

## 2 GUEST OS (WINDOWS 10 & UBUNTU) ON PIKEOS



### Introduction

Thanks to the support of the Intel hardware virtualization, PikeOS 5.1 is executing two unmodified guest operating systems in parallel: Windows 10 and Ubuntu. Each of these OSes is running into separated and isolated partitions. The both guest OSes communicate with each other via the network channel relying on VirtIO Network which is natively supported in PikeOS 5.1.

On both operating systems an application with 4 dials is running. Those 4 dials are simulating spinning actions. Via an external USB controller with 8 knobs and 16 buttons, input signals can be sent into the system. But only the first 4 knobs (8 buttons) have an influence on Windows 10 - the other knobs and buttons can control the Ubuntu dial application.

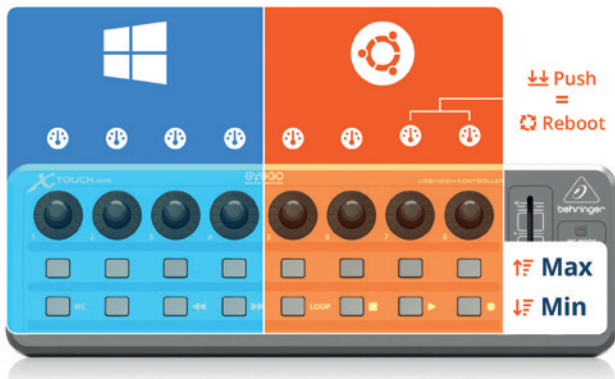
When pushing two knobs (No 7+8) at the same time, the Ubuntu OS is rebooted without affecting Windows 10 in its operation. Both operating systems can perform their tasks separately.

### Architecture

The architecture of this demonstrator consists of several partitions. Two partitions are dedicated to execute Windows 10 and Ubuntu as guest operating systems, another partition is executing a PikeOS Native application. The last application is executing additional software such as network, debugging and monitoring drivers. Here the VirtIO network driver is executed.

Windows is responsible of receiving and opening the USB device and converts USB MIDI information into UDP IP frames. These UDP frames are then sent through the VirtIO channel by using a Windows standard network API together with Drivers. Ubuntu receives these frames by also using the standard Linux network API with drivers.

The data exchanges are based on the usage of PikeOS queuing ports which allow partitions to communicate with each other within a safe communication channel.



PikeOS RTOS & Hypervisor

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**2 GUEST OS DEMO PARTNERS**

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