

java from scratch Knowledge Base

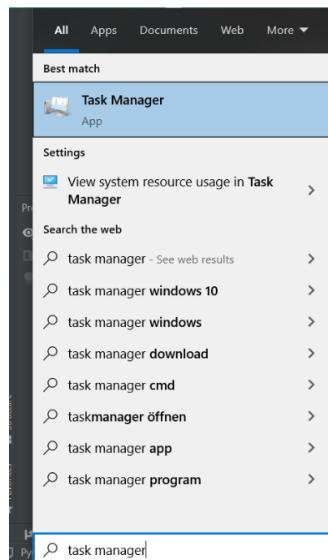
- ✓ Welcome
- ✓ Mastering Agile and Scrum: Video Training Series
- ✓ Program
- ✓ Introduction
- ✓ The architecture of an operating system
- ✓ The structure of files and directories
- Navigating through directories
- Environment variables
- Extracting archives
- Installing the software
- Monitoring the usage of system resources**
- Ending – control questions
- Software Installations
- IntelliJ EduTools – installation
- Introduction
- A brief history of Java
- First program
- Types of data
- Operators
- Conditional statements
- Loops

java from scratch Knowledge Base

Monitoring the usage of system resources

The operating system will not be fully operational if it is not able to use external interfaces and devices such as a computer central unit, hard drives, memory or network interfaces that allow you to connect to the Internet. However resources are not endless. Some application problems are caused by limited or overused system resources. To monitor system resources, operating systems have been equipped with dedicated applications and tools.

Windows



For Windows, the tool for monitoring system resources is the **Task Manager** and the **Resource Monitor**. You can run the task manager by searching for it in the Start Menu.

The task manager allows you to observe currently running processes (applications) and processes required for running systems (background processes). For each of the processes, we can monitor the consumption of the processor (CPU), the RAM, the hard disk, the network load, the use of graphics processors and its energy consumption.

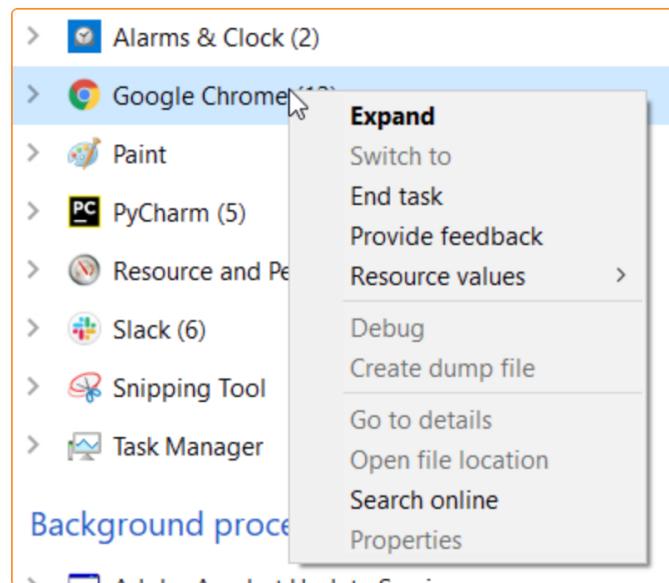
Name	Status	CPU	Memory	Disk	Network	GPU	GPU engine	Power usage	Power usage tr...
Apps (8)									
> Alarms & Clock (2)	1.2%	24.3 MB	0 MB/s	0 Mbps	3.3%	GPU 1 - 3D		Low	Moderate
> Google Chrome (12)	0.1%	746.7 MB	0 MB/s	0 Mbps	0%	GPU 1 - 3D		Very low	High
> Paint	0%	20.0 MB	0 MB/s	0 Mbps	0%			Very low	Very low
> PyCharm (5)	2.0%	1,116.6 MB	2.4 MB/s	0 Mbps	0%	GPU 1 - 3D		Low	Moderate

- Arrays
- Object-oriented programming
- Conclusion
- Assignments
- Basics of GIT – video training
- HTTP basics – video training
- Design patterns and good practices video course
- Prework Primer: Essential Concepts in Programming
- Cybersecurity Essentials: Must-Watch Training Materials
- Java Developer – introduction
- Java Fundamentals – coursebook
- Java fundamentals slides
- Java fundamentals tasks
- Test 1st attempt | after the block: Java fundamentals
- Test 2nd attempt | after the block: Java fundamentals
- GIT version control system coursebook
- Java – Fundamentals: Coding slides
- Java fundamentals tasks
- Software Testing slides
- Software Testing Coursebook
- Software Testing tasks
- Test 1st attempt | after the block: Software testing
- Test 2nd attempt | after the block: Software testing
- Java – Advanced Features coursebook

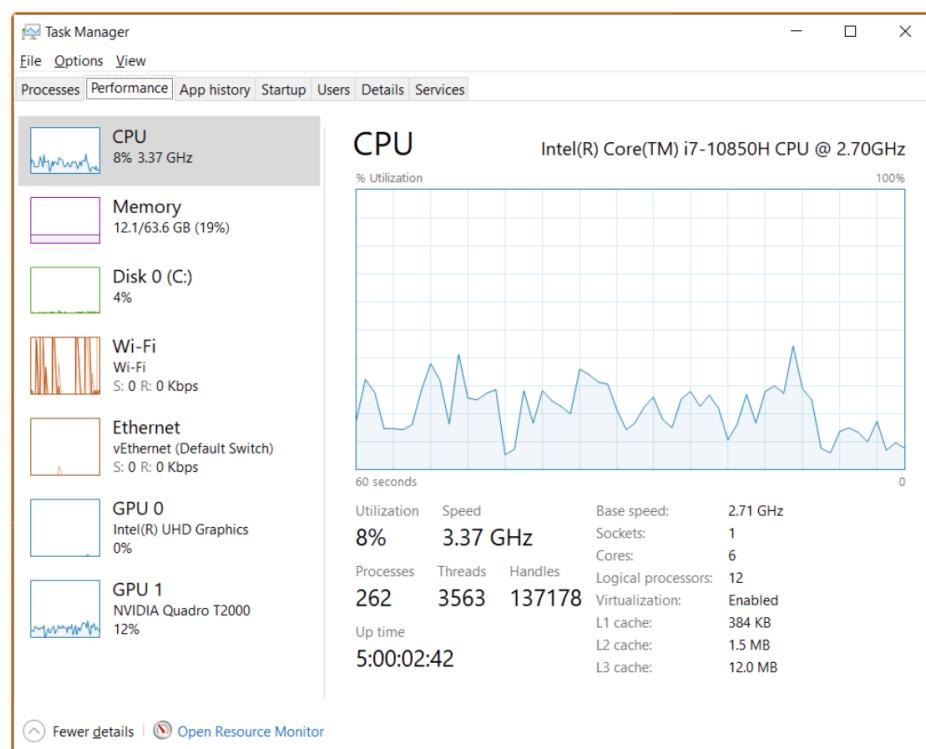
> Resource and Performance Mon...	1.1%	69.3 MB	0 MB/s	0 Mbps	0%	Low	Low
> Slack (6)	0.1%	317.0 MB	0.1 MB/s	0 Mbps	0%	Very low	Very low
> Snipping Tool	0.1%	3.5 MB	0 MB/s	0 Mbps	0%	Very low	Very low
> Task Manager	1.7%	43.2 MB	0 MB/s	0 Mbps	0%	Low	Very low
Background processes (119)							
> Adobe Acrobat Update Service	0%	1.4 MB	0 MB/s	0 Mbps	0%	Very low	Very low
> Application Frame Host	0%	15.0 MB	0 MB/s	0 Mbps	0%	Very low	Very low
> bcmUshUpgradeService	0%	2.7 MB	0 MB/s	0 Mbps	0%	Very low	Very low
> BeyondTrust Privilege Manag...	0%	4.7 MB	0 MB/s	0 Mbps	0%	Very low	Very low

Fewer details End task

The context menu enables the management of processes, e.g. their termination.



In the **Performance** tab, you can observe the consumption of system resources on an ongoing basis in the form of graphs.



In the **Startup** tab you can observe which applications are launched with the system. You can change the way they are launched using the context menu.



○ Java – Advanced Features slides

○ Java – Advanced Features tasks

○ Test 1st attempt | after the block: Java Advanced Features

○ Test 2nd attempt | after the block: Java Advanced Features

○ Java – Advanced Features: Coding slides

○ Java – Advanced Features: Coding tasks

● Test 1st attempt | after the block: Java Advanced Features coding

○ Test 2nd attempt | after the block: Java Advanced Features coding

○ Data bases SQL coursebook

○ Databases SQL slides

○ Databases – SQL tasks

○ Coursebook: JDBC i Hibernate

○ Exercises: JDBC & Hibernate

○ Test 1st attempt | after the block: JDBC

○ Test 2nd attempt | after the block: JDBC

○ Design patterns and good practices

○ Design patterns and good practices slides

○ Design Patterns & Good Practices tasks

○ Practical project coursebook

○ Practical project slides

○ HTML, CSS, JAVASCRIPT Coursebook

○ HTML, CSS, JAVASCRIPT slides

○ HTML, CSS, JavaScript tasks

Name	Publisher	Status	Startup impact
BeyondTrust Privilege Mana...	BeyondTrust Corp.	Enabled	Low
Common User Interface	McAfee LLC.	Enabled	High
Docker Desktop	Docker Inc.	Disabled	None
GlobalProtect client	Palo Alto Networks	Enabled	High
Java Update Scheduler	Oracle Corporation	Enabled	Low
Logitech Download Assistant	Logitech, Inc.	Enabled	Medium
McAfee File and Removable...	McAfee, LLC	Enabled	High
NotificationIcon	EMC Corporation	Enabled	Medium
Realtek HD Audio Universal ...	Realtek Semiconductor	Enabled	Low
Send to OneNote Tool	Microsoft Corporation	Enabled	Low
Skype	Enable	Disabled	None
Skype for Business	Open file location	Enabled	High
Slack	Search online	Enabled	Low
Waves MaxxAudio Service A...	Waves Audio Ltd.	Enabled	High
Windows Security notificatio...	Microsoft Corporation	Enabled	Low

In the **Details** tab, you can view the details of the processes being run, e.g. the name of the process (name of the executable file), PID (process id), i.e. a unique process number assigned by the system, status, i.e. the current state of our process, the user who started the process, CPU and physical memory usage.

Name	PID	Status	User n...	CPU	Memory (active private working set)	UAC virtualization
ApplicationFrameHo...	7736	Running	patry...	00	14,700 K	Disabled
armsvc.exe	4208	Running	patry...	00	1,344 K	
audiogd.exe	4456	Running	patry...	01	43,704 K	
backgroundTaskHost...	11936	Suspended	patry...	00	0 K	Disabled
backgroundTaskHost...	17704	Suspended	patry...	00	0 K	Disabled
bcmHostControlServ...	4836	Running	patry...	00	3,432 K	
bcmHostStorageServ...	4844	Running	patry...	00	3,412 K	
bcmUsbUpgradeServ...	2788	Running	patry...	00	3,312 K	
Calculator.exe	12336	Suspended	patry...	00	0 K	Disabled
CcmExec.exe	14808	Running	patry...	00	21,408 K	
chrome.exe	3052	Running	patry...	00	6,416 K	Disabled
chrome.exe	4248	Running	patry...	00	107,484 K	Disabled
chrome.exe	17856	Running	patry...	00	2,184 K	Disabled
chrome.exe	7328	Running	patry...	00	202,516 K	Disabled
chrome.exe	16764	Running	patry...	00	14,484 K	Disabled
chrome.exe	10696	Running	patry...	00	5,108 K	Disabled
chrome.exe	14116	Running	patry...	00	92,500 K	Disabled
chrome.exe	1784	Running	patry...	00	198,184 K	Disabled
chrome.exe	2096	Running	patry...	00	12,452 K	Disabled
chrome.exe	16344	Running	patry...	00	3,772 K	Disabled
chrome.exe	1304	Running	patry...	00	146,732 K	Disabled
chrome.exe	11368	Running	patry...	00	141,632 K	Disabled
CmRcService.exe	4548	Running	patry...	00	4,564 K	
com.docker.service	6856	Running	patry...	00	14,092 K	
conhost.exe	4984	Running	patry...	00	6,156 K	

In the **Services** tab we can see all the services and processes of the operating system. They also include applications that run in the background and do not use the graphics mode. The user can start, restart or stop the service. Do not interfere with the operation of websites without advanced knowledge, it may cause a failure or malfunction of the system.

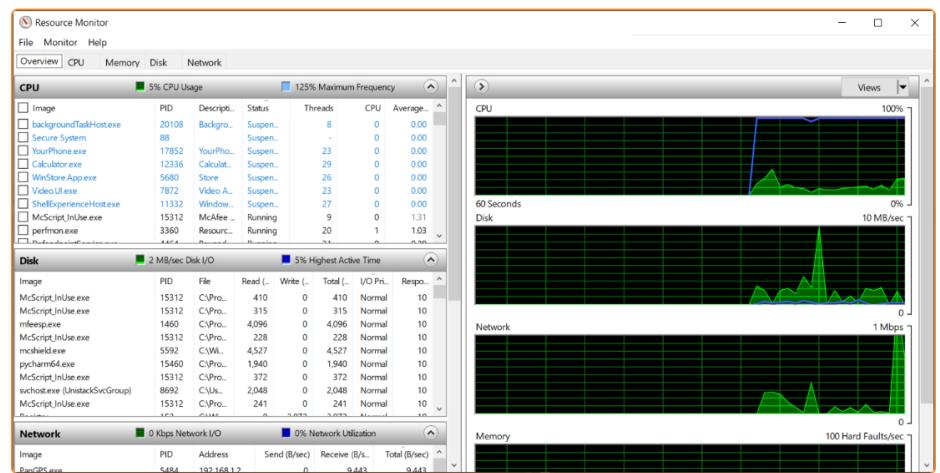
Name	PID	Description	Status	Group
AarSvc		Agent Activation Runtime	Stopped	AarSvcGroup
AarSvc_Be1c02		Agent Activation Runtime_Be1c02	Stopped	AarSvcGroup
Adobe Acrobat Update Service	4208	Adobe Acrobat Update Service	Running	
AllJoyn Router Service		AllJoyn Router Service	Stopped	LocalServiceNe...
ALG		Application Layer Gateway Service	Stopped	
ApHidMonitorService	4376	AlpsAlpine HID Monitor Service	Starting	
ApplDsvc		Application Identity	Stopped	LocalServiceNe...

- Test 1st attempt | after the block: HTML,CSS,JS
- Test 2nd attempt | after the block: HTML,CSS,JS
- Frontend Technologies coursebook
- Frontend technologies slides
- Frontend Technologies tasks
- Test 1st attempt | after the block: FRONTEND TECHNOLOGIES (ANGULAR)
- Test 2nd attempt | after Frontend technologies
- Spring coursebook
- Spring slides
- Spring tasks
- Test 1st attempt | after the block: spring
- Test 2nd attempt | after the block: spring
- Mockito
- PowerMock
- Testing exceptions
- Parametrized tests
- Final project coursebook
- Final project slides
- Class assignments

AppInfo	16136	Application Information	Running	netsvc
AppMgmt		Application Management	Stopped	netsvc
AppReadiness		App Readiness	Stopped	AppReadiness
AppXClient		Microsoft App-V Client	Stopped	
AppXSvc	17444	AppX Deployment Service (AppXSVC)	Running	wsappx
AssignedAccessManagerSvc		AssignedAccessManager Service	Stopped	AssignedAccess...
AudioEndpointBuilder	3444	Windows Audio Endpoint Builder	Running	LocalSystemNe...
Audiosrv	4236	Windows Audio	Running	LocalServiceNe...
autotimesvc		Cellular Time	Stopped	autoTimeSvc
Avecto Defendpoint ePO Int.	3668	Avecto Defendpoint ePO Interface	Running	
Avecto Defendpoint Service	4464	Avecto Defendpoint Service	Running	
AxInstSV		ActiveX Installer (AxInstSV)	Stopped	AxInstSVGroup
BcastDVRUserService		GameDVR and Broadcast User Service	Stopped	BcastDVRUserS...
BcastDVRUserService_8e1c02		GameDVR and Broadcast User Service	Stopped	BcastDVRUserS...
BDSEVC		BitLocker Drive Encryption Service	Stopped	netsvc
BFE	2900	Base Filtering Engine	Running	LocalServiceNo...
BITS		Background Intelligent Transfer Service	Stopped	netsvc
BluetoothUserService		Bluetooth User Support Service	Stopped	8thAppGroup

[Fewer details](#) | [Open Services](#)

The second tool in Windows is the **Resource Monitor** which allows you to monitor the consumption of all the most important elements of the computer system in real time – through interactive charts.

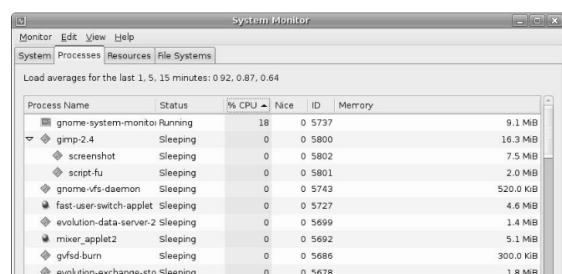


Linux

In Linux, there is a very large set of tools for monitoring computer system parameters. Graphical ones (System Monitor) and those that use the terminal, e.g. the command **top**, **htop**. To use the System Monitor utility, you need to go to Administration tools from the application menu and select the appropriate item.



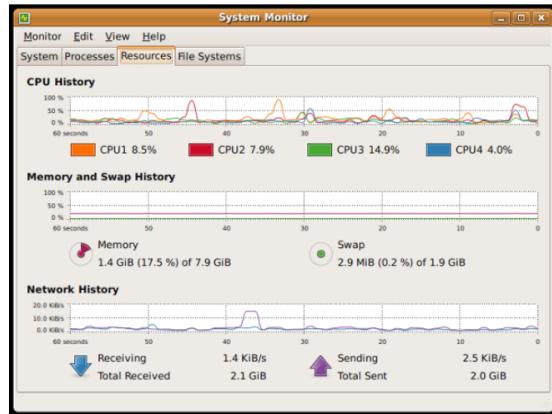
The first tab contains the most important information about the operating system, the graphics environment, the RAM, the processor and the computer architecture.



The **Processes** tab allows you to view the currently running processes and stop them. In order to stop a process you need to select it and choose the **End process** option from



END PROCESS OPTION from the context menu.



In the **Resources** tab, the user can check the usage status of the processor (CPU), the RAM and the swap and the amount of data (packets) used, which are sent and received in the network.



The **File system** tab contains information about the size of each partition and the used as well as the available space.

Terminal utilities, such as `top`, can be run without any options or arguments. In the terminal, it is enough to call the `top` command to get the most important information about the system, such as memory, swap memory and currently running processes with their numbers and consumption of individual resources.

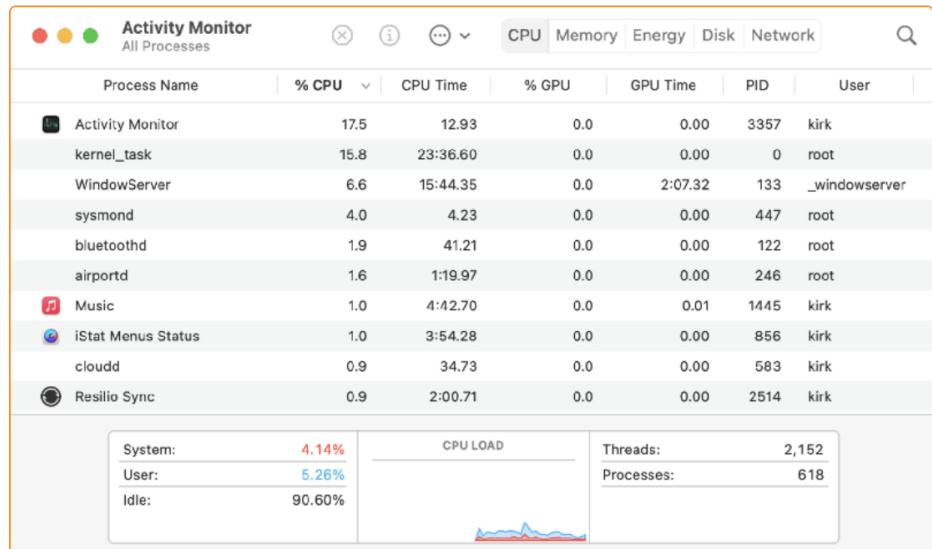
```
MiB Mem : 32117.0 total, 10688.5 free, 6176.9 used,
15251.5 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used.
24012.1 avail Mem
```

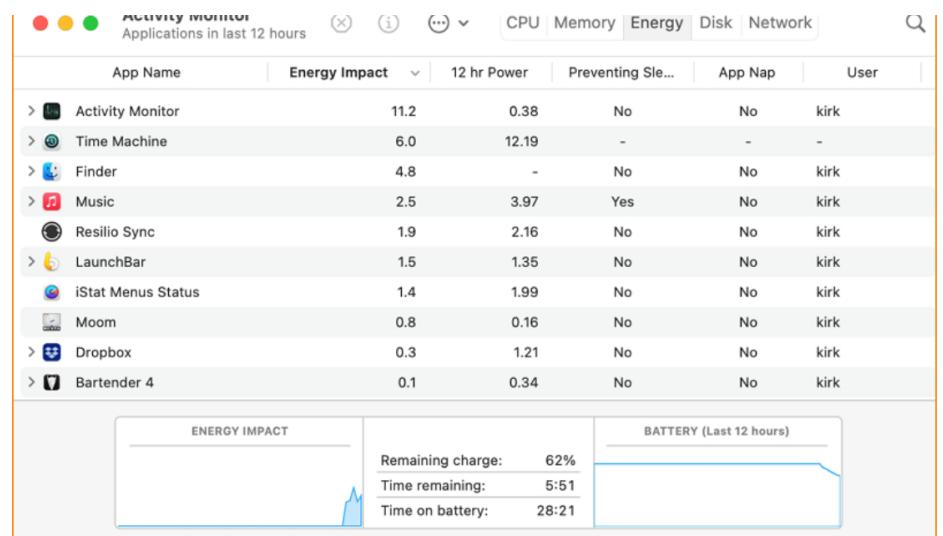
	PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU
	%MEM		TIME+	COMMAND					
0.2	8	user	38	18	928808	78716	33032	S	1.0
	0:03.10	node							
0.0	1	user	20	0	2492	592	524	S	0.0
	0:00.01	tini							
0.0	7	user	38	18	2608	608	540	S	0.0
	0:00.00	sh							
0.0	20	user	38	18	12176	6900	6068	S	0.0
	0:00.00	sshd							
0.0	400	user	38	18	7856	5808	3300	S	0.0
	0:00.06	bash							
0.0	432	user	38	18	7928	3784	3220	R	0.0
	0:00.00	top							

macOS

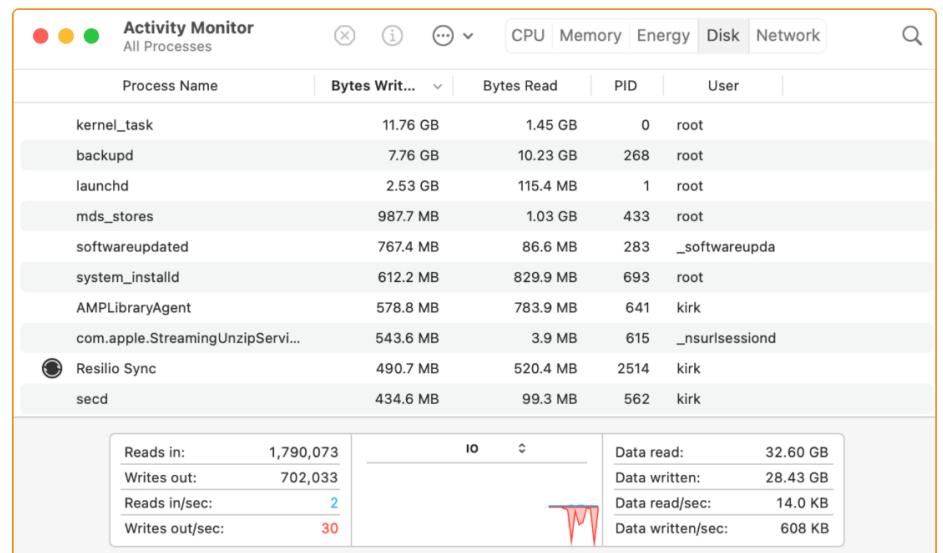
In macOS, the Activity Monitor tool is a dedicated tool for monitoring system resources. There are five tabs in the tool that correspond to the CPU, memory, energy management, hard disk and network connections, respectively.

In the CPU tab, the information about the processors currently governing the computer will be provided, along with information about the percentage of processor resources used by specific applications. In addition, we can see for how long a given application uses the dedicated CPU resources. The main advantage of the application is the ability to use the search engine (magnifying glass icon in the top right corner).

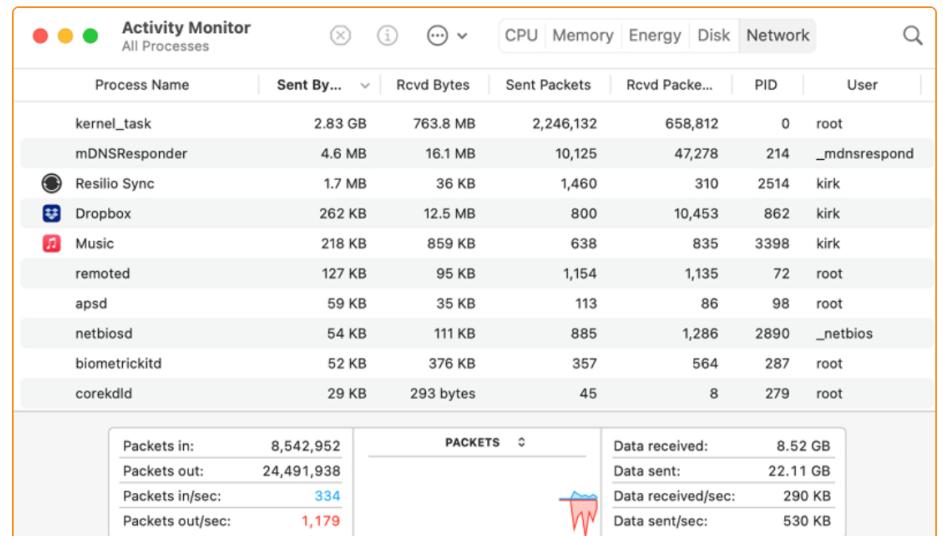




In the **Disk** tab you can observe the data flow in our system. More precisely, how much data has been saved and read by individual processes and users. If no applications are currently running on our system and the disk load remains high, it is highly likely that data is being downloaded or saved in the cloud.



In the **Network** tab, we can observe the current amount of information sent and downloaded via the network (by the running applications).



Which of the following best describes the primary function of tools like Task Manager, System Monitor, and Activity Monitor in different operating systems?

- To provide tutorials on how to use the operating system.
- To allow users to change the visual themes of their desktop.
- To monitor and manage system resources, view running processes, and track system performance.
- To help users set up a new software installation.

Submit

Complete Lesson