MQ\u00e9160\u00e0\u00e918\u00e98\u00

♠

CONTENT ... LAB TAKE TEST: LAB 3

- 7

est Information		
escription		
structions		
ultiple Attempts Not allowed. This test can only be taken once.		
rce Completion This test can be saved and resumed later.		
QUESTION 1	1 points	Saved
Can we try to run rootprog from rootdo and attempt to write something onto rootfile.: i.e: do you think the message "helloFromUser" can be written onto rootfile.txt?	txt,	
○ Yes		
○ No		
QUESTION 2	2 points	Saved
QUESTION 2  Upon successful write, will the entire file be overwritten with the new sentence from buffer or is the content of buffer appended onto the end of the file?	2 points	Saved
Upon successful write, will the entire file be overwritten with the new sentence from	2 points	Saved
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Upon successful write, will the entire file be overwritten with the new sentence from buffer or is the content of buffer appended onto the end of the file?  The entire file be overwritten with the new sentence from buffer  The content of buffer appended onto the end of the file, original content of the fill	·	Saved
Upon successful write, will the entire file be overwritten with the new sentence from buffer or is the content of buffer appended onto the end of the file?  The entire file be overwritten with the new sentence from buffer  The content of buffer appended onto the end of the file, original content of the file unchanged	le is	
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Mashups														

 ${\it Click Save \ and \ Submit \ to \ save \ and \ submit. \ Click \ Save \ All \ Answers \ to \ save \ all \ answers.}$ 

Save All Answers

estion Completion Status:			
a shortcut to another file. text string interpreted and followed by OS to actual path of the other	r file		
Path: p	Words:18		
QUESTION 5		3 points	Saved
Milest in the difference between comballs link and the catual file?			
What is the difference between symbolic link and the actual file?			
This question will be manually graded.			
Provide a very short explanation (not more than 2-3 sentences).			
Answers that are too lengthy wont be graded.			
For the teelber proced ALT, E10 (DC) or ALT, EN, E10 (Mac)			
For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).			
Paragraph \$ Arial \$ 3 (12pt) \$			
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₹ masiaps			
symlink does not increase reference count of the linked file, whereas actual file does.			
Path: p	Words:14		
	Words:14	1 points	Saved
Path: p		1 points	Saved
Path: p  QUESTION 6  Can you (a normal user) delete a file like rootfile.txt belonging to the root? Note are located inside the Root directory that belongs to the root.		1 points	Saved
Path: p  QUESTION 6  Can you (a normal user) delete a file like rootfile.txt belonging to the root? Note		1 points	Saved
Path: p  QUESTION 6  Can you (a normal user) delete a file like rootfile.txt belonging to the root? Note are located inside the Root directory that belongs to the root.		1 points	Saved
Path: p  QUESTION 6  Can you (a normal user) delete a file like rootfile.txt belonging to the root? Note are located inside the Root directory that belongs to the root.  Yes		1 points	Saved
Path: p  QUESTION 6  Can you (a normal user) delete a file like rootfile.txt belonging to the root? Note are located inside the Root directory that belongs to the root.  Yes No  NO			
Path: p  QUESTION 6  Can you (a normal user) delete a file like rootfile.txt belonging to the root? Note are located inside the Root directory that belongs to the root.  Yes No			

¥ Question Completion Status:

Irwxr-xr-x: I stands for s	ymbolic link, owner	r can read, write	and execute,	users in the
same group can read an	d execute, all other	r users can read	and execute	

- Irwxr-xr-x: I stands for text file, all other users can read, write and execute, users in the same group can read and execute, owner can read and execute
- Irwxr-xr-x: I stands for directory, all other users can read, write and execute, users in the same group can read and execute, owner can read and execute

# QUESTION 8 Saved

#### How does the script exploit.sh check if the attack is successful and stop the loop?

This question will be graded manually.

Provide a very short explanation (not more than 2-3 sentences).

Answers that are too lengthy wont be graded.

Paragraph \$ Arial \$ 3 (12pt) \$  the content of Is -I Root/rootfile.txt ack is successful, the size will increase (characters appended), OLDFILE differs from NEWFILE, then to exits	
ck the output of Is -I Root/rootfile.txt  ttack is successful, the size will increase (characters appended), OLDFILE differs from NEWFILE, then p exits	
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tack is successful, the size will increase (characters appended), OLDFILE differs from NEWFILE, then p exits	
p exits	
p exits	ı while
ı: p V	Vords:27

### QUESTION 9 2 points Saved

## What "attack message" is injected into rootfile.txt when the attack is successful?

- HELLO THIS IS ROOT FILE
- Hello this is attacker!
- username1 fake\_password
- SUCCESS! The root file has been changed.

### QUESTION 10 5 points Saved

Comment on your output (With regards to the task in The Attack section). Is your attack successful? If yes, how long does it take for the attack to be successful. If not, why not?

This question will be graded manually.

Provide a very short explanation (not more than 2-3 sentences).

Answers that are too lengthy wont be graded.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

Paragraph \$	Arial \$	3 (12pt)	<b>\$</b>

Click Save and Submit to save and submit. Click Save All Answers to save all answers.

Save All Answers

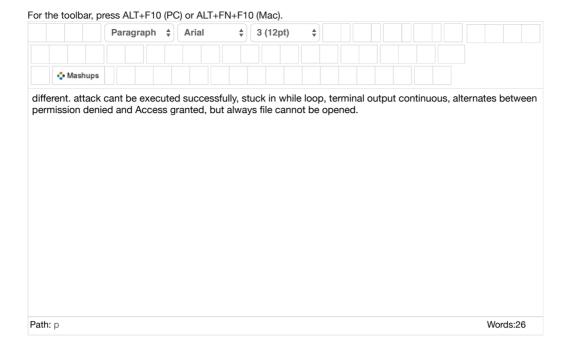
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	itatus:																
many attempts	of exec	uting.	with ac	cess (	granted	, and ı	oermissi	on der	nied. ei	nding v	with Sl	JCCES	S!, Exi	t succe	ss		
yes, successful.																	
Path: p														Words:	21		
QUESTION 11																5 points	Saved
					_				<b>.</b>								
If we only slee	ep for	1 ms	inste	ad of	1s, co	mme	nt its ir	npac	t to th	e atta	acker.						
This question wil	l be gra	aded m	nanuall	<b>/</b> .													
Provide a very sh					than 2-	3 sent	ences).										
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doesnt matter, s	Parag	T+F10 graph	(PC) o	r ALT+ rial	FN+F1(	3 (12	Ppt)							Words:	12		

After fixing rootprog.c. relaunch the attack script using User/exploit.sh again and comment on

 ${\it Click Save \ and \ Submit\ to \ save\ and \ submit\ .} {\it Click \ Save \ All \ Answers\ to\ save\ all\ answers.}$ 

Save All Answers

¥ Question Completion Status:



QUESTION 13 1 points Saved

#### Paste your fixed rootprog.c code to the space provided below.

This question will be graded manually

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

	Format 💠 Arial	\$ 3 (12pt) \$	
•• Mashups			
toctou_prog.c */			
include <stdio.h></stdio.h>			
include <unistd.h></unistd.h>			
include <string.h></string.h>			
include <time.h></time.h>			
include <sys td="" types<=""><td>.h&gt;</td><td></td><td></td></sys>	.h>		
define DELAY 1			
nt main(int argc, cha	r *arav[])		
n mamimir argo, ona	r argvij		
char *fileName = a	argv[1];		
char username[64]			
char password[64]	l:		
ath: div » div » span			Words:227

QUESTION 14 5 points Saved

After editing the shell script, relaunch the attack script using User/exploit.sh again and comment on your output. Why do you think the output with this modification is different from the output by the original rootprog.c code?

This question will be graded manually.

Provide a very short explanation (not more than 2-3 sentences).

Answers that are too lengthy wont be graded.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

Click Save and Submit to save and submit. Click Save All Answers to save all answers.

Save All Answers

36 (	Juestin	n Comr	aletion	Status

attack cant be executed successfully, stuck in while loop, terminal output continuous, alternates between permission denied and Access granted, but always file cannot be opened.

the new executable does not have SUID bit, running it wont change the effective ID to root. seteuid(getuid()) has no effect. permission is always the real ID so it can never fopen Root/rootlogfile.txt

Path: p » span

Words:58

\_\_\_\_

Saved

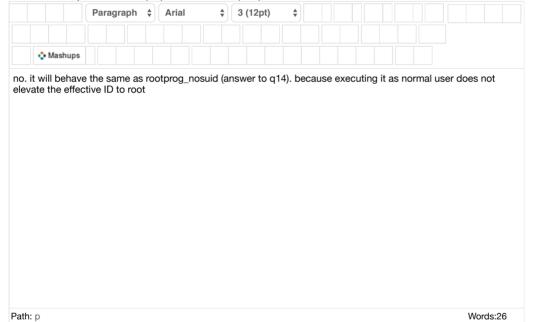
3 points

#### **QUESTION 15**

If the SUID bit of rootprog is **not enabled**, can the attack still succeed? Provide a very short explanation (not more than 2-3 sentences).

Answers that are too lengthy wont be graded.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).



#### **QUESTION 16**

5 points

Saved

This lab talks about TOCTOU Race Condition attack. Why is the attack named as such? Who is racing with who in this case?

This question will be graded manually.

Provide a very short explanation (not more than 2-3 sentences).

Answers that are too lengthy wont be graded.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

	Parag	raph	•	Arial	*	3 (12pt)	*				
Mashups											

Click Save and Submit to save and submit. Click Save All Answers to save all answers.

Save All Answers

¥ Question Completion Status:

Path: p

the shared variable is userfile.txt
attacker's shell script is racing with Root/rootprog to create the symlink, pointing userfile.txt to Root/rootfile.txt, while Root/rootprog is executing access() and fopen() on userfile.txt, so it can fool fopen to open rootfile.txt with effective ID of root

 ${\it Click Save \ and \ Submit \ to \ save \ and \ submit. \ Click \ Save \ All \ Answers \ to \ save \ all \ answers.}$ 

Save All Answers

Words:48