THE RESEARCH QUEUEING PACKAGE
VERSION 2: Availabilty Notice

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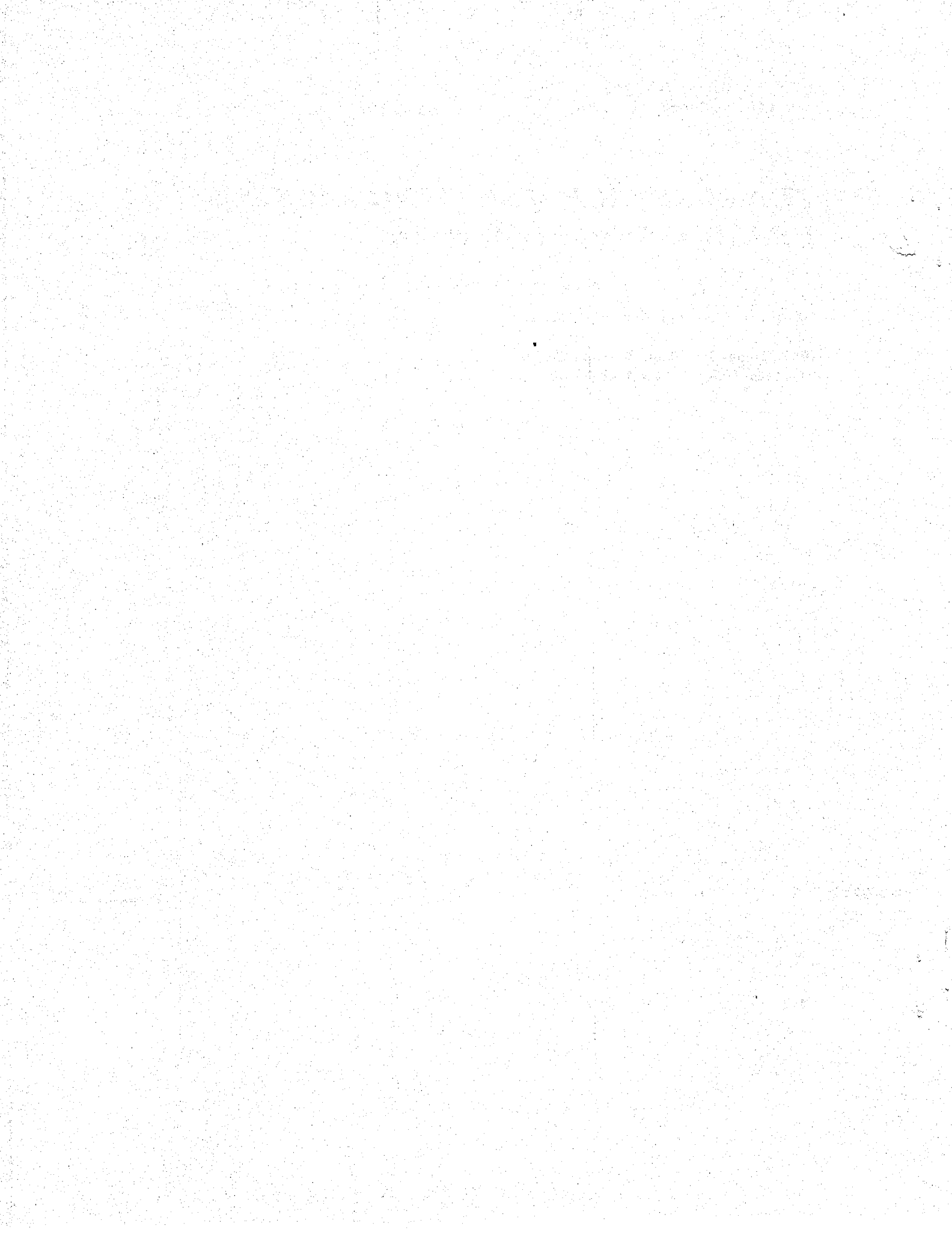
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Research Distributed Program

RESEARCH QUEUEING PACKAGE

A SET OF PROGRAMS TO ENABLE THE CONSTRUCTION AND SOLUTION OF ROBUST QUEUEING NETWORK PERFORMANCE MODELS

Queueing networks frequently play a key role in the modeling of flow systems where contention for resources is the major determinant of system performance. This very broad class of systems includes many commonly encountered examples such as computer systems, communication networks, office systems, and manufacturing plant floor layouts. The Research Queueing Package (RESQ) is a collection of software modules facilitating the construction and solution of queueing network models of large and complex systems. Solutions can be obtained through discrete simulation, through numerical methods, or through a combination of both, enabling the user to trade off model detail against the computer time required to obtain performance measures from the model.

HIGHLIGHTS

- RESQ is highly interactive, and easy to learn and use. RESQ also has a batch mode, and the user may switch freely between interactive and batch modes.

- RESQ provides a high level language to easily and concisely describe the structure of the model.

- Models may be described in a multilevel hierarchical fashion with the definition of parametric submodels to be called by a main model routine.

- The RESQ language permits easy speeification of run-time constraints on model execution.

- RESQ provides special queueing network elements for convenient representation of system characteristics such as simultaneous resource possession, dynamic routing mechanisms and synchronization of parallel activities.

- A simulation trace is provided to facilitate model debugging.

- The RESQ simulation component provides advanced statistical methods for simulation output analysis with a minimum of user involvement.

- Stopping rules based on the output analysis can be specified to help conserve computing resources.

- Simulations may be run in an interactive mode in which the user examines performance results during the run and has the option of stopping or continuing the run after this examination.

- Initial transient portions of the model run may be automatically exeluded from the output of results.

Additional technical description of RESQ together with an extensive bibliography on RESQ and queueing network modeling in general may be found in "The Research Queueing Package: Past, Present and Future," by Charles H. Sauer, Edward A. MacNair and James F. Kurose, *Proceedings of the 1982 National Computer Conference.* The work in progress described in this paper is of a research nature and is not to be construed as a present or future part of the licensed program.

SPECIFIED OPERATING ENVIRONMENT

MACHINE REQUIREMENTS

The minimum system requirements are similar to the minimum system requirements for either VM or MVS. A minimum of 512K of real user memory is required for satisfactory perform-ance. RESQ has been designed to operate with all terminal devices supported by VM or MVS which have the characters available on the 3277 terminal device, including the 3278, 3279, 3943 and other terminal devices.

PROGRAMMING SYSTEMS

RESQ operates in either a VM/CMS environment, or in a MVS/TSO environment.

For the VM environment, RESQ is designed to operate with Release 5 (PLC5) or later of VM/370. For the MVS environment, Release 3.8 or later of OS/VS2 is required. RESQ requires the run time support libraries for the PL/I optimizing compiler, Program Numbers 5734-LM4 and 5734-LM5. (RESQ may be interfaced with PL/I programs. If such interfac-ing is desired, the PL/I optimizing compiler, Program Number 5734-PL1, is also required.)

BASIC MATERIAL

The documentation consists of two copies of the RESQ Introduction and Examples (RA-138) and either two copies of the RESQ CMS Users Guide (RA-139) or two copies of the RESQ TSO Users Guide (RA-140), as appropriate to the target programming system. The licensed program material consists of one mini-reel of machine readable tape eontaining object code.

PROGRAM SERVICE

This program is distributed on an "as is" basis, without warranty except as discussed in the IBM Research Distributed Program License Agreement.

INQUIRIES

Inquiries concerning the program should be addressed to:

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ORDERING INFORMATION

This program and its related documentation are currently scheduled to be available in the United States and Puerto Rico August 9, 1982. This program is available for a one time charge of $7,480.00. Using the progam indicates acceptance of the terms and conditions of the IBM Research Distributed Program License Agreement.

It may be ordered by sending the following request form and a check for $7,480.00, plus applicable taxes, payable to IBM Research.

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Research Distributed Programs
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Enclosed is a check for $7,480.00, plus applicable taxes. Please send the documentation and object code for the Research Queueing Package Licensed Program (RDP-0001), for installation under the CMS/TSO (cross out one) programming system.

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