

## Cisco AnyRes Live on Cisco UCS B200 M3

- Cisco UCS B200 M3 Blade
- Cisco AnyRes Live Software 9.0 or later

Cisco AnyRes Live Software delivers best-in-class live video and audio streams for multiple devices including mobile, PC, and TV from a Cisco UCS blade platform.

## Package Contents

- Cisco AnyRes Live UCS SW CD
- Warranty CD
- RoHS Certificate
- Quick Start Guide
- HASP Network License Key

## Cisco AnyRes Live Features

The Cisco AnyRes Live family of live encoders offers full support for Adaptive Bitrate (ABR) Streaming.

- Apple HTTP Live Streaming to iPhone and iPad
- Microsoft Smooth Streaming, including support for H.264 PlayReady DRM, enabling highly secure live publishing solutions for Smooth Streaming
- Adobe HTTP Dynamic Streaming, with built-in CDN authentication
- Support for Low-Latency Live Smooth Streaming and Multi-language Smooth Streaming
- Support for DFXP, providing industry-standard solutions for subtitling Smooth and Flash streams
- Market Leading H.264 Video quality
- Added WebVTT to support caption and teletext subtitles to iOS devices via HLS

## The Cisco UCS Advantage

A single system that encompasses:

- Network: Unified fabric
  - Compute: Industry standard x86
  - Storage: Access options
  - Virtualization optimized
  - Unified management model
  - Dynamic resource provisioning
- Efficient Scale
- Cisco network scale & services
  - Fewer servers with more memory
- Lower cost
- Fewer servers, switches, adapters, cables
  - Lower power consumption

## What you will learn

This Quick Start Guide will walk you through setting up and logging in to the Cisco AnyRes Live Software on the Cisco Unified Computing System (UCS) B200 M3 Blade. See page 12 of this guide for links to additional documentation and support.

## Introduction

The Cisco AnyRes Live family is an industry leading multi-format, live video streaming system that delivers high quality video to all screens, including mobile, tablet, PC, and television. The AnyRes Live family of products has expanded from a line of 1 RU appliances to include a Cisco UCS B200 M3 Blade offering that supports IP source inputs. Cisco AnyRes Live Software on Cisco UCS supports the latest live streaming formats, including HLS, Smooth, Windows Media, Flash, 3GPP, and MPEG-2 transport streams.

In addition to local management, AnyRes Live can also be managed via the Cisco Linear Stream Manager (LSM) (sold separately). The LSM is a centralized solution for the management, configuration, and live monitoring of the Cisco AnyRes Live family.

## Components

The Cisco AnyRes Live Software offers multiple streaming options for the Cisco UCS B200 M3 Blade, from single format to multi-format, SD to HD, and streaming to any device, from set-top boxes to mobile phones. The family of live encoding products on the Cisco UCS includes:

**Cisco AnyRes Live Software:** Cisco AnyRes Live Software supports both HD and SD inputs and outputs. Input options include H.264 or MPEG-2 in an MPEG-2 transport stream over IP. MPTS and SPTS are supported.

**Cisco UCS B200 M3 Blade:** (Sold separately.) The Cisco UCS is a next-generation data center platform that unites computing, networking, storage access, and virtualization into a cohesive system designed to reduce total cost of ownership (TCO) and increase business agility.

**Cisco Linear Stream Manager:** (Sold separately.) LSM is the management layer for multi-AnyRes Live deployments.

## Equipment Setup

### Install the Network License Server

The Cisco AnyRes Live Software utilizes network licensing from Sentinel. We recommend that the Network License server be installed on a separate B200 blade (bare metal only) or workstation utilizing either Windows Server 2008 R2 Standard Edition or Server 2012 R2 Standard Edition. Before plugging the HASP Network key into the system, run the installer NetworkLicenseSetup.exe. Once the installer has completed, plug in the HASP Network key into a USB port on the computer. Make note of this computer's IP address for use later.

### Provision the Cisco UCS Server

The following must be configured through the Cisco UCS Manager for each blade on which the Cisco AnyRes Live Software will be installed. These specifications are based on the Cisco UCS B200 M3 Blade Server:

- Cisco AnyRes Live Software is supported on either bare metal or virtualized installations. This guide specifically addresses bare metal installations; please contact your Cisco account team for recommendations on virtualized deployments.
- Map the appropriate VLANs to enable network connectivity for the data and control plane connections of the Cisco AnyRes Live encoder. We recommend one native mode VLAN per vNIC. Be sure to note the MAC addresses of each vNIC and the corresponding network function of the mapped VLAN for use later.
- Create a BIOS Policy and update the default values with the values in the table to the right. This BIOS Policy should then be assigned to each Cisco UCS B200 M3 Blade Server that will host the Cisco AnyRes Live Software.

BIOS Policy Section	Parameter	New Value
Advanced: Processor	Enhanced Intel Speedstep	disabled
Advanced: Processor	Hyper Threading	enabled
Advanced: Processor	Virtualization Technology (VT)	disabled
Advanced: Processor	Processor C3 Report	disabled
Advanced: Processor	Processor C6 Report	disabled
Advanced: Processor	CPU Performance	hpc
Advanced: Intel Directed IO	VT for Directed IO	disabled
Advanced: RAS Memory	NUMA	disabled
Advanced: RAS Memory	LV DDR mode	performance mode

### Provision the Operating System

The Cisco AnyRes Live Software requires either Microsoft Windows Server 2012 R2 64-bit Standard Edition or Windows Server 2008 R2 64-bit Standard Edition. Use the full installation option to install this operating system once the Cisco UCS B200 M3 blade configuration has been completed. We recommend applying all current patches and updates to the operating system using Microsoft Windows Update before proceeding.

After the installation of the Microsoft Windows Server operating system, install all necessary drivers through the Windows Device Manager. See the Cisco UCS B200 M3 documentation for the location of the complete driver set on Cisco.com.

## Assign Roles and Features

Roles and Features are managed differently depending on the operating system being used.

### For systems using Microsoft Windows Server 2008 R2:

Add the following Role and Services through the Windows Server Manager. Do not remove any default selections. A restart of the operating system may be required after this step:

- Web Server IIS Role
- ASP.NET Role Service
- IIS 6 Management Compatibility Role Service

Add the following Features through the Windows Server Manager::

- .NET Framework 3.5
- Desktop Experience
- SNMP Services

### For systems using Microsoft Windows Server 2012 R2:

Roles and Features are not bundled as part of the default Windows Server 2012 R2 install and will require access to the Windows Server 2012 R2 installation DVD/media as an alternate source. To install the required Roles and Features:

- Launch the 'Add Roles and Features Wizard'
- Select "Specify an alternative source path" on the "Confirmation" step
- Provide the path for the Windows Server 2012 R2 installation media (similar to "d:\sources\sxs")
- Navigate to the following Role: Server Roles > Web Server (IIS) > Web Server > Application Development > ASP.NET 3.5
- Navigate to the following Feature: Features > .NET Framework 3.5 Features > .NET Framework 3.5 (includes .NET 2.0 and 3.0)

## Configure Network Interfaces

The vNICs created earlier will appear in the Windows Network Connections view. This order may or may not align with the order of the vNICs as shown in the Cisco UCS Manager.

Each network interface must be renamed in the Windows Network Connections view to align with the expected interface names for the Cisco AnyRes Live Software. Reference the MAC addresses noted in the earlier step to identify which network interface maps to which VLAN in the Cisco UCS. The MAC address is listed in the Details view for each network connection.

Based on your unique VLAN-to-MAC address mapping, manually rename the network connections according to the table below. Note that the names must be exact, and that there are no spaces in the names below. After renaming each network interface, be sure to disable IPv6 through the Properties window. Static IPv4 address assignments should also be made at this time if static addressing is required in your network.

Network Connection Name	Purpose
Main	Management
Aux	Auxiliary
Input1	Primary IP Multicast Input
Input2	Secondary IP Multicast Input
Output1	Primary Output
Output2	Secondary Output

## Prepare the Cisco UCS for the Cisco AnyRes Live Software

The Cisco AnyRes Live Software requires additional pre-configuration of the blade and operating system before installation. Follow the steps below to complete the configuration of the blade prior to installation. These steps must be run under a login with Administrator permissions:

- Copy the file SpinnakerPrep.zip from the Cisco AnyRes Live Software distribution package or CD to the desktop.
- Unzip the file SpinnakerPrep.zip.
- Open a command prompt session as the Windows Administrator.
- Change the directory to the unzipped SpinnakerPrep folder.
- From the command prompt, execute ImagePrep.bat. This step may take several minutes.
  - When prompted, click **Next** until prompted to click **Install**. After clicking Install, the SnarellS program will be installed.
  - SnarellS will prompt for an Audit Service Configuration window. Click **OK** to accept the default values.
  - SnarellS may then raise a warning message about file paths. This is normal. Click **OK** to continue.
  - Click **Next**, and then click **Finish**.
- The installer for Microsoft Visual J# 2.0 will now launch. When prompted, click **Next**, review and accept the terms of the license, and then click **Install**. After the installation completes, click **Finish**.
- If installing on Microsoft Server 2012 R2:
  - Reboot the server
  - Open a command prompt session as the Windows Administrator.
  - Change the directory to the unzipped SpinnakerPrep folder.
  - From the command prompt, execute ImagePrep-SpinnakerUpdate.bat.
- The batch file execution will then complete. After returning to the command prompt, enter **exit** to close the command prompt window.
- Reboot the server

## Configure Network Licensing

The licensing service on the blade must now be configured to reach the licensing server prior to installation of the Cisco AnyRes Live Software. Follow the steps below to configure the licensing service:

- Open a web browser on the Cisco UCS server and navigate to the URL <http://localhost:1947>
- On the Access to Remote License Managers tab, enter the IP address of the Network License Server in the Specify Search Parameters field and click **Submit**.

### Next...

When network licensing is configured, proceed to Install the Cisco AnyRes Live Software.

## Install the Cisco AnyRes Live Software

After completing all of the preceding steps, navigate to the file CiscoAnyResLive-<build number>.exe (for example, CiscoAnyResLive-8.5.1.48129.exe), which is included in the Cisco AnyRes Live Software distribution package or CD. Double-click this executable file to install the AnyRes Live Software.

The blade will reboot after the AnyRes Live Software installation completes. After the reboot completes, log in to the AnyRes Live Licensing and Recovery page (<https://management IP address/encadmin/Recovery.aspx>) to verify that the correct license configuration has been applied. The Network HASP USB license includes support for the seven configurations outlined in Table 1 below. The license server will allow you to switch between these configurations on each blade (license) that is purchased. Note that updating the license configuration may take several minutes and will automatically restart the encoding services.

Table 1: Network HASP USB License Configurations

Density Solutions	1x16	2x12	3x8	6x6	8x4	10x3	16x1
Inputs	1	2	3	6*	8	10	16
Outputs	16 per input	12 per input	8 per input	6 per input	4 per input	3 per input	1 per input
Total output	16	24	24	36(SD) 36(HD)*	32	30	16
SD	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HD	Yes	Yes	Yes	Yes	No	No	No

\*Standard 6x6 presets may not be supported with some HD configurations.

## User Interface

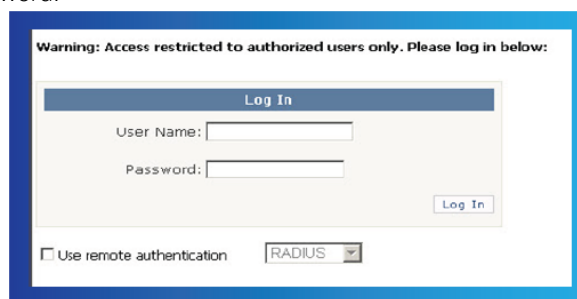
The Cisco AnyRes Live Software user interface will allow you to manage AnyRes Live by browsing to its IP address. With this interface, you can:

- Load and save encoding presets
- Configure the encoding parameters
- Start and stop AnyRes Live
- Monitor status and general encoding statistics
- Display system information
- Manage the system

### Accessing the User Interface / Logging In

To access the user interface of the AnyRes Live encoder, go to: `https://machine name or IP/encadmin`. For example, `https://198.51.100.1/encadmin`. If logged in to AnyRes Live locally or remotely through Remote Desktop, you can open the user interface at: <https://localhost/encadmin>.

Once you have opened to the Cisco AnyRes Live user interface, you must log in with a valid user name and password.



The initial AnyRes Live administrator credentials are:

- **User Name:** admin
- **Password:** encAdm1n

**Note:** The Use remote authentication check box must be unchecked to use these credentials.

After logging in, use the Network Adapter Configuration page on the System tab to configure additional IP addresses for LAN1 and LAN2.

### Getting Acquainted

Now that you are logged in, it is helpful to understand how the user interface is laid out. The main summary page shows status for Audio/Video, Output, Archive Outputs, Pre-Processing, Encode Channels, the IP network settings, and the next three upcoming Scheduled Events. As you look across the tabs at the top, you will see Home, Presets, Input, VC-1, H.264, H.263, Scheduling, System, and Help.

Each Cisco AnyRes Live user interface page indicates in the top right corner whether AnyRes Live is running or stopped.

**Note:** When changing a setting in any page, you must click Apply before proceeding to a different page. Otherwise, the settings will not be saved. Click Reload to return to the previously applied settings for that page.

**Note:** Make all setting changes while AnyRes Live is stopped. Any changes made while AnyRes Live is running cannot be applied, and these changes will be erased when it is stopped.



## Configuring a Stream

Let us step through setting up a live VC-1 stream. The purpose of this exercise is to provide a quick overview of the user interface and confirm that AnyRes Live is configured correctly. For a deeper understanding of each of the menu options and settings, see the User Guide, which can be accessed by clicking the Help menu and choosing User Guide.

The steps below outline how to configure and test your Cisco AnyRes Live to generate a Live Windows Media VC-1 stream.

### Confirm Source

Begin by confirming that the source is connected to AnyRes Live. The Ethernet cable carrying the video input should be connected to the back of the server chassis through a VLAN to Input1 on the blade.

### Presets Tab

The Presets tab manages AnyRes Live preset files to allow the operator to create, store, import, and export presets. Each AnyRes Live ships with presets that have been optimized for targeted formats and devices. New presets can be created, but we highly recommend that you always start with one of the presets that ships with AnyRes Live and then modify it to your specific needs.

### Choose a Preset

The top right corner of the user interface displays the name of the currently active preset. The AnyRes Live Software product ships with a Factory Defaults preset. If it is not the active preset, choose it from the Manage Presets area of the Encoder Presets page and click **Apply**.

### Next...

Next, proceed to the Input tab.

## Input Tab

Click the Input tab. The Video/Audio/Teletext page allows you to view or modify input settings, including Video PID, Video Resolution, Frame Rate, Audio PID and Audio Level, and the PID for the DPI (SCTE-35).

### Detect Input Streams

Enter the multicast address and port that Cisco AnyRes Live should use for IP input. Optionally, specify a source address.

Next, click the **Detect Streams** link in the top right corner of the Video Input area.

If the multicast address is valid, this page will display the Detected Input Streams area with information about the detected streams. In the example shown here, there is a single program which contains a single video PID and two audio PIDs. If multiple program or video PIDs are available, choose the program you wish to utilize for your live stream, and then choose the video PID.

Detected Input Streams									
Transport Stream ID:		1							
Number of Programs:		1							
Program:		1 PID=0x1E0 (480) ▾			PCR PID:		0x1E1 (481)		
Video Streams:									
PID	Type	Format	Aspect	Frame Rate	Prog Seq	Bit Rate	Profile/Level	Chroma	
0x1E1 (481)	0x02 MPEG2 video	704x480	4x3	29.97	No	15000000	Main@Main	4:2:0	
Audio Streams:									
PID	Type	Language	Channels	Sample Rate	Bits/Sample	Bit Rate	Channel Assignment		
0x1E2 (482)	0x01 AC3 audio	eng	2	48000	16	192000	1 2		
0x1E3 (483)	0x01 AC3 audio	spa	2	48000	16	192000	3 4		
SCTE-35 Streams:									
PID	Type								
0x1E4 (484)	0x06 SCTE-35 data								

## Choose Input Streams

After choosing the program with the correct video and audio PIDs, this information will be displayed in the Selected Input Streams area.

Channel	PID	Audio Level
1	482	0 dB
2	483	0 dB
3	0	0 dB
4	0	0 dB
5	0	0 dB
6	0	0 dB
7	0	0 dB
8	0	0 dB

In the Selected Input Streams area, confirm that the correct video and audio PIDs are entered. Also, confirm that the resolution, frame rate, and scan type are correct.

Click **Apply** in the top right corner of the page to save your selections.

### Next...

When complete, move on to the VC-1 tab.

# Video and Content Delivery

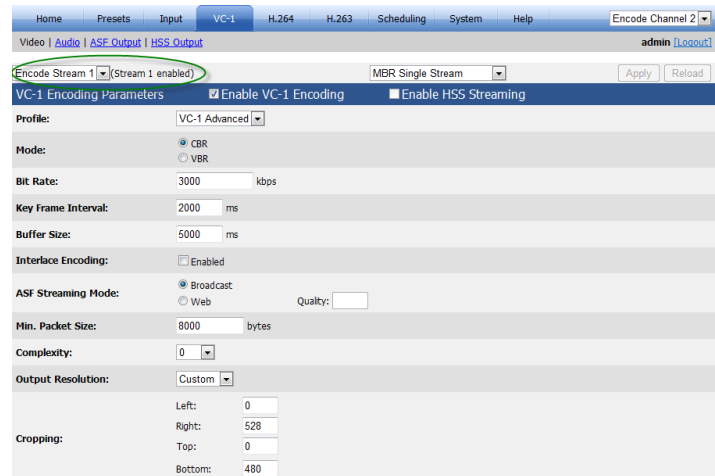
## VC-1 Tab

Begin by clicking the VC-1 tab and confirm that the Enable VC-1 Encoding check box is checked and that the stream is enabled.

Within the VC-1 tab, you will find the following pages: Video, Audio, ASF Output, and HSS Output.

Click the Audio link to display the Audio page and confirm that the audio is enabled. If any modifications are made to this page, click Apply.

Next, click the link for the ASF Output page. Confirm that the Enable ASF Pull check box is checked to enable Windows Media Servers and Windows Media Players to retrieve (“pull”) content as it is being encoded from AnyRes Live via UDP port. Confirm that the network port is set to 8080. If you change any settings on this page, click Apply.

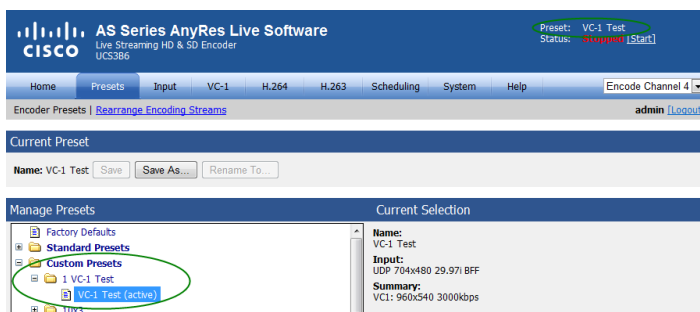


Next...

When complete, move on to Saving Your Preset.

## Saving Your Preset

You have now configured a live streaming VC-1-pull preset. At this time, you can go back to the Presets tab and click **Save As**. Enter a name for the preset and choose a destination group. If a destination group is not defined, the preset will be added to the Custom Presets directory by default. Click **Save Copy** to store the preset in the designated directory. The name of the new preset is displayed in the top right corner of the page.



Once the preset has been saved, click Start in the top right corner of the page to begin the live stream. When a live stream is started, the encoder will automatically display the Encoding Statistics page on the Home tab. At this time, the status should display **Running** as the Encoding Session statistics and Current statistics update continuously.



Next...

When complete, move on to Live Streaming Playback.

## Live Streaming Playback

### Video Player

To play back the stream, you must use Windows Media Player (WMP). At the bottom of the Encoding Statistics page on the Home tab, locate the View Now area.

Click the link provided to launch the Media Player. Depending on your browser, a message may be displayed asking if you want to allow this program to open on your computer. Click **Allow** to launch the application.

When the player first initializes, you will have to wait several seconds as the player buffers the stream. The stream should start playing within 10–20 seconds.

If you do not see the stream and are connected via the user interface, log in to AnyRes Live via Remote Desktop or locally by connecting a monitor to AnyRes Live. After logging in to AnyRes Live, attempt to play the stream again. It is possible that the system you are using to access the remote user interface does not have network access to view the stream.

### Next...

If you are able to view and hear the stream, your AnyRes Live is set up and ready to use. If you are not able to view or hear your stream, review the troubleshooting section in the User Guide.

## Cisco AnyRes Live Software Ordering

Product Part Number	Description
SPN-SWK-UCS-0700	Cisco AnyRes Live SW Kit, Apps CD, User Guide, for use on Cisco UCS

### Licensing Information:

See Table 1 on Page 5 for available configurations per blade.

## Supported Cisco UCS Hardware

### Cisco UCS B200 M3 Blade Requirements:

Note: At this stage, all specifications are *non-negotiable*. Extensive testing has been undertaken on this specification configuration. Any deviations from this specification *will not* be supported. The specifications shown are for bare metal installations (hosted on Microsoft Windows Server 2008 R2 Standard or Windows Server 2012 R2 Standard) or virtualized deployments; please contact your Cisco account team for recommendations on virtualization. The specifications shown below detail specifics including the part numbers required to procure and build a Cisco AnyRes Live Software solution within a Cisco UCS environment.

Product Part Number	Description	Recommended Quantity
UCSB-B200-M3-U	UCS B200 M3 Blade Server w/o CPU, memory, HDD, mezzanine	1
UCS-CPU-E5-2690B	3.00 GHz E5-2690 v2/130W 10 Core/25MB Cache/DDR3 1866MHz	2
UCS-MR-1X041RY-A	4 GB DDR3-1600 MHz RDIMM/PC3-12800/single rank/1.35v	8
A03-D500GC3	500 GB SATA 7.2K RPM SFF HDD/hot plug/drive sled mounted	1
UCSB-MLOM-40G-01	Cisco UCS VIC 1240 modular LOM	1

### Additional Accessories: Cisco UCS Switch Fabric/Chassis Requirements

Product Part Number	Description
UCS-FI-6248UP-UPG	6248UP 1RU Fabric Int/No PSU/32UP/12p LIC
N10-MGT010	UCS Manager v2.0
SFP-10G-SR	10GBASE-SR SFP Module
UCS-PSU-6248UP-AC	6248UP Power Supply/100-240VAC
CAB-9K12A-NA	Power Cord, 125VAC 13A NEMA 5-15 Plug, North America
UCS-ACC-6248UP	6248UP Chassis accessory kit
UCS-FI-DL2	UCS 6248 Layer 2 Daughter Card
UCS-FAN-6248UP	6248UP Fan Module

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## Additional Information

To learn more about the Cisco AnyRes Live family, including details about features and functionality, see the User Guide. The User Guide can be found from within the AnyRes Live user interface under Help.

Additional information regarding the Cisco AnyRes Live family can be found at the following link:

<http://www.cisco.com/go/anyres/live>

Viewing and downloading the guide from Cisco.com require customer login. If you are unable to access Cisco.com via your customer login, contact Cisco support at [tac@cisco.com](mailto:tac@cisco.com).

## Additional Support

Refer to the following for additional product documentation and support:

### [Download Software](#)

<http://www.cisco.com/go/anyres/live/softwaredownloads>

### [Datasheets](#)

<http://www.cisco.com/go/anyres/live/datasheets>

### [Bug Search Tool](#)

<http://tools.cisco.com/bugsearch/search>

### [TAC Service Request Tool](#)

<http://tools.cisco.com/ServiceRequestTool/create/launch.do>



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