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Revised By:	Joshua Graves	Review Cycle/Date:	Annual
Reviewed By:	Aleta Seaman	Reviewing Unit:	Mainframe
Title:	Tivoli Workload Scheduler SOP		
Description:	This document is the standard operating procedure for the Tivoli Workload Scheduler, the job scheduler for mainframe.		

Tivoli Workload Scheduler

Standard Operating Procedure

1. General Statement of Purpose
 - 1.1. The purpose of this document is to outline the functions of the Tivoli Workload Scheduler, the job scheduler for the mainframe.
2. Scope
 - 2.1. This document is for job processes that run on the Mainframe.
3. Discipline
 - 3.1. Technical Standards
4. Terms and Definitions
 - 4.1. Tivoli Workload Scheduler (TWS) – IBM job scheduling system that auto submits jobs that run on the mainframe.
 - 4.1.1. IBM’s software product, Tivoli Workload Scheduler, is a production support management system. The system automates production job scheduling and significantly improves data center productivity and service by eliminating unnecessary manual scheduling.
5. Instructions
 - 5.1. TWS addresses the areas of workload management, workload definition, processing management, and performance tracking and reporting. Organization is provided by the TWS database through event record maintenance. The composite database is a central location with primary maintenance functions being performed by the Production Control group.
 - 5.2. The database contains:
 - 5.2.1. Definitions for all tasks to be managed by TWS processing are:
 - 5.2.1.1. Job Control Language (JCL) for production jobs
 - 5.2.1.2. Production dataset information management
 - 5.2.1.3. Interrelationships between processing tasks
 - 5.2.1.4. System resource dependencies
 - 5.2.1.5. CPU Processing requirements
 - 5.2.1.6. Dispatch priorities for production jobs
 - 5.2.1.7. Dataset dependencies and tracking
 - 5.2.1.8. Prerequisites for job processing
 - 5.2.1.9. Processing job sequence instructions
 - 5.2.1.10. Optional text description and/or processing instructions

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- 5.3. Scheduled events are automatically submitted to the host system when ready for execution. Prior to submitting each event, TWS verifies that all pre-processing requirements (e.g., completion of manual tasks, creation of datasets, completion of predecessor jobs, mutually exclusive systems requirements, etc.) are satisfied. If these requirements are not satisfied, the event will not process. Outstanding requirements for any job may be displayed online at any time.
 - 5.4. Next and prior to submission, the workload balancing and performance management facility examines the queue of jobs waiting for CPU processing and makes real time calculations to determine which job within the queue should be submitted. This determination is based on comparing job requirements to a matrix of information, which defines installation priorities and machine resource availability.
 - 5.5. During execution, the progress of each job is automatically monitored through examination of selected Storage Management Subsystem (SMS) records. As datasets are created, TWS functions to monitor and record such creation. Should datasets created by a job be required for input to another job, dataset availability is automatically posted. This posting occurs upon successful job completion or selectively upon step completion. When an event is successfully executed, requirements for events dependent upon the completed cycle are posted. Additionally, wrap-up activity associated with the event is initiated.
 - 5.6. Should a job abnormally terminate, no posting occurs and the terminated job is moved to the TWS queues to await rerun or restart. TWS is capable of facilitating event clean-up and resubmission.
 - 5.7. In addition to notifying the appropriate personnel of each abnormally terminated job, restart and rerun assistance provides information that allows automatic restart at the last step of execution, prior to termination. Datasets are passed, steps are skipped and condition codes are checked automatically to meet requirements of event restart or rerun. This prevents the duplicate process of steps and ensures that no database is corrupted.
6. Roles and Responsibilities
- 6.1. Production Control – Support staff that implement changes to the job scheduling system.
7. Limitation or Implementation Notes
- 7.1. A strong understanding of the agency and job implications is needed to set up the scheduler.