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BianLian: New Ransomware variant on the rise

8/18/2022



GoLang-based Ransomware targets multiple industries

Cyble Research Labs has observed that malware written in the programming language "Go" has recently been popular among Threat Actors (TAs). This is likely due to its cross-platform functionalities and the fact that it makes reverse engineering more difficult. We have seen many threats developed using the Go language, such as Ransomware, RAT, Stealer, etc.

During our routine threat-hunting exercise, we came across a Twitter post about a ransomware variant written in Go named "BianLian," which was first identified halfway through July 2022.

The ransomware has targeted many well-known organizations (9 victims so far) across several industry sectors such as Manufacturing, Education, Healthcare, BFSI, etc. In the figure below, we have prepared a breakdown of the industries targeted by the BianLian ransomware.

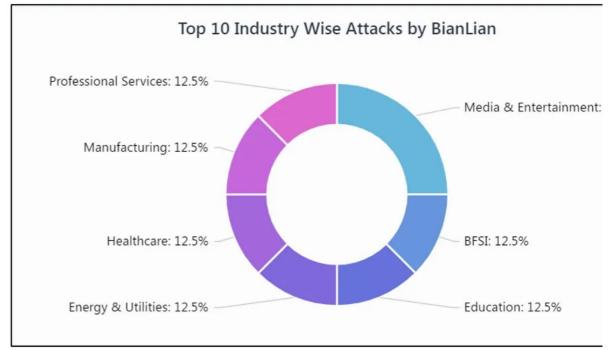


Figure 1 – Industries Targeted by the BianLian Ransomware

Technical Analysis

We have taken the below sample hash for the purposes of this analysis: (SHA256), *eaf5e26c5e73f3db82cd07ea45e4d244ccb3ec3397ab5263a1a74add7bbcb6e2*, which is a 64-bit GoLang binary executable.

The unique build ID of the GoLang ransomware is shown below.

Bloymtab	
Go build ID:	"H40nAXi0HAA8phzv9-cb/qCmr9jSfyS54gBjEKYHI/3NP6oNV505RosziU-nxb/ldC38qRU
Верш в	
Hautto	
ohJrF	
D SOH9	

Figure 2 – Go Build ID

Upon execution of the ransomware, it attempts to identify if the file is running in a WINE environment by checking the *wine_get_version()* function via the *GetProcAddress()* API.

"wine_get_version"
Address

Figure 3 – Anti-analysis Technique

Then, the ransomware creates multiple threads using the *CreateThread()* API function to perform faster file encryption, making reverse engineering the malware more difficult. The below figure shows the multiple threads created by the ransomware.

Number	ID	Entry	TEB	RIP	Suspend Count	Priority	Wait Reason	Last Error	User Time	Kernel Time	Creation Time
8	2052	000000000830FC0	000000C7744BF000	00007FF98F520C90	1	Normal	Executive	00000000			
44	1640	000000000830FC0	000000C774507000	00007FF98F70BE24	1	Normal	Suspended	00000000	00:00:00.0156250	00:00:00.0000000	
17	6644	000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000			
Main	1816	000000000830800	000000C7744AF000	00007FF98F70BE24	1	Norma1	Suspended	00000000		00:00:00.0468750	
41	3268	000000000830FC0	000000C774501000	00007FF98F70BE24	1	Normal	Suspended	00000000			
36	8016	000000000830FC0	000000C7744F7000	00007FF98F70E5D4	1	Normal	Suspended	00000000		00:00:00.0000000	
1	8176	00007FF98F6820E0	000000C7744B1000	00007FF98F70F7F4	1	Normal	Suspended	00000000		00:00:00.0156250	
2	7088	00007FF98F6820E0		00007FF98F70F7F4	1	Normal	Suspended	00000000	00:00:00.0000000	00:00:00.0000000	
7	7180	000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000			
40	7256	000000000830FC0			1	Normal	Suspended	00000000		00:00:00.0000000	
3	8940	000000000830FC0	000000C774485000	00007FF98F70BE24	1	Normal	Suspended	00000000	00:00:00.0000000	00:00:00.2031250	
5	7344	000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000	00:00:00.0000000	00:00:00.0000000	
46	288	000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000		00:00:00.0000000	
6	9160	0000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000			
4	7112	000000000830FC0	000000C7744B7000	00007FF98F70BE24	1	Normal	Suspended	00000000		00:00:00.0000000	
9	4844	000000000830FC0	000000C7744C1000	00007FF98F70BE24	1	Normal	Suspended	00000000			
10	2068	000000000830FC0		00007FF98F70BE24	1	Norma1	Suspended	00000000			
48	2352		000000C77450F000	00007FF98F70BE24	1	Normal	Suspended	00000000			
26	8636	000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000			
11	9012	000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000	00:00:00.0000000	00:00:00.0312500	
20	2832	000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000			
12	6816	000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000		00:00:00.0156250	
13	4576	000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000			
43	4252	000000000830FC0	000000C774505000	00007FF98F70BE24	1	Normal	Suspended	00000000		00:00:00.000000	
30	8932	000000000830FC0	000000C7744EB000	00007FF98F70BE24	1	Normal	Suspended	00000000		00:00:00.000000	
14	4396	000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000		00:00:00.000000	
15	6600		000000C7744CD000		1	Normal	Suspended	00000000			
16	1752		000000C7744CF000	00007FF98F70BE24	1	Normal	Suspended	00000000			
18	6704	000000000830FC0	000000C7744D3000	00007FF98F70BE24	1	Normal	Suspended	00000000	00:00:00.0156250	00:00:00.0156250	
19	6252	000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000		00:00:00.0156250	
21	340	000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000		00:00:00.0156250	
22	6472	000000000830FC0		00007FF98F70BE24	1	Normal	Suspended	00000000			
23 60	7700 5920	0000000000830FC0 000000000830FC0	000000C7744DD000	00007FF98F70BE24	1	Normal Normal	Suspended	00000000	00:00:00.0000000	00:00:00.0156250	
	5920 5328	0000000000830FC0 000000000830FC0	000000C774527000	00007FF98F70BE24 00007FF98F70BE24	1	Normal	Suspended	00000000	00:00:00.0000000	00:00:00.000000	
24 37	5328 3804	0000000000830FC0 000000000830FC0		00007FF98F708E24 00007FF98F708E24	1	Normal	Suspended	00000000	00:00:00.0000000	00:00:00.0156250	
32	7352		000000C7744F9000 000000C7744EF000	00007FF98F708E24 00007FF98F708E24	-	Normal	Suspended	00000000		00:00:00.0000000	
		00000000000830FC0			-						
25 27	6904 3300			00007FF98F70BE24	1	Normal	Suspended	00000000		00:00:00.000000	
21	3300	0000000000030FC0	000000C7744E5000	00007FF98F70BE24	1	Normal	Suspended	00000000	00:00:00.0000000	00:00:00.0000000	16:02:48.08204)

Figure 4 – Multiple Thread Creation

Next, the malware identifies the system drives (from A:\ to Z:\) using the *GetDriveTypeW()* API function and encrypts any files available in the connected drives. Then, the malware drops a ransom note in multiple folders with the file name "Look at this instruction.txt."

The ransomware creates a ransom note with the content shown below.

00000	6648:00 6648:00 6649:00 6649:00	6ECA			mo	vq xr	nm0,r nm1,r nm2,r	dx B					rd	x:"M	Z蜻"						
00000	FFD0	0205			ca	1 na	ax.	-					Wr	iteF	ile						
00000	48:810	\$ 5000	1000	0			,150			_											
00000	59 48:894	1.0				p rc)		en d	es fe].rax										
	40.034	10			Tino	v qm	nu p	ur u	at fr	CATI	Jirax										
<																					
<pre>rax=1 .text:000</pre>	0000000	830D1	LC n	ew_or	ne.ex	e:\$6	0D1C	#603	31C				۵.	2	Ţ				Mar	age	
Dump 1)ump 2		Du	mp 3	1	Dump	Ð		Dump	i 💮 Watch 1	[x=] [File		Home	Shar		View	Drive	Tools	
Addre: He	x							_			ASCII	1	_	•				Cut			
00000C 6F	65 6D 64 20 20 43 72 64 79 6F	72 20 73 20 61 6E 6F 6E 65 72 75 72	77 64 74 20 20	65 7 20 6 61 6 74 6 64 6	3 74 F 20 1 74	63 7 20 7 72 6 61 2	72 6B 51 74 72 79 75 73 55 73 2E 20	74 70 20 74 44	61 6 74 6 69 6 6F 7 6F 6	5 64 E 20 2 65 E 27	Your network tems were att ed and encryp . Contact us order to rest your data. D	ack ted in ore	Pin to acce			Paste Clipboard	۵	Copy path Paste sho		Move to ~	c t
000000 74 000000 65 000000 73 000000 20	73 20 74 72	61 68 69 6E 75 63 20 66	20 74	20 6 79 6 75 7 6C 6	F 75 2 65	72 3 3A 2	20 63 20 66 20 74 20 64	69 6F	75 6	E 67 5 20 3 68 7 74	t make any ch es in your fi structure: to no files, do	le buch	÷	÷	* †	告 > Т	his P	C → Loca	al Disk ((C:)	
000000 20	74 72 79 20	79 20 79 6F	74 75	6F 2 72 7	0 72 3 65	65 (6C (53 6F	76 20	65 7 74 6	2 20	try to recov by yourself,	/er tha			Nam	e				Size	
000000 74 000000 27 000000 2E	73 20	51 79 53 6F 0D 0A	6D	6C 6 70 6 6F 2	C 65	74 (20 74 55 20 5E 74	6C	20 6 6F 7 63 7	3 73	t may lead to 's complete 1 To conta	oss			l L	ook at thi	is ins	truction.t	ct.		
00000C 75 00000C 6F	73 20	79 6F	75	20 6	8 61		55 20	74		0 64	us you have t ownload "tox"	o d			P	ython27					
000000 73		SE 67				68 7			73 3		ssenger: http				P	rogram F	iles				
00000C 2F		6F 78		67 6	9 74	68 7	75 62	2E			/qtox.github.				_	Vindows					

Figure 5 – Malware Writing Ransom Notes

After dropping the ransom note, the malware searches files and directories for encryption by enumerating them using the *FindFirstFileW()* and *FindNextFileW()* API functions.

The ransomware excludes the below file extensions and file/folder names from encryption.

File extension .exe, .dll, .sys, .txt, .lnk and .html File names bootmgr, BOOTNXT, pagefile.sys, thumbs.db, ntuser.dat and swapfile.sys Folder names Windows, Windows.old

The ransomware usesGoLang Packages such as "crypto/cipher," "crypto/aes" and "crypto/rsa" for file encryption on the victim machine.



Figure 6 – Hardcoded Strings of "Crypto" GoLang Packages

For encryption, the malware divides the file content into 10 bytes chunks. First, it reads 10 bytes from the original file, then encrypts the bytes and writes the encrypted data into the target file. Dividing the data into small chunks is a method to evade detection by Anti-Virus products.

The figure below shows the code snippet of the encryption loop and the original and infected file content before and after encryption.

MachineStorage.dat		CPU	Log	Not	tes	Breakpoints	Memory Memory M	Aap 🔲 Cal	II Stack
0 1 2 3 4 5 6 7 8 9 A B C D E F 0123456789ABCDEF	E	:	0000000	0000802	A7.7	48:898424 31C9	A\$000000	mov qword xor ecx.ed	CX
00C0h: 42 33 36 35 43 39 45 31 43 45 41 34 38 39 39 44 B365C9E1CEA4899D		-	0000000	0008C2	A79	V EB 11		ino new or	ne.sc:
00D0h: 43 45 43 31 34 33 33 38 46 45 22 2C 22 37 22 3A CEC14338FE", "7":		1	0000000	00008C2	480	48: 804A 0	70	lea rcx,qu	word p
00E0h: 22 44 35 45 34 45 41 33 36 37 33 38 35 32 45 34 "D5E4EA3673852E4			0000000	000862	A84	48:888424	A8000000	mov rax, qu	word p
00F0h: 37 36 45 42 42 30 37 43 30 38 46 39 42 36 39 36 76EBB07C08F9B696		→ •	0000000			48:885424	78	mov rdx,qu	word p
0100h: 34 34 38 33 35 38 30 42 39 38 44 35 37 44 34 34 4483580B98D57D44			0000000			48:39CA V 0F8E 2101	0000	the new_or	ne. SC
0110h: 43 33 42 32 34 34 38 34 35 35 42 34 30 44 43 39 C3B2448455B40DC9			0000000	00008C2	A9A	48:894C24	70	mov gword	ptr :
0120h: 45 22 2C 22 35 22 3A 22 45 30 39 31 31 36 45 44 E","5":"E09116ED		1	0000000			48:888424 48:89F7	80000000	mov rs1,qu mov rd1,r1	word p
0130h: 34 38 39 45 32 39 46 44 36 38 33 35 45 38 32 43 489E29FD6835E82C			0000000			48:0FAFF1		imul rsi.	rex
0140h: 45 30 37 33 34 39 45 30 32 44 35 38 32 33 44 37 E07349E02D5823D7			0000000			48:0335 9		add rsi,qu	word p
0150h: 44 34 45 45 32 44 39 37 44 39 35 30 34 33 39 32 D4EE2D97D9504392		1	0000000			48:898424 48:89C3	\$5000000	mov qword	
0160h: 43 45 31 39 30 43 33 31 22 2C 22 33 22 3A 22 45 CE190C31", "3":"E			0000000	000802	AC0	48:8B8424	A0000000	mov rax.qu	word p
0170h: 39 33 33 38 32 37 38 44 41 36 36 37 35 36 38 42 9338278DA667568B			0000000	000802	ACS	48:89F9		mov rex,re	di
0180h: 46 31 42 35 34 31 43 42 46 31 35 39 34 38 33 44 F1B541CBF159483D			0000000	1000802	AD 0	E8 50C1FA 48:8BB424		mov rsi,qu	
0190h: 36 36 32 39 32 44 46 46 41 45 33 30 42 31 37 42 66292DFFAE30B17B			0000000	000802	ADS	48:39F0		cmp rax, rs	\$1
01A0h: 36 35 35 32 32 31 45 35 35 45 38 35 43 43 32 22 655221E55E85CC2"			0000000			^ 75 9E 48:89C3		jne new_or mov rbx,rs	
01B0h: 2C 22 38 22 3A 22 44 35 45 34 45 41 33 36 37 33 , "8": "D5E4EA3673			0000000			48:89F1		mov rcx,rs	
01C0h: 38 35 32 45 34 37 36 45 42 42 30 37 43 30 B8 46 852E476EBB07C08F			0000000	000802	AE3	48:8BBC24		mov rdi,qu	word p
01D0h: 39 42 36 39 36 34 34 38 33 35 38 30 42 39 38 44 9B6964483580B98D	- R I		0000000			48:887424 4C:884424		mov rsi,que	and p
01E0h: 35 37 44 34 34 43 33 42 32 34 34 38 34 35 35 42 57D44C3B2448455B			0000000	000502	AFS	4C:8B8C24	98000000	mov r9, qw	ord pro
01F0h: 34 30 44 43 39 45 22 2C 22 36 22 3A 22 49 6E 74 40DC9E", "6":"Int			0000000			4C:885424		mov r10,qu	word p
0200h: 65 6C 28 52 29 20 38 32 35 37 34 4C 20 47 69 67 el(R) 82574L Gig			0000000			4C:885C24 48:888424		mov rii,qu	word
0210h: 61 62 69 74 20 4E 65 74 77 6F 72 6B 20 43 6F 6E abit Network Con			100000000	KORIO RA PI	804	E8 2CF6FF		call new_o	one. 80
0220h: 6E 65 63 74 69 6F 6E 22 7D 0B nection"}.			0000000	000802	B14	48:89CF 48:888424	******	mov rdi,rd mov rsi,qu	CX
			0000000	0008C2	81F	48:8909	88000000	mov rcx, rl	bx
Encrypted File			0000000	0008C2	822	48:89C3		mov rbx,ra	
MachineStorage.dat.bianlian X Cherypted File		:	0000000	000852	825	48:888424 E8 8EC7FA		call new_0	one.8
0 1 2 3 4 5 6 7 8 9 A B C D E F 0123456789ABCDEF				000862		48:85DB		test rbx,	rbx
00C0h: C2 C2 3F D3 96 8F C5 DF 1D C6 55 48 7B 36 FA A3 AA?0AB.ÆUH{6ú£	× .		0000000			75 OE 48:888424	80000000	jne new_or mov rsi.qu	ne.8C2
00D0h: FB FF FD 6D 7B 56 06 43 7F 84 2D CD F5 ED 8B B7 ûÿým{V.C."-Íõí«·	-		0000000			90	8000000	nop	
00E0h: 57 62 38 A0 E7 F9 92 B6 99 37 19 2C 8D EA 83 DE Wb8 cù'¶"7.,.êfÞ			0000000			LE9 36FFFF		jmp new_or	
00F0h: 3C EC 86 E1 6B 6B 12 06 E3 7A 63 39 E9 25 10 9A <itakkãzc9é%.š< td=""><td></td><td>·>0</td><td>0000000</td><td></td><td></td><td>44:0F1180 74 04</td><td>24 80000000</td><td>je new_one</td><td></td></itakkãzc9é%.š<>		·>0	0000000			44:0F1180 74 04	24 80000000	je new_one	
0100h: B5 2B 8A F1 C3 97 9F 49 A2 05 08 47 02 98 AC 69 µ+ŠñÃ-YICG. ~i			0000000			48:8858 0	8	mov rbx,qu	
0110h: 37 D6 90 A4 5E 5E D3 BA D3 1C 3A 04 D1 34 76 8F 70.¤^^0°.:.N4v.		1	<						
0120h: 9D 67 5B F3 E9 B6 18 D6 25 57 79 36 B7 29 AC 89 .g[óé¶.0%Wy6·)¬%		ax=1							_
0130h: A8 FC 55 20 5B 9A 00 99 DB 06 AD 08 82 BE A8 B1 UU [5. U * ±	n n	\$1=00000	C000143	D18 & "	'C:\\Pr	ogramData\\M	icrosoft V	isual Studio	0\\Ма
0140h: 74 6C 38 CO 88 B3 FE 78 3F 49 1D BA 68 A0 91 31 tl8Å< ³ þ{?I.ºh '1		text:000	0000008	C2AD8 n	new_one	.exe:\$F2AD8	#F20D8		
0150h: 00 F0 5A 31 8E 0A 54 2F 49 9C 1E 4D 03 A3 41 D5 .ðZ1Ž.T/Iœ.M.£AÖ									_
0160h: 99 DA 2D 6E 7D FC 9D 65 3C D2 96 06 70 DE 6A 07 ™Ú-n}ü.e<ÓpÞj. 0170h: 99 20 84 8B D1 20 38 CB 84 CB BE CC 22 E0 D6 0B ™ "<Ñ 8Ё"Ё₩Ì*àô.		Dump 1	UN Du	mp 2	Dum	p 3 📖 Dump	4 🚛 Dum	p 5 💮 Wa	tch 1
0180h: 85 8F 0F C8 0A 47 B4 C6 97 65 CB 81 6B FA FC F1È.G'Æ-eĒ.kúuñ	A	ddress	Нех					ASCII	
0190h: 14 4D 9A C3 14 6F 10 93 01 84 F6 F6 85 C1 5B 66 .MšÃ.o."., öæ Á[f	0	000000000	DE 44 F			79 FF 98 B		00 00 pourie	F_yy.
01A0h: E9 43 5D B5 0C 0B A5 7D 3B 84 05 7C B9 0B 5C DE eC]u+;						0 00 00 00 00 6A 8E BE 77			N11.5
01B0h: 44 F9 77 E8 46 5F 79 FF 98 BA A0 F0 66 95 7E 8D DuweF_yy" after						GA SE BE 77			
01C0h: EF 7F 5F 53 4E EF 6A 8E BE 77 21 6F BF C2 57 EE 1. SMitzww!o; AW1	0	000000000	00 00 0	0 00 00	0 00 00	0 00 00 00 00	00 00 00 0	2 57	
01D0h: 2F 0C 89 16 F9 60 BA 57 EC 59 E1 C1 56 2B DD 8D 7.5.0 WiYaAV+Y.	0	000000000	EE 2F 0	6 89 16	5 F9 60	BA 57 EC 55 BA 57 EC 55	E1 C1 56 0	2 57 1/	U OWY
01E0h: E0 0C C9 6C 3C 4D 08 AD 24 D3 DF 40 B3 91 9F 35 a.El <msób@3 td="" ys<=""><td>0</td><td>000000000000000000000000000000000000000</td><td>00 00 0</td><td>0 00 00</td><td>0 00 00</td><td>0 00 00 00 00</td><td>00 00 00</td><td>28 DD</td><td></td></msób@3>	0	000000000000000000000000000000000000000	00 00 0	0 00 00	0 00 00	0 00 00 00 00	00 00 00	28 DD	
01F0h: 02 2D 1E 09 3D FD 25 8D E5 AE 5D 9E E7 4A 85 96=v%.a@1žcJ						08 AD 24 D			
0200h: D0 8F FB CA 03 D2 E4 03 80 97 A4 A5 24 49 F0 61 Đ.ûÊ.Òā.€-¤¥SIða						0 08 AD 24 D3			·M5
0210h: 90 71 E2 03 D8 4B 70 82 71 DD 19 55 74 43 6F 6E .gå.@Kp.gÝ.UtCon	0	000000000	35 02 2	D 1E 05	9 3D FD	25 8D E5 A8	5D 9E E7	91 9F 5	=ý%. a
0220h: 6E 65 63 74 69 6F 6E 22 7D 0B nection"}.	0	00000000	35 02 2	D 1E 09	B BD FD	25 80 E5 A8	5D 9E E7	00 00 5	=ÿ%. å
						0 00 00 00 00 E4 03 80 97			.òä.

Figure 7 - Encryption routine and Original/Encrypted file content

In the next step, the malware renames the encrypted files with the ".bianlian" extension and replaces them with the original file using the *MoveFileExW()* API function, as shown below.

<pre>mov rsi,rsp mov rcx,qword ptr ds:[rsi] mov rdx,qword ptr ds:[rsi+8] mov r8,qword ptr ds:[rsi+10] mov r9,qword ptr ds:[rsi+18] movq xmm0,rcx movq xmm1,rdx movq xmm2,r8 movq xmm2,r9</pre>	<pre>[rsi]:L"C:\\Com"ment</pre>
call rax	MoveFileExW
add rsp.150	

Finally, the ransomware deletes itself using the following command line, leaving only the encrypted files and the ransom note on the victim's machine.

• cmd /c del C:\Users\<Admin>\Desktop\new_one.exe

The below figure shows the BianLian ransomware encrypted files and ransom note text file after the successful infection of a victim's machine.

Name	Туре	Size
bianlian	BIANLIAN File	20 KB
y.bianlian	BIANLIAN File	49 KB
📄 📺 y.bianlian	BIANLIAN File	4 KB
📄 📺 🚚 bianlian	BIANLIAN File	26 KB
📄 ingent gy.bianlian	BIANLIAN File	44 KB
📄 🛶 🛶 yc.bianlian	BIANLIAN File	39 KB
📄 🖶 👷 (bian)lian	BIANLIAN File	4 KB
📄 🖦 yu Imunlian	BIANLIAN File	4 KB
Dianlian	BIANLIAN File	3 KB
📄 🛶 bianlian	BIANLIAN File	3 KB
📄 👘 bianlian	BIANLIAN File	5 KB
c.bianlian	BIANLIAN File	4 KB
📄 🛶 👝 o.bianlian	BIANLIAN File	4 KB
📄 🛶 🛶 bianlian	BIANLIAN File	103 KB
📄 🗤 🙀 🙀 .bianlian	BIANLIAN File	56 KB
bianlian	BIANLIAN File	56 KB
Look at this instruction.txt	Text Document	1 KB
📄 mangadh ay linanlian	BIANLIAN File	7 KB
📄 🚥 🖓 👘 y.bianlian	BIANLIAN File	3 KB

Figure 9 – Files encrypted by BianLian Ransomware

In the dropped ransom note, victims are given instructions on how they can contact the TAs to restore their encrypted files.

The TAs threaten their victims, stating that their important data, such as financial, client, business, technical, and personal files, has been downloaded and will be posted on their leak site if the ransom is not paid within ten days.

The ransom note also contains the ID of TOX Messenger for ransom negotiations and the Onion URL of the leak site page – shown in the figure below.

Look at this instruction.txt - Notepad File Edit Format View Help Your network systems were attacked and encrypted. Contact us in order to restore Don't make any changes in your file structure: touch no files, don't try to reco yourself, that may lead to it's complete loss. To contact us you have to download "tox" messenger: https://qtox.github.io/ Add user with the following ID to get your instructions: A483080450A241464871758084270807458557396675511A20809854398059797FC Alternative way: @onionmail.org Your ID: * You should know that we have been downloading data from your network for a signi before the attack: financial, client, business, post, technical and personal fil In 10 days - it will be posted at our site http://bianlianline.competitors and news agencies, that will lead to a negat on your company: potential financial, business and reputational loses. Figure 10 – Ransom note

The figure below shows the BianLian ransomware Onion leak home page and the affected company's extortion objects.

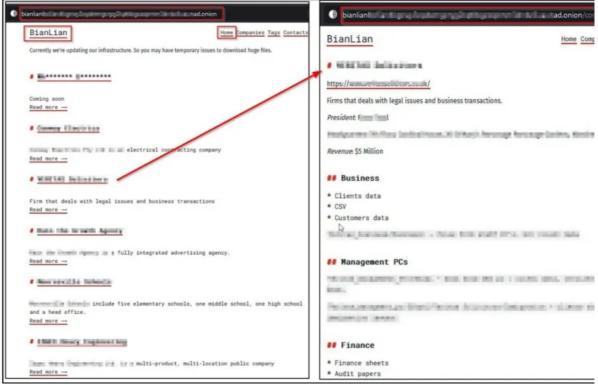


Figure 11 – BianLian Leak site home page

The BianLian Leak site contains the list of all companies affected by the ransomware and the TA's contact details for ransomware data recovery.



Figure 12 - BianLian Leak site affected companies list & TAs contact details

Conclusion

Ransomware is becoming an increasingly common and effective attack method that affects organizations and their productivity. BianLian is GoLang-based ransomware that continues to breach several industries and demand large ransom amounts. The TAs also use the double extortion method by stealing an affected organization's files and leaking them online if the ransom is not paid on time.

TAs write their ransomware in GoLang for various reasons; the language enables a single codebase to be compiled into all major operating systems. The TAs behind BianLian are constantly making changes and adding new capabilities to avoid detection.

Cyble Research Labs will continue to monitor BianLian and other similar Ransomware groups' activities and analyze them to better understand their motivations.

Our Recommendations

We have listed some essential cybersecurity best practices that create the first line of control against attackers. We recommend that our readers follow the best practices given below:

Safety Measures Needed to Prevent Ransomware Attacks

- Conduct regular backup practices and keep those backups offline or in a separate network.
- Turn on the automatic software update feature on your computer, mobile, and other connected devices wherever possible and pragmatic.
- Use a reputed anti-virus and Internet security software package on your connected devices, including PC, laptop, and mobile.
- · Refrain from opening untrusted links and email attachments without verifying their authenticity.

Users Should Take the Following Steps After the Ransomware Attack

- Detach infected devices on the same network.
- Disconnect external storage devices if connected.
- Inspect system logs for suspicious events.

Impact of BianLian Ransomware

- · Loss of Valuable data.
- · Loss of the organization's reputation and integrity.
- Loss of the organization's sensitive business information.
- Disruption in organization operation.
- Financial loss.

MITRE ATT&CK® Techniques

Tactic	Technique ID	Technique Name
Execution	T1204	User Execution
Execution	T1059	Command and Scripting Interpreter
	T1497	Virtualization/Sandbox Evasion
Defense Evasion	T1027	Software Packing
	T1036	Masquerading
Discovery	T1082	System Information Discovery

T1083	File and Directory Discovery
T1518	Security Software Discovery
T1120	Peripheral Device Discovery
Impact T1486	Data Encrypted for Impact
Lateral Movement T1091	Replication Through Removable Media

Indicator Of Compromise (IOCs)

Indicators	Indicator Type	Description
0c756fc8f34e409650cd910b5e2a3f00	MD5	BianLian
70d1d11e3b295ec6280ab33e7b129c17f40a6d2f	SHA1	Ransomware
eaf5e26c5e73f3db82cd07ea45e4d244ccb3ec3397ab5263a1a74add7bbcb6e2	Sha256	Executable
08e76dd242e64bb31aec09db8464b28f	MD5	BianLian
3f3f62c33030cfd64dba2d4ecb1634a9042ba292	SHA1	Ransomware
1fd07b8d1728e416f897bef4f1471126f9b18ef108eb952f4b75050da22e8e43	Sha256	Executable