

Virtualization Technologies for NFV

Unit 1: Introduction. Introduction to virtualization, Benefits, Need of virtualization, Limitations. Virtualization concepts. Hardware foundations.

Unit 2: Virtualisation approaches. Types of virtualization: Full virtualization, Paravirtualisation, Hardware support for virtualisation (Intel VT-x). Desktop virtualization, Server virtualization. Application level vs. OS-level virtualisation. Managing virtualisation. Use cases.

Unit 3: Virtual machines. Defining virtual machines: Taxonomy and Life cycle. Binary translation techniques. Managing storage for virtual machines. Virtualising storage. Moving virtual machines. Scale-up and scale-out virtual machines.

Unit 4: Reference solutions. Building and managing virtual machines. Hypervisors and their architecture: Xen, VMWare VSphere, Kernel Virtual Machine(KVM), Microsoft Hyper-V, VirtualBox.

Unit 5: Lightweight solutions. Operating System facilities. Linux Containers. Docker et.al.

Unit 6: Laboratory: Virtualization for Personal Computers, Linux Containers and Docker