# Deploy SUT SW and Benchmark

* Create VMs for SUT (MSSQL)

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|  | **Base 6226 2xSQL** | **Base 6240 2xSQL** |
| vCPU | 12 vCPU  (single NUMA) | 18 vCPU  (single NUMA) |
| vMemory | 164 GB | 164 GB |
| vDisks | All disks Thick provisioned  100 GB – OS drive  4x250GB – Data DB , 4 files per disk  2x32Gb – Temp DB   100GB – User transaction log  50GB – temp log  2T – backup/restore disk, SQL binaries  W jaki sposób rozumieć 1 SCSI controller? Czyli np. 1 SCSI 1TB i 4 partycje 250GB? Czy zwykły provision w Nutanix jest z defaultu Thick?  Do bazy 5000 100GB Transaction Log to za mało. | |

* Set rules so that MSSQL VMs are on the same host, but different than HammerDB
* Run vulnerability check
  + From PowerShell

Set-ExecutionPolicy Unrestricted

Install-Module SpeculationControl

Import-Module SpeculationControl          
Get-SpeculationControlSettings

* + Please take screenshot of this check, it will be required during performance review
* Create VMs for loader/stresser (HammerDB)

Czy HammerDB może być na Linuksie?

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|  | **Base 6226 2x** | **Base 6240 2x** |
| vCPU | 8 | 8 |
| vMemory | 10 GB | 10 GB |
| vDisks | All disks Thick provisioned | |

* Install HammerDB 3.2
* Install ODBC Driver 17 for SQL Server

## Prepare for benchmarking

* Create MSSQL database with following configuration:

Data disks:

4x 250GB

Temp: 2x 32 GB

Log: 1x 100 GB

Log 2 x 50 gb? W tabelce powyżej mamy 1x 50gb.

Data files: 4 files per disk

Tempdb files: spread across 2 disks, 4 files per disks

Tempdb log: single on dedicated disk (log1)

Transaction log: single file on dedicated disk

Autoshrink disabled

Autogrow disabled

Tranlog size 100G

max server memory (MB): <TotalMemoryForVm – 8G (for OS)>

min server memory (MB) :112640MB

max worker threads: 3000

recovery interval (min): 32767

lightweight pooling: 1 (Enabled)

priority boost: 1 (Enabled)

* Install QPI <https://github.com/JocaPC/qpi>
* Benchmark parameters

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| --- | --- | --- |
| Param Set | Warehouses | Users |
| 1 | 1000 | 100 |
| 2 | 2000 | 200 |
| 3 | 3000 | 300 |
| 4 | 4000 | 400 |
| 5 | 5000 | 500 |

Userzy nie stanowią 1/10 warehouses. Czy to jest poprawnie?

Puszczamy to po kolei?

* Prepare HammerDB for benchmarking by creating preparing and saving file with configuration for each set of parameters.
* Prepare database saves for each set of parameters.

O co chodzi w tym punkcie?

* Create VM for HammerDB with as much resources as available.

Czemu taka informacja skoro wyżej mamy zdefiniowane resources dla HammerDB?

* Configure HammerDB and choose building database for 1000 warehouses.
* Create MSSQL database backup, label it with 1000 warehouses.
* Repeat for all required warehouses numbers.
* Configure HammerDB with MSSQL (IP, credentials, log names, timed, etc)

# Prepare for benchmark run

* Restore database with required number of warehouses.
* Ensure database is configured as required (autoshrink, tranlog size etc.)
* Restart MSSQL service
* Execute QPI snapshot (t-sql: exec qpi.snapshot\_perf\_counters;)
* Configure HammerDB with required number of warehouses and users

# Run benchmark

* Run HammerDB benchmark.

# Gather data

* While HammerDB benchmark is running gather data of:
* VM OS CPU usage (from within VM) -czym? Perfmon?
* VM OS Memory usage (from within VM) -czym? Perfmon?
* CPU usage on host where MSSQL VMs are (from vCenter) -czym?
* Mem usage on host-czym?
* When HammerDB ends take HammerDB log and TPM and NOTPM data to jest średnia
* When HammerDB ends execute t-sql query on each MSSQL:
* select \* from qpi.perf\_counters;

# Analyze data

* Sum TPM from all HammerDB logs
* From QPI sum all Batches for total CPU Latency < 20ms and calculate percent of all Batches for total CPU latency
* From QPI sum all Batches for request CPU Latency < 5ms and calculate percent of all Batches for request CPU latency

Appendix A – Czy te skrypty są już gotowe? Czy mamy je edytować pod siebie?