**NIT3222 – Virtualisation in Computing**

**Tutorial 1**

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1. What is the differences between virtualisation and private cloud?

With private cloud, the vendor takes the company data and sends it to a remote vendor location where it is completely separate from any other client data. By contrast, with virtualization, a network isn't sending data into the cloud at all.

1. What is the difference between a parent and child partition?

The root partition, which can access memory and devices directly, starts the hypervisor. The parent partition runs the hypervisor and creates and manages child partitions. Each child partition can run a separate OS, which is sometimes known as a Guest OS.

1. What is the NUMA? How to scale up server with NUMA?

NUMA (non-uniform memory access) is the phenomenon that memory at various points in the address space of a processor have different performance characteristics. At current processor speeds, the signal path length from the processor to memory plays a significant role. Increased signal path length not only increases latency to memory but also quickly becomes a throughput bottleneck if the signal path is shared by multiple processors. The performance differences to memory were noticeable first on large-scale systems where data paths were spanning motherboards or chassis.

1. What is dynamic memory in virtualization?

Dynamic Memory is a memory allocation feature for Microsoft Hyper-V which pools the host's memory and sends resources to virtual machines ( VMs) that need it. When Hyper-V Dynamic Memory is enabled, the VM declares how much memory it needs and the host provides that quantity plus an extra amount to be used as a buffer.