

Unit 8 - Week 7

Course outline

How does an NPTEL online course work?

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Covert Channels

Flush+Reload Attacks

Prime+Probe

Meltdown

Spectre Variant1

Spectre variant2

rowhammer

Heap demo 1

Heap demo 2

Heap demo 3

Quiz : Practice Assignment 7

Quiz : Assignment 7

Week 7 Feedback

Week 8

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Assignment 7

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-03-18, 23:59 IST.

1) Which of the following are micro architectural attacks?

1 point

- a). Rowhammer attack
- b). Meltdown and Spectre
- c). Cache Timing Attack

- a and b
- b and c
- b and c
- All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
All of the above

2) State True or False

Cache memory is implemented using DRAM chips, which are fast and expensive.

1 point

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
False

3) Which of the following is true for out-of-order execution

1 point

- I. Exploits instruction level parallelism and hides latencies
- II. Hardware required is complex
- III. Used to reduce latencies
- IV. Hardware required is simple compared to in-order processors

- I and IV
- II and III
- I, II, III
- All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
I, II, III

4) State True/False

In the Probe phase of prime + probe attack, the time taken to access the cache sets that have victims data is more due to cache miss.

1 point

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

5) Rowhammer attack, which is strong enough to give kernel access permissions to the user process, can be prevented by partitioning the DRAM and separating the sensitive and non-sensitive information.

1 point

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

6) State True or False.

- I. All the parent and the child processes share the same page table. Does this mean they share the same page frames in the RAM?
- II. COW creates a copy of the shared pages if it changes. All further changes are made in this new page.

- True, False
- False, True
- False, False
- True, True

No, the answer is incorrect.
Score: 0

Accepted Answers:
True, True

7) State True/ False

Meltdown and Spectre attacks exploit on out-of-order execution of the processor.

1 point

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
False

8) State True/False

One of the countermeasures to prevent Flush+Reload attack is to permit cflush accessible only through system calls.

1 point

- True
- False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

9) Which of the following is a Keystroke Logger?

1 point

- Hardware based Keylogger
- Screen based Keylogger
- Kernel based Keylogger
- All of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
All of the above

10) Which of the following can prevent cache covert channel?

1 point

- Process P1 and Process P2 should be separated at the operating system level.
- Process P1 and Process P2 can share the same cache memory one after the other.
- Process P1 and Process P2 can never be allowed to share the same cache memory.
- Process P1 and Process P2 can have restricted access to some cache memory

No, the answer is incorrect.
Score: 0

Accepted Answers:
Process P1 and Process P2 can never be allowed to share the same cache memory.