

# DA-681 Series WinXP Embedded User's Manual

---

Second Edition, May 2009

[www.moxa.com/product](http://www.moxa.com/product)

**MOXA**®

© 2009 Moxa Inc. All rights reserved.  
Reproduction without permission is prohibited.

# DA-681 Series

## WinXP Embedded User's Manual

The Moxa software described in this manual is furnished under a license agreement and may be used only in accordance with the terms of that agreement.

### Copyright Notice

Copyright © 2009 Moxa Inc.  
All rights reserved.  
Reproduction without permission is prohibited.

### Trademarks

MOXA is a registered trademark of Moxa Inc.  
All other trademarks or registered marks in this manual belong to their respective manufacturers.

### Disclaimer

Information in this document is subject to change without notice and does not represent a commitment on the part of Moxa.

Moxa provides this document “as is,” without warranty of any kind, either expressed or implied, including, but not limited to, its particular purpose. Moxa reserves the right to make improvements and/or changes to this manual, or to the products and/or the programs described in this manual, at any time.

Information provided in this manual is intended to be accurate and reliable. However, Moxa assumes no responsibility for its use, or for any infringements on the rights of third parties that may result from its use. This product might include unintentional technical or typographical errors. Changes are periodically made to the information herein to correct such errors, and these changes are incorporated into new editions of the publication.

### Technical Support Contact Information

**[www.moxa.com/support](http://www.moxa.com/support)**

Moxa Americas:

Toll-free: 1-888-669-2872  
Tel: +1-714-528-6777  
Fax: +1-714-528-6778

Moxa China (Shanghai office):

Toll-free: 800-820-5036  
Tel: +86-21-5258-9955  
Fax: +86-10-6872-3958

Moxa Europe:

Tel: +49-89-3 70 03 99-0  
Fax: +49-89-3 70 03 99-99

Moxa Asia-Pacific:

Tel: +886-2-8919-1230  
Fax: +886-2-8919-1231

# Table of Contents

<b>Chapter 1</b>	<b>Introduction .....</b>	<b>1-1</b>
	Overview .....	1-2
	Product Features .....	1-2
	Software Specifications .....	1-3
	Application Development Environment .....	1-3
	Networking and Communication Capabilities .....	1-4
	Supporting Services and Daemons .....	1-5
<b>Chapter 2</b>	<b>Software Configuration .....</b>	<b>2-1</b>
	Starting Your DA-681-XPE Computer .....	2-1
	Resetting Your DA-681-XPE Computer .....	2-2
	Operating Your DA-681-XPE Computer with a Telnet Client .....	2-2
	Adjusting the System Time .....	2-3
	Starting and Stopping Services .....	2-5
	Simple Network Management Protocol (SNMP) .....	2-5
	Four RS-232 Serial Ports and Eight RS-485 Serial Ports .....	2-6
	Non-standard Baudrates .....	2-7
	Changing the Network Settings .....	2-8
	Remote Desktop (RDP) .....	2-10
	Inserting a USB Mass Storage Device into the Computer .....	2-11
	Inserting a Compact Flash Card Storage into a DA-681 Computer .....	2-11
	How to Determine the Firmware Build Version .....	2-12
	Enhanced Write Filter .....	2-12
	BIOS Status Notification .....	2-13
<b>Chapter 3</b>	<b>Management Tools .....</b>	<b>3-1</b>
	Computer Management .....	3-1
	Component Services .....	3-2
	Event Viewer .....	3-2
	Internet Information Services (Web/FTP) .....	3-3
	ODBC Data Source Administrator .....	3-8
	Performance Monitor .....	3-9
<b>Chapter 4</b>	<b>System Recovery .....</b>	<b>4-1</b>
	Recovery Environment .....	4-1
	Recovery Procedure .....	4-2

Thank you for purchasing a Moxa DA-681 Series x86 ready-to-run embedded computer. This manual introduces the software configuration and management for the Windows XP Embedded operating system. For hardware installation, connector interfaces, setup, and upgrading the BIOS, please refer to the DA-681 Series Hardware User's Manual.

Microsoft Windows XP Embedded is a specialized operating system with Windows XP Professional features that allows you to build a wide range of innovative, small footprint devices. Windows XP Embedded has the same binary files as Windows XP Professional. Applications that run under Windows XP can also run under Windows XP Embedded, and there is no additional cost required to migrate from XP to XPE. Windows XP Embedded enables you to develop reliable and full-featured connected devices, quickly and without spending an inordinate amount of effort.

The following topics are covered in this chapter:

- ❑ **Overview**
- ❑ **Product Features**
- ❑ **Software Specifications**
  - Application Development Environment
  - Networking and Communication Capabilities
  - Supporting Services and Daemons

## Overview

The Moxa DA-681 Series of X86-based rackmount embedded computers are designed for industrial data acquisition applications.

The DA-681's main operating system is based on the Intel Celeron M processor and 910GM chipset, which supports standard X86 VGA, USB, PS/2 keyboard/mouse, 6 10/100 LAN ports, and IDE/SATA disk interface. In addition, the DA-681 has a CompactFlash socket and comes with Linux, WinCE 6.0, Windows XP Embedded pre-installed. Programmers will find the full-function development kit a great benefit for developing software and building reliable communication applications.

The housing is a standard 1U, 19-inch wide rack-mounted rugged enclosure. This robust, rack-mountable design provides the hardened protection needed for industrial environment applications.

Moreover, the DPP-T models are in full compliance with IEC 61850-3 standards to meet the demands of power substation automation.

## Product Features

The DA-681 Basic System has the following features:

- IEC 61850-3 certified for power substation automation systems (DPP-T models only)
- Intel Celeron M 1GHz processor with 400 MHz FSB
- Intel 910GML + ICH6M chipset
- 200-pin DDR2 SODIMM socket x1, supporting DDR2 400 up to 1 GB
- 6 10/100M Ethernet ports for network redundancy
- 1 CompactFlash socket
- 2 SATA connector for storage expansion
- 4 RS-232 and 8 RS-485 serial ports
- 2 USB 2.0 ports for high speed peripherals
- 19-inch rackmount, 1U height form factor
- Fanless design
- 100/240 VAC/VDC power input (single power and dual power models available)
- Shipped with DDR2 1 GB memory
- Ready-to-Run Windows XP Embedded platform pre-installed on 2 GB flash disk module

## Software Specifications

The DA-681-XPE embedded computer provides the following common, popular application development features, networking/communications capabilities, and supporting services/daemons, making the Windows XP Embedded with SP2 environment an easy and convenient programming tool. The software features of the DA-681-XPE embedded computer are listed below:

### Application Development Environment

- **Microsoft .Net Framework 2.0 with service pack 2**—Includes the common language runtime (CLR) and the .NET Framework class library.
- **Active Directory Service Interface (ADSI) Core**—Provides the basic functionality for ADSI by routing requests to the corresponding provider, based on the path that is provided.
- **Active Template Library (ATL)**—Supports ATL applications.
- **ASP.NET 2.0**—A unified Web application platform that provides the services necessary to build and deploy enterprise-class web applications.
- **Certificate Request Client & Certificate Autoenrollment**—This component includes the common language runtime (CLR) and the .NET Framework class library.
- **COM Base**—The Component Object Model (COM) includes a programming model and a set of application programming interfaces (APIs), but does not include a dedicated user interface.
- **Common Control Libraries**—Provides common user interface (UI) controls.
- **Common File Dialogs**—Provides support for common dialog boxes.
- **Direct3D**—Infrastructure for using two-dimensional and three-dimensional graphics.
- **DirectPlay**—Provides a networking API that can enable any application to operate over both a peer-to-peer and client/server topology.
- **DirectShow**—Base filter graph and device enumeration support for all DirectShow applications. This component also provides most DirectShow filters.
- **Distributed Transaction Coordinator (MSDTC)**—A distributed transaction facility for Microsoft Windows systems, which uses transaction-processing technology. MSDTC uses loosely coupled systems to provide scalable performance.
- **Enhanced Write Filter**—An upper filter in the storage device driver stack that redirects disk write operations to DRAM.
- **Event Log**—A dynamic-link library (DLL) that runs as part of Services.exe. This component stores and retrieves events that can be viewed in the event viewer.
- **Internet Explorer**—The Internet Explorer Web browser allows customers to connect to the Internet or to an intranet (see properties via inetctl.cpl).
- **Mapi32 Libraries**—The infrastructure for e-mail support.
- **Message Queuing (MSMQ) Core**—Message Queuing is a messaging infrastructure and a development tool for creating distributed messaging applications for Microsoft Windows operating systems. It provides guaranteed message delivery, efficient routing, increased security, support for sending messages within transactions, and priority-based messaging.
- **Microsoft Visual C++ Run Time Libraries**—The Microsoft C++ Runtime Library.
- **NTFS**—The NTFS File System driver (NT File System). Use NTFS instead of FAT for optimum file system security.
- **Registry Editor**—The Registry Editor (regedit.exe, regedt32.exe).

- **RPC**—Facilitates local remote procedure calls (RPCs) using the ncalrpc and ncacl\_np protocol sequences, and provides support for dynamic endpoint resolution. The RPC name service provides remote procedure call (RPC) named services functionality, such as the RPC Locator. The RPC Named Service component exposes all RpcNs\* RPC functions. The RPC server provides a variety of RPC and Component Object Model (COM) services, including RPC Endpoint Mapper, COM Service Control Manager (SCM), and COM Object Resolver.
- **Smart Card Cryptographic Service Providers**—Supports features such as smart card logon and improved email security. Smart cards must be able to perform certain RSA public key cryptographic operations. The functions are exposed with CryptoAPI through a CSP. Each type of smart card requires a different CSP (provided by the card vendor).
- **USB 2.0**—The core drivers needed to communicate with an Enhanced Host Controller Interface (EHCI) that is compliant with USB .95 or 1.0.
- **Windows API**—Provides the user-mode component of the Windows operating system API.
- **Windows Media Player 10**—Playback functionality for digital media that includes music, videos, CDs, DVDs, and Internet Radio for end users and developers.
- **Windows Script Engines**—A complete scripting environment for Windows, including command-line scripting, script languages, and the ability to host script engines within your applications.
- **WMI**—Bundles the features that combine to create Windows Management Instrumentation (WMI).

## Networking and Communication Capabilities

- **DHCP Client Service**—Registers and updates Internet Protocol (IP) addresses and Domain Name System (DNS) records for your target system.
- **IP Security Services**—This component provides IP Security (IPsec) services for all IP traffic.
- **Dial-Up Networking**—Provides the infrastructure necessary to implement a Remote Access Service (RAS) client.
- **Microsoft-Windows-HTTP**—Services that implement the functionality of the HTTP protocol on a server.
- **TCP/IP Networking**—Implements the core TCP/IP protocol stack, which includes the IPv4 version of the following protocols: Transmission Control Protocol (TCP), User Datagram Protocol (UDP), raw, Internet Control Message Protocol (ICMP), Internet Group Membership Protocol (IGMP), and Address Resolution Protocol (ARP). The component also includes Wshtcpip.dll, which is the Winsock provider for TCP/IP to enable socket-level communication over TCP/IP.
- **TAPI**—A Telephony API (TAPI) Telephony Service Provider (TSP).
- **Simple Network Management Protocol (SNMP)**—SNMP is an agent service that provides management systems with information about activities that occur in the Internet Protocol (IP) network layer. The SNMP agent monitors network traffic, and retrieves and updates local management information based on the requests from the SNMP manager. The agent also notifies registered managers with traps when significant events occur.
- **Time Service Core**—Synchronizes a workstation's clock with other computers using Network Time Protocol (NTP) version 3. This component increases accuracy by incorporating algorithmic enhancements from NTP 4.
- **Windows Firewall/Internet Connection Sharing (ICS)**—Windows Firewall provides a barrier between your device and network connections to reduce attacks by hackers, viruses, and worms across networks.

- **Wireless Zero Configuration**—Supports the Windows implementation of the IEEE 802.11 standard. This component performs automatic configuration and authentication for IEEE 802.11 wireless network adaptors.
- **Unimodem**—Provides the infrastructure necessary for applications to communicate with a modem.

## Supporting Services and Daemons

- **COM+ Services**—The next evolution of Microsoft Component Object Model (COM) and Microsoft Transaction Server (MTS).
- **Computer Browser Service**—Computer browsing functionality that allows a client machine to browse its network neighborhood for available computers to find file and print sharing services.
- **Disk Management Services**—Support for disk and volume management operations. The component implements a Component Object Model (COM) interface that can be used to query and configure disks and volumes (both basic and dynamic). The component also monitors disk arrivals and removals and other changes in the storage subsystem.
- **IIS Web Server**—Allows you to create and manage Web sites.
- **Terminal Server**—Microsoft Terminal Server client application (mstsc.exe).
- **Remote Registry Service**—Enables remote users to modify registry settings on this computer.
- **Telnet Server**—Allows users to connect to Telnet servers from remote computers.



# 2

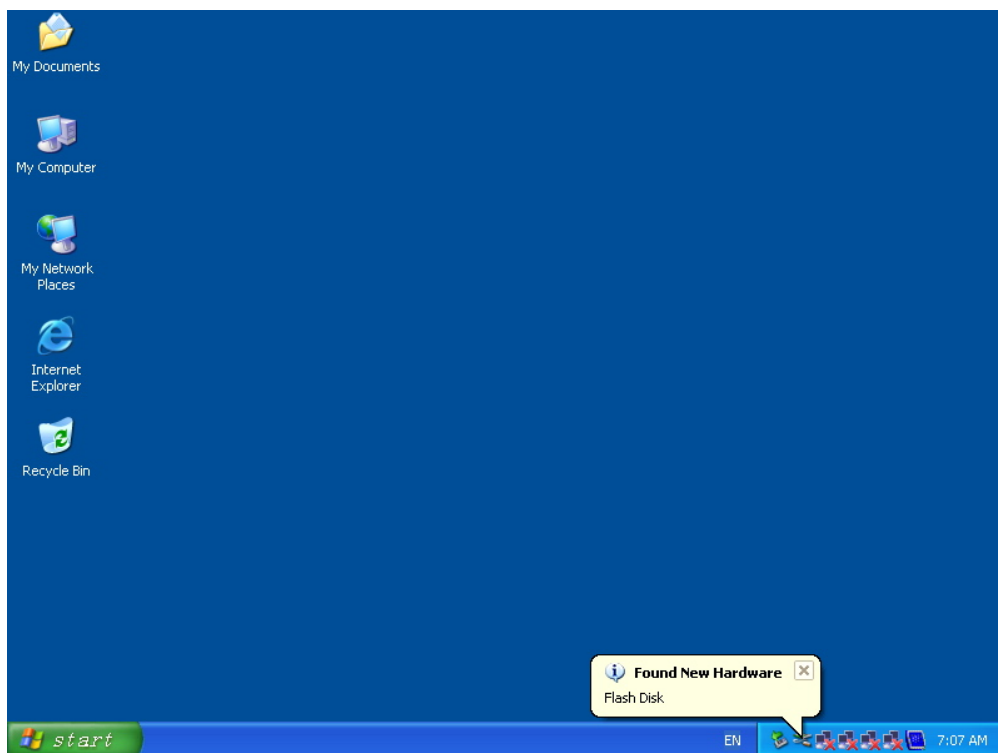
## Software Configuration

---

In this chapter, we explain how to operate a DA-681-XPE computer directly or from a PC. In addition, we describe how to take care of system time adjustment, troubleshooting network connectivity, etc. Some of these operations can be done with system commands after gaining access to the computer, and others can be done with the “Control Panel,” which is described in a later chapter.

### Starting Your DA-681-XPE Computer

Connect the CRT monitor or LCD monitor to the target computer, and then power it up by connecting it to the power adaptor. It takes about 30 to 40 seconds for the system to boot up. Once the system is ready, the desktop will appear on your monitor.



## Resetting Your DA-681-XPE Computer

### Reset Button

A **Reset** button is located on the rear panel of the DA-681-XPE. You can shut down your DA-681 by pressing this button, just as you would do with a standard PC.

### Software Shutdown/Reboot

Click **Start** → **Shutdown** to reboot or shutdown the DA-681-XPE computer.

## Operating Your DA-681-XPE Computer with a Telnet Client

Use a crossover Ethernet cable to connect your development workstation directly to the target computer, or use a straight-through Ethernet cable to connect the computer to a LAN hub or switch. Next, use a Telnet client on your development workstation to connect to the Telnet console utility of the target computer. After a connection has been established, type the login name and password as requested to log on to the computer.

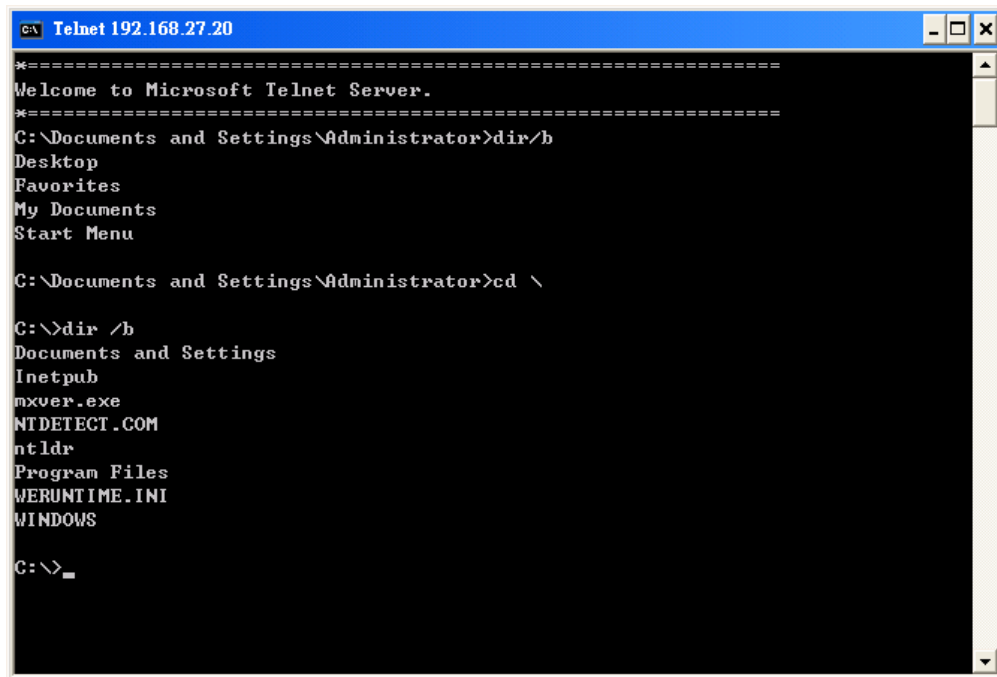


### ATTENTION

The default user id is “**administrator**” and the default password is not set; you need to create a new password for this account to use the Telnet client.

```
C:\> Telnet 192.168.27.20
Welcome to Microsoft Telnet Service
login: administrator
password: _
```

After logging in through the Telnet client, a list of commands will be available for operating the computer. Use **HELP** to display all of the commands, or type **HELP [command name]** to display extended help for the selected command. Some of these commands, such as **DATE** and **TIME**, are very useful for managing the computer's system time. Other commands, such as **DIR** and **MKDIR**, are good utilities for file management. For example, to inspect the file structure of the root directory, type **DIR**.



```
c:\ Telnet 192.168.27.20
*=====
Welcome to Microsoft Telnet Server.
*=====
C:\Documents and Settings\Administrator>dir /b
Desktop
Favorites
My Documents
Start Menu

C:\Documents and Settings\Administrator>cd \

C:\>dir /b
Documents and Settings
Inetpub
mxver.exe
NTDETECT.COM
ntldr
Program Files
WERUNTIME.INI
WINDOWS

C:\>_
```

**ATTENTION**

You can only create two Telnet connections at the same time.

## Adjusting the System Time

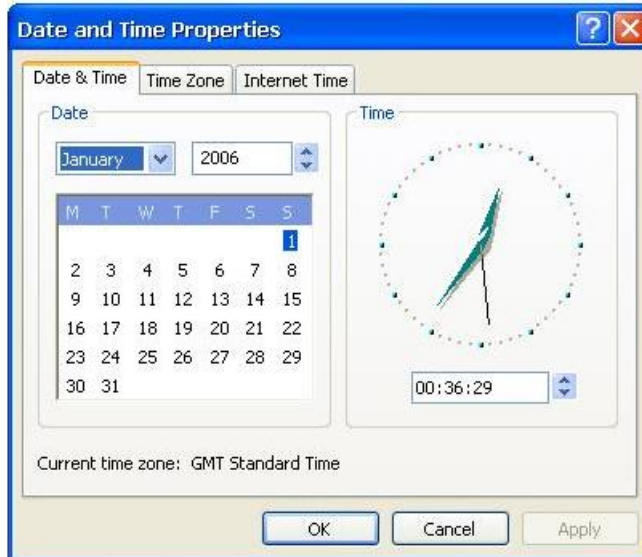
Two methods are available for adjusting the system Date/Time.

### Setting the System Time Manually

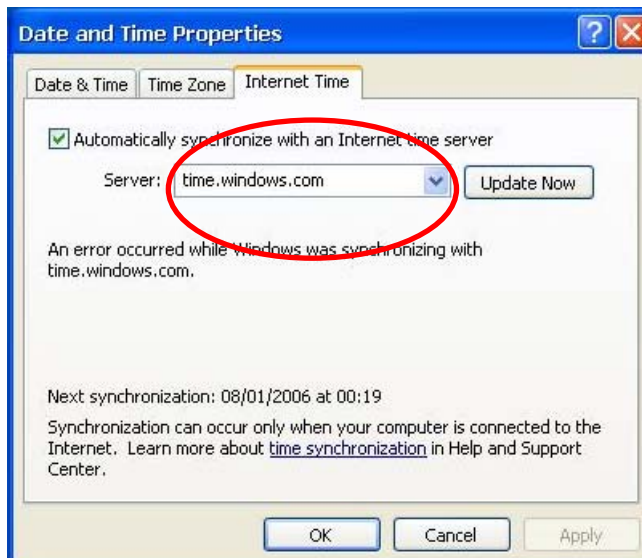
Use the **date** and **time** command line utility to query the current system date/time or set a new system date/time.

### Date/Time Control Panel

Go to the Control Panel and double click the **Date/Time** icon, you can adjust the Date and Time with the **Date and Time Properties** Window.

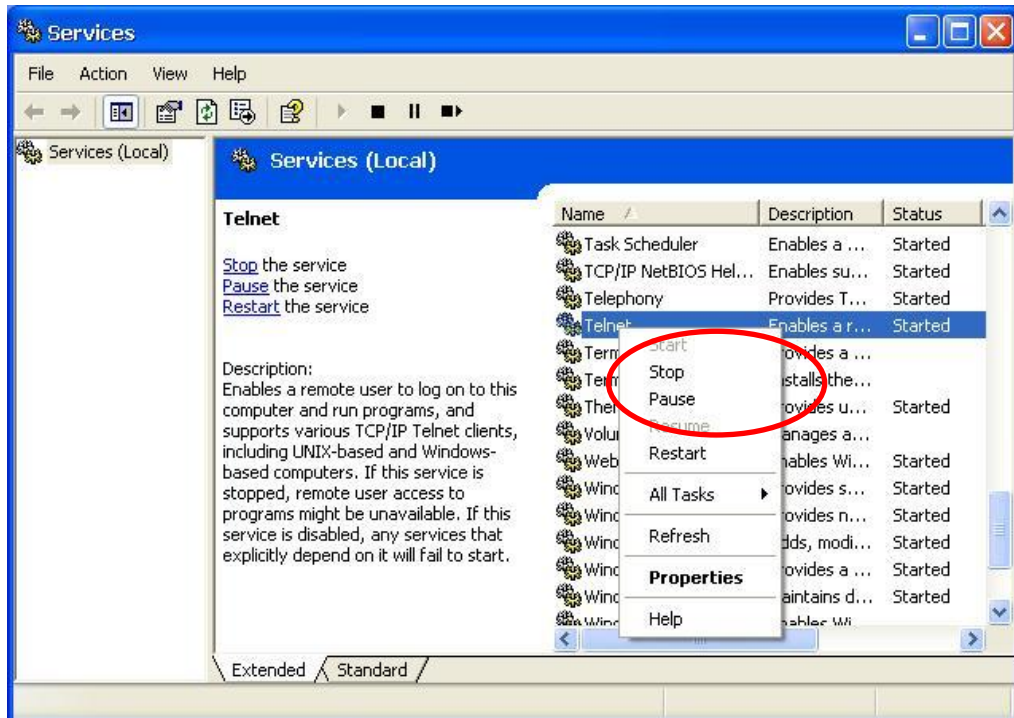


Go to **Date/Time properties** → **Internet Time** to adjust the NTP server setting.



## Starting and Stopping Services

To start or stop an XP service, select **Start → Control Panel → Administrative Tools** and double click **Services**. Then, use right-click to start or stop the service you want.



## Simple Network Management Protocol (SNMP)

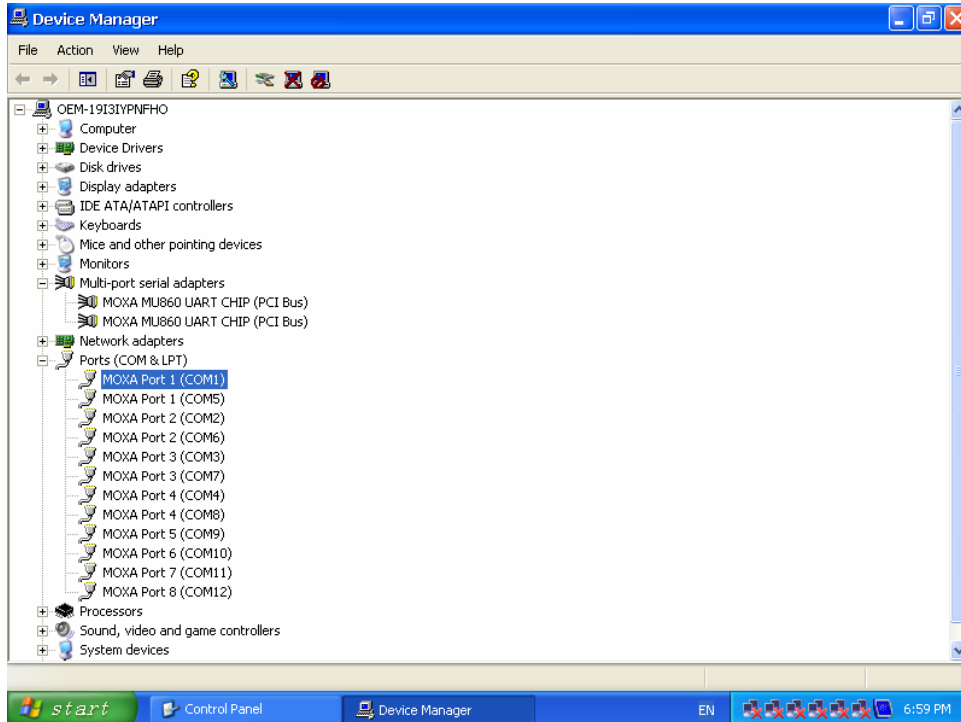
To check SNMP agent capabilities on a target DA-681-XPE computer (e.g., network IP at 192.168.3.127), log in to the workstation computer that the SNMP manager resides and type:

```
\> snmpwalk -v 2c -c public 192.168.3.127 system
```

You will see a series of messages from the SNMP agent on the DA-681-XPE computer. From here, you can monitor and manage the computer.

## Four RS-232 Serial Ports and Eight RS-485 Serial Ports

The 4 RS-232 serial ports of DA-681-CE computer from bottom to top and left to right are assigned COM port numbers 1 to 4. The 8 RS-485 serial ports are assigned COM port numbers 5 to 12. Each of these ports supports baudrate settings up to 921600 bps.



## Non-standard Baudrates

Moxa's UART ASIC, supports most non-standard baudrates in the range 50 bps to 921.6 Kbps. In fact, supported baudrates are much denser towards the lower values. For example, no baudrates are supported between the integers 5320 and 5323, but 49 baudrates are supported between the integers 387 and 388. Of course this is the way it should be, since serial devices that require using non-standard baudrates generally use slower baudrates.

Before using a serial device that requires using a non-standard baudrate, you must first check that the DA-681 supports a baudrate within the tolerance specified by the serial device manufacturer.

Use the following formula to calculate which baudrates are supported by the DA-681:

$$(A) \text{ Baudrate} = 921600 / (N + M/8) \text{ bps, for } N = 1, 2, \dots, 18431, M = 0, 1, 2, \dots, 7$$

or

$$(B) \text{ Baudrate} = 8 \times 921600 / K \text{ bps, for } K = 8, 9, \dots, 147456$$

If you are a programmer and you need to write a driver for your serial device, then you may need to use formula A. If you have a serial device that requires using a non-standard baudrate, then you can use formula B to determine if the DA-681 supports a baudrate within the tolerance specified by the serial device manufacturer.

Example: Your serial device requires using a baudrate of 5340 bps and has a tolerance of 2 bps. Can the DA-681 be used with this device?

Solution: Set formula B to the desired baudrate and then solve for K.

$$8 \times 912600 / K = 5338 \implies K = 1367.703259\dots$$

This shows that the supported baudrate closest to 5340 comes from setting  $K=1367$  or  $K=1368$ .

$$K=1368 \implies \text{Baudrate1} = 5336.842105\dots$$

$$K=1367 \implies \text{Baudrate2} = 5340.746159\dots$$

Since  $5338 - \text{Baudrate1} < 2$ , we can see that the DA-681 supports the serial device.

Note that we can use formula A to generate the so-called "standard" baudrates, which come from setting  $M=0$ , and setting  $N$  equal to certain integers.

Standard Baudrates						
Baudrate	N	M		Baudrate	N	M
921600	1	0		4800	192	0
460800	2	0		2400	384	0
230400	4	0		1800	512	0
115200	8	0		1200	768	0
57600	16	0		600	1536	0
38400	24	0		300	3072	0
19200	48	0		150	6144	0
9600	96	0		75	12288	0
7200	128	0		50	18432	0



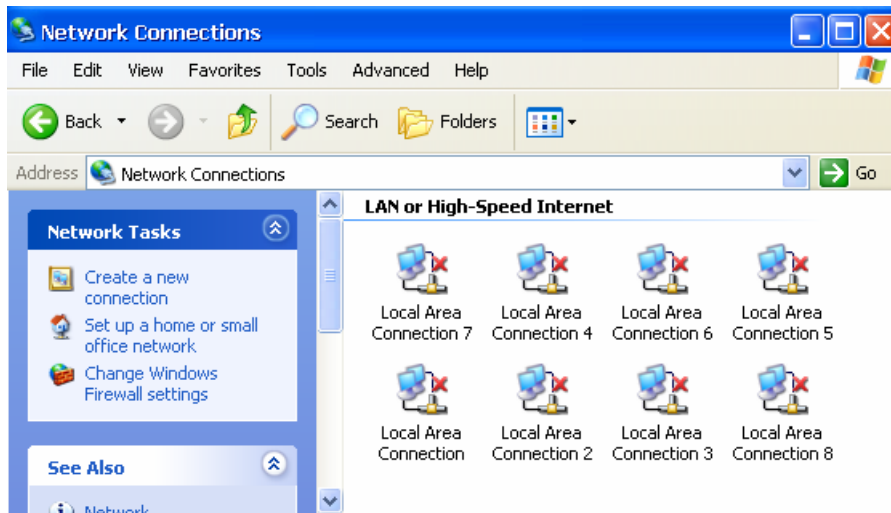
**WARNING**

Communication between a serial device and a Moxa UART port may not work correctly if the serial device uses a baudrate that is not within the correct tolerance of a baudrate calculated from either formula A or formula B.

## Changing the Network Settings

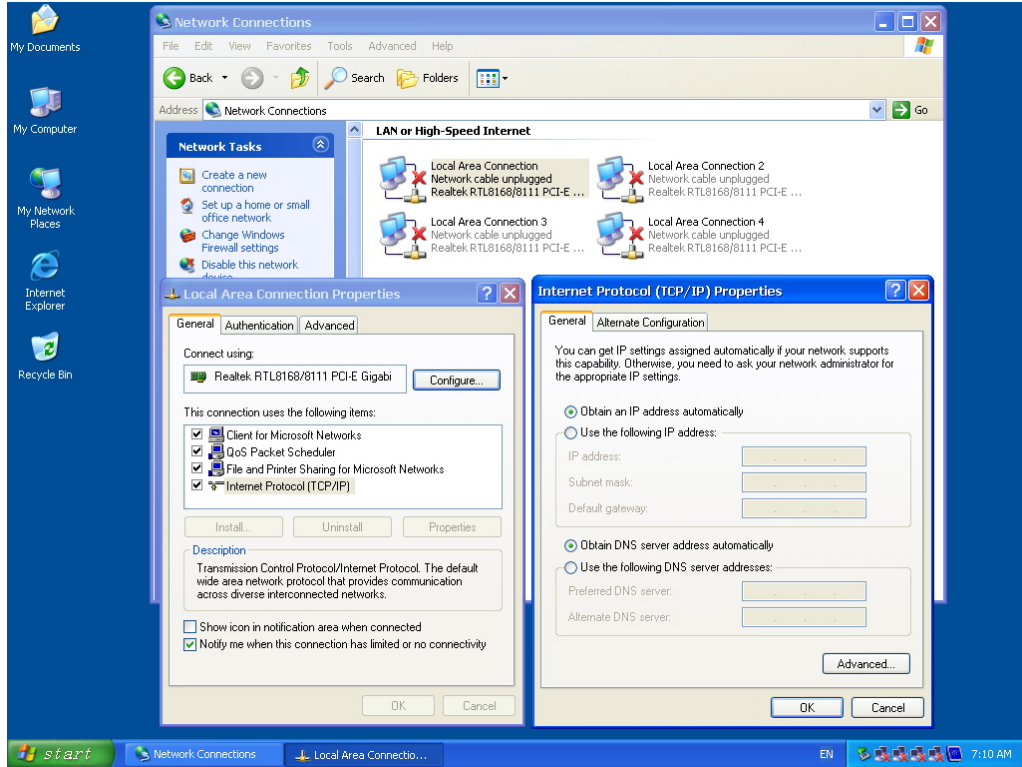
The DA-681-XPE computer comes with four basic 10/100 Mbps Ethernet ports labeled Local Area Connection 1 to Local Area Connection 6.

The default IP addresses are DHCP supported. Choose **My Device** → **Control panel** → **Network Connections** to enter the network settings page.



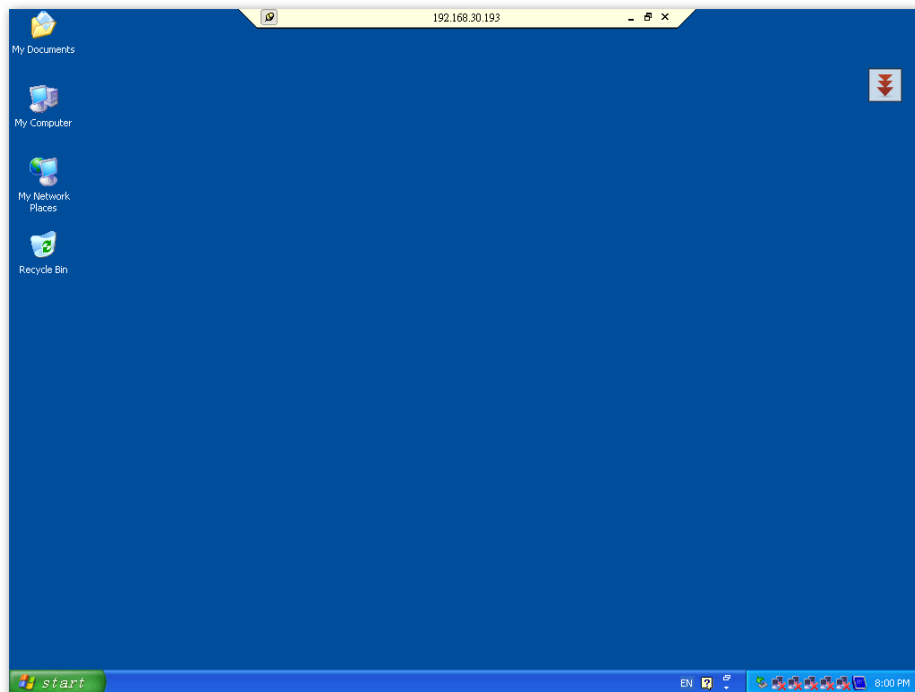
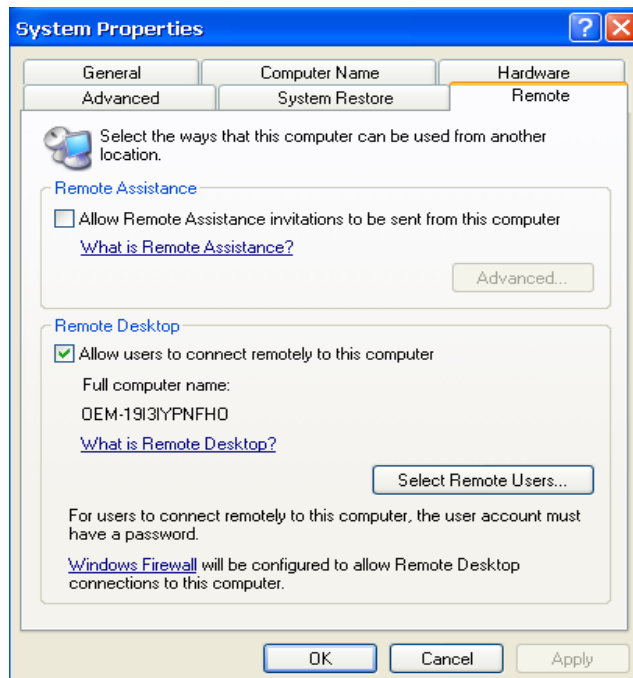


Select the connection and then right-click and choose an option from the pop-up menu. You can specify the IP address manually or by DHCP. In addition, you can disable or enable either one or any combination of connections with the pop-up menu.



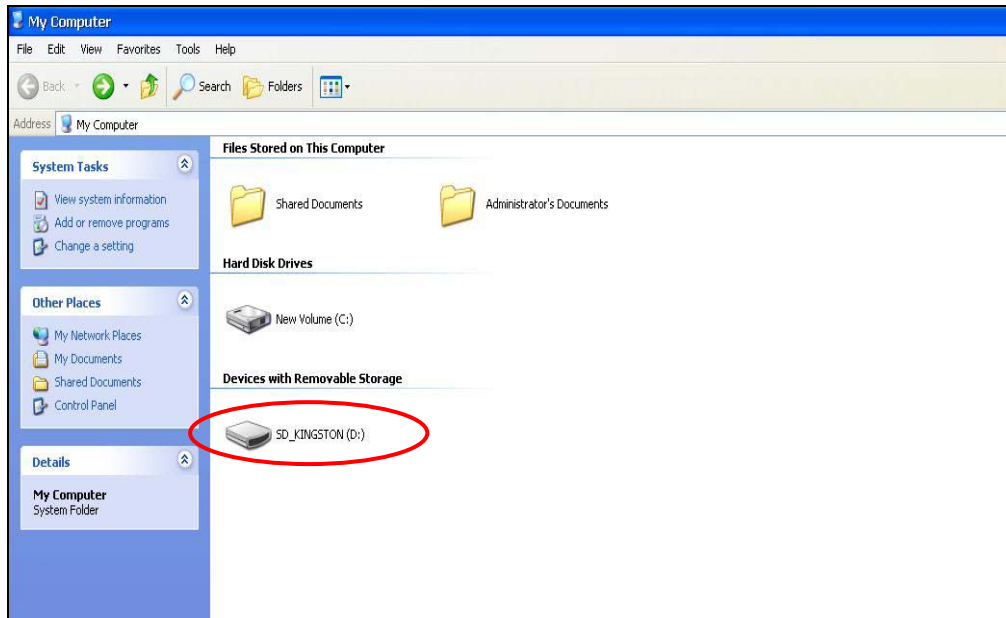
## Remote Desktop (RDP)

You can connect to the target DA-681-XPE computer remotely by Remote Desktop by making sure the administrator password has been created and the “Allow users to connect remotely to this computer” item is checked.



## Inserting a USB Mass Storage Device into the Computer

Inserting a USB mass storage device will generate a new drive on the DA-681-XPE. The new drive should be visible in the File Explorer.



## Inserting a Compact Flash Card Storage into a DA-681 Computer

There is a Compact Flash slot on the side of DA-681 computer. The Compact Flash slot is designed as a secondary IDE device and it does not support “plug and play”. In other words, it does not support “Hot swap”. If you plug a CF card into the slot when entering the operating system, it will make system hang.

So you must turn off power before inserting a Compact Flash card. After the CF card is inserted, you can power on the DA-681-XPE.

Not every Compact Flash card is compatible with the DA-681-XPE. The following table provides a list of brands that have been tested and found compatible with the DA-681-XPE.

Brand	Size
Afaya	256MB
Afaya	1GB
Transcend	512MB(Industrial)
Transcend	1GB(Industrial)
Transcend	2GB(Industrial)
Transcend	4GB(Industrial)
Transcend	8GB(Industrial)

**NOTE: Not every Transcend CF card is compatible with the DA-681-XPE. The firmware inside the CF card will influence the compatibility and an old version or generic version of Transcend CF card may not be compatible with the DA-681-XPE.**

## How to Determine the Firmware Build Version

Use the `mxver` command to obtain the firmware version. This information is particularly important for identifying which features your embedded computer supports.

Execute `mxver.exe` from the command line:

```
C:\> mxver
```

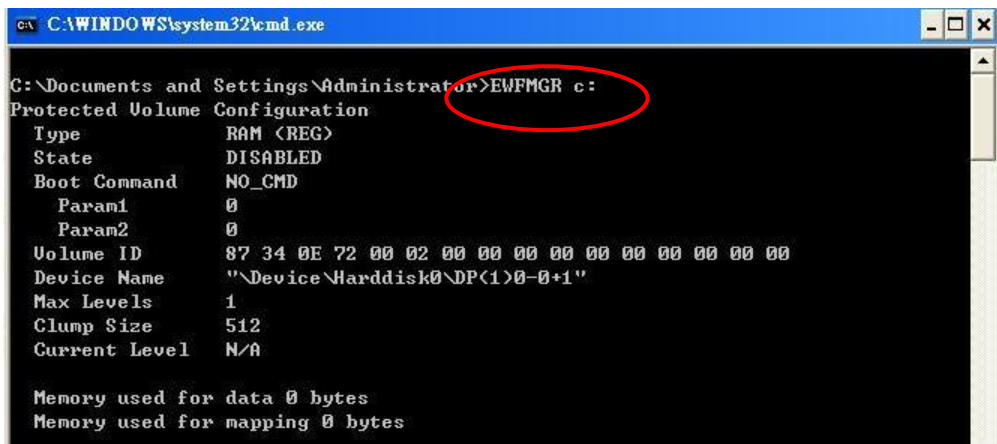
The response should appear similar to the following:

```
Model Name: DA-681-XPE
Version: 1.0
Build Date: 08120613
```

## Enhanced Write Filter

The Enhanced Write Filter protects the contents of a volume on the target media by redirecting all writes to another storage location called on overlay. You can control EWF either by using the EWF APIs or embedded command-line utility. To use the EWF APIs, you need to include “`ewfapi.h`” and “`ewfapi.lib`” from the software CD to your project. To use the command-line utility, take the following steps to enable the Enhanced Write Filter.

1. Type `EWFMgr C:` to check if the Enhanced Write Filter is disabled.
2. Type `EWFMgr C: -enable` to enable the Enhanced Write Filter.
3. Reboot the system to activate the Enhanced Write Filter.
4. Delete a file on your protected volume and reboot the system. The file you just deleted will appear.



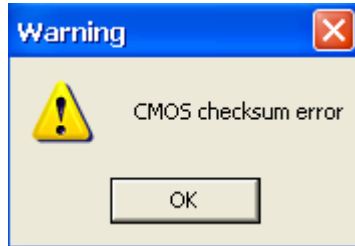
```
C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Administrator>EWFMgr c:
Protected Volume Configuration
Type          RAM <REG>
State         DISABLED
Boot Command  NO_CMD
  Param1      0
  Param2      0
Volume ID     87 34 0E 72 00 02 00 00 00 00 00 00 00 00 00
Device Name   "\\Device\Harddisk0\DP(1)0-0+1"
Max Levels    1
Clump Size    512
Current Level N/A

Memory used for data 0 bytes
Memory used for mapping 0 bytes
```

## BIOS Status Notification

The notification window provides users with immediate system status updates through the four following types of message:

- **CMOS Checksum Error**-Some situations, such as low battery or when the CMOS is cleared, will cause the CMOS checksum error and the notification window shows.



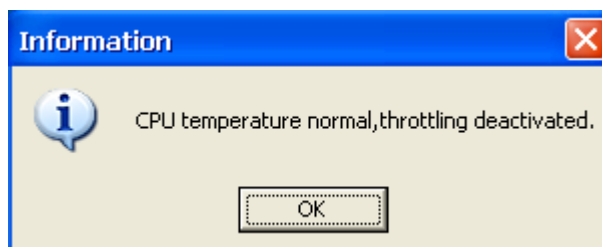
- **Keyboard Error**-If the keyboard was not installed in booting process, the notification window will pop up.



- **Processor Throttling Activated**-When the processor temperature exceeds the BIOS setting, the processor throttling function will activate, prompting the processor frequency to adjust and a notification window to pop up.



- **CPU Throttling Deactivated**-When the processor temperature returns to normal, the processor throttling function deactivates and the notification window pops up.



## Management Tools

---

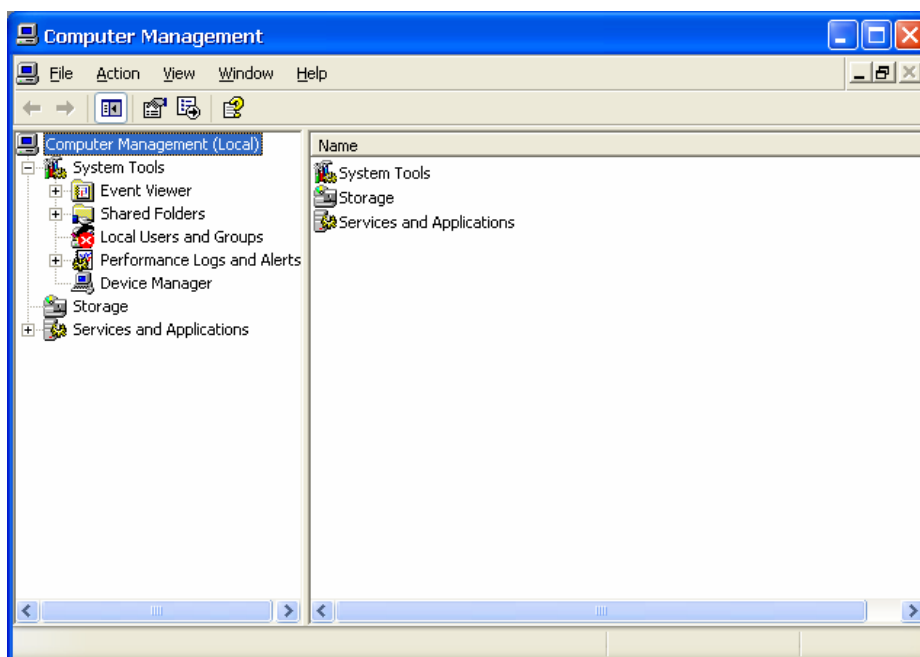
The DA-681-XPE ready-to-run embedded computer is shipped with the Windows XP Embedded operating system pre-installed. This network-centric platform is designed to serve as the front-end for data acquisition and industrial control applications. A set of Windows XP management tools is installed on the DA-681-XPE computer to help with management issues.

### Computer Management

[Control Panel] → [Administrative tools] → Computer Management

You can use the tools for a variety of tasks, such as disk partition, disk mount/dismount, and create/remove users.

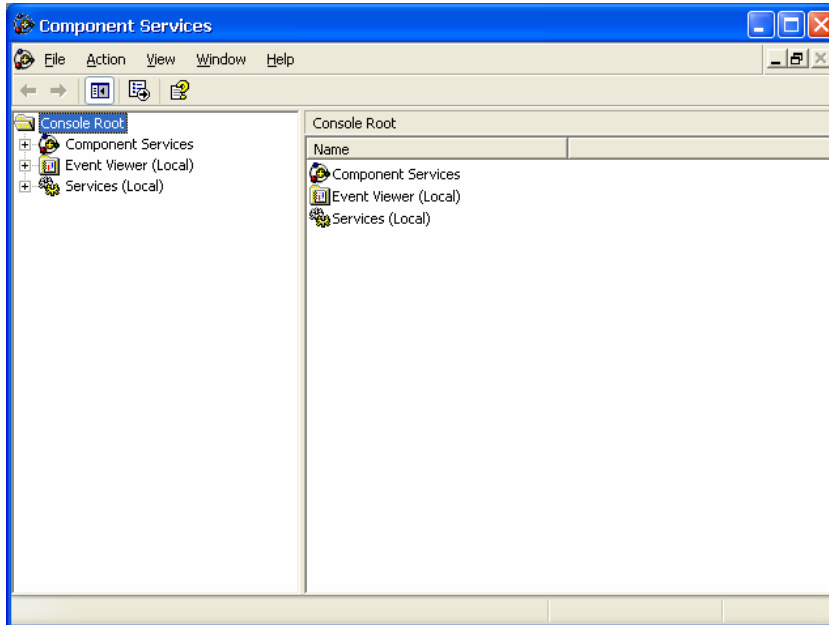
You can also check services in the Computer Management window.



## Component Services

[Control Panel] → [Administrative tools] → Component Services

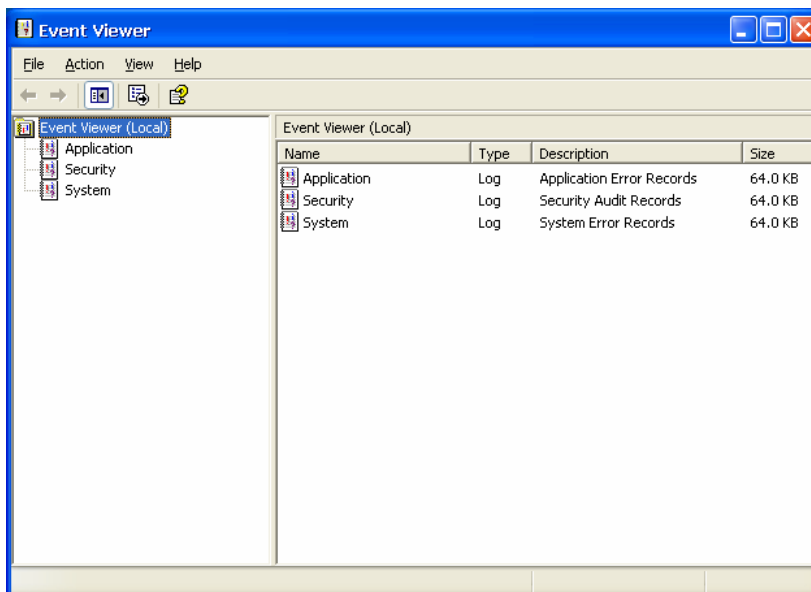
You can install/view/remove COM components with this tool.



## Event Viewer

[Control Panel] → [Administrative tools] → Event Viewer

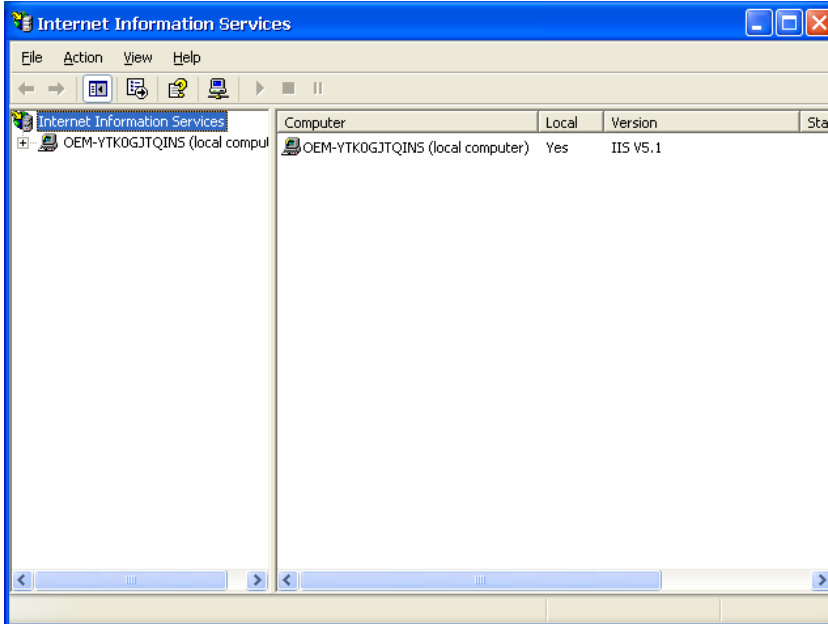
Every DA-681-XPE event, including system, applications, and security events are logged in this event database.



## Internet Information Services (Web/FTP)

[Control Panel] → [Administrative tools] → Internet Information Services

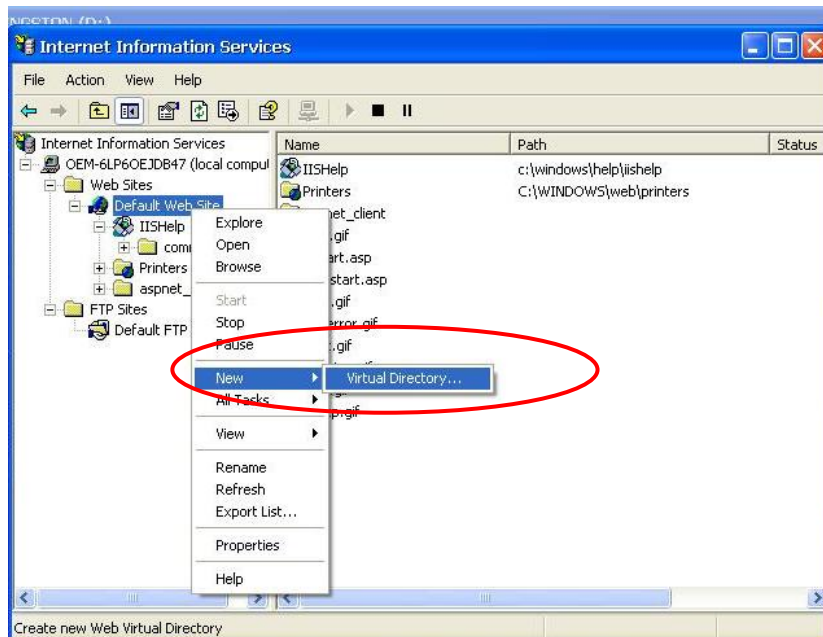
You must use this tool to configure web or FTP services. You can also use the tool to start and stop HTTP/FTP services.



A default web page is located in the directory **c:\inetpub**. Use this default page to test your web server.

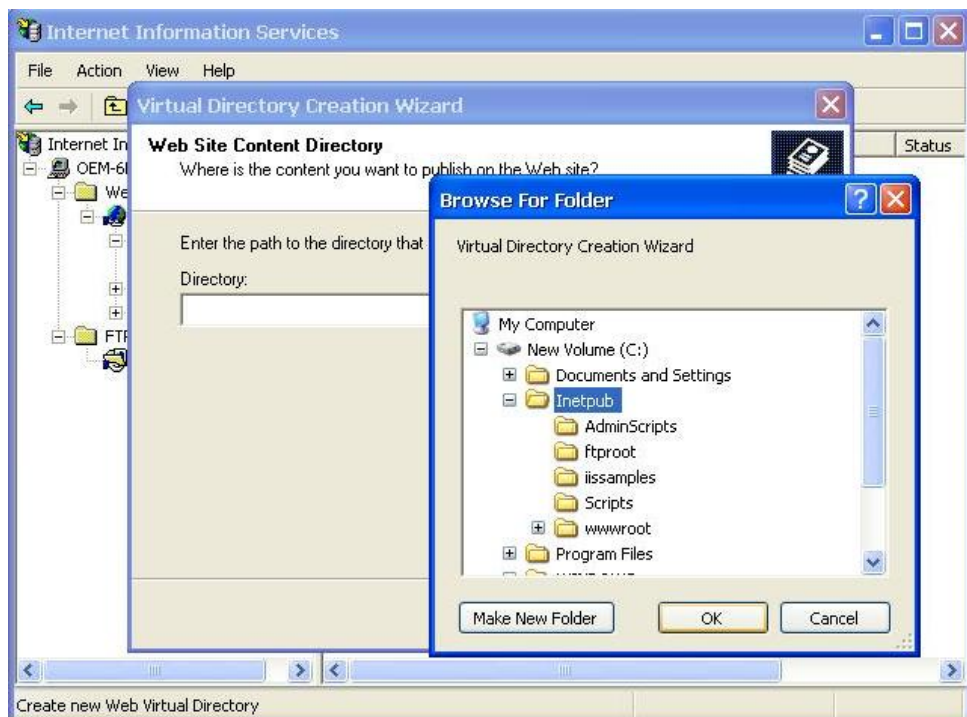
Follow the steps shown below to create the virtual directory.

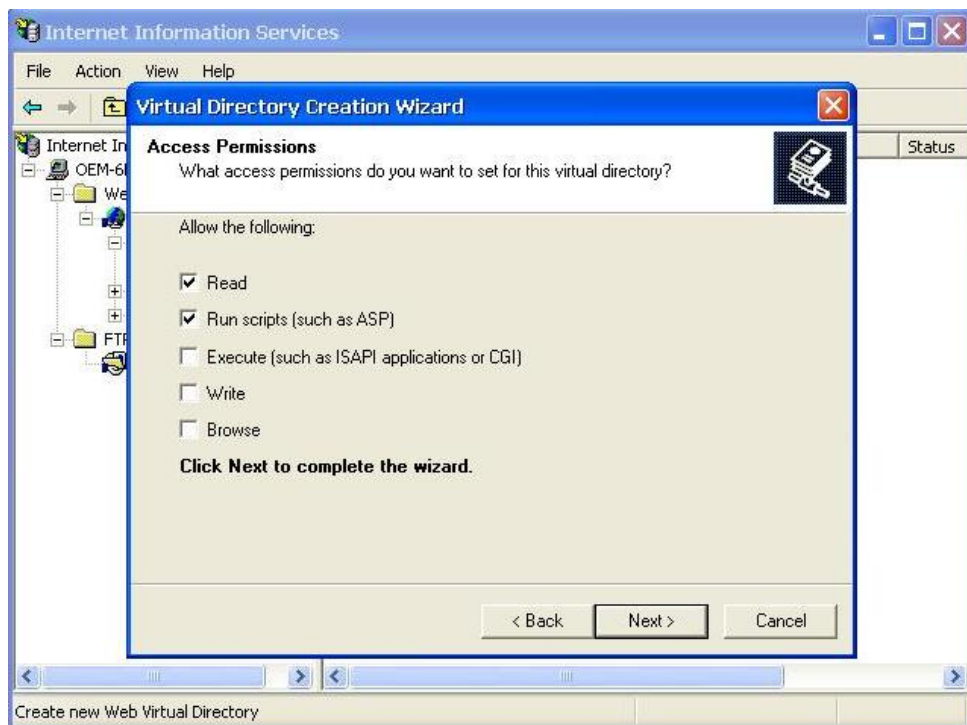
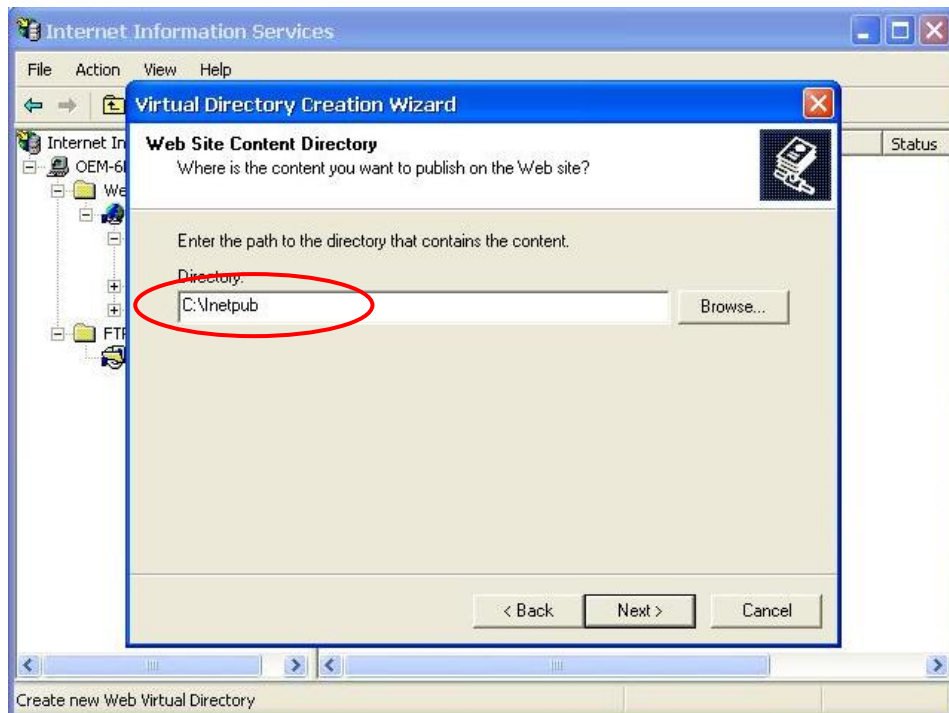
1. Create a virtual directory by selecting **Default Web Site → New → Virtual Directory**.





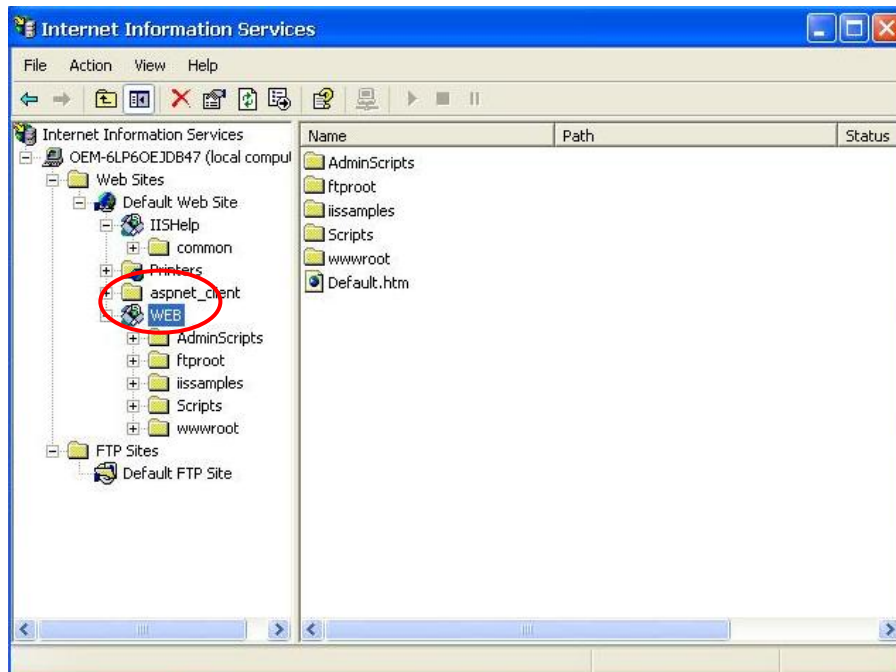
2. Follow the virtual directory creation wizard and complete the steps to create the virtual directory **c:\inetpub**, as indicated in the following series of screen shots.



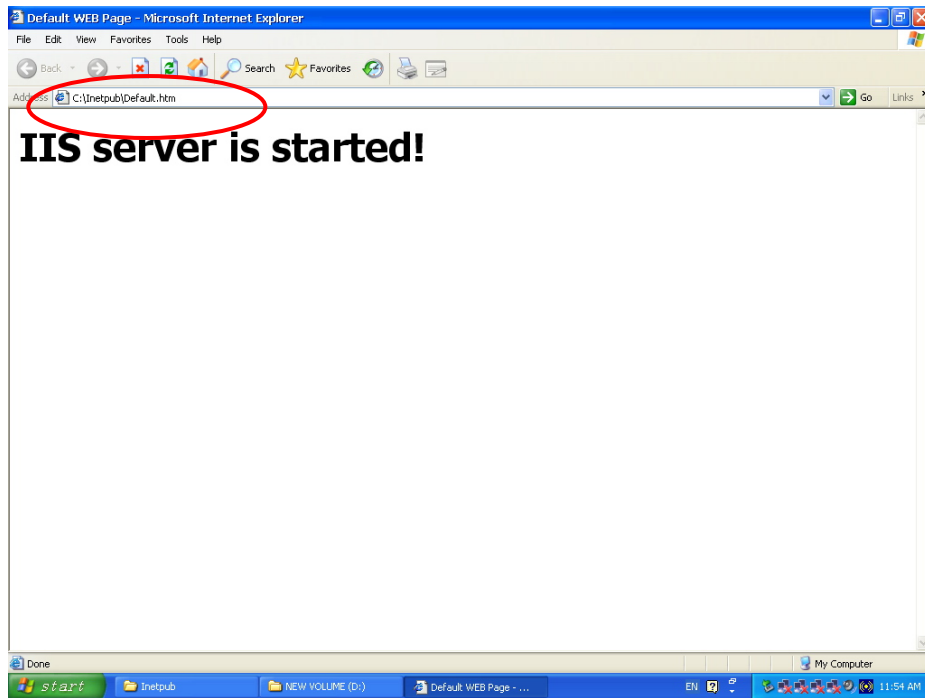




- When you complete the steps, the virtual directory **WEB** will appear under **Default WEB Site**.

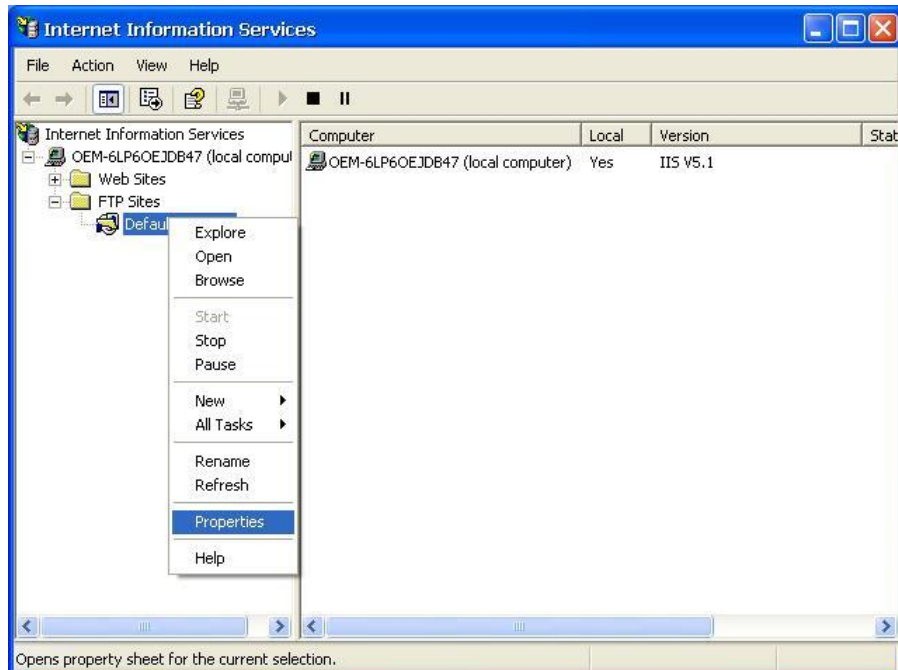


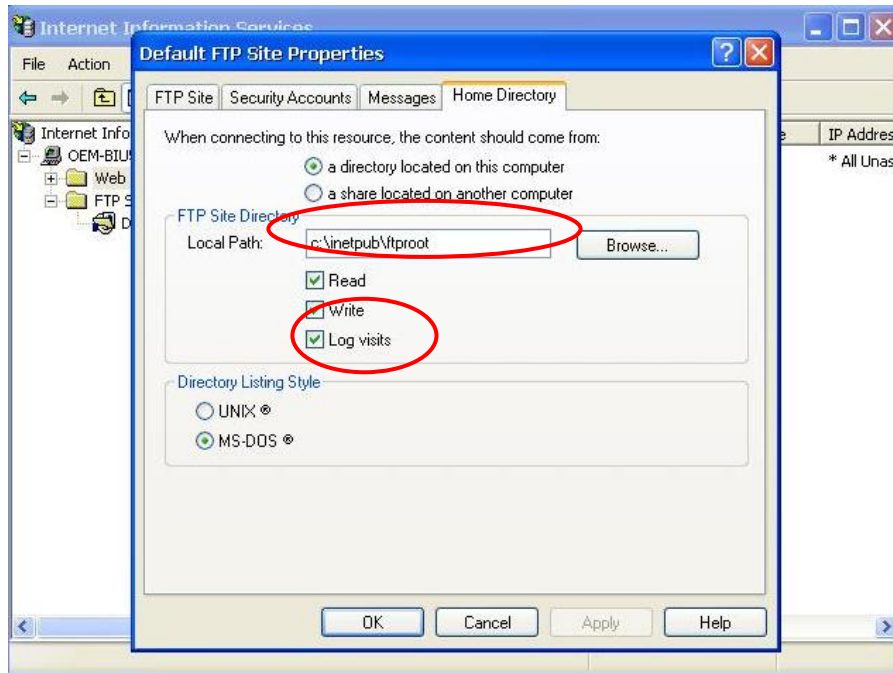
- 4. Open IE, type **C:\inetpub\Default.htm** or **[IP Address]/WEB/Default.htm** (for example, 192.168.3.127/WEB/Default.htm). The following page should appear.



If you need to use the FTP server, you must create the default password for your account and turn on the write permission on your home directory, which is located in **c:\inetpub\ftproot**.

Select **FTP Sites** → **Default FTP Site** → **Properties** → **Home Directory**, and checkmark the **Write** checkbox. You should now be able to transmit files through the ftp server.

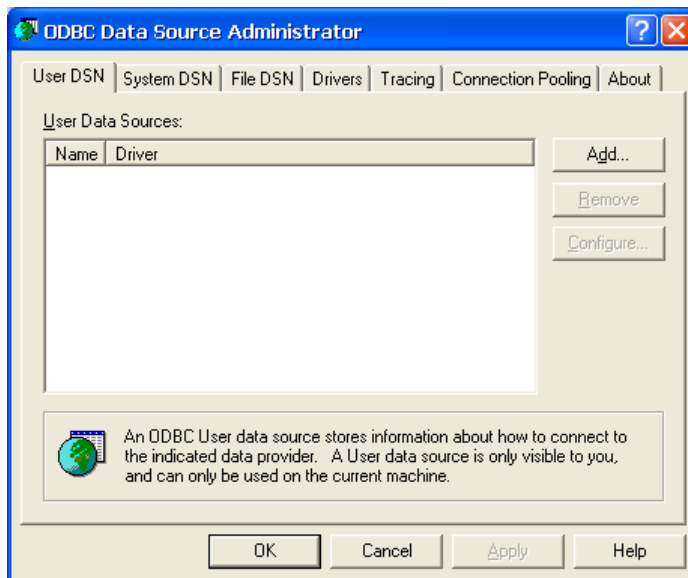




## ODBC Data Source Administrator

[Control Panel] → [Administrative tools] → ODBC.

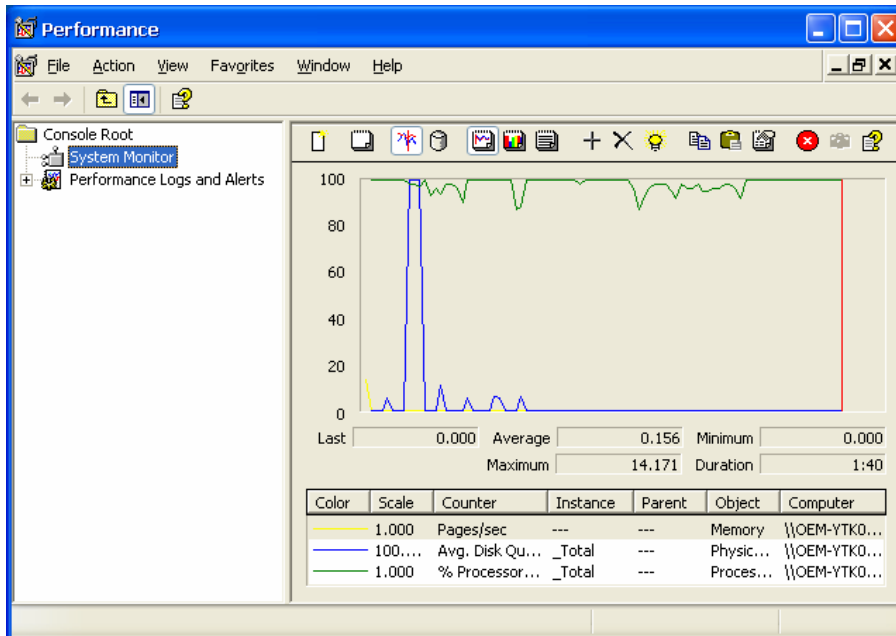
This is a database source configuration tool for users to add, delete, or set up a data source and display information about the installed ODBS drivers. You can create a new data source or trace the calls to ODBC functions.



## Performance Monitor

[Control Panel] → [Administrative tools] → Performance

You can use this tool to monitor system and network resources.



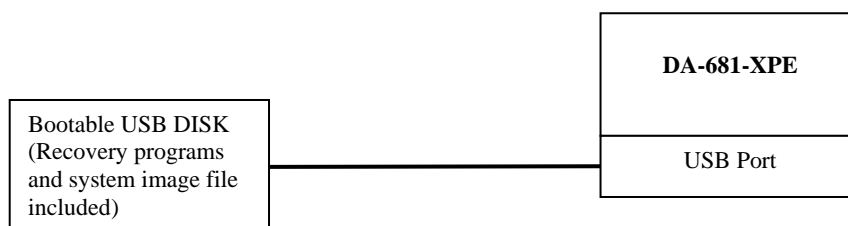
## System Recovery

---

The DA-681-XPE ready-to-run embedded computers are Windows XP Embedded platforms. Although it rarely happens, you may find on occasion that operating system files are damaged. This chapter describes how to recover your DA-681-XPE to a normal status.

### Recovery Environment

The recovery environment includes the DA-681-XPE embedded computer and a bootable USB disk with the recovery programs and system image file.

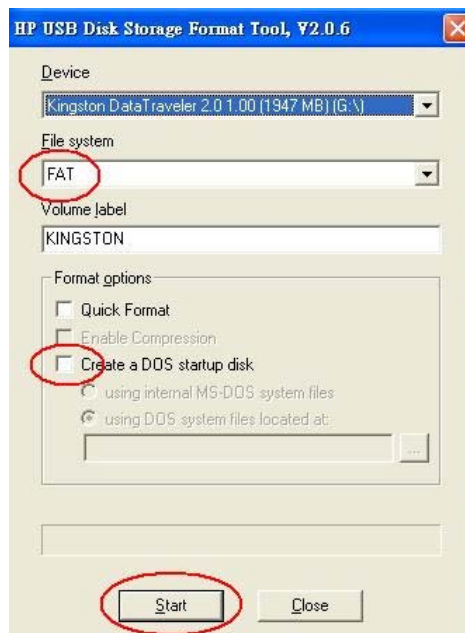


## Recovery Procedure

This section describes the recovery procedure.

### Step 1: Format an Empty USB Disk.

- a. Format your USB disk with the **HP USB Disk Format Tool**, open the utility, and then select the device and FAT file system. Use an empty disk, and **DO NOT** check the option **Create a DOS startup disk**.
- b. Click **“Start”**.



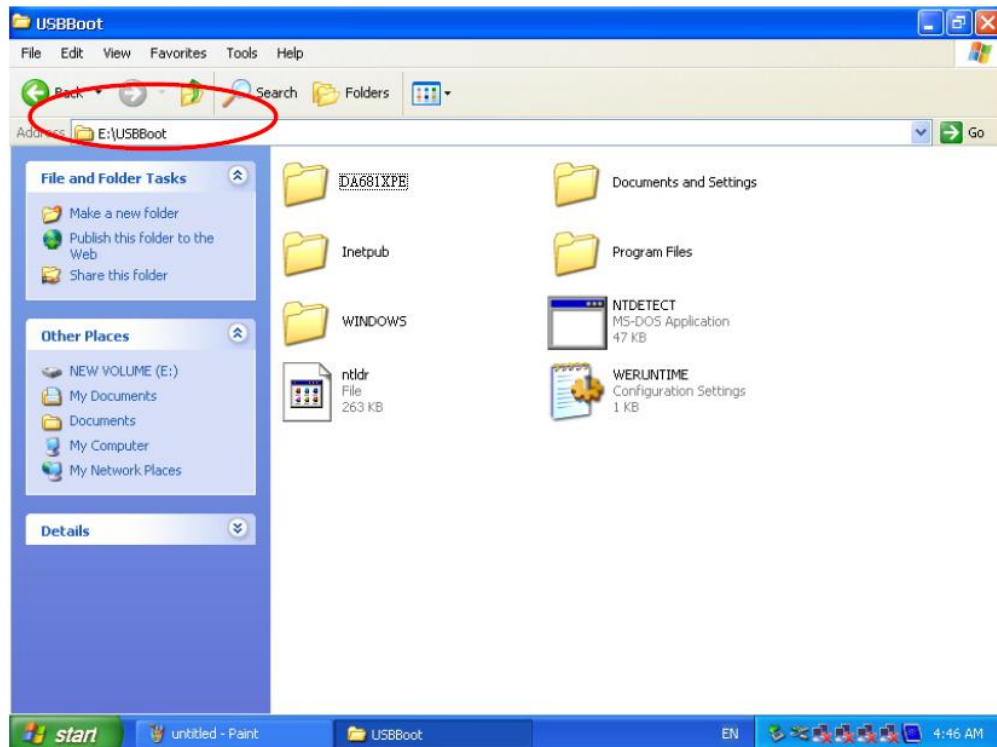
#### ATTENTION

HP USB Disk Storage Format Tool can be downloaded from many web sites, type **“HP USB Disk Storage Format Tool”** to search internet and download it.

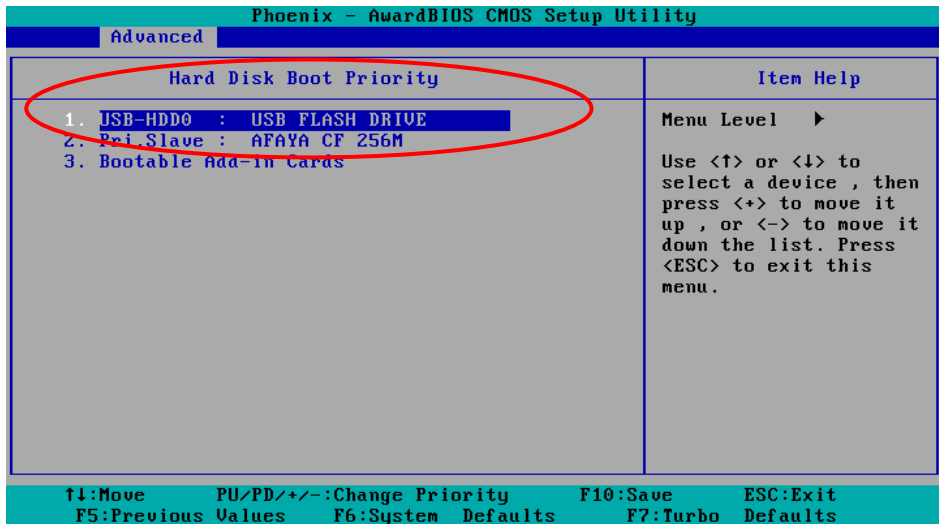
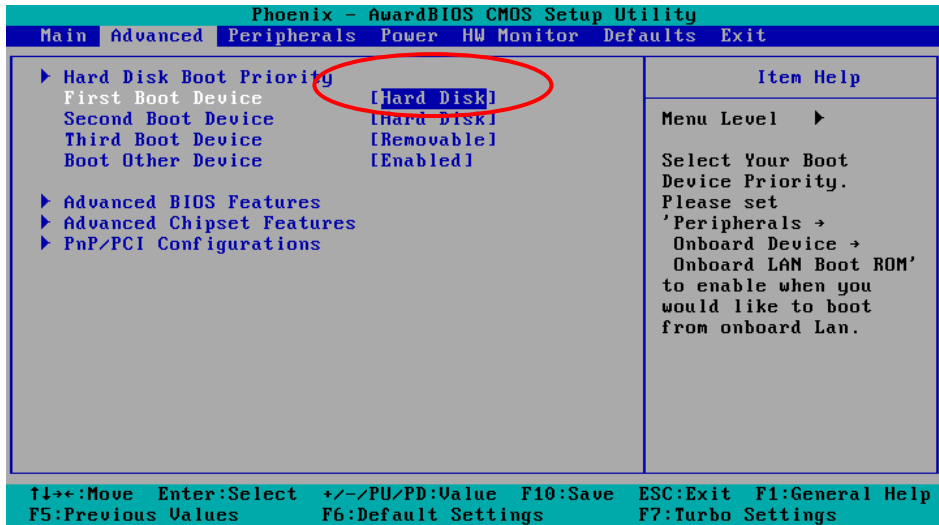


**Step 2: Create a Windows XP Embedded Bootable USB Disk.**

- a. Configure Windows Explorer to show hidden files (including protected operating system files).
- b. Copy all files in the **USBBoot** directory from the DVD to the root directory of your USB disk.

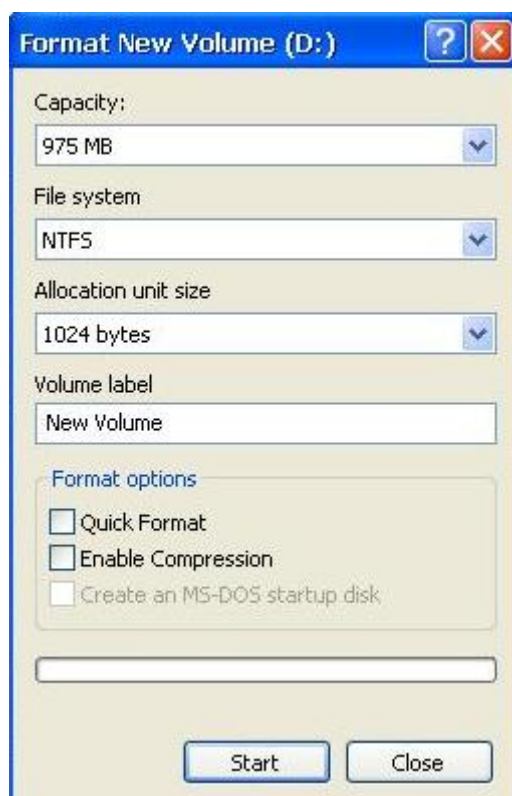
**Step 3: Set up the BIOS to Boot from the USB Disk.**

- a. Insert the USB disk.
- b. Power on the computer and press **DEL** on the keyboard to enter the bios setup menu.
- c. Select **Advanced → Hard Disk Boot Priority** and then press **Enter**.
- d. From the setup menu, use “↑” or “↓” to select the USB device.
- e. Press “+” to move the selection up to the first priority, and then press “**Esc**” to exit the setup menu.
- f. Make sure the first boot device is “Hard Disk”. If not, press Enter to change it.
- g. Select **Exit → Save & Exit Setup** and then press **Enter**.
- h. Choose **Y** to save to CMOS and then exit.



**Step 4: Copy Windows XPE system files to the DOM or CompactFlash Disk.**

- a. If the BIOS setup is correct, it will restart and boot from the USB disk.
- b. Select and right-click the hard disk you want to recover (e.g., New Volume D: for DOM or New Volume E: for CF card), and then select **Format**.
- c. Select the NTFS file system option and click **Start**.
- d. Configure Windows Explorer to show hidden files (including protected operating system files).
- e. Close the format utility window and copy all files in the **DA681XPE** directory from the USB disk to the hard disk.
- f. When the operation is complete, turn off the computer and remove the USB disk.



**Step 5: Reset the BIOS to boot from the DOM or CompactFlash disk.**

- a. Power on the computer and press **DEL** to enter the bios setup menu.
- b. Select **Advanced → Hard Disk Boot Priority** and then press **Enter**.
- c. From the setup menu, use “↑” or “↓” to select the DOM or CompactFlash device.
- d. Press “+” to move the selection up to the first priority, and press then **Esc** to exit the setup menu.
- e. Select **Exit → Save & Exit Setup** and then press **Enter**.
- f. Choose **Y** to save to CMOS and then exit.
- g. Wait about 10 or 15 minutes for the system to recover. You may need to restart your computer for the new settings to take effect. When the recovery process is finished, you should be able to see the Windows XP Embedded desktop.

**NOTE: DO NOT turn off the power during this operation, or the system might crash.**

