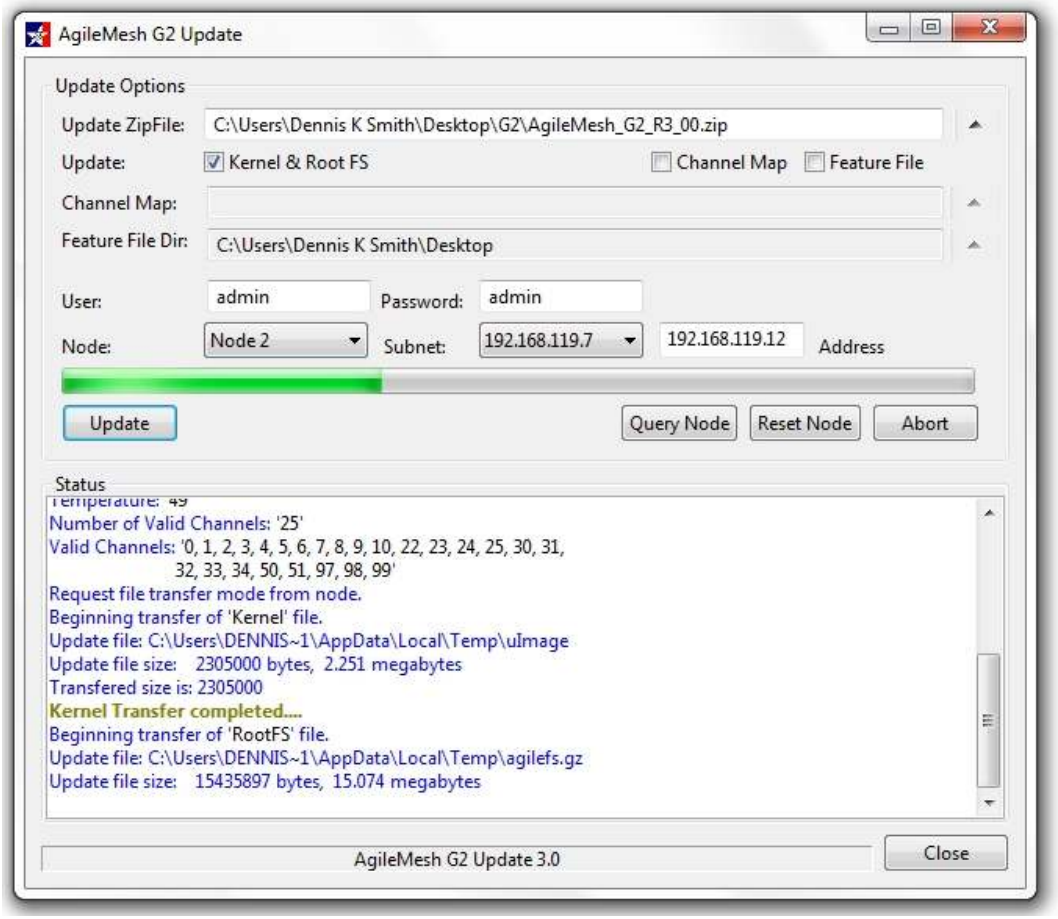
AgileMesh

AgileMesh Update Utility

User's Guide



Version 3.X

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Introduction

The AgileMesh Update Utility is used to:

- Update the software on an AgileMesh node
- Add or update the Channel Map
- Enable newly purchased features on an AgileMesh node
- Query a node for current software version
- Get the MAC address of a node
- Remotely reset a node

Channel Maps, Node Feature files and Node Software files are used when an Update is required. Example file names are listed below.

File Type	Example file name
Channel Map	DEFAULT Channel Map.cmf
Node Feature File	NodeFeatureFile_000060.nff
Node Software	3.1.zip

A Channel Map file is used to set the radio transmit and receive frequency, the Mesh ID and the Mesh Password (encryption key) for each AgileMesh channel. There are 97 channels (0 to 96) that are user defined. All AgileMesh nodes are shipped with a default channel map file.

A Node Feature File is used to enable software features on a node that has been shipped to a customer. **IF** the underlying hardware supports the feature to be added, the feature can be enabled remotely by updating the Feature File. As an example, audio can be added to a node if the hardware shipped supports audio.

Node Software is a zip file that is given the name of the upgrade version (i.e. 3.1.zip). It is not necessary to un-zip the Node Software file.

The AgileMesh Update utility runs on Windows XP and Windows 7 operating systems.

Note: The AgileMesh Update utility must be run on the same subnet as AgileMesh nodes and will not operate through an AV3000 Network Bridge.

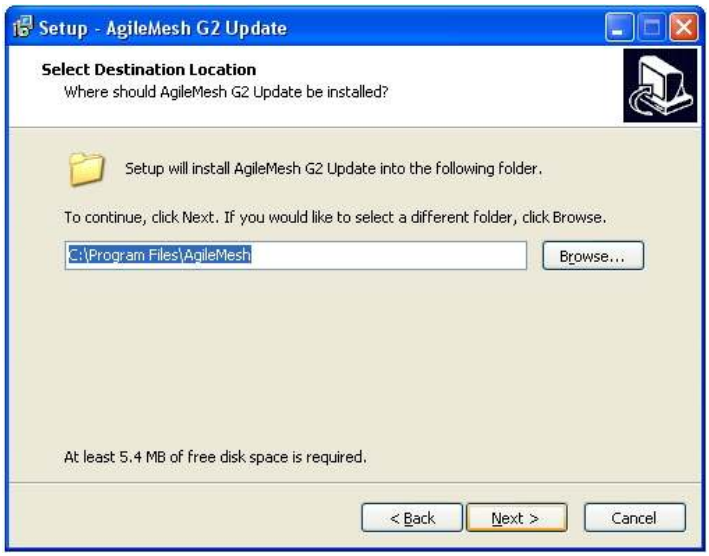
Software Installation

> Fact:
> **Use "Add/Remove Programs" in the Windows Control Panel to remove a previously installed version of the AgileMesh Update Utility before installing a newer version.**

Use the AgileMesh Master Installer CD or download the AgileMesh G2 Installer from the AgileMesh website (Products → Software → login. (Contact AgileMesh to get a unique login and password.)

Double-click on the "AgileMesh G2 Installer 3.X ISO image " link to burn the image to a CD or double-click on the "AgileMesh G2 Installer 3.X" link to download a ZIP file.

Select "AgileMesh G2 Update 3.X" and click the "Next" button to start the install of the G2 Update application.



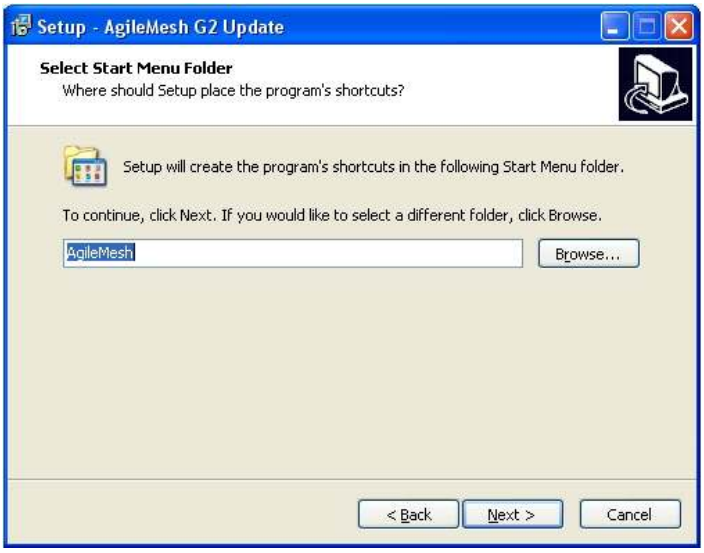
Click the "Next" button to install the AgileMesh Update Utility in the default location (RECOMMENDED).

Click "Next" button

[Optionally, click on "Browse" to select the location to install the Viewer.]

Note: The default directory is recommended.

If other AgileMesh products were previously installed on this PC, this message may appear. Click the "Yes" button and proceed with the installation.

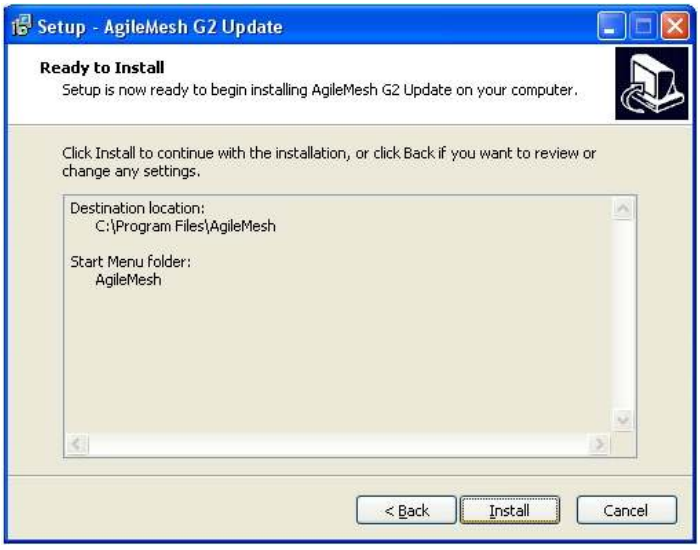


Select the Start Menu Folder.

Note: The default folder is recommended

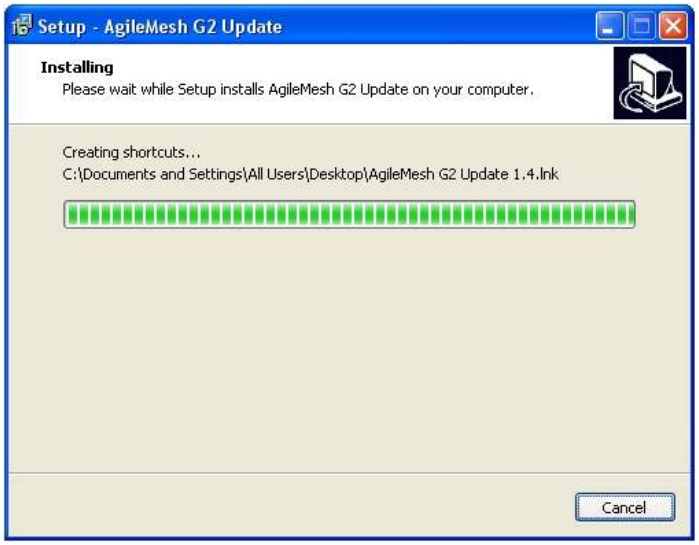
Click "Next >" button.

.



If the "Destination Location" and "Start Menu folder" are correct:

Click "Install"



Wait until the progress bar is completely filled (installation complete).

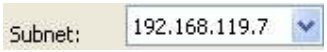
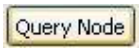
To cancel it, click “Cancel” button.

Installation is complete.

Click the “Finish” button.

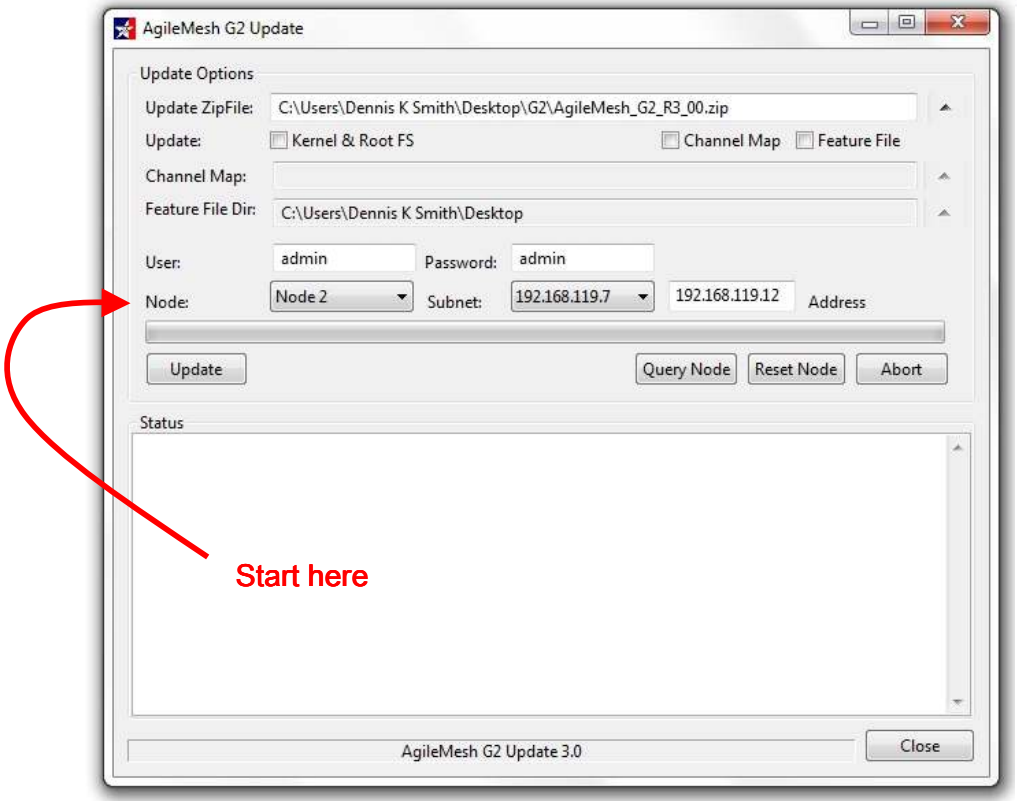
Update Utility Overview

Descriptions of the check boxes and fields on the update application are listed below.

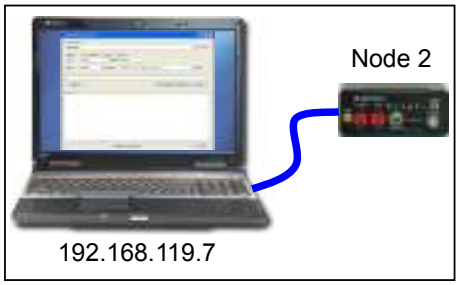
	Select the location of the node software file used to update an AgileMesh node
	Check the appropriate box to update a node.
	The default User name is "admin", the default password is "admin".
	Select the node number of the unit to be updated.
	Select the subnet on the PC connected to the unit to be updated. The default subnet of an AgileMesh node is 192.168.119.XX
	The default node addresses are listed in Appendix 1.
	The progress bar indicates the portion of the update completed.
	Click this button to start the update.
	Click this button to display the current Software and Firmware versions.
	Click this button to reset the node.
	Click this button to stop the update.
	Close this application.

Update Node Software

Locate and double-click on the desktop icon for the AgileMesh Update Utility to bring up the application. No login or password is required.



Connect a PC with the Update software application installed to the node that is to be updated. The PC should be on the same subnet as the AgileMesh node. The default subnet is 192.168.119.



From the drop down menu, select the node number of the unit to be updated.

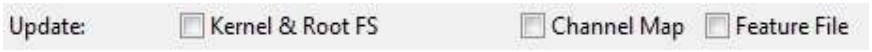
Select the subnet on the attached PC that matches the subnet of the AgileMesh node to be updated. Appendix 1 list the default IP address for AgileMesh nodes.

Note:

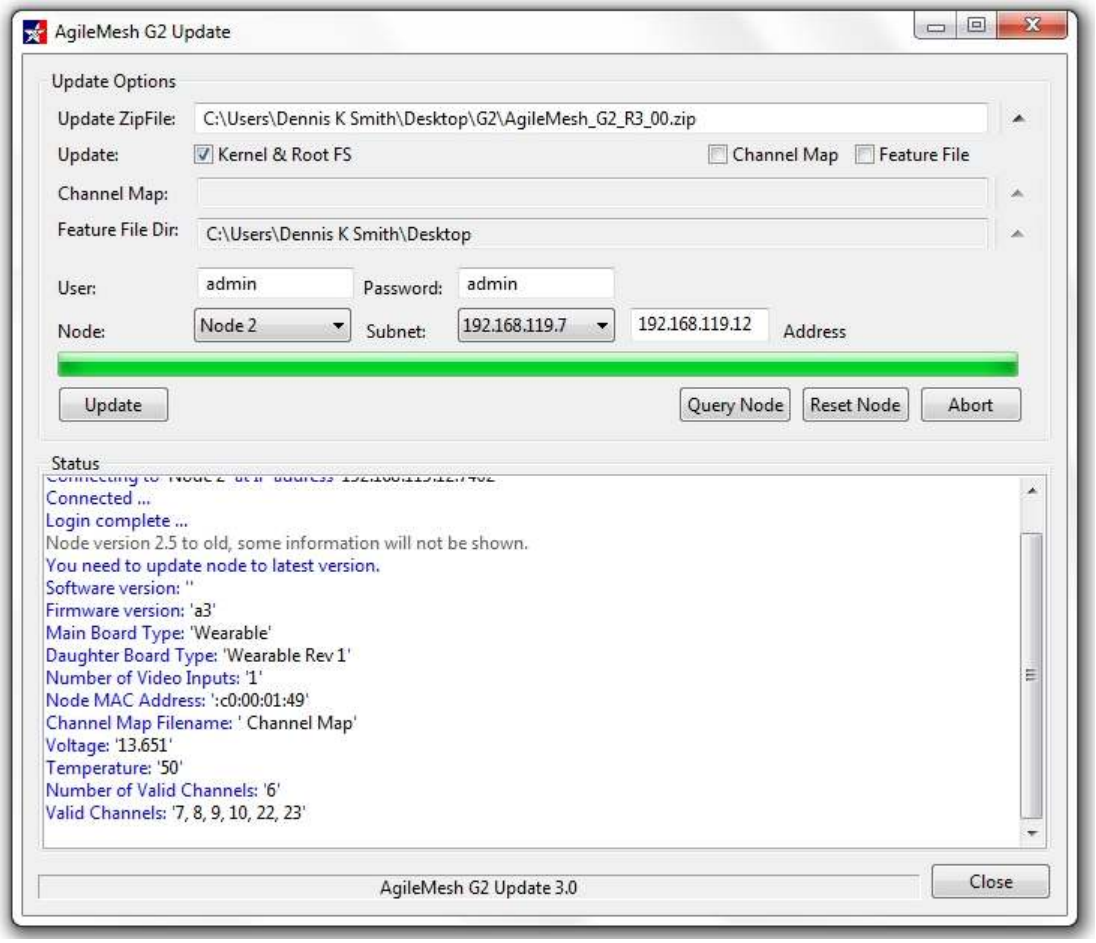
The AgileMesh node must have bridging enabled (default from the factory) to update. Browse to the Node IP address, login and select the "Network Settings" web page.

The default address of the node will be displayed for the selected node.

On the “Update ZipFile:” line, click on the browse button to select the location of the file to update on the AgileMesh node. Check the “Kernel and Root FS” to update the node software.



Click on “Query Node” to read the current node Software version, Board Type, Channel Map Filename and Firmware version. See below.

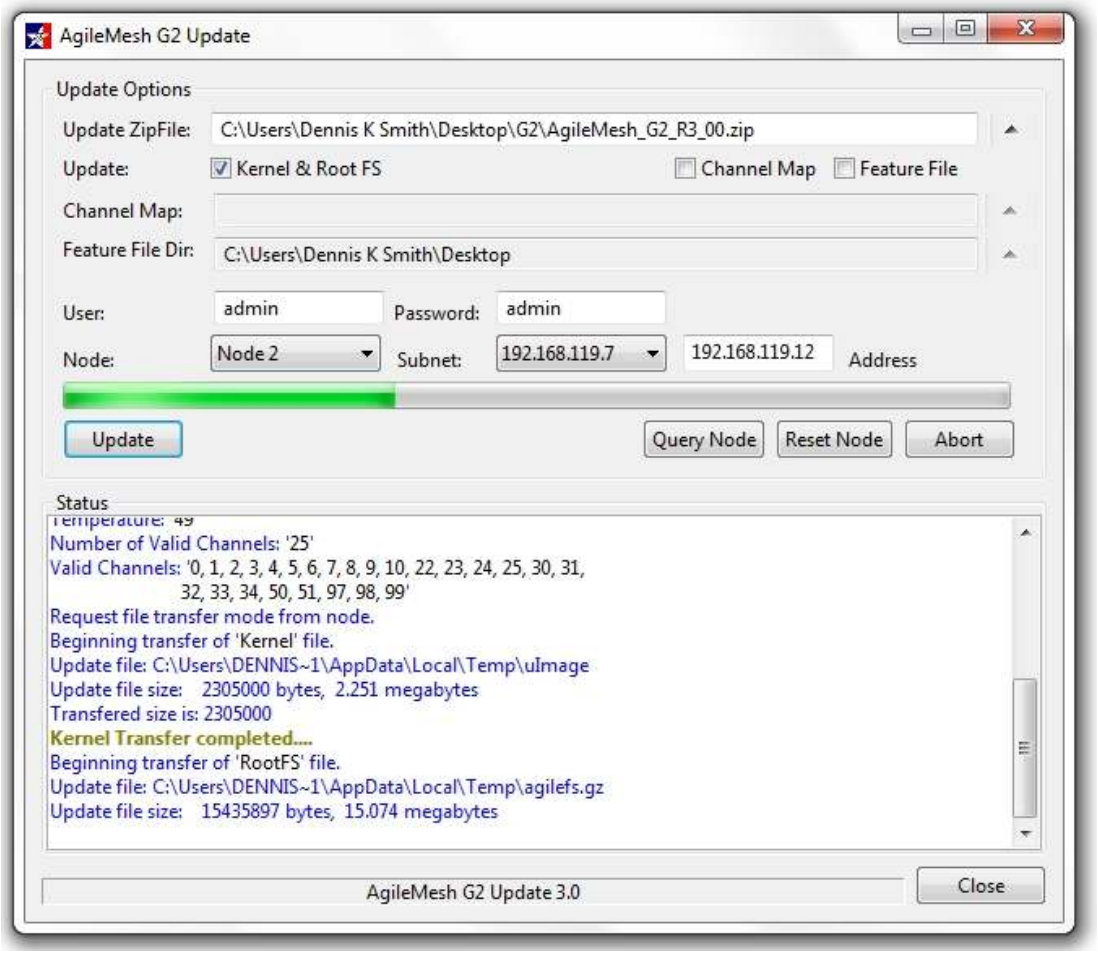


Notice the “Software version” is 2.5 before the update to 3.00 (see “Update ZipFile” above).

Select “Kernel & Root FS” and click the button to begin the update process.

Note: DO NOT disconnect the node from the PC or remove power or turn off the node until the update process is complete.

Two files will be downloaded. The kernel is a 2 MB+ file and the Root File System is a 15 MB+ file. An in-progress update is shown below.



Because the “Kernel & Root FS” check box was selected, both files will be downloaded to the node. The node will reboot and be ready for use within two minutes.

Notice:

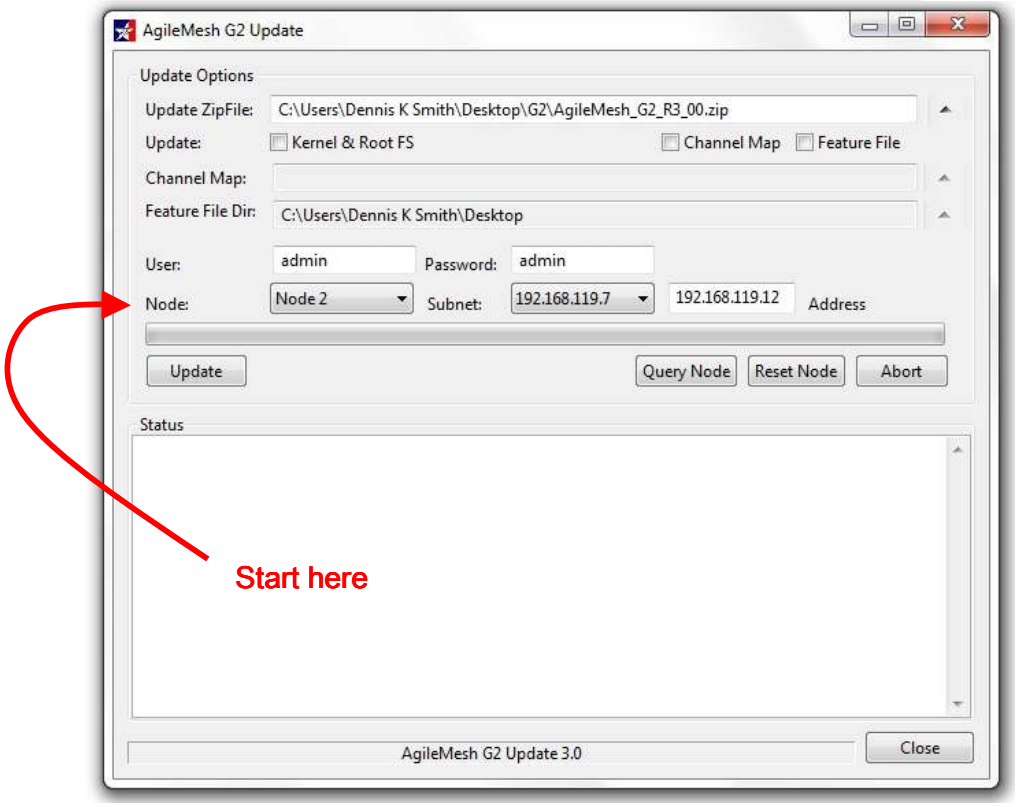
The zip file from AgileMesh contains a matched Kernel and Root File System for the update. The filename will indicate the version number. Do not un-Zip the file.

Information:

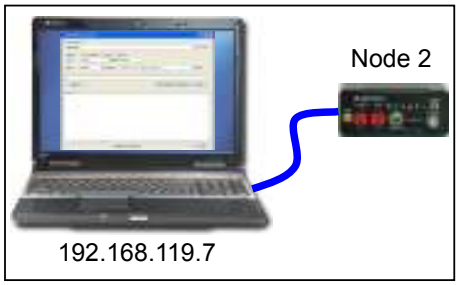
A node (or nodes) can be updated “over the air” as long as the wireless connection can be maintained and the remote node is continuously powered up.

Update Node Channel Map

Locate and double-click on the desktop icon for the AgileMesh Update Utility to bring up the application. No login or password is required.



Connect a PC with the Update software application installed to the node that is to be updated. The PC should be on the same subnet as the AgileMesh node. The default subnet is 192.168.119.



From the drop down menu, select the node number of the unit to be updated.

Select the subnet on the attached PC that matches the subnet of the AgileMesh node to be updated. Appendix 1 list the default IP address for AgileMesh nodes.

Note:

The AgileMesh node must have bridging enabled (default from the factory) to update. Browse to the Node IP address, login and select the "Network Settings" web page.

The default address of the node will be displayed for the selected node.

On the “Channel Map:” line, click on the browse button to select the location of the channel map to update on the AgileMesh node. Check the “Channel Map” box and then

to install a new Channel Map. The new Channel Map will take effect when the node is rebooted.

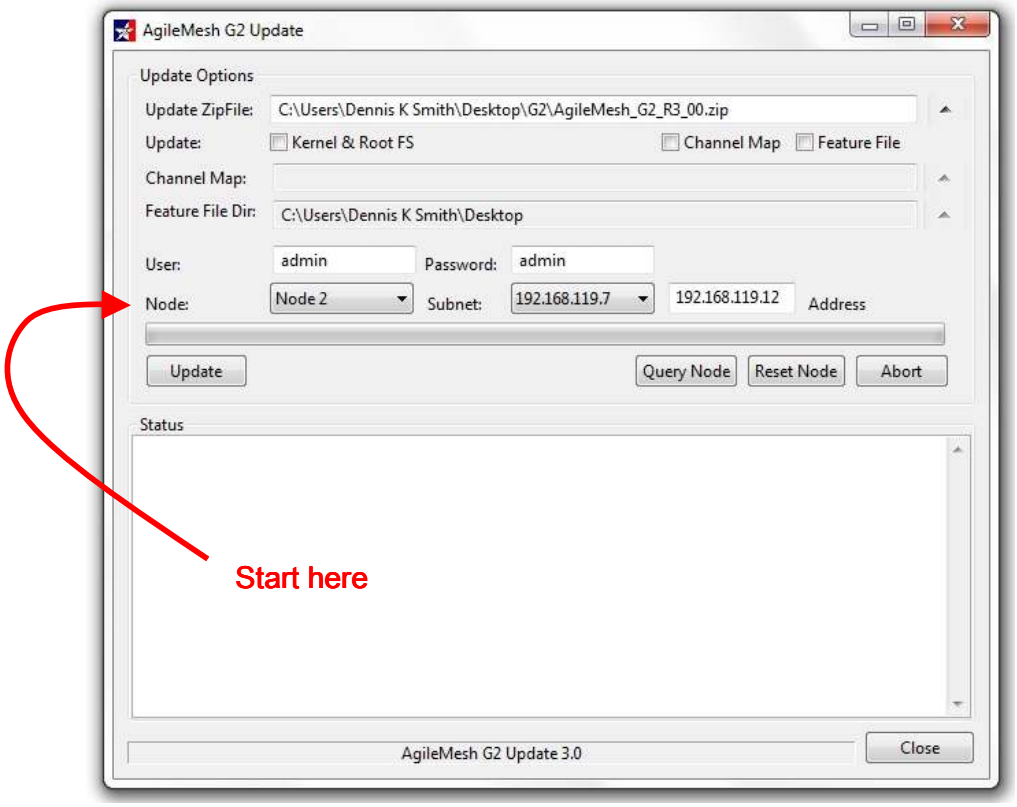
Click on “Query Node” to verify that the new channel map has been installed.

Note:

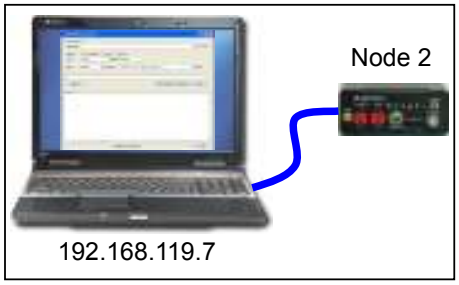
After a channel map is installed and the node has rebooted, the node will be on Channel 99.

Update Node Features

Locate and double-click on the desktop icon for the AgileMesh Update Utility to bring up the application. No login or password is required.



Connect a PC with the Update software application installed to the node that is to be updated. The PC should be on the same subnet as the AgileMesh node. The default subnet is 192.168.119.



From the drop down menu, select the node number of the unit to be updated.

Select the subnet on the attached PC that matches the subnet of the AgileMesh node to be updated. Appendix 1 list the default IP address for AgileMesh nodes.

Note:

The AgileMesh node must have bridging enabled (default from the factory) to update.

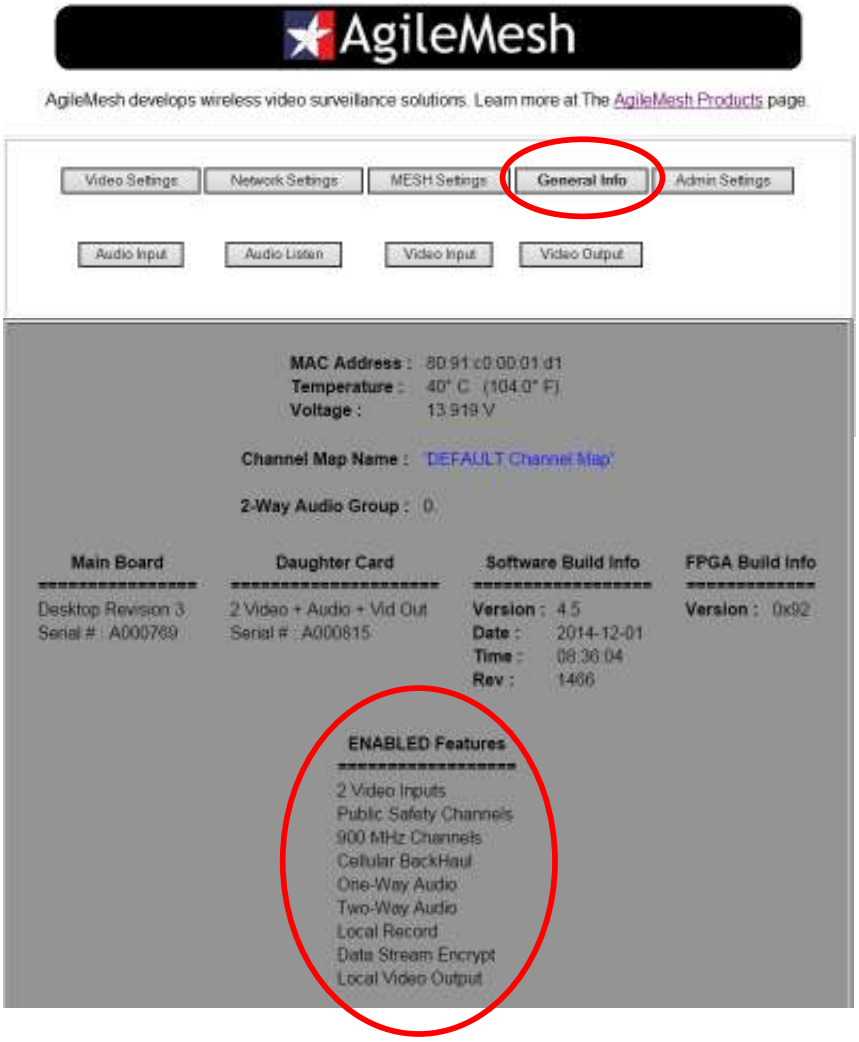
Browse to the Node IP address, login and select the "Network Settings" web page.

The default address of the node will be displayed for the selected node.

On the “Feature File Dir:” line, click on the browse button to select the location of the Feature File to update on the AgileMesh node. Check the “Feature File” box and then click

to install a new Feature File. The node must be rebooted to add the new feature.

A list of enable features for a node can be seen on the node’s web pages under the “General” tab. All possible features are shown in the screen shot below.



Note:

If a new feature is purchased for an existing customer node (ie Cellular Backhaul), AgileMesh will e-mail a node Feature File to add the new feature to that specific node.

The Feature Files are node locked to a specific node by the MAC address.

Appendix 1 – AgileMesh Default IP Addresses

The table below lists the node number, the default IP address and the port numbers for the video and audio codecs as well as the control channel.

Node #	Node IP	Video 1 Codec	Video 2 Codec	Control Channel	Audio Codec	Internal Video Codec
0	192.168.119.10	7000	7200	7400	7600	7900
1	192.168.119.11	7001	7201	7401	7601	7901
2	192.168.119.12	7002	7202	7402	7602	7902
3	192.168.119.13	7003	7203	7403	7603	7903
4	192.168.119.14	7004	7204	7404	7604	7904
5	192.168.119.15	7005	7205	7405	7605	7905
6	192.168.119.16	7006	7206	7406	7606	7906
7	192.168.119.17	7007	7207	7407	7607	7907
8	192.168.119.18	7008	7208	7408	7608	7908
9	192.168.119.19	7009	7209	7409	7609	7909
10	192.168.119.20	7010	7210	7410	7610	7910
11	192.168.119.21	7011	7211	7411	7611	7911
12	192.168.119.22	7012	7212	7412	7612	7912
13	192.168.119.23	7013	7213	7413	7613	7913
14	192.168.119.24	7014	7214	7414	7614	7914
15	192.168.119.25	7015	7215	7415	7615	7915
16	192.168.119.26	7016	7216	7416	7616	7916
17	192.168.119.27	7017	7217	7417	7617	7917
18	192.168.119.28	7018	7218	7418	7618	7918
19	192.168.119.29	7019	7219	7419	7619	7919
20	192.168.119.30	7020	7220	7420	7620	7920
21	192.168.119.31	7021	7221	7421	7621	7921
22	192.168.119.32	7022	7222	7422	7622	7922
23	192.168.119.33	7023	7223	7423	7623	7923
24	192.168.119.34	7024	7224	7424	7624	7924
25	192.168.119.35	7025	7225	7425	7625	7925
26	192.168.119.36	7026	7226	7426	7626	7926
27	192.168.119.37	7027	7227	7427	7627	7927

Node #	Node IP	Video 1 Codec	Video 2 Codec	Control Channel	Audio Codec	Internal Video Codec
28	192.168.119.38	7028	7228	7428	7628	7928
29	192.168.119.39	7029	7229	7429	7629	7929
30	192.168.119.40	7030	7230	7430	7630	7930
31	192.168.119.41	7031	7231	7431	7631	7931
32	192.168.119.42	7032	7232	7432	7632	7932
33	192.168.119.43	7033	7233	7433	7633	7933
34	192.168.119.44	7034	7234	7434	7634	7934
35	192.168.119.45	7035	7235	7435	7635	7935
36	192.168.119.46	7036	7236	7436	7636	7936
37	192.168.119.47	7037	7237	7437	7637	7937
38	192.168.119.48	7038	7238	7438	7638	7938
39	192.168.119.49	7039	7239	7439	7639	7939
40	192.168.119.50	7040	7240	7440	7640	7940
41	192.168.119.51	7041	7241	7441	7641	7941
42	192.168.119.52	7042	7242	7442	7642	7942
43	192.168.119.53	7043	7243	7443	7643	7943
44	192.168.119.54	7044	7244	7444	7644	7944
45	192.168.119.55	7045	7245	7445	7645	7945
46	192.168.119.56	7046	7246	7446	7646	7946
47	192.168.119.57	7047	7247	7447	7647	7947
48	192.168.119.58	7048	7248	7448	7648	7948
49	192.168.119.59	7049	7249	7449	7649	7949
50	192.168.119.60	7050	7250	7450	7650	7950
51	192.168.119.61	7051	7251	7451	7651	7951
52	192.168.119.62	7052	7252	7452	7652	7952
53	192.168.119.63	7053	7253	7453	7653	7953
54	192.168.119.64	7054	7254	7454	7654	7954
55	192.168.119.65	7055	7255	7455	7655	7955
56	192.168.119.66	7056	7256	7456	7656	7956
57	192.168.119.67	7057	7257	7457	7657	7957
58	192.168.119.68	7058	7258	7458	7658	7958
59	192.168.119.69	7059	7259	7459	7659	7959
60	192.168.119.70	7060	7260	7460	7660	7960
61	192.168.119.71	7061	7261	7461	7661	7961

Node #	Node IP	Video 1 Codec	Video 2 Codec	Control Channel	Audio Codec	Internal Video Codec
62	192.168.119.72	7062	7262	7462	7662	7962
63	192.168.119.73	7063	7263	7463	7663	7963
64	192.168.119.74	7064	7264	7464	7664	7964
65	192.168.119.75	7065	7265	7465	7665	7965
66	192.168.119.76	7066	7266	7466	7666	7966
67	192.168.119.77	7067	7267	7467	7667	7967
68	192.168.119.78	7068	7268	7468	7668	7968
69	192.168.119.79	7069	7269	7469	7669	7969
70	192.168.119.80	7070	7270	7470	7670	7970
71	192.168.119.81	7071	7271	7471	7671	7971
72	192.168.119.82	7072	7272	7472	7672	7972
73	192.168.119.83	7073	7273	7473	7673	7973
74	192.168.119.84	7074	7274	7474	7674	7974
75	192.168.119.85	7075	7275	7475	7675	7975
76	192.168.119.86	7076	7276	7476	7676	7976
77	192.168.119.87	7077	7277	7477	7677	7977
78	192.168.119.88	7078	7278	7478	7678	7978
79	192.168.119.89	7079	7279	7479	7679	7979
80	192.168.119.90	7080	7280	7480	7680	7980
81	192.168.119.91	7081	7281	7481	7681	7981
82	192.168.119.92	7082	7282	7482	7682	7982
83	192.168.119.93	7083	7283	7483	7683	7983
84	192.168.119.94	7084	7284	7484	7684	7984
85	192.168.119.95	7085	7285	7485	7685	7985
86	192.168.119.96	7086	7286	7486	7686	7986
87	192.168.119.97	7087	7287	7487	7687	7987
88	192.168.119.98	7088	7288	7488	7688	7988
89	192.168.119.99	7089	7289	7489	7689	7989
90	192.168.119.100	7090	7290	7490	7690	7990
91	192.168.119.101	7091	7291	7491	7691	7991
92	192.168.119.102	7092	7292	7492	7692	7992
93	192.168.119.103	7093	7293	7493	7693	7993
94	192.168.119.104	7094	7294	7494	7694	7994
95	192.168.119.105	7095	7295	7495	7695	7995

Node #	Node IP	Video 1 Codec	Video 2 Codec	Control Channel	Audio Codec	Internal Video Codec
96	192.168.119.106	7096	7296	7496	7696	7996
97	192.168.119.107	7097	7297	7497	7697	7997
98	192.168.119.108	7098	7298	7498	7698	7998
99	192.168.119.199	7099	7299	7499	7699	7999

To calculate the last octet value of the IP address of a node use the following formula

10 + the Node number = node IP address

To calculate the video codec1 use the following formula: 7000 + the Node number

To calculate the video codec 2 use the following formula: 7200 + the Node number

To calculate the control port use the following formula: 7400 + the Node number

To calculate the audio port use the following formula: 7600 + the Node number

To calculate the internal video codec port: 7900 + the Node number

Node 99 is a failsafe node number with a permanent IP address. It allows the user to regain control of the node if the node has been configured for a custom IP address.

Notes:

1. **Video Codec 1 and Video Codec 2 are used by the AgileMesh Viewer and can be the source for Tip of the Spear (ToS) video to ToS equipped nodes.**
2. **The internal video codec is used for local record and node-to-node video. This codec cannot be displayed on the AgileMesh Viewer**

Appendix 2 – AgileMesh Default Channel Map

Default Panel Channel Map

Channel	Internal Mapping	Center Freq (GHz)	Freq. Band
00	1	2.4120	2.4GHz OFDM
01	2	2.4170	
02	3	2.4220	
03	4	2.4270	
04	5	2.4320	
05	6	2.4370	
06	7	2.4420	
07	8	2.4470	
08	9	2.4520	
09	10	2.4570	
10	11	2.4620	

Channel	Internal Mapping	Center Freq (GHz)	Freq. Band
22	36	5.1800	5.X GHz OFDM
23	40	5.2000	
24	44	5.2200	
25	48	5.2400	
30	149	5.7450	
31	153	5.7650	
32	157	5.7850	
33	161	5.8050	
34	165	5.8250	

Channel	Internal Mapping	Center Freq (GHz)	Freq. Band
50	16	4.9600	4.9GHz OFDM
51	17	4.9800	

96	N/A	N/A	N/A
97	6	2.4370	2.4 GHz
98	16	4.9600	4.9GHz
99	149	5.7450	5.X GHz

Radio OFF
Same as default channel 5
Same as default channel 50
Same as default channel 30

} "Failsafe" channels with no encryption