



congatec Application Note

Affected Products	conga-QMX6 and conga-UMX6
Subject Installation and Update of NXP MFGTool and congatec Bootloader Profiles	
Confidential/Public	Public
Author	ATP

Revision History

Revision	Date (yyyy-mm-dd)	Author	Changes
1.0	2016-08-02	ATP	Initial release
1.1	2016-08-04	SCM	Added table of content Corrected section title for sections 4 and 5 Changed screenshot in sections 3, 4 and 5
1.2	2016-12-08	SCM	Corrected commands in section 4.1
1.3	2017-09-18	GAL	Changed download link on section 2 Changed image from section 3.2



Preface

This application note describes how to install and update the MFGTool and congatec bootloader Profiles via the git server.

Disclaimer

The information contained within this Application Note, including but not limited to any product specification, is subject to change without notice.

congatec AG provides no warranty with regard to this Application Note or any other information contained herein and hereby expressly disclaims any implied warranties of merchantability or fitness for any particular purpose with regard to any of the foregoing. congatec AG assumes no liability for any damages incurred directly or indirectly from any technical or typographical errors or omissions contained herein or for discrepancies between the product and the Application Note. In no event shall congatec AG be liable for any incidental, consequential, special, or exemplary damages, whether based on tort, contract or otherwise, arising out of or in connection with this Application Note or any other information contained herein or the use thereof.

Intended Audience

This Application Note is intended for technically qualified personnel. It is not intended for general audiences.

Electrostatic Sensitive Device

All congatec AG products are electrostatic sensitive devices and are packaged accordingly. Do not open or handle a congatec AG product except at an electrostatic-free workstation. Additionally, do not ship or store congatec AG products near strong electrostatic, electromagnetic, magnetic, or radioactive fields unless the device is contained within its original manufacturer's packaging. Be aware that failure to comply with these guidelines will void the congatec AG Limited Warranty.

Technical Support

congatec AG technicians and engineers are committed to providing the best possible technical support for our customers so that our products can be easily used and implemented. We request that you first visit our website at www.congatec.com for the latest documentation, utilities and drivers, which have been made available to assist you. If you still require assistance after visiting our website then contact our technical support department by email at support@congatec.com



Symbols

The following are symbols used in this application note.



Notes call attention to important information that should be observed.



Caution

Cautions warn the user about how to prevent damage to hardware or loss of data.



Warnings indicate that personal injury can occur if the information is not observed.

Copyright Notice

Copyright [©] 2016, congatec AG. All rights reserved. All text, pictures and graphics are protected by copyrights. No copying is permitted without written permission from congatec AG.

congatec AG has made every attempt to ensure that the information in this document is accurate yet the information contained within is supplied "as-is".

Trademarks

Product names, logos, brands, and other trademarks featured or referred to within this user's guide or the congatec website, are the property of their respective trademark holders. These trademark holders are not affiliated with congatec AG, our products, or our website.



Contents

1	Overview
2	Preparation
3	Installation10
4	Configuration13
5	Update15
5.1	Updating MFG Profiles15
5.2	Updating MFGTool16



1 Overview

NXP's MFGTool (manufacturing tool) enables communication with i.MX6-based hardware designs (for example, conga-QMX6 or conga-UMX6) even if there is no working bootloader program resident in the SPI-flash.

Previous releases were split up into separate MFGTool and MFG Profiles archive files. These archives were distributed via the congatec website and driver database. The newer releases (r006 and later) are available on the congatec public git server.

This document describes how to install and update the MFGTool and MFG Profiles via the git server. Prior knowledge of git or version control in general is not required. However, to follow this guide, you require a Windows operating system and the Git GUI.

Please refer to the MFGTool readme (https://git.congatec.com/imx6-mfg-tool/mfgtool) for information on how to use the git command line or git bash. Refer also to the software guide for the latest information on the usage of the MFGTool.

Note

 (\square)

Always use the latest release of MFGTool and MFG Profiles to ensure your design functions properly.



2 **Preparation**

Download the 2.8.2 git binary version from the following link depending of your processor architecture.

32-bit: https://github.com/git-for-windows/git/releases/download/v2.8.2.windows.1/Git-2.8.2-32-bit.exe

64-bit: https://github.com/git-for-windows/git/releases/download/v2.8.2.windows.1/Git-2.8.2-64-bit.exe

Note

Do not obtain git binaries from unofficial sources. Obtain the git binaries from the official website (https://github.com/git-for-windows/) only.

The subsequently shown settings are recommended and should be strictly applied.

- 1. Double-click the git binary executable file
- 2. Select the components as shown below:

🛟 Git 2.8.2 Setup	
Select Components Which components should be installed?	*
Select the components you want to install; clear the components you install. Click Next when you are ready to continue.	ou do not want to
Additional icons C On the Desktop Windows Explorer integration G Git Bash Here	
Git GUI Here Associate .git* configuration files with the default text editor Associate .sh files to be run with Bash	
Use a TrueType font in all console windows	
Current selection requires at least 187,5 MB of disk space.	
< Back Next	> Cancel



3. Select Use Git from the Windows Component Prompt:



4. Select Checkout as-is, commit Unix-style line endings:





5. Select Use MinTTY (the default terminal of MSYS2):



6. Select Enable file system caching:

🚸 Git 2.8.2 Setup	_ 🗆 🗙
Configuring extra options Which features would you like to enable?	
V Enable file system caching	
File system data will be read in bulk and cached in memory for cer operations ("core.fscache" is set to "true"). This provides a signific performance boost.	tain ant
Enable Git Credential Manager	
The <u>Git Credential Manager</u> for Windows provides secure Git crede for Windows, most notably multi-factor authentication support for Team Services and GitHub. (requires .NET framework v4.5.1 or or	ential storage Visual Studio 'later)
https://git-for-windows.github.io/	Cancel



3 Installation

Follow the steps below to fetch the latest MFGTool and MFG Profiles from the git server:

- 1. Choose the installation destination for the MFGTool and MFG Profiles:
 - a. Open Windows Explorer (file manager)
 - b. Create a new directory and name it for example git_checkouts
 - c. Double-click the newly created directory git_checkouts to open it
 - d. Right-click anywhere in the open directory and click Git GUI Here

Name			Date modified	Туре	Size
		Th	is folder is empty.		
		View Sort by Group by Refresh) 		
		Customize this folder Paste Paste shortcut Undo Rename	Ctrl+Z		
	 ♦ ♦	Git GUI Here Git Bash Here Share with	•		
	2 C	SVN Checkout TortoiseSVN	۲		
		New Properties	۲		

2. Click Clone Existing Repository:





- 3. Select the repository to clone and its local target directory:
 - a. In the **Source Location** box, enter the URL of the congatec mfgtool repository:

https://git.congatec.com/imx6-mfg-tool/mfgtool.git

- In the Target Directory box, enter the clone's local destination: MFGTool2
- c. Select Recursively clone submodules too
- d. Click Clone button

🚦 Git Gui			- 🗆 🗙
Repository Hel	р		
		Clone Existing Repository	
	Source Location:	https://git.congatec.com/imx6-mfg-tool/mfgtool.git	Browse
	Target Directory:	MFGTool2	Browse
5	Clone Type:	 Standard (Fast, Semi-Redundant, Hardlinks) Full Copy (Slower, Redundant Backup) Shared (Fastest, Not Recommended, No Backup) Recursively clone submodules too 	
		Clone	Quit



Note

The latest MFGTool and its associated MFG Profiles are now cloned into the local target directory MFGTool2

Git Gui Repository Hei	lp
	Cloning submodules
+	Submodule path 'Profiles/gmx6/OS Firmware/update.uboot2013': checked out 'b8f931 Cloning into 'Profiles/gmx6/OS Firmware/update.uboot2013-android' Submodule path 'Profiles/gmx6/OS Firmware/update.uboot2016' Submodule path 'Profiles/gmx6/OS Firmware/update.uboot2016': checked out 'b9f7bf Cloning into 'Profiles/gmx6/OS Firmware/update.wec' Submodule path 'Profiles/gmx6/OS Firmware/update.wec' Submodule path 'Profiles/gmx6/OS Firmware/update.wec': checked out '4f6518261eb5 Cloning into 'Profiles/gmx6/OS Firmware/update.wec': checked out '4f6518261eb5 Cloning into 'Profiles/gmx6/OS Firmware/mpdate.wec': checked out '4f6518261eb5
	< III ► ▼
	Quit



Note

 (\square)

The MFGTool and MFG Profiles installation is complete if the Git GUI's main window displays (as shown below). This window opens automatically after a successful clone

🚦 Git Gui (MFGTool2) C:/Users/ /Dater	n/Software/MFGTool2	
Repository Edit Branch Commit Merge Remote	Tools Help	
Current Branch: master	Add	
Unstaged Changes	Remove	
Staged Changes (Will Commit)		~
Comr	mit Message: 💿 New Commit 🔿	Amend Last Commit
Rescan		<u>^</u>
Stage Changed		
Sign Off		
Commit		
Push		
•		-
Ready.		



4 Configuration

Follow the next steps to finalize the installation:

- 1. Perform three mandatory configuration tasks:
 - a. On the menu bar, click Tools -> Add

🔒 Git Gui (MFGTool2) C:/Users/ /Daten/Software/MFGTool2	_ 🗆 🗙
Repository Edit Branch Commit Merge Remote Tools Help	
Current Branch: master	
Unstaged Changes Adda.	
A Nellove	
	-
Staged Changes (Will Commit)	4
Commit Message: New Commit Amount Amount	end Last Commit
Rescan	
Stage Changed	
Sign Off	
Signature	
Commit	
Push	
	~
Ready.	

b. Add the entry "Update MFG Profiles" as follows:

Name:	Update	MFG	Profiles	

Command: git submodule update --remote

👼 Add Tool			
	Add New Tool Command		
-Tool Detail	s		
	Use '/' separators to create a submenu tree:		
Name:	Update MFG Profiles		
Command:	Command: git submodule updateremote		
Show a dialog before running			
□ Ask the user to select a revision (sets \$REVISION)			
□ Ask the user for additional arguments (sets \$ARGS)			
 Don't show the command output window Run only if a diff is selected (\$FILENAME not empty) 			
Add glo	bally Cancel Add		



c. Add the entry "Update MFGTool" as follows:

Name:Update MFGTool (!! backup your files first !!)Command:git reset --hard HEAD && git pull origin master
&& git submodule update --init

🛃 Add Tool				
	Add New Tool Command			
-Tool Detail	Tool Details			
Use '/' separators to create a submenu tree:				
Name:	Update MFGTool (!! backup your files first !!)			
Command:	git resethard HEAD; git pull origin master			
Show a dialog before running				
\Box Ask the user to select a revision (sets \$REVISION)				
Ask the user for additional arguments (sets \$ARGS)				
Don't show the command output window				
Run only if a diff is selected (\$FILENAME not empty)				
🗌 Add glo	Add globally Cancel Add			

- 2. Update the MFG Profiles to the latest release as described in paragraph 5.1
- 3. Close Git GUI and locate the directory "MFGTool2".



5 Update

5.1 Updating MFG Profiles

The MFG Profiles contain various bootloader images required to boot Linux, Android or Windows Embedded Compact (WEC). To ensure, that one is burning the latest available bootloader revision, update the MFG Profiles regularly.

To update the MFG Profiles, follow the instructions below:

- 1. Open the Windows Explorer (file manager)
- 2. Locate the directory "MFGTool2"
- 3. Right-click anywhere in the open directory and click Git GUI Here:

Name	^	Da	te modified	Туре	Size
 .git Drivers Profiles gitignore 	View Sort by Group by Refresh		> > >	File folder File folder File folder Text Document	1 KB
gitmodules		Customize this folder		Text Document	2 KB
MfgTool2.exe		Paste Paste shortcut Undo Rename	Ctrl+Z	Application extens	1,950 KB 2,190 KB
		Git GUI Here		File	6 KB
OICfg.ini	*	Git Bash Here Share with	*	Configuration setti	1 KB
	2 1	SVN Checkout TortoiseSVN	•		
		New	۰.		
		Properties			

4. At the menu bar, click on Tools -> Update MFG Profiles

🛔 Git Gui (MFGTool2) C:/Users/	/Daten	/Software/MFGTool2	
Repository Edit Branch Con	nmit Merge Remote	Tools Help	
Current Branch: master		Update MFG Profiles	
Unstaged Changes		Update MFGTool (!! backup your files first !!)	
* *		Add Remove	
Staged Changes (Will Commit)	∢		1
Comr		nit Message:	New Commit Amend Last Commi
	Rescan		·
	Stage Changed Sign Off Commit Push		



5.2 Updating MFGTool

Update the MFGTool to the latest version if you encounter an issue with a new MFG Profile release.

🗩 Note

Double-check your configuration settings before you update the MFGTool, to rule out misconfiguration.



CAUTION

Updating the MFGTool will overwrite all MFG related files. Create a backup in order to prevent unintended data loss.

Steps for updating the MFGTool

- 1. Open the Explorer (file manager)
- 2. Double-click the directory MFGTool2
- 3. Backup the modified files (cfg.ini, ucl2.xml, etc.)
- 4. Right-click anywhere in the open directory and click Git GUI Here

Name		Da	te modified	Туре	Size
 .git Drivers Profiles .gitignore 		View Sort by Group by Refresh	* * *	File folder File folder File folder Text Document	1 KB
] .gitmodules		Customize this folder	Text Document	2 KB	
 cfg.ini MfgTool2.exe MfgToolLib.dll 		Paste Paste shortcut Undo Rename	Ctrl+Z	Configuration setti Application Application extens	9 KB 1,950 KB 2,190 KB
	1	Git GUI Here		File	6 KB
谢 UICfg.ini	*	Git Bash Here Share with	•	Configuration setti	1 KB
	2	SVN Checkout TortoiseSVN	•		
		New	•		
		Properties			



5. On the menu bar, click on Tools -> Update MFGTool

🛔 Git Gui (MFGTool2) C:/Users/alexanderpockes/Daten/Software/MFGTool2			
Repository Edit Branch Commit Merge Remote	Tools Help		
Current Branch: master	Update MFG Profiles		
Unstaged Changes	Update MFGTool (!! backup your files first !!)		
Staged Changes (Will Commit)	Add Remove		
A Comm	it Massagar		
Rescan	it message.		
Stage Changed Sign Off Commit Push			
Ready.			