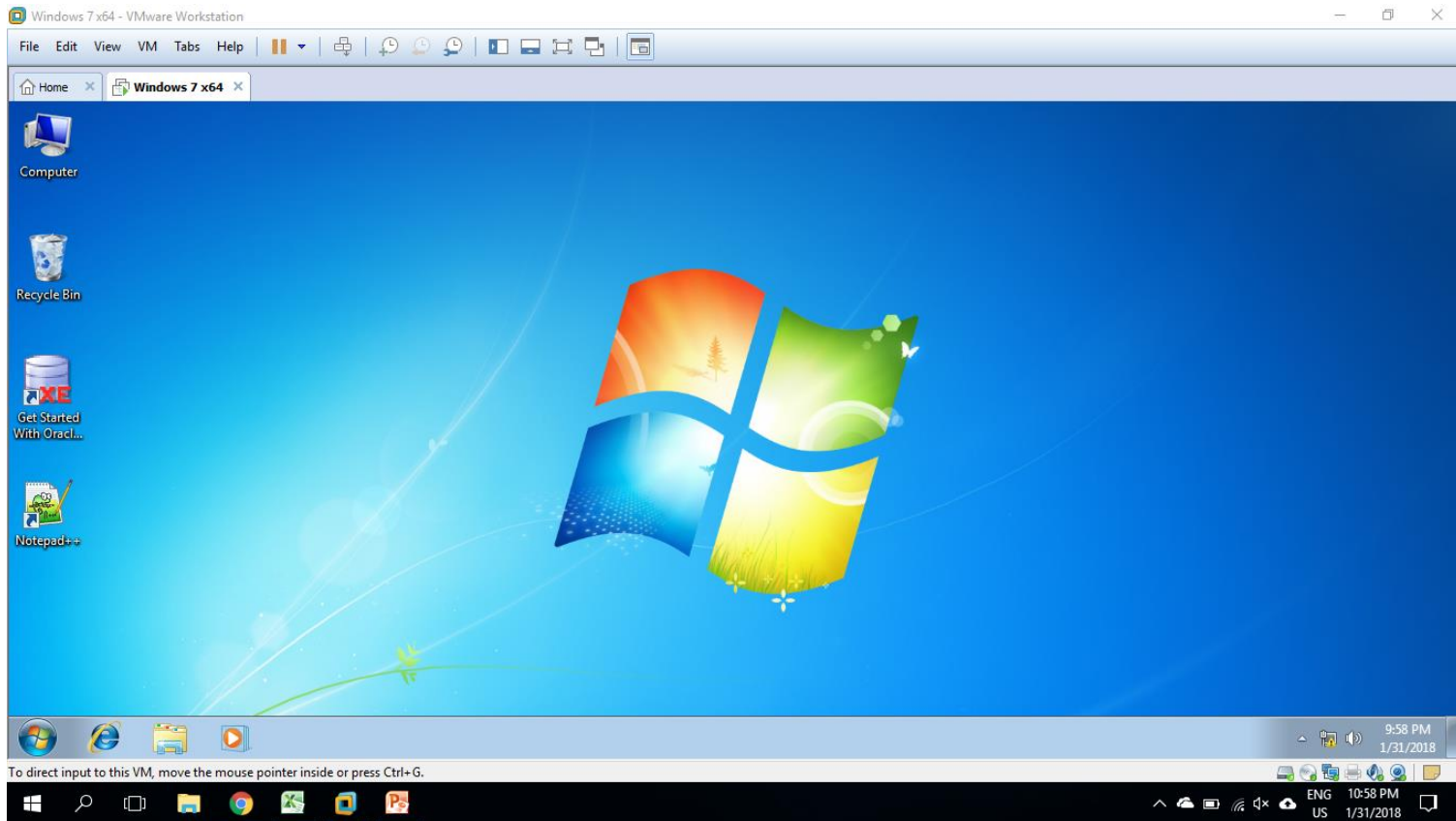


Workflow

	Server End (host)	Site End (VM)
1	Install Oracle 10g	Install Oracle 10g
2		Create tables and insert data
3		Turn off Firewall
4		Change IP to static IP
5	From RUN, Ping the site IP If reply, then good	
6		Go to C:\oracle\app\oracle\product\10.2.0\server\NETWORK\ADMIN\ And Change something in listener.ora
7		Go to cmd, lsnrctl stop/ start If successful message, you are good to go
8	Run the connection code	
9	Run SQL command to access from site	

At site

- Install *oracle 10g* and *notepad++*.



At site

- Create tables.

Windows 7 x64 - VMware Workstation

File Edit View VM Tabs Help

Home Windows 7 x64

Computer

Recycle Bin

Get Started With Oracl...

Notepad++

```
C:\Windows\system32\cmd.exe - sqlplus
```

SNUM	SNAME	MAJ	S	AGE
1	Sajid Abdullah	CSE	1	19
2	Abdullah Karim	CSE	1	19
3	Sajid Rahmatullah	CSE	2	20
4	Abid Barkatullah	CSE	2	22
5	Barkatullah Shahid	CSE	3	19
9	abc	CSE	4	22
7	Abdullah Hafiz	CSE	3	21
8	Rahmatullah Hafiz	CSE	3	21

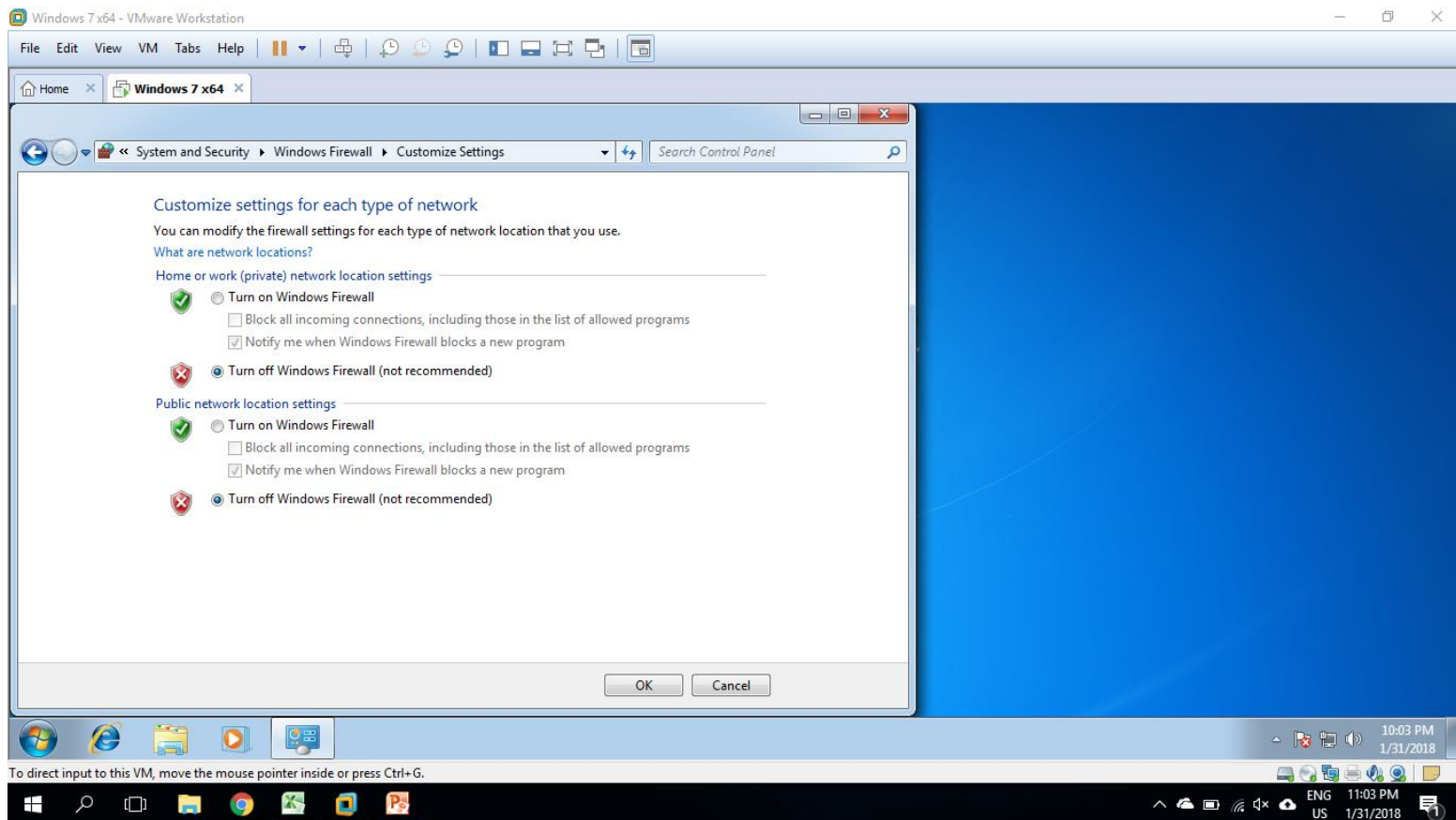
8 rows selected.

SQL>

To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

At site

- Turn off firewall



At site

- Check you IPv4 Address. In this example, it is 192.168.10.128. We will need 192.168.10 part later.

The screenshot shows a Windows 7 desktop environment within a VMware Workstation. The Control Panel is open to the Network and Sharing Center. The 'Local Area Connection Status' window is displayed, showing the connection details for the 'WIN-GM6MVV7S6C7' computer. The 'General' tab is selected, showing the IPv4 address as 192.168.10.128, which is highlighted with a red box. The 'Network Connection Details' window is also open, showing the same IPv4 address. The taskbar at the bottom shows the Start button, search bar, and several application icons. The system clock in the bottom right corner indicates the time is 10:06 PM on 1/31/2018.

Windows 7 x64 - VMware Workstation

File Edit View VM Tabs Help

Home Windows 7 x64

Control Panel Network and Internet Network and Sharing Center Search Control Panel

Control Panel Home

Change adapter settings

Change advanced sharing settings

WIN-GM6MVV7S6C7 (This computer)

View your active networks

Network Public network

Change your networking settings

Set up a new connection or network

Set up a wireless, broadband, dial-up, a

Connect to a network

Connect or reconnect to a wireless, wire

Choose homegroup and sharing option

Access files and printers located on oth

See also

HomeGroup

Internet Options

Windows Firewall

Local Area Connection Status

General

Connection

IPv4 Connectivity: Internet

IPv6 Connectivity: No Internet access

Media State: Enabled

Duration: 00:10:19

Speed: 1.0 Gbps

Details...

Activity

Sent Received

Bytes: 12,717 3,032

Properties Disable Diagnose Close

Network Connection Details

Network Connection Details:

Property	Value
Connection-specific DN...	localdomain
Description	Intel(R) PRO/1000 MT Network Connecti
Physical Address	00-0C-29-00-FA-19
DHCP Enabled	Yes
IPv4 Address	192.168.10.128
IPv4 Subnet Mask	255.255.255.0
Lease Obtained	Wednesday, January 31, 2018 10:02:23 I
Lease Expires	Wednesday, January 31, 2018 10:32:23 I
IPv4 Default Gateway	192.168.10.2
IPv4 DHCP Server	192.168.10.254
IPv4 DNS Server	192.168.10.2
IPv4 WINS Server	192.168.10.2
NetBIOS over Topip En...	Yes
Link-local IPv6 Address	fe80::99db:bcbf:686c:20b4%11
IPv6 Default Gateway	
IPv6 DNS Server	

Close

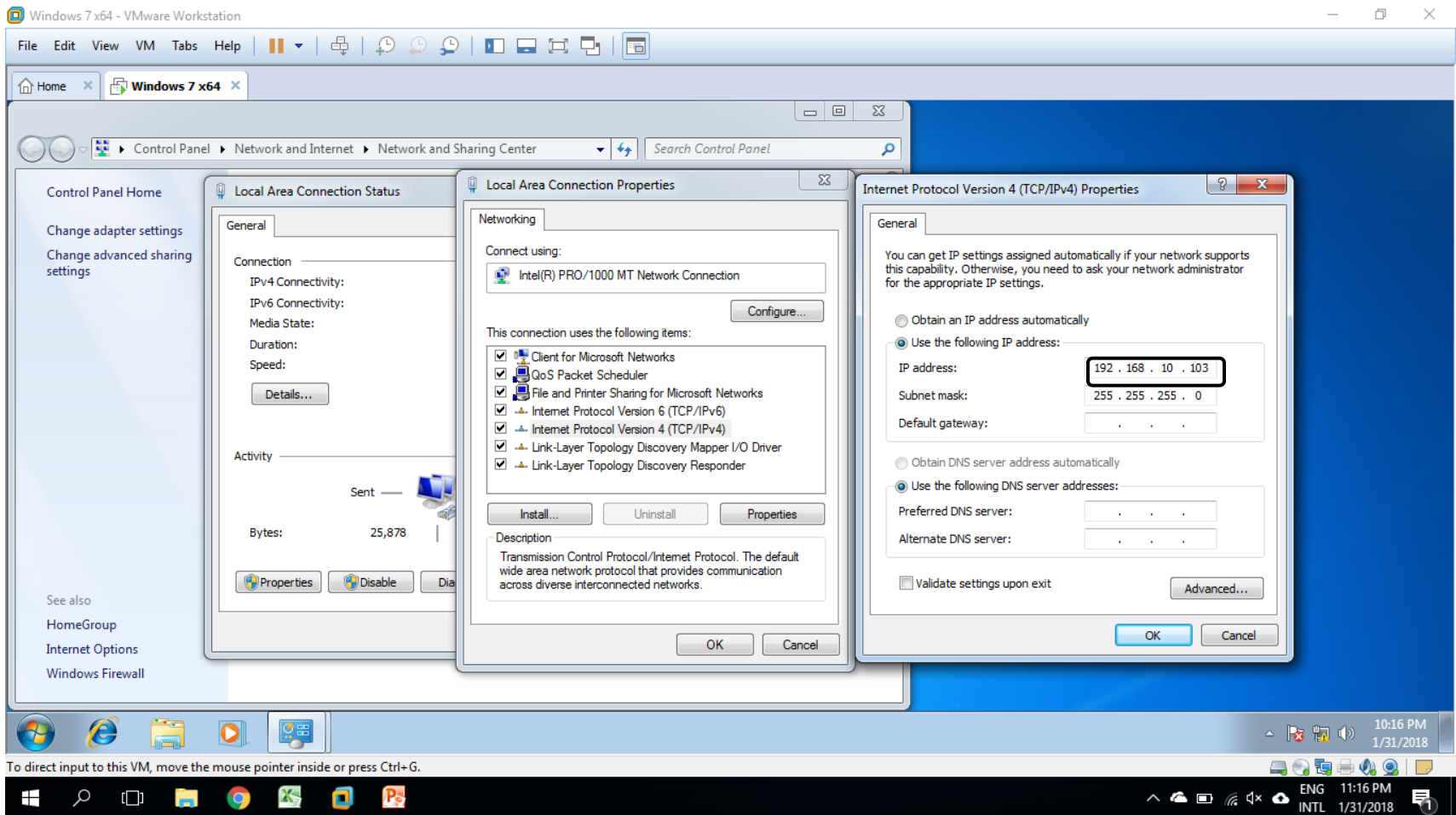
To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

Windows 7 x64 - VMware Workstation

10:06 PM 1/31/2018

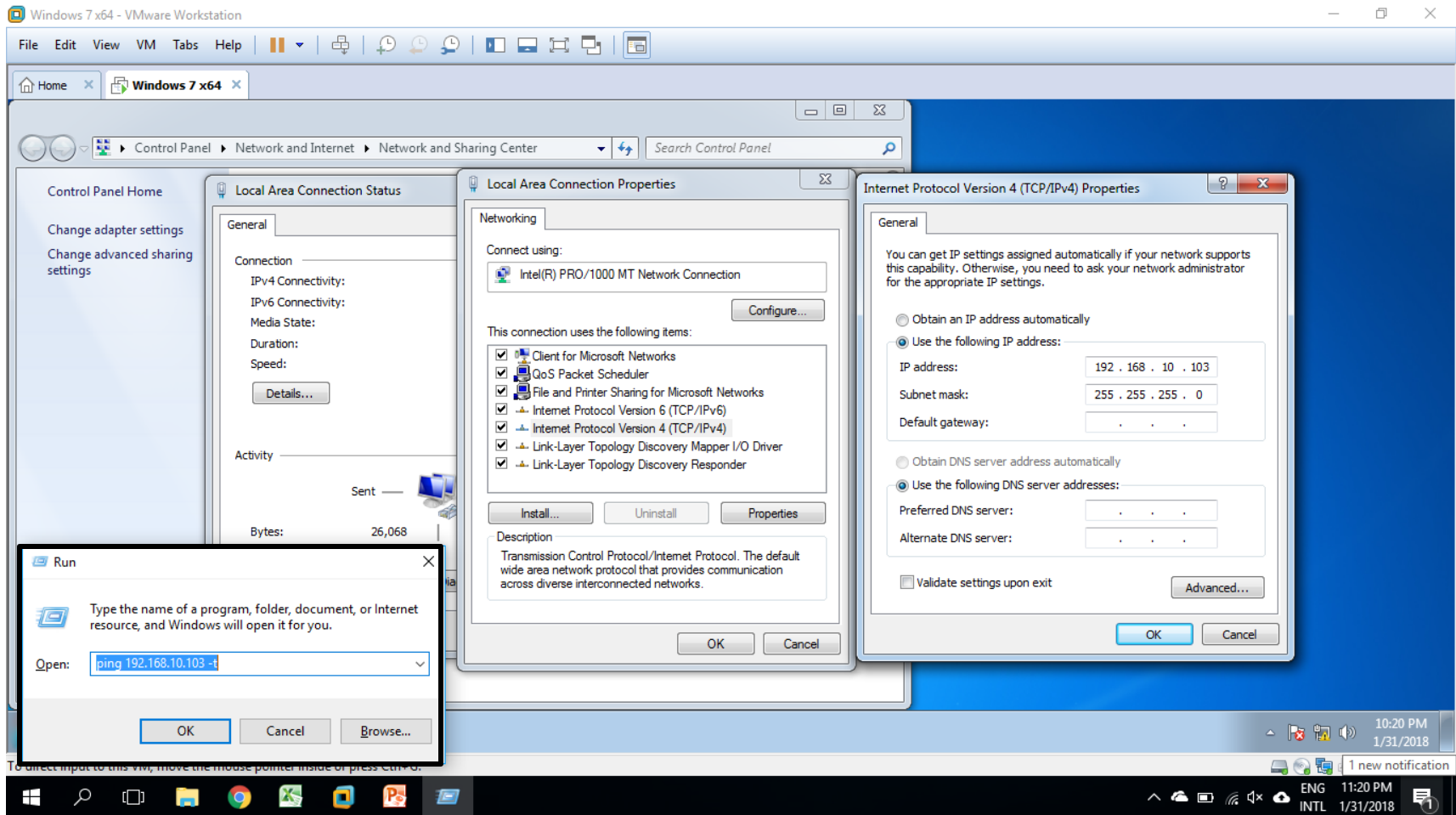
At site

- Change automatic IP to static IP address. Assign an IP similar to IPv4 address. In this case, it is 192.168.10.103, here 192.168.10. part is chosen from previous slide.



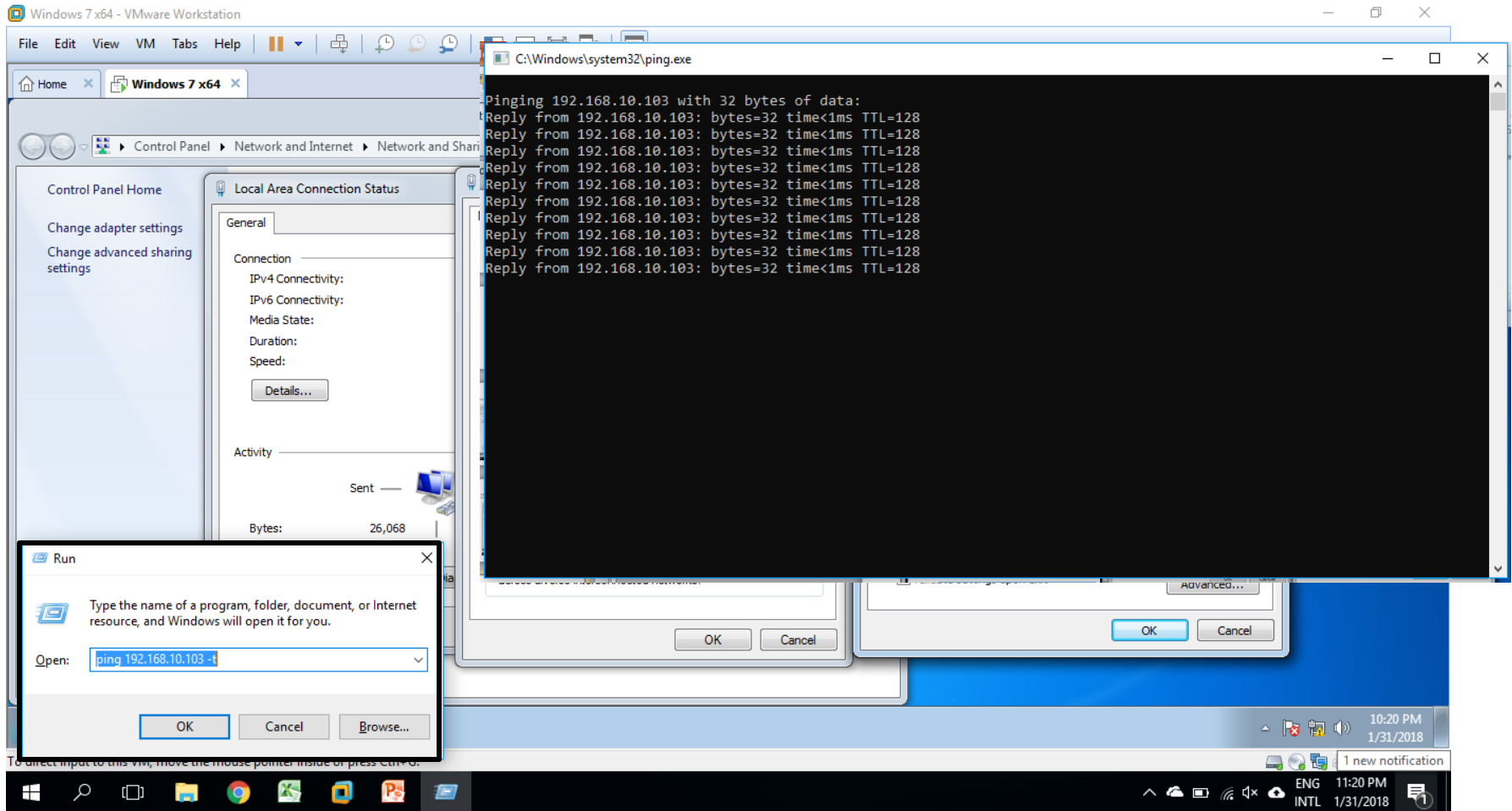
At host

- From the host computer, ping the site's IP address.



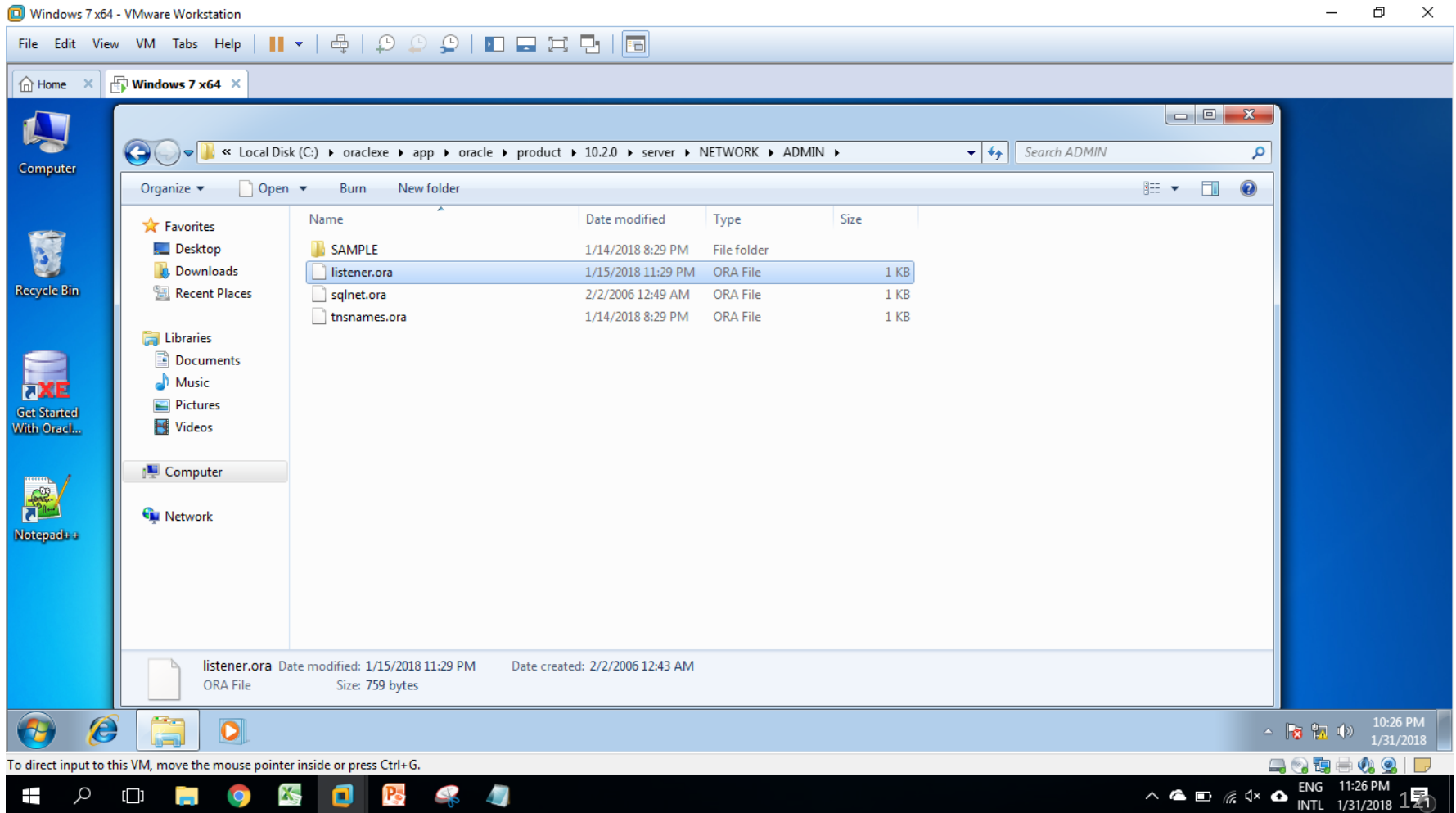
At host

- From the host computer, ping the site's IP address. If reply, then success !



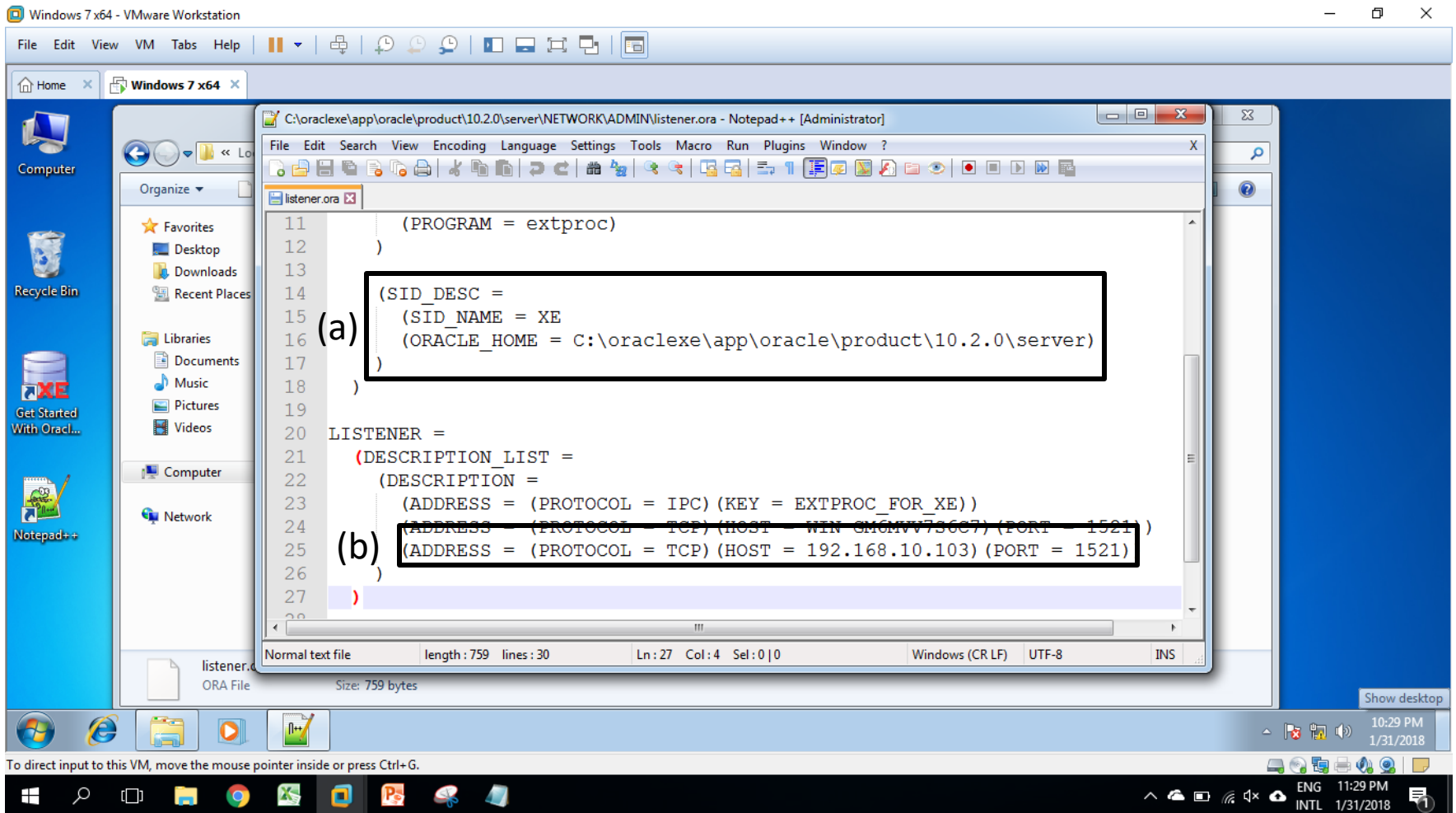
At site

- Go to : C:\oraclexe\app\oracle\product\10.2.0\server\NETWORK\ADMIN\



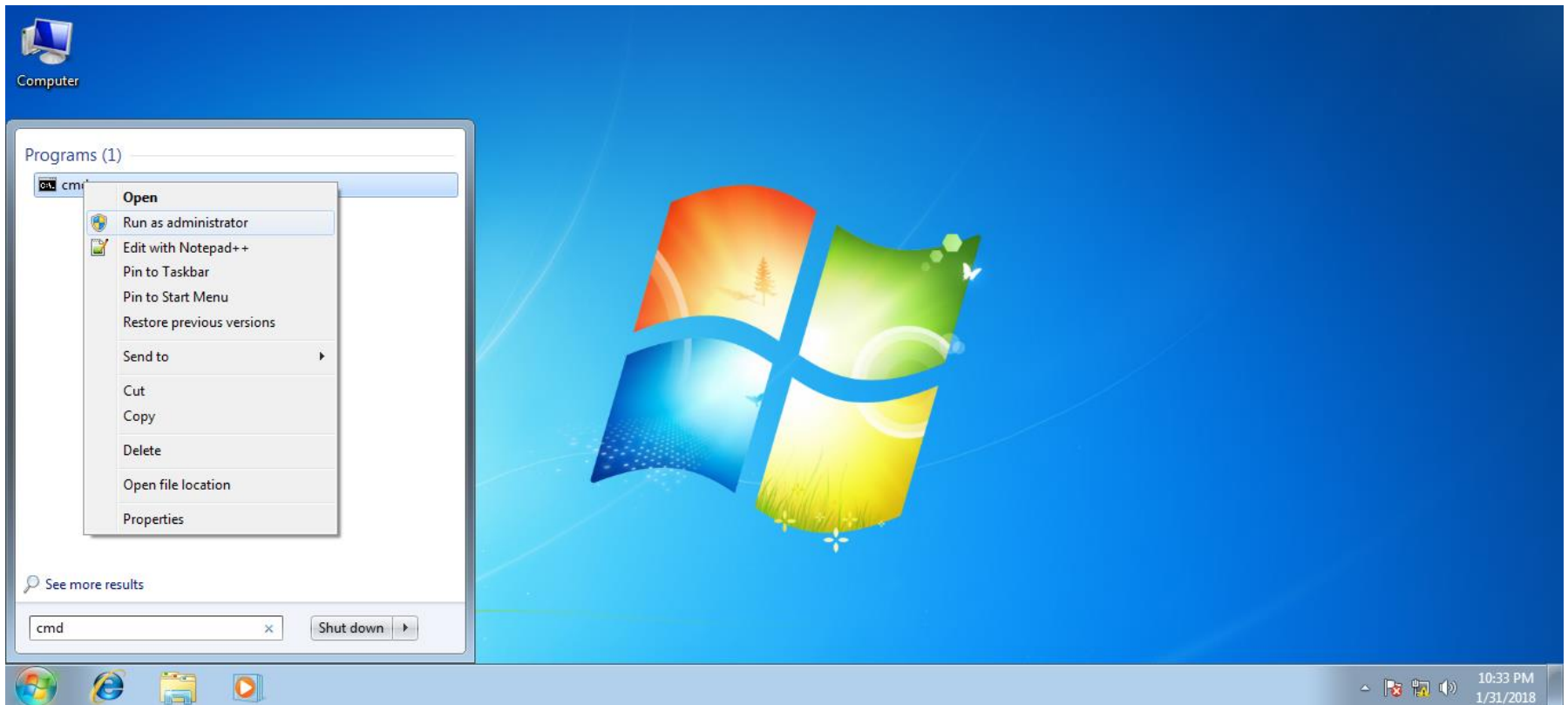
At site

- Open `listener.ora` on *notepad++* and add following these two portions (indicated by *a* and *b*). Save the changes.



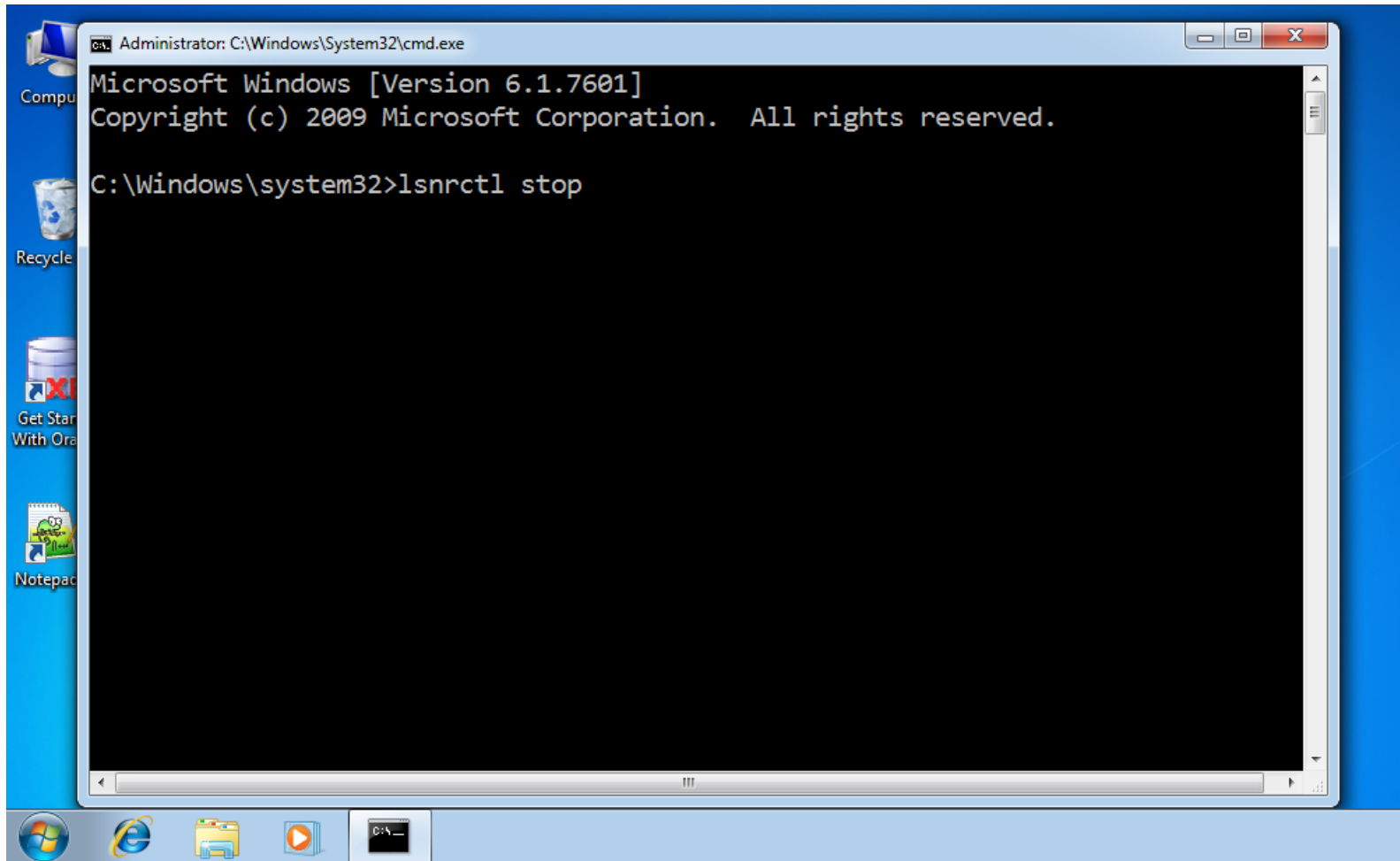
At site

- Run the *cmd* in administrative mode.



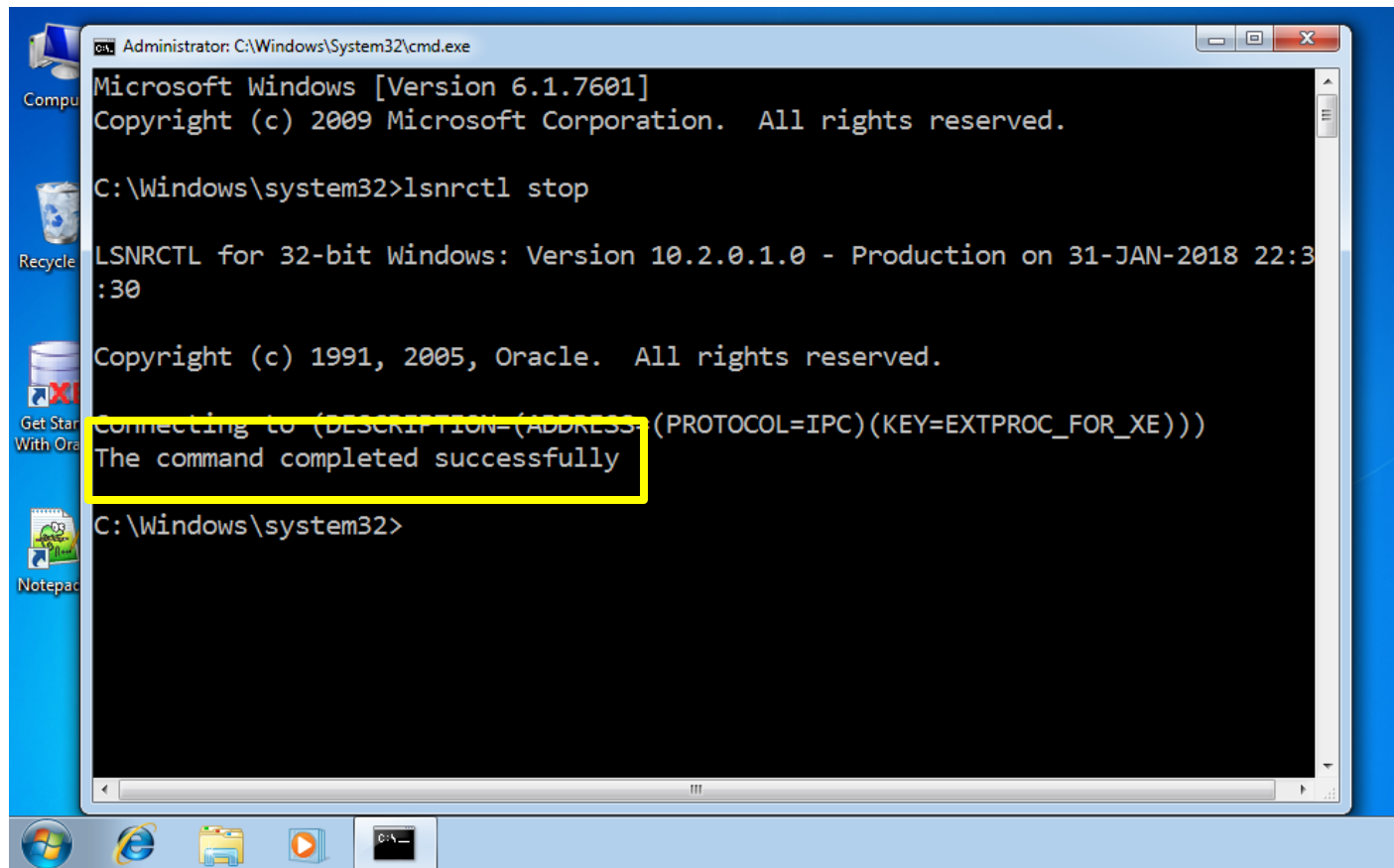
At site

- Give the command: `lsnrctl stop`



At site

- Give the command: `lsnrctl stop`. You should get a success message.



```
Administrator: C:\Windows\System32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Windows\system32>lsnrctl stop

LSNRCTL for 32-bit Windows: Version 10.2.0.1.0 - Production on 31-JAN-2018 22:30:30

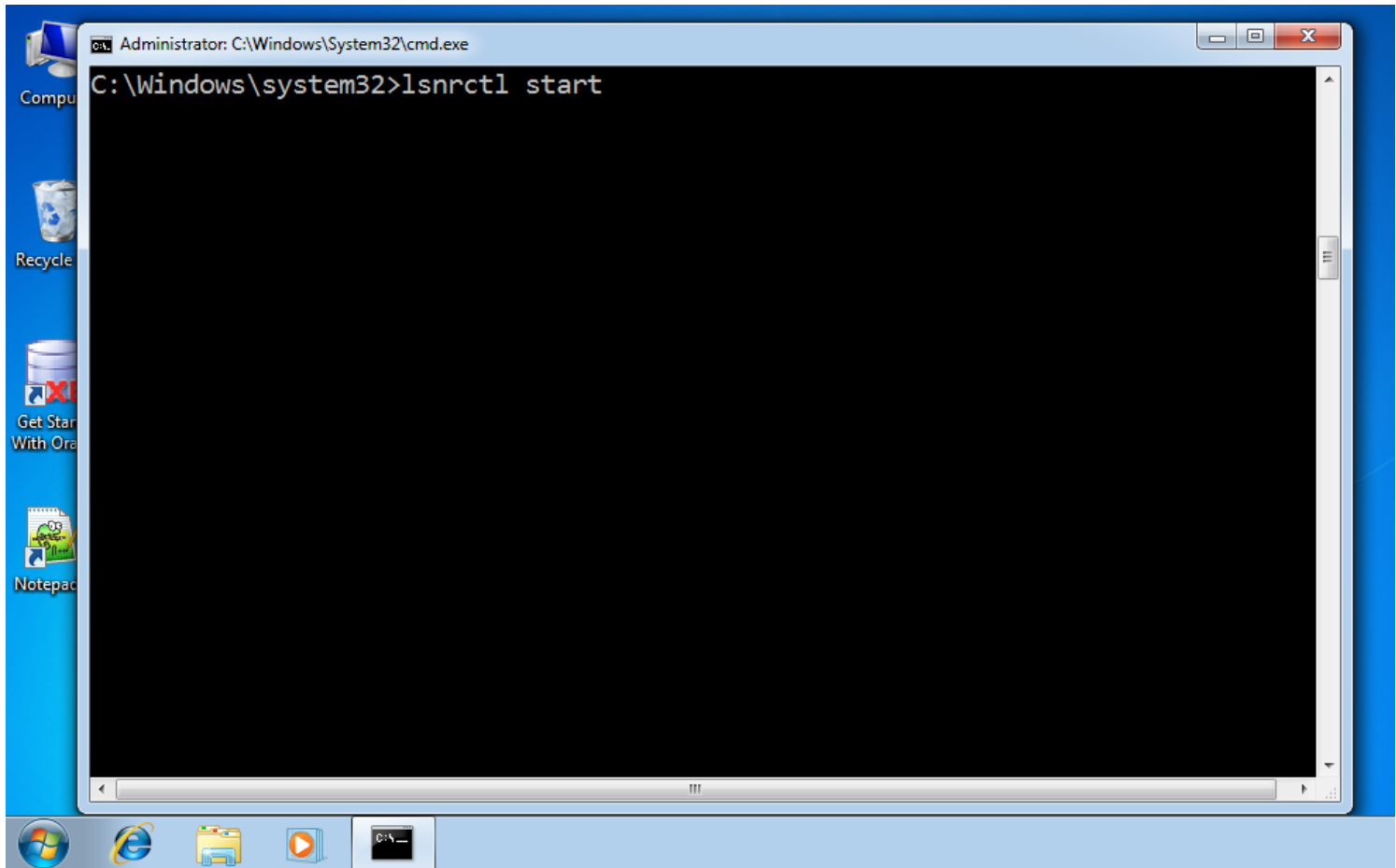
Copyright (c) 1991, 2005, Oracle. All rights reserved.

Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=IPC)(KEY=EXTPROC_FOR_XE)))
The command completed successfully

C:\Windows\system32>
```

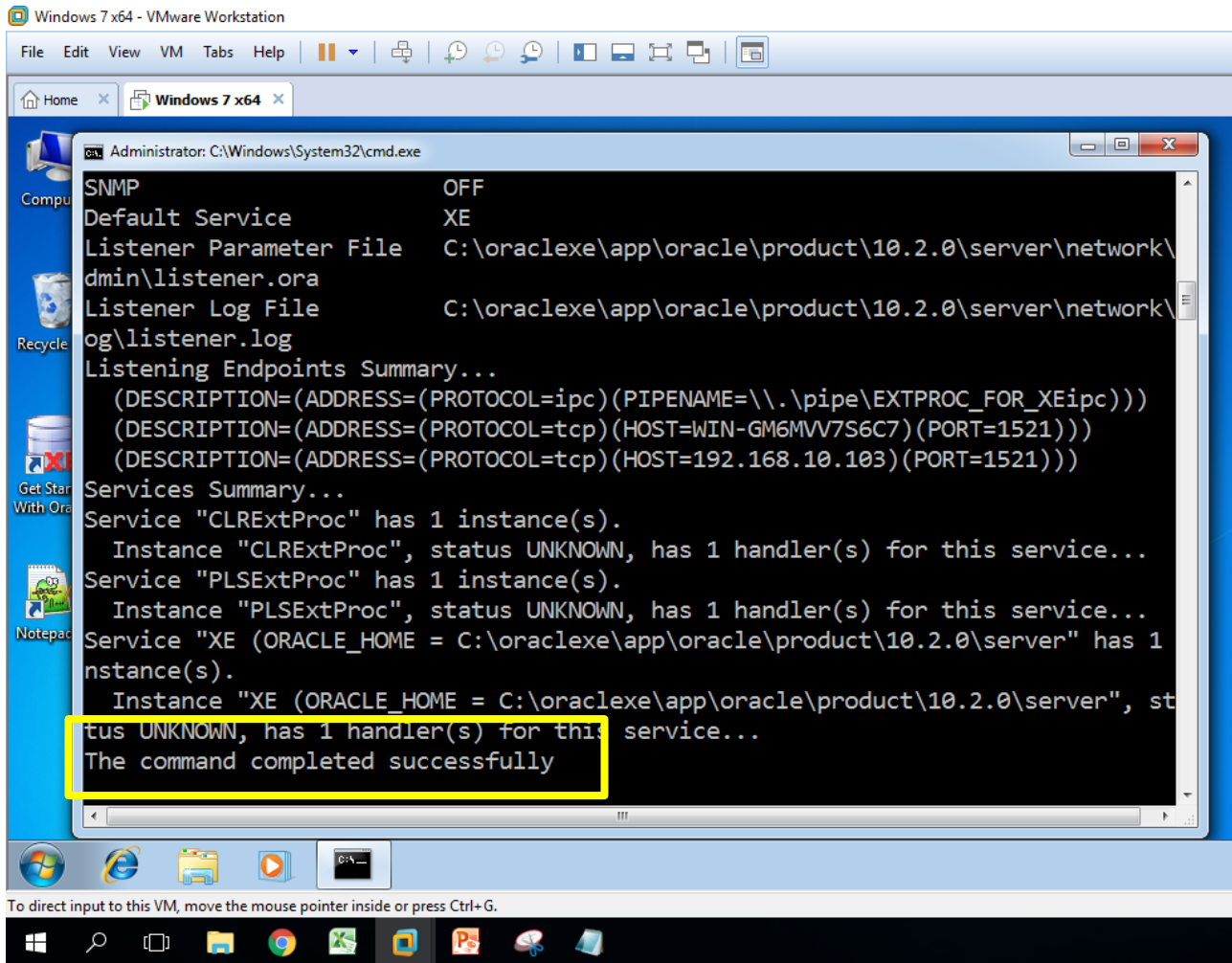

At site

- Now, Give the command: `lsnrctl start`



At site

- You should get a success message again.

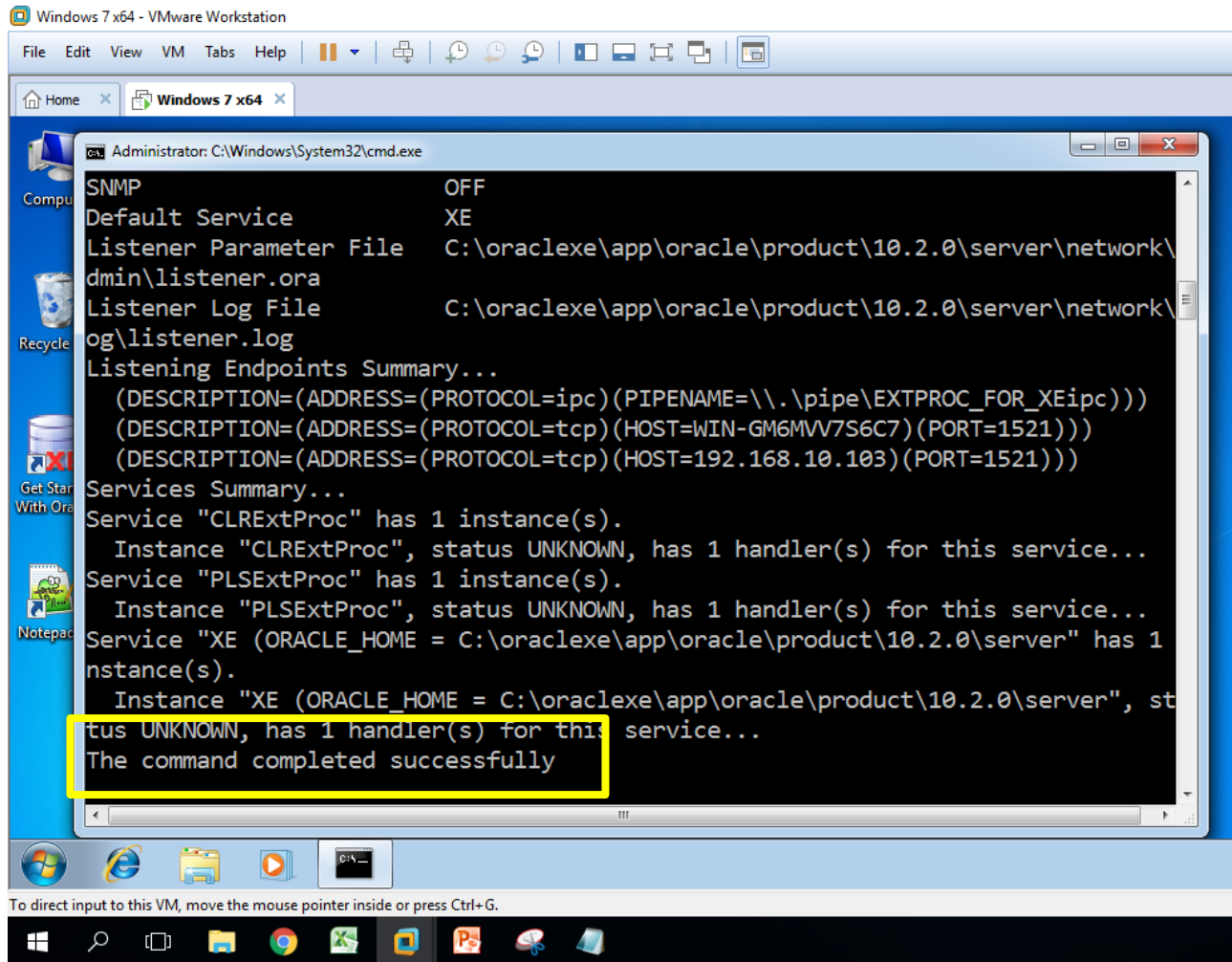


The screenshot shows a Windows 7 x64 VM running Oracle XE. A command prompt window is open, displaying the output of a command. The output includes configuration details for the listener, a summary of listening endpoints, and a services summary. The final line, "The command completed successfully", is highlighted with a yellow box.

```
Administrator: C:\Windows\System32\cmd.exe
SNMP OFF
Default Service XE
Listener Parameter File C:\oraclexe\app\oracle\product\10.2.0\server\network\
admin\listener.ora
Listener Log File C:\oraclexe\app\oracle\product\10.2.0\server\network\
log\listener.log
Listening Endpoints Summary...
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(PIPENAME=\\.\pipe\EXTPROC_FOR_XEipc)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=WIN-GM6MVV7S6C7)(PORT=1521)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=192.168.10.103)(PORT=1521)))
Services Summary...
Service "CLRExtProc" has 1 instance(s).
  Instance "CLRExtProc", status UNKNOWN, has 1 handler(s) for this service...
Service "PLSExtProc" has 1 instance(s).
  Instance "PLSExtProc", status UNKNOWN, has 1 handler(s) for this service...
Service "XE (ORACLE_HOME = C:\oraclexe\app\oracle\product\10.2.0\server" has 1
instance(s).
  Instance "XE (ORACLE_HOME = C:\oraclexe\app\oracle\product\10.2.0\server", st
tus UNKNOWN, has 1 handler(s) for this service...
The command completed successfully
```

At site

- But If error, modify `port = 1522` at portion (b) in slide-13. Then again do the `lsnrctl stop` and `lsnrctl start`.



The screenshot shows a Windows 7 x64 VM with a command prompt window open. The window title is "Administrator: C:\Windows\System32\cmd.exe". The command prompt displays the output of the `lsnrctl status` command. The output includes the listener parameter file, log file, listening endpoints summary, and services summary. The last line of the output, "The command completed successfully", is highlighted with a yellow box.

```
SNMP OFF
Default Service XE
Listener Parameter File C:\oracle\app\oracle\product\10.2.0\server\network\
admin\listener.ora
Listener Log File C:\oracle\app\oracle\product\10.2.0\server\network\
log\listener.log
Listening Endpoints Summary...
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(PIPENAME=\\.\pipe\EXTPROC_FOR_XEipc)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=WIN-GM6MVV7S6C7)(PORT=1521)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=192.168.10.103)(PORT=1521)))
Services Summary...
Service "CLRExtProc" has 1 instance(s).
  Instance "CLRExtProc", status UNKNOWN, has 1 handler(s) for this service...
Service "PLSExtProc" has 1 instance(s).
  Instance "PLSExtProc", status UNKNOWN, has 1 handler(s) for this service...
Service "XE (ORACLE_HOME = C:\oracle\app\oracle\product\10.2.0\server" has 1
instance(s).
  Instance "XE (ORACLE_HOME = C:\oracle\app\oracle\product\10.2.0\server", st
tus UNKNOWN, has 1 handler(s) for this service...
The command completed successfully
```

At host

- Create database link using the following command:

```
drop database link site_link;

create database link site_link
  connect to system identified by "123"
  using '(DESCRIPTION =

    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)
        (HOST = 192.168.10.103)
        (PORT = 1521))
    )
    (CONNECT_DATA = (SID = XE))
  ) '
;
```

At host

- Accessing data from site:

```
select * from student@site_link;
```