

Grandstream UCM Gamma Config

Brief notes on configuration for a Grandstream UCM 63xx with Gamma SIP trunks.

Nigel Whitfield, August 2024.

1. The UCM has three LAN ports on the back. One is for heartbeat/failover, which I'm ignoring. The others are labelled LAN and WAN. In the default config, they apparently just behave like switch ports.
2. I have assumed that there is a public IP address available for the UCM, and that there is a private network available too, to which all the telephones and other devices are connected.
3. In terms of firewall ports, the range of ports open to traffic has not been changed from the previous 3CX deployment. Obviously, it's wisest to restrict incoming SIP to the Gamma IP ranges, for security.
4. The UCM has a setup wizard, so I'll cover stuff in the same order as that.
5. The default networking behaviour is Switch. However, we want to use it in Route mode. This requires that the WAN port is connected to the public side of your network, with a public IP address, and the LAN port is connected to the private side of the network, with a private IP range. Select Route from the options at the top of the page.
6. In my installation, the WAN port is given a static IP; you could use DHCP, but I set it up manually - choose Static for IP Method, and set the options appropriately.
7. Scroll down and set the LAN options. You could use the UCM as the DHCP server for your LAN, if you don't have any other devices, or you can disable the DHCP server if, as on my LAN, there is already one in use. I have 10.0.1.2 to 10.0.1.200 assigned via my internal router, and gave the UCM the fixed IP of 10.0.1.220.
8. After the LAN options, the setup wizard will take you through time zones and extensions, and on to the Trunks / Routes page. Ignore this step - although you can add a SIP trunk here, it's been slightly simplified, and you won't be able to set the options for Gamma correctly.
9. Finish the wizard, and it will ask you to reboot, since you changed the IP address. When the system is back up again, sign in and select Extension/Trunk -> VoIP Trunks, and click the Add SIP Trunk button at the top of the page.
10. The first option here is the Type setting, which can be either Peer SIP Trunk or Register SIP Trunk. For Gamma, you must select Peer SIP Trunk. Type Gamma as the provider name, and enter the Gamma gateway address under Host name, for example 88.215.51.235:5060

11. Tick the box labelled NAT, and set the Caller ID number to the default number for your trunk, less the initial 0. Set the From domain to the FQDN matching your system's IP address, eg sip.nigelwhitfield.com.

12. On the advanced settings tab, tick 'Send PAI header' so you can set different outbound IDs for different extensions, make sure DID mode is set to Request-line, and tick Enable heartbeat detection.

13. Open PBX Settings -> SIP Settings and click the NAT tab and make sure the External host value is set to the FQDN, eg sip.nigelwhitfield.com

14. If you want to use things like video entry phones, also click the Misc tab, and select Support SIP Video and Enable use of Final SDP

15. To handle incoming calls, go to Extension/Trunk -> Inbound Routes, select your Gamma trunk and click Add. Give the route a name like 'Main'. In the pattern box, enter the DDI number to match, like 02012345678 and select the default destination, eg a ring group, extension, etc. You can set time of day options too, if you like.

16. On Extension/Trunk -> Outbound Routes, you can create the rules for your outbound calls. For example, I have a rule called 'London' which matches NXXXXXXX, and then pre-pends 020 and sends the call to the Gamma trunk, so I can dial London numbers without the 020. You can set an outbound caller ID for each route, if you wish. Or leave it blank, in which case, the ID set for the calling extension will be used.

17. You should probably also add routes to Gamma for 1XX, 1XXXXXX and 0X, so you can dial most PSTN numbers directly, unless you want to have a 'Dial 9 for outside' type of setup.

18. On the Extension settings, each one has a Caller ID number, which can be used to set the ID (which might still be overridden by, for example, the outbound route). Enter the DDI number you want to use, without the leading 0.

19. If you want to use fax, go to Call features -> Fax/T.38. Click add to add a default extension for Fax and specify the email address or addresses that faxes should be delivered to. The Fax Settings button lets you set things like headers for outbound fax and whether to forgo TIFF files for PDF only when faxes are emailed.

20. Back on the Inbound routes page for your SIP trunk, add a new route, enter the DDI number you want to use for Fax, and set the default destination to Fax.

21. As far as I can see the outbound called ID for sending faxes has to be entered each time you sent a fax (done via uploading a PDF at Call features -> Fax Sending

I think that covers pretty much everything for the basics; other stuff, like ring groups, voicemail groups and IVR is left as an exercise for the reader.