How's That Work?
a Focus on WLM Goal Mode Batch Workloads

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Other SHARE Sessions

- This session (2542) discusses only Batch Workloads
- The companion session is Wednesday at 11:00 am:
  2543- How's that Work? A Focus on WLM Goal Mode STC Workloads

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Introduction

This session discusses various aspects of Batch Workloads in Workload Manager Goal Mode. You will see how these Workloads originate, guidelines for setting up, options for qualifying them, and best practices for defining the associated Service Classes.

Agenda

- Batch Origins and Categories
- JOBClass Standards
- Naming Conventions
- Prioritizing Batch
- Recommended Service Classes
- Scheduling Environments
- Qualifying Batch
- Real World Example

Batch Job Origins

- TSO/E (or equivalent) using the SUBMIT command
  - UserID provided by Security package
- CICS, IMS, DB2 or other similar Products, using a SYSOUT DD statement defining an Internal Reader
  - Job retains UserID of submitting STC (OwnerID)
- Automation Packages using a SYSOUT DD statement defining an Internal Reader
- Job Scheduling Packages using a SYSOUT DD statement defining an Internal Reader
- Started Tasks using a SYSOUT DD statement defining an Internal Reader
- Executing Jobs using a SYSOUT DD statement defining an Internal Reader
- From Remote/Distributed Systems: NJE, RJE, non-MVS Platforms

Batch Categories

- Production Jobs submitted by a Job Scheduler
  - Regular, Critical Path, Hot
- Ad-hoc Jobs (possibly submitted by a Job Scheduler)
- Development Jobs
- System Support Jobs
  - Regular, Emergency
- Logs, Archival, Backup, and D/R Jobs (possibly submitted by a Job Scheduler or an appropriate Subsystem)
- Quick Utility Jobs

Setup Jobs

- Batch Jobs may require Media that is not normally online to a System have Setup Requirements that Involve Operator Intervention
  - Input
  - Output
- May Include:
  - Manual Tape Mounts (Reels or Cartridges)
  - Automate Tape Mounts- normally very quick unless media is not in the ATL
  - Virtual Tape Servers (VTS)- normally very quick unless Data is not staged in the Disc Cache

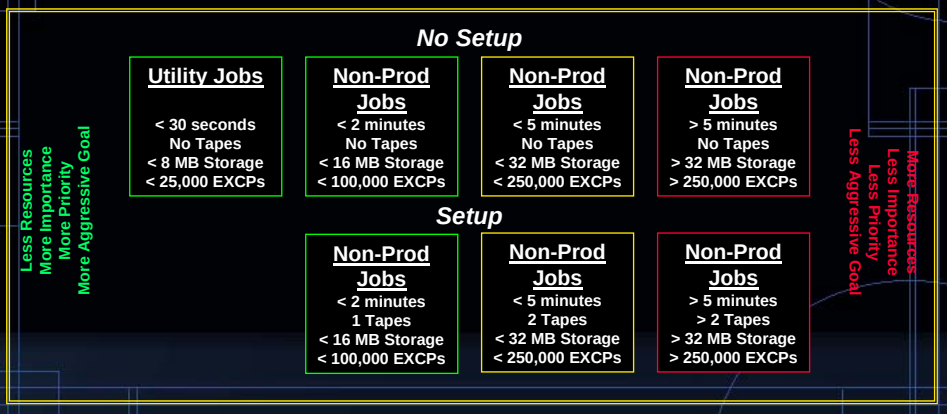
JOBClasses

- JES2 has 36 available (A-Z, 0-9)
- JES3 has 255 available (A-Z, 0-9, assigned Class Names)
- Less is More!
- WLM does better with fewer Service Classes Periods with similar work in it
- Segregate Jobs into JobClasses based on Resource Requirements

JOBClasses

- Time for New Standards or a JobClass Overhaul
  - All 36 JobClasses in Use?
  - Different on each System? Sysplex?
  - Single-purpose Legacy JobClasses for a single group of Users?
  - Many similar JobClasses with "one-off" characteristics?
  - Jobs better suited as Started Tasks?
- Define JobClasses for JES-managed Initiators
- Define JobClasses for WLM-managed Initiators
- Define JobClasses for Operator Intervention
- Jobclasses based on Production vs. Ad-Hoc vs. Systems Support vs. Development

Example of Non-Restricted JobClass Categories



Example of JobClass Definitions

JES JobClass	Description
A	Utility Jobs, < 30 sec, No Tapes
B	Non-Production Jobs, < 2 min, No Tapes
C	Non-Production Jobs, < 5 min, No Tapes
D	Non-Production Jobs, >= 5 min, No Tapes
E	Non-Production Jobs, < 2 min, 1 Tape
F	Non-Production Jobs, < 5 min, 2 Tapes
G	Non-Production Jobs, > 5 min, >= 2 Tapes

JES JobClass	Description
H	Production Hot and Emergency Jobs
P	Production Regular Jobs
Q	Production Critical Path Jobs
S	System Support Jobs

WLM JobClass	Description
U	Non-Production Utility Jobs, No Tapes
V	Non-Production Regular Jobs, No Tapes

WLM JobClass	Description
W	Production Regular Jobs
X	Production Critical Path Jobs

Initiators and Structure

- Initiators are re-useable Address Spaces where Jobs are selected to execute
- 2 Types: JES-managed and WLM-managed
- For JES-managed, a Structure is defined that contains the number of Initiators and which JobClasses can run it. A priority is created based on the order that the Jobclasses are defined in each Initiator.
- Keep it Simple. But, don't Over-simplify

Initiators and Structure

- Determine the minimum and maximum number of Initiators that is needed
- Determine the number of Unique Initiators needed (Prod vs. Dev vs. Ad-Hoc)
- Determine what types of work can be run in the same Initiator
- Determine how many Tape Jobs can run simultaneously
- Determine whether a different Structure is needed for Daytime, Nighttime, Weekend, etc.

Example of Initiator Structure

INIT	Class	Status
1-3	A	Start
4-5	A	Drain
6-7	H	Start
8-10	H	Drain
11-20	Q,P	Start
21-25	Q,P	Drain
26-27	S	Start
28-30	S	Drain

INIT	Class	Status
31-35	B,C	Start
36-40	B,C	Drain
41-45	B,C,D	Start
46-50	B,C,D	Drain
51-53	E,F,G	Start
54-55	E,F,G	Drain
56-57	G,E,F	Start
58-60	G,E,F	Drain

Standards/Guidelines

- Standards or Guidelines are used to help classify Jobs into specific JobClasses
  - Somewhat a Technical matter
  - Mostly a Political/Emotional matter
  - Good Up-front Communication is needed for the User Community to understand the benefit
  - Senior Management Assistance may help any Implementation
- Used to qualify WLM Service Classes
- Exits may be available to help Enforce the Standards (Vendor Packages or Security)

Standards/Guidelines

- **JobClass Characteristics that may be available to standardized:**
  - Estimated CPU time
  - Estimated Elapsed Time
  - Estimated Storage
  - Estimate I/O
  - Setup Requirements
  - Production vs. Ad-Hoc vs. Development
  - Submitter of a Job

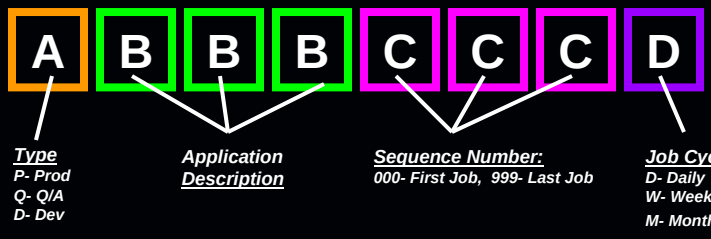
Job Naming

- **How Job Names are defined**
  - Can it be identified by its Name?
  - Can it be identified as Production vs. Q/A vs. Ad-Hoc vs. Development?
  - Can it be identified to an Application?
  - Can it be identified as: Daily? Weekly? Monthly? Quarterly? Yearly? Special?

Job Naming

- How TSO Submitted Jobs are defined
  - TSO UserID plus 1 Character?
  - Same as Previous Item?
  - IKJEFFxx Submit Exit may be used to enforce standards
  - JES2/SMF Exits may be used to enforce standards
- How Scheduler Jobs are defined
- How Emergency Jobs are defined
- How Distributed Jobs are defined
- …and so on

Naming Conventions Example



- JobNames can be programmatically identified
- Example: PSYS100W Scheduler Production System Job run weekly
  DOPS250M Development Operations Job run monthly
  $OPS375D Emergency Production System Job run daily

Security Implementations and Enforcement

- ACF/2, Top Secret, RACF (and other Security Packages) can be used to enforce JobClass assignments
- Specific JobClasses for Scheduling Package can be uniquely assigned
- Production JobClasses can be unavailable to non-Production Jobs
- Un-restricted JobClasses can be used only by non-Production UserIDs
- USERID and Password are inserted into Jobcard to determine who submitted the Job
- Correct Accounting Information on the Jobcard can be enforced
- Scheduling Environment may be assigned by JES2 or inserted by Exits or Scheduling Packages

SLAs and SLOs

- SLAs and SLOs are used to coordinate Business Units of Work to a Service Class
- Just as with Job Classes, It may be Time for an Overhaul!
  - Can SLAs/SLOs that are close enough to be combined?
  - Reasonable? Can a complex DB2 Query complete in less that 5 seconds?
- 2 parts Definition: An Execution Objective and a Turnaround Objective
  - Example- Batch Jobs Executing in less than 2 minutes of CPU time will turn around in under 30 minutes

SLAs and SLOs

- Less is More! Consolidated SLAs/SLOs create a smaller number of required Service Classes
- Use Percentile requirements (95% of 30 second Jobs will complete in 10 minutes)
- Be sure SLAs/SLOs are measurable with available WLM statistics
  - Service Class Performance Index (PI)
  - Number of Completions in a Period of Time
  - Average Rate for Completion

Types of Batch Work Units

- Very Short, High-Importance Work
- Short, Important Work
- Long, Less-Important Work
- Very Long, Least-Important Work
- Categorized based on work type on each System or Sysplex
  - Example: Only Production Work is run on Systems WIP1 and WIP2 on the WIZPPLEX
  - Example: Only Development Work is run on the Systems WID3 on the WIZDPLEX
- In reality, combined work of mixed types may have to run on the same System or in the same Sysplex (D/R, Planned outages)

Setting Batch Job Goals

- **3 Types of Goals are available to Batch Workloads (with appropriate considerations)**
  - ***Response Time Goals*: Consideration- Queue Delay is included in the Response Time of Jobs of ALL Job Classes. As the Job Queues increase, the Response Time increases. Good choice for Jobs with specific Turnaround Requirements, and for those Jobs that have Operator Intervention.**
  - ***Velocity Goals*: Consideration- Queue Delay is included in the Velocities of Jobs in WLM-managed Job Classes. As the number of Jobs waiting for a WLM-managed Initiator increases, the Velocity in the Service Class decreases. Good choice for Productions Jobs Streams that need to complete in a timely manner.**

Setting Batch Job Goals

- ***Discretionary Goals*: Consideration- As higher importance Batch Jobs enter the System, there may be insufficient Resources to provide to work in these Service Classes. Discretionary Goals provide for Mean-Time-To-Wait (MTTW) algorithms, so that CPU-intensive work's Dispatching Priority is lowered, while I/O-intensive work is raised. Good choice for those Jobs with no specific completion requirements**

- **There must be a sufficient amount of completions (10 within 20 minutes) of Batch Jobs per Service Class Period to allow WLM to make appropriate adjustments. For a small number of Completions, consider using Velocity or Discretionary Goals.**

Suggested Production Batch Service Classes

Well-Mannered Systems

Service Class	Imp	Goal	Description
HOT_BATCH	1	V=50%	Emergency Production Jobs
BATP_HI	2	V=50%	Very Short, High-Priority Production Jobs
BATP_MD	3	V=40%	Critical Path Production Jobs
BATP_LO	-/4	DISC or V=30%	Regular Production Jobs
BATP_WH	2	V=50%	Very Short, High-Priority Production Jobs- WLM-managed INITs, No Tape
BATP_WM	3	V=40%	Medium-Priority Production Jobs- WLM-managed INITs, No Tape

Ill-Mannered Systems

Service Class	Imp	Goal	Description
BATP	2 3 -	P1 V=50% P2 V=40% P3 DISC	Unclassified Production Jobs
BATP_WM	2 3 -	P1 V=50% P2 V=40% P3 DISC	Unclassified Production Jobs- WLM-managed INITs, No Tape

Suggested Development Batch Service Classes

Well-Mannered Systems

Service Class	Imp	Goal	Description
BATD_VH	2	90%<1 min	Very Quick Utility Jobs (<30 sec)
BATD_HI	3	V=40%	Short Development Jobs (<2 min)
BATD_MD	4	V=30%	Medium Development Jobs (<5 min)
BATD_LO	-	DISC or V=30%	Long Development Jobs (>5 min)
BATD_WH	3	V=40%	Short Development Jobs- WLM-managed INITs, No Tape
BATD_WM	4	V=30%	Medium Development Job- WLM-managed INITs, No Tape

Ill-Mannered Systems

Service Class	Imp	Goal	Description
BATD	3 4 -	P1 V=40% P2 V=30% P3 DISC	Unclassified Development Jobs
BATD_WM	3 4 -	P1 V=40% P2 V=30% P3 DISC	Unclassified Development Jobs- WLM-managed INITs, No Tape

Locking Mechanisms In Batch Jobs

- Batch Jobs connecting to DB2 or similar Data Base Management Products may be involved with Locking Mechanisms
- Not usually a concern with Short-duration Locks
- Long-Duration Locks can cause a Production Region to hang or crash
- Avoid Discretionary Goals or those with very low Velocity (<30%) and low Importance

Tape Mounts, ATLs/Silos, VTS

- Batch Jobs requiring Tape Mounts can impact the Performance Index (PI) for a Batch Service Class
- Consider:
  - For an actual Tape Mount, the Operator may not mount the Tape in a timely manner (can't locate the Volume, no Device available from Allocation Recovery, Operator Out to Lunch)
  - For ATLs/Silos, the Volume is not in the SubSystem and needs to be inserted (back to previous consideration for potential challenges)
  - For VTS, a Data Set is not in the Cache and needs to be restage from a Physical Volume (back to previous considerations for potential challenges)
- These types of Delays will generate a large amount of UNKNOWN samples, which WLM can do little about
- If enough completions, Percentile Goals might help to avoid the effects of this type of delay

Basic Scheduling Environments

- A Scheduling Environment (SCHENV) is similar to a System Variable with a set of Scheduling Resources and Specific States
  - ON, OFF, or RESET
- Useful in asymmetric Sysplexes where the Systems differ in installed Software, Applications, or Hardware
- When any System Image satisfies all the Resource Requirements for a Scheduling Environment (On or OFF), the Unit of Work (Job) can be assigned to that System Image. Multiple Image assignment is allowed.

Basic Scheduling Environments

- Some Types of Real Entity Scheduling Resources are:
  - Physical Hardware (example: Printer, Check Sorter)
  - Particular Data Base (example: DB2 Subsystem DB2P)
  - Particular Transaction System (example: CICSPROD, IMSTESTA)
- Some Types of Other Abstract Scheduling Resources are:
  - Calendar (example: Prime-Time, Weekday, Holiday)
  - Identification (example: CPU-ID, Production Environment, Tape Mounts)

Batch Jobs Qualifiers

- WLM Classification Services are used by JES to assign a Service Class to each Job after Conversion
- The Service Class is assigned based on WLM Classification Rules using these Qualifiers:
  - Accounting Information (AI)- Not available in JES2 if ACCTFLD=OPTIONAL on JOBDEF Initialization Statement
  - Perform (PF) and PERFORM Group (PFG)
  - Priority (PRI)- Available at JES2 v2.4 and JES3 v2.8
  - Scheduling Environment (SE)- Available at OS/390 v2.10 with APAR OW43813
  - SubSystem Collection (SSC)- Available at OS/390 v2.10 with APAR OW43813
  - SubSystem Instance (SI) and SubSystem Instance Group (SIG)
  - Sysplex Name (PX)- Available at OS/390 v2.10 with APAR OW43813
  - Transaction Class (TC) and Transaction Class Group (TCG)
  - Transaction Name (TN) and Transaction Name Group (TNG)
  - UserID (UI) and UserID Group (UIG)

Classification Rules Order

- Classification Rules are searched for a Matching Qualifier to locate and assign a Service Class and/or Report Class
- Jobs may be able to match many Classification Rules
- The Order of the Classification Rules determines how Service Classes are assigned
- Notice the Order of the Classification Rules in the following examples to see how the Order could impact what is really desired

Job Class Qualification

```
//PSYS100D JOB (00123456ABCDEF00,ROOM2004),'PGMRNAME',CLASS=P
```

```
Subsystem-Type  Xref  Notes  Options  Help
 ------------------------------------------------------------------------
                 Modify Rules for the Subsystem Type       Row 1 to 5 of 5
 Command ===> _____________________________________________ SCROLL ===> CSR

 Subsystem Type . : JES         Fold qualifier names?   Y  (Y or N)
 Description  . . . JES2 or JES3 Environments

 Action codes:   A=After     C=Copy        M=Move     I=Insert rule
                 B=Before    D=Delete row  R=Repeat   IS=Insert Sub-rule
                                                        More ===>
           --------Qualifier--------               -------Class--------
 Action    Type       Name     Start                Service     Report
                                                DEFAULTS: BATD_LO     RC_DUNKN
  ____  1  TC         P        ___                  BATD_WM     RC_BATPR
  ____  1  TC         Q        ___                  BATP_MD     RC_BATPR
  ____  1  TC         R        ___                  BATP_WH     RC_BATPC
  ____  1  TC         S        ___                  BATP_HI     RC_BATPC
  ____  1  TCG        TCG_DEV1 ___                  BATD_WM     RC_BATD1
```


Job Name Qualification

```
//PSYS100D JOB (00123456ABCDEF00,ROOM2004),'PGMRNAME',CLASS=P
```

```
Subsystem-Type  Xref  Notes  Options  Help
 ------------------------------------------------------------------------
                 Modify Rules for the Subsystem Type       Row 1 to 4 of 4
 Command ===> _____________________________________________ SCROLL ===> CSR

 Subsystem Type . : JES         Fold qualifier names?   Y  (Y or N)
 Description  . . . JES2 or JES3 Environments

 Action codes:   A=After     C=Copy        M=Move     I=Insert rule
                 B=Before    D=Delete row  R=Repeat   IS=Insert Sub-rule
                                                        More ===>
           --------Qualifier--------               -------Class--------
 Action    Type       Name     Start                Service     Report
                                                DEFAULTS: BATD_LO     RC_BATUK
  ____  1  TN         PSYS100% ___                  BATP_WH     RC_BATPC
  ____  1  TN         PSYS*    ___                  BATP_MD     RC_BATPC
  ____  1  TNG        TNG_APP1 ___                  BATP_WM     RC_BATPR
  ____  1  TC         P        ___                  BATP_WM     RC_BATPR
```

Accounting Information Qualification

```
//PSYS100D JOB (00123456ABCDEF00,ROOM2004),'PGMRNAME',CLASS=P
```

```
Subsystem-Type  Xref  Notes  Options  Help
 ------------------------------------------------------------------------
                 Modify Rules for the Subsystem Type       Row 1 to 4 of 4
 Command ===> _____________________________________________ SCROLL ===> CSR

 Subsystem Type . : JES         Fold qualifier names?   Y  (Y or N)
 Description  . . . JES2 or JES3 Environments

 Action codes:   A=After     C=Copy        M=Move     I=Insert rule
                 B=Before    D=Delete row  R=Repeat   IS=Insert Sub-rule
                                                        More ===>
           --------Qualifier--------               -------Class--------
 Action    Type       Name     Start                Service     Report
                                              DEFAULTS: DBAT_LO     RC_BATUK
  ____  1  AI         123456   __3                  ________    ________
  ____  2    AI       ABCD%%%% __9                  BATP_WM     RC_BATPC
  ____  2    AI       ABC*     __9                  BATP_MD     RC_BATPR
  ____  1  TC         P        ___                  BATP_WM     RC_BATPR
```


UserID Qualification

```
//PSYS100D JOB (00123456ABCDEF00,ROOM2004),'PGMRNAME',CLASS=P,
//          USERID=PSYSOP1,PASSWORD=********
```

```
Subsystem-Type  Xref  Notes  Options  Help
 ------------------------------------------------------------------------
                 Modify Rules for the Subsystem Type       Row 1 to 4 of 4
 Command ===> _____________________________________________ SCROLL ===> CSR

 Subsystem Type . : JES         Fold qualifier names?   Y  (Y or N)
 Description  . . . JES2 or JES3 Environments

 Action codes:   A=After     C=Copy        M=Move     I=Insert rule
                 B=Before    D=Delete row  R=Repeat   IS=Insert Sub-rule
                                                        More ===>
           --------Qualifier--------               -------Class--------
 Action    Type       Name     Start                Service     Report
                                              DEFAULTS: BATD_LO     RC_BATUK
  ____  1  UI         PSYS%%1  ___                  BATP_WH     RC_BATPC
  ____  1  UI         PSYSOP*  ___                  BATP_WM     RC_BATPC
  ____  1  UIG        UIG_OPS  ___                  BATP_MD     RC_BATPR
  ____  1  TC         P        ___                  BATP_WM     RC_BATPR
```

Performance Group Qualification

```
//PSYS100D JOB (00123456ABCDEF00,ROOM273E),'PGMRNAME',CLASS=P,
//          PERFORM=20
```

```
Subsystem-Type  Xref  Notes  Options  Help
 ------------------------------------------------------------------------
                 Modify Rules for the Subsystem Type       Row 1 to 4 of 4
 Command ===> _____________________________________________ SCROLL ===> CSR

 Subsystem Type . : JES         Fold qualifier names?   Y  (Y or N)
 Description  . . . JES2 or JES3 Environments

 Action codes:   A=After     C=Copy        M=Move     I=Insert rule
                 B=Before    D=Delete row  R=Repeat   IS=Insert Sub-rule
                                                        More ===>
           --------Qualifier--------                -------Class--------
 Action    Type       Name     Start                Service     Report
                                              DEFAULTS: BATD_LO     RC_BATUK
  ____  1  PF         20       ___                  BATP_HI     RC_BATPC
  ____  1  PFG        PFG_CRIT ___                  BATP_WH     RC_BATPC
  ____  1  TN         PSYS100% ___                  BATP_WH     RC_BATPC
  ____  1  TC         P        ___                  BATP_WM     RC_BATPR
```


Priority Qualification

```
/*PRIORITY 9
//PSYS100D JOB (00123456ABCDEF00,ROOM2004),'PGMRNAME',CLASS=P,
//          PRTY=7
```

```
Subsystem-Type  Xref  Notes  Options  Help
 ------------------------------------------------------------------------
                 Modify Rules for the Subsystem Type       Row 1 to 4 of 4
 Command ===> _____________________________________________ SCROLL ===> CSR

 Subsystem Type . : JES         Fold qualifier names?   Y  (Y or N)
 Description  . . . JES2 or JES3 Environments

 Action codes:   A=After     C=Copy        M=Move     I=Insert rule
                 B=Before    D=Delete row  R=Repeat   IS=Insert Sub-rule
                                                        More ===>
           --------Qualifier--------                -------Class--------
 Action    Type       Name     Start                Service     Report
                                              DEFAULTS: BATD_LO     RC_BATUK
  ____  1  TC         P        ___                  BATP_WM     RC_BATPR
  ____  2    PRI      >=9      ___                  BATP_HI     RC_BATPC
  ____  2    PRI      >=7      ___                  BATP_WH     RC_BATPC
  ____  1  TC         Q        ___                  BATP_MD     RC_BATPR
```

Scheduling Environment Qualification

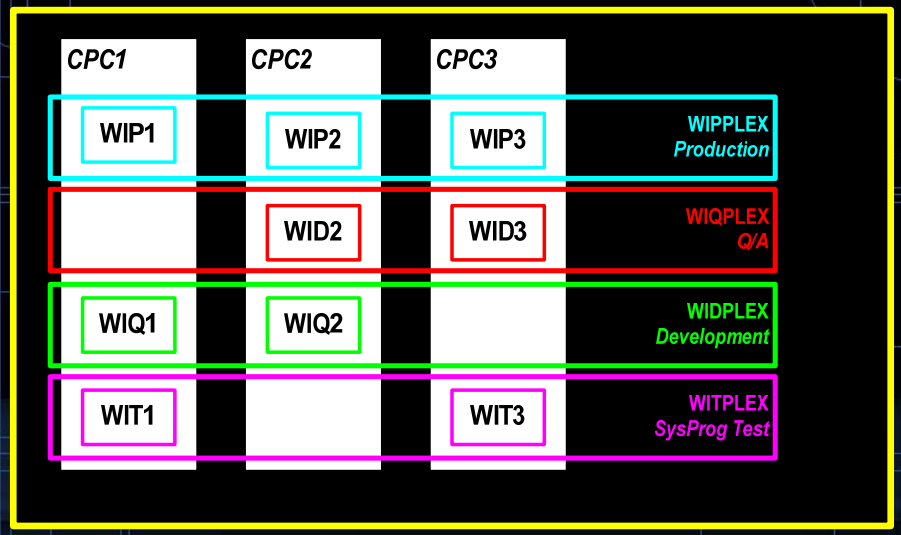
```
//PSYS100D JOB (00123456ABCDEF00,ROOM2004),'PGMRNAME',CLASS=P,
//          SCHENV=PBAT_APPLA
```

```
Subsystem-Type  Xref  Notes  Options  Help
 ------------------------------------------------------------------------
                 Modify Rules for the Subsystem Type       Row 1 to 5 of 5
 Command ===> _____________________________________________ SCROLL ===> CSR

 Subsystem Type . : JES         Fold qualifier names?   Y  (Y or N)
 Description  . . . JES2 or JES3 Environments

 Action codes:   A=After     C=Copy        M=Move     I=Insert rule
                 B=Before    D=Delete row  R=Repeat   IS=Insert Sub-rule
                                                        More ===>
           --------Qualifier--------                 -------Class--------
 Action    Type       Name     Start                 Service     Report
                                                DEFAULTS: BATD_LO     RC_BATUK
  ____  1  SE         PBAT_APP ___                   _______     ________
  ____  2    SE       LB       ___                   BATP_WM     RC_BATPR
  ____  1  TC         P        ___                   BATP_WM     RC_BATPR
  ____  2    SE       PBAT_APP ___                   _______     ________
  ____  3      SE     L%       ___                   BATP_HI     RC_BATPC
```


Sysplex Name



Sysplex Name Qualification

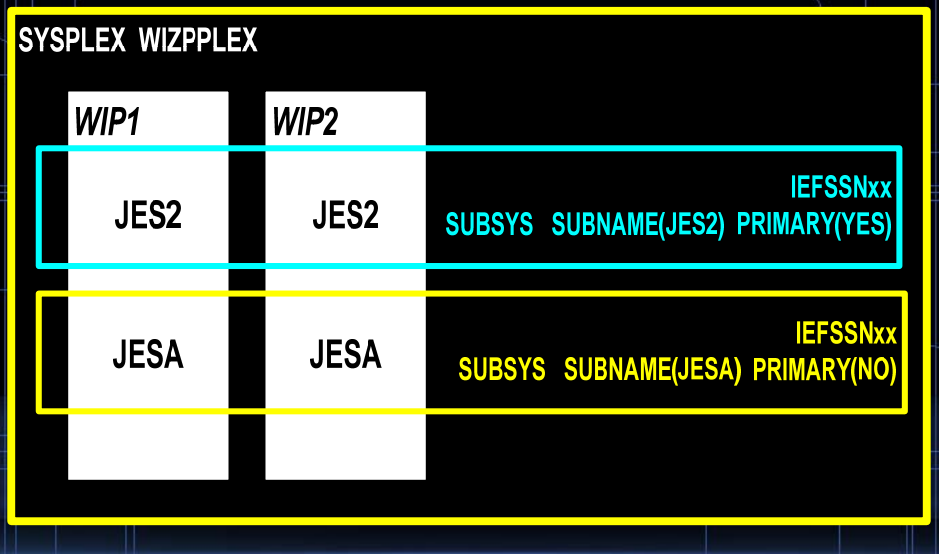
```
//PSYS100D JOB (00123456ABCDEF00,ROOM2004),'PGMRNAME',CLASS=P
```

```
Subsystem-Type  Xref  Notes  Options  Help
 ------------------------------------------------------------------------
                 Modify Rules for the Subsystem Type       Row 1 to 5 of 5
 Command ===> _____________________________________________ SCROLL ===> CSR

 Subsystem Type . : JES         Fold qualifier names?   Y  (Y or N)
 Description  . . . JES2 or JES3 Environments

 Action codes:   A=After     C=Copy        M=Move     I=Insert rule
                 B=Before    D=Delete row  R=Repeat   IS=Insert Sub-rule
                                                        More ===>
           --------Qualifier--------               -------Class--------
 Action    Type       Name     Start                Service     Report
                                              DEFAULTS: BATD_LO     RC_BATUK
  ____  1  PX         WIPPLEX  ___                  ________    ________
  ____  2    TC       P        ___                  BATP_HI     RC_BATPC
  ____  1  PX         WIQPLEX  ___                  ________    ________
  ____  2    TC       P        ___                  BATP_WH     RC_BATPC
  ____  1  TC         P        ___                  BATP_WM     RC_BATPR
```


Poly-JES SubSystem Instance



Poly-JES SubSystem Instance Qualification

```
//PSYS100D JOB (00123456ABCDEF00,ROOM2004),'PGMRNAME',CLASS=P
```

```
Subsystem-Type  Xref  Notes  Options  Help
 ------------------------------------------------------------------------
                 Modify Rules for the Subsystem Type       Row 1 to 6 of 6
 Command ===> _____________________________________________ SCROLL ===> CSR

 Subsystem Type . : JES         Fold qualifier names?   Y  (Y or N)
 Description  . . . JES2 or JES3 Environments

 Action codes:   A=After     C=Copy        M=Move     I=Insert rule
                 B=Before    D=Delete row  R=Repeat   IS=Insert Sub-rule
                                                        More ===>
           --------Qualifier--------                -------Class--------
 Action    Type       Name     Start                Service     Report
                                              DEFAULTS: BATD_LO     RC_BATUK
  ____  1  SI         JES2     ___                  _______     ________
  _____ 2    TC       P        ___                  BATP_WM     RC_BATPR
  ____  2    TC       Q        ___                  BATP_MD     RC_BATPR
  ____  2    TC       R        ___                  BATP_WH     RC_BATPC
  ____  2    TC       S        ___                  BATP_HI     RC_BATPC
  ____  1  SI         JESA     ___                  BATD_WM     RC_BATD1
```


Poly-JES SubSystem Collection

Poly-JES SubSystem Collection Qualification

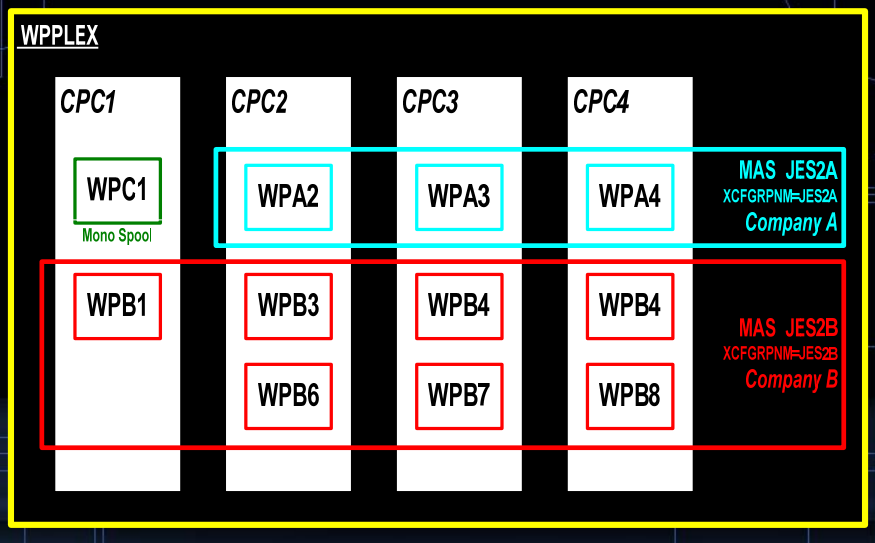
```
//PSYS100D JOB (00123456ABCDEF00,ROOM273E),'PGMRNAME',CLASS=P
```

```
Subsystem-Type  Xref  Notes  Options  Help
 ------------------------------------------------------------------------
                 Modify Rules for the Subsystem Type       Row 1 to 6 of 6
 Command ===> _____________________________________________ SCROLL ===> CSR

 Subsystem Type . : JES         Fold qualifier names?   Y  (Y or N)
 Description  . . . JES2 or JES3 Environments

 Action codes:   A=After     C=Copy        M=Move     I=Insert rule
                 B=Before    D=Delete row  R=Repeat   IS=Insert Sub-rule
                                                          More ===>
            --------Qualifier--------                -------Class--------
 Action     Type       Name     Start                Service     Report
                                                DEFAULTS: BATD_LO     RC_BATUK
  ____  1   SSC        JES2P    ___                  _______     ________
  _____ 2     TC       P        ___                  BATP_WM     RC_BATPR
  ____  2     TC       Q        ___                  BATP_MD     RC_BATPR
  ____  2     TC       R        ___                  BATP_WH     RC_BATPC
  ____  2     TC       S        ___                  BATP_HI     RC_BATPC
  ____  1   SSC        JESAP    ___                  BATD_WM     RC_BATD1
```


Real World Example



Poly-JES SubSystem Collection Qualification

```
//PSYS100D JOB (00123456ABCDEF00,ROOM273E),'PGMRNAME',CLASS=P
```

```
Subsystem-Type  Xref  Notes  Options  Help
 ------------------------------------------------------------------------
                Modify Rules for the Subsystem Type       Row 1 to 6 of 6
 Command ===> _____________________________________ SCROLL ===> CSR

 Subsystem Type . : JES         Fold qualifier names?   Y  (Y or N)
 Description  . . . JES2 or JES3 Environments

 Action codes:   A=After     C=Copy        M=Move     I=Insert rule
                 B=Before    D=Delete row  R=Repeat   IS=Insert Sub-rule
                                                        More ===>
           --------Qualifier--------               -------Class--------
 Action    Type       Name     Start                Service     Report
                                              DEFAULTS: DBAT_LO     RC_DUNKN
  ____  1  SSC        JES2A    ___                  BATP_WM     RC_BATPR
  _____ 2    TC       P        ___                  BATP_HI     RC_BATBH
  ____  1  SSC        JES2B    ___                  BATP_WM     RC_BATBR
  ____  2    TC       P        ___                  BATP_MD     RC_BATBM
  ____  1  SSC        JES2C    ___                  BATB_HI     RC_BATPH
  ____  1  TC         P        ___                  BATP_WM     RC_BATPR
```


Conclusion

- Classifying Batch Workloads offers many options
- Preparation may be required to Consolidate like Work into good Service Class definitions
- Naming Conventions and Standards will help classify Current Workloads, and allow for better incorporation of New Work
- KISS! Keep it simple; but not too simple
- Re-visit Goals over Time to keep Performance at Advertised Levels

References

- Planning for Workload Manager
- JES2 Initialization and Tuning Reference
- JES3 Initialization and Tuning Reference
- Scheduler and Automation Installation and Customization Guides
- Share Presentations: What's New in RMF? What's New in WLM?
- Peter Enrico's "Advanced z/OS Workload Manager and Re-evaluation of Goals" Class

Questions?

How's That Work?
a Focus on WLM Goal Mode Batch Workloads

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