

Step-By-Step Guide to Creating Virtual i Partitions Hosted by IBM i



Pete Massiello

iTech Solutions Group

pmassiello@itechsol.com

203-744-7854



iTech Solutions because IBM i (AS/400's) didn't come with System Administrators.

What we will cover

This is a step by step approach to building virtual IBM i partitions on your IBM i. You won't require any additional hardware, and you will be able to perform this in about 4 hours. You will be able to use these slides to build your own partitions, just make sure the minimum requirements have been met.

Agenda

- Introduction
- Create Virtual SCSI Server on Hosting Partition
- Create NEW IBM i Client Partition (Hosted / Guest)
- Create Network Server & Storage on Hosting Partition.
- Start the partition from the HMC
- Add additional Disks
- Other devices to configure/manage
- Summary

Multiple Ways to Host Partitions

- IBM i

- Same skill sets you already have and are familiar with
- Can only share CEC DVD “virtually” with 6.1
- Can share CEC Tape with 7.1 TR2 (and above)
- No Reload Required **

- VIOS (Virtual I/O Server)

- Requires some knowledge of AIX
- Used to have more flexible – Internal DVD and Tape Sharing
- Save and Restore of existing partition required !
- External Disk Fantastic
- Live Partition Mobility



**Decision
Point**

Partition Uses

- Development partitions.
- Web Partitions.
- Test the next release of the operating system.
- Test the next release of your application software.
- Just about anything you need.

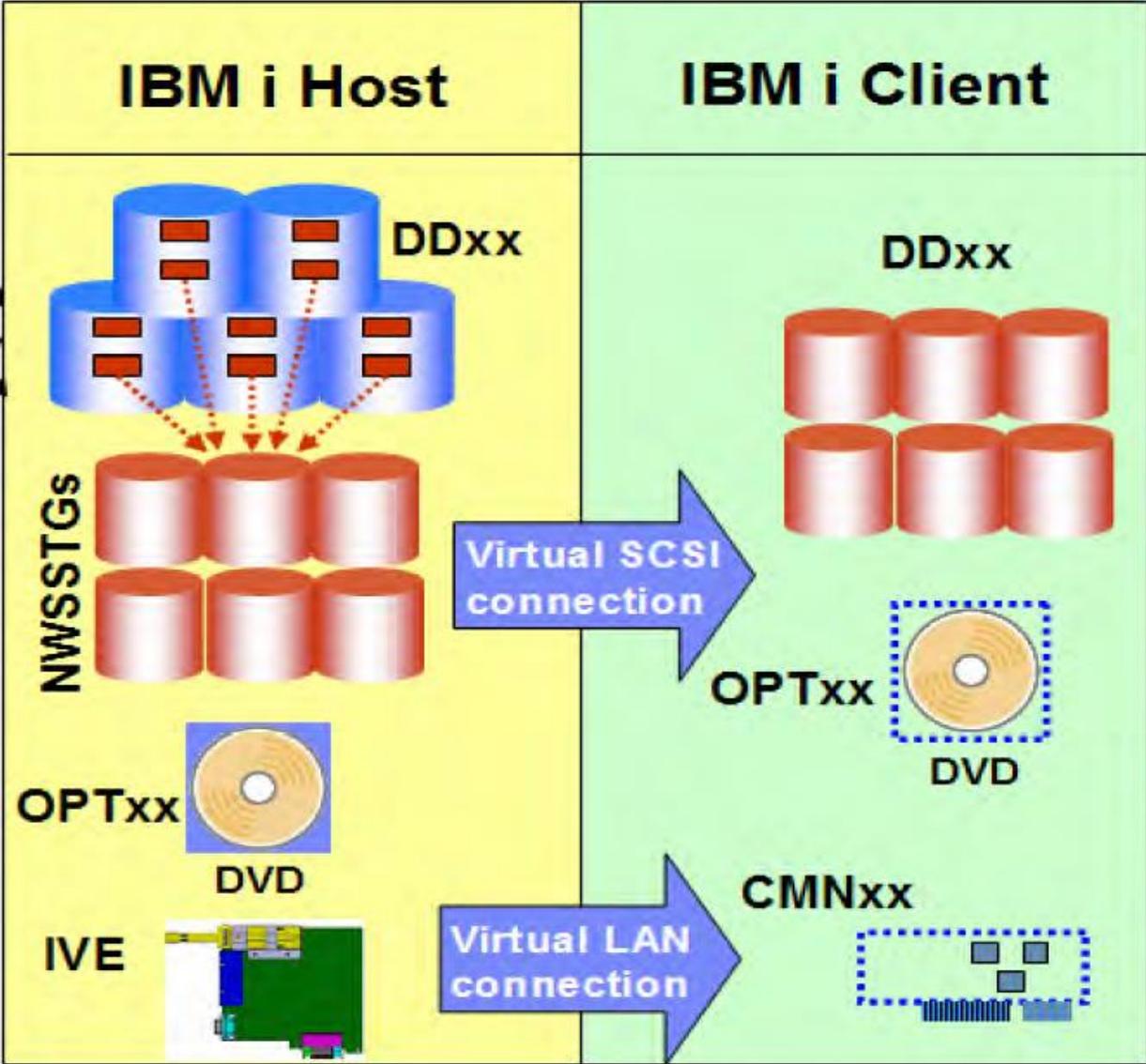
What we wish to accomplish

- Create a Virtual i partition without any additional hardware
- “Carve out” storage from our existing disk allocation on the hosting partition.
- Great way to create a test environment
- Can be IBM i 7.3, 7.2, 7.1, or 6.1

Requirements

- HMC* on Version 7.x or 8.x
- POWER6, POWER7, or POWER8 hardware
- IBM i 6.1, 6.1.1, 7.1, 7.2, or 7.3
- I_BASE_01 DVD or SAVSYS tape for loading LIC
- Enough disk space in the hosting partition to create our required Network Storage Space (NWSSTG)
- External Optical Device or can share the Internal Optical in the CEC if owned by Hosting partition.
- Ethernet: Host Ethernet Adapter port, Bridging or Virtual Lan Connection, physical adapter.

Visual description



Step by Step approach

- What I used (Note: These are not the minimums)
 - My HMC was at 7.7.6
 - Power7 8202-E4B 720 with six processors (You can do this with just one processor).
 - IBM i 7.1 on both Hosting and Hosted partitions.
 - 7.1 I_BASE_01 DVD
 - 16GB of memory
 - 2 TB of disk

Agenda

- Introduction
- Create Virtual SCSI Server on Hosting Partition
- Create NEW IBM i Client Partition (Hosted / Guest)
- Create Network Server & Storage on Hosting Partition.
- Start the partition from the HMC
- Add additional Disks
- Other devices to configure/manage
- Summary

Get on your HMC

iTechHMC1: Hardware Management Console Workplace (V7R7.6.0.2) - Mozilla Firefox

https://172.29.6.12/hmc/connects/mainuiFrameset.jsp

Hardware Management Console

petem | Help | Logoff

Systems Management > Servers View: Table

Select	Name	Status	Available Processing Units	Available Memory (GB)	Reference Code
<input type="checkbox"/>	iTech-Power7	Operating	5.2	0	

Max Page Size: 500 Total: 1 Filtered: 1 Selected: 0

Tasks: Servers

Connections

Status: OK

Waiting for 172.29.6.12...

Select the Server from your HMC

The screenshot shows the iTechHMC1 Hardware Management Console Workplace interface in Mozilla Firefox. The browser address bar shows the URL: https://172.29.6.12/hmc/connects/mainuiFrameset.jsp. The page title is "Hardware Management Console". The breadcrumb navigation shows "Systems Management > Servers > iTech-Power7".

The main content area displays a table of servers with the following columns: Select, Name, ID, Status, Processing Units, Memory (GB), Active Profile, Environment, and Reference Code. The table contains 7 rows of server data.

Select	Name	ID	Status	Processing Units	Memory (GB)	Active Profile	Environment	Reference Code
<input type="checkbox"/>	GAF	6	Not Activated	0.1	0.1	1 GAF	IBM i	00000000
<input type="checkbox"/>	Hosting	7	Not Activated		0	0	IBM i	00000000
<input type="checkbox"/>	Hosting1	1	Running		0.2	6 iTech07	IBM i	00000000
<input type="checkbox"/>	iTech61	3	Running		0.2	2 V6R1M1	IBM i	00000000
<input type="checkbox"/>	MRDyn61	4	Running		0.1	2 MRDyn61	IBM i	00000000
<input type="checkbox"/>	MRDyn71	5	Running		0.1	2 MRDyn71	IBM i	00000000
<input type="checkbox"/>	V7NEUGC	2	Running		0.1	2 V7NEUGC	IBM i	00000000

Below the table, there is a "Max Page Size" input field set to 500, and summary statistics: "Total: 7 Filtered: 7 Selected: 0".

The left sidebar contains navigation menus for "Welcome", "Systems Management", "System Plans", "HMC Management", "Service Management", and "Updates".

The bottom right pane shows "Tasks: iTech-Power7" with a tree view of operations and configuration options.

At the bottom left, there is a "Status: OK" indicator and a "Read 172.29.6.12" label.

Select Partition Properties

iTechHMC1: Properties - Mozilla Firefox

https://172.29.6.12/hmc/content?taskId=68&refresh=79

Partition Properties - Hosting1

General | Hardware | Virtual Adapters | Settings | Other

Name: * **Hosting1**

ID: 1

Environment: IBM i

State: Running

Attention LED: Off

Resource configuration: Configured

OS version: IBM i Licensed Internal Code 7.1.0 410 0

Current profile: iTech07

System: 8202-E4B* 102BC2P

Allow performance information collection

Allow this partition to be suspended.

RestrictedIO Partition

OK Cancel Help

Virtual Adapters

Partition Properties - Hosting

General Hardware **Virtual Adapters** Settings Other

Actions ▼

Virtual resources allow for the sharing of physical hardware between logical partitions. The current virtual adapter settings are listed below.

Maximum virtual adapters : * 8

Number of virtual adapters : 2

Select ^	Type ^	Adapter ID ^	Server/Client Partition ^	Partner Adapter ^	Required ^
<input type="checkbox"/>	Server Serial	<u>0</u>	Any Partition	Any Partition Slot	Yes
<input type="checkbox"/>	Server Serial	<u>1</u>	Any Partition	Any Partition Slot	Yes

Total: 2 Filtered: 2 Selected: 0

OK Cancel Help

Create Virtual Adapter

- On the Hosting Partition
- Create a Virtual SCSI Server Adapter
- Two ways
 - Dynamically
 - Regular
- Dynamically allows us to do this without a reboot - but MUST add later.
- This allows the communication from the Hosting partition. We will later “marry” this to a Virtual SCSI Client Adapter on the Client (Hosted) Partition.
- Write down the Slot number.

Dynamically add Virtual Adapter

The screenshot shows the iTechHMC1 Hardware Management Console Workplace (V7R7.6.0.2) in Mozilla Firefox. The browser address bar shows the URL: https://172.29.6.12/hmc/connects/mainuiFrameset.jsp. The console title is "Hardware Management Console".

The main content area displays "Systems Management > Servers > iTech-Power7". A table lists server components:

Select	Name	ID	Status	Processing Units	Memory (GB)	Active Profile	Environment	Reference Code
<input type="checkbox"/>	GAF	6	Not Activated	0.1	1	GAF	IBM i	00000000
<input type="checkbox"/>	Hosting	7	Not Activated	0	0		IBM i	00000000
<input checked="" type="checkbox"/>	Hosting1			0.2	6	iTech07	IBM i	00000000
<input type="checkbox"/>	iTech61			0.2	2	V6R1M1	IBM i	00000000
<input type="checkbox"/>	MRDyn61			0.1	2	MRDyn61	IBM i	00000000
<input type="checkbox"/>	MRDyn71				2	MRDyn71	IBM i	00000000
<input type="checkbox"/>	V7NEUGC				2	V7NEUGC	IBM i	00000000

A context menu is open over the 'Hosting1' row, showing options: Properties, Change Default Profile, Operations, Configuration, Hardware Information, Dynamic Logical Partitioning, and Serviceability. A sub-menu is open for 'Dynamic Logical Partitioning', showing: Processor, Memory, Physical Adapters, Virtual Adapters (highlighted), and Host Ethernet.

The left sidebar contains navigation options: Welcome, Systems Management (Servers, iTech-Power7, Custom Groups), System Plans, HMC Management, Service Management, and Updates.

The bottom section shows "Tasks: Hosting1" with a tree view of operations: Properties, Change Default Profile, Operations (Restart, Shut Down, Deactivate Attention LED, Schedule Operations), Suspend Operations, Configuration (Manage Profiles, Manage Custom Groups, Save Current Configuration), Hardware Information, Dynamic Logical Partitioning, and Serviceability.

Status: OK

Read 172.29.6.12

Create Virtual SCSI Server Adapter

iTechHMC1: Virtual Adap...

https://172.29.6.12/hmc/wcl/T7c53

Create Virtual SCSI Adapter: Hosting1

Virtual SCSI adapter

Adapter : * 2

Type of adapter : Server

Any client partition can connect

Only selected client partition can connect

Client partition : GAF(6)

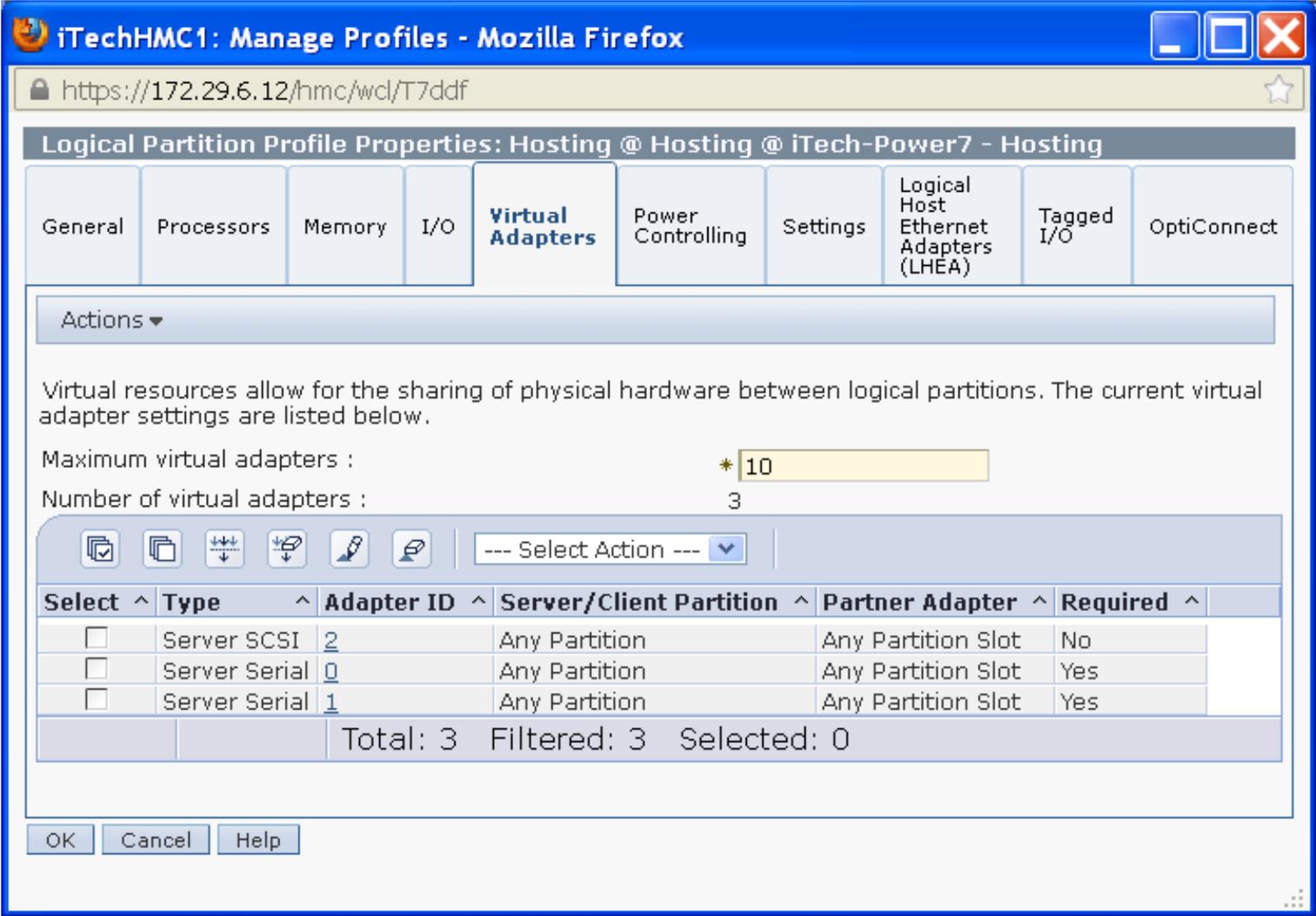
Client adapter ID : 2

OK Cancel Help



Document the Slot number

What we created: SCSI Virtual Server Adapter



Logical Partition Profile Properties: Hosting @ Hosting @ iTech-Power7 - Hosting

General Processors Memory I/O **Virtual Adapters** Power Controlling Settings Logical Host Ethernet Adapters (LHEA) Tagged I/O OptiConnect

Actions ▾

Virtual resources allow for the sharing of physical hardware between logical partitions. The current virtual adapter settings are listed below.

Maximum virtual adapters : * 10

Number of virtual adapters : 3

--- Select Action --- ▾

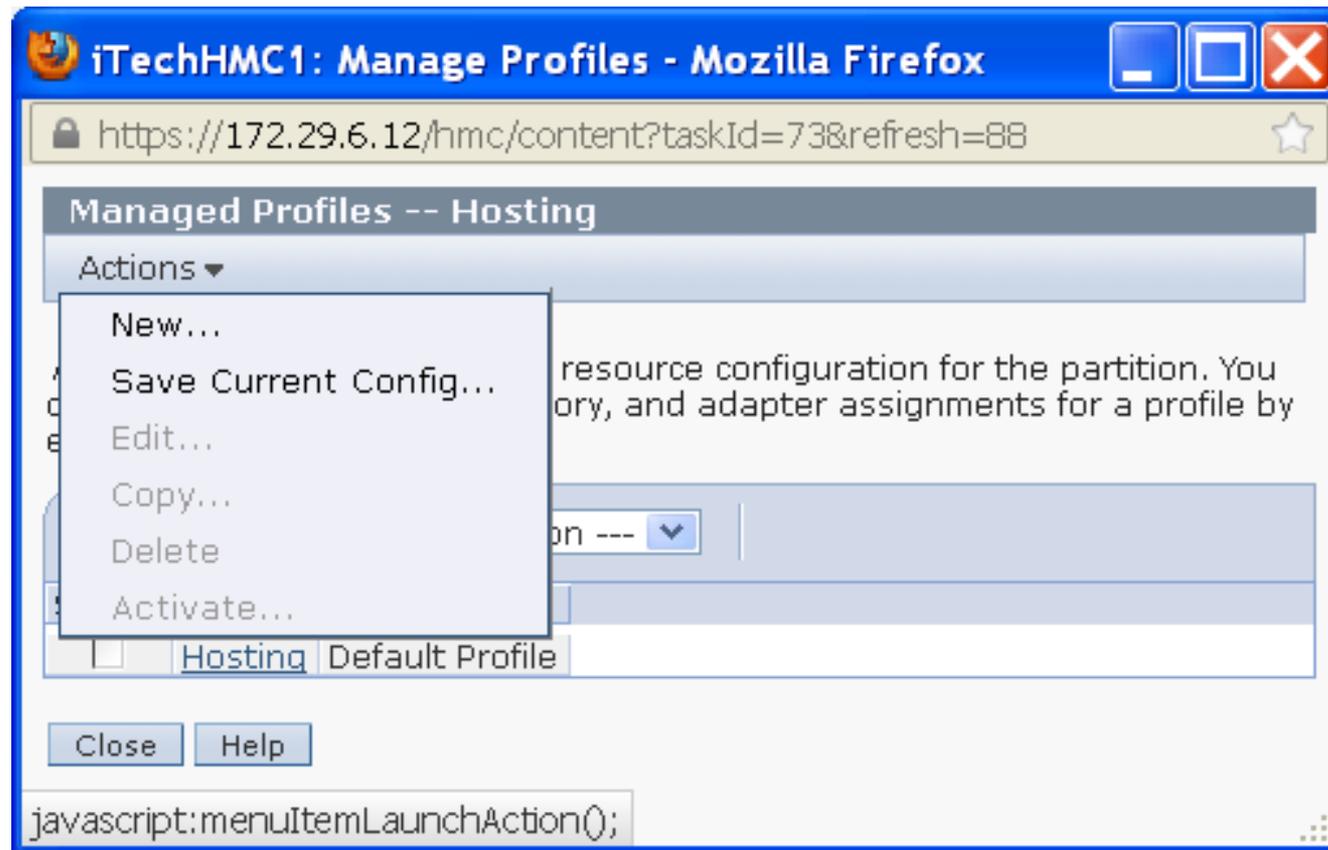
Select ^	Type ^	Adapter ID ^	Server/Client Partition ^	Partner Adapter ^	Required ^
<input type="checkbox"/>	Server SCSI	2	Any Partition	Any Partition Slot	No
<input type="checkbox"/>	Server Serial	0	Any Partition	Any Partition Slot	Yes
<input type="checkbox"/>	Server Serial	1	Any Partition	Any Partition Slot	Yes

Total: 3 Filtered: 3 Selected: 0

OK Cancel Help

Remember

- You must go back to Edit the existing profile and ADD the Virtual SCSI Server adapter to the Hosting partition for the same slot.



Virtual Resource on the Hosting Partition

- From a 5250 screen on the Hosting partition, we need to identify which IBM i hardware resource is created for the Virtual SCSI Server adapter.
- Note we will use the WRKHDWRSC *CMN. Look for the 290B Type of resource.



**Key
Feature**

From a session on your Existing partition (Hosting)

```
Session C - [24 x 80]
File Edit View Communication Actions Window Help
LICPGM Work with Licensed Programs System: Hosting
Select one of the following:
Manual Install
  1. Install all
Preparation
  5. Prepare for install
Licensed Programs
  10. Display installed licensed programs
  11. Install licensed programs
  12. Delete licensed programs
  13. Save licensed programs
More...
Selection or command
==> wrkhdwrc *cmn
F3=Exit F4=Prompt F9=Retrieve F12=Cancel F13=Information Assistant
F16=System Main menu
MA C MW 20/007
I902 - Session successfully started
```

Look for the 290B Resource to Display Resource Detail

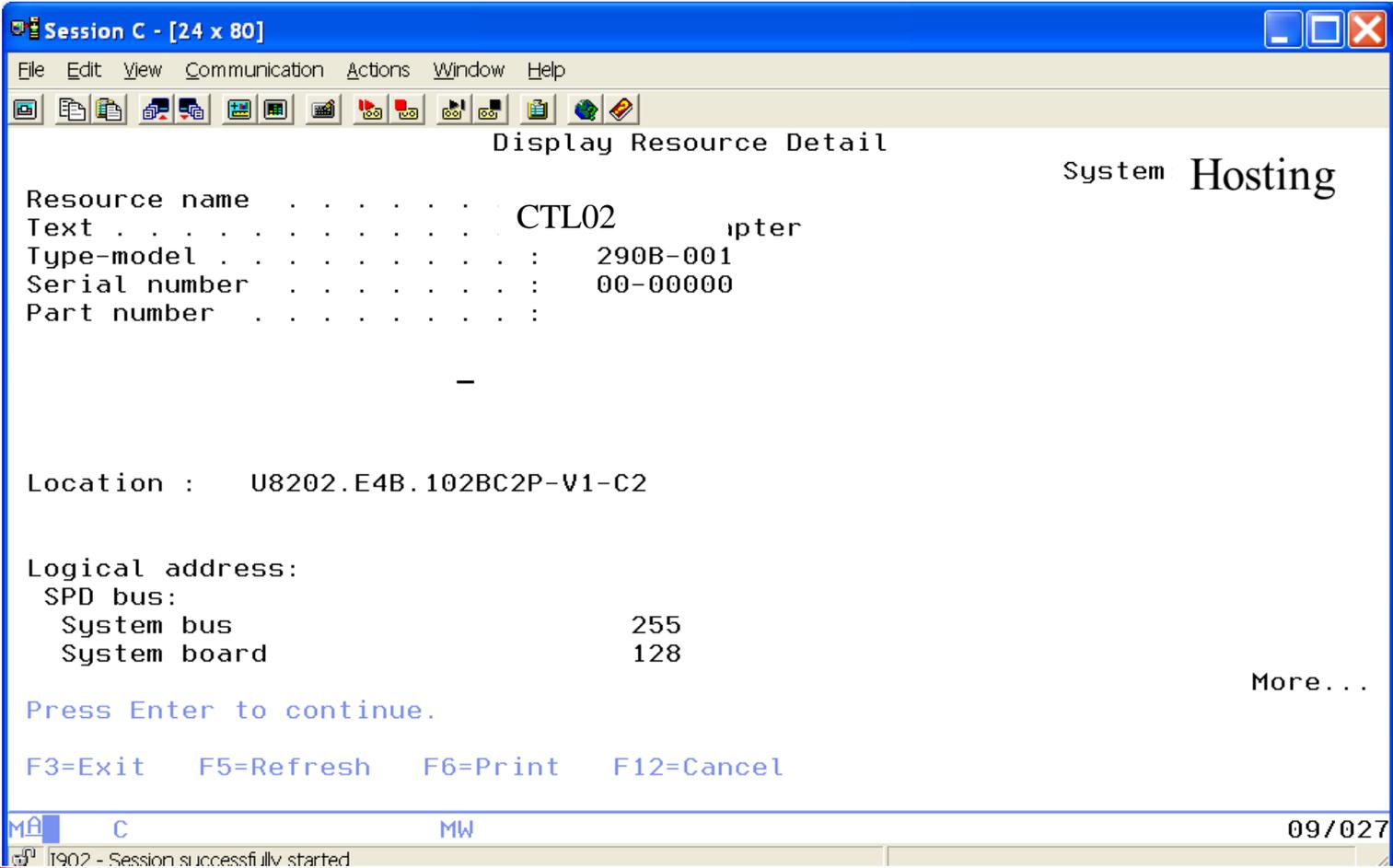
```
HMC Console - [24 x 80]
File Edit View Communication Actions Window Help
Work with Communication Resources
System: S1045YYM
Type options, press Enter.
5=Work with configuration descriptions 7=Display resource detail

Opt Resource Type Status Text
- CMB02 6B03 Operational Comm Processor
- LIN03 6B03 Operational Comm Adapter
- CMN01 6B03 Operational Comm Port
- CMB03 6B03 Operational Comm Processor
- LIN02 6B03 Operational Comm Adapter
- CMN02 6B03 Operational Comm Port
- CMB05 1819 Operational Comm Processor
- LIN01 1819 Operational Comm Adapter
- CMN03 1819 Operational Ethernet Port
- CMN04 1819 Operational Ethernet Port
- CMN05 1819 Operational Ethernet Port
- CMN06 1819 Operational Ethernet Port
- CMB09 290B Operational Comm Processor
7 CTL02 290B Operational Comm Adapter

Bottom
F3=Exit F5=Refresh F6=Print F12=Cancel
MA a
Connected to remote server/host 192.168.10.225 using port 2300
```

Display Resource Detail

- In my case it shows V1-C2. V is Virtual and the C2 is for Slot 2 that matches Slide 18 Create Virtual SCSI Server Adapter.



Agenda

- Introduction
- Create Virtual SCSI Server on Hosting Partition
- Create NEW IBM i Client Partition (Hosted / Guest)
- Create Network Server & Storage on Hosting Partition.
- Start the partition from the HMC
- Add additional Disks
- Other devices to configure/manage
- Summary

Create IBM i Client Partition

The screenshot displays the IBM Hardware Management Console (HMC) interface within a Mozilla Firefox browser window. The browser title is "iTechHMC1: Hardware Management Console Workplace (V7R7.6.0.2) - Mozilla Firefox" and the address bar shows "https://172.29.6.12/hmc/connects/mainuiFrameset.jsp".

The main interface is titled "Hardware Management Console" and includes a navigation pane on the left with sections like "Welcome", "Systems Management", "System Plans", "HMC Management", "Service Management", and "Updates". The "Systems Management" section is expanded to show "Servers".

The main content area shows a table of servers. The selected server is "iTech-Power7", which has 5.2 Available Processing Units and 0 Available Memory (GB). A context menu is open over this server, with the "Configuration" option selected. This menu includes "Properties", "Operations", "Configuration", "Connections", "Hardware Information", "Updates", "Serviceability", and "Capacity On Demand (CoD)". The "Configuration" sub-menu is further expanded, showing options like "Create Logical Partition", "System Plans", "Partition Availability Priority", "View Workload Management Groups", "Manage Custom Groups", "Manage Partition Data", "Manage System Profiles", and "Virtual Resources". The "Create Logical Partition" option is selected, and a sub-menu is open, showing "AIX or Linux" and "IBM i". The "IBM i" option is highlighted.

Below the table, there is a "Tasks: iTech-Power7" section with a list of tasks: "Properties", "Operations", "Configuration", "Connections", "Hardware Information", "Updates", "Serviceability", and "Capacity On Demand (CoD)".

At the bottom left, there is a "Status: OK" indicator. At the bottom of the browser window, there is a JavaScript snippet: `javascript:menuItemLaunchAction();`

Create Guest IBM i Partition (Hosted i)

System name : iTech-Power7
Partition ID : 2
Partition name : Client

Allow this partition to be suspended.
 Restricted IO partition

Use your partition Name

Partition Profile

Create Lpar Wizard : iTech-Power7

Partition Profile

A profile specifies how many processors, how much memory, and which I/O devices and slots are to be allocated to the partition.

Every partition needs a default profile. To create the default profile, specify the following information :

System name: iTech-Power7

Partition name: Client

Partition ID: 8

Profile name:

This profile can assign specific resources to the partition or all resources to the partition. Click Next if you want to specify the resources used in the partition. Select the option below and then click Next if you want the partition to have all the resources in the system.

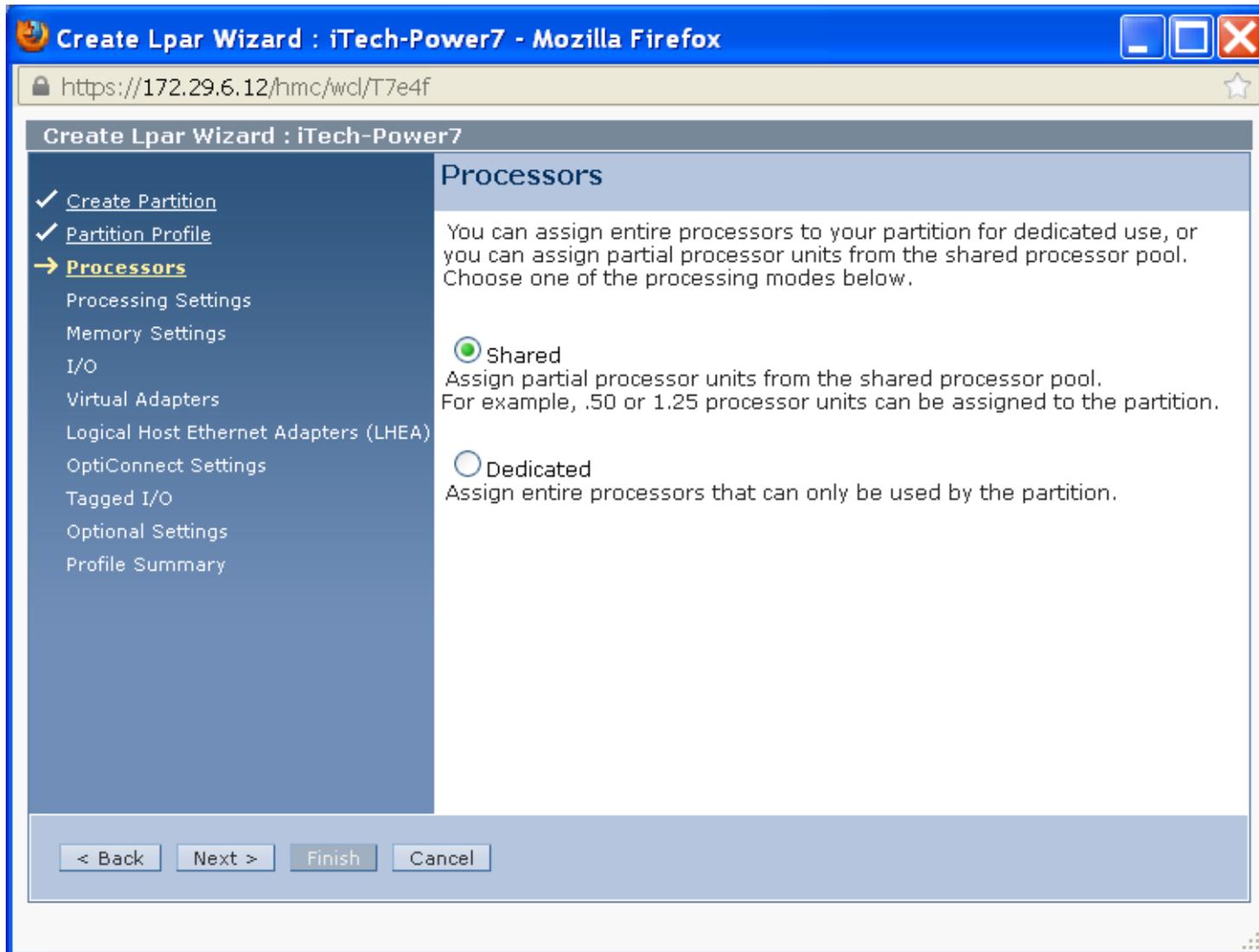
Use all the resources in the system.

< Back Next > Finish Cancel



Best Practice

Shared or Dedicated Processors



Choose your Processing needs

The screenshot shows a web browser window titled "Create Lpar Wizard : iTech-Power7 - Mozilla Firefox". The address bar shows the URL "https://172.29.6.12/hmc/wcl/T7e4f". The main content area is titled "Create Lpar Wizard : iTech-Power7" and is divided into two sections. On the left is a navigation pane with a list of steps: "Create Partition", "Partition Profile", "Processors", "Processing Settings" (highlighted with a yellow arrow), "Memory Settings", "I/O", "Virtual Adapters", "Logical Host Ethernet Adapters (LHEA)", "OptiConnect Settings", "Tagged I/O", "Optional Settings", and "Profile Summary". The right section is titled "Processing Settings" and contains the following text: "Specify the desired, minimum, and maximum processing settings in the fields below." Below this text are several input fields: "Total usable processing units: 6.00", "Minimum processing units: * 0.1", "Desired processing units: * 0.2", "Maximum processing units: * 0.3", and "Shared processor pool: iTech-shared01 (1)". Below these is a section titled "Virtual processors" with the text "Minimum processing units required 0.10 for each virtual processor:". This section contains three input fields: "Minimum virtual processors: * 1", "Desired virtual processors: * 1", and "Maximum virtual processors: * 1". At the bottom of this section is a checkbox labeled "Uncapped" and a text field labeled "Weight : 128.0". At the very bottom of the wizard window are four buttons: "< Back", "Next >", "Finish", and "Cancel".

Enter Memory for partition

The screenshot shows a web browser window titled "Create Lpar Wizard : iTech-Power7 - Mozilla Firefox" with the URL "https://172.29.6.12/hmc/wcd/T7e4f". The main content area is titled "Create Lpar Wizard : iTech-Power7" and displays the "Memory Settings" configuration page.

Memory Settings

Physical Memory
Installed Memory 16384
Current memory available for Partition usage (MB) 15360

Minimum Memory	<input type="text" value="1"/>	GB	<input type="text" value="0"/>	MB
Desired Memory	<input type="text" value="2"/>	GB	<input type="text" value="0"/>	MB
Maximum Memory	<input type="text" value="4"/>	GB	<input type="text" value="0"/>	MB

Navigation buttons: < Back, Next >, Finish, Cancel

Choose any I/O Required

Create Lpar Wizard : iTech-Power7

https://172.29.6.12/hmc/wcd/T7e4f

Create Lpar Wizard : iTech-Power7

- ✓ Create Partition
- ✓ Partition Profile
- ✓ Processors
- ✓ Processing Settings
- ✓ Memory Settings
- **I/O**
- Virtual Adapters
- Logical Host Ethernet Adapters (LHEA)
- OptiConnect Settings
- Tagged I/O
- Optional Settings
- Profile Summary

I/O

Physical I/O

Detailed below are the physical I/O resources for the managed system. Select which adapters from the list you would like included in the profile and then add the adapters to the profile as Desired or Required. Click on an adapter to view more detailed adapter information.

--- Select Action ---

Select	Location Code	Description	Added	Bus
<input type="checkbox"/>	U78AA.001.WIH0062-P1-T9	RAID Controller		512
<input type="checkbox"/>	U78AA.001.WIH0062-P1-T7	Universal Serial Bus UHC Spec		513
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C19	RAID Controller		514
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C4	PCI-E SAS Controller		516
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C5	Empty slot		517
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C6	Empty slot		518
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C7	Empty slot		519

Total: 7 Filtered: 7

Virtual Adapters

Create Lpar Wizard : iTech-Power7 - Mozilla Firefox

https://172.29.6.12/hmc/wcd/T7e4f

Create Lpar Wizard : iTech-Power7

- ✓ Create Partition
- ✓ Partition Profile
- ✓ Processors
- ✓ Processing Settings
- ✓ Memory Settings
- ✓ I/O
- **Virtual Adapters**
- Logical Host Ethernet Adapters (LHEA)
- OptiConnect Settings
- Tagged I/O
- Optional Settings
- Profile Summary

Virtual Adapters

Actions ▾

Virtual resources allow for the sharing of physical hardware between logical partitions. The current virtual adapter settings are listed below.

Maximum virtual adapters : * 10

Number of virtual adapters : 2

--- Select Action --- ▾

Select ^	Type ^	Adapter ID ^	Server/Client Partition ^	Partner Adapter ^	Required ^
<input type="checkbox"/>	Server Serial	0	Any Partition	Any Partition Slot	Yes
<input type="checkbox"/>	Server Serial	1	Any Partition	Any Partition Slot	Yes

Total: 2 Filtered: 2 Selected: 0

< Back Next > Finish Cancel

Create Virtual SCSI CLIENT Adapter

Virtual Adapters

Actions ▾

- Create Virtual Adapter ▸
 - Ethernet Adapter...
 - Fibre Channel Adapter...
 - SCSI Adapter...
 - Serial Adapter...
- Edit
- Properties
- Delete
- Advanced ▸

--- Select Action --- ▾

Select	Type	Adapter ID	Server/Client Partition	Partner Adapter	Required
<input type="checkbox"/>	Server Serial	0	Any Partition	Any Partition Slot	Yes
<input type="checkbox"/>	Server Serial	1	Any Partition	Any Partition Slot	Yes

Total: 2 Filtered: 2 Selected: 0

< Back Next > Finish Cancel

Heads-Up

Create Virtual SCSI Client Adapter

- Select the Server partition which we created the Virtual SCSI Server Adapter
- Match the Server Adapter ID with the adapter number created in Virtual SCSI Server Adapter, slide # 18.



Tip



Where to Find It

iTechHMC1: IBM i - Mozilla Firefox

https://172.29.6.12/hmc/wcl/T7ec8

Create Virtual SCSI Adapter - iTech-Power7

Virtual SCSI adapter

Adapter : * 2

Type of adapter : Client

This adapter is required for partition activation.

Server partition : Hosting1(1) System VIOS Info...

Server adapter ID : 2

OK Cancel Help

Must Match page
18 values

Verify Adapter Number and Partition

Create Lpar Wizard : iTech-Power7 - Mozilla Firefox

https://172.29.6.12/hmc/wcd/T7ec8

Create Lpar Wizard : iTech-Power7

- ✓ Create Partition
- ✓ Partition Profile
- ✓ Processors
- ✓ Processing Settings
- ✓ Memory Settings
- ✓ I/O
- **Virtual Adapters**
- Logical Host Ethernet Adapters (LHEA)
- OptiConnect Settings
- Tagged I/O
- Optional Settings
- Profile Summary

Virtual Adapters

Actions ▾

Virtual resources allow for the sharing of physical hardware between logical partitions. The current virtual adapter settings are listed below.

Maximum virtual adapters : * 10

Number of virtual adapters : 3

Select ^	Type ^	Adapter ID ^	Server/Client Partition ^	Partner Adapter ^	Required ^
<input type="checkbox"/>	Client SCSI	2	Hosting1(1)	2	Yes
<input type="checkbox"/>	Server Serial	0	Any Partition	Any Partition Slot	Yes
<input type="checkbox"/>	Server Serial	1	Any Partition	Any Partition Slot	Yes

Total: 3 Filtered: 3 Selected: 0

< Back Next > Finish Cancel



Checklist

Ethernet will depend on machines & adapters

- Host Ethernet Adapter Slides 38
- Power8, Power7 C & D models have no Host Ethernet Adapters – Will use Ethernet Layer-2 Bridging. Host must be 7.1 TR3 or later. See Slides 41 to 45

This works by putting two Ethernet adapters (one physical, one virtual) into a mode where they can receive traffic that is not specifically destined for their address, and selectively sending those frames onto the other network. Because of this, frames transmitted by virtual Ethernet adapters on the same vlan as the bridging virtual Ethernet adapter can be sent to the physical network, and frames from the physical network can be received by adapters on the virtual network.

Logical Host Ethernet Adapters: Add Adapter

Create Lpar Wizard : Develop-8203-E4A-SN0659D65

192.168.10.225 https://192.168.10.225/hmc/wcd/T1576#selectedRow_440b440b

Create Lpar Wizard : Develop-8203-E4A-SN0659D65

Logical Host Ethernet Adapters (LHEA)

To configure a Logical Host Ethernet Adapter (LHEA) for this partition profile, select an HEA physical port in the table below and then click Configure to enter the appropriate information. Select Reset to undo this.

Select	Physical Port Location Codes	Physical Port ID	Port Group	Logical Port IDs	Allowed VLAN IDs
<input type="radio"/>	U789C.001.DQD3V98-P1 - C7-T1	0	1		
<input type="radio"/>	U789C.001.DQD3V98-P1 - C7-T2	1	1		
<input type="radio"/>	U789C.001.DQD3V98-P1 - C7-T3	0	2		
<input checked="" type="radio"/>	U789C.001.DQD3V98-P1 - C7-T4	1	2		

Done

Choose Logical Port

iTechHMC1: Manage Profiles - Mozilla Firefox

192.168.0.60 https://192.168.0.60/hmc/wcl/T739

Logical Host Ethernet Adapter (LHEA) Configuration - V7R1TR1

Logical Port configuration

Use the fields below to specify a logical port and allowed VLAN IDs.

Choose Logical Port:

VLAN ID Restrictions

Allow all VLAN IDs

Specify Allowable VLAN IDs

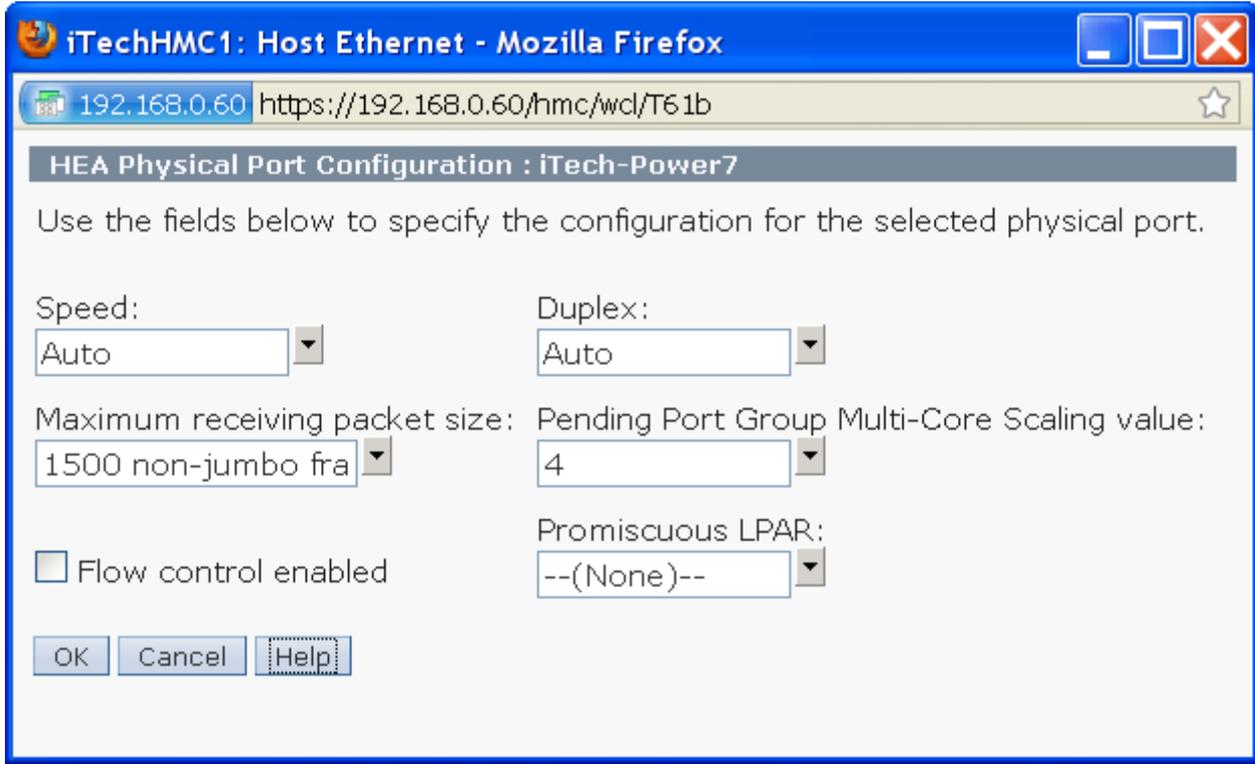
MAC Address Restrictions

Allow all O/S Defined MAC Addresses

Deny all O/S Defined MAC Addresses

Specify Allowable O/S Defined MAC Addresses

Configure Ethernet (Side note on HEA)



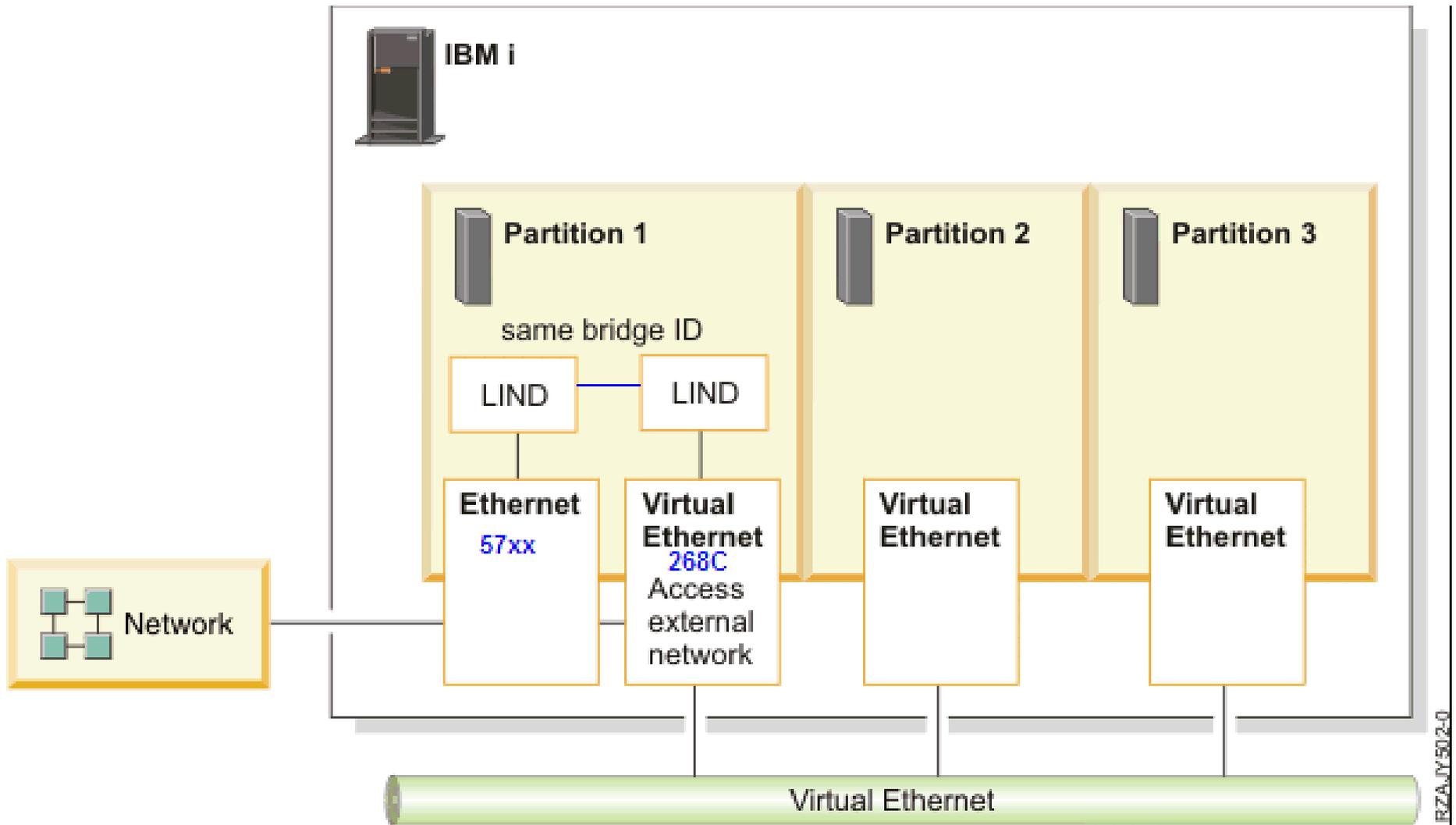
The screenshot shows a Mozilla Firefox browser window titled "iTechHMC1: Host Ethernet - Mozilla Firefox". The address bar displays "192.168.0.60 https://192.168.0.60/hmc/wcd/T61b". The main content area is titled "HEA Physical Port Configuration : iTech-Power7" and contains the following text: "Use the fields below to specify the configuration for the selected physical port." Below this text are several configuration fields:

- Speed: Auto (dropdown menu)
- Duplex: Auto (dropdown menu)
- Maximum receiving packet size: 1500 non-jumbo fra (dropdown menu)
- Pending Port Group Multi-Core Scaling value: 4 (dropdown menu)
- Flow control enabled
- Promiscuous LPAR: --(None)-- (dropdown menu)

At the bottom of the configuration area are three buttons: "OK", "Cancel", and "Help".



Virtual Ethernet



RZA.JY502-0

Ethernet Bridging

iTechHMC1: Virtual Adapters - Mozilla Firefox

https://172.29.6.12/hmc/content?taskId=100&refresh=148

Create Virtual Ethernet Adapter - iTech07

General | Advanced

Virtual ethernet adapter

Adapter ID : * 8

VSwitch : ETHERNET0(Default)

Port Virtual Ethernet (VLAN ID): 1

[View Virtual Network...](#)

IEEE Settings
Select this option to allow additional virtual LAN IDs for the adapter.
 IEEE 802.1q compatible adapter

Shared Ethernet Settings
Select Ethernet bridging to link (bridge) the virtual Ethernet to a physical network
 Use this adapter for Ethernet bridging

OK Cancel Help

On Host Partition (out of Sequence)

iTechHMC1: Virtual Adapters - Mozilla Firefox

https://172.29.6.12/hmc/wcd/T88df

Create Virtual Ethernet Adapter - iTech07

General | Advanced

Virtual ethernet adapter
Adapter ID : * B

VSwitch : ETHERNET0(Default)

Port Virtual Ethernet (VLAN ID): 1 [View Virtual Network...](#)

IEEE Settings
Select this option to allow additional virtual LAN IDs for the adapter.
 IEEE 802.1q compatible adapter

Shared Ethernet Settings
Select Ethernet bridging to link (bridge) the virtual Ethernet to a physical network
 Use this adapter for Ethernet bridging
Priority: 1 (1 or 2)

OK Cancel Help

Host Partition Find 268C

Session B - [24 x 80]

File Edit View Communication Actions Window Help

Work with Communication Resources

System: ITECH07

Type options, press Enter.
5=Work with configuration descriptions 7=Display resource detail

Opt	Resource	Type	Status	Text
_	CTL03	290B	Operational	Comm Adapter
_	CMB09	290B	Operational	Comm Processor
_	CTL04	290B	Operational	Comm Adapter
_	CMB10	290B	Operational	Comm Processor
_	CTL05	290B	Operational	Comm Adapter
_	CMB11	290B	Operational	Comm Processor
_	CTL06	290B	Operational	Comm Adapter
_	CMB12	290B	Operational	Comm Processor
_	CTL07	290B	Operational	Comm Adapter
_	CMB14	290B	Operational	Comm Processor
_	CTL08	290B	Operational	Comm Adapter
_	CMB15	268C	Operational	Comm Processor
_	LIN05	268C	Operational	LAN Adapter
=	CMN07	268C	Operational	Ethernet Port

Bottom

F3=Exit F5=Refresh F6=Print F12=Cancel

M& B 20/003

Connected to remote server/host.172.29.6.12 using port 2300

Create the Bridge on Host to Virtual Network

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Host: 172.29.6.2 Port: 23 Workstation ID: Disconnect

Create Line_Desc (Ethernet) (CRTLINETH)

Type choices, press Enter.

Line description . . . . . > ETHBRIDGV1      Name
Resource name . . . . . > CMN07          Name, *AGG, *NWID, *NWS
Bridge identifier . . . . . > BRIDGE1       Name, *NONE
Online at IPL . . . . . *YES           *YES, *NO
Vary on wait . . . . . *NOWAIT       *NOWAIT, 15-180 seconds
Local adapter address . . . . . *ADPT          020000000000-FEFFFFFFF...
Exchange identifier . . . . . *SYSGEN       05600000-056FFFFF, *SYSGEN
Ethernet standard . . . . . *ETHV2          *ETHV2, *IEEE8023, *ALL
Line speed . . . . . *AUTO           10M, 100M, 1G, 10G, *AUTO
Duplex . . . . . *AUTO             *HALF, *FULL, *AUTO
Serviceability options . . . . . *NONE       Character value, *NONE

F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display  Bottom
F24=More keys

MA A MW 01/033
1902 - Session successfully started
```

Create the Bridge on Host to Physical Network

Session A - [24 x 80]

File Edit View Communication Actions Window Help

Host: 172.29.6.2 Port: 23 Workstation ID: Disconnect

Create Line Desc (Ethernet) (CRTLINETH)

Type choices, press Enter.

Line description	> <u>ETHBRIDGP1</u>	Name
Resource name	> <u>CMN12</u>	Name, *AGG, *NWID, *NWS
Bridge identifier	> <u>BRIDGE1</u>	Name, *NONE
Online at IPL	<u>*YES</u>	*YES, *NO
Vary on wait	<u>*NOWAIT</u>	*NOWAIT, 15-180 seconds
Local adapter address	<u>*ADPT</u>	020000000000-FEFFFFFFF... .
Exchange identifier	<u>*SYSGEN</u>	05600000-056FFFFF, *SYSGEN
Ethernet standard	<u>*ETHV2</u>	*ETHV2, *IEEE8023, *ALL
Line speed	<u>*AUTO</u>	10M, 100M, 1G, 10G, *AUTO
Duplex	<u>*AUTO</u>	*HALF, *FULL, *AUTO
Serviceability options	<u>*NONE</u>	Character value, *NONE

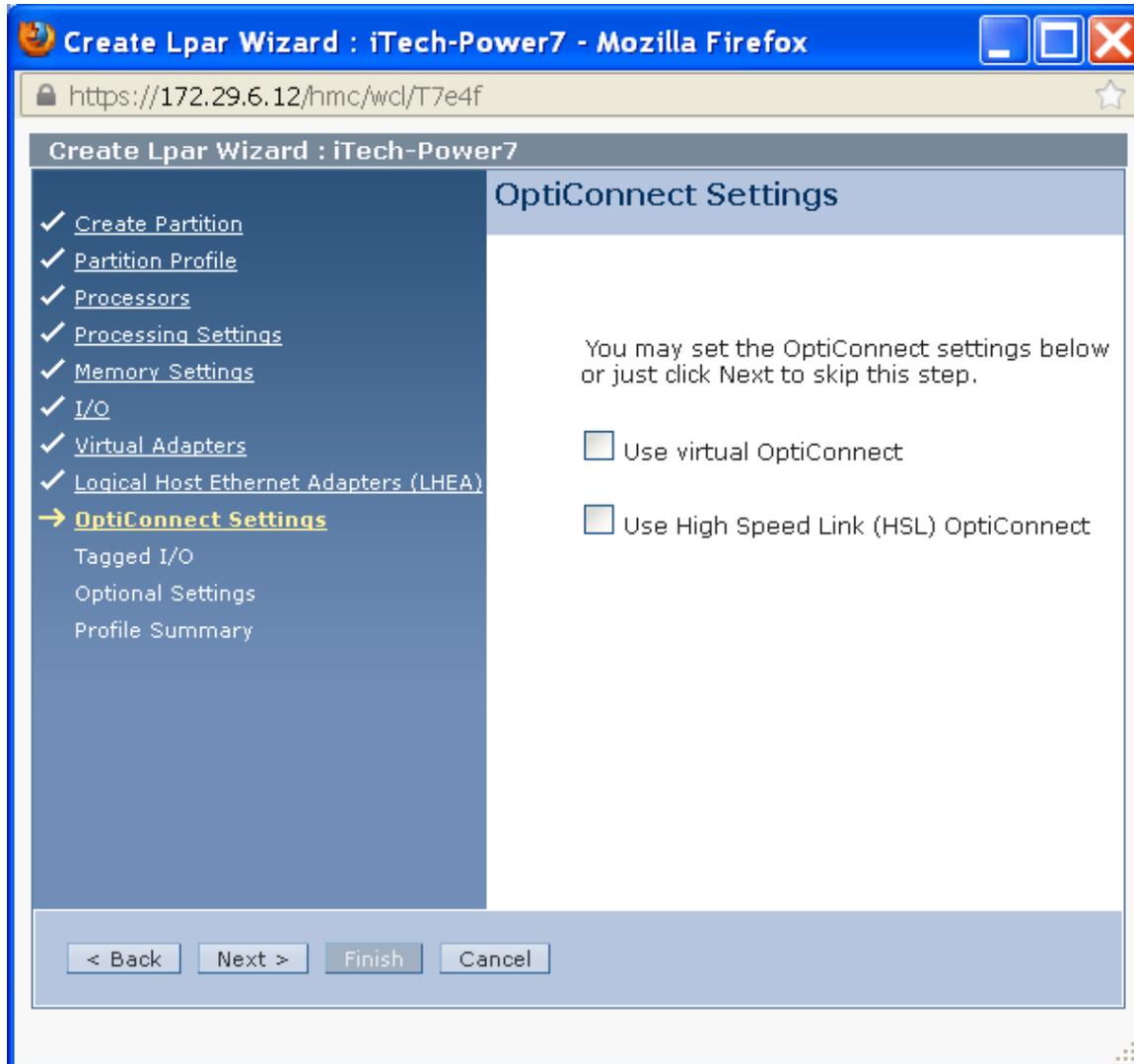
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

Bottom

MA A MW 06/042

1902 - Session successfully started

Select OptiConnect Settings



Just click next here

Tagged I/O

- Tagged I/O is where we describe which resources will be used for the Load Source, Alternative Restart Device, and Console.
- For the Console we will select HMC
- For the Load Source we will select the Virtual SCSI Client Adapter we created in this partition.
- For the Alternative Restart Device (Alternative IPL Device) we will choose either the same Virtual SCSI Client Adapter if the hosting partition owns the embedded disk controller in the CEC or an adapter that has an external DVD/Tape attached.



Lesson

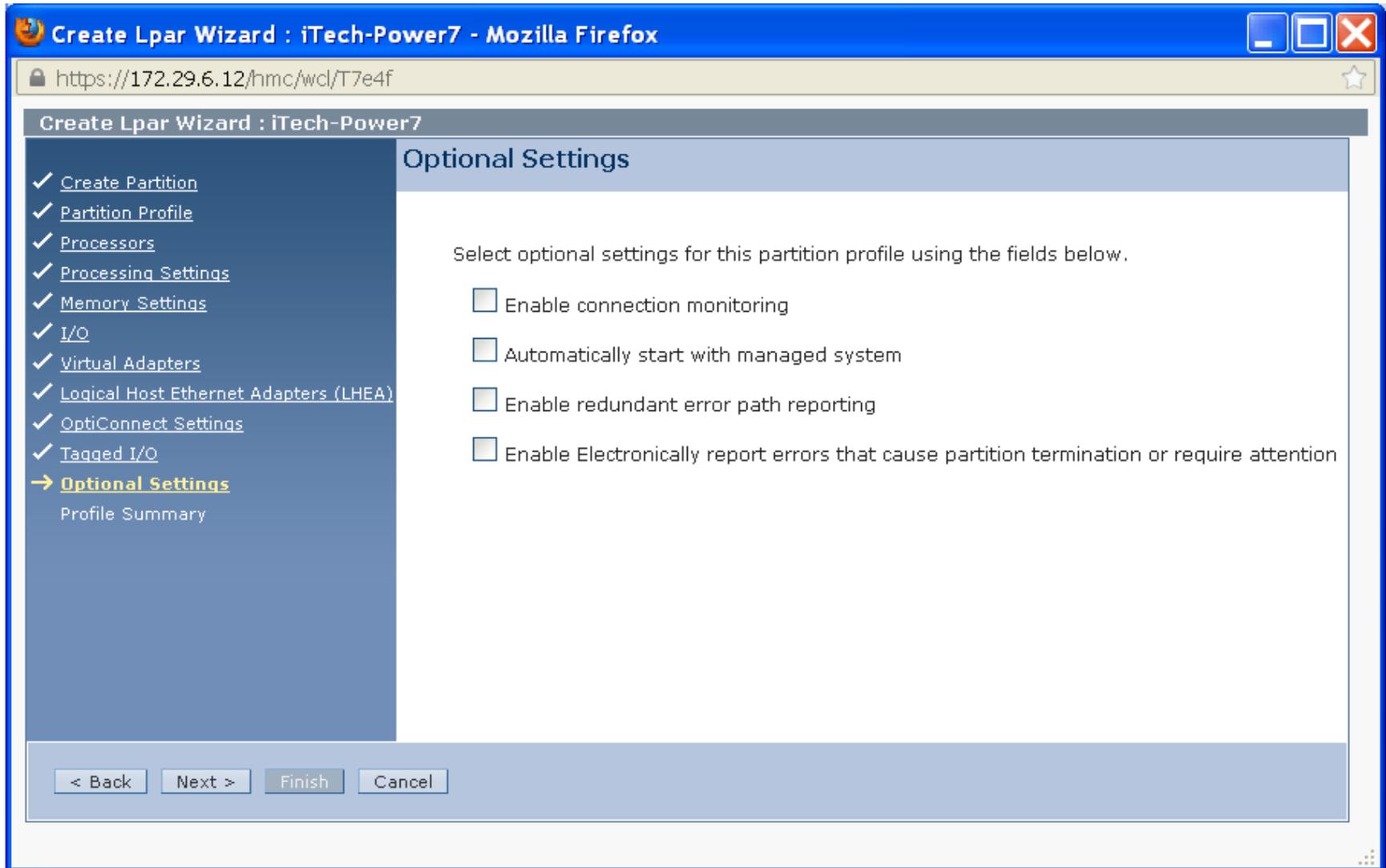
Tagged I/O

The screenshot shows a web browser window titled "Create Lpar Wizard : iTech-Power7 - Mozilla Firefox". The address bar shows the URL "https://172.29.6.12/hmc/wcl/T7e4f". The main content area is titled "Create Lpar Wizard : iTech-Power7" and displays a navigation menu on the left with the following items: "Create Partition", "Partition Profile", "Processors", "Processing Settings", "Memory Settings", "I/O", "Virtual Adapters", "Logical Host Ethernet Adapters (LHEA)", "OptiConnect Settings", "Tagged I/O" (highlighted with a yellow arrow), "Optional Settings", and "Profile Summary". The main panel is titled "Tagged I/O" and contains the following text: "Tagged I/O devices for this partition profile are detailed below." Below this text are several configuration sections, each with a dropdown menu: "Load source" (Client SCSI Slot 2), "Alternate restart device" (Client SCSI Slot 2), "Console" (Hardware Management Console), "Alternate console" (None), and "Operations Console" (None). At the bottom of the wizard, there are four buttons: "< Back", "Next >", "Finish", and "Cancel".



Checklist

Optional Settings



The screenshot shows a web browser window titled "Create Lpar Wizard : iTech-Power7 - Mozilla Firefox". The address bar displays the URL "https://172.29.6.12/hmc/wcd/T7e4f". The main content area is titled "Create Lpar Wizard : iTech-Power7" and "Optional Settings".

On the left side, there is a navigation menu with the following items, each preceded by a checkmark:

- ✓ [Create Partition](#)
- ✓ [Partition Profile](#)
- ✓ [Processors](#)
- ✓ [Processing Settings](#)
- ✓ [Memory Settings](#)
- ✓ [I/O](#)
- ✓ [Virtual Adapters](#)
- ✓ [Logical Host Ethernet Adapters \(LHEA\)](#)
- ✓ [OptiConnect Settings](#)
- ✓ [Tagged I/O](#)
- [Optional Settings](#)
- [Profile Summary](#)

The main content area contains the following text and options:

Select optional settings for this partition profile using the fields below.

- Enable connection monitoring
- Automatically start with managed system
- Enable redundant error path reporting
- Enable Electronically report errors that cause partition termination or require attention

At the bottom of the wizard, there are four buttons: "< Back", "Next >", "Finish", and "Cancel".

Profile Summary: Verify your settings

Create Lpar Wizard : iTech-Power7

Profile Summary

This is a summary of the partition and profile. Click Finish to create the partition and profile. To change any of your choices, click Back. You can see the details of the physical I/O devices you chose by clicking Details.

You can modify the profile or partition by using the partition properties or profile properties after you complete this wizard.

Partition ID: 8
Partition name: Client
Partition environment: IBM i
Profile name: Client

Desired memory: 2.00 GB 0.00 MB
Desired processing units: 0.20
Physical I/O devices: 0 [Details](#)

Load source: Virtual slot number 2
Location code:

Console: Using the management console
Location code:

Alternate restart device: Virtual slot number 2
Location code:

Virtual I/O adapters: 1 Ethernet
1 SCSI
2 Serial
0 Fibre Channel

< Back Next > Finish Cancel

We now have a new Partition

The screenshot shows the iTechHMC1 Hardware Management Console Workplace interface. The browser title is "iTechHMC1: Hardware Management Console Workplace (V7R7.6.0.2) - Mozilla Firefox". The URL is "https://172.29.6.12/hmc/connects/mainuiFrameset.jsp". The page title is "Hardware Management Console".

The main content area displays "Systems Management > Servers > iTech-Power7". Below this is a table of partitions:

Select	Name	ID	Status	Processing Units	Memory (GB)	Active Profile	Environment	Reference Code
<input type="checkbox"/>	Client	8	Not Activated	0.2	0.2	1 Client	IBM i	00000000
<input type="checkbox"/>	Hosting	7	Not Activated	0	0	0	IBM i	00000000
<input type="checkbox"/>	Hosting1	1	Running	0.2	0.2	6 Hosting	IBM i	00000000
<input type="checkbox"/>	iTech61	3	Running	0.2	0.2	2 V6R1M1	IBM i	00000000

Below the table, there is a "Max Page Size:" field set to "500" and a summary: "Total: 8 Filtered: 4 Selected: 0".

The bottom pane is titled "Tasks: iTech-Power7" and contains a list of tasks:

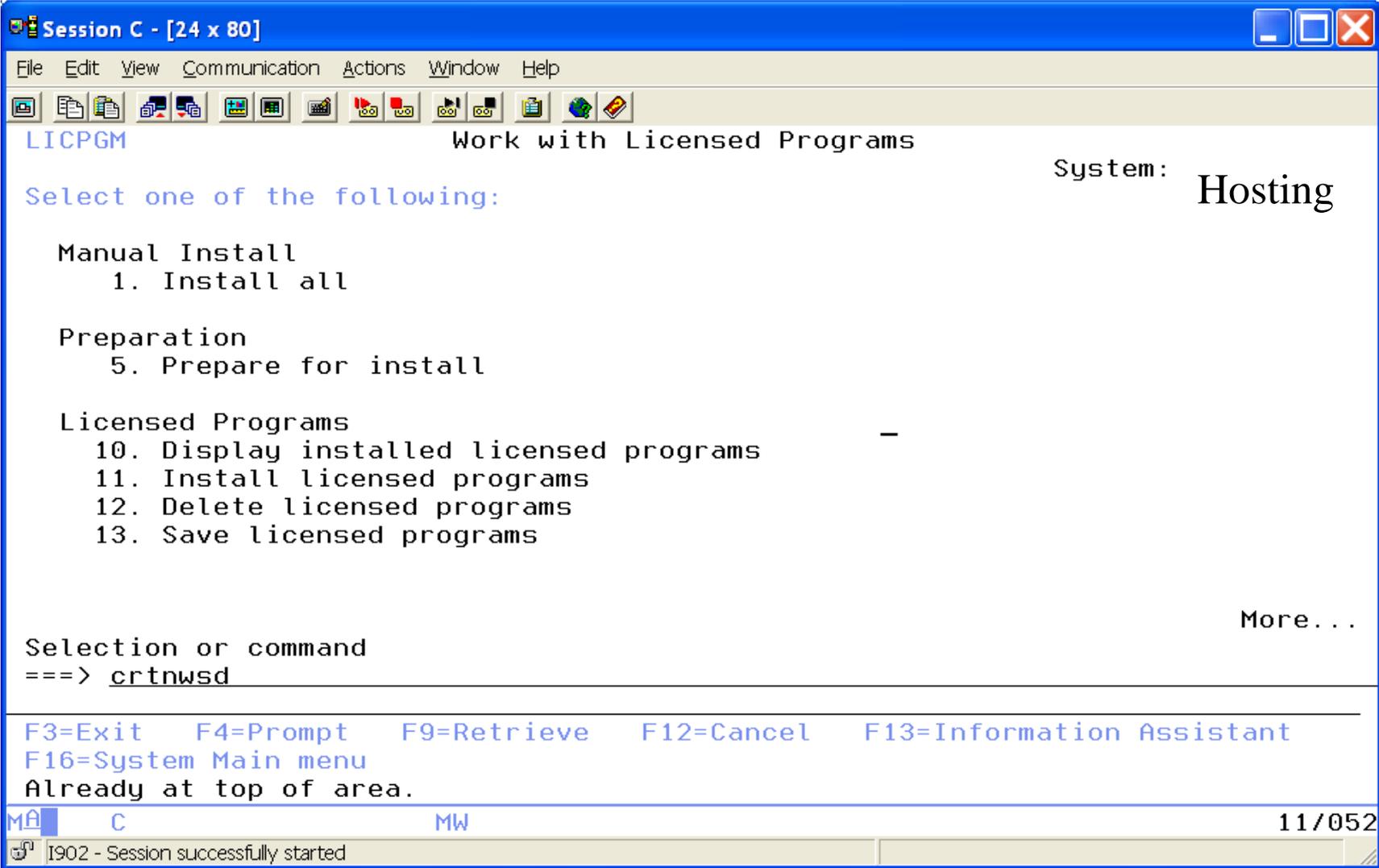
- Properties
- Operations
 - Power Off
 - Power Management
 - LED Status
 - Schedule Operations
 - Launch Advanced System Management (ASM)
 - Utilization Data
 - Rebuild
 - Change Password
- Configuration
 - Create Logical Partition
 - AIX or Linux
 - VIO Server
 - IBM i
 - System Plans
 - Partition Availability Priority
 - View Workload Management Groups
 - Manage Custom Groups
 - Manage Partition Data

The status bar at the bottom left shows "Status: OK".

Agenda

- Introduction
- Create Virtual SCSI Server on Hosting Partition
- Create NEW IBM i Client Partition (Hosted / Guest)
- Create Network Server & Storage on **Hosting** Partition.
- Start the partition from the HMC
- Add additional Disks
- Other devices to configure/manage
- Summary

On the Hosting partition



Create Network Server

```
Session C - [24 x 80]
File Edit View Communication Actions Window Help
Create Network Server Desc (CRTNWS)

Type choices, press Enter.

Network server description . . . > CLIENT
Resource name . . . . . > CTL02
Network server type:
  Server connection . . . . . > *GUEST
  Server operating system . . . . > *OPSYS
Online at IPL . . . . . *YES
Vary on wait . . . . . *NOWAIT
Shutdown timeout . . . . . *TYPE
Partition . . . . . *NONE

Partition number . . . . . 8
Code page . . . . . *LNGVER
Server message queue . . . . . *JOBLOG
  Library . . . . .
Pool identifier . . . . . *BASE

More...
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys
Function key not allowed.

MA C MW 15/038
I902 - Session successfully started
```

Your name. Resource is from Slide 23

Your partition Number Slide 28



Heads-Up

CRTNWS D (continued)

Session C - [24 x 80]

File Edit View Communication Actions Window Help

Create Network Server Desc (CRTNWS D)

Type choices, press Enter.

TCP/IP port configuration:

Port *NONE *NONE, 1, 2, 3, 4...

Internet address _____

Subnet mask _____

Maximum transmission unit . . _____ Number

Gateway address _____

+ for more values _

TCP/IP route configuration:

Route destination *NONE _____

Subnet mask _____

Next hop _____

+ for more values _

TCP/IP local host name *NWS D _____

More...

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

MA C MW 05/035

1902 - Session successfully started

CRTNWSD (continued)

Session C - [24 x 80]

File Edit View Communication Actions Window Help

Create Network Server Desc (CRTNWSD)

Type choices, press Enter.

TCP/IP local domain name *SYS

TCP/IP name server system *SYS
+ for more values

Restricted device resources . . . *NONE Name, *NONE, *ALL...
+ for more values

IPL source *NWSSTG *NWSSTG, *PANEL, *STMF, A...
IPL stream file *NONE

IPL parameters *NONE

Power control > *NO *YES, *NO

Serviceability options *NONE

Authority *CHANGE Name, *CHANGE, *ALL, *USE...

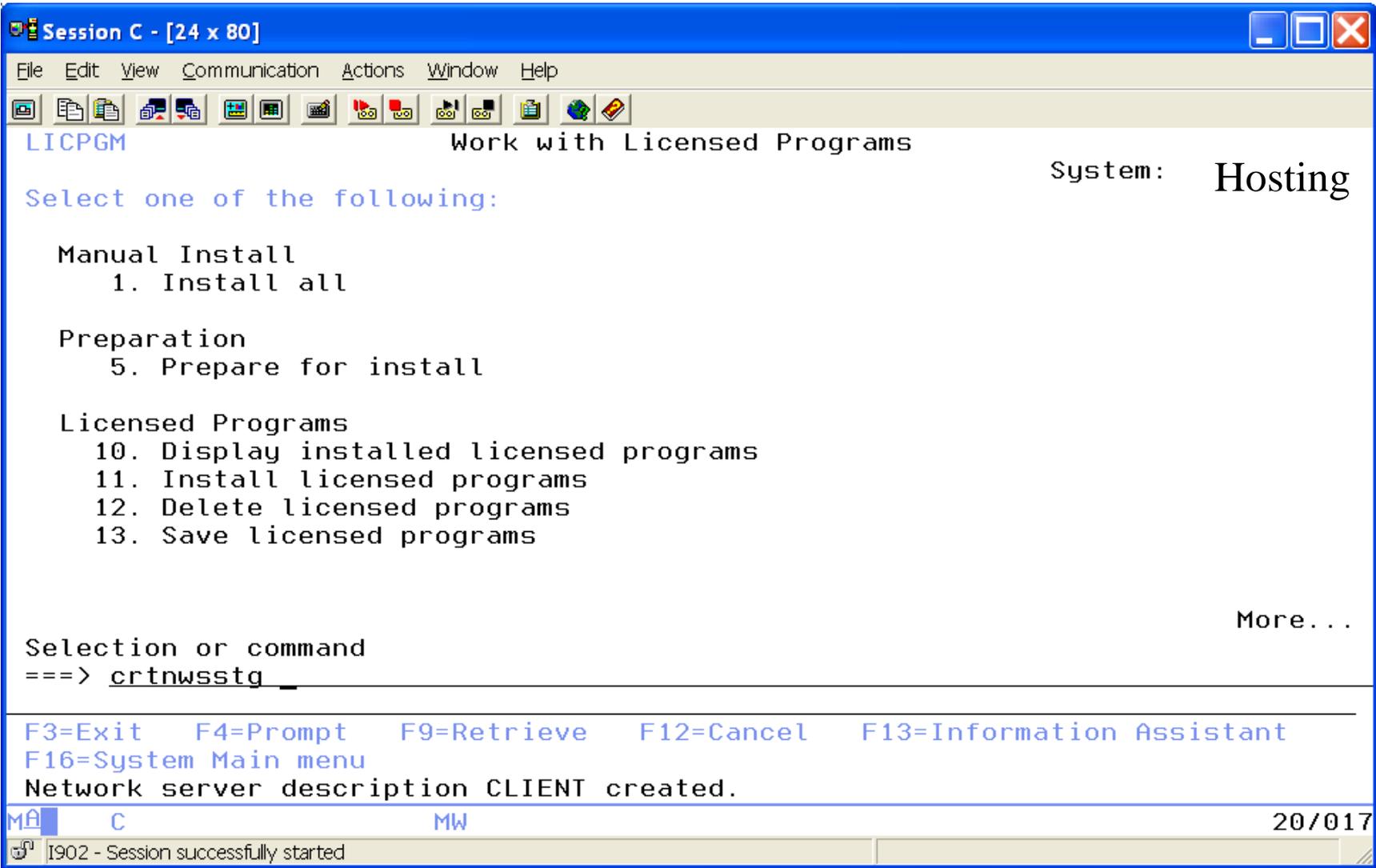
More...

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

MA C MW 17/037

I902 - Session successfully started

Create Network Storage for our new partition



Determine Size & Name of Storage Space (6.1, 7.1, 7.2 TR1 and above, and 7.3)

```
Session C - [24 x 80]
File Edit View Communication Actions Window Help
Create NWS Storage Space (CRTNWSSTG)

Type choices, press Enter.

Network server storage space . . > CLIENT1      Name
Size . . . . . > 39375      *CALC, 1-1024000 megabytes
From storage space . . . . . *NONE      Name, *NONE
Format . . . . . > *OPEN      *NTFS, *FAT, *FAT32, *OPEN...
Data offset . . . . . *FORMAT      *FORMAT, *ALIGNLGLPTN...
Auxiliary storage pool ID . . . 1      1-255
ASP device . . . . .      Name
Text 'description' . . . . . > 'Virtual Disk for Client Partition'

Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
Creating NWS storage space CLIENT1: 704 of 39378 megabytes complete.
MA C X SYSTEM MW 12/073
I902 - Session successfully started
```

Associate Storage space to NWSDD using WRKNWSSTG

Session C - [24 x 80]

File Edit View Communication Actions Window Help

Work with Network Server Storage Spaces System: Hosting

Type options, press Enter.
1=Create 2=Change 3=Copy 4>Delete 5=Display 6=Print 10=Add link
11=Remove link

Opt	Name	Server	Seq	Link Type	Access	Stg Path
<u>10</u>	CLIENT1					

Bottom

Parameters or command
===>

F3=Exit F4=Prompt F5=Refresh F6=Print list F9=Retrieve
F11=Display disk status F12=Cancel F17=Position to

MA C MW 21/007

I902 - Session successfully started

Adding Server Storage

Session C - [24 x 80]

File Edit View Communication Actions Window Help

Add Server Storage Link (ADDNWSSTGL)

Type choices, press Enter.

Network server storage space	> <u>CLIENT1</u>	Name
Network server description	> <u>CLIENT</u>	Name
Dynamic storage link	> <u>*YES</u>	*NO, *YES
Network server type	<u>*NWSD</u>	Character value
Access	<u>*UPDATE</u>	*UPDATE, *READ, *SHRUPD
Drive sequence number	<u>*CALC</u>	1-64, *CALC, *QR
Storage path number	<u>*DFTSTGPTH</u>	1-4, *DFTSTGPTH, *MLTPTHGRP

Bottom

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

MA C MW 05/037

I902 - Session successfully started

Vary on Network Server Description

Session C - [24 x 80]

File Edit View Communication Actions Window Help

Work with Configuration Status ITECH07
03/24/13 17:02:05

Position to _____ Starting characters

Type options, press Enter.

1=Vary on 2=Vary off 5=Work with job 8=Work with description
9=Display mode status 13=Work with APPN status...

Opt	Description	Status	-----Job-----
<u>1</u>	CLIENT	VARIED OFF	

Parameters or command
==> _____

F3=Exit F4=Prompt F12=Cancel F23=More options F24=More keys

MA C MW 10/003

[902 - Session successfully started

Everything is good status is Active – But not yet up.

```
Session C - [24 x 80]
File Edit View Communication Actions Window Help
Work with Configuration Status
03/24/13 Hosting
Position to . . . . . Starting characters
Type options, press Enter.
 1=Vary on   2=Vary off   5=Work with job   8=Work with description
 9=Display mode status 13=Work with APPN status...
Opt  Description      Status      -----Job-----
_   CLIENT           ACTIVE
Parameters or command
===>
F3=Exit   F4=Prompt   F12=Cancel   F23=More options   F24=More keys
MA  C              MW              A              10/002
[902 - Session successfully started
```

Agenda

- Introduction
- Create Virtual SCSI Server on Hosting Partition
- Create NEW IBM i Client Partition (Hosted / Guest)
- Create Network Server & Storage on Hosting Partition.
- Start the partition from the HMC
- Add additional Disks
- Other devices to configure/manage
- Summary

Check Client Partition Properties

The screenshot shows a Mozilla Firefox browser window titled "iTechHMC1: Properties - Mozilla Firefox" with the address bar displaying "https://172.29.6.12/hmc/wcl/TB230". The main content area is titled "Partition Properties - Client" and contains several tabs: "General", "Hardware", "Virtual Adapters", "Settings" (which is selected), and "Other".

Boot

- IPL source:
- Keylock position:
- Automatically start with managed system: Disabled

Service and support

- Connection monitoring: Disabled
- Service partition: Disabled
- Redundant error path reporting: Disabled
- Electronically report errors that cause partition termination or require attention:

Tagged I/O

- Load source:
- Alternate restart:
- Console:
- Alternate console:
- Operations console direct:

At the bottom of the window are buttons for "OK", "Cancel", and "Help".



Don't Forget

Activate our new partition

The screenshot displays the iTechHMC1 Hardware Management Console Workplace interface. The browser title is "iTechHMC1: Hardware Management Console Workplace (V7R7.6.0.2) - Mozilla Firefox". The URL is "https://172.29.6.12/hmc/connects/mainuiFrameset.jsp". The main header is "Hardware Management Console". The breadcrumb navigation shows "Systems Management > Servers > iTech-Power7".

The left sidebar contains a navigation tree with the following items: Welcome, Systems Management (expanded), Servers (expanded), iTech-Power7 (selected), Custom Groups, System Plans, HMC Management, Service Management, and Updates.

The main content area shows a table of servers with a context menu open over the "Client" server. The table has columns: Select, Name, ID, Sta, Processing Units, Memory (GB), Active Profile, Envir..., and Reference Code. The context menu includes: Properties, Change Default Profile, Operations (expanded), Configuration, Hardware Information, Dynamic Logical Partitioning, and Serviceability. The "Operations" sub-menu is further expanded to show: Activate (expanded), Deactivate Attention LED, Schedule Operations, Delete, and Suspend Operations. The "Activate" sub-menu is also expanded to show "Profile" and "Current Configuration".

Below the table, there is a "Tasks: Client" section with a tree view of available actions: Properties, Change Default Profile, Operations (expanded), Configuration, Hardware Information, Dynamic Logical Partitioning, and Serviceability. The "Operations" tree view is further expanded to show "Activate", "Suspend Operations", and "Configuration".

At the bottom left, there is a "Status: OK" indicator and a JavaScript console snippet: "javascript:menuItemLaunchAction();".

Start your console as well



Light on DVD Drive should be flashing

Browser Title: iTechHMC1: Hardware Management Console Workplace (V7R7.6.0.2) - Mozilla Firefox
URL: https://172.29.6.12/hmc/connects/mainuiFrameset.jsp

Hardware Management Console

Properties | Properties | Virtual Adapters | Properties | petem | Help | Logoff

Systems Management > Servers > iTech-Power7

Select	Name	ID	Star	Processing Units	Memory (GB)	Active Profile	Envir...	Reference Code
<input checked="" type="checkbox"/>	Client		8		0.2	1 Client	IBM i	C20060F0
<input type="checkbox"/>	Hosting		7		0		IBM i	00000000
<input type="checkbox"/>	Hosting1		1		0.2	6 Hosting	IBM i	00000000
<input type="checkbox"/>	iTech61		3		0.2	2 V6R1M1	IBM i	00000000

Max Page Size: 500 | Total: 8 | Filtered: 4 | Selected: 1

Tasks: Client

- Properties
 - Change Default Profile
- Operations
 - Restart
 - Shut Down
 - Deactivate Attention LED
 - Schedule Operations
- Suspend Operations
- Configuration
 - Manage Profiles
 - Manage Custom Groups
- Hardware Information
- Serviceability

Status: OK

Is everything ok?

It's normal for the Reference Code to go to 0000000 and the console to be blank for 3 to 5 minutes...**just hang in we are almost there**

Hardware Management Console

Systems Management > Servers > iTech-Power7

Select	Name	ID	Sta	Processing Units	Memory (GB)	Active Profile	Envir...	Reference Code
<input checked="" type="checkbox"/>	Client		8		0.2	1 Client	IBM i	00000000
<input type="checkbox"/>	Hosting		7		0		IBM i	00000000
<input type="checkbox"/>	Hosting1		1		0.2	6 Hosting	IBM i	00000000
<input type="checkbox"/>	iTech61		3		0.2	2 V6R1M1	IBM i	00000000

Max Page Size: 500 Total: 8 Filtered: 4 Selected: 1

Tasks: Client

- Properties
 - Change Default Profile
- Operations
 - Restart
 - Shut Down
 - Deactivate Attention LED
 - Schedule Operations
- Suspend Operations
- Configuration
 - Manage Profiles
 - Manage Custom Groups
 - Save Current Configuration
- Hardware Information
- Dynamic Logical Partitioning
- Serviceability

Status: OK



Note

Success !!!!

The screenshot shows a remote session window with a blue title bar containing the text "Session A - [24 x 80]" and standard window control buttons. Below the title bar is a toolbar with various icons for file operations and system functions. The main area of the window is white and contains the text "LANGUAGE FEATURE ==> 2924". In the bottom right corner of the main area, there is a blue square icon with a white checkmark and the word "Checkpoint" below it. At the bottom of the window, there is a status bar with a small icon on the left, the text "Connected to remote server/host 172.29.6.12 using port 2300", and the number "22/027" on the right.

Ready to Install LIC

Session A - [24 x 80]

File Edit View Communication Actions Window Help

Install Licensed Internal Code System: H102BC2P

Select one of the following:

1. Install Licensed Internal Code
2. Work with Dedicated Service Tools (DST)
3. Define alternate installation device

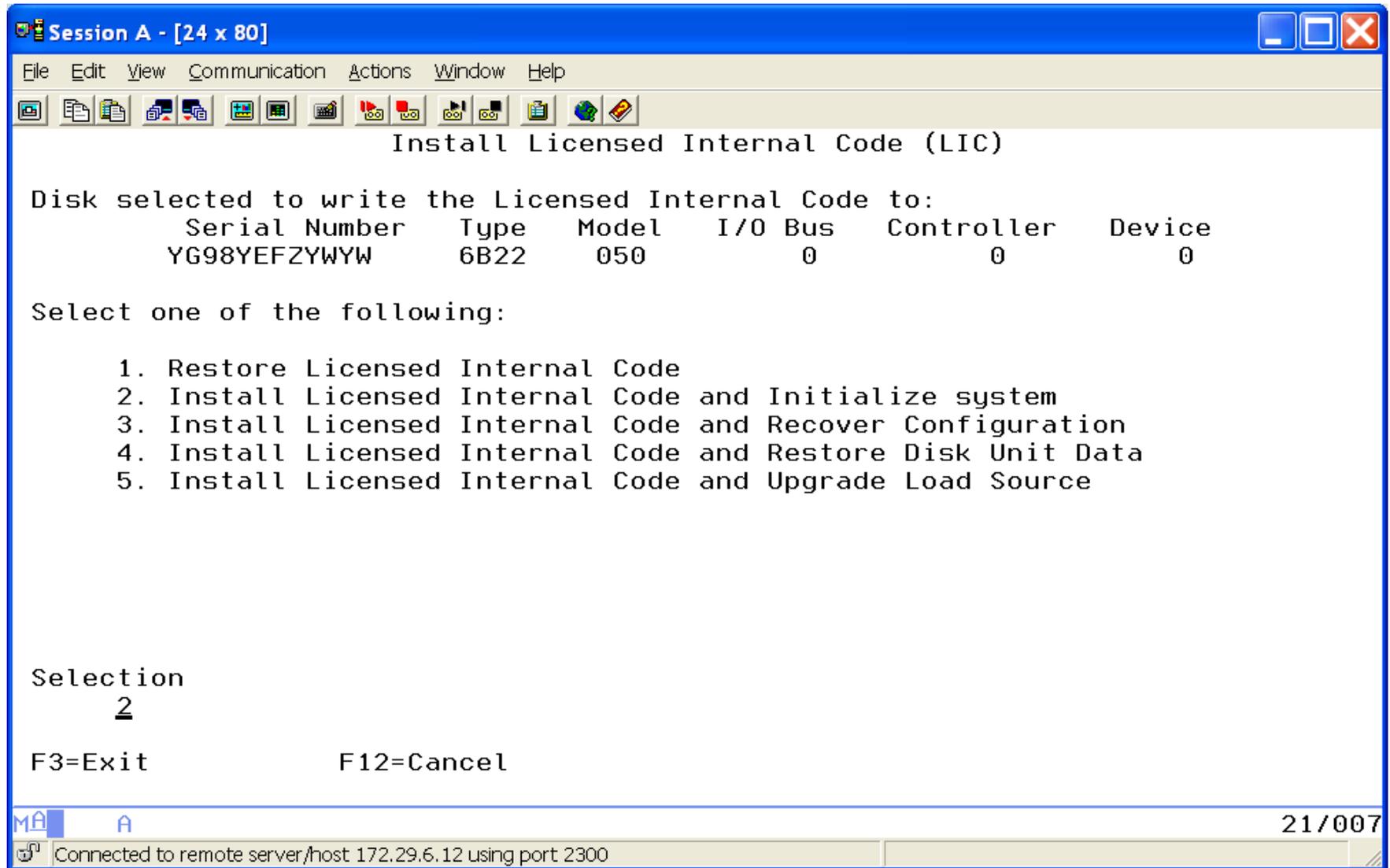
Selection -
 1

Licensed Internal Code - Property of IBM 5770-999 Licensed Internal Code (c) Copyright IBM Corp. 1980, 2010. All rights reserved. US Government Users Restricted Rights - Use duplication or disclosure restricted by GSA ADP schedule Contract with IBM Corp.

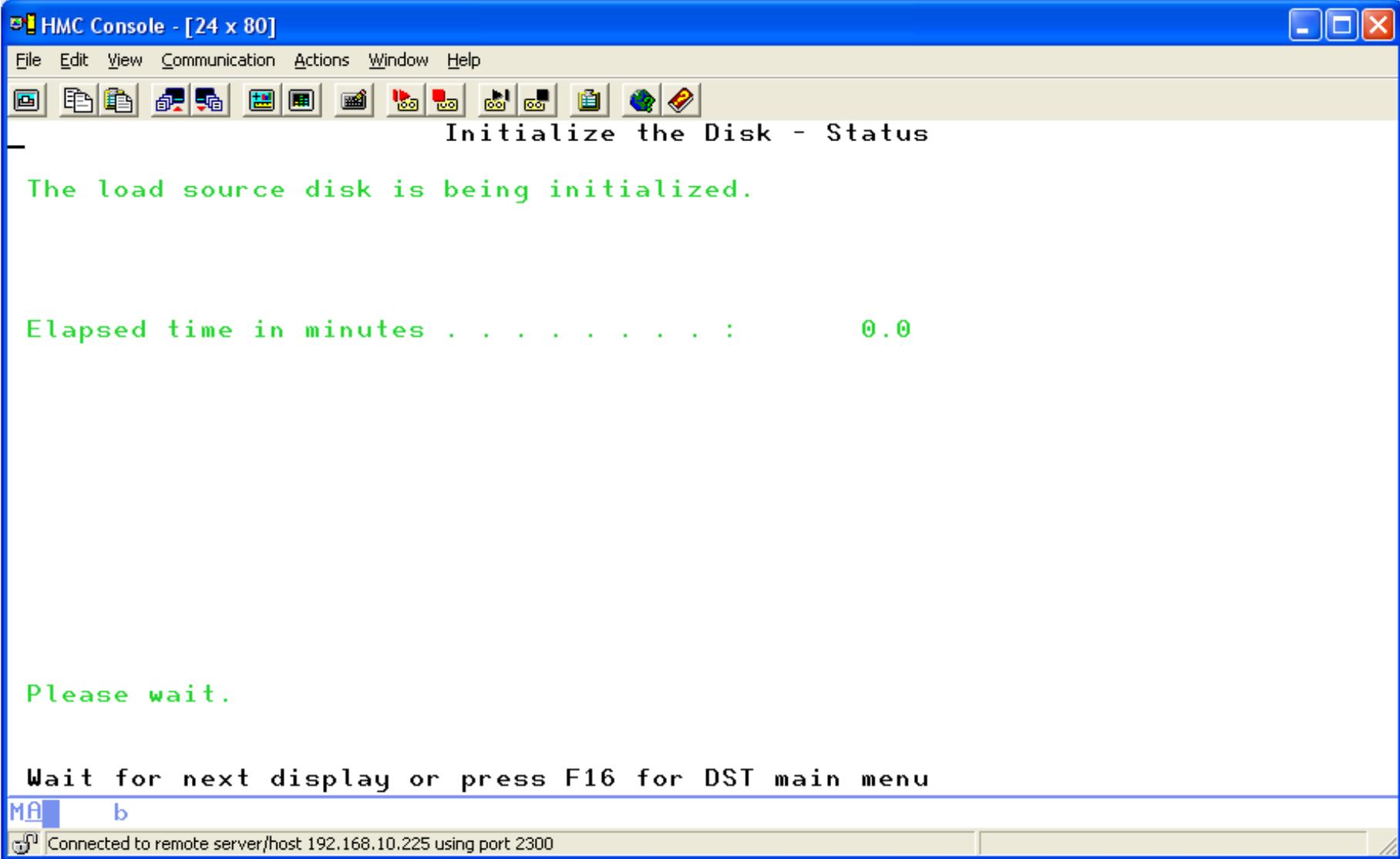
MA A 14/017

Connected to remote server/host 172.29.6.12 using port 2300

Install LIC and Initialize the system



Initialize Load Source



Installing the Licensed Internal Code

The screenshot shows a terminal window titled "Session A - [24 x 80]". The window has a menu bar with "File", "Edit", "View", "Communication", "Actions", "Window", and "Help". Below the menu bar is a toolbar with various icons. The main content area displays the following text:

```
Install Licensed Internal Code - Status
```

Install of the Licensed Internal Code in progress.

Percent complete	15%
------------------	-----

Elapsed time in minutes : 1.0

Please wait.

Wait for next display or press F16 for DST main menu

MA A 01/001

Connected to remote server/host 172.29.6.12 using port 2300

When finishes loading LIC the Console goes blank but continues to IPL

The screenshot displays the iTechHMC1 Hardware Management Console interface. The browser title is "iTechHMC1: Hardware Management Console Workplace (V7R7.6.0.2) - Mozilla Firefox". The URL is "https://172.29.6.12/hmc/connects/mainUIFrameset.jsp". The main header shows "Hardware Management Console" with navigation tabs for "Properties", "Virtual Adapters", and "Properties". The user is logged in as "petem".

The main content area is titled "Systems Management > Servers > iTech-Power7". It features a table of servers with the following data:

Select	Name	ID	Sta	Processing Units	Memory (GB)	Active Profile	Envir...	Reference Code
<input checked="" type="checkbox"/>	Client		8	0.2	1	Client	IBM i	C20080F0
<input type="checkbox"/>	Hosting		7	0	0		IBM i	00000000
<input type="checkbox"/>	Hosting1		1	0.2	6	Hosting	IBM i	00000000
<input type="checkbox"/>	iTech61		3	0.2	2	V6R1M1	IBM i	00000000

Below the table, it shows "Max Page Size: 500" and "Total: 8 Filtered: 4 Selected: 1".

The "Tasks: Client" menu is expanded, showing the following options:

- Properties
 - Change Default Profile
- Operations
 - Restart
 - Shut Down
 - Deactivate Attention LED
 - Schedule Operations
- Suspend Operations
- Configuration
 - Manage Profiles
 - Manage Custom Groups
- Hardware Information
- Serviceability

The status bar at the bottom left indicates "Status: OK".

Back to Console and Accept with F10

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Disk Configuration Attention Report

Type option, press Enter.
  5=Display Detailed Report

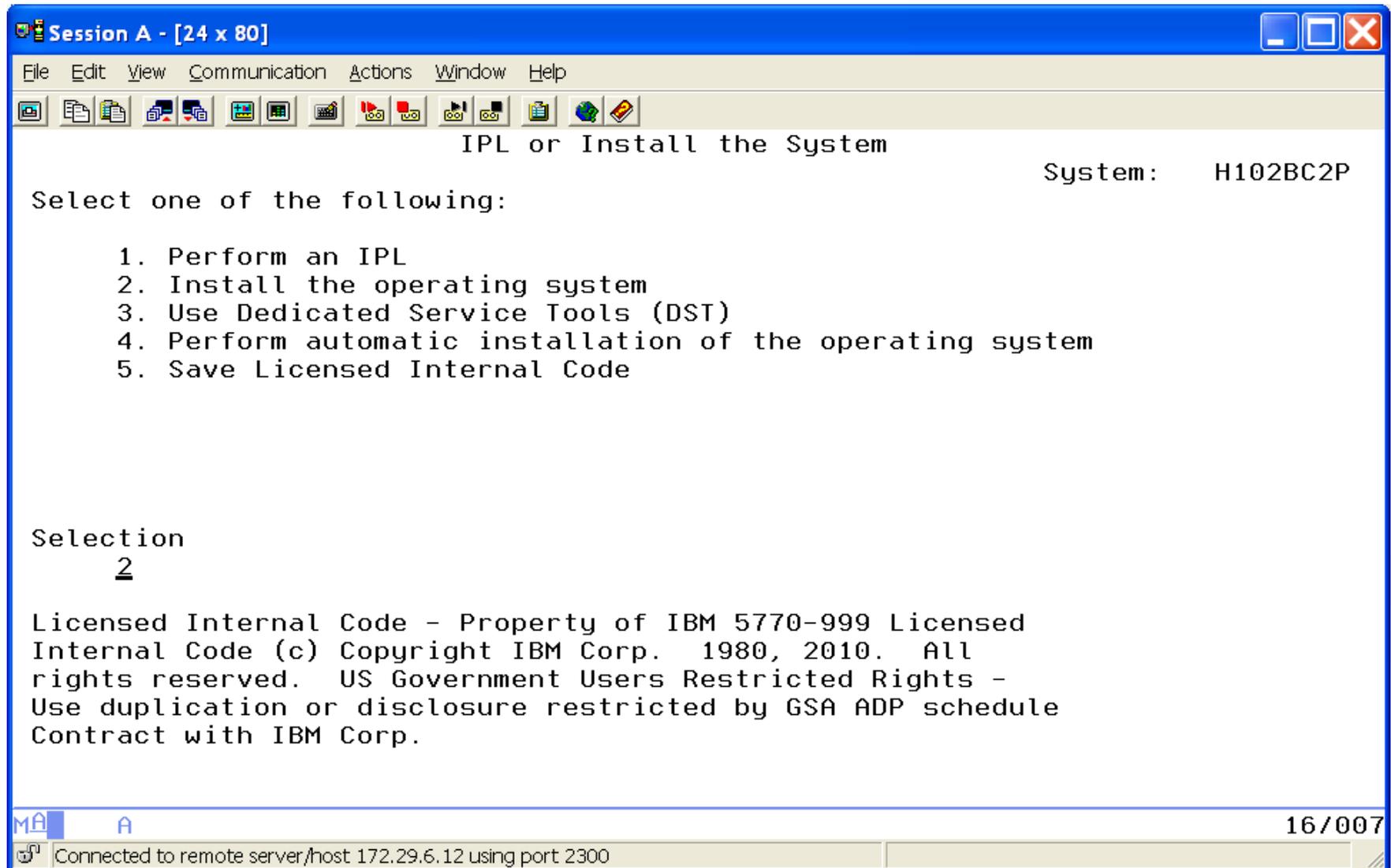
Press F10 to accept all the following problems and continue.
The system will attempt to correct them.

Opt  Problem
  _  New disk configuration

F3=Exit   F10=Accept the problems and continue   F12=Cancel

MA  A
10/003
Connected to remote server/host 172.29.6.12 using port 2300
```

Install the Operating System



Put B2924_01 (6.1) GROUPx-01 (7.x) in DVD if selecting #2

Session A - [24 x 80]

File Edit View Communication Actions Window Help

Install Device Type Selection

System: H102BC2P

Select the installation device type:

1. Tape
2. Optical
3. Virtual device - preselected image catalog
4. Current alternate selected device None
5. Network device

Selection
2

F3=Exit F12=Cancel

Decision Point

MA A 20/007

Connected to remote server/host 172.29.6.12 using port 2300

Installing the Operating System

Session A - [24 x 80]

File Edit View Communication Actions Window Help

Install the Operating System

Type options, press Enter.

Install option	<u>2</u>	1=Take defaults (No other options are displayed) 2=Change install options
--------------------------	----------	--

Date:

Year	<u>13</u>	00-99
Month	<u>03</u>	01-12
Day	<u>25</u>	01-31

Time:

Hour	<u>08</u>	00-23
Minute	<u>52</u>	00-59
Second	<u>56</u>	00-59

Stop

MA A 18/025

Connected to remote server/host 172.29.6.12 using port 2300

Specify OS Install Options

Session A - [24 x 80]

File Edit View Communication Actions Window Help

Specify Install Options

Type options, press Enter.

Restore option	<u>1</u>	1=Restore programs and language objects from the current media set 2=Do not restore programs or language objects 3=Restore only language objects from current media set 4=Restore only language objects from a different media set using the current install device
Job and output queues option	<u>2</u>	1=Clear, 2=Keep
Distribute operating system on available disk units. .	<u>2</u>	1=Yes, 2=No

M A 05/035

Connected to remote server/host 172.29.6.12 using port 2300

Restore Options

The screenshot shows a terminal window with a menu bar (File, Edit, View, Communication, Actions, Window, Help) and a toolbar. The main content is titled "Specify Restore Options" and includes the instruction "Type options, press Enter." Below this is a list of restore options with their corresponding values and descriptions. A red arrow points to the first option, "System information 1", with the text "VERY Important" written on it.

```
Specify Restore Options

Type options, press Enter.

Restore from the installation media

System information . . . . 1 1=Restore, 2=Do not restore
Edit descriptions . . . . 1 1=Restore, 2=Do not restore
Message reply list . . . . 1 1=Restore, 2=Do not restore
Job descriptions . . . . 1 1=Restore, 3=Keep customization
Subsystem descriptions . . 1 1=Restore, 3=Keep customization
```

VERY Important

 **Tip** 135

MA A
Connected to remote server/host 172.29.6.12 using port 2300

Complete the restore of the OS

Message ID . . . : CPI2070

IBM i Installation Status

Stage 2	██████████	16%
---------	------------	-----

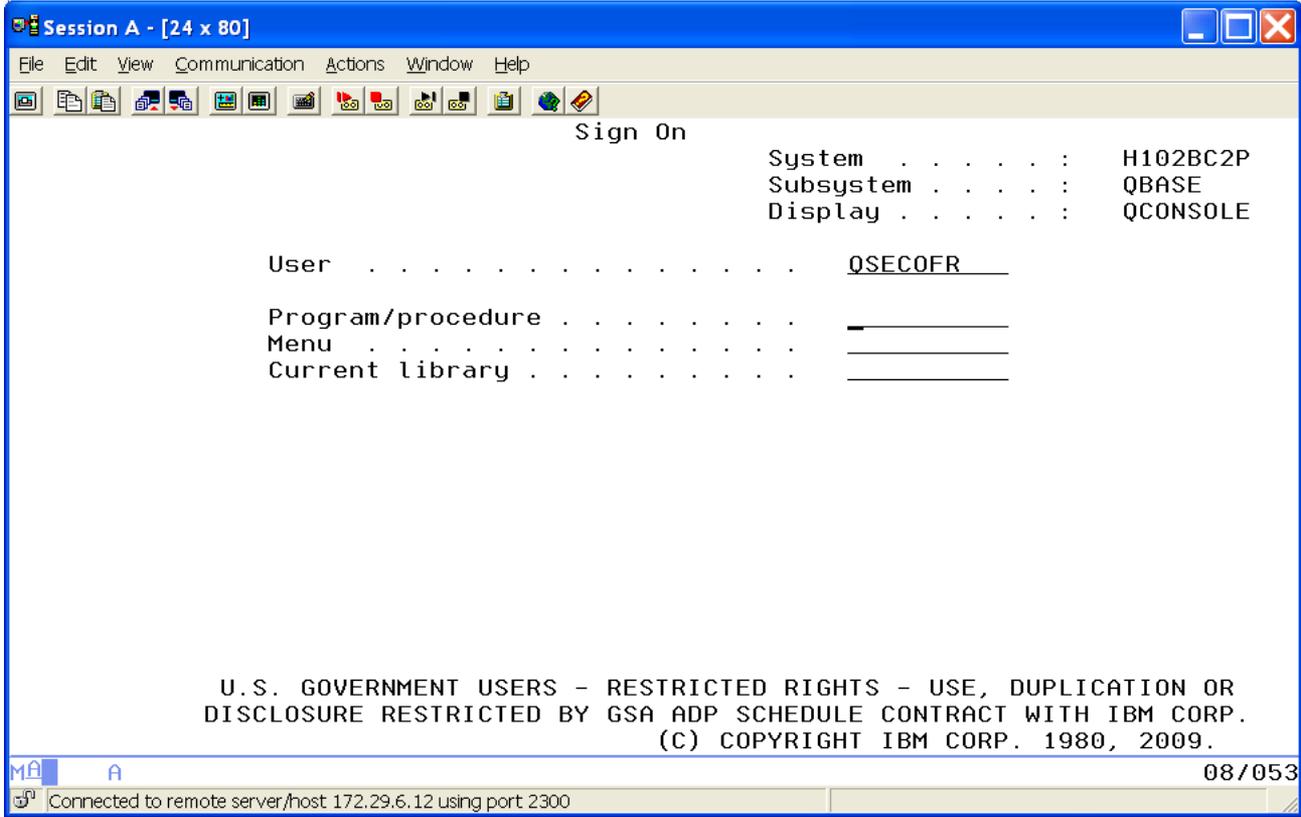
Installation

Stage	Completed	Objects Restored
1 Creating needed profiles and libraries :	X	
>> 2 Restoring programs to library QSYS :		02319
3 Restoring language objects to library QSYS . . . :		
4 Updating program table :		
5 Installing database files :		
6 Installing base directory objects. :		

01/001

Connected to remote server/host 172.29.6.12 using port 2300

Sign on



Accept License Agreements

Session A - [24 x 80]

File Edit View Communication Actions Window Help

Work with Software Agreements

System: H102BC2P

Currently selected language : English

Type options, press Enter.
5=Display

Opt	Licensed Program	Product Option	Product Release	Accept Status
<u>5</u>	*MCHCOD			No
<u>5</u>	5770SS1	*BASE	V7R1M0	No

Bottom

F3=Exit F11=Display description F12=Cancel F13=Select language
F19=Display trademarks F22=Restore software agreements

MA A 10/003

Connected to remote server/host 172.29.6.12 using port 2300

Agenda

- Introduction
- Create Virtual SCSI Server on Hosting Partition
- Create NEW IBM i Client Partition (Hosted / Guest)
- Create Network Server & Storage on Hosting Partition.
- Start the partition from the HMC
- Add additional Disks
- Other devices to configure/manage
- Summary

WRKDSKSTS from Client Partition

The screenshot shows a terminal window titled "Session A - [24 x 80]". The window contains the following text and data:

File Edit View Communication Actions Window Help

Work with Disk Status H102BC2P
03/25/13 05:11:15

Elapsed time: 00:00:00

Unit	Type	Size (M)	% Used	I/O Rqs	Request Size (K)	Read Rqs	Write Rqs	Read (K)	Write (K)	% Busy
1	6B22	36703	17.4	.0	.0	.0	.0	.0	.0	0

Bottom

Command
===>

F3=Exit F5=Refresh F12=Cancel F24=More keys

MA A 22/008

Connected to remote server/host 172.29.6.12 using port 2300

Add another Virtual Disk on Hosting

```
Session C - [24 x 80]
File Edit View Communication Actions Window Help
Create NWS Storage Space (CRTNWSSTG)
Type choices, press Enter.
Network server storage space . . > CLIENT2      Name
Size . . . . . > 39375      *CALC, 1-1024000 megabytes
From storage space . . . . . > *NONE      Name, *NONE
Format . . . . . > *OPEN      *NTFS, *FAT, *FAT32, *OPEN...
Data offset . . . . . > *FORMAT      *FORMAT, *ALIGNLGLPTN...
Auxiliary storage pool ID . . . > 1          1-255
ASP device . . . . . >           Name
Text 'description' . . . . . > 'Virtual Disk for Client Partition'

Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
Creating NWS storage space CLIENT2: 896 of 39378 megabytes complete.
MÂ C X SYSTEM MW 05/037
1902 - Session successfully started
```

Add the Storage to the Server

Session C - [24 x 80]

File Edit View Communication Actions Window Help

Add Server Storage Link (ADDNWSSTGL)

Type choices, press Enter.

Network server storage space	> <u>CLIENT2</u>	Name
Network server description	> <u>CLIENT</u>	Name
Dynamic storage link	> <u>*YES</u>	*NO, *YES
Network server type	<u>*NWS</u>	Character value
Access	<u>*UPDATE</u>	*UPDATE, *READ, *SHRUPD
Drive sequence number	<u>*CALC</u>	1-64, *CALC, *QR
Storage path number	<u>*DFTSTGPTH</u>	1-4, *DFTSTGPTH, *MLTPHGRP

Bottom

F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

MA C MW 08/037

902 - Session successfully started

On the Client Partition – Here it is.

The screenshot shows a remote session window titled "Session A - [24 x 80]". The window has a menu bar with "File", "Edit", "View", "Communication", "Actions", "Window", and "Help". Below the menu bar is a toolbar with various icons. The main content area displays the output of a disk status command. At the top right, it shows "H102BC2P" and "03/25/13 05:24:34". Below this, it says "Elapsed time: 00:00:00". A table follows with columns for Unit, Type, Size (M), % Used, I/O Rqs, Request Size (K), Read Rqs, Write Rqs, Read (K), Write (K), and % Busy. The table shows two units, both of type 6B22, with a size of 36703 M and 17.5% used. All I/O and request values are 0.0. At the bottom right of the main area, it says "Bottom". Below the main area is a "Command" field with "===>" and a status bar with "F3=Exit F5=Refresh F12=Cancel F24=More keys". The bottom status bar shows "M A" on the left, "22/007" on the right, and "Connected to remote server/host 172.29.6.12 using port 2300" at the bottom.

```
Work with Disk Status                                     H102BC2P
                                                         03/25/13 05:24:34

Elapsed time:      00:00:00

Unit  Type      Size      %      I/O   Request  Read  Write  Read  Write  %
 1  6B22    36703    17.5   .0    .0       .0    .0     .0    .0     0
 0  6B22    36703

Command
===>
F3=Exit  F5=Refresh  F12=Cancel  F24=More keys

M A                                     22/007
Connected to remote server/host 172.29.6.12 using port 2300
```

Add it to the ASP

Session A - [24 x 80]

File Edit View Communication Actions Window Help

Specify ASPs to Add Units to

Specify the existing ASP to add each unit to.

Specify ASP	Serial Number	Type	Model	Capacity	Resource Name
<u>1</u>	Y6YRZXKEWVYM	6B22	050	36703	DPH001

F3=Exit F5=Refresh F11=Display disk configuration capacity
F12=Cancel

MA A 07/004

Connected to remote server/host 172.29.6.12 using port 2300

Multiple Disks in ASP

Session A - [24 x 80]

File Edit View Communication Actions Window Help

Work with Disk Status H102BC2P
03/25/13 05:27:29

Elapsed time: 00:00:00

Unit	Type	Size (M)	% Used	I/O Rqs	Request Size (K)	Read Rqs	Write Rqs	Read (K)	Write (K)	% Busy
1	6B22	36703	17.4	.0	.0	.0	.0	.0	.0	0
2	6B22	36703	.0	.0	.0	.0	.0	.0	.0	0

Bottom

Command
===>

F3=Exit F5=Refresh F12=Cancel F24=More keys

22/007

Connected to remote server/host 172.29.6.12 using port 2300

Agenda

- Introduction
- Create Virtual SCSI Server on Hosting Partition
- Create NEW IBM i Client Partition (Hosted / Guest)
- Create Network Server & Storage on Hosting Partition.
- Start the partition from the HMC
- Add additional Disks
- Other devices to configure/manage
- Summary

Create Ethernet Line Using 266D (HEA) or 268C (Bridge)

Session A - [24 x 80]

File Edit View Communication Actions Window Help

Work with Communication Resources

System: CLIENT

Type options, press Enter.
5=Work with configuration descriptions 7=Display resource detail

Opt	Resource	Type	Status	Text
-	CMB02	268C	Operational	Combined function IOP
-	LIN04	6B26	Operational	Comm Adapter
-	CMB03	6B03	Operational	Comm Processor
-	LIN01	6B03	Operational	Comm Adapter
-	CMN02	6B03	Operational	Comm Port
-	CMB04	6B03	Operational	Comm Processor
-	LIN02	6B03	Operational	Comm Adapter
-	CMN01	6B03	Operational	Comm Port
-	CMB05	268C	Operational	Comm Processor
-	LIN03	268C	Operational	LAN Adapter
-	CMN03	268C	Operational	Ethernet Port

F3=Exit F5=Refresh F6=Print F12=Cancel

 Tip

Bottom

M& A 07/003

Sharing Tape I/O Adapter between two partitions

- Identify the I/O Adapter to be shared
- Would you like to move the adapter via a CL Program?
- Needs to be varied off before moving
- Uses an id on the HMC to move the resource



**Decision
Point**

Create User id on HMC

Doesn't require more than HMC Operator role

User Profiles

User Help

Select a User ID below and click "User" to manage the console users.

Select	User ID	Task Role	Resource Role	Authentication Type	Description
<input type="radio"/>	hscroot	hmcsuperadmin	AllSystemResources	Local Authentication	HMC Super User
<input type="radio"/>	petem	hmcsuperadmin	AllSystemResources	Local Authentication	Pete Massiello
<input type="radio"/>	itechsol	hmcsuperadmin	AllSystemResources	Local Authentication	new user from Wizard
<input type="radio"/>	hscpe	hmcpe	AllSystemResources	Local Authentication	hscpe
<input checked="" type="radio"/>	iTech-oper	hmcoperator	AllSystemResources	Local Authentication	System Operator
<input type="radio"/>	root	hmcsuperadmin	AllSystemResources	Local Authentication	root

Done

Identify “Desired” Resources

The screenshot shows the iTechHMC1 Manage Profiles interface in Mozilla Firefox. The browser address bar shows the URL https://192.168.0.60/hmc/wcl/T4dd. The main window title is "Logical Partition Profile Properties: iTech07 @ iTech71 @ iTech-Power7 - iTech71". Below the title bar, there are several tabs: General, Processors, Memory, I/O (selected), Virtual Adapters, Power Controlling, Settings, Logical Host Ethernet Adapters (LHEA), Tagged I/O, and OptiCor.

The "Physical I/O" section contains the following text: "Detailed below are the physical I/O resources for the managed system. Select which adapters from the list you would like included in the profile and then add the adapters to the profile as Desired or Required. Click on an adapter to view more detailed adapter information."

Below the text are three buttons: "Add as required", "Add as desired", and "Remove".

There is a toolbar with icons for selection, copy, paste, and a dropdown menu labeled "Select Action".

Select	Location Code	Description	Added	Bus
<input type="checkbox"/>	U78AA.001.WIH0062-P1-T9	RAID Controller	Required	512
<input type="checkbox"/>	U78AA.001.WIH0062-P1-T7	Universal Serial Bus UHC Spec	Required	513
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C19	RAID Controller	Required	514
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C4	PCI-E SAS Controller	Desired	516
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C5	Empty slot		517
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C6	Empty slot		518
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C7	Empty slot		519

Total: 7 Filtered: 7

Buttons: OK, Cancel, Help

Done

Click on Adapter (WIH0062-P1-C4)

iTechHMC1: Manage Profiles - M...
192.168.0.60 https://192.168.0.60/hmc/wd/T439

Physical I/O Properties - iTech71

General IBM i

Description: PCI-E SAS Controller
Location code: U78AA.001.WIH0062-P1-C4

PCI Configuration Data

Vendor ID:	1014
Device ID:	0339
Subsystem vendor ID:	1014
Subsystem device ID:	033A
Class code:	0104
Revision ID:	01

I/O Pool

Use in I/O pool

I/O pool ID:

OK Cancel Help

iTechHMC1: Manage Profi...
192.168.0.60 https://192.168.0.60/hmc/v

Physical I/O Properties - iTech71

General IBM i

Last known additional information

Type-model: 57B3-001
Serial number: YL11D0148108

OK Cancel Help

The 57B3 IOA is on the iTech71 partition



Work with Storage Resources

System: ITECH07

Type options, press Enter.

7=Display resource detail 9=Work with resource

Opt	Resource	Type-model	Status	Text
-	CMB01	2BE1-001	Operational	Storage Controller
-	DC01	2BE1-001	Operational	Storage Controller
-	CMB05	268C-001	Operational	Storage Controller
-	DC02	6B02-001	Operational	Storage Controller
-	CMB07	2BD9-001	Operational	Storage Controller
-	DC04	2BD9-001	Operational	Storage Controller
-	CMB06	57B3-001	Operational	Storage Controller
-	DC03	57B3-001	Operational	Storage Controller

Bottom

F3=Exit F5=Refresh F6=Print F12=Cancel

MA B

07/003

I902 - Session successfully started

Where we are moving also “Desired”

Logical Partition Profile Properties: V6R1M1 @ iTech61 @ iTech-Power7 - iTech61

General Processors Memory **I/O** Virtual Adapters Power Controlling Settings Logical Host Ethernet Adapters (LHEA) Tagged I/O OptiConnect

Physical I/O

Detailed below are the physical I/O resources for the managed system. Select which adapters from the list you would like included in the profile and then add the adapters to the profile as Desired or Required. Click on an adapter to view more detailed adapter information.

Add as required Add as desired Remove

Select	Location Code	Description	Added	Bus
<input type="checkbox"/>	U78AA.001.WIH0062-P1-T9	RAID Controller		512
<input type="checkbox"/>	U78AA.001.WIH0062-P1-T7	Universal Serial Bus UHC Spec		513
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C19	RAID Controller		514
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C4	PCI-E SAS Controller	Desired	516
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C5	Empty slot		517
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C6	Empty slot		518
<input type="checkbox"/>	U78AA.001.WIH0062-P1-C7	Empty slot		519

Total: 7 Filtered: 7

OK Cancel Help

Done

Not currently on this system (iTech61)

The screenshot shows the iTech61 application window. The title bar reads 'iTech61'. The menu bar includes 'File', 'Edit', 'View', 'Communication', 'Actions', 'Window', and 'Help'. The toolbar contains various icons for file operations and system functions. The main display area shows the following text:

Work with Storage Resources System: V6R1M1

Type options, press Enter.
7=Display resource detail 9=Work with resource

Opt	Resource	Type-model	Status	Text
-	CMB01	290A-001	Operational	Storage Controller
-	DC01	290A-001	Operational	Storage Controller
-	CMB02	268C-001	Operational	Storage Controller
-	DC02	6B02-001	Operational	Storage Controller
-	CMB06	57B3-001	Not detected	Storage Controller
-	DC03	57B3-001	Not detected	Storage Controller

F3=Exit F5=Refresh F6=Print F12=Cancel Bottom

At the bottom, there is a status bar with 'MA C' on the left, '07/003' on the right, and a message 'I902 - Session successfully started' in the taskbar.

Command to move it (QShell)



QSH Command Entry

```
> chhwres -r io -m iTech-Power7 -o m -p iTech71 -t iTech61 -l 21010204
```



Tip

```
==> _____  
_____  
_____
```

F3=Exit F6=Print F9=Retrieve F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry

Moved

The screenshot shows a software window titled 'iTech61' with a menu bar (File, Edit, View, Communication, Actions, Window, Help) and a toolbar. The main content area displays 'Work with Storage Resources' and 'System: V6R1M1'. It prompts the user to 'Type options, press Enter.' and lists two options: '7=Display resource detail' and '9=Work with resource'. A table lists storage resources with columns for Opt, Resource, Type-model, Status, and Text. At the bottom, it shows 'Bottom' and function key shortcuts: 'F3=Exit', 'F5=Refresh', 'F6=Print', and 'F12=Cancel'. A status bar at the very bottom shows 'MA C' and '07/003', and a system tray message 'I902 - Session successfully started'.

Opt	Resource	Type-model	Status	Text
-	CMB01	290A-001	Operational	Storage Controller
-	DC01	290A-001	Operational	Storage Controller
-	CMB02	268C-001	Operational	Storage Controller
-	DC02	6B02-001	Operational	Storage Controller
-	CMB06	57B3-001	Operational	Storage Controller
-	DC03	57B3-001	Operational	Storage Controller

Power On/Off

- You must **Shutdown** the hosted partition down (PWRDWN SYS) **BEFORE** the Hosting Partition.
- You must start the Hosting Partition **FIRST**.



Heads-Up

Agenda

- Introduction
- Create Virtual SCSI Server on Hosting Partition
- Create NEW IBM i Client Partition (Hosted / Guest)
- Create Network Server & Storage on Hosting Partition.
- Start the partition from the HMC
- Add additional Disks
- Other devices to configure/manage
- Summary

7 Key Points to take Home

- Plan your disk requirements, and other Resources (Memory, Processors, Ethernet, Tape, DVD) .
- Make sure you are on the latest cumulative PTFs & FSP Firmware.
- Need SAVSYS or I_BASE_01 to load LIC.
- Make sure you understand sharing of CPU, DVD, and Tape.
- Analyze disk utilization before you start.
- Each Host Ethernet Adapter port is a switch sharable among partitions.
- Your resource name of the NWSD must match the Virtual Server SCSI device.

Note: While this was a step by step approach for you to follow, your screens might be a little different based upon your hardware and resources of your machine, but the concepts don't change.

Your Turn!



Questions?

iTech
Solutions Group, LLC

How to contact me:

Pete Massiello

Email: pmassiello@itechsol.com

Twitter: [PeteM59](https://twitter.com/PeteM59)