

System performance evaluation using different virtualization techniques

Definition of problem

In this evaluation, we will emulate several virtualization types and in created environments we will try to use building of Linux kernel as a benchmark use case.

Virtualization environments

For emulation purposes we will use Windows 10 and Ubuntu 19.04 as host machines and on the same hardware to ensure specification consistency for performed tests. For emulation we choosed following techniques:

- containerization (Docker - Windows, Linux)
- full virtualization
 - software (VirtualBox, KVM)
 - hardware (KVM, HYPER-V)
- para virtualization (Xen, ...)

What to do

- measure guest machine performance during building of Linux kernel
- measure host machine impact due to VMx
- advantages/disadvantages of usage different virtualization approaches as result of defined problem

Evaluation

- best virtualization -> high performance of guest machine / low impact on host machine
- differences between each virtualization

As a result we will provide couple of figures with comparisions given above

Sources

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