

## Accelerated 6300-CX Configuration for SR-Series Routers Solution Guide



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## Contents

|   |   |
|---|---|
| Accelerated 6300-CX LTE Router Setup .....            | 4 |
| ✓ Initial Setup .....                                 | 4 |
| ✓ Site Survey .....                                   | 5 |
| ✓ Remote Power Installation – Powering Option #1..... | 5 |
| ✓ Direct Power Installation – Powering Option #2..... | 6 |
| ✓ Understanding the 6300-CX LEDs .....                | 6 |
| SR-Series Configuration with the 6300-CX.....         | 7 |
| ✓ Reconfiguring Ethernet Ports.....                   | 7 |
| ✓ Cellular Failover/ Backup WAN .....                 | 8 |

### Failover Configuration Quick List:

1. Complete a site survey for cellular signal strength and ideal placement location.
  2. Deploy the Accelerated 6300-CX with an activated SIM.
  3. Confirm connectivity: check for the blue status LED and optimal signal-strength LEDs.
  4. ***Failover setup only:*** Reconfigure an available LAN port as a WAN interface.
  5. Run an Ethernet cable from the 6300-CX to the selected LAN port on the SR-series router for failover connectivity, or to the WAN port for LTE connectivity as the SR’s primary uplink.
- NOTE:** *Failover configuration assumes a primary uplink is connected to the WAN port.*
6. Set interface metrics and Active Recovery as necessary.
  7. Verify failover continuity.

**NOTE:** *This document is intended to provide procedural guidance toward the interoperability of the Accelerated 6300-CX with the SR-Series of routers also designed and manufactured by Accelerated Concepts, Inc. Please refer to the dedicated support resources at [kb.accelerated.com](http://kb.accelerated.com) for comprehensive documentation.*



## Overview

The Accelerated 6300-CX LTE Router provides a reliable, high-speed cellular (WWAN) 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. For these reasons, Accelerated Concepts designed its 6300-CX LTE router to offer comprehensive, flexible cellular network integrations for enterprises, retail, government, remote sites, and branch offices.

The Accelerated 6350-SR is a high-performance business router that features multiple WAN connectivity options (Ethernet or WWAN) to support both load balancing and failover. It comes with a carrier-certified, modular, plug-in LTE modem with dual SIM support for cellular Internet access. Separating the core router appliance from the cellular modem allows the SR to upgrade, or downgrade, its 4G connection to the category of LTE data access that best suits a network's throughput requirements. Instead of replacing the entire device, however, network administrators need only to swap plug-ins.

This modem, the 1002-CM, is currently available in two standards: Category 4 (or Cat. 3) for LTE access and Category 6 for LTE Advanced (LTE-A) connectivity, though additional plug-ins will be available as cellular networks implement support for a wider range of LTE categories. While the 6350-SR can provide connectivity via cellular networks, its optional WiFi and 5-port GbE interface often leads to the device being deployed near other networked equipment – in a data center or electrical closet, for instance – the position of which can lead to sub-par signal reception for the 1002-CM.

Such constraints can lead to the need for a dedicated LTE router that can be deployed in a location where signal strength is optimal. Accelerated's 6300-CX pairs perfectly in this context, serving as an efficient means of remotely deploying a cellular connection (via the CX's flexible mounting options) that can then supply reliable LTE connectivity to the networked appliance it connects to via an Ethernet handoff. This solution circumvents the need for cost-ineffective antenna cabling and prevents the need to relocate the 6350-SR due to concerns over cellular reception.

## Interoperability Matrix

This section covers interoperability information of the hardware tested for this solution.

| Test Date | SR-Series Firmware | 6300-CX Firmware |
|-----------|--------------------|------------------|
| 06/2017   | 17.2.22            | 17.2.22          |

## 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.), availability of 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 connection assumes that a primary Ethernet cable is plugged into the WAN port on the 6350-SR. Connecting the 6300-CX's Ethernet cable to a backup Ethernet port requires reconfiguring a LAN port to be a WAN interface.

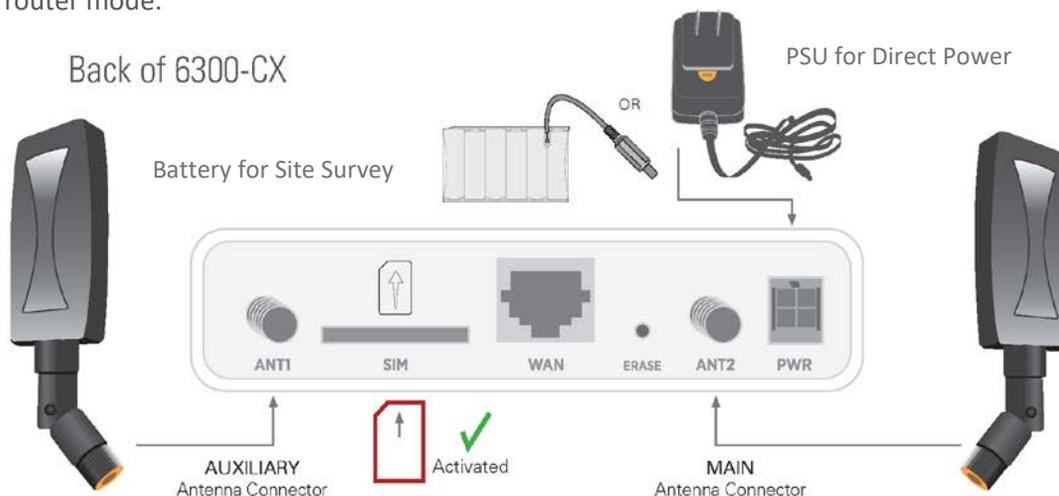
# Accelerated 6300-CX LTE Router Setup

## 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

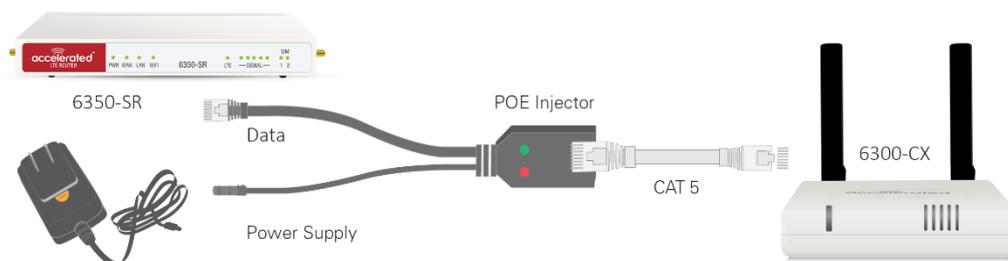
1. After following steps 1 and 2 in the “Initial Setup” section, connect the battery pack to temporarily power the Accelerated 6300-CX. The charge lasts two to four hours – it is not rechargeable and should be properly disposed of after use.
2. Move the 6300-CX to different locations within your site 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 – Powering 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 6350-SR.
4. Connect an Ethernet cable from the RJ45 socket on the PoE injector cable to the Ethernet port of the 6300-CX. (See diagram.)

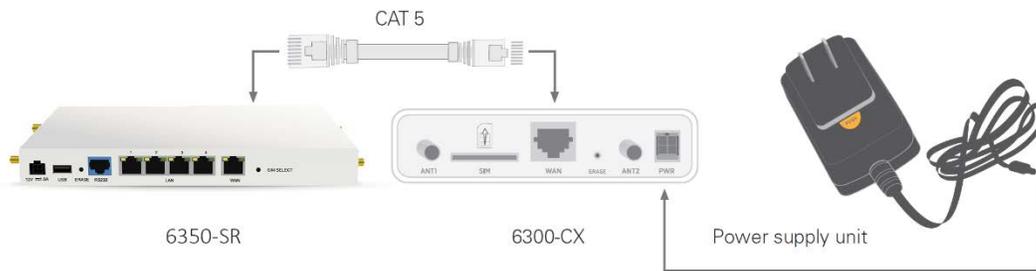


## Direct Power Installation – Powering Option #2

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

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

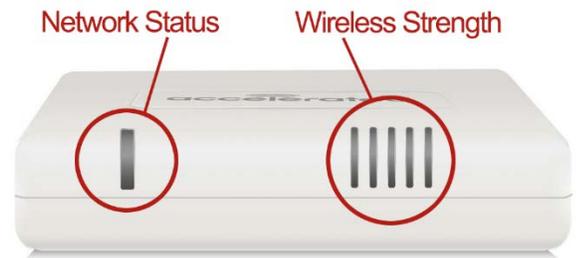
1. Use an Ethernet cable to connect the 6300-CX to the security appliance via the WAN port (to use the cellular network as the primary connection) or select an available LAN port (to configure a failover).
2. Plug the 6300-CX power supply unit (PSU) into an AC power outlet.
3. Connect the PSU into the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



## 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 6300-CX displays connectivity information.

Please visit [www.accelerated.com](http://www.accelerated.com) for additional information and troubleshooting tips.



### Network Status LED

|  |  |  |   |
|--|--|--|---|
|  | <b>Solid Yellow</b><br>Initializing or starting up.  |  | <b>Solid Green</b><br>Connected to 2G or 3G and also has an Ethernet connection.                                |
|  | <b>Flashing Yellow</b><br>In the process of connecting to the cellular network and to a device on its Ethernet port.                                       |  | <b>Flashing Blue</b><br>Connected to 4G LTE and in the process of connecting to a device on its Ethernet port.  |
|  | <b>Flashing White</b><br>Has an Ethernet connection and is in the process of connecting to the cellular network.   |  | <b>Solid Blue</b><br>Connected to 4G LTE and also has an Ethernet connection.                                   |
|  | <b>Flashing Green</b><br>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). |  | <b>Alternating Red/ Yellow</b><br>Upgrading firmware. <b>WARNING: DO NOT POWER OFF DURING FIRMWARE UPGRADE.</b> |

### 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 |

# SR-Series Configuration with the 6300-CX

## Reconfiguring Ethernet Ports

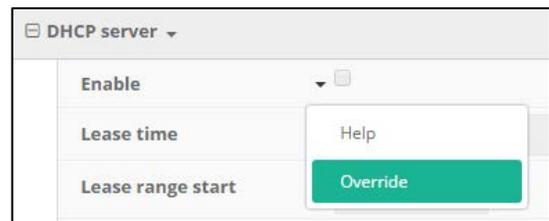
The 6300-CX can be plugged into the 6350-SR's WAN port for primary Internet access without requiring the configuration steps described in this document. To configure the CX as a backup for failover connectivity, a LAN port must be converted for WAN functionality. Select an available port and proceed with the configuration steps covered below.

Accelerated View is [available at this URL](#). For more information on local configuration options, [click here](#).

### Step-by-Step Guidance: Reconfiguring Ethernet Ports

1. Sign in to Accelerated View and locate the 6350-SR by entering its **MAC address** in the **Search** field.  
**NOTE:** The MAC address is a 12-character code included on the 6350-SR's bottom label.
2. Click on the link in the **MAC** column to bring up the device's profile.
3. Navigate to the **Configuration** tab.
4. When configuring Accelerated devices, it is best to utilize new or existing **Group Configuration** profiles so that settings can be centrally stored and later applied to additional devices. Click the **Edit group configuration** link to proceed with the device setup.

**NOTE:** Changes made to a group configuration are applied to ALL devices assigned to that group. To adjust settings for individual devices, select the **Override** button from the pull-down menu situated next to each field/ setting in question and make any necessary changes without editing the group config.



5. **Settings** in Accelerated View are categorized and nested according to their scope of configuration:  
**Network → Interfaces:** specify a name for the new interface and click **Add**. "WAN2," for example.  
(The "→" symbol denotes nested categories.)
6. Ensure **Enable** is selected and adjust the **Interface type** if necessary.
7. Specify the **Device** that should be associated with the new WAN interface. (Use an available LAN port.)
8. Set the **Zone** to "External."
9. In the **Network → Bridges** section, expand the **LAN** entry.
10. Using the pull-down menu next to the selected **Device**, select "delete."
11. Click **Update** to finalize the new settings.
12. To apply the new settings immediately, reboot the SR or refer to this link for [issuing remote commands](#).

**NOTE:** Devices sync with Accelerated View once a day by default; pending configuration updates will apply at this time.

## Cellular Failover/ Backup WAN

Each interface on the 6350-SR can be assigned a “metric” value, which is used to establish prioritization for the SR device’s active Internet uplinks; if multiple WAN interfaces are online the 6350 will pass traffic through the connection with the **lowest** metric (unless custom rules are established). It is assumed that a LAN port has been reconfigured as an additional WAN interface before proceeding, per this [knowledge article](#) outlined in the previous section.

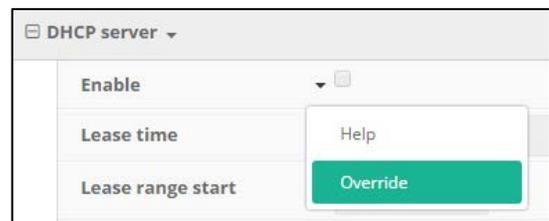
**NOTE:** The following configuration steps are valid for any multi-WAN setup. Lowering an interface’s metric will escalate its priority in the SR’s failover sequence. Accelerated’s failover logic skips over disconnected WAN uplinks.

Accelerated View [available at this URL](#). For more information on local configuration options, [click here](#).

### Step-by-Step Guidance: Cellular Failover

1. Sign in to Accelerated View and locate the 6350-SR by entering its **MAC address** in the **Search** field.  
**NOTE:** The MAC address is a 12-character code included on the 6350-SR’s bottom label.
2. Click on the link in the **MAC** column to bring up the device’s profile.
3. Navigate to the **Configuration** tab.
4. When configuring Accelerated devices, it is best to utilize new or existing **Group Configuration** profiles so that settings can be centrally stored and later applied to additional devices. Click the **Edit group configuration** link to proceed with the device setup.

**NOTE:** Changes made to a group configuration are applied to ALL devices assigned to that group. To adjust settings for individual devices, select the **Override** button from the pull-down menu situated next to each field/ setting in question and make any necessary changes without editing the group config.



5. **Settings** in Accelerated View are categorized and nested according to their scope of configuration:  
**Network → Interfaces → Modem:** the **Metric** field sets the order for WAN interface priority.  
(The “→” symbol denotes nested categories.)
6. Adjust other interfaces to set the order in which the 6350-SR will establish Internet connectivity. Interfaces with lower metric values are utilized first (assuming they are online).
7. Next, open **Network → Interfaces → WAN → IPv4 → Active Recovery** and ensure **Enable** is checked.
8. The **SR’s default settings** include a 2-minute failover window utilizing both HTTP and ping tests (4 attempts set at a 30-second interval). Consult your network administrator before adjusting these fields.  
**NOTE:** **Active Recovery** must be enabled for the primary interface. If a third connection is to serve as additional failover, enable the feature for the interface with the second-lowest metric as well.
9. Click **Update** to finalize the new settings.
10. To apply the new settings immediately, reboot the SR or refer to this link for [issuing remote commands](#).

**NOTE:** Devices sync with Accelerated View once a day by default; pending configuration updates will apply at this time.