Kraken Azure Quick Start Guide

Kraken 3.8 on Microsoft Azure

This quick start guide describes how to create and configure a virtual Kraken server on Microsoft Azure. For detailed configuration and operation information, please refer to the Kraken User's Guide.

For the default credentials, refer to the *Important Notice* (postcard shipped with appliances). You may download the *Important Notice* as well as the latest software and Release Notes through the Download Center on the Haivision Support Portal.

Guide Contents

About Microsoft Azure

Microsoft Azure is a cloud computing platform for building, deploying and managing applications and services through a network of hosted data centers. Microsoft Azure allows you to deploy and manage your Kraken instances in this global network. For more information, please visit: http://azure.microsoft.com

About Kraken

Haivision Kraken can encode or transcode real-time motion imagery streams to optimize video quality over constrained networks and datalinks. Kraken uses Microsoft's global network of cloud regions and the public internet to distribute high-quality and encrypted full-motion video to multiple destinations for use in defense and ISR applications. As a transcoder, Kraken ingests compressed video data in a broad range of common streaming formats and converts that video stream to the most efficient standards-based formats (H.264 or HEVC) with stream settings suitable for downstream networks or video distribution systems. Kraken is specifically built for the task of transcoding to disseminate information in a format required by downstream networks, exploitation systems, and viewers, with the lowest possible delay, while preserving metadata with frame-accurate synchronization. Kraken provides powerful metadata management tools to aggregate multiple sources as required to save bandwidth while preserving geospatial context.

The following features have been disabled or modified on the Kraken Azure Web interface:

1. Network settings are read-only.
2. Upgrade is disabled.
3. SAP is disabled.
4. The REST API page is disabled.

> **Note**
>
> This disables the legacy REST API. To access the API documentation for the current REST API, append `/apidoc` to the end of the Kraken URL. See Kraken API v2.0 Integrator's Guide.

Cloud Example

One example of Kraken Cloud usage would be to combine local Makitos with Azure Kraken and HMP as follows:
Workflow is 10x low bitrate transcodes: Makito X4-R/Makito X1 → HEVC/NTSC/SRT(128kbps) → Satellite → Kraken (Azure) → 264/720p/UDP(1Mbps) → HMP (Azure)

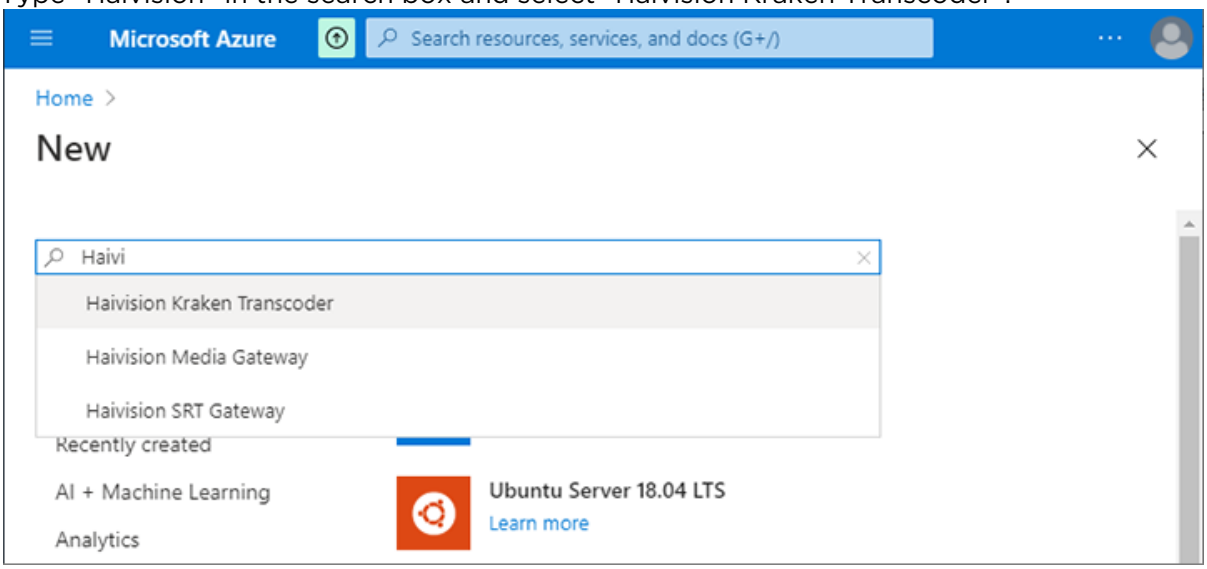
Before You Start

You must have an active Microsoft Azure account to sign in to the Azure Portal. For evaluation purposes you can subscribe to Azure for a trial period. For more information, please visit: http://azure.microsoft.com/en-us/pricing/free-trial/

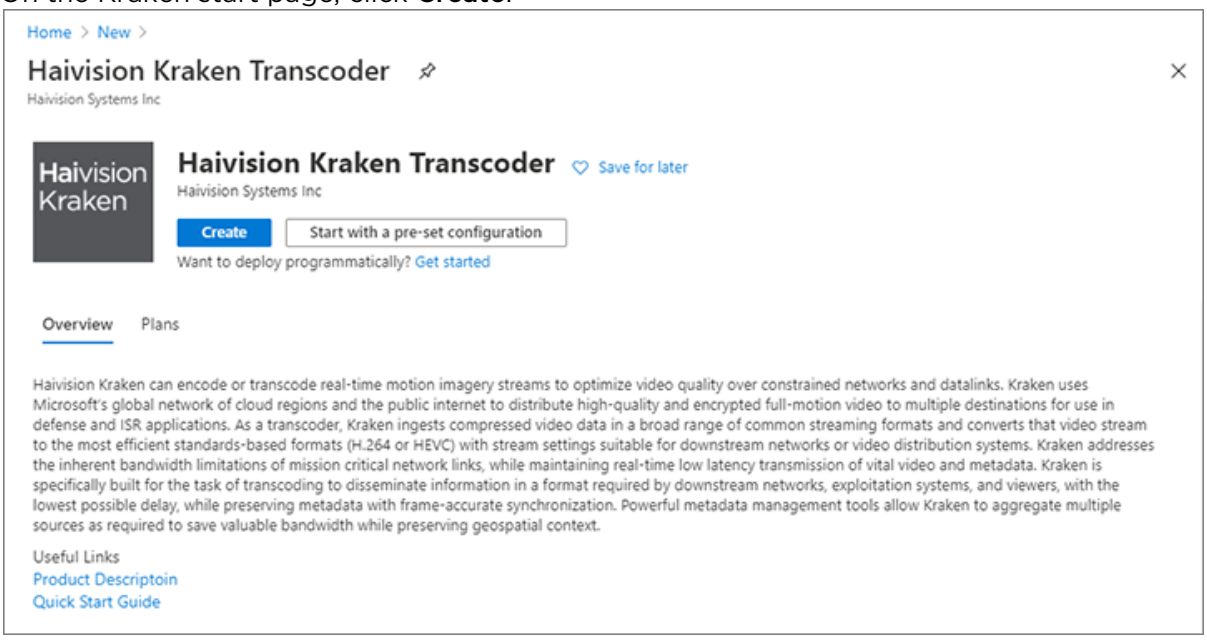
With Microsoft Azure, you must "bring your own license" (BYOL) for Kraken. You can choose from different licensing options. Please contact your Haivision representative to discuss your options.
See Licensing Your Server for details.

Creating a Virtual Kraken Server

1. Sign in to your Azure account: https://portal.azure.com
2. After you have successfully signed in to the Azure portal, under Azure Services, click **+ Create a Resource**.
3. Type "Haivision" in the search box and select "Haivision Kraken Transcoder".



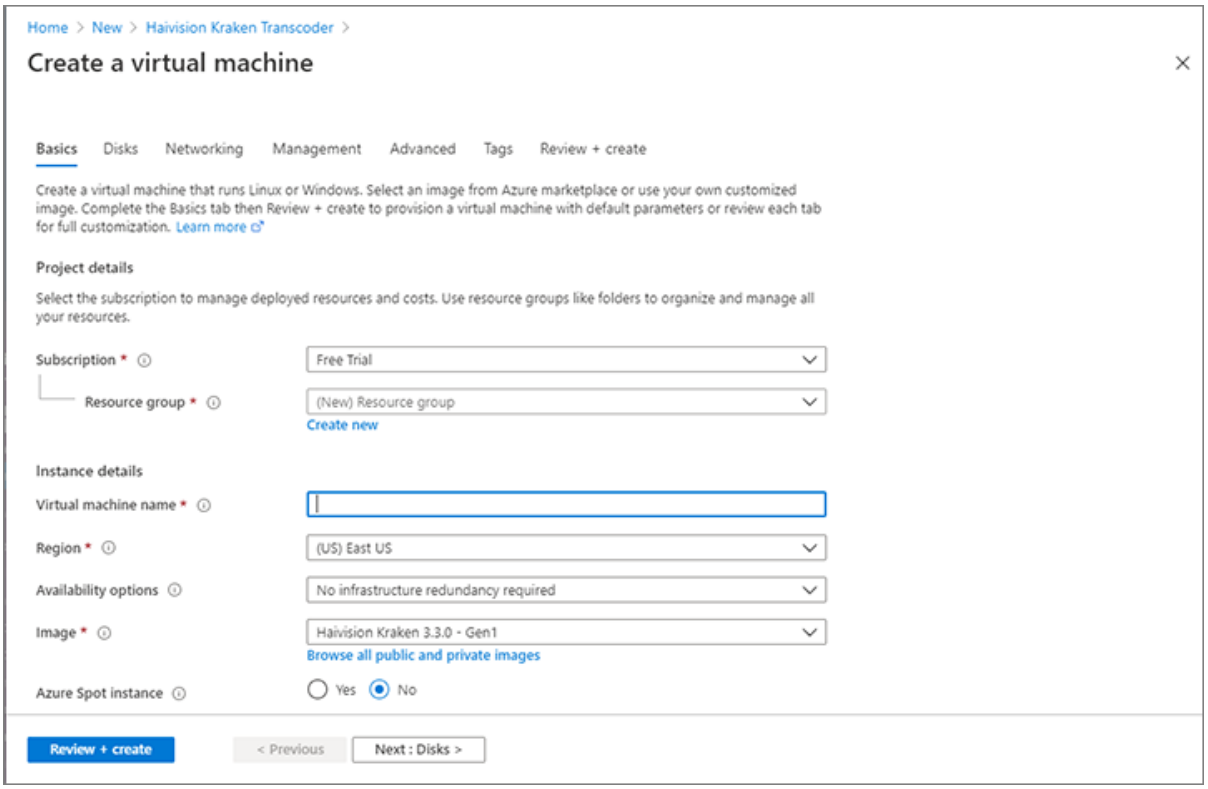
4. On the Kraken start page, click **Create**.



Setting Up Your Server

To set up your virtual server, complete each of the sub-sections as described below.

Basics



1. In the Basics section, specify a subscription plan.
2. For Resource Group, select an existing resource group. Click **Create New** to create a resource group, if necessary. For more information on resources, visit: https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-group-portal

   Note

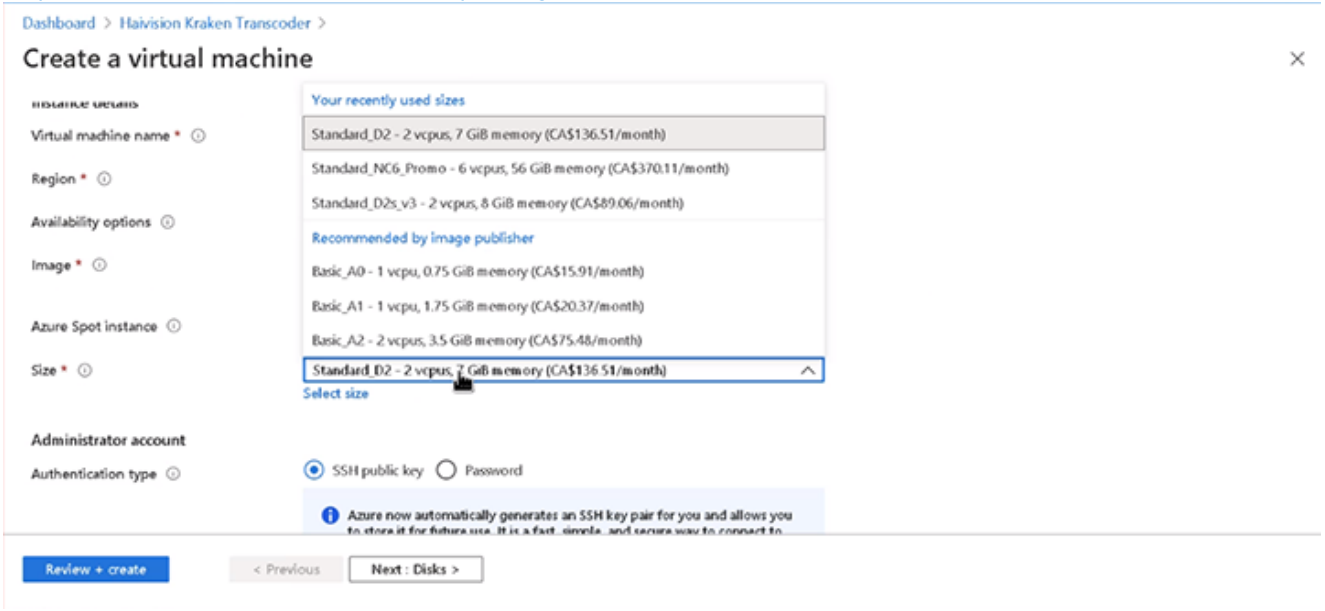
   The resource group must be composed of the characters A-Z, a-z, 0-9, period(.), hyphen (-), and/or underscore (_).

3. Select a region, corresponding to the geographical location closest to the ingest source and/or egress source of your virtual server. This ensures the lowest latency for your Kraken traffic.
4. Enter a name for your virtual machine instance.

   Note

   The name must be composed of the characters a-z and/or 0-9.

5. For Size, select from the recommended pricing tiers (D2, D3, A2 Standard, etc.). For details see: http://azure.microsoft.com/en-us/pricing/details/virtual-machines/



> **Note**
>
> Size should be based on the considerations of performance, space and pricing. For recommendations on sizing, see https://azuremarketplace.microsoft.com/en-us/marketplace/apps/haivisionsystemsinc1580780591922.haivision-kraken?tab=PlansAndPrice.

6. Set up the Admin account by choosing “SSH public key” for the Authentication type and entering “hvroot” for the Username.
7. Generate an SSH public/private key pair for admin access to your virtual server. Typically, this is done on the computer that you will use to manage the server.

> **Note**
>
> SSH access to Kraken’s Console UI is only allowed via SSH public key. After deploying the virtual server, you can use this console to enable access for other administrators by uploading their public keys.
> You can generate an OpenSSH public key with tools like ssh-keygen on Linux and OS X, or PowerShell on Windows. For details, see https://docs.microsoft.com/en-us/azure/virtual-machines/linux/ssh-from-windows and https://docs.microsoft.com/en-us/azure/virtual-machines/linux/mac-create-ssh-keys.

8. Copy and paste your public SSH key into the “SSH public key” text box. Never share the private key.
9. For basic inbound ports, select ssh, http and httpd.
10. When you are satisfied with your settings, click **Next: Disks**.

Disk Options

1. Select the OS disk type. Disk size for Kraken Azure should be based on the considerations of performance, space and pricing.
2. When you are satisfied with your settings, click **Next: Networking**.

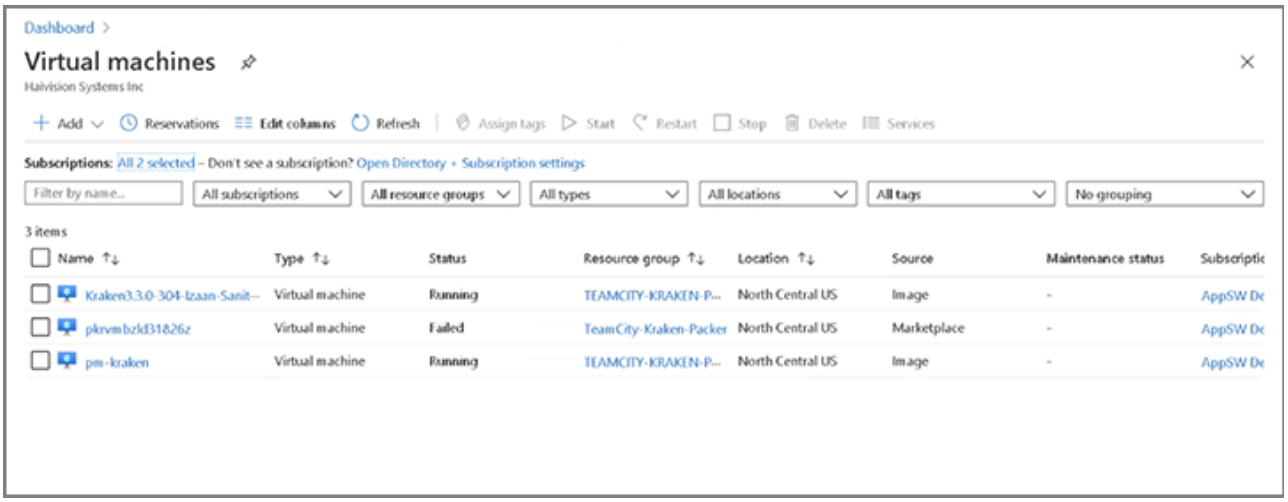
Networking

1. For the Public IP address, click **Create New** and select the desired options.
2. Enter a Domain Name Label prefix. If specified, a DNS record is created for the public IP, using this prefix plus the cluster location's FQDN.
3. When you are satisfied with the settings, click **Next: Review + Create**.

Review + Create

1. Review your settings. You can go back to previous sections to make any necessary changes or corrections.
2. When you are satisfied with the summary, click **Create**.

Creating your server instance can take several minutes. Once the VM creation is done, it can be found on the VM Machines page.

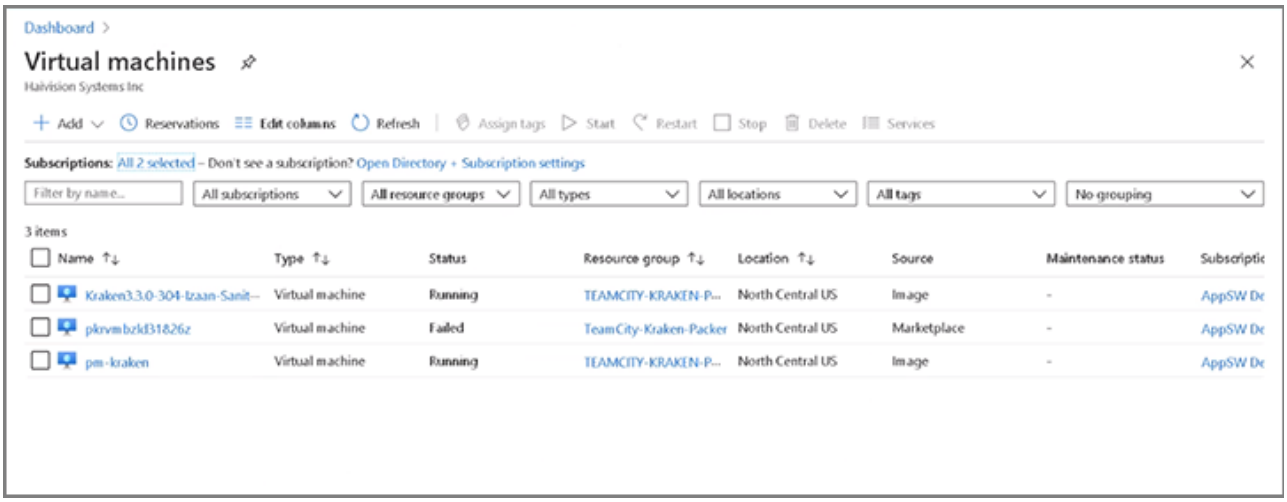


See Signing in to Your Server.

Signing in to Your Server

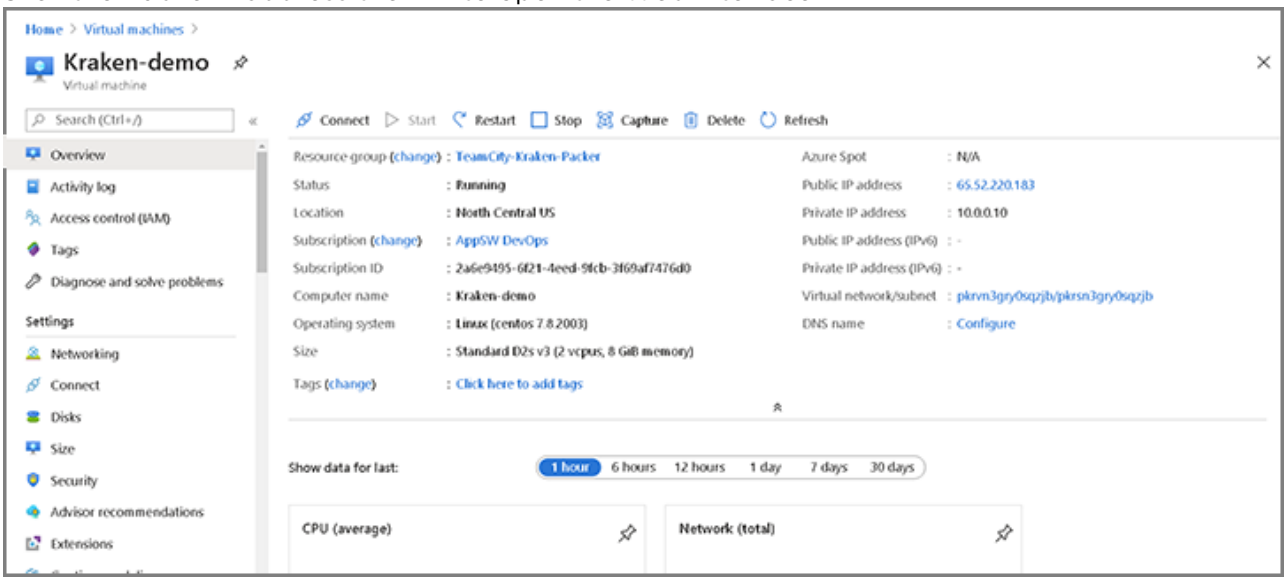
Accessing the Web Interface

1. On the VM Machines page, click the link for the Kraken Azure instance to view the details for the VM:

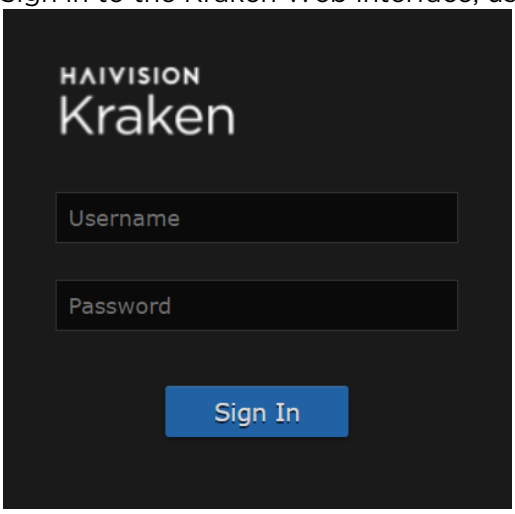


> **Tip**
>
> The Kraken Web Interface can be accessed with Kraken Azure VM's Public IP address.

2. Click the Public IP address the link to open the Web Interface.



3. Sign in to the Kraken Web interface, using the default administrative user name and password.



4. Please refer to the *Important Notice* (postcard included in the box or available from the Download Center on the Haivision Support Portal) for the default login credentials.
   A License Required modal appears. See Licensing Your Server to obtain a license.

Accessing the Console UI

You can log in to virtual server's Console UI via a Secure Shell (SSH) client (e.g., Terminal on macOS, or PuTTY on Windows).

> **Note**
>
> You must have a private RSA key corresponding to the public key with which the virtual server was configured. See the "Basics" heading in Setting Up Your Server.

1. In a terminal window, enter the following command:
   `ssh -i ~/.ssh/<private-key_rsa> hvroot@<public-ip-address>`

   The Console UI appears. Note that the Root user is disabled; however, Root commands can be run with sudo.
2. In the navigation sidebar, use the ↑↓ (up and down arrow) keys to highlight menu items, and then press the **Enter** key.
3. Change settings as necessary.

   > **Important**
   >
   > Network configuration settings are controlled by Microsoft Azure. Do not change them using the Haivision Console UI.

4. Press the **Enter** key to save your changes and return to the main screen.
5. Select **Log Out** and then press the **Enter key** to exit the Console UI.

For more details, refer to Using the Console UI with Haivision Hardware.

Licensing Your Server

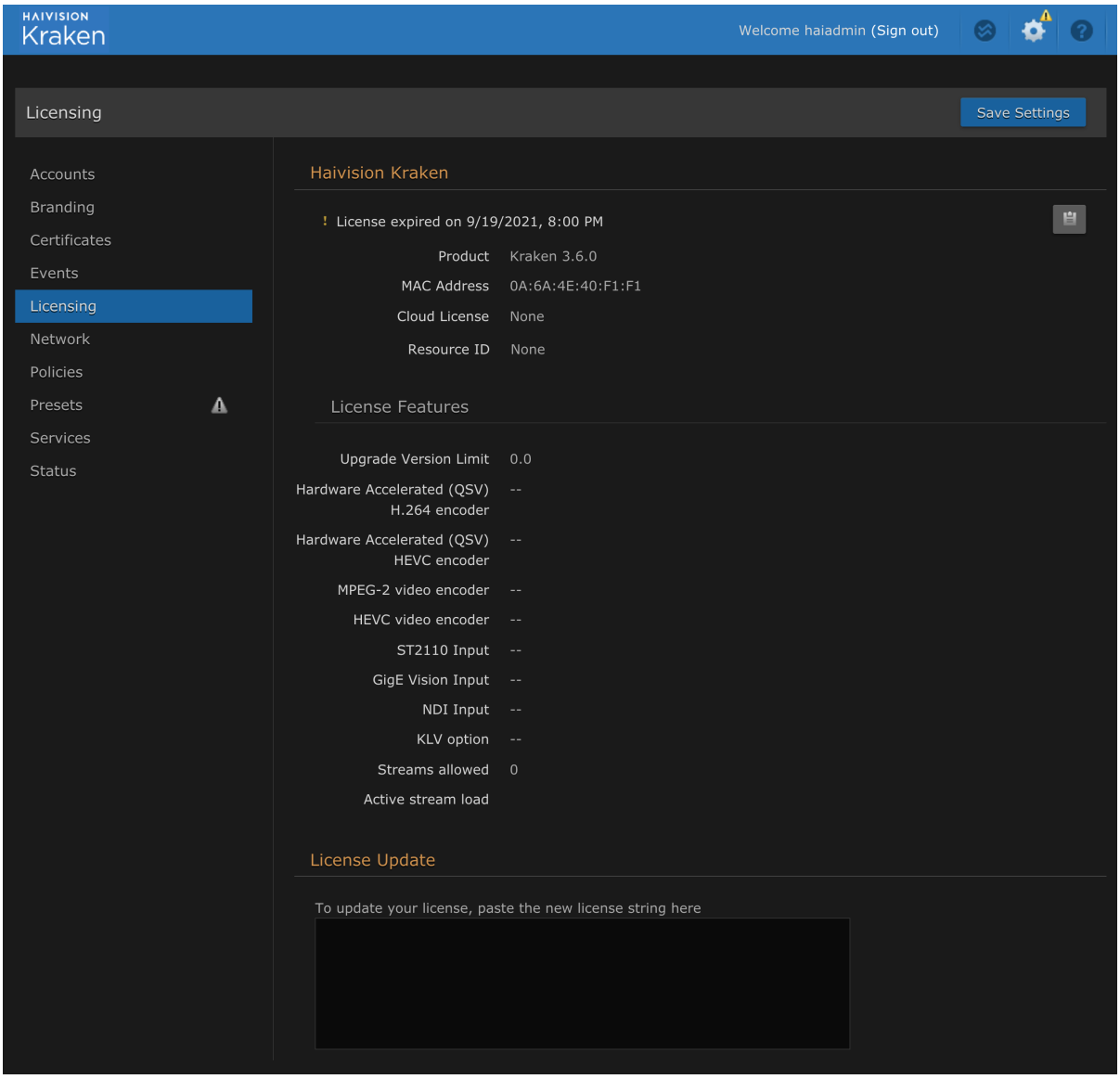
Before beginning to transcode or encode video, you must obtain a license from Haivision.

> **Note**
>
> Without a valid license key, you can sign in, but you cannot encode or transcode video.

Kraken uses the Azure **Resource ID** instead of MAC address for licensing. You can find the Kraken Azure **Resource ID** on the Properties page of the Kraken VM. You will need to copy this Resource ID to submit a license request (see below). You can copy it to the clipboard by clicking the button at the rightmost edge of the Resource ID text field.

To obtain a license for the Kraken Azure server:

1. Sign in to the Web interface using the credentials provided in the *Important Notice*, available from the Haivision Support Portal.
2. Click the **Administration** icon on the toolbar (the settings gear) and click **Licensing** from the sidebar.



Make sure you have the Azure Resource ID and the Kraken version number.

3. To request a license for your product:
   a. Log in to the Haivision Support Portal (https://support.haivision.com).
   b. After logging in, click **License Requests**.
   c. Click the **New** button.
   d. Select the appropriate device type and click the **Next** button.
   e. Fill in the form with the appropriate information, and click **Save**.

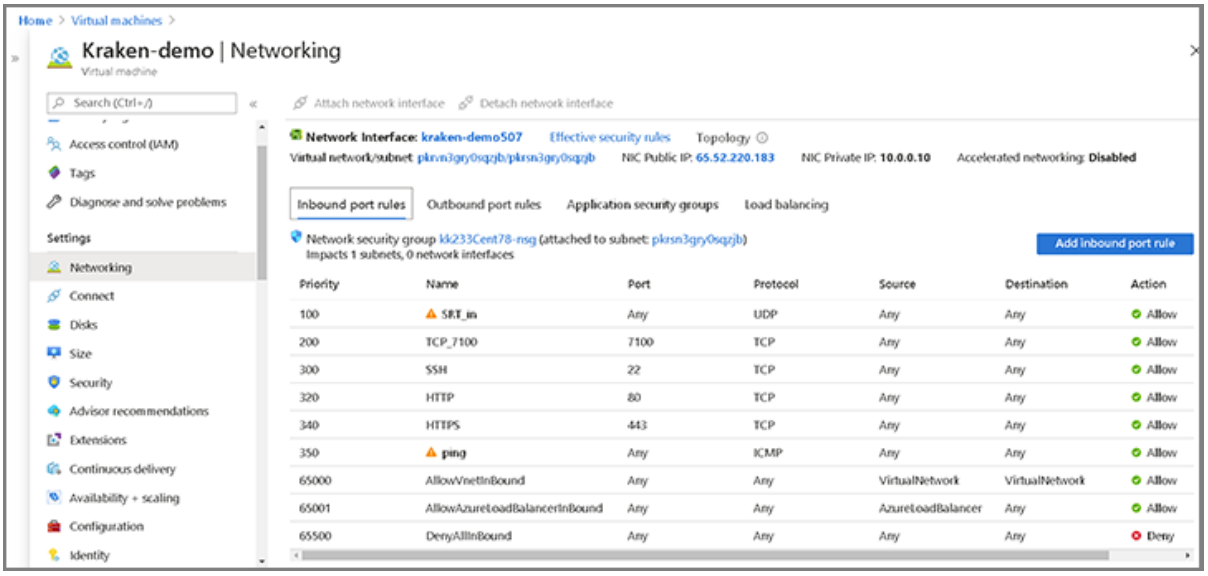
   Your license request is submitted and you will be contacted by a Haivision representative shortly with a license key for your product.
4. After you receive a license key, paste the license string in the License text box.
5. Click **Save Settings** to load the license.

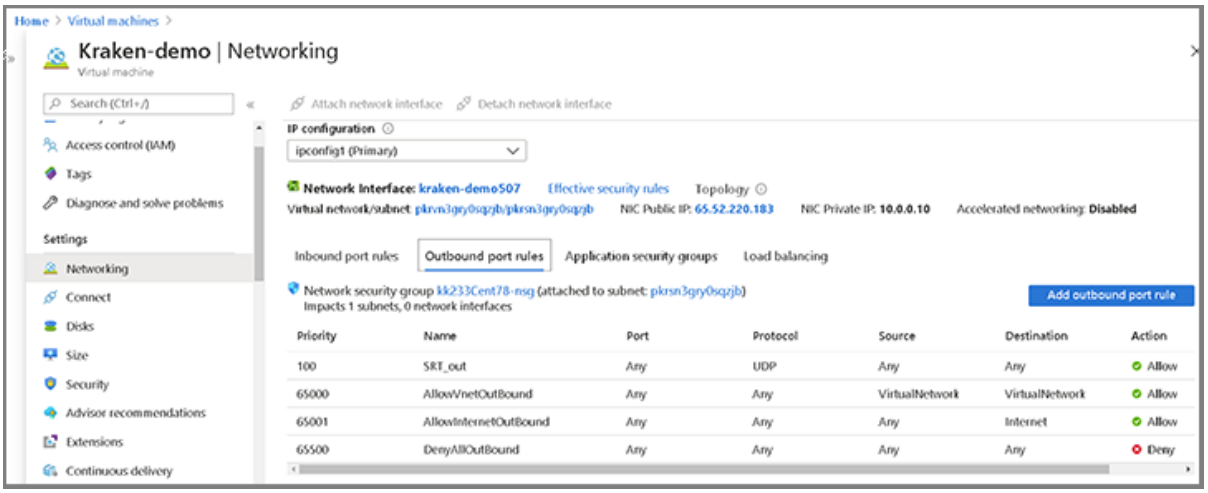
The License Features list is updated to show the new license information.

Modifying Network Security Rules

By default, most Inbound and Outbound network traffic ports are denied. To allow Kraken input and output streams to get in and out the VM machine, you need to add inbound/outbound rules to open some ports for certain protocols. For example, SRT needs some ports opened for UDP. Also, customized rules should be higher priority than default deny-rules. Example setups are shown following (ports can be narrowed down to a range too).

The required ports are 22 (SSH), 80 (HTTP), and 443 (HTTPS).





Note

For more information on SRT, please refer to the Kraken User's Guide and the SRT Deployment Guide.

Setting Up Transcoding and Encoding

To set up transcoding, you need to define:

- **Inputs** – the source URL, or an SDI or Analog Composite Input (applicable hardware server or appliance, cloud or virtual machine instance) for baseband input encoding
- **Transcoders** – audio and video characteristics to change
- **Outputs** – one or more output URLs
- **Streams** – select from defined Inputs, Outputs, Transcoders, and (optionally) Metadata sources.

You may optionally configure Kraken to capture KLV or CoT **Metadata** from a UDP network source or from the SDI or Serial Input interface.

For detailed configuration and operation information, please refer to the Kraken User's Guide.

Tip

A typical Kraken Azure use case is SRT configuration.

Stopping the Instance

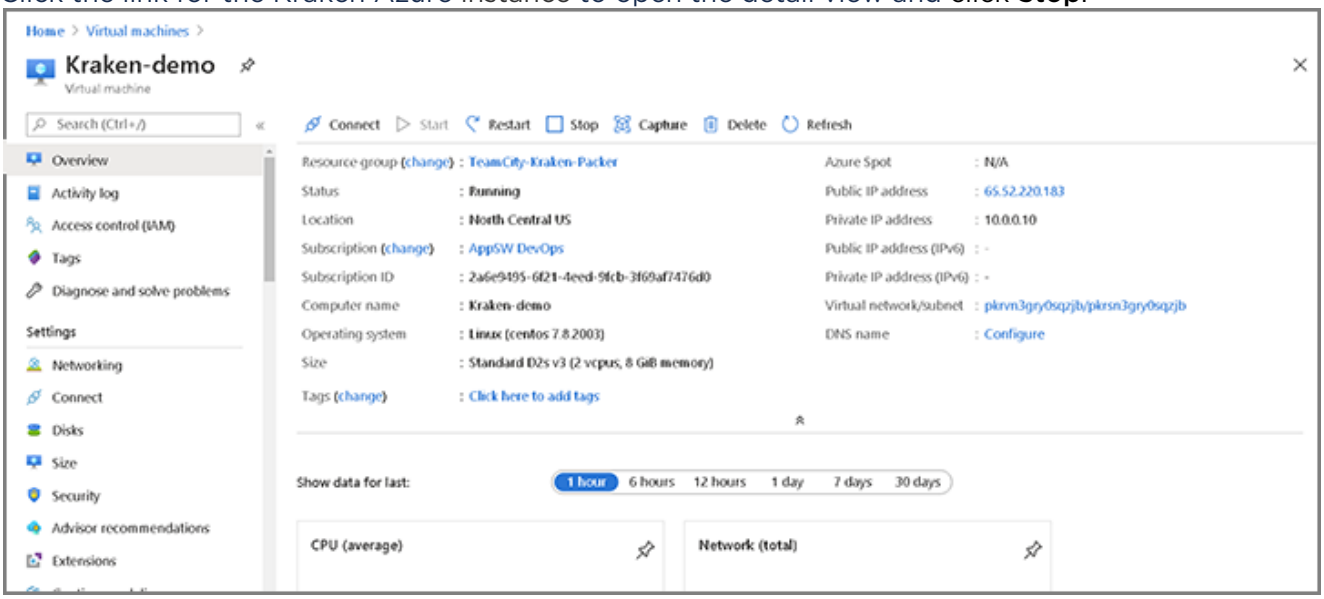
You can stop and deallocate your server instance, while keeping all configurations active. After the instance is stopped, no further running charges are applied.

Important

Please be aware that simply shutting down your server via the Console UI does not deallocate your instance, and you will continue to be charged for the running instance. To avoid unwanted charges, you must stop the virtual machine.

To stop your server instance:

1. Navigate to the VM Machines page in the Azure portal.
2. Click the link for the Kraken Azure instance to open the detail view and click **Stop**.



Obtaining Documentation

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Getting Help

General Support	North America (Toll-Free) **1 (877) 224-5445** International **1 (514) 334-5445** *and choose from the following:* Sales - 1, Cloud Services - 3, Support - 4
Managed Services	U.S. and International 1 (512) 220-3463
Fax	1 (514) 334-0088
Support Portal	https://support.haivision.com
Product Information	info@haivision.com