

STATE OF OHIO (DAS)

CLASSIFICATION

SPECIFICATION

CLASSIFICATION SERIES:

Data Systems Scheduler

SERIES NO.:

1282

MAJOR AGENCIES:

All Agencies

EFFECTIVE DATE:

4/14/2019

SERIES PURPOSE:

The purpose of the data systems scheduler occupation is to schedule batch computer jobs according to predetermined frequency, ensure availability of adequate resources required by each job (e.g., memory, processing time, print volume, tape usage, direct access storage devices), avoid contention or failure by the current execution or multiple jobs with similar requirements & define values for parameters passed to system at execution time.

At the lower levels, employees maintain & monitor resource usage, review new & modified operations documentation for conformity to standards & updates automated scheduling documentation libraries &/or learn to or develop daily production processing schedules & determine & maintain the proper resource allocations for all production processing.

At the middle level, employees recommend changes to data processing policies, procedures, method & documentation to improve efficiency of scheduling unit, organize, coordinate & control flow of input & output data through entire production process by managing automated scheduling systems for assigned agency & act as liaison with Ohio data network.

At the higher level, employees supervise data systems schedulers assigned to one work unit. The level is restricted for use by the Ohio Department Of Job & Family Services, Ohio Department Of Taxation & Ohio Bureau Of Workers' Compensation only.

For positions assigned responsibility for monitoring jobs to assure smooth progression, balancing control totals, verifying accurate execution of jobs & taking corrective action, please see Data Control Technician, 1235 series.

Glossary: The following are definitions of items that will be cited herein for this classification series:

Automated Scheduling Package: An automated scheduling package addresses all the variables considered by members of the scheduling unit in determining the appropriate time for jobs to execute. Information provided by the scheduling unit enables the package to consider the resources required, the calendar to be followed, the prerequisite jobs which must execute beforehand as well as the jobs which run subsequently. It also monitors the execution of jobs & prevents jobs from running outside their predetermined order or from running when a predecessor job has not completed successfully.

Contention: A condition arising when two or more data stations attempt to transmit at the same time over a shared channel, or when two data stations attempt to transmit at the same time in two-way communication. The result of contention is poor response time in the online environment or slow execution time in the batch environment. For example, two jobs attempting to access a single data file at the same time might prevent one or even both jobs from executing.

DASD Planning: Management of a pool of disk packs (DASD) dedicated to its data processing operations. In determining the number of disk packs required to store a department's data, thought must be given as to the number & size of files required, the disk packs upon which those files may be most efficiently placed in order to alleviate contention issues & the amount of growth anticipated in files used in existing systems or anticipated in new development efforts.

DASD Space Allocations/Space Management: Every data file is allocated a given amount of space on a DASD device. Those allocations must be managed to assure they are large enough to hold the amount of data to be stored yet not so large as to waste space unnecessarily. While being allocated, the issue of placement must be considered. Factors such as the other files on the disk pack & the jobs accessing those files must be analyzed in determining the most efficient placement. Further consideration must be given to the anticipated growth of files in determining where they should be placed.

Data Set: A file or the major unit of data storage & retrieval, consisting of a collection of data in one of several prescribed arrangements & described by control information to which the system has access.

Device Type: Usually referring to DASD or tape, the general name for a kind of device; for example, DASD devices are referred to as 3380 or 3390 devices depending upon the model they are.

Failure: The premature termination of job or transaction resulting in its inability to perform its required function. A failure is the effect of a fault. The termination of a task prior to its completion because of an error condition that cannot be resolved by recovery facilities while the task is executing.

Job Processing Placement: The determination of when jobs should execute (job processing placement) in relation to

other jobs, results in timely completion of production systems.

Parameter: A name in a procedure that is used to refer to an argument passed to that procedure. Parameters utilized commonly include such information as dates, volumes on which files should be created, volume serial numbers of tapes to be included in jobs, etc.

Print Queue Volume: The amount of data generated by execution of computer jobs, destined for print must be controlled as there is a finite amount of space which can be occupied. Should the volume of print be left unattended & the print queues reach an unacceptable threshold, the operating system on the mainframe computer shuts down & all processing comes to a halt.

Resource Availability: A resource is any facility of the computing system or operation system required by a job or task & including main storage, input/output devices, the processing unit, data sets & control or processing programs. The scheduling unit analyzes each job that is to execute in conjunction with every other job to determine what resources are required & what contention for resources may result when any combination of jobs is submitted to execute at any given time. Without this analysis, the effect of contention for resources among jobs would result in inefficient execution of automated systems.

Time Share Option/Integrated Structured Programming Facilities: The facility enables personnel to interact with the operating system to perform a variety of tasks including programming, job submission & file maintenance. Referred to as TSO/SPF, this software is used by technical staff to converse with the operating system.

VSAM File: Virtual storage access method is an access method for direct or sequential processing of fixed & variable-length records on direct access devices. The records in a VSAM data set or file can be organized in logical sequence by a key field, in the physical sequence in which they are written on the data set or file, or by relative-record number. VSAM files are more efficiently accessed when they are intelligently placed on DASD & monitored to assure they are adequately tuned.

VTOC Information: The volume table of contents is a table on a direct access volume that describes each data set of the volume. The VTOC contains such information as the file name, the method in which it is organized, the amount of space allocated for each file, the percentage of the space used.

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>PAY GRADE</u>	<u>EFFECTIVE</u>
Data Systems Scheduler 1	12821	28	03/07/2004

CLASS CONCEPT:

The entry level class works under immediate supervision & requires some knowledge of computer production control procedures & job control language or report generating language in order to coordinate abend resolution & job system monitoring, schedule, coordinate & monitor computer production jobs/data runs & under mentorship of higher-level data systems scheduler, to learn to determine proper resource requirements for production job processing, monitor production job tape usage, daily print queue volume & VTOC information & determine job processing placement, most efficient device type for each data set & potential data set contention problems.

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>PAY GRADE</u>	<u>EFFECTIVE</u>
Data Systems Scheduler 2	12822	29	02/13/2000

CLASS CONCEPT:

The developmental level class works under immediate supervision & requires working knowledge of computer production control procedures & job control language or report generating language in order to determine proper resource requirements for production job processing, monitor production job tape usage, daily print queue volume & VTOC information & determine job processing placement, most efficient device type for each data set & potential data set contention problems.

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>PAY GRADE</u>	<u>EFFECTIVE</u>
Data Systems Scheduler 3	12823	31	02/13/2000

CLASS CONCEPT:

The full performance level class works under general supervision & requires considerable knowledge of computer production control procedures, DASD planning, job control language or report generating language & VSAM file organization in order to determine proper DASD space requirements for production job processing, coordinate with production control to determine optimum scheduling timetable to execute production jobs as they relate to resource

availability, mandated completion & delivery dates & data contention issues using automated scheduling software package.

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>PAY GRADE</u>	<u>EFFECTIVE</u>
Data Systems Scheduler 4	12824	32	02/13/2000

CLASS CONCEPT:

The advanced level class works under general direction & requires thorough knowledge of computer production control & scheduling procedures, DASD planning, VSAM file organization in order to analyze new production systems & recommend changes to electronic data processing policies, procedures, methods & documentation to improve efficiency of assigned data scheduling unit, organize, coordinate & control flow of input & output data through entire production process by managing automated scheduling systems, act as liaison with Ohio data network in determining workload on weekly basis to facilitate scheduling decisions, analyze & test all new production job/systems & manage automated scheduling software systems (e.g., Control-M, Ca-Scheduler).

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>PAY GRADE</u>	<u>EFFECTIVE</u>
Data Systems Scheduler Supervisor	12825	13	03/07/2004

CLASS CONCEPT:

The supervisory level class works under general direction & requires thorough knowledge of electronic data processing functions, production control & scheduling procedures & activities in order to supervise data systems schedulers assigned to one work unit (i.e., class is restricted for use by Ohio Department Of Job & Family Services, Ohio Department Of Taxation & Ohio Bureau Of Workers' Compensation only).

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>B. U.</u>	<u>EFFECTIVE</u>	<u>PAY GRADE</u>
Data Systems Scheduler 1	12821	09	03/07/2004	29

JOB DUTIES IN ORDER OF IMPORTANCE: (These duties are illustrative only. Incumbents may perform some or all of these duties or other job-related duties as assigned.)

Coordinates abend resolution & job system monitoring (e.g., ensures validity of output data; corrects job-control language; investigates abends by studying abend code online documentation; outputs or dumps to determine if abend is user or system caused; determines problem resolution by researching performance history; uses job-control language to copy job from residing library into ad hoc library to make corrections & resubmit job; enhances job-control language documentation & naming conventions for files, datasets, programs &/or jobs), organizes & coordinates computer production jobs by modifying system parameters for nightly runs, verifies conditions are set properly prior to batch processing, facilitates corrective actions, allocates direct storage devices, restarting of jobs &/or program file downloads &/or uploads, activates & deactivates online regions & serves as liaison between programmers, users &/or systems personnel.

Schedules, coordinates & monitors computer production jobs/data runs; assures online availability; utilizes job control or report generating language in order to set up & submit computer production jobs; follows programming flow charts, diagrams & instructions to control flow of data; determines sequence of processing steps; reviews, validates & adjusts input & output data to ensure accuracy; writes job documentation (e.g., user instructions; system; job flow charts).

Under mentorship of higher level data systems schedulers learns how to allocate adequate resources for each system; determines & maintains memory & processing time requirements for production jobs; monitors production job tape usage & print queue volume during peak processing times; determines job processing placement, most efficient device type for each data set & potential data set contention problems & assists in preparation of volume table of content (VTOC) reports showing resource availability utilizing job control or report generating language.

Prepares for mailing &/or distributes computer print-outs/reports to appropriate office; analyzes processing problems (e.g., abnormal terminations); determines solutions &/or advises users; reviews new & modified operations documentation; assists in updating control-m documentation library; uses automated scheduling packages to schedule & monitor production job execution; contacts users regarding processing problems, status of work or scheduling delays; recommends modifications to existing procedures; maintains production control records; protects & secures input & output data; mounts tapes &/or backs up disk drives.

MAJOR WORKER CHARACTERISTICS:

Knowledge of SAM file structure*; job control language or report generating computer language (e.g., JCL, TSO, Control-M Keystroke Language); electronic data processing/computer science; computer production control procedures; data systems analysis procedures*; DASD space management techniques*; automated scheduling system operating procedures*. Skill in operation of computer terminal & peripheral equipment (e.g., printers; bursters; decollators); time share option/integrated structured programming facilities (TSO/ISPF). Ability to use statistical analysis*; develop & interpret data processing flow charts; deal with problems involving several variables; sort items into categories; interpret variety of technical material; cooperate with co-workers on group projects.

(*)Developed after employment.

COMPETENCIES

Interacting With Computers
Getting Information
Communicating with Supervisors, Peers, or Subordinates

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT:

6 mos. trg. or 6 mos. exp. in electronic data processing/computer science; 6 mos. trg. or 6 mos. exp. in using job control or report generating language (e.g., RPG, JCL, TSO, Control-M Keystroke Language); 6 mos. trg. or 6 mos. exp. in computer production control procedures.

-Or equivalent of minimum class qualifications for employment noted above.

TRAINING AND DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT:

Not applicable.

UNUSUAL WORKING CONDITIONS:

On call 7 days per week/24 hours per day; may work evening or night shift; may be exposed to constant low-level noises; overtime may be required.

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>B. U.</u>	<u>EFFECTIVE</u>	<u>PAY GRADE</u>
Data Systems Scheduler 2	12822	09	02/13/2000	31

JOB DUTIES IN ORDER OF IMPORTANCE: (These duties are illustrative only. Incumbents may perform some or all of these duties or other job-related duties as assigned.)

Assures adequate resources are allocated for each system in proactive manner, determines & maintains memory & processing time requirements for production jobs, monitors production job tape usage & print queue volume during peak processing times, follows programming flow charts, diagrams & instructions to determine job processing placement, most efficient device type for each data set & potential data set contention problems & prepares volume table of content (VTOC) reports showing resource availability utilizing job control or report generating language (e.g., JCL, TSO, Control-M Keystroke Language).

Assists higher-level data system schedulers in resolving data set contention problems between production jobs & retention periods for tape data sets & backups; monitors VSAM files for signs of inefficient fragmentation; monitors DASD data set space usage to ensure current space allocations are sufficient for production processing & modifies space allocation when necessary; builds tables of symbolic parameters used to provide information to system at execution time.

Reviews new & modified operations documentation, updates control-m documentation library under guidance/direction of higher-level data systems scheduler; uses automated scheduling packages to schedule & monitor production job execution & maintains tables for these packages.

MAJOR WORKER CHARACTERISTICS:

Knowledge of VSAM file structure; job control language or report generating language; electronic data processing/computer science; computer production control procedures; data systems analysis procedures; DASD space management techniques; automated scheduling system operating procedures. Skill in time share option/integrated structured programming facilities (TSO/ISPF). Ability to use statistical analysis; develop & interpret data processing flow charts; deal with variety of abstract variables; gather, collate & classify information about data; define problems, collect data, establish facts & draw valid conclusions; read, write & interpret variety of technical material; cooperate with co-workers on group projects.

(*)Developed after employment.

COMPETENCIES

Interacting With Computers
Getting Information
Communicating with Supervisors, Peers, or Subordinates

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT:

12 mos. trg. or 12 mos. exp. in electronic data processing/computer science; 12 mos. trg. or 12 mos. exp. in using job control or report generating language (e.g., RPG, JCL, TSO, Control-M Keystroke Language); 12 mos. trg. or 12 mos. exp. in computer production control procedures.

-Or 12 mos. exp. as Data Control Technician 3, 12353.

-Or 6 mos. exp. as Data Systems Scheduler 1, 12821.

-or equivalent of Minimum Class Qualifications For Employment noted above.

TRAINING AND DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT:

Not applicable.

UNUSUAL WORKING CONDITIONS:

On-call 7 days per week/24 hours per day.

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>B. U.</u>	<u>EFFECTIVE</u>	<u>PAY GRADE</u>
Data Systems Scheduler 3	12823	09	02/13/2000	31

JOB DUTIES IN ORDER OF IMPORTANCE: (These duties are illustrative only. Incumbents may perform some or all of these duties or other job-related duties as assigned.)

Schedules & monitors all agency computer system production jobs in timely & efficient manner using automated scheduling software package, makes decisions regarding priority of production runs & balances processing workload based on mandated completion & delivery dates, resource availability & data contention issues, determines DASD storage/space requirements assuring adequate DASD resources & performs space management activities to maintain efficiency of storage architecture including data base and sequential VSAM files.

Organizes, coordinates & controls flow of data through entire production process using standard data processing flow charts; participates in development & testing of new systems to ensure that automated scheduling packages contain accurate scheduling & symbolic parameter information.

Maintains records of job schedules & run completion dates; prepares daily & monthly reports on status of production systems including delinquencies for management; designs charts showing workload peaks & processing delays to facilitate management planning & analysis; issues schedule of events to other units & agencies on production processing; writes documentation for management showing problems encountered & resolutions taken for production systems.

Determines & maintains memory, tape usage &/or processing time requirements for production jobs; monitors production job tape usage & print queue volume during peak processing times; follows programming flow charts, diagrams & instructions to determine most efficient device type for each production data set & potential data set contention problems; prepares VTOC reports showing resource availability utilizing job control or report generating language (e.g., JCL, TSO, RPG, Control-M Keystroke Language); confers with customers to review specifications, production schedule & resolve problems.

MAJOR WORKER CHARACTERISTICS:

Knowledge of automated scheduling software functions & VSAM file structure; electronic data processing/computer science; computer production control procedures; data systems analysis procedures; DASD space management techniques. Skill in time share option/integrated structured programming facilities (TSO/ISPF). Ability to use statistical analysis; deal with variety of abstract variables; gather, collate & classify information about data; define problems, collect data, establish facts & draw valid conclusions; read, write & interpret variety of technical material; work alone on most tasks; maintains accurate record systems; develop & interpret & cooperate with co-workers on group projects.

COMPETENCIES

Interacting With Computers
Getting Information
Communicating with Supervisors, Peers, or Subordinates

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT:

24 mos. trg. or 24 mos. exp. in using job control or report generating language (e.g., RPG, JCL, TSO, Control-M Keystroke Language); 24 mos. trg. or 24 mos. exp. in computer production control procedures which included determining & maintaining memory & processing time requirements for production jobs, monitoring production job tape usage & print queue volume during peak processing times & determining job processing placement, most efficient device type for each data set & potential data set contention problems.

-Or 12 mos. exp. as Data Systems Scheduler 2, 12822.

-Or equivalent of Minimum Class Qualifications For Employment noted above.

TRAINING AND DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT:

Not applicable.

UNUSUAL WORKING CONDITIONS:

On-call 7 days per week/24 hours per day.

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>B. U.</u>	<u>EFFECTIVE</u>	<u>PAY GRADE</u>
Data Systems Scheduler 4	12824	09	02/13/2000	32

JOB DUTIES IN ORDER OF IMPORTANCE: (These duties are illustrative only. Incumbents may perform some or all of these duties or other job-related duties as assigned.)

Recommends changes to electronic data processing policies, procedures, methods & documentation to improve efficiency of data scheduling unit, organizes, coordinates & controls flow of input & output data through entire production process by managing automated scheduling systems, develops documentation on methods of expediting production processing on individual system by system basis, analyze all new production jobs/systems to determine initial execution, job/system placement in regards to other scheduled jobs/systems & affect new job/system will have on daily/weekly/monthly processing & conducts system testing to verify that automated scheduling packages contain accurate scheduling & symbolic parameter information.

Acts as liaison with Ohio data network in determining workload for coming week to facilitate scheduling decisions & advises Ohio data network of expected peaks in production system jobs.

Prepares reports for management showing problems encountered & resolutions taken for production processing problems; informs bureau chief of any impending problems that may have adverse effect on bureau; prepares reports detailing workload peaks & potential processing delays to facilitate management planning & analysis.

Prepares summary report for production management on new job/system's impact on computer resources, processing schedules & problems encountered in testing; maintains master scheduling tables used by lower-level data systems schedulers to produce daily processing schedules.

MAJOR WORKER CHARACTERISTICS:

Knowledge of VSAM file structure; electronic data processing; government structure & process; computer production control procedures; data systems analysis procedures & DASD space management techniques. Skill in time share option/integrated structured programming facilities (TSO/ISPF) & developing & interpreting data processing flow charts. Ability to use statistical analysis; deal with variety of abstract variables; gather, collate & classify information about data; define problems, collect data, establish facts & draw valid conclusions; read, write & interpret technical material; cooperate with co-workers on group projects; maintain accurate record systems; work alone on most tasks & handle sensitive inquiries from agency personnel & government officials.

(*)Developed after employment.

COMPETENCIES

Interacting With Computers
 Getting Information
 Communicating with Supervisors, Peers, or Subordinates

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT:

3 yrs. trg. or 3 yrs. exp. in computer science; 24 mos. trg. or 24 mos. exp. in using job control or report generating language (e.g., JCL, RPG, TSO, Control-M Keystroke Language); 3 yrs. trg. or 3 yrs. exp. in computer production control procedures which included automated scheduling software package to schedule & monitor computer production jobs, determining priority of runs & DASD requirements & performing space management to maintain efficiency of sequential & VSAM files.

-Or 12 mos. as Data Systems Scheduler 3, 12823.

-Or equivalent of Minimum Class Qualifications For Employment noted above.

TRAINING AND DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT:

Not applicable.

UNUSUAL WORKING CONDITIONS:

On call 7 days per week/24 hours per day.

<u>JOB TITLE</u>	<u>JOB CODE</u>	<u>B. U.</u>	<u>EFFECTIVE</u>	<u>PAY GRADE</u>
Data Systems Scheduler Supervisor	12825	22	03/07/2004	13

JOB DUTIES IN ORDER OF IMPORTANCE: (These duties are illustrative only. Incumbents may perform some or all of these duties or other job-related duties as assigned.)

In Ohio Department Of Job & Family Services, Ohio Department Of Taxation & Ohio Bureau Of Workers' Compensation only, supervises lower-level data systems schedulers &/or management analysts/quality assurance staff assigned to one work unit, develops & enforces work unit procedures, trains staff, assists staff by evaluating & correcting difficult scheduling problems (e.g., automated scheduling system malfunctions; production system problems; unusual processing timetables), plans data systems schedulers' workload to accommodate peak processing periods, coordinates work with systems programming, change control, applications development & production control personnel, verifies accuracy of automated scheduling system operations documentation & scheduling libraries, maintains scheduling libraries & develops forms, charts &/or tables for recording & reporting unit activities.

Coordinates scheduling activities with management information system development, quality assurance/quality control, change control, production control & Ohio data network personnel; reviews new job documentation & reports effects of job on current production processing to production control & production management; operates computer terminal utilizing job control or report generating language (e.g., JCL, TSO, RPG or Control-M Keystroke Language).

Provides technical assistance to programming, applications development, users of agency computer systems & production control staff regarding scheduling procedures or development & testing of new production jobs.

Maintains up-to-date records; provides periodic, graphic reports on production volume, problems & resolutions.

MAJOR WORKER CHARACTERISTICS:

Knowledge of supervisory principles/techniques*; employee training & development; electronic data processing/computer science; job control or report generating computer language (e.g., JCL, RPG, TSO, Control-M, Keystroke Language). Skill in operation of complete terminal & peripheral computer equipment (e.g., printers). Ability to define problems, collect data, establish facts & draw valid conclusions; write concise & accurate computer documentation; read & interpret variety of technical material; establish & maintain friendly atmosphere as supervisor of work unit; handle sensitive inquiries from agency personnel, government officials & user community.

(*)Developed after employment.

COMPETENCIES

Interacting With Computers
Getting Information
Establishing and Maintaining Interpersonal Relationships

MINIMUM CLASS QUALIFICATIONS FOR EMPLOYMENT:

3 yrs. trg. or 3 yrs. exp. in computer science; 24 mos. trg. or 24 mos. exp. in using job control or report generating language (e.g., JCL, RPG, TSO, Control-M Keystroke Language); 12 mos. exp. in analyzing & testing new production jobs/systems to determine initial execution, job/system placement & affect of new system on current processing schedule using automated scheduling packages, making recommendations to improve efficiency of data scheduling functions & coordinating, organizing & controlling flow of input & output data through entire production process by managing automated scheduling systems; 6 mos. trg. or 6 mos. exp. in providing work direction & training to other employees or computer project management.

-Or 12 mos. exp. as Data Systems Scheduler 3, 12823.

-Or equivalent of Minimum Class Qualifications For Employment noted above.

TRAINING AND DEVELOPMENT REQUIRED TO REMAIN IN THE CLASSIFICATION AFTER EMPLOYMENT:

Not applicable.

UNUSUAL WORKING CONDITIONS:

On call 7 days per week/24 hours per day.