Avocent™

OutLook 180DX

Installer/User Guide

INSTRUCTIONS

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

DANGEROUS VOLTAGE

This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

POWER ON

This symbol indicates the principal on/off switch is in the on position.

POWER OFF

This symbol indicates the principal on/off switch is in the off position.

PROTECTIVE GROUNDING TERMINAL

This symbol indicates a terminal which must be connected to earth ground prior to making any other connections to the equipment.

OutLook 180DX

Installer/User Guide

USA Notification

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canadian Notification

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

Japanese Notification

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Agency Approvals

UL 1950, CSA C22. 2 No. 950, EN60950, IEC 60950
FCC part 15A, EN55022, EN55024

Table of Contents

1 Product Overview

Contents

Chapter 1: Product Overview

Features and Benefits

The Avocent OutLook 180DX switch system consists of the user station (your keyboard, monitor and mouse), the switch unit and the attached servers. You can connect additional, or secondary, switches to the primary OutLook switch (called cascading) to expand the 180DX system to 64 servers. This flexibility allows you to add capacity as your data center grows.

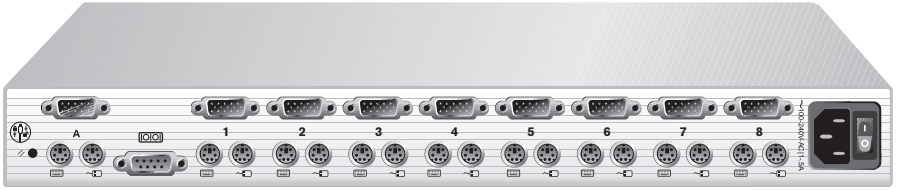


Figure 1.1: OutLook 180DX Model

OSCAR user interface

OutLook switches are equipped with OSCAR, our patented On-Screen Configuration and Activity Reporting interface. OSCAR features intuitive menus to configure your switch system and select computers. Computers can be identified by a unique name or port number, allowing you to select server names that make sense to you.

Multiplatform support

The OutLook 180DX supports PS/2 and expands to support multiple platforms with adaptors for Apple, Sun, Unix, IBM RS/6000, HP 9000 and serial devices. Switch easily across platforms with OSCAR.

Security

Protect your system with a screen saver password. After a user-defined time, the screen saver mode will engage. Access is prohibited until the appropriate password is entered to reactivate the system.

Quality video support

The OutLook 180DX supports analog VGA, SVGA and XGA video. The resolution you can achieve depends upon the length of cable separating your switch and servers. Achieve resolutions of up to 1600 x 1200 with a 7 foot cable and up to 800 x 600 with a 50 foot cable.

Plug and Play

The OutLook system supports Display Data Channel Plug and Play, which automates configuration of the monitor and is compliant with the VESA DDC2B standard.

FLASH upgradable

The OutLook 180DX is FLASH upgradable. This allows you to update your firmware at any time through a simple serial connection to ensure that your OutLook system is always running the most current version available.

Built-in scanning capabilities

A built-in scanning feature allows you to automatically monitor, or scan, connected computers without intervention. When keyboard activity is detected, scanning is suspended until all activity stops. Scanning then resumes with the next server in sequence.

Cascading expansion

Each OutLook 180DX switch supports up to eight directly attached servers. If more than eight are needed, multiple units can be cascaded together with one unit designated as the primary switch and additional units connected to it as secondary switches. This extra cascade of units allows you to attach up to 64 servers in one system.

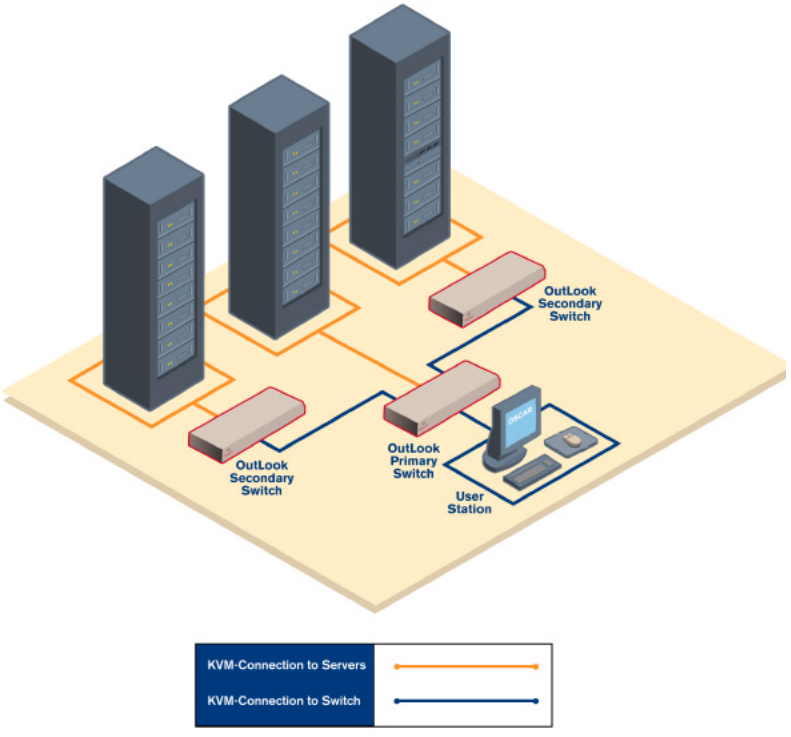


Figure 1.2: Example OutLook Configuration

Safety Precautions

To avoid potential video and/or keyboard problems when using Avocent products:

- If the building has 3-phase AC power, ensure that the computer and monitor are on the same phase. For best results, they should be on the same circuit.
- Use only Avocent-supplied cable to connect computers and KVM switches. Avocent warranties do not apply to damage resulting from user-supplied cable.

To avoid potentially fatal shock hazard and possible damage to equipment, please observe the following precautions:

- Do not use a 2-wire extension cord in any Avocent product configuration.
- Test AC outlets at the computer and monitor for proper polarity and grounding.
- Use only with grounded outlets at both the computer and monitor. When using a backup power supply (UPS), power the computer, the monitor and the OutLook unit off the supply.

NOTE: The AC inlet is the main disconnect.

Rack mount safety considerations

- Elevated Ambient Temperature: If installed in a closed rack assembly, the operation temperature of the rack environment may be greater than room ambient. Use care not to exceed the rated maximum ambient temperature of the unit.
- Reduced Air Flow: Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.
- Mechanical Loading: Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- Circuit Overloading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Consider equipment nameplate ratings for maximum current.
- Reliable Earthing: Reliable earthing of rack mounted equipment should be maintained. Pay particular attention to supply connections other than direct connections to the branch circuit (for example, use of power strips).

2 Installation

Contents

Chapter 2: Installation

Getting Started

Before installing your OutLook system, refer to the lists below to ensure that you have all the items that shipped with the OutLook as well as all other items necessary for proper installation.

Supplied with the OutLook

Your OutLook switch package contains the following items:

- OutLook 180DX unit
- Local country power cord
- OutLook 180DX Installer/User Guide
- OutLook 180DX Quick Installation Guide
- Download Instructions

Optional items

- 19 inch Switch Mounting Bracket Kit (available from Avocent)
- Serial cable, DB9 female, to update firmware
- Adaptors (available from Avocent)
  - To connect a PC computer that has a serial mouse–ELC-11KM
  - To connect a Macintosh computer with an ADB keyboard–ELC-12KM
  - To connect a Sun workstation–ELC-11ST
  - To connect a serial device–ELC-15TE
  - To connect a Sync-on-green video card (option for HP9000/RS6000 computers)–ELC-11RVA, ELC-11RVB

Rack Mounting your OutLook 180DX Unit

You can either place your switch on your desktop or rack mount your unit into an EIA standard rack.

Obtain a 19 inch Switch Mounting Bracket Kit (1U) to rack mount your OutLook. Before installing the switch and other components in the rack, stabilize the rack in a permanent location. Start rack mounting your equipment at the bottom of the rack, then work to the top. Avoid uneven loading or overloading of racks.

CAUTION: Rack Loading - Overloading or uneven loading of racks may result in shelf or rack failure, causing damage to equipment and possible personal injury. Stabilize racks in a permanent location before loading begins. Mount components beginning at the bottom of the rack, then work to the top. Do not exceed your rack load rating.

CAUTION: Power Considerations - Connect only to the power source specified on the unit. When multiple electrical components are installed in a rack, assure the total component power ratings do not exceed circuit capabilities. Overloaded power sources and extension cords present fire and shock hazards.

To install the switch mounting bracket:

1. Line up the holes in the "long side" of the kit's side brackets with the screw holes in the switch.
2. With an Allen wrench, fasten the mounting brackets to the switch using two #8-32 button head socket cap screws on each side.
3. Attach the six rack nut/holders to the mounting rail of the rack so that the nut is positioned on the inside of the rack.
4. Mount the switch assembly to the rack by matching the holes in the "short side" of each bracket to an appropriate set of matching holes on your equipment rack, then inserting #10-32 Phillips screws through the slots in the bracket and the holes in the mounting rail and then into the rack/nut holders.

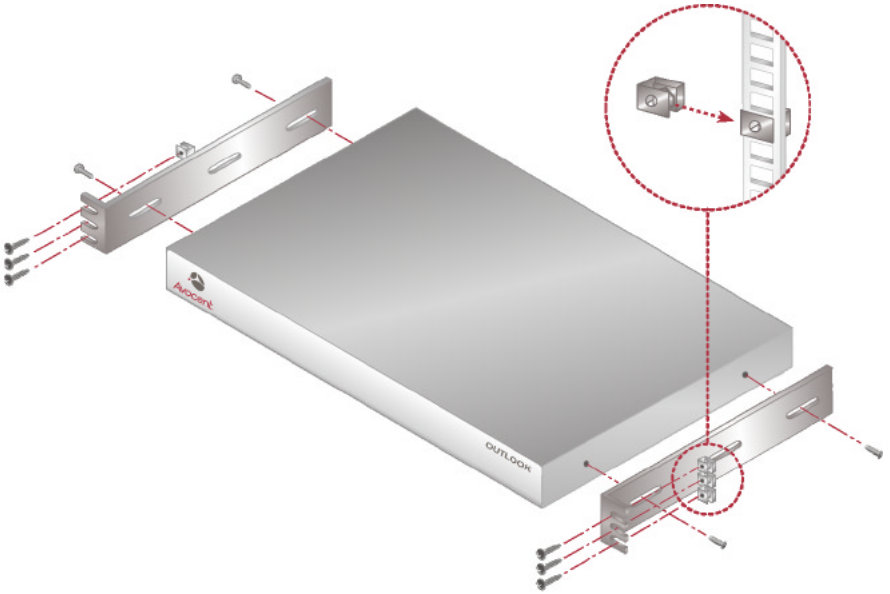


Figure 2.1: Rack Mounting Diagram

Installing an OutLook 180DX

The diagram below illustrates one possible configuration for your OutLook 180DX switch. Follow the step-by-step instructions to properly install your new switch.

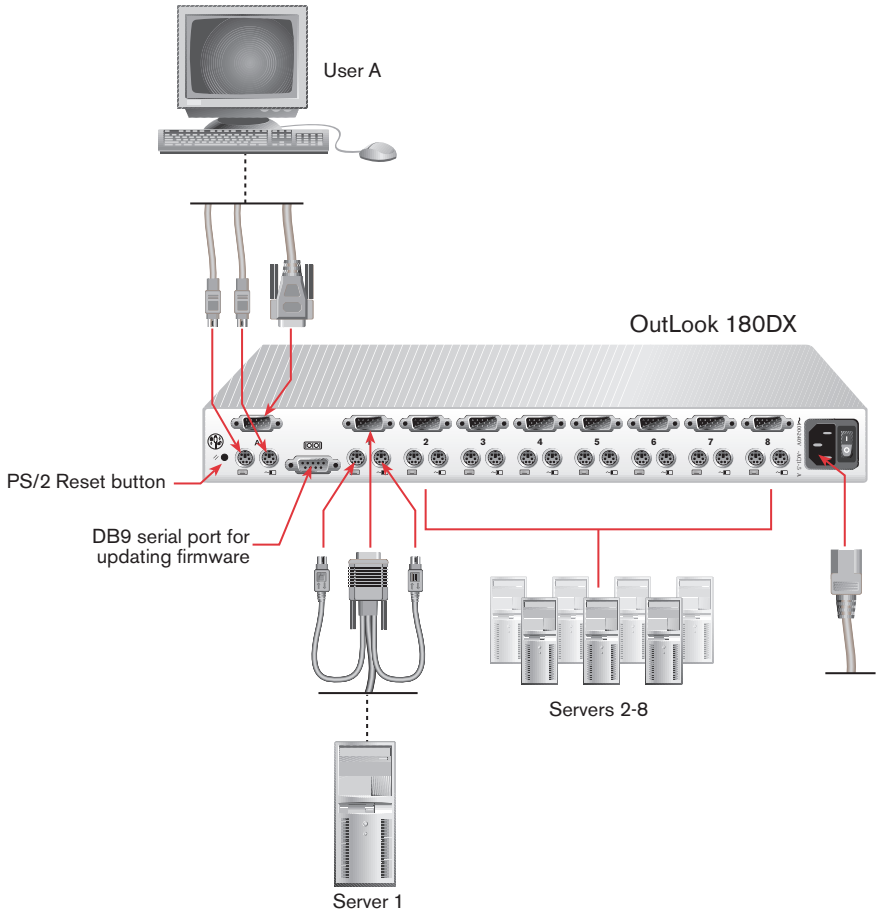


Figure 2.2: Installation Example

WARNING: To reduce the risk of electric shock or damage to your equipment:
- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) outlet that is easily accessible at all times.
- Disconnect the power from the unit by unplugging the power cord from either the electrical outlet or the unit.

To install an OutLook 180DX switch:

1. Prepare the location for the switch. See *Rack Mounting your OutLook 180DX Unit* in this chapter if you are rack mounting the unit.
2. Select cables with appropriate connectors and length. (See *Appendix B* for cable specifications.)

NOTE: Cable length affects video quality as well as keyboard and mouse data timing. The maximum cable length is determined in part by the computer and peripherals used. Not all systems will give satisfactory results at the maximum length.

3. Connect the mouse, video and keyboard cables to the appropriate switch connectors. Note that all keyboard and mouse cables are 6-pin miniDIN PS/2 style and all the video cables are 15-pin VGA/SVGA style. (These connectors are located on the left rear of the switch unit.)

NOTE: Keyboard and mouse connectors on the OutLook switch work with cables that have a locking mechanism. The cable lock prevents cables from becoming disconnected from the switch connectors due to the weight of the cable bundles or accidental tension from handling cables.

4. Select the computer that is to be connected to Port 1. Attach the computer's mouse to the appropriate connector on Port 1. Attach the computer's monitor to the 15-pin VGA connector. Attach the computer's keyboard to the appropriate connector. Bundle and label the cables for easy identification.
5. Repeat step 4 for all remaining servers to be connected to the switch unit.
6. Connect the power cord to the switch unit.

Installing a Multiple Switch System

The following diagram illustrates one possible cascading configuration using your OutLook switch. Perform this installation if you want to add another switch to your existing system. Follow the step-by-step instructions to properly cascade your new OutLook switch.

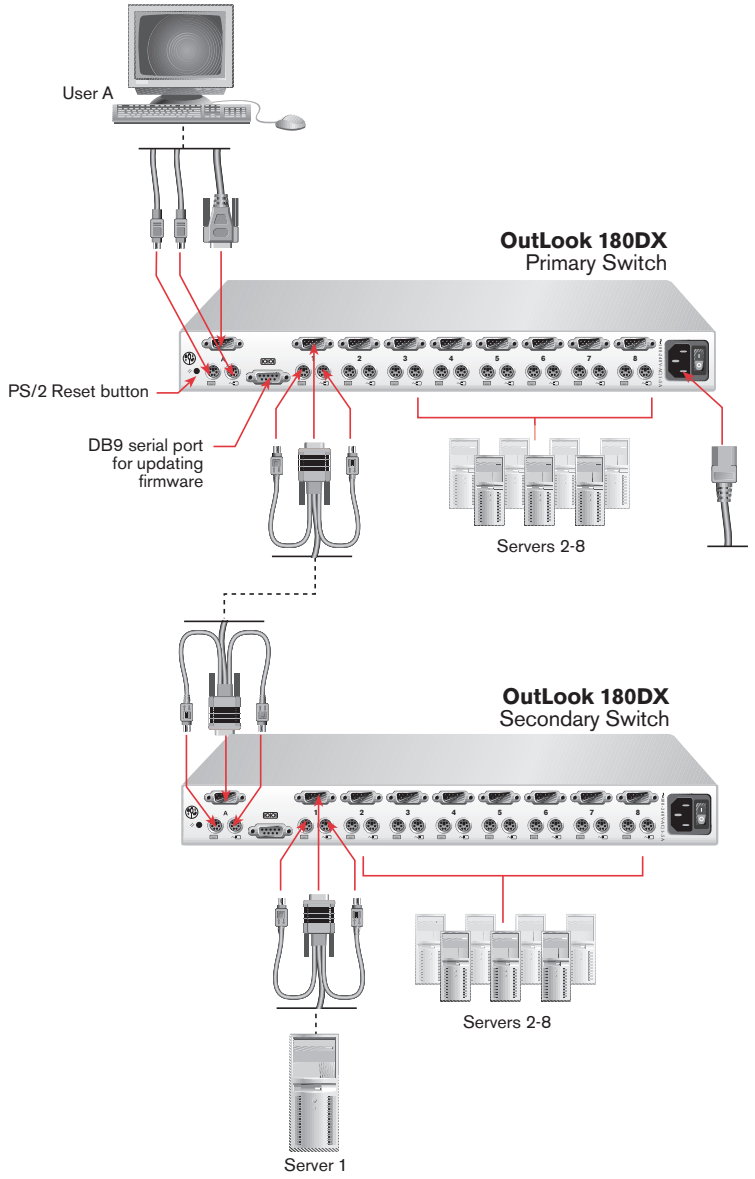


Figure 2.3: Multiple Switch Installation Example

Checklist of Steps for Adding a Secondary Switch

At the Primary Switch	At the Secondary Switch
	1. Select its location.
	2. Connect cables to station connections.
3. Connect cables to a port.	
4. Power up switch.	
	5. Plug in power cord and power up switch.
6. Assign specific device types.	
	7. Connect servers.
	8. Power up servers.
	9. If switch was previously used as a primary device, then reset OSCAR defaults (optional).
10. Check status of secondary servers.	
11. Check mouse, keyboard and video functions.	
12. Perform Snapshot.	
	13. Perform Snapshot.
	14. Turn off Delay Time.

To add a secondary switch to an OutLook switch system:

1. Place the secondary switch in the desired location. Make sure the switch is turned off and unplugged.
2. Connect the video, mouse and keyboard interconnecting cables to the user port connections on the secondary switch.
3. Connect the video, mouse and keyboard cables (in this order) to the user port connections on the primary switch.
4. Power up the primary switch.
5. Plug the power cord into its socket on the secondary switch and power up the secondary switch.
6. At the primary switch, open OSCAR to assign a specific device type. This designation makes the primary switch aware of the secondary switch:
   a. Press **Print Screen** to open the OSCAR Selection screen.
   b. Highlight *Setup - Devices* and press **Enter**.
   c. Highlight the port number you want to alter and use the **Plus** (**+**) or **Minus** (**–**) keys to identify the number of ports of the secondary switch: 4-port, 8-port, 10-port or 16-port.
   d. Press **Enter**.
7. Leave the power turned on to the secondary switch and connect the video, mouse and keyboard cables (in this order) from the servers to the switch port.

8. Power up the servers attached to the secondary switch.
9. If a secondary switch was previously used as a primary switch, reset OSCAR settings by doing the following:
   a. At the primary switch, press **Print Screen** to open the OSCAR Selection screen. Select the port number of the secondary switch.
   b. Press **Print Screen** again to gain access to the OSCAR Selection screen on the secondary switch.
   c. Highlight *Setup - Devices* and press **Enter**. Press **F10** to restore the default settings, then press **Enter**.
   d. From the Advanced Menus screen, highlight *Names* and press **Enter.** Press **F10** to restore the default settings, then press **Enter**.
   e. From the Advanced Menus screen highlight *Flag* and press **Enter**. Press **F10** to restore the default settings, then press **Enter**.
   f. Press **Escape** to exit OSCAR at the secondary switch.
10. At the primary switch, check the status symbols of the servers in the OSCAR Selection screen. If symbols are different from what is expected, see the *Status Symbols* section in *Appendix D*. Check mouse and keyboard functions and video signals for each computer.
11. Perform the Snapshot procedure at the primary switch to save mouse and keyboard settings:
   a. Press **Print Screen** to open the OSCAR Selection screen.
   b. Highlight *Commands - Snapshot* and press **Enter**.
   c. Press **Escape** to exit OSCAR from the primary switch.
12. Perform the Snapshot procedure at the secondary switch to save keyboard and mouse settings:
   a. Press **Print Screen** to open the OSCAR Selection screen then select the port number of the secondary switch.
   b. Press **Print Screen** again to gain access to OSCAR at the secondary switch.
   c. Highlight *Commands - Snapshot*.
   d. Press **Escape** to exit OSCAR from the secondary switch.
13. Turn off Delay Time at the secondary switch (this prevents OSCAR from displaying at the secondary switch when selecting servers):
   a. Press **Print Screen** to open the OSCAR Selection screen, then select the port number of the secondary switch.
   b. Press **Print Screen** again to gain access to OSCAR at the secondary switch.
   c. Highlight *Setup - OSCAR* and press **Enter**.
   d. Type **Ø** for Delay Time, then press **Enter**.
14. If all of the primary switches in the system show the correct port and server configuration and your mouse, keyboard and video function properly, your OutLook switch system is ready for operation.

NOTE: When connecting the video, mouse and keyboard cables from your servers to a running OutLook system, always *connect the keyboard cable last*. The switch detects the system power of the secondary switch or server through the keyboard cable. When the keyboard cable is connected last, the switch initializes both the keyboard and mouse interfaces to the system, allowing you to add a new switch without restarting your system.

Powering Up the OutLook Switch System

The switch must be powered up before the attached servers since the switch stores mouse and keyboard connection and rate data for each server. The switch uses this information to initialize the keyboard and mouse interfaces of the servers. If the servers are turned on before the switch, the servers may exhibit abnormal or erratic behavior.

To power up the OutLook switch system:

1. Turn on the monitors.
2. Turn on the primary switch.
3. Turn on the servers attached to the primary switch.
4. Turn on the secondary switch (if applicable).
5. Turn on the servers attached to the secondary switch (if applicable).

Checking the OutLook switch system startup behavior

During system startup, check to see that your primary OutLook switch does the following:

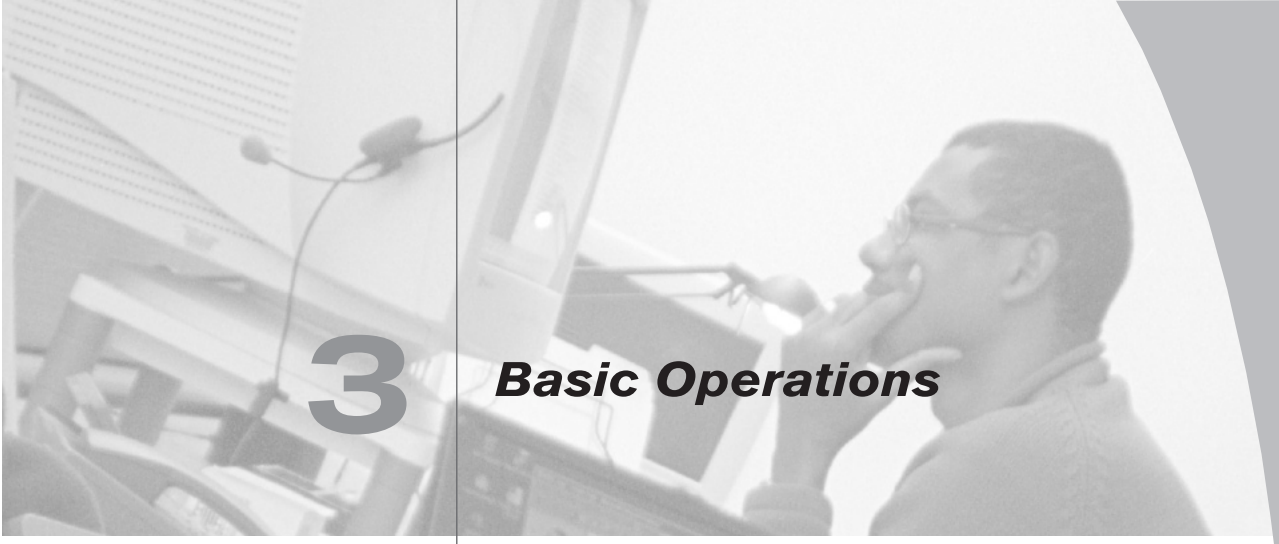
- Identifies the mouse and keyboard and sets their default states
- Displays copyright information about the OutLook switch and firmware
- Selects a port and displays its number in the status flag on the monitor

If the copyright information and status flag do not appear, check that the monitor is connected and powered up.

Making connections while the system is powered

You can connect additional servers to the switch while it is powered up. When you power up the newly connected servers, the OutLook 180DX recognizes them and allows you to switch to the new servers without requiring any additional configuration.

You can also connect the mouse and/or keyboard to a powered switch. When you connect a new device, the switch recognizes it and configures it to the settings of the currently selected computer. This technique allows failed devices to be replaced without having to restart the system.



3 Basic Operations

Contents

Chapter 3: Basic Operations

Viewing and Selecting Ports and Servers

When you launch OSCAR, you will first see the OSCAR Selection screen. This screen lists all the ports in the system, the associated server names and the status of each port. It can be organized either by port number or by server name. From here, you can you can select servers and access OSCAR configuration options.

To access the OSCAR Selection screen:

Press **Print Screen** to launch OSCAR. (For information on accessing OSCAR in cascaded environments, see *Accessing OSCAR at a Secondary Switch* in *Chapter 4*.)

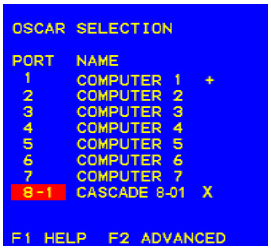


Figure 3.1: OSCAR Selection Screen

NOTE: OSCAR screens in this document are examples. Your screens may vary depending on your configuration.

OSCAR Navigation Basics

This Keystroke	Does This
Print Screen	Opens OSCAR. (To print a screen, see *Sending the Print Screen Keystroke* in *Chapter 3*.)
Escape	Closes the current screen without saving changes. In the OSCAR Selection screen, it closes OSCAR and returns to the selected server.
Enter	Completes the operation in an OSCAR screen.
Up/Down Arrows	Moves the cursor from line to line in lists.
Right Arrow	Moves one field to the right, wraps downward or highlights adjacent screen.
Left Arrow	Moves one field to the left, wraps upward or highlights adjacent screen.
Page Up/Down	Displays the previous or next screen of a list.
Home/End	Moves the cursor to the top or bottom of a list.
Caps Lock	Disabled. (Use the **Shift** key to change case.)
F1	Opens the Help screen for the current screen.
F2	Opens the OSCAR Advanced Menus screen.
F10	Restores the default settings for the current screen.

Viewing the Status of your Switch System

The status of servers and switches in your system is indicated in the far right column of the OSCAR Selection screen. The following table describes the status symbols.

OSCAR Status Symbols

Symbol	Description
+	Server connected and powered up.
X	Secondary switch connected and powered up.

Selecting Servers

Use the OSCAR Selection screen to select servers. When you select a server, the OutLook switch reconfigures the keyboard and mouse to the settings for the selected server.

To select servers:

1. If your servers are ordered by port number in the OSCAR Selection screen, type the port number of the server you want to see.
   –or–
   If your servers are ordered by name, type the first letters of the computer name you wish to select.
   –or–
   Use the arrow keys or mouse to select a server.
2. Press **Enter**.

Soft Switching

After you press **Print Screen** to initially open OSCAR, you can select servers without displaying OSCAR. This is called a soft switch.

To configure servers for selecting without displaying OSCAR:

1. Press **Print Screen** then **F2** to access the Advanced Menus screen.
2. Highlight *Setup - OSCAR* and press **Enter**.
3. For Delay Time, type the number of seconds of delay desired before the OSCAR Selection screen is displayed after **Print Screen** is pressed.
4. Press **Enter** and then **Escape** to exit OSCAR.

To select servers without displaying OSCAR:

To select another server, press **Print Screen**. If the display order of your server list is by port, type the port number and press **Enter**.
- or -
If the servers are in name order, type the first few letters of the name of the server and press **Enter**. If the selection is performed before the Delay Time has expired, OSCAR does not display.

Setting up OSCAR

All commands other than selecting servers are performed from the OSCAR Advanced Menus screen. The OSCAR Advanced Menus screen contains two lists: Commands and Setup. The Commands list displays a list of actions you can initiate. The Setup list displays a list of screens you can access to configure your system.

Advanced Menus Features List

Commands List	
Scan	Initiate the mode where the switch scans from port to port.
Version	Access the version information about your system.
Snapshot	Save the hardware settings in the event you need to restore them.
Reset	Reset the mouse and keyboard to restore correct settings.
Broadcast	Initiate simultaneous keyboard and mouse control over multiple servers.
Setup List	
Scan	Set up a custom scan pattern.
Names	Identify servers by unique names.
OSCAR	Configure OSCAR resolution, colors, launch Delay Time and server ordering.
Flag	Change the display, timing, color or location of the status flag.
Devices	Identify the device types attached to your switch, including servers and other switches.
Security	Set passwords to restrict server access and enable the screen saver.
Broadcast	Configure settings to control multiple servers simultaneously.

To access the Advanced Menus screen:

1. Press **Print Screen** then **F2** to access the Advanced Menus screen.
2. The OSCAR Advanced Menus screen appears displaying the Commands list. Highlight *Setup* to display the screen options available for configuring your switch.
3. Press the **Arrow** keys to move the highlight up or down to select a specific command or screen.

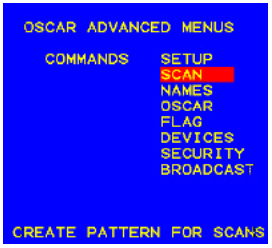


Figure 3.2: Advanced Menus Screen

Assigning Server Names

You can identify servers in a system by name rather than by port number. For example, in a network environment, you can assign the same names to each computer as those assigned by the network. To list the computers by name in the OSCAR Selection screen, see *Changing OSCAR Display Attributes* in this chapter.

To access the Port Name Setup screen:

1. Press **Print Screen** then **F2** to access the Advanced Menus screen.
2. Highlight *Setup - Names* and press **Enter**. The Port Name Setup screen appears.

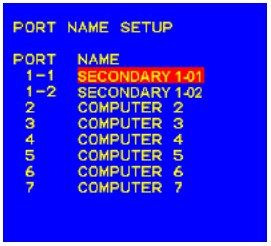


Figure 3.3: Port Name Setup Screen

To assign names to servers:

1. In the Advanced Menus screen, highlight *Setup - Names* and press **Enter**. The Port Name Setup screen appears.
2. Highlight the port number of the server you want to change.
3. Type a name for the server. Server names can be up to 12 characters long. Legal characters are: A-Z, Ø-9, the space and the dash (-) character.
4. Repeat steps 2 and 3 for each computer in the system you wish to name.
5. Press **Enter** to save the settings and exit the menu.

NOTE: Before you can assign names to servers attached to secondary switches, you must first make the primary switch aware of the secondary switch. See *Assigning Device Types* in *Chapter 4.*

Changing OSCAR Display Attributes

On the OSCAR Attributes screen, you can change the server display order to list alphabetically by name or numerically by port number. Other attributes, such as the launch Delay Time, position and color, can also be changed to suit your needs. Setting a display Delay Time for OSCAR allows you to complete a soft switch without OSCAR displaying. For more information, see Soft Switching in this chapter.

OSCAR Display Settings

To change…	Select…	Value
Size of screen	Resolution	Select 384 or 768. The lower the value, the larger the size.
Size of text	Height	Higher values display larger text.
Location of screen	Horizontal	Ø-127
	Vertical	Ø-255
Color of screen and text	Background	Ø-7
	Highlight	Ø-7
	Text	Ø-7
Timing of OSCAR	Delay Time	Time in seconds that the OSCAR Selection screen is delayed before appearing after **Print Screen** is pressed.

To access the OSCAR Attributes screen:

1. Press **Print Screen** then **F2** to access the Advanced Menus screen.
2. Highlight *Setup - OSCAR* and press **Enter**. The OSCAR Attributes screen appears.

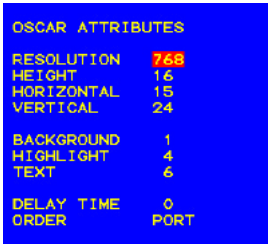


Figure 3.4: OSCAR Attributes Screen

To choose the server display order in the OSCAR Selection screen:

1. Highlight the *Order* option and use the **Plus** (**+**) or **Minus** (**–**) keys to obtain the desired value. Choose *Name* to display servers alphabetically by name or *Port* to display servers numerically by port number.
2. Press **Enter** to save the settings and exit the menu.

To set a Delay Time for OSCAR:

1. Highlight the Delay Time option and use the **Plus** (**+**) or **Minus** (**–**) keys to obtain the desired value.
2. Press **Enter** to save the settings and exit the menu.

To change the OSCAR display attributes:

1. Highlight the display setting you want to change. Use the **Plus** (**+**) or **Minus** (**–**) keys to obtain the desired value. As you select different values, the effect of the changes is reflected immediately on the display. The OSCAR Display Settings table describes each of the available display attributes.

NOTE: While changing OSCAR attributes, it is possible to scramble the screens, making it difficult to correct the problem. If this occurs, reset the switch to its default OSCAR values by pressing: **Escape + Escape + Print Screen + F10 + Y + Enter.**

2. Press **Enter** to save the settings and exit the menu.

Setting up a Scan Pattern

In scan mode, the switch automatically scans from port to port (server to server). You can scan the entire system sequentially or designate a custom scan pattern by specifying servers and durations.

To access the Scan screen:

1. Press **Print Screen** then **F2** to access the Advanced Menus screen.
2. Highlight *Setup - Scan* and press **Enter**. The Scan Pattern Setup screen appears.

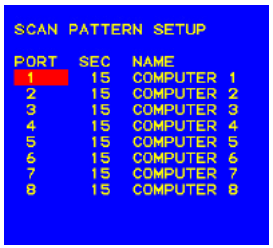


Figure 3.5: Scan Pattern Setup Screen

To scan all servers in the system:

1. In the Scan Pattern Setup screen, press **F10** to restore the defaults.
2. In the *Sec* column, type the number of seconds (from 1 to 256) of desired Delay Time before the scan moves to the next server in the sequence.
3. Move the cursor to the next line or press the **Down Arrow** and repeat step 2 for each server, then press **Enter**.
4. Highlight *Commands - Scan* to start the scan mode and press **Enter**.

To remove a server from the scan list:

1. In the Scan Pattern Setup screen, type the port number of the computer to be removed.
   –or–
   If your servers are listed by name, type the first few letters of the name of the server.
2. Highlight the *Sec* column and type **Ø** for the number of seconds.
3. Press **Delete** while in the Scan Pattern Setup screen to delete the highlighted computer and all entries below it.
4. Press **Enter** to save the settings and exit the menu. The new scan pattern replaces the standard or previous custom scan pattern.

To set up a custom scan pattern:

1. In the Scan Pattern Setup screen, type the port number of the first server to be included in the scan.
   – or–
   If your computers are listed by name, type the first few letters of the name of the first server to be included in the scan.
2. Highlight the *Sec* column, and then type the number of seconds you want this computer to be selected before switching to the next server in the sequence.
3. Repeat steps 1 and 2 for each of the remaining servers and press **Enter**. The new scan pattern replaces the standard or previous custom scan pattern.

To start the scan mode:

Highlight *Commands - Scan* in the Advanced Menus screen and press **Enter**.

To cancel scan mode:

Press any key (except **Print Screen**) or move the mouse; the scan stops at the currently selected computer.

Controlling the Status Flag

The status flag displays the name or port number of the currently selected server. You can choose to display the status flag at all times, for a few seconds after switching or not at all. You can also change the color of the status flag and its location on the screen.

Flag Appearance Settings

Setting	Values	Effect
Enabled	Flag Off	Flag does not appear.
	Ports On	Flag displays computer by port number.
	Names On	Flag displays computer by name.
	Ports Timed	Port number appears for five seconds after switching.
	Names Timed	Name appears for five seconds after switching.
Row	Ø-14	Position the flag vertically on the screen.
Column	Ø-25	Position the flag horizontally on the screen.
Color	Ø-7	Set the flag color.
Text	Ø-7	Set the flag text color.

To access the Flag Configuration screen:

1. Press **Print Screen** then **F2** to access the Advanced Menus screen.
2. Highlight *Setup - Flag* and press **Enter**. The Flag Configuration screen appears.

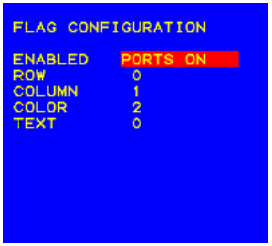


Figure 3.6: Flag Configuration Screen

To change the status flag display:

1. Highlight *Setup - Flag* in the Advanced Menus screen and press **Enter**. The Flag Configuration screen appears.
2. Highlight the settings you want to change and use the **Plus** (**+**) or **Minus** (**–**) keys to adjust the values. The Flag Appearance Settings table describes each of the available menu attributes.
3. Press **Enter** to save the settings and exit the menu.

Setting User Console Security

Use the Security Configuration screen to secure your user station. You can establish a screen saver mode that engages after your station remains inactive for a user-specified time. Once engaged, your station will remain locked until you press any key or move the mouse. You will then need to type in your password to log back in to the system.

To access the Security Configuration screen:

1. Press **Print Screen** then **F2** to access the Advanced Menus screen.
2. Highlight *Setup - Security* and press **Enter**. The Security screen appears.

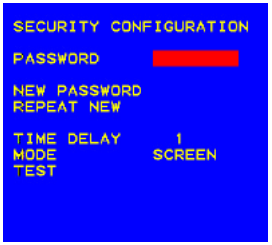


Figure 3.7: Security Screen

Security Configuration Settings

Setting	Action
Password	Enter current password to activate other fields.
New Password	Type a new password.
Repeat New	Retype new password to confirm it.
Time Delay	Before the screen saver starts, set a value from 1 to 254 minutes or select *Off*. If Time Delay is set to Off, the screen saver mode is disabled.
Mode	Energy: Use only with Energy Star-compliant monitors that go into lower-power mode when Time Delay has elapsed.
	Screen: Use with non-Energy Star-compliant monitors.
Test	Immediately activates screen-selected mode.

To set or change the user station password:

1. On the Advanced Menus screen, highlight the *Setup - Security* and press **Enter**. The Security Configuration screen appears.
2. If a password already exists, you must first type the current password.

NOTE: The default password is 0123456OSCAR. Because the **Caps Lock** key is disabled by default, you must hold down the **Shift** key as you type each upper case letter. Passwords can be up to 12 characters long and are not case sensitive. Legal characters are: A-Z, a-z, Ø-9 and (space).

3. Type the new password in the New Password line and press **Enter**.
4. Repeat the password in the Repeat New box and press **Enter**. The word Changed will appear in the Repeat New box. However, your password is not activated until you press **Enter** in either the Time Delay, Mode or Test fields even if you are not altering those settings.
5. Highlight *Time Delay* and use the **Plus** (**+**) or **Minus** (**–**) keys to select the number of minutes, from 1 to 254, before you want your screen saver

to engage. Select *Off* and press **Enter** to disable the screen saver.

6. Highlight *Mode* and select *Energy* if you are using an Energy Star-compliant monitor or *Screen* if your monitor is not of that type and then press **Enter**.

CAUTION: Monitor damage can result from use of energy mode with monitors that are not Energy Star-compliant.

7. (optional) Highlight *Test* and press **Enter** to test your settings. If Time Delay is not set to Off, the screen saver will engage. Press any key to exit the screen saver mode and type in your password to access your user station.

To log in to your user station:

1. Press any key on the keyboard or move your mouse. The Password screen appears. Type your password and then press **Enter**.
2. Press **Print Screen** to start OSCAR.

To remove password protection from your user station:

1. On the Advanced Menus screen, highlight *Setup - Security* and press **Enter**. The Security Configuration screen appears.
2. Type the current password and press **Enter**.
3. Press **Enter** in both the New Password and Repeat New boxes. Leave the boxes blank. The word Changed will appear in the Repeat New box.
4. Use the **Down Arrow** key to highlight either the Time Delay, Mode or Test fields and press **Enter** to activate the password change.
5. Password protection is now removed and your console will not be protected against unauthorized users.

NOTE: You must highlight and press **Enter** in either the Time Delay, Mode or Test fields after the word Changed appears or your password changes will not take effect.

To enable the screen saver mode with no password protection:

1. If you are in screen saver mode, press any key on your keyboard and then type your password if your console is password protected.
2. In the Advanced Menus screen, highlight the *Setup - Security* and press **Enter**. The Security Configuration screen appears.
3. Type the current password and press **Enter**.
4. Press **Enter** in both the New Password and Repeat New boxes. Leave the boxes blank.
5. Ensure that Time Delay is not set to Off. If it is, use the **Plus** (**+**) or **Minus**

(**–**) keys to select the number of minutes, from 1 to 254, before you want your screen saver to engage.

6. Use the **Down Arrow** key to highlight either the Time Delay, Mode or Test fields and press **Enter** to activate the password change.
7. After the screen saver mode engages, you can press any key on the keyboard to activate the user station.

NOTE: Activation of the screen saver mode disconnects the user from a server.

To exit the screen saver mode:

Press any key or move your mouse. The OSCAR Selection screen appears.

To turn off the screen saver:

1. If you are in screen saver mode, press any key on your keyboard and then type your password if your console is password protected.
2. In the Advanced Menus screen, highlight *Setup - Security* and press **Enter**. The Security Configuration screen appears.
3. Highlight *Time Delay* and use the **Plus** (**+**) or **Minus** (**–**) keys to select *Off*. Press **Enter**.

Broadcasting to Servers

Use the Broadcast Settings screen and Broadcast command to simultaneously control more than one server in a system. This feature is useful when you want to ensure that all selected servers receive identical input. For each server receiving the broadcast, you can choose to broadcast keystrokes and/or mouse movements independently. In a cascaded system, you can broadcast to any combination of servers in the entire system.

To access the Broadcast Settings screen:

1. Press **Print Screen** then **F2** to access the Advanced Menus screen.
2. Highlight *Setup - Broadcast*. and press **Enter**. The Broadcast Settings screen appears.

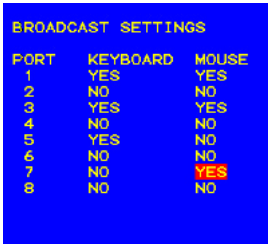


Figure 3.8: Broadcast Settings Screen

NOTE: Broadcasting Keystrokes - The keyboard state must be identical for all servers receiving a broadcast to interpret keystrokes identically. Specifically, the **Caps Lock** and **Num Lock** modes must be the same on all keyboards. While the switch attempts to send keystrokes to the selected servers simultaneously, some servers may inhibit and thereby delay the transmission.

NOTE: Broadcasting Mouse Movements - For the mouse to work accurately, all systems must have identical mouse drivers, desktops (such as identically placed icons) and video resolutions. In addition, the mouse must be in exactly the same place on all screens. Because these conditions are extremely difficult to achieve, broadcasting mouse movements to multiple systems may have unpredictable results.

To broadcast to selected servers:

1. Highlight *Setup - Broadcast* from the Advanced Menus screen and press **Enter**. The Broadcast Settings screen appears.
2. For each port, select which computers receive keyboard and/or mouse commands by using the **Plus** (**+**) or **Minus** (**–**) keys to choose *Yes* or *No*.
3. Press **Enter** to save the settings.
4. Highlight *Commands - Broadcast* in the Advanced Menus screen. Press **Enter** to turn on the broadcast mode. Type information and/or make mouse movements you want to broadcast.
5. To stop broadcasting, highlight *Commands - Broadcast* in the Advanced Menus screen and press **Enter**.

Using Snapshot

Snapshot saves the keyboard and mouse information of your powered up servers. The OutLook switch uses this information to initialize the keyboard and mouse interfaces of the servers. If power is turned off to the switch before you perform the Snapshot procedure, then you must restart each server to reestablish keyboard and mouse communication with the switch. Perform Snapshot after you install the switch system, add servers to the system or change the mouse or keyboard.

How Snapshot works with power outages

If you have performed Snapshot, once power is restored after a power outage, OutLook switches automatically restore the keyboard and mouse settings of each server. If you use an uninterrupted power supply, connect the switches to the same source as the rest of the system.

To save keyboard and mouse settings:

Highlight *Commands - Snapshot* in the Advanced Menus screen and press **Enter**.

Resetting your Keyboard and Mouse

If a keyboard or mouse locks up, you may be able to reestablish operation of these peripherals by issuing a reset command. The Reset command sends a hot-plug sequence to the server. The hot-plug sequence to a Plug and Play server causes the mouse and keyboard settings to be sent to the OutLook. With communication reestablished, functionality is restored to you.

To reset the mouse and keyboard values:

Highlight *Commands - Reset* in the Advanced Menus screen and press **Enter**.

NOTE: If you cannot access the Commands list to perform the reset procedure, press the Reset button on the back panel of the switch.

Displaying Version Information

Use the Version screen to display the firmware as well as keyboard and mouse information for the currently selected server. This information facilitates system troubleshooting and support. For optimum performance, keep your firmware current.

To display version information:

1. From the Commands list in the Advanced Menus screen, highlight Version and press **Enter**. The Version screen appears.
2. To display version information for an auxiliary device, press **F2**.
3. Press **Escape** to close the Version screen.

Sending the Print Screen Keystroke

The **Print Screen** key has many functions in the OSCAR environment. Refer to the chart below to properly access the feature you need.

Press Print Screen This Many Times	To Do This
OutLook switch as a stand-alone switch	
1	Open OSCAR.
2	Send the **Print Screen** keystroke to the currently selected device.
OutLook switch connected to another Avocent switch	
1	Open OSCAR at the primary switch.
2	Open OSCAR at the selected secondary switch.
3	Bring both OSCAR menus up on the monitor at the same time.
4	Send the **Print Screen** keystroke to the currently selected device.

4 Advanced Operations

Contents

Chapter 4: Advanced Operations

Assigning Device Types

If your system includes one or more secondary switches in a cascaded configuration, you must make the primary switch aware of the secondary switches by assigning a specific device type to the secondary switch.

Once you so this, the port numbering changes in the OSCAR Selection screen. In the example below, the ports on the secondary switch are listed as 1-1 and 1-2. The number before the hyphen indicates the primary switch port number that the secondary switch occupies. The number after the hyphen is the port number on the secondary switch for the server itself.

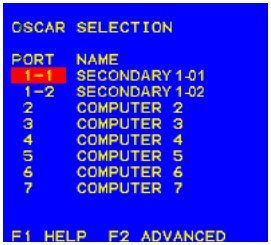


Figure 4.1: Port Numbering in a Cascaded System

To access the Devices screen:

1. Press **Print Screen** then **F2** to access the Advanced Menus screen.
2. Highlight *Setup - Devices* and press **Enter**. The Device Settings screen appears.

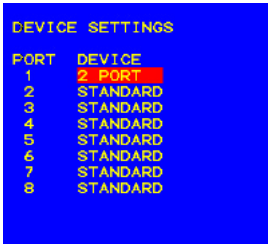


Figure 4.2: Devices Settings Screen

To assign a device type:

1. On the Advanced Menus screen, highlight the *Setup - Devices* and press **Enter**. The Device Settings screen appears.
2. Highlight the port and use the **Plus** (**+**) or **Minus** (**–**) keys to obtain the appropriate values. Choose one from the following:
   - Standard: If a server is attached (default setting).
   - Port number: If a secondary switch is attached, select the number of ports it has.
3. Repeat step 2 for each port you want to assign a device type.
4. Press **Enter** to save the settings and exit the menu.

Accessing OSCAR at a Secondary Switch

With cascaded configurations, you specify settings at the primary switch. All naming, scanning, status flag attributes, OSCAR attributes, device settings and passwords must be set at the primary switch.

You will access OSCAR at the secondary switch to set up broadcasting, add another level of security in cascaded configurations or use Snapshot to save the secondary mouse and keyboard settings. You will also access the secondary OSCAR for firmware version information or to reset the secondary mouse and keyboard.

To access OSCAR at a secondary switch:

1. Press **Print Screen**. The OSCAR Selection screen will appear.
2. Type the primary switch port number you want followed by a dash and the number of the port on the secondary unit. For example, to switch to the computer connected to Port 3 of a secondary unit connected to Port 1 of the primary, press **Print Screen** and then type **1-3.**
3. Press **Enter**.

Broadcasting to Cascaded Configurations

Broadcasting to a cascaded configuration requires special consideration at both the primary and secondary switches. Follow these step-by-step instructions to properly configure your system for cascaded broadcasting.

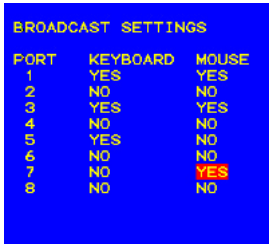


Figure 4.3: Broadcast Settings

To set up servers attached to secondary switches:

1. From the OSCAR Selection screen at the primary switch, highlight the port number of the secondary switch (for example, Port 1-1, 2-1, 3-1) to which you want to broadcast commands. Press **Enter**.
2. Press **Print Screen** twice; the OSCAR Selection screen of the secondary switch appears. Press **F2** to access the Advanced Menus screen.
3. Highlight *Setup - Broadcast*. Press **Enter** to access the Broadcast Settings menu.

4. For each port, select which computers receive keyboard and/or mouse commands by using the **Plus** (**+**) or **Minus** (**–**) keys to choose *Yes* or *No*.
5. Press **Enter** to save the settings.

To set up servers attached to primary switches:

1. Press **Print Screen** then **F2** to access the Advanced Menus screen.
2. Highlight *Setup - Broadcast* in the Advanced Menus at the primary switch and press **Enter**. The Broadcast Settings screen appears.
3. For each port, select which computers receive keyboard and/or mouse commands by using the **Plus** (**+**) or **Minus** (**–**) keys to choose *Yes* or *No*.
4. Press **Enter** to save the settings.

NOTE: Once you exit OSCAR, broadcasting is activated and any keystrokes or mouse movements will be active.

To begin broadcasting to a cascaded configuration:

1. Highlight *Commands - Broadcast* in the Advanced Menus screen at the primary switch. Press **Enter** to turn on the broadcast mode.
2. From the OSCAR Selection screen at the primary switch, highlight the port number of the secondary switch to which you want to broadcast commands. Press **Enter**.
3. Press **Print Screen** twice; then press **F2**. Highlight *Commands - Broadcast* in the Advanced Menus screen. Press **Enter** to turn on the broadcast mode on the secondary switch.
4. From a computer attached to the primary switch and connected to the secondary switch, type information and/or make mouse movements you want to broadcast.

To turn off broadcast mode for a cascaded configuration:

1. Highlight *Commands - Broadcast* in the Advanced Menus screen at the primary switch. Press **Enter** to turn off the broadcast mode.
2. From the OSCAR Selection screen at the primary switch, highlight the port number of the secondary switch to which you want to stop broadcasting commands. Press **Enter**.
3. Press **Print Screen** twice; then press **F2**. Highlight *Commands - Broadcast* in the Advanced Menus screen. Press **Enter** to turn off the broadcast mode on the secondary switch.

Appendices

Contents

Appendices

Appendix A: FLASH Upgrades

OutLook Firmware Upgrade Instructions

You can update the firmware of your OutLook switch by using a special update utility provided by Avocent. This utility automatically configures the port communications settings to allow direct downloading from the connected server.

To update your firmware you need the following items:

- Computer running Windows NT, Windows 95, Windows 98 or Windows 2000
- Available serial port (COM port) on the server
- Standard serial cable (DB-male) that connects the switch and the server
- Firmware update

To update firmware:

1. Connect the standard serial cable between the serial connector on the server and the serial connector on the back panel of the switch.
2. Navigate to the drive where you have saved the firmware update.
3. Double-click to open the WUpDate.exe file.
4. In the dialog box that displays, select the desired language and COM port.
5. Click *Load*, then click *Done*.
6. Once the firmware is updated, a completion message will appear.
7. The switch automatically reboots after the update is completed.

Possible error conditions

If the download does not execute properly, verify the following:

- Verify that the COM port is correct.
- Verify that no other program is currently using the COM port, or that a previous DOS window/shell is open that had used the desired COM port.
- Verify that no other copies of the WUpDATE utility are currently running.
- Verify that a straight through (1-to-1) type of serial cable is used, not a null modem serial cable.
- Verify in the selected COM port's Advanced Port settings that the FIFO buffers are selected and that the receive buffer is set to High.

WARNING: While upgrading, do not use your computer for anything else or switch between windows. Close all other windows if necessary. If the update was unsuccessful (such as during a power outage), repeat the procedure.

Appendix B: Technical Specifications

Product Specifications		
Dimensions		
Height	1.75 in	(4.5 cm)
Depth	8.0 in	(20.3 cm)
Width	17 in	(43.2 cm)
Weight – 8-Port	5.25 lbs	(2.38 kg)

Input Power Requirements	
Rated Voltage	100-240V AC
Rated Frequency	50-60 Hz
Rated Input Current	1A maximum

Temperature Range		
Maximum Ambient Operating	50° – 104° F	(10° – 50° C)
Ambient Storage and Shipping	-40° – 185° F	(-40° – 85° C)
Maximum Internal Rack	122° F	(50°C)

Relative Humidity	
Operating	20% – 80%
Non-operating	5% – 90%
Video Modes Supported	VGA, SVGA, XGA

Maximum Cable Lengths		
Console to switch	18 ft - If you need more than 18 feet, use LongView, Avocent's long-line driver	
Computer to switch	7 ft 12 ft 25 ft 50 ft	1600 x 1200 dpi @ 75Hz 1280 x 1024 dpi @ 70Hz 1024 x 768 dpi @ 65 Hz 800 x 600 dpi @ 60Hz
Switch to switch	25 ft	

Appendix C: Technical Support

Our Technical Support staff is ready to assist you with any installation or operating issues you encounter with your Avocent product. If an issue should develop, follow the steps below for the fastest possible service:

1. Check the pertinent section of the manual to see if the issue can be resolved by following the procedures outlined.
2. Check our web site at www.avocent.com/support to search the knowledge base or use the on-line service request.
3. Call Avocent Technical Support for assistance at (888) 793-8763. Visit the Avocent web site at http://www.avocent.com/support and highlight on *Getting Support* for current phone support hours.

Appendix D: Troubleshooting

VIDEO	
No OSCAR or video at server	
	Check for loose video cable connection or bad video cable.
	Confirm Devices, Names and Flag settings.
	Reset settings to default in these dialog boxes.
No OSCAR at primary switch	
	Reconnect the power cord to the switch.
	Replace the power cord.
	Check AC outlet for power.
	Check that the monitor is turned on.
	Check the control for brightness on the monitor.
	Replace the monitor.

MOUSE	
Mouse error on start up	
	Check for loose mouse cable connection.
	Check for PS/2 keyboard and mouse cable cross-connections.[1]
	Replace the mouse cable.
	Check the Internet for the latest firmware version of the mouse.
	If a mouse is connected to the serial port on the server, install the Serial-to-PS/2 mouse adaptor (Avocent part number ELC-11KM).
Mouse displays erratic behavior or pointer is frozen on display	
	Reset the mouse in OSCAR:[2] Highlight *Commands - Reset*.
	Reset the mouse by pressing the Reset button on the back panel of the switch.[2]
	Check the Internet for the latest firmware version of the mouse.

1 Some servers require restarting when the keyboard cable is disconnected from the server. For this reason, perform these tests when the server can be restarted.
2 Must have performed Snapshot in order for the reset function to work properly.

KEYBOARD
Console keyboard is not working or cannot start OSCAR
Ensure that Delay Time is off. Highlight *Setup - Menu,* Type **Ø** secs for Delay Time.
Check keyboard operation. See if the **Num Lock** and **Caps Lock** keys light.
Keyboard worked, but then stopped working with one server
Check for loose keyboard cable connection or bad keyboard cable.[1]
Check maximum length of the keyboard cable (maximum length = 12 feet).
Check maximum length of station cable extension.
Press the Reset button on the back panel of the switch to reset all keyboards and mouse devices on all servers (must have performed Snapshot).
Keyboard never worked on one server
Check for PS/2 keyboard and mouse cable cross connections.
Replace interconnecting keyboard cable.[1]
Disconnect and reconnect the interconnecting keyboard cable.[1]
Check length of the interconnecting keyboard cable (maximum length = 12 feet).
Check maximum length of station cable extension.
Replace the station keyboard.[1]
Keyboard signal never worked on all servers or stopped working with one server
Check for loose station keyboard cable.
Check maximum length of station cable extension (maximum length = 12 feet).
Replace the station keyboard.[1]
Press the Reset button on the back panel of the switch (must have performed Snapshot in order for reset function to work properly).
Check for loose interconnecting keyboard cables.
Keyboard error on startup
Check the Web for the latest firmware version of the keyboard.
Keystrokes shifted, swaps upper case for lower case
Server keyboard left in shifted state when last selected. Press both **Shift** keys to change keystrokes to lower case or upper case.
Keystrokes are not working properly
Check that keystrokes are not in locked mode. On the left side of the keyboard, press **Caps Lock+Shift+Control+Alt.**
On the right side of the keyboard, press **Alt+Control+Shift.**

[1]Some servers require restarting when the keyboard cable is disconnected from the server. For this reason, perform these tests when the server can be restarted.

STATUS SYMBOLS

No Plus (+) or (X) shows next to server number or name

Check for loose keyboard cable connection between server and switch.

Restart OSCAR: Press **Escape** to exit OSCAR. Then press **Print Screen**.

Plus (+) shows next to cascaded port

Disconnect and reconnect the keyboard cable at the same port number on the switch.

Replace keyboard cable.

(X) shows next to server number or name when Plus (+) is expected

PS/2 interconnecting cable from another switch is connected in error to the port. Disconnect the secondary switch and connect the server to the port.

(X) shows next to primary server when Plus (+) is expected

Confirm selection of the correct number of ports (4, 8, 10, 16) for the secondary switch in the Device Settings screen.

Confirm that all port settings are set to Standard if not connected to a secondary switch.

SWITCH BEHAVIORS

Switch selects servers at will

Ensure that scanning is off.

Same keystrokes or mouse movements display on one or more servers

Ensure that broadcasting is turned off.

Can only select Port 1 on a secondary switch (selecting Port 1-4 selects Port 1-1)

Ensure correct settings in the Device Settings screen at the primary switch. Confirm the selection of the correct number of ports (2, 4, 8, 10, 16) for the secondary switch.

Confirm that all port settings are set to Standard if connected to servers.

FIRMWARE UPDATES

Firmware does not download

Check for loose cable connections.

Replace serial cable.

Check that the serial cable is connected to the COM port on the server and to the serial port on the switch.

Download timed out

Confirm that the correct port was selected.

If another program is using the same port, quit the program.

If a serial cable is not installed, install one. If it is defective, replace it.

LIMITED WARRANTY

Avocent Corporation warrants to the original retail purchaser that this product is and will be free from defects in materials and workmanship for a period of 12 months from the date of purchase.

Additionally, all Avocent products carry an unconditional thirty-day satisfaction guarantee. If, for any reason, you are dissatisfied with the performance of this product, you may return it to the point of purchase for a refund of the purchase price (excluding shipping charges). This guarantee does not apply to special order products, and may not be available through all resellers. During the warranty period, purchaser must promptly call Avocent for a RETURN MATERIALS AUTHORIZATION (RMA) number. Make sure that the RMA number appears on the packing slip, proof of purchase, AND ON THE OUTSIDE OF EACH SHIPPING CARTON. Unauthorized returns or collect shipments will be refused.

Ship prepaid to: Avocent Corporation
4991 Corporate Drive
Huntsville, AL 35805 U.S.A.
Telephone: (256) 430-4000

The above limited warranty is voided by occurrence of any of the following events, upon which the product is provided as is, with all faults, and with all disclaimers of warranty identified below:

1. If non-Avocent approved cabling is attached to the unit. Poorly constructed and miswired cabling can diminish video quality and damage equipment. Avocent manufactured cabling is built to high quality standards utilizing overall braided shield to comply with FCC emission standards, and each cable is individually tested under load.
2. If defect or malfunction was caused by abuse, mishandling, unauthorized repair, or use other than intended.
3. If unauthorized modifications were made to product.
4. If unreported damages occurred in any shipment of the product.
5. If damages were due to or caused by equipment or software not provided by Avocent.
6. If the unit is used with non-grounded or incorrectly polarized AC power.
7. If the product is used in contradiction to any instruction provided by any User Guide or Instruction Sheet provided to you or with the product.
8. If the product is damaged due to power surges, water exposure or act of God including lightning.

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