

DSP Failure Issue

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Introduction and Purpose

The purpose of this guide is to provide list of reason of DSP Failure and how to troubleshoot the same.

VEGA GUI shows DSP Related information under "**Media**" section of "**Status**" Tab (i.e. **Status -> Media**) as shown below:

The screenshot shows the Vega High Density FXS GW Configuration GUI. The browser address bar displays 'localhost Vega High Den' and '192.168.3.141/vsframe?sid=476904303&frame_id=129'. The page title is 'Vega High Density FXS GW Configuration'. The left sidebar contains a navigation menu with 'Status' highlighted. The main content area is divided into several sections: System Status, Registrar and Proxy, Media, Calls, LAN, SIP Registrations, Interfaces, and Time and Date. The 'Media' section is highlighted with a red box and shows 'DSP Status' as 'ACTIVE'. The 'Calls' section shows 'Answered' and 'Total' counts as 0. The 'Time and Date' section shows the current time as 12:46:12 and the date as 08/03/2017.

System		LAN	
Product version	Vega High Density FXS	IP Address LAN 1	192.168.3.141
Serial Number	0050582046fc	IP Address unknown device	
Firmware File	VEGAARM_R111S007	LAN Gateway	192.168.3.1
Show	Version Information	Show	License Information
Show	LAN Information	Show	Switch Information

Registrar and Proxy		SIP Registrations	
Domain	192.168.3.111	Registered Users	0 of 24 users registered
Proxy	192.168.3.111	Show	SIP Registrations
Registrar	192.168.3.111		
Outbound Proxy	0.0.0.0		

Media		Interfaces	
DSP Status	ACTIVE	FXS	3 of 24 in service
Show	DSP Information	Show	Port Information

Calls		Time and Date	
Answered	0	Time (hh:mm:ss)	12:46:12
Total	0	Date (dd/mm/yyyy)	08/03/2017
Show	Call Information		

Now, Media section basically has two different sections:

1. DSP Status
2. DSP Information

DSP Status

DSP status show the status of DSP on VEGA i.e. whether DSP is **Active** state or DSP state is **FAILED** as shown below:

localhost Vega High Den x

192.168.3.141/vsframe?sid=1377075565&frame_id=129

Vega High Density FXS GW Configuration

Host Name localhost
IP Address 192.168.3.141
User Name admin

System Status

System		LAN	
Product version	Vega High Density FXS	IP Address LAN 1	192.168.3.141
Serial Number	0050582046fc	IP Address unknown device	
Firmware File	VEGAARM_R111S007	LAN Gateway	192.168.3.1
Show Version Information	Show License Information	Show LAN Information	Show Switch Information

Registrar and Proxy		SIP Registrations	
Domain	192.168.3.111	Registered Users	0 of 24 users registered
Proxy	192.168.3.111	Show SIP Registrations	
Registrar	192.168.3.111		
Outbound Proxy	0.0.0.0		

Media		Interfaces	
DSP Status	ACTIVE	FXS	3 of 24 in service
Show DSP Information		Show Port Information	

Calls		Time and Date	
Answered	0	Total	0
Show Call Information		Time (hh:mm:ss)	12:52:41
		Date (dd/mm/yyyy)	08/03/2017

Save

Warnings(5)

Log off

DSP Information

DSP Information will provide all the necessary information with respect to DSP channels status etc if active else provide the reason for DSP Failure.

DSP information when **DSP Status** is **Active** as shown below:

localhost Vega High Den X

192.168.3.141/vsframe?sid=1377075565&frame_id=129



Vega High Density FXS GW Configuration

Status

Quick Config

Expert Config

System

Logging

LAN/WAN

POTS

Dial Plan

Media

Tones

SIP

ENP

QoS Statistics

Supp.Services

Advanced

Save

Warnings(5)

Log off

Reboot System

Registrar and Proxy

Domain	192.168.3.111
Proxy	192.168.3.111
Registrar	192.168.3.111
Outbound Proxy	0.0.0.0

Media

DSP Status **ACTIVE**

DSP Information

Available DSP Image Builds

Build: OCT; Longest Echo Tail: 128ms; Max Channels: 120/0
CODECS: G729,G729AnnexA,G723.1,G711Alaw,G711Ulaw,G726,GSM,T38,Clear

Ch	Status	InUse	Image	A/ULaw	Ver	TS	Mode	Codec

0000	READY	N	OCT	A	0201			
0001	READY	N	OCT	A	0201			
0002	READY	N	OCT	A	0201			
0003	READY	N	OCT	A	0201			
0004	READY	N	OCT	A	0201			
0005	READY	N	OCT	A	0201			
0006	READY	N	OCT	A	0201			
0007	READY	N	OCT	A	0201			
0008	READY	N	OCT	A	0201			
0009	READY	N	OCT	A	0201			
000A	READY	N	OCT	A	0201			
000B	READY	N	OCT	A	0201			
000C	READY	N	OCT	A	0201			
000D	READY	N	OCT	A	0201			
000E	READY	N	OCT	A	0201			
000F	READY	N	OCT	A	0201			
0010	READY	N	OCT	A	0201			
0011	READY	N	OCT	A	0201			
0012	READY	N	OCT	A	0201			
0013	READY	N	OCT	A	0201			
0014	READY	N	OCT	A	0201			
0015	READY	N	OCT	A	0201			
0016	READY	N	OCT	A	0201			
0017	READY	N	OCT	A	0201			
0018	READY	N	OCT	A	0201			

DSP information when DSP Status is FAILED as shown below:

The screenshot shows the Vega 200G GW Configuration web interface. The DSP Status is 'FAILED'. A red box highlights the 'DSP Information' section, which contains the following details:

Available DSP Image Builds

Build: OCT; Longest Echo Tail: 128ms; Max Channels: 120/0
CODECS: G729,G729AnnexA,G723-1,G711A1aw,G711U1aw,G726,GSM,T38,CLear

Ch	Status	InUse	Image	A/ULaw	Ver	TS	Mode	Codec
00*	SWFAIL							DSP image download failed

DSP Failure Reason

There can be number of reason of DSP Failure as stated below:

1. Hardware Failure (HWFAIL)
2. Unavailable (UNAVAIL)
3. DSP Image download failure (SWFAIL)
4. DSP stopped responding (SWFAIL)
5. DSP disabled (UNAVAIL)
6. DSP fatal runtime error (SWFAIL)

NOTE: UNAVAIL stands for **Unavailable**, **HWFAIL** stands for **Hardware Failure** and **SWFAIL** stands for **Software Failure**

Troubleshoot DSP Failure

As explained DSP Failure may be due to multiple reason. Now if order to troubleshoot DSP failure there are two steps:

Step 1) Check if the Failure is due to DSP Upgrade is required

Step 2) Take appropriate action Depending upon **Step 1**.

Step 1) Check if DSP Failure is due to DSP upgrade Required?

If DSP is Failed due to DSP Upgrade then in such case **DSP Upgrade** button with a help button will appear on to VEGA GUI in front of **DSP Status** as shown below:

The screenshot shows the Vega 200G GW Configuration web interface. The browser address bar displays `localhost Vega 200G Onl x` and `192.168.3.113/vsframe?sid=740821281&frame_id=129`. The page title is "Vega 200G GW Configuration".

Host Name: localhost
 IP Address: 192.168.3.113
 IP Address: 192.168.168.2
 User Name: admin

Serial Number: 000008203200
 Firmware File: VEGA_R110SDSPUG.4.a
 IP Address LAN 2: 192.168.168.2
 LAN Gateway: 192.168.3.1

Buttons: Show Version Information, Show License Information, Show LAN Information, Show Switch Information

Registrar and Proxy
 Domain: default-reg-domain.com
 Proxy: 192.168.3.176
 Registrar: default-proxy-1.com
 Outbound Proxy: 0.0.0.0

SIP Registrations
 Registered Users: 0 of 2 users registered
 Button: Show SIP Registrations

Media
 DSP Status: **FAILED** (with a question mark icon) **Upgrade DSP** (highlighted with a red box)
 Button: Show DSP Information

Interfaces
 E1/T1: 2 of 2 in service
 Button: Show Port Information

Calls
 Answered: 0 Total: 0
 Button: Show Call Information

Time and Date
 Time (hh:mm:ss): 12:52:10
 Date (dd/mm/yyyy): 08/03/2017

Useful Links
[Show Plan](#), [Show Paths](#), [Show Log](#), [Show Support](#), [Show Config Changes](#), [Show System Stats](#)

CWMP/TR-069
 Show Status: ACS
 Disconnected
 Buttons: Show Config, Show Config Logs, Show Client Logs

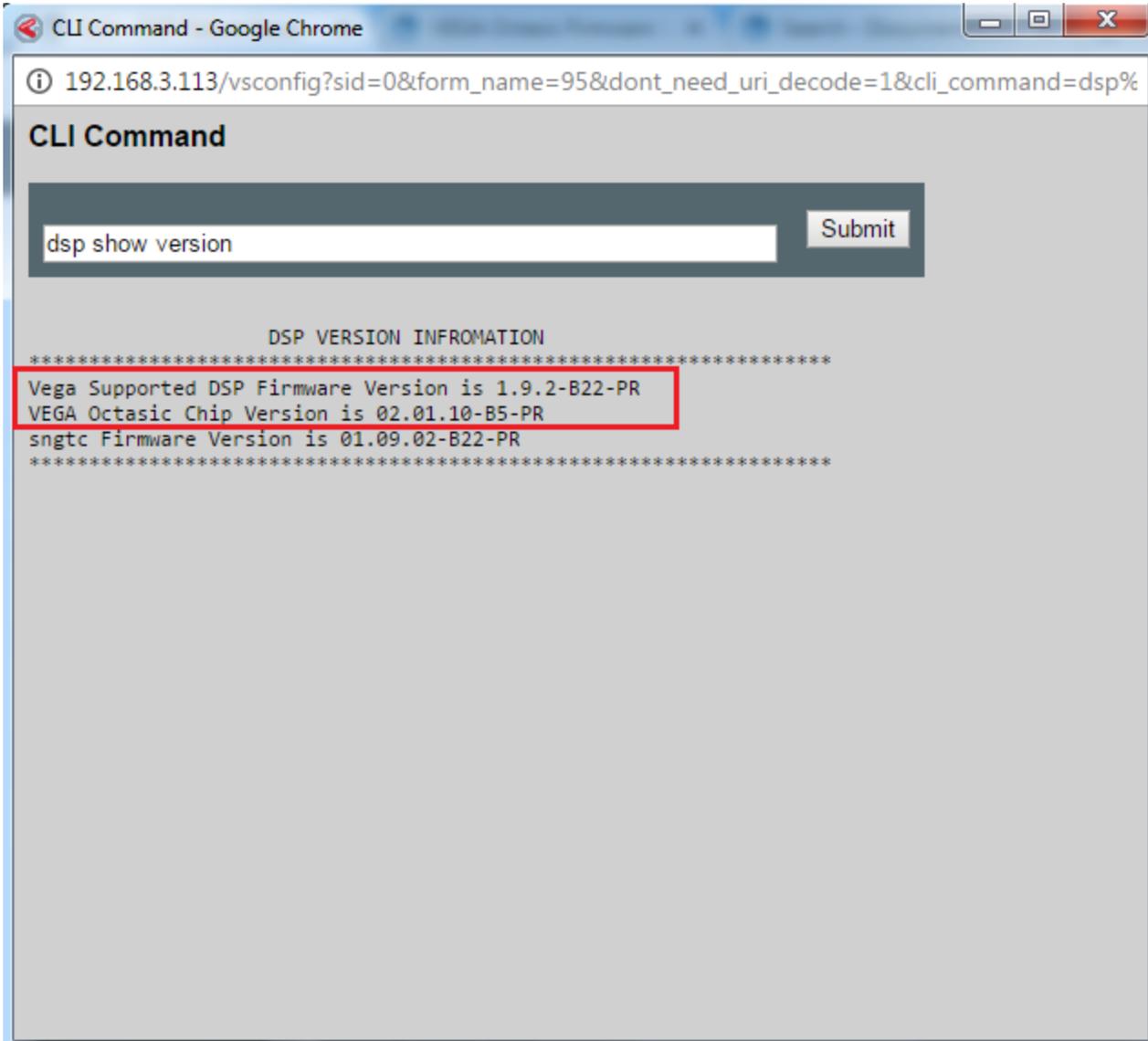
Left sidebar menu: Status, Quick Config, Expert Config, System, Logging, LAN/WAN, E1/T1, Dial Plan, Media, Tones, SIP, ENP, QoS Statistics, Advanced, Save, Warnings(5), Log off, Reboot System.

In order to get further information with respect to the same please refer to **DSP Upgrade**

To confirm DSP Failure is due because mismatch of DSP version please goto "**CLI Command**" Option as present with in "**Advanced**" Tab and type "**dsp show version**" (i.e. **Advanced** -> **CLI Command**) as shown below:

The screenshot shows the Vega 200G GW Configuration web interface. The browser address bar displays `localhost Vega 200G Onli x` and `192.168.3.113/vsframe?sid=740821281&frame_id=129`. The page title is "Vega 200G GW Configuration". In the top right corner, system information is displayed: Host Name: localhost, IP Address: 192.168.3.113, IP Address: 192.168.168.2, and User Name: admin. A left-hand navigation menu includes items like Status, Quick Config, Expert Config, System, Logging, LAN/WAN, E1/T1, Dial Plan, Media, Tones, SIP, ENP, QoS Statistics, and Advanced (highlighted with a red box). Below the menu are buttons for Save, Warnings(5), Log off, and Reboot System. The main content area is titled "Advanced" and contains several sections: "Blocking" with a text input for "Blocking Cause Code" containing "34"; "LAN Parameters" with a checked "RTP Checksum" checkbox and a "Submit" button; "Temperature Alert Action" with a dropdown menu set to "none" and a "Submit" button; "Cause Codes" with a "Show Cause Mapping" link; "Boot Manager" with a "Change Active Boot Partition" link; and "CLI Command" (highlighted with a red box) with a text input containing "dsp show version" and a "Submit" button. Below the CLI Command input, there is a link that says "help. show all options".

Now, Check if the output of above command has different "**VEGA Supported DSP Firmware Version**" and "**VEGA Octasic Chip Version**" then we are sure the the cause of DSP Failure is mismatch of DSP version and DSP upgrade is required as shown below:



NOTE: The same command can be executed on VEGA CLI in order to get the same output.

Step 2) Take appropriate action

Now if the DSP Failure is due to mismatch of DSP version i.e. DSP upgrade is required then please follow the steps as stated here: [DSP Upgrade Procedure](#)

It might be possible that the DSP Upgrade itself get failed.

Troubleshoot DSP Upgrade Procedure Failure

The possible reason of DSP Upgrade Failures are:

1. Invalid DSP Firmware uploaded
2. Checksum mismatch
3. Improper Space present on VEGA in order to upload DSP

Invalid DSP Firmware / CheckSum Mismatch

In case of **Invalid DSP Firmware Uploaded** and **Checksum mismatch** the UI should display proper information on to VEGA screen this means that that either the DSP Firmware has been uploaded on to VEGA or the DSP Firmware is not properly copied on to VEGA.

DSP Failure due to no space available on to VEGA

It is possible that the DSP Upgrade Procedure will get Failed with no proper information present on to the VEGA GUI. In such case please follow below steps:

- Try to uploaded DSP Firmware manually using SCP operation on to VEGA **/tmp/** folder via 2022 port (either using winscp from windows or using scp command from linux)
one can enable 2022 port on to VEGA as provided in [Advanced Debugging link](#)
- Now if the scp if failed due to space not available on to vega then check if there is any **core** file present in **/** folder or any invalid file present within VEGA on VEGA then remove the same and try upgrade procedure again. If still the DSP Upgrade procedure is failed the please contact sangoma support.

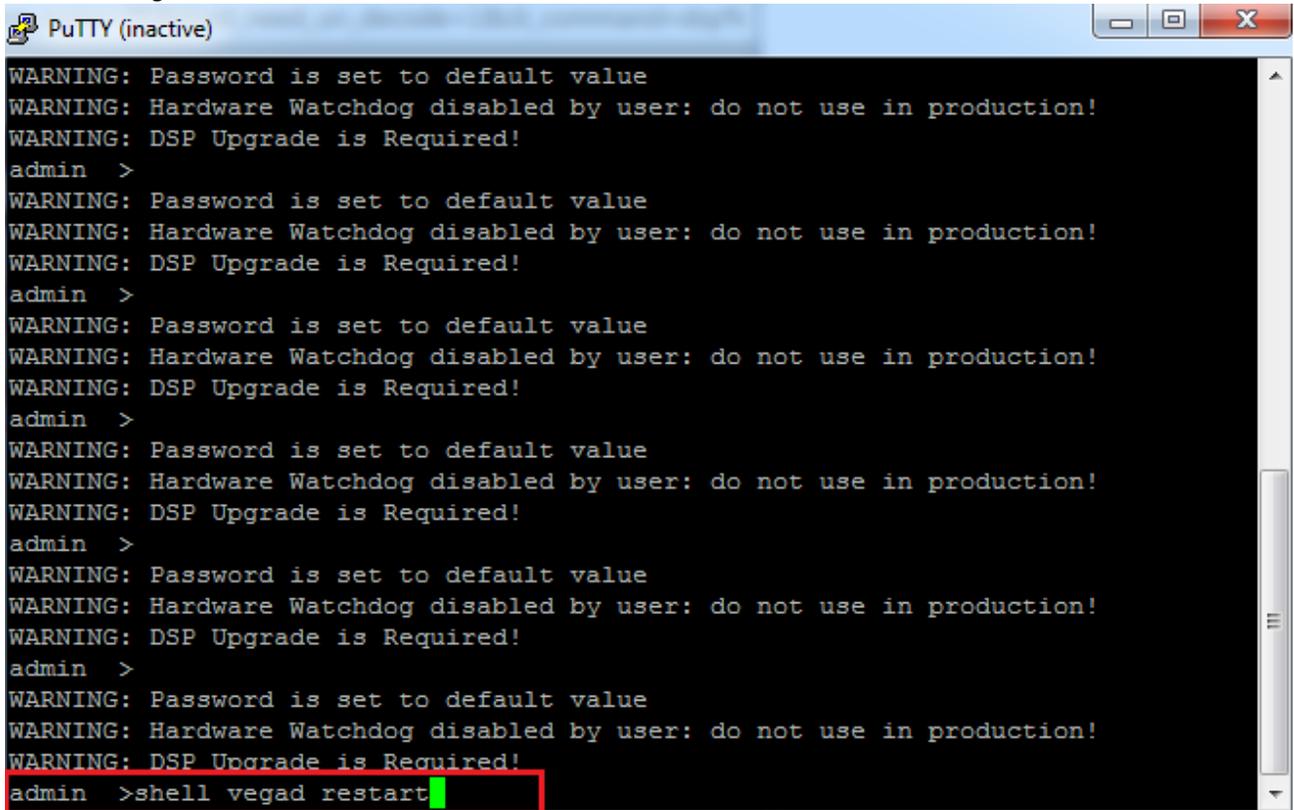
NOTE

In order to avoid such situations it is preferred to run below commands before Upgrade DSP:

- 1) Take backup of the current configuration
- 2) factory reset the VEGA box
- 3) Reboot VEGA box
- 4) Upgrade DSP
- 5) Upload the backed up configuration once DSP upgrade is successful

If DSP Failure is is not because of DSP Upgrade required then follow below steps:

- Logon to vega console and start pcap capture as stated here: [How to Take pcap capture on VEGA](#)
- Now, issue below command on vega cli:
admin>shell vegad restart



- Once this is done and vega is up again i.e after 3 to 4 minutes stop the pcap trace
- Now, raise a ticket with the pcap attached sangoma support support.sangoma.com and the issue details.