

Multi-Codec Control

Management Tool for Comrex MIDAS,
ACCESS and BRIC-Link Codecs

Codec Name	State	Remote	Algorithm	Call Quality	Delay	Packet Loss	Audio RX	Call / Drop
MIDAS 1 21 207 130 34 8001 TX: ONLINE RPT: DISABLED	Connected	MIDAS 2	RX: AAC Stereo TX: D2 AAC Stereo 96Kb		200ms 	0.0% 		
MIDAS 2 21 207 130 34 8002 TX: ONLINE RPT: DISABLED	Connected	MIDAS 1	RX: AAC Stereo TX: D2 AAC Stereo 96Kb		200ms 	0.0% 		
MIDAS 3 21 207 130 34 8003 TX: ONLINE RPT: DISABLED	Connected	MIDAS 4	RX: AAC Stereo TX: D2 AAC Stereo 96Kb		200ms 	0.0% 		
MIDAS 4 21 207 130 34 8004 TX: ONLINE RPT: DISABLED	Connected	MIDAS 3	RX: AAC Stereo TX: D2 AAC Stereo 96Kb		200ms 	0.0% 		
MIDAS 5 21 207 130 34 8005 TX: ONLINE RPT: DISABLED	Connected	MIDAS 6	RX: AAC Stereo TX: D2 AAC Stereo 96Kb		200ms 	0.0% 		
MIDAS 6 21 207 130 34 8006 TX: ONLINE RPT: DISABLED	Connected	MIDAS 5	RX: AAC Stereo TX: D2 AAC Stereo 96Kb		200ms 	0.0% 		
MIDAS 7 21 207 130 34 8007 TX: ONLINE RPT: DISABLED	Connected	MIDAS 8	RX: AAC Stereo TX: D2 AAC Stereo 96Kb		200ms 	0.0% 		
MIDAS 8 21 207 130 34 8008 TX: ONLINE RPT: DISABLED	Connected	MIDAS 7	RX: AAC Stereo TX: D2 AAC Stereo 96Kb		200ms 	0.0% 		
MIDAS 9 21 207 130 34 8009 TX: ONLINE RPT: DISABLED	Connected	MIDAS 10	RX: AAC Stereo TX: D2 AAC Stereo 96Kb		200ms 	0.0% 		
MIDAS 10 21 207 130 34 8010 TX: ONLINE RPT: DISABLED	Connected	MIDAS 9	RX: AAC Stereo TX: D2 AAC Stereo 96Kb		200ms 	0.0% 		
Vortex - London 01 48 130 100 000 TX: ONLINE RPT: ONLINE (200 OK)	Connected	Comrex Lab Voice	RX: A1 BRIC-HQ1 Mono TX: A1 BRIC-HQ1 Mono		200ms 	0.0% 		

User Manual

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Introduction

MCC Multi-Codec Control is an application for Microsoft Windows which provides advanced centralized monitoring and management for the Comrex BRIC family of IP audio codecs, including ACCESS, BRIC-Link and MIDAS. It provides control and shows the status of any number of devices, including connection state, name of the remote unit, coding algorithm in use in each direction, packet loss and delay statistics over time and receive audio levels. An intuitive 'traffic light' indicator is also provided for each connection to give an idea of the expected audio quality at a glance.

Multi-Codec Control allows calls to be made and dropped on each of the managed codecs. Any manually-added Remote entries or 'Switchboard Server' / 'Traversal Server' Remotes from the codec in question can be selected as a destination; in addition, a local 'phonebook' within MCC allows destinations and profiles to be defined once and used across all managed codecs. MCC can also be used to configure the managed codecs' system settings.

Multi-Codec Control is designed to be touch-friendly and can be run in full-screen mode on a dedicated 'control surface' PC. It supports connections via a SOCKS proxy server for use in enterprise environments where direct connection to the managed codecs is not possible.

Installation

Double-click the provided setup.exe file to start the installer. The wizard will guide you through the installation process.

After installation, to launch Multi-Codec Control in future, use the shortcut in the Start Menu (under Programs or All Programs > Vortex Communications Ltd > Multi-Codec Control) or on the Desktop.

Licensing

Multi-Codec Control will initially run in Evaluation Mode. The functionality is not limited, but it will expire after 30 days. When MCC is started in Evaluation Mode, a screen will first be displayed to show how many days of the evaluation period remain and to allow you to enter a licence key. Click 'Continue Evaluation' to show the main MCC window.

To upgrade Multi-Codec Control to the full version, click 'Enter Licence...' on the Evaluation Screen, then:

- If the computer is connected to the internet, enter your licence key in the box provided (or copy it to the clipboard and click 'Paste From Clipboard'). Then click 'Apply Licence'.
- If the computer is not connected to the internet, click 'Offline Activation...' and follow the instructions provided.

Once the licence key has been validated, you will see a confirmation message; click 'Start Program' to begin using the full version of Multi-Codec Control.

To uninstall Multi-Codec Control, use the Programs and Features or Add / Remove Programs option in Control Panel.

System Requirements

Multi-Codec Control requires the Microsoft .NET Framework 4 (Client Profile) or higher and Windows Installer 3.1 or higher. These components will be downloaded and installed automatically if they are not already available when you install MCC. The system requirements for MCC and the .NET Framework are:

- **Operating system:** Microsoft Windows XP SP3 or later
- **CPU:** 1GHz Pentium or faster (32- or 64-bit)
- **RAM:** 512MB or more
- **Display:** 1280x1024 or larger (1920x1080 recommended), 16-bit colour or higher
- **Hard disk:** 600MB (32-bit) / 1.5GB (64-bit) free or more
- **Network:** 10/100Mb/s Ethernet connection

Quick Start

1. Run Multi-Codec Control. If the Evaluation Screen is displayed, click 'Continue Evaluation'.
2. Click Menu > Codecs...
3. Either:
 - a. Enter the IP address of a codec to manage in the Address column of the blank row, and the port number and password (if they differ from the defaults) in the appropriate fields; or
 - b. To add multiple MIDAS software codecs, click 'Add MIDAS', enter the address of a MIDAS server, select whether it is a 5- or 10-instance installation and click 'OK'.
4. Click 'OK' and the codecs configured will be displayed in the main Multi-Codec Control window. Incoming connections will be displayed as they arrive; to make an outgoing connection, click the green 'telephone' button, choose a Remote entry from the list and click 'Call'.

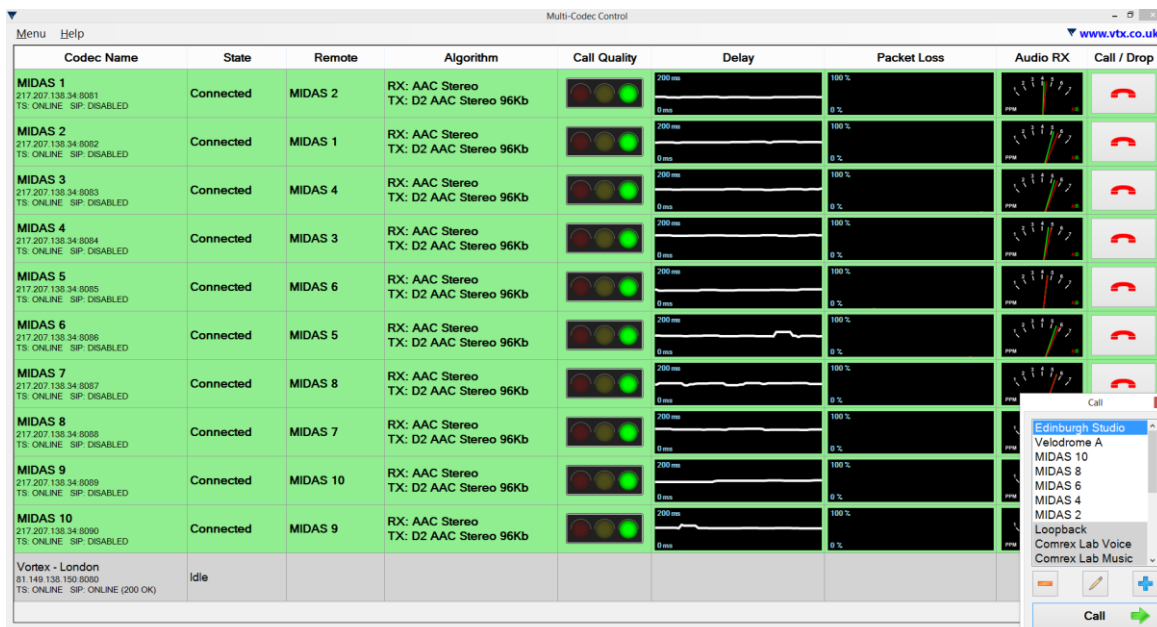


Figure 1 - Making a Call

Main Screen

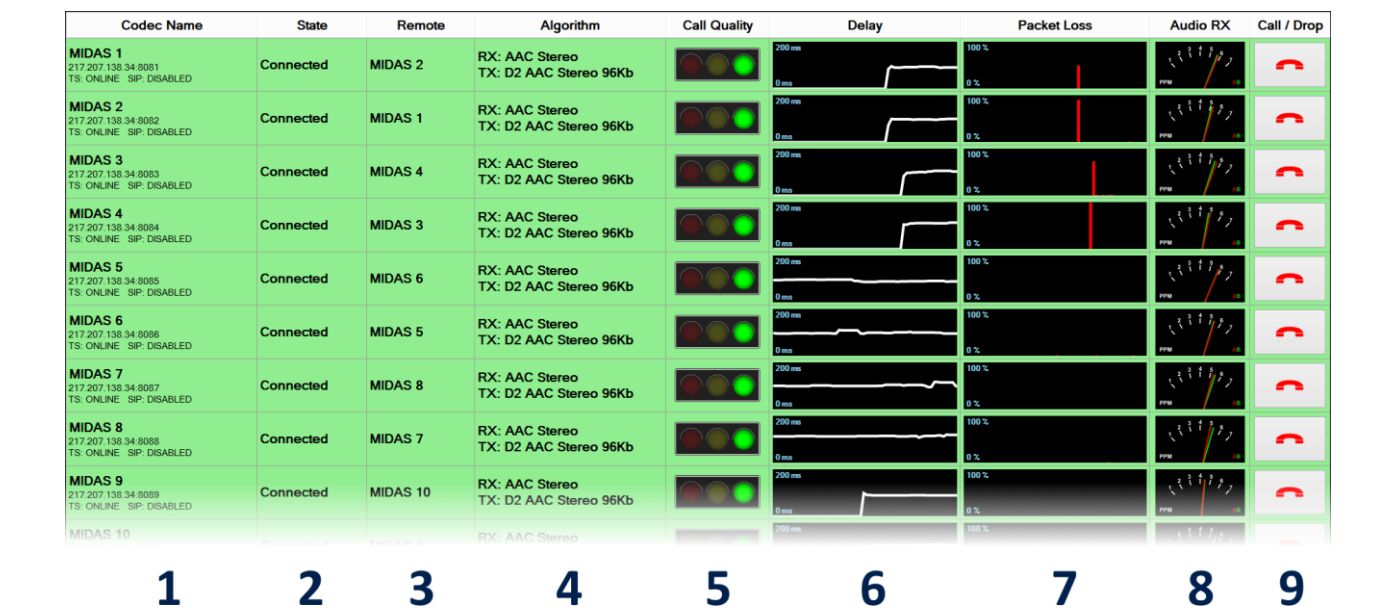


Figure 2 - Main Screen

The main screen of Multi-Codec Control organizes the key information from all the managed codecs into a table, with one row per codec. The rows are colour-coded:

- Light Grey** Codec is online and idle (ready to accept incoming connections or make outgoing calls)
- Yellow** Codec is active but not receiving audio (for example when a connection has been made with a send-only profile)
- Green** Codec is connected and receiving audio data
- Dark Grey** Codec is offline and cannot be monitored, controlled or configured

The columns of the main screen provide the following information or functionality (refer to Figure 2):

- 1 Codec Name**
The name of the codec / MIDAS channel as configured in its system settings. The IP address and control port number are shown for reference. The current Switchboard (Traversal) Server and SIP Registration status is also shown ('TS:' and 'SIP:'). When a codec is offline, all other columns are blank and this column is shown in a grey italic font.

2 State

The current state of the codec (e.g. Idle, Connected etc.). This is similar to the Current State / Last State column on the ACCESS web interface but if multiple connections are active on the codec concurrently, the state of the receive connection (i.e. the one which provides incoming audio) is given preference, followed by active transmit-only connections and finally those which are in the process of connecting or disconnecting.

3 Remote

The name of the remote device to which the codec is currently connected. If multiple connections are active concurrently, the name of the receive connection is shown first, followed by any transmit-only connections in brackets.

4 Algorithm

The coding algorithm currently being used by the codec in the send (TX) and receive (RX) directions, if known.

5 Call Quality

An easy-to-read 'traffic light' indication of the current (receive) call quality, taking into account the perceptual quality of the receive coding algorithm, the packet loss and delay and their variation over time. It provides a useful indication of how 'usable' a connection is likely to be on air: a green light indicates that the audio quality is high and the delay is low; amber suggests a connection which is usable but might suffer occasional dropouts or where the delay may start to make two-way exchanges difficult; red flags a connection which should probably not be used.

6 Delay

A plot of the incoming delay (buffer + decoder) for the current receive connection over the last minute (the same figure as shown in the RX Delay column of the ACCESS web interface Statistics tab). Note that this graph auto-scales so take care to check the maximum value shown. Two connections which have similar-looking graphs may have very different delays!

7 Packet Loss

A plot of the frame loss rate for the current receive connection over the last minute (the same figure as shown in the Frame Loss column and lower graph of the ACCESS web interface Statistics tab).

8 Audio RX

A PPM-style peak meter showing the decoded audio level. The red 'A' needle shows the left level and the green 'B' needle the right level (when a stereo or dual-mono algorithm is being received).

9 Call / Drop Button

When the codec is active (as a result of either an outgoing or incoming call), the button in this column will show a red 'hang up' icon and can be used to drop the call. When the codec is idle, it will show a green 'call' icon and can be used to connect to one of the Remotes from the codec's Remotes list or from the local 'phonebook'. See Call for more information.

Right-clicking on any managed codec reveals the Modify System Settings... option which displays the System Settings Dialog

Call

Clicking the 'Call' button on an idle codec will show the Call Dialog:

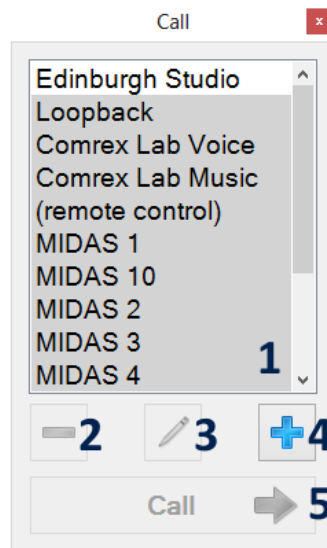


Figure 3 - Call Dialog

The list at the top of the dialog (1) shows Remotes from the local 'phonebook' (rows with a white background) followed by those from the codec's own Remotes list (which includes manually-defined and Switchboard (Traversal) Server Remotes) (rows with a grey background). To connect the codec to any of these, just select it in the list and click 'Call' (5). When a local 'phonebook' entry is selected, it can be deleted or edited using the appropriate buttons (2 or 3). The Add button (4) can be used to add a new entry to the local 'phonebook' (this will then be shown in the Call Dialog for all managed codecs, allowing locally-created destinations and profiles to be reused easily).

Add / Edit Peer

When adding or editing a local 'phonebook' entry, the Add / Edit Peer Dialog is displayed:

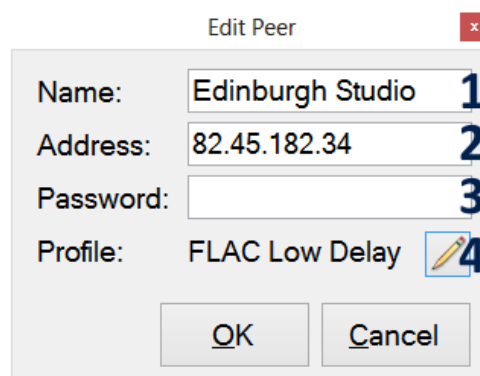


Figure 4 - Add / Edit Peer Dialog

This dialog is used to enter a descriptive name for the connection (1) and the address (2) (IP address, optionally followed by a colon and port number; SIP username; telephone number etc.). If the remote unit being called has a connection password configured, this can be specified in the appropriate field (3). The profile to use for the connection

can be specified by clicking the 'Edit Profile' button (4); otherwise, the codec's default profile will be used. Note, however, that the default profile may well be different on different codecs, so if the local 'phonebook' entry is to be used to make the same type of connection from several different managed codecs, it is more predictable to specify a profile here explicitly.

Select Profile

Clicking the 'Edit Profile' button on the Add / Edit Peer Dialog reveals the Select Profile Dialog:



Figure 5 - Select Profile Dialog

This dialog shows all profiles which have been created in the local 'phonebook'. To specify a profile for the local entry, simply select it from the list (1) and click 'OK'. A profile can be deleted or edited using the appropriate buttons (2 or 3). The add button (4) can be used to add a new entry to the list of profiles.

Add / Edit Profile

When adding or editing a local 'phonebook' profile, the Add / Edit Profile Dialog is displayed:

General	
Profile Name	FLAC Low Delay
Channel	BRIC Normal

Local	
Connection Timeout	60
Encoder	K2 - FLAC Dual Mono
Transmit On/Off	True
Frames per Packet	1
Decoder Downmix	None
Loss Cushion	5
Loss Cushion Mode	True
Retransmit Squelch Trigge	1
Retransmit Squelch Max	2
Fixed Delay	0
Delay Cushion	0
Delay Limit	500
Jitter Window	5
Buffer Management On/O	True

Profile Name
Configurable name for this profile.

☒ Show Advanced Options

OK Cancel

Figure 6 - Add / Edit Profile Dialog

This dialog shows a grid of profile settings (1) which can be modified, grouped into three sections: General, Local and Remote. These mirror the profiles settings found on the ACCESS web interface. A description is provided for the currently-selected setting below the grid (2). Some settings are considered to be advanced options and are only shown if the appropriate box (3) is ticked. Settings which have been changed from their default value are shown in bold. Such settings can be reset to default by right-clicking on the setting name and choosing Reset.

Note that because the profile configured through this dialog can be assigned to a local 'phonebook' entry which can then be called from any of the managed codecs, the settings shown are in fact a superset of those defined on all the managed units. It is therefore potentially possible to choose options which are not available on the particular codec from which the 'phonebook' entry is eventually called. This is most likely to occur with the Encoder setting, since not all coding algorithms are available on all products. If a 'phonebook' entry is dialled from a codec which is unable to satisfy the requirements of the locally-defined profile chosen, the unit's default profile will be used instead. Where Multi-Codec Control is used exclusively for controlling MIDAS software codecs from a single installation, this problem usually does not arise.

System Settings

Clicking Modify System Settings... in the right-click menu for a managed codec displays the System Settings Dialog:

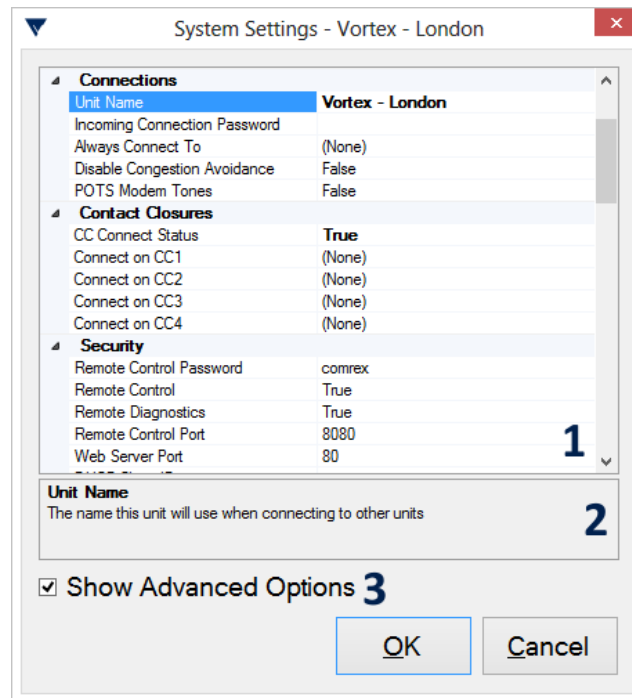


Figure 7 - System Settings Dialog

This dialog shows a grid of system-wide and channel-specific (BRIC Normal, N/ACIP SIP etc.) settings (1) which can be modified. These mirror the settings found under the System Settings tab on the ACCESS web interface. A description is provided for the currently-selected setting below the grid (2). Some settings are considered to be advanced options and are only shown if the appropriate box (3) is ticked. Settings which have been changed from their default value are shown in bold. Such settings can be reset to default by right-clicking on the setting name and choosing Reset.

Menu

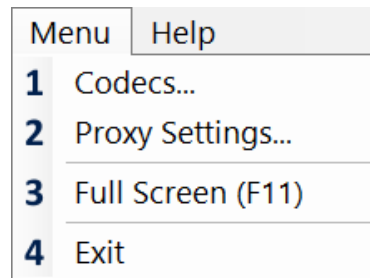


Figure 8 – Menu

- 1 Codecs...**
This displays the Codec Configuration Dialog, allowing the list of managed codecs to be modified.
- 2 Proxy Settings...**
This displays the Proxy Settings Dialog where the method of connecting to the managed codecs can be configured (direct or via a SOCKS proxy).
- 3 Full Screen (F11)**
This causes Multi-Codec Control to be displayed full-screen and the menu bar to be hidden. To return to windowed mode, press F11 or Esc. F11 can also be used to enable full-screen mode. If MCC is closed when in full-screen mode (using the standard Windows key combination Alt+F4), it will start in full-screen mode when next launched.
- 4 Exit**
This exits Multi-Codec Control.

Codec Configuration

The Codec Configuration Dialog allows the managed codecs to be defined.

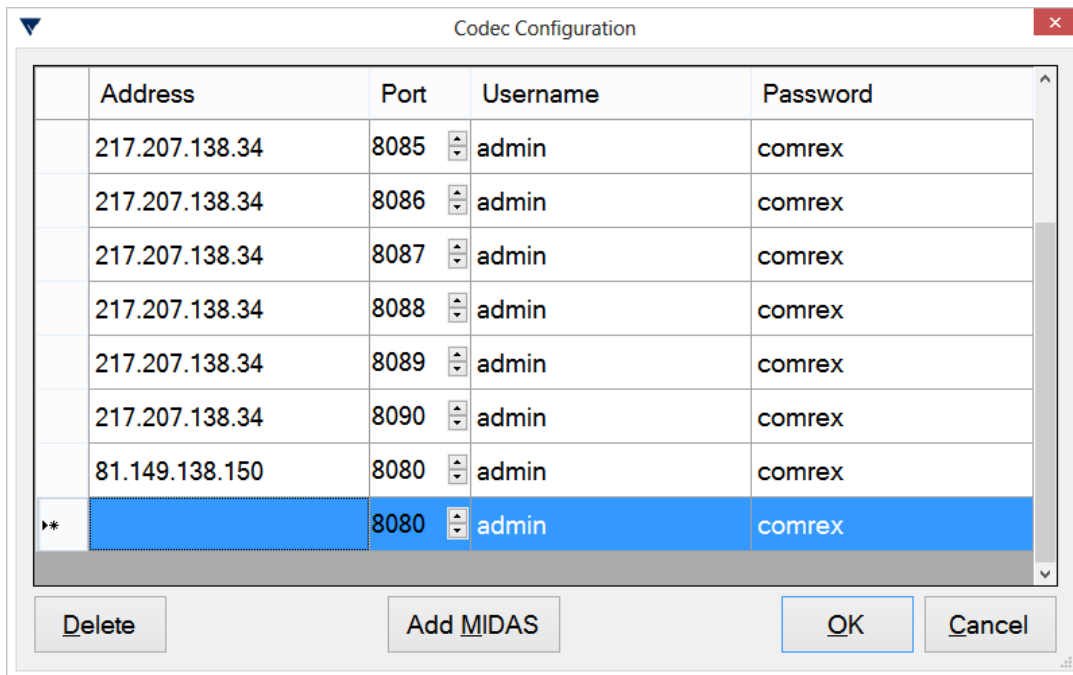


Figure 9 - Codec Configuration Dialog

Each row in the table represents a codec shown on the Multi-Codec Control main screen. A new entry can be added by typing in any of the fields of the bottom row (shown with a *). For non-MIDAS codecs, usually only the IP address / hostname needs to be specified (in the Address field). The default control port of 8080 and password of comrex are normally correct, and the username is unimportant. Entries in the list can be edited simply by clicking in the appropriate field, and deleted using the Delete button.

The order of codecs on the main screen matches the order shown in this dialog. To change the order, simply click and drag the rows up or down.

Clicking 'OK' in the Codec Configuration Dialog will save any changes to the list of managed codecs and reconnect to them all.

Add MIDAS

The control port numbers on a MIDAS server usually increment consecutively from 8081. Although each channel can be added manually in the way outlined above, it is usually more convenient to click the 'Add MIDAS' button, which displays the following dialog:

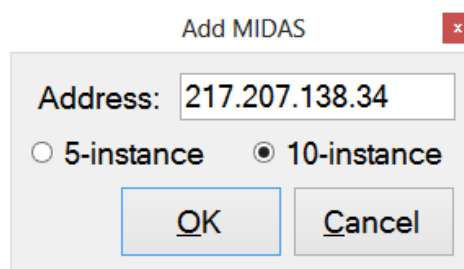


Figure 10 - Add MIDAS Dialog

Here it is sufficient to specify the IP address / hostname of the MIDAS server and whether it is a 5- or 10-instance installation; the appropriate entries will be added to the list, with ports from 8081 to 8085 or 8081 to 8090.

Proxy Settings

Multi-Codec Control can connect directly to the managed codecs, or via a SOCKS proxy server (version 4 or 5). The connection method and server settings are configured in the Proxy Settings Dialog.

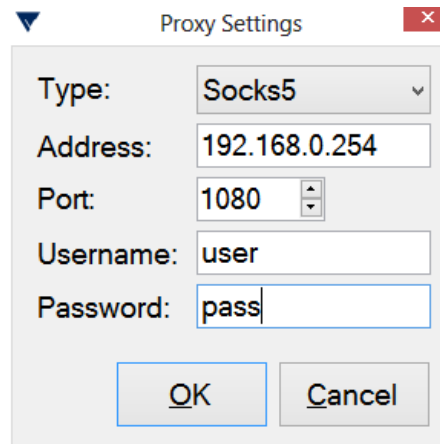
A screenshot of the 'Proxy Settings' dialog box. The dialog has a title bar with a blue triangle icon, the text 'Proxy Settings', and a red close button. Inside, there are five labeled fields: 'Type:' with a dropdown menu showing 'Socks5'; 'Address:' with a text box containing '192.168.0.254'; 'Port:' with a spinner box showing '1080'; 'Username:' with a text box containing 'user'; and 'Password:' with a text box containing 'pass'. At the bottom are two buttons: 'OK' and 'Cancel'.

Figure 11 - Proxy Settings Dialog

The connection mode (direct, SOCKS 4 or SOCKS 5) is selected in the Type dropdown box. The address, port, username and password for the SOCKS proxy (if enabled) are configured in the corresponding fields. Clicking 'OK' in the Proxy Settings Dialog will save any changes to the connection mode and reconnect to all managed codecs using the specified settings.