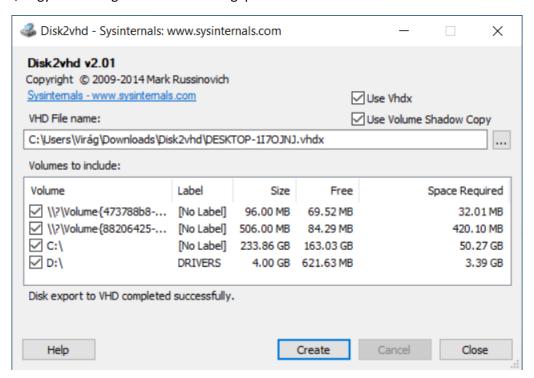
#### 2. feladat:

#### a) File and Disk Utilities (Disk2vhd)

Létrehozott egy merevlemezképfájlt a Disk2vhd mappába, ami az operációs rendszer VHD-re alakított mása. Ez azért jó, mert ha szeretnénk valamit telepíteni a számítógépre vagy változtatásokat szeretnénk rajta végrehajtani, akkor előtte lehetőségünk van egy virtuális géppel - például Hyper-V – tesztelni, hogy miként fog hatni a mi számítógépünkre.



### b) Networking Utilities (TCPView)

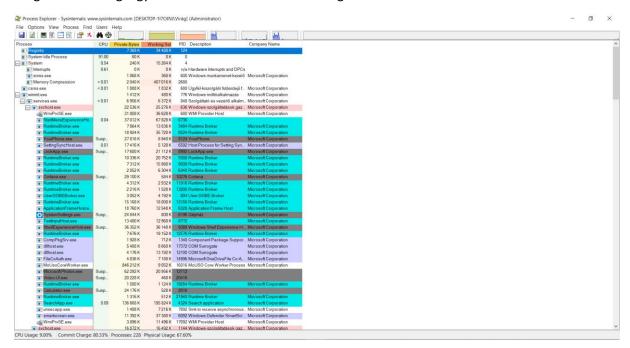
Megmutatja azt, hogy milyen internetes process fut éppen a számítógépen, megmutatja hogy ez a process milyen protokollt használ; UDP,TCP -ezek IPv4 protokollok, UDPv6,TCPv6 -ezek pedig IPv6 protokollok. Továbbá megmutatja a protokollok helyi címét, megmutatja, hogy melyik porton megy ki az internetre, mi a külső IP-cím és mi a külső port. Megmutatja azt, hogy milyen státuszban van a process, hány darab küldött csomag hajtódott végre a kommunikáció során.

Postero   Fig.   Proceed   Local Address   Local Address   Local Address   Reven Byles   Reven Byl
Order   1700   170
Prince   1700   170
Chromate   1700   170
Octomic ent   1750   175
Primaries   1750   170
- chrome tes   1730   170°   chrome tes   1730   chrome tes   1730
Primer   1750
Column cest   1720   170   declarate   1720   dec
Prince   1708
Prisona et al 1472 UDP ESES LIPENTAN ESSE   **  Christian et al 1472 UDP ESES LIPENTAN ESSE   **  Christian et al 1720 UDP ESES LIPENTAN ESSE   **
dromane et   4772
drome-see   1700   UDP   DESCRIPTION SCENE
## chroma ees   1726
denome see 1728 UPP DESCRIPTION SSS - chrome see 1729 UPP DESCRIPTION SSS - chrome see 1720 UPP UPP UPP UPP UPP UPP UPP UPP UPP UP
chrome eve         14772         UDP         DESKTOP-I/TOUN SISS         -           chrome eve         17200         UDP         DESKTOP-I/TOUN SISS         -           chrome eve         14772         UDP         DESKTOP-I/TOUN SISS         -
ebronne sees 17200 UDP DESKTOP170XM 5755 * *  **CHONNE sees 17772 UDP DESKTOP170XM 5755 * *
chrome see 17200 UDPV6 (0:00:00:00:00) 5783 * chrome see 17472 UDPV6 (0:00:00:00:00:00) 5783 * chrome see 17472 UDPV6 (0:00:00:00:00:00:00:00:00:00:00:00:00:0
Chrome ene 147/2 UDV6 (0.000.00.00) 5363
chrome see 14772 UDPv6 (0:0000000) 5363 * *
chrometers 17200 TCP desktop-1/2nj 52816 172.217.19.106 https: ESTABLISHED 2 649 2 776
chrome eve 17286 UDP DESKTOP-1170.INJ 62980 * 6 2.442 9 2.808
Discordinge 12384 TCP DESKTOP-1170JNJ 6463 DESKTOP-1170JNJ 0 LISTENING
Discordine 11336 TCP desktop-1/7oin 52962 162.159.133.234 https ESTABUSHED 1 51 1 32
pi_service.exe 19856   TCPV6   [0:0:0:0:0:0:0]   50437   [0:0:0:0:0:0]   0   LISTENING
Instrume 969 TCP DESKTOP-117ÖJNJ 49664 DESKTOP-117ÖJNJ 0 LISTENING
Insurance 868 TCPV6 [0.0.0.0.0.0.0] 49684 [0.0.0.0.0.0.0] 0 LISTENING
MiMpEng.eve 13116 TCP desktop-17/sjnj 52807 51.144.227.73 https://essays.cs.desktop-17/sjnj 52807 51.1
OneApp   GECC. 4244   TCP   DESKTOP+17DLNI 000   DESKTOP+17DLNI 0   LISTENING
Orestop (ICCC. 4244   TCPV6   (0:0:0:0:0:0:0:0)   (0:0:0:0:0:0:0)   USTENING   USTENIN
UneQuire eve
Seatch-page 4324   TCP   destrop-1/249  01330   234:78.137.239   mpp   E51:88USHED     Seatch-page 4324   TCP   destrop-1/2491   51:916   13:107.4254   https   E51:88USHED
SeestApp see 4324   TCP   debtop 1/2 pt   S1300   13.107.3.254   https:// ES146USHED
Searchaption 4224 TCP desktop-1/2011 52817 13.107.21.200 https://doi.org/10.1011/10.10
Search-appear 4224 TCP desktop-1/2en 52818 52.97.188.178 https: ESTABLISHED 5 1.678 5 1.077
Search/spieve 4324 TCP desktop-17/cmi 52919 12.107.43.14 https: ESTABLISHED
SearchAppiere 4324 TCP desktop-17/cpt 52820 13.107.4.254 Mps ESTABLISHED
SearchAppiere 4324 TCP deuktoj-1/7ejn 52821 152.199.19.161 https:// ESTABUSHED
Search/aspieve 4324 TCP desktop-17/on 52822 204.79.197.222 https ESTABUSHED
services and 948 TCP DESKTOP-1170JNJ 49670 DESKTOP-1170JNJ 0 LISTENING
points: 111 Established: 33 Listening: 25 Time Walt: 5 Close Wait: 1

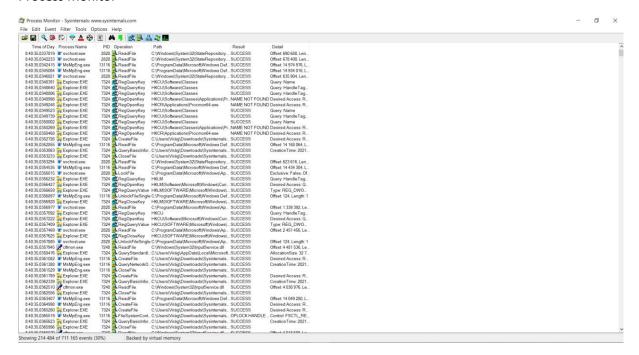
c) Process Utilities (Process Explorer, Process Monitor, AutoRuns)

# **Process Explorer**

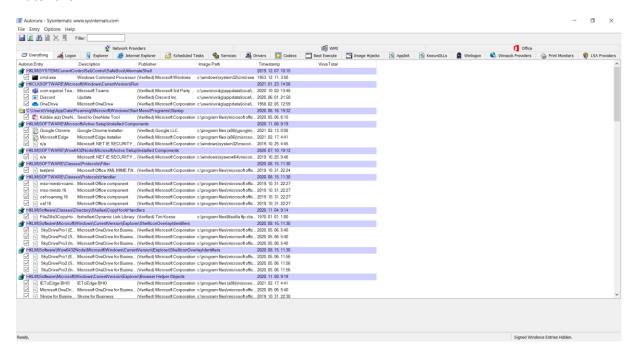
Megmutatja, hogy milyen processek futnak a gépen ebben a pillanatban. Egy rövid leírás mellett megtalálható még a gyártó neve és a CPU kihasználtsága is.



# **Process Monitor**

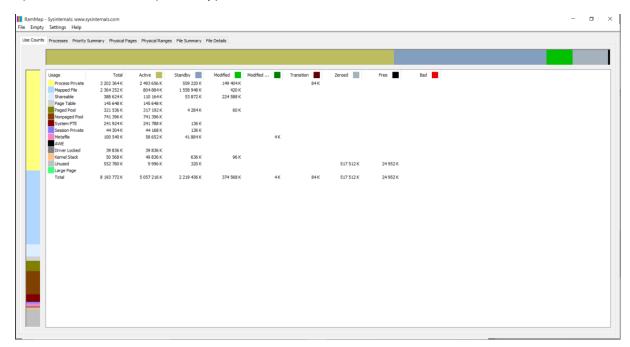


#### **AutoRuns**

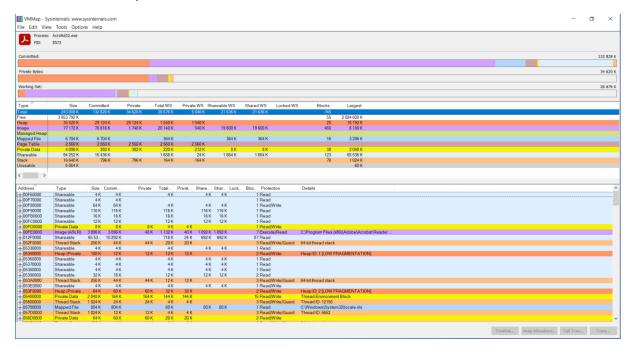


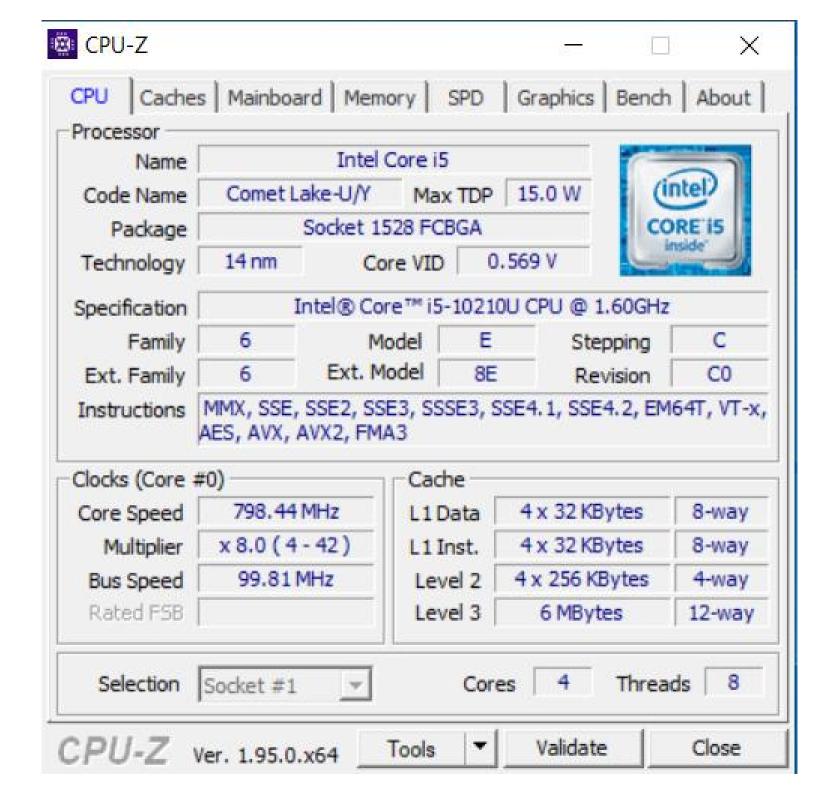
# d) Security Utilities (LogonSession)

### e) Information Utilities (RAMMap)



### +1 választott VMMap







#### CPU-Z

**Binaries** 

CPU-Z version 1.95.0.x64

**Processors** 

CPU Groups

CPU Group 0 8 CPUs, mask=0xFF

Number of sockets 1
Number of threads 8

#### **APICs**

#### Socket 0

-- Core 0 (ID 0)

-- Thread 0 0 -- Thread 1 1

-- Core 1 (ID 1)

-- Thread 2 2 -- Thread 3 3

-- Core 2 (ID 2)

-- Core 3 (ID 3)

-- Thread 6 6
-- Thread 7 7

### Timers

 ACPI timer
 3.580 MHz

 Perf timer
 10.000 MHz

 Sys timer
 1.000 KHz

## **Processors Information**

Socket 1 ID = 0Number of cores 4 (max 4)

Number of threads 8 (max 8)

Manufacturer GenuineIntel

Name Intel Core i5

Codename Comet Lake-U/Y

Specification Intel(R) Core(TM) i5-10210U CPU @ 1.60GHz

Package (platform ID) Socket 1528 FCBGA (0x2)

**CPUID** 6.E.C **Extended CPUID** 6.8E Core Stepping C0 Technology 14 nm **TDP Limit** 15.0 Watts Tjmax 100.0 °C Core Speed 4090.0 MHz Multiplier x Bus Speed 41.0 x 99.8 MHz Base frequency (cores) 99.8 MHz Base frequency (ext.) 99.8 MHz Stock frequency 2100 MHz Max frequency 4200 MHz

Instructions sets MMX, SSE, SSE3, SSSE3, SSE4.1, SSE4.2, EM64T, VT-x, AES, AVX, AVX2, FMA3

Microcode Revision 0xC0

L1 Data cache 4 x 32 KBytes, 8-way set associative, 64-byte line size
L1 Instruction cache 4 x 32 KBytes, 8-way set associative, 64-byte line size
L2 cache 4 x 256 KBytes, 4-way set associative, 64-byte line size
L3 cache 6 MBytes, 12-way set associative, 64-byte line size

 Max CPUID level
 00000016h

 Max CPUID ext. level
 80000008h

 FID/VID Control
 yes

Turbo Mode supported, enabled

Max non-turbo ratio21xMax turbo ratio42xMax efficiency ratio4x

 Speedshift
 Autonomous

 O/C bins
 none

 Ratio 1 core
 42x

 Ratio 2 cores
 41x

 Ratio 3 cores
 39x

 Ratio 4 cores
 39x

IA Voltage Mode PCU adaptive

IA Voltage Offset 0 mV

GT Voltage Mode PCU adaptive

GT Voltage Offset 0 mV

LLC/Ring Voltage Mode PCU adaptive

LLC/Ring Voltage Offset 0 mV

Agent Voltage Mode PCU adaptive

Agent Voltage Offset 0 mV

TDP Level 15.0 W @ 16x
TDP Level 10.0 W @ 8x
TDP Level 25.0 W @ 21x

 Temperature 0
 74 degC (165 degF) (Package)

 Temperature 1
 57 degC (134 degF) (Core #0)

 Temperature 2
 73 degC (163 degF) (Core #1)

 Temperature 3
 57 degC (134 degF) (Core #2)

 Temperature 4
 57 degC (134 degF) (Core #3)

 Voltage 0
 1.12 Volts (VID)

 Voltage 1
 +0.00 Volts (IA Offset)

 Voltage 2
 +0.00 Volts (GT Offset)

 Voltage 3
 +0.00 Volts (LLC/Ring Offset)

 Voltage 4
 +0.00 Volts (System Agent Offset)

 Power 00
 16.23 W (Package)

 Power 01
 14.64 W (IA Cores)

 Power 02
 0.06 W (GT)

 Power 03
 1.54 W (Uncore)

 Power 04
 0.62 W (DRAM)

Clock Speed 0 4090.00 MHz (Core #0) Clock Speed 1 3690.97 MHz (Core #1) Clock Speed 2 3890.48 MHz (Core #2) Clock Speed 3 3890.48 MHz (Core #3) Core 0 max ratio 42.0 (effective 41.0) Core 1 max ratio 42.0 (effective 41.0) Core 2 max ratio 42.0 (effective 41.0) Core 3 max ratio 42.0 (effective 41.0)

Northbridge Intel Comet Lake rev. 0C
Southbridge Intel Comet Lake PCH rev. 00
Bus Specification PCI-Express 3.0 (8.0 GT/s)

Graphic Interface PCI-Express

Memory Type DDR4

Memory Size 8 GBytes

Channels Dual

Memory Frequency 1329.5 MHz (1:20)

 CAS# latency (CL)
 19.0

 RAS# to CAS# delay (tRCD)
 19

 RAS# Precharge (tRP)
 19

 Cycle Time (tRAS)
 43

 Row Refresh Cycle Time (tRFC)
 467

 Command Rate (CR)
 2T

Uncore Frequency 3591.2 MHz
Host Bridge 0x9B61

#### **Memory SPD**

Monitoring

Mainboard Model X521FA (0x00000177 - 0x0056A420)

**LPCIO** 

**Hardware Monitors** 

Hardware monitor Hardware monitor ID=0xFFFFFFF

Hardware monitor Hardware monitor ID=0xFFFFFFFF

Hardware monitor D3D

Hardware monitor Intel I/O

 Temperature 0
 55 degC (131 degF) [0x37] (GPU)

 Clock Speed 0
 449.01 MHz [0x1C1] (Graphics)

Clock Speed 1 n.a. (Memory)
Clock Speed 2 n.a. (Processor)

**PCI Devices** 

Description Host Bridge

Location bus 0 (0x00), device 0 (0x00), function 0 (0x00)

Common header

 Vendor ID
 0x8086

 Model ID
 0x9B61

 Revision ID
 0x0C

Description VGA Controller

Location bus 0 (0x00), device 2 (0x02), function 0 (0x00)

Common header

 Vendor ID
 0x8086

 Model ID
 0x9B41

 Revision ID
 0x02

Description

Data Aquisition and Signal Processing Device
Location

Data Aquisition and Signal Processing Device
bus 0 (0x00), device 4 (0x04), function 0 (0x00)

Common header

 Vendor ID
 0x8086

 Model ID
 0x1903

 Revision ID
 0x0C

Description System Device

Location bus 0 (0x00), device 8 (0x08), function 0 (0x00)

Common header

 Vendor ID
 0x8086

 Model ID
 0x1911

 Revision ID
 0x00

Description

Data Aquisition and Signal Processing Device

Location

Data Aquisition and Signal Processing Device

bus 0 (0x00), device 18 (0x12), function 0 (0x00)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02F9

 Revision ID
 0x00

Description USB Controller

Location bus 0 (0x00), device 20 (0x14), function 0 (0x00)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02ED

 Revision ID
 0x00

Description RAM Memory Controller

Location bus 0 (0x00), device 20 (0x14), function 2 (0x02)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02EF

 Revision ID
 0x00

Description Network Controller

Location bus 0 (0x00), device 20 (0x14), function 3 (0x03)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02F0

 Revision ID
 0x00

Description Serial Bus Controller

Location bus 0 (0x00), device 21 (0x15), function 0 (0x00)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02E8

 Revision ID
 0x00

Description Serial Bus Controller

Location bus 0 (0x00), device 21 (0x15), function 1 (0x01)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02E9

 Revision ID
 0x00

Description Communication Device

Location bus 0 (0x00), device 22 (0x16), function 0 (0x00)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02E0

 Revision ID
 0x00

Description RAID Controller

Location bus 0 (0x00), device 23 (0x17), function 0 (0x00)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02D7

 Revision ID
 0x00

Description PCI to PCI Bridge

Location bus 0 (0x00), device 29 (0x1D), function 0 (0x00)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02B0

 Revision ID
 0xF0

Description Communication Device

Location bus 0 (0x00), device 30 (0x1E), function 0 (0x00)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02A8

 Revision ID
 0x00

Description Serial Bus Controller

Location bus 0 (0x00), device 30 (0x1E), function 2 (0x02)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02AA

 Revision ID
 0x00

Description PCI to ISA Bridge

Location bus 0 (0x00), device 31 (0x1F), function 0 (0x00)

Common header

 Vendor ID
 0x8086

 Model ID
 0x0284

 Revision ID
 0x00

Description Multimedia device

Location bus 0 (0x00), device 31 (0x1F), function 3 (0x03)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02C8

 Revision ID
 0x00

Description SMBus Controller

Location bus 0 (0x00), device 31 (0x1F), function 4 (0x04)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02A3

 Revision ID
 0x00

Description Serial Bus Controller

Location bus 0 (0x00), device 31 (0x1F), function 5 (0x05)

Common header

 Vendor ID
 0x8086

 Model ID
 0x02A4

 Revision ID
 0x00

**DMI** 

SMBIOS Version 3.2

vendor American Megatrends Inc.

 version
 X521FA.203

 date
 11/28/2019

 ROM size
 16384 KB

**DMI System Information** 

manufacturer ASUSTeK COMPUTER INC.

product VivoBook\_ASUSLaptop X521FA\_S533FA

version 1.0

serial L6N0CV12C031259

UUID {ED2359EF-D9DA-D64B-953C-70335EF133E6}

SKU unknown family VivoBook

DMI Baseboard

vendor ASUSTeK COMPUTER INC.

model X521FA revision 1.0

serial L624NBCV0089SNMB

DMI System Enclosure

manufacturer ASUSTeK COMPUTER INC.

chassis type Notebook

chassis serial L6N0CV12C031259

DMI Physical Memory Array

location Motherboard usage System Memory

correction None
max capacity 32 GB
max# of devices 2

**DMI Memory Device** 

designation ChannelA-DIMM0

format SODIMM type DDR4 total width 64 bits data width 64 bits size 4 GB

**DMI Memory Device** 

designation ChannelB-DIMM0

format SODIMM
type DDR4
total width 64 bits
data width 64 bits
size 4 GB

DMI OEM Strings

 $\begin{array}{lll} string[0] & kPJ-+7X7+EfTa \\ string[1] & jTyRUBSNi7Ydf \\ string[2] & fCrOzJ6x1i-eh \\ \end{array}$ 

string[3]

string[4] 90NB0LE4-M01710

DMI Processor

manufacturer Intel(R) Corporation

model Intel(R) Core(TM) i5-10210U CPU @ 1.60GHz

clock speed 1584.0 MHz

FSB speed 100.0 MHz multiplier 16.0x

Graphics

Number of adapters

**Graphic APIs** 

API D3D API Intel I/O

**Display Adapters** 

Display adapter 0

ID 0x4000000

Name Intel(R) UHD Graphics

Board Manufacturer ASUSTeK Computer Inc.

Codename Comet Lake GT2

Technology 14 nm

PCI device bus 0 (0x0), device 2 (0x2), function 0 (0x0)

1

 Vendor ID
 0x8086 (0x1043)

 Model ID
 0x9B41 (0x1DB1)

Revision ID 0x2
Performance Level 0

Core clock 448.8 MHz
Performance Level Current
Core clock 448.7 MHz
Driver version 27.20.100.8681

WDDM Model 2.7

Win32\_VideoController AdapterRAM = 0x40000000 (1073741824)

Win32\_VideoController DriverVersion = 27.20.100.8681
Win32\_VideoController DriverDate = 09/05/2020

Monitor 0

Model ()

ID LGD0563

Serial

Manufacturing Date Week 0, Year 2018

Size 15.3 inches

Max Resolution 1920 x 1080 @ 59 Hz

Horizontal Freq. Range 0-0 kHz

Vertical Freq. Range 0-0 Hz

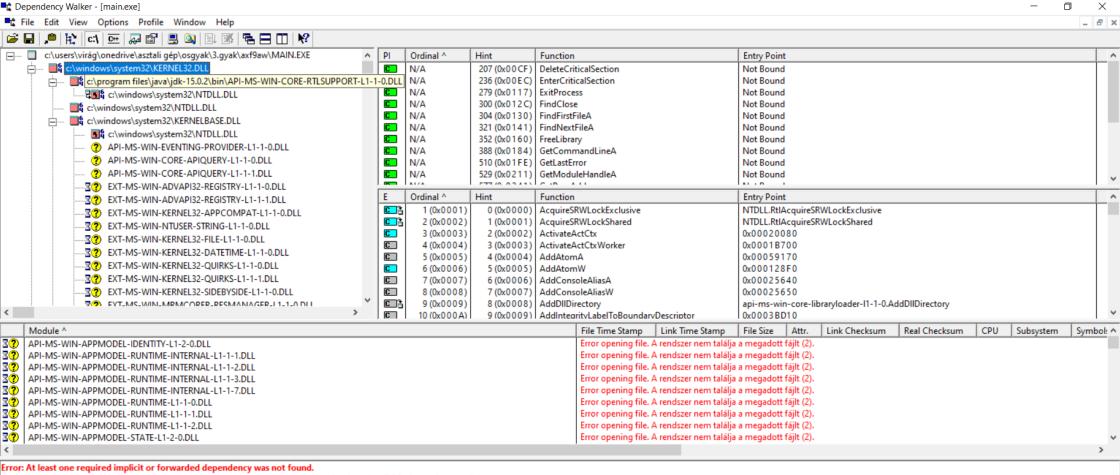
Max Pixel Clock 0 MHz

Gamma Factor 2.2

Software

Windows Version Microsoft Windows 10 (10.0) Professional 64-bit (Build 19041)

DirectX Version 12.0



Error: At least one module has an unresolved import due to a missing export function in an implicitly dependent module.

Error: Modules with different CPU types were found.

Error: A circular dependency was detected.

Warning: At least one delay-load dependency module was not found.

Warning: At least one module has an unresolved import due to a missing export function in a delay-load dependent module.

For Help, press F1