Mitel Technical Configuration Notes-HO1169

August 19, 2019

Configure MiVoice Business 9.0 SP2 and MiVoice Border Gateway/SRC 10.1 for use with Red Box Recorder Quantify 5.0.7.172

Description: This document provides a reference to Mitel Authorized Solutions providers for configuring the Mitel MiVB to connect to Red Box Recorder Quantify.

Environment: MiVoice Business 9.0 SP2 (9.0 SP2.2.16), MiVoice Border Gateway 10.1.0.257, Mitel 69xx MiNET 01.04.00.090, Mitel 69XX SIP and Mitel 68XX SIP 5.1.0.1024

NOTICE

TRADEMARKS

Mitel Technical Configuration Notes – Configure MiVoice Business for use with Red Box Recorder Quantify.
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Overview

This document provides a reference to Mitel Authorized Solutions providers for configuring the Mitel MiVB and MBG to connect with Red Box Recorder Quantify. The different devices can be configured in various configurations depending on your VoIP solution. This document covers a basic setup with required option setup.

Interop History

Version	Date	Reason
1	April 13, 2011	Initial Interop (MCT) with Mitel MCD 4.2 and Mitel MBG/SRC 6.1.8 with Red Box Recorder 2A_SP1
2	December 18, 2012	MAT interoperability tests with Mitel MCD 5.0 and Mitel MBG/SRC 7.1.30 with Red Box Recorder 2C_SP2
3	March 20, 2013	Re-test the issues with not recorded parties against SIP trunk MBG software 7.1.31.
4	January 24, 2014	MAT interoperability tests with Mitel MiVoice Business 6.0 SP3 and Mitel MBG/SRC 8.0.17 with Red Box Recorder Quantify 3B Build 423
5	December 18, 2016	Interoperability tests with Mitel MiVoice Business 7.2 SP1 PR1 and Mitel MBG/SRC 9.3.1.6 with Red Box Recorder Quantify
6.	August 02, 2019	Interoperability tests with Mitel MiVoice Business 9.0 SP2 SP2 and Mitel MBG/SRC 10.1.0.257with Red Box Recorder Quantify 5.0.7.172.

Interop Status

The Interop of Red Box Recorder Quantify has been given a Certification status. This Red Box Recorder Quantify will be included in the SIP CoE Reference Guide. The status Red Box Recorder Quantify achieved is:

	"**Mitel-Approved Test" (MAT) Certification**. Applies only for MSA Gold Preferred member products/services (i.e., 3PP solutions resold by Mitel). MAT certification utilizes a Mitel-approved test plan for the product/service category, which may be customized as necessary for the specific member product/service. MAT involves testing and/or validation by Mitel of the interface points between the Mitel platform and 3PP product/service and may also include select evaluation of functional capabilities and documentation. Any limitations identified during the testing are documented in a formal test report and/or Mitel Config Guide. Nonetheless, it is the responsibility of the 3PP and the Mitel channel partner to ensure that they understand the extent of the Mitel testing and that they determine whether the documented/known issues will impact their specific customer deployment. MAT is reserved for key strategic components of the Mitel 3PP portfolio for which Mitel assumes a significant degree of responsibility for support, often acting as the interface between the customer and the 3PP as necessary.

Software & Hardware Setup

This was the test setup to generate a basic SIP call between Service Provider Red Box Recorder Quantify and the MiVB.

Note – Although this testing was performed on the below tested variants, the scope of this testing can be extended to other product variants that work with the same firmware. The list of components for which this testing can be considered applicable is given in the "Additional Applicable Variants" column of the following table –

Manufacturer	Tested Variants	Software Version	Additional Applicable Variants
Mitel	MiVoice Business	Release 9.0 SP2 (9.0 SP2.1.22)	NA
Mitel	MiVoice Border Gateway	10.1.0.257	NA
Mitel	69XX MiNET 69XX SIP and 68XX SIP	01.04.00.090 5.1.0.1024	NA
Red Box	Recorder Quantify	5.0.7.172	NA
Red Box	Mitel CTI Server	5.0.1.172	NA
Red Box	Mitel SRC RAM	5.0.0.172	NA

SRC CRE Feature Matrix

The following table lists various features of SRC. Red Box Recorder provides support for these features as listed in the table:

SRC Feature	Supported by CRE (Yes/No)
Support for Static Taps	No
Support for Dynamic Taps	Yes
Submitting separate query commands to SRC	No
SIP Support	Yes
Tone Injection/Recording Indicator Beep	No
SRC Clustering	Yes
SRC Load balancing	Yes
Support for Transcoded Taps (G.729)	Yes
Support for Encrypted Taps	Yes, Minet native
MIVB Resiliency/Call Survival	Yes
MiTAI Call Information	Yes
IP Console Support	Yes
Indirect Call Recording (as of SRC 1.3)	Yes
PKM Support	Yes

Tested Features

This is an overview of the features tested during the Interop test cycle and not a detailed view of the test cases.

Feature	Feature Description	Issues
Commissioning	Enrollment of Certificates during installation	☑
Synchronization	When the components in the network restart, their status information is correctly exchanged and synchronized	☑
Event Handling	There is a mechanism of some sort within the CRE that allows the tester to view the current status of devices, as reported by the SRC	☑
Tap Management	Tap resources are set and managed correctly	☑
License Failure	Alarm notification when there are insufficient licenses available	☑
Fault Tolerance	CRE responds correctly during various fault scenarios	☑
3300 Resiliency/Call Survival	In the case of an MIVB failure, SRC servers proxy the voice stream and any taps in progress at the time of MIVB failure are maintained and should be recorded.	☑
MiTAI Call Information	Proper handling of MIVB MiTAI event information	☑
SIP Trunks	Recording of SIP trunk calls through MBG	☑

☑ - No issues found ✕ - Issues found, cannot recommend to use ⚠ - Issues found

Device Limitations and Known Issues

This is a list of problems or unsupported features when Service Provider Red Box Recorder Quantify is connected to the MiVB.

Feature	Problem Description
Call Hold	When the call is put on hold, call recording is split in to two. This is the known behavior on Redbox **Recommendation:** Contact Redbox for more details
The support of **cluster_info_event** command	Currently, Red Box Recorder does not support **cluster_info_event** command **Recommendation:** Configure clustering manually though MiSslTunnel.ini as instructed in this manual later in this document
Station based and SIP trunking SRC recording	Station based and SIP trunking SRC recording can't coexist. Only one can be setup on Redbox. The customer needs to evaluate the requirements before choosing one of these **Recommendation:** Known limitation. Contact Redbox for more details
SIP Trunk Recording	The individual extensions should be setup for Monitoring on Redbox though SIP trunk recording is enabled. SIP trunk recording doesn't work without enabling monitoring for these extensions. Recommendation: This is a known issue. Contact Redbox for more details

Network Topology

The typical implementation of Mitel Secure Recording Connector (SRC) call recording is that we have number of telephones that are registered to Mitel MiVoice Business 9.0 SP2 through SRC/MBG. Since phones are pointed and essentially connected to SRC/MBG directly, we call this method as “direct call recording”. In this configuration, SRC/MBG relays the audio streams and sets up the voice taps to the recorder (CRE).

The diagram below shows how the testing network is configured for direct call recording (i.e. when SRC protocol 1.1 is in use).

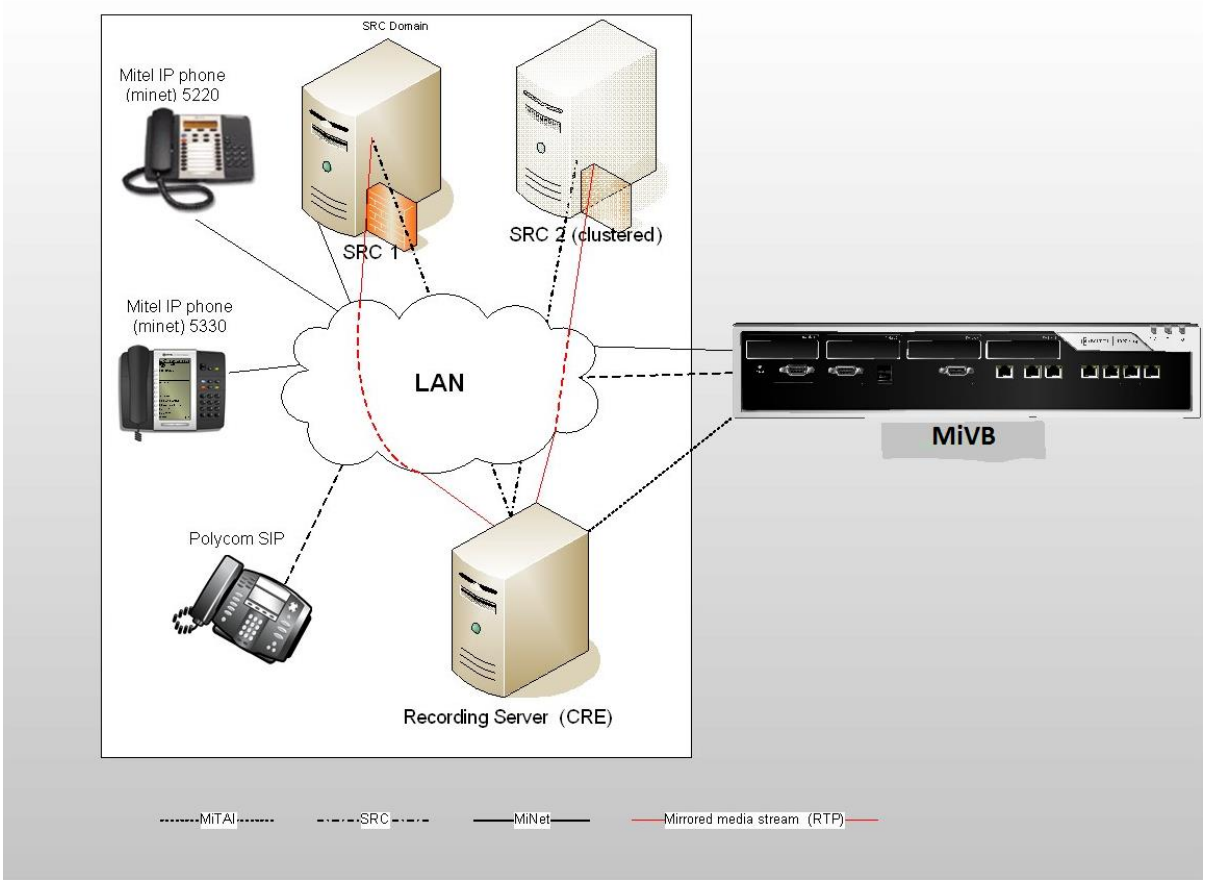


Figure 1 – Network Topology

As per new features in SRC protocol 1.3, it is possible to make voice recordings even for the telephone sets that are not registered with SRC directly. In other words, we can make the recordings if the phones are “classically” connected to PBX (see Figure 2 below). This is so-called “indirect call recording”.

NOTE: Recording of devices that are directly connected to Mitel MiVoice Business 9.0 SP2 can be accomplished with the following restrictions:

• SRC and CRE protocol version >= 1.3

• CRE requests “report_remote_devices” in registration message.

• SRC is configured such that MiVB has “indirect call recording” option enabled.

• MIVB supports this feature only if MIVB version is >= 5.0 SP2

• Only 69xx telephone sets with MiNET protocol support this feature.

When recording remote devices, the tap RTP stream comes directly from the device itself and thus the following restrictions apply:

• Only the native codec will be sent, the CRE cannot specify a codec override in the add_tap request.

• Only taps by “stream_id” can be used. The tap will automatically be deleted when the stream ends.

• A maximum of 3 simultaneous taps are supported.

• If the CRE is connected to multiple SRC’s (clustered) and those SRC’s are, in turn, connected to the same monitored MIVB, the CRE should be prepared to receive multiple device and stream events for the same remote device. Each SRC will report the same remote device. It is important that the CRE pick one SRC to send any add_tap requests to and not send add_tap to multiple SRC’s. If multiple add_tap’s are sent, multiple RTP streams will be received (max 3) and will be difficult for the CRE to sort out.

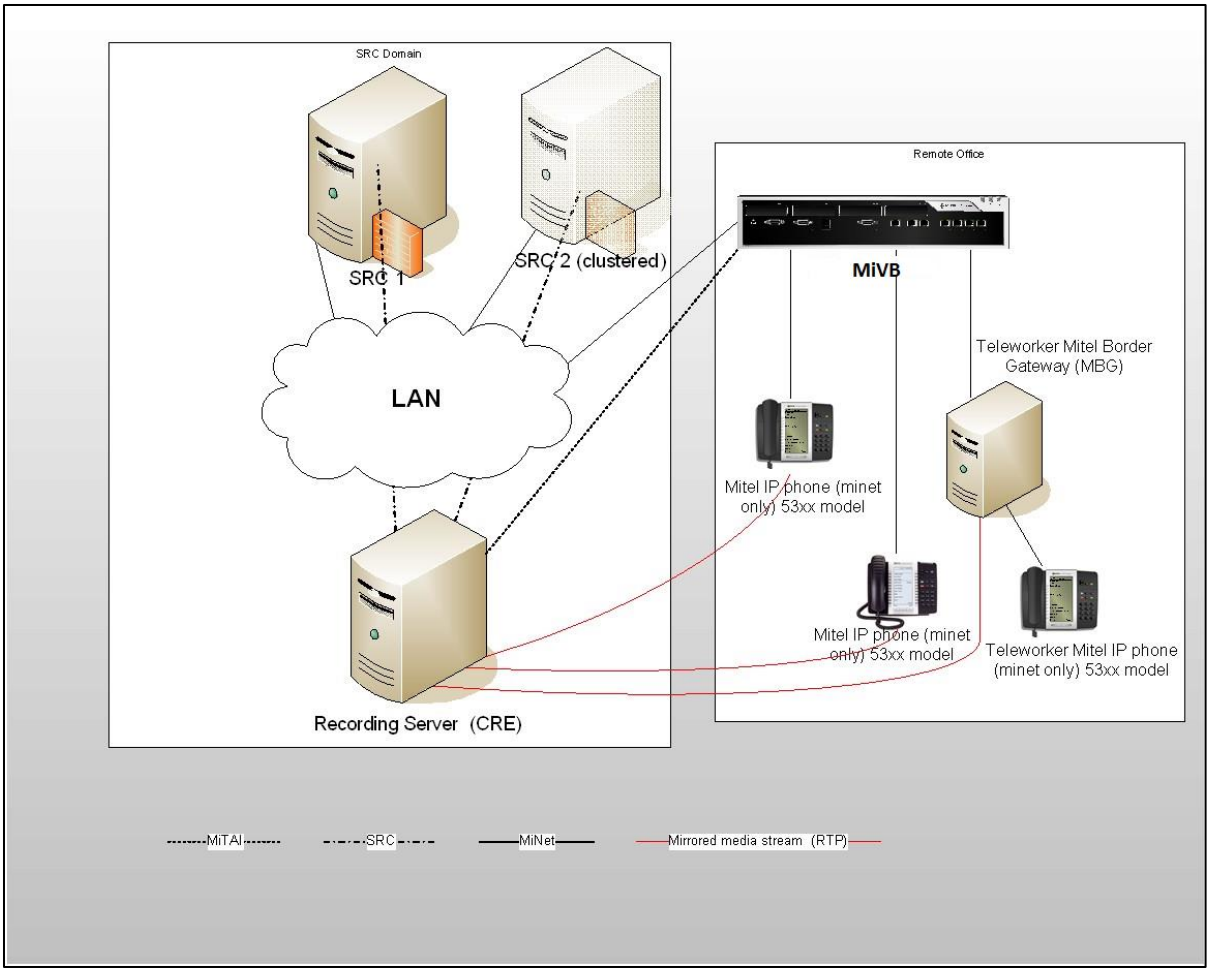


Figure 2 – Network topology for SRC protocol 1.3

Configuration Notes

This section is a description of how the SIP Interop was configured. These notes should give a guideline how a device can be configured in a customer environment and how Red Box Recorder Quantify with MiVB 9.0 SP2 and MBG was configured in our test environment.

Disclaimer: Although Mitel has attempted to setup the interop testing facility as closely as possible to a customer premise environment, implementation setup could be different onsite. YOU MUST EXERCISE YOUR OWN DUE DILIGENCE IN REVIEWING, planning, implementing, and testing a customer configuration.

MiVB Configuration Notes

The following steps show how to program a MiVB to interconnect with Red Box Recorder.

Configuration Template

A configuration template can be found in the same Mitel Knowledge Management System (KMS) article as this document. The template is a Microsoft Excel spreadsheet (.csv format) **solely** consisting of the SIP Peer profile option settings used during Interop testing. All other forms should be programmed as indicated below. Importing the template can save you considerable configuration time and reduce the likelihood of data-entry errors. Refer to the MiVB documentation on how the Import functionality is used.

Network Requirements

- There must be adequate bandwidth to support the voice over IP. As a guide, the Ethernet bandwidth is approx. 85 Kb/s per G.711 voice session and 29 Kb/s per G.729 voice session (assumes 20ms packetization). As an example, for 20 simultaneous SIP sessions, the Ethernet bandwidth consumption will be approx. 1.7 Mb/s for G.711 and 0.6Mb/s. Almost all Enterprise LAN networks can support this level of traffic without any special engineering. Please refer to the MiVB Engineering guidelines for further information.
- For high quality voice, the network connectivity must support a voice-quality grade of service (packet loss <1%, jitter < 30ms, one-way delay < 80ms).

Assumptions for MiVB Programming

The SIP signaling connection uses UDP on Port 5060.

Figure 2 – License and Option Selection

Class of Service Assignment

The Class of Service Options Assignment form is used to create or edit a Class of Service and specify its options. Ensure options HCI/CTI/TAPI Monitor Allowed and HCI/CTI/TAPI Call Control Allowed are Set to "Yes" and applied to all trunks and telephone sets involved in call recording. Classes of Service, identified by Class of Service numbers, are referenced in the Trunk Service Assignment form for SIP trunks.

Many different options may be required for your site deployment but ensure that "Public Network Access via DPNSS" Class of Service Option is configured for all devices that make outgoing calls through the SIP trunks in the MiVB.

- Public Network Access via DPNSS set to Yes
- Campon Tone Security/FAX Machine set to Yes
- Busy Override Security set to Yes

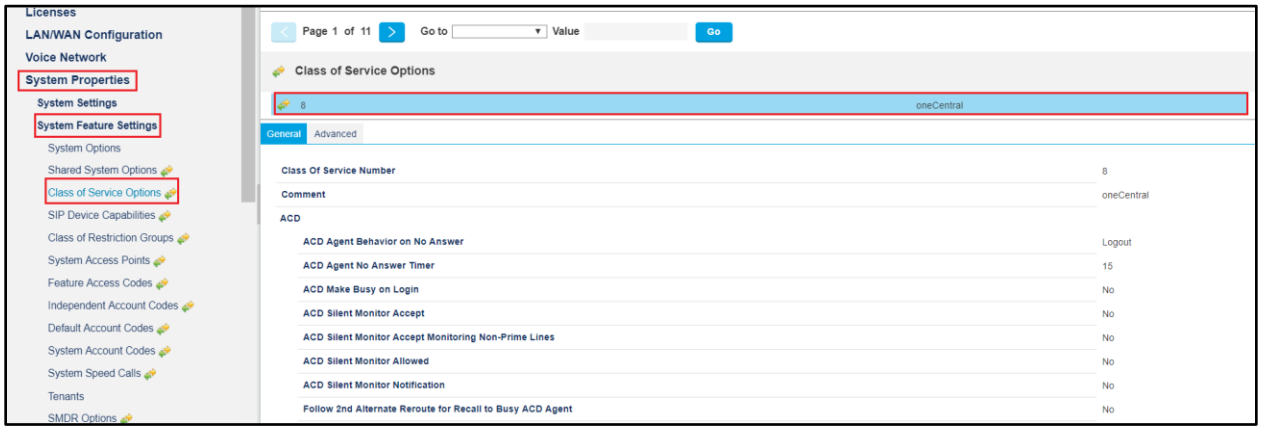


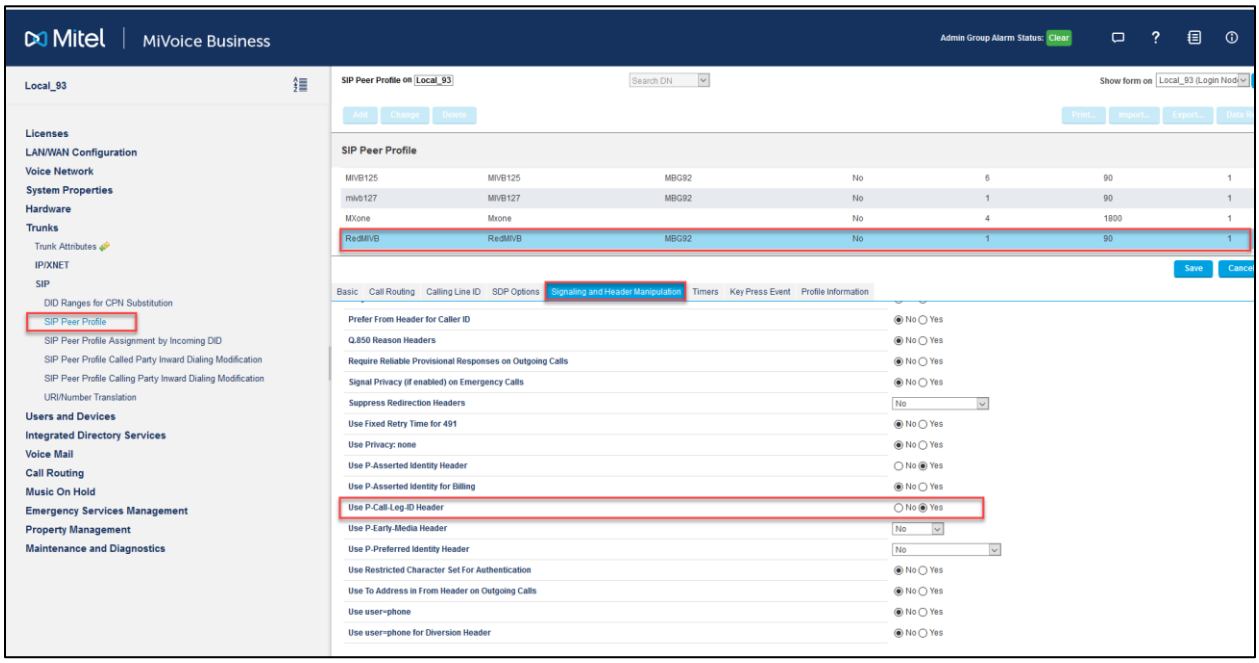
Figure 3 – Class of Service

SIP Peer Profile

The recommended connectivity via SIP Trunking does not require additional physical interfaces. IP/Ethernet connectivity is part of the base MiVB Platform. For SIP trunking recording one should set up SIP trunks through MBG. This document does not intent to cover detailed steps to configure SIP trunking on MIVB and MBG. Refer MIVB, MBG and Redbox configuration documents for detailed steps to configure SIP trunks.

The SIP Peer Profile should be configured with the following options:

For SIP trunk calls to get recorded enable **Use P-Call-Leg-ID Header** under. Refer Fig below for your reference.



MiVoice Border Gateway Configuration Notes

Secure Recording Connector (SRC) is a software solution that facilitates the recording of Mitel encrypted voice streams by third-party Call Recording Equipment (CRE), e.g. Red Box Recorder Quantify. Typically, the SRC server is positioned on the LAN between the MIVB and the telephone sets to be recorded. It accepts requests from an authorized CRE to establish taps in the voice stream. These taps are separate (mirrored) streams from the SRC to the Red Box Recorder Quantify.

Certificate Management

Before normal operation can be established, the CRE must undergo a commissioning stage. During commissioning, Red Box Recorder Quantify enrolls with the SRC to establish a trust relationship.

NOTE: This commissioning step is a one-time requirement between each Red Box Recorder Quantify and each SRC.

When Red Box administrator creates file MiSslTunnel.ini and reboots the server (see the creation of INI files for Red Box Recorder later), it triggers sending the Certificate Signing Request to MBG/SRC.

At MBG/SRC, under Certificate Management, review the Request and accept the certificate. Refer **Figure 5.**

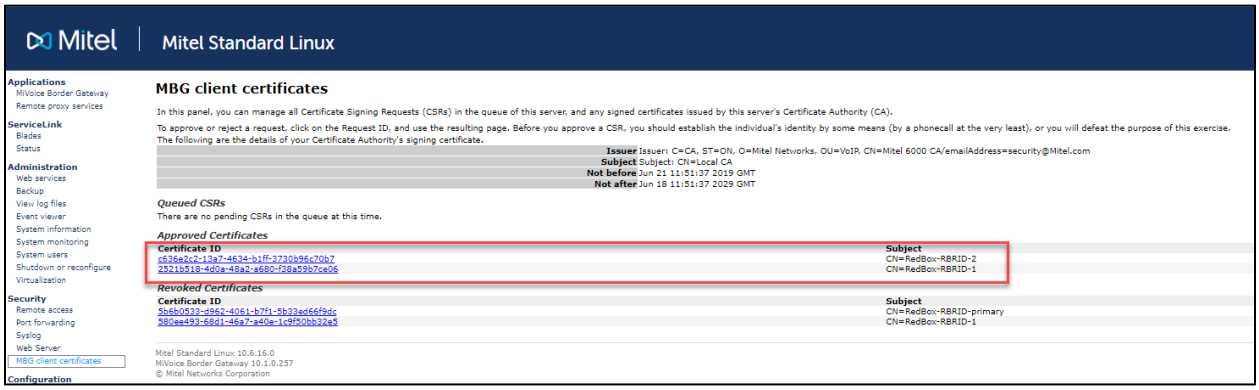


Figure 5 – MBG client Certificates

When Red Box Recorder is successfully connected to MBG/SRC, you must verify that the server's ID is unique and the negotiated SRC protocol is 1.1 (or 1.3 if you intend using indirect call recording). To do this, navigate to Recording Status page and review the status as in **Figure 6.**

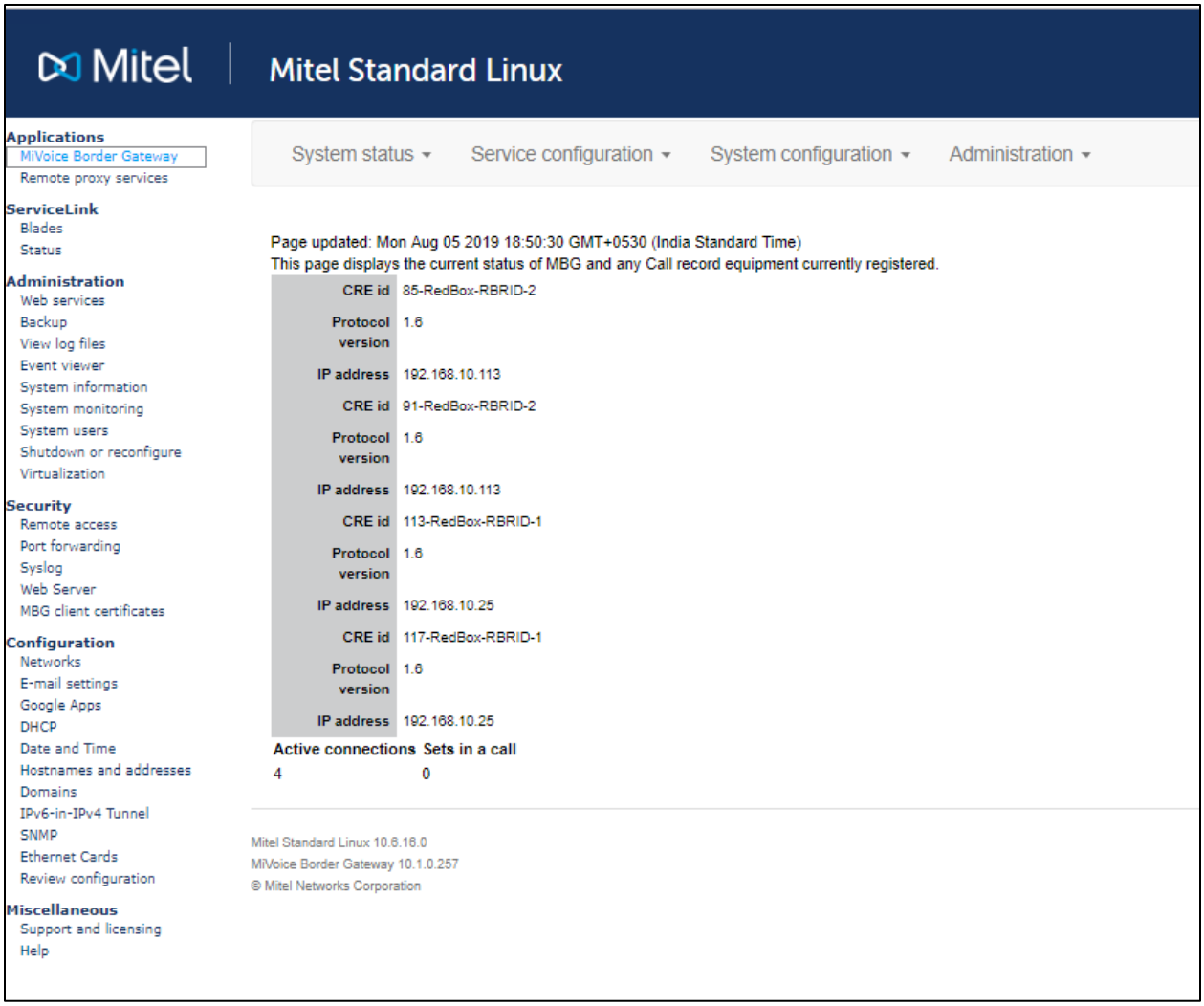


Figure 6 – CRE identification

MBG/SRC Global Settings

When configuring SRC of Mitel MiVoice Border Gateway (MBG), verify the tap license availability. To do this:

- Login to MBG and click Mivoice Border Gateway -> System status -> Dashboard
- Ensure that MBG/SRC has enough tap licenses as shown below -

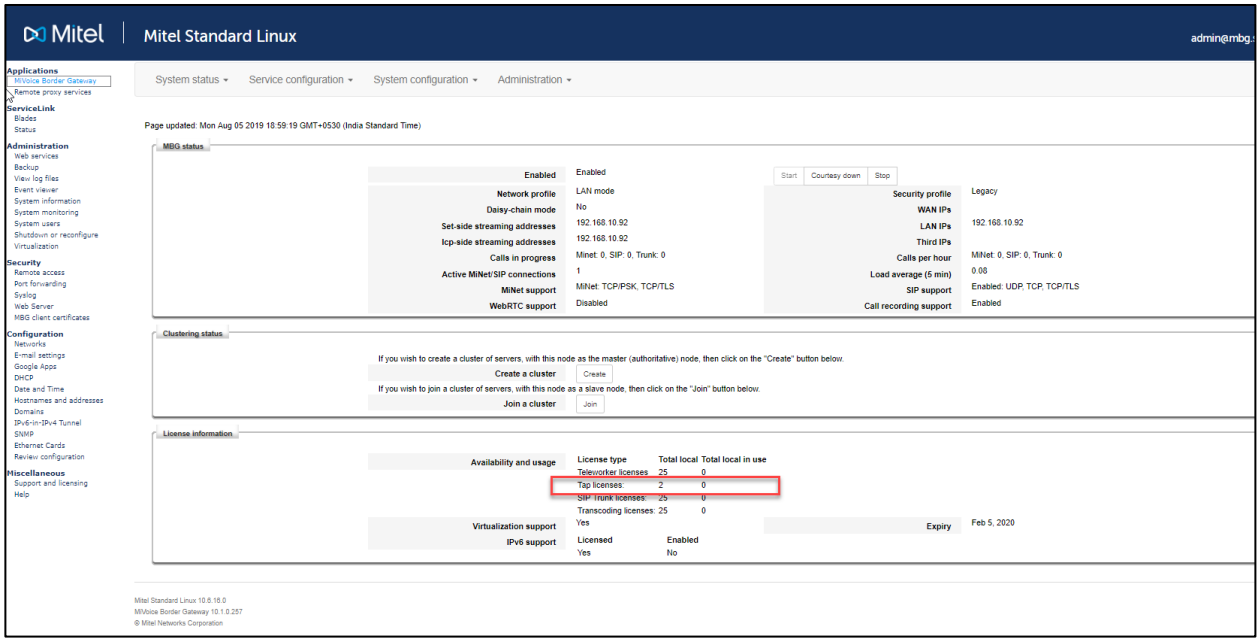


Figure 7 – MBG/SRC tap license review

You will also need to verify that Call Recording is enabled for all devices connected to MBG/SRC. To do this:

- Click **System Configuration** tab (see **Figure 9** for details)
- Ensure that current value for “Restrict MiNET devices” is set to False. It allows authenticating of all MiNET phones at MBG/SRC before connecting them to MIVB.

NOTE: When this step is completed, all phones that need to be monitored and recorded must be pointed to MBG/SRC’s IP address as their primary MIVB. This applicable to direct call recording only (SRC Protocols 1.0 and 1.1).

- Ensure that “Call recording support” is enabled. If Call recording is disabled, click Edit button and set it to True.

NOTE: If you keep this value at False, then you must navigate to Devices tab to enable Call recording for every single phone individually.

NOTE: Since Red Box Recorder does not record G.722.1 voice steams and this codec is the default for MiNET telephones, you may also force all MiNET sets to use either G.711 or G.729 codec. For that, configure the setting as shown in **Figure 8**.

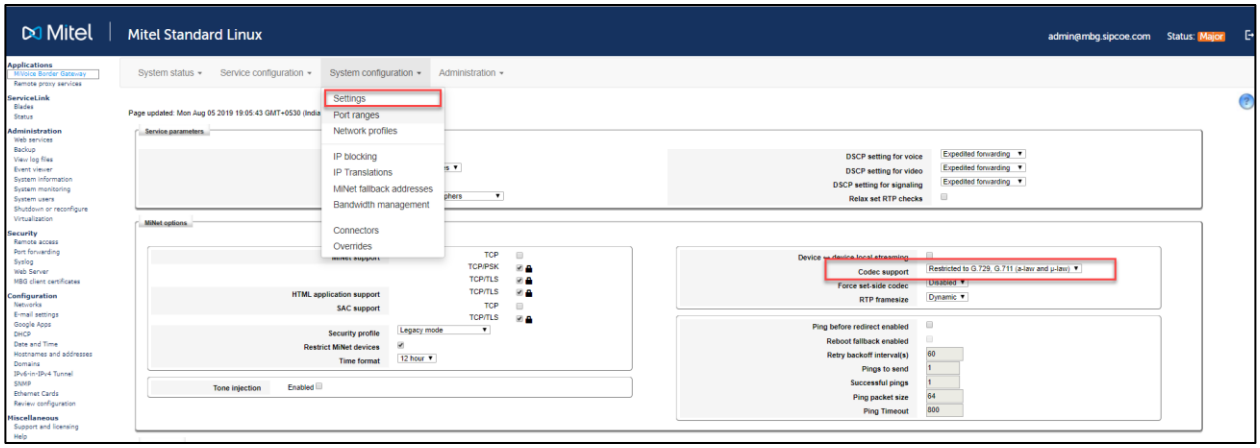


Figure 8 – MBG/SRC call recording status

Navigate to Configuration->**MIVBs** and identify the default, "working" MIVB where to forward calls from Minet and SIP telephones. See **Figure 10.**

NOTE: If you are going to use indirect call recording as of SRC protocol 1.3, modify the setting for the selected PBX to enable this option.

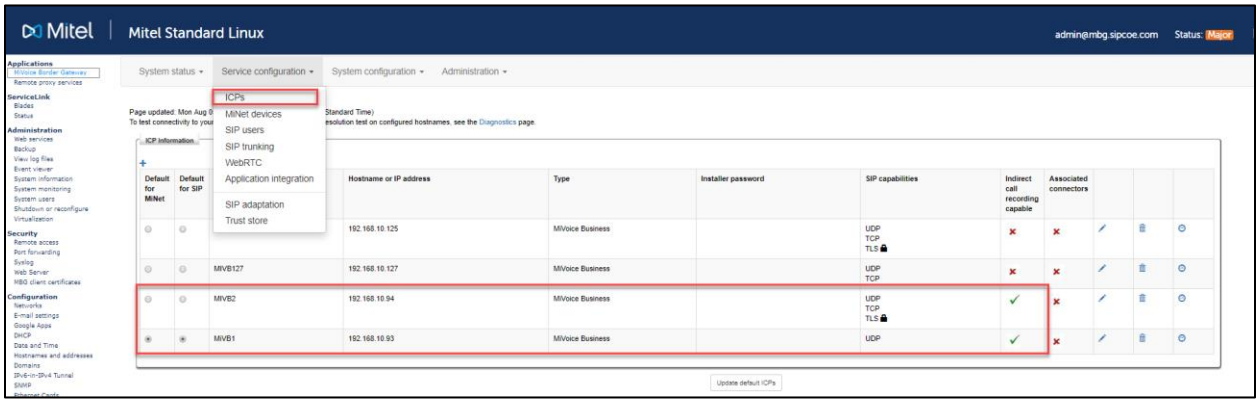


Figure 9 – MiVBs configuration

NOTE: Alternative way to configure MBG/SRC is not to identify default MIVB (**Figure 9**) and do keep enabled the connection restrictions. Then, you need to modify settings for every single phone individually (under Services->**MiNET** devices) in order to set the Configured MIVB.

Red Box Recorder Configuration Notes

The installation and initial configuration of Red Box Recorder is out of scope of this Configuration Guide. Contact the professional services' specialists at Red Box Recorders for this matter.

We assume that the Red Box Recorder software was installed properly and is up and running.

In these Notes, we are going to describe only the basic settings that need to be configured in Red Box Recorder to make it working with Mitel MiVoice Business 9.0 SP2. Many other features are not described here.

To connect Red Box Recorder and MiVoice Business, one must configure the basic connection settings in two files at Red Box Recorder server:

```
MitelCTIServer.ini
MiSslTunnel.ini
```

Then, when connection between Red Box Recorder and Mitel MIVB is established, we must configure several settings in Red Box Recorder's web interface.

Configuring MitelCTIServer.ini

Firstly, navigate to the location where Red Box Recorder files are installed, e.g**. C:\LTR\Config** and open **MitelCTIServer.ini.** Ensure that two sections are set as shown below:

[MitelSRC]
SRCRecording=1
SRCCallStarts=1
SRCCallEnds=1

[MiTAI Server]
NumConnections=1

Address1=192.168.10.93

; The below parameter needs to be set if you want to enable SIP trunking recording. Restart the services or reboot the system for the parameter to take into effect.

[Peer Names]

Count=1

PeerName.0=RedMIVB <Trunk name in MIVB>

NOTE: Address 192.168.10.93 represents the IP address of Mitel MiVoice Business.

Save the file when you are done.

NOTE: Later, when you create the list of monitored extensions, this file will be updated with the section [**MonitorDevices**].

Configuring MiSslTunnel.ini (For Clustered MBG/SRC)

In the folder **C:\LTR\Config**, create a new INI file with the name **MiSslTunnel.ini**.
Ensure that MiSslTunnel.ini contains the following lines:

```
;$max_line=5973$encoded=1$
[Primary]
ca=PrimaryCA
connect_to=192.168.10.92:6810
listen=127.0.0.1:0
ssl_in=0
ssl_out=1
use_cert=1


[ca_list]
ca.0=PrimaryCA
count=1

[general]
log_verbosity=0
redboxVersion=1
version=0

[tunnels]
count=1
tunnel.0=Primary
```

Log files (**debugXxx.xml**) will be saved in folder **C:\LTR\Logs**.

Reboot Red Box Recorder server upon creation of MiSslTunnel.ini and MitelCTIServer.ini.

When Red Box Recorder is fully booted up, navigate to MBG/SRC and approve the security certificate as

per section Certificate Management.

If certificate approval was completed successfully, after couple of minutes, the parameter **`state`** in MiSslTunnel.ini should be changed from 0 to 4.

Web page configurations

After successful and complete installation of Red Box Recorder software, the home page of the web browser, e.g. Internet Explorer (IE), has been changed so that next time you start the IE you will see the web page as in Figure 13.

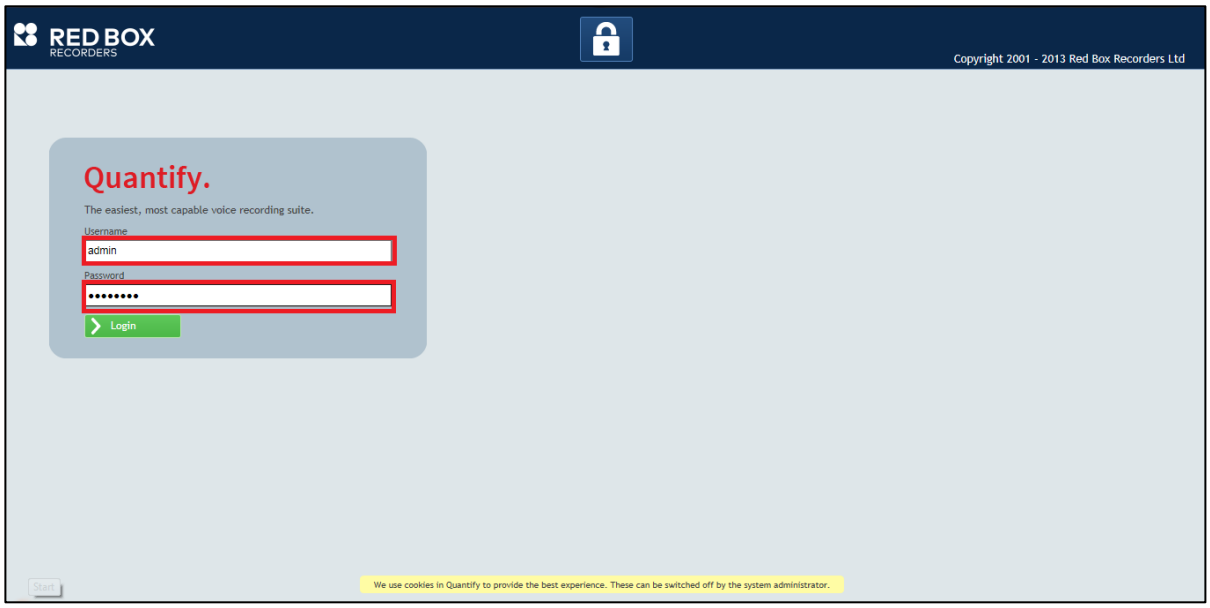


Figure 10 – The home web page to launch the Red Box Recorder application

Enter a user name and password to login to the application. The default credentials are admin and recorder respectively.

Selection of monitored extensions

In Red Box Recorder Quantify, we must define which extensions should be monitored and recorded by the recorder.

After successful login, click main navigation button at the top of the screen and click Configuration as shown in Figure 14.

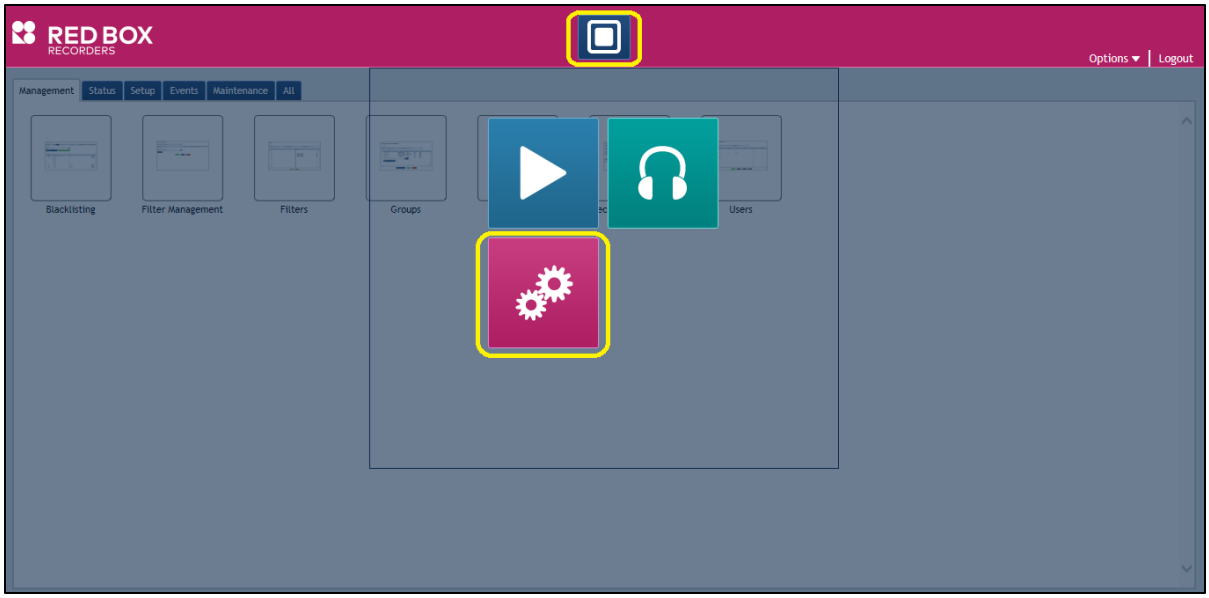


Figure 11 – Navigate to the Configuration settings

On the Configuration page, navigate to Management and select Recording as shown in Figure 15.

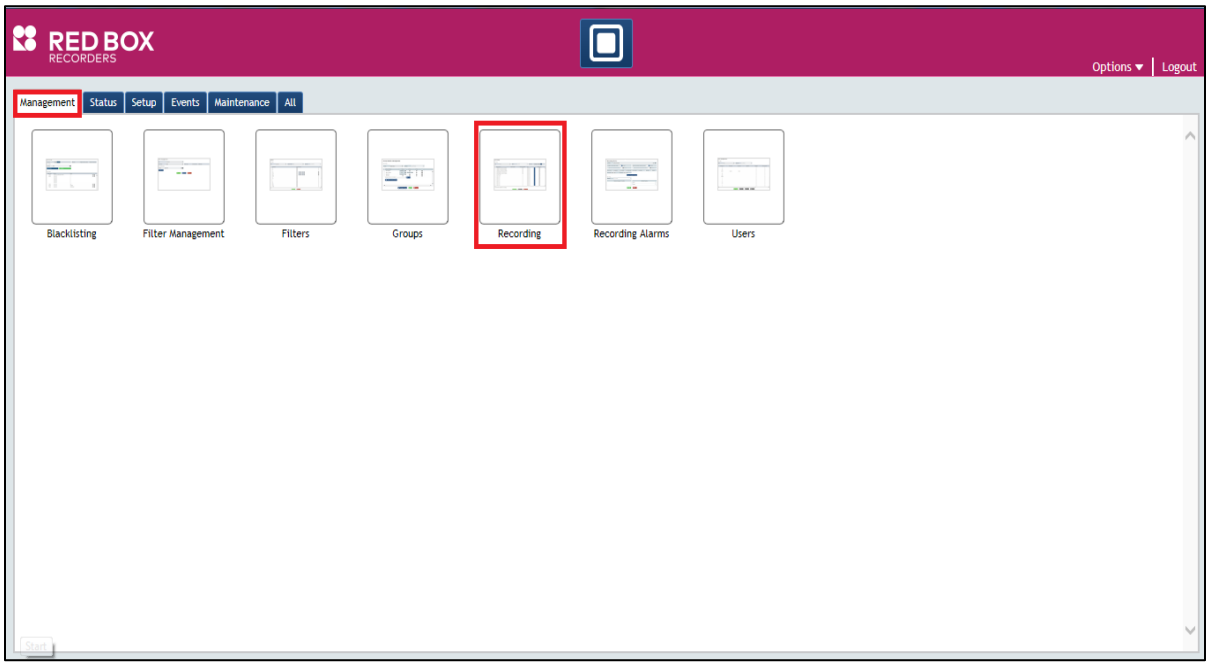


Figure 12 – Navigate to Recording configuration page

By default, all phones that are registered through MBG/SRC as well as internal extensions are listed in this screen.

Tick all required extensions from the list and click Update. See Figure 16 for details.

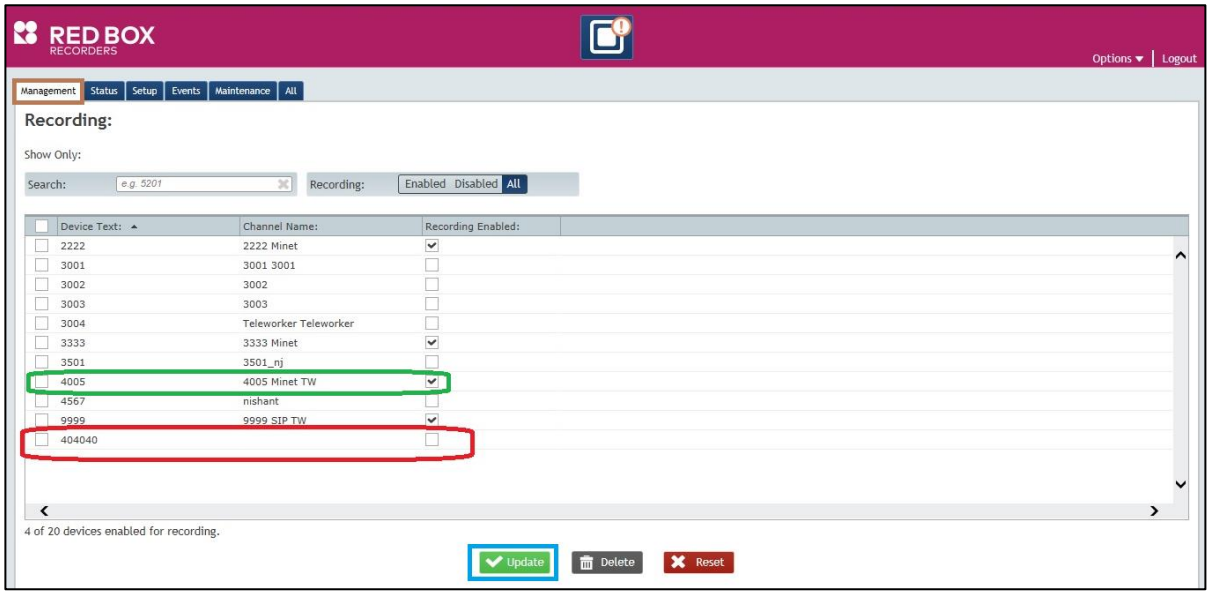


Figure 13 – Add the extensions for monitoring and recording

As soon as you complete the extension assignment, the new icons will appear in the Monitoring page. They represent the monitored extensions.

Click the main navigation button and select Monitoring to view the status of monitored extensions. Like in Figure 17, we can see various extensions in this screen. The green color of icon “4005 Minet TW” indicates that this extension is currently in an active call and recording is in progress.

If you click magnifying glass or headset icons, you can also view the recordings in the lower portion of this screen and listen to them as required.

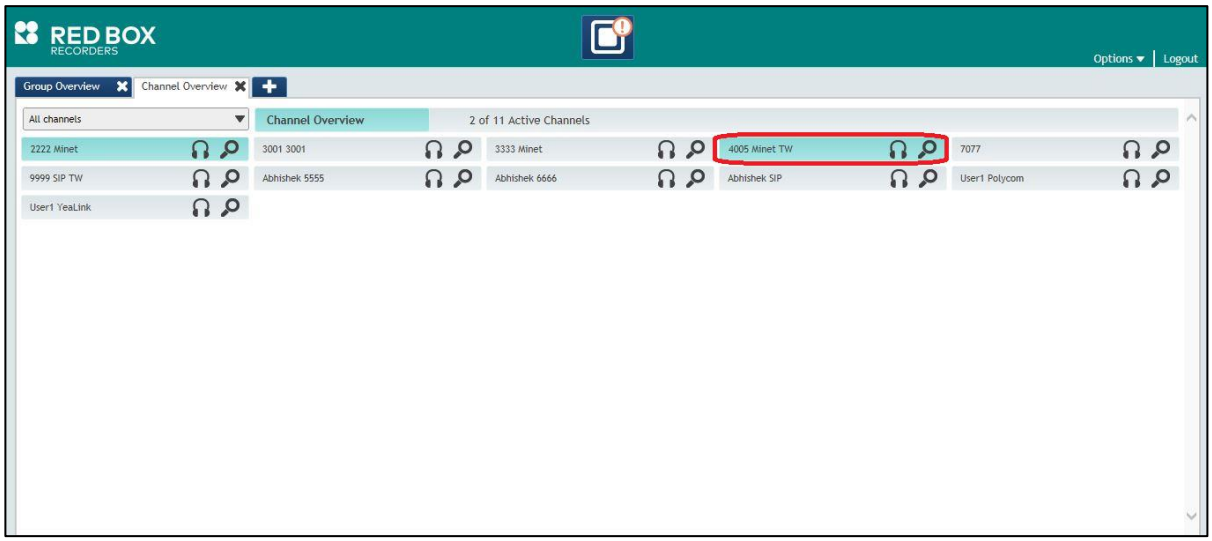


Figure 14 – View the monitored extensions and available recordings

Navigate to Configuration->Status->Recorder Status to check the recorder status. Ensure there are no active warnings and alarm messages.

Also on this page you can find the Recorder ID and current brief performance overview. Like in Figure 18, we can see that there are two calls were recording and recorder utilization is 10%.

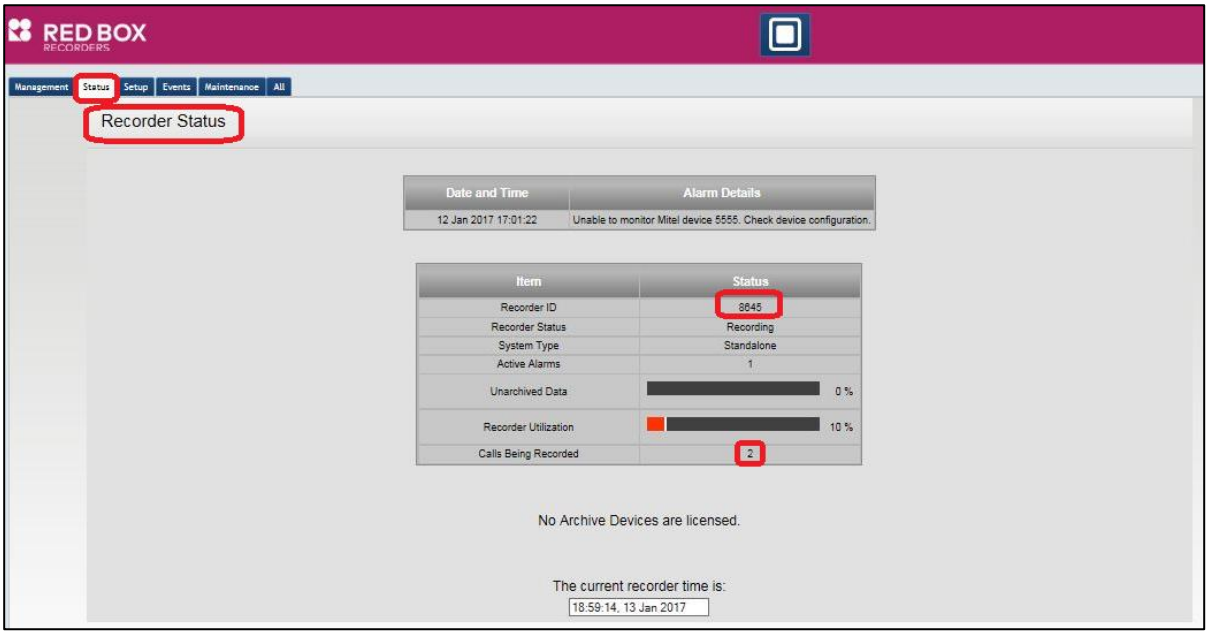


Figure 15 – Recorder Status page

Recordings review and playback

Once configured, Red Box Recorder starts voice recording every time when monitored extensions begin new conversation over the phone. To review and playback the recorded conversations, click the main navigation button and then click Replay button. Click Search Range bar and identify the dates when the recordings should be reviewed for.

Now, when we click Start Search button, the Results field will be filled with the recordings for all monitored extensions for the selected days. Sometimes it is inconvenient. To narrow down this list, we can add some specific criteria.

To do this, click Add Criteria bar and select the criteria to filter the list. As an example in Figure 19, we set Extension as a search criteria.
Click OK to confirm your selection.

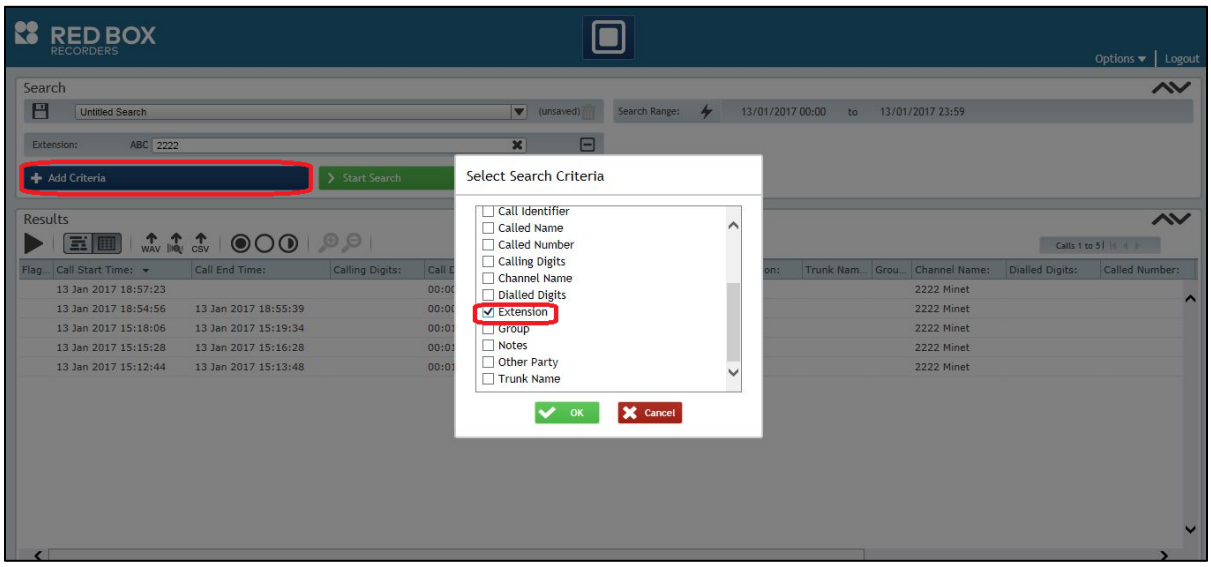


Figure 19 – Setting the search criteria (extension)

Now, we need to enter the extension number for which we would like to review the recordings. Type an extension number in the search bar as shown in Figure 20 (e.g. 2222) and click Start Search.

The list of available recordings will be shown in the field below. The recordings with black triangles on the left represent the already previewed recordings.

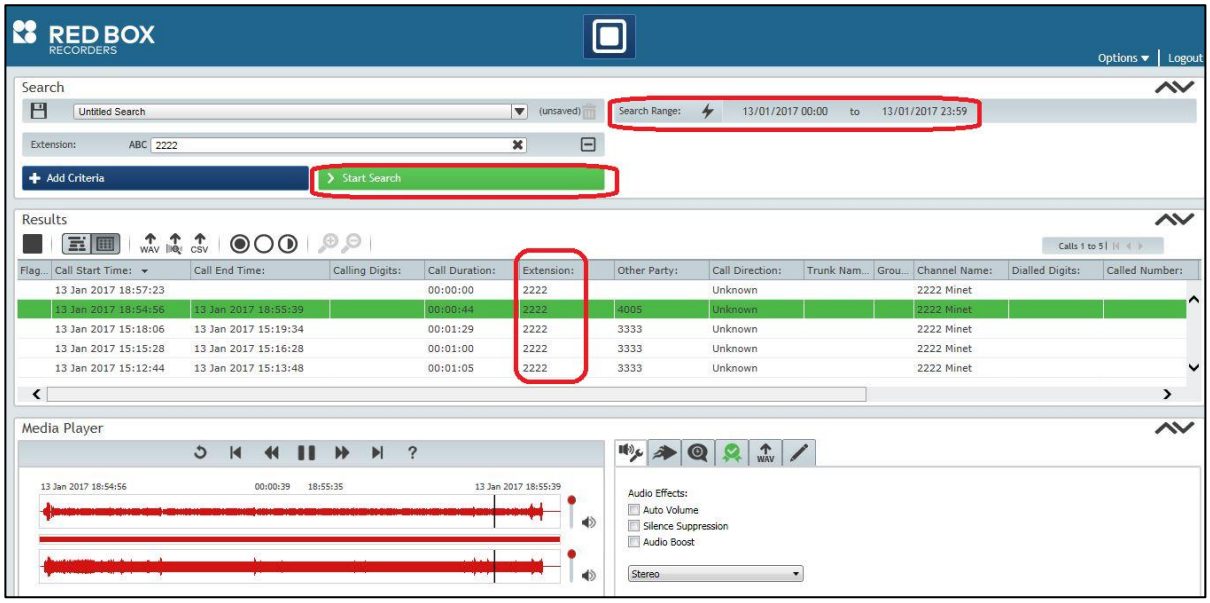


Figure 16 – Search recordings for an extension

Enabling Indirect Call Recording

To configure Indirect call recording in Red Box Recorder, we have to enable this feature in MBG/ SRC and to add couple parameters in the configuration files of Red Box Recorder.

As of MBG/SRC, see Figure 10 on how to enable Indirect call recording for the selected MiVoice Business (MiVB).

For the Red Box Recorder's configuration, navigate again to the location where Red Box Recorder files are installed, e.g. C:\LTR\Config and open MitelCTIServer.ini.

Eventually, the file should look like in the example below:

```
[MitelSRC]
SRCRecording=1
SRCCallStarts=1
SRCCallEnds=1

[MiTAI Server]
NumConnections=1

Address1=192.168.10.93

[Heartbeat]
DeviceID=123
Period=60
AllowedFailures=0
```

Now, open and edit file **MiSslTunnel.ini**.
In this file, we need to add just one line - `remote_devices=1`. See the file example below:

```
; Note: To use remote devices, SRC must support protrocol ver 1.3
; Note: Only one certificate (ca) is needed per SRC, even if
making multiple connections to it.



;$max_line=5973$encoded=1$
[Primary]
ca=PrimaryCA
connect_to=192.168.10.92:6810
listen=127.0.0.1:0
ssl_in=0
ssl_out=1
use_cert=1
remote_devices=1
```

Don’t forget to reboot Red Box Recorder server upon after making the changes to MiSslTunnel.ini and MitelCTIServer.ini.

Glossary

MiVoice Business	MiVB
MiVoice Border Gateway	MBG
MiNET Interface	MiNET
Mitel Solutions Alliance	MSA
Personal Ring Group	PRG
Knowledge Management System	KMS
Class of Service	COS
Automatic Call Distribution	ACD