



streeme

## Network Routing Implementation

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Location  
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# Introduction

## Overview

This document provides an implementation example of the Streeme live-TV solution. Because every service location has different network requirements, the actual implementation will vary from location to location. As additional equipment such as supplemental transcoders are added, the remote access strategies become more complex.

## Typical Hardware Connectivity

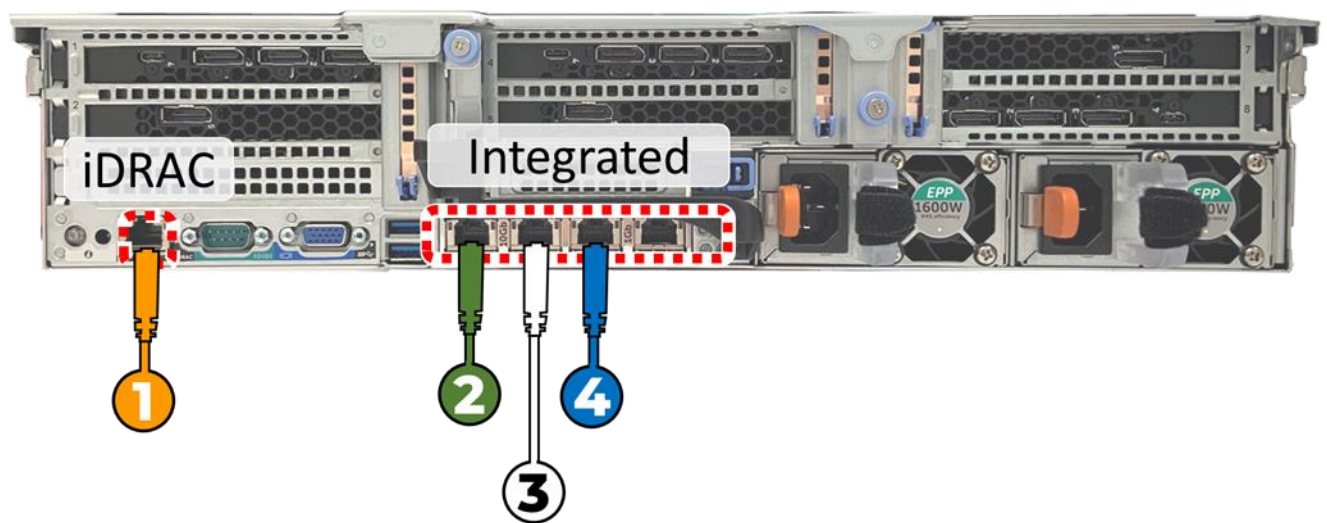


Figure 1-Typical NIC layout in the Media Server

The minimum hardware connectivity of the Streeme Media Server requires 4 cable connections that include:

**iDRAC [1]** – The iDRAC connection is the service lifeline of the system. This service port is used by Streeme service personnel to remotely manage the system. This connection is always a 1Gb ethernet connection and is accessed remotely only by a service VPN.

**Source Content [2]** – The source content port is how the system receives live content for rebroadcast. Content is received on 1 or more 10Gb ports. In almost all cases, it is a copper ethernet connection because the DirecTV COM3000 distributes via 10Gb ethernet. When connected to the DirecTV COM3000, this port is normally configured as a point-to-point connection. At some service locations a second content port is enabled to receive local ATSC channels or local ethernet supplied channels. When multiple sources are used, an aggregation switch may be deployed to combine the multicast source data into a single cable/connection.

**Subscriber Services [3]** – The subscriber services port is a secure network interface for service

delivery. It is typically 1 or more 10Gb copper ethernet ports. When more capacity is required, 2 service ports can be aggregated to support additional bandwidth requirements. In normal scenarios a single HD stream uses about 2.2 Mbs, so a single 10Gb port could support up to 3,000 subscriber sessions. This connection is supported by SSL, and subscribers' connections are limited to LAN distribution and defined as static routes.

**Management [4]** – The management port is an SSL secure, 1Gb connection that supports communication of application data to and from the AWS hosted middleware software. Application data includes subscriber authentication, system monitoring, and announcements displayed in the players. This same connection is used for server SSH connections and to verify live-TV streams by service personnel.

## Remote Access

All Streeme equipment is remotely accessed by the predefined static IP addresses 54.145.87.9 (primary) and 107.172.254.33 (back-up) service VPNs. For added security, the service location firewall should be tailored to reflect these IP addresses to both the iDRAC and management port.

To remotely access the system, we will request at least one static public IP address. If additional devices are required, additional static IP address may be requested. This public static IP address is typically NAT'd as necessary to provide access to specific media server ports and services. A summary of the network translations is detailed in Figure 2- Network Implementation Summary.

In the Figure 2 diagram it is assumed that there are 2 static public IPs, one to the iDRAC and one to the management port.

Please note that only the iDRAC and Management ports are remotely accessed.

## Network Connectivity

Media Server		Firewall		WAN		
Server Port	Private IP	Inbound		Static Public IP	Source	Description
Cable 1 iDRAC Support	10.120.50.6	Private Port	Public Port	Public IP 1 TBD	54.145.87.9 107.172.254.33	Service VPN (Primary) Service VPN (Back Up)
		TCP 5900	TCP 5900			
		TCP 5901	TCP 5901			
		TCP 443	TCP 443			
Cable 3 Source Content	192.168.3.X	Point to Point or LAN Only				
Cable 2 Subscriber Services	Customer specified & cannot be .50 Network	LAN Limited Traffic			<a href="https://live.streeme.tv">https://live.streeme.tv</a>	Authentication, EPG Data & Announcement Data Retrieval
Server Port	Private IP	Inbound Ports		Static Public IP	Source	Description
Cable 5 Management	10.120.50.11	Private Port	Public Port	Public IP 2 TBD	54.205.81.245 18.210.113.62 52.39.30.72	AWS TvServicePortal.com AWS Monitoring AWS Middleware
		TCP 80	TCP 80			
		TCP 443	TCP 443			
		TCP 8081	TCP 8081		54.145.87.9 107.172.254.33	Service VPN (Primary) Service VPN (Back Up)
		TCP 9090	TCP 9090			
		TCP 22	TCP 22			
		Outbound Ports			Destination	
			TCP 67 TCP 111 TCP 323 TCP 611 TCP 5353 TCP 44689	Public IP 2 TBD	AWS Services	

Figure 2- Network Implementation Summary

# Network Configuration

		iDRAC	Subscriber*	Content	Management
		Cable 1	Cable 2*	Cable 3	Cable 5
1	Private IP <i>(defaults shown and may be changed)</i>	10.120.50.6	<i>required*</i>	192.168.3.x	10.120.50.11
2	Public Static IP	<i>required</i>			<i>required</i>
3	Gateway	<i>required</i>	<i>required*</i>		<i>required</i>
4	Interface Subnet	<i>required</i>	<i>required*</i>		<i>required</i>

*\*Cannot be on the same network as the management and idrac*

5	Internal Subnets for IPTV routing	<i>required</i>
		<i>optional</i>
		<i>optional</i>
		<i>optional</i>
		<i>optional</i>
		<i>optional</i>
		<i>optional</i>
		<i>optional</i>
		<i>optional</i>
		<i>optional</i>
		<i>optional</i>
		<i>optional</i>
		<i>optional</i>
		<i>optional</i>

6	Network Switch	Make	Model Number	Connection Type
		<i>required</i>	<i>required</i>	<i>required</i>

7	Server Preferred Voltage <i>(required)</i>	120
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8	Authentication Type <i>(required)</i>	None/CSV
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