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AnyDesk Public Exploit Disclosure - Arbitrary file write by symbolic link attack lead to denial-of-service attack on local machine

From: chan chan <siuchunc.03 () gmail com>

Date: Wed, 22 Jun 2022 17:42:49 +0800

Hi FullDisclosure,

I would like to publish an exploit that I found on AnyDesk as follows.

```
# Exploit Title: AnyDesk allow arbitrary file write by symbolic link
attack lead to denial-of-service attack on local machine
# Google Dork: [if applicable]
# Date: 24/5/2022
# Exploit Author: Erwin Chan
# Vendor Homepage: https://anydesk.com/en
# Software Link: https://anydesk.com/en
# Version: 7.0.9
# Tested on: Windows 11
```

It was found that AnyDesk (version 7.0.9) was vulnerable to arbitrary file write by symbolic link attack leading to denial-of-service attack on local machine. It was noted that two functions were affected.

Affected function A

When there was a remote connection come in, a directory under AppData of current user (without admin privilege) and a "ad.trace" file (i.e., "C:\Users\<user>\AppData\Roaming\AnyDesk") will be created by "AnyDesk.exe" with "NT Authority\SYSTEM" privilege.

[image: image.png]

[image: image.png]

Affected function B

After a connection was made, local or remote user could use the chat room. The chat log was written to folder

"C:\Users\<user>\AppData\Roaming\AnyDesk\chat\" by "AnyDesk.exe" with "NT Authority\SYSTEM" privilege. Or the local user (without admin privilege) could change the location of the chat log to anywhere that he/she has

"Modify" privilege.

[image: image.png]

[image: image.png]

Vulnerability Summary

Since the directories (i.e., "C:\Users\<user>\AppData\Roaming\AnyDesk\", "C:\Users\<user>\AppData\Roaming\AnyDesk\chat\") were assigned with "Modify" privilege for current user, current user could modify the entire

directory. With this setup, an unprivileged user is able to achieve arbitrary file write by creating a symbolic link to a privileged location (e.g., C:\Windows\System32). As a result, a malicious user could potentially deny any service by overwriting the configuration or system file of applications such as Anti Virus solutions. It was noted that the file content could be manipulated in affected function B such that a low privileged user could write an arbitrary file to an arbitrary location.
[image: d98609c1-7ec9-4a1d-9a6c-f4ef670e5d23.png]

Affected function A: Exploit steps by local user (without admin privilege)

1. Remove the directory "C:\Users\<user>\AppData\Roaming\AnyDesk"
2. Create symbolic link of "ad.trace" file to a privileged location (e.g., C:\Windows\System32\test.file) (PoC binary could be found here: https://github.com/googleprojectzero/symboliclink-testing-tools/blob/main/CreateSymlink/CreateSymlink_readme.txt)

[image: image.png]

1. Connect to local machine (target machine) from a remote machine. After the connection was initiated, the content of "ad.trace" file would be written to target file (e.g., C:\Windows\System32\test.file)

[image: image.png]

Affected function B: Exploit steps by local user (without admin privilege)

1. edit username of remote connector

[image: image.png]

1. Establish a AnyDesk connection from remote. Enter arbitrary text into the chat box. Mark down the filename of chat log

[image: image.png]

1. Remove the directory "C:\Users\<user>\AppData\Roaming\AnyDesk\chat"
2. Create symbolic link of chat log file (e.g., 657584961.txt) to a privileged location (e.g., C:\Windows\test.conf) (PoC binary could be found here: https://github.com/googleprojectzero/symboliclink-testing-tools/blob/main/CreateSymlink/CreateSymlink_readme.txt)

[image: image.png]

1. Open the chat room and enter arbitrary content into it. After that, the content of chat room would be written to target file (e.g., C:\Windows\test.conf)

[image: image.png]

[image: image.png]

Please let me know if any detail need further. Thanks

Regards,
Erwin



AnyDesk



New Session



Settings




Settings/Privacy

Disconnected from the AnyDesk network.


Settings


 User Interface

 Security

 Privacy

 Display

 Audio

 Connection

Choose...

C:\Users\\Pictures\AnyDesk

Chat Log

☐ Disabled

☒ Default path

☐ Custom path

Choose...

C:\Users\\AppData\Roaming\AnyDesk\chat



AnyDesk



New Session



Settings




Settings/Privacy

Disconnected from the AnyDesk network.


Settings

 User Interface

 Security

 Privacy

 Display

 Audio

 Connection

Choose...

C:\Users\\Pictures\AnyDesk

Chat Log

☐ Disabled

☒ Default path

☐ Custom path

Choose...

C:\Users\\AppData\Roaming\AnyDesk\chat



AnyDesk



New Session



Settings



Settings/Privacy

Disconnected from the AnyDesk network.

Settings

User Interface

Security

Privacy

Display

Audio

Connection

Choose...

C:\Users\\Pictures\AnyDesk

Chat Log

☐ Disabled

☒ Default path

☐ Custom path

Choose...

C:\Users\AppData\Roaming\AnyDesk\chat



AnyDesk



New Session



Settings



Settings/Privacy

Disconnected from the AnyDesk network.

Settings

User Interface

Security

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Display

Audio

Connection

Choose...

C:\Users\\Pictures\AnyDesk

Chat Log

☐ Disabled

☒ Default path

☐ Custom path

Choose...

C:\Users\AppData\Roaming\AnyDesk\chat



AnyDesk



New Session



Settings



Settings/Privacy

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Settings

User Interface

Security

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Display

Audio

Connection

Choose...

C:\Users\\Pictures\AnyDesk

Chat Log

☐ Disabled

☒ Default path

☐ Custom path




Choose...

C:\Users\AppData\Roaming\AnyDesk\chat

General Sharing Security Previous Versions Customise

Object name: C:\Users\lowpriv\AppData\Roaming\AnyDesk

Group or user names:

 SYSTEM
 lowpriv (L...R\lowpriv)
 Administrators (I...R\Administrators)

To change permissions, click Edit.

Edit...

Permissions for lowpriv

Allow

Deny

Full control



Modify



Read & execute



List folder contents





AnyDesk



New Session



Settings



Settings/Privacy

Disconnected from the AnyDesk network.

Settings



User Interface



Security



Privacy



Display



Audio



Connection

Choose...

C:\Users\\Pictures\AnyDesk

Chat Log

☐ Disabled

☒ Default path

☐ Custom path

Choose...

C:\Users\\AppData\Roaming\AnyDesk\chat



AnyDesk



New Session



Settings



Settings/Privacy

Disconnected from the AnyDesk network.

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User Interface



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Privacy



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Audio



Connection

Choose...

C:\Users\\Pictures\AnyDesk

Chat Log

☐ Disabled

☒ Default path

☐ Custom path

Choose...

C:\Users\\AppData\Roaming\AnyDesk\chat



AnyDesk



New Session



Settings




Settings/Privacy

Disconnected from the AnyDesk network.


Settings


 User Interface

 Security

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 Audio

 Connection

Choose...

C:\Users\\Pictures\AnyDesk

Chat Log

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AnyDesk



New Session



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AnyDesk



New Session



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Settings



User Interface



Security



Privacy



Display



Audio



Connection

Choose...

C:\Users\\Pictures\AnyDesk

Chat Log

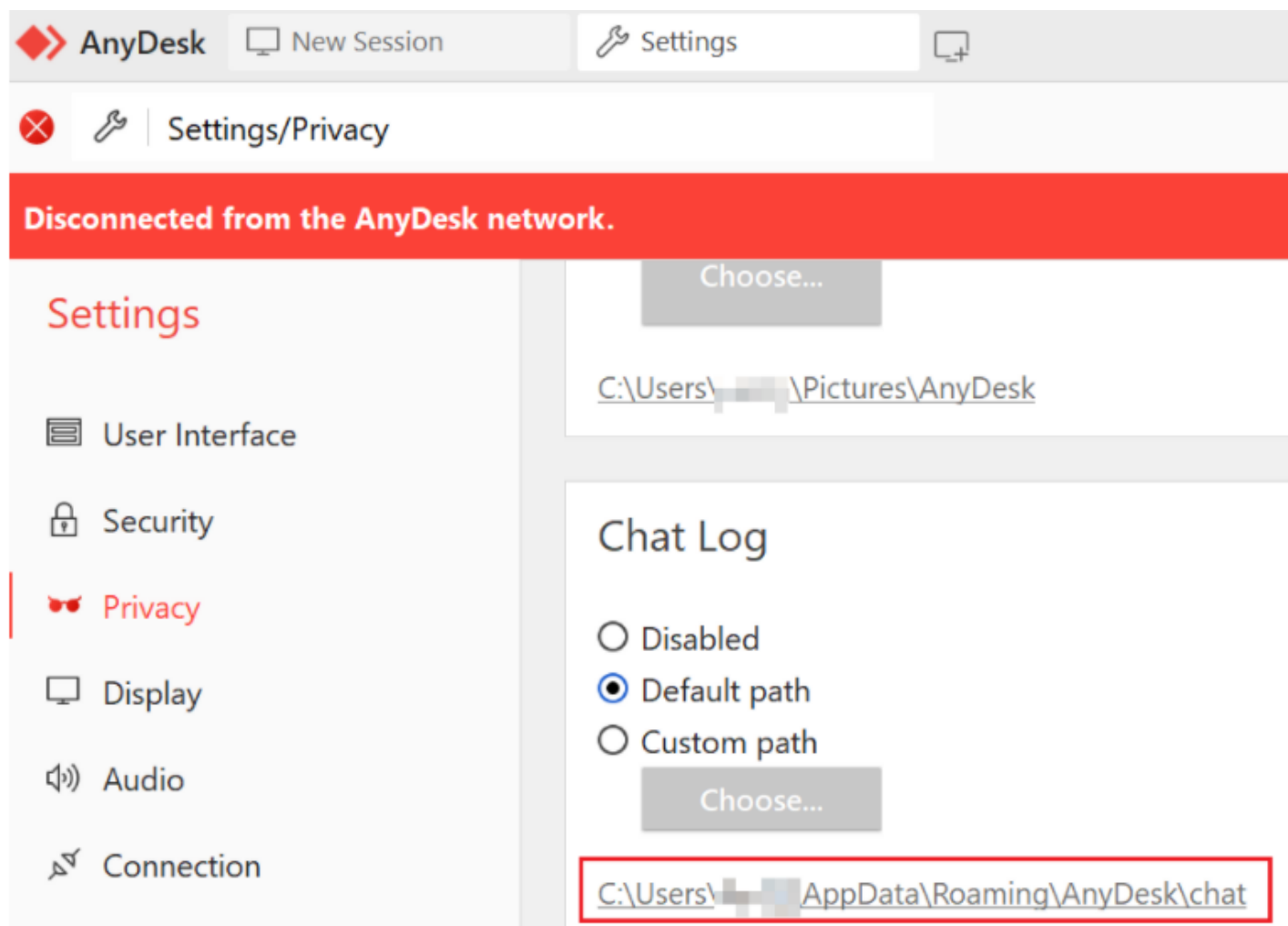
☐ Disabled

☒ Default path

☐ Custom path

Choose...

C:\Users\\AppData\Roaming\AnyDesk\chat



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