# TechNote

# Microsoft Hyper-V May 18, 2017







www.xcapi.de





Page 2

### Introduction

This document is intended to support you during the configuration of the XCAPI in a Microsoft Hyper-V environment.

For this we are going to adjust the energy options and the clock source of the Microsoft Hyper-V for sufficient timing behaviour, assuring an operation without disruptions which are commonly based on wrong CPU clocking between several guest operating systems and the host.

Please note that it is essential testing the Microsoft Hyper-V and VoIP environment for sufficient resource and real-time behaviour.

For some extended information on installation procedures regarding the Microsoft Hyper-V and the virtual machines please refer to the respective manuals.

A short installation manual for the XCAPI is available at XCAPI Website.

## Improving Real-time Performance

Up to a certain degree, the XCAPI can cope with time shifts in the virtual machine which is a general problem when a virtual machine does not have sufficient CPU time due to other time-consuming processes on the host. Without this adjustment, real-time applications like Softfax are not feasible because of gaps in the audio stream which can lead to aborted fax transmissions.



## **Query Performance Counter Support inside the XCAPI**

For enabling XCAPI Query Performance Counter (QPC) support, you need to run the configuration tool xfinetune.exe. This executable can be found in the installation folder of the XCAPI. There you have to activate the option High Resolution Time Source within the General Settings.

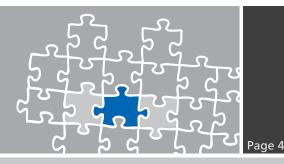
Please select the option **QPC** for the time source parameter.

XFinetune 3.3.227.0 TE-SY	STEMS GmbH	<u>? ×</u>
XCAPI Parameters Finetu General Settings	ning	
General	Queues	
H.323 RTP	VoIP Signaling Queues	1
	Disable Hires Timer	
	∫ ₩igh Resolution Time Source	<u> 990</u>
Defaults		<u>QK</u> <u>C</u> ancel



Finally a reboot is required to activate this change to the configuration!





# Enhanced Intel SpeedStep(R) Technology

Please review the Bios of the Hyper-V host and disable all related **Enhanced Intel SpeedStep(R) Technology** settings.

Advanced	
Processor Configuration	
Core Count	<total cores="" number="" of=""></total>
Core Frequency	<current frequency="" processor=""></current>
System Bus Frequency	<current frequency="" fsb=""></current>
Enhanced Intel <sup>®</sup> SpeedStep Tech	Enabled/Disabled
Core Multi-processing	Enabled/Disabled
Intel <sup>®</sup> Virtualization Technology	Enabled/Disabled
Intel <sup>®</sup> VT for Directed I/O	Enabled/Disabled
Simulated MSI Support	Enabled/Disabled
Execute Disable Bit	Enabled/Disabled
Hardware Prefetcher	Enabled/Disabled
Adjacent cache line prefetch	Enabled/Disabled
Processor Re-Test	Enabled/Disabled
Processor 1 Information	
Processor 2 Information	

You could use the Intel(R) Processor Identification Utility to verify the SpeedStep(R) technology support of the CPU.

暮 Intel(R) Processor Ide	ntification Utility			×
Elle Processor View Help				
Frequency Test CPU Tech	nologies CPUID Data			
Intel® Proces	sor Identification Utility		(	(intel)
	Intel(R) Core(TM)2 Duo CPU E8500 @ 3.1	6GHz		
	Supporting Advanced Intel Processor Tech	hnologies		
	Intel(R) Virtualization Technology			Yes
	Intel(R) Hyper-Threading Technology			No
	Intel(R) 64 Architecture			Yes
	Other Intel Technologies Supported			
	Enhanced Intel SpeedStep(R) Technology	Yes	Intel(R) Advanced Vector Extens	ions No
	Intel(R) SSE	Yes	Intel(R) AES New Instructions	No
	Intel(R) SSE2	Yes		
	Intel(R) SSE3	Yes		
	Intel(R) SSE4	Yes		
				Information
	Intel processor numbers are not a measure of perfo family, not across different processor families. See			
<u></u>				



Page 5

### **Power Options**

Additionally you might have to disable any **Power Options** within the Windows host and client. Referring to this, please review also the BIOS settings.

🔰 🕞 🗢 👻 👻 Control Panel 🝷 Al	Control Panel Items - Power Options	👻 🛃 Search Control Panel		
Control Panel Home	Select a power plan		_	
Choose what the power button does	Power plans can help you maximize your computer's performance or choose a plan and customize it by changing its power settings.	or conserve energy. Make a plan active by selecting it, Tell me more about power plans		
Create a power plan	Preferred plans			
Choose when to turn off the	C Balanced (recommended)	Change plan settings		
display	Automatically balances performance with energy consumption on capable hardware.			
	High performance	Change plan settings		
	Favors performance, but may use more energy.			
	Hide additional plans	A		
	C Power saver	Change plan settings		
	Saves energy by reducing your computer's performance	ze where possible.		
See also				
Liser Accounts				

If necessary, the power scheme can be set via the CLI.

```
C:\Windows\system32>powercfg.exe -L

Existing Power Schemes (* Active)

Power Scheme GUID: 381b4222-f694-41f0-9685-ff5bb260df2e

Power Scheme GUID: 8c5e7fda-e8bf-4a96-9a85-a6e23a8c635c

(High performance)

Power Scheme GUID: a1841308-3541-4fab-bc81-f71556f20b4a

C:\Windows\system32>powercfg -setactive 8c5e7fda-e8bf-4a96-9a85-a6e23a8c635c

C:\Windows\system32>powercfg.exe -L

Existing Power Schemes (* Active)

Power Scheme GUID: 381b4222-f694-41f0-9685-ff5bb260df2e

Power Scheme GUID: 8c5e7fda-e8bf-4a96-9a85-a6e23a8c635c

Power Scheme GUID: 381b4222-f694-41f0-9685-ff5bb260df2e

Power Scheme GUID: 8c5e7fda-e8bf-4a96-9a85-a6e23a8c635c

Power Scheme GUID: a1841308-3541-4fab-bc81-f71556f20b4a

C:\Windows\system32>_
```





Page 6

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