THE LIVE STREAMING COOKBOOK
EVERYTHING YOU NEED TO GET UP AND RUNNING WITH LIVE STREAMING
JOIN THE LIVE STREAMING REVOLUTION
We live in a world of screens. On the move, people are accompanied by their smartphones, tablets and laptops almost everywhere they go. In the home, they spend hours in front of their PCs, gaming consoles, streaming media devices and smart TVs. And, today, most enjoy fast broadband connections.

As a result, people are consuming more live streamed video than ever. Sports. Entertainment. Events. News. Now, anyone with an idea for a show can take it to a global stage. For video pros, the advantages of live streaming are clear—they can:

- Connect viewers to content they wouldn’t usually be able to access
- Gain access to a far wider global audience for their productions
- Enhance their primary shows with valuable extra content
- Generate revenue through increased viewership, advertising and sponsorship opportunities

About this cookbook
In this cookbook, we’re going to cover the common live streaming scenarios our customers face every day. From here, we’ll give you sample recipes for the equipment you’ll need to make the move into live streaming as well as tips for setting up your productions. (If you would like to learn more about the actual process of live streaming, simply download our whitepaper How to Stream Live Video.)

There are of course countless kit combinations suitable for live streaming. In fact, you may already own or have access to much of what you’ll need. But the following kit lists should at least give you a place to start.
SMALL PRODUCTIONS, BIG IDEAS
2: SMALL PRODUCTIONS, BIG IDEAS

So you want to get started with something small—say productions aimed at a finite audience, programming produced for a specialized purpose, or locations of limited size. If this sounds like you, a smaller live streaming setup can be used to achieve professional results, without compromising creative flexibility.

<table>
<thead>
<tr>
<th>Typical scenarios</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ Mobile and remote events</td>
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<tr>
<td>▶ Small news or chat-style production in a basic studio or virtual set</td>
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<td>▶ Stage presentations or performances from smaller venues</td>
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<td>▶ Amateur, local and semi-professional sports</td>
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<td>▶ Small business or corporate use, such as professional workshops, seminars or webcasts</td>
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<td>▶ Distance learning or training applications</td>
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</tbody>
</table>
### Must haves:
- Network connection and Ethernet cable
- NewTek TriCaster 460 with control surface
- Up to four live cameras with SDI or analog connectivity (component, composite or Y/C)
- Microphones (XLR or 1/4”)
  - Indoor production: Lavalier microphones with wireless receivers or wireless system with handheld microphones
  - Outdoor production: Wired handheld microphones or wired condenser lavaliere microphones
- Cabling
  - 25’ to 50’ (8m to 16m) video cables appropriate for your choice and quantity of live cameras and their connection types
  - Audio cables up to 50’ (16m) as needed to support sound capture devices
- Power source and heavy-duty extension cords
- 1920 x 1080 resolution monitor with DVI video port and cable (HDMI or VGA require DVI adapter)

### Seriously consider:
- Tripods
  - One per camera as needed
- Green screen
  - Example choices include collapsible background or chroma cloth sheet. For a permanent fixture, consider green chroma key paint
- Lighting kit
  - Stands, fixtures, bulbs and diffusers for minimum three-point lighting (key, fill and back light) on each scene
- Audio mixer
  - Table top or portable audio mixer with enough inputs and outputs to accommodate your sound needs
  - OR
  - iPad with NewTek Audio Mixer for TriCaster app installed

### Nice to have:
- Storage media, such as a USB thumb drive or external hard drive, for transferring video or images (8GB or above recommended)
- Laptop for screen-sharing or to use as additional live content source

### The crew:
- TriCaster operator (mandatory; any experience level from basic switching to skilled technical director or vision mixer)
- Camera operators (optional)
- Audio operator (optional)
<table>
<thead>
<tr>
<th>Shopping:</th>
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<tbody>
<tr>
<td>□ If your production schedule is light or your budget limited, you may want to start out by renting equipment and hiring freelance personnel. In addition to dedicated production houses and agencies, many retailers and resellers offer rental packages and have a network of industry connections, including NewTek Certified Operators for TriCaster.</td>
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<tr>
<td>□ If you are looking to buy, explore your options—especially if you’re on a budget. Gently used or pre-owned equipment is always an option when you are starting out.</td>
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<tr>
<th>Prep:</th>
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<tr>
<td>□ Most camcorders come equipped with a short-range breakout cable for output to a display or production system, but the connection type and length are not always suitable for live production use. Go with the cables recommended in the sample kit list instead.</td>
</tr>
<tr>
<td>□ The length of camera cables depends on the proximity of your cameras to your TriCaster or equivalent production system, but it’s almost always better to go longer than you expect you’ll need. And be sure to run cables appropriately and keep away from high-traffic areas if possible.</td>
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<th>Production:</th>
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<tr>
<td>□ Anything can happen when you’re live. Use TriCaster’s ISO recording feature to record your show as it happens, as well as the individual camera angles, so you can change out shots, cover up mistakes or hide unwanted visuals in post-production for the on-demand or archived version.</td>
</tr>
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EVERYDAY LIVE STREAMING
3: EVERYDAY LIVE STREAMING

If you’re looking to get more serious about live streaming, producing more shows more often, then this section is for you. Here we’re talking about productions aimed at larger audiences (or both in-house and online viewers), frequently scheduled programming or locations where there is more ground or action to cover. This core setup is ideal for standardizing your production platform and establishing a credible presence with clients and viewers.

**Typical scenarios**

- Regular studio use for interviews, cut-ins and drop-in guests—either for live or on-demand streaming
- Seasonal coverage of professional sports events
- Corporate communications such as product launches and quarterly meetings
- Keynotes, association conferences and large town hall meetings
- Churches and houses of worship with multiple campuses or remote congregations
# SAMPLE KIT LIST

## Must haves:
- Network connection and Ethernet cable
- NewTek TriCaster 860 with control surface
- Up to eight live cameras with SDI or analog connectivity (component, composite or Y/C)
- Microphones (XLR or 1/4”)
  - Indoor production: Lavaliere microphones with wireless receivers or wireless system with handheld microphones
  - Outdoor production: Wired handheld microphones or wired condenser lavaliere microphones
- Cabling
  - 75’ to 100’ (24m to 32m) video cables appropriate for your choice and quantity of live cameras and their connection types
  - Audio cables up to 100’ (32m) as needed to support sound capture devices
- UPS power supply with power conditioning and surge protection
- Heavy-duty extension cords as needed
- Two 1920 x 1080 resolution monitors with DVI video port and cable (HDMI or VGA require DVI adapter)

## Seriously consider:
- Tripods
  - One per camera as needed (indoor/outdoor use)
- Studio camera pedestal or dolly
  - One per camera as needed or as space allows (indoor use)
- Green screen
  - Example choices include collapsible background or chroma cloth sheet. For a permanent fixture, consider green chroma key paint
- Lighting kit
  - Stands, fixtures, bulbs and diffusers for minimum three-point lighting (key, fill and back light) on each scene
- Audio mixer
  - Table top to studio-grade audio mixer with enough inputs and outputs to accommodate your sound needs
  - OR
    - iPad with NewTek Audio Mixer for TriCaster app installed

## Nice to have:
- Storage media, such as a USB thumb drive or external hard drive, for transferring video or images (8GB or above recommended)
- Laptop for screen-sharing or to use as additional live content source

## The crew:
- TriCaster operator (mandatory and preferably experienced)
- Camera operators (optional to mandatory, considering the scope of your coverage)
- Audio operator (optional to mandatory, considering scope of your coverage)
### FOR BEST RESULTS

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<th>Shopping:</th>
<th>Prep:</th>
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<tr>
<td>□ Robotic PTZ cameras, consumer or prosumer camcorders, and action sports cameras are also viable, cost-effective camera options for adding more coverage, new angles and different perspectives to your live show.</td>
<td>□ For frequent to everyday programming, consider investing more time, effort and resources into your lighting. Whether you’re working in an actual studio or with a green screen, appropriate lighting is a critical component in creating polished, professional visuals, especially for regularly scheduled productions.</td>
<td>□ As the number of cameras and sources increases, it becomes more important for the operator to be comfortable at the controls. If your technical director is new to multi-camera live streaming, it may be wise to scale back from the show you envision initially and work your way up as your operator gains experience.</td>
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HIGH VALUE, HIGH PERFORMANCE LIVE STREAMING
Today’s live stream audiences increasingly expect professional broadcast-quality programming. If you’re looking to deliver shows on a par with mainstream broadcasters, this section is for you. You may be a professional broadcaster yourself, a top-tier sports organization, a high-profile brand or a venue serving massive audiences. The key factor will be your demand for top-end production values—regardless of the transmission medium. Having a top-flight production system, a lot of advance prep and a creative professional at the controls sets the stage to extend your brand further with live streaming video.

### Typical scenarios

- Dedicated or simulcast news and entertainment programming for broadcast and online viewing
- Network-style coverage of professional sports teams and leagues
- Global companies and corporations looking to make online video core to their brand
- Entertainment venues seeking to further monetize their live shows
- Megachurches producing worship programming for local and remote live audiences
SAMPLE KIT LIST

<table>
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<tr>
<th>Must have:</th>
<th>Seriously consider:</th>
<th>Nice to have:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network connection and Ethernet cable</td>
<td>Tripods</td>
<td>Two-way communication systems for director, talent and production personnel</td>
</tr>
<tr>
<td>NewTek TriCaster 8000 with control surface</td>
<td>Studio camera pedestal or dolly</td>
<td>Storage media, such as a USB thumb drive or external hard drive, for transferring video or images (8GB or above recommended)</td>
</tr>
<tr>
<td>Up to eight live cameras with SDI or analog connectivity (component, composite or Y/C)</td>
<td>Camera crane or jib arm</td>
<td>Laptop for screen-sharing or to use as additional live content source (8GB or above recommended)</td>
</tr>
<tr>
<td>Microphones (XLR or 1/4&quot;)</td>
<td>Green screen</td>
<td></td>
</tr>
<tr>
<td>Indoor production: Lavalier microphones with wireless receivers or wireless system with handheld microphones</td>
<td>Example choices include collapsible background or chroma cloth sheet. For a permanent fixture, consider green chroma key paint</td>
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<tr>
<td>Outdoor production: Wired handheld microphones or wired condenser lavalier microphones</td>
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</tr>
<tr>
<td>Cabling</td>
<td>Lighting kit</td>
<td>The crew:</td>
</tr>
<tr>
<td>Video cables 100’ (32m) or longer appropriate for your choice and quantity of live cameras and their connection types</td>
<td>Stands, fixtures, bulbs and diffusers for minimum three-point lighting (key, fill and back light) on each scene</td>
<td>Experienced TriCaster operator (mandatory)</td>
</tr>
<tr>
<td>Audio cables 100’ (32m) or longer as needed to support sound capture devices</td>
<td></td>
<td>Camera operators (mandatory to get the best results)</td>
</tr>
<tr>
<td>UPS power supply with power conditioning and surge protection</td>
<td>Audio mixer</td>
<td>Sound operator (optional to mandatory, considering the scope of coverage)</td>
</tr>
<tr>
<td>Heavy-duty extension cords as needed</td>
<td>Studio-grade audio mixer with enough inputs and outputs to accommodate your sound needs</td>
<td>Technician or gear specialist (may also be your operator)</td>
</tr>
<tr>
<td>Two 1920 x 1080 resolution monitors with DVI video port and cable (HDMI or VGA require DVI adapter)</td>
<td>OR</td>
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</tbody>
</table>

The crew:

- Experienced TriCaster operator (mandatory)
- Camera operators (mandatory to get the best results)
- Sound operator (optional to mandatory, considering the scope of coverage)
- Technician or gear specialist (may also be your operator)
# FOR BEST RESULTS

## Shopping:
- Complex video sequences are a trademark of high-end productions. Automate these visuals with any number of MIDI controllers (including iPad apps) and TriCaster macros. You can even manage live performance elements like lighting and sound from the same controller for consolidated operation.
- Increase your coverage with the addition of an external video router. Plug in double or triple the amount of cameras (or even more) and switch between all of the angles right from the TriCaster interface.

## Prep:
- The bigger and bolder the show, the more time you’ll need to spend in pre-production—configuring macros, routing audio mixes, setting up shots, etc. Crunch time isn’t the time to fine-tune your workflow.

## Production:
- An inventory of A-list gear can only go so far to make a live stream look like live television. An experienced operator will make the difference between a show that looks standard and one that looks spectacular. Invest in hiring a professional or training your staff appropriately (for TriCaster, we strongly recommend having a NewTek Certified Operator).
With high-quality video equipment more budget-friendly than ever before, and daily online video views now in the billions, the question is no longer whether you should stream live video, but how you’re going to turn a great idea into amazing online programming for your audience.

This cookbook is just a taste of what you’ll need to take into consideration when moving forward with live streaming. If you’d like to learn more about the actual process of live streaming, download our whitepaper: How to Stream Live Video.

For more insight into NewTek live production and streaming solutions, download our Which TriCaster is Right for You guide. This will help you find the TriCaster system that best fits your needs.

And for bite-sized tips from NewTek professionals, check out our Take 5 video series.
ABOUT NEWTEK

NewTek is transforming the way people create network-style television content and share it with the world. From sporting events, web-based talk shows, live entertainment, classrooms and corporate communications—to virtually any venue where people want to capture and publish live video, we give our customers the power to grow their audiences, brands and businesses, faster than ever before.

Learn more at www.newtek.com