



DMP Plus Series / C V Models DMP Plus Series / C V AT Models

RingCentral Configuration Guide

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Revision Log

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Feb 12, 2020	1.1.0	Updated DMP Plus Series
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1.0 Introduction

This document provides essential instructions for registering the VoIP lines of DMP Plus Series, C V and C V AT models, as a RingCentral cloud-based SIP extension.

DMP Plus Relates to the following products:

- DMP 128 Plus C V / C V AT
- DMP 128 FlexPlus C V AT
- DMP 64 Plus C V / C V AT

Note: Requires Firmware Version **1.08.0002** or higher

2.0 Configuring RingCentral for DMP Plus Series C V (AT) VoIP Registration

Prior to proceeding with this guide, contact RingCentral in order to add or purchase SIP extensions for use with the DMP Plus Series C V (AT). The DMP Plus Series behaves as a **3rd party SIP device**. The following credentials are required for each line that is to be used on the system

- 1) SIP Domain and Port Number
- 2) Outbound Proxy and Port Number
- 3) User Name
- 4) Password
- 5) Authorization ID



3.0 Configuring DMP Plus Series C V (AT) VoIP Lines

VoIP configuration of the DMP Plus Series is handled exclusively through a web interface, served from the device itself. The VoIP landing page is accessed through an address of the format -

<http://192.168.254.254/www/voip.html>

- where 192.168.254.254 in this example is the default IP address of the DMP Plus Series device.

Up to 8 lines may be configured. Note that each line intended for use will require a unique Extension to be specified as part of the IP Office configuration process.

3.1 Network Interface Configuration

Click on the **Network** tab followed by **Interface** tab to set up the desired network interface on the DMP Plus Series; either LAN1 or LAN2 may be used for VoIP. VLAN tagging is available on either interface if required. Up to two DNS entries may be manually specified.

Click **Apply** after making any changes in order to restart the networking services on the device.

The screenshot displays the web interface for configuring the DMP Plus Series. The top navigation bar includes tabs for Home, Network, Line 1 through Line 8, Logs, and System. The 'Network' tab is selected, and the 'Interface' sub-tab is active. A dropdown menu for 'VoIP Interface' is set to 'LAN 1'. Below this, the configuration for 'LAN 1' is shown, including IP Address (DHCP, 192.168.31.40), Subnet Mask (255.255.255.0), Default Gateway (192.168.31.1), and DNS Server (4.2.2.2). The 'LAN 2' and 'VLAN' sections are also visible. The 'Apply' button at the bottom right is highlighted.

3.2 Transport Configuration

Click on the **Transport** tab to access signaling transport configuration. Check that the transport is set to UDP.

In the event that changes need to be made, click **Apply** to commit any adjustments to the device.

The screenshot shows the 'Transport' configuration page. The 'Network' tab is selected, and the 'Transport' sub-tab is active. The 'Transport' section shows 'UDP' selected as the transport protocol. The 'Listening Port' is set to 5060. The 'Use Secure RTP (AES CTR)' checkbox is unchecked. The 'Apply' button is highlighted. Below the 'Transport' section are fields for 'TLS Mode', 'Local Mode', 'Local Cert', 'Private Key', and 'Server Certs'.

3.3 Line Registration

Click on the first line tab to be configured as part of the system, e.g. **Line 1**. Refer to the credentials provided by RingCentral (Section 2.0).

- 1) **User Name:** Set this to match the **User Name** from RingCentral.
- 2) **Authentication Name:** Set this to match the **Authorization ID**.
- 3) **Authentication Password:** Set to match the **Password**.
- 4) **Display Name:** Optional. Specify an identifier for the line if required.
- 5) **Primary Proxy Name/IP:** Enter the **SIP Domain**
- 6) **Primary Proxy Port:** Specify the **SIP Domain Port Number**.

Once the above settings have been entered, click the **Apply** button to save to the device.
Do not attempt to register the line at this stage.

The screenshot shows the web interface for configuring a line. The top navigation bar includes tabs for Home, Network, Line 1, Line 2, Line 3, Line 4, Line 5, Line 6, Line 7, Line 8, Logs, and System. The 'Line 1' tab is selected. Below this, there are sub-tabs for Registration, Audio, and Dialing. The 'Registration' sub-tab is active. The main content area is titled 'Registration' and contains the following fields:

- * User Name: 15612504899
- Authentication User Name: 12547892
- Authentication Password: ****
- Display Name: DMP Test
- * Primary Proxy Name/IP: sip.ringcentral.com
- Primary Proxy Port: 5060

A note at the bottom left of the form states: '* Denotes Required Field'. At the bottom right of the form are two buttons: 'Clear' and 'Apply'. The 'Apply' button is highlighted with a red box. Below the form is an 'Advanced' section. In the bottom right corner, there is a red circle with a diagonal line through it, overlaid on the 'Unregister' button and the 'Status: Not Registered' text.

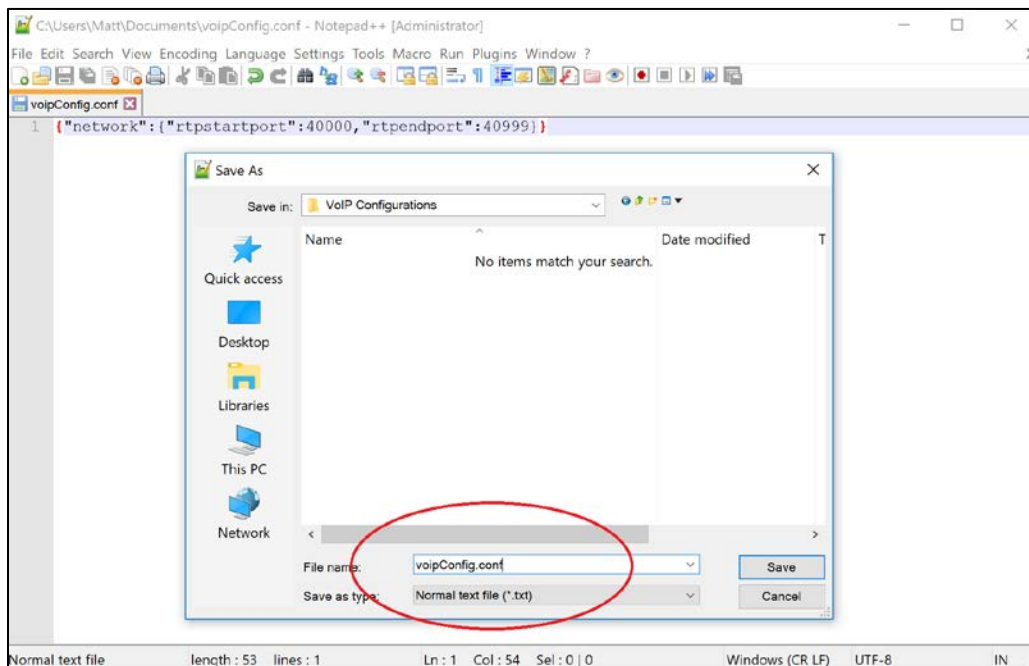
3.4 Outbound Proxy

NOTE: The following steps must be carried out in order to set the **Outbound Proxy** and **Port Number** required for RingCentral registration.

1. Create a new blank text file using a suitable basic text editor.
 - a. Example “**voipConfig.conf**” is attached to this PDF, see **Section 3.9**
 - i. Attached file is configured for Line1
2. Enter the following text into the document, replacing the **1** in ‘line1’ with the required DMP Plus Series line ID (1 – 8):

```
{"users": [{"id": "line1", "outbound_proxy": "sip10.ringcentral.com",  
"outbound_proxy_port": "5090"}]}
```

- Replace “**sip10.ringcentral.com**” with the **Outbound Proxy Address** provided by RingCentral (Section 2.0), if different.
 - Change “**5090**” to the **Outbound Proxy Port** provided by RingCentral (Section 2.0), if different.
3. Save the file as **voipConfig.conf**.



4. Navigate to the DMP Plus Series VoIP configuration webpage and click on the **System** tab.
5. Under **Export System Configuration**, click the **Export** button to back up the current VoIP configuration to disk. The file will be saved in the default web browser download directory.
6. Under **Import System Configuration**, click the **Browse** button to locate the **voipConfig.conf** file created in steps 1 to 3.

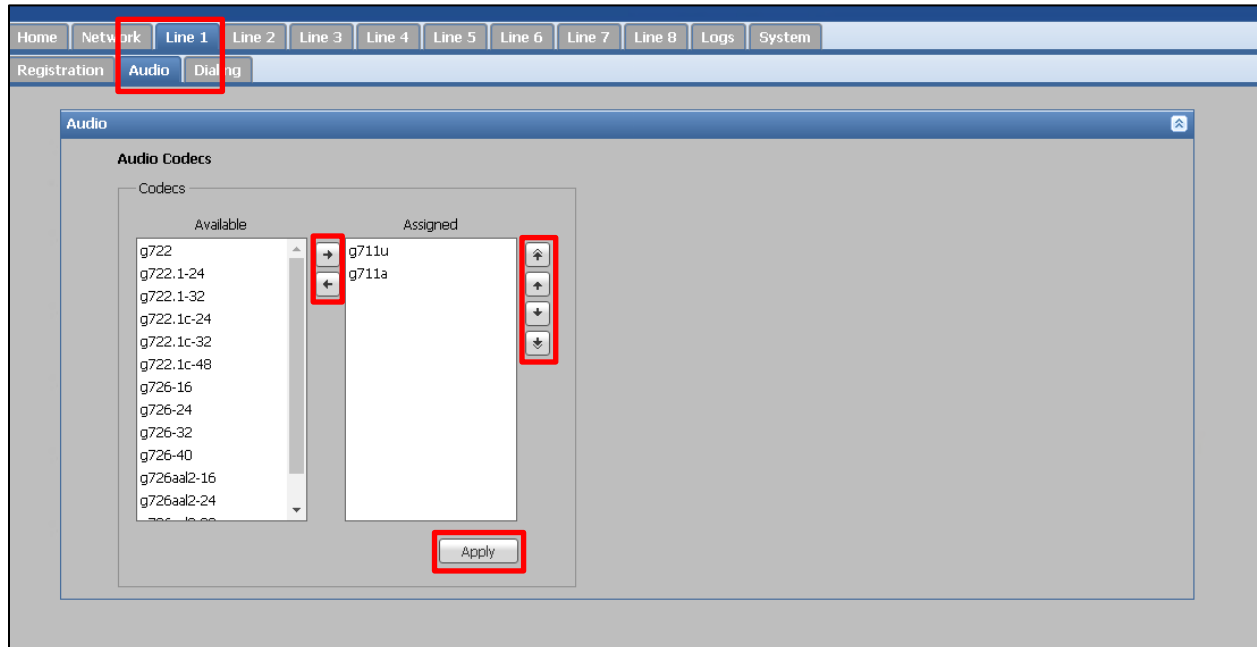


7. Click the **Import** button to update the DMP Plus Series with the new outbound proxy settings. A notification will appear once the settings have applied successfully.
8. Return to the **Line - Registration** tab and click **Register** to complete the registration process.

3.5 Codecs

The availability and priority of codecs may be changed from within the **Audio** tab. Codecs will only be available for use within phone calls if they are moved from the **Available** to the **Assigned** column. By default, G.711u and G.711a are assigned to the system. Codec assignment and priority can be set per line.

Click the **Apply** button to commit any changes to the device.



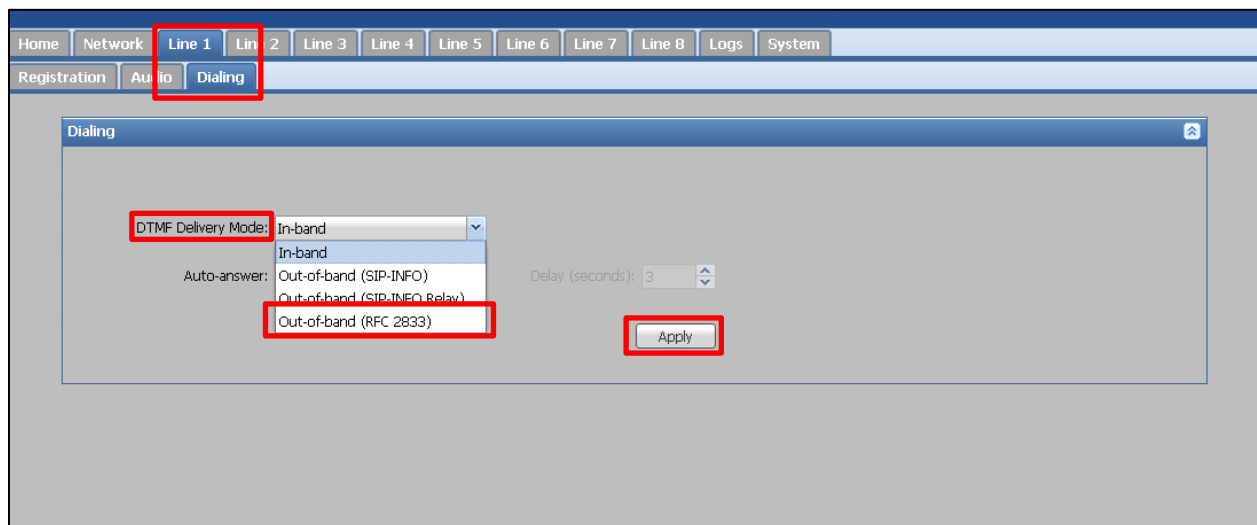
3.6 Dialing

Use the **Dialing** tab to select the desired DTMF signaling method. The default DMP Plus Series mode is In-Band. Other available options are as follows:

- Out of Band – SIP INFO
- Out of Band – SIP INFO (RELAY)
- Out of Band – RFC 2833

Recommend DTMF delivery method is **Out of Band – RFC 2833**

Click **Apply** after selecting **Out of Band – RFC 2833** DTMF signaling method for the line. This can be set per line.



3.7 System Overview

Once all required lines have been registered to RingCentral, use the **Home** tab to view a summary of the system, as required. In the example below, one of two registered lines (line 3) is currently in an active call. Appearance-specific (caller-specific) details for active calls can be accessed by clicking on the corresponding Line entry.

Home	Network	Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7	Line 8	Logs	System
------	---------	--------	--------	--------	--------	--------	--------	--------	--------	------	--------

VoIP Status							
	Registration	Audio DSP	Call Status	Packets Rx	Packet Drop	Jitter Rx (ms)	Duration
Line 1	Not Configured	Configured	--	--	--	--	--
Line 2	Not Configured	Configured	--	--	--	--	--
Line 3	Registered - Primary	Configured		1169	0	55	00:00:24
Line 4	Registered - Primary	Configured		--	--	--	--
Line 5	Not Registered	Configured		--	--	--	--
Line 6	Not Registered	Configured		--	--	--	--
Line 7	Not Registered	Configured		--	--	--	--
Line 8	Not Registered	Configured		--	--	--	--

Details Line 3					
Appearance	Codec	Duration	Packets Rx	Packet Drop	Jitter Rx (ms)
1	g711u	00:00:24	1169	0	55

3.8 Troubleshooting

In the event of failure to register, review the following:

- Check that the credentials provided by RingCentral are correctly entered into the registration fields for each line.
- Check network interface settings, including DNS fields.
- Click on the **Logs** tab to inbound and outbound SIP transactions. The absence of inbound transactions indicates a network routing problem. Registration-specific problems may be indicated by corresponding SIP responses such as *403 – Forbidden*.

3.9 Configuration File – Attached to PDF

If needed, the configuration file “voipConfig.conf” is attached to the PDF

- To access the file select “Attachments”  from the left side bar – see figure A1
- Then save the attachment, before uploading to DMP Plus – see Figure A2 below

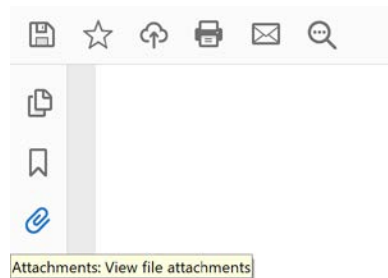


Figure A1 Save Attachment

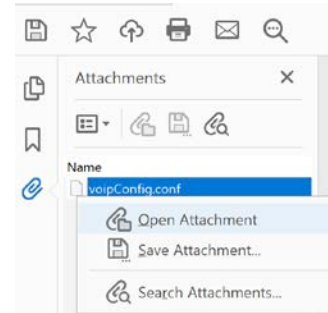


Figure A2 Show Attachments

Appendix A: RTP Port Range

The default port range for VoIP RTP traffic on the DMP Plus Series is **50000 – 50999**. To change this range, the following steps must be carried out. There are two methods that can be used to change adjust the RTP port Range

Note: Requires Firmware 1.08.0002 or later.

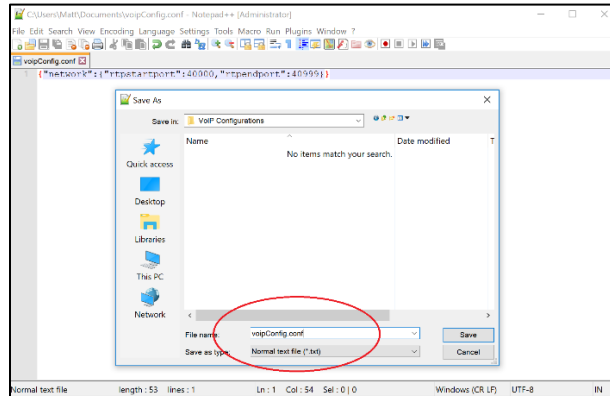
Method 1 – Internal Webpage

- 1) From internal webpage Select **Network** then **Advanced** Tab
- 2) Adjust the Start and End port for RDP

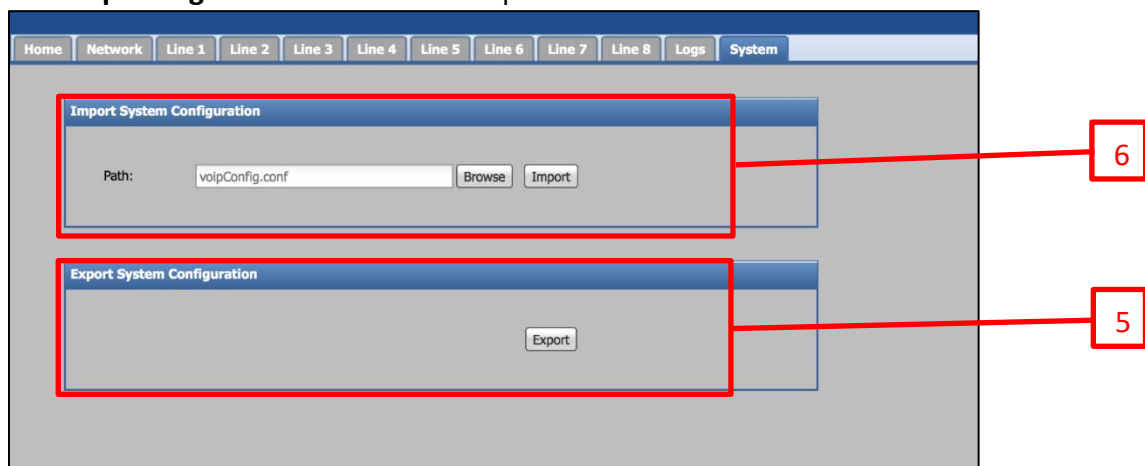
The screenshot displays the internal webpage of the DMP Plus Series. The top navigation bar includes tabs for Home, Network, Line 1, Line 2, Line 3, Line 4, Line 5, Line 6, Line 7, Line 8, Logs, and System. The 'Network' tab is selected and highlighted with a red box. Below this, a sub-navigation bar shows Interface, QoS/LLDP-MED, Transport, NAT Traversal, and Advanced. The 'Advanced' tab is selected and highlighted with a red box. The main content area is divided into three sections: Registration, RTP Port Range, and Outgoing Calls. The 'RTP Port Range' section is highlighted with a red box and contains two input fields: 'Start Port' set to 50000 and 'End Port' set to 50999. Below these fields is a 'Set Defaults' button. The 'Registration' section above it includes a checkbox for 'Automatic Line Re-Registration', a 'Retry Count' field set to 0, and a 'Retry Delay' field set to 600 seconds, with an 'Apply' button. The 'Outgoing Calls' section below it includes a checkbox for 'Enable Codec Compatibility Mode' and a note: 'Only recommended if experiencing outgoing calls being disconnected quickly.'

Method 2 – Configuration file

- a. Create a new blank text file using a suitable basic text editor.
 - i. Example “**voipConfig.conf**” is attached to this PDF, see **Section 3.9**
- b. Enter the following text into the document (in this example, the port range is being changed to 50000 - 50999; replace these values with the desired range) -
`{"network":{"rtpstartport":50000,"rtpendport":50999}}`
- c. Save the file as **voipConfig.conf**.



- d. Navigate to the VoIP configuration webpage and click on the **System** tab.
- e. Under **Export System Configuration**, click the **Export** button to back up the current VoIP configuration to disk. The file will be saved in the default web browser download directory.
- f. Under **Import System Configuration**, click the **Browse** button to locate the **voipConfig.conf** file created in steps 1 to 3.



- g. Click the **Import** button to update the DMP Plus Series with the new RTP Port Range settings. A notification will appear once the settings have applied successfully.

Appendix B: Automatic Line Re-Registration

Some call managers and networks go into maintenance windows which do not allow VoIP endpoints to register or maintain their registration. To help resolve this issue the Automatic Line Re-Registration function can be configured to re-register a line if line registration is unexpectedly lost. This function causes the VoIP interface to re-attempt a line re-registration if the first automatic re-registration attempt fails.

In order to use this feature, the line must first be registered to the call manager.

Note: When enabled, this function will attempt re-registration once the SIP timer has expired. By default the SIP timer is set to 3600 seconds (60 mins). By default, the Automatic Line Re-Registration feature is disabled, with the “registration_fail_retry_count” set to zero (0).

To set up Automatic Line Re-Registration, the following steps must be carried out.

Requires Firmware 1.08.0002 or later.

Method 1 – Internal Webpage

- 1) From internal webpage Select **Network** then **Advanced** Tab
- 2) To Enable the Automatic Line Re-Registration select the check box
- 3) Enter **Retry Count** (0 – 99)
 - a. This is the number of attempts a Line will make to re-register
 - i. Example below is set to twenty (20) reconnections attempts
 - ii. If this is set to zero (0), the feature is disabled
- 4) Enter **Retry Delay** (120 – 3600 seconds)
 - a. Amount time between registration attempts in seconds
 - i. Example above is set to 300 seconds (5 mins) between reconnections attempts
- 5) Once Set hit **Apply**

The screenshot shows the internal webpage interface for configuring the device. The top navigation bar includes tabs for Home, Network, Line 1 through Line 8, Logs, and System. The 'Network' tab is selected and highlighted with a red box. Below this, there are sub-tabs for Interface, QoS/LLDP-MED, Transport, NAT Traversal, and Advanced. The 'Advanced' tab is also selected and highlighted with a red box. The main content area is titled 'Registration'. It contains a checkbox labeled 'Automatic Line Re-Registration' which is checked. Below this checkbox are two input fields: 'Retry Count' set to 20 and 'Retry Delay' set to 300 seconds. Both input fields are highlighted with a red box. At the bottom right of the configuration area, there is an 'Apply' button, which is also highlighted with a red box.

Method 2 – Configuration file

1. Create a new blank text file using a suitable basic text editor
 - a. Example “**voipConfig.conf**” is attached to this PDF, see **Section 3.9**
2. Enter the following text into the document –

```
{"network":{"registration_fail_retry_count":5,"registration_fail_retry_delay":300}}
```

- a. `registration_fail_retry_count":5`

This is the number of attempts a Line will make to re-register

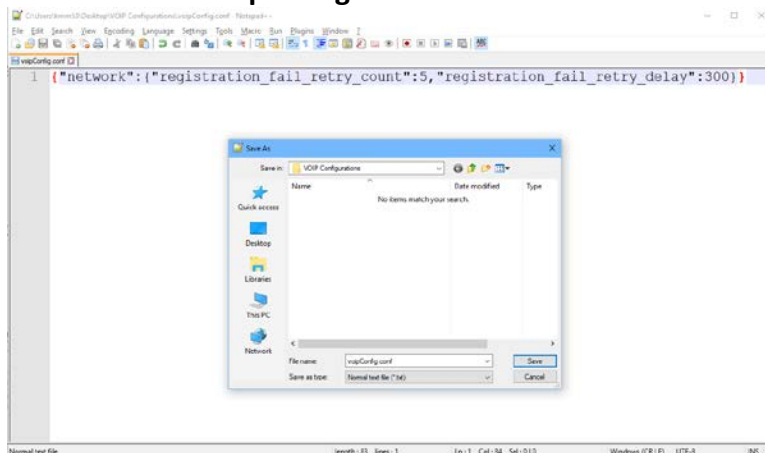
- i. Example above is set to five (5) reconnections attempts
- ii. If this is set to zero (0), the feature is disabled
- iii. Valid Range of values: 0 - 99

- b. `registration_fail_retry_delay":300`

Amount time between registration attempts in seconds

- i. Example above is set to 300 seconds (5 mins) between reconnections attempts
- ii. Valid Range of values: 120 - 3600

3. Save the file as **voipConfig.conf**.



4. Navigate to the VoIP configuration webpage and click on the **System** tab.
5. Under **Export System Configuration**, click the **Export** button in order to back up the current VoIP configuration to disk. The file will be saved in the default web browser download directory.
6. Under **Import System Configuration**, click the **Browse** button to locate the **voipConfig.conf** file created in steps 1 to 3.

The screenshot displays the RingCentral VoIP configuration interface. At the top, a navigation bar includes tabs for Home, Network, Line 1 through Line 8, Logs, and System. The System tab is selected and highlighted with a red box. Below the navigation bar, there are two main sections: 'Import System Configuration' and 'Export System Configuration'. The 'Import System Configuration' section contains a 'Path:' label, a text input field with 'voipConfig.conf', and 'Browse' and 'Import' buttons. This section is enclosed in a red box with a red line pointing to a red box containing the number '6'. The 'Export System Configuration' section contains an 'Export' button. This section is enclosed in a red box with a red line pointing to a red box containing the number '5'.

Click the **Import** button to update the DMP Plus Series with the new settings. A notification will appear once the settings have applied successfully.

To disable to Auto-Reregistration mode, send the following string using the same method:

```
{"network":{"registration_fail_retry_count":0,"registration_fail_retry_delay":200}}
```