

## Euroforth 2020 "Rome"



### A radical alternative to the Windows registry

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### A radical alternative to the Windows registry

REPLACE THE REGISTRY WITH WHAT?

- a) Basic configuration data A BIT OF THIS  
*Configuration file*
- b) System configuration data LOTS OF THIS  
*PROBLEM*
- c) Per PC configuration data A BIT OF THIS  
*Configuration file*
- d) Small amounts of persistent data A BIT OF THIS  
*Configuration file*

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#### THE GOOD OLD REGISTRY

- \* One of the best bits of Windows
- \* Gradually made less and less useful over the years
- \* Essentially, a hierarchical database
- \* Amazingly, there is no really good alternative in Linux

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### A radical alternative to the Windows registry

Configuration files – easy  
Lots of possibilities  
Libconfig is our favourite

Typical FORTH interface to Libconfig

```
: DATABASECONF { ... } Database settings
2" Database" CONFKEY
\ <length> <address> <name> <default> <action>
HOST_NAME_MAX ZDBHOST 2" IP_address_of_central_database" 2" 192.168.0.10" CONF$
HOST_NAME_MAX ZDBCENTRAL 2" IP_address_of_central_database" 2" 192.168.0.100" CONF$
MAX_DB_USER DBUSER 2" Database_user" 2" NICK" CONF$
MAX_DB_PASS DBPASS 2" Database_password" 2" Z$SECRET" CONF$
MAX_DB_NAME DBNAME 2" Database_name" 2" Tracknet" CONF$
ADIR DBPORT 2" Database_port_number" 3306 CONF$
;
```

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We used it for:

- a) Basic configuration data A BIT OF THIS  
*e.g. Where to find the database*
- b) System configuration data LOTS OF THIS  
*e.g. How many Kgs do you put in a washing machine?*
- c) Per PC configuration data A BIT OF THIS  
*e.g. On this PC, are you allowed access to this dialog?*
- d) Small amounts of persistent data A BIT OF THIS  
*e.g. Go back to the same report that you selected last time*

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WHAT TO DO ABOUT SYSTEM CONFIGURATION DATA?

- \* Lots of it
- \* Needs to be easily editable  
(But only by the configuration engineer)
- \* Needs to be structured
- \* Needs to be accessible from all devices on the control network
- \* Needs to be very flexible, and easily extensible

THIS SUGGESTS

- a) A database table
- b) A tabbed dialog box
- c) The dialog box to be dynamically generated

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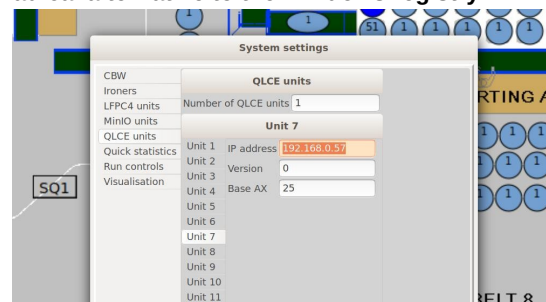
HOW TO EDIT THE DATA?

- a) Basic configuration data A BIT OF THIS  
*Need to set this manually, before the program will run*
- b) System configuration data LOTS OF THIS  
*Dialog boxes ESSENTIAL for managing the complexity*
- c) Per PC configuration data A BIT OF THIS  
*SIMPLE, so could be set manually*
- d) Small amounts of persistent data A BIT OF THIS  
*Never needs setting*

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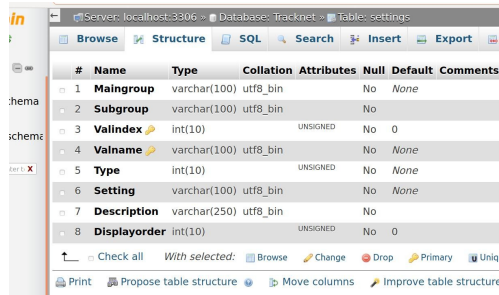


QLCE = Quad Loadcell to Ethernet

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#### Database table columns



#	Name	Type	Collation	Attributes	Null	Default	Comments
1	Maingroup	varchar(100)	utf8_bin		No	None	
2	Subgroup	varchar(100)	utf8_bin		No	None	
3	Valindex	int(10)		UNSIGNED	No	0	
4	Valname	varchar(100)	utf8_bin		No	None	
5	Type	int(10)		UNSIGNED	No	None	
6	Setting	varchar(100)	utf8_bin		No	None	
7	Description	varchar(250)	utf8_bin		No	None	
8	Displayorder	int(10)		UNSIGNED	No	0	

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#### NOW FOR THE RADICAL BIT

#### DURING COMPILATION, AT AN EARLY STAGE...

1. Read in the database config file  
*Now you know how to get to the DB*

2. Read in the DB settings table

3. For every Valname...

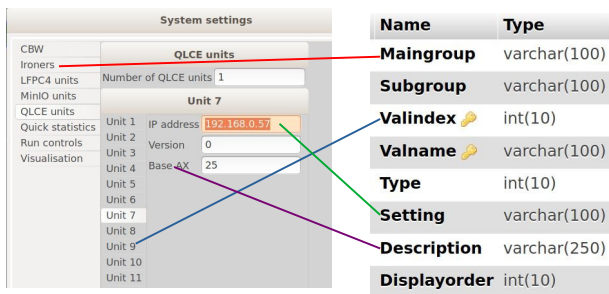
- Does it exist as a Forth word?
- If not, **dynamically create** a VALUE, VINDEX or STRINDEX, according to Valindex and Type
- Set the value from Setting

4. You are then free to use these new words in the rest of the compilation process

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#### Tying the DB table to the dialog



Name	Type
Maingroup	varchar(100)
Subgroup	varchar(100)
Valindex	int(10)
Valname	varchar(100)
Type	int(10)
Setting	varchar(100)
Description	varchar(250)
Displayorder	int(10)

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#### SUMMARY

New Forth words are created, not in code, but from entries in a database table.

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#### Specify Forth VALUE types in the DB

Name	Type
Maingroup	varchar(100)
Subgroup	varchar(100)
Valindex	int(10)
Valname	varchar(100)
Type	int(10)
Setting	varchar(100)
Description	varchar(250)
Displayorder	int(10)

**Valname**  
Name of Forth value type word

**Valindex**  
0= it's a single Forth VALUE  
0<> = it's indexed value  
(VINDEX, STRINDEX etc.)

**Type**  
bool, int, string etc.