

# How to Create a Channel on Roku

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## Session Overview @ #SMWest

### Business focus:

- Roku at-a-glance
- Features of Roku OS 7
- Monetization
- Channel Store 101

### Developer focus:

- The Roku platform
- SDK & Technical Concepts
- How to: Build a Channel
- Q&A

{Quick Note:}  
**Steps to follow along  
in the 2<sup>nd</sup> half of workshop**

## Developer Steps: Building on the Roku Platform

Prep work for the Roku Channel dev walk-through:

1. Create your Roku Account: [my.roku.com/signup](https://my.roku.com/signup)
2. Join Dev Program [developer.roku.com/home](https://developer.roku.com/home)
3. Download samples at [bit.ly/rokudevxml](https://bit.ly/rokudevxml)



The future of streaming is here.  
Introducing the all-new Roku 4.

[Learn more](#)

{Part 1:}

# Opportunities, features, monetization, and the Roku Channel Store

The biggest streaming  
channel lineup

America's favorite  
streaming players

Roku 3 with voice search

New LG powered by Roku  
TV

Try HBO NOW<sup>SM</sup> free for  
30 days

## Roku at-a-glance

- Roku OS is purpose-built for the TV
- Runs across Roku streaming players and (smart) Roku TVs
- Players sold in the US, UK, Ireland, Canada, Mexico & France
- Now with **4K UHD** capable devices too
- Nearly **3,000 channels** across **20+** genres (in the U.S.)
- Roku has **7.5M** active accounts today
- Roku accounts stream an average of **60 hours per month**

# A broadly deployed platform



Streaming Players



Roku TVs



Roku Powered solutions

# We focus on the User Experience

Top Entertainment

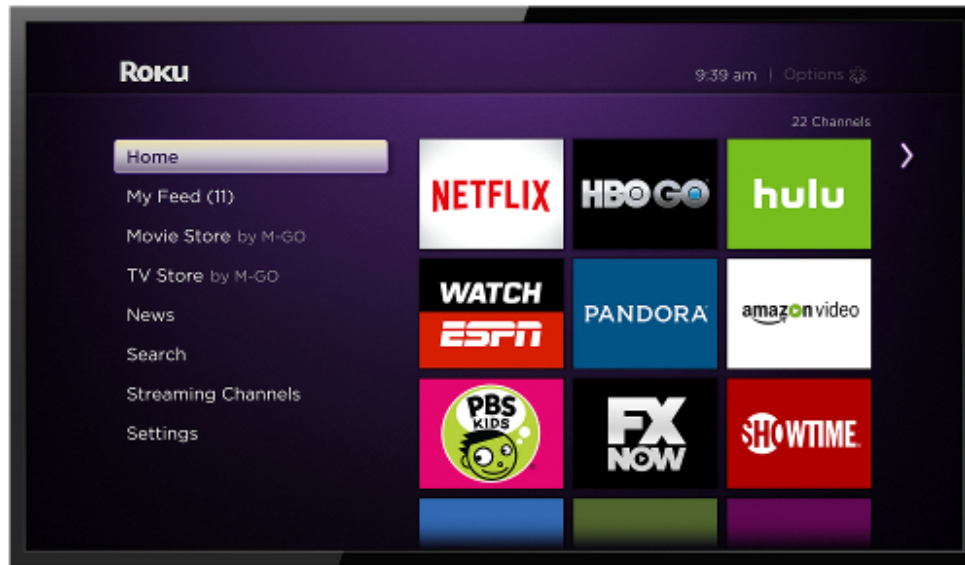
Search and Discovery

Easy to Use

NOW THIS IS TV

Roku

8





# Wide breadth of content across all genres

The top shows, movies, and networks all streaming on the Roku platform



Movies & TV episodes



Sports



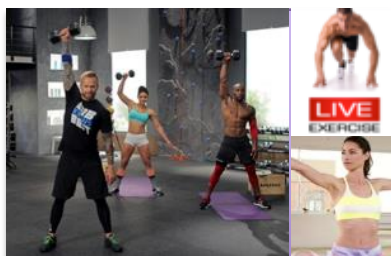
News & Weather



Music



Kids & Family



Fitness



Foreign Language

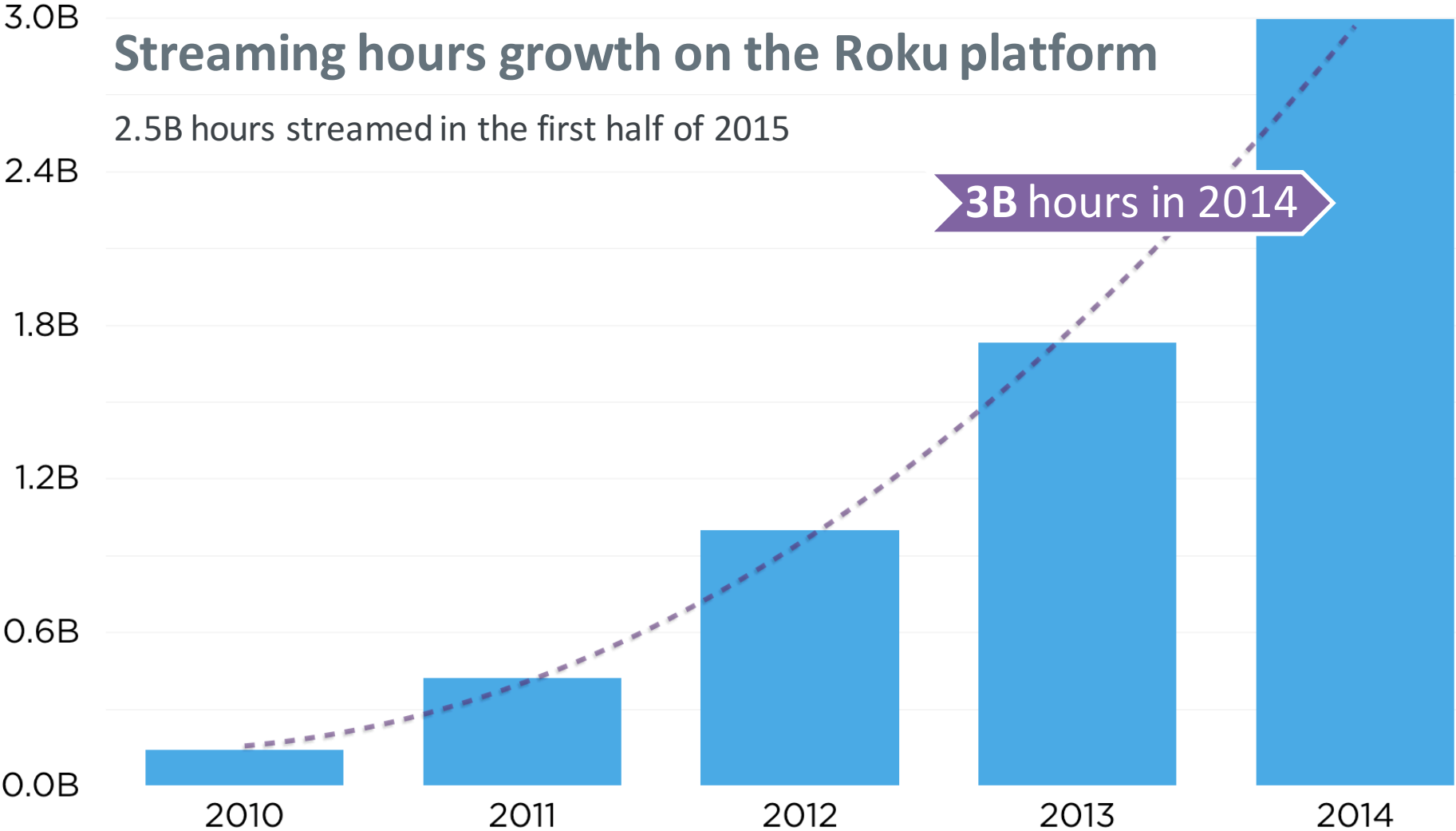


Spirituality

# Streaming hours growth on the Roku platform

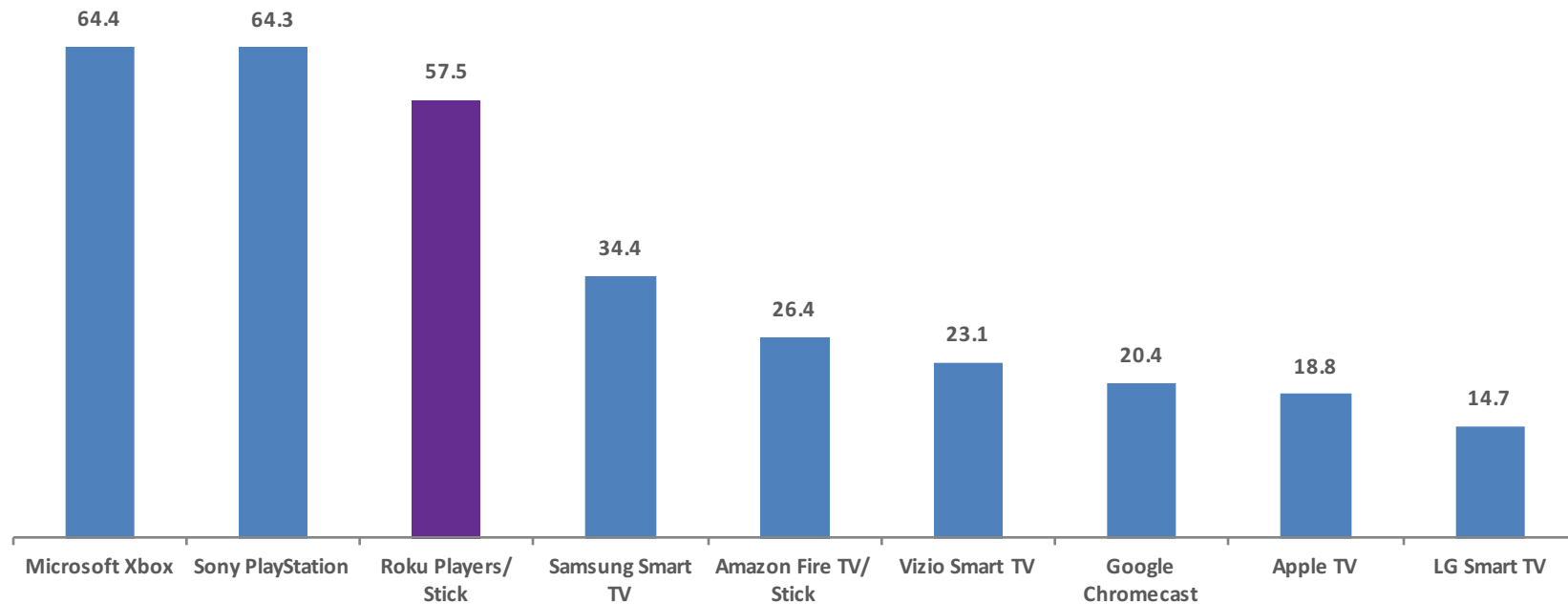
2.5B hours streamed in the first half of 2015

3B hours in 2014



# Roku leads all streaming players and smart TVs

Total weekly video hours used (M) according to survey respondents



SOURCE: NPD Survey, 2015

Roku

9:39 am | Options

22 Channels

Home

My Feed (11)

Movie Store by M-GO

TV Store by M-GO

News

Search

Streaming Channels

Settings

NETFLIX

HBO GO

hulu

ESPN

PANDORA

amazon video



FX NOW

SHOWTIME

# Features of Roku OS 7

## Roku OS 7 – Containers and Codecs

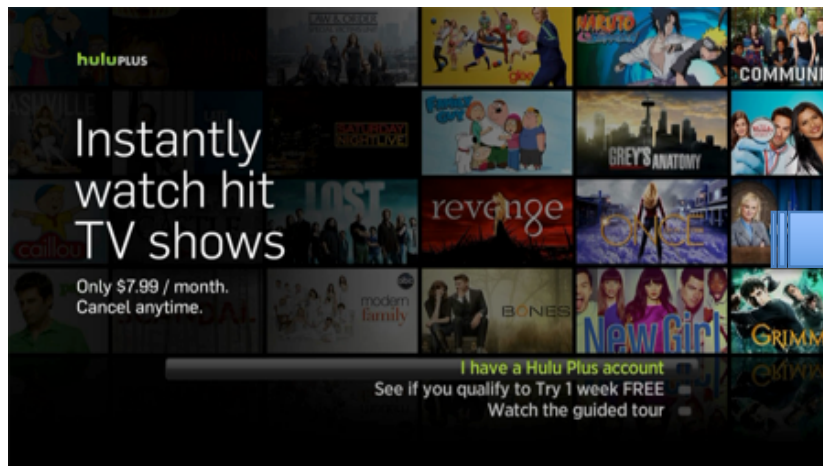
### Specs:

- **Codecs:** H.264, H.265, AAC, PCM, WMA, MP3
- **Streaming:** MP4, DASH, HLS, Smooth, MPEG-TS

### Approach:

- All commonly used formats are supported on our platform
- Codec support is driven by **developer demand**

# Roku Billing: Frictionless signup + conversions



SAM'S ACCOUNT | DEVELOPER SITE | BLOG | SUPPORT | SIGN OUT

Channels See what's on Choose your player

### Manage In-Channel Products

Manage In-Channel Products -

Add a Product

Product Name:	Identifier:	Purchase Type:	Price:	Cleared for Sale:	Status:
SamProduct	Sam123456	One-Time Purchase, Consumable	\$ 0.99	No	Saved
Edit   Delete   Submit for review					
Sam's Product	SAM123	Monthly Subscription	\$ 0.99	No	Saved
Edit   Delete   Submit for review					

Go Back



In-app billing (One time, monthly, annual)  
 AVOD, TVOD, SVOD supported  
 & Trials can be offered to users

## Ads: TV Ads on an OTT Platform

- Roku offers a rich toolset to acquire, grow and monetize your audience
- **Roku Ad Framework (RAF)** – Integrates advanced video ad functionality into the Roku OS
- 1<sup>st</sup> streaming platform to integrate **Nielsen Digital Ad Ratings**

The Nielsen logo consists of the word "nielsen" in a lowercase, sans-serif font. The "n" is blue, and the rest of the letters are grey. Below the text is a horizontal line of seven grey dots.



M-GO

★★★★★

M-GO is built right into your Roku player so it's easy to buy or rent the latest and greatest...

Details



HBO NOW

★★★★★

HBO NOW™ is the easiest way to watch all of HBO--every season, every...

Details



FXNOW

★★★★★

FXNOW is the easiest way to watch the biggest and best lineup of critically acclaimed...

Details



Showtime Anytime

★★★★★

SHOWTIME ANYTIME is available at no additional cost with your SHOWTIME subscription through...

Details

+ Add channel



Tubi TV

★★★★★

Tubi TV is a free streaming service that gives you all the latest and greatest...

Details



SHOWTIME

★★★★★

SHOWTIME is the easiest way to watch all the latest and greatest...

Details



NBC

★★★★★

NBC is the easiest way to watch all the latest and greatest...

Details



Popcornflix

★★★★★

Popcornflix is a free streaming service that gives you all the latest and greatest...

Details

Channel Store 101  
**channelstore.roku.com**





Search channel



Netflix



Netflix unlimited members can instantly watch TV shows & movies streaming from Netflix. Go to the...

Details

Installed



Hulu



Hulu gives you unlimited instant streaming of current episodes and full seasons of hit TV show,...

Details

Installed



Amazon Instant Video



Amazon Instant Video offers two great ways to watch movies and TV shows instantly, anywhere. Buy or...

Details

Installed



Sling TV



Try Sling TV FREE for 14 days." Watch live TV on Sling with just an Internet connection for only...

Details

+ Add channel



25 Channels



Most Popular

Top Free

Top Paid

Roku Recommends

Games

Search Channels

Genres

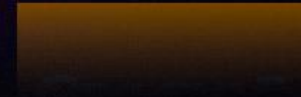
Movies & TV

TV Everywhere

Music

Apps

Comedy





★★★★★ 1,714 ratings  
Version 1.0 | Nov 3, 2015  
Rated: All Ages  
Photo Apps  
Developer: jbraverman

● Go to channel

- Remove channel
- My rating ★★★★★

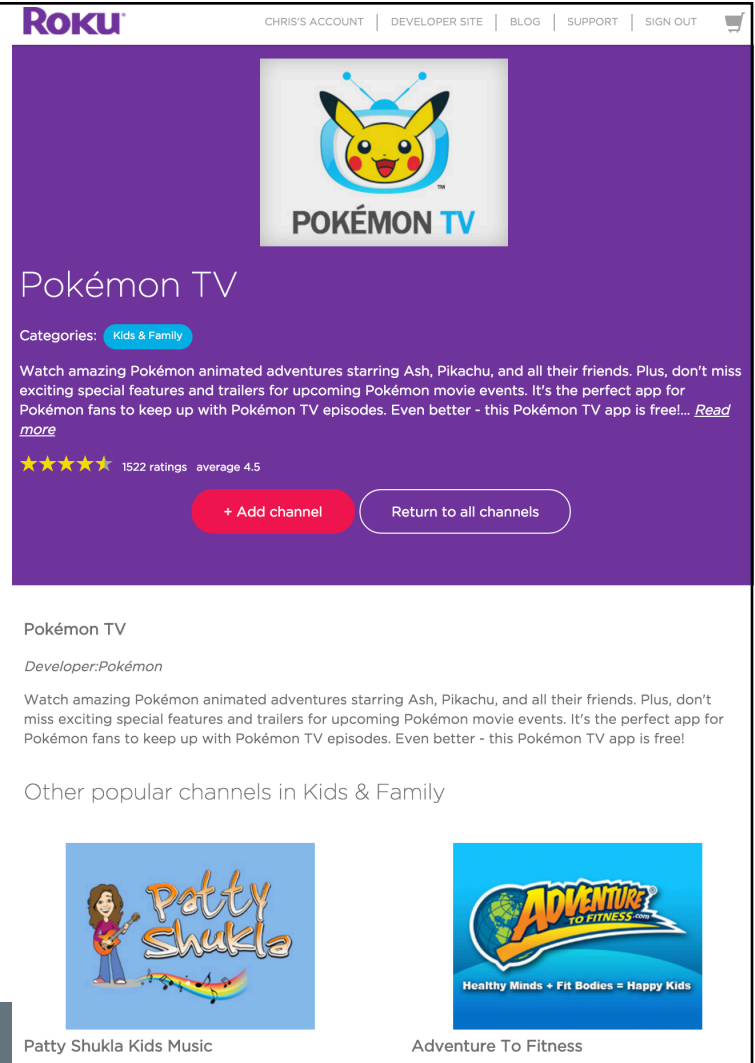
View public photos on flickr, as well as your personal account photos.

# Details for Roku Channels

## Public Channels:

- QA certification process
- Listed in Roku Channel Store
- Ratings, description, screenshots, & “+add channel”


**Note:** Private channels are available for beta testing



The screenshot shows the Roku Channel Store interface for the Pokémon TV channel. At the top, the Roku logo is on the left, and navigation links for 'CHRIS'S ACCOUNT', 'DEVELOPER SITE', 'BLOG', 'SUPPORT', and 'SIGN OUT' are on the right. The main content area has a purple background. It features the Pokémon TV logo (Pikachu's head inside a TV set) and the text 'POKÉMON TV'. Below the logo, the channel name 'Pokémon TV' is displayed. A category tag 'Kids & Family' is shown. A description follows: 'Watch amazing Pokémon animated adventures starring Ash, Pikachu, and all their friends. Plus, don't miss exciting special features and trailers for upcoming Pokémon movie events. It's the perfect app for Pokémon fans to keep up with Pokémon TV episodes. Even better - this Pokémon TV app is free!...' with a 'Read more' link. A star rating of 4.5 (from 1522 ratings) is shown. Two buttons are present: '+ Add channel' and 'Return to all channels'. Below this, the channel name 'Pokémon TV' and developer 'Pokémon' are listed. A detailed description is provided: 'Watch amazing Pokémon animated adventures starring Ash, Pikachu, and all their friends. Plus, don't miss exciting special features and trailers for upcoming Pokémon movie events. It's the perfect app for Pokémon fans to keep up with Pokémon TV episodes. Even better - this Pokémon TV app is free!'. A section titled 'Other popular channels in Kids & Family' shows two other channels: 'Patty Shukla Kids Music' and 'Adventure To Fitness'.

Roku

CHRIS'S ACCOUNT | DEVELOPER SITE | BLOG | SUPPORT | SIGN OUT



Pokémon TV

Categories: Kids & Family

Watch amazing Pokémon animated adventures starring Ash, Pikachu, and all their friends. Plus, don't miss exciting special features and trailers for upcoming Pokémon movie events. It's the perfect app for Pokémon fans to keep up with Pokémon TV episodes. Even better - this Pokémon TV app is free!... [Read more](#)

★★★★★ 1522 ratings average 4.5


+ Add channel Return to all channels

Pokémon TV


Developer: Pokémon

Watch amazing Pokémon animated adventures starring Ash, Pikachu, and all their friends. Plus, don't miss exciting special features and trailers for upcoming Pokémon movie events. It's the perfect app for Pokémon fans to keep up with Pokémon TV episodes. Even better - this Pokémon TV app is free!

Other popular channels in Kids & Family



Patty Shukla Kids Music



Adventure To Fitness



## Add Public Channel - Channel Descriptions

The Channel Store displays channel descriptions and channel icons based on player language settings. Providing channel information in a customer's language increases the chances they will add or buy your channel.

Tip: Be sure to state when your channel's content is in a different language than your channel description.

English

\*Channel Name <sup>?</sup>

\*Description <sup>?</sup>

300 characters remaining

Key Words <sup>?</sup>

255 characters remaining

Web Description <sup>?</sup>

1500 characters remaining

FHD Poster <sup>?</sup>

Choose a 540 x 405 JPEG or PNG file. This image will display in the Roku Channel Store when in FHD mode.

Select...

HD Poster <sup>?</sup>

Choose a 290 x 218 JPEG or PNG file. This image will display in the Roku Channel Store when in HD mode.

Select...

SD Poster <sup>?</sup>

Choose a 214 x 144 JPEG or PNG file. This image will display in the Roku Channel Store when in SD mode.

Select...

Preferred Category

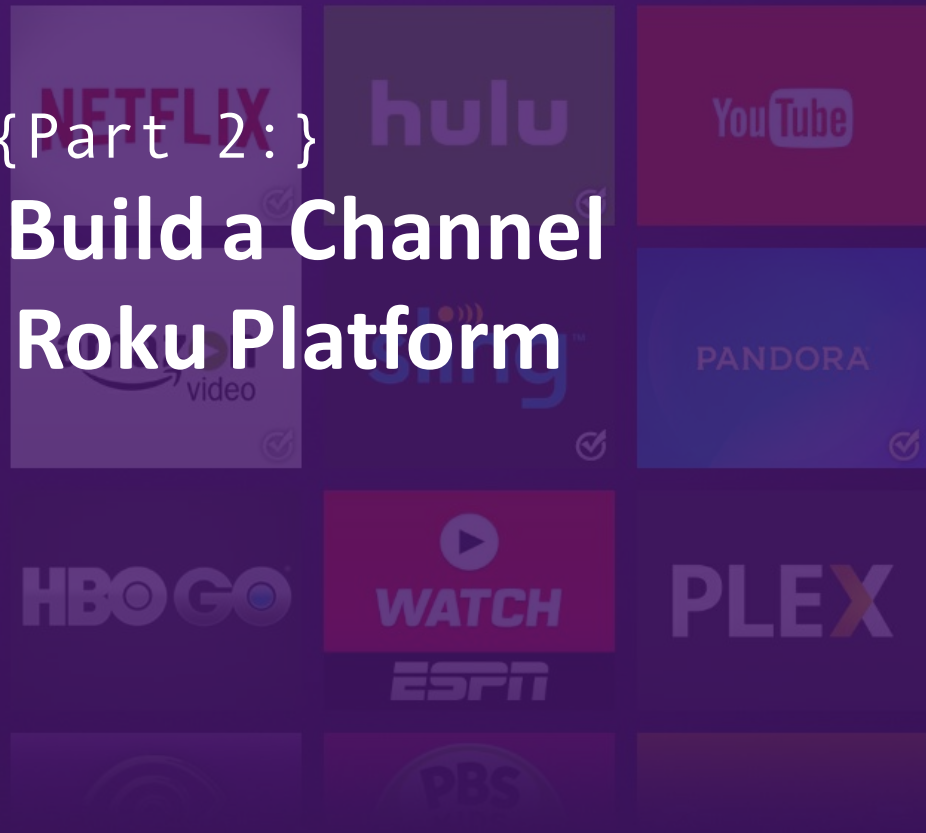
# Add/Remove Channels: [developer.roku.com/apps](https://developer.roku.com/apps)

25 Channels

- Most Popular
- Top Free
- Top Paid
- Roku Recommendations
- Games
- Search Channels
- Genres
- Movies & TV
- TV Everywhere
- Music
- Apps

{Part 2: }

# How to Build a Channel on the Roku Platform



# Building a Roku Channel

## Core Requirements:

- Roku player
- Roku user account
- Internet access
- [sdkdocs.roku.com](http://sdkdocs.roku.com)



# Building a Roku Channel

## Software Requirements:

- Text Editor / IDE
- Ability to “zip” files
- Command line app + telnet access

```
testListScene.xml × main.brs ×
1 sub Main()
2   if firmwareRequiresUpdate() then return
3   showChannelSGScreen()
4 end sub
5
6 sub showChannelSGScreen()
7   print "in showChannelSGScreen"
8   screen = CreateObject("roSGScreen")
9   m.port = CreateObject("roMessagePort")
10  screen.setMessagePort(m.port)
11  scene = screen.CreateScene("TemplateScene")
12  screen.show()
13
14  while(true)
15    msg = wait(0, m.port)
16    msgType = type(msg)
17    if msgType = "roSGScreenEvent"
18      if msg.isScreenClosed() then return
19    end if
20  end while
21 end sub
22
23 function firmwareRequiresUpdate() as boolean
24   'First firmware release with SceneGraph SDK2.0 support is 6.0.
25   majorRequirement = 6
26   minorRequirement = 0
27   buildRequirement = 0
28
29   'get firmware version
30   version = CreateObject("roDeviceInfo").GetVersion()
31
32   print("Firmware Version Found: " + version)
33
34   major = Mid(version, 3, 1)
35   minor = Mid(version, 5, 2)
36   build = Mid(version, 8, 5)
37
38   print("Major Version: " + major + " Minor Version: " + minor +
39
```

Line 1, Column 1



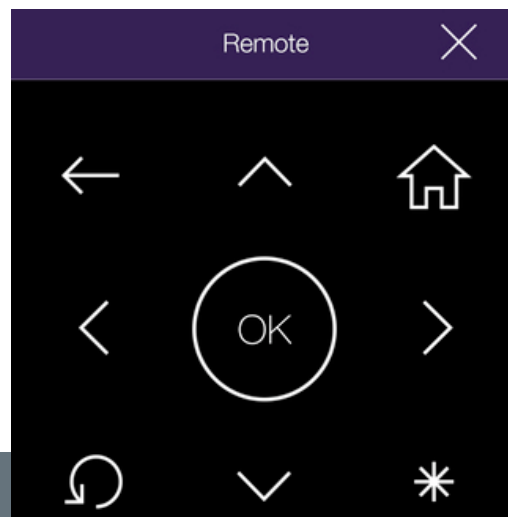
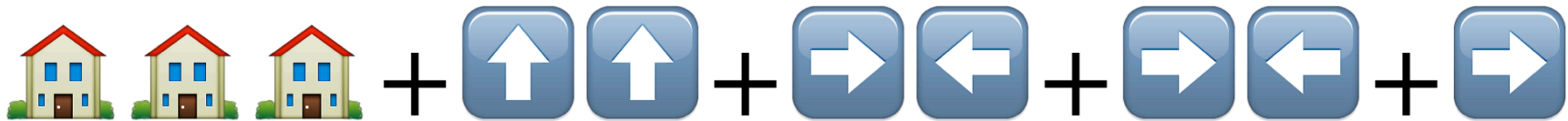
# Basic Roku Development

## Core Concepts:

- **BrightScript:** Roku's scripting language similar to Visual Basic in which Roku channels are built
- **Roku SceneGraph:** an XML based rendering framework for building channels with Roku OS
- **Side-Loading:** Devs build + test apps on Roku devices
- **Packaging:** Roku devices prepare apps for publishing

# Get your Roku device into “Developer Mode”!

Using our super secret code on your Roku remote:



The Development Application Installer allows developers to test their own applications. To enable the installer, select 'Enable installer and restart' below. If you have enabled your installer, after your Roku player restarts you can access the installer by pointing a web browser on the same subnet to this URL:

http://10.12.12.13

Username: rokudev



**Save your Roku's URL**

• Enable installer and restart

•

Cancel

Last modified: September 23, 2015

PLEASE READ THE FOLLOWING AGREEMENT CAREFULLY. THESE TERMS CONSTITUTE A LEGAL AGREEMENT BETWEEN YOU AND ROKU, INC.

Overview.

This Agreement between you and Roku, Inc. states the terms that govern your license to the Software Development Kit.

Certain capitalized terms used in this Agreement are defined in Section 3 below, and elsewhere in the body of this Agreement. The Application Distribution Agreement referenced in Section 1.3 below also includes additional defined terms.

**Read agreement +  
agree to continue**



- I Agree
- Cancel



Select development webserver password (minimum 4 characters)

Webserver username is 'rokudev'

|

↑	a	b	c	d	e	f	g	1	2	3	□ ↑
└─	h	i	j	k	l	m	n	4	5	6	⦿ ABC123
⌫	o	p	q	r	s	t	u	7	8	9	○ !?#\$%&
←   →	v	w	x	y	z	-	_	@	.	0	○ åéâøï

- Set password and reboot
- Cancel

**Reboot the Roku  
in "Dev Mode"**

# Go to your Roku device **URL** in a browser



Installer

Utilities

## Development Application Installer

No Development Application Installed.

File:

Upload



.zip sample channel

Install

# “Side Loading” a Roku Channel

## Core Concepts:

- Channel sent to Roku device as **.zip** via uploader
- Only one developer channel at a time, new uploads replace the previous one
- Script runs and if successful, channel will launch
- Dev channel lives in “**My Channels**”

```
Last login: Mon Nov  2 14:40:25 on ttys005
14:59:11-ctraganos@:~:telnet $ROKU_DEV_TARGET 8089
Trying 10.12.12.64...
Connected to 
Escape character is '^]'.
ist.xml onKeyEvent back false
in listItemSelected
-- selected item 36
SelectedComponent is CheckListTest
LIST IS
LIST IS theList
unfocused index 0
in testList.xml onKeyEvent OK true
in testList.xml onKeyEvent OK false
unfocused index 0
unfocused index 1
selected index 1
in testList.xml onKeyEvent OK false
in testList.xml onKeyEvent back true
CLEANING UP m.CURRENTTEST
in testList.xml onKeyEvent back false
starting init
testComponents <UNINITIALIZED>
TestComponentsLabelTest
PosterTest
RectangleTest
LabelDefaultFontsTest
LabelSizeChangeTest
SimpleScriptTest
SimpleTimerTest
SimpleTimerMultipleScriptTest
SimpleTimerExternalScriptTest
SimpleAnimationTest
SimpleInterfaceTest
UseInterfaceFieldTest
LabelAlignTest
LayoutGroupTest
AdPanel
PacmanTest
```

## Debug Feature: Roku's Telnet Console

Get direct access to breakpoints,  
error logs, and app details

**% telnet [Your-Roku-IP] 8085  
(other ports 8086,8087,8089)**

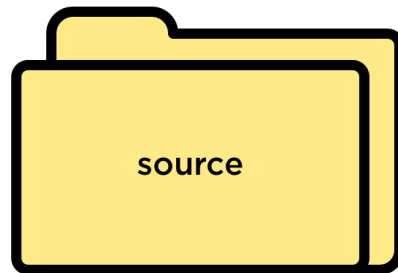


# What's inside a Roku Channel?

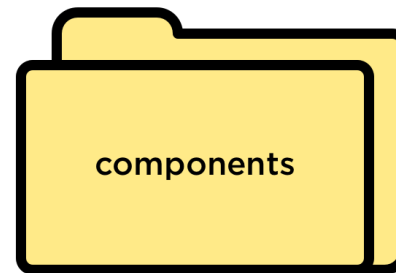
File structure of a .zip directory



Manifest



└─ main.brs



└─ sg.xml



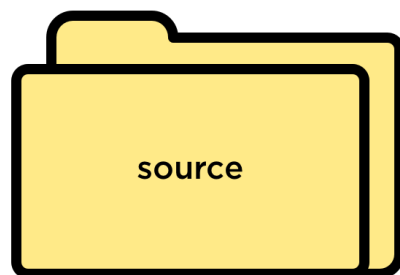
*Max channel size = 2MB; Typical size 500kB*

# What's inside a Roku Channel?

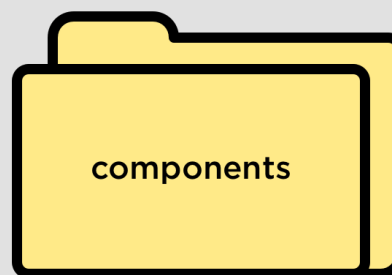
File structure of a .zip directory



Manifest



└─ main.brs



└─ sg.xml

## Optional Items



*Max channel size = 2MB; Typical size 500kB*

# The channel **Manifest** file

Attributes + versioning for channel

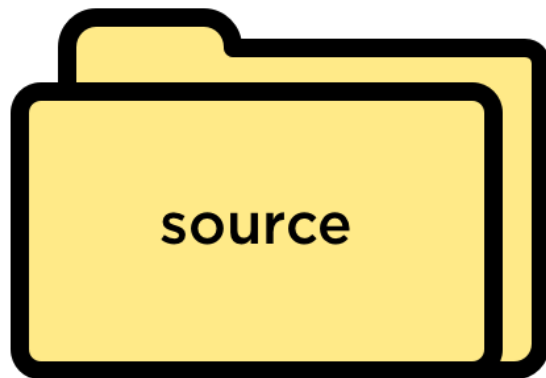


**Manifest**

```
manifest
1 title=Scene Graph Dev App
2 subtitle=Building a basic app for Roku
3 major_version=1
4 minor_version=0
5 build_version=00001
6
7 mm_icon_focus_hd=pkg:/images/MainMenu_Icon_Center_HD.png
8 mm_icon_side_hd=pkg:/images/MainMenu_Icon_Side_HD.png
9 mm_icon_focus_sd=pkg:/images/MainMenu_Icon_Center_SD43.png
10 mm_icon_side_sd=pkg:/images/MainMenu_Icon_Side_SD43.png
11
12 splash_screen_fhd=pkg:/images/splash_fhd.png
13 splash_screen_sd=pkg:/images/splash_sd.jpg
14 splash_screen_hd=pkg:/images/splash_hd.jpg
15 splash_color=#000000
16 splash_min_time=1
17
18
19
20
```

# The channel source files

The starting point for Roku channels

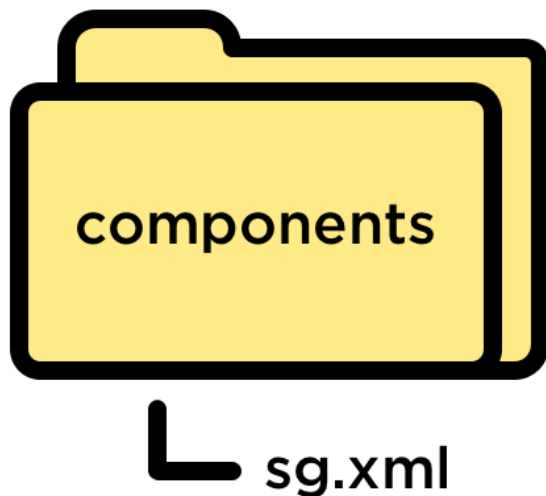


└─ main.brs

```
1  ****
2  ** Application: Template Scene
3  ** File: Main.brs
4  ** Copyright (c) 2015 Roku, Inc. All rights reserved.
5  ****
6
7  sub Main()
8      print "in showChannelSGScreen"
9      screen = CreateObject("roSGScreen")
10     m.port = CreateObject("roMessagePort")
11     screen.setMessagePort(m.port)
12     scene = screen.CreateScene("TemplateScene")
13     screen.show()
14
15     while(true)
16         msg = wait(0, m.port)
17         msgType = type(msg)
18         if msgType = "roSGScreenEvent"
19             if msg.isScreenClosed() then return
20         end if
21     end while
22 end sub
23
24
25
26
27
28
29
30
31
32
```

# The XML components

Loading **SceneGraph** to draw screens



```
manifest * labelTest.xml *
1 <?xml version="1.0" encoding="utf-8" ?>
2 <component name="LabelTest" extends="Scene">
3 <children>
4 <Group>
5 <Rectangle
6 id="SampleRectangle"
7 color="0x7A44A2FF"
8 width="200"
9 height="200"
10 translation="[900,425]">
11 </Rectangle>
12
13 <Poster
14 id="testPoster"
15 uri="pkg:/images/roku_streaming_stick.png"
16 width="0.0"
17 height="0.0"
18 translation="[820,20]" />
19
20 <Label
21 translation="[50, 50]"
22 text="Building apps on the Roku Platform"
23 font="font:MediumSystemFont"
24 color="0x1ACF4199" >
25 </Label>
26 <Label
27 translation="[50, 100]"
28 text="For updates, check out twitter.com/RokuDev"
29 font="font:LargeBoldSystemFont"
30 color="0xFFFFFFFF">
31 </Label>
32 <Label
33 translation="[50, 175]"
34 color="0xFFFFFFFF"
35 text="Welcome to..."
36 font="font:MediumSystemFont" >
37 </Label>
38 <Label
39 translation="[350, 575]"
```

```
manifest x main.brs x
~/Sites/roku-apps/simpleChannel/manifest
1
2   if firmwareRequiresUpdate() then return
3   showChannelSGScreen()
4 end sub
5
6 sub showChannelSGScreen()
7   print "in showChannelSGScreen"
8   screen = CreateObject("roSGScreen")
9   m.port = CreateObject("roMessagePort")
10  screen.setMessagePort(m.port)
11  scene = screen.CreateScene("TemplateScene")
12  screen.show()
13
14  while(true)
15    msg = wait(0, m.port)
16    msgType = type(msg)
17    if msgType = "roSGScreenEvent"
18      if msg.isScreenClosed() then return
19    end if
20  end while
21 end sub
22
23 function firmwareRequiresUpdate() as boolean
24   'First firmware release with SceneGraph SDK2.0 support is 6.0.
25   majorRequirement = 6
26   minorRequirement = 0
27   buildRequirement = 0
28
29   'get firmware version
30   version = CreateObject("roDeviceInfo").GetVersion()
31
32   print("Firmware Version Found: " + version)
33
34   major = Mid(version, 3, 1)
35   minor = Mid(version, 5, 2)
36   build = Mid(version, 8, 5)
37
38   print("Major Version: " + major + " Minor Version: " + minor + " Build Number: " + build)
```

# Roku BrightScript

## Roku **BrightScript**

- Roku's interpreted language
- Optimized for our hardware & OS
- Dynamically typed
- Booleans, Integers, Floats, Doubles, Strings (ASCII), Objects
- Loops, OOP patterns, associative arrays

# BrightScript flow control

## Loops:

- If / else
- For
- For each
- While

```
1  ****
2  ** Application: Template Scene
3  ** File: Main.brs
4  ** Copyright (c) 2015 Roku, Inc. All rights reserved.
5  ****
6
7  sub Main()
8      print "in showChannelSGScreen"
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15     while(true)
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17         msgType = type(msg)
18         if msgType = "roSGScreenEvent"
19             if msg.isScreenClosed() then return
20         end if
21     end while
22 end sub
23
24
25
26
27
28
29
30
31
32
```



```
manifest x labelTest.xml x
1 <?xml version="1.0" encoding="utf-8" ?>
2 <component name="LabelTest" extends="Scene">
3   <children>
4     <Group>
5       <Rectangle
6         id="SampleRectangle"
7         color="0x7A44A2FF"
8         width="200"
9         height="200"
10        translation="[900,425]">
11      </Rectangle>
12
13     <Poster
14       id="testPoster"
15       uri="pkg:/images/roku_streaming_stick.png"
16       width="0.0"
17       height="0.0"
18       translation="[820,20]" />
19
20     <Label
21       translation="[50, 50]"
22       text="Building apps on the Roku Platform"
23       font="font:MediumSystemFont"
24       color="0x1ACF4199" >
25     </Label>
26     <Label
27       translation="[50, 100]"
28       text="For updates, check out twitter.com/RokuDev"
29       font="font:LargeBoldSystemFont"
30       color="0xFFFFFFFF">
31     </Label>
32     <Label
33       translation="[50, 175]"
34       color="0xFFFFFFFF"
35       text="Welcome to..."
36       font="font:MediumSystemFont" >
37     </Label>
38     <Label
```

# Roku SceneGraph (RSG)

## Roku SceneGraph

- **XML-based** framework for building apps on Roku devices
- Screens are rendered from **XML markup**
- Pre-built **components**
- **Multi-resolution support** w/ fallbacks for legacy screens
- **Custom fonts, XML tree inheritance, animations**

# SceneGraph: There are four visible “nodes”

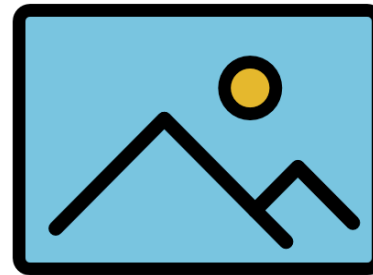
Block level elements in the XML tree



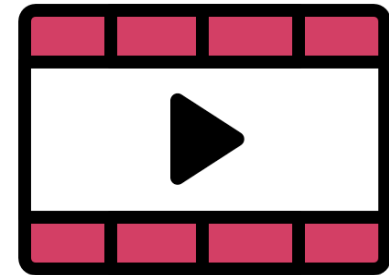
**Rectangles**



**Labels (text)**

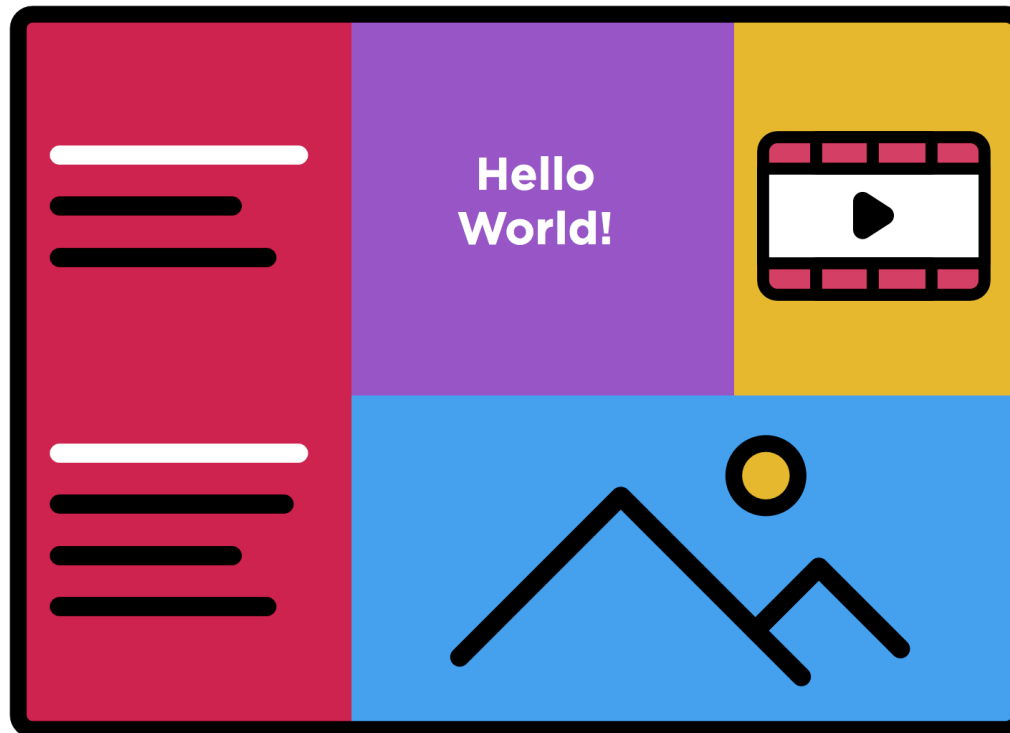


**Posters (images)**



**Videos**

# SceneGraph Draws multiple nodes on screen



# Combining nodes, we get pre-built components

- Lists
- Buttons
- In-app Keyboards
- Number pads
- Dialog boxes



# Dialog Boxes

- Basic Dialog

- Customized Dialog

- Progress Dialog

- Pin Dialog

- Keyboard Dialog



# Pin keypad

- Basic Dialog
- Customized
- Progress Dia
- Pin Dialog
- Keyboard Dia

Enter your 4-digit pin

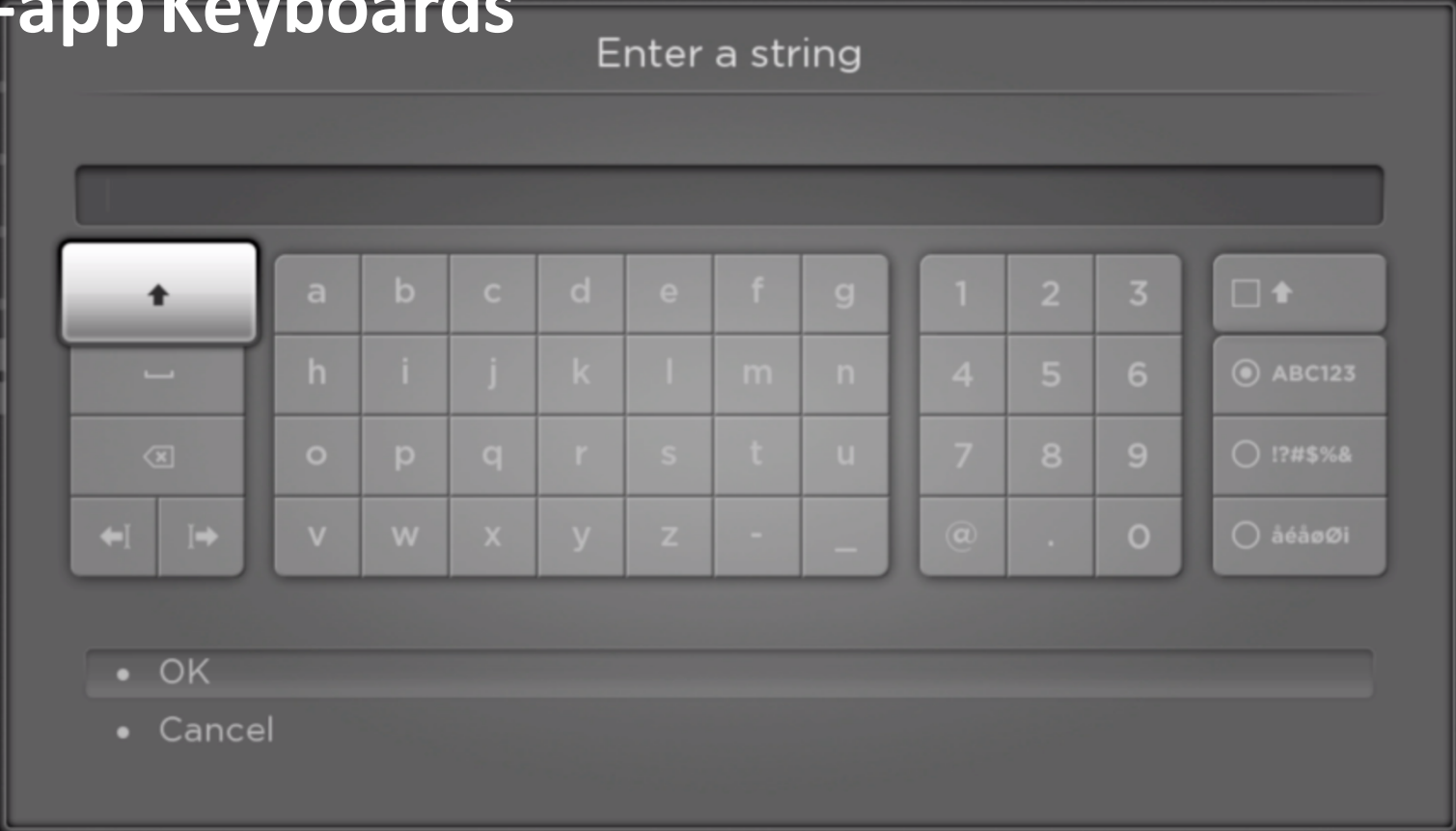
1	2	3	
4	5	6	
7	8	9	
⌫	0	⌫	

• OK

• Cancel

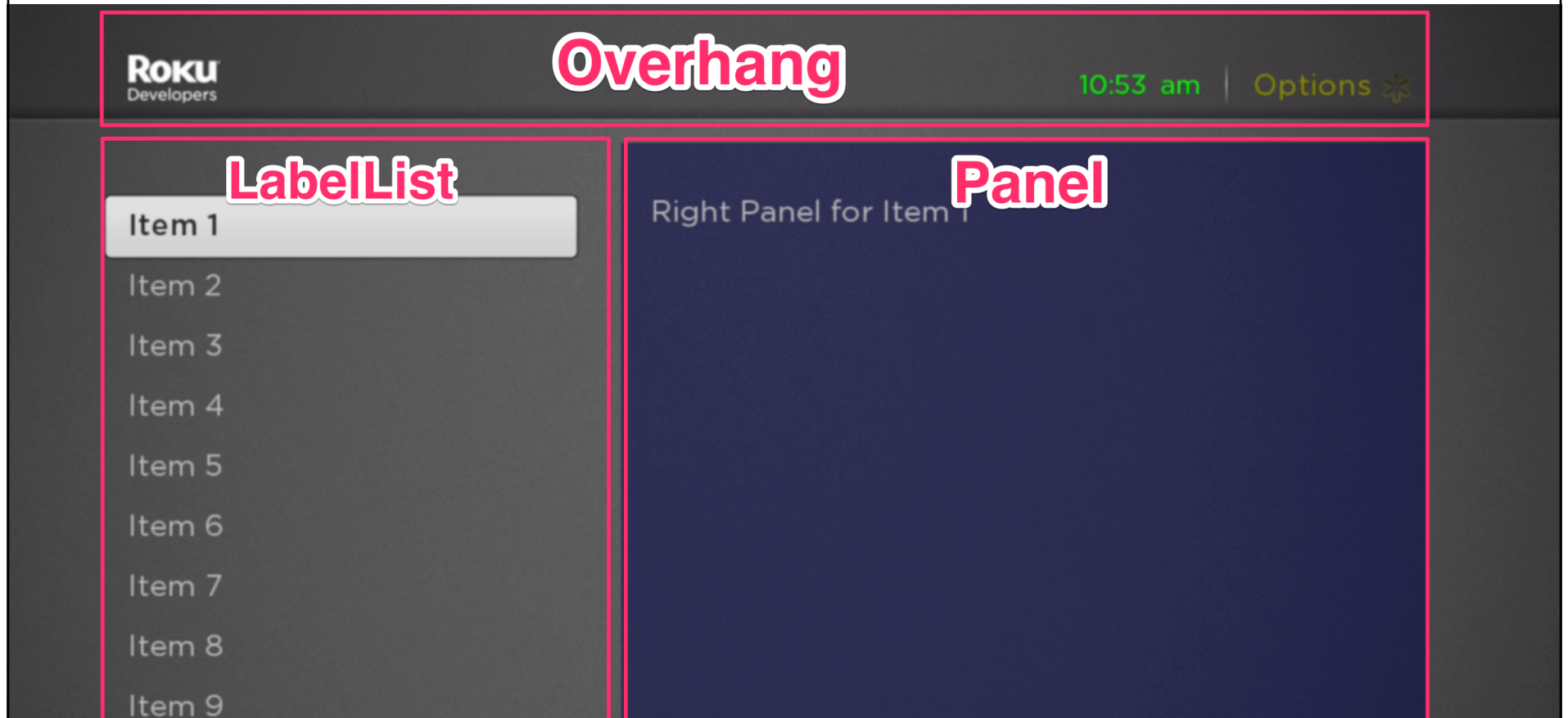
(press \* to hide/show highlight in keypad)

# In-app Keyboards





# Containers for the channel are “Scenes”







# 500px

Categories: [Photo Apps](#)

Explore 500px photos on your TV. With a 500px account, access your own photos, your favorites, and your friends albums... [Read more](#)

★★★★★ 5 ratings average 4.5

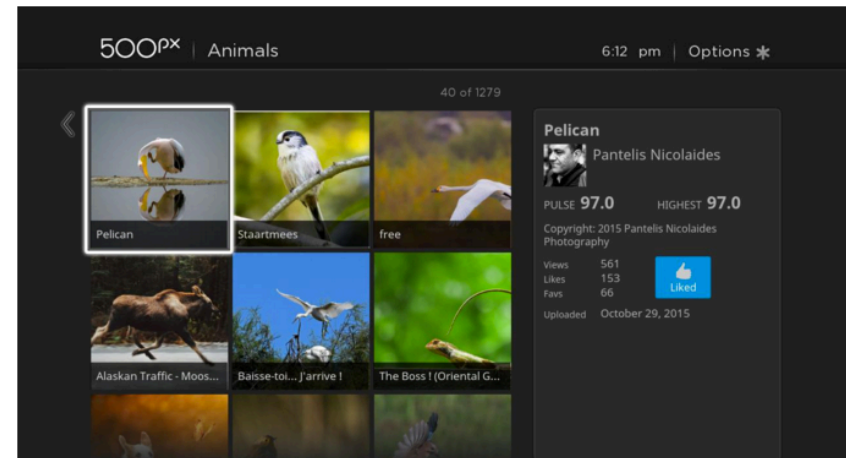
+ Add channel

Return to all channels

## 500px

Developer: RokuDeveloper

Explore 500px photos on your TV. With a 500px account, access your own photos, your favorites, and your friends albums.



5000 photos



Underwater

Urban Exploration

Wedding

All Categories

Abstract

Animals

Black and White

Celebrities

City and Architecture

Commercial

Concert



set me free



Big brown



Curtain of Light



Immersion



Sanctuary



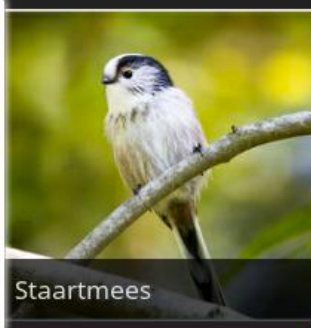
Rage



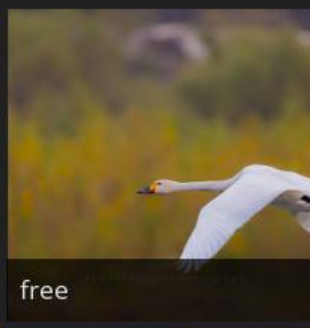
40 of 1279



Pelican



Stuartmees



free



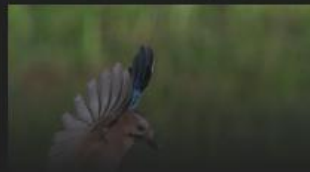
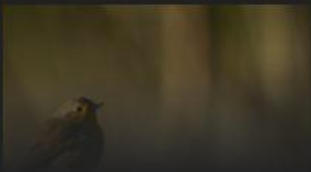
Alaskan Traffic - Moos...



Baisse-toi... J'arrive !



The Boss ! (Oriental G...



### Pelican



Pantelis Nicolaides

PULSE **97.0**

HIGHEST **97.0**

Copyright: 2015 Pantelis Nicolaides Photography

Views 561  
Likes 153  
Favs 66



Uploaded October 29, 2015



Fresh

Upcoming

Editor's Choice

Highest Rated

This Week

Popular

Animals

Black and White

Celebrities

City and Architecture

Commercial

Concert

Family

Fashion

Film

Fine Art

Food



 A Different Angle



- **Favorite**
- Like
- Follow
- About Ole Henrik Skjelstad
- OK



A Different Angle



Capadocia

gle  
k Skjelstad

HIGHEST **99.7**  
to the right from

2015  
2015

mm F4 OSS  
50 100

500px

6:11 pm | Options 

65 photos

**Favorites**

Account

About

Discover

Following

My Photos



Fall Colors and Reflect...



Evening Colors



Tail of Dragon



Sunset in Normandy



Sunset Behind the Mo...



In the morning





# For more RSG, dig into our developer docs

sdkdocs.roku.com

- > Channel Packaging And Publishing
  - Design Guidelines
- > Developer Guide
- > BrightScript Language Reference
- > BrightScript Component Reference
- > **Scene Graph XML Guide**
- > Scene Graph Reference
- > Scene Graph XML Tutorial
- Roku Ad Framework
- External Control Guide
- Eclipse Plugin Guide
- Web Service API
- Release Notes
- Index

[Roku SDK Documentation](#) / [Roku SDK Documentation](#)

## Scene Graph XML Guide

 **Beta Documentation**  
The contents of this page are subject to change

Roku has introduced a new programming framework for developing applications. This new framework incorporates two new key concepts:

- Scene Graph rendering of the application screens
- XML configuration of the Scene Graph screens

The goal of this new programming framework is to speed application development time by reducing the amount of procedural code that must be written to render a screen display. Instead, the appearance of the screen can be configured as screen component attributes set in XML files. Much of the appearance and behavior of screen components has been coded into the Scene Graph components that Roku provides, allowing you to quickly select and set the attributes of each component to match the design of your application, and allowing easier development of more complex screen displays than were possible in previous Roku firmware.

In addition, the Scene Graph XML programming framework includes a new capability to design your application user interface for specific screen display resolutions, but also with the flexibility to allow the user interface to render correctly on Roku players that do not support the intended display resolution.

- [Scene Graph XML Overview](#)
- [BrightScript Objects and Interfaces](#)
- [XML Components](#)
- [Developing Scene Graph Applications](#)

# Conclusion

## Wrapping up

- Read the **Roku Developer Guide** + docs
- Review the **Channel Package/Publisher Guide** docs
- Test the workflow for building your channel
- Reach out and show off your channels via **@rokudev** on Twitter

# Thanks for Building on the Roku Platform!

*Questions?*

Chris Traganos

@ctraganos

@rokudev

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