



# IntraCore™ 3524 Series Gigabit Ethernet Switches

## Getting Started Guide

## Quick Start Guide

Follow these steps to install your IntraCore switch:

1. Open the box and check the contents. See *Chapter 1.1 Package Contents* for a complete list of the items included with your IntraCore switch.
2. Install the switch in an equipment or wall rack, or prepare it for desktop placement.
3. Connect the power supply.
4. Connect network devices to the switch.
5. Refer to the User's Manual on the accompanying CD-ROM for configuration and management capabilities.



For more information on installing the IntraCore 3524, please refer to *Chapter 2 Installation and Setup*.

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# 1 Introduction

## The IntraCore 3524 Series

Thank you for purchasing the Asanté IntraCore 3524 Series Gigabit switch. The IntraCore 3524 is a 24-port 10/100 managed switch with a variety of hardware and software options. Hardware expansion slots (two Type IC35) can accept a wide range of Gigabit and 10/100 Mbps media modules:

- 10/100/1000BaseT
- 1000BaseX GBIC
- 1000BaseSX
- 100BaseMMFX
- 100BaseSMFX

See the table below for a description of the 3524 series models that are available.

<b>Model</b>	<b>10/100 Ports</b>	<b>Optional Media Modules</b>	<b>Description</b>
<b>IC 3524 Base</b>	24	Two IC35 slots available	Managed 24-port 10/100 switch; base
<b>IC 3524-2T</b>	24	Two 10/100/1000 BaseT ports	Integrated copper Gigabit ports
<b>IC 3524-2G</b>	24	Two GBIC ports	Integrated Gigabit Ethernet Interface Converter (GBIC) ports

**Table 1-1—3524 Models**

The system can operate as a stand-alone network or be used in combination with other IntraCore series switches in the backbone.

## 1.1 Package Contents

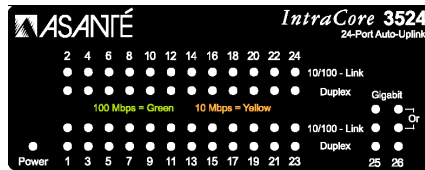
The following items are included in your package:

- Switch
- AC power cord
- Rack mount brackets with screws
- Rubber feet
- Reference Guide
- User's Manual (on CD-ROM)
- Getting Started Guide (this document)
- IntraCore 3524 CD-ROM

Contact your dealer immediately if any of these items are missing.

## 1.2 LEDs

The system's LED display allows you to monitor the status of your switch. See Tables 1-2 and 1-3 below for a complete LED description.



Port #	LED	Color	Description
N/A	Power/ System	Green	Power is on
		Off	Power is off
1-24 (10/100)	10/100 Link	Solid Green	A valid 100 Mbps link has been established
		Solid Amber	A valid 10Mbps has been established
		Off	No link has been established
1-24 (10/100)	Duplex	Solid Green	Full Duplex
		Solid Amber	Half Duplex

**Table 1-2—Ports 1-24 have two LEDs each**

Port #	LED	Color	Description
25,26	Gigabit (speed)	Solid Green	A valid 1000Mbps link has been established
		Off	No link has been established, or link is at 10/100Mbps rate
25,26	10/100 Link	Solid Green	A valid 100Mbps link has been established
		Solid Amber	A valid 10Mbps link has been established
		Off	No 10/100 link has been established
25,26	Duplex	Solid Green	Full Duplex
		Solid Amber	Half Duplex

**Table 1-3—Ports 25 & 26 have 3 LEDs each**

### 1.3 Front Panel Description

From left to right, the front panel contains the following: Power and port LEDs; 24 10/100 ports; 2 optional module slots; and a console port.



Front Panel IC 3524 Base

The switch is field upgradeable for use with 1000BaseSX, 1000BaseX GBIC or 10/100/1000BaseT modules.



Optional modules for the IC 3524

## 2 Installation and Setup

This chapter explains how to install and connect the switch to your network. To configure the switch for management, refer to the User's Manual on the CD-ROM.

The following guidelines will help you prepare to install the switch in such a way that it has the proper power supply and environment.

### 2.1 Safety Overview

The following information provides safety guidelines to ensure your safety and to protect the switch from damage.

**Note:** Be aware, however, that this information is intended as a guideline, and may not include every possible hazard to which you may be exposed. Use caution when installing this switch.

- Only trained and qualified personnel should be allowed to install or replace this equipment.
- Always use caution when lifting heavy equipment
- Keep the chassis clean
- Keep tools and chassis components off the floor and away from foot traffic
- Avoid wearing rings or chains (or other jewelry) that could get caught in the chassis. Metal objects can heat up and cause serious injury to persons and damage to the equipment. Avoid wearing loose clothing, i.e. ties or sleeves

When working with electricity, follow these guidelines:



- Before accessing the interior of the chassis, locate the emergency power-off switch for the room you are in
- Disconnect all external cables before installing or removing a chassis
- Do not work alone when working with electricity
- Always check that the power has been disconnected from the circuit

- Do not tamper with the internal components of your switch. This could void your warranty
- Examine your work area for potential hazards (i.e. wet floors, ungrounded cables, etc.) and eliminate them before installing your switch

For more safety information, please refer to the User's Manual.

## 2.2 Recommended Installation Tools

You will need the following tools and equipment (not included) to install the switch:



- Number 1 Phillips screwdriver
- Number 2 Phillips screwdriver
- 3/16-inch flat-blade screwdriver
- Antistatic mat or foam
- An ESD grounding strap

## 2.3 Power Requirements

The electrical outlet should be located near the switch and be easily accessible. It must also be properly grounded.

Make sure the power source adheres to the following guidelines:

- Power: Auto Switching 110/240 VAC
- Frequency range: 50/60 Hz
- Maximum input AC Current: 1.0A at 115 VAC full load

## 2.4 Environmental Requirements

The switch must be installed in a clean, dry, dust-free area with adequate air circulation to maintain the following environmental limits:

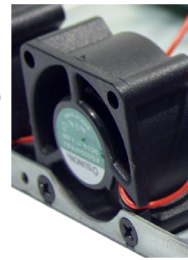
- Operating Temperature: 0° to 40° C (32° to 104° F)
- Storage Temperature: -20° to 70° C (-4° to 158° F)
- Relative Humidity: 10% to 90% relative humidity
- Storage Relative Humidity: 10% to 95% relative humidity

Failure to observe these limits may cause damage to the switch and void the warranty.

Avoid direct sunlight, heat sources, or areas with high levels of electromagnetic interference.

## 2.5 Cooling and Airflow

The switch uses internal fans for air cooling. Do not restrict air flow by covering or obstructing air vents on the sides of the switch.



## 2.6 Installation Overview

Follow these steps to install the switch:

1. Open the box and check the contents. See *Chapter 1.1 Package Contents* for a complete list of the items included with your purchase.
2. Install the IntraCore switch chassis in an equipment rack or wall rack, or prepare it for desktop placement.
3. Connect the power supply.
4. Connect network devices to the switch.
5. Refer to the user's manual on the CD-ROM for configuring the switch for management capabilities.

## 2.7 Chassis Installation/Placement

The switch can be installed in a standard 19-inch equipment rack. It can also be placed on a stable horizontal surface.

**Note:** The equipment rack or desk on which you install the switch *must* be secure and stable. Equipment racks must be fastened to the floor; desks must be resting on a flat, stable surface. Refer to Chapter 2.4 for the environmental requirements of the switch.

### 2.7.1 Installation in an Equipment Rack

To install the unit in an equipment rack, use the following procedure:

**Important!** Before continuing, disconnect all cables from the switch.

To mount the switch onto an equipment rack:

1. Place the switch on a flat, stable surface.
2. Locate a rack-mounting bracket (supplied) and place it over the mounting holes on one side of the unit.
3. Use the screws (supplied) to secure the bracket (with a Phillips screwdriver).
4. Repeat the two previous steps on the other side of the unit.
5. Place the switch in the equipment rack.
6. Secure the switch by securing its mounting brackets onto the equipment rack.



**Important!** Make sure the unit is supported until all of the mounting screws for each bracket are secured to the equipment rack. Failure to do so could cause the unit to fall, which may result in personal injury or damage to the unit.

### 2.7.2 Equipment Rack Guidelines

- Size: 423 x 245 x 43 mm  
(17.25 x 10.0 x 1.7 inches)
- Ventilation: Ensure that the rack is installed in a room where the temperature remains below 40° C (104° F). Be sure that there are no obstructions, such as other equipment or cables, blocking airflow to or from the vents.
- Clearance: In addition to providing clearance for ventilation, ensure that there is adequate clearance for servicing the switch from the front.

### 2.7.3 Free-Standing/Desktop Placement

The switch has rubber feet for the bottom of the case that allow for secure, freestanding placement of the unit.

Follow the steps below for free-standing/desktop placement:

1. Attach the rubber pads (supplied) to the bottom of each corner of the unit.

2. Place the unit on a flat surface with a minimum area of 434.3 mm x 342.9 mm (17.1" x 13.5") and support capacity of 10 kg (22 lbs ).
3. Make sure there is enough ventilation space between the switch and surrounding walls or objects.

## 2.8 Installing GBIC Interfaces

Instructions for installing, removing, and maintaining GBIC interfaces are provided in this section.

### 2.8.1 Installing a GBIC

**Note:** GBICs are hot-swappable. This means that they can be inserted and removed while the unit is powered on.

1. Remove the GBIC from its protective packaging.
2. Grip the sides of the GBIC with your thumb and forefinger, then insert the GBIC into the slot on the face of the Gigabit Ethernet module.
3. Slide the GBIC into the slot until you hear or feel a click. The click indicates that the GBIC is locked into the slot.
4. Connect your network cable.



### 2.8.2 Removing a GBIC

Follow the steps below to remove a GBIC interface from a Gigabit Ethernet module:

**Note:** Copper GBIC modules run hot under normal operating conditions. Remove with care and place on a heat-resistant surface and allow to cool before handling.

1. Disconnect the network cable from the GBIC connector.
2. Release the GBIC from the slot by simultaneously squeezing the locking tabs on both sides of the GBIC.
3. Slide the GBIC out of the slot.
4. Store your GBIC in its protective packaging.

### 2.8.3 GBIC Care and Handling

Follow these GBIC maintenance guidelines:

- Unnecessary removal and insertion of a GBIC can lead to its premature failure. A GBIC connector has a lifetime of 100 to 500 removals/insertions
- GBICs are static-sensitive. To prevent ESD damage, follow your normal board and component handling procedures
- GBICs are dust-sensitive. When the GBIC is stored or when a fiber-optic cable is not plugged in, always keep plugs in the GBIC optical bores
- Use an alcohol swab or Kim-Wipe to clean the ferrules of the optical connector. The most common source of contaminants in the optical bores is debris picked up from the optical connectors

## 2.9 Installing Optional Hardware Modules

Follow the steps below to install your media modules (10/100/1000BaseT, 1000BaseX GBIC, 1000BaseSX or 100BaseFX):

1. Using a flat-bladed screwdriver (not included), remove the slot cover plate from the switch.
2. Touch a grounded, metal object to discharge any static electricity on your body, and then remove the module from its protective packaging (being careful not to touch any board components or connectors).
3. Slide the module firmly into the module slot until it has clicked into place. The module's faceplate should be aligned with the front panel of the switch.
4. Replace the screws to secure the module, being careful not to overtighten the screws.
5. Connect network cables to the module port.
6. Reset the switch.

For more detailed information on your media modules, refer to the User's Manual on the CD-ROM.

## 2.10 Connecting Power

Use the following procedure to connect power to the switch:

**Important!** Carefully review the power requirements (Chapter 2.3) before connecting power to the unit.

1. Plug one end of the supplied power cord into the power connector on the back of the unit.
2. Plug the other end into a grounded AC outlet. The Power LED will begin its initialization process.

The front panel LEDs blink and the Power LED illuminates when it has initialized. The switch is ready for connection to the network.

**Important:** If the power does not come on, refer to Appendix A: Troubleshooting.

## 2.11 Connecting to the Network

The switch may be connected to an Ethernet network with the unit powered on or off. Use the following procedure to make your network connections:

1. Connect network devices to the switch, following the cable guidelines outlined below.
2. After the unit is connected to the network, it can be configured for management capabilities. Please refer to the User's Manual on the CD-ROM for instructions on how to set up the management features of the switch.

### 2.11.1 10/100BaseTX Ports Cabling Procedures

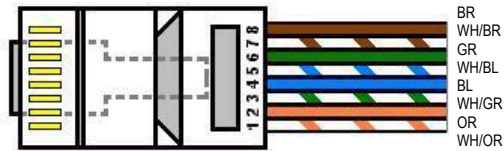
The 24 10/100 ports on the switch allow for the connection of 10BaseT or 100BaseTX network devices. The ports are compatible with IEEE 802.3 and 802.3u standards.



**Important:** The switch must be located within 100 meters of its attached 10BaseT or 100BaseTX devices.

**Note:** There is no uplink port on this switch. All 10/100 ports on this switch are auto-sensing MDI/MDI-X. This advanced feature means that the 10/100 ports will automatically determine whether the device at the other end of the link is a hub, switch or workstation, and adjust its signals accordingly.

Although 10BaseT requires only pins 1, 2, 3 and 6, Asanté strongly recommends cables with all 8 wires connected as follows:



1000BaseTX requires that all four pairs (8 wires) be connected correctly. Table 2-1 shows the correct pairing of all eight wires.

Pin Number	Pair Number & Wire Colors
1	2 White/Orange
2	2 Orange/White
3	3 White/ Green
4	1 Blue/White
5	1 White/Blue
6	3 Green/White
7	4 White/Brown
8	4 Brown/White

**Table 2-1**

### 2.11.2 Gigabit Ethernet Ports Cabling Procedures

Cabling requirements for the Gigabit Ethernet modules depend on the type of GBIC interface that has been installed. Use the following guidelines to determine the cabling requirements for your GBIC:

- 1000BaseSX GBIC: Cables with SC-type fiber connectors; 62.5-micron multimode fiber (MMF) media up to 275 meters (902 feet) long, or 50-micron MMF media up to 550 meters (1805 feet) long
- 1000BaseLX GBIC: Cables with SC-type fiber connectors; 10-micron single mode fiber media up to 5 kilometers (16,405 feet) long
- 1000BaseLX Long Haul GBIC: Cables with SC-type fiber connectors; 10-micron single mode fiber media up to 100 kilometers (328,100 feet) long
- 1000BaseT: Category 5 or better Unshielded Twisted Pair (UTP) cable to a distance of 100 meters (328.1 feet)

### 2.12 Using the Stacking Feature

The 3524 v.1.1 offers a stacking feature that allows the user to stack up to eight units, all sharing one IP address of the master switch (unit #1). This is an efficient and cost-effective way to add ports as needed. The following lists the characteristics of stacking that the user needs to be aware of:

- Uses any physical media supported by IC 3524: copper or fiber, Fast Ethernet or Gigabit Ethernet (see the stacking kit {sold separately} shown below); or a special, cost-effective Stacking Kit (available Q2-02, not shown)



**Stacking Kit**

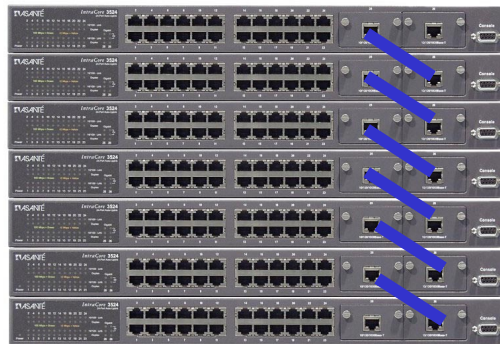
- All stacked units are managed through connection to the master switch, via console, telnet or web interfaces

**Note:** While the user may manage the stack via console, telnet or web interface, the initial formation of the stack may only be done by connection to a console.

- The switches need no extra software, but they must all have the 1.1 firmware installed (see Chapter 3.14 in the User's Manual for firmware upgrade instructions)

Follow the steps below to install (build) a stack:

1. Physically stack the units, in an equipment rack, or on a flat, stable surface (Asanté recommends that the stack is formed from the bottom up for ease of adding additional units).
2. Units are connected via the Gigabit ports (see section 2.4). Starting with the first unit in the stack (the bottom unit, in the photo below), connect the Ethernet cable from Gigabit port #26 to the Gigabit port #25 of the next unit and continue the connections to the last unit in the stack. The result is a stack with  $n$  x 24 10/100 ports and 2 Gigabit ports, where  $n$  is the number of units in the stack (up to eight).



3. For stacking operation, the stacking feature must first be enabled on each unit (by default, stacking is disabled). Establish a

console connection to the first unit. Type **k** in the Configuration Menu to access the Stacking Management menu, shown below. Type **t** to toggle the switch from “disabled” to “enabled”. Repeat for all remaining units.

```
IntraCore 3524 Configuration Menu

<Cmd>      <Description>
a          System Administration Configuration
i          System IP Configuration
b          Bootstrap Configuration
n          SNMP Configuration
p          Port Configuration
s          Spanning Tree Configuration
d          Unicast Forwarding Database Configuration
t          Security Management
v          VLAN Management
c          IP Multicast Traffic Management
m          Port Mirroring Configuration
f          File Up/Downloading Configuration
k          Stack management
r          System Reset Options
l          System Log
u          User Interface Configuration
y          System Utility
q          Return to previous menu

Command>
```

```
IntraCore 3524 Stack Management Configuration Menu

Stacking : ENABLED
Stacking Operation (1 of 8)
Stack IP  : xxx.xxx.xxx.xxx
Stack MAC : 00:00:94:CC:C7:6D

<Cmd>      <Description>
s          Stacking Multiple Modules
d          Stand Alone Operation
t          Toggle Stacking Enable/Disable
q          Return to previous menu

Command>
```

4. After all units have had stacking enabled, connect the console to the first unit (the Master unit).
5. Power cycle the whole stack, or, if the units are to be powered up separately, power the Master last.
6. Go to the Master's Stack Management menu and type **s** to begin the automatic formation of the stack.
7. After the stack is formed, configuration and operation of the stack can begin (see the User's Manual for information on configuring the switch(es) for operation.).

## Appendix A Troubleshooting

In the unlikely event your network does not operate properly, follow the troubleshooting tips below:

1. **CHECK YOUR POWER CONNECTION.** Is the Power LED on? If not, plug the power cord into another known working AC outlet.
2. **CHECK YOUR NETWORK CABLES.** Are the LINK LEDs on? If not, check the cable connections. Are the connectors seated correctly in each port? Make sure that the correct type of cable is connected to each port.
3. **CHECK YOUR GBIC CONNECTOR.** Are the cables inserted correctly? The receiving and transmitting plugs must be inserted into their respective receptacles correctly in order to establish a link.
4. **CHECK YOUR HARDWARE MODULES.** Make sure that they are properly installed, and sit flush against the switch.

See the Troubleshooting section of the User's Manual for more detailed information.



## **Appendix B Safety and Regulatory Compliance**

### **FCC Compliance Statement**

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 their own expense.

### **Safety Advisory**

1. This product should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
2. Do not allow anything to rest on the power cord. Do not locate this product where people will walk on the cord.
3. Never push objects of any kind into this product through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.
4. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage points or other risks. Refer all servicing to service personnel.



## Appendix C Features and Specifications

The IntraCore 3524 Series is Asanté's most powerful, flexible work-group switch. See the User's Manual for detailed specifications.

### Features

- Two IC35 option slots for configuring Gigabit Ethernet (copper or fiber) or Fast Ethernet (fiber) ports
- Asanté Auto-Uplink™ on all 10/100 and 10/100/1000BaseT ports (auto MDI/MDI-X)
- 6.4 Gbps no-blocking bandwidth with wire speed forwarding (9.523 M packets per second)
- 8K MAC addresses with hardware-based aging
- 64 VLANs
- IP Multicast with IGMP snooping
- 4 priority queues per port
- Front-mounted DB-9 serial (console) port (see Appendix D)

### Specifications

#### Physical Dimensions

440 x 253 x 43 mm (W x D x H)  
17.32 x 9.96 x 1.7 inches

#### Environmental

Operating temperature: 0 to 40° C (32 to 104° F)  
Storage temperature: -20 to 70° C (-4 to 158° F)  
Operating Humidity: 10 to 90% RH  
Storage Humidity: 10 to 95% RH

#### Power Supply

100-240VAC/50-60 Hz universal input

#### Safety and Emission

FCC Class A, CE Class A, TUV, UL and CUL certified



## Appendix D Serial Port Pin Outs

The console port is used to connect with a terminal using a DB-9 female connector. The setting is 9600-N81. See the table below for a list of pin outs.

Pin Number	Signal	Name
1	CD	Carrier Detect
2	RD	Receive Data
3	TD	Transmit Data
4	DTR	Data Terminal Ready
5	SG	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CD	Carrier Detect
9	RI	Ring Indicator



## Appendix E Warranty and Support

The IntraCore switch is covered by Asanté's 3-year IntraCare™ product warranty and advanced technical support. An additional 2 year warranty is available through AsantéCare™. See the User's Manual for more detailed information.

If your switch is still not operating properly, contact Asanté Technologies, Inc. Technical Support (801-566-8991). Before you contact Technical Support, however, please register your switch online at [www.asante.com/support/registration.html](http://www.asante.com/support/registration.html). By doing so, you'll be entitled to special offers, up-to-date information and important product bulletins.







**IntraCore 3524 Series Gigabit Ethernet Switches**  
Getting Started Guide

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P/N 06-00618-00 Rev. C