Speedup Kernel Bisect with Kexec and Remote Kernel Images

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Problem Statement

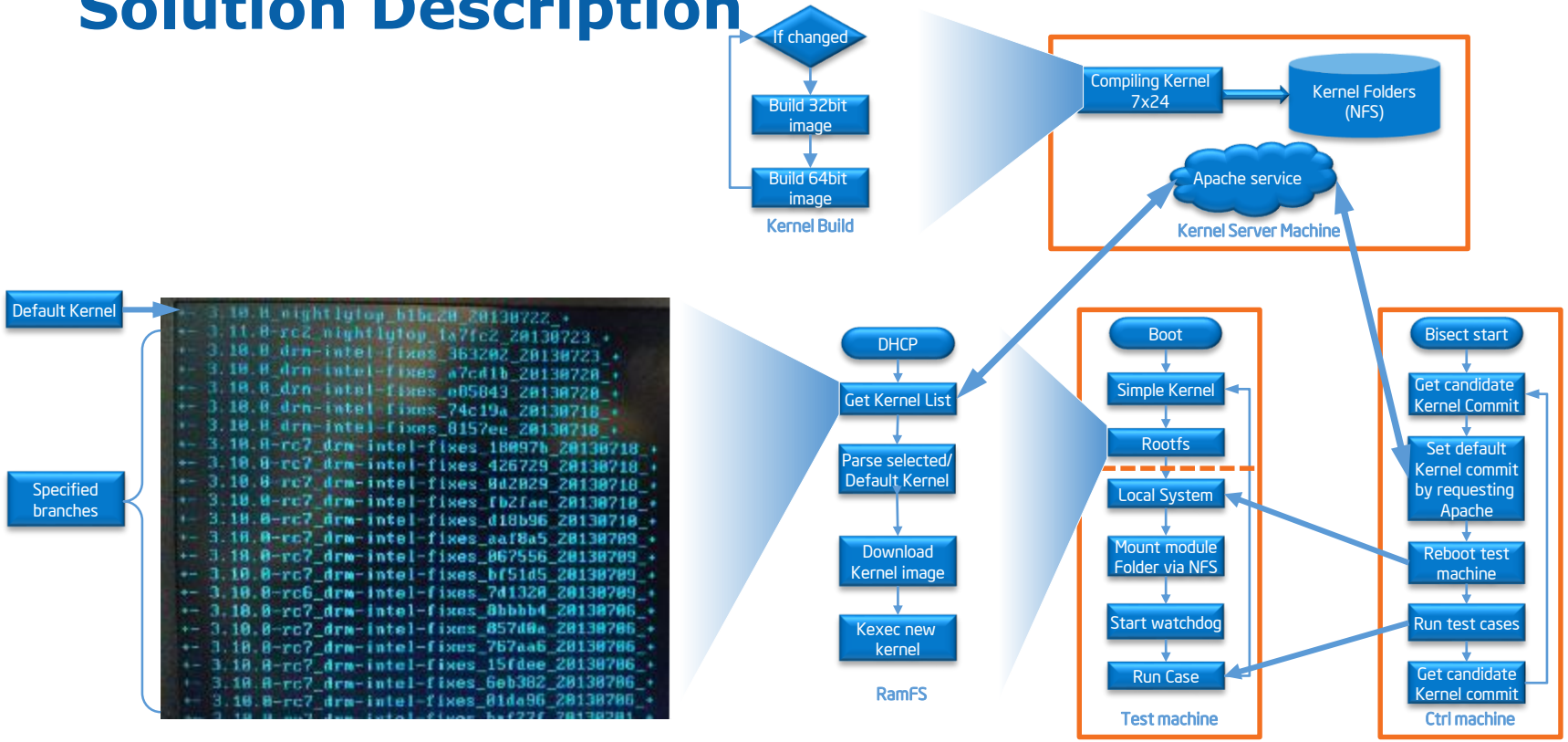
- Only install a candidate kernel image on an ‘alive’ system
- Compiling candidate kernel images requires much time

Solution for Problems

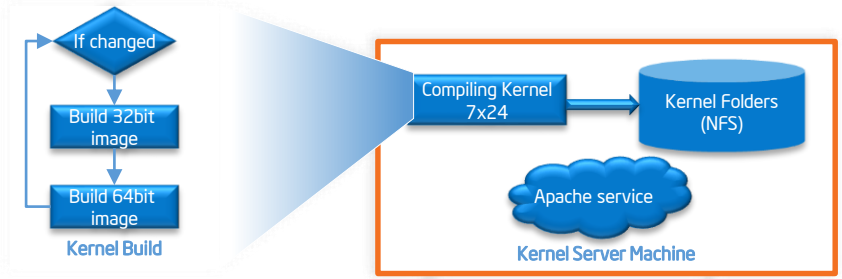
- Remote Kernel images
  - Previously prepared Kernel images
  - Save on a NFS server

- Kexec (Kernel Execution)
  - Big problem: often causes the system to be unstable

Solution Description



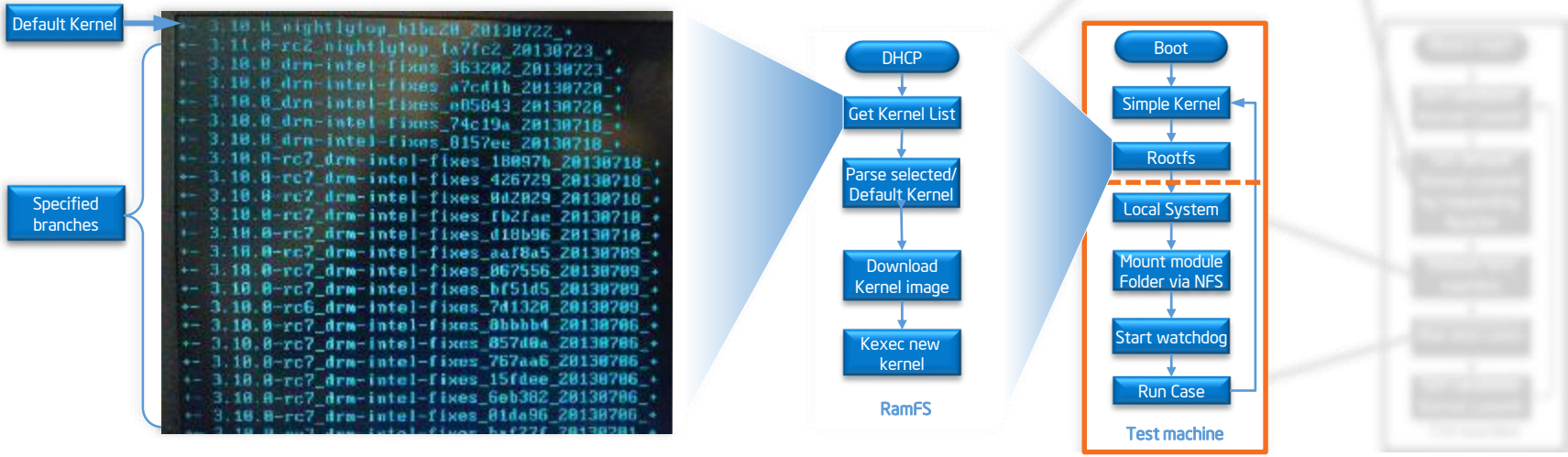
Kernel Server



- A continuous Kernel images building program is running
- An Apache service is also set up on the Kernel server

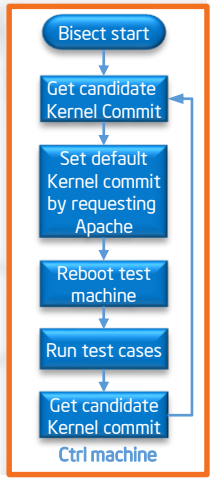
Test Machine

Stage 1: a fixed Kernel with a customized rootfs (ramfs)
Stage 2: the real candidate Kernel image with the local OS



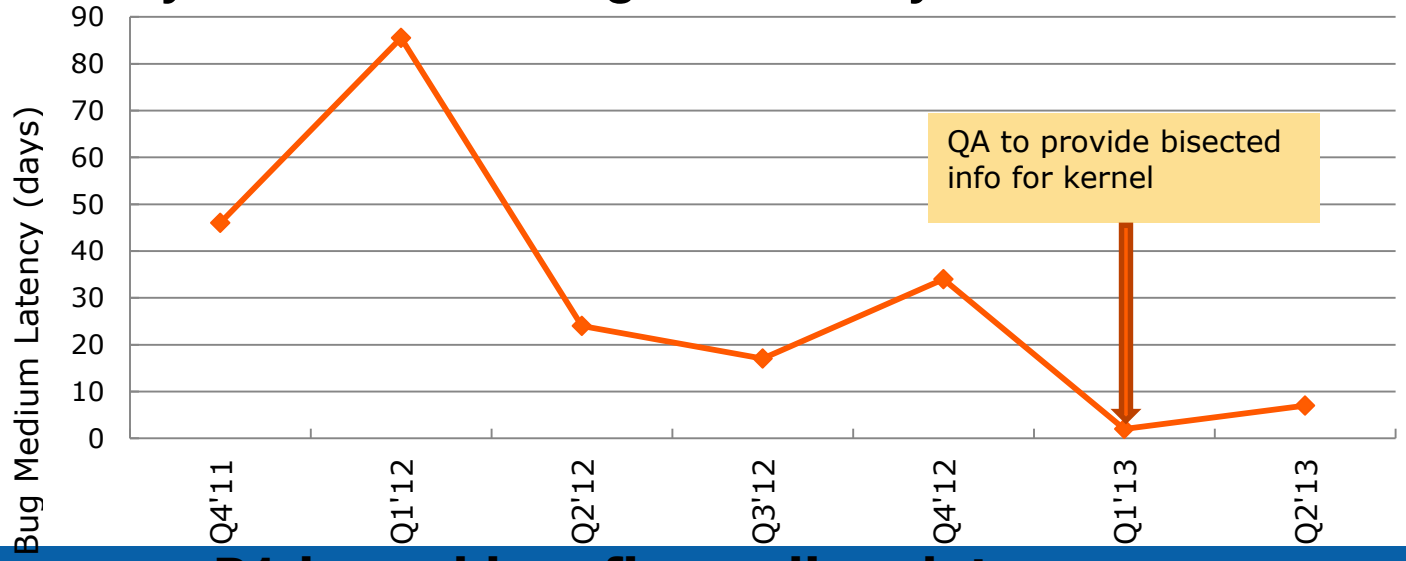
Control Machine

- Git bisect in Kernel source folder
- Change the default Kernel for test machine



Benefit

- Speed up the Kernel bisect procedure by 10x times
- Apply to other project (PRTS/Xeon)
- Extremely reduce the bug fix latency



P1 kernel bug fix medium latency (how many days it takes to fix a bug)

Q & A

Thank You!