CiB Centre-in-a-Box

Brendan Gilbert

iSHARE2 Support Team
What is a CiB?

• Single physical appliance with all the components needed to document, extract, transform, load and distribute micro-data sets from INDEPTH member centres.
CiB Components

- Intel i7Core CPU 2.6GHz – Dual Core (4 vCPU)
- 16GB RAM
- 1x 512GB M.2 SSD
- 1x 1TB SATA HDD
- VMware ESXi Hypervisor
CiB Architecture
Introduction to Virtualization and VMware Hypervisor Architecture
Virtual Machines on CiB

- **System server**: Provides network services, authentication services, web server and file server.

- **Database server**: Hosts a database system that replicates the operational database of the HDSS.

- **Datamanager desktop**: Hosts the software required to prepare and document the datasets that will eventually be shared on the repository.
Terminology

- **Remote Desktop (RDP)** – Feature that allows you to remotely access a computer using RDP client i.e. Remote Desktop Connection Client.
Remote Desktop Client

Remote Desktop Connection

Computer: Example: computer.fabrikam.com

Username: None specified

The computer name field is blank. Enter a full remote computer name.

Show Options  Connect  Help
Vmware Vsphere Client

- **Vmware Vsphere Client** - An application that allows to connect any windows PC remotely to a ESX/ESXi host.
Vmware Vsphere Client

To directly manage a single host, enter the IP address or host name. To manage multiple hosts, enter the IP address or name of a vCenter Server.

- IP address / Name:
- User name:
- Password:

- Use Windows session credentials

[Login] [Close] [Help]
VMware ESXi Host - VMware ESXi host is computer virtualization software developed by VMware Inc.
Vmware ESXi Host
Virtual Machines (VM)

- **Virtual Machines (VM)** - A virtual machine (VM) is a software implementation of a machine (i.e. a computer) that executes programs like a physical machine.
Virtual Machines (VM)
Network Virtualization

• Network virtualization is a method of combining the available resources in a network by splitting up the available bandwidth into channels.

• Given that the local network configuration can vary significantly across Centres, the topology for CiB is difficult to predict.
Network Virtualization
Connecting to VM’s on CiB (pre-requisites)

- Request assistance from your local IT staff to connect CiB to Centre’s network (LAN).
- Power ON CiB.
- Allow few mins for ESXi host and VM’s to start-up.
- Identify the Esxi Host and System Server IP addresses.
- The System Server’s IP will be known as the External IP address.
- Know your login credentials for CiB.
Connecting to VM’s on CiB

• Using Remote Desktop Client connect to the **External IP** using the designated tcp port for the VM e.g. 192.168.0.60:3389 Data Manager or 192.168.0.60:3390 Database Server

• Login using your credentials e.g. cib\username and password
RDP Ports for VM’s on CiB

- External IP: 3389 – Data Manager Desktop
- External IP: 3390 – Database Server

e.g. 192.168.0.60:3390
Hands On Test
(exercise - 1)

• Connect to your Data Manager Desktop using Remote Desktop client.

• Connect to your Database Server using Remote Desktop client.

NB: Remember the pre-requisites.
Conclusion

• You have an understanding of the CiB.
• You have an understanding of the Terminology
• You are able to Remote Desktop (RDP) to your Data Manager Desktop and Database Server.

• Next we look at Virtual Machines on the CiB.......
Next CiB VM’s.............
Virtual Machines (VM)

- System Server
- Database Server
- Data Manager Desktop
System Server

The main role of the System server:

• Manage all network services such as network security, resource sharing and network infrastructure.

• It is the open source alternative to Microsoft network infrastructure products.

• Managed via a single easy to use web interface.
System Server
System Server (continued)

Key role File Server:

- Shared file storage to Windows and Linux clients.

- Act as a central repository for all the data, documentation, and other files managed and archived at the Centre.
Key role Web Server:

- Manage the web-based content.
- Build survey data portals.
- Researchers can discover, browse and compare information on census and survey data.
System Server (continued)
Database Server

The main role Database server:

• Host analytical snapshot the centre’s operational database.
Data Manager Desktop

The primary role of this desktop is to host the **tools** needed by the Data Manager:

- Pentaho Data Integration also called “Kettle” for ETL purposes.
- Nesstar Publisher for DDI documentation.
- Zotero for citation management.
Data Manager Desktop
THANK YOU