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@server iSeries

HMC, Operations Console and Twinax: What's Best For You?

Marvin Levi

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HMC, Operation Console overview



HMC



Operations Console



Twinax



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HMC, Operations Console and Twinax: What's Best For You?

Topics

- Overview
- More information
- Console choices
- Comparison chart
- Console type considerations
- Scenarios
- Questions

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HMC, Operations Console and Twinax: What's Best For You?

Agenda	Title	Time	Location	Speaker
25BA	Linux on i5 Configuration	Monday 2-3:15	Haymarket	Erwin L. Earley
34CA	HMC Panel Discussion	Tuesday 12:30-1:45	Crystal Ballroom A	Jim Oberholtzer
52GB	Case Study on HMC	Thursday 9:30 – 10:45	Grand Ballroom B	Larry Bolhuis

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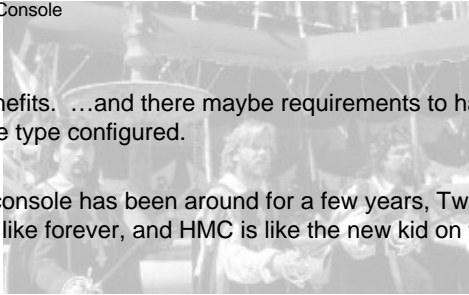
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HMC, Operation Console, Twinax overview

The Consoles are like the 3 Musketeers

- HMC
- Operations Console
- Twinax



...each has its benefits. ...and there maybe requirements to have more than one console type configured.

Note: operations console has been around for a few years, Twinax has been around for like forever, and HMC is like the new kid on the block.

Overview

- This presentation describes how a customer should make a decision on what to use for their i5/OS console as of V5R3.
- The addition of the IBM eServer i5 models and the Hardware Management Console (HMC) provides another option to control a POWER5 server or i5/OS partition.
- Because of the variety of ways that iSeries servers can be used, what's best for one customer may not be best for another customer.
- This presentation will describe some of the key differences between the console choices, and what the pros and cons are for each.
- At times, multiple consoles will be required in order to get all needed function.
- The word "Console" is used generally at some times to also include control panel function.
- This presentation is only meant as an overview and for decision making. Details on how to configure and use these console types are available in Infocenter and in a new redbook on consoles for i5 servers.

Types of console - choices

Starting in V5R3, the types of consoles that can be used with i5/OS are:

- Twinax terminal
- Operations Console direct-connect
- Operations Console LAN-connect
- Hardware Management Console (HMC)
- ASMI (Advanced System Management Interface)



Twinax terminal

- This was the traditional console for AS/400/iSeries systems.
- The terminal and twinax adapter are dedicated to the purpose of providing a 5250 interface between the system and a user.
- No graphical user interface is available.
- It is supported on all AS/400 and iSeries systems ever made.
- A twinax terminal and twinax adapter are required on the iSeries for each i5/OS partition.
- Note: There are some 2 and 4 session twinax terminals available; however, all sessions connect to a single i5/OS partition. Also, note that future iSeries models may not support twinax console.

Operations Console direct-connect



Operations Console direct-connect

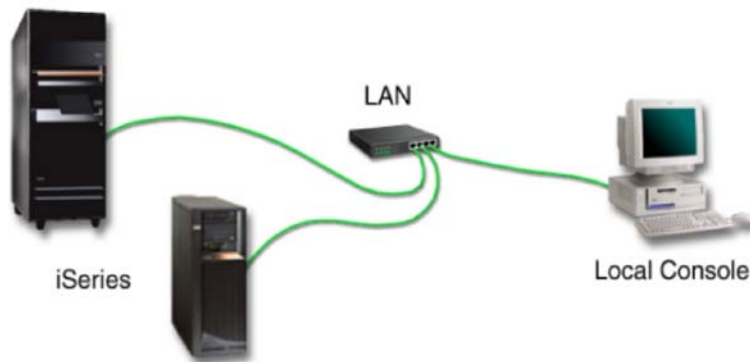
- No parallel port on the new i5 machines
- Can create VCP over the serial cable



Operations Console direct-connect

- Need to install iSeries Access for Windows on a PC
- Connect a single async cable (provided with the system) between that PC and the server.
- Configure Operation Console for direct-connection, which allows the provided PC5250 emulator to be used as the system console.
- When used in a partitioned environment, an async-capable WAN adapter is required on the iSeries for each partition.
- A graphical view of the system control panel is available for use (requires a separately orderable parallel cable in addition to the async cable).
- The parallel cable is not available on POWER5 systems.
- These functions can also be made available remotely through the use of a dial-in connection between a remote PC and the PC directly connected to the server. Operations Console has been available since V4R3 of OS/400.
- Future iSeries models may not support direct-connect Operations Console.

Operations Console LAN-connect –



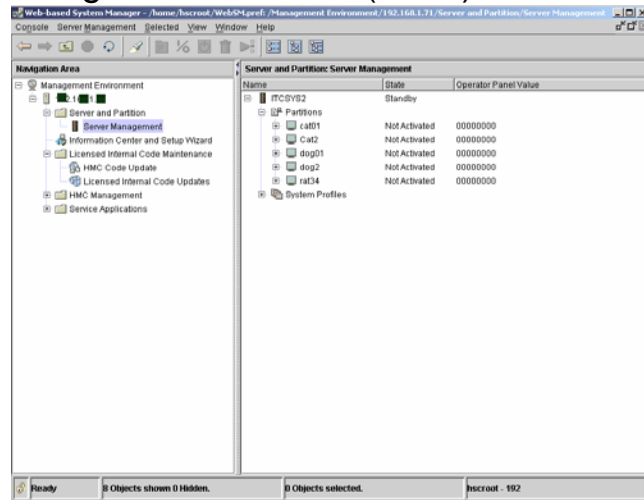
Operations Console LAN-connect –

- Install iSeries Access for Windows on a PC
- Connect via LAN to a dedicated LAN adapter on the iSeries (an additional LAN adapter is required for each partition).
- The Operations Console component of iSeries Access for Windows is then configured for LAN-connection, which allows the provided PC5250 emulator to be used as the system console.
- A graphical view of the system control panel is available for use. This connection type allows a single PC to be the console for multiple iSeries servers and/or OS/400 and i5/OS partitions.
- The imbedded Ethernet ports provided with the model 520 or 570 do not support this attachment.
- Future iSeries models may not support token-ring for Operations Console LAN-connect.

Operations Console LAN-connect –

- Can't use the integrated Ethernet port

Hardware Management Console (HMC) –



Hardware Management Console (HMC) –

- HMC is new to the iSeries with eServer i5 servers.
- It is a hardware appliance available from IBM that is pre-loaded with an operating system and the applications needed to control the servers.
- It is designed to be a closed system, and other applications cannot be added.
- Can be used to manage multiple iSeries and pSeries servers.
- Cannot be used to control any iSeries models prior to POWER5 servers.
- It contains a 5250 emulator, and control panel functions are also available
- Remote PCs running 5250 emulation can be used as the i5/OS console (Operations Console is not required on the remote PC).
- Note that one HMC can control multiple partitions without requiring a separate adapter for each one.



Advanced System Management Interface (ASMI) –

- This function allows a PC running a web browser to connect to an integrated Ethernet port on an eServer i5 server to make a subset of functions available on a control panel.
- It can be used to remotely power on and off Power5 servers.
- ASMI can only be used with eServer i5 models, and has no 5250 console capability.
- It is designed to be complementary to other console choices, not in place of.
- When complementing Operations Console, its primary value is the ability to remotely power on eServer i5 servers.
- ASMI is not intended to be a console on it own:

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Comparison chart

Function	Twinax	Op Console (functions apply to pre-i5 and i5 unless specified)	HMC (all functions are for i5 only)
Local 5250 access	Yes	Yes	Yes
Remote 5250 access	No	Yes	Yes (via passthru)
One console PC can manage many partitions/systems	No	Yes(LAN only)	Yes
LPAR and CUoD managed with	No	Yes(pre-i5 only)	Yes
Graphical disk management available on	No	Via iSeries Navigator	No
Remote Control panel functions available	No	Yes (but no remote power on capability on i5)	Yes
Requires IOP and dedicated IOA	Yes	Yes	No
Supported via LAN	No	Yes	Yes
Customer has to install software on console	No	Yes	No
Supports all languages supported by OS/400 and i5/OS	Yes	Yes	No (language support is limited)
EZSetup function available	No	Yes	No
Can be used for remote service	No	Yes	Yes – New Service Focal Point function

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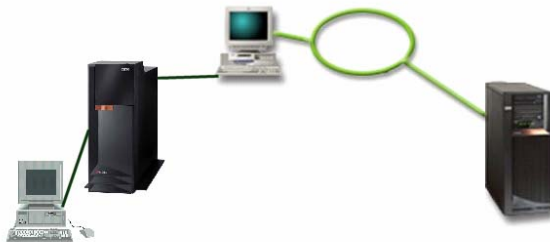


Considerations

- Only on i5
- Control Panel functions
- Language support
- Graphical disk unit management
- I/O Requirements
- Other considerations

Console type considerations

- Only on i5

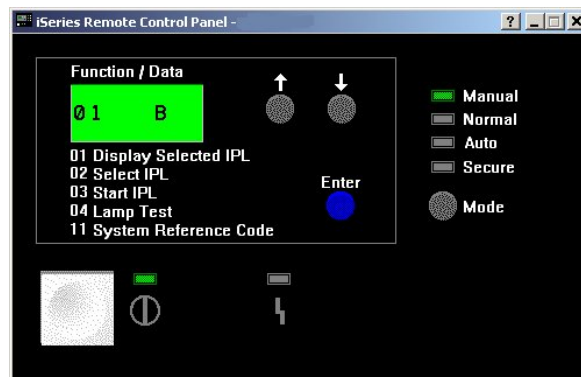


Console type considerations

- **Only on i5**
- One of the key differences in the products is that HMC is only available for use with i5 models, while Operations Console is available for most models still in support. So if the customer wants to use a single console to control a mix of pre-i5 and i5 models in their environment, Operations Console would be the clear choice.
- However, once they start partitioning the i5 servers, the choice becomes more difficult. Partitioning can only be done from an HMC. They could then decide to have one HMC to manage all their i5 systems, and one Operations Console PC for managing their other iSeries. Another way of doing it would be to use the HMC to do all the partitioning, but once all the partitions are allocated, use Operations Console as the 5250 interface into all the systems so they still can all be controlled by one PC.

Console type considerations

- **Control Panel functions**



Console type considerations

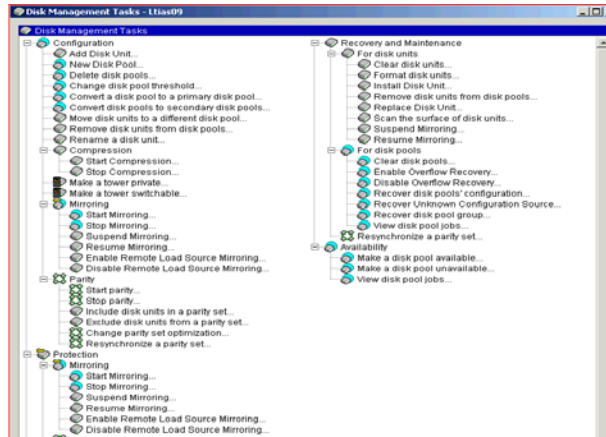
- **Control Panel functions**
- Remote Control Panel (RCP) capability is more limited with Operations Console on i5. On pre-i5 systems, Operations Console RCP function could be used through a parallel port cable to the iSeries. This connection went to the iSeries service processor, and allowed RCP to be used to remotely power on an iSeries. However on i5, there is no parallel port, and the service processor connection is through an embedded LAN adapter that Operations Console cannot use. What this means is that the only 2 choices for remotely powering on an i5 server are HMC and ASMI. Although almost all other functions of the control panel can be accessed via Operations Console RCP through a LAN connection, there is no current plan to add the remote power on capability.

Console type considerations

- **Language support**
- There are differences in the languages supported by the different console choices. Operations Console is a component of iSeries Access for Windows, which is translated into about 40 different languages, including double-byte and bi-directional languages. The HMC is more limited and at initial announcement/availability covers about 20 languages (see appendix). It does not support Korean, or any of the bi-directional languages, such as Arabic and Hebrew. Customers needing to use their console in a language not supported by HMC have 2 choices. Either they can use Operations Console or they can use the iSeries Access for Windows PC5250 emulator passing through the HMC. In the latter, iSeries Access for Windows connects to a special port on the HMC which allows PC5250 to run as the console without using Operations Console. The steps to configure this are documented in the i5 Infocenter.

Console type considerations

- **Graphical disk unit management**



Console type considerations

- **Graphical disk unit management**
- On iSeries hardware, a graphical interface to manage these units is available in iSeries Navigator. In order to access that feature, the PC must first authenticate via a service tools user ID, which then opens a connection to the Operations Console adapter underneath. There are some features of disk unit management that are not available via a 5250 interface, so using this graphical interface is the only way of doing these things. This disk unit management interface is not available on HMC. So whether a pre-i5 or an i5 server needs to be managed, iSeries Access for Window is required for doing graphical disk unit management.

Console type considerations

- I/O Requirements



Console type considerations

- I/O Requirements

- Operations Console requires a connection to a dedicated IOA (Input/Output Adapter) that is logically under an IOP (Input/Output Processor) on the iSeries, while HMC just plugs into an integrated LAN port. On the new i5 servers, there are fewer slots available in the main tower than there are on the pre-i5 servers. So depending on what other I/O is required on the server, there may not be slots available to plug in the required IOP and IOA. On some i5 models, there is not a slot available off the primary IOP for a LAN-connected Operations Console or a twinax console. In those cases, an additional IOP must be purchased (in addition to the dedicated IOA), therefore consuming 2 slots, and leaving little or no room for any additional I/O. This is not a concern for direct-connected Operations Console which is able to always use the async adapter that is shipped with all iSeries models. But if direct-connect Operations Console doesn't meet the customer's needs (maybe there is a need to manage multiple systems from one console), HMC is likely the only option.

Console type considerations

- **Other considerations**
- Operations Console can install on most Windows PCs, whereas HMC exists only on a pre-loaded box available only from IBM. Due to the well-known security issues that Windows has been prone to over the past several years, there are a constant flow of patches and service packs needed to keep a Windows PC safely running in an enterprise. Any one of these changes to the operating system have the potential to cause a problem with Operations Console. Although there is a cost benefit to being able to install Operations Console on almost any PC, there is the underlying stability of the Windows operating system that tends to be a negative at times. The HMC on the other hand is pre-loaded with a specific OS level that should remain relatively unchanged. In addition, some scenarios for Operations Console require the purchase of an additional IOA and IOP, which would raise the cost of that solution also. So take this into consideration when deciding on a console choice. Also, since the HMC represents a new, improved approach to partitioning, you may want to take advantage of IBM education or services to get off to a faster implementation.

Use case scenarios

- Example Scenarios:
- **Scenario #1: Adding an i5 system to an environment with 830 and 840 systems (non-LPARed)**
- In this scenario, 830 and 840 servers are being controlled by a single LAN-connected Operations Console. When the new i5 server is added to the network, the customer would like to manage it from the same console that is being used for the others. If this is a model 520, then a LAN IOA will be plugged into slot 5. The base IOP that comes by default with the 520 will be used, so no additional IOP needs to be ordered. If the new system is 570, then an additional IOP will need to be ordered. On the Operations Console PC, configure a new LAN connection to the i5 system, and connect.

Use case scenarios

- **Scenario #2: 830 system with twinax console being replaced with i5 system**
- Customer is using twinax console because they had always used twinax consoles. They want to continue using it when the 830 is replaced with an i5. If this is a model 520, then a twinax IOA will be plugged into slot 5. The base IOP that comes by default with the 520 will be used, so no additional IOP needs to be ordered. If the new system is a 570, then an additional IOP will need to be ordered. Cable the twinax terminal to the twinax IOA, set the twinax address, and power on the terminal.

Use case scenarios

- **Scenario #3: Partitioned i5 system using Turkish language**
- Since this system is partitioned, an HMC must be purchased in order to create the partitions and make any changes to partition sizes. However, the administrator speaks only Turkish, and the HMC does not support that language. In order to control the i5/OS partition, V5R3 iSeries Access for Windows is installed on the administrator's PC. The PC5250 component of iSeries Access is configured to connect to a port on the HMC. The HMC is configured to allow remote PC telnet sessions to connect for console use. When the PC connects to the HMC, the administrator will be prompted for the HMC's userid and password. Then the console session will be connected, and the administrator will sign into the i5/OS partition. One drawback of this: the person configuring HMC to allow this pass through support will need to be able to read a language that the HMC supports.

Use case scenarios

- **Scenario #4: Using disk management on an i5 system**
- The graphical interface for disk unit management is available only on iSeries Access for Windows (which includes the Operations Console and iSeries Navigator components). Unlike the 5250 function, there is no option to be able to connect through the HMC. Therefore a LAN IOA (and possibly an IOP) will need to be added to the i5 in order to make a console connection for iSeries Navigator. For the 5250 console, the administrator can choose to use Operations Console on the same PC. If the system is being partitioned, then an HMC will need to be added for that, and the administrator will need to deal with 2 different consoles.

Use case scenarios

- **Scenario #5: Multiple i5 models using English language that are being partitioned**
- In this scenario, a customer with no previous iSeries servers purchases multiple i5 models. The administrator can read English, would like to control all i5/OS partitions from a single console, and does not need to use any of the graphical disk management features. This is definitely the perfect environment for using HMC. No Operations Console should be needed.

Use case scenarios

- **Scenario #6: Partition an i5 server into more partitions than can be handled via HMCs**
- This is the same as Scenario #5, except that 64 partitions of i5/OS are needed on a single i5 model. Administrator wants a console running concurrently at all times on all partitions. Since the service processor component cannot handle the amount of network traffic this would require, some percentage of the consoles could not be run on the HMC. Instead, some of the partitions would need to use Operations Console. Each partition will need its own dedicated LAN card on the iSeries, but each Operations Console PC can control multiple partitions.

Use case scenarios

- **Scenario #7: Need disk management on a non-partitioned i5 server, but no slots available**
- In this scenario, the customer needs to use iSeries Navigator disk management, but there are not enough slots available in the single-tower i5 model to use LAN-connected Operations Console. To further complicate, the administrator wants to use a new laptop for the console, but there is no async port to be able to use direct-connect Operations Console. The solution in this case is to use Operations Console with a USB-to-async converter cable (multiple companies make these). This converter can plug into the USB port on the laptop, and the other end of the converter can connect to the async IOA that is shipped on all iSeries models. Operations Console is configured as direct-connect.

Use case scenarios

- **Scenario #8: Replacing a partitioned 840 with a 570**
- In this scenario, a customer starts with an 840 that has 5 partitions, all managed by Operations Console LAN-Connect. They are upgrading to a 570, and will continue to need 5 partitions. An HMC will definitely be needed for this. If the customer is using an HMC-supported language, such as English, and does not need to do i5/OS disk management, then no Operations Console should be needed. A big advantage will be that the HMC only needs to connect into a single integrated ethernet port. Operations Console requires a separate LAN IOA be dedicated for each partition being managed.

HMC, Operations Console and Twinax: What's Best For You?

- Summary
- Questions



HMC, Operations Console and Twinax: What's Best For You?

- Evaluation
 - Session ID: 480155
 - Session title: **HMC, Operations Console and Twinax: What's Best For You?**
 - Agenda key: 44CJ
 - Speaker: Marvin Levi

Thank you for attending!

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