



# **Dialogic® PowerMedia™ XMS WebRTC**

## **Demo Guide**

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## Revision History

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Revision	Release Date	Notes
05-2718-009	May 2018	Updates to support PowerMedia XMS Release 3.5. <a href="#">Browser Support for WebRTC</a> : Updated the section.
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 <i>Dialogic® PowerMedia™ XMS Installation and Configuration Guide</i> .
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.
Last modified: May 2018		

Refer to [www.dialogic.com](http://www.dialogic.com) for product updates and for information about support policies, warranty information, and service offerings.

# 1. Welcome

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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 3.5 documentation at <http://www.dialogic.com/manuals/xms/xms3-5>.

## 2. WebRTC with PowerMedia XMS

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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 Mozilla Firefox (Nightly) and Google Chrome (Canary) are subject to frequent change and may not work correctly. Any other WebRTC clients including Apple Safari and Opera may also work, but may also have some compatibility issues.

### 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:

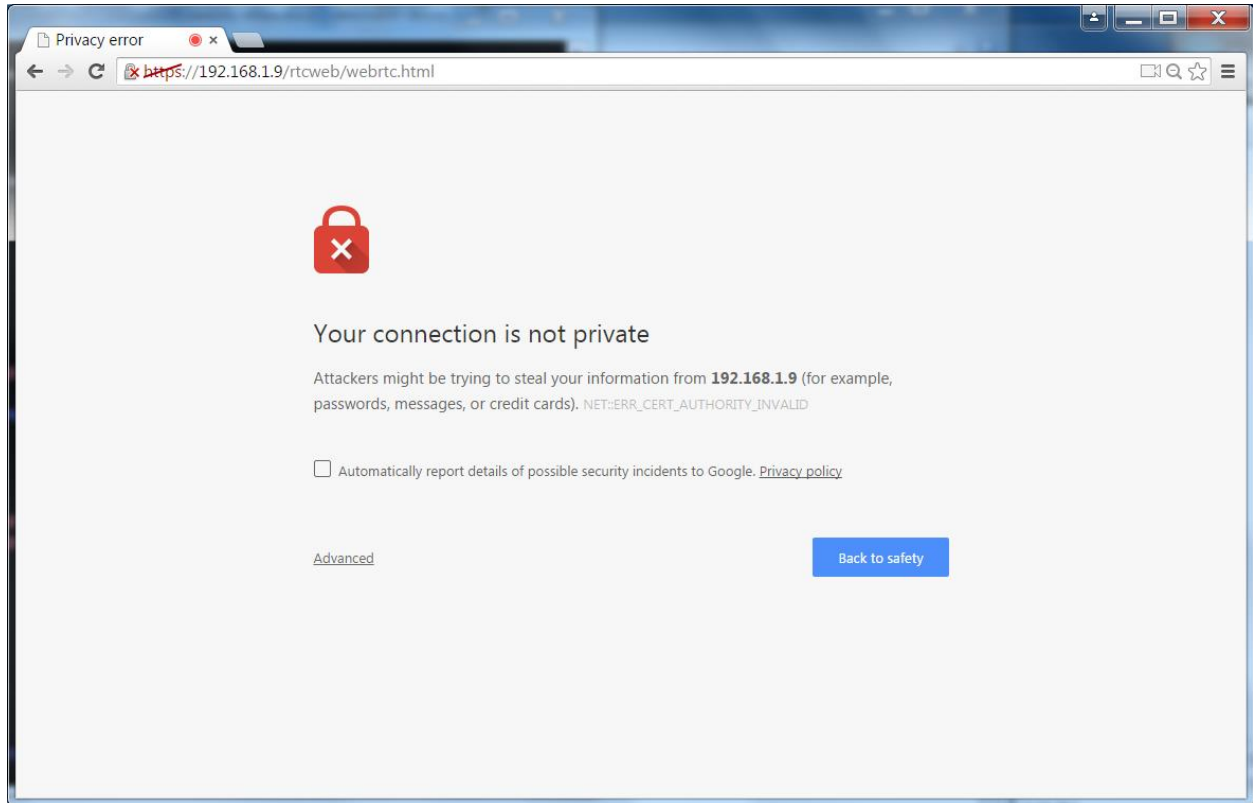
`https://<xms_ip_address>/rtcweb/webrtc.html`

**Note:** The screens will differ between [Chrome](#) and [Firefox](#).

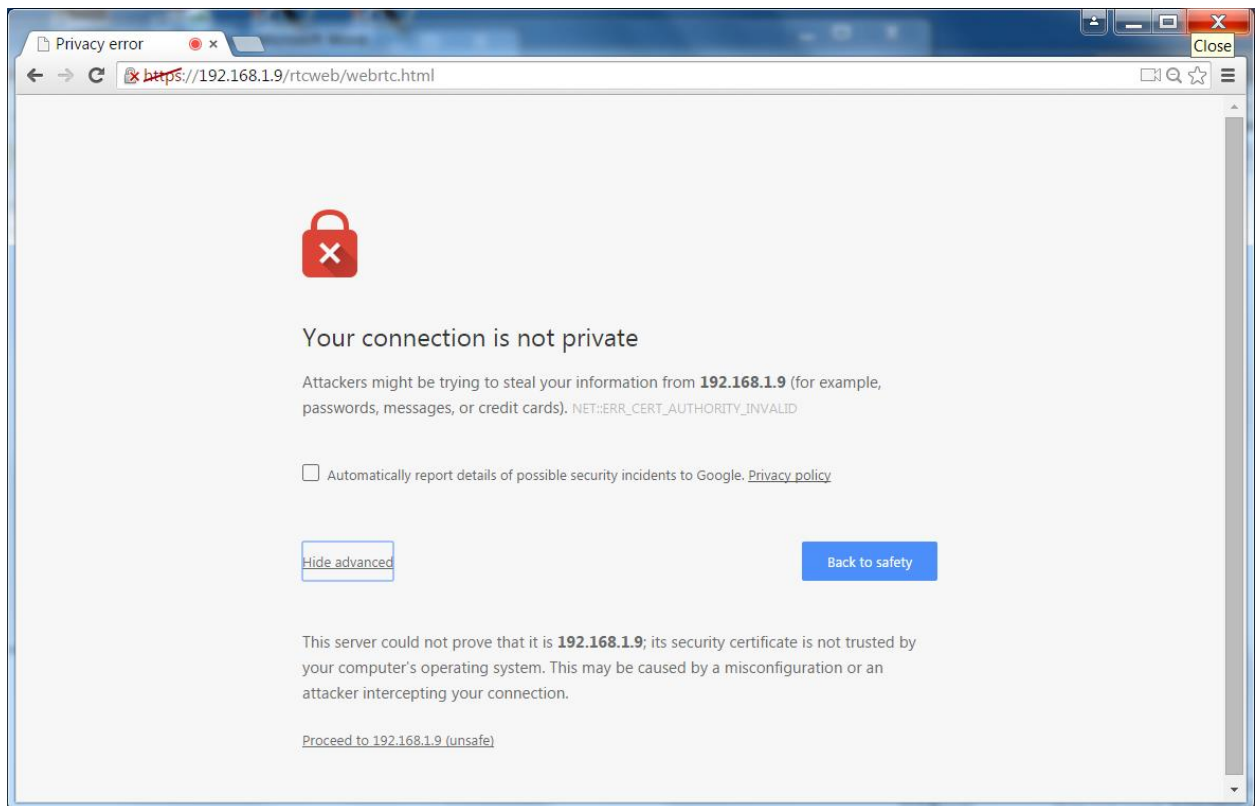
## Chrome

### Establish the HTTPS Connection

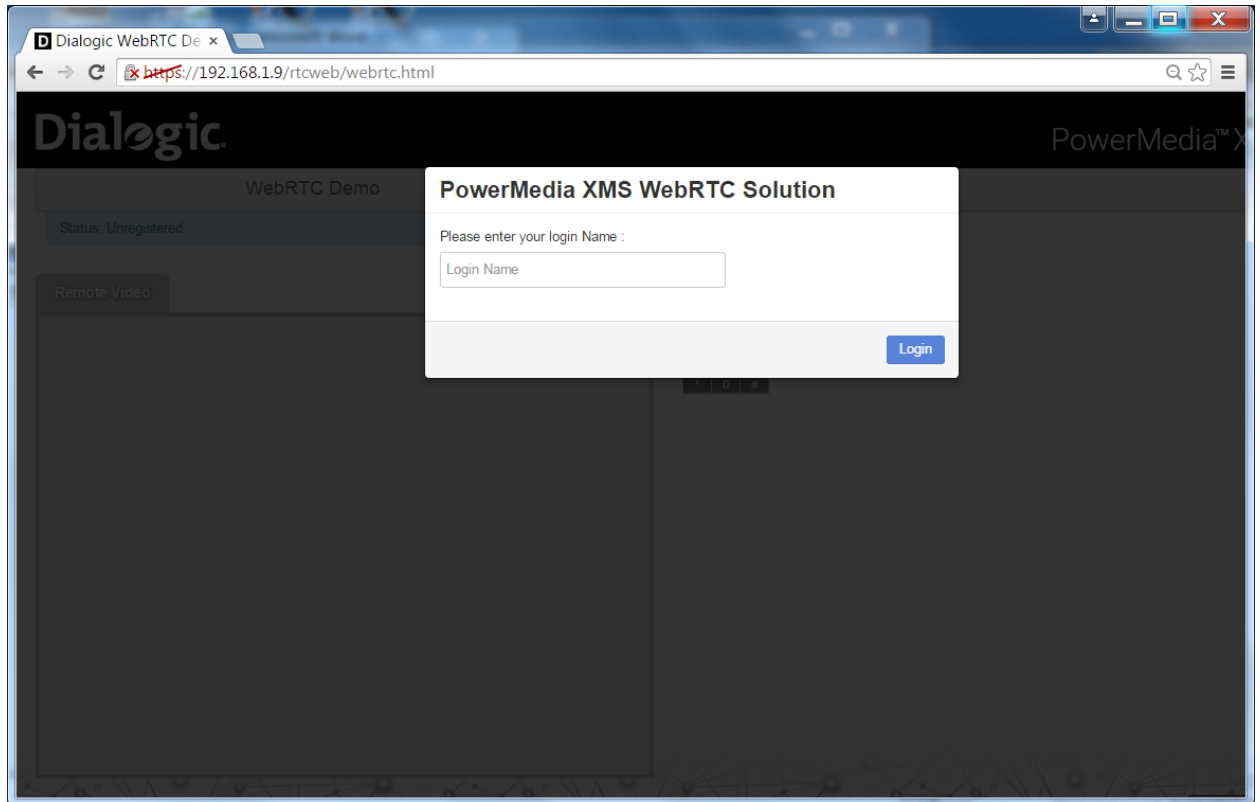
When accessing the WebRTC demo for the first time, the following warning will be displayed. An HTTPS connection must be established as follows or the WebRTC demos will not work.



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



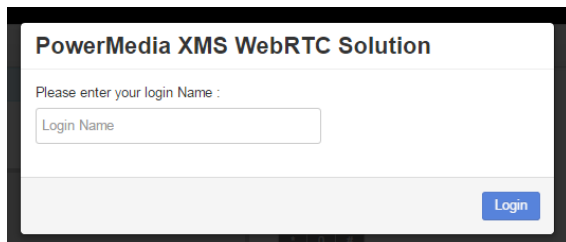
2. Click **Proceed to <xms-ip-address> (unsafe)**. The login screen for the demo will appear with an indication that the HTTPS connection has been made with an untrusted certificate. The demo will operate normally.



## Launch the WebRTC Browser

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

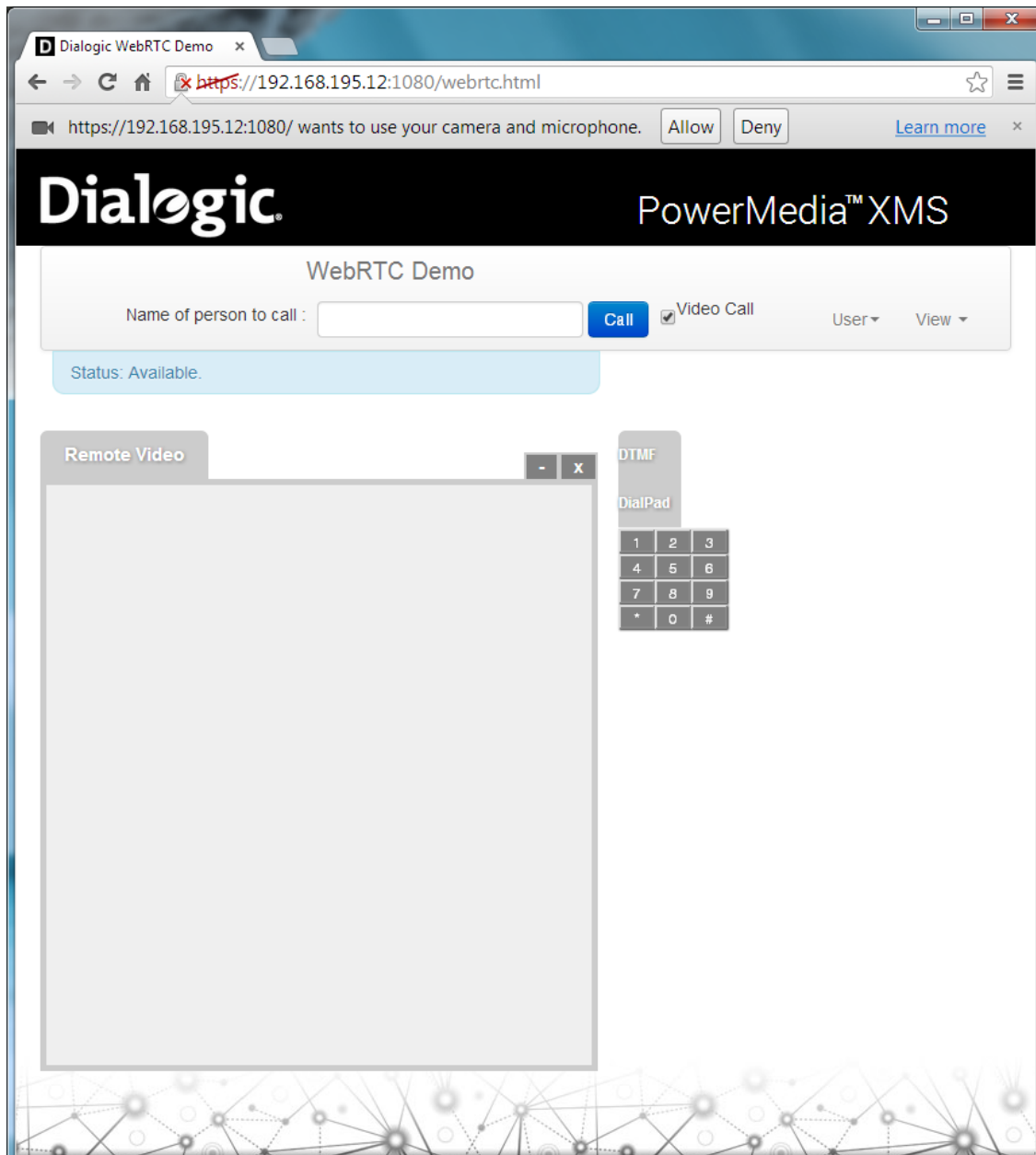
1. Enter a name in **Please enter your login Name** box and then click **Login**.



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.

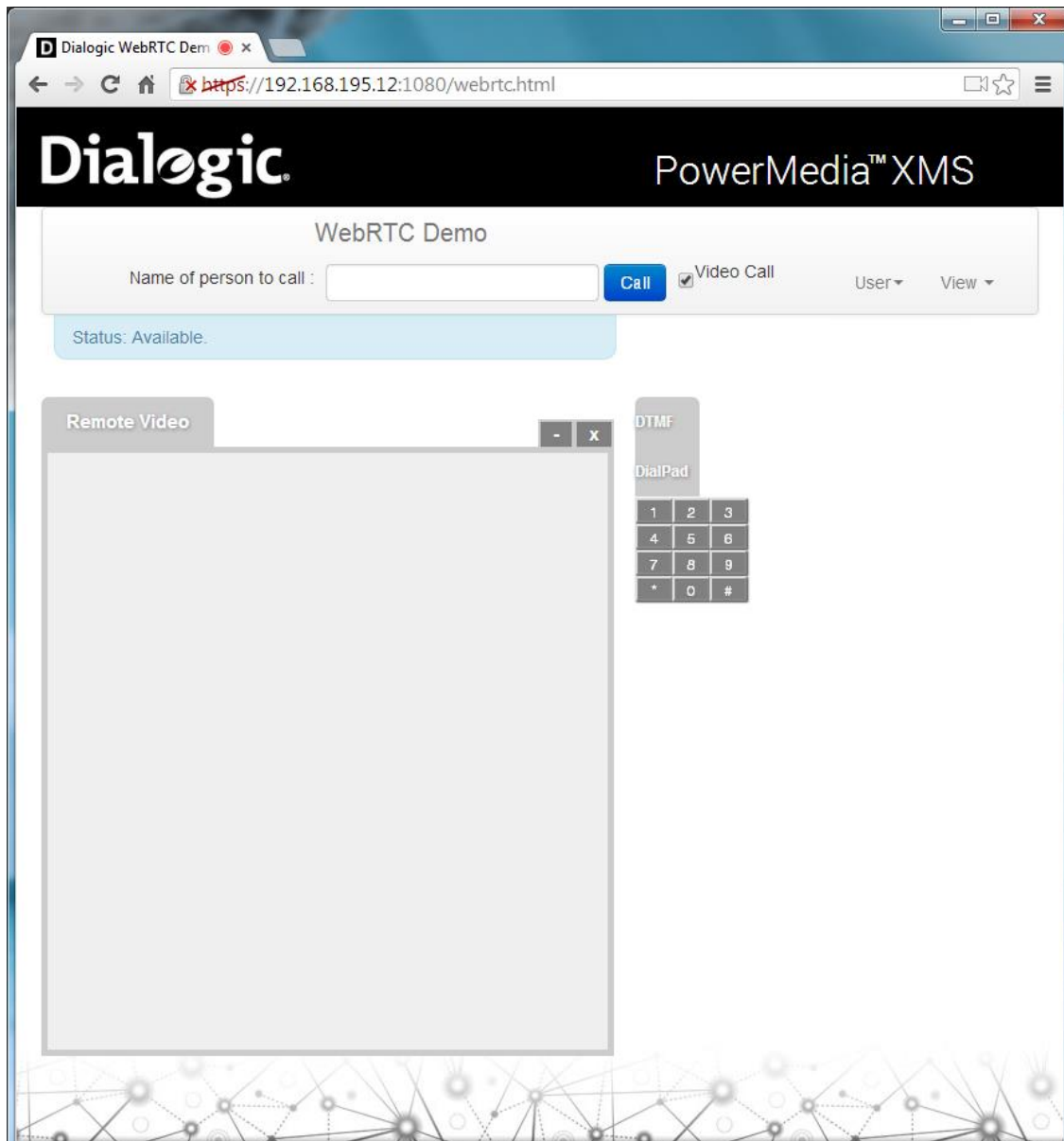


3. Click **Allow** button to enable media through your browser as illustrated. Click **Learn more** link for more information on media functionality.

**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.

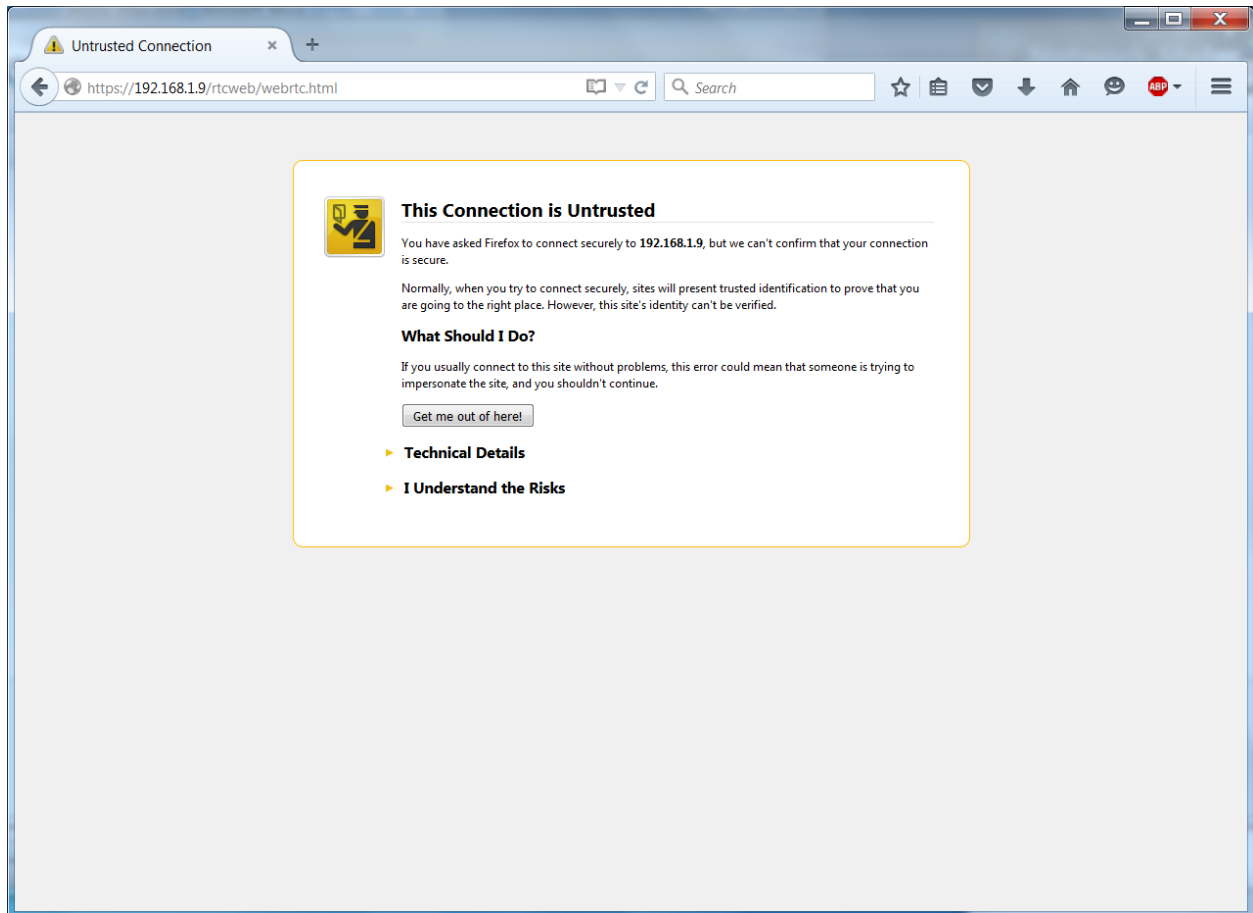


4. Proceed to the [WebRTC Verification Demos](#) section for instructions on how to verify PowerMedia XMS WebRTC access using the verification demos.

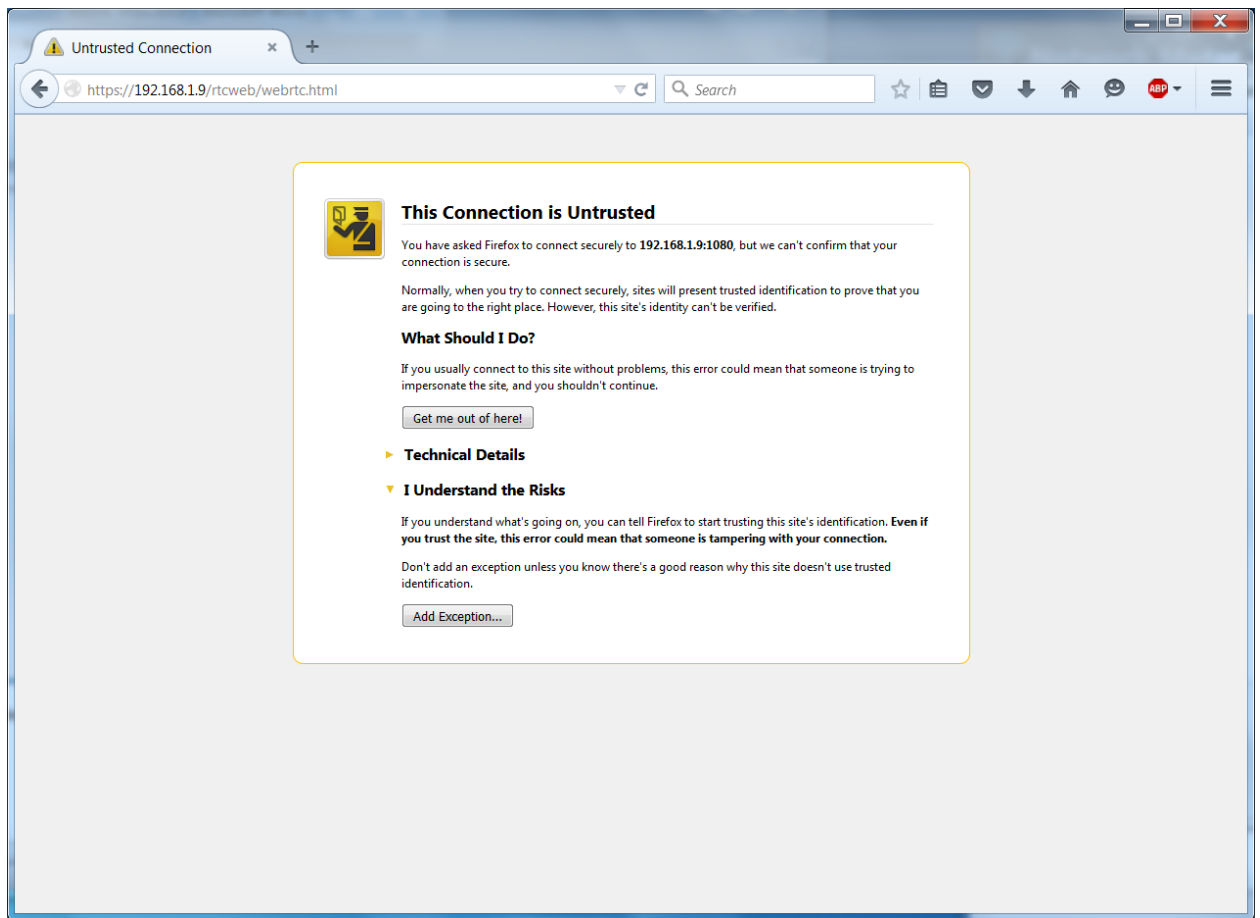
## Firefox

### 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.

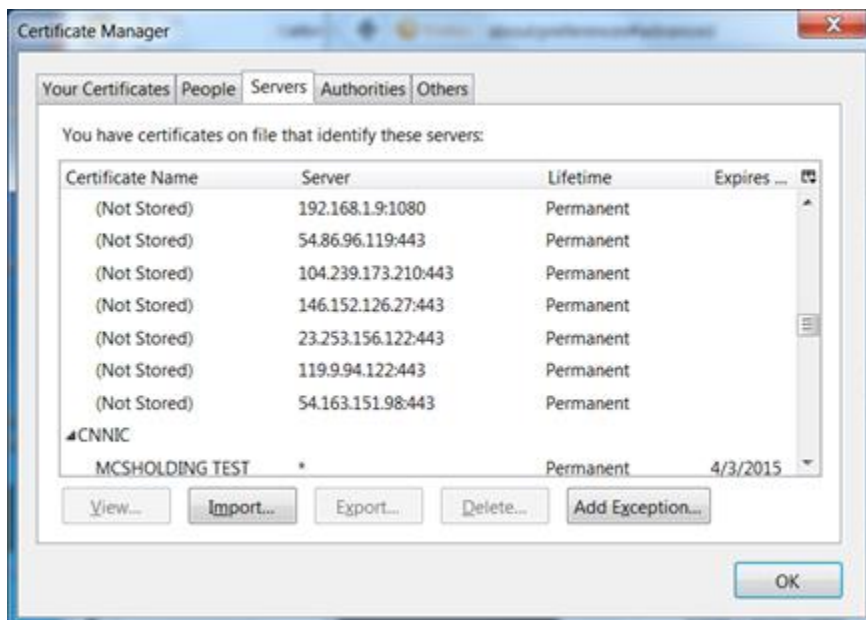
5. Repeat steps 1 through 3 for port 1080. The following screen indicates that the security exception for port 1080 has been set. The demo will operate normally.



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.

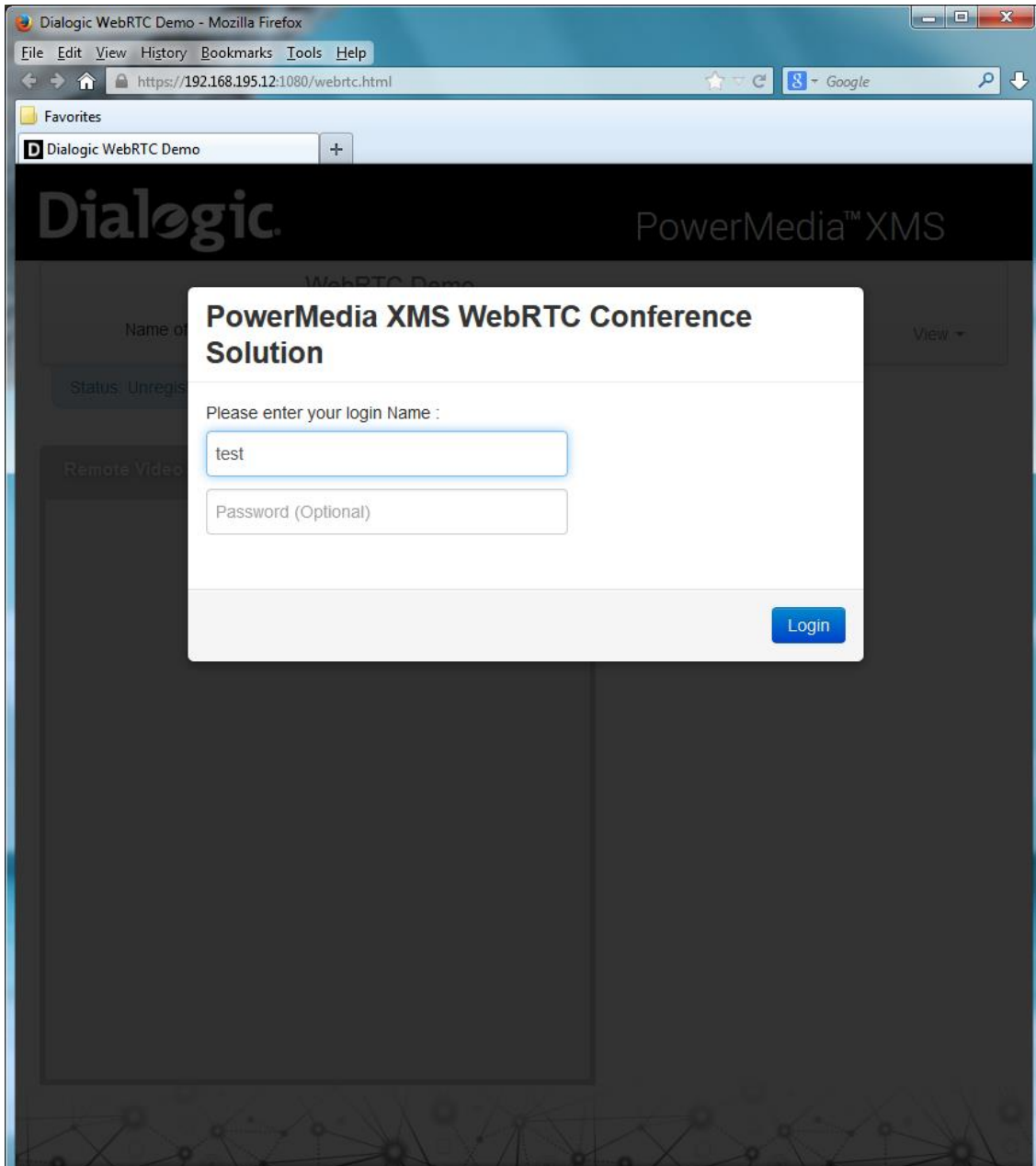
In the following example, the IP address is 192.168.1.9 and the port is 1080 (192.168.1.9:1080).



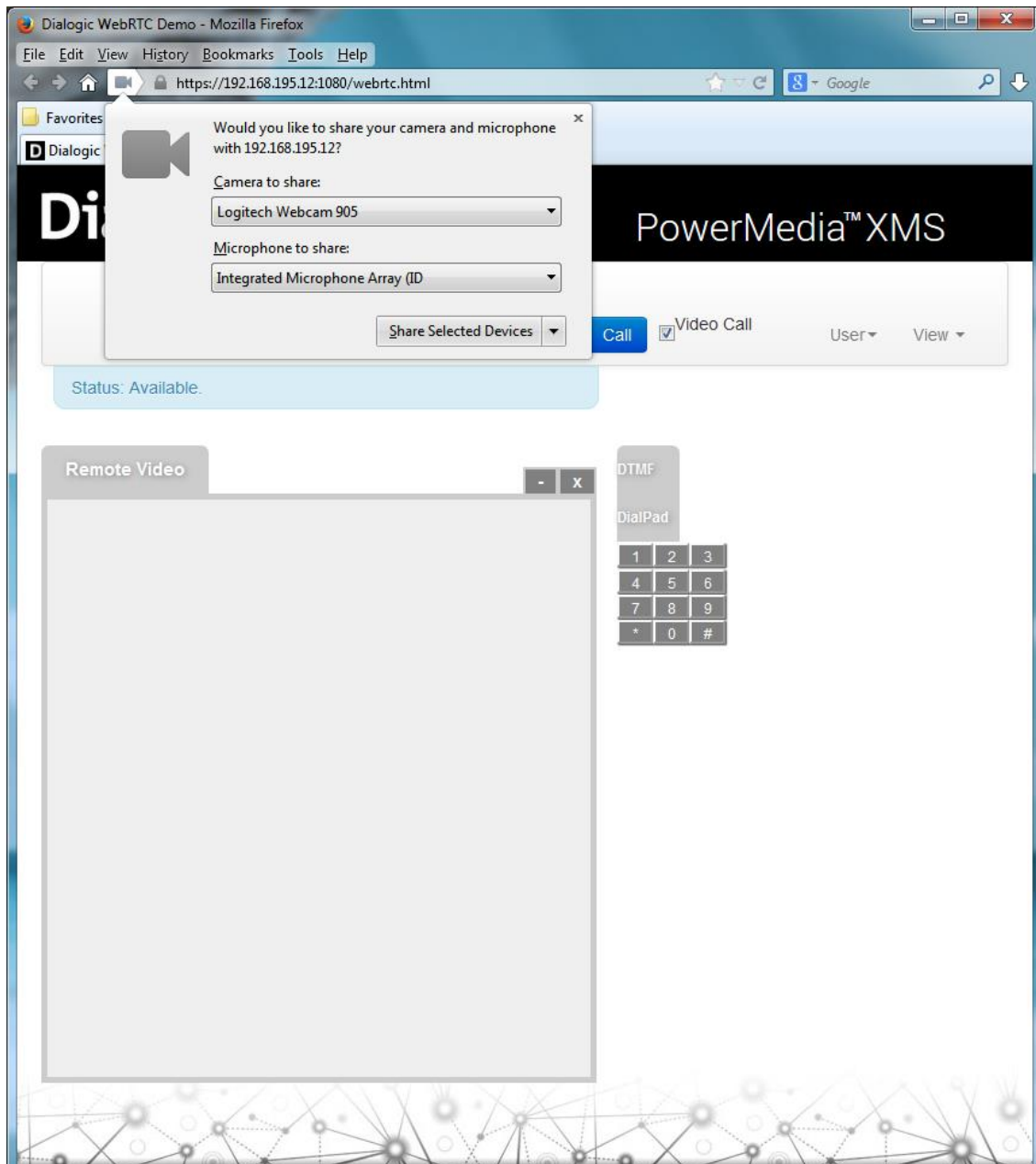
## Launch the WebRTC Browser

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**.

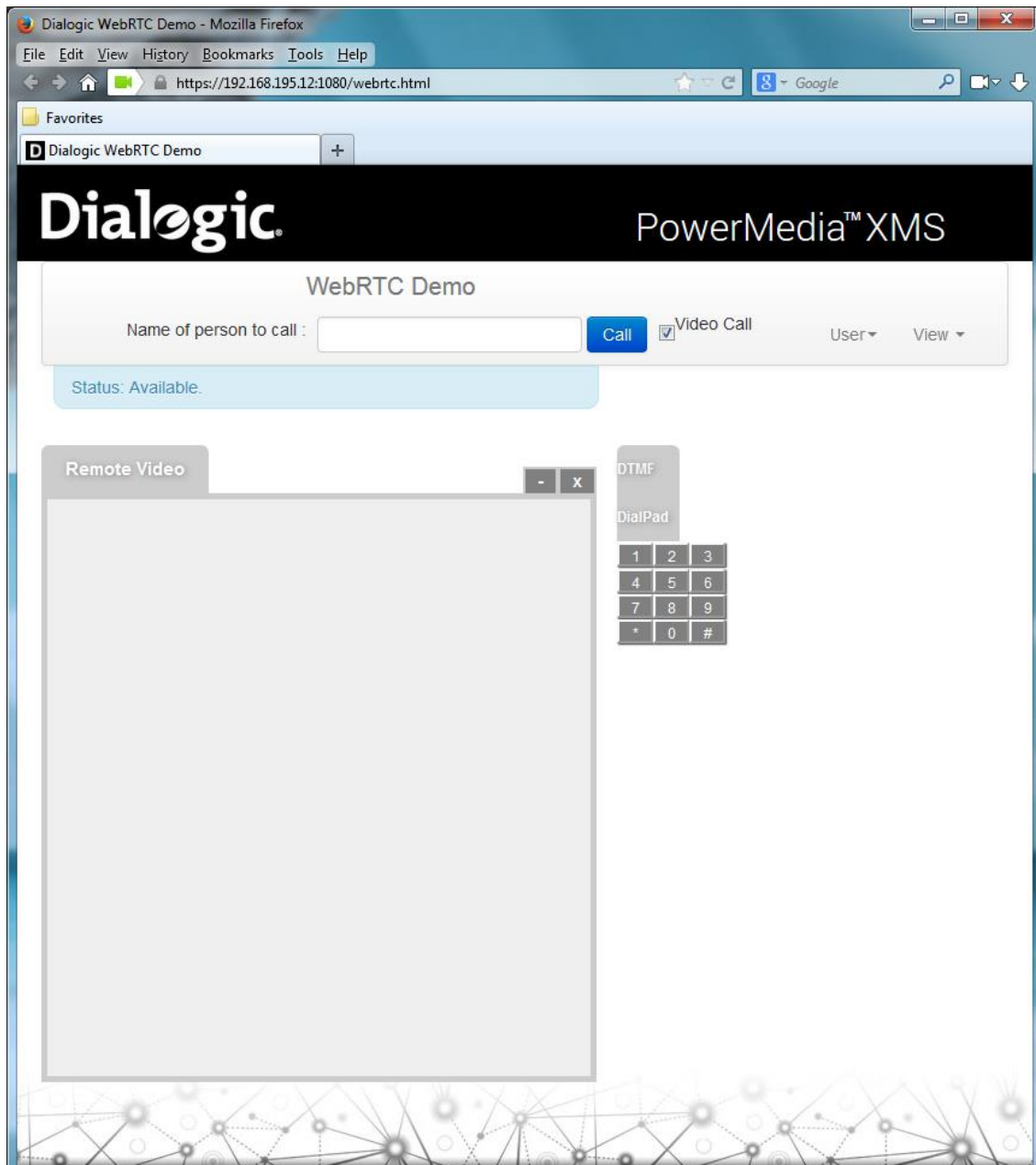


3. Choose the appropriate media selection in your browser. Wait for a message indicating the choices. Select the desired devices and click **Share Selected Devices** button.



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

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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.

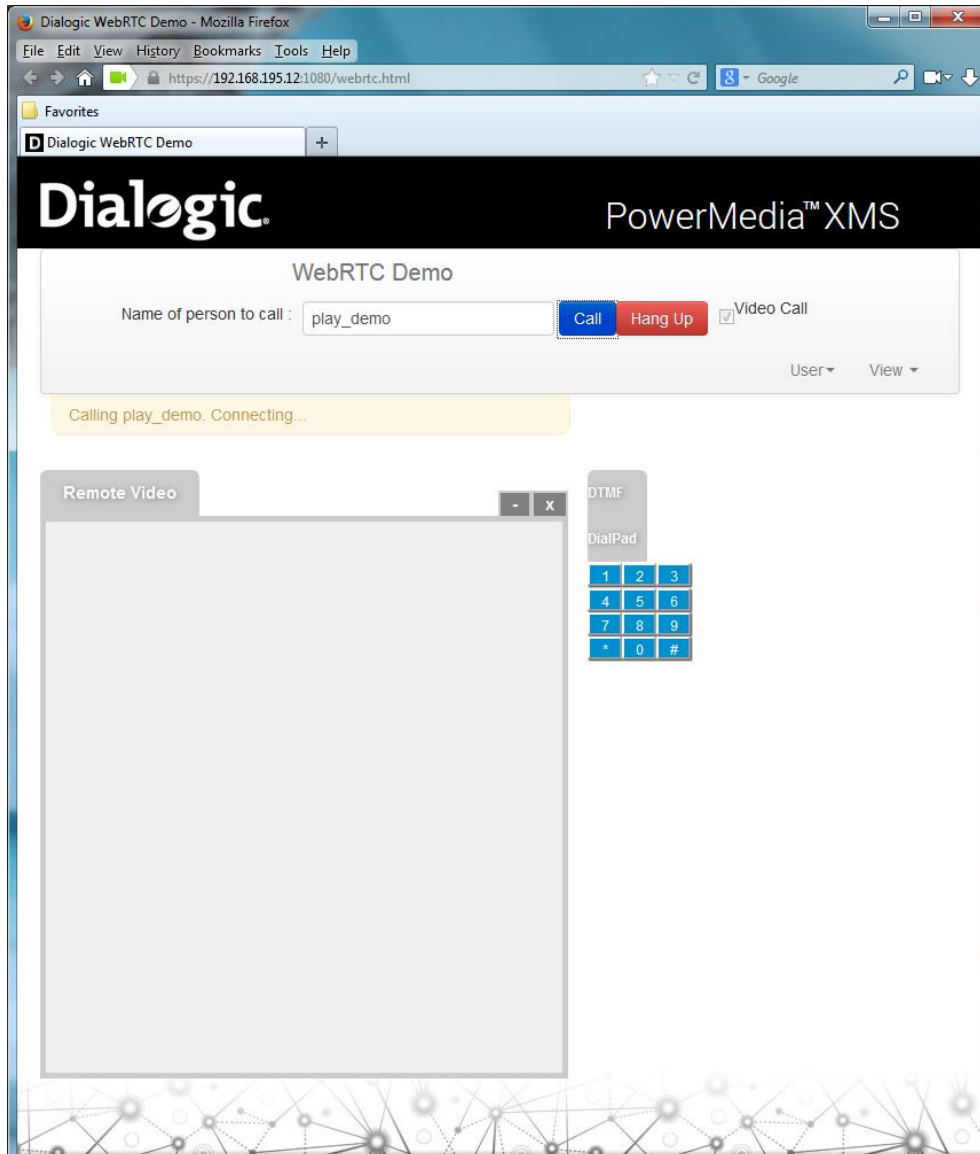
To restart services through the Console, refer to the [Services](#) section for more information.

## Video Play Verification Demo

This verification demo plays a video clip.

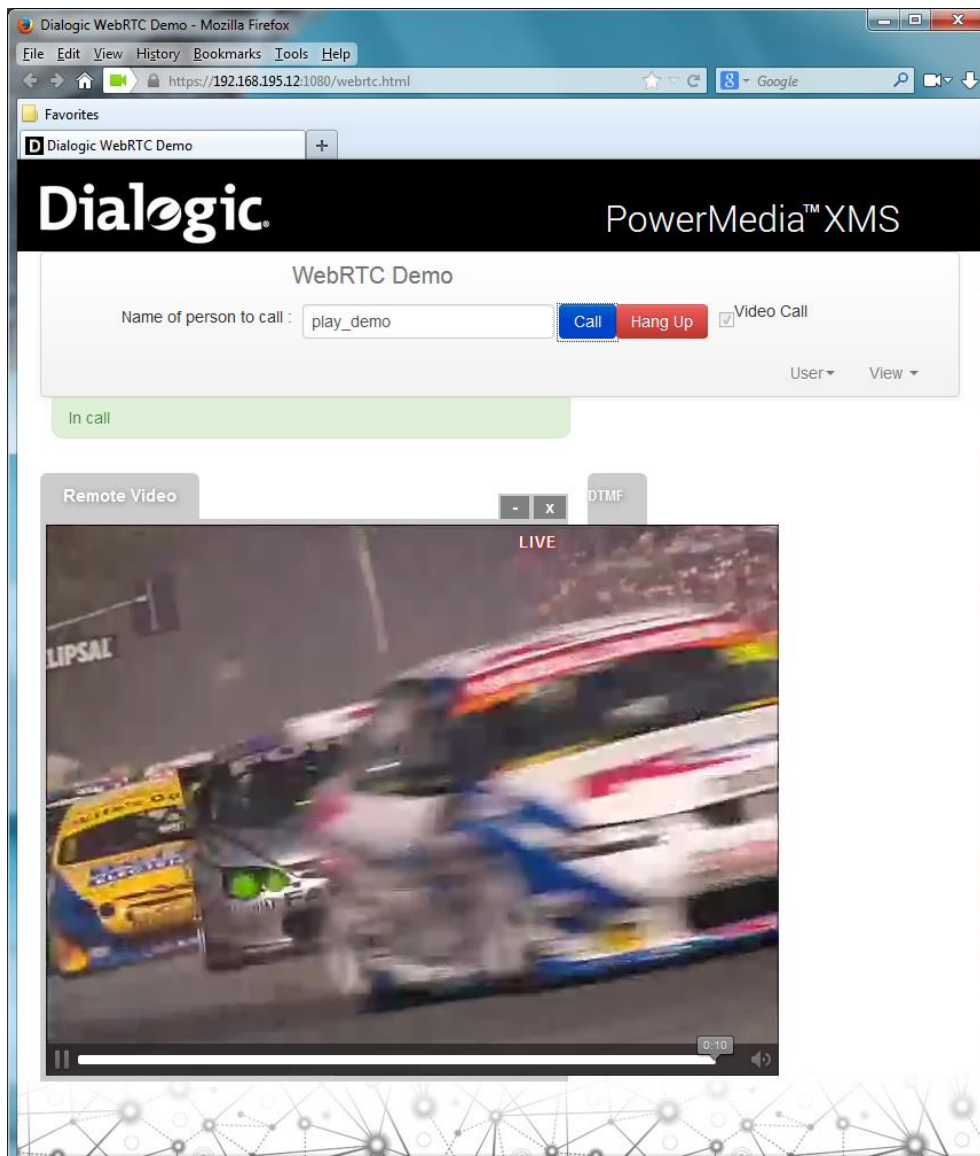
Initialize the browser as described in [WebRTC Browser Access](#) section.

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**.

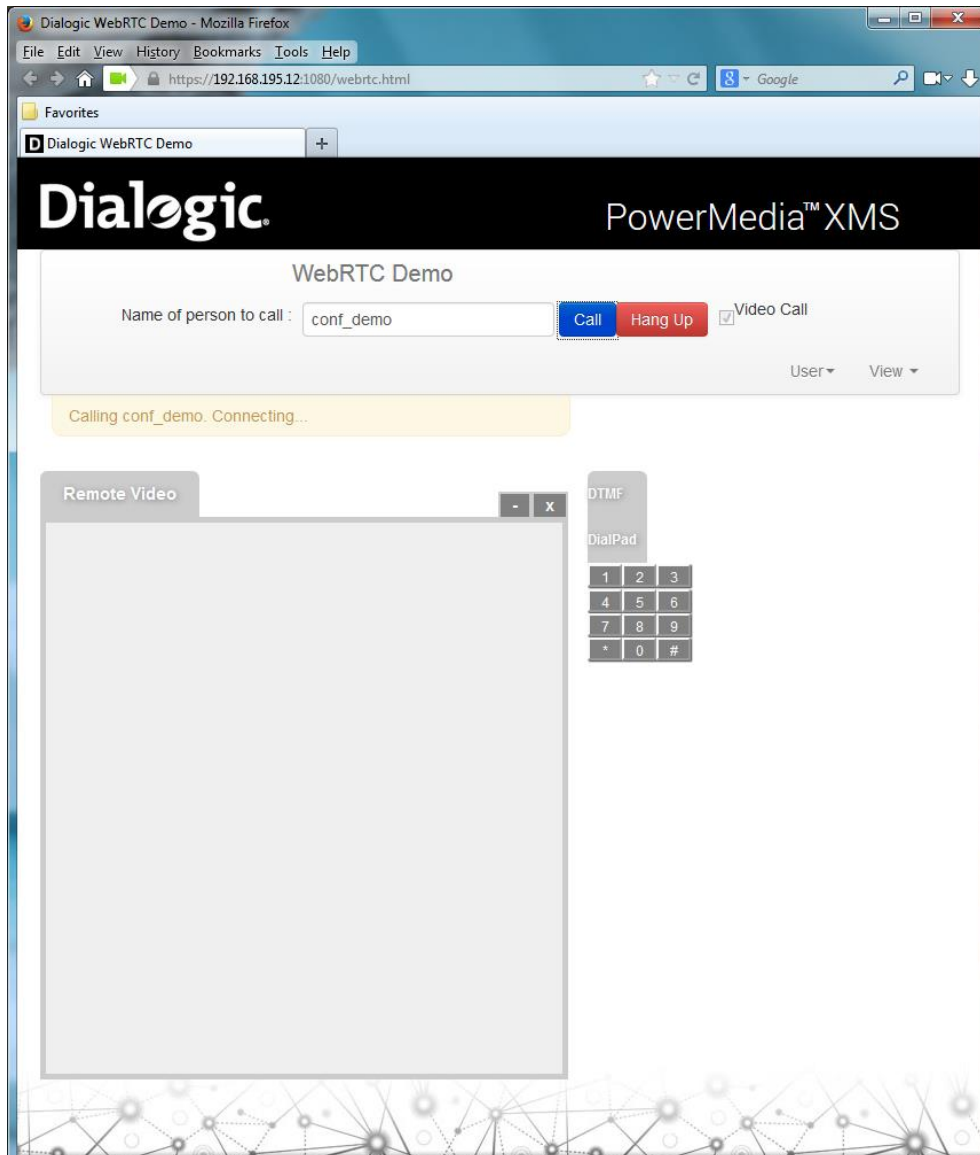
## Conference Verification Demo

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.

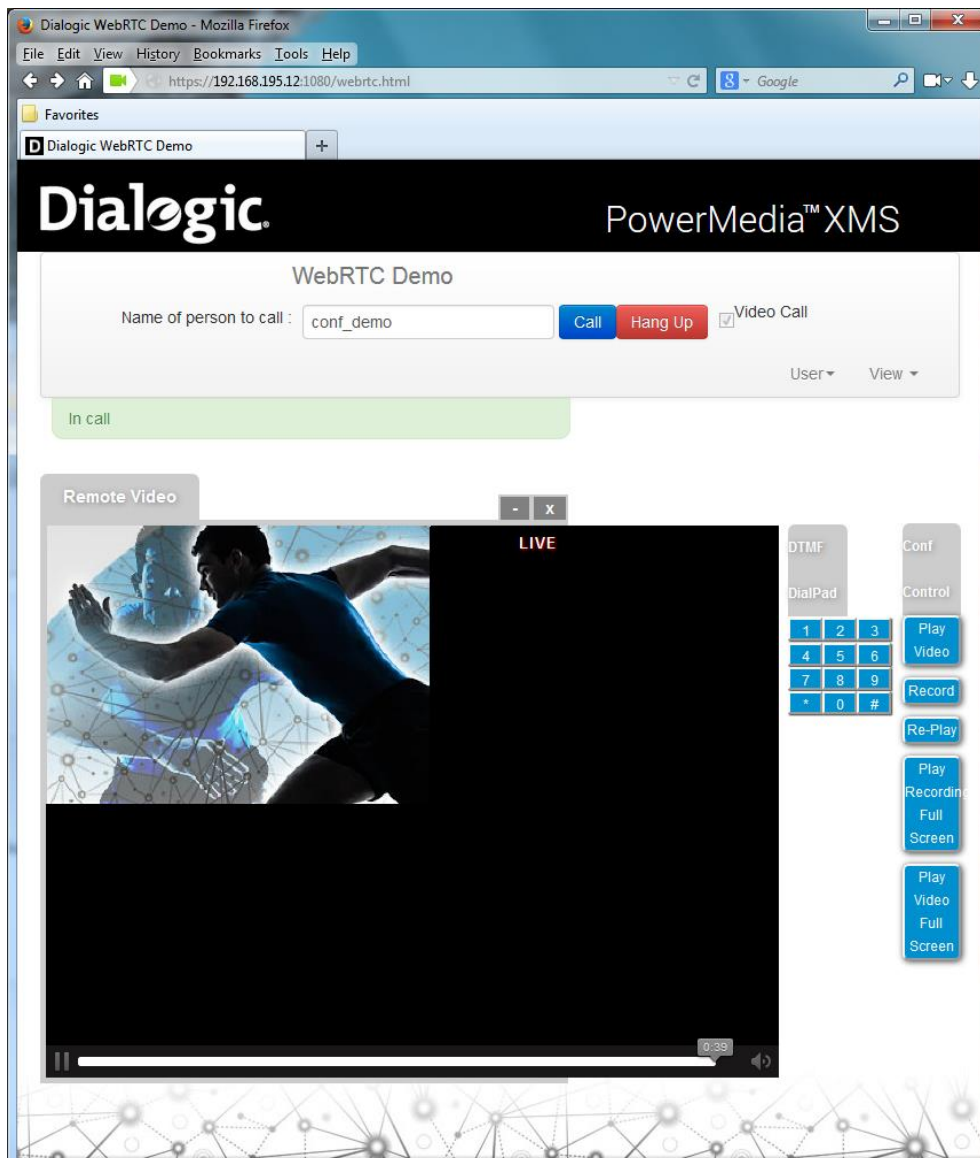
Initialize the browser as described in [WebRTC Browser Access](#) section.

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.

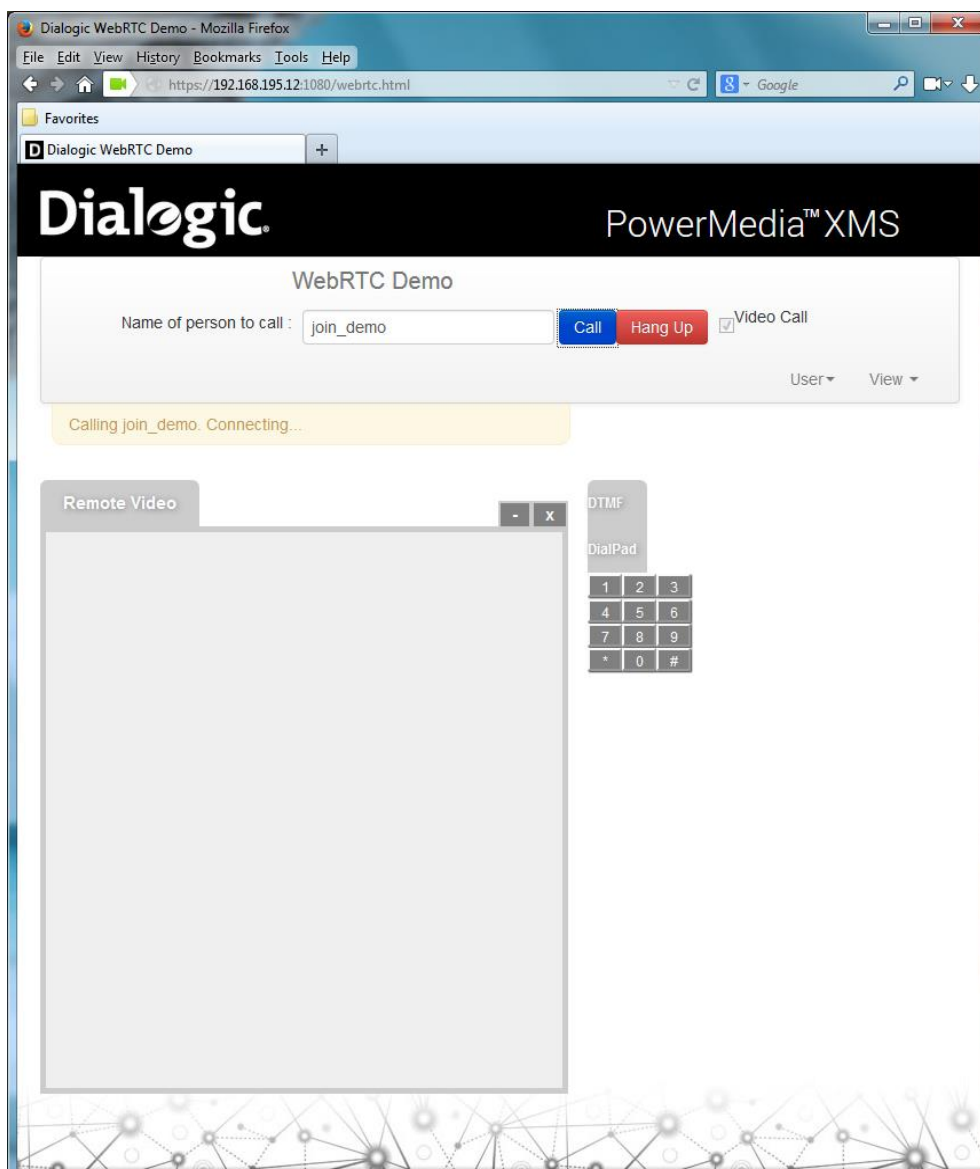
When the demo hangs up, it will display **Call disconnected**.

## 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

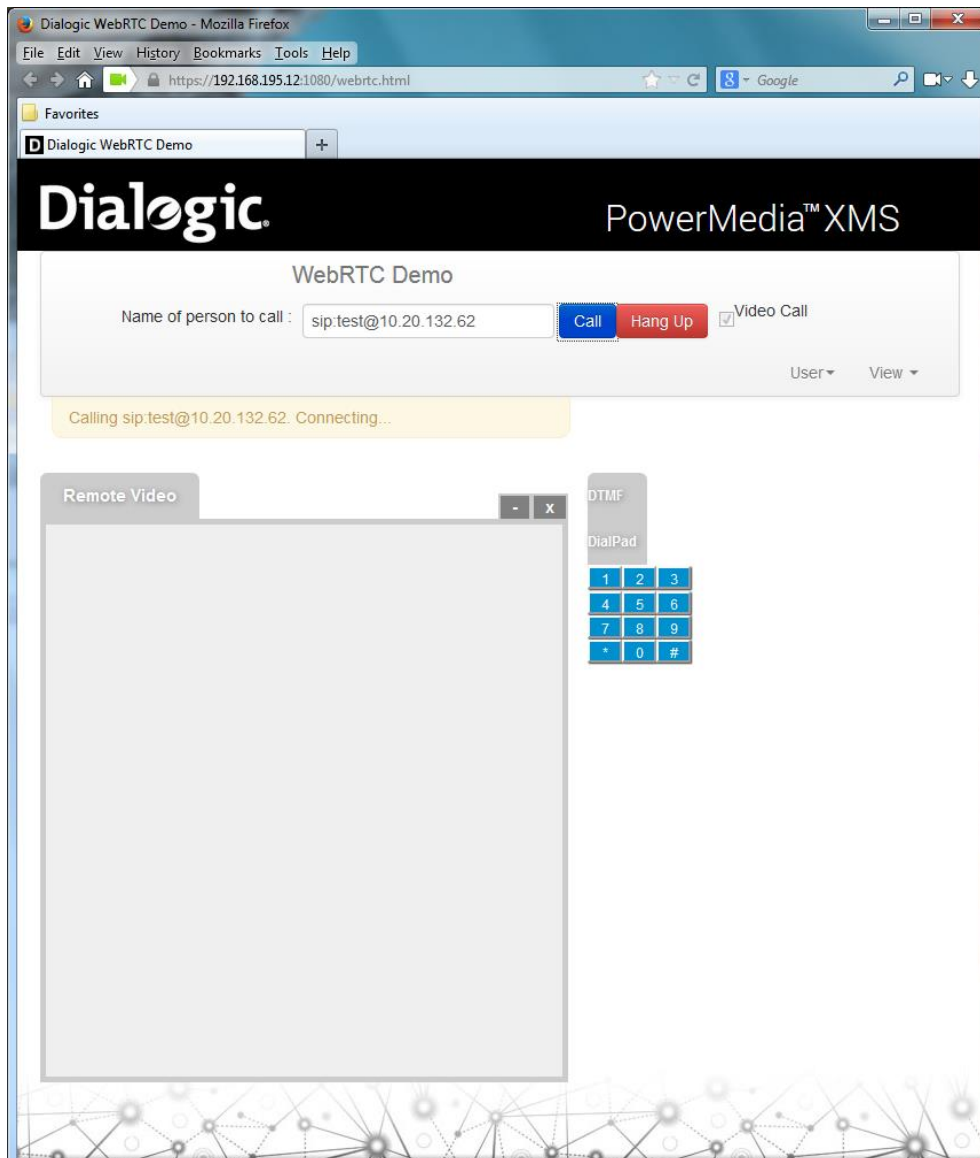
This verification demo allows a SIP URL to be dialed from a WebRTC screen. When the SIP call is answered, the two endpoints are joined together. When either call hangs up, the other caller will be disconnected and the demo reset.

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.

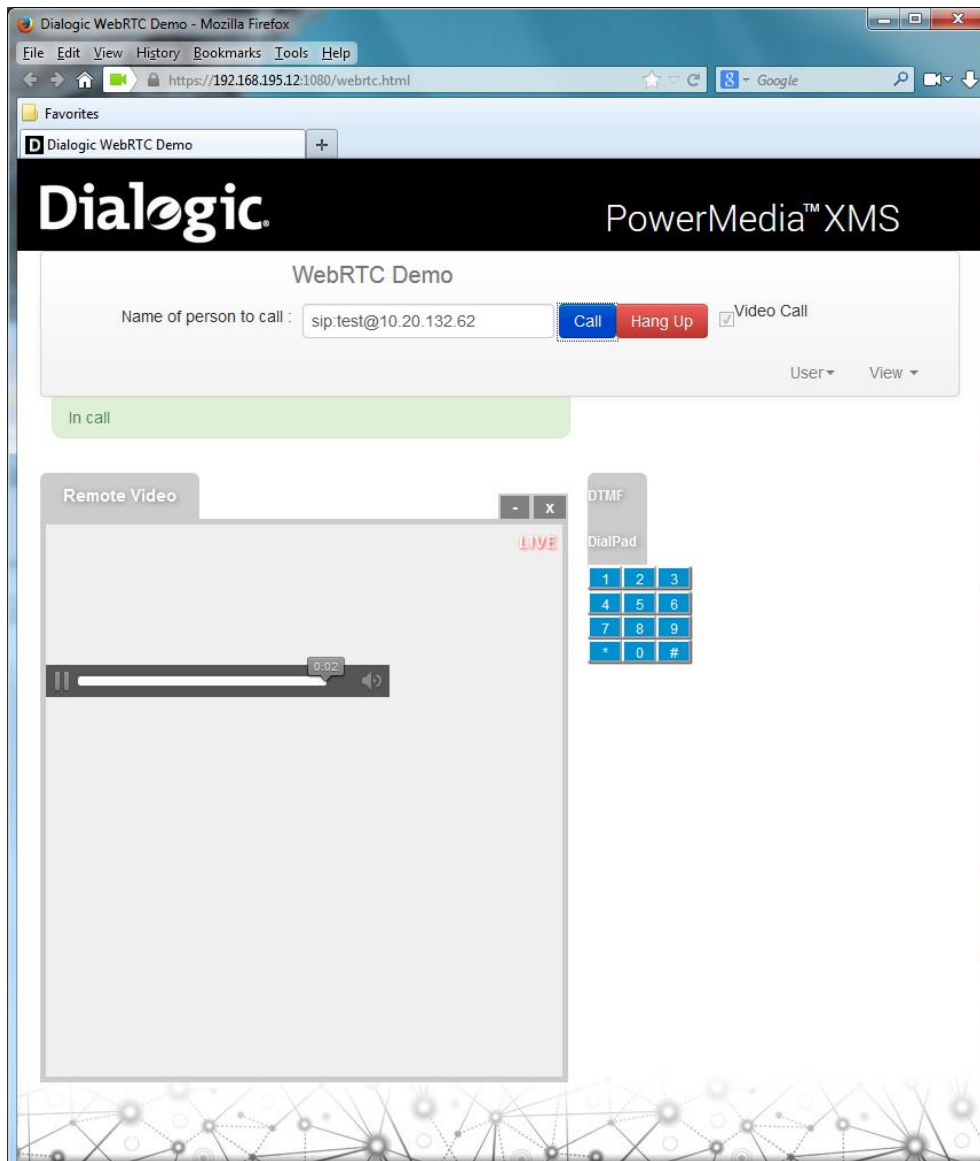
The URL must be in the following format:

```
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:

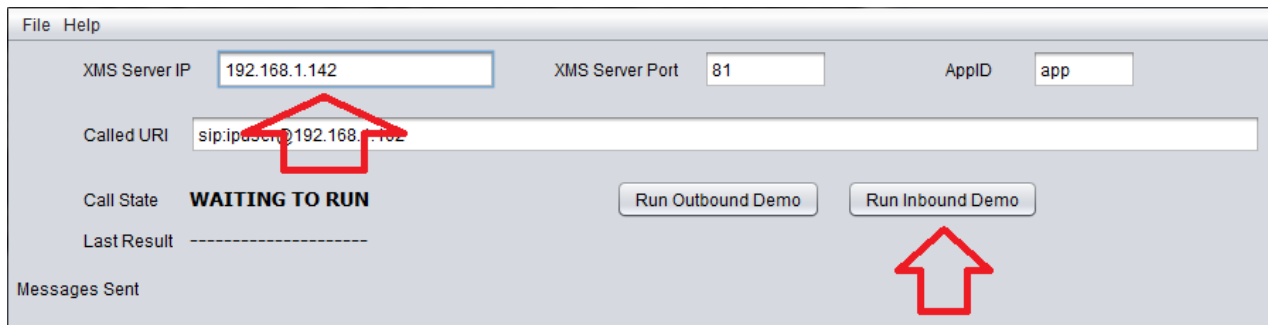
The downloaded *XMSVerificationDemo.zip* file should be downloaded to a system with a Java runtime and a Windows environment.

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:

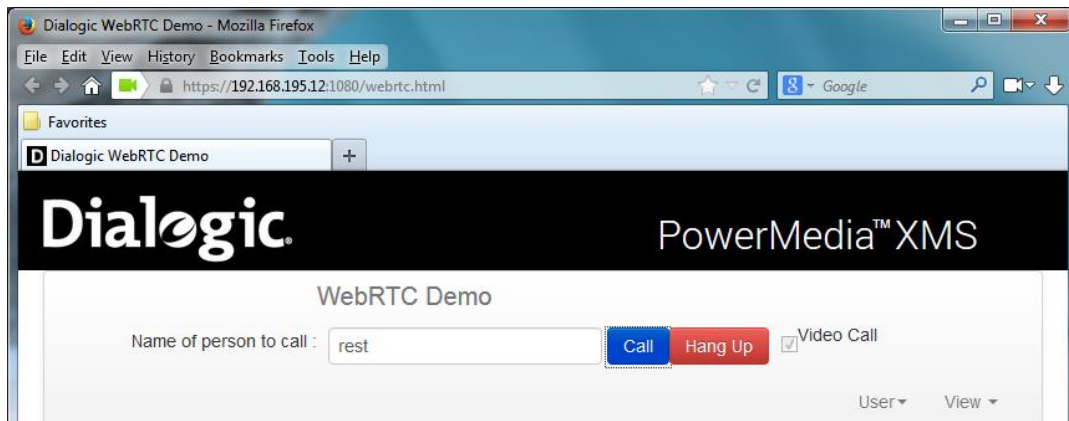
```
java -jar XMSVerificationDemo.jar
```

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:

The screenshot shows the 'Menu' window of the XMSTool application. At the top, there are input fields for 'Media Server IP' (146.152.122.147) and 'Media Server Port' (81). Below these is a 'Demo' section with a label 'Select the demo you wish to run'. A dropdown menu is open, showing a list of options: 'record', 'None', 'collect', 'conference', 'confplay', 'join', 'play', and 'record' (highlighted at the bottom). At the bottom of the window, there is a 'Clear' button and an 'Input:' label.

The screenshot shows the main interface of the XMSTool application. At the top, there are input fields for 'Media Server IP' (146.152.122.147), 'Media Server Port' (81), 'Call Control' (1PCC), and 'App Id' (app). Below these are several tabs: 'Calls', 'Conferences', 'EventHandler', 'NodeController', 'Macros', and 'Demos'. The 'Calls' tab is selected. On the left side of the 'Calls' tab, there are buttons for 'Create', 'Delete', 'Update', 'Get All', 'Get', and 'Initialize Input'. In the center, there are two large empty boxes labeled '0 Calls' and '0 Transactions'. On the right side, there is a box labeled '0 Sip Connections' and a 'Disconnect' button. At the bottom, there is a 'Clear' button and an 'Input:' label.

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).

