OmniAccess 700 Getting Started Guide

Release 2.2

Alcatel·Lucent

CAUTION: THIS EQUIPMENT IS TO BE INSTALLED AND SERVICED ONLY BY QUALIFIED SERVICE PERSONNEL.

Batteries Caution. There is a danger of explosion if the battery in your chassis is incorrectly replaced. Replace the battery only with the same or equivalent type of battery recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions. The manufacturer's instructions are as follows:

> Return the module with the battery to Alcatel-Lucent. The battery will be replaced at Alcatel-Lucent's factory.

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THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE.

This equipment has been tested and found to comply within the limits pursuant to the (Centre for Telecom) rules. These limits are designed to provide protection against harmful interference when the equipment is operated in a commercial environment.

The following information is for the Users of the OmniAccess 740: If it is not installed in accordance with the installation instructions, it may not function exactly to the said specifications. Modifying the equipment without Alcatel-Lucent's written authorization may result in the equipment no longer complying with the said dimensions.

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4-slot Chassis that includes

- Services Engine (SE) - 2-port 10/100/1000 Mbps Ethernet
- 3 Fans (built-in)
- Power Supply (built-in)

Optional Modules	Miscellaneous
• 4-port T1E1 Line Card • 8-port 10/100/1000 Mbps Gigabit Ethernet (GigE) Line Card • 4-port Serial Line Card (V.35/X.21)	• AC Power Cord • Console Cable • Rack Mount Screws • 19-inch Rack Mount Ears • 512 MB USB Memory Flash • Product Documentation CD ROM

OA-780 Hardware

8-slot Chassis that includes

- Services Engine (SE) - 2-port 10/100/1000 Mbps Ethernet
- Switch Fabric (built-in)
- Fan Tray (built-in)
- Power Supply (built-in)

Optional Modules	Miscellaneous
• Services Engine (second unit for redundancy) • Switch Fabric (second unit for redundancy) • Power Supply Tray (second unit for redundancy or for load sharing) • 4-port T1E1 Line Card • 8-port 10/100/1000 Mbps Gigabit Ethernet (GigE) Line Card • 4-port Serial Line Card (V.35/X.21)	• AC Power Cord • Console Cable • Rack Mount Screws • 19-inch Rack Mount Ears • 512 MB USB Memory Flash • Product Documentation CD ROM

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REQUIRED TOOLS AND EQUIPMENT

You need the following items to install the OmniAccess 700 (OA-700):

- Electrostatic Discharge Wrist Strap (ESD)
- Level (optional)
- Tape Measure (optional)

Note: This equipment is designed to the highest quality standards of materials, workmanship, and safety. Do not bypass any of the safety features of this equipment or operate this in an improper environment.

Warning: Only trained and qualified personnel should be allowed to install or replace the OA-700. Refer to the warnings and safety notes that are given in the "**OmniAccess 740/780 Hardware Users Guide"** provided with this device.

Refer to the "**Rack Mounting the OA-740/OA-780**" section in the "OmniAccess 740/780 Hardware Users Guide" to install the OA-700 in the rack.

CONNECTING AC INPUT POWER

This section provides the procedures for connecting AC-input power to the OA-700.

Note:

1. The OA-700 installation must comply with all the applicable codes. All the hardware materials used should be of compatible material and preclude loosening, deterioration, and electro-chemical corrosion of hardware and joined material.

2. **OA-740 Power Supply Specification:** The OA-740 requires 100/240V and 6A (RMS) @115V, 3A (RMS) @230V AC power. A fully loaded OA-740 consumes approximately 250W of power.

   For more details on power supply specifications, see the **"AC Power Specifications"** chapter in the "OmniAccess 740 Hardware Users Guide".

Figure 1: Connecting the Power Cord on OA-740

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3. **OA-780 Power Supply Specification:** The OA-780 requires 100/240V and 6A (RMS) @115V, 3A (RMS) @ 230V AC power. A fully loaded OA-780 consumes approximately 350W of power.

For more details on power supply specifications, see the **"AC Power Specifications"** chapter in the "OmniAccess 780 Hardware Users Guide".

Figure 2: Connecting the Power Cord on OA-780

Step 1: Use the shipped power cord to power your system.

Step 2: Verify that the power switch located on the rear panel is in OFF (O) position.

Step 3: Connect the system end of the connector to the OA-740/OA-780, as shown in the figures above.

Step 4: Identify a power source point that complies with the system specifications, and connect the power plug of the AC cable to the utility power socket.

Step 5: Ensure that the cable is not left in a hazardous position that could impair movement of personnel or be frayed due to the movement of other equipment in the vicinity.

Warning: Read the installation instructions before you connect the OA-700 to its power source.

CONNECTING TO THE OA-700 CONSOLE PORT

The OA-700 has a RJ-45 console port connector. A RJ-45 - RJ-45 "roll-over" cable along with RJ-45 to DB-9 (female) adapter is provided with the system to access the console port via a DTE (computer/terminal). For additional connector details, refer to "**Pin Connector Details for OA-740/OA-780**" in the "**OmniAccess 740/780 Hardware Users Guide**".

Figure 3: Connecting to the OA-740 System Console

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Figure 4: Connecting to the OA-780 System Console

Note: Ensure that the OA-700 is powered off before connecting the console cable to the system.

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To connect the OA-700 to the console, perform the following steps:

Step 1: Connect the RJ-45 end of the console cable to the front panel console port on the OA-700 and the DB-9 end to the serial port (COM) on your computer/terminal.

Step 2: Start your terminal emulation software.

Example: *kermit* or *hyperterm* terminal (if you are using Microsoft Windows operating system) or *minicom* terminal (if you are using Unix/Linux operating system).

Step 3: Set the console session as follows:

Table 1: Console Properties

Parameter	Value
Baud rate	9600
Parity	None
Data Bits	8
Stop Bit	1
Flow control	None

Step 4: Watch for console message output or press the **Enter** key to get the device prompt.

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STARTING THE OA-700

After installing your OA-700 and connecting cables, follow the procedure given below to start the system:

Step 1: Before you power ON the OA-700, check the following:

- Ensure that the power supply tray is securely inserted into the chassis.
- Ensure that the utility power cable is connected to a valid power cord in the rear panel, and power is available from this source.
- Ensure that the Switch Fabric and the SE modules are correctly and securely installed.
- Ensure that a PC or VT100 terminal is connected to the console port, using the appropriate console cable. (If the system is not connected to a console, see the **"Connecting to the OA-700 Console Port"** section of this document to connect the system to a console.)

Step 2: Power ON the OA-700.

Power on the OA-700 by turning on the external power switch located on the rear panel. If power supply is available, you should hear the rotation of system fans, and the system LEDs showing activity. At this point, the system begins its bootup sequence.

Step 3: Monitor the system front panel LEDs and console for various bootup messages.

Once the system begins to startup, monitor the front panel LEDs for various stages of booting process (refer to the table given below). In addition to the LEDs, monitor the system console for various bootup text messages (an example of a bootup message is given below). While a console access is not always required for system startup, it is a good idea to monitor the console at least the first time the system is booted and initial configurations completed.

LED Information

The following table shows the state in which the main LEDs should be after a startup.

Table 2: OA-740 LED Status

LED	Status	Description
SE EDs		
Active	Off	Power up status. This is the default display when the system is first powered on and before the software is loaded.
	Green	SE card is active.
	Yellow	Indicates transient conditions (e.g., booting).

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Table 3: OA-780 LED Status

LED	Status	Description
SE LEDs		
Active	Off	Power up status. This is the default display when the system is first powered on and before the software is loaded.
	Green	SE card is active.
	Yellow	Indicates transient conditions (e.g., booting).
Switch Fabric LEDs		
Active	Off	Power up status. This is the default display when the system is first powered on and before the software is loaded.
	Green	Switch Fabric is active.
Fan Tray Status LED (Tricolor LED)		
	Off	Power up status. This is the default display when the system is first powered on and before the software is loaded.
	Red	A component of the system is not managed by the Chassis Manager, or the Chassis Manager has exited, or the system was "reloaded", or the Chassis Manager has not yet restarted.
	Amber	Indicates transient conditions (e.g., booting).
	Green	Bootup completed, and system is ready to use.
Fan Tray LEDs (3 Uni-color Port LEDs) representing USB, Console, and Modem ports		
	Off	System is not working.
Console LED	Green	Console is accessible.

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OA-740 Bootup Message

Example:

```
== Press ^C for Boot options ==

== Initiating startup sequence ==
Mounting internal storage medium...OK.
Checking storage medium...OK
Services Engine [3] Starting daughter processor
Services Engine [3] Installing image package
Services Engine [3] (SE) Installing image package
 Loading Startup Config ...
 /-------- Percent Complete --------
 |******************************
Services Engine [3] (SE) Initialization Complete
Username :superadmin
Password :
ALU>
```

OA-780 Bootup Message

Example:

```
RedBoot(tm) bootstrap and debug environment [ROMRAM]
Red Hat certified release, version 2.27 - built 19:13:01,
Nov 20 2006

Copyright (C) 2000, 2001, 2002, Red Hat, Inc.

== Press ^C for Boot options ==

== Initiating startup sequence ==
Mounting internal storage medium...OK.
Checking storage medium...OK
Switch Card [24] Starting internal services
Switch Card [24] Installing image package
T1 Line Card [4] Installing image package
Services Engine [3] Starting daughter processor
L2 GiGe Card [5] Installing image package
Switch Card [24] Initialization complete
Services Engine [3] Installing image package
T1 Line Card [4] Initialization complete
L2 GiGe Card [5] Initialization complete
Services Engine [3] (SE) Installing image package
 Loading Startup Config ...
 /-------- Percent Complete --------
 |******************************
Services Engine [3] (SE) Initialization Complete
Username :superadmin
Password :
ALU>
```

Step 4: Configure the system.

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PERFORMING BASIC CONFIGURATION TASKS

Once you boot the OA-700 and connect to the console, you can start configuring your OA-700 either through the Command Line Interface (CLI) or the web-based Graphical User Interface (GUI).

ACCESSING THE OA-700 THROUGH CLI

The CLI is the primary interface to access the OA-700 through the console. The CLI allows you to configure, monitor, troubleshoot the system, and enables network connectivity.

To perform initial configuration of your system, follow the procedure given below:

Step 1: Once the system bootup is complete, you are asked to configure the password for a special user - **superadmin**. Superadmin is authorized to execute any command. You need to set the superadmin password when the following prompt is displayed:

```
Enter the new password for superadmin:
```

Once you enter the password for the superadmin, you will be asked to reconfirm the password, with the following prompt:

```
Retype the new password:
```

After confirming the password, you will be asked to login using a user name. The below prompt appears.

```
Username:
```

Enter the user name as superadmin. Now, you will be prompted for a password.

```
Password:
```

Enter the newly configured superadmin password.

Note: If you have any pre-existing user account, you can enter at the user name and password prompts, else use the superadmin user account.

Step 2: After entering the correct user name and password, the ALU> prompt is displayed. If the prompt is not seen, press the **Enter** key a few times.

```
ALU>
```

By default, the host name is "**ALU**". (To configure a different host name, use the configure "hostname <*name*>' command in the Configuration mode.)

Step 3: At the **ALU** prompt, enter the **enable** command to enter the Super User Mode (SUM).

Example:

```
ALU> enable
ALU#
```

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Step 4: From **SUM**, you can enter the Configuration Mode (CM). The CM is used to configure the system globally, to enter specific configuration modes, or to configure specific elements, such as interfaces or protocols.

Enter the **configure terminal** command to enter the Configuration mode.

Example:
```
ALU# configure terminal
ALU(config)#
```

The above steps are to be followed to configure the OA-700 via the console.

Step 5: To configure the system remotely (Telnet, SSH, Modem), you need to configure basic Authentication, Authorization, and Accounting (AAA) configuration. AAA is a system in IP-based networking to control which users have access to the system, what resources users have access to, and to keep track of the activity of users over a network.

To enable the AAA services on your system, enter the **aaa services** command in the Configuration mode.

Example:
```
ALU(config)# aaa services
```

Step 6: Set the enable password (system password). To set the system password, enter the following command:
```
enable {secret|password} [5] <password>
```

Example:
```
ALU(config)# enable secret test
Secret for level 15 is set
```

Note: By default, only the console session is available without the enable password configuration.

Step 7: Establish authentication for new users by configuring new user accounts. To configure a new user account, use the following command:
```
username <user-name> {password [5] <password>|nopassword|
secret [5] <password>}
```

Example:
```
ALU(config)# username user1 password pass1
```

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Step 8: Configuring an interface. Enter the following command to enter the Interface Configuration mode:

```
interface <name> <slot/port>
```

Example:

```
ALU(config)# interface GigabitEthernet 7/0
ALU(config-interfaceGigabitEthernet7/0)#
```

(For more information on configuring interfaces, refer to the '**The Command Line Interface**' chapter in the **OmniAccess 700 CLI Configuration Guide**.)

Step 9: Administratively bring up the interface by using the '**no shutdown**' command.

Example:

```
ALU(config-if GigabitEthernet7/0)# no shutdown
```

Step 10: Configure an IP address for the interface by entering the following command. Enter the IP address in the valid IP address format A.B.C.D.

```
ip address {<ip-address subnet-mask>|<ip-address/prefix-
length>}
```

Example:

```
ALU(config-if GigabitEthernet7/0)# ip address 192.168.1.1/24
```

Note: In the above example, 192.168.1.1 is assumed to be the GigE 7/0 LAN facing interface and IP address. You can configure the IP address based on your topology.

Step 11: Enable SSH and Telnet for in-band Management. The following command enables SSH/Telnet connection to a remote computer:

- **Secure Shell (ssh)** is a program for logging in to a remote machine that provides secure communication between two systems.

  ```
  ssh {enable|disable}
  ```

  Example:

  ```
  ALU(config)# ssh enable
  ```

- **Telnet** is a user command and an underlying TCP/IP protocol for accessing remote computers. Telnet is a program that enables connection to foreign or remote host computers, and provides access to information on them.

  ```
  telnet {enable|disable}
  ```

  Example:

  ```
  ALU(config)# telnet enable
  ```

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Step 12: Enable HTTP & HTTPS for web-based management.

- HTTP is the primary protocol used to transfer files over the World Wide Web. You can access the OA-700 using HTTP through a web browser after being authenticated.

    ```
    http {enable|disable}
    ```

    Example:

    ```
    ALU(config)# http enable
    ```

- HTTPS, in addition to the normal HTTP uses SSL encryption for secure transmission of files.

    Example:

    ```
    ALU(config)# https enable
    ```

Step 13: Enable Modem for Out of Band Management.

```
modem {enable|disable}
```

Example:

```
ALU(config)# modem enable
```

Step 14: Show Chassis - The '**show chassis**' command provides a physical inventory of the running chassis components for a specific slot or for the entire system.

Example:

The following is an example of the **show chassis** command on an OmniAccess 740 system:

```
ALU> show chassis
Physical inventory at Tue Oct 30 12:31:50 2007
        System started approximately Tue Oct 30 12:30:32 2007
        Uptime is 0 days 0 hours 3 minutes 40 seconds
T1E1 - Four port T1E1 (active)
        Slot number: 0
        Part number: 902604-90
        Manufacturer:  ALU
        Description: Four port T1E1
        Serial number:  ND0533001165
        Version: 00
        Revision: 55
        Deviation: 0000
        Loader version: 2.29
        ALU-OS version: 2.2.57
SE - Service engine (active)
        Slot number: 3
        Part number: 902601-90
        Manufacturer:  ALU
        Description: Service engine
        Serial number:  DD0538002041
        Version: 01
        Revision: 02
        Deviation: 0001
        Opteron CPU Version: 10
        Opteron CPU Frequency: 1994 MHz
        LoL firmware version: 2.2.56
```

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```
        Loader version: 2.29
        ALU-OS version: 2.2.57
        MDC
        Serial number: WL0534000130
        Deviation: 0002
        Revision: A1
        Version: 01
BP - ALU OA740 chassis (passive)
        Slot number: 29
        Part number: 902610-90
        Manufacturer:  ALU
        Description: ALU OA740 chassis
        Serial number:  WL0537000210
        Version: 00
        Revision: 01
        Deviation: 0001
        Base MAC: 00:11:8b:00:70:00
ALU#
```

The following is an example of the **show chassis** command on an OmniAccess 780 system:

```
ALU> show chassis
Physical inventory at Tue Oct 30 06:33:47 2007
      System started approximately Tue Oct 30 06:30:26 2007
      Uptime is 0 days 0 hours 4 minutes 20 seconds
L2 - 8-port copper GigE (active)
      Slot number: 0
      Part number: 902603-90
      Manufacturer:  ALU
      Description: 8-port copper GigE
      Serial number:  DD0512560340
      Version: 00
      Revision: 01
      Deviation: 0000
      Loader version: 2.27
      ALU-OS version: 2.2.52
      MDC
      Serial number: WL0534000127
      Deviation: 0001
      Revision: A1
      Version: 01
SE- Service engine (active)
      Slot number: 3
      Part number: 902601-90
      Manufacturer:  ALU
      Description: Service engine
      Serial number:  DD0538002048
      Version: 01
      Revision: 04
      Deviation: 0001
      CPU Version: 1 (Low Power Opteron)
      Opteron CPU Version: 1
      Opteron CPU Frequency: 2193 MHz
      Loader version: 2.30
```

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```
            ALU-OS version: 2.2.64
            MDC
            Serial number: WL0529000008
            Deviation: 0002
            Revision: 05
            Version: 01
      PB - Power tray (passive)
            Slot number: 22
            Part number: 902612-90
            Manufacturer:  ALU
            Description: Power tray
            Serial number:  DD0536004050
            Version: 00
            Revision: 01
            Deviation: 0000
   SC - Switch card (active)
            Slot number: 24
            Part number: 902613-90
            Manufacturer:  ALU
            Description: Switch card
            Serial number:  DD0536054350
            Version: 00
            Revision: 54
            Deviation: aaaa
            LoL firmware version: 2.2.56
            Loader version: 2.29
            ALU-OS version: 2.2.52
   FP - Fan tray (passive)
            Slot number: 26
            Part number: 902614-90
            Manufacturer:  ALU
            Description: Fan tray
            Serial number:  DD0545027001
            Version: 00
            Revision: 01
            Deviation: 0000
   BP - ALU OA780 chassis (passive)
            Slot number: 29
            Part number: 902611-90
            Manufacturer:  ALU
            Description: ALU OA780 chassis
            Serial number:  DD0546005005
            Version: 00
            Revision: 01
            Deviation: 0000
            Base MAC: 00:11:8b:00:72:00
            ALU(config)#
```

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Step 15: Save the running configuration to the startup configuration.

Example:
```
ALU(config)# write mem
```

Note: Be sure to save the running configuration. If this is not done, when the system reboots, the configuration is lost.

For further configuration of your OA-700, refer to the **OmniAccess 700 CLI Configuration Guide** provided in the OA-700 Documentation CD along with your system.

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ACCESSING THE OA-700 THROUGH GUI

Follow the procedure given below to access and configure the OA-700 through GUI.

Note: To access the OA-700 through GUI, an IP interface must be configured in your system.

Step 1: Configure IP address of an interface.

To configure an IP address of a given interface, follow the steps detailed in the "Accessing the OA-700 Through CLI" section of this document.

Step 2: Open a Web browser from your PC.

Step 3: In the address bar/field, type the IP address of the interface and press the **Enter** key.

Example:
```
http://<ip address>
http://192.168.1.1/24
```

The login page for the Web GUI is displayed in the browser window.

Step 4: Enter the user name and password, and press the **Enter** key. This will launch a web interface to configure your OA-700.

For further configuration of your OA-700, refer to the "**OmniAccess 700 Web GUI Users Guide"** provided in the OA-700 Documentation CD.

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CABLE CONNECTION

The connections and cables listed here are described in detail in the "OmniAccess 740/780 Hardware Users Guide". The following table summarizes the cable connections for the OA-700.

Table 4: Cable Connection

Module	Port Type	Connected To
Power Unit	IEC 60320 (320) C-14 Power Inlet	Main power supply
Ethernet	RJ-45	Ethernet hub or switch
T1E1	RJ-45	T1E1 network
Console	RJ-45	PC or VT100
Modem	RJ-11	Telephone Line
Serial	68 pin VHDCI Connector	V.35/X.21 modem

OBTAINING TECHNICAL SUPPORT

For all customers, partners, resellers, and distributors who hold valid Alcatel-Lucent service contracts, the Alcatel-Lucent Technical Support Team provides 24-hour-a-day, technical support services online and over the phone.

For Customer issues and help, contact:

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US Customer Support: (800) 995-2696

International Customer Support: (818) 878-4507

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