Scheduler - this part of the application C-MonitorConsole serves to creation, browsing and modification of lists of tasks, which should be launched by the application C-Monitor. The section Scheduler is opened automatically after the application C-MonitorConsole is launched. It is also possible to enter Scheduler through tray menu of the C-Monitor icon, as displayed on the following image.

S	Odoslať a prijať
•	Zastaviť
	Moduly Nástroje
	Záznamy 🕨
	Scheduler - Monitor Console
	Prepnúť na plochu interaktívnych služieb Vypnúť detekciu interaktívnych služieb
	Konfigurácia Potvrdzovať vzdialený prístup CM a Poruchy PC
0	O aplikácii Koniec
	Zobraziť informačný panel Easyclick požiadavky Pomoc cez vzdialený prístup
٤	Prihlásiť technika do CM

There are two ways to add new tasks for Scheduler

OMER MONITOR

1. Add a task by using the wizard - for adding the most commonly used task a wizard has been created, in which you make necessary settings and just add the task easily

2. Add a task without the wizard - for your personal use, anything can be launched

Schedules may be also edited from CM Portal, for more information go to <u>Scheduled tasks</u> (<u>Schedules</u>) [1].

Add a task by using the wizard

Addition of a scheduled task by using the wizard in Scheduler - Monitor Console is displayed on the following image.



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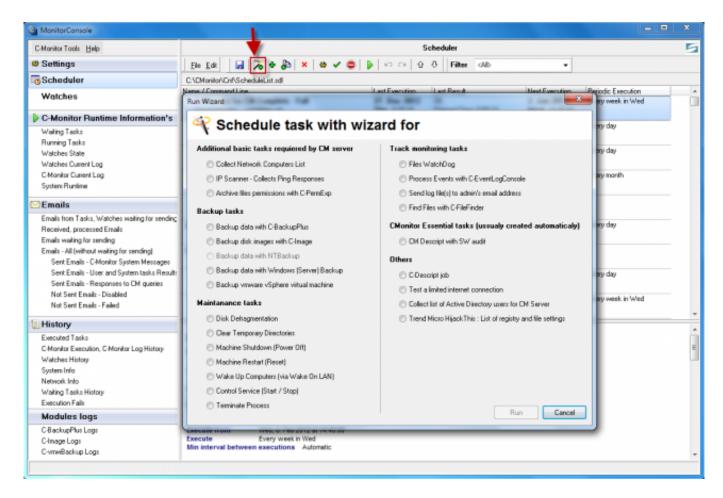


Image: Pridanie novej naplánovanj úlohy použitím sprievodcu

1. After opening Scheduler - Monitor Console, the current list of C-Monitor task will be loaded. In case it doesn't exist, you'll automatically view a dialog to select the wizard for adding tasks.

2. If the dialog for selection of the wizard is not yet displayed, it has to be launched through the option "Add Task With Wizard" from the menu "Edit" of toolbar or from the context menu, as displayed on the image above.

3. Then you have to select wizard for the required type of task, and press the button "Run".

4. When the wizard is displayed, all required fields must be filled in, by pressing the button "Next" go through all of the dialog's forms, and finally close the wizard by pressing "Finish".

5. Then the new task, or more tasks, are added, and are shown in the list of tasks.

6. When all required tasks are added, you have to check their validity by launching the individual tasks by the command "Run Selected Tasks" from the menu "File" of toolbar, or from the context menu.

7. Then the list of file has to be saved by the option "Save" from the menu "File", or from the toolbar. C-Monitor will register a change in the file with tasks, and loads it automatically.

Add a task without the wizard

In case you need to set regular launching of certain programs or commands, do so by adding a periodic task without using the wizard, as displayed on the following image. Description of the individual windows is given in the text below.



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C-Monitor Tools Help	Scheduler		E
		-	-
9 Settings	Ele Edt 📓 🂫 🗣 🎥 🗶 📽 🖌 🚭 🏓 🗠 🖙 🕸 🗗 Filter (4b) 🔹		
o Scheduler	C-VDMonitor/Cn/NScheduleList.sdl		
Watches	Name / Command Line Last Execution Last Result Need Execution 201 C-De Modify Task 201 Detd		
C-Monitor Runtime Information's	Do Before Execution Result File(s) On Task Finish E-Mail		
Waiting Tasks	C-De General Accounts Advanced Conditions for Execution Security 013		
Running Tasks	Name (Description) Education	*	
Watches State	Uper Vanaz hisek los		
Watches Current Log	open Tyme iges by		
C-Monitor Current Log	Baci Scheduling Enabled Show in Info Panel 201	2 Every day	
System Runtime	Back Command Line 100		
Emails	petri crnd.exe /c del c:\CMonitor\Modules\Other\hijackthis.log		
Emails from Tasks, Watches waiting for sending	odefi Startup Directory		
Received, processed Emails	Cles 201	2 Everyday	
Email: waiting for sending			
Emails - All (without waiting for sending)	Tren Execute by Date and Time 013	Every week in Wed	
Sent Emails - C-Monitor System Messages	HJTS @ Once Execute 28.12.2012 • at 9:16:18	10	
Sent Emails - User and System tasks Result:	Tren Daly 013	Every week in Wed	
Sent Emails - Responses to CM queries	HUTS COLOR		
Not Sent Emails - Disabled	Vym		-
Not Sent Email: - Failed	ond a Monthly		(
History	Other period		
Executed Tasks	Vym		
C-Monitor Execution, C-Monitor Log History Watches History	Task sil V Execute on (Trigger, OS start,)		
System Info			
Network Info	emd.ex Tigger • VYM4Z		
Walting Tasks History	Don't e		
Execution Fails	Confirmation Note - will be displayed in the task confirmation dialog		
Modules logs	Commission of the second		
C-BackupPlus Logs			
C-Image Logs	Only fo Run t		
C-vmwBackup Logs			

Image: Pridanie novej úlohy bez použitia sprievodcu

Tab General

Tab Accounts

Tab Advanced

Tab Conditions for Execution

Tab Do Before Execution

<u>Tab On Task Finish</u>

Warning: Every task created without the wizard for adding tasks has to be signed for security reasons.

Signing of executable files

This button serves to verification, whether the executable file is given in the Command Line signed = marked as reliable, or not. C-Monitor only launches signed tasks - i.e. a user with admin authorizations has marked the selected tasks as safe via Scheduler. Verification characteristics of executable files are located in the subdirectory "**Cnf**", in the file "**Signatures.bin**". They're bound to license, which is bound to program and mechanical equipment of the computer, so the file is not transportable between computers. In case that the executable file is changed, either deliberately - update, or with bad intention or unintentionally - unwanted rewrite, virus..., C-Monitor won't launch the task, it will generate a record about it and send an informative email to Customer Monitor. Executable files saved by C-Monitor, based on an email request (utilities update, direct save of a file) are signed automatically, as their reliability is guaranteed by the sender, and email with requests is multistage encrypted.



Modify Task	(1. im.)				×
Do Before E	xecution	Result File(s)	On Task	< Finish	E-Mail
General	Accounts	Advanced	Conditions fo	or Execution	Security
Name (Descrip Clear Temp Direc				Category Maintanance	
Scheduling	Enabled			Show in Info	Panel
Command Line ClearDir "C:\Use	rs\Juraj\AppData\Lo	ocal\Temp" "C:\Users\	Juraj\AppData\Lo	ocal\Microsoft\W	/indow: 🔒 💕
Startup Directory				ıtim sem e spustiteľný	
Execute by	Date and Time			ibor	
🔘 Once	Execute from	6. 6. 2012 🔻 a	t 14:20:00		
 O Daily ○ Weekly 	Every	1 🚔 days			
Monthly	🔲 Last possit	ble start			
Other period					
each C-Monitor	(Trigger, OS star start –	t,]			
🔲 User must c	User must confirm execution				
				ОК	Cancel

Image: Podpísanie spustiteľného súboru



Published on Customer Monitor (https://customermonitor.eu)

Do Before	Execution	Result File(s)	On Task Finish	E-Mail
General	Accounts	Advanced	Conditions for Execution	Security
		obal signatures (sha utable is globally signed	red between more tasks)	
Note		1.	Check, if file is global	ly signed / Sign file
If executable			n, like scripting / installation t xe,, is highly recomended u	sing Extended secur
Please, neve	er globa Information		-	teľný dsbor bol šne podpisaný
Extended :		Global signature verif "ClearDir" OK	ication success for file	

Image: Spustiteľný súbor bol úspešne podpísaný

To confirm whether a file is signed, it is **absolutely necessary, that C-Monitor is running**. The verification process is namely that after pressing the button, Scheduler connects with the running C-Monitor, submits the request to verify the content of command line, and displays the corresponding message according to C-Monitor's response.

Description of the most important parts, which have to be set in the individual tabs is given and described in the text below.

<u>Tab General</u>



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Modify Task			-		×
Do Before Exe	cution	Result File(s)	On Ta:	sk Finish	E-Mail
General	Accounts	Advanced	Conditions	for Execution	Security
Name (Descriptio	n)			Category	
OpenVPN					•
🔽 Scheduling Er	abled			📃 Show in Infe	o Panel
Command Line					
"C:\Program Files (x	86)\OpenVPN	bin\openvpn-gui-1.0.3.e	xe''		🔒 💕
Startup Directory					
					<u> </u>
🔽 Euseute hu Da	to and Time				
V Execute by Da	ice and lime				
💿 Once	Execute 1	9. 1.2013 🔻 at 🗄	9:21:19 🛛 🚔		
🔘 Daily					
🔘 Weekly					
Monthly					
Other period					
	1				
Execute on (T	rigger, OS st	art,)			
Trigger		PUSTI			
	c	_			
Confirmation Note		n ed in the task confirmation	n dialog		
Spustit VPN ?	This be displayed		n alalog		
L					
				ОК	Cancel
nage: Záložka Gene	aral				

Name (Description) defines name of the executed task. This name will be used in the list of tasks in the application's window, in confirmation dialogs and in C-Monitor logos.

Category - choose an appropriate category for the task

Scheduling Enabled the task can be executed only if this option is ticked

Show in Info Panel when this option is ticked, the task will be displayed in the <u>Information panel</u> [2].

User must confirm execution if this option is ticked, a simple dialog will show everytime the task should be launched, where the user must confirm that the task will be executed, or optionally postpone the confirmation (execution).

Command Line the command that should be executed



Startup Directory the directory "from which the command line will be executed", it's a closer specification of the current application's directory.

Execute by Date and Time here you can adjust the time interval of the execution

Execute on Trigger, OS started, each C-Monitor start defines whether the task should be executed when a Trigger event occurs, at each start of C-Monitor, or at start of the operating system. Trigger is an event generated for instance at the end of another task, or based on a request delivered to C-Monitor by a control email. This launching principle is equivalent to launching based on date and time. Therefore, a task is either executed based on the current date and time, ot because of a Trigger event. If the application should be launched by a Trigger, this option has to be ticked and you must write the name of the trigger. A Trigger's name is any sequence of letters and numbers, which is not even case sensitive. Closer description of Triggers can be found in the section Synchronization of task execution [3].

Tab Accounts



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Do Before	Execution	Result File(s)	On Task Finish	E-Mail
General	Accounts	Advanced	Conditions for Execution	Security
) Run under	same user accou	— nt as is running C	Monitor	
		_		
∥ ∺un as an o UserName	unei user (user f		:omputer or in your domain) Domain	
administrator			vasadomena	
Password			Password Confirmation	
*****	:			
) Run under	logged on users			
Run under ea	ch logged on user			
List of users (u:	ser login names), sen	arated by , or :		
List of users (u	ser login names), sep	arated by , or ;		
List of users (u:	ser login names), sep	arated by , or ;		
List of users (u:	ser login names), sep	arated by , or ;		1
List of users (u	ser login names), sep	arated by , or ;		
List of users (u:	ser login names), sep	arated by , or ;		
List of users (u:	ser login names), sep	arated by , or ;		
			2000)	
] Run with high	nest privileges (used	only for Windows Vist		
Bun with high Connect pe	nest privileges (used ersistently mapped	only for Windows Vist d network drives	with created process user)	
Bun with high Connect pe Use remote	nest privileges (used ersistently mapped	only for Windows Vist d network drives als (connect to n	with created process user) etwork device as another user)
Bun with high Connect pa User name	nest privileges (used ersistently mapped	only for Windows Vist d network drives als (connect to n	with created process user) etwork device as another user Domain / Network name of device)
Bun with high Connect pe	nest privileges (used ersistently mapped	only for Windows Vist d network drives als (connect to n	with created process user) etwork device as another user Domain / Network name of device vasadomena)
Bun with high Connect pa Use remote User Name backupuser Password	nest privileges (used ersistently mapped	only for Windows Vist d network drives als (connect to n	with created process user) etwork device as another user Domain / Network name of device vasadomena Password Confirmation)
Bun with high Connect pa User remote User Name backupuser	nest privileges (used ersistently mapped	only for Windows Vist d network drives als (connect to n	with created process user) etwork device as another user Domain / Network name of device vasadomena)
Bun with high Connect pa Use remote User Name backupuser Password	nest privileges (used ersistently mapped	only for Windows Vist d network drives als (connect to n	with created process user) etwork device as another user Domain / Network name of device vasadomena Password Confirmation]
Bun with high Connect pa Use remote User Name backupuser Password	nest privileges (used ersistently mapped	only for Windows Vist d network drives als (connect to n	with created process user) etwork device as another user Domain / Network name of device vasadomena Password Confirmation)
Bun with high Connect pa Use remote User Name backupuser Password	nest privileges (used ersistently mapped	only for Windows Vist d network drives als (connect to n	with created process user) etwork device as another user Domain / Network name of device vasadomena Password Confirmation)
] Run with hig] Connect pa] Use remote User Name backupuser Password	nest privileges (used ersistently mapped	only for Windows Vist d network drives als (connect to n	with created process user) etwork device as another user Domain / Network name of device vasadomena Password Confirmation)

Run under same user account as is running C-Monitor standard option - the task will run under the same user, under whom C-Monitor was launched

Run as another user In operating systems Windows 2000 and newer, C-Monitor allows task execution under another user, e.g. the domain admin etc. If the task should be executed under other user than C-Monitor is running, you must select this option and fill the user's login data <u>User Name</u>

login name of the user, under whom the task should be executed

<u>Domain</u>

domain of the user, under whom the task should be executed. If it's a local user, you may leave this parameter blank.

Password, Password Confirmation

user's login password, entered twice (to eliminate typing errors, it's standard to type invisible text twice)

Run under logged on users if C-Monitor runs in the service mode, it doesn't show the user interface directly, but uses auxiliary processes that are launched automatically after every user login. Besides mediating the user interface to a user, these processes can also execute tasks under this user (on the basis of communication with the main C-Monitor process). If this option is ticked, C-Monitor will launch this task "in context of each user, to whom the C-Monitor icon is displayed", and who's username meets certain conditions. The task is not executed at each user login, but only when it should be executed - C-Monitor registers which tasks have been executed, in who's context. Username conditions - choose one option from the drop-down list:

Run under each logged on user

Run only under users listed below - in the textfield "List of users (user login names) separated by , or ; "

<u>Run under each user, except users listed below</u> - in the textfield "List of users (user login names) separated by , or ; "

This also applies for a single user.

Connect persistently mapped network drives (with created process user) if this option is ticked, C-Monitor will connect network drives, which should be automatically connected after login, before launching the task (they're persistently mapped). Each user can have network drives connected - created mappings of network paths into logical drives letters, e.g. logical drive unit "Z:" may represent the network path "\\server\documents". After this connection is created, there's an option to determine whether this connected automatically at login for any reason (e.g. the network path was unavailable), or they've been disconnected (also due to unavailability of the network path), tasks executed by C-Monitor, which assume / expect connection of the network drives (e.g. backup), may not work properly. Therefore it is recommended to select this option for these tasks - C-Monitor will try to establish the connection just before launching them.

Use remote access credentials (connect to network device as another user) this option is most commonly used for backup tasks. By selecting this option, you choose a user under which you login to a network storage, e.g. QNAP, to which backups are saved. Example: A backup task is executed under a local account, which, however, doesn't have access to the backup device. Therefore, you select the option *Use remote access credentials* and here you'll enter the user, under which will the task access the network storage, with his access password, for example Backup user. The backup will then run properly, with no need to add any further permissions to access the network storage.

Tab Advanced



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Modify Task			Test Tests	×	
Do Before B	xecution	Result File(s)	On Task Finish	E-Mail	
General	Accounts	Advanced	Conditions for Execution	Security	
Execute on session (used only for Windows Vista, 2008,)					
Logged user session (app will be terminated by that user logoff)					
🔽 Critical task	: - Can't shutdowr	n / restart PC by C-N	fonitor, while this task is re	unning	
🔽 Pause C-Mo	onitor (Disk Activi	ty)			
Show Mode	Normal	~			
Priority	Normal	-			
🔲 Random delay		1 Day	▼ C in the LAN at the execut	ion time	
📃 Send msg to (CM, if task running tin	ne is more than specified	1 time		
🔲 Terminate tas	k, if it's running time i	s more than the specifie	d time		
Show waiting	g list settings				
			ОК	Cancel	

Image: Záložka Advanced

Execute on session (used only for Windows Vista, 2008,..) - you may choose in which session will the task run. In Windows servers and Vista and higher, display of applications is divided to Session 0 and User session, so it's necessary to choose where the application will show. If you execute a task on Session 0 and someone is logged in, he'll receive a notification that Interactive services require user intervention (these messages may be disabled by C-Monitor - through Tray menu). That's why you need to have this item set up properly, so the user only sees what he ought to. We must point out, that the option to choose session is different than "Run as". Session defines where the application will be executed & displayed and Run as defines what authorization will the application have.

You may choose from these options :

Always session 0 - the advantage is that the application won't be interrupted if anyone logs out

Logged user session - launch on a logged user's session, if he logs out, the application will be also terminated

Logged user session / session 0 - session 0 will be used only if no one is logged in **Some of specified logged user session** - new option since C-Monitor 2.6.628.0, to specifically define at which user should the application be executed

Critical task - can't shutdown / restart PC by C-Monitor, while this task is runnig - if this option is ticked, C-Monitor won't execute any other task, which would require PC restart

Pause C-Monitor (Disk Activity) - If this option is ticked, C-Monitor won't write and won't read anything from the disk while the task is running. This option was included to support execution of applications such as disk defragmentation etc, during which it's required that nothing is written on the disk.

Show mode - Defines in which mode should the application, specified by command line, be executed

<u>Hidden</u> the application's window will be (should be) invisible after launch <u>Normal</u> the window will have its usual size and location <u>Minimized</u> the application's window will be (should be) minimized after launch <u>Maximized</u> the application's window will be (should be) maximized after launch

Priority - Defines what priority will the application, specified by command line, have. Low the application will have low priority Normal the application will have normal (usual) priority

Min interval between executions - here you'll enter the minimal interval for the next launch of the scheduled task

Wake up the PC using CM server and another PC in the LAN at the execution time - By selecting this option, the PC will be automatically woken up before the task is launched on CM's instruction by Wake on LAN. Packet for waking up is delivered through a turned on computer with C-Monitor in LAN. For PC setup for Wake on LAN, read the section <u>PC Maintenance</u> [4].

Tab Conditions for Execution



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Modify Task	1.0	and the local	the local	x		
Do Before E	xecution	Result File(s)	On Task Finish	E-Mail		
General	Accounts	Advanced	Conditions for Execution	Security		
🔽 Wait, if exe	 Wait, if operating system running time < 5 min (5 min after OS start is OS fully up) Wait, if executable is already running Note: Allways wait, if executable is in conflict with some others by Conflict Applications List 					
+ 🏚 🗙 🌂	only if all conditio	ons are meet				
Conditio	ons					
	als" - execute on	ly if all signals was	signalled	E 🕐		
spusti				*		
				~		
			OK	Cancel		

Image: Záložka Conditions for Execution

Here you can define a list of conditions, which **must all be met**, for the task included in the list of tasks waiting for execution to be executed. A condition may result certain actions to be performed (e.g. termination of a process), therefore you must consider the sequence of the conditions. Condition no. 1 is tested first, if it's met then condition no. 2 and so on. However, if a condition is not fulfilled, the task won't be launched and at the next selection of tasks for execution, the testing will start again by condition no. 1.

Wait, if operating system running time <5 min - means that the task won't be executed in the first 5 minutes after start of the operating system

Wait for signals - execute only if all signals was signalled - the task will be executed only after the given signal is received, which signalizes execution of the task, read more in the section



Synchronization of task execution [3]

Tab Do Before Execution

In this tab you have an option to activate a Trigger before launching this scheduled task, this might be useful if it's necessary that tasks are executed concurrently. Click on the blue question mark to view the hint.

General Accounts Advanced Conditions for Execution	Security
Do Before Execution Result File(s) On Task Finish	E-Mail
Before task execution activate trigger(s)	E 🕐
(after confirmation, when all conditions for execution are true, except "Wait for signals") ULOHA SA SPUSTA	
OLONA SA SPOSTA	<u>^</u>
	Ŧ
ОК	Cancel

Image: Záložka Do before execution

<u>Tab On Task Finish</u>



Published on Customer Monitor (https://customermonitor.eu)

Modify Task			Day Datab	23
General	Accounts	Advanced	Conditions for Execution	Security
Do Before E	Execution	Result File(s)	On Task Finish	E-Mail
Archive File Name	e (empty means "	do not archive result'')		
Archive Max Size	1	Unlimited	T	
Store Method	None		-	
Compression	None	*		
Send Result (or te	emporary) File to C	M Server with Subject (er	npty means ''do not send'')	
Shutdown PC Task Finished Task succeede	Notification	Show Ballon Message	•in TrayArea ▼	
After task finis	h signalize sig	nal(s) Only if task	< succeeded (by ExitCode)	• 🕐
uspesne				* *
After task finis	h activate trig	ger(s) Only if task	< failed (by ExitCode)	- 🔋 🕐
neuspesne				*
			ОК	Cancel

Image: Záložka On Task Finish

Shutdown PC on Finish - PC will automatically turn off when the task is completed

Task Finished Notification - options of notification about the finished task

Task succeeded if ExitCode - here you'll enter the exit code for a successfully executed task, standard exit code of successful task is 0

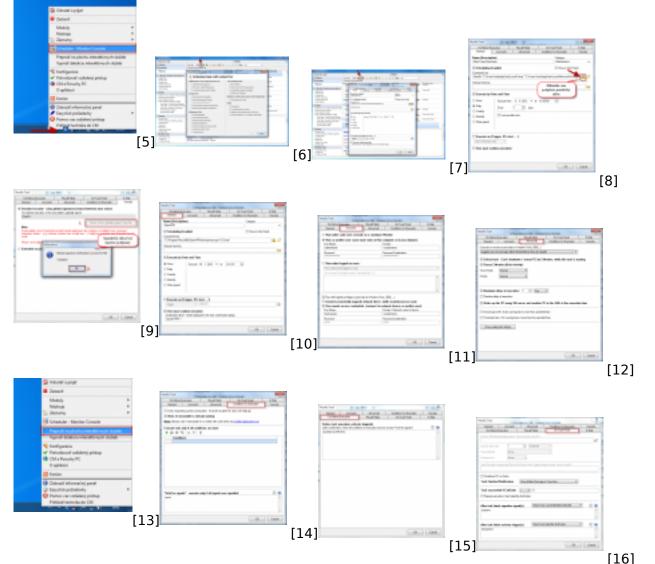
Repeat execution if task failed (by ExitCode) - if you select this option, then in case the task is not completed successfully based on your given exit code, it's going to be re-executed until it's not finished successfully.

After task finish signalize signal(s) - a signal will be signalized after the task is finished , you

may choose to signalize after successful or failed completion of the task, according to the exit code. Read more at <u>Synchronization of task execution</u> [3].

After task finish activate trigger(s) - a trigger will be activated after the task is finished, you may choose the trigger to be activated after successful or failed completion of the task, according to the exit code. Read more at <u>Synchronization of task execution</u> [3]. Date:

12/05/2012Images:



Links

[1] https://customermonitor.eu/how-cm-works-0/components-and-architecture-cm/cm-server-cm-portal/selected-functions-c-monitor-0

[2] https://customermonitor.eu/how-cm-works-0/components-and-architecture-cm/c-monitor-windows-client/information-panel-c-monitor

[3] https://customermonitor.eu/how-cm-works-0/components-and-architecture-cm/c-monitor-windows-client/c-monitorconsole-0

- [4] https://customermonitor.eu/how-cm-works-0/functions-remote-maintenance/pc-maintenance
- [5] https://customermonitor.eu/sites/default/files/vstup%20do%20schedulera_0.png

[6] https://customermonitor.eu/sites/default/files/planovanie%20uloh%20sablony.png

[7] https://customermonitor.eu/sites/default/files/planovana%20uloha%20-%20mimo%20sablon.png

[8] https://customermonitor.eu/sites/default/files/podpis.png

[9] https://customermonitor.eu/sites/default/files/podpis2.png

[10] https://customermonitor.eu/sites/default/files/zalozka%20general.png

[11] https://customermonitor.eu/sites/default/files/zalozka%20accounts.png

[12] https://customermonitor.eu/sites/default/files/zalozka%20advanced.png



- [13] https://customermonitor.eu/sites/default/files/prepnutie%20medzi%20session.png
- [14] https://customermonitor.eu/sites/default/files/zalozka%20cfe.png
- [15] https://customermonitor.eu/sites/default/files/do%20before%20execution.png
- [16] https://customermonitor.eu/sites/default/files/zalozka%20on%20task%20finish.png