



Speedup Kernel Bisect with Kexec and Remote Kernel Images

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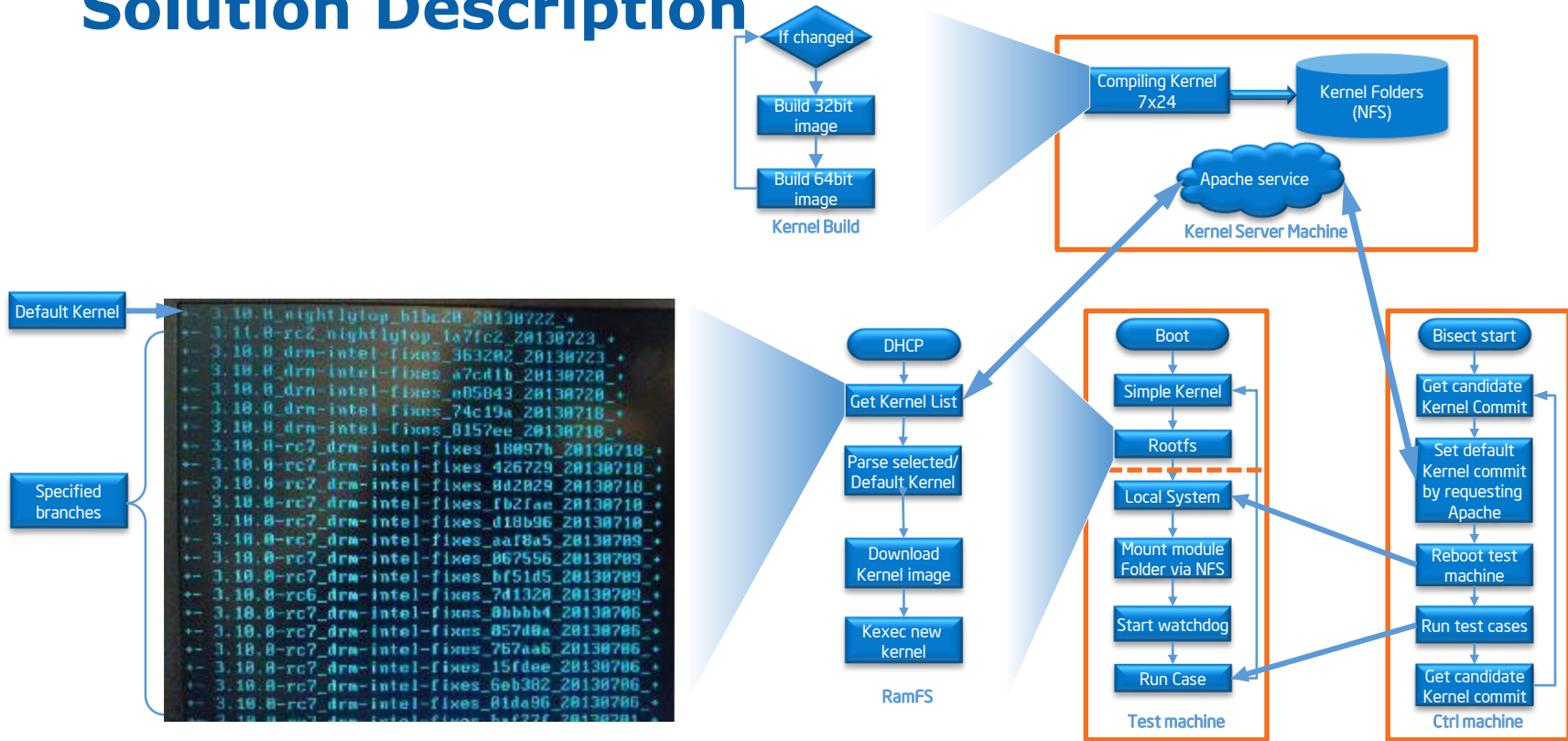
Problem Statement

- 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



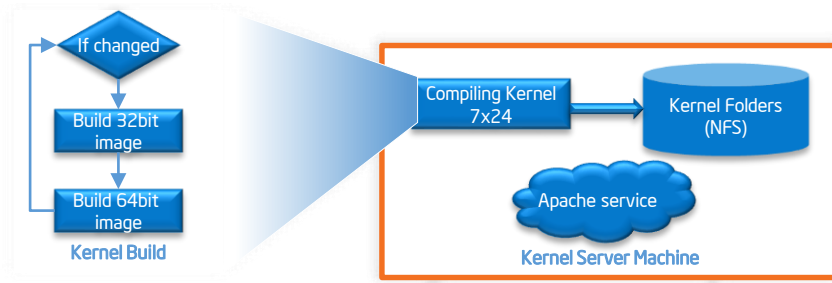
Default Kernel

```

3.10.0-nightlytop_b1bc20_20130722_+
3.11.0-rc2-nightlytop_fa7fc2_20130723_+
3.10.0-drm-intel-fixes_363202_20130723_+
3.10.0-drm-intel-fixes_a7cd1b_20130720_+
3.10.0-drm-intel-fixes_065049_20130720_+
3.10.0-drm-intel-fixes_74c19a_20130718_+
3.10.0-drm-intel-fixes_8157ee_20130718_+
3.10.0-rc7-drm-intel-fixes_18097b_20130718_+
3.10.0-rc7-drm-intel-fixes_426729_20130718_+
3.10.0-rc7-drm-intel-fixes_8d2029_20130718_+
3.10.0-rc7-drm-intel-fixes_fb2fae_20130718_+
3.10.0-rc7-drm-intel-fixes_d18b96_20130718_+
3.10.0-rc7-drm-intel-fixes_aaf8a5_20130709_+
3.10.0-rc7-drm-intel-fixes_067556_20130709_+
3.10.0-rc7-drm-intel-fixes_bf51d5_20130709_+
3.10.0-rc6-drm-intel-fixes_7d1320_20130709_+
3.10.0-rc7-drm-intel-fixes_0bbbbb_20130706_+
3.10.0-rc7-drm-intel-fixes_857d0a_20130706_+
3.10.0-rc7-drm-intel-fixes_767aa6_20130706_+
3.10.0-rc7-drm-intel-fixes_15fdee_20130706_+
3.10.0-rc7-drm-intel-fixes_6eb382_20130706_+
3.10.0-rc7-drm-intel-fixes_81da96_20130706_+
3.10.0-rc7-drm-intel-fixes_baf77f_20130701_+
    
```

Specified branches

Kernel Server

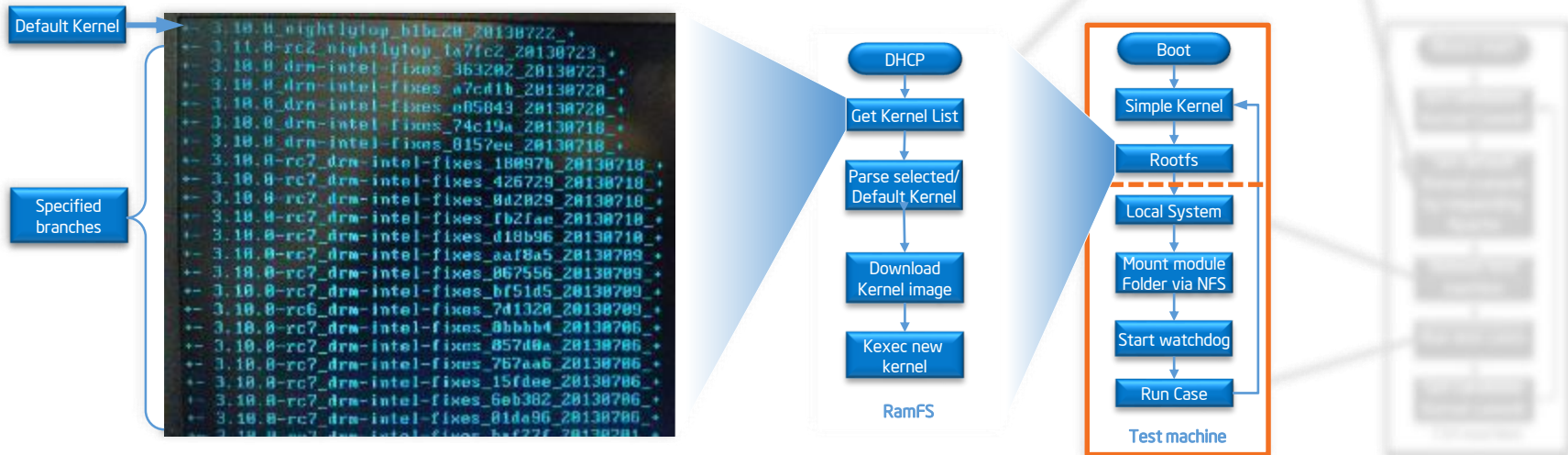


- A continuous Kernel images building program is running
- An Apache service is also set up on the Kernel server

Test Machine

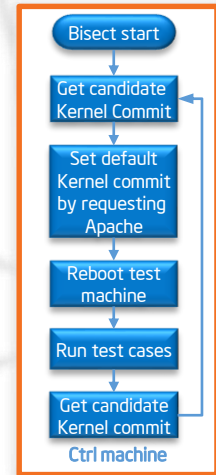
Stage 1: a fixed Kernel with a customized roots (ramfs)

Stage 2: the real candidate Kernel image with the local OS



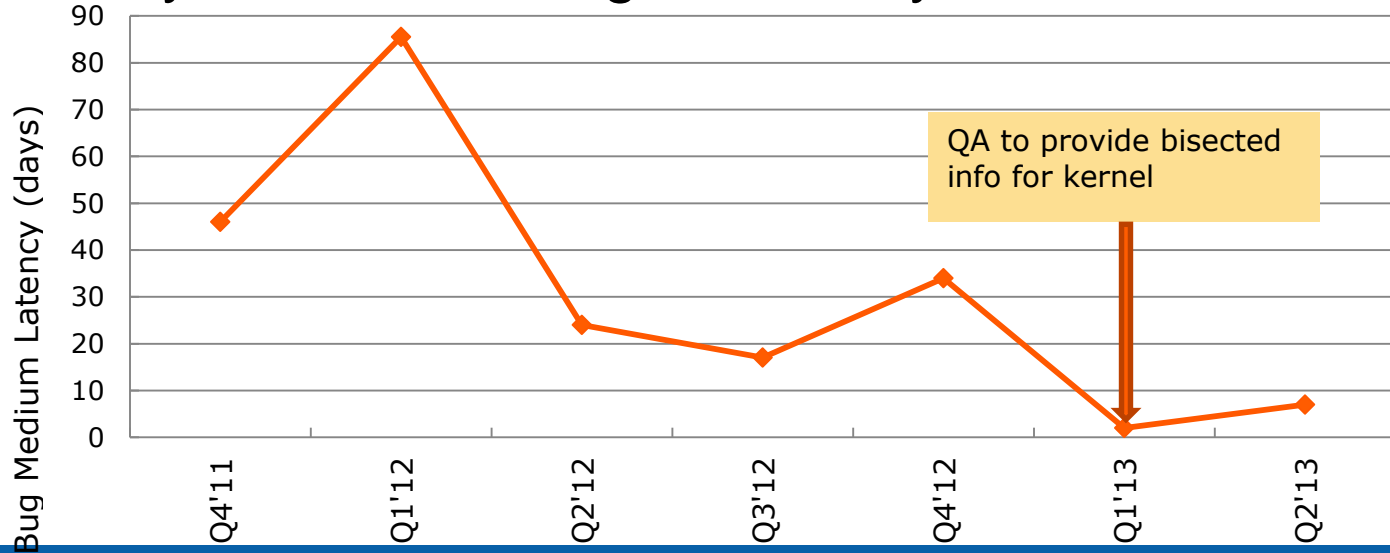
Control Machine

- 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!