Dialogic® PowerMedia™ XMS WebRTC

Demo Guide

March 2016 05-2718-009

www.dialogic.com

Copyright and Legal Notice

All contents of this document are furnished for informational use only and are subject to change without notice and do not represent a commitment on the part of Dialogic Corporation and its affiliates or subsidiaries ("Dialogic"). Reasonable effort is made to ensure the accuracy of the information contained in the document. However, Dialogic does not warrant the accuracy of this information and cannot accept responsibility for errors, inaccuracies or omissions that may be contained in this document.

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH DIALOGIC® PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN A SIGNED AGREEMENT BETWEEN YOU AND DIALOGIC, DIALOGIC ASSUMES NO LIABILITY WHATSOEVER, AND DIALOGIC DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF DIALOGIC PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT OF A THIRD PARTY.

Dialogic products are not intended for use in certain safety-affecting situations. Please see http://www.dialogic.com/company/terms-of-use.aspx for more details.

Due to differing national regulations and approval requirements, certain Dialogic products may be suitable for use only in specific countries, and thus may not function properly in other countries. You are responsible for ensuring that your use of such products occurs only in the countries where such use is suitable. For information on specific products, contact Dialogic Corporation at the address indicated below or on the web at www.dialogic.com.

It is possible that the use or implementation of any one of the concepts, applications, or ideas described in this document, in marketing collateral produced by or on web pages maintained by Dialogic may infringe one or more patents or other intellectual property rights owned by third parties. Dialogic does not provide any intellectual property licenses with the sale of Dialogic products other than a license to use such product in accordance with intellectual property owned or validly licensed by Dialogic and no such licenses are provided except pursuant to a signed agreement with Dialogic. More detailed information about such intellectual property is available from Dialogic's legal department at 6700 Cote-de-Liesse Road, Suite 100, Borough of Saint-Laurent, Montreal, Quebec, Canada H4T 2B5. **Dialogic encourages all users of its products to procure all necessary intellectual property licenses required to implement any concepts or applications and does not condone or encourage any intellectual property infringement and disclaims any responsibility related thereto. These intellectual property licenses may differ from country to country and it is the responsibility of those who develop the concepts or applications to be aware of and comply with different national license requirements.**

Dialogic, Dialogic Pro, Dialogic Blue, Veraz, Brooktrout, Diva, BorderNet, PowerMedia, PowerVille, PowerNova, MSaaS, ControlSwitch, I-Gate, Mobile Experience Matters, Network Fuel, Video is the New Voice, Making Innovation Thrive, Diastar, Cantata, TruFax, SwitchKit, Eiconcard, NMS Communications, SIPcontrol, Exnet, EXS, Vision, inCloud9, NaturalAccess and Shiva, among others as well as related logos, are either registered trademarks or trademarks of Dialogic Corporation and its affiliates or subsidiaries. Dialogic's trademarks may be used publicly only with permission from Dialogic. Such permission may only be granted by Dialogic's legal department at 6700 Cote-de-Liesse Road, Suite 100, Borough of Saint-Laurent, Montreal, Quebec, Canada H4T 2B5. Any authorized use of Dialogic's trademarks will be subject to full respect of the trademark guidelines published by Dialogic from time to time and any use of Dialogic's trademarks requires proper acknowledgement.

The names of actual companies and products mentioned herein are the trademarks of their respective owners.

This document discusses one or more open source products, systems and/or releases. Dialogic is not responsible for your decision to use open source in connection with Dialogic products (including without limitation those referred to herein), nor is Dialogic responsible for any present or future effects such usage might have, including without limitation effects on your products, your business, or your intellectual property rights.

Table of Contents

Revision History

Revision	Release Date	Notes
05-2718-009	March 2016	Updates to support PowerMedia XMS 3.1.
05-2718-008	September 2015	Updates to support PowerMedia XMS Release 3.0. WebRTC with PowerMedia XMS: Updated information to support HTTPS.
05-2718-007	May 2015	Updates to remove redundant information available in the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide*.
05-2718-006	February 2015	Updates to support PowerMedia XMS Release 2.4. Installing WebRTC with PowerMedia XMS: Updated list of supported processors.
05-2718-005 (Updated)	January 2015	Updates to remove VXML support.
05-2718-005	September 2014	Updates to support PowerMedia XMS Release 2.3.
05-2718-004	June 2014	Installing WebRTC with PowerMedia XMS: Updated list of supported operating systems and added new section for supported virtual machines. RPM Method: Added note that SELinux is not supported and should be disabled. WebRTC Browser Access: Updated the URL format to HTTP.
05-2718-003	February 2014	Updates to support PowerMedia XMS Release 2.2. WebRTC Browser Access: Updated the URL to secure HTTP. WebRTC Verification Demos: Removed note that the WebRTC verification demos are video-only. Supported on audio and video.
05-2718-002	November 2013	WebRTC Verification Demos: Added note that the WebRTC verification demos are video-only.
05-2718-001	October 2013	Updates to support PowerMedia XMS Release 2.1.
05-2718-001-01	August 2013	Initial release of this document.

Revision	Release Date	Notes
Last modified: March 2016		

Refer to www.dialogic.com for product updates and for information about support policies, warranty information, and service offerings.

1. Welcome

This WebRTC Demo Guide provides information about running WebRTC demos with Dialogic® PowerMedia™ Extended Media Server (also referred to herein as "PowerMedia XMS" or "XMS").

Refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide* for information about installing, configuring, administering, and maintaining the PowerMedia XMS.

Related Information

See the following for additional information:

- PowerMedia XMS Release 3.0 documentation at http://www.dialogic.com/manuals/xms/xms3.0.aspx.

2. WebRTC with PowerMedia XMS

This section illustrates what is needed to configure the browser to run the provided demos using WebRTC and writing your own WebRTC clients. You need to first make sure to use a web browser that is compatible with WebRTC. To see a list of supported web browsers for WebRTC, refer to the Browser Support for WebRTC section.

Note: Browsers provide a visual/audio/video endpoint for user interaction. They do not contain demo application logic.

Refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide* for more details about configuring the PowerMedia XMS and the application technologies.

Supported Web Browsers

Browser Support for PowerMedia XMS Admin Console

The following web browsers are supported:

- Google Chrome
- Mozilla Firefox
- Microsoft Internet Explorer
- Apple Safari

Browser Support for WebRTC

The following web browsers are supported:

- Google Chrome
- Mozilla Firefox

Note: Other release lines of Google Chrome (Canary) and Mozilla Firefox (Nightly) may also work. However, other release lines are subject to frequent change and may not work correctly.

WebRTC Browser Access

The PowerMedia XMS WebRTC demos use HTTPS (secure HTTP) to access the WebRTC browsers. PowerMedia XMS is delivered with self-signed security certifications with the expectation that, when used for production on a public system, legitimate security certificates will be put in place. Google Chrome and Mozilla Firefox access the WebRTC browser differently. Launch the WebRTC browser as follows, and then refer to the Chrome or Firefox section for browser-specific details.

To launch the WebRTC browser, enter the IP address in URL format in the address field:

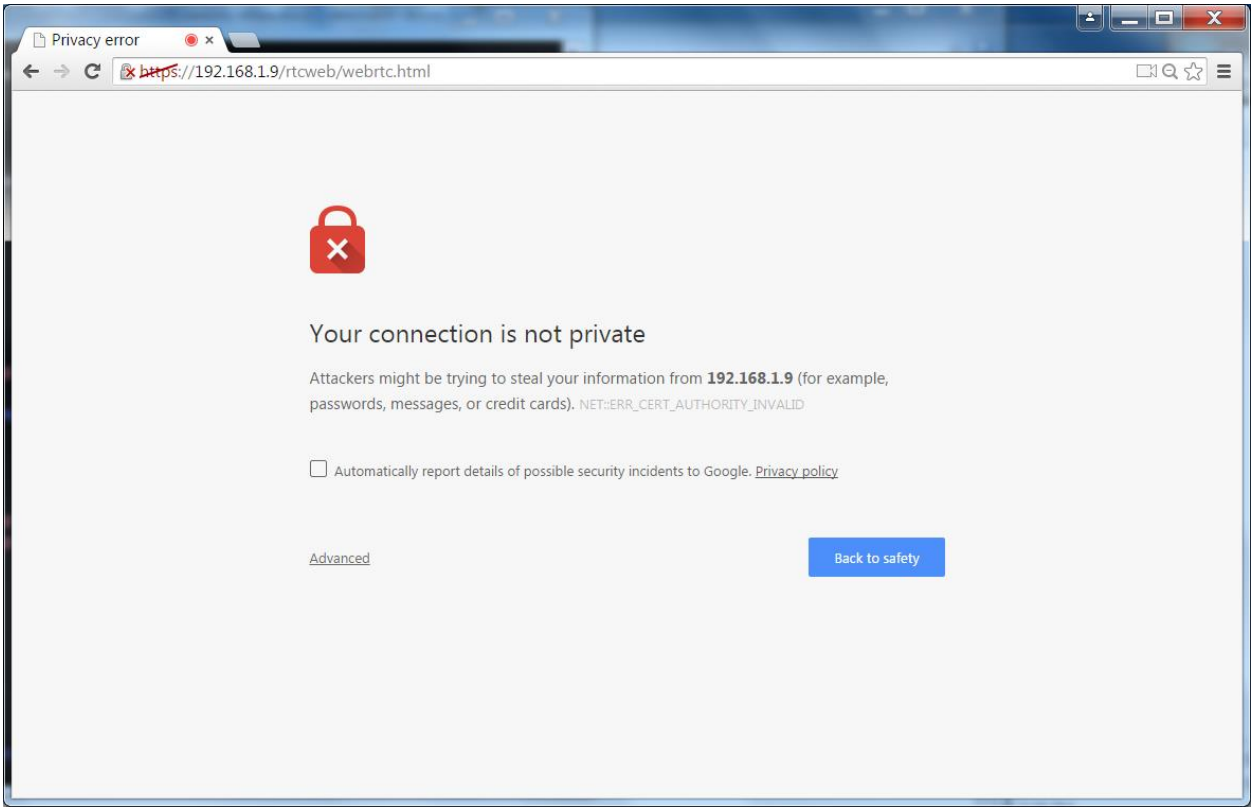
https://<xms_ip_address>/rtcweb/webrtc.html

Note: The screens will differ between Chrome and Firefox.

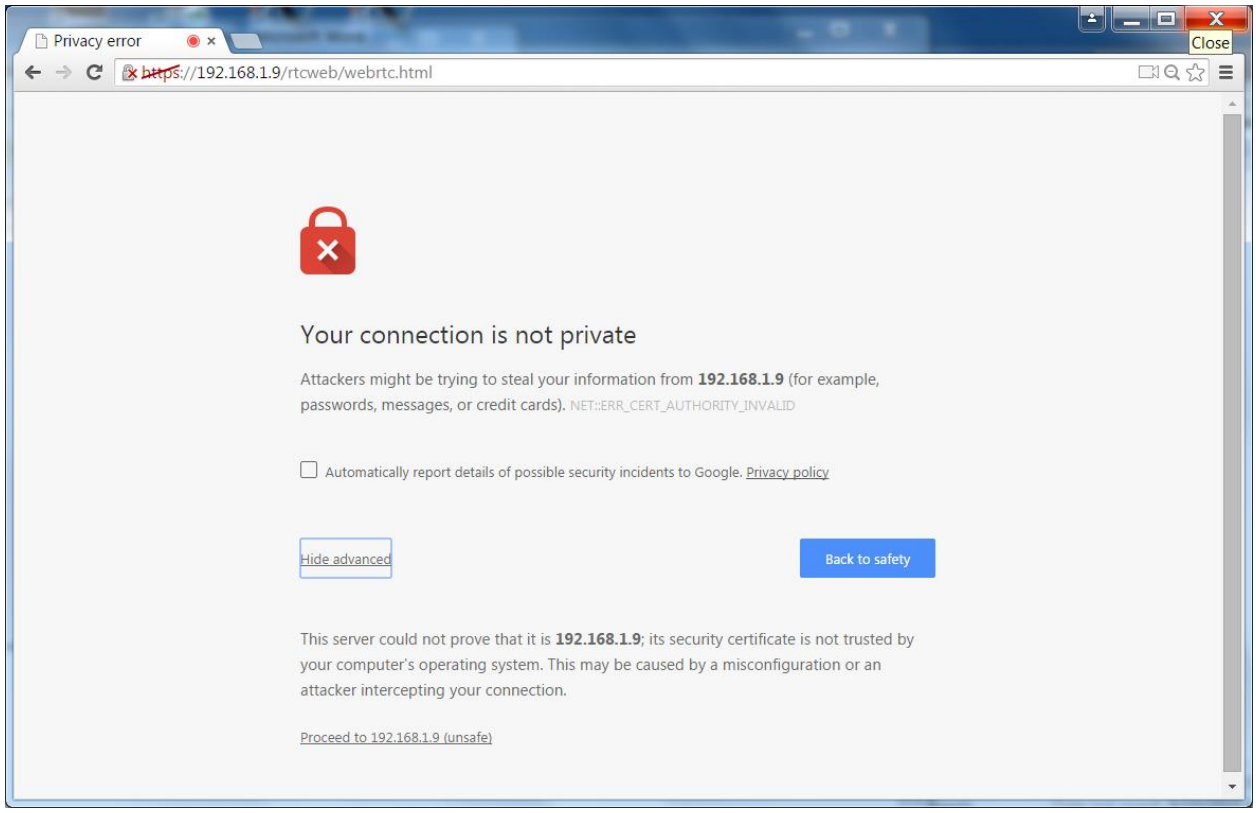
Chrome

Establish the HTTPS Connection

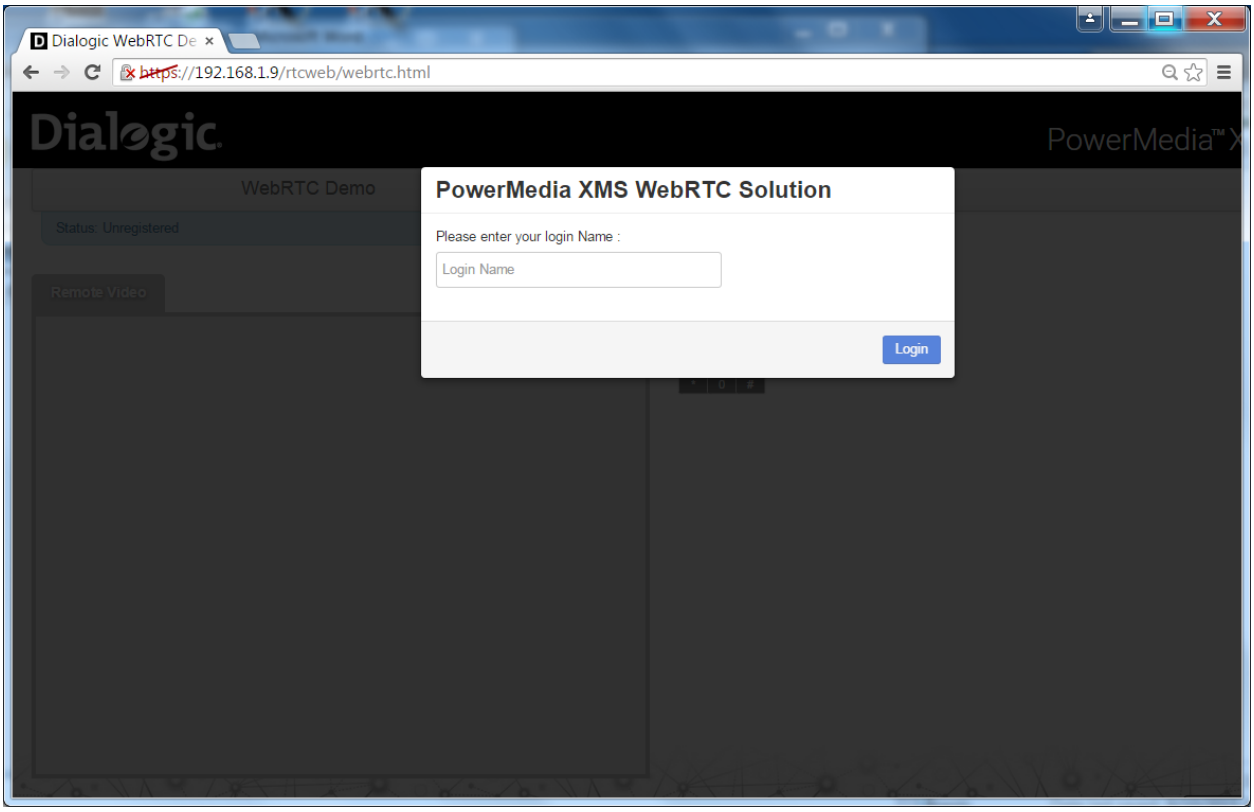
When accessing the WebRTC demo for the first time, the following warning will be displayed. An HTTPS connection must be established as follows or the WebRTC demos will not work.



1. Click the **Advanced** link to display additional information.



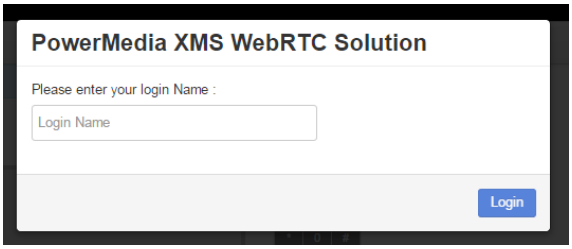
2. Click **Proceed to *<xms-ip-address>* (unsafe)**. The login screen for the demo will appear with an indication that the HTTPS connection has been made with an untrusted certificate. The demo will operate normally.



Launch the WebRTC Browser

Proceed as follows to launch the WebRTC browser after establishing the HTTPS connection.

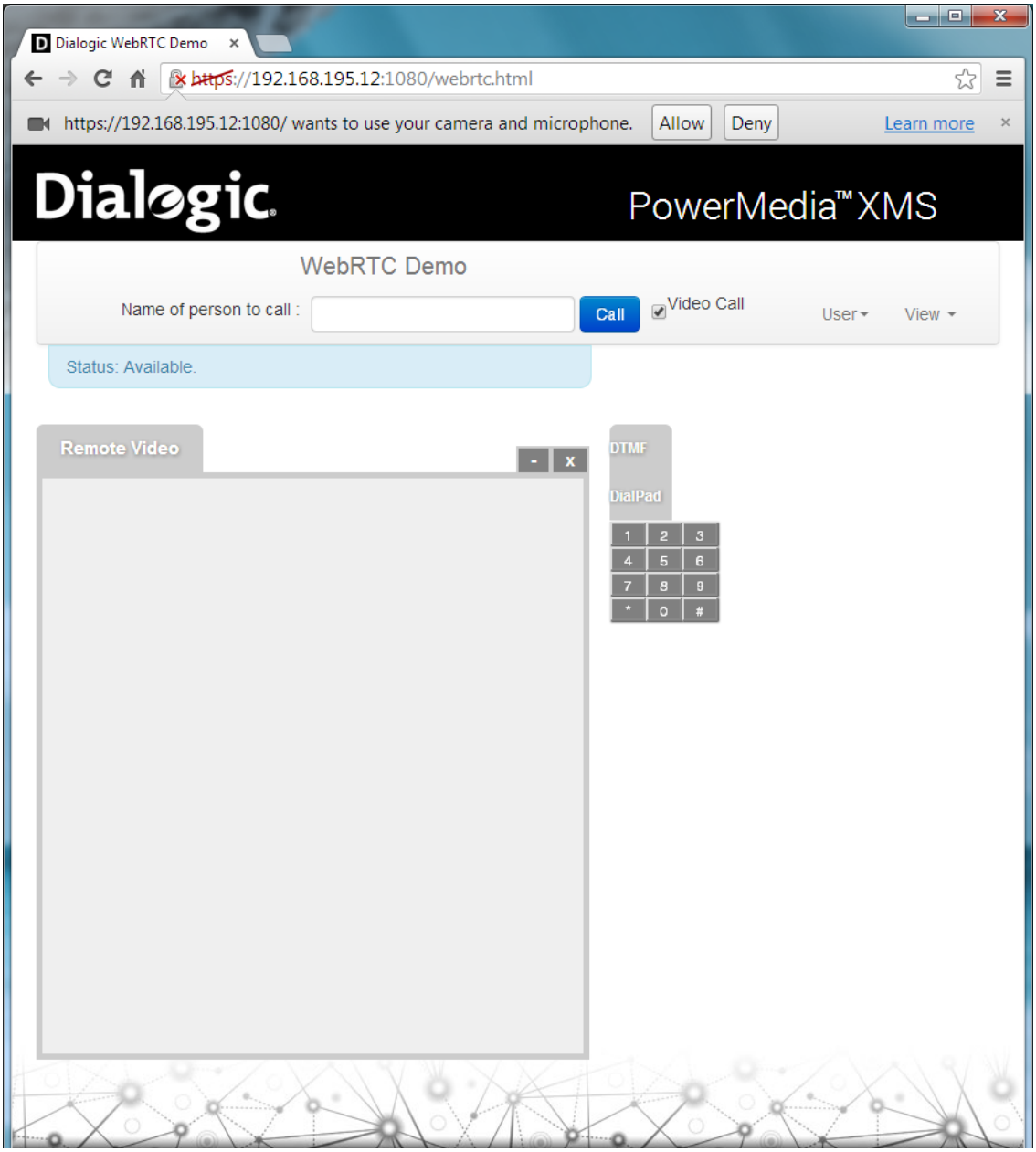
1. Enter a name in **Please enter your login Name** box and then click **Login**.



2. Choose whether to allow or deny media selection in your browser. Wait for a message indicating the choices.

   Default camera and microphone settings are automatically selected by the Chrome browser and can be modified through the Chrome menu **Settings** on the browser toolbar.

   Note: Browser restart will be necessary after making any changes.

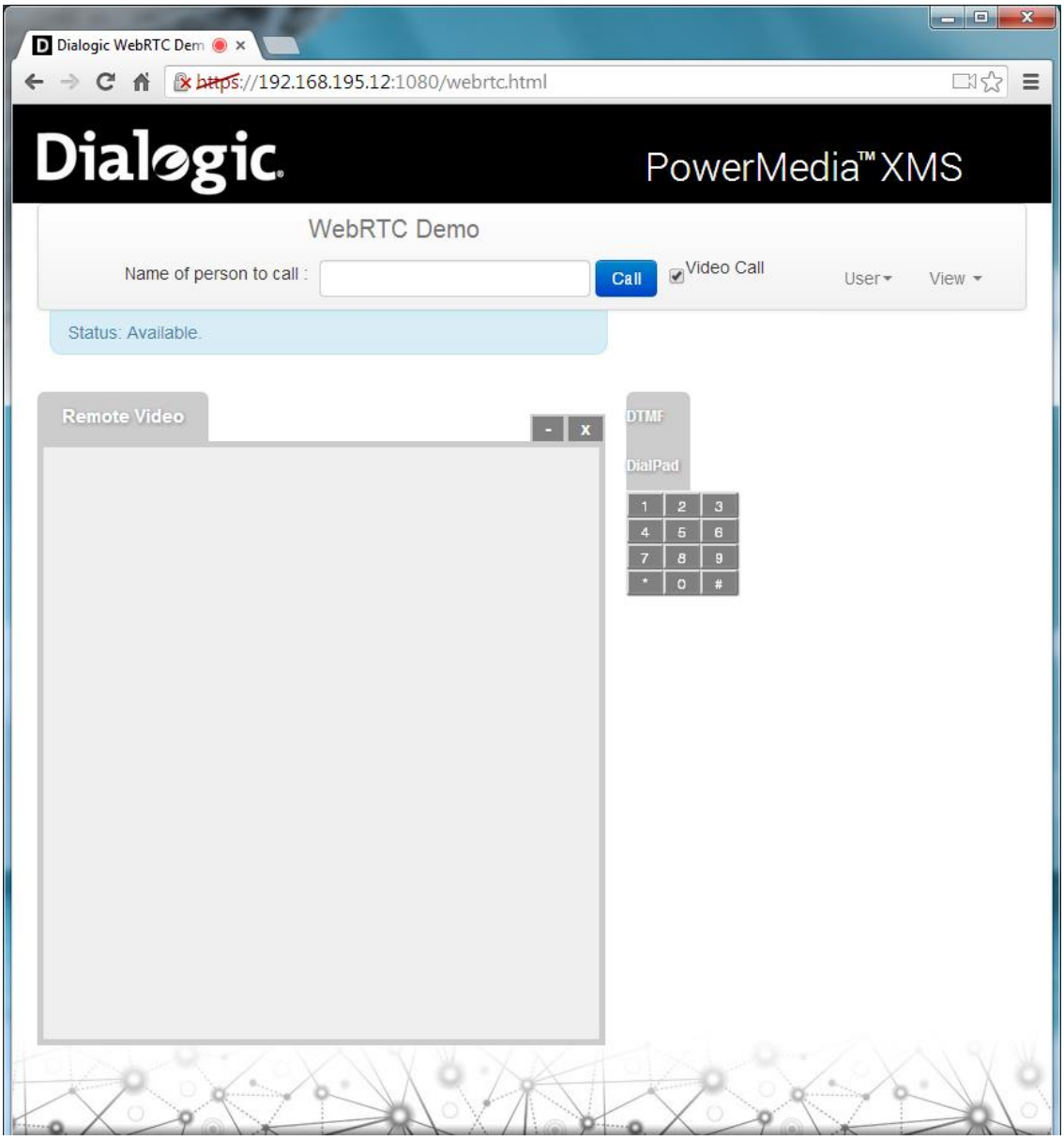


3. Click **Allow** button to enable media through your browser as illustrated. Click **Learn more** link for more information on media functionality.

   Note: Failure to click the **Allow** button will cause the WebRTC demos not to function properly.

If there is an error message that states "failed to get access to local media," the browser cannot access specified media for its use. Make sure that the selected media devices are not being used by any other application on that system.

The WebRTC browser and the PowerMedia XMS should be successfully linked as shown.

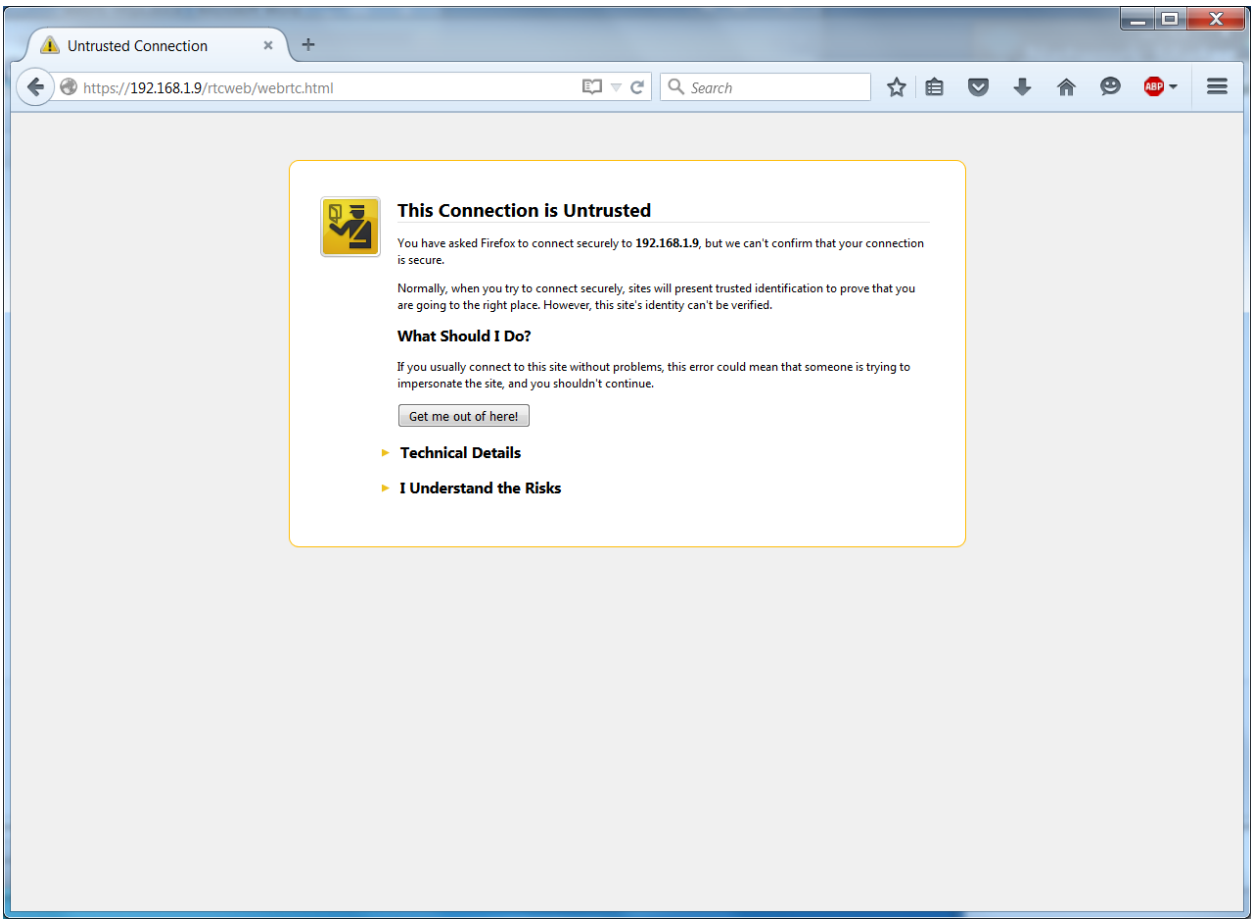


4. Proceed to the WebRTC Verification Demos section for instructions on how to verify PowerMedia XMS WebRTC access using the verification demos.

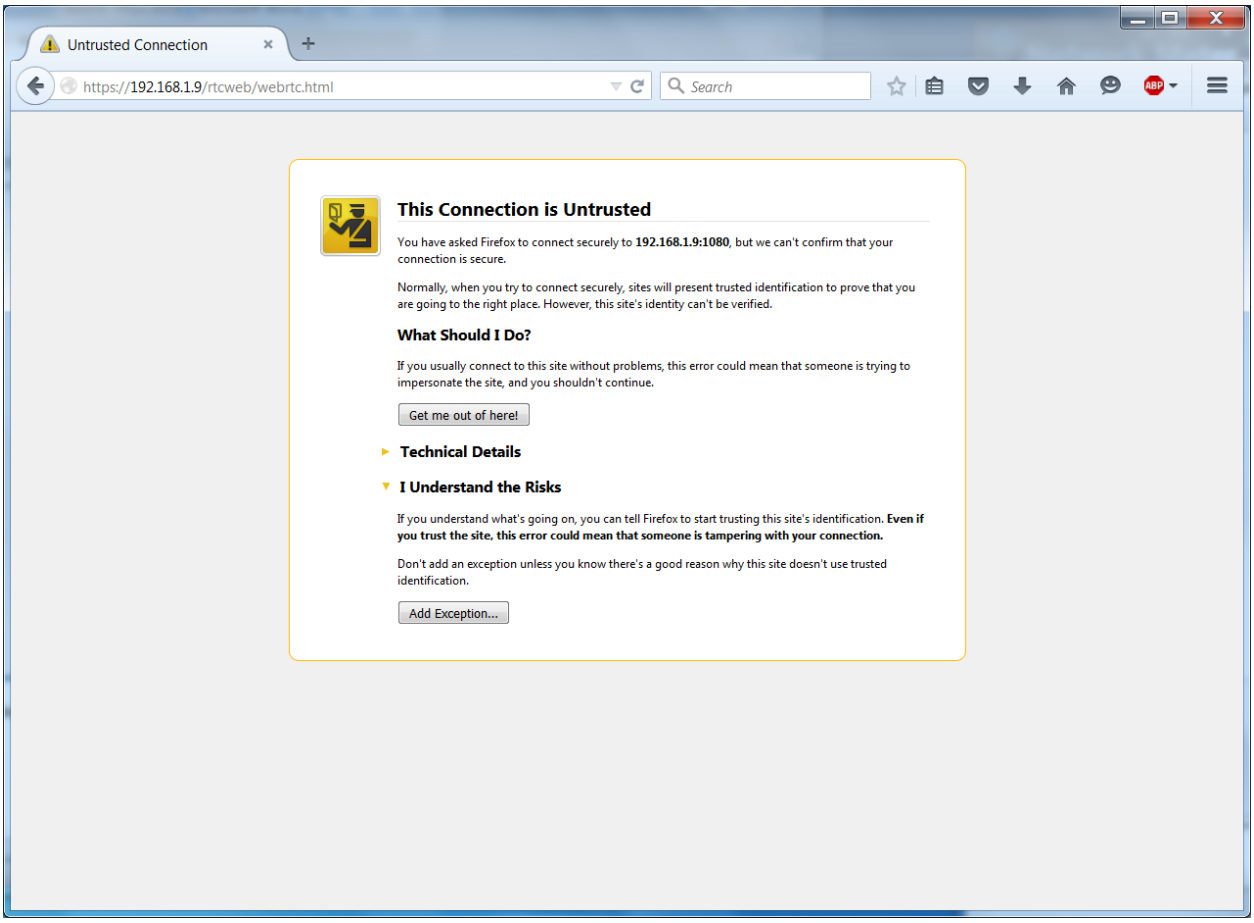
Firefox

Establish the HTTPS Connection

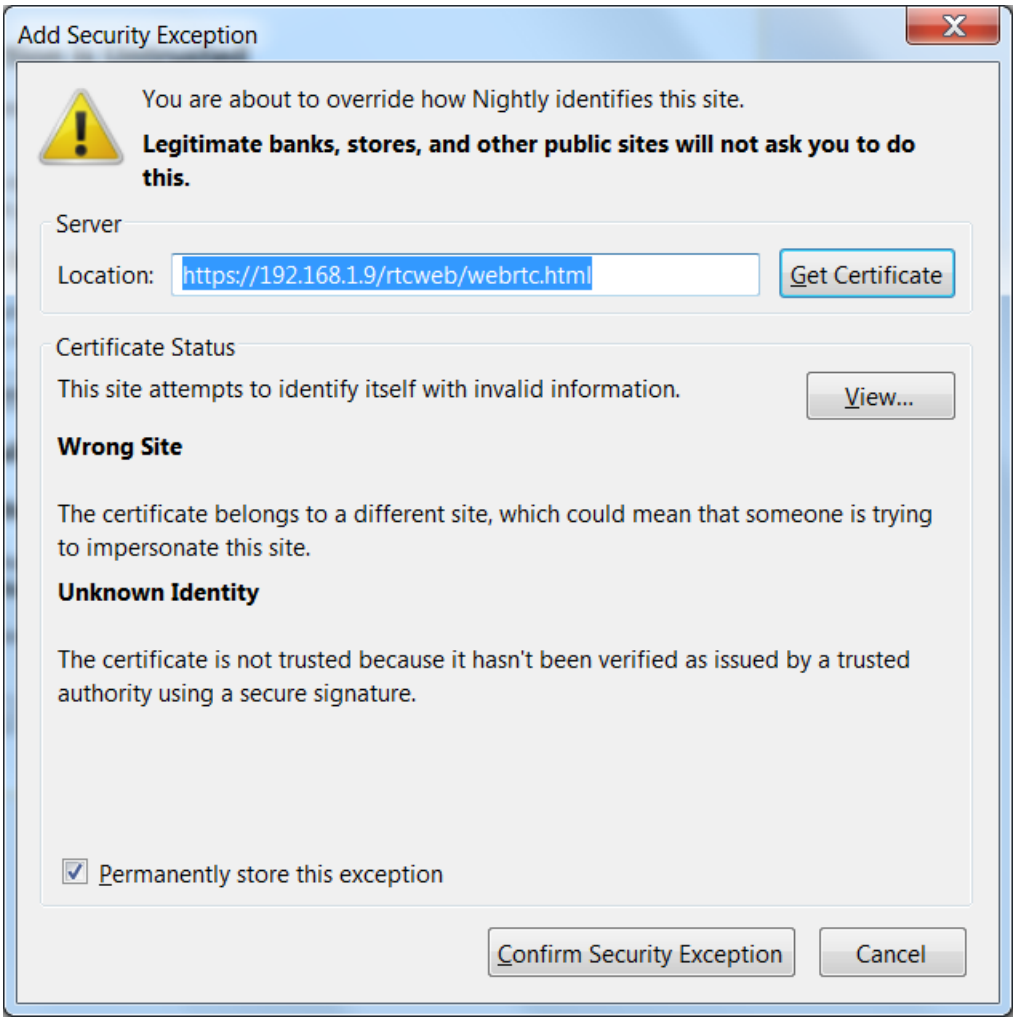
When accessing the WebRTC demo for the first time, the following warning will be displayed. An HTTPS connection must be established as follows or the WebRTC demos will not work.



1. Click **I Understand the Risks** to display additional information.



2. Click **Add Exception**. The **Add Security Exception** popup will appear.



3. Click **Confirm Security Exception** to establish the security exception for port 443 – HTTPS.
4. To begin adding the second exception for an internal websocket connection using port 1080, launch the WebRTC browser again using the following IP address in URL format:

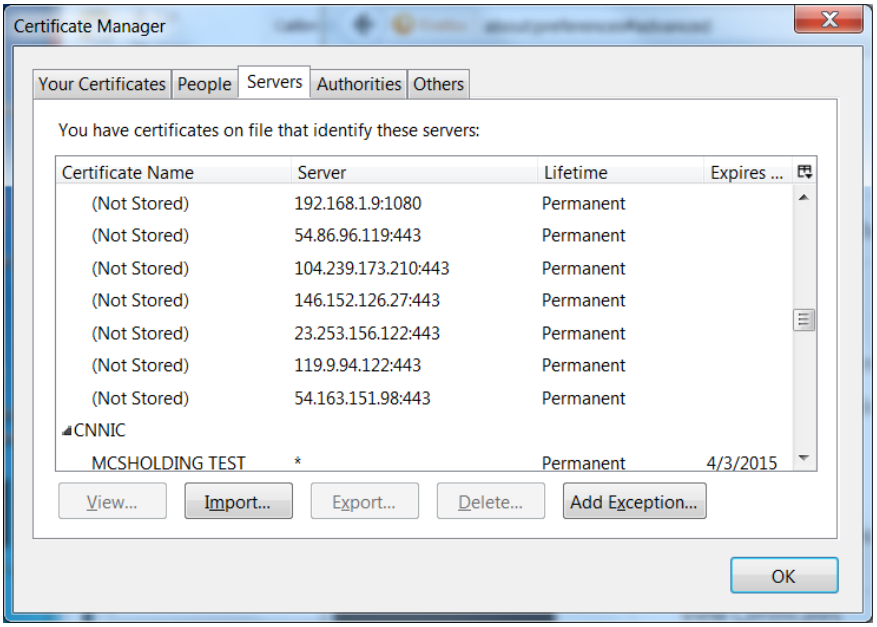
   https://<xms-ip-address>:1080

   Note: Adding the second exception is required when using Firefox to run WebRTC demos.
5. Repeat steps 1 through 3 for port 1080. The following screen indicates that the security exception for port 1080 has been set. The demo will operate normally.

If there are problems with accessing the demo using HTTPS, stored exceptions should be checked and verified. This can be done by going to **Options** > **Advanced** > **Certificates** > **View Certificates** > **Servers**. In the **Certificate Manager** window, locate the name or IP address of your server. There should be an exception for port 443 and port 1080.

If necessary, it is possible to add the exceptions in the **Certificate Manager** window instead of establishing the HTTPS connection using the WebRTC URLs.

In the following example, the IP address is 192.168.1.9 and the port is 1080 (192.168.1.9:1080).



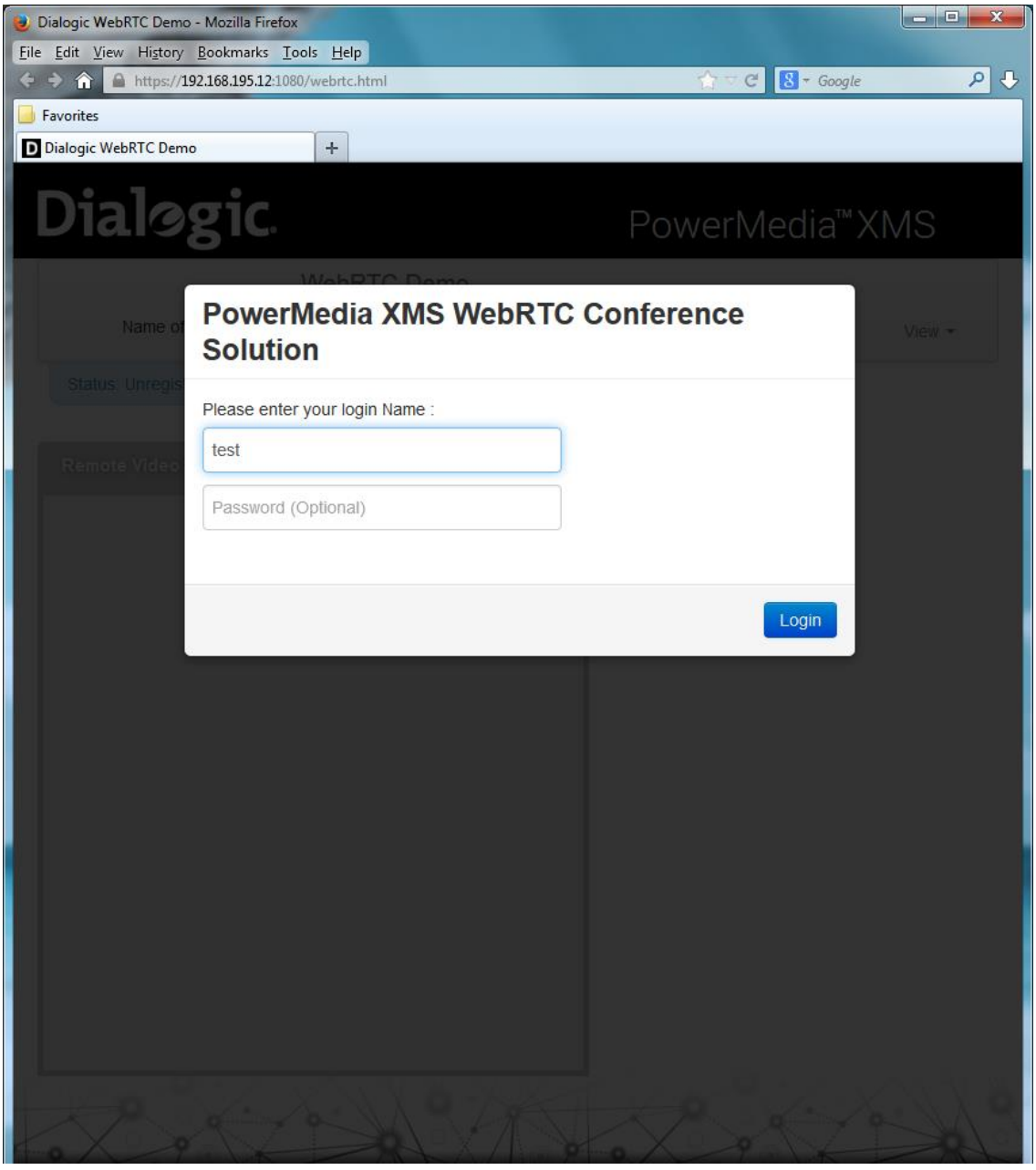
Launch the WebRTC Browser

Proceed as follows to launch the WebRTC browser after establishing the HTTPS connection.

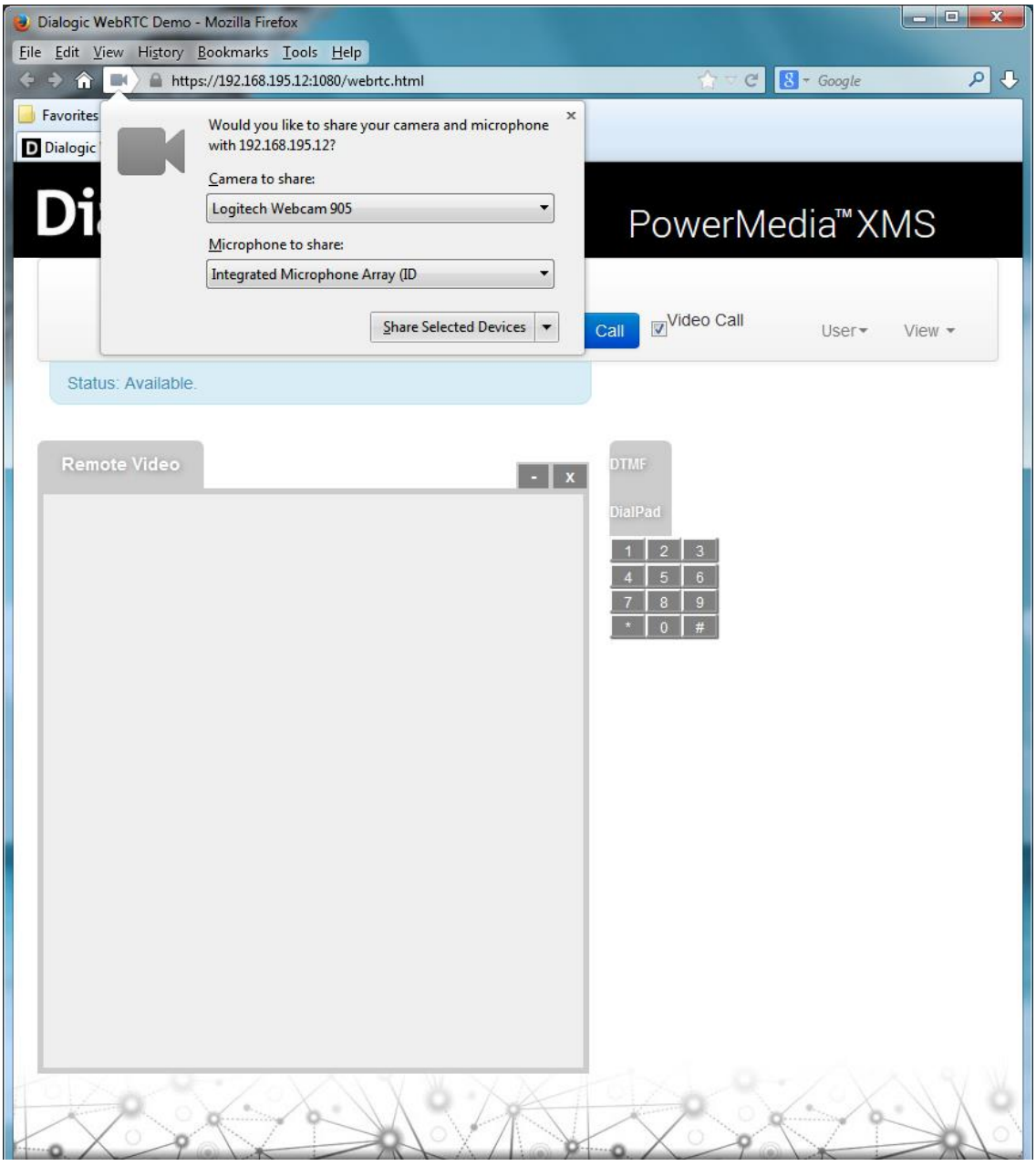
1. Enter the IP address in URL format in the address field:

   https://<xms_ip_address>/rtcweb/webrtc.html

2. When the login page appears, enter a name in **Please enter your login Name** box then click **Login**.

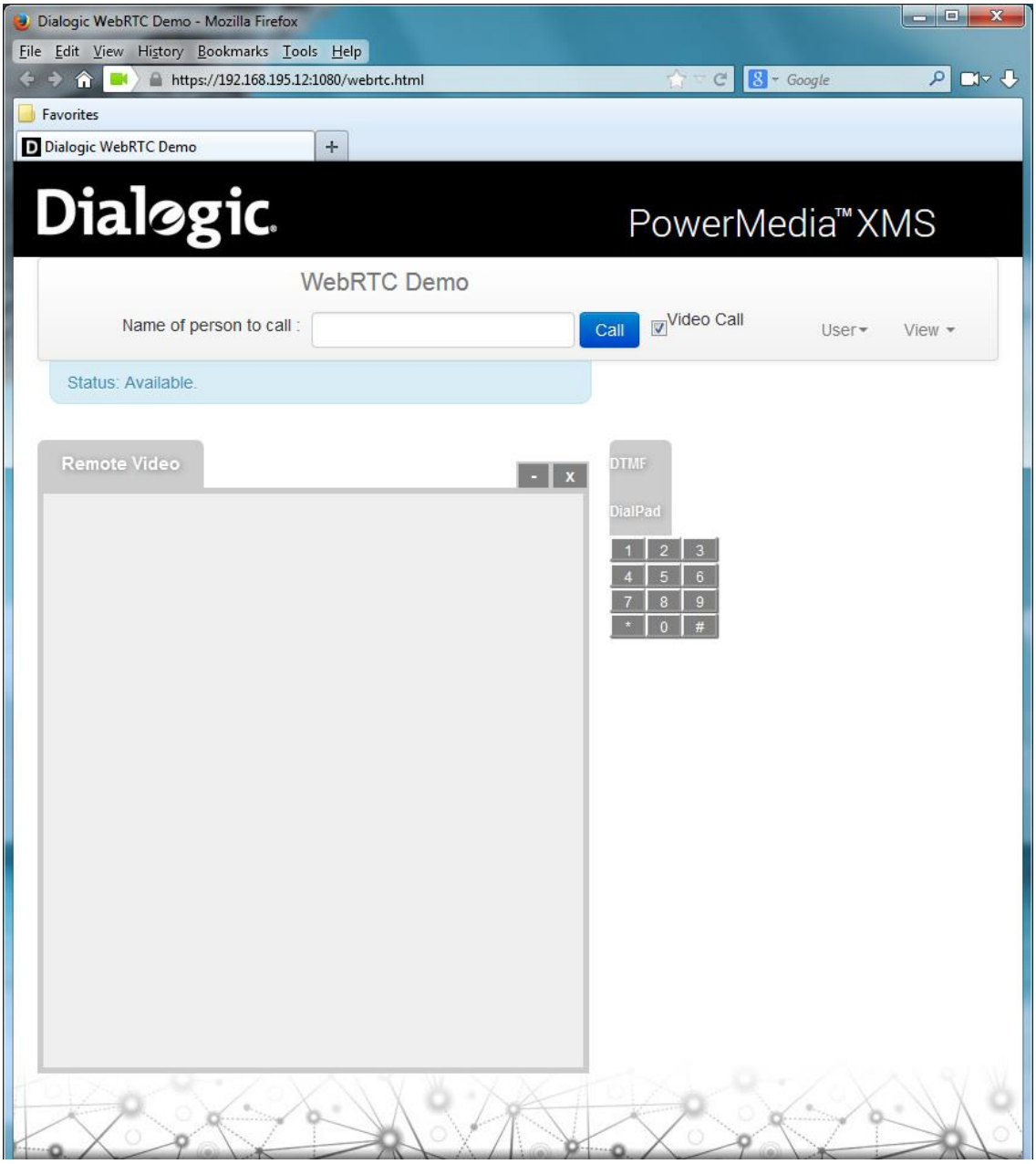


3. Choose the appropriate media selection in your browser. Wait for a message indicating the choices. Select the desired devices and click **Share Selected Devices** button.



If there is an error message that states "failed to get access to local media," the browser cannot access specified media for its use. Make sure that the selected media devices are not being used by any other application on that system.

The WebRTC browser and the PowerMedia XMS should be successfully linked as shown.



4. Proceed to the WebRTC Verification Demos section for instructions on how to verify PowerMedia XMS WebRTC access using the verification demos.

3. PowerMedia XMS Demos

The **WebRTC Demo** page, as described in WebRTC Browser Access section, is used as an interface to the verification service and is recommended to verify system operation. It will handle a single demo instance on the system at any given time and is not intended to be used for load testing or production.

This section illustrates what is needed to verify the provided demos using WebRTC.

- WebRTC Verification Demos
- PowerMedia XMS Applications

WebRTC Verification Demos

The following WebRTC verification demos are available. These demos are installed by default on the system and are activated using a specific URI.

- Video Play Verification Demo – plays a video clip into browser or SIP phone.
- Conference Verification Demo – four (4) party conferencing demo that shows interoperability between Chrome, Firefox, and SIP. Inbound calls enter and leave the conference. Web page selections allow for playing a video clip into the conference and recording the conference and replaying the recording.
- Join Verification Demo – two SIP or WebRTC inbound video calls are joined together and then unjoined when one hangs up.
- WebRTC to SIP Verification Demo – allows a SIP URL to be dialed from a WebRTC screen. When the SIP call is answered, the two endpoints are joined together. When either call hangs up, the other caller will be disconnected and the demo reset.

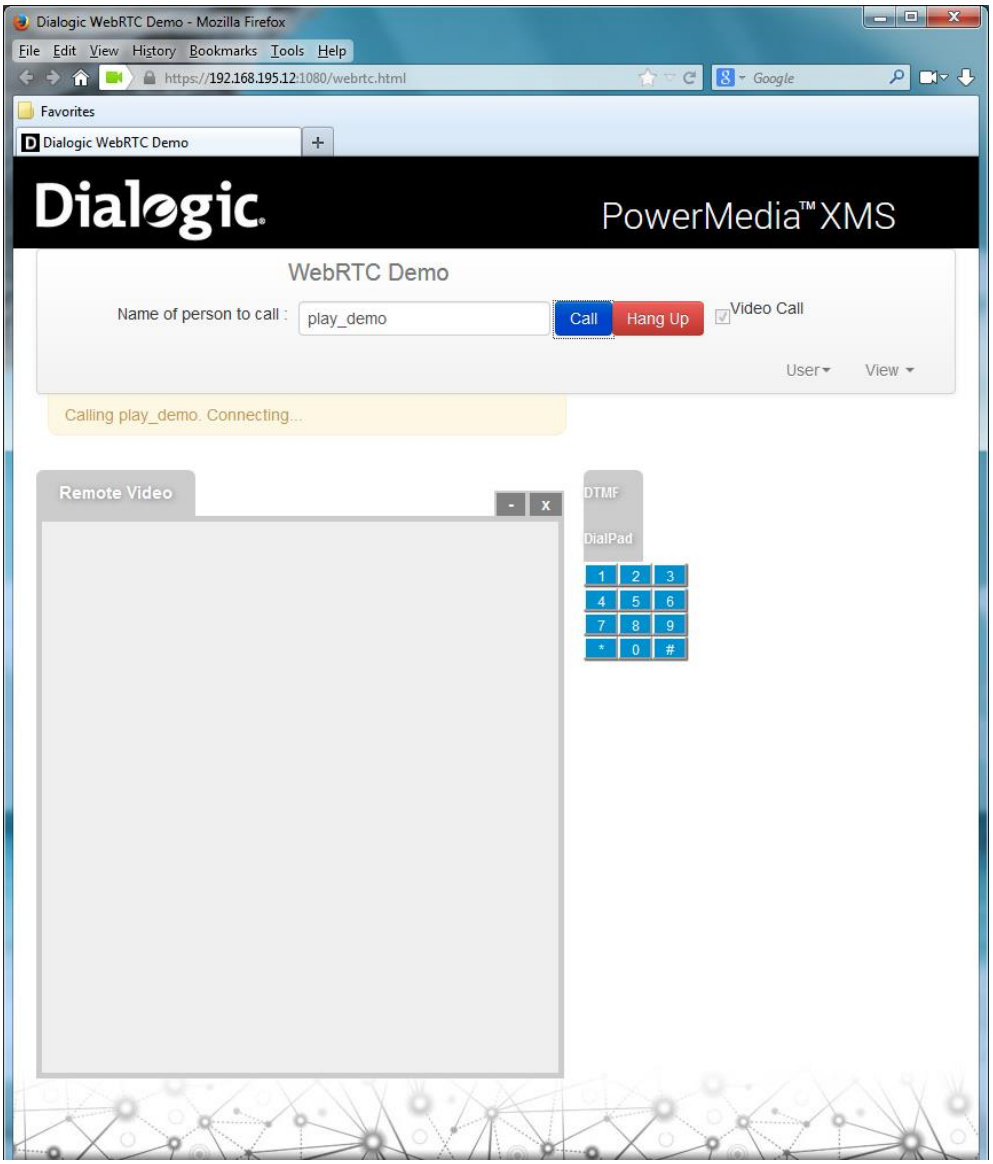
To restart services through the Console, refer to the Services section for more information.

Video Play Verification Demo

This verification demo plays a video clip.

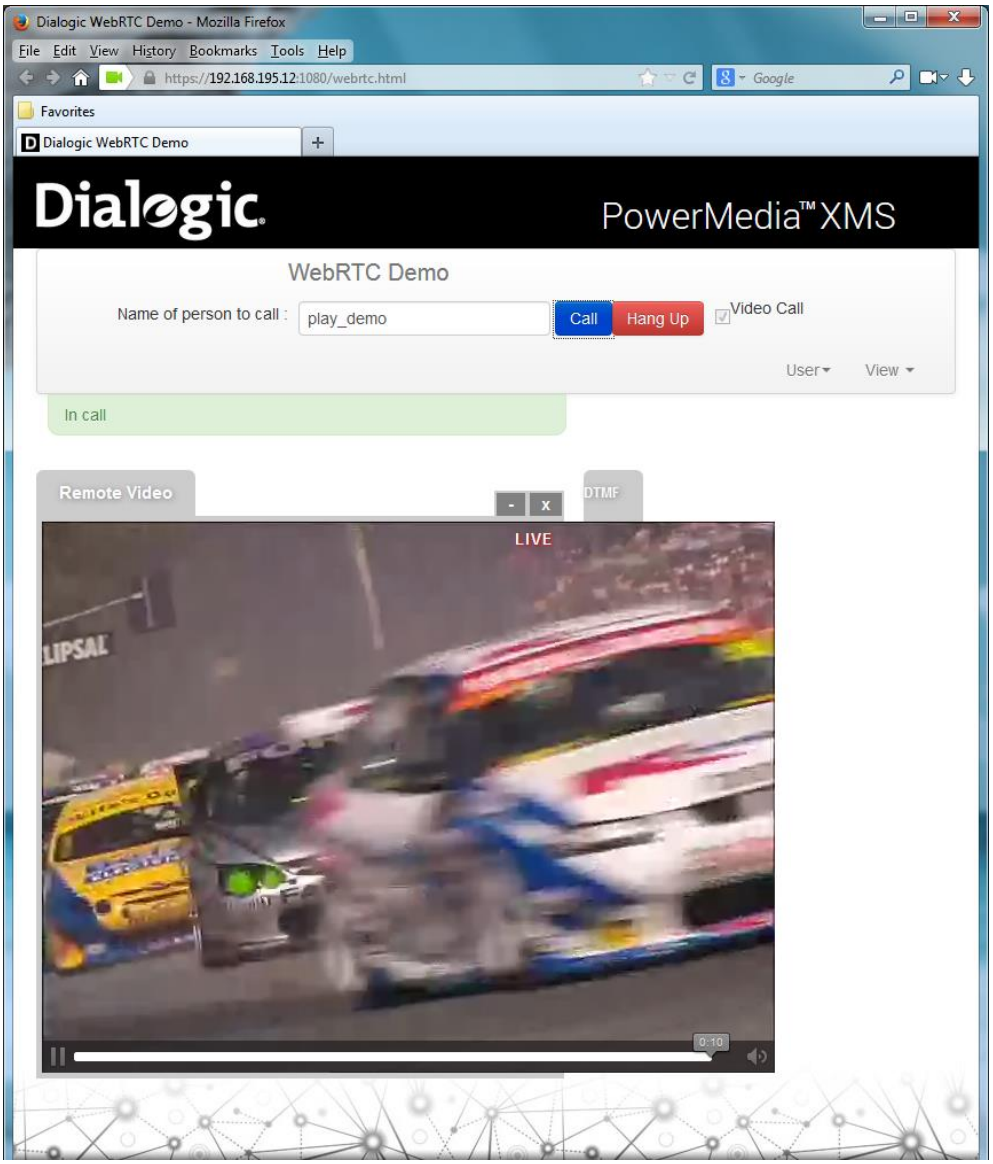
Initialize the browser as described in WebRTC Browser Access section.

Enter **play_demo** in the **Name of person to call** box and click **Call** button.



When the **Call** button is clicked, the status will display **Calling play_demo. Connecting**.

Once connected, the screen will show a video clip with race cars (if video is enabled).



You can hang up the call by clicking the red **Hang Up** button at the top of the screen or wait until the video clip finishes playing.

When the demo hangs up, it will display **Call disconnected**.

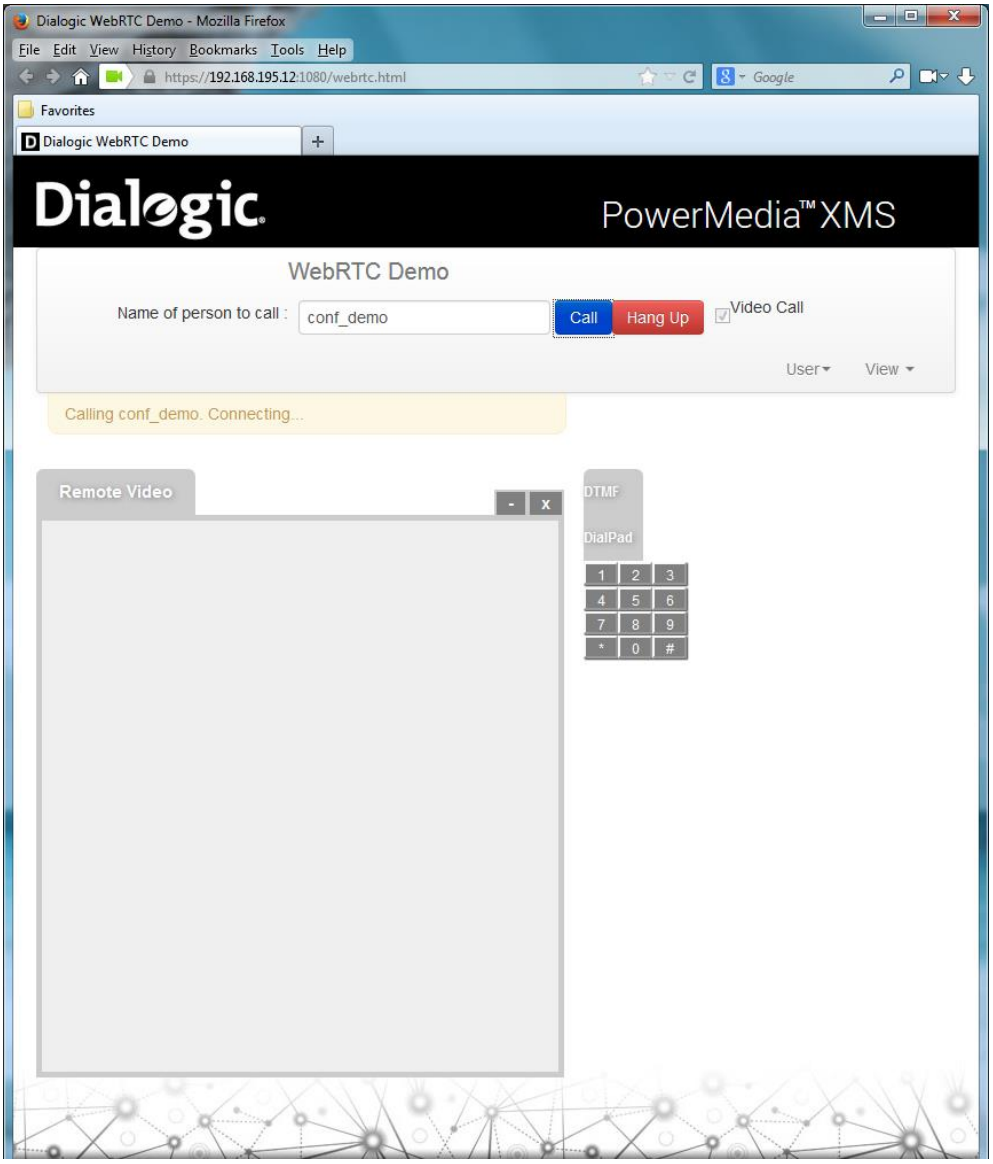
Conference Verification Demo

This verification demo provides an ad-hoc four (4) party video conference. Callers are immediately placed into conference on calling in, and leave the conference when hung up. Additional functions are conference recording, replaying the recording into the conference, and playing a video into the conference.

Note: A 4-port evaluation license is necessary for the callers in the conference.

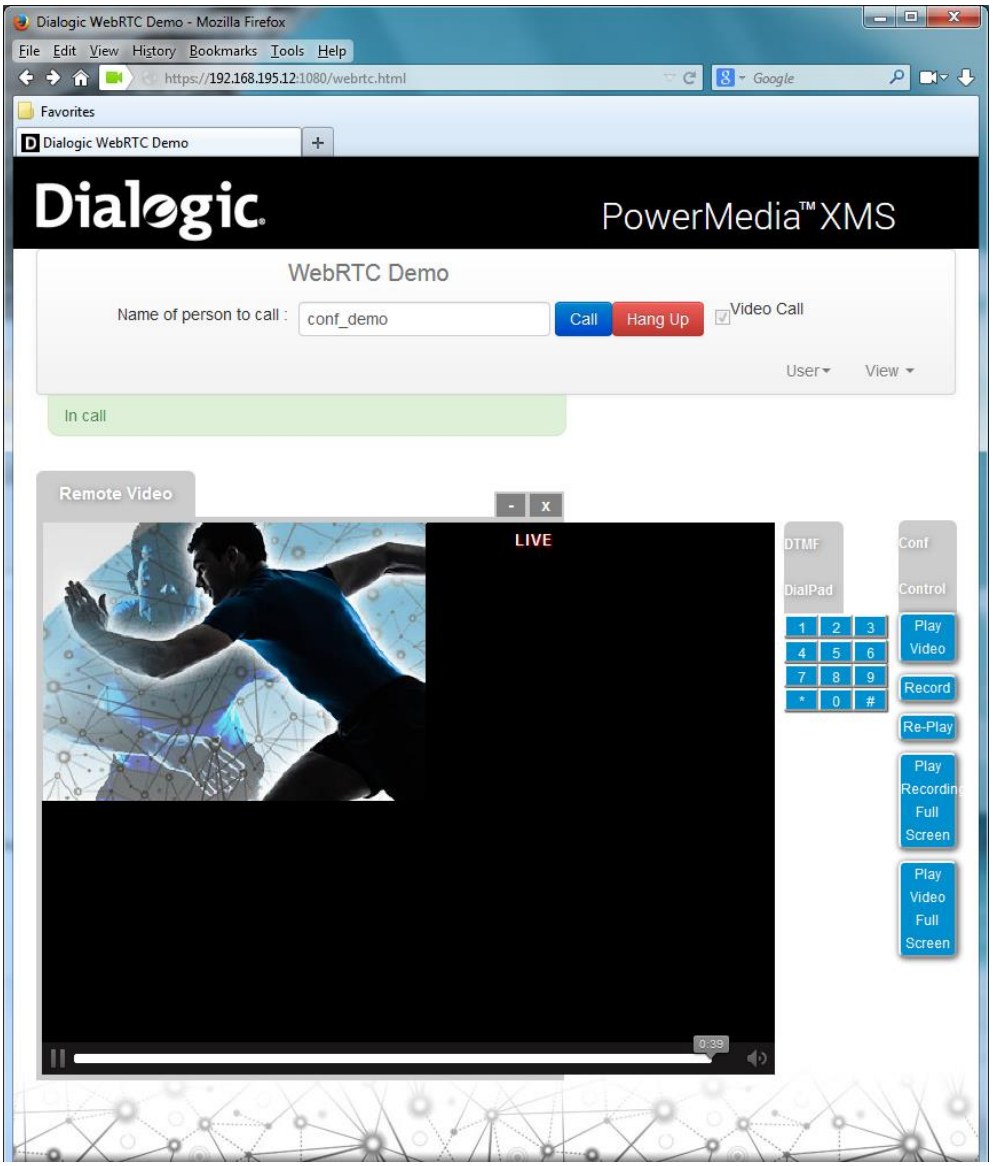
Initialize the browser as described in WebRTC Browser Access section.

Enter **conf_demo** in the **Name of person to call** box and click **Call** button.



When the **Call** button is clicked, the status will display **Calling conf_demo. Connecting**.

Once connected, the screen will show an image of the caller.



The **DTMF Dial Pad** provides the following functions:

DTMF 1: Plays the **Dialogic Network Fuel** video clip into bottom right tile.

Note: There is not a stop button for video so let it play until the end.

DTMF 2: After a beep, the conference will record for ten (10) seconds which overwrites previous recording.

DTMF 3: Plays recorded conference into bottom right tile until completion.

DTMF 4: Plays recorded conference into full screen until completion, pre-empting conference.

DTMF 5: Plays the **Dialogic Network Fuel** video clip in full screen until completion, pre-empting conference.

The **Conference Demo Control** menu provides the same functions as the **DTMF Dial Pad**. The **Conference Demo Control** menu is accessible through the **View** drop-down list.

You can hang up the call by clicking the red **Hang Up** button at the top of the screen or wait until the video clip finishes playing.

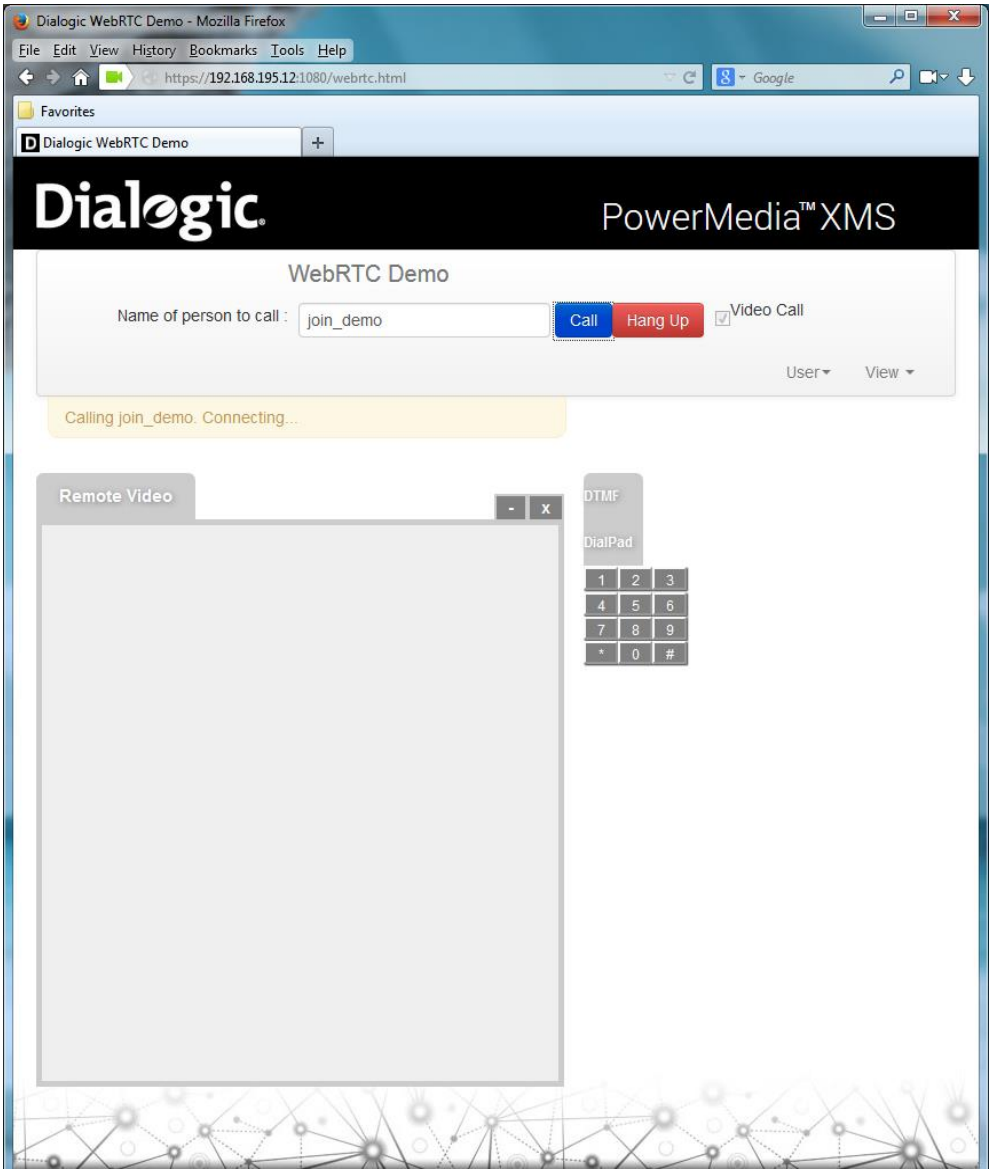
When the demo hangs up, it will display **Call disconnected**.

Join Verification Demo

This verification demo joins two video calls together. It is intended to demonstrate audio and video transcoding between two different endpoints, either SIP or WebRTC. It expects two inbound calls, and will join the second call to the first when the second arrives. When either call hangs up, the other caller will be disconnected and the demo reset.

Initialize the browser as described in WebRTC Browser Access section.

Enter **join_demo** in the **Name of person to call** box and click **Call** button.



When the **Call** button is clicked, the status will display **Calling join_demo. Connecting**.

Once connected, the screen will show that each caller will see and hear the other. Video will be a single full screen of the other caller (if video is enabled).

You can hang up the call by clicking the red **Hang Up** button at the top of the screen or wait until the video clip finishes playing.

When the demo hangs up, it will display **Call disconnected**.

WebRTC to SIP Verification Demo

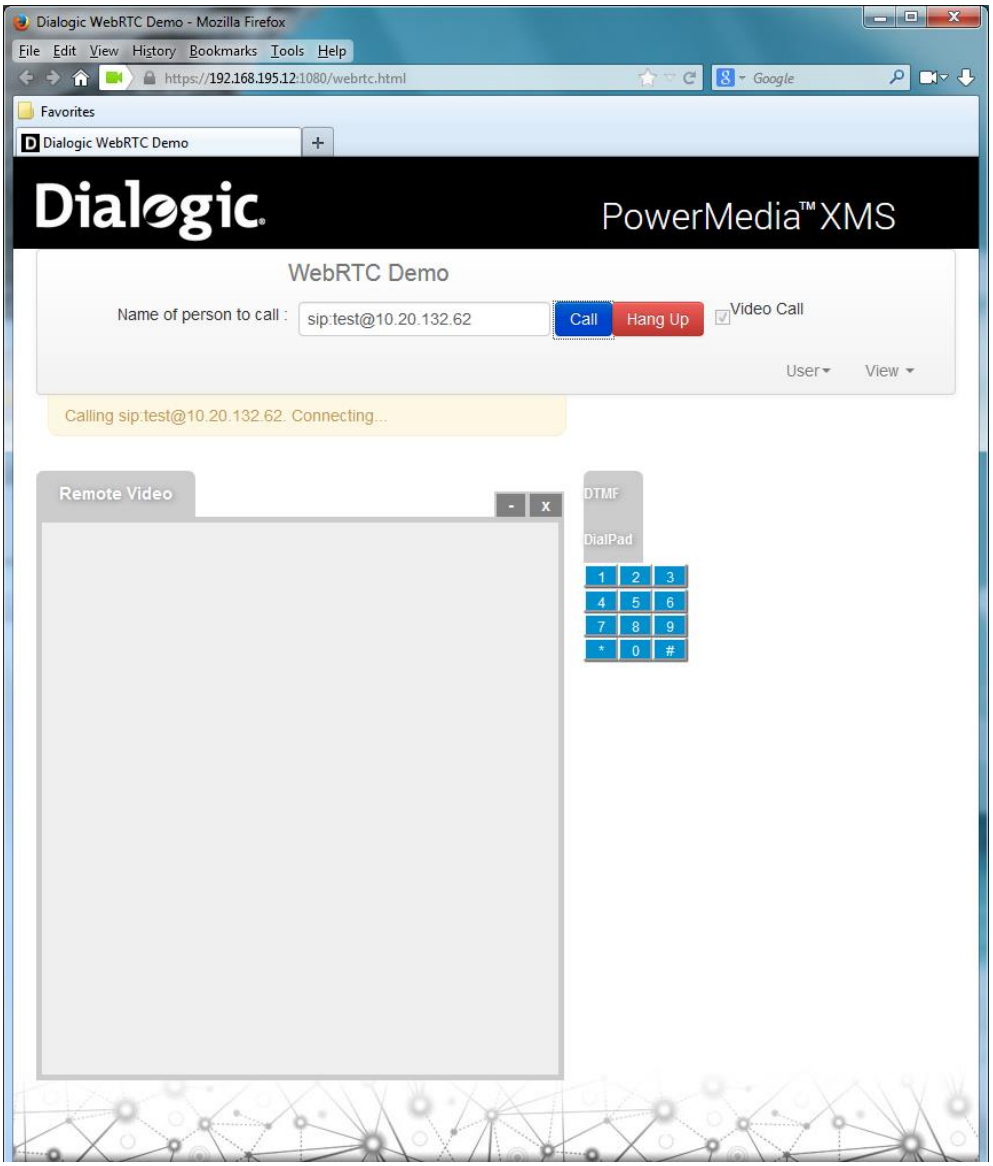
This verification demo allows a SIP URL to be dialed from a WebRTC screen. When the SIP call is answered, the two endpoints are joined together. When either call hangs up, the other caller will be disconnected and the demo reset.

Initialize the browser as described in WebRTC Browser Access section.

Enter the destination SIP URL in the **Name of person to call** box and click **Call** button.

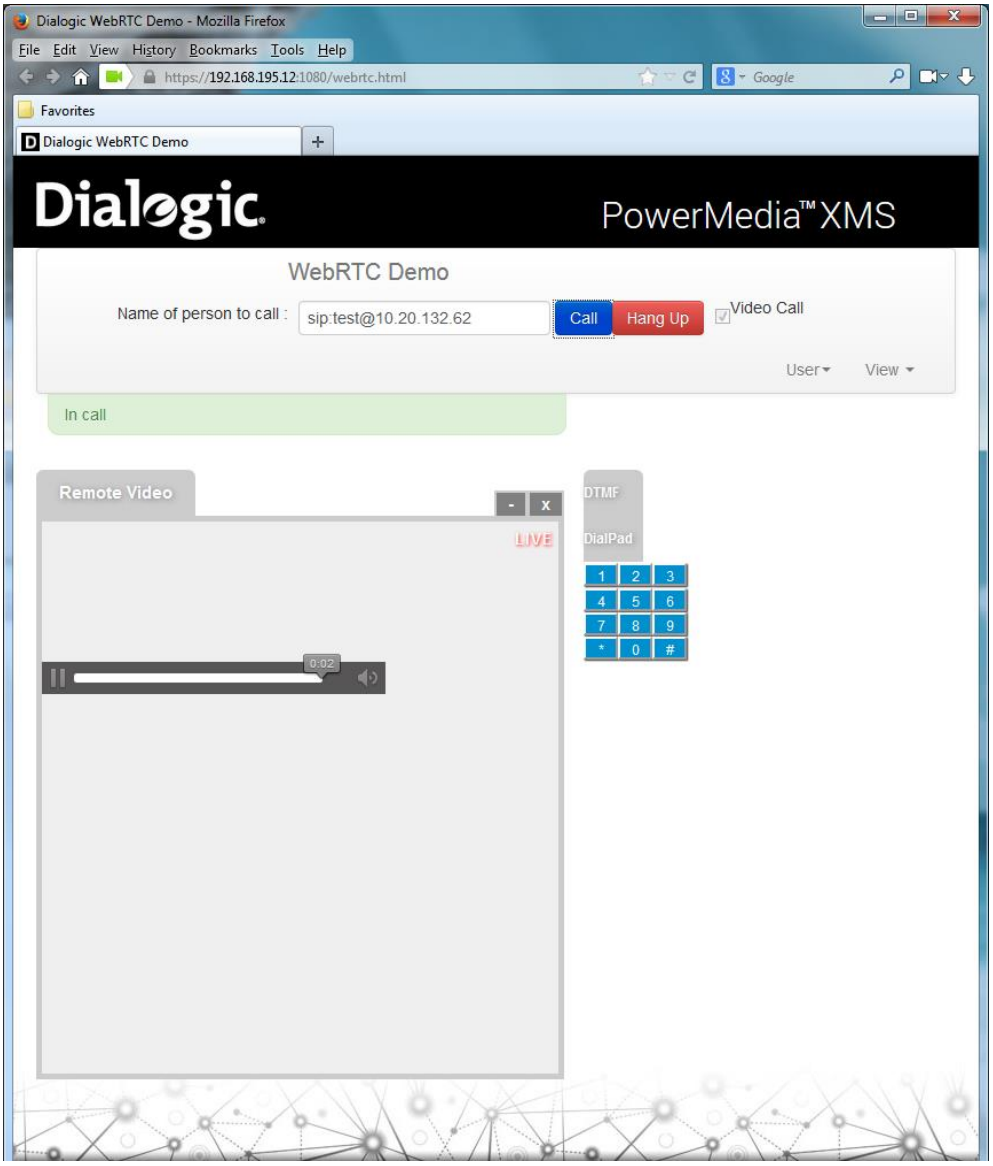
The URL must be in the following format:

```
sip:username@<sip_ip_address>
```



When the **Call** button is clicked, the status will display **Calling <SIP URL>. Connecting**.

Once connected, each caller will see and hear the other. Video will be a single full screen of the remote caller (if video is enabled).



You can hang up the call by clicking the red **Hang Up** button at the top of the screen or wait until the video clip finishes playing.

When the demo hangs up, it will display **Call disconnected**.

PowerMedia XMS Applications

There are additional PowerMedia XMS applications that can be invoked through the **WebRTC Demo** browser page:

- NETANN
- RESTful

NETANN

No separate verification application is needed.

Initialize the browser as described in WebRTC Browser Access section.

To use the NETANN announcement service, enter one of the following in the **Name of person to call** box.

Audio-only ("Video Call" option should be unchecked):

```
annc@xms;play=file://verification/greeting.wav
```

or

```
annc@xms;play=file://verification/greeting.wav;locale=en-US;repeat=2;delay=1;duration=infinite
```

Audio and Video:

```
annc@xms;play=file://verification/greeting
```

Click the **Call** button to hear the greeting.

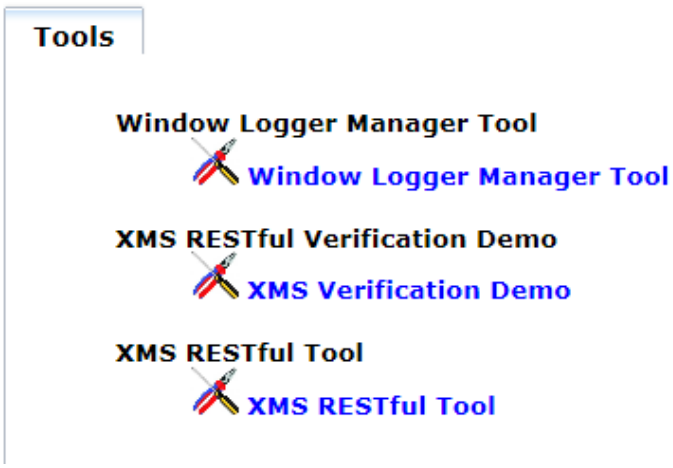
To use the NETANN conference service (audio and video), enter the following in the **Name of person to call** box:

```
conf=1234@xms
```

Click the **Call** button to join conference 1234.

RESTful

The PowerMedia XMS RESTful interface works with the XMS RESTful Verification Demo and XMS RESTful Tool. These two demos are delivered on PowerMedia XMS and can be accessed from the **Tools** page via **Downloads** menu.



XMS RESTful Verification Demo

Prepare for the demo as follows:

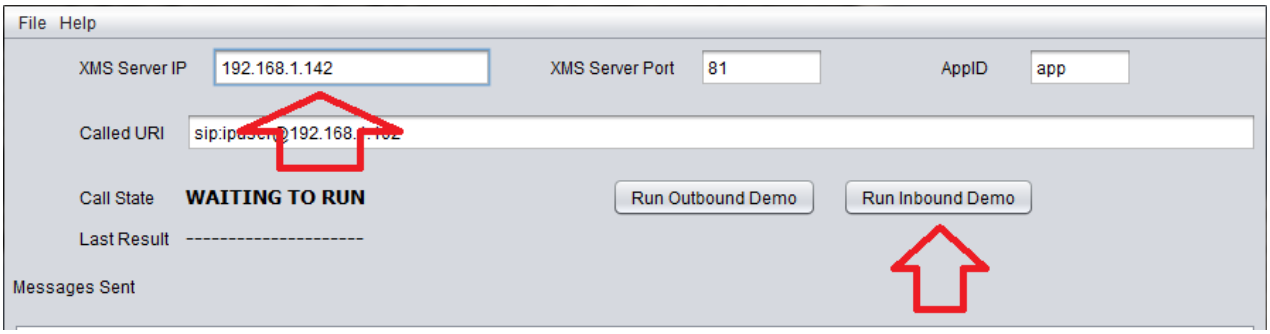
The downloaded *XMSVerificationDemo.zip* file should be downloaded to a system with a Java runtime and a Windows environment.

Unzip the file that contains source code of the demo. Navigate to *XMSVerificationDemo.jar* in the **dist** subfolder.

From the command prompt, run the following command:

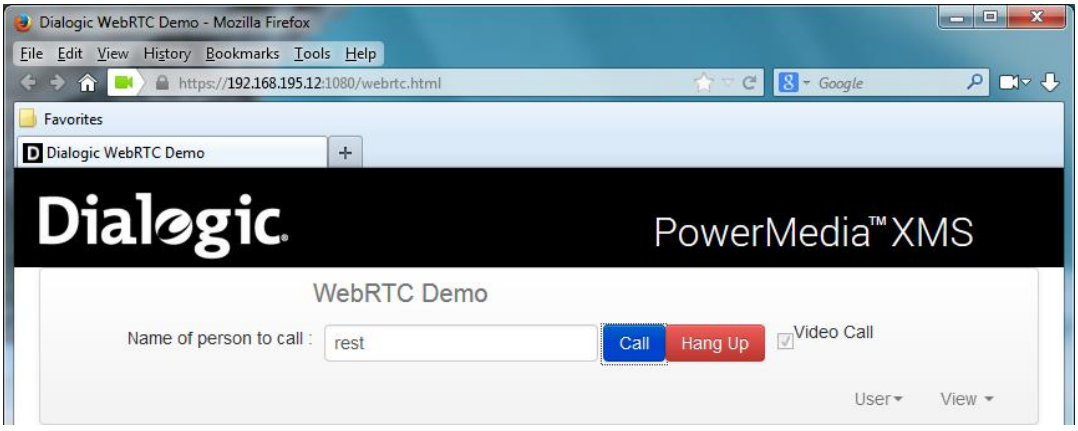
```
java –jar XMSVerificationDemo.jar
```

Specify the correct PowerMedia XMS Server IP address and then click the **Run Inbound Demo** button.



Additional information about the demo can be found in the *Dialogic® PowerMedia™ XMS Quick Start Guide*.

To run the demo from **WebRTC Demo** browser page, specify **rest** in **Name of person to call** and click the **Call** button ("Video Call" option should be unchecked).



XMS RESTful Tool

Prepare for the demo as follows:

The downloaded *XMSTool.zip* file should be downloaded to a system with a Java runtime and a Windows environment.

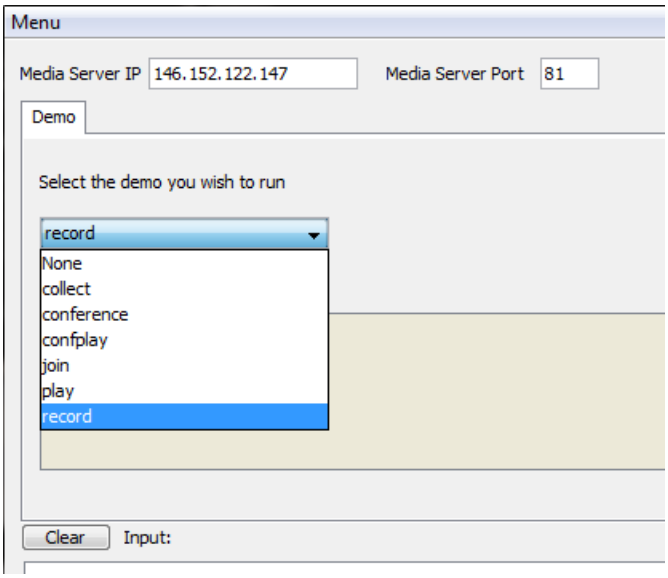
Unzip *XMSTool.zip* file. This will create an **XMSTool** directory. From the command line, navigate to that directory and run the following command:

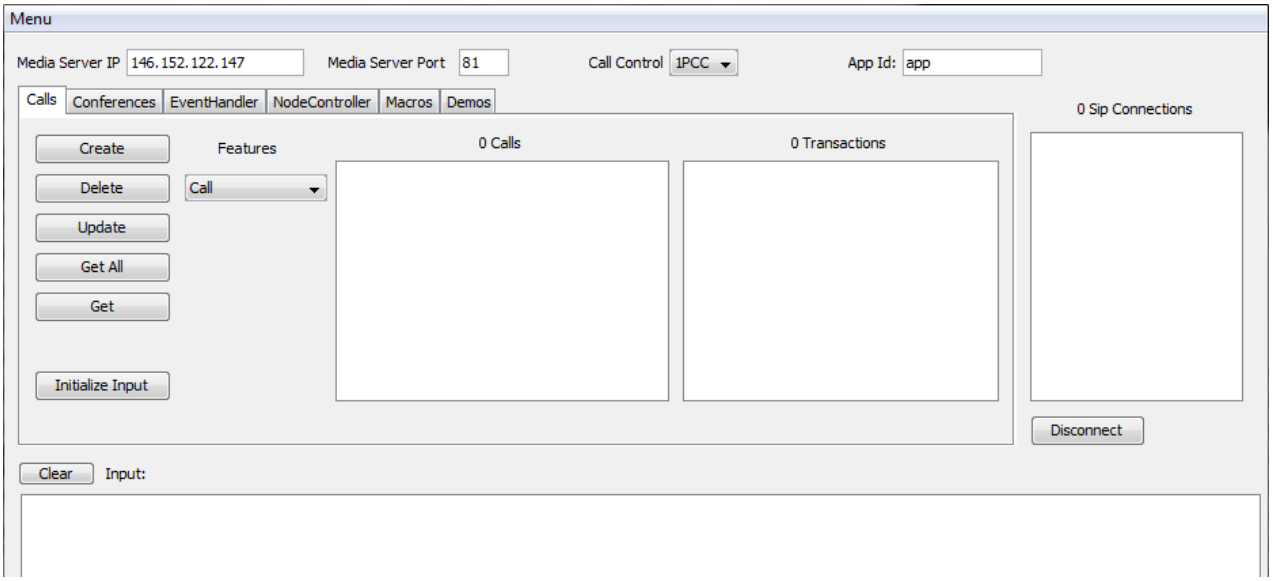
```
java -jar dist/XMSTool.jar -g -m <xms_ip_address>
```

Note: It is necessary to be in the directory up from **dist**.

Refer to the *Dialogic® PowerMedia™ XMS Installation and Configuration Guide* for detailed instructions on running the demo.

Select the type of a demo you want XMSTool application to run by selecting it from the drop-down menu:





To run the demo from **WebRTC Demo** browser page, specify **rest** in **Name of person to call** and click the **Call** button ("Video Call" option should be unchecked).