

Lecture 13

CS695

-based VM primitives

- sharing, ballooning, migration
- high availability, record-replay, image introspection, vm cloning.

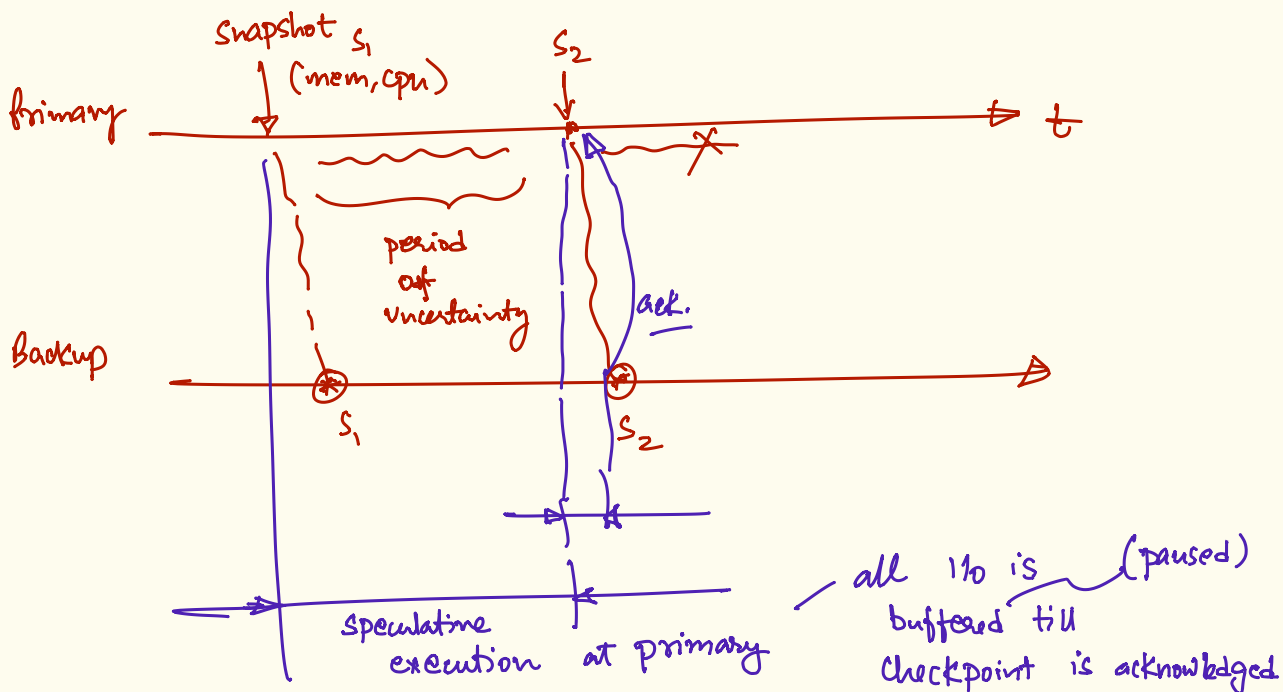
① HA [remus]

- ~ maintain memory-coherent VM replica
- ~ periodically trigger memory snapshots to backup VM.

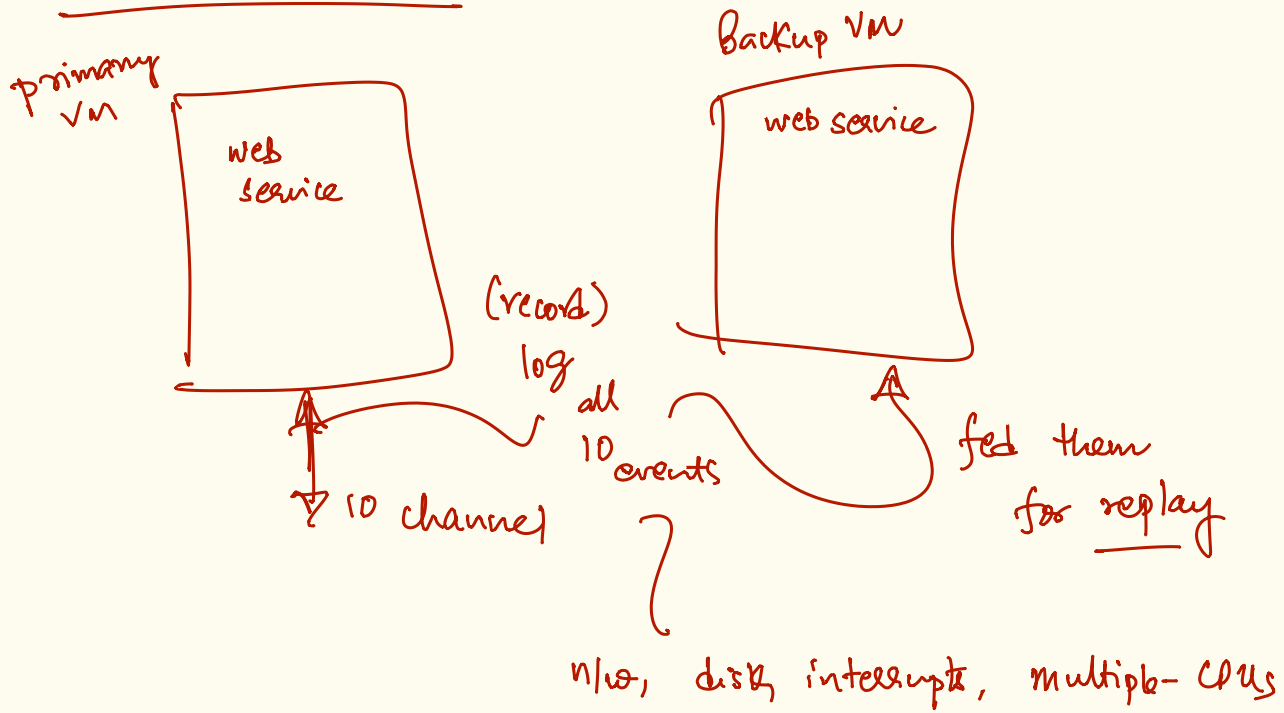
~

upcoming tutorials / assignments

- ① virtio frontend / backend
(PV-based IO virtualization)
- ② API remoting / virtualization using RPC
- ③ container setup & management (docker-lite)
- ④ eBPF inside-out
- ⑤ ~ project



② record & replay. [insight]



③ VM cloning [snowflake]

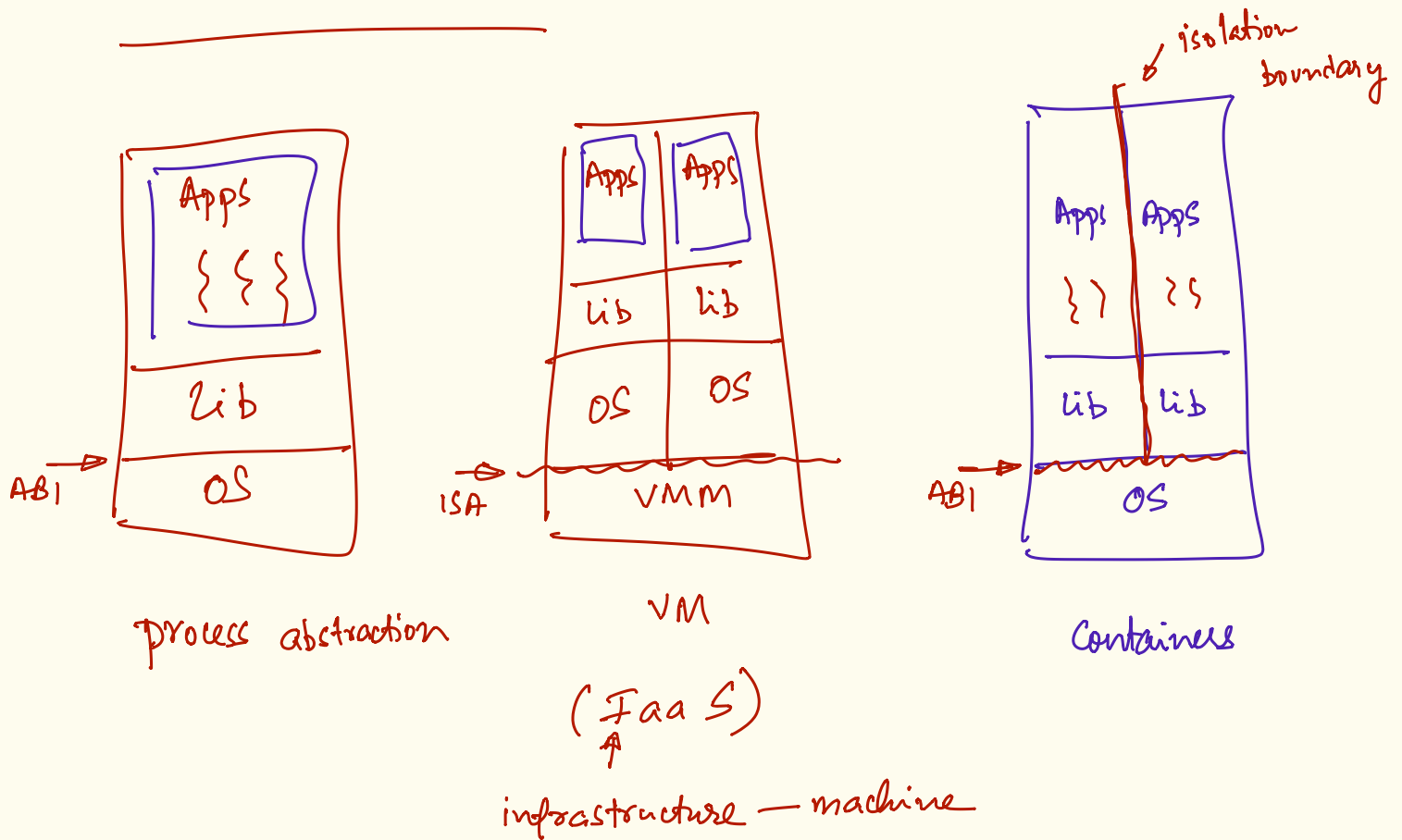
fork a VM

eg: HDFS/Hadoop, scale web services, ...

④ VM image introspection [stepphead]

- ~ based on FS-usage of VM can interpret & recreate all file state from VM image/disk
- ~ change / add / delete / checksum files of a VM.

Containers



application-view

- ~ set of processes
 - ~ libraries
 - ~ tools
 - ~ file system / directory structure
 - ~ network addresses
- } dependencies

isolated setup
of
the
application
view.

(#) 4 main building blocks for containers

- namespaces
- cgroups
- image files
- capabilities