

# WLM 101: Introduction to WLM

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# Agenda

- WLM Overview
  - WLMs purpose
  - Workloads
- Service Class Overview
  - Grouping workloads
  - Service class importance
  - Service class goals
- Defining and analyzing service class goals
  - Performance Index
  - Execution Velocity
  - Percentile Response Time



# WLM OVERVIEW

## WLM Overview

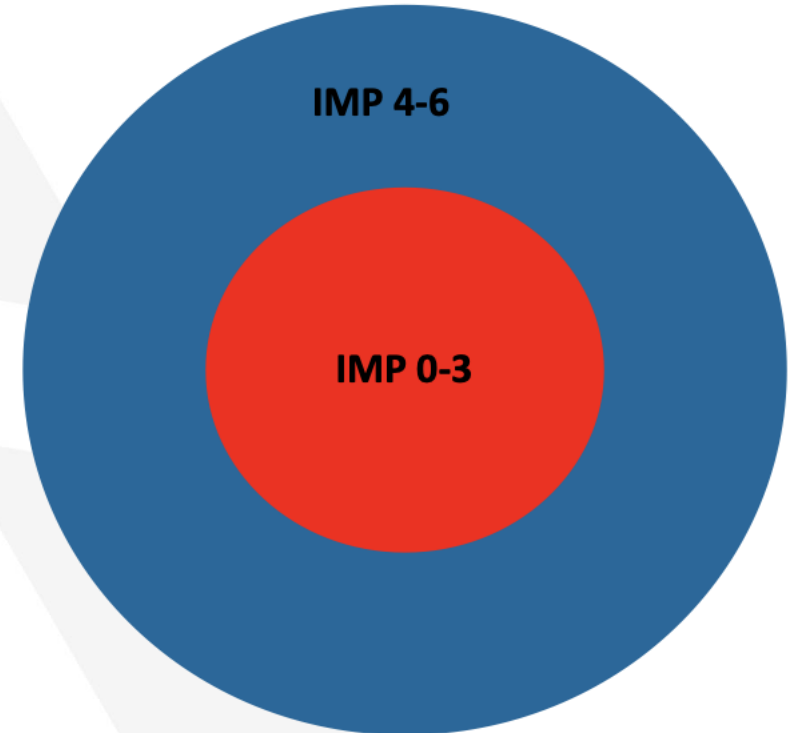
- WLM – Workload Manager
  - System dispatcher advisor
    - Work queue management
- Workloads
  - Address spaces on a system
    - Batch jobs, transactions, tso commands, etc.
  - Grouped into service classes
    - Business importance
    - Performance goals
    - Resource requirements



# SERVICE CLASS OVERVIEW

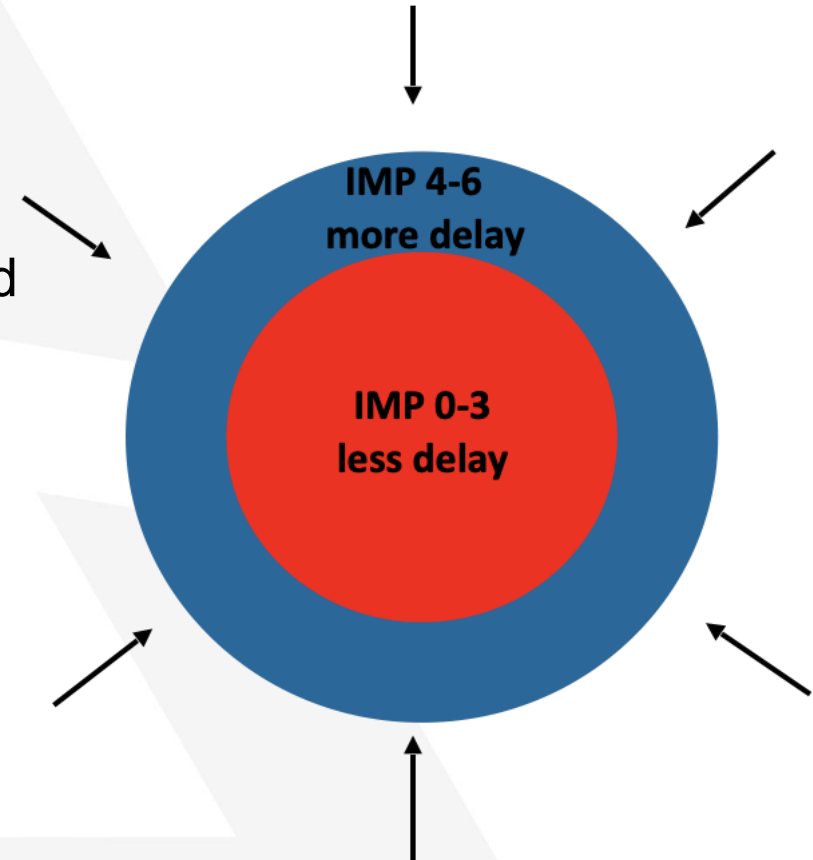
## Service Class Overview

- Service Classes are assigned an Importance
  - Hierarchical from 0 down to 6.
    - 0 reserved for SYSTEM workloads.
- Importance level is assigned based on business importance.
  - This determines the order work received system resources.
- Importance levels 0-3 represent time-critical workloads.
- Importance level 4-6 represent non-time critical workloads.



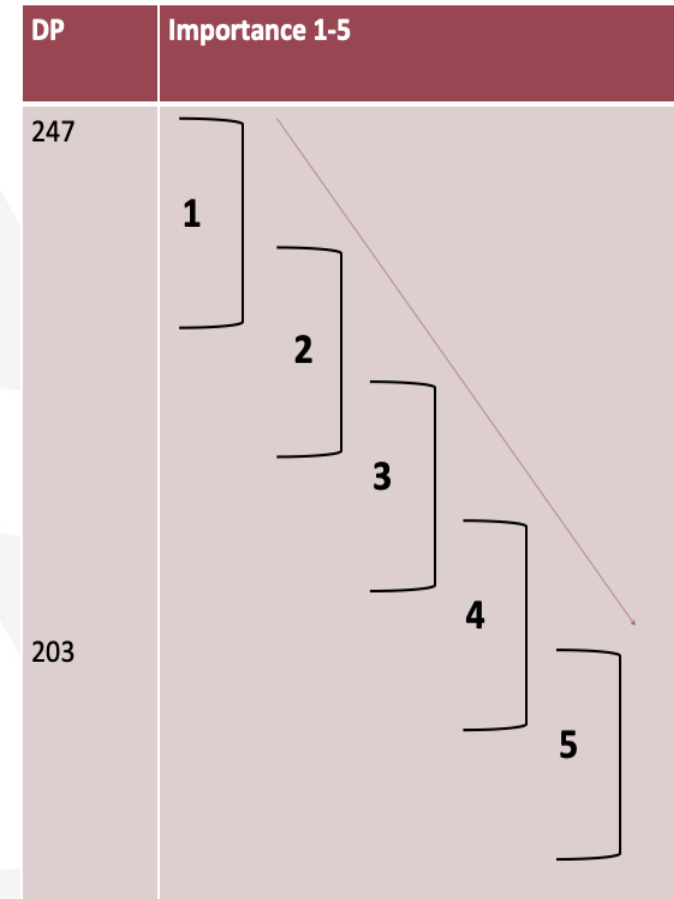
# Service Class Overview

- Why does this matter?
  - Finite quantity of system resources.
  - Shortages will happen.
    - Most common being high processor utilization and capping.
  - Not all workload is equal.
    - Less importance workloads must be delayed to allow more important workloads to execute.



# Service Class Overview – CPU Dispatching Priority

- Importance levels can overlap.
- High performing workloads can receive a higher dispatching priority than a poorly performing higher importance workload.
  - WLM's CPU-Critical setting being enabled prevents this.



## Service Class Overview

- Service Classes are also assigned a goal.
  - Determines prioritization.
- Different goal type based on the type of workload in a service class.
  - Response time goals
    - To be used with transactional workloads.
    - Average Response Time and Percentile Response Time
  - Execution Velocity Goal
    - Batch, Started Tasks, CICS/DB2 regions, etc.
  - Discretionary
    - Least important workloads without a defined goal.
      - Test batch, etc.
- Service Class Periods can be used to create tiered service classes.
  - Establish a Duration before work is lowered to the next period.

# Service Class Overview

Service Class Name	Period	Duration	Importance	Goal Type	Goal Value	Percentage
SYSTEM		1	0	System	System	0
SYSSTC		1	0	System	System	0
STC		1	0	Execution		
				1 Velocity	75	
ONLINES		1	0	Execution		
				1 Velocity	70	
CICSPRD		1	0	2	Response Time	00:00.1 95%
TSO		1	1000	2	Response Time	00:00.1 90%
				Execution		
BATCH		1	0	3	Velocity	50
				Execution		
TSO		2	0	4	Velocity	20
				Execution		
ONLTST		1	0	5	Velocity	15
BATCHTST		1	0	Disc	Discretionary	0
SYSOTHER		1	0	Disc	Discretionary	0

# Service Class Overview – Donor vs Receiver

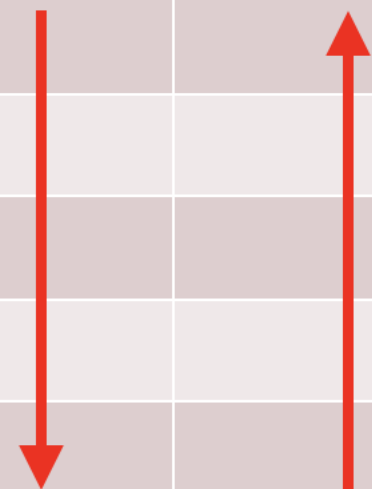
- Every 10 seconds, WLM adjusts dispatching priorities every 10 seconds.
  - From top to bottom WLM identifies one service class not meeting its goal to be a receiver.
  - From bottom to top WLM selects one or more service class(es) that are exceeding their goals to be donor(s).
- Is based on performance index:
  - $PI < 0.75$  = potential donor
  - $0.75 < PI < 1.25$  = goal met
  - $PI > 1.25$  = potential recipient

Time critical



non time critical

Importance	Receiver	Donor
1		
2		
3		
4		
5		
Discretionary		

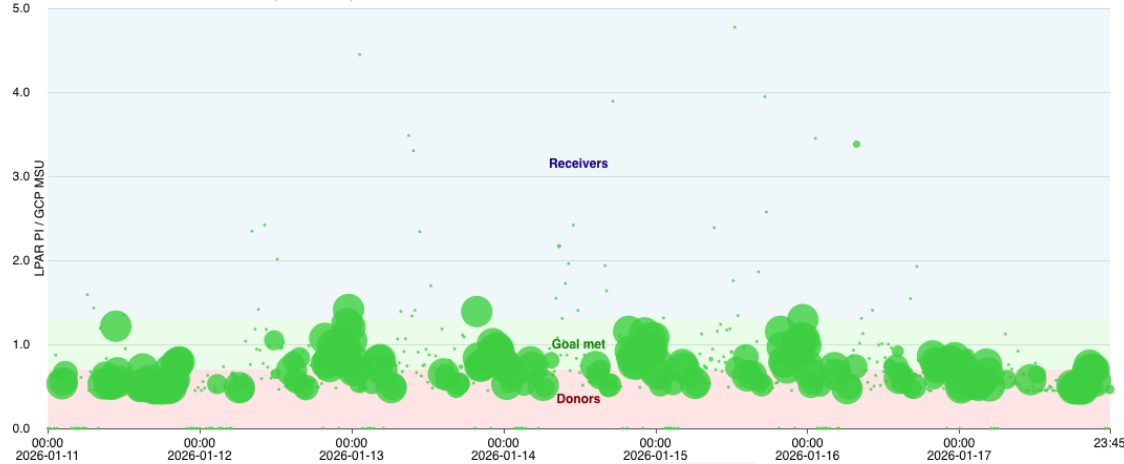




# SERVICE CLASS GOALS

# Service Class Overview – Performance Index

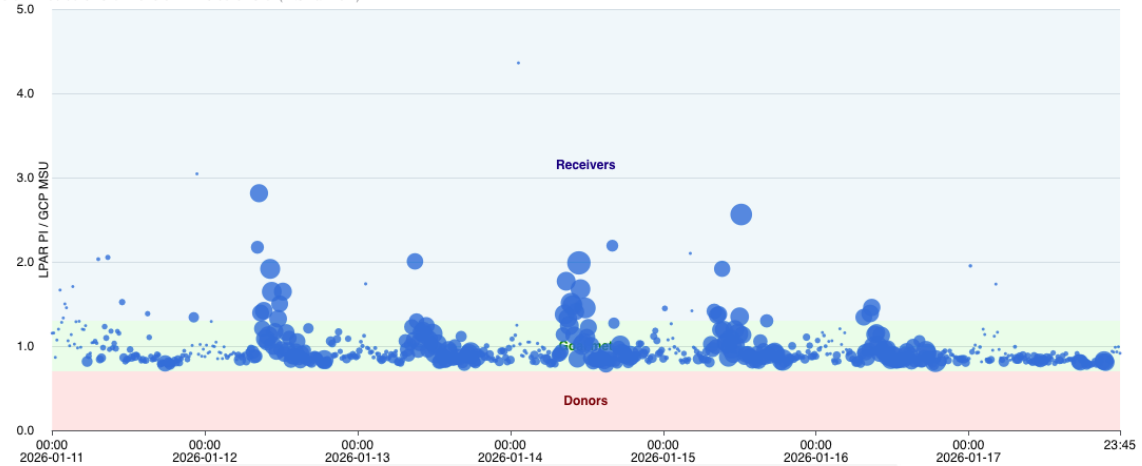
Performance Index Distribution - Service classes  
2026-01-11 00:00 UTC-8 - 2026-01-17 23:59 UTC-8 (Interval: 15m)



- Example of a batch service class.
- Hardly ever is a receiver.
- Often meets its goal overnight.
- Is a donor during online hours.

- Example of an online service class.
- Is never a donor.
- Usually meets its goal.
- Receives WLM help during high online periods.

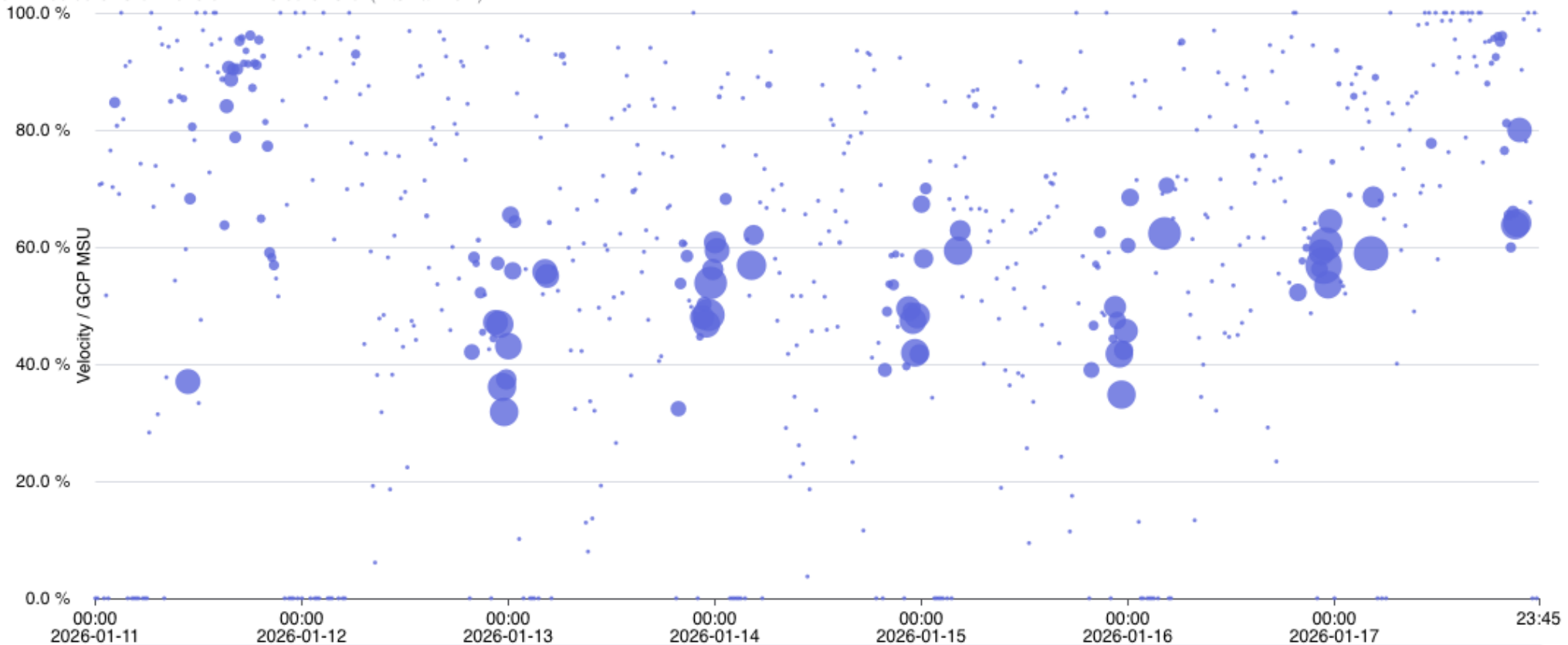
Performance Index Distribution - Service classes  
2026-01-11 00:00 UTC-8 - 2026-01-17 23:59 UTC-8 (Interval: 15m)



# Service Class Overview – Execution Velocity Goal

Execution Velocity Distribution - Service class

2026-01-11 00:00 UTC-8 - 2026-01-17 23:59 UTC-8 (Interval: 15m)



- Batch service class with an Importance 3 and Execution Velocity of 45

# Service Class Overview – Response Time

## Average Response Time Distribution - Service classes

2026-01-06 00:00 UTC-6 - 2026-01-21 23:59 UTC-6 (Interval: 15m)

3.847 s

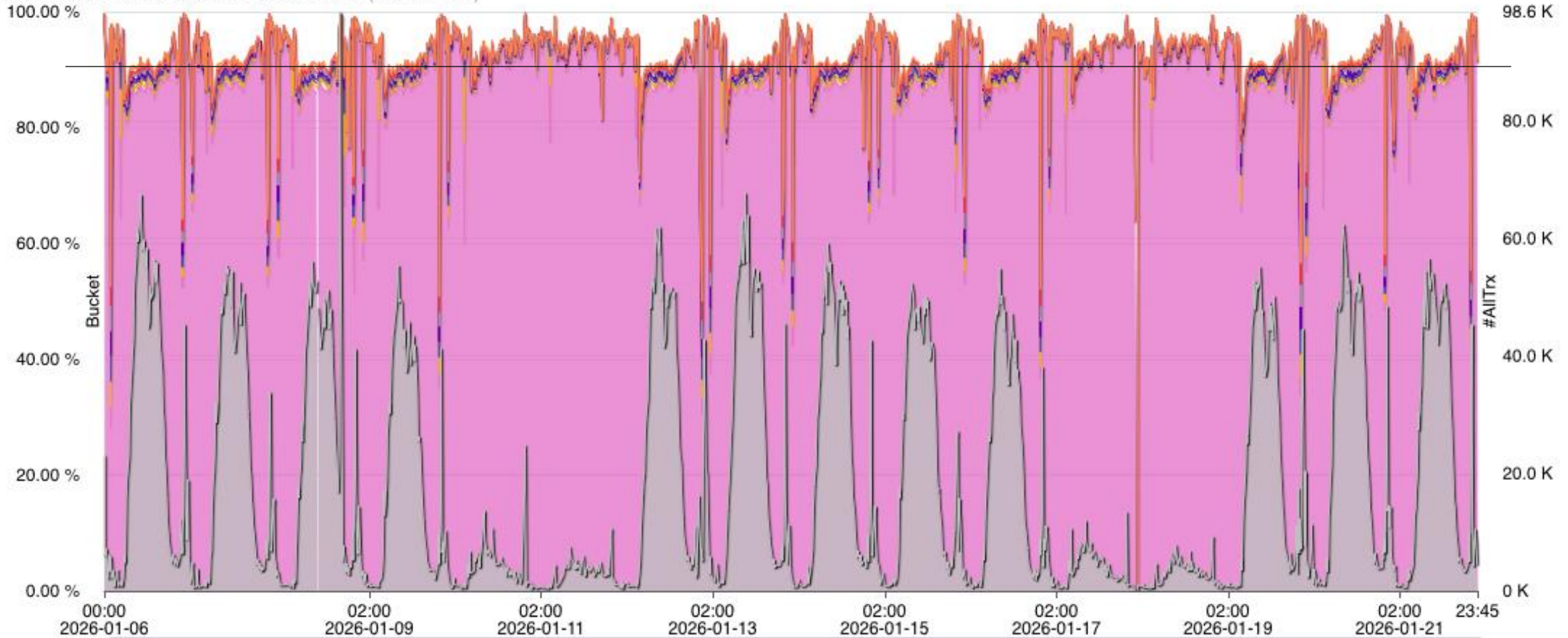


- Goal of 0.075 seconds with a percentile of 90%.

# Service Class Overview – Response Time

## Bucket 1-14 % by Service class

2026-01-06 00:00 UTC-6 - 2026-01-21 23:59 UTC-6 (Interval: 15m)



- Goal of 0.075 seconds with a percentile of 90%.

# Service Class Overview – WLM Best Practices

1. Maximum of 25-30 service classes including periods.
2. Balanced use of all importance levels.
3. Non time critical work in Importance level 4 or lower.
4. Set realistic and achievable goals and updated accordingly.
5. Group like workloads together in service classes.
6. Have sufficient donors.

# Your feedback is important!

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