Quick Note 047

Multiple cellular modules compatibility in a single configuration file using tags.

Digi Support
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Contents

1 INTRODUCTION

1.1 Introduction

This document will show how to use tags to create a configuration file that will support multiple cellular modules on the same Digi TransPort platform.
In this example, a WR21 configuration will be generated to allow usage on a unit with either a Sierra Wireless LTE or a Telit module.

Please Note: A configuration file is read top to bottom; any duplicate setting in the file will result as the last one being taken over.

1.2 Assumptions

This guide has been written for use by technically competent personnel with a good understanding of the communications technologies used in the product and of the requirements for their specific application. It also assumes a basic ability to access and navigate a Digi TransPort router.

This application note applies only to:

Model: DIGI TransPort WR21/41/44

Firmware versions: 5246 and later

Configuration: This document assumes that the devices are set to their factory default configurations. Most configuration commands are shown only if they differ from the factory default.

Please note: This application note has been specifically rewritten for firmware release 5246 and later but will work on earlier versions of firmware. Please contact tech.support@digi.com if your require assistance in upgrading the firmware of the TransPort router.

1.3 Corrections

Requests for corrections or amendments to this application note are welcome and should be addressed to:
tech.support@digi.com
Requests for new application notes can be sent to the same address.

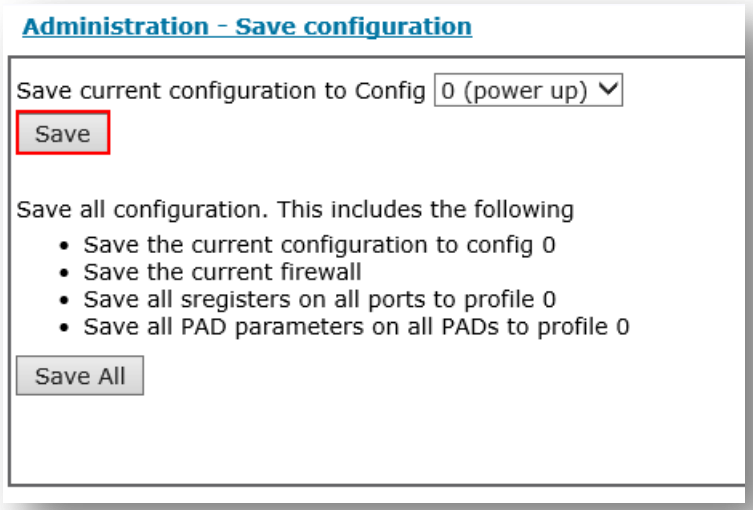
2 VERSION

Version Number	Status
1.0	Published

3 CREATE CONFIGURATION FILE

3.1 Create a backup configuration file

Administration – Backup/Restore

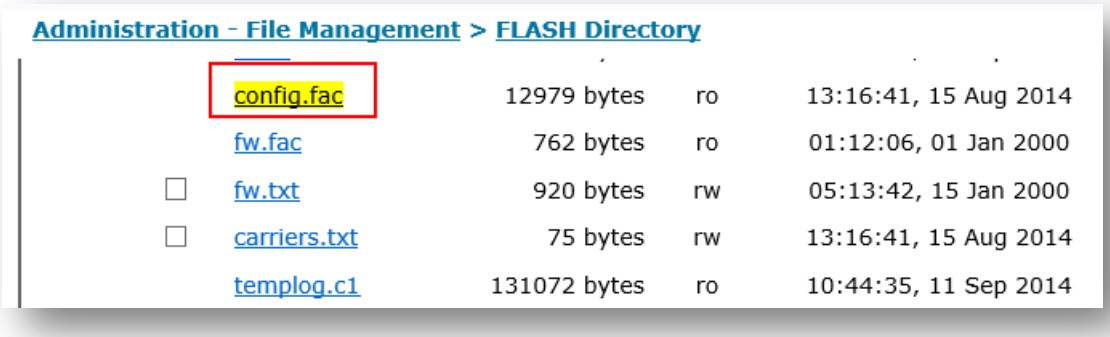


Click on the "**Backup**" button to general the backup configuration file. Check the boxes above to include passwords, certificates, keys and routing protocols configurations in the backup file.

Save the file to a location on the computer and extract the content to a folder.

3.2 Factory configuration

Administration – File Management > FLASH Directory



Save the **config.fac** file to a location on the computer. This file contains the factory default settings of the router including all support cellular modules parameters.

3.3 Edit the configuration file

Using a text editor, open the **config.da0** and **config.fac** file

In the **config.fac** file, copy the header section and add it after the line **ip 0 cidr ON** in the **config.da0** file. The TOP of the **config.da0** file should look like this :

```
[CFG]
config last_saved "15:36:17, 11 Sep 2014"
config last_saved_changes "1"
config last_saved_user "username"
eth 0 IPaddr "192.168.1.22"
eth 0 gateway "192.168.1.1"
addp 0 enable ON
lapb 0 ans OFF
lapb 0 tinact 120
lapb 1 tinact 120
lapb 3 dtemode 0
lapb 4 dtemode 0
lapb 5 dtemode 0
lapb 6 dtemode 0
ip 0 cidr ON

#####################################
# Hardware conditional configuration #
#####################################
```

In the **config.fac** file, copy the sections (TAGS) for each cellular module that will be used in the routers, for this example, we will use a **Sierra_LTE** and a **Telit_3G.**

A Tag start with **<module_name>** and ends with **</module_name>**

```
<TELIT_3G>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
modemcc 0 asy_add 2
modemcc 0 info_asy_add 3
modemcc 0 init_str "+CGQREQ=1"
modemcc 0 init_str1 "+CGQMIN=1"
modemcc 0 apn "Your.APN.goes.here"
modemcc 0 link_retries 10
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 init_str_2 "+CGQREQ=1"
modemcc 0 init str1 2 "+CGQMIN=1"
modemcc 0 apn_2 "Your.APN.goes.here"
modemcc 0 link_retries_2 10
modemcc 0 stat_retries_2 30
ppp 1 phonenum "*98*1#"
ppp 1 name "W-WAN (HSPA 3G)"
ppp 1 r_chap OFF
</TELIT_3G>

<SIERRA_LTE>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
ppp 1 name "W-WAN"
ppp 1 phonenum "*98*3#"
ppp 1 username "username"
ppp 1 password "password"
```

```
ppp 1 r_chap OFF
ppp 1 timeout 0
ppp 1 cdma_backoff ON
ppp 1 pwr_dly 40
modemcc 0 asy_add 2
modemcc 0 info_asy_add 4
modemcc 0 apn "none"
modemcc 0 link_retries 30
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 link_retries_2 30
modemcc 0 stat_retries_2 30
modemcc 0 apn_2 "none"
modemcc 0 sms_interval_2 1
modemcc 0 sms_access_2 1
modemcc 0 sms_concat 0
</SIERRA_LTE>
```

Paste these 2 module tags AFTER the header you previously inserted and BEFORE the rest of the unit configuration. It should now look like this:

```
ip 0 cidr ON

#######################################
# Hardware conditional configuration #
#######################################

<TELIT_3G>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
modemcc 0 asy_add 2
modemcc 0 info_asy_add 3
modemcc 0 init_str "+CGQREQ=1"
modemcc 0 init_str1 "+CGQMIN=1"
modemcc 0 apn "Your.APN.goes.here"
modemcc 0 link_retries 10
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 init_str_2 "+CGQREQ=1"
modemcc 0 init_str1_2 "+CGQMIN=1"
modemcc 0 apn_2 "Your.APN.goes.here"
modemcc 0 link_retries_2 10
modemcc 0 stat_retries_2 30
ppp 1 phonenum "*98*1#"
ppp 1 name "W-WAN (HSPA 3G)"
ppp 1 r_chap OFF
</TELIT_3G>

<SIERRA_LTE>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
ppp 1 name "W-WAN"
ppp 1 phonenum "*98*3#"
ppp 1 username "username"
ppp 1 password "password"
ppp 1 r_chap OFF
ppp 1 timeout 0
ppp 1 cdma_backoff ON
ppp 1 pwr_dly 40
modemcc 0 asy_add 2
```

```
modemcc 0 info_asy_add 4
modemcc 0 apn "none"
modemcc 0 link_retries 30
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 link_retries_2 30
modemcc 0 stat_retries_2 30
modemcc 0 apn_2 "none"
modemcc 0 sms_interval_2 1
modemcc 0 sms_access_2 1
modemcc 0 sms_concat 0
</SIERRA_LTE>

def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
```

Scroll down in the **config.da0** file to the device configuration section and remove **AT LEAST** the module configuration lines and the PPP 1 phone number since these 3 parameters will vary from modules to modules:

```
modemcc 0 asy_add 2

modemcc 0 info_asy_add 4

ppp 1 phonenum "*98*3#"
```

The following lines can also be removed **if they are not differing from the factory settings** above:

```
modemcc 0 link_retries 30
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 link_retries_2 30
modemcc 0 stat_retries_2 30
modemcc 0 sms_interval_2 1
modemcc 0 sms_access_2 1
```

If some settings are not matching the factory settings, replace the lines accordingly in the tags section, for example

```
modemcc 0 link_retries 30
```

With

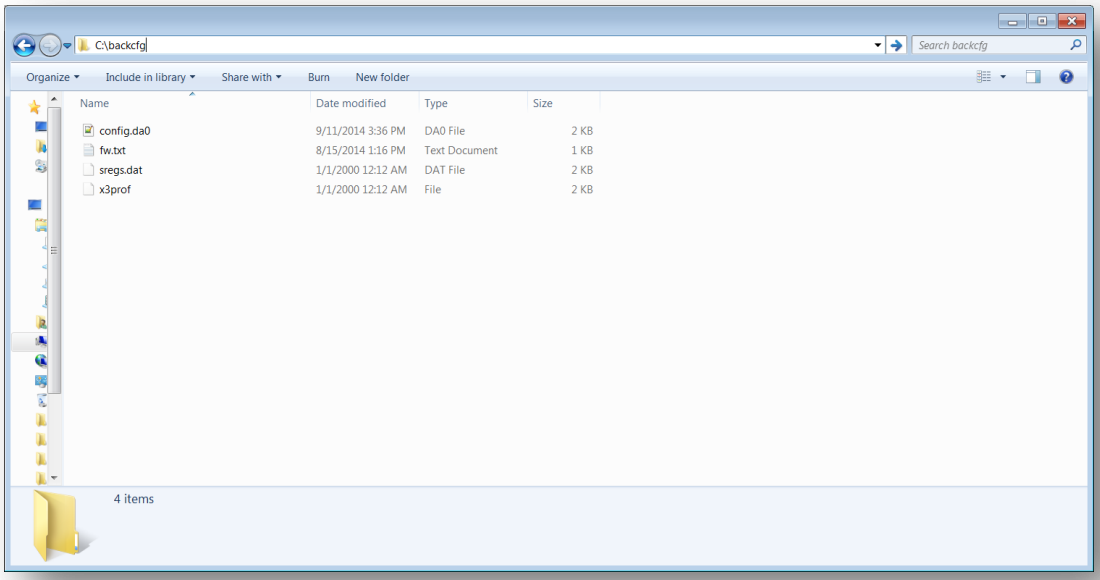
```
modemcc 0 link_retries 40
```

Make sure to leave the **modemcc 0 apn “xxx”** and **modemcc 0 apn_2 “xxx”** lines in the device configuration section or alternatively set the appropriate apn settings under each tags.

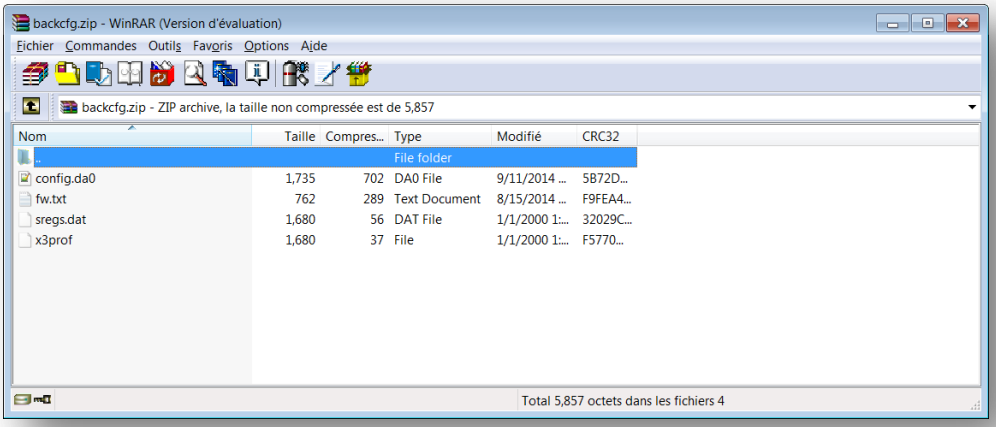
Save the file.

3.4 Build backup config zip file

Navigate to the folder containing the extracted backup configuration that was just modified :



Select all the files and compress them in zip format. Make sure that the zip archive only contains the files and not a directory including the files or the restore process on the router will fail:



This archive can now be used to restore the configuration on units with a Telit or a Sierra Wireless module.

Please note: Making any further changes to the router's configuration and clicking **save** will result in a merge of the module section in the rest of the configuration.

4 SAMPLE CONFIGURATION FILE

Digi TransPort WR21 with Telit and Sierra hardware configuration. In bold, what was added/changed to the configuration file from the device.

```
[CFG]
config last_saved "15:36:17, 11 Sep 2014"
config last_saved_changes "1"
config last_saved_user "username"
eth 0 IPaddr "192.168.1.22"
eth 0 gateway "192.168.1.1"
addp 0 enable ON
lapb 0 ans OFF
lapb 0 tinact 120
lapb 1 tinact 120
lapb 3 dtemode 0
lapb 4 dtemode 0
lapb 5 dtemode 0
lapb 6 dtemode 0
ip 0 cidr ON
#####################################
# Hardware conditional configuration #
#####################################

<TELIT_3G>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
modemcc 0 asy_add 2
modemcc 0 info_asy_add 3
modemcc 0 init_str "+CGQREQ=1"
modemcc 0 init_str1 "+CGQMIN=1"
modemcc 0 apn "Your.APN.goes.here"
modemcc 0 link_retries 10
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 init_str_2 "+CGQREQ=1"
modemcc 0 init_str1_2 "+CGQMIN=1"
modemcc 0 apn_2 "Your.APN.goes.here"
modemcc 0 link_retries_2 10
modemcc 0 stat_retries_2 30
ppp 1 phonenum "*98*1#"
ppp 1 name "W-WAN (HSPA 3G)"
ppp 1 r_chap OFF
</TELIT_3G>

<SIERRA_LTE>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
ppp 1 name "W-WAN"
ppp 1 phonenum "*98*3#"
ppp 1 username "username"
ppp 1 password "password"
ppp 1 r_chap OFF
ppp 1 timeout 0
ppp 1 cdma_backoff ON
ppp 1 pwr dly 40
modemcc 0 asy_add 2
modemcc 0 info_asy_add 4
modemcc 0 apn "none"
modemcc 0 link_retries 30
```

```
modemcc 0 stat_retries 30
modemcc 0 sms_interval 1
modemcc 0 sms_access 1
modemcc 0 sms_concat 0
modemcc 0 link_retries_2 30
modemcc 0 stat_retries_2 30
modemcc 0 apn_2 "none"
modemcc 0 sms_interval_2 1
modemcc 0 sms_access_2 1
modemcc 0 sms_concat 0
</SIERRA_LTE>
def_route 0 ll_ent "ppp"
def_route 0 ll_add 1
dhcp 0 IPmin "192.168.1.100"
dhcp 0 respdelms 500
dhcp 0 mask "255.255.255.0"
dhcp 0 gateway "192.168.1.1"
dhcp 0 DNS "192.168.1.1"
sntp 0 server "time.etherios.com"
ppp 0 timeout 300
ppp 1 name "W-WAN"
ppp 1 username "username"
ppp 1 IPaddr "0.0.0.0"
ppp 1 timeout 0
ppp 1 use_modem 1
ppp 1 cdma_backoff ON
ppp 1 aodion 1
ppp 1 autoassert 1
ppp 1 pwr_dly 40
ppp 1 r_chap OFF
ppp 3 defpak 16
ppp 4 defpak 16
web 0 prelogin_info ON
modemcc 0 apn "Internet"
modemcc 0 apn_2 "none"
ana 0 l1on ON
ana 0 lapdon 0
ana 0 asyon 1
ana 0 logsize 45
cmd 0 unitid "ss%s>"
cmd 0 cmdnua "99"
cmd 0 hostname "digi.router"
cmd 0 asyled_mode 2
cmd 0 tremto 1200
cmd 0 rcihttp ON
user 0 access 0
user 1 name "username"
user 1 access 0
user 2 access 0
user 3 access 0
user 4 access 0
user 5 access 0
user 6 access 0
user 7 access 0
user 8 access 0
user 9 access 0
local 0 transaccess 2
sslsvr 0 certfile "cert01.pem"
sslsvr 0 keyfile "privrsa.pem"
ssh 0 hostkey1 "privSSH.pem"
ssh 0 nb_listen 5
ssh 0 v1 OFF
cloud 0 ssl ON
[ENDCFG]
```