



Quarra Configuration Guide for AES67

There are three recommended features to support an AES67 network

1. IGMP Snooping
2. QoS
3. IEEE1588 PTP

IGMP Snooping

Navigate to – “Configuration > IPMC > IGMP Snooping > Basic Configuration” and set the parameters shown below then click save.

IGMP Snooping Configuration

Global Configuration	
Snooping Enabled	<input checked="" type="checkbox"/>
Unregistered IPMCv4 Flooding Enabled	<input type="checkbox"/>
IGMP SSM Range	232.0.0.0 / 8
Leave Proxy Enabled	<input checked="" type="checkbox"/>
Proxy Enabled	<input checked="" type="checkbox"/>

Port Related Configuration

Port	Router Port	Fast Leave	Throttling
*	<input type="checkbox"/>	<input type="checkbox"/>	<>
1	<input type="checkbox"/>	<input type="checkbox"/>	unlimited
2	<input type="checkbox"/>	<input type="checkbox"/>	unlimited
3	<input type="checkbox"/>	<input type="checkbox"/>	unlimited
4	<input type="checkbox"/>	<input type="checkbox"/>	unlimited
5	<input type="checkbox"/>	<input type="checkbox"/>	unlimited
6	<input type="checkbox"/>	<input type="checkbox"/>	unlimited
7	<input type="checkbox"/>	<input type="checkbox"/>	unlimited
8	<input type="checkbox"/>	<input type="checkbox"/>	unlimited
9	<input type="checkbox"/>	<input type="checkbox"/>	unlimited
10	<input type="checkbox"/>	<input type="checkbox"/>	unlimited

Navigate to – “Configuration > IPMC > IGMP Snooping > VLAN Configuration”. Click “Add new IGMP VLAN” and set the parameters shown below then click save.

IGMP Snooping VLAN Configuration

Start from VLAN 1 with 20 entries per page.

Delete	VLAN ID	Snooping Enabled	Querier Election	Querier Address	Compatibility	PRI	RV	QI (sec)	QRI (0.1 sec)	LLQI (0.1 sec)	URI (sec)
<input type="button" value="Delete"/>	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.0.0.0	Forced IGMPv2	0	2	125	100	10	1

If more than one switch is used you will need to decide which one will act as Querier



QoS

Navigate to – “Configuration > QoS > Port Classification” and set the parameters shown below then click save.

QoS Ingress Port Classification

Port	CoS	DPL	PCP	DEI	Tag Class.	DSCP Based	Address Mode
*	<>	<>	<>	<>		<input checked="" type="checkbox"/>	<>
1	0	0	0	0	Disabled	<input checked="" type="checkbox"/>	Source
2	0	0	0	0	Disabled	<input checked="" type="checkbox"/>	Source
3	0	0	0	0	Disabled	<input checked="" type="checkbox"/>	Source
4	0	0	0	0	Disabled	<input checked="" type="checkbox"/>	Source
5	0	0	0	0	Disabled	<input checked="" type="checkbox"/>	Source
6	0	0	0	0	Disabled	<input checked="" type="checkbox"/>	Source
7	0	0	0	0	Disabled	<input checked="" type="checkbox"/>	Source
8	0	0	0	0	Disabled	<input checked="" type="checkbox"/>	Source
9	0	0	0	0	Disabled	<input checked="" type="checkbox"/>	Source
10	0	0	0	0	Disabled	<input checked="" type="checkbox"/>	Source

Save Reset

Navigate to – “Configuration > QoS > DSCP-Based QoS” and set the parameters shown below then click save.

34 (AF41)	<input checked="" type="checkbox"/>	4	0
35	<input type="checkbox"/>	0	0
36 (AF42)	<input type="checkbox"/>	0	0
37	<input type="checkbox"/>	0	0
38 (AF43)	<input type="checkbox"/>	0	0
39	<input type="checkbox"/>	0	0
40 (CS5)	<input type="checkbox"/>	0	0
41	<input type="checkbox"/>	0	0
42	<input type="checkbox"/>	0	0
43	<input type="checkbox"/>	0	0
44	<input type="checkbox"/>	0	0
45	<input type="checkbox"/>	0	0
46 (EF)	<input checked="" type="checkbox"/>	7	0

The default DSCP tags in AES67 are 46(EF) for PTP and 34(AF41) for RTP audio. These values may vary or be configurable in various products so please check before configuring QoS.

AES67 recommends that PTP takes the highest QoS Class 7, we recommend moving the rtp audio up above general traffic at Class 0. In this example we have used Class 4.

You may have other traffic which requires QoS Classification but please reserve Class 7 for PTP Only.



IEEE1588 PTP Transparent Clock.

Navigate to – “Configuration > PTP” then Click “Add new PTP clock”. Set the parameters shown below then click save.

PTP External Clock Mode

One_PPS_Mode	Output
External Enable	False
Adjust Method	LTC frequency
Clock Frequency	1

PTP Clock Configuration

Delete	Clock Instance	Device Type	Profile
Delete	0	E2eTransp	No Profile

Click the “0” under Clock Instance. Select the ports required and other parameters outlined below. DSCP is set to 46(EF) the AES default. Click Save to set parameters.

PTP Clock's Configuration and Status

Clock Type and Profile

Clock Instance	Device Type	Profile	Apply Profile Defaults
0	E2eTransp	No Profile	n/a

Port Enable and Configuration

Port Enable										Configuration
1	2	3	4	5	6	7	8	9	10	Ports Configuration
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Local Clock Current Time

PTP Time	Clock Adjustment method	Synchronize to System Clock
1970-01-01T04:31:51+00:00 374,943,740	Internal Timer	<input type="button" value="Synchronize to System Clock"/>

Clock Current DataSet

stpRm	Offset From Master	Mean Path Delay
0	0.000,000,000	0.000,000,000

Clock Parent DataSet

Parent Port ID	Port	PStat	Var	Rate	GrandMaster ID	GrandMaster Clock Quality	Pri1	Pri2
00:50:c2:ff:fe:39:e9:f0	0	False	0	0	00:50:c2:ff:fe:39:e9:f0	Cl:251 Ac:Unknwn Va:65535	128	128

Clock Default DataSet

ClockId	Device Type	2 Step Flag	Ports	Clock Identity	Dom	Clock Quality
0	E2eTransp	False	10	00:50:c2:ff:fe:39:e9:f0	0	Cl:251 Ac:Unknwn Va:65535

Pri1	Pri2	Protocol	One-Way	VLAN Tag Enable	VID	PCP	DSCP
128	128	IPv4Multi	False	False	1	0	46

Clock Time Properties DataSet

UtcOffset	Valid	leap59	leap61	Time Trac	Freq Trac	ptp Time Scale	Time Source
0	False	False	False	False	False	True	160

Filter Parameters

Filter Type	Delay Filter	Period	Dist
Basic	6	1	2

Servo Parameters

Display	P-enable	I-enable	D-enable	'P' constant	'I' constant	'D' constant
False	True	True	True	3	80	40



Saving Configuration.

Navigate to – “Maintenance > Configuration > Save Startup-config” then Click “Save Configuration”. This will save your profile to the boot memory, **failure to do this will result in the loss of configuration after a power cycle.**

Please email support@arg.co.uk with the subject AES67 Transparent PTP profile if you would like a copy of the profile created in this document. Or check the USB stick that was delivered with the unit.

Loading a profile

Reset the unit to default, navigate to - “Maintenance > Factory Defaults” then click “Yes”. Your IP address will be maintained **all other configuration will be lost.**

Navigate to – “Maintenance > Configuration > Upload” then Click “browse” and select the file. Click “running-config” and “merge” then click “upload configuration”

Upload Configuration

File To Upload

AES67 transparent PTP profile

Destination File

File Name	Parameters
<input checked="" type="radio"/> running-config	<input type="radio"/> Replace <input checked="" type="radio"/> Merge
<input type="radio"/> startup-config	
<input type="radio"/> Create new file	<input type="text"/>

Use this profile as template and tweak if necessary, remember to follow the Saving Configuration guide above to save your profile to boot memory.

Note: This document and associated profile is based on software version ARG.3.65.1.7.