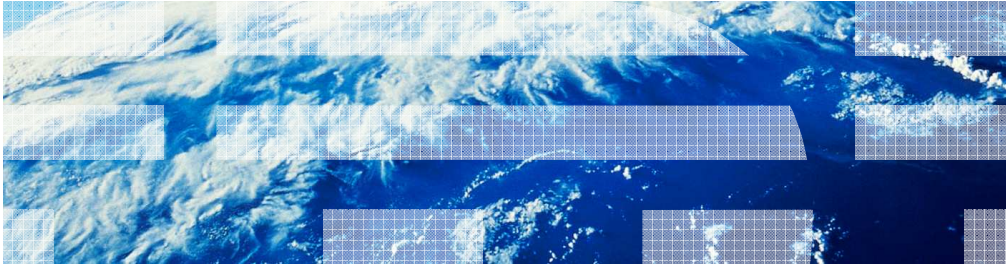IBM

z/OS V1R13

BCP capacity provisioning manager: Customer requirements

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Session objectives

- Understand Capacity Provisioning enhancements
  - user defined capacity increments, a better way to control the amount of capacity that should be added
  - recurring time conditions, a better way to control when additional capacity can be added

- Know what migration is necessary
  - Support of SNMP will be removed in a later release and migration to z/OS® BCPii should be started
  - Java 5 is no longer supported and runtime needs to be migrated

- Understand Provisioning Manager command enhancements
  - Allow to filter the output of the workload report

- Know new Control Center support
  - Windows 7 now supported

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mer-Requirements.ppt

Overview – Capacity increments

- Problem Statement / Need Addressed
  - Capacity Provisioning activates capacity step by step
    - For subcapacity machines, and for full capacity machines with many processors, one step increment is usually insufficient capacity to resolve a bottleneck
    - Many activation steps to achieve required capacity takes too much time
- Solution
  - Define the capacity increments for the first and all following activations of additional capacity in the policy
- Benefit / Value
  - Adjustment of capacity in the increments needed by the installation
  - Shorter time to get the capacity that suits the workload requirements

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Subcapacity machine have many configurations (software models) with similar capacity. Some level may only be different by 1 or 2 MSU and do not provided sufficiently enough capacity.

For full capacity machines with many processors, one additional processor is just a small relative increment (for example, adding the 51st processors just increments the capacity by roughly more 1%).

CP activates capacity step by step, each step adds 15 minutes blocking time to correctly assign the new capacity.

Overview – Recurring time conditions

- Problem Statement / Need Addressed
  - If there are many times when additional temporary capacity may be required, a policy usually requires many time conditions. Alternatively, time conditions spanning times when no activation should be allowed could be defined.
    - Many time conditions are time consuming to define and maintain
    - Unwanted activations at night shifts would introduce unnecessary costs
- Solution
  - Define weekly recurring time conditions that occur for all allowed days in a large time range, for example some months
- Benefit / Value
  - Less definitions required
  - Easier to define and maintain

In previous release, a time condition is defined using **one** start time, a deadline time, and an end time. If you want to define the prime shifts, you have to define one time condition for each day, each with the start and end time during the day. The other possibility would be to define one time condition for the whole period, but that could activate additional capacity also during nightshift or at the weekend.

The new recurring time condition define for a range of day between a start date and an end date, when the condition for each day should start (start time) and end (end time). You may also specify a deadline time in between after which no additional capacity may be added, but activated capacity may be left active. Then, you can select the days within the week for which the times apply, for example only Monday to Friday, but not on Saturday and Sunday.

Overview – Filtered workload report

- Problem Statement / Need Addressed
  - When monitoring many systems and/or service classes
    - Workload report can be confusing
    - Workload report will be cut if it exceeds 255 lines
- Solution
  - Allow filtering of workload complying to different criteria
    - Workload with current PI readings
    - Workload with current PI readings above provisioning PI limit
    - Workload of a specific system
- Benefit / Value
  - Reduced output that better fits on one screen
  - Focus on relevant information

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Attention is not diverted from relevant data

No need to scroll to the relevant data

Overview – SNMP removal

- Problem Statement / Need Addressed
  - For R13 removal of SNMP as supported protocol in a future release is announced
    - Migration would be necessary in a future release when using SNMP
- Solution
  - Indicate SNMP configuration
    - With a message at start-up
    - With an entry to z/OS Tracking Facility
- Benefit / Value
  - Early customer awareness and migration to BCPii

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For R13 SNMP and BCPii are still both supported in R13.

If starting with SNMP now, migration will be required if SNMP support is removed in a future release. Customer should start with BCPii right away.

Tracking Facility is used to support Migration and early awareness for customers migrating from an earlier release.

Overview – Windows 7 support

- Problem Statement / Need Addressed
  - Latest version of Microsoft Windows not supported by the Control Center
- Solution
  - Support of Windows 7 for the Control Center
    - Installation
    - Runtime
    - 32 and 64 bit environments
- Benefit / Value
  - Control Center runs in more customer environments
  - Customers no longer require Windows XP or Vista for the Control Center

For R13 Windows NT and Windows Vista as runtime environment are still supported

Support for Windows 7 is added

Only affects the Control Center

Control Center behavior on Windows 7 is the same as on Windows Vista

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mer-Requirements.ppt

Overview – Remove support for Java 5

- Problem Statement / Need Addressed
  - Java Version 5 as pre-requisite is no longer supported
- Solution
  - Support for Java Version 6
    - Run-time environment for the Provisioning Manager
    - Already supported in earlier z/OS releases
  - Indicate Java Version 5 usage on previous release
    - With an entry to the z/OS Tracking Facility
- Benefit / Value
  - No need to have Java Version 5 installed for Capacity Provisioning any more

New set-up no longer supports Java 5

If you still have the Provisioning Manager installed and running with Java 5, you need to migrate to Java 6 before activating it on R13

Usage of Java 5 creates a Tracking Facility entry for R12

Usage and invocation – Capacity increments (1 of 3)

- The support is invoked by:
  - Adding the primary and secondary activation capacity increments to the maximum provisioning scope for each CPC
- New/Changed External Output:
  - Policy report and policy status in the Control Center report the capacity increments
  - Activation request may skip intermediate software model
- Example:

```
Primary Activation:      120

Secondary Activation:     58

722 -------> 723 -------> 724 -------> 725 -------> 726 -------> 727 -------> 728 -------> 729
(0)         (59)        (117)       (174)       (234)       (291)       (348)       (400)
 |           |           |           |           |           |           |           |
------------------------------------->|----------->|----------------------->|----------->|
          0+120 = 120               174+58=232      234+58=292       348+58=406
```

You can specify primary and secondary capacity increments for each CPC

> Primary increment: capacity increment for the first activation

> Secondary Increments: capacity increments for all further activations

The increments are for general purpose capacity and specified in MSU.

First activation: The first model to be activated should have more or equal MSU than the number of MSU of the current model added by the number of MSU specified as primary activation.

> The number of MSU of this model may not have more MSU than specified in the maximum provisioning Scope.

> If no model fulfils the criteria, the model with the most allowed MSU will be used.

All other activations: The next model to be activated should have more or equal MSU than the number of MSU of the current model added by the number of MSU specified with secondary activations.

> The number of MSU of this model may not have more MSU than specified in the maximum provisioning Scope.

> If no model fulfils there criteria, the model with the most allowed MSU will be used.

Usage and invocation – Capacity increments (2 of 3)
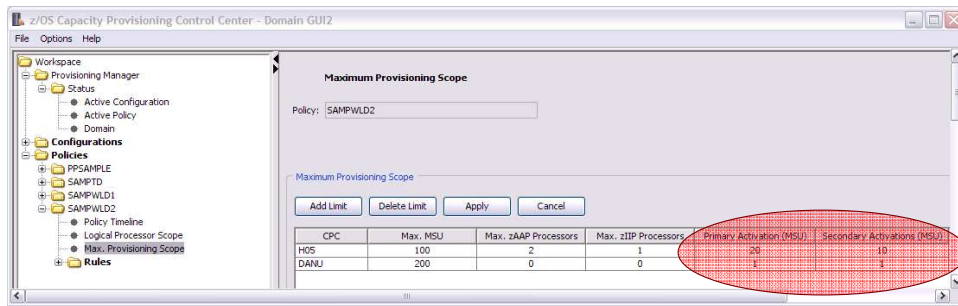
- The value for Primary Activation and for Secondary Activations should be less than Max. MSU

- Default for both values is 1

- Allowed range 1 to 9999

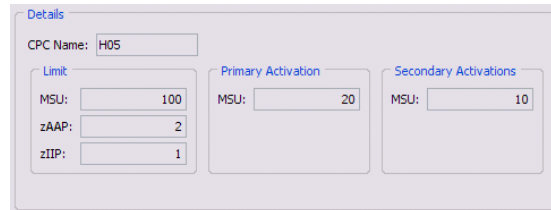BCP capacity provisioning manager: Customer requirements
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Two columns have been added to the Maximum Provisioning Scope Panel, one for Primary Activation (MSU) and one for Secondary Activations (MSU)

The default value (1) equals the behavior that was available before this support is introduced

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Usage and invocation – Capacity increments (3 of 3)

- The policy status of the Processor Limits Details of the Max. Provisioning Scope in the Control Center now shows in addition
  - The minimum capacity increment (in MSU) for the first activation
  - The minimum capacity increment in (MSU) for all further activations

Details

CPC Name: H05

Limit		Primary Activation	Secondary Activations
MSU:	100	MSU: 20	MSU: 10
zAAP:	2		
zIIP:	1		

- Reporting on the console

```
Policy EXAMPLE is enabled
Maximum provisioning scope:
 Limit for CPC H05 is 100 MSU, 3 zAAPs, 3 zIIPs
  activation of 20/10 MSU
```
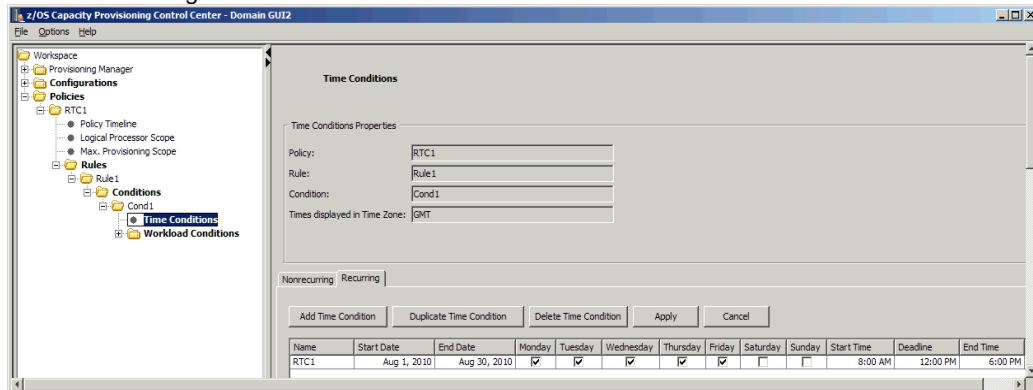
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Two groups have been added to the Details Panel, one for Primary Activation and one for Secondary Activations

Usage and invocation – Recurring time conditions (1 of 3)

- The support is invoked by:
  – Adding the definitions to the Capacity Provisioning policy using the Control Center
- New/Changed External Output:
  – Policy report reports the recurring time conditions
  – Policy status in the Control Center displays the recurring time conditions

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mer-Requirements.ppt

Usage and invocation – Recurring time conditions (2 of 3)

- Definition using the Control Center

The Time Conditions Panel now includes a TAB for nonrecurring time conditions and one for recurring time conditions.

Definition using a TAB in time condition panel. Time conditions that are nonrecurring are now a TAB in the same panel. Information is the same as in previous releases.

For recurring time condition use the TAB Recurring. Here you enter the name of the time condition, start date, end date, allowed days of the week, and for each allowed days the start time, deadline time, and end time.

All dates and times are displayed using the time zone in the "Times displayed in Time Zone" field. When the time zone is changed the difference to the previous time zone is added to the times shown. The dates may move to the day before or after the previous date. Accordingly the selected days of the week may move by one position.

Usage and invocation – Recurring time conditions (3 of 3)

- Reporting in the Control Center:
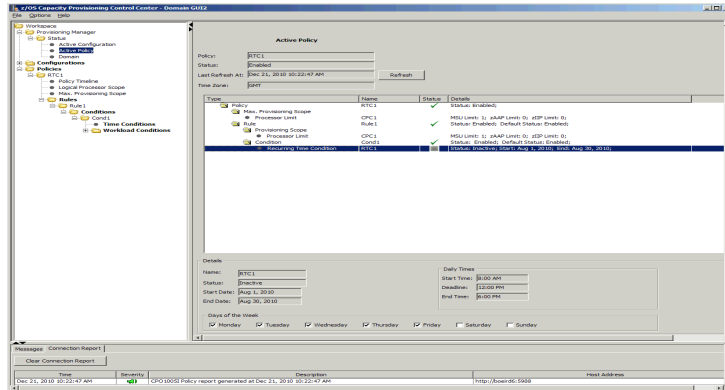
- Reporting on the console:

```
Recurring time condition RTCS001 is pending
 s/e/w days : 06/14/2010 /    06/15/2010 / XX-----
 s/d/e times:      15:20 / 17:20 / 18:20
```

The Active Policy Status Panel now shows Recurring Time Conditions. The Details consist of a left group containing name, status and start and end date of the recurring time condition.

The group on the right contains the daily times, which are start time, deadline and end time. And the lower group lists the selected days of the week.

The example shows an excerpt from a REPORT POLICY command. The information displayed is:

the name (RTCS001), its current status (pending)

Start and end date with the allowed days (Monday and Tuesday)

Start, deadline, and end time for each allowed day

Usage and invocation – Filtered workload report

- The support is invoked by:
  - Issuing the workload report with new/additional parameters
    - REPORT WORKLOAD TYPE=WithPIonly
    - REPORT WORKLOAD TYPE=AbovePLonly
    - REPORT WORKLOAD PLEX=xxx SYS=yyy
- New/Changed External Output:
  - Workload report reports only displays service classes complying with the specified criteria

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WithPIonly only displays service classes that have a current Provisioning Index (PI) reading

AbovePLonly only displays service classes which have a PI reading above the Provisioning Limit (PL) as specified in the CP policy, this means that the service class is actually suffering

Both, WithPIonly and AbovePIonly display detailed information, just as the TYPE=Detailed parameter would do.

PLEX=xxx SYS=yyy allows to only display workload on a specific system. Syntax is the same as for enable/disable configuration plex=xxx sys=yyy.

The filtering of a specific system can be combined with the type-criteria filtering in order to display only workload on a single system that complies with the criteria of a type-filter such as AbovePLonly

Usage and invocation – SNMP removal

- The support is invoked by:
  - The Provisioning Manager automatically at start-up
  - If domain is configured to use SNMP protocol
- New/Changed External Output:
  - Message CPO3060W at start-up
  - Entry in Tracking Facility
    - CPO-W:SNMP usage *<domain name>*
- Example:

```
COMMAND INPUT ===> /DISPLAY OPDATA,TRACKING                    SCROLL ===
RESPONSE=IRD6
 CNZ1001I 14.09.28 TRACKING DISPLAY 184
 STATUS=ON      NUM=1    MAX=1000 MEM=n/a EXCL=0     REJECT=0
 ----TRACKING INFORMATION---- -VALUE-- JOBNAME  PROGNAME+OFF-- ASID NUM
 CPO-W:SNMP usage DOMAIN1           00 CPOSRV   *PATHNAM   2E0   5F   1
              -------------------------------------------------------
 TO REPORT THESE INSTANCES, SEND THIS MESSAGE VIA E-MAIL TO
 CONSOLES@US.IBM.COM. FOR ADDITIONAL INFORMATION OR TO OBTAIN A CURRENT
 EXCLUSION LIST, SEE APAR II13752.
```

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In Tracking Facility entry text the <domain name> will be substituted with the name of the actual domain the Provisioning Manager is working for

Tracking information can be activated using "SETCON TRACKING=ON" MVS command.

Tracker information can be view using "DISPLAY OPDATA,TRACKING" MVS command.

You may configure the Tracking Facility to skip the Capacity Provisioning entries. A sample CNIDTRxx member content can be found in member CPODTR00 in your system SAMPLIB library.

Interactions and dependencies

- Software Dependencies
  – None
- Hardware Dependencies
  – None
- Exploiters
  – None

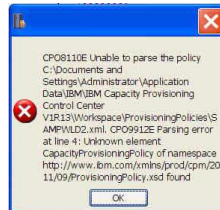　　BCP capacity provisioning manager: Customer requirements

Migration and coexistence considerations (1 of 4)

- Function and coexistence for recurring time conditions and capacity increments is available for release 11 and 12 with APAR OA35284
  - PTF UA59076 for R12
  - PTF UA58996 for R11
- If you activate a policy with the new functionality, and you restart the Provisioning Manager on R10 you need for coexistence APAR OA35284. Neither recurring time conditions nor capacity increments will be observed.
  - PTF UA58952 for R10
- Warning for SNMP usage and Java Version 5 usage are indicated using a message and Tracking Facility entry with APAR OA35284 for R12

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UA59076 contains all, recurring time conditions, capacity increments, SNMP usage, and Java 5 usage changes

Migration and coexistence considerations (2 of 4)

- Coexistence of Control Center and policy versions:
- A R13 policy can be edited with a Control Center of an earlier version if the values for the capacity increments are the default values and the policy contains no recurring time condition
- All R13 policies can be edited with a R11 or R12 Control Center with Coexistence/Function support APAR OA35284 applied
- In all other cases, when a R13 policy is loaded into a Control Center of a previous release the following error message is displayed

CPO8110E Unable to parse the policy
C:\Documents and
Settings\Administrator\Application
Data\IBM\IBM Capacity Provisioning
Control Center
V1R13\Workspace\ProvisioningPolicies\S
AMPWLD2.xml. CPO9912E Parsing error
at line 4: Unknown element
CapacityProvisioningPolicy of namespace
http://www.ibm.com/xmlns/prod/cpm/20
11/09/ProvisioningPolicy.xsd found

OK

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Message Text: CPO8110E Unable to parse the policy SAMPWLD.xml

Contained in the PTFs mentioned on the previous page

zOS_V1R13_BCP_Capacity_Provisioning_Manager_Custo
mer-Requirements.ppt   Page 19 of 26

- Installation of z/OS V1R13 Control Center
  - The location of the default workspace changes
  - If the user want to continue using the existing (pre-z/OS V1R13) workspace, he has to point to the desired workspace during the installation process.
  - It is also possible to switch the workspace at a later time by navigating to the desired workspace when the Control Center starts.
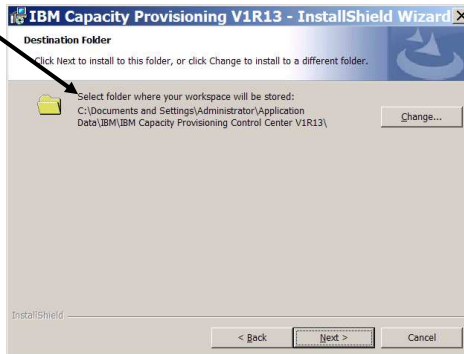
20   BCP capacity provisioning manager: Customer requirements   © 2012 IBM Corporation

With z/OS V1R13, the location of the default workspace changes.

The actual directory depends on the Windows version that you are using.

Windows XP:

C:\Documents and Settings\user\Application Data\IBM\IBM Capacity Provisioning Control Center V1R13

Windows Vista / Windows 7:

C:\Users\userName\AppData\Roaming\IBM\IBM Capacity Provisioning Control Center\ V1R13\

If you want to continue using your existing (pre-z/OS V1R13) workspace, point to the desired workspace during the installation process. You can also switch the workspace at a later time by navigating to the desired workspace when the CPCC starts.

Migration and coexistence considerations (4 of 4)

- Java 5 is no longer supported
- Migration of the Provisioning Manager runtime is needed
  – Install IBM 31-bit SDK for z/OS, Java 2 Technology Edition, V6 (5655-R31)

  - Change the LIBPATH variable in the ENV member of your Provisioning Manager parameter file to contain the installation directories of your Java V6 installation. LIBPATH statement may look like:

- LIBPATH=/usr/lib:/usr/lpp/java/J6.0/bin:usr/lpp/java/J6.0/bin/classic:/usr/lpp/cpo/lib
- If you install APAR OA35284 on R12, you will be informed of Java 5 usage be a Tracking Facility message:
  – CPO-W:Java 1.5.0 *<domain name>*

Migration is described in z/OS Migration book

Details how to set the Provisioning Manager environment is described in Capacity Provisioning User's Guide

For details on Tracking Facility message see previous foils.

R12 OA35284 PTF is UA59076

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Installation

- None

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Session summary (1 of 2)

- Capacity increments
  - You can define primary and secondary increments for general purpose capacity activation
  - You can define the increments for each CPC separately
  - The new increments are reported in the policy report and policy status
- Recurring time condition
  - Makes it easier to define and maintain the dates when activation of temporary capacity is allowed
  - The new information is reported in the policy report and policy status
- SNMP support will be removed in a future release
  - Messages added to SYSLOG and z/OS Tracking Facility

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Session summary (2 of 2)

- Windows 7 support
  - Control Center now also runs on Microsoft Windows 7
- Java 5 is no longer supported as runtime environment for the Provisioning Manager
  - Migration is needed
- Filtered workload report allows to focus the output on suffering workload or/and on workload of a specific observed system

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Appendix - References

- MVS Capacity Provisioning Users Guide, SC33-8299
- MVS System Messages Volume 4 (CBD – DMO), SA22-7634
- z/OS Migration, GA22-7499

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