iSeries
On/Off CoD Planning Guide

Temporary Capacity for Model 825, 870, and 890

February 14, 2003

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Preface

You knew you might need extra processing power to meet the demands of your e-business and you didn't want to impact your current operational commitments to get it ...

IBM offers a fast, non-disruptive method of activating "extra" processor capacity that is built directly into IBM eServer iSeries.

CUoD or On/Off CoD enable you to activate (no IPL and/or database reconfiguration) one or more central processors of a Model 825, 870 and 890 up to the maximum number of available standby processors.

CUoD for permanent capacity
1) Order an activation code to permanently turn on extra capacity

On/Off CoD for temporary capacity
1) Enable your server for the use of temporary capacity
2) Turn on and off capacity as you need it ... it's immediate!
3) Pay for the requested capacity at the end of each quarter

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Purpose of Planning Guide

This guide will explain in detail all the aspects of planning for, purchasing, and managing an **IBM eserver iSeries with On/Off Capacity on Demand**. On/Off CoD as defined in this document , is for the Model 825, 870 and 890 announced January 20, 2003 and made generally available February 28, 2003. The latest set of V5R2 PTFs **(CUM package dated 3/23/2003)** is required.

This guide is not a capacity planning document ... it will however point out key considerations when using capacity planning tools for a Model 825, 870, and 890.

Where to Get Help

The following information will help you quickly find the assistance you need.

Problem with a Capacity Card (part failure)

=> Call your service provider

=> IBM service personnel can contact Level II support, in Rochester, to reset the appropriate cap acity after the card has been replaced (refreshed Activation/Enablement Code**s)**

Problem with understanding technical details of On/Off Capacity Upgrade on Demand

=> Contact TCOD Administrator at tcodadmin@us.ibm.com

=> Review appropriate sections in this Planning Guide

=> Work with Level II and/or Techline support in your geography

Problem with selling/marketing On/Off Capacity Upgrade on Demand

=> Review appropriate sections in this Planning Guide and other available materials at the following website: http://www.ibm.com/eserver/iseries/hardware/ondemand

=> Work with account teams and/or marketing specialists in your Geography

Planning Guide Feedback

You may directly contact the author of this Planning Guide if you have information that may be of assistance in updating the guide or making it a more useful Planning Guide.

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iSeries Capacity Planning

Capacity planning is a 'business as usual' value-add function of IBM's sales team. Any special considerations specific to iSeries On/Off Capacity on Demand will be pointed out in this section. There is a comprehensive set of tools, resources and offerings available to aid IBMers, customers, and partners with capacity planning assistance.

When doing capacity planning for models offering On/Off CoD, one must plan ahead for any potential disruptive actions that would inhibit the full utilization of temporarily activated processor capacity. Some actions you may want to take prior to ever activating any processors are:

- Perform any I/O conditioning (e.g., new cages, or other I/O infrastructure)
- Perform memory upgrades
- Prepare LPAR partitions

Planning Ahead

By planning ahead, customers can accommodate the growth of existing workloads as well as handle new workloads without requiring a server outage.

Simply activating standby processors may not provide you with the full potential of capacity improvements you require. Other components of a server affect performance and overall throughput of workloads. By planning ahead and taking into account the complete server configuration, a customer can ensure they get the full benefit of processor activations.

iSeries Benchmark Center

IBM facilitates bench marking of customer and solution provider application environments. For more information, see their website at http://www.as400.ibm.com/developer/cbc.

iSeries Solutions Center -- Capacity Planning Services

Information regarding an IBM consulting service which can assist customers with their capacity planning needs can be found at the following website: http://www-1.ibm.com/services/its/us/as400solutionctr.html

On/Off Capacity on Demand (On/Off CoD)

CUoD was first introduced for the iSeries in the fall of 2002. At that time, CUoD was synonymous with permanent processor capacity. CUoD provided iSeries customers who purchased an iSeries model with standby capacity (un-activated at the time of purchase). This standby capacity, could be permanently activated for Planned Growth by purchasing a processor activation feature and entering the generated key at the server whenever the capacity was needed.

Now, we have introduced something entirely new ... On/Off CoD. This offering provides temporary capacity for a customer's business peaks!

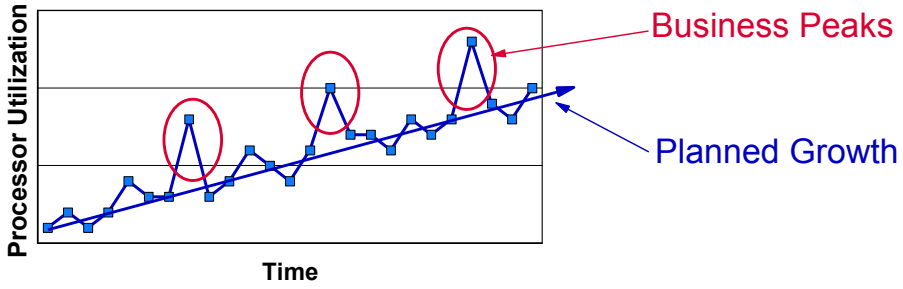
What's new in 2003

- CUoD and On/Off CoD is available on iSeries Model 825, 870, 890 (new processor features)
- On/Off CoD ... ability to temporarily activate processor capacity
- Low cost processor activations for Linux
- Simpler fulfillment process for permanent activations (no field VPD required)

With the introduction of the 2003 product line, iSeries once again will be among the leaders in this space by complementing the exiting offering called CUoD with a brand new capability called On/Off CoD. On/Off CoD, means a customer, can turn processor capacity on/off to satisfy business peaks. You simply request a number of processors be temporarily made available for a specific number of days ... you will be billed for whatever you requested at the end of each calendar quarter. Like renting, this flexibility is more expensive in the long run than buying, the approximate break-even point is 45 Processor Days (if you request/pay for 45 Processor Days you will have paid approximately the same price you would have paid for permanently activating a processor).

An added benefit of the new function called On/Off CoD, are Bonus Processor Days. There is nothing else like it in the market today. With the initial order and fulfillment of a TCOD Enablement Feature (no charge feature) comes fourteen bonus days of temporary capacity ... you will not be billed for the first 14 days of temporary capacity you request from the server.

CUoD and On/Off CoD



- CUoD (Capacity Upgrade on Demand) for permanent capacity
  - Planned Growth ... pay when purchased, no premium
- On/Off CoD (Capacity on Demand) for temporary capacity
  - Business Peaks ... pay after use, break even is ~45 days
  - Special Purpose ... bonus and complementary days available

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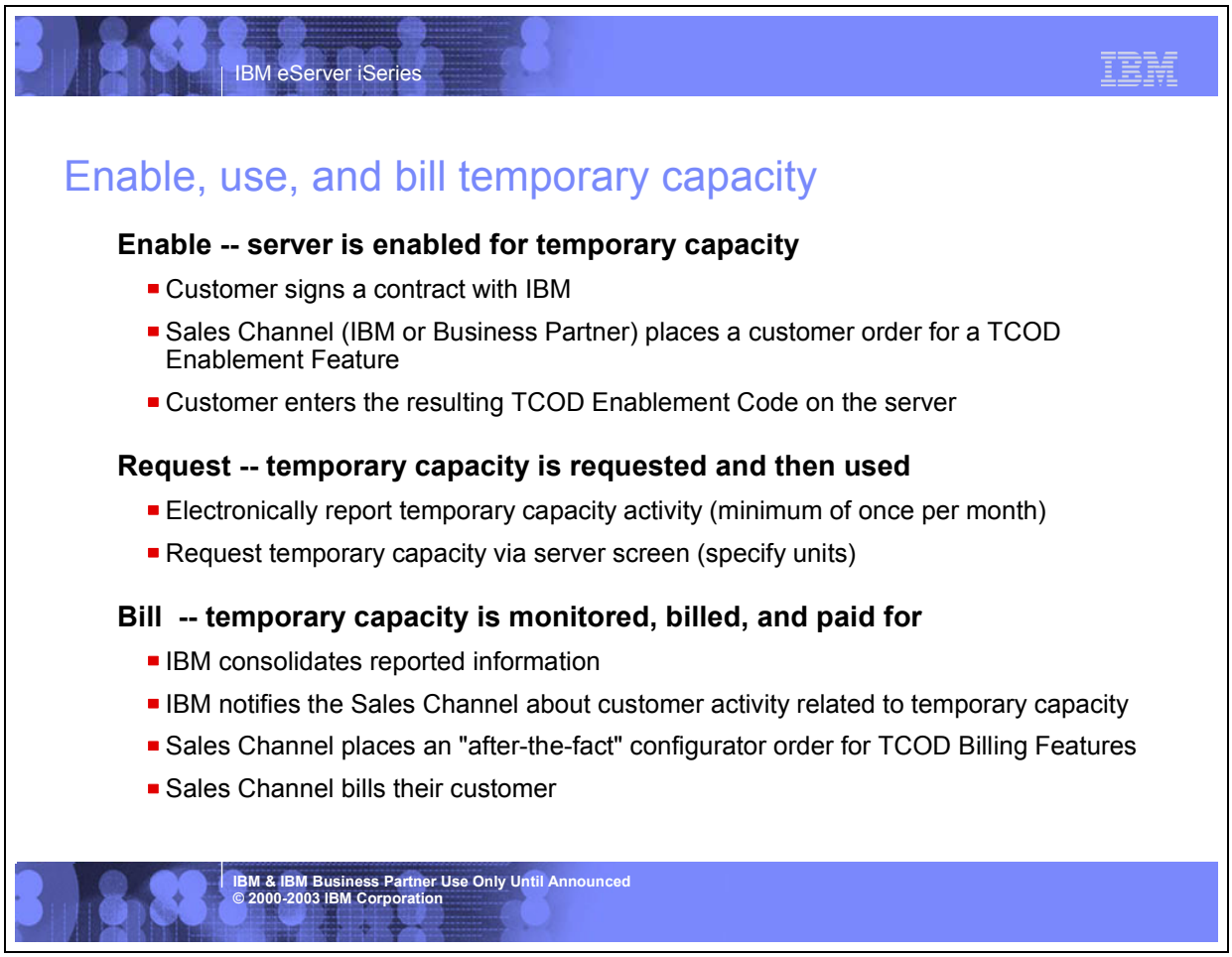
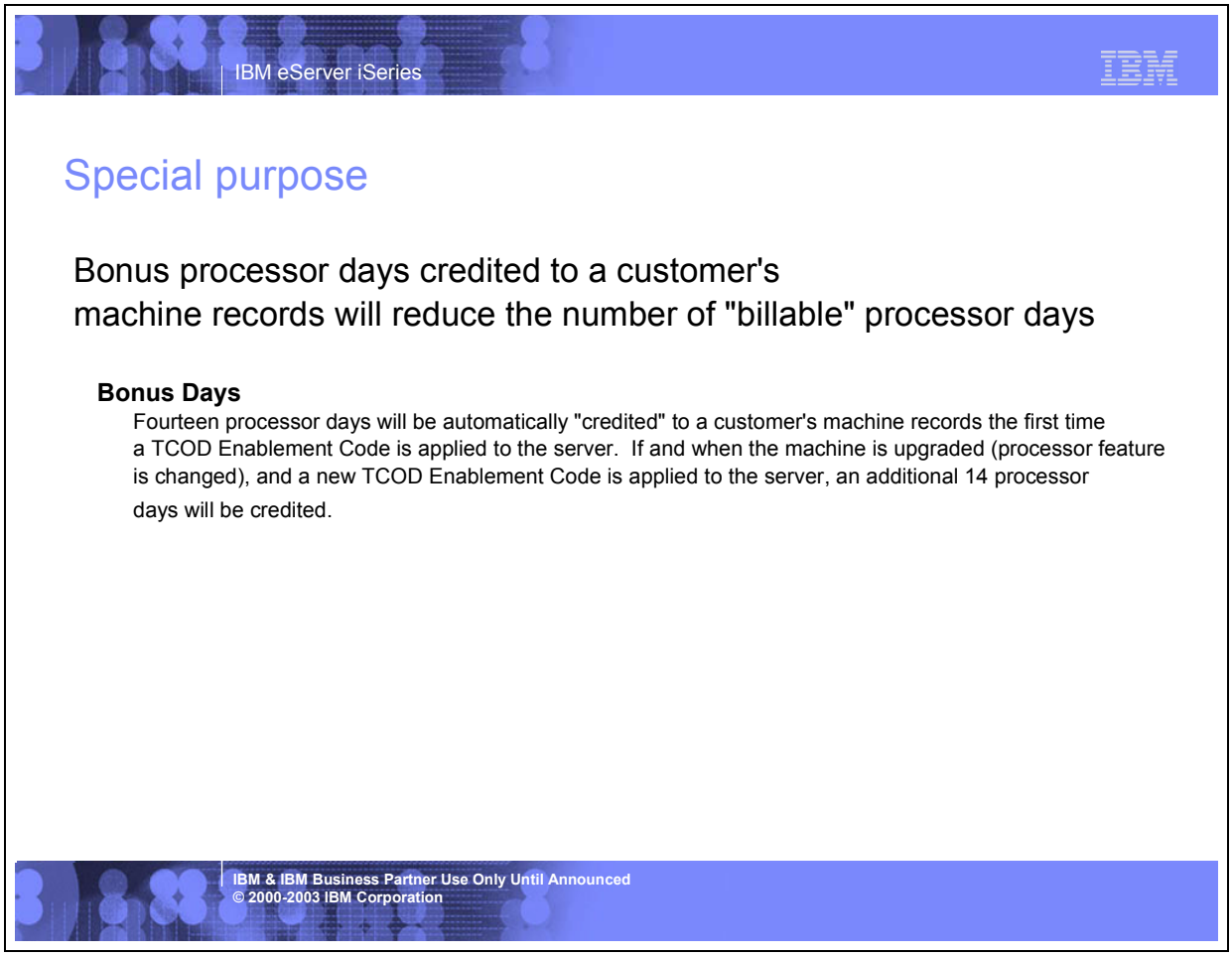
On/Off CoD (aka. temporary capacity on demand)

Temporary capacity is available on the new iSeries Model 825, 870, and 890:

1) It can be turned on/off to match a customer's peak periods
2) It allows you to request a variable number of days as well as a variable number of processors
3) It is "immediate" ... no IPL, no re-configuraing, no ordering, no waiting



Bonus Processor Days



Pricing

Temporary capacity pricing

Breakeven is approximatly 45 processor days ... IBM adds together the price of a permanent processor activation with the price of an OS/400 processor license and then divides the total by 45 ... this determines the price for a single processor day of temporary capacity.

Model	Processor Feature	Startup Processors	Standby Processors	TCOD Enablement Feature	TCOD Billing Feature	US Prices
825	2473	3	3	1773	1782 or 1783	$1,100
870	2486	8	8	1776	1785 or 1786	$1,200
890	2497	16	8	1777	1788 or 1789	$1,300
890	2498	24	8	1778	1791 or 1792	$1,300

* TCOD Enablement Features are no charge MES features
* US Prices represent IBM's list price for a TCOD Billing Feature (one Processor Day of temporary capacity)
* Additional operating system licensing may be required if using an OS that is licensed by processor (NOT required for OS/400)
* Additional software licensing may be required if using SW that is licensed by processor

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Temporary Capacity Enablement

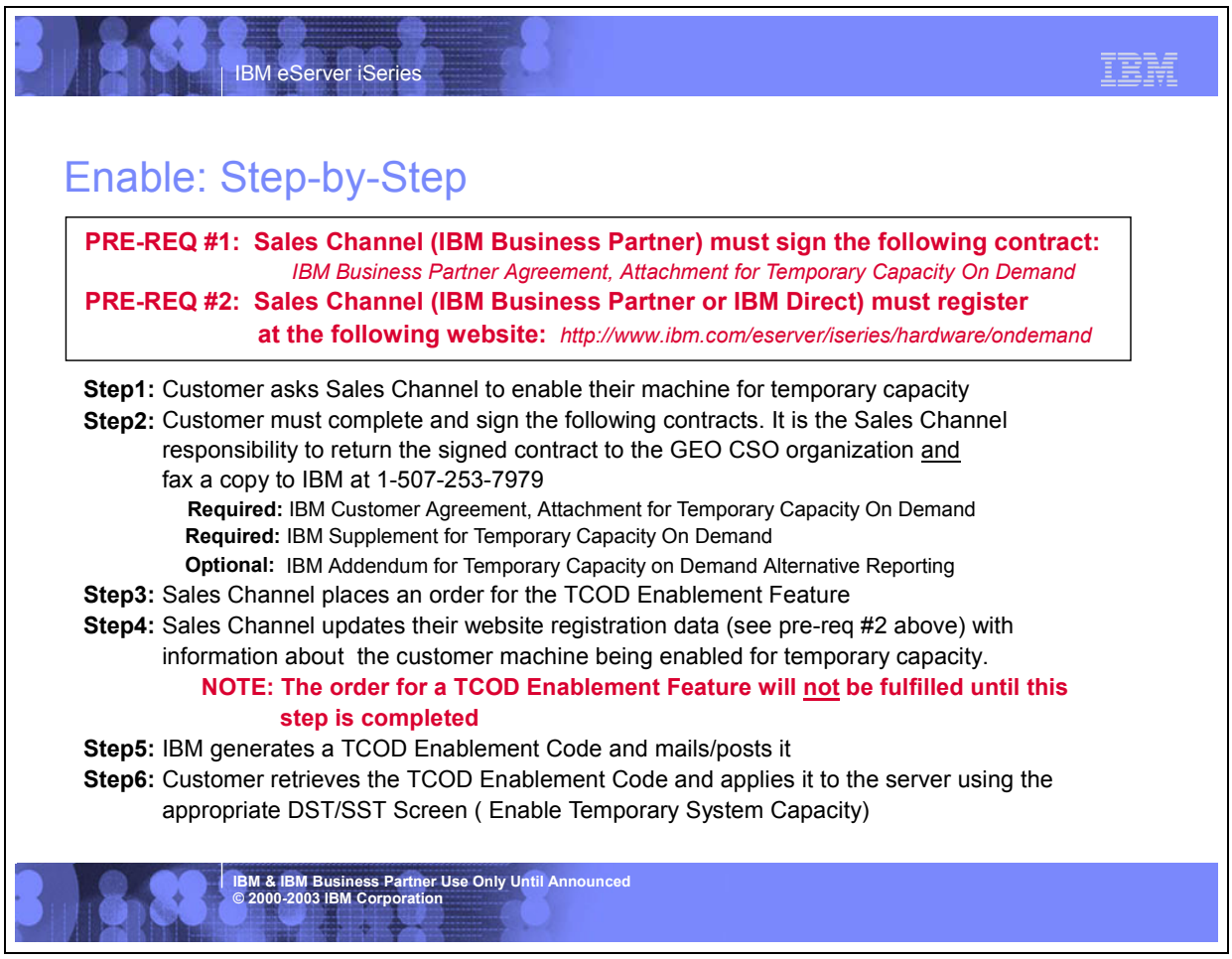
Prior to requesting temporary capacity on your server, you must "enable" your server. To do this, order a TCOD Enablement Feature (MES only feature) and sign the required customer contract.

Model	Processor Feature	Enablement Feature
890	2498	1778
890	2497	1777
870	2486	1776
825	2473	1773

Placing an order for a TCOD Enablement Feature will result in a TCOD Enablement Code being generated and mailed to you, as well as being posted on the Web for you to retrieve and enter on your server.

A TCOD Enablement Code "enables" the server to a limit of Processor Days (up to 192) that can be requested as temporary capacity. This means, you can make requests for temporary capacity over the life of the machine as long you don't exceed this value. When the limit is reached, a new TCOD Enablement Feature must be ordered and a new TCOD Enablement Code entered. Every time a new TCOD Enablement Code is entered it will reset the limit of Processor Days that can be requested as temporary capacity to 192 (TCOD Enablement Codes are not additive)

Enable: Step-by-Step



Guidelines for Ordering a TCOD Enablement Feature

ibm.com/eserver/iseries

Guidelines for Temporary Capacity Enablement

New Box Orders

the order for the new server **cannot** include a TCOD Enablement Feature because a TCOD Enablement Feature is MES only

Package-to-Package Conversion, Processor-to-Processor Conversion, or Model-to-Model Upgrades

=> All records of TCOD Enablement Features ordered prior to the conversion/upgrade are removed from the machine records

(will need to order a new TCOD Enablement Feature for new hardware)

=> You can include a TCOD Enablement Feature on these types of orders (see warning) and have your TCOD Enablement Code mailed to you as well as posted on the web, so it is ready to enter on your server as part of the conversion/upgrade.

Warning: Delays can occur in the scheduling/fulfillment of this type of order because a TCOD Contract must first be signed

Enablement Feature Orders

=> For orders that have TCOD Enablement Features but don't contain a Processor or Package Feature .. if the Machine Serial# and/or the Capacity Card Serial# have not been altered outside of the IBM manufacturing or field maintenance process, then a TCOD Enablement Code will be generated and mailed/posted without requiring CUoD Data (VPD) to be collected from the server and sent to IBM

eserver

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How to retrieve a TCOD Enablement Code from the Web

Customer retrieves the TCOD Enablement Code from the web or waits for the TCOD Enablement Code to be sent by mail. The TCOD Enablement Code will be posted on the web usually within one business day of receiving the order on the manufacturing floor. To retrieve the TCOD Enablement Code follow these steps:

1) Go to the following Web-site: http: //www.ibm.com/eserver/iseries/hardware/ondemand
2) Enter the Machine Type and Serial number of the target server on the web page
3) Print and/or record the TCOD Enablement Code displayed on the web page

How to enter a TCOD Enablement Code on the Server

Customer enters the TCOD Enablement Code at the System Console for the target server:

1) Start System Service Tools (SST) with the STRSST command or start
   Dedicated Service Tools (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
3) Select the option to ENABLE TEMPORARY SYSTEM CAPACITY
4) Enter TCOD Enablement Code and press Enter
5) Press Enter to confirm change and exit the System Capacity service function

NOTE: If the server is in bypass mode for the System Password, DST option 12 may not be available (no access to the DST screens associated with the CUoD functionality). If this is the case, you should obtain a valid System Password by contacting you IBM business partner or IBM Sales rep.

After entering a TCOD Enablement Code, the server must be run for 15 minutes to insure that the TCOD Enablement Activation Code is persistently stored (remembered) within the server. If you enter a TCOD Enablement Code and shut down the server before it has run for 15 minutes, on your next IPL, the TCOD Enablement Code **may be forgotten by the sever and have to be re-entered**

Temporary Capacity Request

When you decide you actually need to use temporary capacity ... you simply go to the temporary capacity screen on the server and specify how many of the standby (currently not activated) processors you would like activated and for how many days you would like them activated.

You will be billed for the processor days you request, so it is important to assign the processors to a partition as soon as they are activated to get the full benefit of the temporary capacity.

At the end of the temporary period (days you requested), you must make the temporarily activated processors "available" (LPAR state) to be re-claimed by the server, or you will be billed (per TCOD contract you signed) for any Un-Returned processor days.

Request: Step-by Step

What is a Processor Day ?

Temporary capacity is activated, measured, and billed in units called "Processor Days" ...

Requested Processor Days: number of processors multiplied by the number of days specified on a request for temporary capacity

Un-Returned Processor Days: number of processors multiplied by the number of days that remain available for use beyond the expiration of the request for temporary capacity

How is a Processor Day counted?

Scenario-1: When a request for temporary capacity is made (once the confirmation screen is pressed), a request is considered "started". Once the request is started, at the beginning of each day (24 hour period) a processor is available for use, the server will record one Requested Processor Day.

Scenario-2: A request for temporary capacity can be stopped at any time, when the request is stopped, the server recorded information will be adjusted to reflect the appropriate number of Requested Processor Days (number of processors multiplied times the number of days that the temporary capacity was actually available for use). If a request for temporary capacity is stopped anytime before a full (24 hour period) day has expired ... the server will have recorded a Requested Processor Day for each processor that was specified on the request and made available for use per the previous paragraph. (Note: Each time a request is started for a processor, a Requested Processor Day is recorded .. if the request is stopped and a new request is then started within the same 24 hour period, the result will be the recording of an additional Processor Day).

Scenario-3: If processors remain available for use beyond the number of days specified on a request for temporary capacity, the server will record Un-Returned Processor Days. One Un-Returned Processor Day will be recorded for each processor that is still available for use (customer has not removed the processors from the assigned partitions and made them available to be re-claimed by the server) at the expiration of the request . **An additional Un-Returned Processor Day will be recorded for each processor that is still available for use at the beginning of each subsequent 24 hour period.** (Note: Multiple warning messages will be provided on the server alerting the customer to the pending expiration of a request for temporary capacity)

Start a Request for Processor Days

To request an amount of temporary capacity, simply follow these steps:

1) Start System Service Tools (SST) with the STRSST command or start
   Dedicated Service Tools (DST) with F21 on the control panel
2) Sign on using service tools user profile of System capacity - administration or
   System capacity - operator
3) Select the option to WORK WITH SYSTEM CAPACITY
4) Select the option to WORK WITH TEMPORARY CAPACITY
5) Enter a number of processors and a number of days ... then press ENTER
6) Press enter on the confirm screen (text is shown to re-affirm the customer's understanding of the
   contract he/she signed prior to the enablement of this specific server for temporary capacity)

****

7) Assign the Activated Processors to a partition ... **you must do these steps 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) ... press Enter
      Note: *If a configuration error is signaled at the bottom of the screen, refer to LPAR trouble shooting article at* http://publib.boulder.ibm.com/iseries/v5r2/ic2924/info/rzaj8/rzaj8overview.htm
   E) Press Enter to confirm the change
   F) Exit SST or DST

How to Stop a Request before it Expires

To stop a request before it expires you must perform two steps. If both of these steps are not completed in the proper order, the machine will continue to count a quantity of Un-Returned Processor Days and you will be billed for these days at the end of the quarter.

First: Use LPAR screens to remove the temporarily activated processors from the partitions they were assigned to and make them available to be re-claimed by the server

Second: Use the following steps to actually "stop" your request for temporary capacity (number of processors for a number of days)

1) Start System Service Tools (SST) with the STRSST command or start Dedicated Service Tools (DST) with F21 on the control panel
2) Sign on using service tools user profile of System capacity - administration or System capacity - operator
3) Select the option to WORK WITH SYSTEM CAPACITY
4) Select the option to WORK WITH TEMPORARY SYSTEM CAPACITY (TCOD)
5) Select the option to stop the request and confirm the chan ge

What Happens When a Request Expires?

One of two scenarios can happen ...

Scenario#1: If you make the temporary capacity available to be re-claimed before the request expires ...then the request will expire and be removed from the WORK WITH TEMPORARY SYSTEM CAPACITY Screen.

Scenario#2: If you do not make the temporary capacity available to be re-claimed before the request expires .. then the request will expire and be removed from the WORK WITH TEMPORARY SYSTEM CAPACITY Screen.

WARNING: The server will treat the temporary capacity that is still assigned to partitions as Un-Returned Processor Days (you will be charged for Un-Returned Processor Days at the same rate you would have been charged for Requested Processor Days).

How to Display Temporary Capacity Information?

Information about how many standby processors are activated can be reviewed by using the following steps:

1) Start System Service Tools (SST) with the STRSST command or start
   Dedicated Service Tools (DST) with F21 on the control panel
2) Sign on using service tools user profile of System capacity - administration or
   System capacity - operator
3) Select the option to WORK WITH SYSTEM CAPACITY
4) Select the option to DISPLAY SYSTEM CAPACITY INFORMATION
5) Select the PF Key to DISPLAY TEMPORARY SYSTEM CAPACITY

Temporary Capacity Billing

The contract signed by the customer prior to receiving the enablement code, requires the customer to report billing data, at least once per month (whether there is activity or not). This data is used to determine the proper amount to bill the customer for at the end of each billing period (calendar quarter).

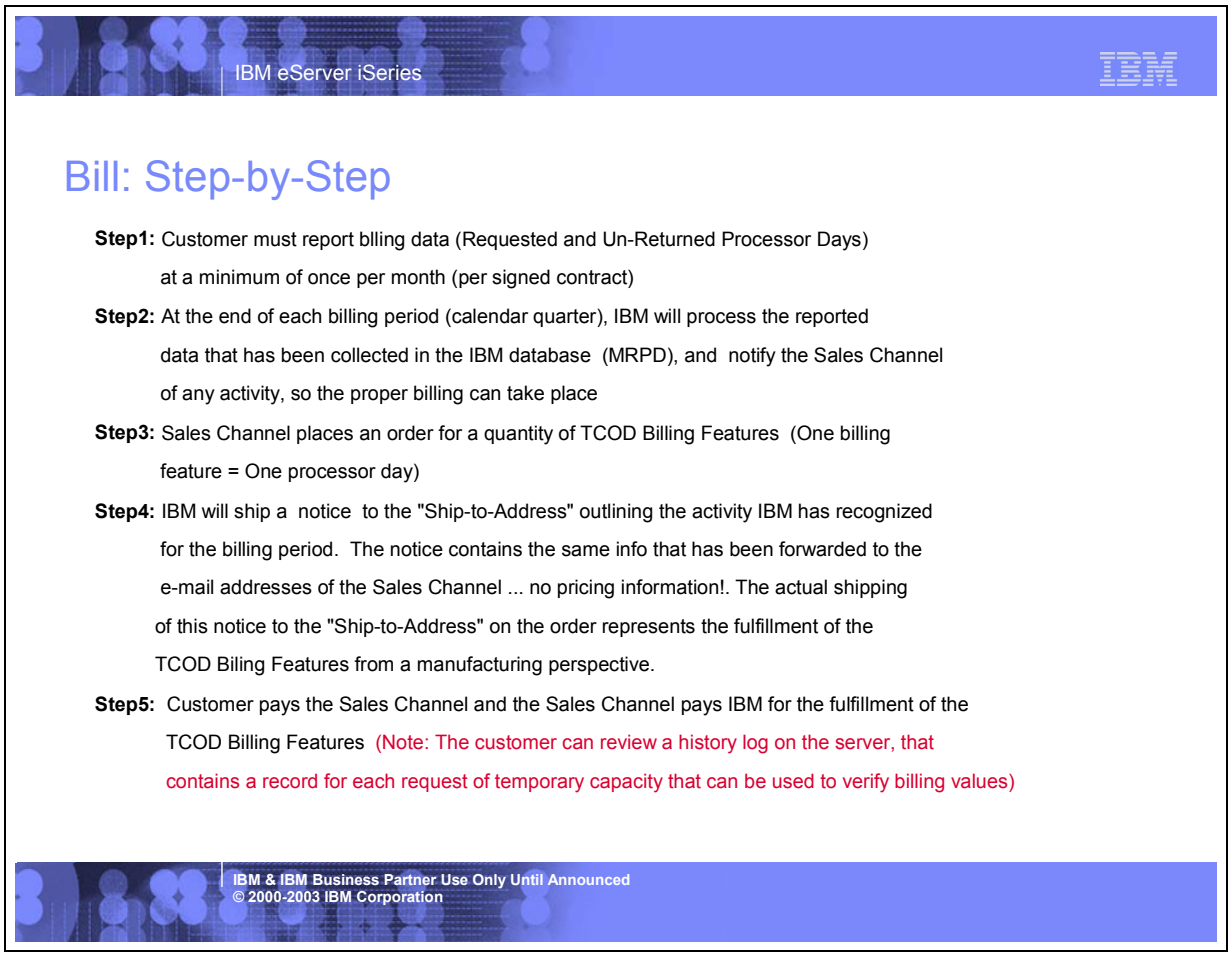
Processor days of credit will be applied against any Requested and/or Un-Returned processor days of temporary capacity. This will happen automatically, until they are used up.

Failure to report billing data during a Billing Quarter for which the machine has been enabled (TCOD Enablement Feature has been ordered and the resulting TCOD Enablement Code has been shipped), will result in estimated bill for 90 Processor Days of temporary capacity .

The Sales Channel will be notified of customer requests for temporary capacity. As a result, the Sales Channel is required to place an order for a quantity of TCOD Billing Features (One Feature = One Processor Day).

Model	Processor Feature	Package Feature	Billing Feature
890	2498	7427	1792
		7426	1791
		7425	na
890	2497	7424	1789
		7423	1788
		7422	na
870	2486	7421	1786
		7420	1785
		7419	na
825	2473	7418	1783
		7417	1782
		7416	na

Bill: Step-by Step



How to Report via Electronic Service Agent

Information about your requests for temporary capacity must be reported to IBM (minimum of once per month per the TCOD Contract). Electronic Service Agent can be used to "electronically" transfer information to IBM on a regularly scheduled basis.

Exercise the steps found in Chapter 2 of the IBM Electronic Service Agent for iSeries Simplified Activation User Guide -- Release V5R2, found at URL:

http://publib.boulder.ibm.com/as400_sd/sdsadoc.html

How to Report via Fax

Information about your requests for temporary capacity must be reported to IBM (minimum of once per month per the TCOD Contract). The data that must be reported can be collected by following the steps outlined below:

1) Start System Service Tools (SST) with the STRSST command or start
   Dedicated Service Tools (DST) with F21 on the control panel
2) Sign on using service tools user profile of System capacity - administration or
   System capacity - operator
3) Select the option to WORK WITH SYSTEM CAPACITY
4) Select the option to DISPLAY SYSTEM CAPACITY INFORMATION
5) Select the option to DISPLAY TEMPORARY SYSTEM CAPACITY
6) Print the screen and fax a copy of the printed screen to the TCOD Administrator at 1-507-253-7979

How to Report via e-Mail

Information about your requests for temporary capacity must be reported to IBM (minimum of once per month per the TCOD Contract). The data that must be reported can be collected by following the steps outlined below:

1) Start System Service Tools (SST) with the STRSST command or start
   Dedicated Service Tools (DST) with F21 on the control panel
2) Sign on using service tools user profile of System capacity - administration or
   System capacity - operator
3) Select the option to WORK WITH SYSTEM CAPACITY
4) Select the option to DISPLAY SYSTEM CAPACITY INFORMATION
5) Select the option to DISPLAY TEMPORARY SYSTEM CAPACITY
6) Copy an electronic image of the screen and e-mail to the TCOD Administrator at tcodadmin@us.ibm.com

How to Review the History Log

If there are concerns with a bill or the customer simply wants to review the history of temporary capacity requests on the server, follow these steps:

1) Start System Service Tools (SST) with the STRSST command or start
   Dedicated Service Tools (DST) with F21 on the control panel
2) Sign on using service tools user profile of System capacity - administration or
   System capacity - operator
3) Select the option to WORK WITH SYSTEM CAPACITY
4) Select the PF key to DISPLAY HISTORY LOG

How to Resolve a Customer Issue with their Bill

Here are the levels of customer bill resolution that should be followed:

Level-1: Partner answers customer's questions
Level-2: Partner and customer jointly review the History Log and validate that the appropriate bill has been generated
Level-3: Partner contacts TOD administrator (e-mail) with explanation of customer issue and a copy of the History Log. TCOD Administrator resolves situation with one of the following:
   A) Partner/Customer are resolved of the Processor Days in question
   B) Partner/Customer are resolved of all Processor Days for this quarter
   C) Partner/Cusotmer are resolve of all Processor Days for this quarter and a TCOD Termination Code is generated and applied to the server (server is no longer enabled for temporary capacity)

Termination

To stop future use of temporary capacity, a TCOD Termination Code must be applied to the server.

Scenario #1: Customer requests a TCOD Termination Code because he/she does not want the server enabled for temporary capacity any longer

Required Steps:

Step1: Customer makes a request to the TCOD Administrator (tcodadmin@us.ibm.com)
Step2: TCOD Administrator uses the TCOD Application to generate a TCOD Termination Code for the customer's server, using "9999" as the Feature/CCIN value
Step3: TCOD Administrator provides the Termination Code to the customer
Step4: The customer enters the TCOD Termination Code on the same screen used to enter a TCOD Enablement Code

Scenario #2: Customer/Partner requests a TCOD Termination Code because they are selling their machine (Note: customer is required to have a TCOD Termination Code applied to the server before being sold to avoid billing for temporary capacity due to a failure to report machine activity during future TCOD Billing Periods)

Required Steps:

Step1: Customer/Partner makes a request to the TCOD Administrator (tcodadmin@us.ibm.com)
Step2: TCOD Administrator uses the TCOD Application to generate a TCOD Termination Code for the customer's server, using "9999" as the Feature/CCIN value
Step3: TCOD Administrator provides the Termination Code to a CE, IBM specialist, or Channel Partner (not the customer) that can make a site visit
Step4: The TCOD Termination Code is entered on the same screen used to enter a TCOD Enablement Code

Scenario #3: Partner requests a TCOD Termination Code because customer is not paying for temporary capacity

Required Steps:

Step1: Partner makes a request to the TCOD Administrator (tcodadmin@us.ibm.com)
Step2: TCOD Administrator uses the TCOD Application to generate a TCOD Termination Code for the customer's server, using "9999" as the Feature/CCIN value
Step3: TCOD Administrator provides the Termination Code to the Partner
Step4: The partner enters the TCOD Termination Code on the same screen used to enter a TCOD Enablement Code

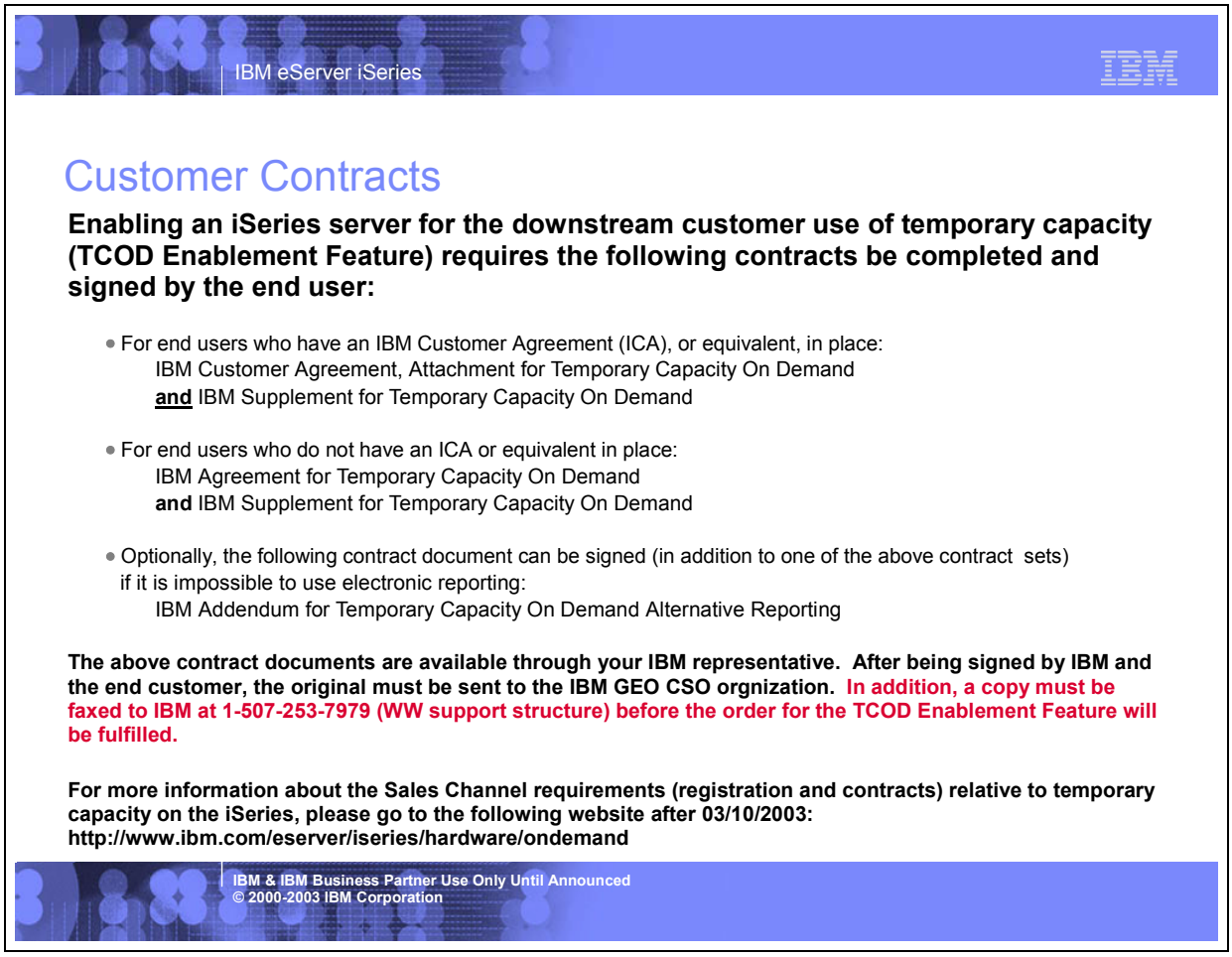
Scenario #4: IBM or Partner requests a TCOD Termination Code because customer is in noncompliance with The TCOD contract that was signed prior to enabling temporary capacity on the server

Required Steps:

Step1: IBM or Partner makes a request to the TCOD Administrator (tcodadmin@us.ibm.com)
Step2: TCOD Administrator uses the TCOD Application to generate a TCOD Termination Code for the customer's server, using "9999" as the Feature/CCIN value
Step3: TCOD Administrator provides the Termination Code to a CE, IBM specialist, or Channel Partner (not the customer) that can make a site visit
Step4: The TCOD Termination Code is entered on the same screen used to enter a TCOD Enablement Code

Customer Contracts/Responsibilities

Customer Contracts



Customer Responsibilities

Customer Responsibilities

Enable:

A) Order a TCOD Enablement Feature from your Sales Channel

1) The TCOD Enablement Feature is good for 192 Processor Days (temporary capacity that can be requested before a new TCOD Enablement Feature would have to be ordered)

2) TCOD Enablement Features are not additive .. if you order a new one and apply the TCOD Enablement Code, the new limit will be set to 192 Processor Days, no matter how many Processor Days were left on the old limit

B) Sign the proper contract

- For end users who have an IBM Customer Agreement (ICA), or equivalent, in place:
  IBM Customer Agreement, Attachment for Temporary Capacity On Demand **and** IBM Supplement for Temporary Capacity On Demand
- For end users who do not have an ICA or equivalent in place:
  IBM Agreement for Temporary Capacity On Demand **and** IBM Supplement for Temporary Capacity On Demand
- Optionally, the following contract document can be signed (in addition to one of the above contract sets) if it is impossible to use electronic reporting:
  IBM Addendum for Temporary Capacity On Demand Alternative Reporting

C) Retrieve and enter the TCOD Enablement Code on the server

Request:

A) Report to IBM a minimum of once per month using Electronic Service Agent (Excpetion: FAX or eMail) the billing data that reflects the quantity of Requested and Un-Returned Processor Days for your server

B) Specify a quantity of processors and a quantity of days to be activated as temporary capacity

C) Return requested processors at the end of the temporary period so they can be re-claimed by the server

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Customer Responsibilities (continued ..)

Bill:

Accept and pay your bill for the number of Requested and Un-Returned Processor Days that occurs during each billing period

1) If you fail to report activity during a billing period (calendar quarter), accept the terms of the contract that explain that you will be charged a flat rate of 90 Processor Days of temporary capacity
2) Understand that you will receive (first time the hardware is enabled) at no charge, 14 Bonus Days that will be applied by IBM to your machine records and subsequently will result in a reduction in the number of actual Processor Days you will be billed for by your Sales Channel
3) Return requested processors at the end of the temporary period, so they can be re-claimed by the server, or accept the terms of the contract that explain you will be charged for Un-Returned Processor Days at the same rate as Requested Processor Days

Terminate:

Request a TCOD Termination Code from tcodadmin@us.ibm.com and allow IBM/partner to enter the code prior to the machine being sold or retruned from lease

1) Understand that it is the customer's responsibility to request a TCOD Termination Code and allow machine access so that it may be applied prior to the machine being sold (Failure to do so will result in on going Processor Day billing equal to 90 Processor Days due to the fact that the original customer is no longer reporting machine activity)

Allow a TCOD Termination Code be entered by IBM/partner if you, the customer, is not paying the bills and/or is found to be in noncompliance with the contracts you have signed

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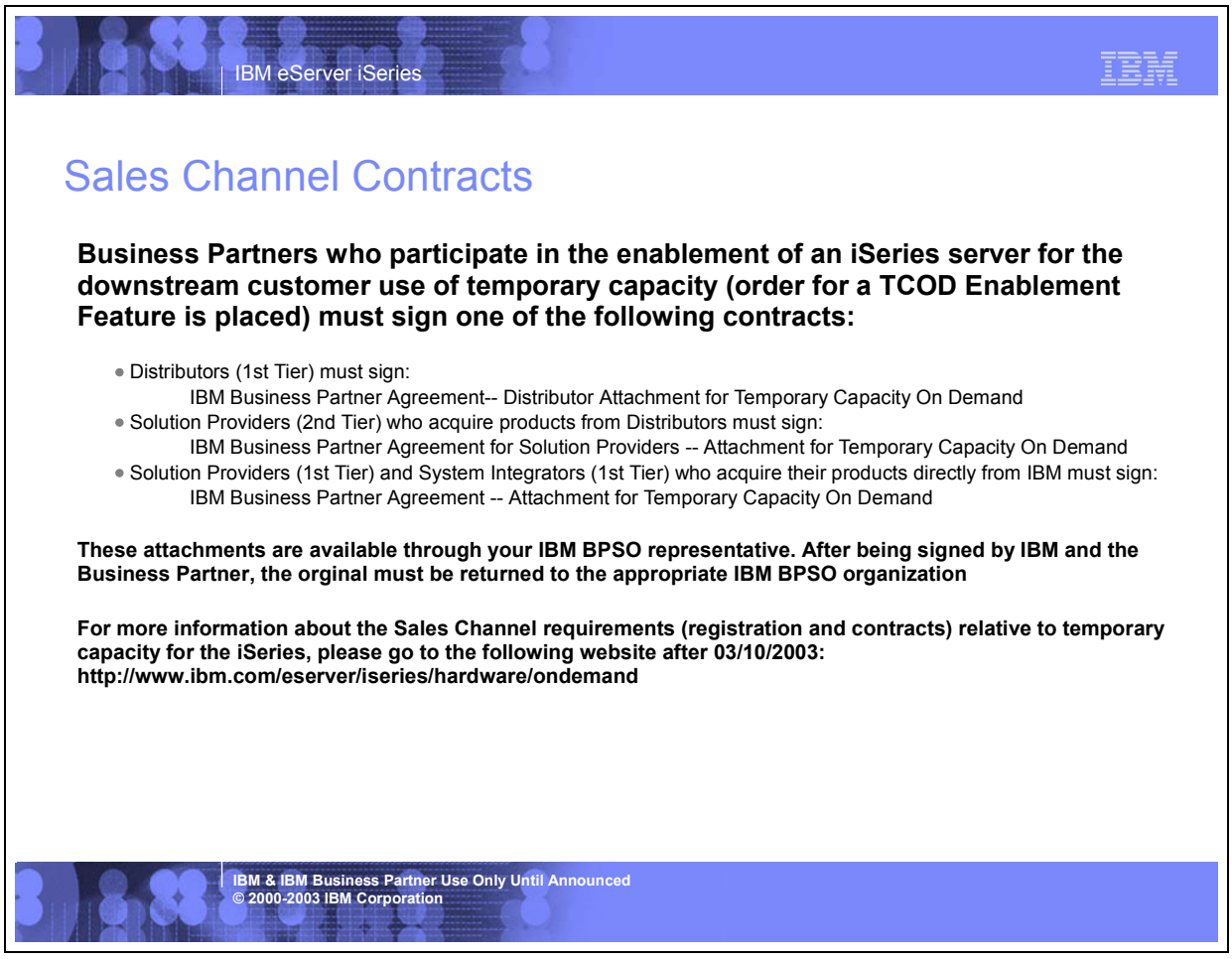
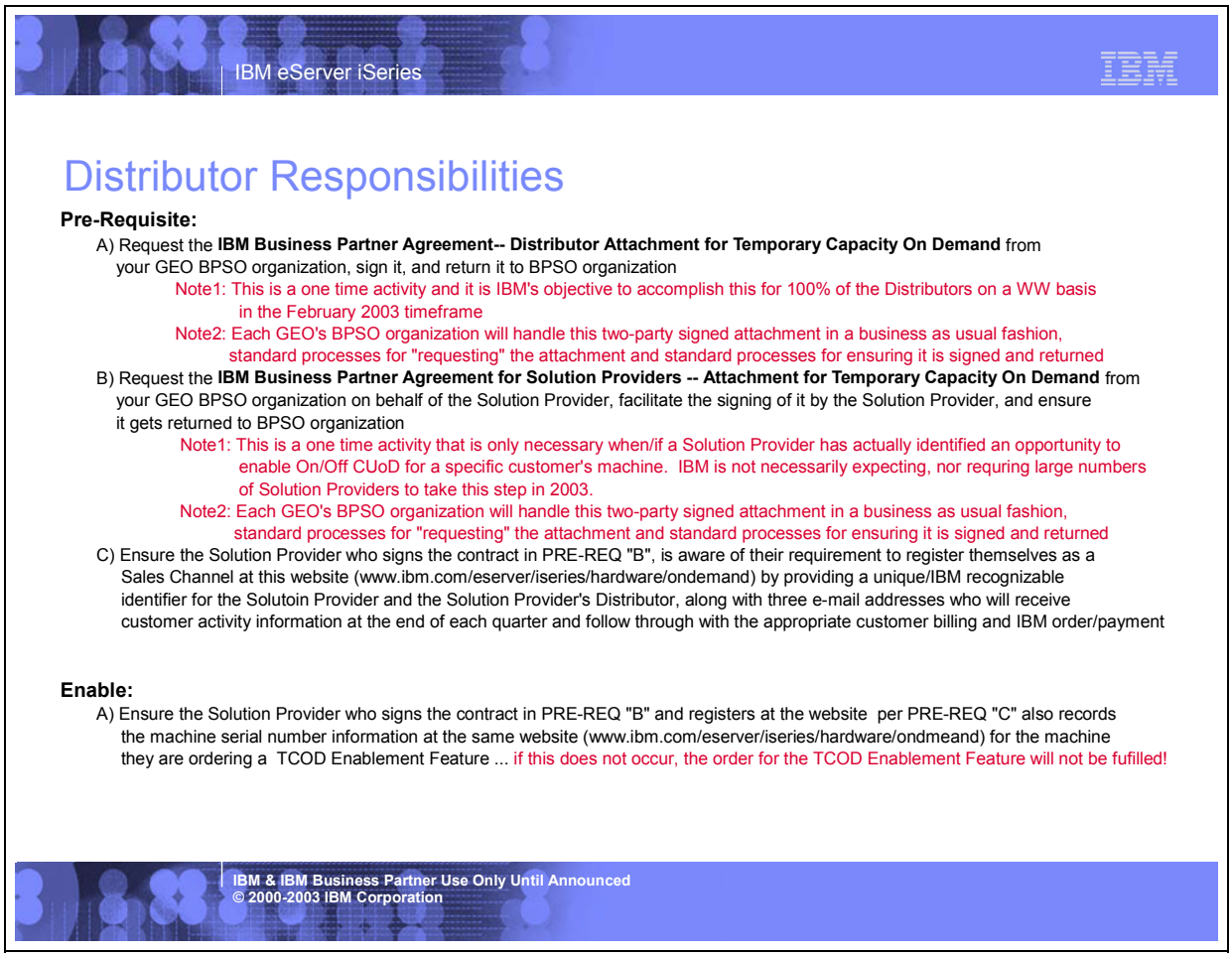
Sales Channel Contracts/R esponsibilities

Sales Channel Contracts



Distributor Responsibilities



Distributor Responsibilities

Bill:

A) Work with the Solution Provider to place an order for a quantity of TCOD Billing Features in IBM's configurator (treat them like any other order for a qty of hardware features against a specific serial number).

B) Work with the Solution Provider to bill the cusotmer for a quantity of TCOD Billing Features (one biling feature per Procesor Day)

Note1: The contract signed between the customer and IBM (two-party contract) prior to the enablement of On/Off CUoD for the customer's machine obligates him/her to pay for the request/use of temporary capacity.

Customer Contract Wording:

You agree that you are liable to IBM for payment for each TCOD Unit (both Requested and Unreturned Units) on your TCOD Machine. This liability is discharged when you order and pay IBM or your designated participating IBM Business Partner for the TCOD Units. The amont due will be at IBM's or your IBM Business Partner's, as applicable, then current prices and payment terms for the TCOD Billing Feature for the applicable TCOD Billing Quarter.

Note2: If it is deemed necessary to have a PO in place to facilitate action "A" and "B", then one could consider an open PO approach initiated at the time the customer signs the contract for temproary capacity or a PO that is put in place following the e-mail notification to the Solution Provider that activity has actually happened within a quarter that requires billing to take place

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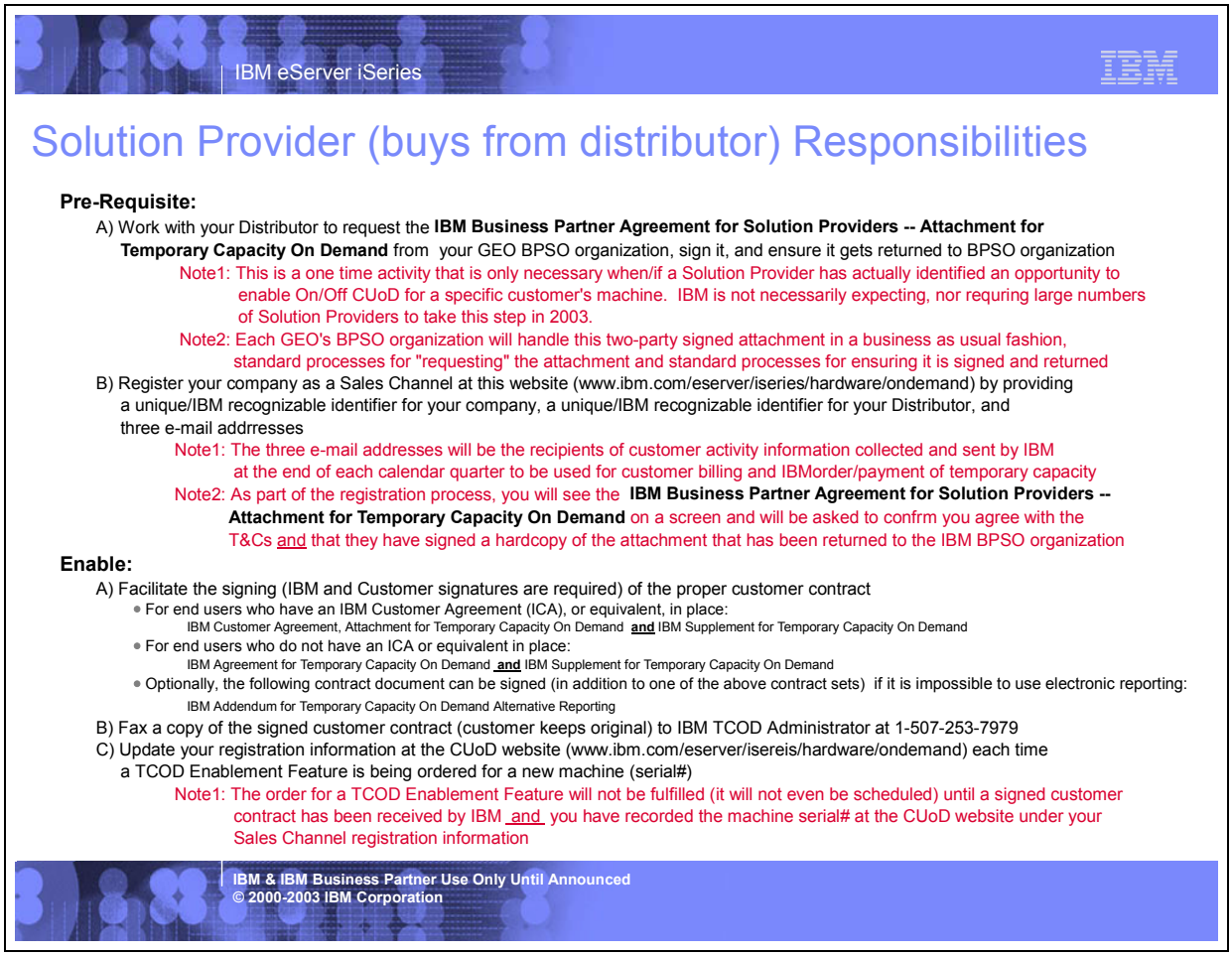
Solution Provider (buy from distributor) Responsibilities



Solution Provider (buys from distributor) Responsibilities

Bill:

A) Receive customer activity data from IBM at the end of each calendar quarter (e-mail based on addresses provided at time of your registration at the CUoD website)

B) Work with your Distributor to place an order for a quantity of TCOD Billing Features in IBM's configurator (treat them like an other order for a qty of hardware features against a specific serial number).

C) Billl the customer for a quantity of TCOD Billing Features (one biling feature per Procesor Day)

Note1: The contract signed between the customer and IBM (two-party contract) prior to the enablement of On/Off CUoD for the customer's machine obligates him/her to pay for the request/use of temporary capacity.

Customer Contract Wording:

You agree that you are liable to IBM for payment for each TCOD Unit (both Requested and Unreturned Units) on your TCOD Machine. This liability is discharged when you order and pay IBM or your designated participating IBM Business Partner for the TCOD Units. The amont due will be at IBM's or your IBM Business Partner's, as applicable, then current prices and payment terms for the TCOD Billing Feature for the applicable TCOD Billing Quarter.

Note2: If it is deemed necessary to have a PO in place to facilitate action "B" and "C", then one could consider an open PO approach initiated at the time the customer signs sontract or a PO that is put in place following the e-mail notification to the Solution Provider that activity has actually happened within a quarter that requires billing to take place

Terminate:

A) Request a TCOD Termination Code (make the request to TCODADMIN@US.IBM.COM) when/if one of thefollowing situations occur:

1) Customer wants it because they don't want the ability to activate temporary capacity anymore
2) Customer wants it because they are obligated by TCOD Contract to terminate temporary capacity before selling the machine or ending a lease
3) Distributor/Solution Provider wants it because they aren't getting paid by customer
4) Distributor/Solution Provider wants it because they have detected customer non-compliance with the TCOD contract

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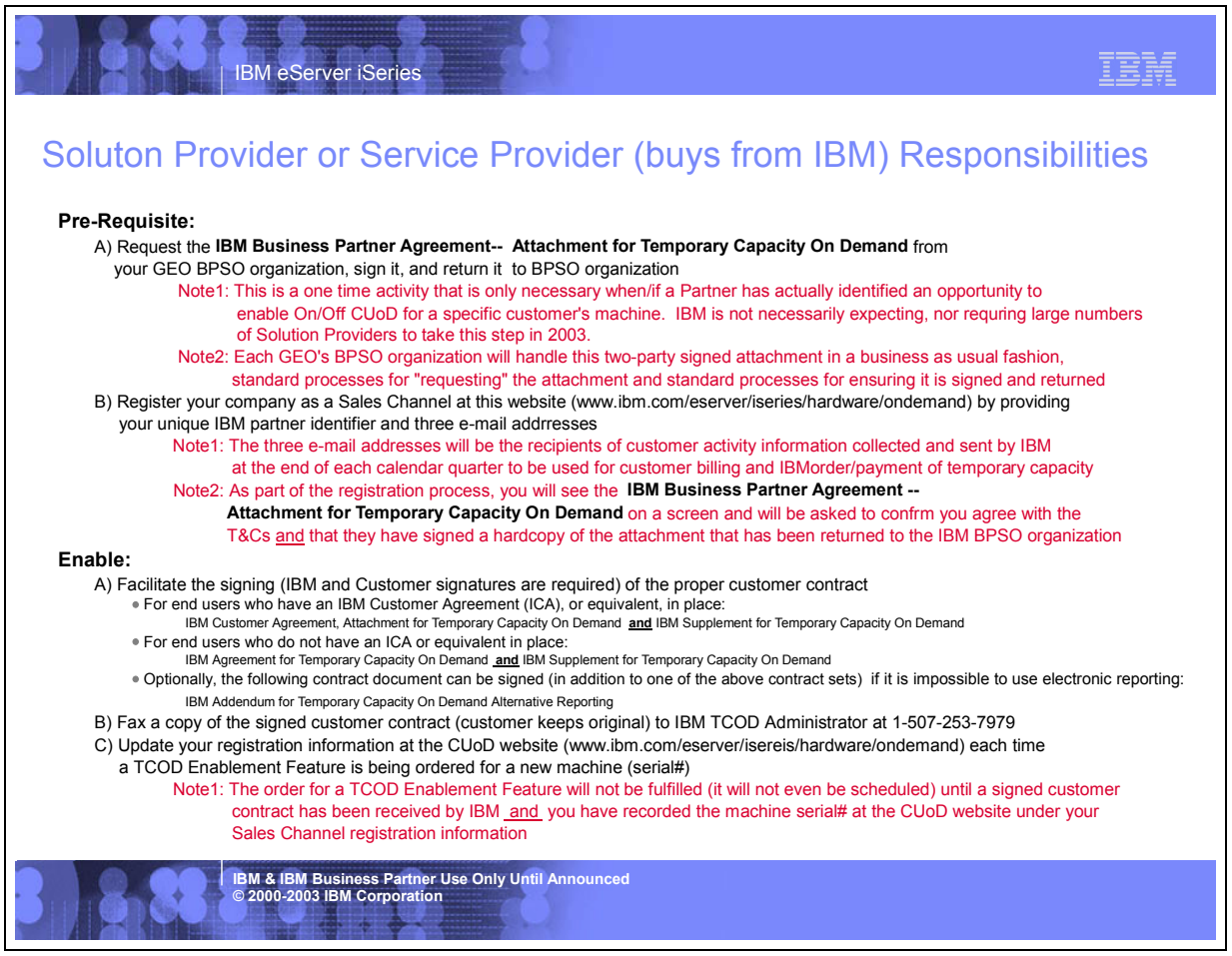
Solution Provider or Service Provider (buys from IBM) Responsibilities



Soluton Provider or Service Provider (buys from IBM) Responsibilities

Bill:

A) Receive a customer activity data from IBM at the end of each calendar quarter (e-mail based on addresses provided at time of your registration at the CUoD website)

B) Place an order for a quantity of TCOD Billing Features in IBM's configurator (treat them like an other order for a qty of hardware features against a specific serial number).

C) Billl the customer for a quantity of TCOD Billing Features (one biling feature per Procesor Day)

Note1: The contract signed between the customer and IBM (two-party contract) prior to the enablement of On/Off CUoD for the customer's machine obligates him/her to pay for the request/use of temporary capacity.

Customer Contract Wording:

You agree that you are liable to IBM for payment for each TCOD Unit (both Requested and Unreturned Units) on your TCOD Machine. This liability is discharged when you order and pay IBM or your designated participating IBM Business Partner for the TCOD Units. The amont due will be at IBM's or your IBM Business Partner's, as applicable, then current prices and payment terms for the TCOD Billing Feature for the applicable TCOD Billing Quarter.

Note2: If it is deemed necessary to have a PO in place to facilitate action "B" and "C", then one could consider an open PO approach initiated at the time the customer signs sontract or a PO that is put in place following the e-mail notification to the IBMpartner that activity has actually happened within a quarter that requires billing to take place

Terminate:

A) Request a TCOD Termination Code (make the request to TCODADMIN@US.IBM.COM) when/if one of thefollowing situations occur:

1) Customer wants it because they don't want the ability to activate temporary capacity anymore
2) Customer wants it because they are obligated by TCOD Contract to terminate temporary capacity before selling the machine or ending a lease
3) Partner wants it because they aren't getting paid by customer
4) Partner wants it because they have detected customer noncompliance with the TCOD contract

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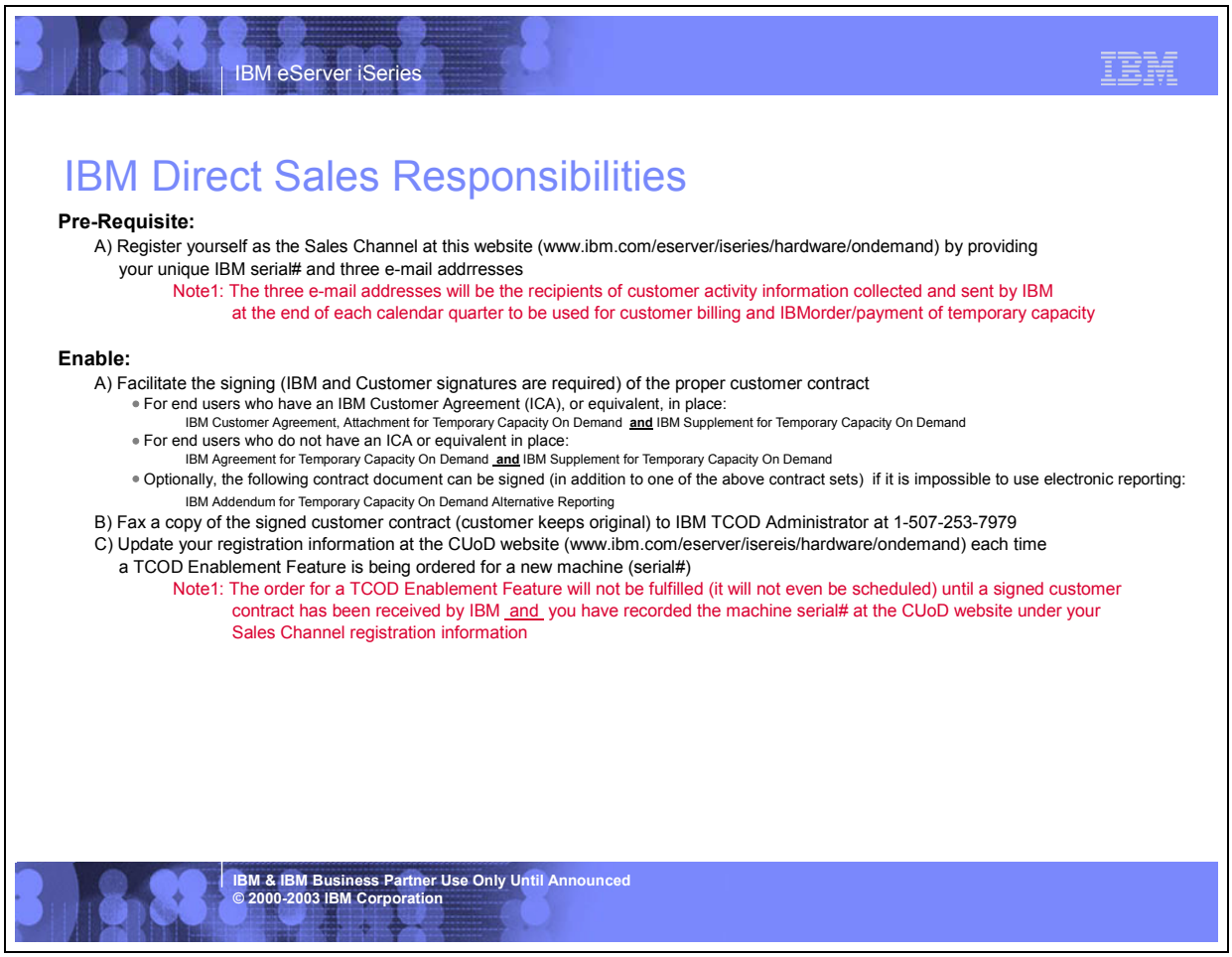
IBM Direct Sales Responsibilities



IBM Direct Sales Responsibilities

Bill:

A) Receive a customer activity data from IBM at the end of each calendar quarter (e-mail to each address provided at time of your Sales Channel registration at the CUoD website)

B) Place an order for a quantity of TCOD Billing Features in IBM's configurator (treat them like any other order for a qty of hardware features against a specific serial number).

C) Billl the customer for a quantity of TCOD Billing Features (one biling feature per Procesor Day)

Note1: The contract signed between the customer and IBM (two-party contract) prior to the enablement of On/Off CUoD for the customer's machine obligates him/her to pay for the request/use of temporary capacity.

Customer Contract Wording:

You agree that you are liable to IBM for payment for each TCOD Unit (both Requested and Unreturned Units) on your TCOD Machine. This liability is discharged when you order and pay IBM or your designated participating IBM Business Partner for the TCOD Units. The amont due will be at IBM's or your IBM Business Partner's, as applicable, then current prices and payment terms for the TCOD Billing Feature for the applicable TCOD Billing Quarter.

Note2: IBM Direct will work with their CSO organizations business-as-usual (just like an order for any hardware feature against a spedcific machine serial#) to ensure an order is placed and the customer is billed. This may require the creation of an open-ended PO as part of the contract arrangement or a unique PO each quarter their is cusotmer activity relaitve to temporary capacity

Terminate:

A) Request a TCOD Termination Code (make the request to TCODADMIN@US.IBM.COM) when/if one of thefollowing situations occur:

1) Customer wants it because they don't want the ability to activate temporary capacity anymore
2) Customer wants it because they are obligated by TCOD Contract to terminate temporary capacity before selling the machine or ending a lease
3) IBM wants it because they aren't getting paid by customer
4) IBM wants it because they have detected customer non-compliance with the customer signed contract

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Converting Hardware Features

Converting Hardware Features

- A two step process is used to convert Model 825, 870, and 890 Processor Features
  - Step1: All standby processors must be activated
    - the possible paths for feature conversions will not be shown in the configurator until enough POD Activation Feaures have been ordered to activate 100% of the standby processors
    - The Processor Feature conversion price in Step2 will take into account the price paid for all standby processors to be activated in Step1
  - Step2: Processor Feature to Processor Feature Conversion
    - What happens to machine records
      - Old POD Activation Features will not be carried forward
      - Old TCOD Enablement Features will not be carried forward
      - Old TCOD Billing Features will be carried forward but no TCOD Data will remain on the server **(customer is requried, per contract, to report any temporary capacity activity prior to the conversion)**

- A one step process is used to convert Model 825, 870, and 890 Package Features
  - Step1: Package Feature to Package Feature Conversion
    - What happens to machine records
      - Old POD Activation Features will be carried forward and a new Activation Code will be generated
      - Old TCOD Enablement Features will not be carried forward
      - Old TCOD Billing Features will be carried forward but no TCOD data will remain on the server **(customer is requried, per contract, to report any temporary capacity activity prior to the conversion)**

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Processor Failures

Standby processors **CAN** be used as REPLACEMENTS for failed processors **(Note: If the customer has activated all the standby processors, then obviously there aren't any to be used as spares).** Starting with V5R1, this capability is offered on iSeries servers with CUoD 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 .

Moving Hardware

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

Any unauthorized (Non IBM conversion/upgrade) movement of processor features (processor parts) and/or package features (capacity card) will disable any previously activated/enabled standby processor capacity.

Any physical addition/removal of processor features (processor parts) and/or package features (capacity card) that results in an invalid configuration will make the server itself unusable (server will not IPL without a valid configuration).

Parts resulting from the fulfillment of an order for a processor conversion are directly tied to a target server (serial number), the parts are not transferable to a server with a different serial number. Installing the parts on a server with a different serial number is not supported by IBM.

Results of Moving iSeries Hardware

- Adding/Removing just the Processor Feature **(Processor Parts)**
  - A) Non-CUoD Models: Removing hardware from machine "A" and putting them into machine "B":
    NOT POSSIBLE TO GET A VALID CONFIGURATION on MACHINE "A" WHEN ADDING ONLY PROCESSOR PARTS (machine will not IPL)
  - B) CUoD Models: Removing Hardware from machine "A" and putting them into machine "B":
    NOT POSSIBLE TO GET A VALID CONFIGURATION on MACHINE "A" WHEN ADDING ONLY PROCESSOR PARTS (machine will notIPL)
- Adding/Removing just the Package Feature **(Capacity Card)** ..... or .....
  Adding/Removing a Processor Feature **(Processor Parts)** with associated Package Feature **(Capacity Card)**
  - A) Non-CUoD Models: Removing hardware from machine "A" and putting it into machine"B":
    - 1) If machine"B" ends up with a **valid** configuration and it's **original** serial number **...**
      then machine "B" will IPL with 100% of the installed processor capacity as well as 100% of the function associated with the Package Feature (Capacity Card)
      NOTE: the machine will IPL in 70 day bypass mode and a new system password will be required (because the hardware changed)
    - 2) If machine "B" ends up with an **invalid** configuration (not something that could be ordered in the iSeries configurator) ... **then machine "B" will not IPL**
  - B) CUoD Models: Removing hardware from machine "A" and putting it into machine "B":
    - 1) If machine"B" ends up with a **valid** configuration and it's **original** serial number **...**
      then machine "B" will IPL with 100% of the start-up processor capacity, 0% of any previously activated standby processor capacity, and 100% of the function associated with the Package Feature (Capacity Card)
      NOTE1: the machine will IPL in 70 day bypass mode and a new system password will be required (because the hardware changed)
      NOTE2: To refresh previously purchased activations, a maintenance action would be required to replace the Capacity Card and recieve a refreshed set of Activation Codes from IBM Level II (Activation Codes will not be provided if the Serial# of the Capacity Card being returned as part of maintenance action does not match the Capacity Card Serial# stored in the IBM machine records reviewed by Level II)
      NOTE3: To purchase new activation/enablement features, a maintenance action would be required (if not done for NOTE 2) to replace the Capacity Card and then an order would have to be placed in the iSeries configurator for theproper features
    - 2) If machine "B" ends up with an **invalid** configuraiton (not something that could be ordered in the iSeries configurator) ... **then machine "B" will not IPL**
- Exchanging an Entire Server
  - A) Non-CUoD Models: **Machine will IPL with 100% of installed processor capacity as well as 100% of the function associated with the Package Feature (CCapacity Card**
  - B) CUoD Models: **Machine will IPL with 100% of startup processor capacity, 100% of any previously activated standby processor capacity, and 100% of the function associated with the Processor Feature (Capacity Card)**
    NOTE: To purchase new activation/enablement features, an order would be placed in theiSeries configurator

Logical Partitions

Starting with V5R1, every server has a primary partition (whether or not a customer is actively using logical partitions). As a result, it is necessary to assign any activated processors to the primary (or a secondary) partition to utilize the processors.

STEP1: Standby processors must be activated to become available to the server

STEP2: Activated processors must be assigned to a partition.

If your server is logically partitioned, refer to your logical partition plan and assign the newly activated processors accordingly.

If your server is not logically partitioned, perform the following steps (Service tools authority is required with operator authority to system partitions).

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, refer to LPAR trouble shooting article at* http://publib.boulder.ibm.com/iseries/v5r2/ic2924/info/rzaj8/rzaj8overview.htm

E) Press Enter to confirm the change

Software Licenses

Activating a processor does not change the software tier for Model 825, 870, or 890.

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 standby processors get permanently or temporarily activated. The Processor Feature Code value (QPRCFEAT) can be displayed using the command WRKSYSVAL or retrieved using the RTVSYSVAL command.

Software providers that charge SW licensing fees (ie. Operating Systems, middleware, applications, etc.) on a per processor basis, have historically utilized a "soft" compliance approach. With each permanent or temporary processor activation, it remains the customer's responsibility to inform and pay the required SW licensing fees associated with software that will be used on the activated processor(s).

Point1: When a permanent processor activation (POD Activation Feature) is ordered, any required charges for IBM software (licensed by processor), is automatically initiated via IBM configurator

Point2: When a temporary processor activation is requested on the server, any required charges for IBM software (licensed by processor), is the sole responsibility of the customer ... with the exception of OS/400 ... there are no additional OS/400 licensing charges associated with a temporary processor activation

The MATMATR Option OXO1F4 can be used to determine what capacity is active at any moment in time.

Permanent: Check the field at offset 0x38, to determine how many processors have been permanently activated (this field represents the quantity of permanently activated processors at any point in time)

Temporary: Check the field at offset 0x47, to determine how many processors have been temporarily activated (this field represents the quantity of temporarily activated processors at any point in time)

Performance Considerations

Standby processors are **NOT** considered within the various system functions that report CPU utilization percentages until they are **activated** and **assigned** to a partition.

CPU UTILIZATION

CPU percent is a calculated metric based on the amount of time the processor was active within an elapsed time. This is normally reported as a percentage where 100% indicates the processor was busy for the entire sample interval. When multiple processors are present, CPU time must be adjusted to be the average usage of all processors so that utilization is always reported as the percentage of total available capacity.

Interactive capability is determined by the package feature purchased. This capability is not impacted by the number of standby processors and does not change when standby processors become active. Interactive utilization reported as a percentage of interactive capability is not affected by the Capacity Upgrade on Demand technology. Within Management Central, this metric is called "CPU Utilization (Interactive Feature)".

Interactive CPU utilization is also reported as a percentage of total system CPU. Within Management Central this metric is called "CPU Utilization (Interactive Jobs)".

TOOLS

There are several tools that can be used to help project which model/processor is appropriate for an initial installation and for projecting when standby processors should be activated. The Workload Estimator is typically used for sizing an initial installation. PATROL is a capacity planner that can often be used for both initial planning and upgrade planning. PM/400 is a trending tool that helps predict growth across workloads. Management Central is a monitoring tool that can be used to identify workload growth. In addition, IBM offers a variety of service options to assist with capacity planning tasks.

Workload Estimator

The Workload Estimator supports models with CUoD. However, only the performance capacity for startup processors will be represented. Capacity for standby processors **is not represented in the tool**. This tool is designed for initial sizing estimates and is not intended to achieve single-processor granularity with its estimates. When the Workload Estimator "recommends" a server as having sufficient capacity to contain a set of workloads, it includes a pull-down list of other supported servers that have at least the same capacity as the recommended server.

The Workload Estimator and associated on-line documentation can be found at:
http://www.ibm.com/eserver/iseries/support/estimator

PM/400

For more detailed information about PM/400e, visit their website at http://www.ibm.com/eserver/iseries/pm400

Management Central

Use of Management Central to aid in Capacity Planning and point out where an activation of standby processors should be considered can be illustrated in the following example:

Consider the model 840-2416 with eight startup processors and four standby processors. The maximum CPU utilization attainable would be 8/12 or approximately 67%. Typical thresholds for system CPU monitoring would be 70% and 90% of total capacity. Sustained usage above 70% is an indicator that additional capacity should be considered. Usage above 90% indicates the system is reaching its capacity maximum.

Applying the above thresholds to the Model 840 with one of these Processor Features (FC 2416, 2417, or 2419) would yield thresholds of 47% and 60% respectively. These values can be seen in the following Management Central Monitor example.

When the initial threshold is reached, assuming the tool has been set up correctly, the line graph goes red indicating that additional processors may be needed. In addition, a message can be triggered and logged when the thresholds are reached, so that an accounting can be done over time of how often the thresholds are crossed. If it reaches the final threshold value often, an upgrade should definitely be considered.

License, Warranty, Maintenance

LICENSE

BUILT-IN-CAPACITY

A machine may include computing resources or capabilities that are to remain inactive, or whose use is restricted, until the right to access and use the resources or capabilities is purchased (Built-in-Capacity). Examples of such computing resources and capabilities include but are not limited to processors, memory, storage, processing capacity identified as interactive processing capacity, and/or workload specific resources or capabilities (such as limitations on the use for a specific operating system, programming language or application). You are licensed to use the Program only to the extent of authorizations you have acquired for access to and use of Built-in-Capacity. You agree that if your use of Built-in-Capacity exceeds the authorizations you have acquired, you will be liable to IBM for the full price of permanent, unrestricted use of the Built-in-Capacity at IBM's current list price.

BUILT-IN-CAPACITY RESTRICTIONS

Built-in-Capacity is protected by certain technological measures. As a condition for your license to the Program under the Agreement, you may not circumvent such technological measures, or use a third party or third party product to do so, or otherwise access or use unauthorized Built-in-Capacity. In the event IBM determines that changes are necessary to the technological measures designed to limit access or use of Built-in-Capacity to that which has been purchased or otherwise authorized, IBM may provide you with changes to such technological measures. As a condition for your license to the Program hereunder, you agree, at IBM's option, to apply or allow IBM to apply such changes.

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.

WARRANTY

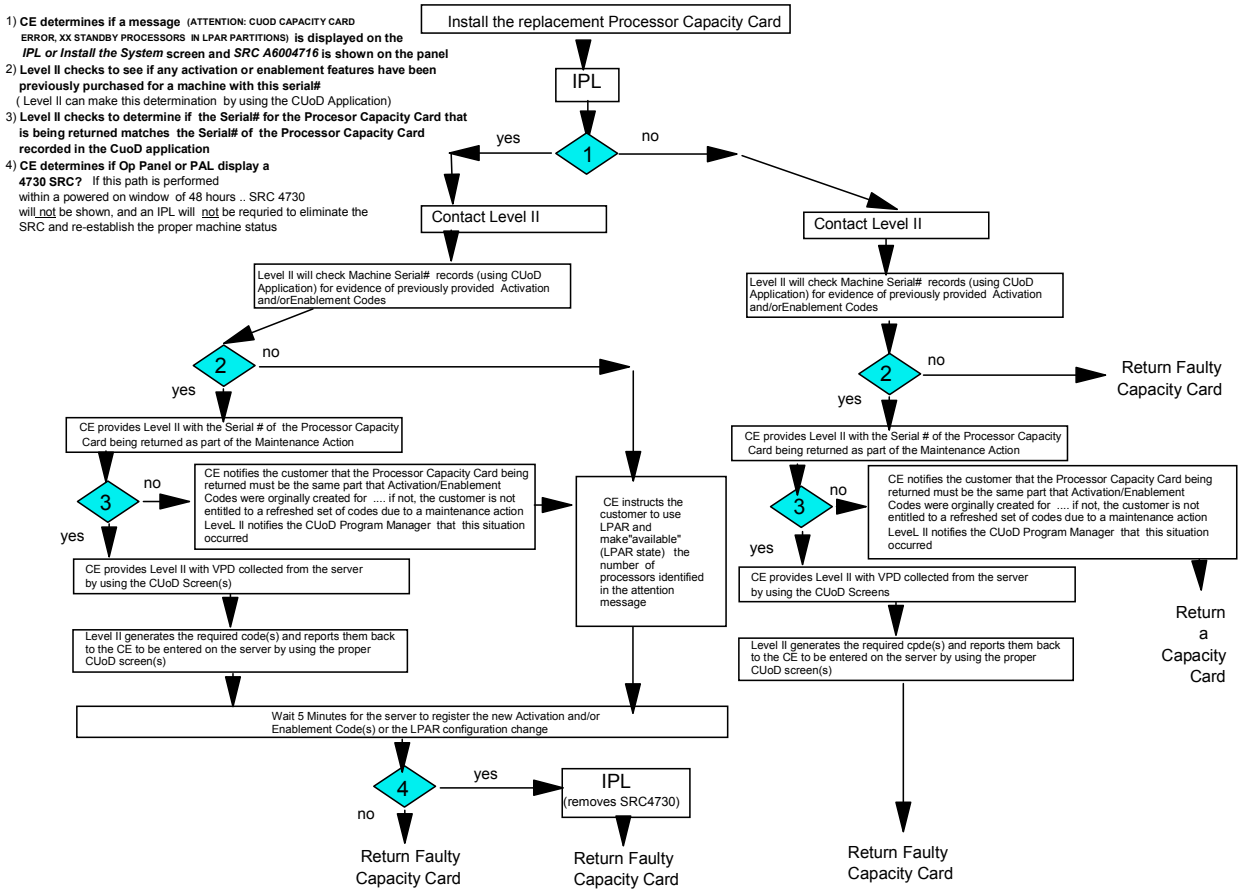
Warranty for all processors (start-up and stand-by) begin when the server is installed. By having the Warranty/Service start immediately upon installation, the customer is better positioned to receive prompt service for the repair/replacement of any failing parts, ensuring the full complement of stand-by processors are available for immediate activation.

MAINTENANCE

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. (Note: temporary activations do not affect maintenance pricing)

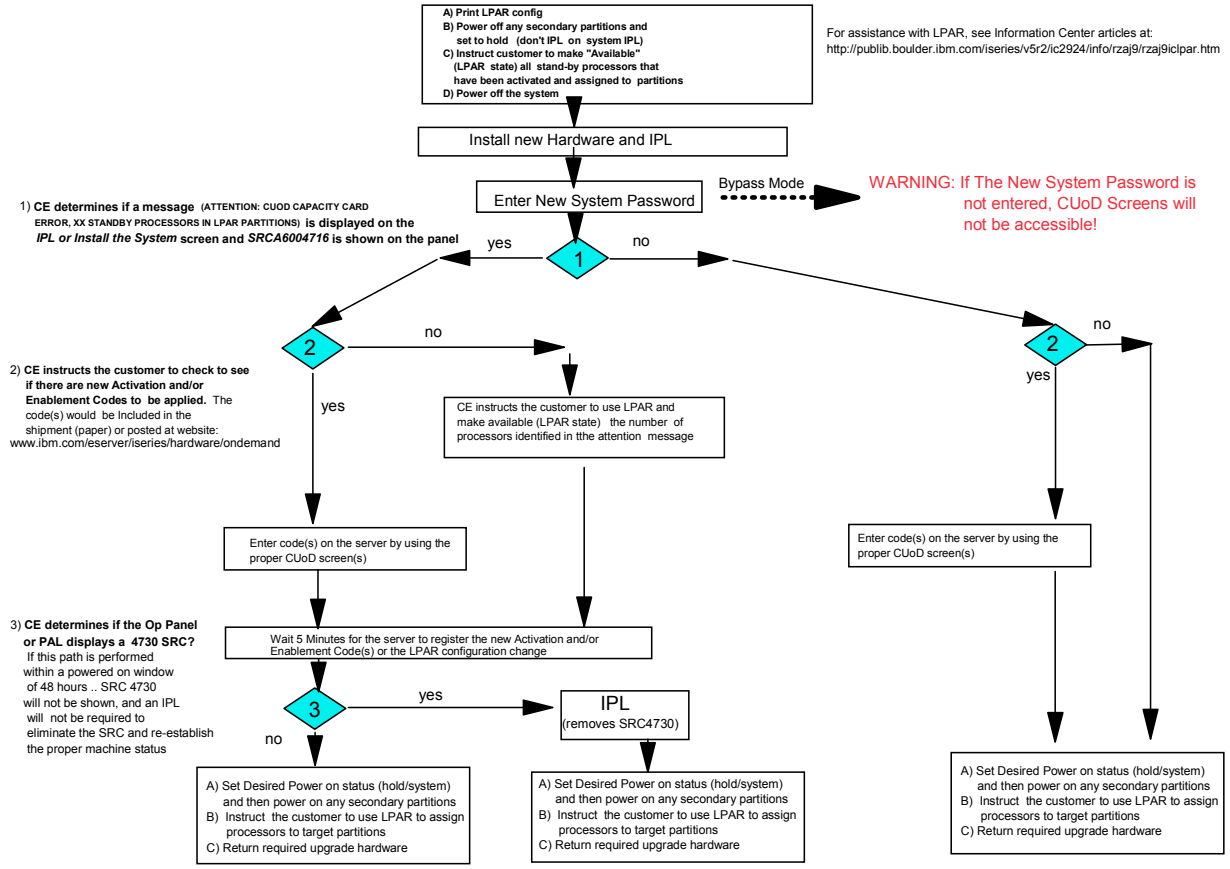
CE: Maintenance Instructions

Model 825, 870, 890 (with V5R2) Maintenance Instructions

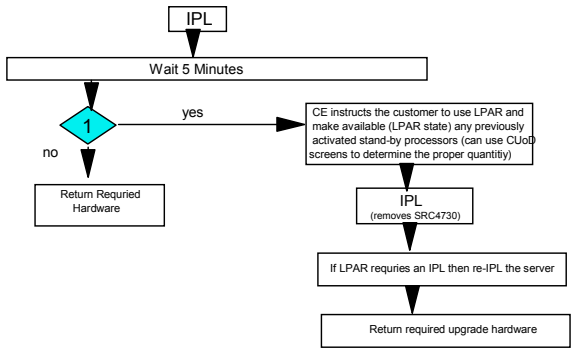


CE: Conversion Instructions

Model 825, 870, and 890 (with V5R2) Processor or Package Feature Conversion Instructions



CE: Upgrade Instructions

Model 825, 870, 8909 (with V5R2)
Model to Model Upgrade Instructions

1) **CE determines if the Op Panel or PAL displays a 4730 SRC?** If this path is performed within a powered on window of 48 hours .. SRC 4730 will not be shown, and an IPL will not be requried to eliminate theSRC and re-establish the proper machine status