Creating and using a template spreadsheet to configure extensions and SIP handsets

White Paper

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Document History

Version	Date	Description of Changes
1.0	08/08/2014	Preliminary

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1 Introduction

Designed with the administrator in mind, the Far South Networks spreadsheet configuration tool allows for hardware configurations to be represented on a spreadsheet, uploaded and restored on to Com.X IP PBX systems.

2 How would I use it?

When configuring customer Com.X PBX containing many numbers of users as IP phone, the spreadsheet provisioning tool could save you a lot of time, at each installation.

To make optimal use of the spreadsheet configuration tool, follow the step by step guide presented in this paper, which will enable you to remotely configure any IP phone connected to the system, with only GUI access to the Com.X unit.

2.1 Generate your template

2.1.1 Create a Managed SIP phone configuration

The Com.X GUI supports exporting a suitable configuration into a spreadsheet format.

We recommend first creating your own custom configuration for at least one SIP handset, added as a managed SIP device. The GUI can then be used to export this configuration to a spreadsheet format, which will include all fields available for configuration.

Configure one of your LAN ports as a DHCP server and connect at least one phone to the LAN port through a switch if necessary. Reboot the phones after connecting them to the DHCP server.

Once the phones have rebooted, navigate to the hardware page, select scan, and enable auto-detect. This setting allows the Com.X to request information from the devices to which it serves DHCP addresses, including the manufacturer, model and MAC address. Without enabling auto-detect, no phone will identify itself as a managed SIP phone and all devices will reflect as generic SIP devices.
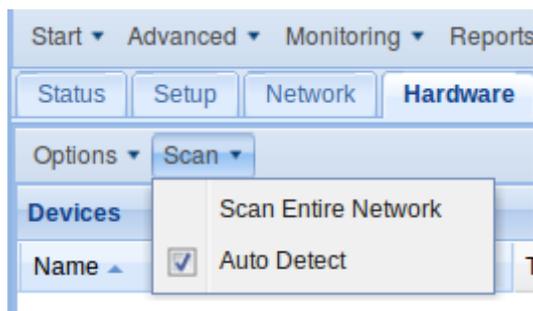
Figure 1: Enable Auto-detect.

Add each handset as a Managed SIP device by selecting Options, Add and then Detected and select the appropriate detected device.
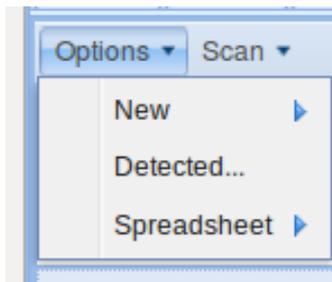
**Figure 2: Select from available detected devices**

Enter an appropriate name for the device and accept the configuration. Note, Yealink phones default to the MAC address, whilst Snom phones default to the model number.

Figure 3: Enter your chosen device name

2.1.2 Exporting a Spreadsheet

To export your spreadsheet, navigate to the hardware panel of the Com.X GUI and select Options, Spreadsheet, Export.
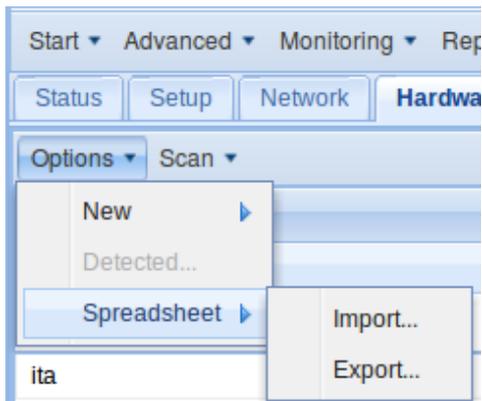
Figure 4: Import or export configuration spreadsheets.

2.1.3 Editing the exported spreadsheet

The raw exported spreadsheet contains rows for the internal MPX or iTA hardware devices added to the unit, as well as for each port on the phone that is capable of supporting an extension (whether or not there is an extension configured on the port), as can be seen in figure 5 below.

	A	B	C	D	E	F	G	H	I	J	K
1	DevName	Mac	Make	Model	LAN	IP	PortId	Extension	Name	Voicemail	PIN
2	MyT46	00:15:65:41:46:cd	Yealink	T46Gv71	lan2	192.168.101.5	Line-1	2010	2010	Y	4454
3	MyT46	00:15:65:41:46:cd	Yealink	T46Gv71	lan2	192.168.101.5	Line-2				
4	MyT46	00:15:65:41:46:cd	Yealink	T46Gv71	lan2	192.168.101.5	Line-3				
5	MyT46	00:15:65:41:46:cd	Yealink	T46Gv71	lan2	192.168.101.5	Line-4				
6	MyT46	00:15:65:41:46:cd	Yealink	T46Gv71	lan2	192.168.101.5	Line-5				
7	MyT46	00:15:65:41:46:cd	Yealink	T46Gv71	lan2	192.168.101.5	Line-6				
8	t20	00:15:65:45:8b:a3	Yealink	T20	lan2	192.168.101.2	Line-1	2005	2005	Y	1234
9	t20	00:15:65:45:8b:a3	Yealink	T20	lan2	192.168.101.2	Line-2				

Figure 5: A portion of an exported spreadsheet

In the spreadsheet above, two extensions are configured on two separate SIP handsets. The spreadsheet populates rows for any additional lines on the handset, that are available for configuration, but not yet configured.

To create a template for hardware configurations, it is recommended that the following adjustments to the exported spreadsheet are made:

1. Delete any rows pertaining to analogue ports. The internal hardware ports vary from system to system, so you do not want these entries on your template spreadsheet.

2. Delete any rows containing ports that are not required to support extensions (i.e. the additional lines available on each handset)

3. Delete the IP address and MAC address fields.

> Note:It may be helpful to make a template that contains one example of each type of handset you regularly install. This would ensure that the model number could be easily copied and pasted, eliminating the chance of error.

Not all fields in the spreadsheet are necessary for successful creation and configuration of extensions. Essential fields include: Devname, Mac, Make, Model, Lan, PortID and Extension. All additional fields need be populated only when necessary.

A very basic spreadsheet showing only the necessary fields to create extension 2005 on the primary account of a YealinkT20 is shown in figure 6 below.

	A	B	C	D	E	F	G
1	DevName	Mac	Make	Model	LAN	PortId	Extension
2	t20	00:15:65:45:8b:a3	Yealink	T20	lan2	Line-1	2009

Figure 6: A minimal spreadsheet containing only the essential fields for extension configuration.

2.2 Configuring your system via spreadsheet

2.2.1 Populating the spreadsheet template

To create a configuration on your spreadsheet, populate the rows with the details of the handset and extension you wish to configure.

Each extension should be configured on it's own row in the spreadsheet, if the extension field is not populated, that row of configuration is ignored.

Many of the fields contained within the spreadsheet are optional. Default settings will be used should these be left unpopulated. Mandatory fields are coloured red in the table below.

Field	Description
DevName	Choose a suitable name for the device.
Mac	The MAC address of the phone. This field is used to identify the device once it is physically connected to the network.
Make	The manufacturer of the phone. Supported manufacturers include Yealink, Snom and Polycom.

Model	The model of the handset to configure. Supported devices, as well as the format in which model numbers are required can be seen on the hardware page of the Com.X GUI. Selecting Options, New and then each of the vendor types, will open a configuration tab, including a drop down list of supported model numbers, as per the image below.
LAN	The interface through which the Com.X should send and receive traffic from this device (Interfaces are enumerated lan1 through to LAN4).
IP	The desired IP address of the phone. If the handset is to receive DHCP, then leave this field blank. Note: If the IP address field is populated, it must contain an IP address that is on the same subnet as the LAN port to which the handset is connected. The IP address should not be in the range of any configured DHCP or comma servers on the Com.X.
PortID	The port identification on the phone. In most scenarios, this should be set to Line-1. If you wish to configure more than one extension on a single handset, you will need to use Line-2, Line-3 and so on. If this field is left blank, the Com.X will add the device and configure it as a free port.
Extension	The extension number to be associated with the selected line on the handset. If this field is left blank, the hardware device will be added and the port will remain a free port.
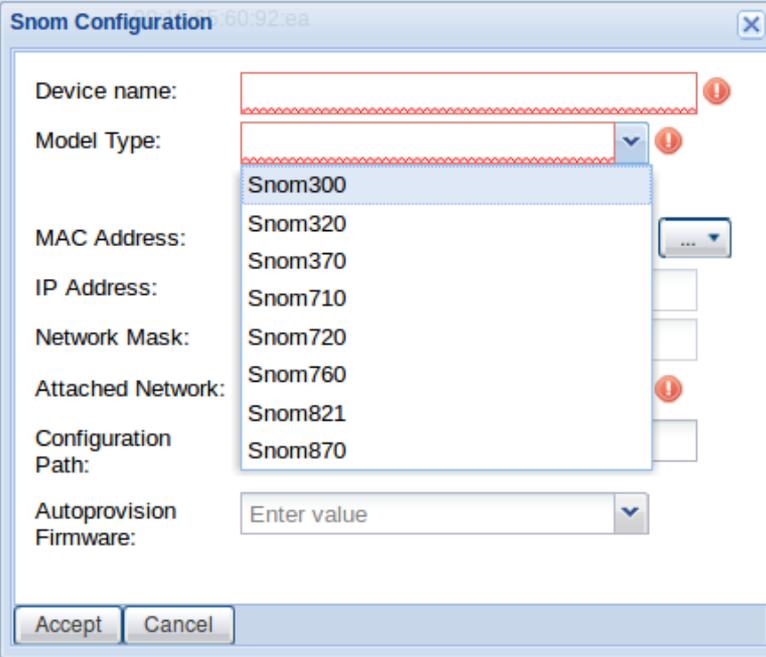
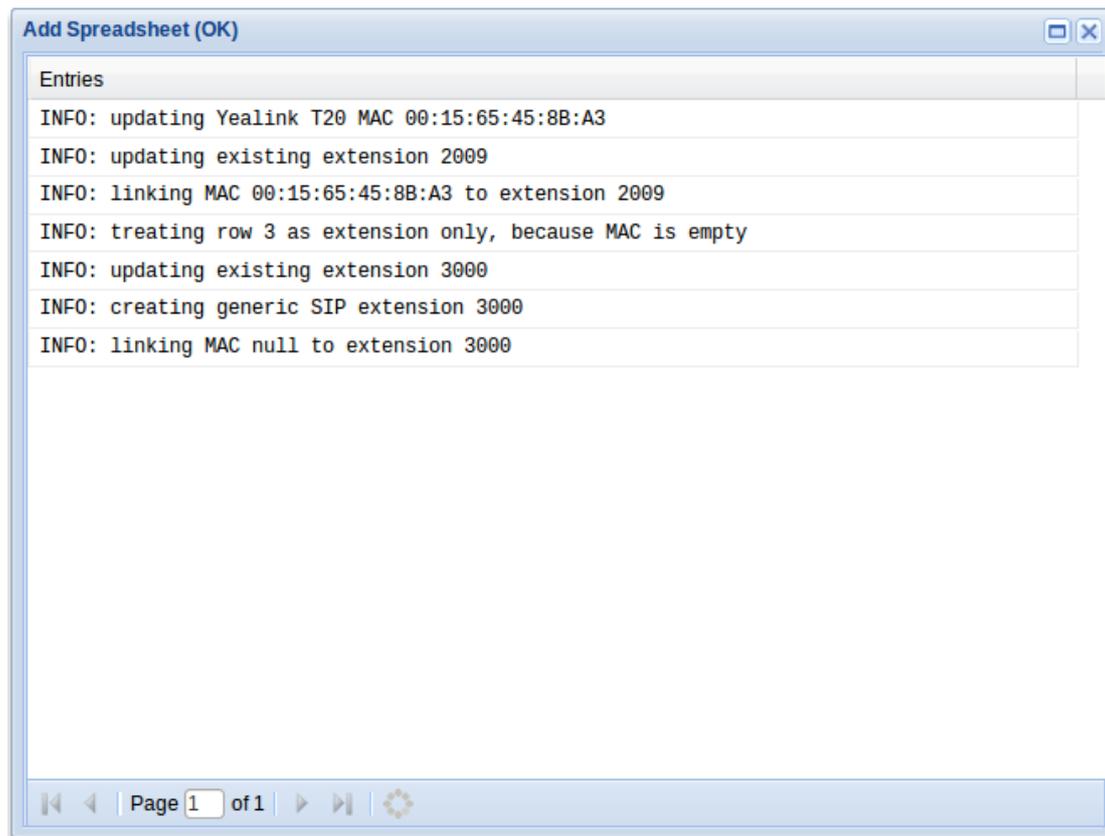| Name	The friendly name of the extension. Often set to be the name of the user of the extension
Voicemail	If set to "Y" voicemail will be enabled.
Pin	The associated pin code of the extension. This code will be required to check voicemail on the extension. If this field is blank, voicemail will be enabled with no password.
Email	An email address associated to the extension. If voicemail to email is enabled, then voicemail messages will be sent to this email address.
Group	If you would like this extension to be included in a pick-up group, include the number of the pick-up group here. All extensions featuring the same number in their group field will be able to answer calls to any other extension in the group using a feature code.
Ringtime	The length of time, in seconds, for which the extension should ring before the call is sent to the failover destination.
Account	An optional account code to be associated with extension. Account codes are often used as tags for billing purposes.
NAT	When enabled, the system ignores the address and port in the SIP and SDP headers and replies to the sender's address and port. This should be enabled when the Com.X is located behind, or acting as, a NAT router
Qualify	If enabled, the system will check the reachability of the handset every 60 seconds.
SipEnabled	If set to Y, the port on the handset will be enabled. If set to N, the port will be disabled.
SipLocalPort	If set to Y the extension on the port attempts to register to the local SIP server(i.e. the Com.X). If set to N, an alternative SIP server IP address can be entered.
SipServer	The IP address of the SIP server. If SIPLocalPort is set to Y, this should be set to the LAN port through which the Com.X connects to the phone, or the switch hosting a number of phones.
SIPUsername	The username as which the SIP port registers with the PBX.
Secret	The password with which the SIP port registers to the SIP server, local or remote.

SIPServerPort	The port through which the phone should connect to the SIP server, defaults to port 5060.
SIPLabel	The label to be displayed on the LCD screen of compatible handsets.
SipUseOutboundProxy	Set to Y if the extension is to use an outbound SIP proxy.
SIPOutboundProxy	The URL of the SIP proxy server to be used.
SipOutboundProxyPort	The port through which the handset connects to the SIP proxy server.
SipCodecs	The codecs to be supported by the extension. Options are shown in the image below:
SipAutoprovisionURL	The url from which the handset should retrieve it's configuration. This field need not be populated if the extension is registering to the local SIP server. If the extension is to register with an external SIP server, the ULR of the server and filepath to the configuration should be entered here.

2.2.2 Uploading the spreadsheet

Once the spreadsheet contains rows configuring all of the required extensions and SIP phones, it can be imported through the GUI and applied into active configuration on the Com.X.

From the hardware panel of the Com.X GUI, first ensure that auto-detect is enabled, then select Options, Spreadsheet, Import.

Use the browse feature to select the spreadsheet from your laptop or PC and accept.

```
Add Spreadsheet (OK)                                                    ☐ ✕

  Entries

  INFO: updating Yealink T20 MAC 00:15:65:45:8B:A3

  INFO: updating existing extension 2009

  INFO: linking MAC 00:15:65:45:8B:A3 to extension 2009

  INFO: treating row 3 as extension only, because MAC is empty

  INFO: updating existing extension 3000

  INFO: creating generic SIP extension 3000

  INFO: linking MAC null to extension 3000






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```

Figure 7: The status of the spreadsheet import is output to the administrator.

The status of your import is shown, including warnings or errors and their causes, if any occur.

Close the import status box and apply the configuration using Review/Apply.