ThruPut Manager™

SE ➡ AE ➡ AE with PCS

ThruPut Manager AE

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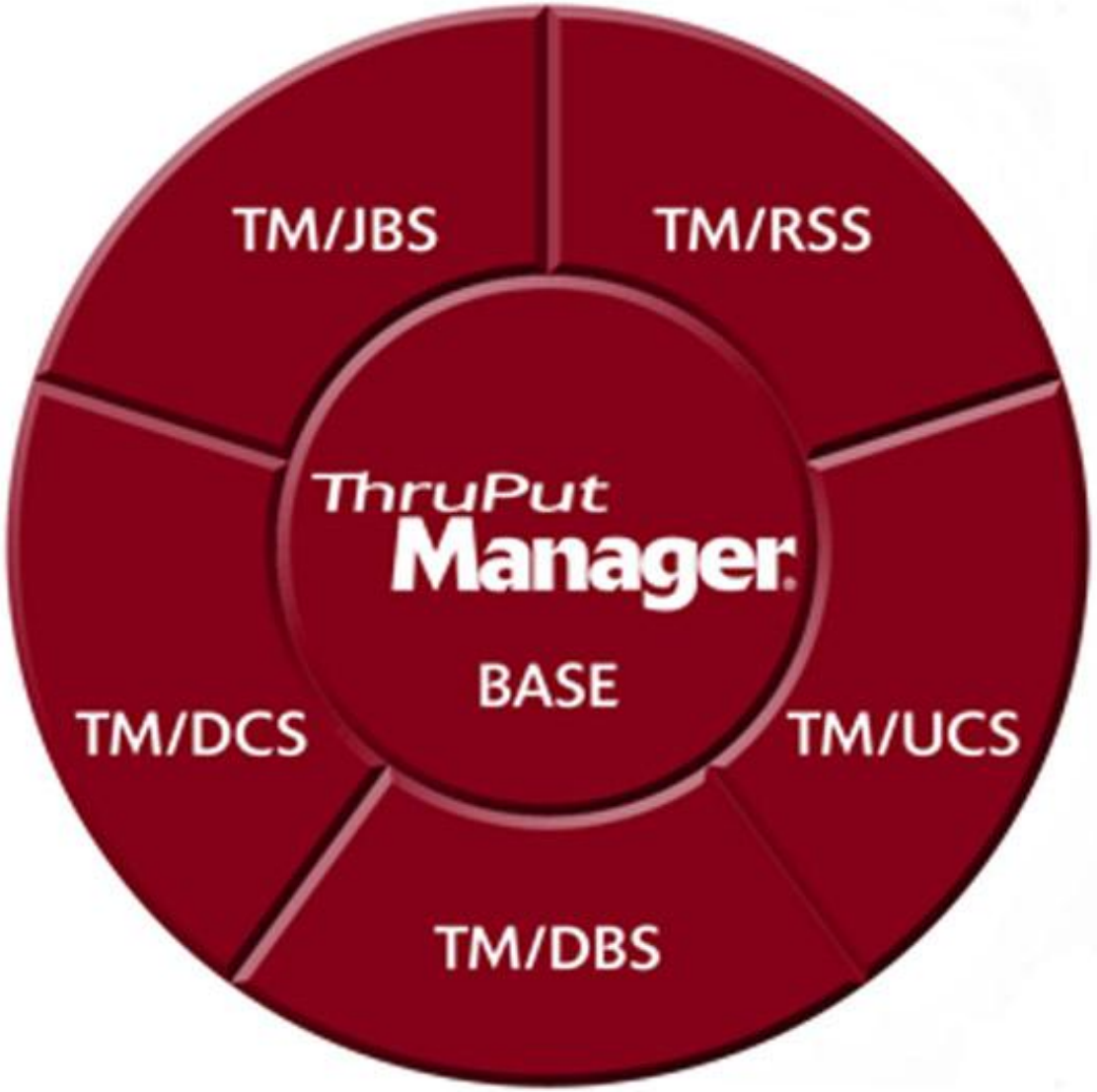
ThruPut Manager AE

ThruPut Manager SE



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ThruPut Manager SE

- Each job is analyzed on submission
- Provides Job Profile for interrogation by a customized rules language (JAL)
- Installations control:
  - classing and priority
  - Routing, especially control of licensed software
  - How many jobs like this can run at a time
  - Recalling from HSM while in the queue
  - Staging virtual volumes into cache
  - Dataset contention

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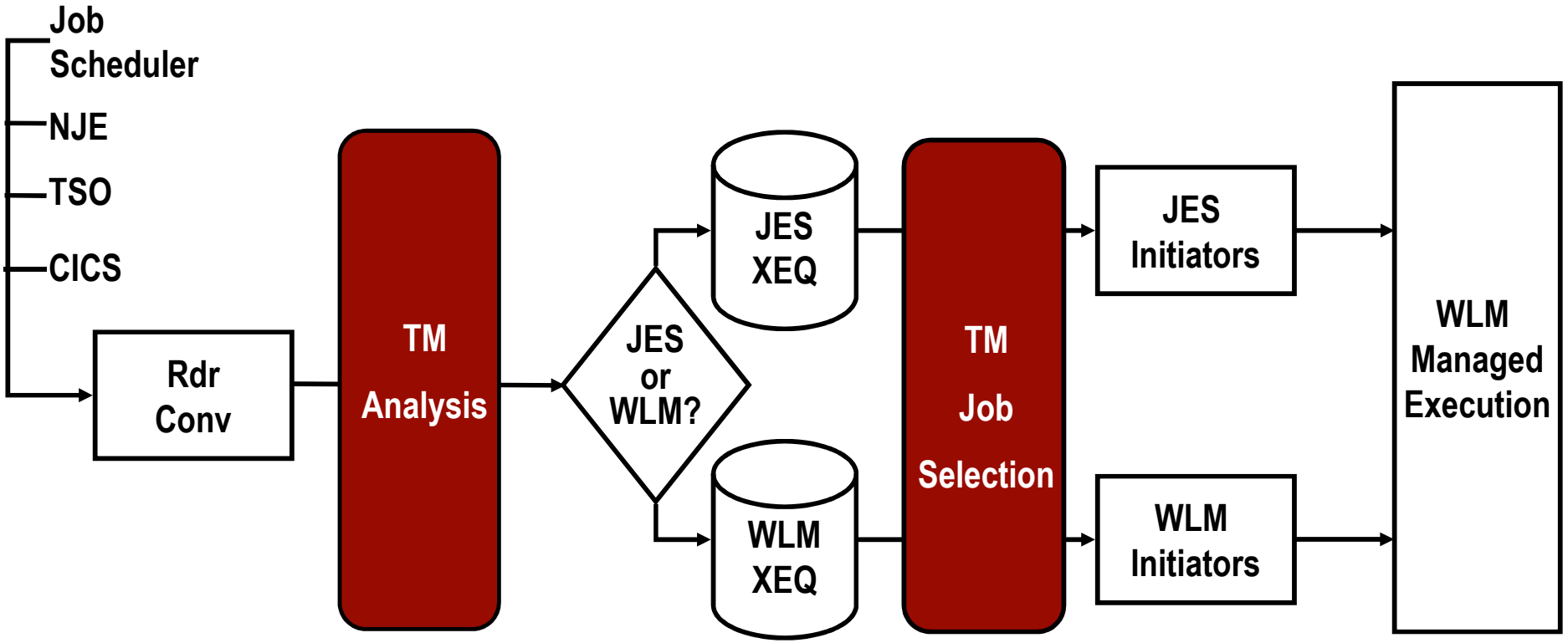
Batch Job Life Cycle With ThruPut Manager SE



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Good but …

- We could manage jobs better if there were goals
- WLM has goals for managing internal resources during execution
- Batch needs external resources to be managed
- Needed goals for selection, with escalation thresholds
- Needed Importance to resolve conflicts
- Needed to control selection based on load

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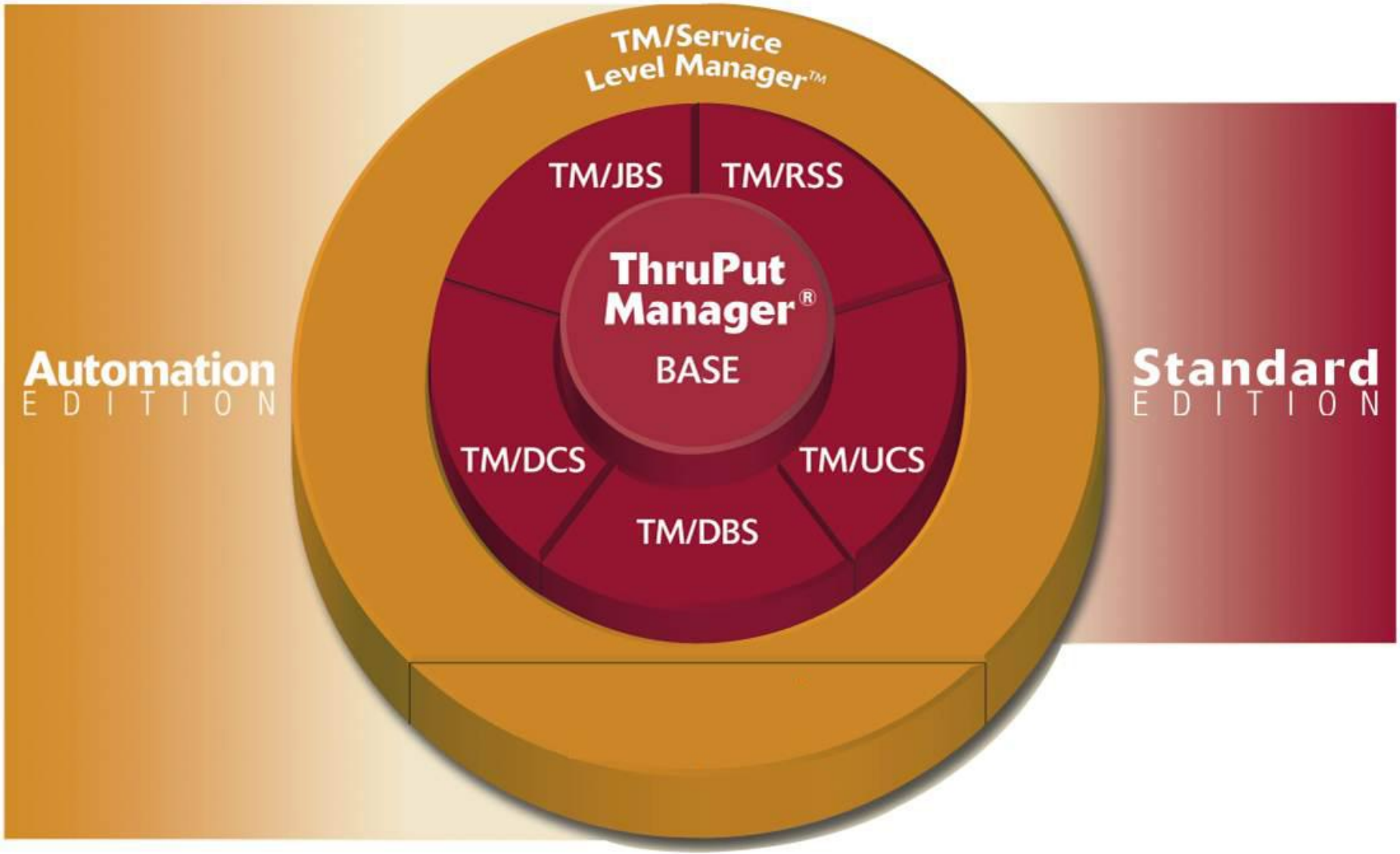
Automation Edition Was Born



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- Installation sets Batch Importance level and selection thresholds for each group/category
- Uses a single JES2 queue
  - Sets initial priority
  - Manipulates queue order using JES2's priority
  - Thresholds determine how fast each group ages
  - Bank line rather than grocery line
  - Job at the top of the queue is usually the "right" job to select
- Manages initiators, selection and batch loading

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Batch Importance

- Importance is used:
  - When jobs miss their targets and are escalated
  - To prioritize recalls from DFHSM and when to release jobs for selection
  - To prioritize staging from VTS backend
  - To decide who goes next when dataset contention detected
  - To decide who goes next when tape drive allocation conflicts occur
  - To set the Service Class for WLM to use (installation determines which Service Classes we can use)

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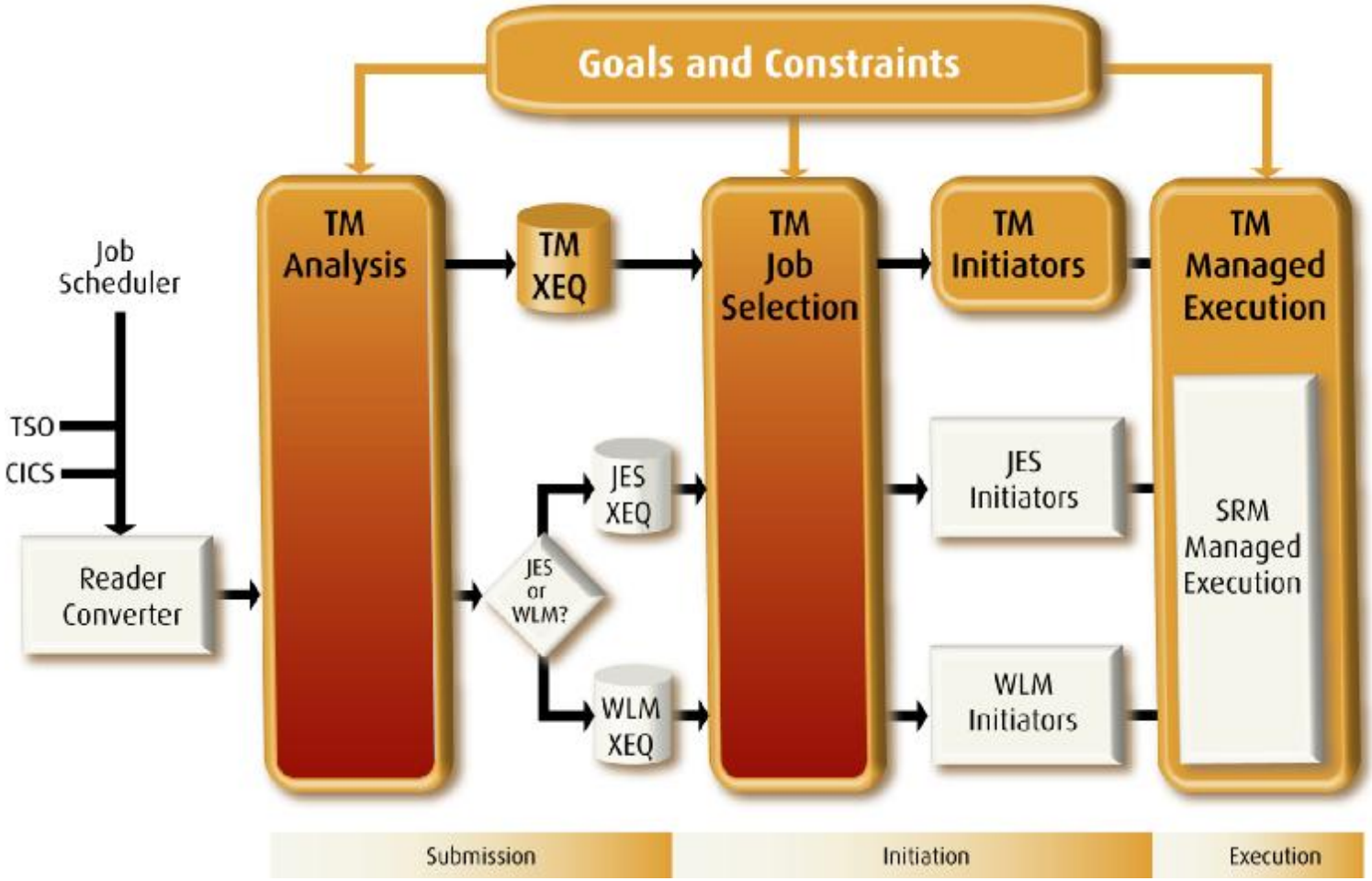
Batch Job Lifecycle with AE



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Great, but …

- AE – like z/OS, JES2 and WLM – sees jobs one at a time with no knowledge of a job's context
  - Is it part of a stream of jobs?
  - Is the stream ahead of schedule, on time or behind schedule?
- What if we could combine AE's intelligence with knowledge of streams of jobs and their schedule?
- Could we get information from a Job Scheduler?

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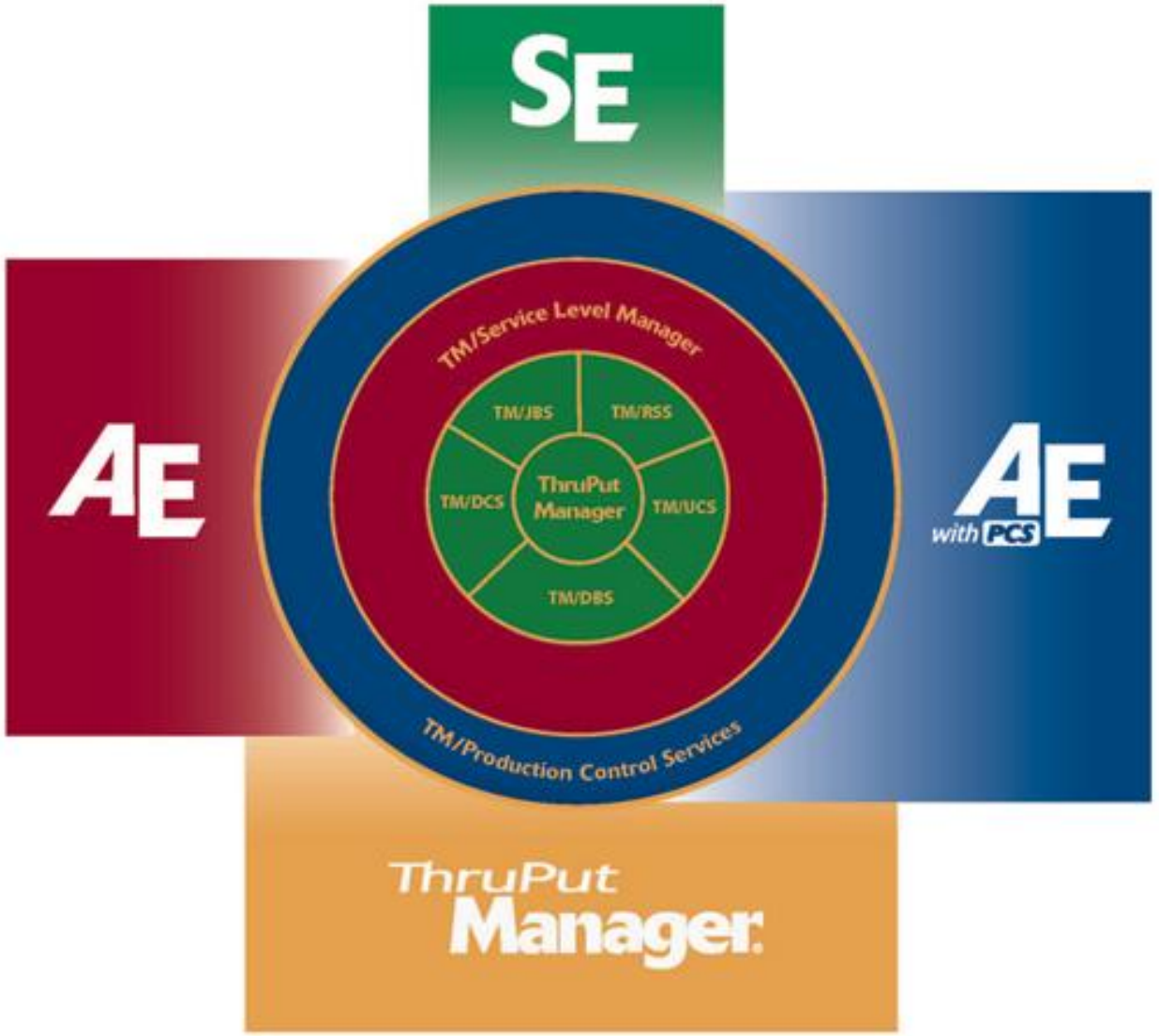
ThruPut Manager AE with PCS Was Born



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ThruPut Manager AE with PCS

- Gets schedule information from CA 7
- Determines the Critical Path dynamically
- Importance set for application (PI)
- Maintains detailed experience data
  - Can calculate length of a job stream
- Sets and adjusts thresholds based on calculated slack time
- Manages jobs separately from non-PCS work
  - Installation chooses relationship

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TM AE – Capacity Management

- The latest addition to AE is –
- **Automated Capacity Management**
- Works with SLM and PCS and there is also an entry level that does not require either.

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TM AE Saves You Money!
How to Reduce Your Software Costs

- Use a combination of IBM's soft capping and TM AE's automated capacity management (ACM)
- Capping puts a limit on MSU usage, based on a 4-hour rolling average
- ACM defers work you've declared deferrable as the 4-hour rolling average approaches the cap level

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TM AE Saves You Money!
Why use Capacity Management?

- Running hard into the cap impacts all workloads, including online
- Batch is usually a major component of the MSU consumption
- Deferring low-importance batch for a short time:
  - gradually approaches the cap rather than running hard into it
  - allows a lower cap with minimal impact

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TM AE Saves You Money!
The Impact of Batch

- Batch workload contributes to CEC 4HRA
- Heavy low importance batch workload on one LPAR may impact more important online and batch work in another LPAR on the CEC
- WLM is unaware of the importance of a load in another LPAR or Sysplex

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TM AE Saves You Money! Controlling Your Costs

- You can control your production batch to a limited degree
  - Some provides the foundation for your onlines and is highly visible to senior management
  - But, not all production batch is equal
    - Reports compared to database updates
    - Externally compared to internally focused
    - Government regulated compared to unregulated
- You can control your non-critical batch

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TM AE Saves You Money!
TM AE with Capacity Management

- You can manage the 4-hour rolling average for a CEC by controlling the selection of batch and selectively adjusting the Service Class of lower importance work that is currently executing
- If there is sufficient batch, this can have a significant effect on your costs

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TM AE Saves You Money!
TM AE with Capacity Management

- You specify up to five percentage levels of that capacity at which you want to take one or more actions
  - Limit a category of batch to *n* concurrent jobs,
  - Stop selecting a category of batch,
  - Change the Service Class of a category of batch to a very low activity one used by TM AE Capacity Management until things get better
    - Discretionary with a Resource Group maximum

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TM AE Saves You Money!
Example Capacity Management Rules

90% of Target capacity	- Stop selecting BI (Batch Importance) 4 and 5 jobs
92% of Target capacity	- Move any BI 5 jobs still running to low-activity SC - Restrict BI 3 to 8 jobs
95%	- Move any BI 4 jobs still running to low-activity SC - Stop selecting BI 3 - Restrict BI 2 to 12 jobs
97%	- Move any BI 3 jobs still running to low-activity SC - Stop selecting BI 2 jobs
99%	- Move any BI 2 jobs still running to low-activity SC

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TM AE Saves You Money! Lowering Your Monthly 4HRA Peak

- Examples from three sites

4HRA Peak in MSUs	25% of Batch MSUs at peak	Savings per Month	Savings per Year
2391	170	$34,000	$408,000
2060	188	$39,600	$475,200
4826	367	$73,400	$880,800

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