QUIZ A
First question

- What is the main criterion used by the designers of FAWN to select its microprocessors?
First question

What is the main criterion used by the designers of FAWN to select its microprocessors?

- **FAWN selects processors that have the highest instructions per second over power consumption ratio.**
Second question

- What would be the main advantage and the main disadvantage of *increasing* the size of the *in-memory key fragment* in FAWN?

- **Main advantage:**

- **Main disadvantage:**
Second question

What would be the main advantage and the main disadvantage of *increasing* the size of the *in-memory key fragment* in FAWN?

- **Main advantage:** *Fewer unneeded accesses to the secondary store.*
- **Main disadvantage:** *A bigger RAM footprint.*
Third question

- Which steps does FAWN take to invalidate a table entry?
Third question

Which steps does FAWN take to invalidate a table entry?

- It marks hash table entry invalid and adds a delete entry to the log (for durability)
Fourth question

- What is the **main drawback** of the dynamic binary translation approach to VMMs used by VMWare?
Fourth question

- What is the **main drawback** of the dynamic binary translation approach to VMMs used by VMWare?

  - *It is slower than the paravirtualization approach taken by Xen.*
Fifth question

- According to the authors of Xen, what is the main limitation of non-tagged TLBs?

- How does Xen handle that issue?
Fifth question

- According to the authors of Xen, what is the main limitation of non-tagged TLBs?
  - They require flushing the TLB at each context switch.

- How does Xen handle that issue?
  - The top 64MB region of each address space is reserved to Xen
  - Can execute Xen code without changing the page map and flushing the TLB
Sixth question

- What does H-Store do to speed up access to its stored data?
Sixth question

- What does H-Store do to speed up access to its stored data?

  - It stores them in main memory
  - No disk accesses, no flash memory accesses
Seventh question

- According to the authors of H-Store, what would be the $k$-safety of a database whose data are replicated on three sites?

□ **Answer:** _____
Seventh question

- According to the authors of H-Store, what would be the \textit{k-safety} of a database whose data are replicated on three sites?

- \textbf{Answer:} \textit{k} = 2
  
  - \textit{Because it can tolerate two site failures}
Eighth question

- According to the authors of H-Store, what characterizes \textit{one-shot transactions}?
Eighth question

According to the authors of H-Store, what characterizes *one-shot transactions*?

- Each of its individual queries executes on a single site
- Output of these queries is not reused as inputs for other queries
- Easy to execute in parallel
QUIZ B
First question

- Which tables are replicated by H-Store on all sites?
First question

- Which tables are replicated by H-Store on all sites?

  - *All read-only tables*
Second question

- According to the authors of H-Store, what would be the \textit{k-safety} of a database whose data are replicated on two sites?

\begin{itemize}
  \item \textbf{Answer:} ___
\end{itemize}
Second question

According to the authors of H-Store, what would be the \textit{k-safety} of a database whose data are replicated on two sites?

\textbf{Answer:} \( k = 1 \)

\textit{Because it can tolerate a single site failure}
Third question

According to the authors of H-Store, what characterizes one-shot transactions?
Third question

According to the authors of H-Store, what characterizes *one-shot transactions*?

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Fifth question

- What is the *main advantage* of the dynamic binary translation approach to VMMs used by VMWare?
Fifth question

What is the main drawback of the dynamic binary translation approach to VMMs used by VMWare?

- It does not require any changes to the guest operating system

This makes VMWare a better choice if your guest OS is a proprietary OS
Sixth question

- Which steps does FAWN take to *invalidate* a table entry?
Sixth question

- Which steps does FAWN take to invalidate a table entry?

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Seventh question

- Why the authors of FAWN did not select a very low-power CPU for their system?
Seventh question

Why the authors of FAWN did not select a very low-power CPU for their system?

- Because medium-powered CPUs tend to be more power efficient
- Higher instructions per second over power consumption ratios.
- More cycles per Joule
Eighth question

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- According to the authors of H-Store, what would be the *k-safety* of a database whose data are replicated on three sites?

  - **Answer:** $k = 2$
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