

Faculty of Nuclear Sciences and Physical Engineering
Czech Technical University

Deployment application for the COMPASS DAQ

Jan Hrušovský
Jan.hrusovsky@cern.ch

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Deployment proces - total

- Deploying the RCCARS – Run, Control, Configure and Readout Software
- 20+ individual projects
 - Various dependencies -> specific order of the projects

Deployment proces – one project

- Deploying each individual project
 - Set the right environmental \$VARIABLES
 - Set valid \$PATHS
 - qmake project.pro –par1 –par2
 - make makefile –par1 –par2
- Total of 4 operations per each project

Deployment process – previous solution

- Everything was performed manually
 - 50+ operations in the terminal
 - Errors can occur in the end -> start over
- Total time of deployment: 1-2 days

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=> Application needed!

Application requirements

- User-friendly application
 - Settings for every individual project
 - Specification of the order of deploying
 - Possibility to save all of the settings
 - Option to use different RCCARS versions
 - Save outputs from terminal
-
- Technology: C++ with the Qt Framework

Result

- Simply install shield wizard – ish application!



GET RCCARS PROJECTS

GIT Repository:

DOWNLOAD

Path:

BROWSE

LOAD SETTINGS

NEXT

ENVIRONMENTAL VARIABLES

LOGNAME	daq	SAVE	EDIT	DEL
USER	daq	SAVE	EDIT	DEL
MasterAddress	pccofs00	SAVE	EDIT	DEL
MasterPort	2505	SAVE	EDIT	DEL
DIALOG_CONTROL_SERVER_ADDRESS	pccore15.cern.ch	SAVE	EDIT	DEL
DIALOG_CONTROL_SERVER_PORT	55550	SAVE	EDIT	DEL
CONN_FILES_PATH	/online/CMAD/CONFIG/	SAVE	EDIT	DEL
ADDR_FILES_PATH	/online/CMAD/CONFIG/	SAVE	EDIT	DEL

PATHS

/online/CMAD/cactus/mo	SAVE	DEL
/online/CMAD/QtCore	SAVE	DEL
/online/daq/lib	SAVE	DEL
/online/RCCARS/compass-rccars-daq/compass-rccars-daq-transportprotocol	SAVE	DEL
/online/RCCARS/compass-rccars-daq/compass-rccars-daq-registerslib	SAVE	DEL
/online/CMAD/qwt/qwt-6.1/lib	SAVE	DEL
/online/RCCARS/compass-rccars-daq/compass-rccars-daq-DIALOGCommunication	SAVE	DEL
/online/RCCARS/compass-rccars-daq/compass-rccars-daq-DAQDebugger	SAVE	DEL

SAVE ALL




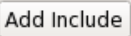













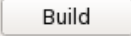
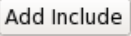
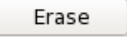


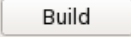
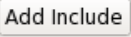
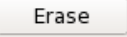


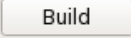
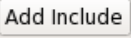
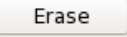


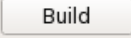
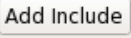



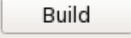
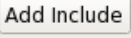
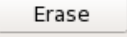


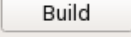
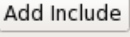
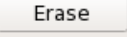
ADD NEW PATH

ADD NEW VARIABLE

PREVIOUS

NEXT

BUILDING PROJECTS

		0	compass-rccars-daq-DAQDebugger			
		1	compass-rccars-daq-DIALOGCommunication			
		2	compass-rccars-daq-registerslib			
		3	compass-rccars-daq-database			
		4	compass-rccars-daq-transportprotocol			
		5	compass-rccars-daq-basic_fifo			
		6	compass-rccars-daq-DIALOGCommunicationControlServer			
		7	compass-rccars-daq-DIALOGCommunicationGUI			
		8	compass-rccars-daq-slavecontrol			

START

STOP

CONTINUE

0





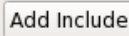





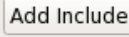





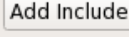
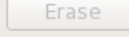



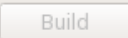
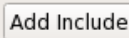
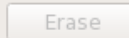




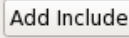





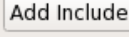





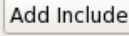










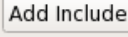

VIEW LOG

SAVE SETTING

PREVIOUS

CLOSE

BUILDING PROJECTS

		0	compass-rccars-daq-DAQDebugger					0:09
		1	compass-rccars-daq-DIALOGCommunication					0:33
		2	compass-rccars-daq-registerslib					0:02
		3	compass-rccars-daq-database					0:05
		4	compass-rccars-daq-transportprotocol					0:00
		5	compass-rccars-daq-basic_fifo					0:01
		6	compass-rccars-daq-DIALOGCommunicationControlServer					0:02
		7	compass-rccars-daq-DIALOGCommunicationGUI					0:00
		8	compass-rccars-daq-slavecontrol					

START

STOP

CONTINUE

7

VIEW LOG










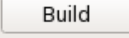
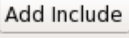




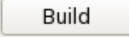
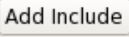
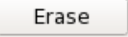









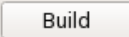
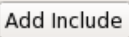




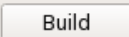
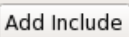
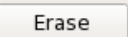



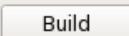
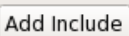
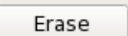



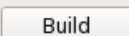
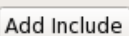




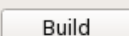
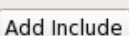
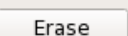
SAVE SETTING

0:56

PREVIOUS

CLOSE

BUILDING PROJECTS

		2	compass-rccars-daq-registerslib					0:02
		3	compass-rccars-daq-database					0:05
		4	compass-rccars-daq-transportprotocol					0:00
		5	compass-rccars-daq-basic_fifo					0:01
		6	compass-rccars-daq-DIALOGCommunicationControlServer					0:02
		7	compass-rccars-daq-DIALOGCommunicationGUI					0:45
		8	compass-rccars-daq-slavecontrol					0:50
		9	compass-rccars-daq-monitor					0:03
		10	compass-rccars-daq-slavereadout					0:08

START

STOP

CONTINUE

10

VIEW LOG

SAVE SETTING

2:45

PREVIOUS

CLOSE

VIEW LOG

2017-11-10_13-38-03	▲ ENVIRONMENTAL VARIABLES:	▲ PATH = "/online/RCCARS/testingDirDAQFEET/"	▲
2017-11-10_13-38-03	"RE_DEBUG" = "12"	0: "compass-rccars-daq-DAQDebugger"	*****
2017-11-10_13-38-03	"DIM_DNS_NODE" = "pccofs00"	1: "compass-rccars-daq-DIALOGCommunication"	9 "compass-rccars-daq-monitor":
2017-11-10_13-38-03	"DIM_DNS_NODE_CS" = "pccofs00"	2: "compass-rccars-daq-registerslib"	qmake exitCode: 0
2017-11-10_13-38-03	"DB_SERVER" = "pccodb00"	3: "compass-rccars-daq-database"	qmake output:
2017-11-10_13-38-03	"DB_DB" = "devdb"	4: "compass-rccars-daq-transportprotocol"	disabled via commands.cpp
2017-11-10_13-38-03	"DB_USER" = "daq"	5: "compass-rccars-daq-basic_fifo"	make exitCode: 0
2017-11-10_13-38-03	"DB_PASSWD" = "na58daq"	6: "compass-rccars-daq-DIALOGCommunicationControlServer"	make output:
2017-11-10_13-38-03	"DB_DEVLOG_DB" = "devlogdb"	7: "compass-rccars-daq-DIALOGCommunicationGUI"	g++ -c -fPIC -I. -I/usr/include/qt5/QtCore -I/usr/include/qt5 -o mpDaemon.o mpDaemon.cpp
2017-11-10_13-38-03	"LOGNAME" = "daq"	8: "compass-rccars-daq-slavecontrol"	g++ -c -fPIC -I. -I/usr/include/qt5/QtCore -I/usr/include/qt5 -o print_logs.o print_logs.cpp
2017-11-10_13-38-04	"USER" = "daq"	9: "compass-rccars-daq-monitor"	g++ -c -fPIC -I. -I/usr/include/qt5/QtCore -I/usr/include/qt5 -o fifo.o MonitorFIFO.cpp
2017-11-10_13-38-13	"MasterAdress" = "pccofs00"	10: "compass-rccars-daq-slavereadout"	g++ -c -fPIC -I. -I/usr/include/qt5/QtCore -I/usr/include/qt5 -o daemon_main.o daemon_main.cpp
2017-11-10_13-38-47	"MasterPort" = "2505"	11: "compass-rccars-daq-msglogger"	g++ -o MonitoringDaemon mpDaemon.o print_logs.o fifo.o daemon_main.o -lstdc++ -lQt5Core -pthread
2017-11-10_13-38-49	"DIALOG_CONTROL_SERVER_ADDRESS" = "pccore15.cern.ch"	12: "compass-rccars-daq-msgbrowser"	g++ -c -fPIC -I. -I/usr/include/qt5/QtCore -I/usr/include/qt5 -o RecoverSharedMemory.o RecoverSharedMemory.cpp
2017-11-10_13-38-55	"DIALOG_CONTROL_SERVER_PORT" = "55550"	13: "compass-rccars-daq-master"	g++ -o memoryRecover RecoverSharedMemory.o print_logs.o fifo.o -lstdc++ -lQt5Core
2017-11-10_13-38-56	"CONN_FILES_PATH" = "/online/CMAD/CONFIG/"	14: "compass-rccars-daq-gui"	g++ -c -fPIC -I. -I/usr/include/qt5/QtCore -I/usr/include/qt5 -fPIC -pthread -o dataFileReader.o example.cxx
2017-11-10_13-38-57	"ADDR_FILES_PATH" = "/online/CMAD/CONFIG/"	15: "compass-rccars-daq-CUI"	ar rcs libMonitorFifo.a fifo.o print_logs.o
2017-11-10_13-38-59	*****	16: "compass-rccars-daq-DIALOGCommunicationDaemon"	g++ -o dataFileReader dataFileReader.o libMonitorFifo.a -lstdc++ -lQt5Core -L. -lMonitorFifo
2017-11-10_13-40-36	*	17: "compass-rccars-daq-monitoringDaemon"	*****
2017-11-10_13-40-36	PATHS:	18: "compass-rccars-daq-sbgui"	10 "compass-rccars-daq-slavereadout":
2017-11-10_13-40-39	/opt/cactus/lib	19: "compass-rccars-daq-configuration-tool"	TERMINATED
2017-11-10_13-40-48			*****
2017-11-10_13-40-48			11 "compass-rccars-daq-msglogger":

			12 "compass-rccars-daq-msgbrowser":

			13 "compass-rccars-daq-master":

OPEN LOG

CLOSE

VIEW LOG

9 "compass-rccars-daq-monitor":

qmake exitCode: 0

qmake output:

disabled via commands.cpp

make exitCode: 0

make output:

g++ -c -fPIC -I. -I/usr/include/qt5/QtCore -I/usr/include/qt5 -o mpDaemon.o mpDaemon.cpp

g++ -c -fPIC -I. -I/usr/include/qt5/QtCore -I/usr/include/qt5 -o print_logs.o print_logs.cpp

g++ -c -fPIC -I. -I/usr/include/qt5/QtCore -I/usr/include/qt5 -o fifo.o MonitorFIFO.cpp

g++ -c -fPIC -I. -I/usr/include/qt5/QtCore -I/usr/include/qt5 -o daemon_main.o daemon_main.cpp

g++ -o MonitoringDaemon mpDaemon.o print_logs.o fifo.o daemon_main.o -lstdc++ -lQt5Core -pthread

g++ -c -fPIC -I. -I/usr/include/qt5/QtCore -I/usr/include/qt5 -o RecoverSharedMemory.o RecoverSharedMemory.cpp

g++ -o memoryRecover RecoverSharedMemory.o print_logs.o fifo.o -lstdc++ -lQt5Core

g++ -c -fPIC -I. -I/usr/include/qt5/QtCore -I/usr/include/qt5 -fPIC -pthread -o dataFileReader.o example.cxx

ar rcs libMonitorFifo.a fifo.o print_logs.o

g++ -o dataFileReader dataFileReader.o libMonitorFifo.a -lstdc++ -lQt5Core -L. -lMonitorFifo

10 "compass-rccars-daq-slavereadout":

TERMINATED

11 "compass-rccars-daq-msglogger":

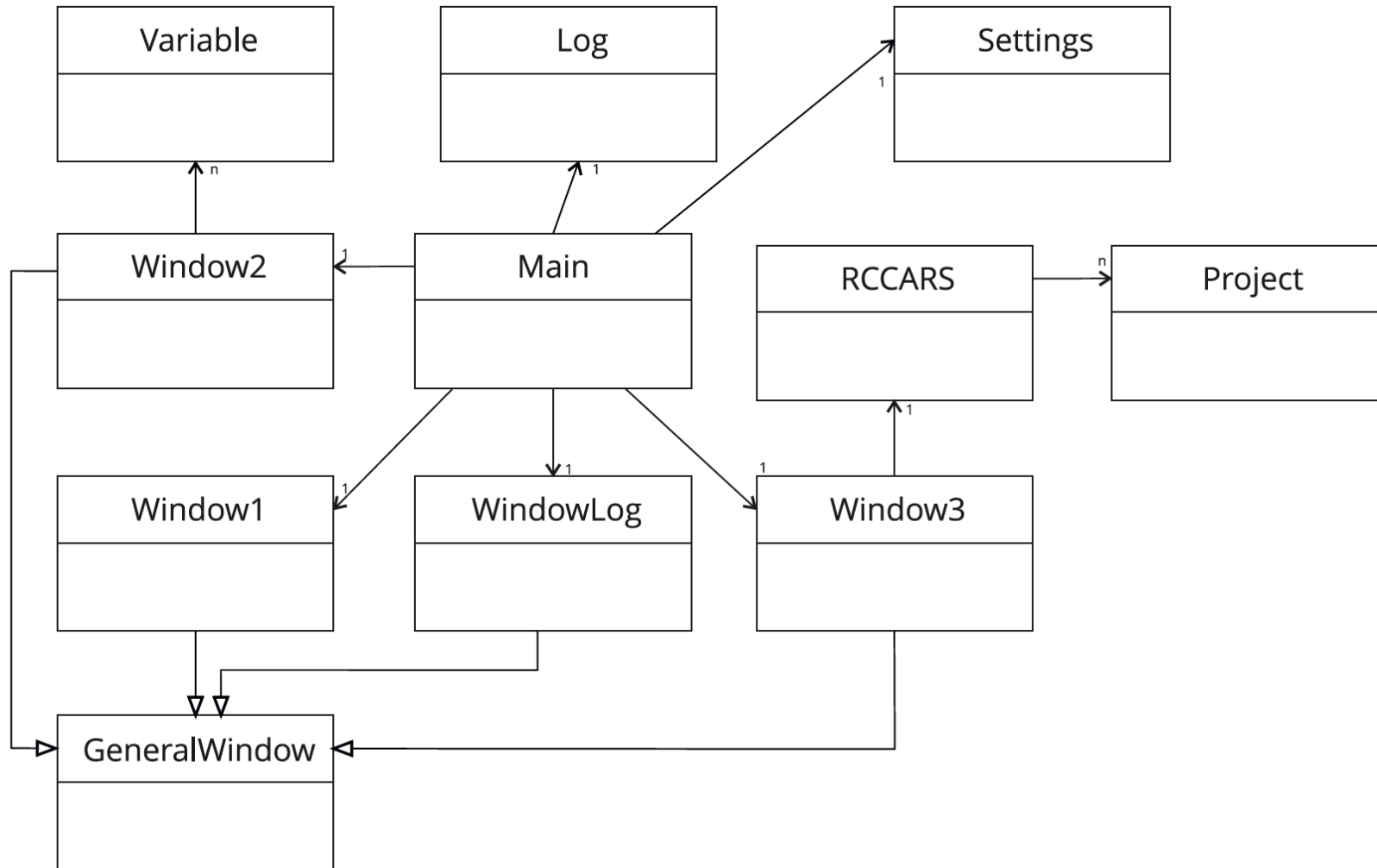
12 "compass-rccars-daq-msgbrowser":

13 "compass-rccars-daq-master":

OPEN LOG

CLOSE

Implementation



Implementation

- Application written in Qt 4
- Files saved in XML
- All commands are stored in seperate .cpp file
 - ➔ user can easy change them

Requirements

- Qt Framework 4.0+

Everything else depends on the projects (i.e. connection to CERN libraries)

Conclusion

- !Versatility!
- Easy to use
- Requirements arise from projects only
- Saves time (1-2 days to 30 min)

Thank you for your attention!