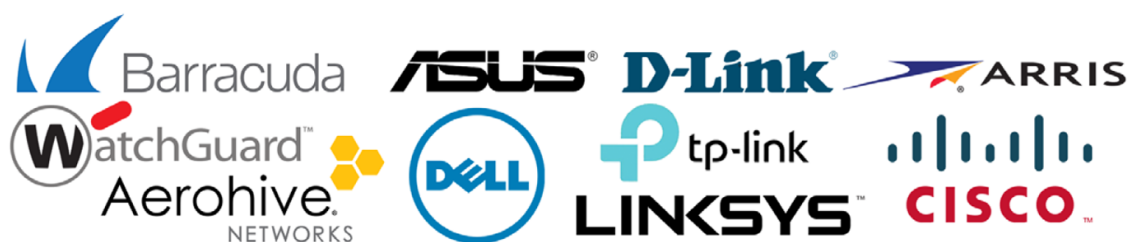# Configuration for Dual-WAN Routers
6300-CX

Configuration for Dual-WAN Routers

Overview

The Accelerated 6300-CX LTE Router provides a reliable, high-speed cellular connection that is compatible with existing wireline infrastructure. While its 4G LTE speeds are capable of operating as a primary WAN uplink, the 6300-CX can also be configured as a backup. This network redundancy solution delivers the ultimate flexibility to minimize expenses when it comes time for upgrading equipment to the latest wireless standards.

Business continuity depends on the seamless integration of failover-connectivity solutions to prevent service interruptions. Now more than ever, contingency networks play a strategic role in sustaining business operations. Unplanned outages can cost companies significant time and money, frustrating employees and clients alike, which creates a negative perception that is difficult to overcome.

Cellular data (4G LTE) bypasses wireline Internet service providers (ISPs) to facilitate the best redundancy possible. Additionally, in some situations it may be a challenge to acquire access to wired circuits or an event may call for temporary online access. Accelerated Concepts extensively tests the 6300-CX LTE Router to ensure its interoperability with a wide variety of security appliances, including equipment produced by SonicWall, Edgewater, Meraki, Fortinet, and others to best accommodate enterprise networks. Pairing the Accelerated 6300-CX with a dedicated firewall offers comprehensive security and flexibility for small business, retail, government, remote sites, and branch offices.

Interoperability Matrix

This section covers interoperability information of the hardware tested for this solution. It includes the firmware versions of both devices as well as the date of testing.

Date	6300-CX Firmware
12/2016	16.11.142

Caveats

The delivery of wireless services varies depending on the carrier and may lead to differences in the area of coverage, type of service (3G, 4G, LTE, etc.), available bandwidth, and IP address designation (Private or Public) among other factors. The interoperability test designed for this solution guide included LTE service, maximum coverage availability, and a public IP address assigned to each device.

Using the 6300-CX as a secondary uplink requires dual WAN ports on the appliance to which it provides connectivity. Therefore, the service described herein assumes the following:

- Two available WAN ports (primary and secondary interfaces)
- Administrative access to the dual-WAN device's local GUI

Some networking appliances have interfaces that can be used as either WAN or LAN ports depending on how they're currently configured. If this is the case, please consult the documentation included with the firewall or router for step-by-step guidance before referencing the configuration notes included in this document.

NOTE: If additional LAN ports are necessary for practical use, a switch can be introduced without requiring additional configuration. Connect the switch to an available LAN port and proceed with the processes described herein.

Accelerated 6300-CX LTE Router Setup

Initial Setup

Affix both antennas to the router and insert an activated SIM card before deploying the device. Be sure to select a location with optimal signal strength. For detailed instruction, refer to the tables that follow. Subsequent sections will outline site selection, powering options, and other device functionality.

Step-by-Step Guidance: Initial Setup

1. Insert the activated 2FF SIM card provided by your cellular network operator (putting the cut corner in first with metal contacts facing down). The card clicks into place when completely inserted.
2. Attach the two included antennas; both should be installed for optimal operation. Do this by gripping the metal connector section with your thumb and forefinger, tightening until secure. Do not tighten the antenna by holding any part of the plastic antenna housing.
3. To determine the optimal location for the 6300-CX, please see the "Site Survey" section.
4. Refer to the section(s) for Remote or Direct Power Installations when ready to connect the 6300-CX to the permanent power supply unit.

5. The 6300-CX uses DHCP with IP passthrough by default, which satisfies the setup requirements for most environments. If required, please use Accelerated View™ or the 6300-CX local GUI to configure the 6300-CX for router mode.
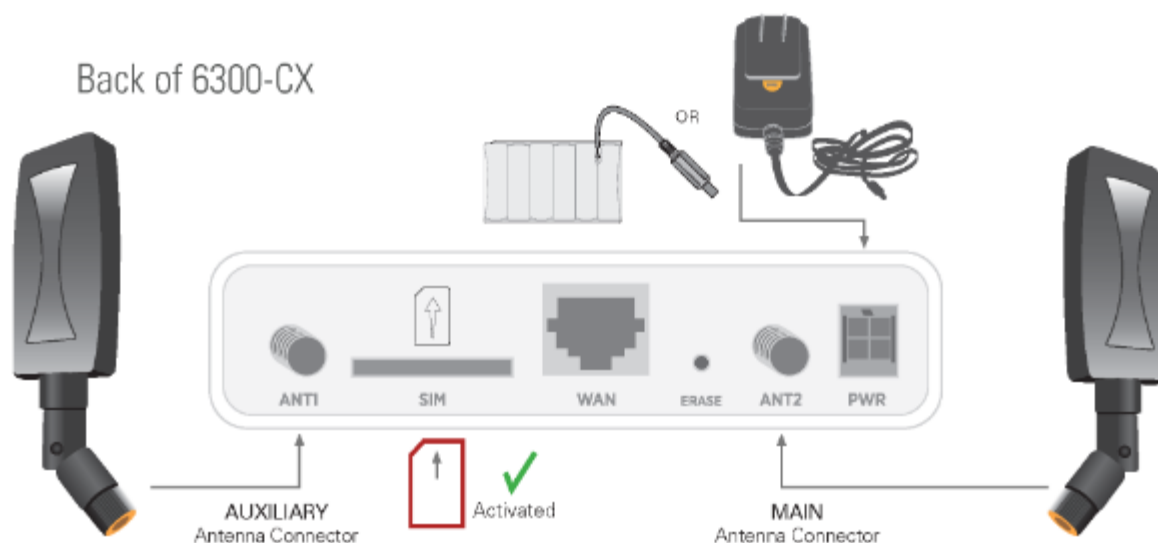
Site Survey

If you are unsure of the available cellular signal strength, or are choosing between several locations, please follow the instructions to identify the ideal installation site.

Step-by-Step Guidance: Site Survey

1. After following steps 1 and 2 in the "Initial Setup" section, connect the battery pack to temporarily power the Accelerated 6300-CX. The charge lasts two to four hours – it is not rechargeable and should be properly disposed of after use.
2. Move the 6300-CX to different locations within your site to determine the best compromise between signal strength and installation constraints. Since cellular signal strength may fluctuate, it is important to **wait at each location for 1 minute while observing the signal strength indicator on the front of the device.** Minimum cellular signal strength for operation is 2 bars (3+ is preferred).
3. After determining the optimal location, remove the battery pack and connect the main power supply unit or Ethernet cable connected to the PoE injector (per the power option outlined below).
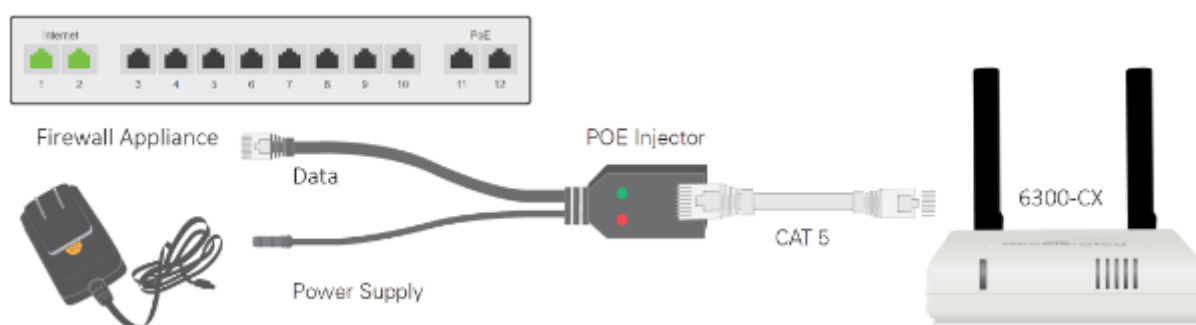
Remote Power Installation – Power Option #1

The included Power-over-Ethernet (PoE) injector allows the device to be positioned away from power outlets to simplify its installation needs. The adaptor consolidates the DC power and Ethernet connections so that both can be

run to the 6300-CX via a single Ethernet cable. Distances of 300 ft have been tested on CAT6 and 250 ft on CAT5e. Note that cable conditions and the number of splices will impact actual distance.

Step-by-Step Guidance: Remote Power Installation

1. Plug the 6300-CX's power supply unit (PSU) into an AC power outlet.
2. Connect the end of the PSU into the DC input (4 pin connector) of the PoE injector.
3. Insert the male RJ45 connector of the PoE injector cable into the SonicWall.
4. Connect an Ethernet cable from the RJ45 socket on the PoE injector cable to the Ethernet port of the 6300-CX. (See diagram.)

Direct Power Installation – Power Option #2

If you plan to collocate the 6300-CX with the MX device, you can directly power the 6300-CX without the PoE cable.

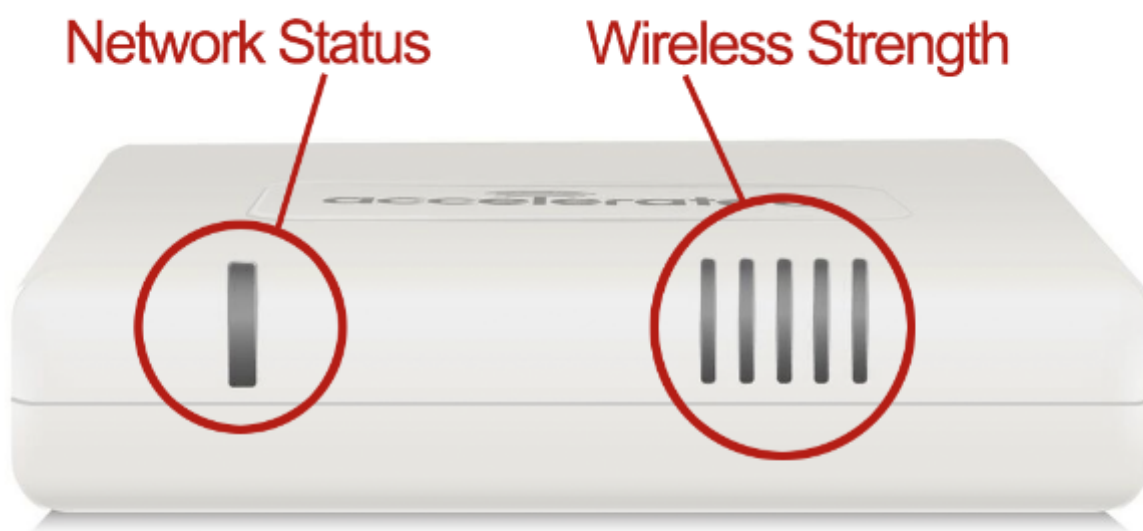## Step-by-Step Guidance: Direct Power Installation

1. Use an Ethernet cable to connect the 6300-CX to the security appliance using port Internet 1 (to use the cellular network as the primary connection) or port Internet 2 (to configure a failover).
2. Plug the 6300-CX power supply unit (PSU) into an AC power outlet.
3. Connect the PSU into the 4-pin power connector of the 6300-CX. (See diagram.)

CAT 5

Firewall Appliance   6300-CX   Power supply unit
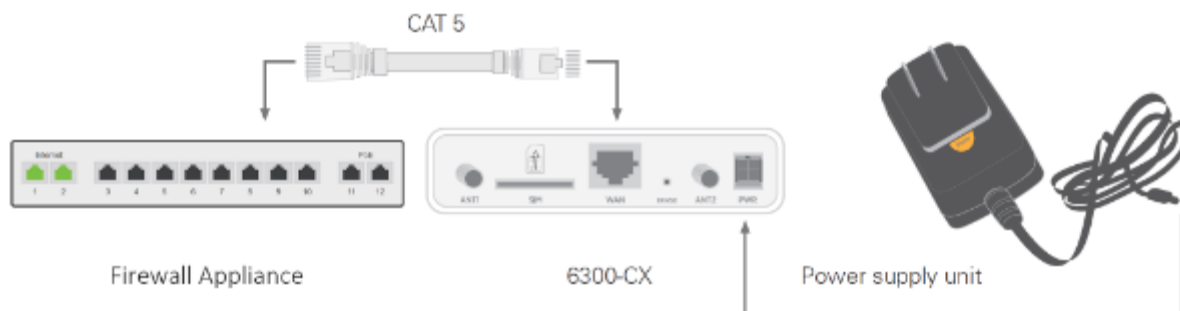
Understanding the 6300-CX LEDs

Once power has been established, your device will initialize and attempt to connect to the network. Device initialization may take 30-60 seconds. Indicator lights on the **Wireless Strength Indicator** show you the cellular network signal strength. The **Network Status Light** on the front left of the device displays connectivity information.

Please visit accelerated.com for additional information and troubleshooting tips.

Network Status   Wireless Strength

Network Status LED

	Solid Yellow Initializing or starting up.		Solid Green Connected to 2G or 3G and also has an Ethernet connection.

Solid Yellow
Initializing or starting up.

Flashing Yellow
In the process of connecting to the cellular network and to a device on its Ethernet port.

Flashing White
Has an Ethernet connection and is in the process of connecting to the cellular network.

Flashing Green
Connected to 2G or 3G and is in the process of connecting to a device on its Ethernet port (or nothing is connected to the port).

Solid Green
Connected to 2G or 3G and also has an Ethernet connection.

Flashing Blue
Connected to 4G LTE and in the process of connecting to a device on its Ethernet port.

Solid Blue
Connected to 4G LTE and also has an Ethernet connection.

Alternating Red/ Yellow
Upgrading firmware. **WARNING: DO NOT POWER OFF DURING FIRMWARE UPGRADE.**

Wireless Strength LEDs

Signal Bars	Weighted dBm	Signal Strength %	Quality
	-113 to -99	0 - 23%	Bad
	-98 to -87	24 - 42%	Marginal
	-86 to -76	43 - 61%	OK
	-75 to -64	62 - 80%	Good
	-63 to -51	81 - 100%	Excellent

Router Configuration with the Accelerated 6300-CX

Dual-WAN Configuration

Before designating the primary and secondary Internet connections, first identify the available ports on the dual-WAN appliance's back panel. While most modern devices support multiple WAN interfaces, not all equipment contains a separate grouping specifically for WAN uplinks. Should this be the case, and there is no distinct labeling to differentiate between ports for Ethernet (LAN) and Internet (WAN), the best practice is best to start with the lowest available port (usually either 0 or 1 unless otherwise specified) for the primary uplink and to use its adjacent port for the secondary connection. Follow the same rule of thumb if the firewall features dedicated WAN interfaces, starting with the first port for the primary WAN before assigning the secondary line.

Network devices typically feature a local (or web) GUI to handle configuration settings. More often than not, this administration portal is accessed by navigating to the device's IP address using a web browser. Administration portals may vary greatly, depending on the make and model of the appliance in question, though the overall process remains the same: enable (or confirm) multiple WAN support and establish failover prioritization. Additional settings will likely be available to offer further control over how the two interfaces cooperate, such as automatic failback/ reversion, load balancing, and traffic-shaping rules or exceptions. Please refer to the proprietary documentation included with the device for an in-depth walkthrough of its local GUI/ admin portal.

In most dual-WAN scenarios, the connection supplied by the 6300-CX is best leveraged as the backup WAN interface. Its embedded cellular modem allows network administrators to run an LTE backup via an Ethernet cable as opposed to a USB solution, which preserves the full security functionality of most firewalls. (DPI-SSL inspection, for example, is not guaranteed when failover connectivity is provided by a USB-connected modem.) It is important to note that IP Passthrough must be enabled on the 6300, which is the device's default setting, to ensure that the dedicated firewall or router is able to properly control how Internet traffic is being routed. This configuration and other administrative settings can be handled remotely by logging into Accelerated View™, a centralized system for network administration that allows for web-based monitoring, management, reporting, and alerts on all Accelerated devices.

NOTE: When integrating cellular failover into existing infrastructure, it is critical to consider all factors in play. Business continuity solutions must be as reliable as they are cost-effective to mitigate the impact of network outages. Firewalls and similar appliances have many supplemental features that allow for advanced control over how data flows between the two WAN connections, but the nature of mobile data plans may not be conducive toward enabling all of these settings. Load balancing, for instance, would consume additional data so it is important to stay aware of

any data caps or limitations (or at least assess the cost of exceeding them). Similarly, customizing the parameters for failback the process of switching back to the primary WAN once its connectivity is restored can optimize dual-WAN configurations by actively checking the status of both uplinks, minimizing the data usage and response time for failover while maximizing continuity. Please refer to your cellular or internet service provider for additional information about available data plans.

6300-CX Quick List

1. Place LTE router for optimal signal strength

2. Connect Ethernet cable to available WAN port

3. Confirm solid blue (4G) or green (3G) LED for network status and device connectivity

4. Verify IP Passthrough is active (it is enabled by default for the 6300-CX)

5. Reference device documentation to proceed with dual-WAN configuration via local GUI

6. Test failover scenarios for business continuity