HP-UX Desktop Troubleshooting Guide

Table of Contents

1. Introduction

1.1 Abstract

This troubleshooting guide is based on the problems reported against CDE and X/Motif products. The nature of problems received by the CDEXM team have been associated with the startup function of CDE. Problems such as CDE not coming up on either the remote system or on the console are associated with customizations either in network configuration files or CDE-related configuration files. This guide focuses on the problems related to CDE startup. However, it will be our constant endeavor to upgrade this guide based on the problems that would be reported in the future.

1.2 Intended Audience

The principle audiences of this document are the CDEXM lab engineers and RCE.

1.3 Related Documentation

Reference	Location-URL
GR8 calls (Since January 2007)	http://gr8.mvlabs.corp.hp.com/
HP Technical documentation	http://www.docs.hp.com/
Man pages	Man pages provided in HP-UX.
HP Technical Documentation	http://itrc.hp.com/
SAW	http://www.hp.com/sg/saw

1.4 Purpose of the Document

This document highlights some of the basic problems that CDE users can see due to which startup of CDE is affected either on remote system or on HP-server console. This document also contains few troubleshooting techniques for resolving generic problems related to network configuration files or configuration files associated with CDE.

1.5 Terms and Definitions

Terms	Definitions
CDE	Common Desktop Environment
HP	Hewlett-Packard
X	Xserver
DNS	Domain Name Server
NIS	Network Information System
XDM	X Display Manager
XDMCP	X Display Manager Control Protocol

Prepared by

Name	Email ID
Lavleen Kumar Bansal	kumar-bansal.lavleen@hp.com

2. Overview

2.1 Problem Statement

Most of the problems faced by customers on the HP-UX desktop are configuration-related, such as, CDE not coming up due to incorrect customization of network or desktop configuration files. These problems usually occur either because of lack of knowledge of the customer or due to human errors. This guide attempts to address these common problems and provide solutions.

2.2 Purpose of Analysis

The purpose of this analysis is to reduce efforts in analyzing the problems related to CDE startup and the inflow of GR8 calls related to CDE startup towards CDEXM lab. This document can be used as a reference for RCE and CDE engineers to resolve most of the CDE startup problems related to network configuration files and customization of configuration files of CDE.

2.3 Troubleshooting Techniques

CDE can be invoked either on a remote system with an X manager, such as Reflection X or eXcursion, or on an HP Server console. Please refer Section 4 for troubleshooting techniques on the Remote System and Section 5 for troubleshooting techniques for HP Server Console for further details.

3. Basic System Checks

This document provides troubleshooting tips to resolve problems commonly encountered by CDE users. However, we strongly recommend that the below-mentioned basic system checks must be performed before proceeding to detailed troubleshooting techniques.

1. Ping the HP Server from the remote machine. Ping the remote machine from the HP Server by running the following commands:

   From HP Server: # *ping <PC IP>*

   From PC   :   # *ping   <HP-Server's IP>*

   If you are not able to ping, check for:
   - The LAN configuration by typing the command: # */usr/sbin/lanscan*

     (The **Hdw State** of the LAN cards connected should be **UP**.)

```
Hardware Station          Crd Hdw   Net-Interface  NM  MAC       HP-DLPI DLPI
Path     Address          In# State NamePPA        ID  Type      Support Mjr#
0/1/2/0  0x0018FE28B18C 0   UP    lan0 snap0      1   ETHER     Yes     119
0/1/2/1  0x0018FE28B18D 1   UP    lan1 snap1      2   ETHER     Yes     119
```

   - The physical connection of network cables.

2. Try to establish the telnet connection with HP Server:

   # *telnet   <HP-Server IP>*

   If you are not able to connect, check if the telnet service is running or not.

3. Enter # *nslookup <server_ip>* and # *nslookup <server_domain_name>* command to verify the information related to name, address, and aliases for HP servers. If you find any errors in the output of nslookup, refer .

4. Check the run level of OS by issuing the following command on the telnet session:

   # *who –r*

   The run level for CDE to come up must be 3. If the run level of the operating system is not 3, change the run level by running following command: # *init 3*

4. Troubleshooting on the Remote System

This section covers various troubleshooting techniques for problems related to startup of CDE on a remote system. Also mentioned below are some of the common error messages encountered while invoking CDE on a remote system running an X manager such as ReflectionX or eXcursion.

This section also enlists troubleshooting techniques for problems related to startup of CDE due to network issues such as problems related to IP address, hostname, and DNS.

4.1 Common Error Messages from X Managers

1) **The specified XDM host is unwilling to manage**

   Please refer section 4.2.1 if this error message or a similar error message is encountered.

2) **Your XDMCP connection timed out**

   Please refer section 4.2.2 if this error message or a similar error message is encountered.

Note: The above-mentioned error messages are specific to ReflectionX.

4.2 Troubleshooting Common Error Messages

4.2.1 Error Message: "The specified XDM host is unwilling to manage"

Possible scenarios for the error message: This message is commonly encountered when there is a configuration problem. The configuration problem is generally with files such as Xconfig file, Xaccess file, and so on.

Xconfig Configuration

The Xconfig file is either located at */etc/dt/config/* or */usr/dt/config/*.
Xconfig will have a reference to the Xaccess file. Check the Xconfig file in the */etc/dt/config* directory first, and then check in the */usr/dt/config* file.
The reference must be: *Dtlogin.accessFile: Xaccess*

```
# ####################################################################
#  Note: If you do not specify a full path beginning with a "/"
#      dtlogin will first search for the following files in
#      /etc/dt/config then in /usr/dt/config.
#
# ####################################################################
Dtlogin.accessFile:           Xaccess
```

GR8 call reference:
http://gr8.mvlabs.corp.hp.com/gr8/stable/callEdit.pl?call=4000142228

For a similar problem as XDM host, please refer the above link.

Xaccess Configuration

The Xaccess file is either located at */etc/dt/config/* or */usr/dt/config/.*

In Xaccess file, the following lines must be uncommented:

* # grant service to all remote displays

* CHOOSER BROADCAST # any indirect host can get a chooser

Check the Xaccess file in the */etc/dt/config* directory first, then check in the */usr/dt/config* file.

```
# ######################################################################
#    Entries...

*                          # grant service to all remote displays

#
# The nicest way to run the chooser is to just ask it to broadcast
# requests to the network - that way new hosts show up automatically.
# Sometimes, however, the chooser can't figure out how to broadcast,
# so this may not work in all environments.
#

*              CHOOSER BROADCAST      # any indirect host can get a chooser
# ######################################################################
```

Once the above-mentioned troubleshooting techniques are followed, the dtlogin process must be stopped and restarted again by executing the following commands:

➢ *# /sbin/init.d/dtlogin.rc stop*

➢ *# /sbin/init.d/dtlogin.rc start*

4.2.2   Error message: "Your XDMCP connection timed out"

Possible scenarios for the error message: "Your XDMCP connection timed out."

There can be multiple reasons for the above message.
A) dtlogin parent process may not be running on the HP server

Check for the existence of dtlogin parent process by executing the following command:

 # ps –ef | grep dtlogin

If the process does not exist, start the dtlogin process by executing the following command and re-check the status:

 # /sbin/init.d/dtlogin.rc start

If the dtlogin process is started, it may have been possible that the **auto-start** option of dtlogin was disabled. (auto-start option will start dtlogin process every time the system is rebooted). To enable the option, execute the following command in the same sequence:

 # /usr/dt/bin/dtconfig –e

 # /sbin/init.d/dtlogin.rc stop

 # /sbin/init.d/dtlogin.rc start

B) The dtlogin request port may be mentioned incorrectly

The *"Dtlogin.requestPort: 0"* entry in Xconfig file may be uncommented.

```
# ######################################################################
#  To disable listening for XDMCP requests from X-terminals.
#
#  Dtlogin.requestPort:        0

# ######################################################################
```

Once commented, start the dtlogin process by running the following command:

 # /sbin/init.d/dtlogin.rc start

Then try connecting via any X manager to check if CDE comes up or not.

Gr8 reference call:

http://gr8.mvlabs.corp.hp.com/gr8/stable/callEdit.pl?call=4000145239

For a similar problem as XDMCP connection, please refer the above link.

4.3 Troubleshooting Problems related to Network

There may be several issues related to the network that may prevent CDE to come up on a remote system. Some of the commonly encountered problems are as follows:

4.3.1 Problems related to IP address and host name

Check the IP address and the hostname of the HP-Server in the */etc/hosts* file. If DNS is not used to resolve the hostname and IP address, there must be one entry for each HP server along with the hostname because this entry will help in resolving the hostname and IP address.

4.3.2 Problems related to DNS

Check the permissions of the */etc/hosts* and */etc/nsswitch.conf* files (the file must have minimum read permissions for the owner, others, and the group). Also check the */etc/nsswitch.conf* file for the following entry according to the operating system version:

▪ if the operating system version is 11.11, check for the **hosts** entry in the *nsswitch.conf* file. This may be as follows:

  o *"hosts: dns [NOTFOUND=continue] files"* [This indicates that DNS will first try to resolve the "hosts" entry. If it is not able to do so, then the */etc/hosts* file will be checked.]

- o *"hosts: files [NOTFOUND=return] dns" "* [This indicates that the */etc/hosts* file will be checked first to resolve the hosts entry. In this case, however, DNS will not be checked if the */etc/hosts* file is unable to resolve the entry.]

- if the operating system version is 11.23 or higher, check for the following entries in the *nsswitch.conf* file:

  hosts entry may be as follows:

  > *"hosts: dns [NOTFOUND=continue] files"*
  > *" hosts: files [NOTFOUND=return] dns"*

  ipnodes entry may be as follows:

  > *"ipnodes: dns [NOTFOUND=continue] files"*
  > *"ipnodes: files [NOTFOUND=return] dns"*

Gr8 reference call:

http://gr8.mvlabs.corp.hp.com/gr8/stable/callEdit.pl?call=4000142281

For a similar problem as DNS, please refer the above link.

- Check for the entries in */etc/resolv.conf*. Please ensure that the following entries are correct if you are using DNS:

  > *"domain   <domain name>"*
  > *"nameserver   <DNS IP address>"*

If the entries in the above-mentioned files are correct, verify the name server configuration by running the following commands:
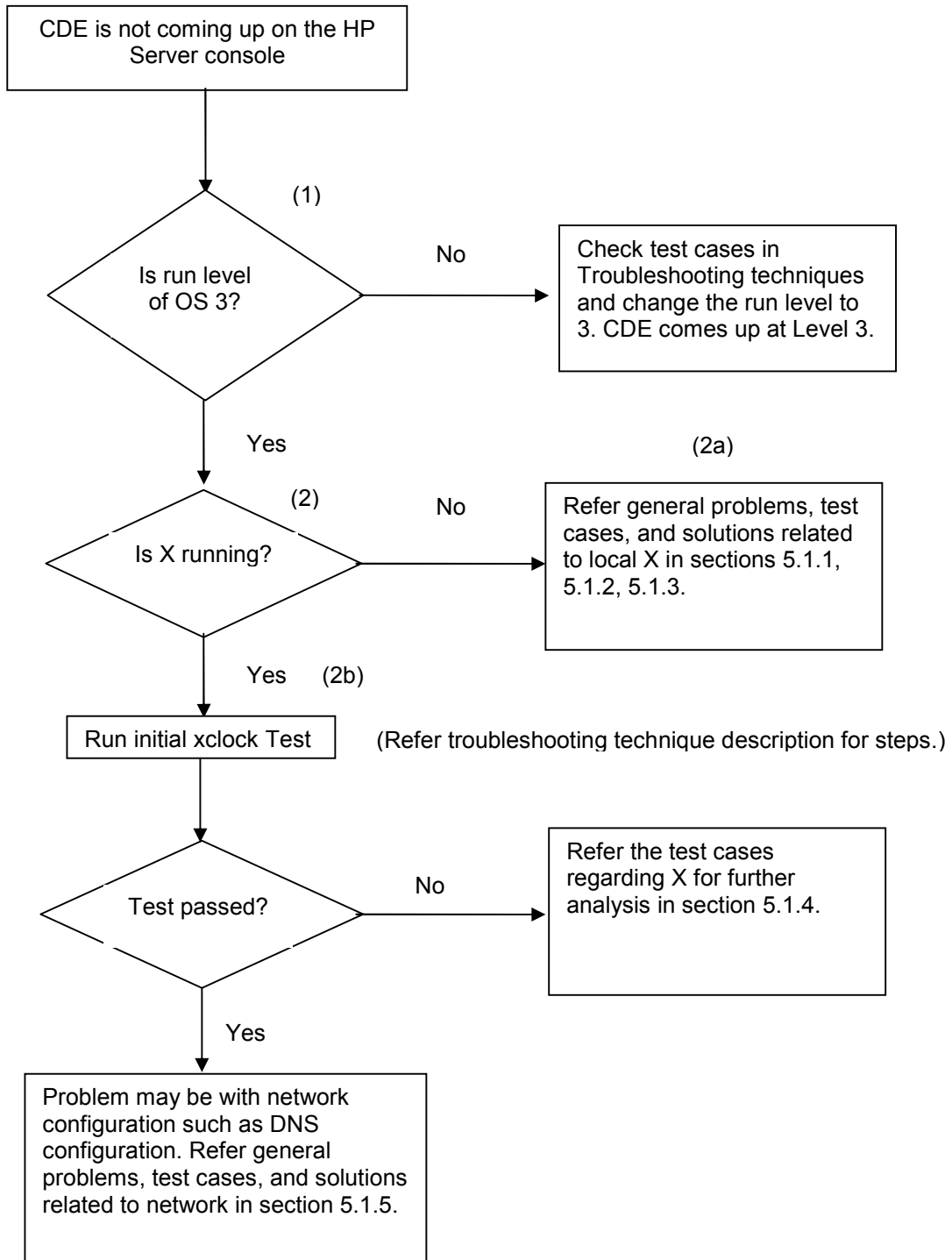
 # nslookup <server_ip> and

 # nslookup <server_domain_name>

and check for information related to name, address, and aliases.

If, the above-mentioned troubleshooting techniques are followed and CDE still does not come up, the */etc/dt/config/Xconfig*, */etc/dt/config/Xaccess*, */etc/dt/config/Xservers,* and */etc/dt/config/Xsession.d* files need to be analyzed further.

5. Troubleshooting on the HP-Server

This section describes troubleshooting tips for problems related to the startup of the HP-Server console.

```
┌─────────────────────────┐
│ CDE is not coming up on  │
│    the HP Server console │
└─────────────────────────┘
            │
            ▼         (1)
         ╱◇╲                        No      ┌──────────────────────────┐
        ╱     ╲                  ─────────▶ │ Check test cases in       │
       ◇ Is run  ◇                          │ Troubleshooting techniques│
        ╲ level  ╱                          │ and change the run level  │
         ╲ of OS 3? ╱                       │ to 3. CDE comes up at     │
          ╲◇╱                               │ Level 3.                  │
            │                               └──────────────────────────┘
           Yes
            │                  (2a)
            ▼         (2)
         ╱◇╲                        No      ┌──────────────────────────┐
        ╱     ╲                  ─────────▶ │ Refer general problems,   │
       ◇ Is X   ◇                          │ test cases, and solutions │
        ╲running?╱                          │ related to local X in     │
         ╲◇╱                                │ sections 5.1.1, 5.1.2,    │
            │                               │ 5.1.3.                    │
           Yes    (2b)                      └──────────────────────────┘
            │
            ▼
┌─────────────────────┐
│ Run initial xclock  │   (Refer troubleshooting technique description for steps.)
│ Test                │
└─────────────────────┘
            │
            ▼
         ╱◇╲                        No      ┌──────────────────────────┐
        ╱     ╲                  ─────────▶ │ Refer the test cases      │
       ◇ Test    ◇                          │ regarding X for further   │
        ╲passed? ╱                          │ analysis in section 5.1.4.│
         ╲◇╱                                └──────────────────────────┘
            │
           Yes
            │
            ▼
┌──────────────────────────┐
│ Problem may be with       │
│ network configuration such│
│ as DNS configuration.     │
│ Refer general problems,   │
│ test cases, and solutions │
│ related to network in     │
│ section 5.1.5.            │
└──────────────────────────┘
```

5.1 Troubleshooting the HP-Server Console

5.1.1 Check configuration entries in the Xservers and Xconfig file

A) Xservers configuration

The Xservers file is located either in the */etc/dt/config/* directory or in the */usr/dt/config* directory. Check if the entry *Local local@console /usr/bin/X11/X :0* is uncommented in the */etc/dt/config* directory and then check in the */usr/dt/config* file.

```
# ######################################################################

# 108

 *      Local local@console /usr/bin/X11/X :0
```

B) Xconfig configuration

The Xconfig file is located either at */etc/dt/config/* or */usr/dt/config/*.

The Xconfig file has a reference to the *Dtlogin.servers: Xservers* file.

Check the Xconfig file in the */etc/dt/config/* directory and in the */usr/dt/config/* directory.

```
# ######################################################################
Dtlogin.accessFile:          Xaccess

# 61

Dtlogin.servers:             Xservers
```

Once you have performed the above-mentioned procedure, run:
- *# init 2* or *# /sbin/init.d/dtlogin.rc stop*
- *# init 3* or *# /sbin/init.d/dtlogin.rc start*

5.1.2 Check physical connectivity of Mouse

Check the physical connection of mouse with the HP Server.
- If the OS version is 11.23 (with USB kernel stack) or < 11.23, the mouse must be connected. If the mouse is not connected, connect the mouse and try to start X by running the *# /usr/bin/X11/X :0 &* command from the telnet session.

- If the OS version is 11.23 (with USB-OO Kernel stack) or 11.31, X will come up irrespective of the mouse (that is, X will come up even if the mouse is not connected).

5.1.3 Check physical connection of Graphics Card

Check the physical connection of the graphics card with HP Server. If the graphics card is not connected, connect the graphics card and try to start X by running the # */usr/bin/X11/X :0 &* command from the telnet session.

5.1.4 Check if the local X server process is running or not

Check the existence of X running on the HP-Server console by executing the following command:

 # ps –ef | grep X

- If X is running, try the following **xclock** test to verify that the local X does not have any problem. To try xclock:

    I. Establish a telnet connection to the HP Server.
    II. Run the *init 2 (or) /sbin/init.d/dtlogin.rc stop* command.
    III. grep for **X** and **dtlogin** process and kill them, if any.
    IV. Start **X** by running the */usr/bin/X11/X :0 &* command.
    V. Run the *export DISPLAY=<HP Server IP>:0.0* command.
    VI. Run the *xclock &* command. A window with a real time clock image on the HP Server graphics console appears.

If the **xclock test case passes**, it indicates that the local X does not have any problem.

If the above **xclock test fails**, repeat the same steps for xclock. Replace step IV as

 # /usr/bin/X11/X :0 -ac &. Check the existence of X.

If X starts, the problem may be related to authorization and further analysis is required.

5.1.5 Check problems related to DNS

Check the permissions of the */etc/hosts and /etc/nsswitch.conf* files (the file must have minimum read permissions for the owner, others, and the group). Also check the */etc/nsswitch.conf* file for the following entries, depending on the version of the Operating System.

- If the Operating System version is 11.11, check for the **hosts** entry in the *nsswitch.conf* file. This may be:

    o **hosts: dns [NOTFOUND=continue] files :** This indicates that DNS will first try to resolve the **hosts** entry. If it is not able to do so, the */etc/hosts* file will be checked.

    o **hosts: files [NOTFOUND=return] dns :** This indicates that the */etc/hosts* file will be checked first to resolve the hosts entry. In this case, DNS will not be checked if the */etc/hosts* file is unable to resolve the entry.

- If the Operating System version is 11.23 or higher, check for the following entries in the *nsswitch.conf* file:

hosts entry may be:

- *hosts: dns [NOTFOUND=continue] files*
- *hosts: files [NOTFOUND=return] dns*

ipnodes entry may be as follows:

- *ipnodes: dns [NOTFOUND=continue] files*
- *ipnodes: files [NOTFOUND=return] dns*

Gr8 reference call:

http://gr8.mvlabs.corp.hp.com/gr8/stable/callEdit.pl?call=4000142281

For a similar problem related to DNS, please refer the above link.

- Check the entries in the */etc/resolv.conf* file. Ensure that the following entries are correct if you are using DNS:
  - *domain <domain name>*
  - *nameserver   <DNS IP address>*

5.1.7 Check problems with the dtgreet screen

Check the dtgreet screen after you login. If you are not able to view the dtgreet screen, establish a telnet connection with the HP Server and check the dtlogin parent process by running the *# ps –ef | grep dtlogin* command.

If the dtlogin parent process is not running, start the dtlogin process by running the *# /sbin/init.d/dtlogin.rc start* command on the command prompt and re-check the status.

If the dtlogin process is started, it may have been possible that the **auto-start** option of dtlogin was disabled (the auto-start option will start the dtlogin process every time the system is rebooted). To enable the option, run the following commands in the same sequence:

- *# /usr/dt/bin/dtconfig –e*
- *# /sbin/init.d/dtlogin.rc stop*
- *# /sbin/init.d/dtlogin.rc start*

5.1.8 Check problems with the dthello screen

The dthello screen is a blue color screen containing the copyright information of CDE. The dthello screen is displayed after you have successfully logged in from the dtgreet screen. If you are not able to view the dthello screen, the problem may be related to *rpcbind*, which is a daemon process.

To check whether the *rpcbind* daemon process is running or not, execute the *# ps –ef | grep rpcbind* command.

The following command will be displayed on the screen:

root   899   1 0 Sep 5 ?   0:00 /usr/sbin/rpcbind

If the above-mentioned command is not displayed, it indicates that the *rpcbind* process is not running. To start the *rpcbind* process, execute the *# /usr/sbin/rpcbind –w warmstartup* command.

Once the above-mentioned procedures are followed, run:

- # init 2
- # init 3

GR8 reference call:

http://gr8.mvlabs.corp.hp.com/gr8/stable/callEdit.pl?call=4000142281

For a similar problem as dthello screen, please refer the above link.

5.1.9 Check problems with the dtsession screen

The dtsession is the actual CDE environment. The dtsession manages all the CDE components such as application manager, file manager, and dtpad. If you are able to successfully login through the dtgreet screen and you are able to view the dthello screen, but you cannot view dtsession, check for any change in the network configuration, such as in DNS, NIS, and so on.

6. Generic Log Files

Apart from the above-mentioned troubleshooting techniques, there are a few log files that can be checked for analysis. These log files contain useful information, which can help in resolving startup issues related to CDE. Some of the most common files are dtlogin.debug, *errorlog, syslog.log*, and *startlog*.

Dtlogin.<pid>.debug : This file contains the runtime log of the *dtlogin* process. The *dtlogin* process must be started in the debuggable mode to create this file.

Kill the dtlogin processes if it is already running by executing the # *kill <pid of dtlogin>*command.

Start the *dtlogin* process in the debuggable mode by running # */usr/dt/bin/dtconfig –debug*. This command creates the *dtlogin.<pid>.debug* file in the */var/dt* directory.

Syslog.log: This file logs information during startup of the machine. You can check this file if you encounter some problems with the startup of the system. This file is located in the */var/adm/sys/* directory.

7. Summary

The above-mentioned troubleshooting techniques are intended to help the RCE or CDE lab engineers to resolve the commonly faced problems related to the HP-UX desktop. So it is recommended that the steps mentioned in the guide be performed and all the relevant suggested solutions must be examined before analyzing the problem in detail. This guide is, however, not comprehensive and there may be new or unknown problems that have not been documented here. HP provides detailed documentation for the desktop related products as mentioned in the section Related Documentation. Please refer to these or contact the HP lab support to address your problems.