

HP Production Management/3000

HP Production Management/3000 is a customizable, interactive system for managing the production planning and control function of a manufacturing operation.

HP Production Management/3000 consists of six software application modules:

- Routings and Workcenters.
- Work-In-Process Control.
- Work Order Scheduling.
- Shop Floor Dispatching.
- Work Order Tracking.
- Capacity Requirements Planning.

A discrete manufacturer who assembles standard multi-piece products in lots represents the ideal candidate for HP Production Management/3000. However, the software is applicable to most manufacturing operations. Hewlett-Packard Sales Representatives and Manufacturing Application Specialists are available for consultation regarding the suitability of HP Production Management/3000 for a specific application.

HP Production Management/3000 Overview

HP Production Management/3000 is designed to meet the requirements of most manufacturing companies. Manufacturing personnel may, however, modify data entry screens, data edits, and information retrieval screens to suit their specific needs. They may also add, delete, and/or modify data items in the HP Production Management/3000 data base. All of these changes can be accomplished easily and without the need for computer programming.

System configuration, security, and job scheduling are also defined and modified without the need for programming personnel.

The modular structure of HP Production Management/3000 allows for flexibility in the product offering. Customers may purchase the entire package, or subsets thereof, depending on their specific needs.

HP Production Management/3000 is a standard (object code) application product which is fully supported by Hewlett-Packard. A comprehensive support package is available which includes:

- User reference and training manuals.
- Customer training courses.
- Project planning and implementation service products.
- Planning, implementation, and customization consulting by Hewlett-Packard Manufacturing Application Specialists.
- A wide range of Software Support Services.

The six functional modules of HP Production Management/3000 are integrated with one another to provide a comprehensive set of production management functions. In addition, interfaces exist which allow HP's Materials Management/3000 (or some other materials system) to complement the functions of HP Production Management/3000 and provide closed-loop manufacturing control. HP Production Management/3000 can also be integrated with other HP application software including HP Financial Accounting to provide a complete manufacturing system as part of the HP Manufacturers' Productivity Network (HP-MPN).

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Features of HP Production Management/3000

- Use of proven production management techniques.
- Easy-to-use, on-line transaction menus.
- On-line assistance via "Help" screens.
- On-line data base update.
- Customizable user environment.
- On-line terminal data entry, field editing, and error correction using the capabilities of HP's Data Entry and Forms Management System, VPLUS/3000.
- Automatic transaction logging.
- User manuals tailored to each job function.
- "Intelligent" HP CRT's and factory data capture terminals.
- Advanced security capabilities.
- Automated operator functions.
- Tailorable data entry screens, retrievals and messages.
- Customizable data base and reports.
- Local language versions.

An important feature of HP Production Management/3000 is the ease and speed with which the user can enter, retrieve, and modify data via an interactive terminal. The user is presented with a series of "menu-like" screens from which any desired function can be easily selected using "soft keys".

Routings and Workcenters

The Routings and Workcenters module is used to interactively specify and maintain the manufacturing resources and production processes under the control of HP Production Management/3000. Routings and Workcenters accommodates a wide variety of manufacturing operations.

Features

- On-line data base update.
- On-line review of routing and workcenter information.
- Standard, common, and alternate routings.
- Specification of workstations within workcenters.
- Capacity specifications of workcenters.
- Cost specifications of workcenters.
- Shop calendar and workcenter calendars.
- Standard labor and overhead cost calculation.

Work-in-Process Control

HP Production Management/3000 provides a variety of tools which allow manufacturing personnel to monitor and fine-tune the shop floor control process in addition to its automatic functions.

Features

- On-line work order status and history reporting.
- Work order priority control.
- Work order partialling.
- On-line work order routing modification.
- Production priority override.
- Data archiving and retrieval.

Work Order Scheduling

HP Production Management/3000 calculates and maintains a detailed production schedule for each work order under its control. These schedules form the basis for production priorities and other planning and control functions.

Features

- Backward or forward scheduling assuming infinite production capacity.
- Work order specific routings.
- Overlapped, compressed, and split sequence scheduling.
- Partial work order scheduling.
- Parallel path scheduling.

Shop Floor Dispatching

The Shop Floor Dispatching module provides the tools to ensure that labor and equipment resources are devoted to the right work orders at all times. The Shop Floor Dispatching module calculates production priorities dynamically on the basis of up-to-date status information and user-selected priority rules.

Features

- Order routing lists.
- On-line review of workcenter status.
- Dispatching lists by workstation or workcenter.
- On-line priority calculation.
- Multiple dispatching rules.
- Manual priority override.

Work Order Tracking

As production activity takes place, the progress of each work order and the direct labor time applied to each can be reported to the system on the shop floor by the people who actually perform the work. The status of each work order is thereby kept current at all times, permitting HP Production Management/3000 to manage shop priorities in a timely manner.

Features

- On-line work order status review.
- Selective operation step tracking.
- Partial work order tracking.
- Interactive step completion reporting.
- Automatic load balancing.
- Rework and scrap reporting.
- Exception reporting.
- Factory data capture terminals.
- Bar coded data entry support.
- Labor collection.
- Labor efficiency variancing.
- Time stamp analysis.

Capacity Requirements Planning

Capacity Requirements Planning is a resource planning technique which is used to anticipate both labor and equipment requirements over time for each workstation and workcenter. It provides tools to ensure that appropriate resources are available when needed and to smooth the work load for the manufacturing facility over time.

For scheduling purposes, Capacity Requirements Planning assumes that there is infinite production capacity and then highlights workstations and workcenters with projected overloads or underloads. Detailed information is available to support the projected loads and to identify specific orders which can be rescheduled to relieve capacity problems.

Features

- Load projection by workstation.
- Exception reporting.
- Summary workcenter reporting.
- Alternate load measures.
- User-defined reporting periods.
- Load detail reporting.
- Input/output analysis.



Standard Application Products

The six functional modules of HP Production Management/3000 are implemented in a way that provides flexibility in the capabilities and features of the user interface, data base definition, operator interface, and security environment. In addition to the object code software, Hewlett-Packard offers HP Production Management/3000 with detailed documentation, comprehensive customer training, consulting services, and a wide range of support services.

Customization Capabilities

HP Production Management/3000 provides a comprehensive set of user customizing features which allow tailoring of the application to match the requirements of a particular manufacturing environment. Three levels of customization capabilities are offered:

- Customizing the operating environment (Operational Customization).
- Customizing data, screens and reports (Data Customization).
- Extended customizing capabilities (Advanced Customization).

Operational Customization

A customer using Operational Customization will be able to tailor the environment in which the application executes. Operational customization is done without the need of any programming and is extensive:

- System configuration can be defined.
- Passwords associated with terminals and data items can be defined.
- System values can be modified.
- Background job scheduling can be done.
- Data base capacities can be modified.
- Error messages can be modified.
- HP 3000 subsystems can be accessed via the User Interface Menu.
- Other HP Manufacturing Systems can be accessed via the Application Transfer Facility.

The User Interface Menu facility provides the application user with a menu driven, customizable interface for accessing HP 3000 subsystems (e.g. QUERY/3000 and EDIT/3000) and user developed applications. Each application user can access a set of applications which has been defined by the System Administrator. The System Administrator defines this set of applications through the customization feature in the User Interface Facility. The customization feature of the User Interface Facility can be accessed from the System Administrator's terminal only.

The Application Transfer facility allows the application user to transfer between application modules or run other HP applications without first having to exit the current application. In addition, the Application Transfer facility provides the System Administrator with the ability to define and modify the transfer selections available for each application terminal.

Data Customization

- Items can be added or deleted from the data base and the characteristics of existing items can be changed.
- Menu and transaction screens can be added, deleted, or resequenced.
- Fields can be added, changed, rearranged, or deleted on existing screens.
- Help screens can be modified.
- Arithmetic relationships between data items can be defined.
- Reports can be customized by rearranging columns, changing column headings, and changing the length of data items.
- Automatic update of DICTIONARY/3000.

Operational and Data Customization of HP Production Management/3000 are performed at a specially designated terminal. End users do not have access to customization capabilities. Customization may be done at anytime, but it will probably occur regularly as HP Production Management/3000 is implemented, and then infrequently for special changes thereafter. Actual customization changes can be made while others are using the application.

Advanced Customization

Advanced Customization provides additional tailoring capabilities for those customers who need specialized processing to satisfy unique business requirements. This level of customization is intended for those companies whose requirements can be met only through extension of the standard processing of HP Production Management/3000 transactions. Advanced Customization features include:

- Predefined exit points in on-line transactions that can be used for:
 - Extension of data editing logic to match company needs.
 - Data validation against external files and data bases.
 - Dynamic interface with other application systems.
 - External data base update during HP Production Management/3000 transaction processing.
- HP Production Management/3000 COBOL COPYLIB Utility.
- Advanced Customization reports.
- TRACE facility for program debug and test of exit procedures.

More information on Advanced Customization may be obtained from a local HP Sales Representative.

Automated Operator Interface

Managing HP Production Management/3000 involves many operator functions, including scheduling, selecting and running background jobs, backup and recovery, and monitoring system activity. The operator interface provides predefined capabilities for many of these functions, and automatically performs some of them. Operator functions that have been automated include:

- System initialization, start-up and message monitoring.
- Tape and disc volume management.
- Background job scheduling.
- Handling and recovery of system and job abnormalities.

Security

Before entering or retrieving information, the user must be identified to the system with a password which is assigned by the System Administrator. Passwords can be used to identify individuals, departments, or any logical grouping. The System Administrator can assign, add, change, or delete authority by designating which data items can be accessed by each password. If the user forgets to exit the application, HP Production Management/3000 automatically returns to the security request after a period of time specified by the System Administrator. This will preclude unauthorized use of unattended terminals.

Documentation

A set of manuals is supplied with the software to provide reference and training material for both the inexperienced terminal user and the System Administrator. HP Production Management/3000 manuals address specific users by grouping logical system functions together.

The manuals, like HP Production Management/3000 are customizable and can be easily altered to reflect changes made to specific reports and screens or to add specific documentation relating to the changes.

Six manuals are available and address both system users and the System Administrator:

User Manuals

- Defining the Shop.
- Managing the Order.
- Using the Factory Data Capture Terminal.
- Capacity Requirements Planning and Input/Output Analysis.

System Administrator Manuals

- Model 10 Customization and Operations.
- Model 20/30 Customization and Operations.

In addition to the above system administrator manuals, an *HP Production Management/3000 System Reference Manual* is provided. Included are detailed descriptions of selected transactions, descriptions of most data items, and layouts of the data bases.

Training

Several courses are offered for the System Administrator/User Trainer, corresponding to the available product options. The System Administrator is responsible for the day-to-day operation of HP Production Management/3000, while the User Trainer is responsible for training end users. These functions could be performed by the same person.

System Administrator Courses

These courses provide training on the customizing capabilities and automated operator interface of HP Application Systems. Three courses cover the different customization levels:

- System Operation.
- System Customization.
- Advanced Customization.

User Trainer Courses

These courses cover the functional capabilities of HP Production Management/3000. Participants learn how to train end-users in the various HP Production Management/3000 modules. Two courses are offered:

- Using Production Management (covering the five modules which constitute Models 10 and 20).
- Capacity Requirements Planning and Input/Output Analysis.

Consulting Services

HP provides a number of different consulting services designed to help customers maximize their success with HP Production Management/3000.

MPN-ASSIST Services

MPN-ASSIST services are designed to assist customers in implementing HP Manufacturing Systems. HP Application Specialists with extensive backgrounds in manufacturing provide four separate consulting products for different stages in the decision/implementation process. Each is a prerequisite to the next and the customer always retains control and authority over the implementation project.

Customization Consulting

Customization consulting is available for customers who choose to customize the application products.

The customer's Project Manager may utilize the services of a Manufacturing Application Specialist to aid in identifying the customization needed for the proper implementation of the application product in the customer's environment. This service might include:

- Aid in identifying necessary data base customization.
- Aid in establishing an appropriate security structure.
- Aid in customizing reports.
- Aid in advanced customization.

Additional Consulting

Consulting services are available from HP to address specific customer requirements. These services are available on a time and material basis.

A local HP Sales Representative or Manufacturing Application Specialist can discuss appropriate consulting services in more detail.

Support Services

To help ensure a customer's success with HP Production Management/3000 after installation, Hewlett-Packard provides a variety of standard support services. These services are available for each HP Production Management/3000 model and additional module. These standard HP software services can be discussed in detail with a local HP Sales Representative or Manufacturing Application Specialist.

Performance Characteristics

There are many factors which influence system performance. Performance expectations in a specific environment should always be discussed in detail with an HP Manufacturing Application Specialist who has detailed information regarding terminal response times, transaction volumes, and background run times. Best performance of HP Production Management/3000 can be expected when the customer's HP 3000 is dedicated to a single application.

Hardware Environment

For HP Production Management/3000, the minimum system recommended is an HP3000 with 512Kb of memory. However, the amount of memory actually needed will depend upon each configuration and expectations regarding transaction volume and terminal response time.

One tape drive and a minimum of 100Mb of disc storage are required; in any specific situation the exact amount of disc storage will be determined by an HP Manufacturing Application Specialist.

Factory Data Capture terminals for use on the shop floor should be ordered with option 004 (alphanumeric keyboard) and either option 005 (alphanumeric display) or option 006 (CRT display). If these terminals are to be connected to the computer via the HP Factory Data Link (FDL), the MTS/3000 communication product and FDL hardware will be required. Interactive CRT terminals must be HP26xx series block mode CRT units with at least 4Kb of terminal memory (8Kb is recommended). Display enhancements should be ordered as an option on models which do not include them in the standard product.

In addition to a system line printer, up to four additional point-to-point HP2631B printers can be used to produce printed material at remote locations such as the shop floor or Production Control department.

Software Environment

HP Production Management/3000 requires the HP 3000 computer system Fundamental Operating Software, including VPLUS/3000 and IMAGE/3000.

Product Configuration

HP Production Management/3000 is designed as a set of separate, but integrated, modules allowing for a flexible product offering. Customers may choose the product sets that most closely match their needs. The modules and customization capabilities offered with each model are summarized in Diagram 1.

	Model 30	Model 20	Model 10
Routings and Workcenters	S	S	S
Work-in-Process Control	S	S	S
Work Order Scheduling	S	S	S
Shop Floor Dispatching	S	S	S
Work Order Tracking	S	S	S
Capacity Requirements Planning	S	O	O
Operational Customization	S	S	S
Data Customization	S	S	O
Advanced Customization	O	O	O
S = Standard O = Optional			

Diagram 1.

In addition to the various models described, several product options can be purchased:

- HP Capacity Requirements Planning/3000 — adds the Capacity Requirements Planning module to Models 10 and 20.
- HP Production Management/3000 Advanced Customization Option — allows Model 20 and Model 30 customers to include specialized processing to satisfy unique business requirements.
- HP Production Management/3000 Model 10/20 Upgrade — adds Model 20 customization capabilities to Model 10.

Hewlett-Packard Sales Representatives and Manufacturing Application Specialists are available for consultation regarding the appropriate configuration of HP Production Management/3000 and other HP products for specific applications.

Local Language Versions

HP Production Management/3000 is available in a number of foreign language versions including German, French, Katakana, Australian, British, Finnish, and Italian.

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