

Dialogic® PowerMedia™ XMS and Amazon Web Services

Running the PowerMedia XMS Verification Demo in AWS

Introduction

This tech note provides instructions on getting a release 2.4 Dialogic PowerMedia XMS media server installed and running on Amazon Web Services (AWS) This is done using a public, pre-built AWS image containing a working PowerMedia XMS media server, with a 4 port trial license built into the image. Here is the simple set of steps:

- Select a public XMS image in a nearby AWS region
- Set up a security group as directed for the image
- Start up an instance of the recommended size
- Verify that the XMS system is running properly (using the XMS Admin GUI)
- Make WebRTC or SIP calls into a demo on the XMS instance using a web browser or SIP phone

Note that a working familiarity with AWS on the part of the reader and an AWS account is presumed; Additionally, the Dialogic PowerMedia XMS product will be referred to herein as either “PowerMedia XMS” or simply “XMS” and represents the XMS product as of its release 2.4.

Starting an XMS Instance

The steps below correspond to the AWS steps used to launch an AMI.

Step 1: Choose an Amazon Machine Image (AMI)

The AMI for XMS is located in these AWS Regions:

- US West (N. California)
- US East (N. Virginia)
- EU (Frankfurt)
- Asia Pacific (Singapore)
- South America (Sao Paulo)

First, log into your AWS account. Note that there is not a publicly available Dialogic account, but rather a public image that may be run under your own account.

Next, find the image. Search IMAGES/AMIs for Public images, AMI Name **dialogic_xms_2.4**. That has XMS 2.4 build 9505 (GA release current as of March 6, 2015).

Once the image is located, the instance can be started. Do this by either right clicking on the image and selecting Launch or checking off the image and selecting: Actions → Launch.

Step 2: Choose an Instance Type

The XMS image will use a four (4) port verification license. This can accommodate four (4) simultaneous calls. To handle four (4) video calls in a conference at a VGA (640x480) resolution, an instance type of **c3.xlarge** or better should be used. The C series of instance types are “compute optimized” and suitable for video media processing.

C3

Features:

- High Frequency Intel Xeon E5-2680 v2 (Ivy Bridge) Processors
- Support for [Enhanced Networking](#)
- Support for clustering
- SSD-backed instance storage

| Model | vCPU | Mem (GiB) | SSD Storage (GB) |
|------------|------|-----------|------------------|
| c3.large | 2 | 3.75 | 2 x 16 |
| c3.xlarge | 4 | 7.5 | 2 x 40 |
| c3.2xlarge | 8 | 15 | 2 x 80 |
| c3.4xlarge | 16 | 30 | 2 x 160 |
| c3.8xlarge | 32 | 60 | 2 x 320 |

Important Note:

When using Amazon EC2 instances, there are multiple virtual machine tenants on a single host. There is no way of knowing what the other tenants are doing, how much bandwidth they are using, their clock interrupt needs, etc. An XMS media server, being a real-time application, has stringent clock interrupt needs to successfully handle RTP media packets. For that reason, there may be situations where a fully occupied host does not service XMS’s needs well. This may lead to poor video quality and/or video freezing. For a controlled environment, a dedicated host can be used, and may be necessary in a production situation where known level of video quality is needed.

Proceed to the next step by selecting “Next: Configure Instance Details”.

Step 3: Configure Instance Details

The settings for this screen are as follows:

| Setting | Value | Comment |
|---------------------|-------------------------|---|
| Number of Instances | 1 | Leave at default |
| Purchasing option | unchecked | Leave at default |
| Network | Launch into EC2-Classic | For this simple trial of XMS, using AWS-supplied networking is sufficient. A Virtual Public Cloud (VPC) is not needed.* |

| | | |
|--------------------------------------|-----------------------------------|--|
| Subnet | AWS-supplied | Leave at default |
| Auto-assign Public IP | Use subnet setting (Enable) | Leave at default |
| Placement Group | No placement group | Leave at default |
| IAM role | None | Leave at default |
| Shutdown behavior | Terminate | Terminate will destroy the instance when it is stopped |
| Enable termination protection | unchecked | Leave at default |
| Monitoring | unchecked | Leave at default |
| EBS-optimized instance | unchecked | Leave at default |
| Tenancy | Shared Tenancy | Leave at default. But see the Important Note in last section about multi tenancy. |
| Network Interfaces | Single eth0 new network interface | Leave at default |
| Advanced Details | No changes | Leave at default |

*If EC2-Classic does not display as an option, it is beyond the scope of this document to describe a VPC setup. Please contact your Dialogic Sales Representative for information on configuration.

Step 4: Add Storage

The default storage allocated (10 GB) with a General Purpose Volume Type is sufficient for an XMS trial.

Step 5: Tag Instance

Add a value - something recognizable when looking at AWS console - "XMS-2.4" for example

Step 6: Configure Security Group

This step will open up AWS ports for access to XMS. Remember - this is not on the XMS system; it is AWS security.

Create a security group for XMS as follows:

1. Assign a security group → Create a new security group
2. Security group name → "XMS-ports" (a descriptive name is all that matters)
3. Add Rule → open the following ports:

| Type | Protocol | Port Range | Source |
|------|----------|------------|-------------------------|
| SSH | TCP | 22 | Anywhere, or as desired |

| | | | |
|-----------------|-----|-------------|-------------------------|
| HTTP | TCP | 80 | Anywhere, or as desired |
| HTTPS | TCP | 443 | Anywhere, or as desired |
| Custom TCP Rule | TCP | 5060 | Anywhere, or as desired |
| Custom TCP Rule | TCP | 1080 | Anywhere, or as desired |
| Custom TCP Rule | TCP | 15001 | Anywhere, or as desired |
| Custom TCP Rule | TCP | 81 | Anywhere, or as desired |
| Custom TCP Rule | TCP | 161 | Anywhere, or as desired |
| Custom UDP Rule | UDP | 5060 | Anywhere, or as desired |
| Custom UDP Rule | UDP | 49152-53512 | Anywhere, or as desired |
| Custom UDP Rule | UDP | 57344-57840 | Anywhere, or as desired |

The source IP address can be left as Anywhere, or, for better security, restricted to certain IP addresses.

Step 7: Review Instance Launch

There will be warnings about improving your instances' security and the instance not being eligible for free usage tier. It is okay to ignore them.

Check information entered. If all looks as expected, start the instance with Launch.

Remember that a public/private key pair must be associated with each new instance. Create a new one if you do not already have one, or you can use an existing key pair. Note that the key pair is used to connect using ssh directly to the XMS system and will likely not be needed. However, it is not possible to start an instance without confirming that you have a valid key pair.

Either "Choose an existing key pair" or "Create a new key pair".

"Your instance is now launching" should now be seen. Check the Instances listing to see when the XMS instance is up and running.

Reaching the XMS System Using ssh

It should not be necessary to directly log into the XMS system using ssh. However, to do so, use the private key that corresponds to the public key attached to the instance:

```
> ssh -i my-private-key.pem <xms_ip_addr>
```

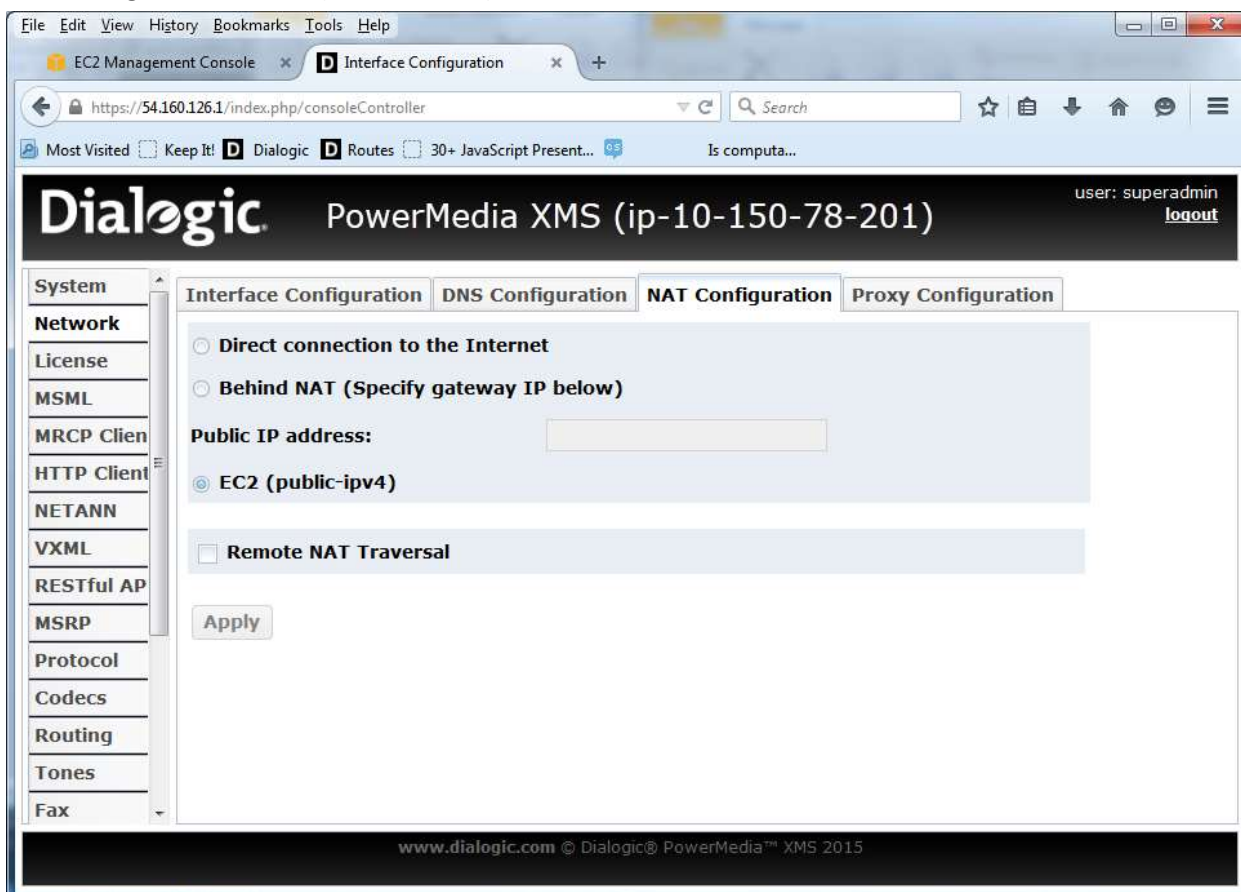
and log in as user "ec2-user". Once in the system, commands requiring root privileges may be run using "sudo".

Verifying XMS Operation

Note the public IPV4 address (x.x.x.x) of XMS once it is started. This can be seen in the AWS Instance console.

Browse to x.x.x.x. You will likely see a warning about this being an untrusted connection. Click through and confirm that this is a security exception. Then, login using superadmin/admin for username/password. From the GUI, confirm XMS is started in System → Services and all Status indicators (except faxservice and cdrservice) are green/Running.

While it is already in place for this AMI, there is one important setting pertaining to AWS. The XMS server is behind a NAT firewall. Its private IP address is different that the public address used to access it externally. This must be taken into account when delivering the RTP (media) address to the WebRTC endpoint. The Network → NAT Configuration screen (shown below) must have the EC2 button checked to take this into account.



This will automatically determine the external IP address and use it for media connections.

Please note that XMS officially supports RHEL/CentOS 6.4 while this image uses RHEL/CentOS 6.5. This may cause an issue if this AMI is used for upgrading to a XMS future release.

Running the XMS Verification Demos

Play Demo

Run this simple demo from Chrome or Firefox by doing the following:

- <http://<x.x.x.x>/rtcweb/webrtc.html>
- Please enter your login Name: “any name” Hit Login button.
- Be sure to “Allow” the browser access to camera and microphone.
- Name of person to call: “play_demo” Hit Call button.
- You should see and hear a short auto racing video clip.

Conference Demo

This demo allows up to four (4) full duplex video conferees in a single conference at VGA resolution:

- <http://<x.x.x.x>/rtcweb/webrtc.html>
- Please enter your login Name: “any name” Hit Login button.
- Be sure to “Allow” the browser access to camera and microphone.
- Name of person to call: “conf_demo” Hit Call button.
- You should see yourself and any other conferees on the screen. Audio from other conferees should also be heard.
- Only four (4) participants are allowed.

Complete instructions on running these and two other demos are available in Chapter 6 in:

http://www.dialogic.com/webhelp/XMS/2.4/XMS_WebRTCInstallConfig.pdf

Next Steps

This tech note covered the simple case of configuring and running XMS with its verification demo. It is intended to be used for test purposes only, not for production. In considering XMS as part of an AWS media server solution, you will likely want to try it with your own application server, cloud-based or otherwise, and at densities suitable for a production situation. Future planned tech notes will outline how to license, configure and run additional XMS AMIs and services in your testing.

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