

New Features

FOCUS Version 7.0 Release 9 Features

FOCUS Performance Enhancements

Fusion

Version 7.0 release 9 introduces the Fusion database for CMS and MVS FOCUS. Fusion is a high performance database whose unique Multi Dimensional Indexing (MDI) architecture extends the scope of high-speed multi-dimensional query performance.

External Sort

- Aggregation is performed directly by the external sort engine. A query containing the verb SUM may now be passed directly to an external sort. This results in an overall performance improvement for queries containing the verb SUM. This feature is activated by default with the set command, SET EXTAGGR=ON/OFF.
- When aggregation is handled by an external sort, alpha and smart date records are returned in a different order from the FOCUS sort. A new setting called SUMPREFIX has been created to control the order in which the records are displayed within a report. FOCUS returns the LAST alpha or smartdate record from the database. External sort products like SyncSort and DFSORT return the first record.
- External sorts may now directly produce a HOLD file. Performance is improved by having the sorted answer set written directly to a HOLD file without creating the additional overhead of internal areas. This feature is activated by default with the set command, SET EXTHOLD=ON/OFF.

FOCUS General Enhancements

Euro Currency Support

With the advent of a single European currency called the Euro, converting between different currencies and triangulation become issues. FOCUS now provides a methodology for converting currencies using the rules established by the European Economic Union.

System Wide Profile Support

Prior to Version 7.0, FOCPARM ERRORS provided full FOCEXEC support. TABLE, MATCH, GRAPH, and Dialogue Manager commands were able to execute from this profile. With Version 7.0 Release 1, we removed this support. It has been added back under the name FOCPROF. FOCPROF will execute as a member in the ERRORS PDS in MVS or filetype ERRORS in CMS.

MVS FOCUS Databases may span multiple volumes

SUFFIX=FOC files may now be allocated with the UCOUNT parameter in MVS. This allows a single physical FOCUS file to exist on multiple DASD volumes. This support is also extended to our default files HOLD, SAVE, SAVB, and FOCSORT.

- IBITABLA may also be customized at install time to indicate how many volumes these files should span.

DYNAM Support for UCOUNT

The DYNAM command now supports the UCOUNT parameter for allocating a file to multiple units.

ESCAPE Character support for SQL LIKE operator

The SQL LIKE operator now supports new syntax to identify an escape character. Using the escape character, the special characters '%' and '_' can be specified as characters that must be included in the data retrieved. The escape character syntax is propagated to the SQL generated by the Relational Interfaces.

'? SET' Enhancements

FOCUS has many SET commands. Each new feature is created with the ability to enable or disable it via a SET command. The typical queries '? SET' and '? SET ALL' have been expanded to check the state of a particular setting. New syntax, '? SET FOR featurename' yields details on the current state of this feature plus details on where it may be set within FOCUS. The '? SET NOT featurename' syntax lists areas of FOCUS in which the setting is not valid.

REBUILD Prompt Changes

We have created a vertical list that numbers each REBUILD option. This is a departure from the single line prompt. The old syntax is still supported. The REBUILD commands may still be stacked in a FOCEXEC or stacked as part of SYSIN for batch usage.

Controlling Rebuild Messages

REBUILD normally displays a count for each 1000 instances read during the database retrieval phase of the REBUILD utility. The message, REFERENCE..AT SEGMENT 1000, 2000 etc. displays. This message may now be controlled via SET REBUILDMSG=nnnn, where nnnn is the number of instances retrieved prior to displaying the REFERENCE..AT SEGMENT message. This feature may be used to dramatically reduce the number of messages displayed during database maintenance operations.

DYNAM Support for Relative GDG numbers

The DYNAM command now supports the use of a relative number when indicating an existing generation and version. The syntax, 'DYNAM ALLOC FILE DDNAME DS PREFIX.DSNAME(-1) SHR REU' is now fully supported.

Leading Zeros

When a Dialogue Manager string with a two-digit year is used as input to a date subroutine, the leading zeros will not be truncated from the resulting date if LEADZERO is set ON.

New HOLD Format Options

- HOLD FORMAT EXCEL creates an excel spreadsheet with column headings.
- HOLD FORMAT WP CC creates a WP-formatted report with carriage control character. When the report is sent to a printer, each page prints on a separate sheet of paper. In MVS, the report output is created with record format VBA.

? PTF Enhancement

The ? PTF command now provides information about superceding PTFs and about the order in which PTFs must be applied.

INTERFACES

FOCUS Client DNS Names Support

Enables Mainframe FOCUS as a client to EDA to specify the DNS name of an EDA host in the Client Communication Configuration files for TCP/IP.

'SQL engine SET SQLJOIN OUTER ON/OFF'

With the new SQLJOIN OUTER setting you can control when the Relational Interfaces optimize outer joins without affecting the optimization of other operations such as aggregation and selection. This parameter provides backward compatibility with prior releases of the Relational Interfaces and enables you to fine-tune your applications.

Teradata Interface Kanji Support for DBCS

This enables support for the Teradata GRAPHIC and VARGRAPHIC datatypes.

ADABAS Support for PREDICT 3.4.1 and above

The AUTOADBS product has been updated to support PREDICT 3.4.1 and above. Performance has also been enhanced.

IDMS New SET command

IDMS has a new SET command to dynamically override the DBNAME and DICTNAME in the Access File.

MODEL 204 Account Split

The MODEL 204 Interface will now accept an account code as part of the logon string.

IBI Subsystem

We have restored support for dynamically starting the IBI subsystem.

Web Products

Web Interface for FOCUS

- We now support PDF format as part of the Web Interface for FOCUS. When used with the PCHOLD command the Web Interface transfers the file to the PC or opens it in Acrobat reader. PDF files may also be created using the command, 'ON TABLE HOLD FORMAT PDF'. This sequential file must then be FTP'd to the PC as an ASCII text file.
- A WINFORM application created by the CACTUS WORKBENCH on the PC can now be executed under the Web Interface.
- PCHOLD will support the following formats:
 - LOTUS
 - DIF
 - WP
 - PDF
 - PS
 - HTML
 - EXCEL

Depending on the configuration of the browser, the results will be a pop up window asking where to save the file on your PC or the file will be displayed under the appropriate program association (lotus, excel, etc).

Web390 V3.2

WEB390 version 3.2 introduces the following new features:

- The HTML/TP chargeable option, which is available as part of WEB390 Gold, provides full customization of the HTML interface for 3270 applications. Web390 has always offered the choice between Emulation mode and Translation mode. Now with HTML/TP users can create their own HTML to represent their 3270 screens.
- WEB390 offers support for method 'PUT'. In conjunction with Netscape's Composer you can create HTML documents and send them directly to the WEB390 server.
- New Console security allows you to control access to the console.
- Support of IBM's new TCPIP, Network Communications Server for OS/390.
- Version 3.2 is Y2K compliant.
- Support for DD WWW3GL. Users no longer need to allocate their CGI programs to DD STEPLIB.
- Support for MOD 4 & 5 lu2 devices.

YEAR 2000 Remediation Version 7.0 Release 8R Features

FOCUS General Enhancements

Displaying Base Dates in FOCUS Reports

You can now display base dates in a FOCUS report. Previously, TABLE always displayed a blank when either a date read from a file matched the base date or a field with a smart date format had the value 0.

CHECK FILE HOLD ALL

CHECK FILE HOLD has been enhanced so you can view all of the attributes in a HOLD file including YRTHRESH and DEFCENT. The HOLD file contains two new columns with the values of FDEFCENT and FYRTHRESH at the file level and two new columns with the values of DEFCENT and YRTHRESH at the field level.

New Date Math Functions for the Year 2000

- DATEADD adds months, days, years, business days, or weekdays to a Smart Date format.
- DATEMOV moves a date to a significant point on the calendar.
- DATEDIF takes the difference in business days between two Smart Date formats.
- DATECVT converts from one date format to another.

Displaying Invalid Smart Dates in Reports

In previous releases of FOCUS, if a date in a non-FOCUS file contained an invalid date, a diagnostic error was displayed and the entire record failed to display in a report. Using a new set command, ALLOWCVTERR, it is now possible to display the rest of the record that contains the incorrect date.

Enhancement to the YRTHRESH Command

You can now set YRTHRESH as an offset from the current year in addition to specifying a year. This technique creates a moving century window that increments itself each year without modifying your application.

Enhancement to the TODAY Subroutine

The TODAY subroutine can now return a 4-digit year when you declare a DEFINE or COMPUTE field as 10 bytes. SET DATEFNS=ON must be in effect to retrieve the extended TODAY value. Note: The formatting slashes count towards the total of 10 bytes.

Displaying a Date Variable Without Separators

You can now display a date variable containing a 4-digit year without separators. The variables are &YYMD, &MDYY, and &DMYY. These variables complement the existing 2-digit year variables &YMD, &MDY, and &DMY.

Field FORMAT=YYJUL

A new date field formatting option, FORMAT=YYJUL, lets you print a Julian date in the format YYYY/DDD. The 7-digit format displays the 4-digit year and the number of days counting from January 1. FORMAT=JUL is still supported; however, only the last two digits of the year will display (YY/DDD).

Altering Your System Date for Testing Purposes

A new set command, SET TESTDATE={YYYYMMDD|TODAY}, lets you temporarily alter your FOCUS system date for a given application program. This is useful when determining what impact the year 2000 will have on your application programs, or when testing leap year dates such as 2000/02/29 without third-party products.

REBUILD Enhancement - Legacy Date Conversion

REBUILD can now convert FOCUS database fields from legacy dates to Smart Dates.

LE Support

You can now control use of IBM's Dynamic Language Environment for IBI-supplied and user-written subroutines with an option in FOCPARM, a FOCUS application, or a FOCUS session.

MAINTAIN

Year 2000 Enhancements

Maintain now supports DEFCENT and YRTHRESH settings at the global, file and field level .

INTERFACES

MSO Log Year 2000 Enhancements

MSO Log now displays dates with 4-digit year.

MODEL 204 and IDMS

Both the Model 204 and IDMS interfaces now support Year 2000 dates.

FOCUS Version 7.0 Release 8 Features

FOCUS Performance Enhancements

Pooled Tables

The Pooled Tables Performance Option enables efficient creation of multiple reports, graphics, and extract files with only a single pass against any database that FOCUS can report from. It dramatically minimizes database I/O and the related CPU costs. Pooled Tables can be implemented without any changes to FOCUS application code. Simple configuration settings allow individual applications or groups of requests to be fully optimized to exploit pooling.

IUCV CMS SU

Inter-user communications vehicle is now supported for CMS SU. This is a desirable protocol as the master processor is not enqueued serially per request. IUCV also offers performance gains when compared to the VMCF communications protocol.

IUCV is not supported for any release prior to R7.0.8. If any earlier release of FOCUS is used with an IUCV server the results are unpredictable. Please see the Simultaneous Usage Reference Manual, CMS Version (DN 1000015.0797)

FOCUS General Enhancements

Project 2000 - Phase III

The third and final phase of our year 2000 compliance for FOCUS includes rewritten user subroutines that perform date manipulations. They are: AYMD, AYM, YM, CHGDAT, GREGDT, JULDAT, DAxxx, DTxxx and FOCUS functions YMD, DMY, MDY. These subroutines and functions will now allow for century digit interpretation via the DEFCENT and YRTHRESH FOCUS settings. Date calculations for these subroutines may now extend beyond year 1999. The subroutines have also been enhanced to respect the last argument, which may contain the output format from the subroutine.

Year 2000 Subroutines

Enhancements have been made to subroutines that handle dates.

Increased DEFINE Limitation

The limit of 256 for the number of DEFINES allowed in FOCUS has been removed. The limit is now dependent on the amount of memory available.

Expanding Byte Precision for COUNT and LIST

The COUNT and LIST verbs have been expanding from 5 to 9 bytes of precision. This internally reformats COUNT and LIST from I5 to I9.

Increasing the Amount of Verbs in a Report Request

The number of verbs for a multi-verb request has been increased from 6 to 16.

Assigning Screening Conditions to a File for Reporting Purposes

A filtering mechanism that assigns screening conditions to a file has been added to the functionality of TABLE.

Extended Plists

Extended plists are now available in FOCUS in order to accommodate certain new VM commands, such as STORMAP and PIPE.

Date Handling for the Year 2000 in FOCUS

FOCUS displays a complete 4-digit year in all parts of FOCUS. The new format is MMDDCCYY.

Automatic Allocation of FOCUS Files

Setting FOCALLOC to ON activates automatic allocation of FOCUS databases referenced in requests when the associated Master File exists as a member of prefix.MASTER.DATA.

Querying Which PTFs Have Been Applied for a Specific Release

The ? PTF query command displays a list of PTFs applied for your current release.

Sink Validation of Userids in CMS

A new file has been created in CMS to help verify who may connect to a specific CMS sink id.

Dynamic Language Environment (LE) Support

IBM's recommended platform for high level language products is known as Language Environment for VM and MVS. It provides a unified platform for runtime services used by LE supported languages. FOCUS user-written subroutines can now be linked using IBM's LE environment.

TABLA Enhancements or Default Space Allocation Table for Work Files

FOCUS output data sets not allocated by the user are allocated dynamically by FOCUS itself.

Extended Support for Scandinavian External Sort

FOCUS supports external sort with the Scandinavian National Languages Character set, and is able to pass the sort sequences for Swedish, Danish, Finnish, and Norwegian to the external sorting products.

INTERFACES

DB2 Interface IF-THEN-ELSE Optimization

Starting with FOCUS Release 7.0.8, the DB2 Interface has been enabled to improve the performance of FOCUS TABLE requests that include IF-THEN-ELSE define statements.

DB2 Interface SET ISOLATION Command

Starting with FOCUS Release 7.0.8, interface has been enabled to take advantage of the DB2 version 4 (and higher) ability to pass an SQL statement isolation level.

MSO/CICS Cooperative Processing

CICS transactions and MSO FOCEXECs may now communicate directly with each other in a synchronous mode.

EDA/MSO Console Display for IMS PSB

The EDA/ MSO Console for the DU (Display Users) screen includes a new column heading named PSB . This column displays the name of the IMS PSB scheduled for each TCB that is accessing IMS.

Invisible Ordered Character and Ordered Numeric Data Type Key Support

This feature will allow access and selection of Model 204 invisible ordered character and invisible ordered numeric fields.

System 2000 Interface Trace Facility

Two new trace levels have been enabled. The traces can be used for informational or debugging purposes.

Teradata Outer Join Optimization

This feature improves the Teradata Relational Interface performance by enabling the interface to deliver better optimized SQL to the Teradata RDBMS, permitting the RDBMS to optimize its own join processing.

Web Products

-HTMLFORM SAVE

The -HTMLFORM SAVE feature for the Web Interface allows you to can save html content generated by the -HTMLFORM command to a file, rather than to the screen.

Automatic Activation of Web Interface for Web Browser Users

FOCUS automatically activates the interactive Web environment for FOCUS Web Interface users entering via the VM Web Interface Server or WEB390.

WEBHOME

This feature enables Web application developers to specify execution of a default FOCEXEC procedure in situations where FOCUS would normally return to command level. This allows them to prevent application users from accidentally or intentionally accessing command level FOCUS from within a Web application. This will ensure that the FOCUS application environment remains intact and consistent even when Web applications include drill-downs and/or allow users to access the ad hoc Java report and graph generation tools.

Java-based Tools

New Java-based tools enable Web Interface users to create ad hoc reports and graphs right from their web browsers through a step-by-step process similar to TableTalk.

Java Graph Wizard

Java Graph Wizard guides a user step-by-step through creating a graph. The Graph Wizard is an alternative to stored graph procedures and generates FOCUS graph syntax from the user's input.

Java Report Assist

Java Report Assist provides a user-friendly environment for creating ad hoc reports in HTML, WP, DIF or LOTUS format. The Report Assistant supports automatic generation of complete record selection criteria, sort fields, headings and footings, subtotals, and calculations.

Complete documentation for this new product may be found in the *Web Interface Users Manual and Installation Guide Release 7.0.8*. (DN 1001038.1097).

FOCUS Version 7.0 Release 7M Features

MAINTAIN

This release of CMS and MVS FOCUS contains over 150 fixes for the Maintain product. This is a full function FOCUS release which was created primarily to deliver Maintain fixes. Please refer to the known problems section of READMEF for a listing of Maintain problems.

FOCUS Version 7.0 Release 7 Features

FOCUS General Enhancements

Project 2000 and SiteAnalyzer

SiteAnalyzer monitors queries. Each time an end user issues a TABLE request, SiteAnalyzer records query and environmental attributes about that request. This information includes many attributes about the fields being accessed, including the usage and format attributes. This means that SiteAnalyzer records:

- Whether a TABLE request accesses a date field.
- Whether the date field is a new date format (number of days since the beginning of the twentieth century) or an old date format (the integer representation of YMD).
- How the date is being used (i.e., YYMMDD or YYYYMMDD).
- Whether the field is a real field in the database, a permanent DEFINE in the Master File, or a temporary DEFINE or COMPUTE.
- Whether a date field is used in a DEFINE or COMPUTE.
- Whether a date field is used as a sort field.
- The name of the Master File containing the date field.
- The name of the FOCEXEC containing the TABLE or MODIFY request.
- The user id of the user executing the FOCEXEC.
- Whether the request was issued interactively or in batch (if in batch, the JOB name is also recorded).
- The PDS that contains the Master File.
- The PDS that contains the FOCEXEC.
- All the potential FOCEXEC PDSs that may contain -INCLUDE files.

The current release of SiteAnalyzer monitors the same information in MODIFYs. In addition to the information just specified, SiteAnalyzer will flag all extraordinary date usage (e.g., in computations, comparisons, new-to-old conversions) and record the line number in the MODIFY where this occurs.

As SiteAnalyzer can monitor all FOCUS TABLE and MODIFY usage, this information can assist you with inventory, project scoping, examination, analysis and solution design, modification, integration/user acceptance test and project management for your FOCUS year 2000 project plan.

Web Products

The Web Interface for FOCUS

The New Web Interface for FOCUS is now available. With the Web Interface, you can access your FOCUS applications from any standard Web browser (such as Netscape Navigator or Microsoft Internet Explorer) rather than a 3270 terminal. Existing applications can be "webified" with little or no changes to the application and new applications can be written for the Internet or Intranet which take full advantage of the web's styling capabilities and universal accessibility.

The Web Interface includes the following features:

HTML Formatted Reporting

FOCUS Reports can now be styled for the web environment in web-standard HTML (hypertext markup language). You activate this styling using traditional STYLE SHEET syntax with new extensions specifically designed for the web. You can now add colors, fonts, boldface, italics and other advanced styling to new or existing FOCUS reports and view these reports in any web browser without ANY specialized desktop software. You can even include conditional styling (stoplighting) and DRILL-DOWN capabilities in your FOCUS reports for a more logical, concise, and meaningful report layout. The drill-down feature allows users to click on virtually any element in a report, including headings or graphical images, and generate a more detailed report or take some other web-based action such as FTP, or EMAIL.

These reports can be viewed immediately, or saved for viewing or distribution via the new HOLD FORMAT HTML feature.

The -HTMLFORM Dialog Manager Command

If you'd like to create new reporting based applications that use your own customized HTML forms to generate FOCUS reports, you can use the new Dialog Manager command -HTMLFORM. This allows you to build FOCUS based applications which are truly optimized for the web environment.

FOCUS Version 7.0 Release 6 Features

FOCUS General Enhancements

Project 2000 Phase II

The second phase of the cross-century dates feature expands the sliding window technique to include setting at the file and field level of applications. Four new settings were added for Master Files: FDFCENT and FYRTHRESH at the file level, and DEFCENT and YRTHRESH at the field level.

Multi-Image FOCUSORT

The MVS FOCUSORT work file may now expand upon its initial allocation up to a total of 16 temporary data sets. A new temporary data set is allocated when the initial FOCUSORT space is exhausted. The size of these temporary data sets is based upon the first FOCUSORT allocation.

Enhancements to JOIN

The JOIN command permits the joining of two files containing different numeric datatypes. This enhancement provides enormous flexibility for creating reports from joined files.

Interpreting Quotation Marks within Strings

FOCUS can interpret quote delimited strings containing embedded quotation marks. FOCUS treats two contiguous quotes within a quote-delimited string as a single literal quote. Coding, IF AIRPORT EQ 'O'HARE', is supported.

Estimating SORTWORK Size for External Sort

The parameter 'FILSZ=En' enables the sorting algorithms to estimate SORTWORK space requirements for each sort parameter request. A new FOCUS set switch, ESTRECORDS, is used to pass the estimated number of records to be sorted in the request.

PRINTPLUS

PRINTPLUS enhances the display alternatives offered by the FOCUS Report Writer. For example, you can place a FOOTING after a SUBFOOT in your report. You enable this feature by setting PRINTPLUS to ON.

INTERFACES

MSO VTAM Logon Time Out

MSO administrators can set a maximum number of seconds that the MSO VTAM Logon screen displays by adding the parameter LOGON_TIMEOUT in their MSO Configuration files.

Language Environment (LE) Support

FOCUS user-written subroutines can be linked and run using IBM's Language Environment (LE). LE support is available for both the MVS and VM operating systems.

31 Bit I/O

By exploiting this MVS 5.1 feature, we halved the virtual storage requirements below the 16 Meg line needed to support a typical FOCUS user. This enables more FOCUS users to operate in a single address space.

MSO Monitoring and Statistics

MVS resource utilization reports for a region or for all users can be viewed immediately online or evaluated in MSOPRINT files. Four types of statistical information are available: On demand, Monitoring, Short on Storage, and Shutdown.

EDA to MSO Bridge

Any FOCUS client (FFW etc.) connected to an MVS EDA server can gain direct access to full functioning FOCUS using MSO.

Enhanced MSO Message Routing

MSO installations can control the printing/listing destination of all MSO messages. Messages can be routed to the operator's console (WTO) or MSOPRINT or both.

MSO Dynamic VTAM Configuration

MSO installations can re-configure the VTAM LU2 applid used for MSO FOCUS access and can dynamically switch to a newly specified LU2 applid without recycling the MSO region.

Enhanced Load Balancing for MSO

The Load Balancing feature introduced in FOCUS 7.0.5 has been enhanced. With Load Balancing, the MSO administrator can control access to and the use of resources. The administrator's job is simplified because users are routed only to the MSO regions set up for their applications, all users have access to MSO FOCUS with a single profile, and users are automatically routed to the region that has capacity. Users find MSO easier to use.

Outer Join Optimization

This feature improves FOCUS Relational Interface performance by enabling the interfaces to deliver better optimized SQL to RDBMSs, so they can optimize their own join processing. Native RDBMS Outer Join syntax is passed when FOCUS SET ALL=ON is specified.

Aggregations on DEFINE fields

This relational interface enhancement delivers optimized SQL to each RDBMS, allowing the RDBMS to optimize its own execution and minimizing the size of the answer sets returned to requesters - an extremely important capability for client-server applications. FOCUS defined fields are passed as objects of the RDBMS ORDER BY clause.

Joins Between Heterogeneous File Types

This new feature improves the SQL that the interfaces pass to relational database servers, improving their native abilities to optimize their own execution. The relational interface JOIN mechanism can now pass a single SELECT statement per TABLE request when all active segments of the given SQL suffix in a file comprise a contiguous single-path subtree.

ADABAS Dynamic Security

ADABAS user passwords can be set from the command level in FOCUS and EDA. A new SET command allows the password in the FOCADBS file to be overridden, or omitted entirely.

ADABAS Dynamic Database Number

ADABAS database numbers (DBNOs) can be set from the command level in FOCUS and EDA/SQL. A new SET command allows users to override the DBNO in the FOCADBS file. This new feature makes Master and Access files sharable among databases.

Automatic index selection using AutoSelect

The AutoSelect feature improves IMS Interface performance by reducing the size of data sets retrieved from IMS through use of IMS secondary indexes. This new feature alleviates the need to create multiple FOCUS Master Files to describe IMS databases with secondary indexes.

FOCUS Version 7.0 Release 5 Features

FOCUS Performance Enhancements

MINIO

A new buffering technique for sequentially organized FOCUS files significantly reduces I/O and elapsed times when reading and writing FOCUS files. It is used in conjunction with the TRACKIO feature to further optimize database I/O operations.

FIXRETRIEVAL

Logical keys are created for FOCUS HOLD files. This greatly enhances retrieval by reading only those key records that match the IF/WHERE selection criteria in the query. This ensures that an entire HOLD file is not read unnecessarily. The request that creates the HOLD file must contain a BY field which ensures sorting. The HOLD Master File now includes SEGTYPE=Sn or SHn, where n is the number of BY fields coded in the query.

FOCUS General Enhancements

Project 2000

Year 2000 is approaching and the two-digit year displays will no longer be valid. It is critical that all applications be able to identify and calculate correctly the correct first two digits in a four digit year displays. FOCUS handles this situation by allowing users to define 100 year spans in which date calculations are made. Two new keywords are introduced for establishing date ranges and thresholds, they are: DEFCENT for default century and YRTHRESH for year threshold.

National Language Support

The 'SET LANG=' command is now fully supported for all languages. Japanese, Dutch, German, French, Swedish, and Spanish language files are all available. If you require additional language support, please contact the International Division for more information.

Scrolling Report Headings in HotScreen

You can make report headings and footers scroll along with the report contents in your HotScreen report by using the new SET command BYSCROLL.

Date and Time Stamp in Reports

Time and date can be set in reports. This is useful for determining exactly when your report has been run. You can do this statically or dynamically using the new SET command, DATETIME.

INTERFACES

Redefines for Interfaces

There is an enhancement to support redefined fields within records in non-FOCUS files. Redefinition is supported for IDMS, IMS, VSAM, DB2 and FIX files only.

FOCUS Client

Remote procedures and Suffix=EDA queries are now supported for CS/2. This includes any queries that are coded with, -REMOTE BEGIN ... -REMOTE END.

MAINTAIN

VSAM

MAINTAIN supports READ/WRITE operations to VSAM files. UPDATE, INCLUDE, and DELETE actions are supported for KSDS VSAM files only. READ operations such as NEXT are supported for both KSDS and ESDS files. RRDS files are not supported.

WINFORM SET/GET Command

MAINTAIN now allows dynamic changing of object attributes in a WINFORM. The WINFORM SET command is used to change objects. The WINFORM GET command allows you to save the value of the object setting a variable in FOCUS 7.0.5.

MAINTAIN Improved SU Performance

MAINTAIN SU now uses data compression with very large blocks of data to maximize throughput for the client applications in FOCUS 7.0.5. This feature can be exploited by using set-based MAINTAIN requests in the form of:

FOR ALL NEXT...WHERE...INTO.

Field Level PFKeys

The FORMS menu has been enhanced with two new selections: Triggers and Actions in FOCUS 7.0.5.

New WINFORM Objects

Three new OBJECTS were added to the WINFORM painter: LISTBOX, COMBOBOX and RADIO GROUPs in FOCUS 7.0.5.

CDN Support

FOCUS MAINTAIN 7.0.5 now supports comma decimal notation for International Users.

INTERFACES

Private & Public DDNAME

If the installation elects, MSO users may allocate their own, 'private' level of Master Files or FOCXECs that are accessed in addition to the global level.

Full SDSF Support

MSO users can directly invoke SDSF from the MSO TOE screen. This may be especially useful for users who have only CICS access to the MVS system that they are running on.

MSO Load Balancing

MSO users may log on to a single MSO point of contact via CICS, TSO, or VTAM and be automatically routed to one of up to 32 MSO regions. This feature provides even distribution of MSO users across MSO regions without intervention by MSO administrators or users.

FOCUS Version 7.0 Release 3 Features

FOCUS Performance Enhancements

Aggregation Optimization

TABLE requests that contain the SUM verb and use an external sort enjoy performance gains in CPU time from 5%-15% due to aggregation optimization. These gains are achieved by passing aggregated records to an external sort avoiding the FOCUS merge process.

FOCUS General Enhancements

Count Distinct

The DISTINCT verb object operator may be used to aggregate and list unique values of any database field. Similar in function to the SQL COUNT(DISTINCT COL) column function, it permits you to determine the total number of distinct values in one pass of the database.

MAINTAIN

MISSING

Missing values are now supported in MAINTAIN R7.0.3. The MISSING attribute may be placed in the Master File in the declaration of the field missing the values, after the format.

INTERFACES

Enabling CA-DATACOM/DB's CBS Trace

CA-DATACOM/DB's Compound Boolean Selection (CBS) Trace can be invoked through the FOCUS Datacom Interface.

Fetch/Prefetch

Releases beginning with ADABAS 5.3.2 support both Prefetch and Multifetch. The FOCUS ADABAS Interface uses the Multifetch feature, if available, otherwise it uses the Prefetch feature, if available.

FOCUS Version 7.0 Release 1 Features

FOCUS Performance Enhancements

External Sort

Formerly a HiperFOCUS feature, External Sort can now be employed to deliver significant performance enhancements for TABLE, MATCH and GRAPH commands.

Setting AUTOTABLEF to ON allows FOCUS to determine whether the request requires the temporary FOCUS work area known as the internal matrix. If not, FOCUS does not create this matrix, potentially saving significant time and system resources.

Automatic Allocation of FOCUS Files

A catalog search no longer occurs in order to dynamically allocate FOCUS databases. All FOCUS databases must be explicitly allocated prior to using them.

Automatic Indexed Retrieval (AUTOINDEX)

FOCUS can now automatically perform indexed retrieval for TABLE requests containing equality or range tests.

AUTOPATH

FOCUS can now automatically select optimal retrieval paths by choosing the lowest possible segment within a hierarchy as its entry point. This enhances performance by reducing database I/O.

Pre-Loading Access Files

Interface Access Files can now be pre-loaded into memory, reducing I/O required each time they are referenced.

Improved Page Handling SET TRACKIO

This feature enhances FOCUS performance by reducing I/O for FOCSORT files and FOCUS databases read from disk. Twelve 4K blocks are read/written for each TABLE, MODIFY and MAINTAIN request.

External Indices for FOCUS Databases

External Indices enable indexing on concatenated FOCUS databases, indexing on DEFINED fields and indexing records selected through WHERE and IF tests.

FOCUS General Enhancements

Specifying up to 256 Verb Objects

The old verb object limit of 95 has been raised to 256.

SET SAVEMATRIX

The internal matrix may be preserved after Dialogue Manager commands and after the conversion of TABLE to TABLEF.

Longer Length for HOLD FORMAT LOTUS Files

The old LRECL limit of 240 has been raised to 512.

Increased Size of FOCSORT

The FOCSORT work file size has been increased from 64K pages to 256K pages.

Larger FOCUS Databases

The maximum FOCUS database size has been increased from 64K pages to 256K pages. The 64 segment limit has not changed.

Increased Number of Indices

The number of combined real segments, plus indices, plus text segment has been increased to 189.

Large Packed Fields

FOCUS Release 7.0 now supports 31-digit packed numbers.

Increased Number of Literal Values in a File

The old limit of 3200 bytes has been raised for FOCUS and SQLDS files. FOCUS now supports up to 32,767 literals in an IF field EQ ddname selection.

Universal Concatenation

Multiple data sources may be read in one retrieval request. Disparate file types can be concatenated to appear as though they are one file.

Renaming/Rejustifying Row and Column Total Labels

COLUMN-TOTAL and ROW-TOTAL labels can now be renamed and justified right, left or center in your reports.

Using StyleSheets

FOCUS now supports the creation of presentation quality postscript 'styled' reports. Changes to the fonts, sizes, styles, and colors can all be made during your FOCUS session.

Determining which FOCEXEC is Running

&FOCFECEXEC and &FOCINCLUDE are new Dialogue Manager variables that contain the name of the currently executing FOCEXEC and the current INCLUDED FOCEXEC, respectively.

Capturing SET Parameter Values

The values of your FOCUS SET commands can now be stored in Dialogue Manager variables. In prior releases, the values of these settings were only displayed via ? SET.

ASIS Function

A new DIALOGUE MANAGER function distinguishes between a blank and a zero. It forces a variable to be evaluated as entered, rather than converting it to a number.

'? SET ALL' Command

A complete list of all FOCUS parameters that can be set is now available with the ? SET ALL command.

FOCUS File Date and Time Stamp

Each time a FOCUS file changes, date and time stamps are applied to the database. This occurs when changing data with SCAN, FSCAN, CREATE, REBUILD, HLI, MAINTAIN, and MODIFY. REBUILD may be used to apply this date and time stamp.

Generalized Listings of DDNAMES

? TSO DDNAME now supports truncation of DDnames with wildcards.

Enhancement to the TED Command in MVS

Members of the FOCEXEC PDS may now be edited without mentioning ddname FOCEXEC.

Improved Handling of Text Fields in TED

Text fields have been significantly improved in Release 7.0 so text data may be displayed in TED exactly as entered into the database.

FOCPARM Enhancements

This file may be used to implement site-wide configuration parameters. It is now required for FOCUS Release 7.0.

Online Release Information

Release statistics, installation and operational changes, program temporary fix (PTF) information, and release notes are now available online by issuing EX READMEF.

MAINTAIN

MAINTAIN is Information Builders' new facility for maintaining data files, and replaces MODIFY as its premier data maintenance tool. It has been designed to meet the needs of the FOCUS community for building sophisticated and robust applications reliably and efficiently. It addresses many of the suggestions about MODIFY that FOCUS users have offered, and incorporates state-of-the-art data processing concepts and technology.

MAINTAIN combines power and simplicity in a single data management facility. It incorporates the following features:

Set-Based Processing

You can manipulate groups of database records at the same time. You can define the group as a sequential range of records, as all records that satisfy selection criteria, or a combination of the two. For example, you can select and retrieve all of the records for the first 100 employees who have the job code A25 using just a single MAINTAIN command!

Record-at-a-Time Processing

In addition to set-based processing, you can also identify and work with one record at a time.

Sophisticated Graphical User Interface (GUI)

You can use the Winform Painter to create sophisticated interactive windows for entering data, displaying information, and selecting options. You can design Winforms to include user-friendly features such as dialog boxes for requesting special information, check boxes for making choices, buttons for invoking actions, and entry fields with automatic data validation for entering valid values.

Triggers and Event-Driven Processing

The flow of control in conventional processing is mostly pre-determined. That is, the programmer determines the few paths that the user will be able to take through the procedure. To make your application more responsive to the user via the graphical user interface MAINTAIN introduces triggers and event-driven processing. A trigger is a specified event that invokes "triggers" a procedure. Each time that the event occurs, the procedure is invoked. In MAINTAIN, the invoked procedure is a case or special function, and the event is something the user does in a Winform. For example, you might create a trigger for retrieving data: it would notice whenever a user clicks a certain button on the Winform, and react by retrieving the specified data from the database and displaying it in the Winform.

Event-Driven Development

Developing a request by writing out sequential lines of code may be sufficient for conventional linear processing, but event-driven processing demands event-driven development. Developing an application in this way enables you to build much of the application's logic around the user interface. For example, you could start by developing part of the user interface (a Winform), then assign a trigger to a particular Winform event, specify the action (that is, the case) associated with the trigger, and finally code the case -- all from within the Winform Painter.

Improved Flow-of-Control

MAINTAIN provides many different ways of controlling the flow of a procedure by using enhanced versions of commands found in MODIFY as well as entirely new commands and functions. For example, you can transfer control via PERFORM, GOTO, and CALL; perform conditional actions using IF; specify blocks of code with CASE and BEGIN; and loop via REPEAT.

Transaction Integrity

MAINTAIN enables you to define a transaction in ways that are meaningful to your application: one transaction can include multiple INCLUDE, UPDATE, and DELETE operations. MAINTAIN respects your DBMS's transaction integrity strategy, and lets it ensure that the entire transaction is written to the database only if all of its component operations were successful. (This is not supported for concurrent database access in Release 7.0.)

Modular Processing

You can create several MAINTAIN requests which work together, one request calling another.

Client-Server Processing

A MAINTAIN request can call other requests residing on different nodes of a network. In this way, you can locate different parts of your application on different platforms to leverage the strengths of each platform. This also enables cooperative processing, so that one MAINTAIN transaction can process related data on many different nodes.

These are just some of the features you can use to develop powerful, flexible data management requests.

The MAINTAIN facility is fully documented in a separate volume with a complete language reference and examples of syntax (DN1001000.0495)

INTERFACES

HiperBudget

The HiperBudget feature of HiperFOCUS permits sites to regulate the use of expanded storage on a system-wide basis.

The New MSO/CICS Interface

The interface is easier to install, with enhanced diagnostic facilities as well as added support for locking the keyboard and designating a special attention key.

FASTPDS

I/O has been minimized for accessing data in globally allocated libraries by copying directory information for partitioned data sets in a server's startup JCL directly into memory at initialization.

APF Internal Authorization

You can reduce the APF authorization requirements on the MSO server, selectively allocating modules that do not perform authorized functions to non- APF authorized libraries.

The MSO Resource Manager

This facility monitors MSO usage and insures that all users share CPU resources equitably.

VSAM File Allocation in MSO JCL

The new SZERO=YES parameter permits sharing of subpool zero across tasks to enable VSAM files to be allocated in MSO JCL.

MSO Console Browser

This new facility permits authorized users to conveniently browse and select data sets allocated to the MSO server.

DYNAM Utilities Menu

A new menuing system enables users to manipulate and submit files more easily.

Fast Logon Enhancements

You can now logon directly on the VTAM screen, bypassing the logon screen.

Static SQL for TABLE Requests

Static SQL support enables FOCUS users to optimize processing by prespecifying and binding (for DB2) or preprocessing (for SQL/DS) those procedures that generate SQL statements, avoiding the need to reinterpret SQL statements at runtime. This provides greater control over security and performance.

Usability Enhancements

The SQL Interface adds support for ASC/DESC KEYORDER and long DECIMAL datatypes, as well as enhanced EXPLAIN facilities, and the abilities to specify index space and storage parameters. Sample CLISTS and JCL are now provided in FOCSQL.DATA.

Optimization Enhancements

SQL Interfaces now pass additional joins, aggregations and screening conditions (i.e., DEFINES and WHERE/MISSING) to the RDBMS to better exploit their native capabilities.

Installation Enhancement for SQL/DS Interface

A new COLLID parameter has been added for the GENFSQL, permitting users to specify a high-level qualifier other than the VM userid or SQLUID value (if one exists) for use in environments such as DRDA, where this passed value may be used as a collection id to a remote location.

DRDA Support Enhancements to the DB2 Interface

The DB2 Interface for FOCUS Release 7.0 supports DRDA Level 2 commands included in DB2 Version 3 and the SET CURRENT PACKAGESET command of DB2 Version 2 Release 2 and Version 3.

VSAM Data and Index Buffers

New SET commands BUFNI and BUFND permit users to establish DATA and INDEX buffers for processing VSAM files online.

DYNAM Support for BUFNI and BUFND

The DYNAM command has also been enhanced to support the BUFNI and BUFND parameters, permitting runtime allocation of VSAM index and data buffers.

Dynamically Setting the Addressing Mode

A new SET command allows you to switch the AMODE of the FOCSAM Interface so that the Interface can be run with 24-bit programs.

Dynamic GETPRV Exit

The GETPRV user exit is now dynamically called at execution time. It is a substitute for internal READ calls, and includes new functionality such as reentrancy and multiple concurrent exit processors.

Enhancement to the ZCOMP1 User Exit

The ZCOMP1 User Exit has been enhanced to support re-entrant code, and to provide an initialization entry point for housekeeping functions.

The New ADABAS Interface

The now fully reentrant ADABAS interface permits specification of field suffixes in the FOCADBS file and provides support for multi-field and short-to-long-field joins, long fieldnames, use of IF/WHERE tests against descriptors in OCCURS segments, and null suppression on fields in ACCESS files. ADABAS optimizations include support for L9 direct calls and compression of the format buffer passed to the ADABAS nucleus, as well as elimination of unnecessary additional calls for (signed) numeric fields.

Changing Default Calltype for Non-Descriptor Fields

Retrieval optimization has been improved by extending the use of ADABAS FIND (S1) calls for use with non-descriptor as well as descriptor fields.

AUTOADBS

A new facility automatically generates Master File and Access Files for ADABAS files based on information in the Predict Data Dictionary and user selections.

AUTODATACOM

A new facility automatically generates Master File and Access Files for CA-DATACOM/DB data files based on information in the CA-DATACOM/DB Data Dictionary and user selections.

FSTRACE for the CA-DATACOM/DB Interface

New trace facilities enable users to review field and parameter contents for all commands and control blocks passed between the interface and the DATACOM/DB database. This trace information can be stored in a sequential file or viewed on-line.

AUTOIDMS

AUTOIDMS may use multiple data dictionaries. This enhances usability as multiple access files are created for dictionaries that contain subschemas. Please see TM7902.4 for additional information.

IMS Enhancements via SET IMS=NEW

The new IMS interface introduced in release 6.8 Put Level 9312 is comprehensively described in DN#1000977.1194 (IMS/DB Interface Users Manual and Installation Guide Release 6.8). A few of the significant improvements include: replacement of the FOCBMP server by the XMI server, addition of the comma-delimited FOCPSB, new SET commands and trace facilities, a new IMS Access file and an IMDTEST verification program and improved security.

Controlling IMS Access via DBCTL

FOCUS now supports IBM's DBCTL (Database Control) option for controlling access to IMS databases. This offers improved efficiency and security and simplifies working with PSBs in processing IMS data.

Model 204 Interface Enhancements

Features added beginning with Release 6.8 Put Level 9404 include: more efficient processing of COUNT requests, new ACCDATA attribute for generating either character-string or numeric HLI requests against non-key MODEL 204 fields, and enhancements to the FOCUS Master and Access Files. A new manual (DN#1000945.0594) is available.

Double Byte Character Set K Format and G Prefix

The introduction of K format and G prefix for representing pure DBCS strings or DB2 graphic data types enables support for languages such as Kanji, which require two bytes of storage to uniquely represent each character.

Checking Current Language Settings

A new command, ? LANG, is now available to query the current language setting and attributes.

Web Products

WEB390[®] Secure Internet Server

WEB390 is a commercial-strength Internet server that transforms IBM mainframes into World Wide Web application and data servers, capable of supporting global Internet and Intranet activities for thousands of users. It is a secure server, with full SSL (Secure Socket Layer) protection. By linking the processing power and storage capacities of mainframes with today's Web browsers, WEB390 enables organizations to serve up mainframe data and applications over the Internet without adding costly emulation software to each end user's workstation.

Web390 affords a secure gateway to 3270-based applications in VM/CMS, MVS/TSO or CICS, allowing browser users to access the legacy applications and data that support day-to-day commercial operations. Thanks to the SSL support, you can safely use your mainframe as a repository for distributing information to your entire user population, on a broadcast or a "need to know" basis. When developing new Web applications, you can also use WEB390 to store and deliver Java applets as well as HTML, VRML, and other MIME datatypes.

WEB390 is a standalone Internet server that works with any mainframe application. It will also be offered as an optional upgrade for the Web Interface for mainframe FOCUS, to provide full SSL protection for sites planning to offer products in the public arena