

Capacity Upgrade on Demand

IBM @server iSeries



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CUoD ... customers are demanding it

- Part of IBM ebusiness on demand
- Single server capacity at your fingertips
- Reduces the need for server IPLs
- Capacity Customization Flexibility
- Address Dynamic Growth Requirements
- Easily Accommodate Business Workload Peak
- Quick, easy, and economical way to accomadate new workloads



CUoD ... trial, permanent, and temporary

Trial Capacity⁽¹⁾ (No additional charge)

100% of Capacity for 14 Elapsed Days

Permanent Capacity (Pay before use ... requires a key)

Ordered Capacity for Unlimited Number of Days

Temporary Capacity⁽²⁾(Pay <u>after</u> use .. requires special T&Cs)

- Specified Capacity for Specified Days
 - (1) Prior to the 15th day, the processors must be made available to be reclaimed or server performance degradation will occur
 - (2) IBM is currently evaluating for a future iSeries release



CUoD ... can mean more than just processor capacity

Processor-on-Demand

Units of Processor Capacity

Memory-on-Demand*

Units of Memory Capacity

Disk-on-Demand*

Units of DASD Capacity

Interactive-on-Demand*

Units of 5250 Interactive Capacity

* IBM is currently evaluating for a future iSeries release



CUoD ... it's the enabler for adding new workloads

CUoD offers a quick means of adding more cost effective capacity for new workloads (*Domino, WebSphere, Linux, etc.*) on a single iSeries server ...

Multiple workloads on a single server



CUoD ... what's new in 2002?

More iSeries Choices with On Demand Capacity

- CUoD is available on Model 830, 840, and 890

Elimination of CUoD Premium Pricing*

- CUoD is now available, on more processors than before, without premium pricing

Easier Than Ever to Activate Capacity

- Customers can purchase features to activate capacity at IBM.COM
- Activation Features can be specified on orders resulting in a new footprint
 - No CUoD Data (VPD) required to fulfill an order
 - Activation Code is applied right in manufacturing

* May not be true in 100% of Geographies where iSeries are sold





Capacity Upgrade on Demand

IBM @server iSeries



10/03/2000

Processor and Activation Features

Processor Features

Model	Processor Feature	Start-up	Stand-by	Installed
		Processors	Processors	Processors
830	2349	4	4	8
830	2351 (Limited Availability)	1	7	8
840	2352	8	4	12
840	2353	12	6	18
840	2354	18	6	24
890	2487	16	8	24
890	2488	24	8	32

 Standby processors can be activated by placing an order for a quantity of POD Activation Features. IBM will fulfill the order by generating a POD Activation Code.

Model	POD Activation Feature	US Prices
830	1605	\$41,000
840	1604	\$41,000
890	1610	\$60,000

The POD Activation Code will be mailed and posted at the following web site: http://www.ibm.com/eserver/iseries/ondemand/coud



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IBM SUPPLIED PROGRAM TEMPORARY FIXES (PTFs)

Application of PTFs may disable or render ineffective programs that use system memory addresses not generated by the IBM translator, including programs that circumvent control technology designed to limit interactive capacity to purchased levels. By applying PTFs you authorize and agree to the foregoing.



Trial Capacity

100% Capacity for 14 Contiguous Days*

- From DST or SST screen, select START TEMPORARY ACTIVATION OPTION
- It's immediate ... no IPL ... no feature ordering ... no activation codes
- All stand-by processors on the server are activated
- 100% of stand-by processor capacity for 14 days*
- Allows time to place an order for Permanent Capacity (POD Processor Feature)
- Can be used once after the server is installed and once after each purchase of a POD Processor Feature
- Prior to the 15th day, the processors must be made available to be reclaimed or server performance degradation will occur

Try-and-Buy ... Test Window ... Order Fulfillment Buffer

* Equivalent to fourteen days (24 hours per day) of elapsed power up time



Trial Capacity: Step-by-Step Activation Process

- 1. Start System Service Tools (SST) with the STRSST command or start Dedicated Service Tools (DST) with function 21 on control panel (key in manual position)
- 2. Signon using service tools user profile of System Capacity Administration
- 3. Select the option to Work With System Capacity
- 4. Select the option to START TEMPORARY SYSTEM CAPACITY ACTIVATION (not shown if currently in use or already used)
- 5. Press Enter to confirm change
- 6. Exit the System Capacity service function
- 7. Assign Activated Processors to a partition ... you must do this step even if your machine is not configurated for LPAR!
 - A) Start the Work With System Partitions option in DST or SST
 - B) Enter Option 3 (Work With Partition Configuration)
 - C) Enter Option 2 (Change Partition Processing Resources) next to PRIMARY
 - D) Enter a value for "New number of processors" (The value should represent TOTAL active processors) ... press Enter
 - Note: If a configuration error is signaled at the bottom of the screen, it means that the default Primary partition has been altered (logical partitioning is actively being used) and it is necessary to refer to your logical partition plan to properly assign the activated processors to the server.
 - E) Press Enter to confirm the change
- 8. Exist DST or SST
- 9. Begin using the new capacity

Cannot intentionally turn off Trial Capacity ... it automatically terminates when a new POD Activation Code is entered or when the trial period ends.



Permanent Capacity



Box Order for a New Server (Footprint)

- Order can contain a quantity of POD Activation Features
- Order for POD Activation Features is fulfilled in Manufacturing by collecting CUoD Data (VPD) and entering the POD Activation Code before the machine ever ships



Manufactured MES order for a Model to Model Upgrade (Footprint)

- Order <u>can</u> contain a quantity of POD Activation Features
- Order for POD Activation Features is fulfilled in Manufacturing by collecting CuoD Data (VPD) and entering the POD Activation Code before the machine ever ships

Manufactured MES or Loose Parts MES order for a Processor Feature (Processor Parts)

- Order <u>cannot</u> contain a quantity of POD Activation Features
- Order <u>cannot</u> be placed unless 100% of the standby processors have been activated

Manufactured MES or Loose Parts MES order for an Activation Feature (Activation Code)

- Order <u>cannot</u> contain a Processor Feature
- Order<u>cannot</u> be fulfilled until CUoD Data(VPD) data is reported from the currently installed server and sent (manual or electronic) to the CUoD administrator
- Order <u>cannot</u> be fulfilled any faster than the date scheduled for the longest lead-time part



Permanent Capacity for <u>Installed</u> Servers

Once you have determined that you want to permanently activate some or all of your standby processors, you must contact your IBM Business Partner, IBM Sales rep, or place an order at IBM.com for the purchase of a quantity of POD Activation Features (one or more).

Once an order reaches the IBM manufacturing site, a POD Activation Code unique to the target server is generated, mailed, and posted at the following web-site for quick access:

http://www.ibm.com/eserver/iseries/ondemand/cuod

Several days should be allowed for order processing and the resulting POD Activation Code posting to take place. This is an important consideration when determining how and when to use Trial Capacity. Trial Capacity provides 14 days (elapsed power-up time) of 100% server capacity that can be used to satisfy any peak workload requirements while an order for the activation of additional capacity is being fulfilled.



Permanent Capacity: Step-by-Step Activation Process

- Step1: Customer determines the number of stand-by processors they wish to activate
- Step2: Customer contacts their sales rep (IBM and/or Partners) or go to IBM.com (US only) to place an order for a quantity of POD Activation Features
- **Step3:** Sales rep places an order in IBM configurators for a specific quantity of POD Activation Features. The Sales Rep is provided with a reminder (via configurator) that Vital Product Data from the iSeries server must be made available to IBM (CUoD Administrator) to fulfill the order.
 - ELECTRONIC PROCESSCollect and Send Information from Server using Electronic Service Agent MANUAL PROCESS ... Print Information from Server and FAX to 507-253-4553
- Step4: Customer retrieves the POD Activation Code from the web or waits for the POD Activation Code to be sent by mail. The POD Activation Code will be posted on the web usually within one business day of receiving the order on the manufacturing floor if the VPD data has already been sent. To retrieve the POD Activation Code follow these steps:
 - 1) Go to the following Web-site.... http://www.ibm.com/eserver/iseries/ondemand/cuod
 - 2) Enter the Machine Type and Serial number of the target server on the web page
 - 3) Print and/or record the POD Activation Code displayed on the web page

(Continued on Next Page)



Permanent Capacity: Step-by-Step Activation Process

Step5: Customer enters the POD Activation Code at the System Console for the target server

1) Start System Service Tools (SST) with the STRSST command or start DST with Function 21

on the control panel (key in manual position)

- 2) Sign on using service tools user profile of System capacity administration
- 3) Select the option to WORK WITH SYSTEM CAPACITY
- 4) Enter POD Activation Code and press Enter
- 5) Press Enter to confirm change and exist the System Capacity service function
- Step6 Assign Activated Processors to a partition ... you must do this step even if your machine is not

configured for LPAR!

- A) Start the Work with system partitions option in DST or SST
- B) Enter Option 3 (Work with partition configuration)
- C) Enter Option 2 (Change partition processing resources) next to the PRIMARY
- D) Enter a value for "New number of processors" (The value should represent TOTAL active processors)

Note: If a configuration error is signaled at the bottom of the screen, it means that the default Primary

partition has been altered (logical partitioning is actively being used) and it is necessary to refer

to your logical partition plan to properly assign the activated processors to the server.

E) Press Enter to confirm the change

Step7 Exist DST or SST

Logical Partitioning (LPAR)

- Stand-by processors, prior to being activated, are not visible within LPAR
- Stand-by processors, once activated, become visible and are initially designated as <u>available</u> processors
- Available processors must be <u>assigned</u> to a partition before the new capacity can be used



Maintenance/Warranty

Processor Failures

Stand-by processors can be used as REPLACEMENTS for failed processors. Starting with V5R1, this capability is offered on iSeries servers to help minimize the impact to server performance caused by a failed processor. By re-IPLing the server after a processor fails, the customer can re-establish required performance levels without waiting for parts to arrive on-site. If a stand-by processor is not currently activated, it will automatically be assigned as a REPLACEMENT processor and the customer can continue processing.

Warranty for Processors

- Warranty for all processors (start-up and stand-by) begin when the server is installed. By having the Warranty/Service start immediately upon installation, the customer is better positioned to receive prompt service for the repair/replacement of any failing parts, helping to ensure the full complement of stand-by processors are available for immediate activation.
- Maintenance agreement charges are based on the number of processors actually activated, maintenance prices will be adjusted for each processor activation ... just like any other hardware feature add.



Software Product Licensing

Model	Processor Feature	SW Tier (Default Int)	SW Tier (Optional Int)
830	2349	P30	P40
830	2351 (Limited Availability)	P30	P40
840	2352	P40	P50
840	2353	P40	P50
840	2354	P40	P50
890	2487	P50	P60
890	2488	P50	P60

- Many partners use the Processor Feature Code value available on the server to set SW licensing fees for software developers software. This value continues to be available for all iSeries servers.
 It is important to understand that this value does not change, no matter how many stand-by processors get activated. The Processor Feature Code value (QPRCFEAT) can be displayed using the command WRKSYSVAL or retrieved using the RTVSYSVAL command.
- Software providers that base their SW licensing fees on the number of processors on a server have historically utilized a "soft" compliance approach. With each processor activation, it remains the customer's responsibility to inform and pay the required SW licensing fees associated with any software resident on the server that has software licensed by the number of processors.

Note: When a POD Activation Feature is ordered via one of the IBM configurators, additional charges for IBM SW licensing is initiated for software products currently installed on the customer's server that are licensed by processor.



Server CPU Utilization

Performance/Capacity Planning Tools

 Stand-by processors are NOT considered "active" within the various system functions that report CPU utilization percentages ... until they get "activated" by entering a POD Activation Code or starting Trial Capacity

DB2 Symmetric Multiprocessing

 Stand-by processors are NOT considered "active" within the various system functions that report CPU utilization percentages.... until they get "activated" by entering a POD Activation Code or starting Trial Capacity

IPL Time

 Stand-by processors are NOT considered "active" within the various system functions that report CPU utilization percentages. ... until they get "activated" by entering a POD Activation Code or starting Trial Capacity



Cancellation of Orders

Once an Activation Code is posted/mailed, the order is considered fulfilled and the downstream billing process will be started. If a customer decides to cancel the order, after a Code is posted/mailed, IBM will dispatch an IBM service representative to the customer location to "invalidate" the posted/mailed Code by performing a maintenance action on the Capacity Card.

- Original Capacity Card is replaced
- Level II is contacted to generate refreshed Code(s) that will reset the server to the "entitled" levels of cpacity
- Original Capacity Card is returned to IBM and the machine is re-IPLed



Movement of Processor Features

iSeries server to iSeries server interchange of processor or interactive features is iSeries system password protected. iSeries server to iSeries server interchange of processor or interactive features outside IBM standard practices and procedures, may void the server warranty or service contracts.

What does it mean?

Any unauthorized (Non IBM upgrades) movement of processor hardware will disable the capability to use stand-by processors.

Any physical removal of processor hardware will make the server itself unusable (All start-up and stand-by processors must be available in the server to IPL)



Two-Steps Required to Convert Processor Features

- A two step process is used to convert Processor Features with stand-by capacity
- The conversion price for Step2 will take into account the price paid for all stand-by processors activated in Step1
 - Step1: <u>All</u> stand-by processors must be activated
 - Step2: Processor Feature to Processor Feature Conversion
 - Server records reflect new Processor Feature
 - Server records don't reflect any POD Activation Features (nothing carried forward)



Model 830-2351 (Limited Availability)

- On April 23, 2001... FC 2351 (Processor Feature), FC 1605 (Activation Feature) and RPQ 847125 (Administration Feature) were announced to a limited set of iSeries Business Partners with an ASP "value-add" designation
- FC 2351 and FC 1605 are available to customers/partners registered* as Application Service Providers (approval of i-Listed RPQ 847125 is required to place an order)

*ASP Registration at http:/www.iseries.ibm.com/developer/education/asp/register.html



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AFP	CODE/400	HTTP Server for AS/400	Net.Commerce	PowerPC	VisualAge for RPG
AIX	DataGuide	IBM	Net.Data	PowerPC AS	WebSphere
AnyNet	DB2	IBM Logo	Netfinity	Print Service Facility	WebSphere Advanced Edition
Application Development	DB2 Extenders	IBM Network Station	NetView	pSeries	WebSphere Commerce Suite
APPN	DB2 UDB for AS/400	Information Warehouse	NUMA-Q	PSF	WebSphere Development Tools for AS/400
AS/400	DB2 Universal	Integrated Language Environment	OfficeVision	S/390	WebSphere Standard Edition
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Photographs shown are of engineering prototypes. Changes may be incorporated in production models





Model 830 Capacity Upgrade on Demand

IBM @server iSeries



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Processor Feature Conversions into Model 830

One Step

- ► 720-2063 (2) to 830-2349 (4/8)
- ► 720-2064 (4) to 830-2349 (4/8)
- ► 730-2065 (1) to 830-2349 (4/8)
- ► 730-2066 (2) to 830-2349 (4/8)
- ► 730-2067 (4) to 830-2349 (4/8)
- ► 730-2068 (8) to 830-2349 (4/8)
- ► 740-2069 (8) to 830-2349 (4/8)
- ► 740-2070 (12) to 830-2349 (4/8)
- ► 820-2396 (1) to 830-2349 (4/8)
- ► 820-2397 (2) to 830-2349 (4/8)
- ► 820-2398 (4) to 830-2349 (4/8)
- ▶ 820-2435 (1) to 830-2349 (4/8)
- ► 820-2436 (1) to 830-2349 (4/8)
- ▶ 820-2437 (2) to 830-2349 (4/8)
- ► 820-2438 (4) to 830-2349 (4/8)
- ► 830-2400 (2) to 830-2349 (4/8)
- ► 830-2402 (4) to 830-2349 (4/8)



Model 830 Performance (Processor CPW and Interactive CPW)

Processor Feature	Processor CPW	Interactive Feature	Interactive CPW
#2349	4200/7350	#1531 (Default)	70
		#1532	120
		#1533	240
		#1534	560
		#1535	1050
		#1536	2000
		#1537	4550
#2351	1200/7350	#1531 (Default)	70
		#1532	120
		#1533	240
		#1534	560
		#1535	1050
		#1536	2000
		#1537	4550



Model 830 Pricing (US Prices)





Total model/processor price (Based on the number of activated processors)

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Model 830 Pricing (Limited Availability FC 2351)

POD Activation Feature FC 1605 = \$41K (US Price)







Model 840 Capacity Upgrade on Demand

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Processor Feature Conversions into Model 840

One Step

► 730-2067 (4)	to	840-2352 (8/12)	or	840-2353 (12/18)		
► 730-2068 (8)	to	840-2352 (8/12)	or	840-2353 (12/18)	or	840-2354 (18/24)
► 740-2069 (8)	to	840-2352 (8/12)	or	840-2353 (12/18)	or	840-2354 (18/24)
► 740-2070 (12)	to	840-2352 (8/12)	or	840-2353 (12/18)	or	840-2354 (18/24)
► 820-2397 (2)	to	840-2352 (8/12)	or	840-2353 (12/18)		
► 820-2437 (2)	to	840-2352 (8/12)	or	840-2353 (12/18)		
► 820-2398 (4)	to	840-2352 (8/12)	or	840-2353 (12/18)	or	840-2354 (18/24)
► 820-2438 (4)	to	840-2352 (8/12)	or	840-2353 (12/18)	or	840-2354 (18/24)
► 830-2400 (2)	to	840-2352 (8/12)	or	840-2353 (12/18)	or	840-2354 (18/24)
► 830-2402 (4)	to	840-2352 (8/12)	or	840-2353 (12/18)	or	840-2354 (18/24)
► 830-2403 (8)	to	840-2352 (8/12)	or	840-2353 (12/18)	or	840-2354 (18/24)
► 840-2418 (12)	to			840-2353 (12/18)	or	840-2354 (18/24)
▶ 840-2420 (24)	to					840-2354 (18/24)

Two Step

1st Step: All stand-by processors must be activated before proceeding with conversion

840-2353 (12/18) or 840-2354 (18/24)

840-2353 (12/18) or 840-2354 (18/24)

840-2354 (18/24)

840-2354 (18/24)

840-2354 (18/24)

• 2nd Step:

<u>erver</u>

- ► 830-2349 (8/8) to 840-2352 (8/12) or 840-2353 (12/18) or 840-2354 (18/24)
- ► 840-2416 (12/12) to
 - ► 840-2417 (18/18) to
 - ► 840-2419 (24/24) to
 - ► 840-2352 (12/12) to
 - ► 840-2353 (18/18) to



Model 840 Performance (Processor CPW and Interactive CPW)

Processor Feature	Processor CPW	Interactive Feature	Interactive CPW
#2352	9000/12000	#1540(Default)	120
		#1541	240
		#1542	560
		#1543	1050
		#1544	2000
		#1545	4550
		#1546	10000
#2353	12000/16500	#1540(Default)	120
		#1541	240
		#1542	560
		#1543	1050
		#1544	2000
		#1545	4550
		#1546	10000
		#1547	16500
#2354	16500/20200	#1540(Default)	120
		#1541	240
		#1542	560
		#1543	1050
		#1544	2000
		#1545	4550
		#1546	10000
		#1547	16500
		#1548	20200



Model 840 Pricing (US Prices)



Total model/processor price (Based on the number of activated processors)

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Model 890 Capacity Upgrade on Demand

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Processor Feature Conversions into Model 890

One Step

- ► 740-2069 (8) to 890-2487 (16/24)
- ► 740-2070 (12) to 890-2487 (16/24)
- ► 830-2402 (4) to 890-2487 (16/24)
- ▶ 830-2403 (8) to 890-2487 (16/24)
- ► 830-2461 (1) to

890-2488 (24/32)

- ► 840-2418 (12) to 890-2487 (16/24)
- ► 840-2420 (24) to 890-2487 (16/24)

Two Step

- 1st Step: All stand-by processors must be activated before proceeding with conversion
- 2nd Step:
 - ► 830-2349 (8/8) to 890-2487 (16/24)
 - ► 840-2416 (12/12) to 890-2487 (16/24)
 - ► 840-2417 (18/18) to 890-2487 (16/24)
 - ► 840-2419 (24/24) to 890-2487 (16/24)
 - ► 840-2352 (12/12) to 890-2487 (16/24)
 - ► 840-2353 (18/18) to 890-2487 (16/24)
 - ▶ 840-2354 (24/24) to 890-2487 (16/24) or

▶ 890-2487 (24/24) to

890-2488 (24/32) 890-2488 (24/32)



Model 890 Performance (Processor CPW and Interactive CPW)

Processor Feature	Processor CPW	Interactive Feature	Interactive CPW
#2487	20000/29300	#1576(Default)	120
		#1577	240
		#1578	560
		#1579	1050
		#1581	2000
		#1583	4550
		#1585	10000
		#1587	16500
		#1588	20200
#2488	29300/37400	#1576 (Default)	120
		#1577	240
		#1578	560
		#1579	1050
		#1581	2000
		#1583	4550
		#1585	10000
		#1587	16500
		#1588	20200
		#1591	37400



Model 890 Pricing (US Prices)



Total model/processor price (Based on the number of activated processors)

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