

MYC Security

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This paper is published in <https://github.com/dk1ri> as well

Introduction

This paper describes some security aspects of a MYC system.

For usage, handling and environment for MYC system see [1] - [5]

Definitions and formats

see <https://dk1ri.de/myc/Definitions.txt> or <https://dk1ri.de/myc/Definitions.pdf>

Some explanation

Security is one of the most important aspects of a control system.

The MYC is a OSI layer 7 protocol and defines the commands and their methods only. Nothing about security is defined. Nevertheless there is one aspect: there is no readable text (except when strings are transmitted), all data are binary and someone reading the transmitted data, must know the connected device as well.

A MYC system can be hirarchical. A tampered subsystem can deliver wrong data, but cannot send commands to other subsystems. This helps security as well.

The other OSI layers can be choosen by demand and they will define the system security.

The following should give some rules how to increase system security.

Funcs, Devices and Programs

Devices are designed to accept their valid command with their valid parameters only. Any other data are ignored and may produce a error message.

This is also valid for interfaces to other systems as FS20, ZWAVE and others.

The devices are connected to the command-router (up to now) by cables. It it assumed, that this system works in a save environment.

If this cannot be guaranteed modified devices with built in encryption must be used (not available yet). The command-router also must communicate

with this format. The same is valid for wireless devices.

For the rules-device and logic-device the same apply.

The behaviour of programs is similar to this of devices. If programs run on the same computer as the command-router secure message transfer usually is no problem. Otherwise encryption is recommended.

Command-router

The command-router communicates with the userinterface usually via internet. So at this point ssh and login processes must be provided. The MYC protocol define a command for login but says nothing about the implementation. The command-router also communicate by MYC commands only and ignore all non valid commands and parameters.

The login to subsystems can also be used to avoid, that a user can access any subsystem.

Webserver and Userinterface

For these the common rules as for secure websites apply.

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Reference

- [1] <https://dk1ri.de/myc/MYC.pdf> (german)
- [2] <https://dk1ri.de/myc/MYC.en.pdf>
- [3] <https://dk1ri.de/myc/Description.txt> or <https://dk1ri.de/myc/Description.pdf>
- [4] <https://dk1ri.de/myc/commands.txt> or <https://dk1ri.de/myc/commands.pdf>
- [5] https://dk1ri.de/myc/Reserved_tokens.txt or https://dk1ri.de/myc/Reserved_tokens.pdf

- [6] <https://dk1ri.de/myc/Rules.txt> or <https://dk1ri.de/myc/Rules.pdf>
- [7] <https://dk1ri.de/myc/commandrouter.txt> or <https://dk1ri.de/myc/commandrouter.pdf>
- [8] https://dk1ri.de/myc/Rules_device.txt or https://dk1ri.de/myc/Rules_device.pdf
- [9] <https://dk1ri.de/myc/skin.txt> or <https://dk1ri.de/myc/skin.pdf>
- [10] <https://dk1ri.de/myc/logicdevice.txt> or <https://dk1ri.de/myc/logicdevice.pdf>
- [11] <https://dk1ri.de/myc/Definitions.txt> or <https://dk1ri.de/myc/Definitions.pdf>
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