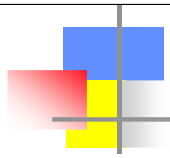


IBM® File Manager

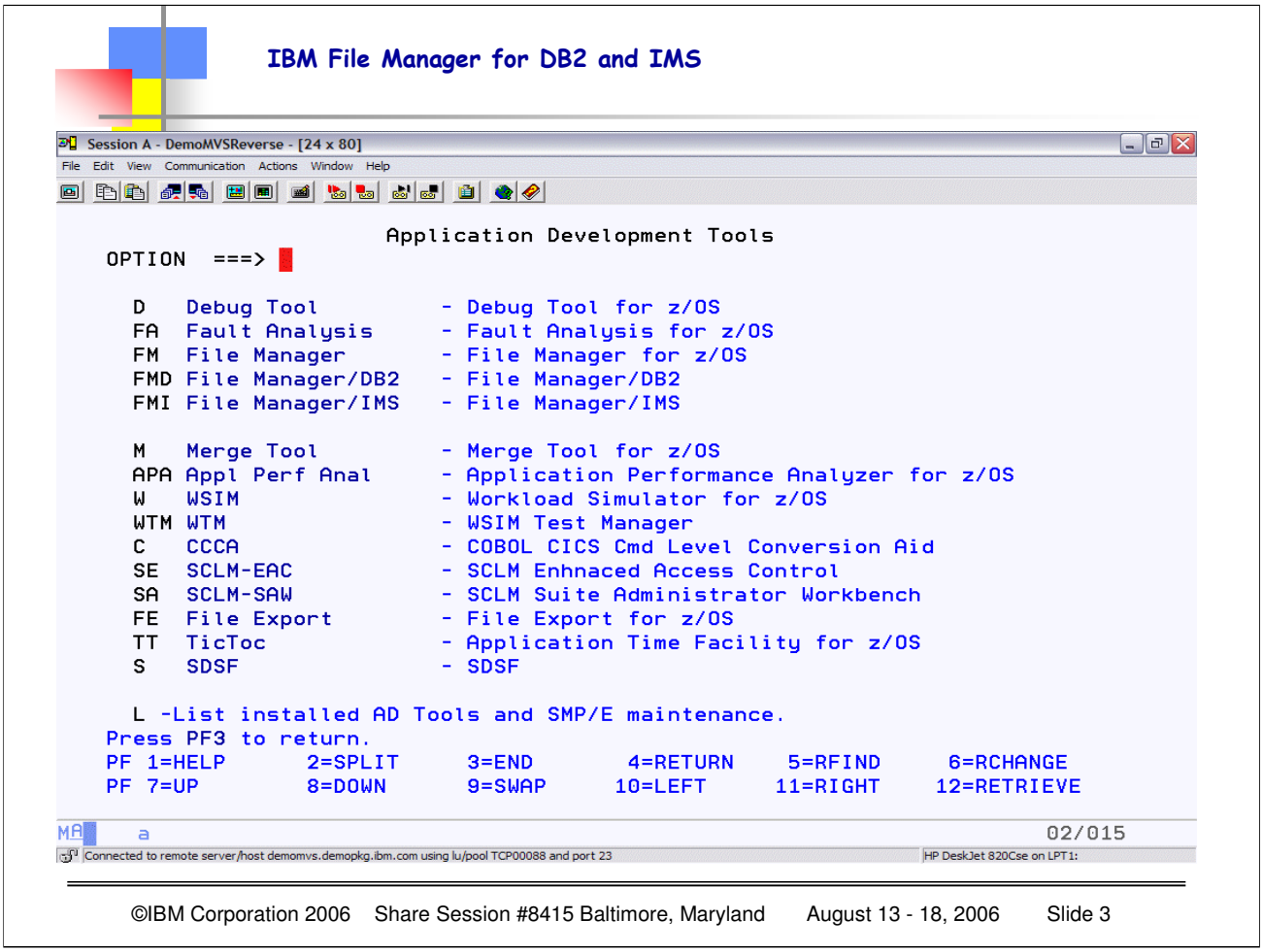
for IMS

SHARE Session 8415

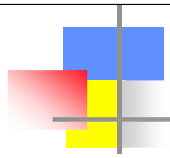
- **WHAT IS File Manager for IMS?**
  - **First and foremost – *AIMED AT APPLICATION DEVELOPERS***
  - **Feature of File Manager for z/OS® extending File Manager capabilities to the IMS environment**
  - **Utilizes familiar interface (ISPF)**
    - **EDIT**
    - **BROWSE**
    - **PRINT**
    - **LOAD**

File Manager for IMS an additional "piece" of the File Manager product set. The commands are familiar in that they are much like the commands already used in ISPF. With this product, however, you can use these same commands and access information that is stored in IMS databases. This feature of File Manager includes edit, browse, print, extract and load functions for IMS databases. The ease of use for these features is greatly enhanced when the database segment layouts are described by COBOL copybooks or PL/I structures. Just as in the base File Manager product, you can certainly work without having copybooks or structures, but being able to "lay out" fields within segments, and update without worrying about data types (especially think packed decimal or binary here) makes your application life much easier.

All of the functions are accessed via familiar ISPF panels.



Depending on how your ISPF panels are set up, you may need to navigate to FIND your tools. This example is from our IBM DemoMVS system, and is a subselection panel from the main ISPF panels. From here, as you can see, I can select any of our problem determination tools, in this case FMI for File Manager/IMS. Check your installation setup to see where your ISPF panels are defined.



- **Highlights**
  - Browse, edit, and print data from IMS databases
  - Extract data from IMS databases
  - Load data into IMS databases
  - Support for HDAM, HIDAM, HISAM, HSAM, DEBD, MSDB, and HALDB databases
  - Process in alternate sequence using secondary indices
  - Process using logical DBD
  - Access using STATIC (existing) or DYNAMIC PSB's
  - Option to access via DL/I or BMP

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FM/IMS provides you with a number of flexible ways to connect to your IMS databases. For example, with BMP mode you can connect to an online multi-user database and manipulate the data. In DLI mode, you can work with data offline as a single user or you can share the data with others.

In addition, FM/IMS provides two functions that you can use in batch jobs.

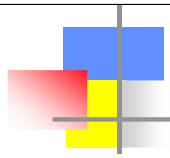
- FM/IMS Edit Batch (IEB) runs a REXX procedure that can insert, update, retrieve, delete or print segments and create views.
- FM/IMS Batch Print (IPR) can print the entire database in one of several available display formats, or a selected subset of the database, based on a view.

FM/IMS allows you to work with the IMS data organization model. IMS uses a *hierarchical* model as the basic method of storing data. In this model, the individual entity types are implemented as *segments* in a hierarchical structure.

The basic building element of a hierarchical data structure is the *parent/child* relationship between segments of data. Each occurrence (or instance) of a parent segment has associated with it 0, 1, 2, or more occurrences of a child segment.

Each child segment occurrence has associated with it one, and only one, occurrence of a parent segment.

The segment with no parent segment, that is, the one at the top, is called the *root segment*. Sometimes it is necessary to distinguish between a *segment type*, that is, the kind of segment; and the *segment occurrence*, that is, the particular instance of the segment type.



- **Highlights cont'd**
  - Use data structures supplied by user
  - Work with data that is formatted
    - Template describes the data so it can be DISPLAYED even though the underlying data is not in display format
  - View formatted segments in tabular or single display
  - Work with segments that have multiple layouts
  - Use flexible criteria to select segments for browse, edit and extract processing
  - Change selection criteria "on the fly" while browsing or editing

For many tasks, you can use the FM/IMS elements called *templates* and *views* to define a logical view of a database, based upon field definitions from COBOL or PL/I copybooks.

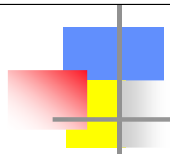
When you associate a view with a database you can:

- Format data according to segment layouts defined in COBOL or PL/1 copybooks.
- Select the segment types and fields that you want to display, edit or extract.
- Change the order in which fields are displayed and adjust field headings.
- Create criteria to identify and select the data that you want to use.

Note: File Manager Version 6 supports COBOL and PL/I copybooks stored in a PDS, a PDSE, or a CA-Panvalet library.

FM/IMS allows you to see the hierarchical relationship of segments in an IMS database and to see each segment and its connection to its parent and child segments.

FM/IMS also allows you to interactively switch between viewing parent or child segments.



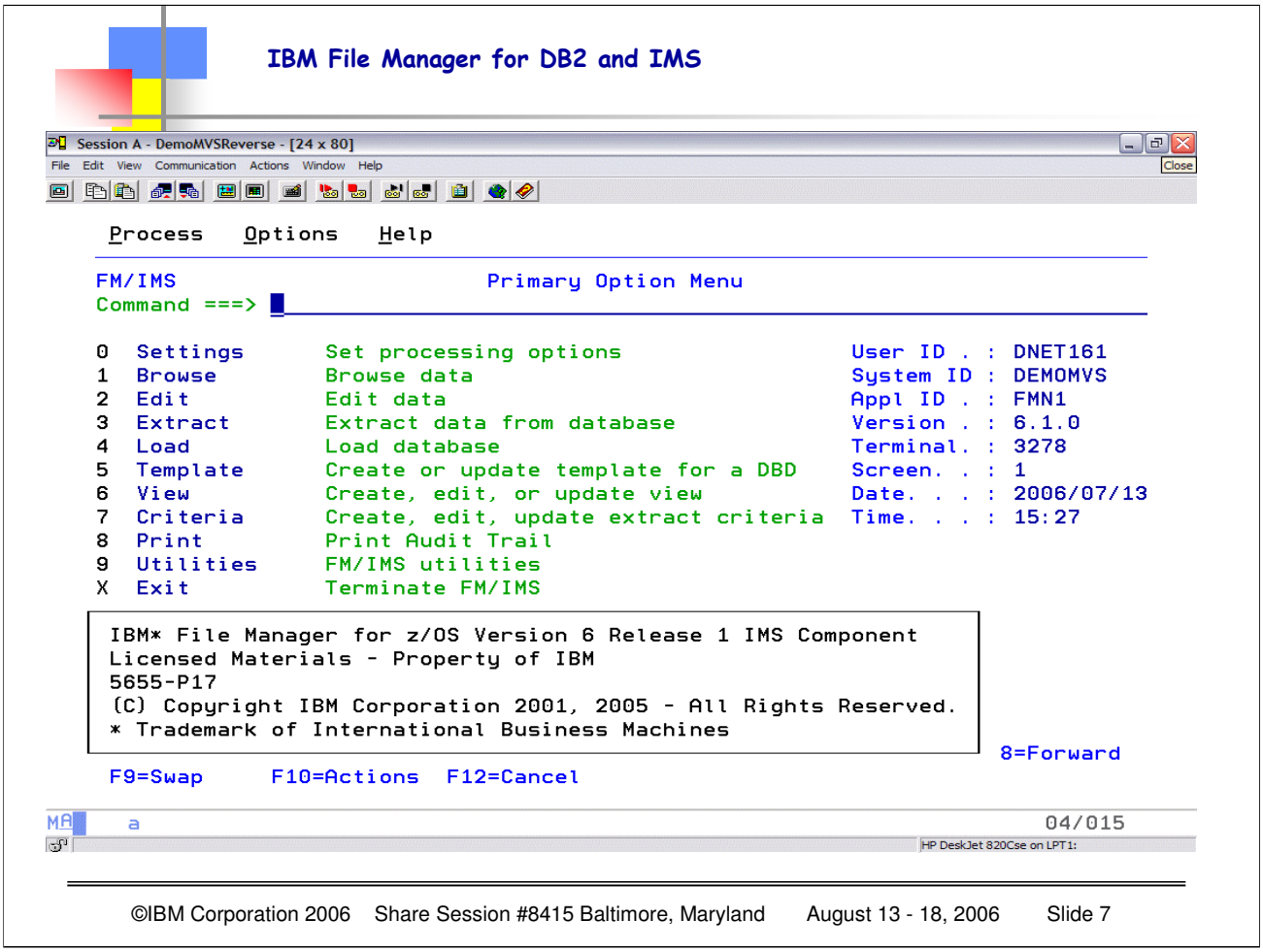
- **Highlights cont'd**
  - Find data within segments and across hierarchical structures
  - Change data within specific fields
  - Identify segments that do NOT match a recognized structure or that contain INVALID values
  - Primary commands available to navigate through the database
  - Support for SCROLL UP and SCROLL DOWN in browse and edit
  - Optional audit trail to record database updates
  - Security exit available

The FM/IMS interface is based upon the ISPF model. Tasks are performed by processing a function, together with its applicable parameters. Panels provide a user-friendly way of selecting a function and supplying the parameter information.

In many cases, FM/IMS provides a series of panels in which you must supply information and choose options before the selected function is processed. This series of panels, known as a *dialog*, starts with an Entry panel. Different subsequent panels are presented, depending upon the information supplied in each panel, and there can be many different paths through the dialog to the end result. For example, the *Edit dialog* starts with the Edit Entry panel, and then presents a number of different panels, depending upon whether or not you have fully qualified your data sets, whether you have selected to use a Static or Dynamic PSB and whether you have chosen to access via BMP or DL/I mode, before you finally arrive at the IMS Data panel (the final destination of the Edit dialog).

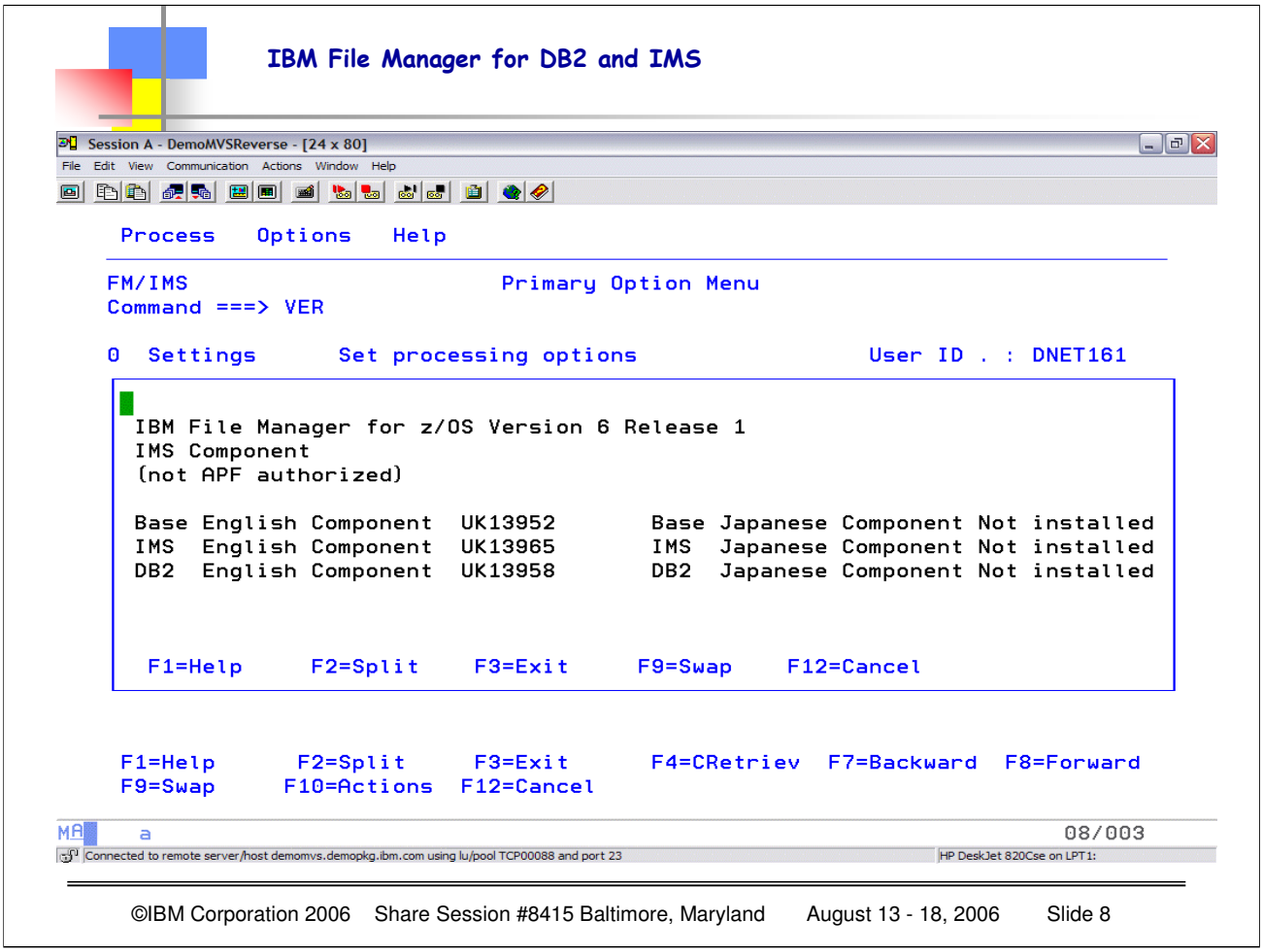
All panels, except for the very end of the Extract, Load and Audit trail report dialogs are processed in foreground mode. In foreground mode, the selected options are processed immediately and any results are returned to you on screen or directed to print outputs, as dictated by your settings.

In the Extract, Load and Audit trail report utilities, JCL is generated from the panel information, and then presented to you for editing. You can modify this code and submit it to a processing queue. The result can then either be displayed via SDSF or routed to a printer.

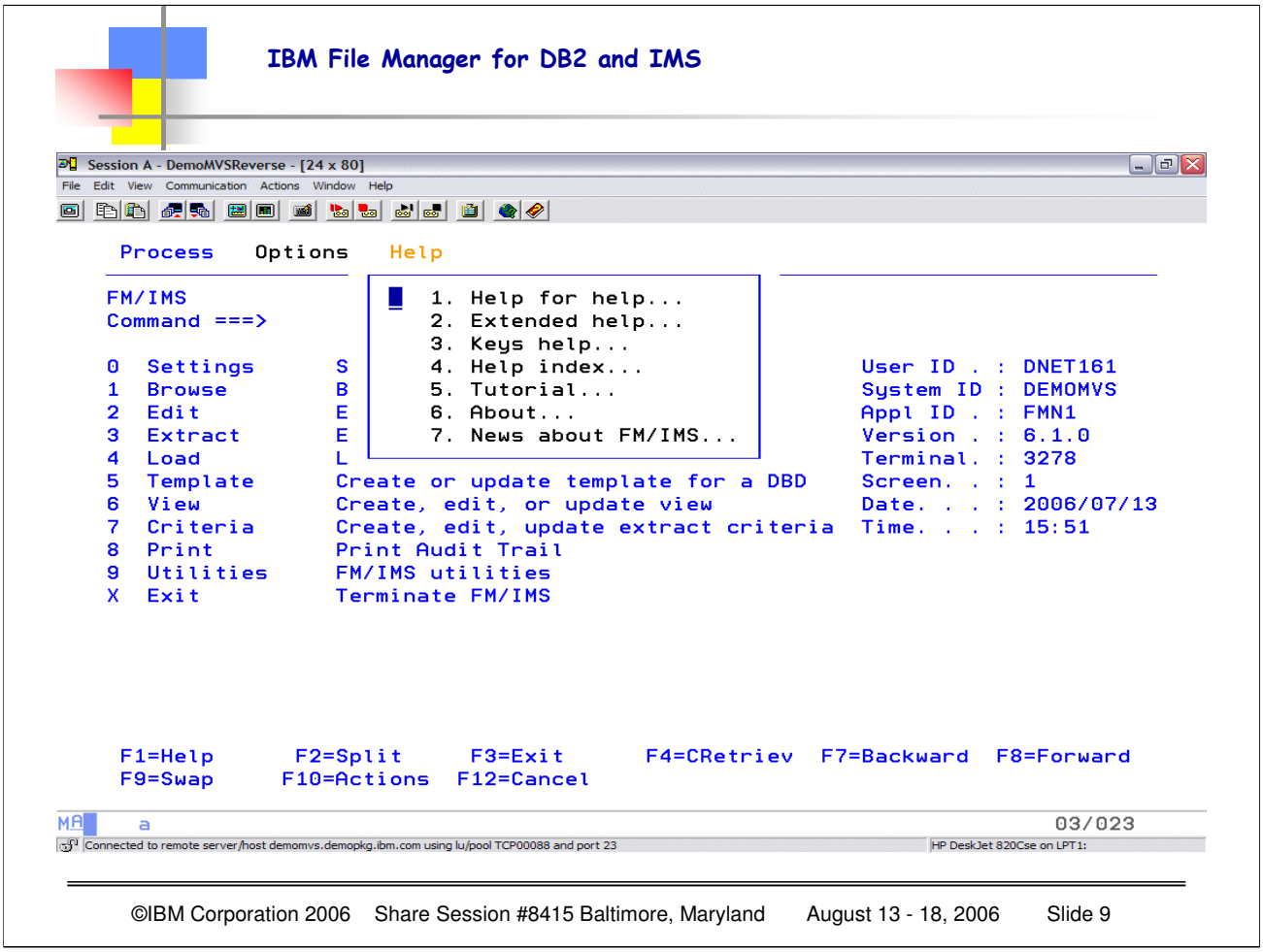


This is the initial or primary options panel for FM/IMS. Notice that straight away you get a pop-up informational message indicating the Version and Release level of FM/IMS. When you hit enter, this pop-up will disappear and you will have the FULL SCREEN of information for your options/actions. Note that with most of the File Manager Panels, there is MORE information than will fit on a 24X80 panel…so it is HIGHLY recommended that you change your terminal type to a MOD3 (at least)…

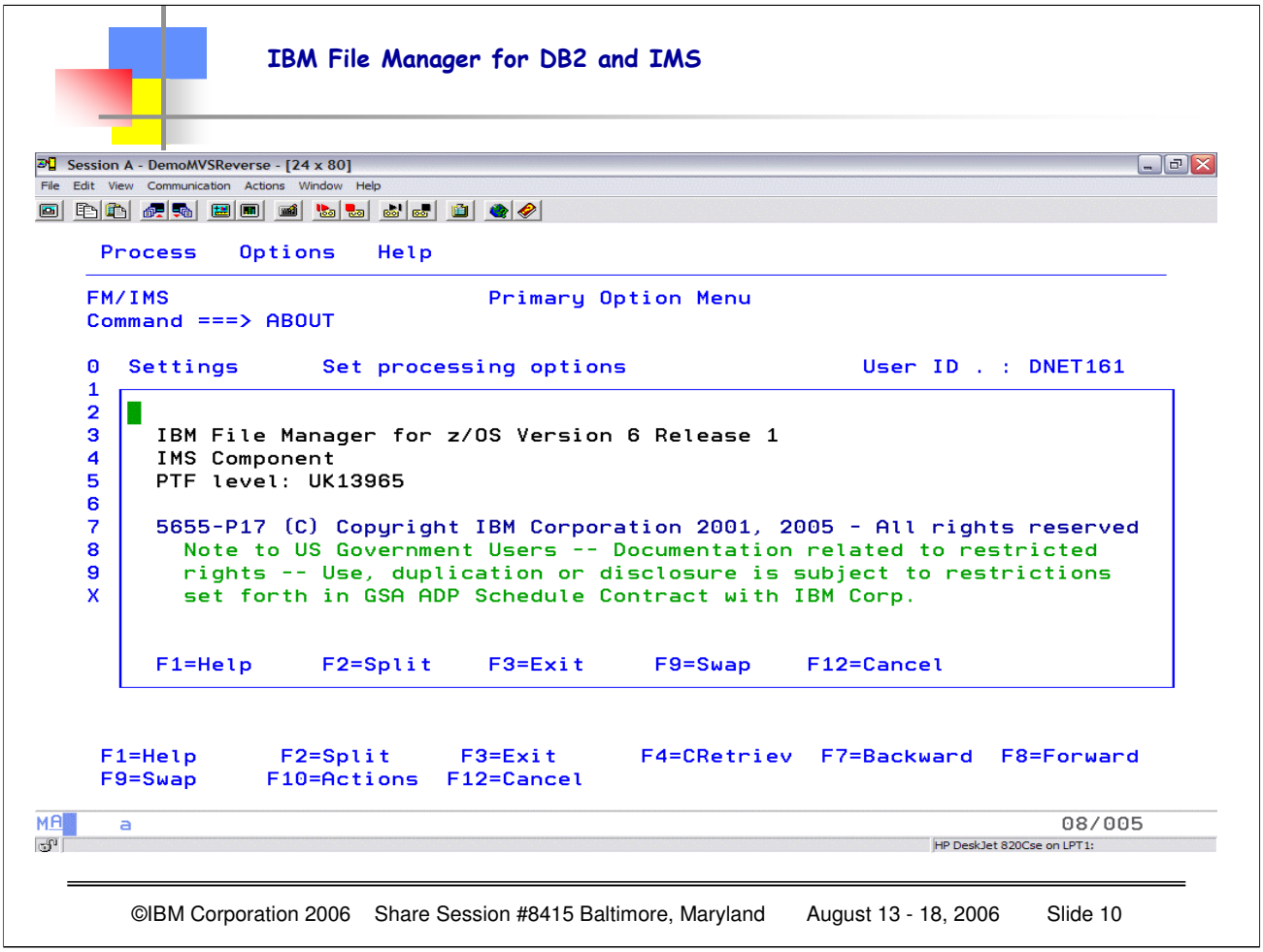
SETTINGS	Display and change options that affect FM/IMS behavior
BROWSE	Display data from an IMS database
EDIT	Display and modify data from an IMS database
EXTRACT	Extract data from an IMS database into a sequential file
LOAD	Load data from a sequential file into an IMS database
TEMPLATES	Create and update templates (use COBOL or PL/I structure) to describe segment layouts in your IMS database
VIEWS	Create and update views (logical presentation of data from your database)
CRITERIA	Define Extract selection criteria for segment types in you IMS database
PRINT	Print data written to the audit trail during edit session
UTILITIES	Delete/Define IMS database Delete/Define allows the IMS database data sets associated with a IMS database to be delete/defined. A batch job is created which will delete and redefine the IMS database data sets based on the existing characteristics.



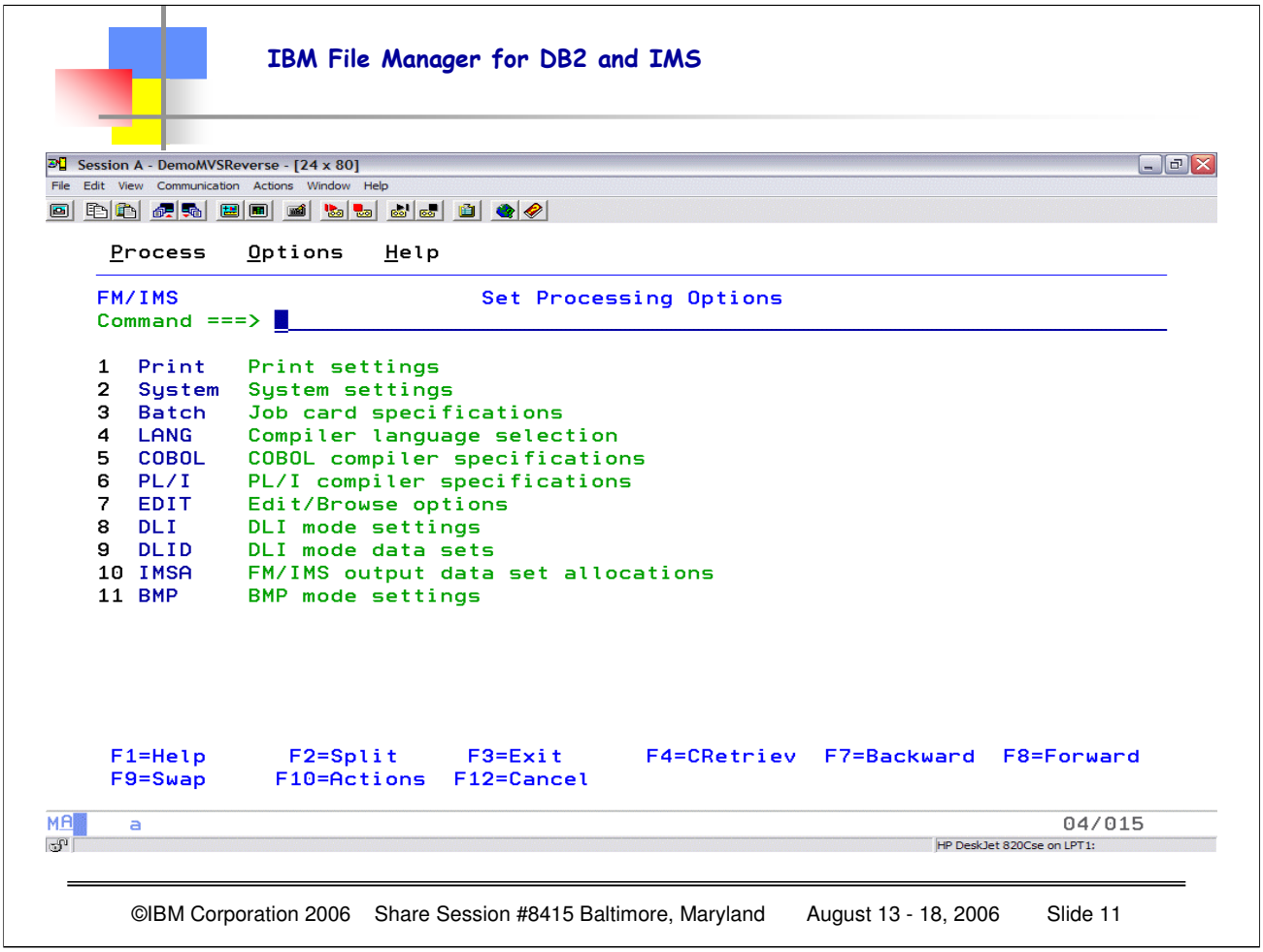
You can get the DETAILED information about your level of FM/IMS either by entering the primary command VER, or by using the pull down menu, put your cursor on HELP and hit enter, and then select option 6 ABOUT…either way you get the most information. This is EXACTLY the type of information that IBM needs in order to resolve any issues…we NEED TO KNOW what level AND WHAT PTF's are installed…and notice the initial screen does NOT indicate the PTF levels, and this one does. This will be the FIRST question IBM support will ask…"what level AND WHAT PTF LEVEL" – so this is extremely important to assist IBM in identifying issues and providing resolutions!



This shows the pull down options from the HELP choice. Simply position your cursor on HELP and hit enter, and to get the "about" information chose option 6. Notice this is another one of the ways that you can get to the extensive on-line help information. You can also select online help using F1 from the panels as you are navigating through File Manager.

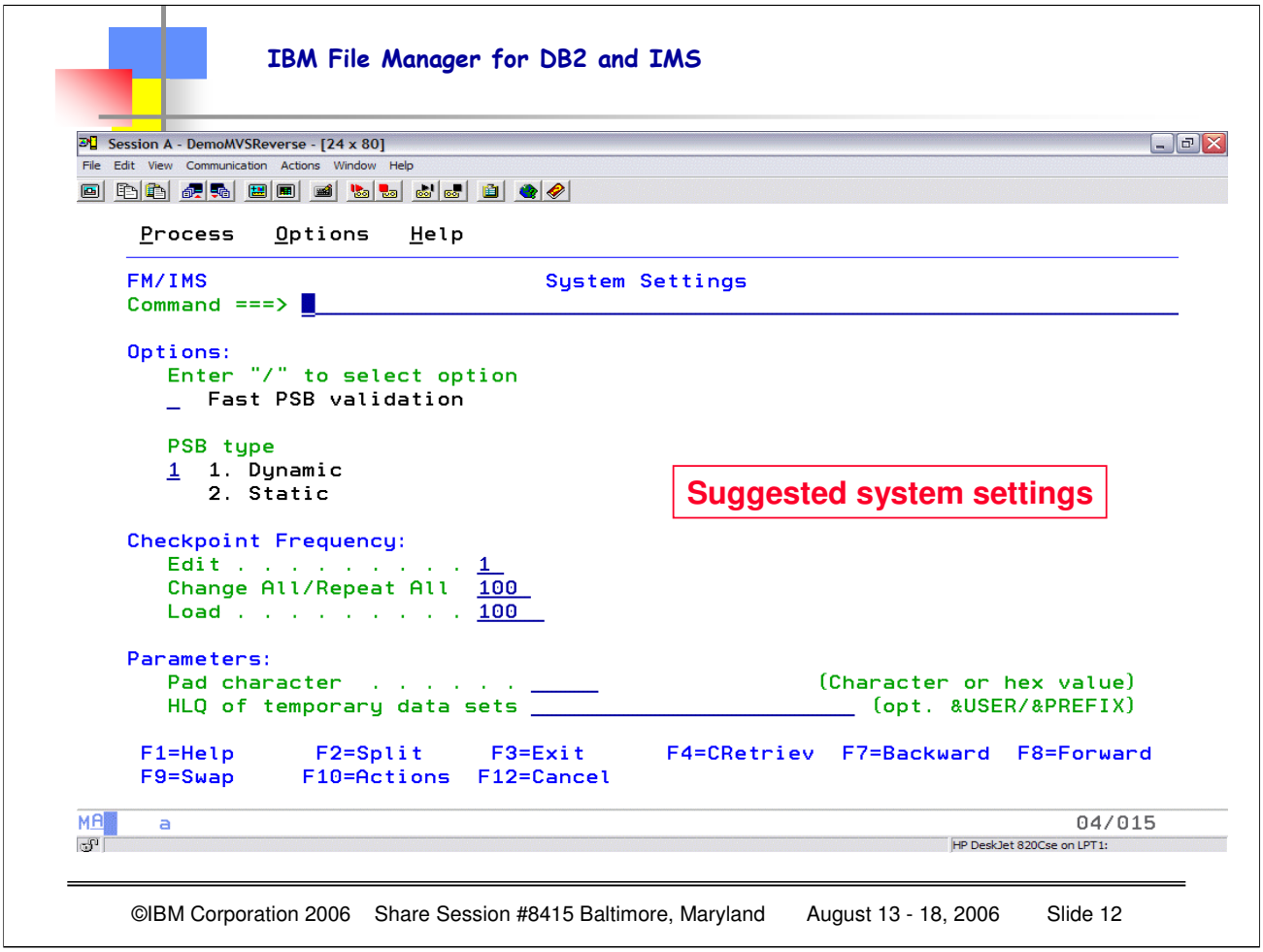


The information for the "about" can either be achieved by using the pull-down Help menu, or by typing in the word ABOUT in the command line. Notice that this information is now SPECIFIC TO ONLY FM/IMS, where the VER gives the BASE File Manager, as well as FM/DB2® and FM/IMS



Here is the menu you get when you choose option 0, set processing options.

PRINT	0.1	Specify parameters that affect print output
SYSTEM	0.2	Specify parameters that affect data presentation and conversion
BATCH	0.3	Specify batch job statements
LANG	0.4	Define default language for segment layouts
COBOL	0.5	Specify options used to compile a COBOL copybook into a template
PL/I	0.6	Specify options used to compile a PL/I data structure into a template
EDIT	0.7	Specify options that affect BROWSE/EDIT behavior
DLI	0.8	Specify settings for running in DL/I mode (recommended when testing)
space.		In DLI mode, FM/IMS allocates the IMS database data sets in the TSO address The databases can only be updated by a single user unless you use the Internal
mode,		Resource Lock Manager (IRLM). By using IRLM to govern your access in DL/I several users can update the same databases. To enable multi-user access in DLI mode, you must make sure that your databases are allocated with DISP=SHR
IMSD	0.9	Specify datasets used by IMS
IMSA	0.10	Specify allocation parameters for datasets created by FM/IMS
BMP	0.11	Specify setting for running in BMP (can be used to access production
databases)		
allowing		In BMP mode, the database data sets are allocated in the IMS Control Region, multiple users to update the same databases. To use BMP mode, your FM/IMS
system		administrator must provide the required IMS subsystem information during the
FM/IMS		installation.



System settings, OPTION 0.2, allow you to set control information for options that are used in both BMP and DLI processing. You can also set the high-level qualifier (HLQ) for temporary datasets used during the FM/IMS processes.

If the individual who installed FM/IMS has set the HLQ as part of the installation, then that HLQ will appear in this panel. You can override the default name by entering your own information.

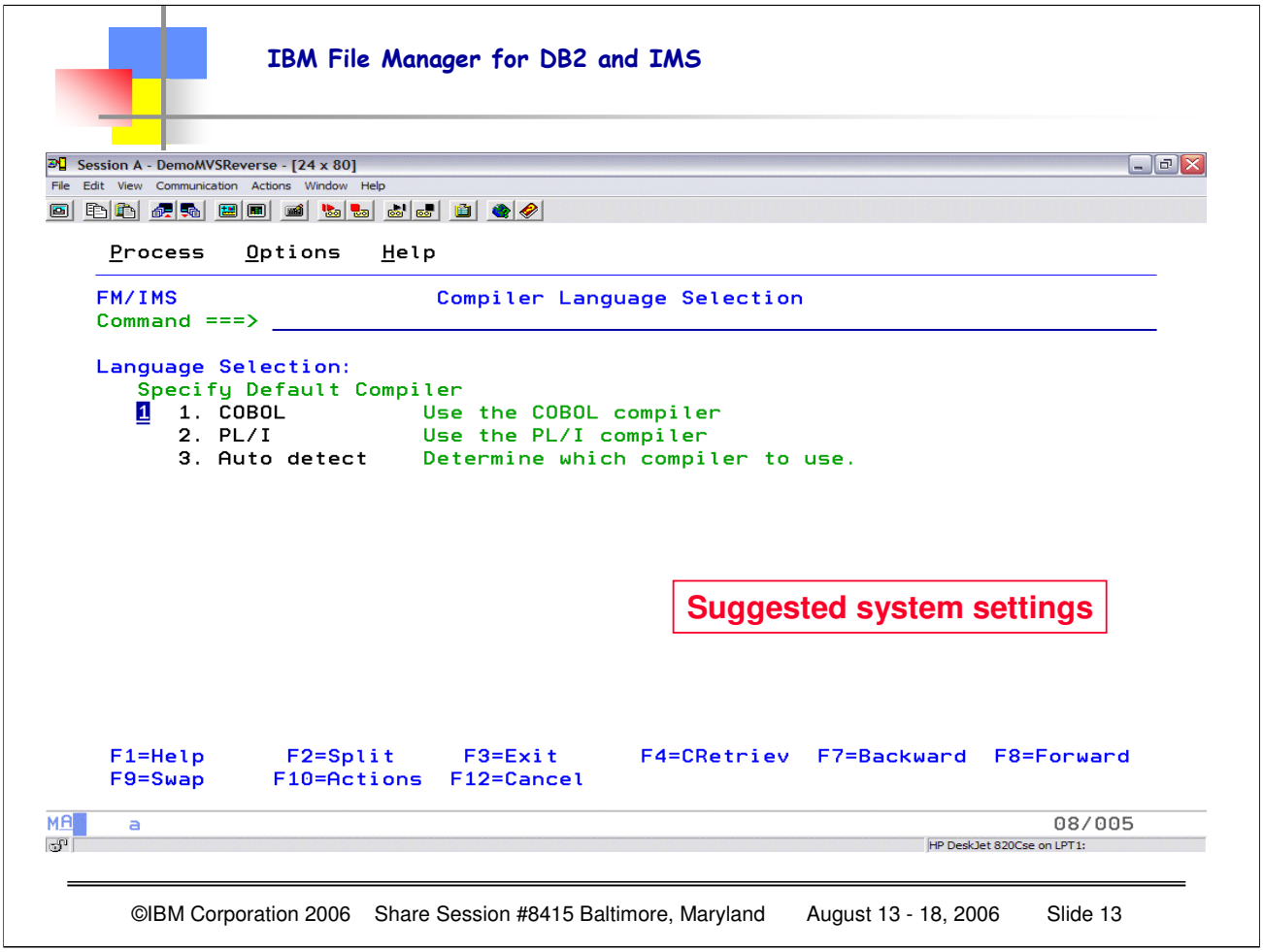
Note that you will want to ensure that the temporary dataset names are ones that will be recognized to be DELETED. Otherwise you may generate temporary data set names that do NOT get deleted as part of your system "maintenance".

Fast PSB validation only applies when using STATIC PSB's.

If you choose DYNAMIC PSB (recommended unless your shop standards require use of STATIC (existing) PSB's), then the PSB is dynamically generated when using either BROWSE or EDIT, which gives you full range of access and capability for all segments identified in the DBD.

The CHECKPOINT information identifies when to release locks (important for performance). The checkpoint frequency applies to DLI mode, and also to BMP mode when your system is set up to allow you to CHANGE the automatic save options.

Recommended settings are the ones shown on this panel, depending upon your system requirements.



This screen, option 0.4 lets you select the language to be used for COPYBOOK or PL/I Structure compilation.

If you have primarily one language, then it is more efficient to specify that predominant language rather than using the Auto detect.

Note that if you select "auto detect" and there are no keywords in the copy member that FM/IMS can use to "detect", then FM/IMS will default to use the COBOL compiler. Compiling the copybooks occurs when you are creating templates from existing copybook or structures (COBOL or PL/I).

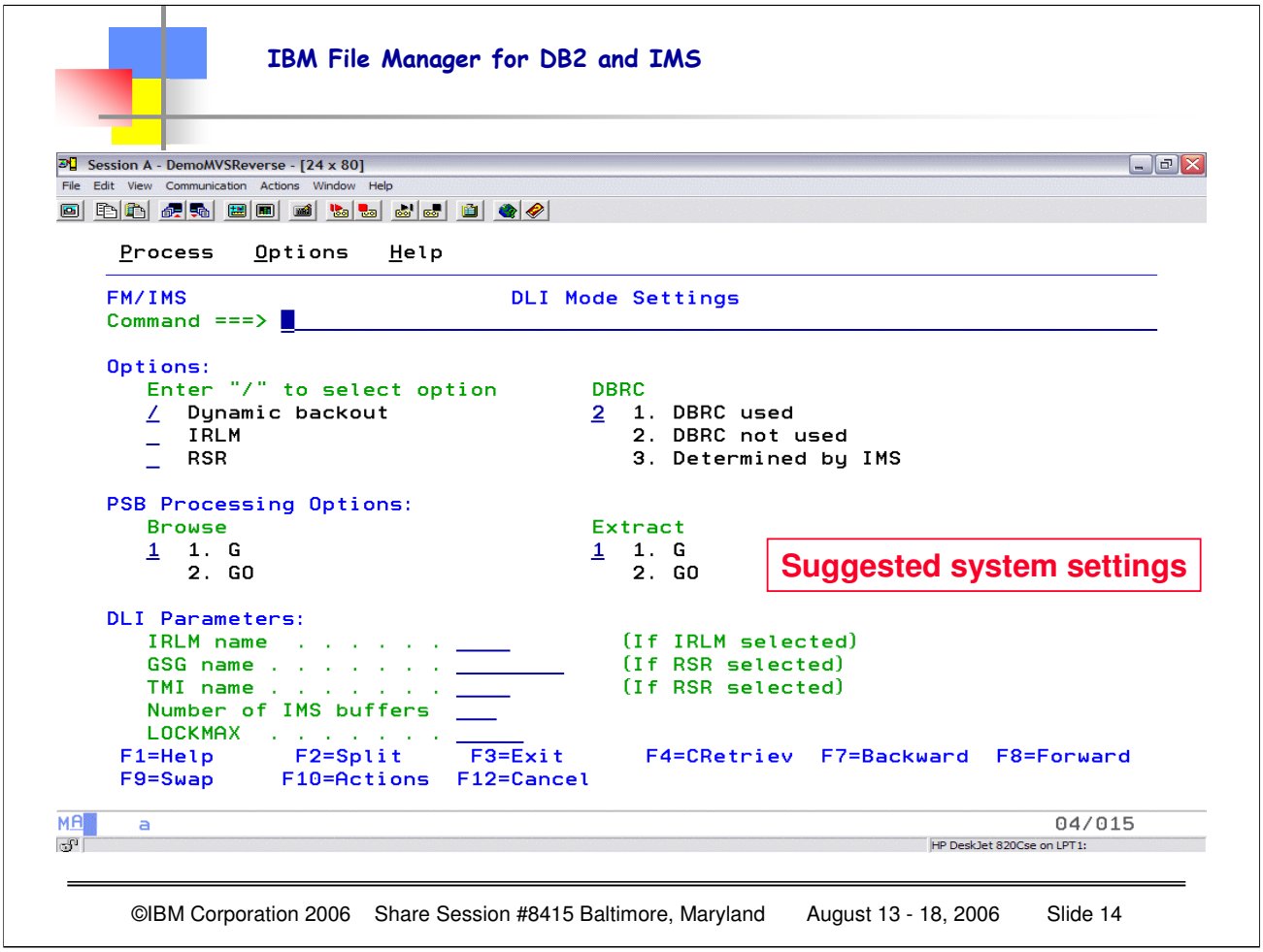
If you have a language (Assembler, for example) where there is no existing structure, you can create a "dummy" copybook that can then be compiled into a template. Templates are invaluable in laying out individual data fields within a segment.

You may also have a segment for which there is no copybook. The recommended approach is to create a copybook where there is not one so that a template MAY be created. This only needs to be done once, and all users can share this template.

Note that templates created in File Manager Base are not interchangeable with File Manager/IMS or File Manager/DB2. The template is the basic description of the segment layout.

A VIEW is created from the template, and contains additional information, such as segment selection criteria, field selection (it is not necessary to display all fields within a segment) and display order.

Typically you will have MANY views but a single TEMPLATE since the template describes the characteristics of the underlying segment. Because a segment could have multiple layouts, it is possible to describe these different layouts as part of the template description itself. The template also describes things such as field size and position within the segment.



This is option 0.8, DLI Mode Settings.

These settings are used when testing your IMS application in DLI mode.

If you want IMS to manage database backouts after an abend (recommended) then select Dynamic Backout.

DBRC (Database Recovery Control) will depend upon what your installation allows.

The PSB Processing Option selection indicates whether IMS will process your BROWSE and/or EXTRACT request in "READ" or "READ WITHOUT INTEGRITY" mode.

Procopt = G will operate in READ mode, G implies no data sharing, or sharing at the database level, but no IMS system has update authority. Using G means data sharing will be at the block level.

Contrast this with GO, which generates a dynamic PSB with GO (read without integrity) for browse operations.

Note that there are some IMS data sharing situations that require this option, but this option also means you may have inconsistent information if a segment is used in different units of work.

- **Accessing your IMS database**
  - One of two ways:
    - BMP – database is under control of an IMS region (typical for a production database with full control/security)
    - DLI – single user access (typical for developers)
    - Using EITHER mode you can still use dynamic or static PSB's to access to data

When your database is allocated to an online system, you access it in BMP mode. BMP mode provides strict controls that are suited to live production environments. For example, you can only access those database data sets that have been defined for your IMS subsystem. Any changes that you make are logged in the IMS online log data set and IMS controls such things as multi-user access to the segment data and automatic backouts if needed.

When running in BMP mode, you can choose to access the database using a Static PSB or a Dynamic PSB. Static PSB's provide control over what segments are available and what processing options, such as Browse or Edit, can be performed on the available segments. Typically, an end-user who updates data in a live production environment would access a database in BMP mode using a Static PSB.

In order to use Dynamic PSB's in BMP mode, your FM/IMS System Administrator must have followed the setup process, as explained in the Customization Guide.

When your database is offline, you access it in DLI mode. In DLI mode, you must specify the data sets that you want to update and security is controlled at the data set level, that is,

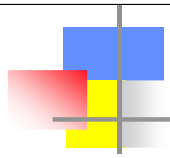
f you have access to the data sets via ISPF, you can access them via FM/IMS in DLI mode. These data sets are allocated to your TSO address space and you manually control your environment by using the Set Options panels.

This type of access is typically used by developers. While DLI mode usually provides single user access, you can share databases with other users by working with the IRLM option turned on (depending on your IMS subsystems definitions).

In DLI mode, you can use a Static PSB or a dynamic PSB. Static PSB's provide the same measure of control in DLI mode as that given in BMP mode.

Using a Dynamic PSB in DLI mode requires no special set up at installation time and allows you to have full access to the data sets you have specified.

Whatever access mode you choose, you have the option to log your editing changes to an Audit Trail data set.



- **Working with Templates or Views**
  - Template has basic description for the complete segment
  - Can be created from existing copybooks or structures
  - If no existing starting point, recommended to CREATE one since TEMPLATES/VIEWS are critical to the process
    - View is required in order to apply "criteria" for selecting specific database records
  - If you have a SEGMENT with no corresponding COPYBOOK, simply create a DUMMY copybook with a very large record definition
    - Can then use this for ANY segment that has no COPYBOOK
    - Allows creating template when not every segment is required/described

A template contains the basic description of the segments in a database and the layout of fields in each segment, that is, the field type, size and position within the segment.

Because there can be more than one layout for a segment type in a database, you can define layout identification criteria within the template, to enable you to distinguish between the different layouts.

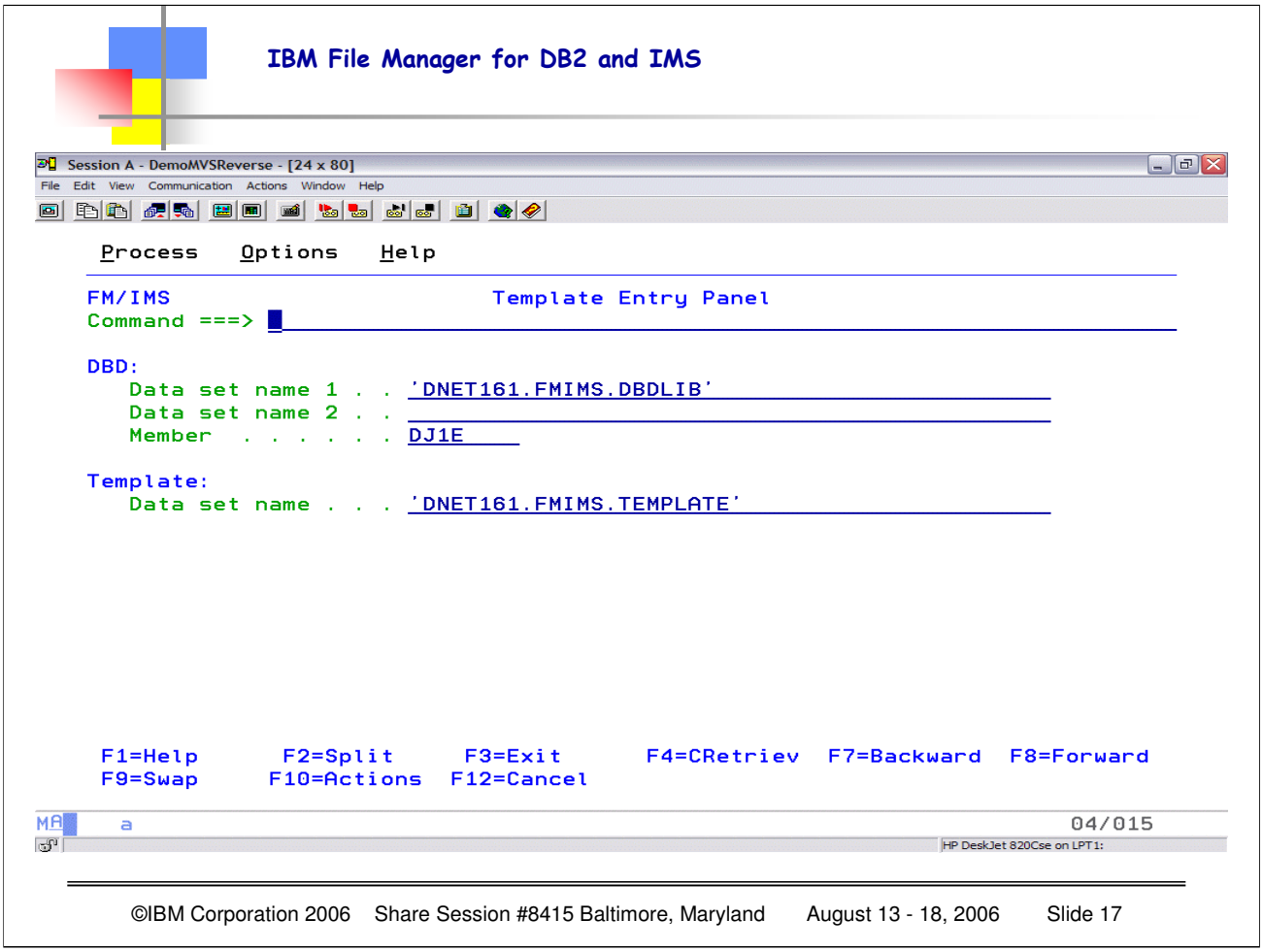
Before you can specify layout identification criteria, you need to examine your data, and determine what field values uniquely identify a segment occurrence as belonging to a particular type. Once defined, you can use these *segment layouts* in your views. Usually, you have only one template defined for each database.

Views are created from a template and contain additional information, such as segment selection, and field selection and display order.

Note that you will likely create many views of your databases, each tailored to a specific purpose.

When you associate a view with a database you can:

- Format data according to segment layouts defined in COBOL or PL/1 copybooks.
- Select the segment types and fields that you want to display, edit or extract.
- Change the order in which fields are displayed and adjust field headings.
- Create criteria to identify and select the data that you want to use.



The Template Entry panel is displayed when you select option 5 (Template) from the Primary Option Menu. On this panel, you specify:

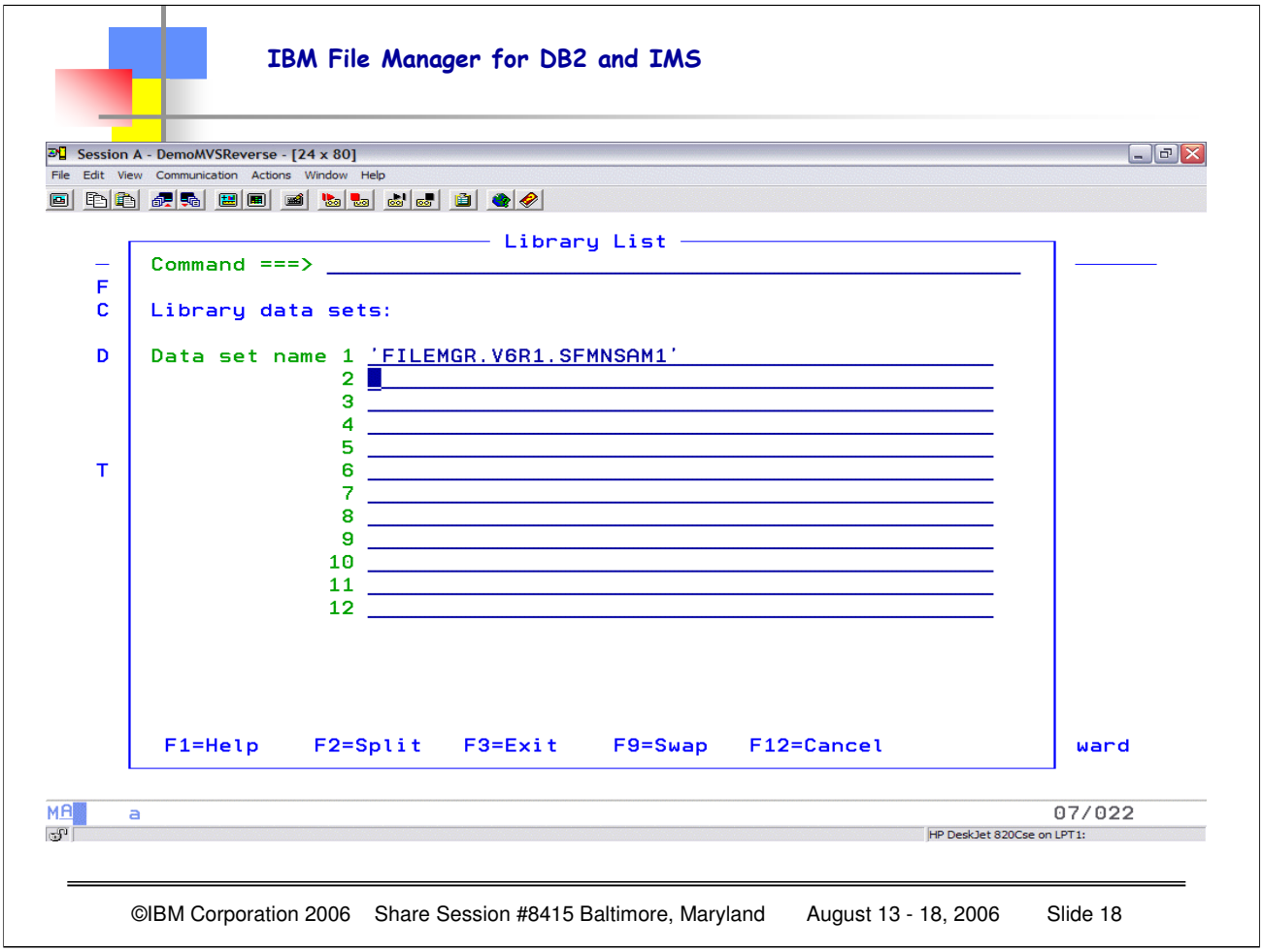
- Either the library that you want a new template stored in, or the library that contains the template that you want to update, edit or view
- The name of the database the template is for
- The DBD library (or libraries) that the database definitions are to be obtained from

DBD Data set name 1 The name of the load library that contains the database definitions (DBDs) that you want FM/IMS to use.

Data set name 2 A second DBD library that is searched when FM/IMS cannot find the DBD in the first DBD library. Specification of this field is optional. The DBD of the database the template is for and the DBDs of all databases that are logically related to this database are required to be in at least one of the specified DBD libraries.

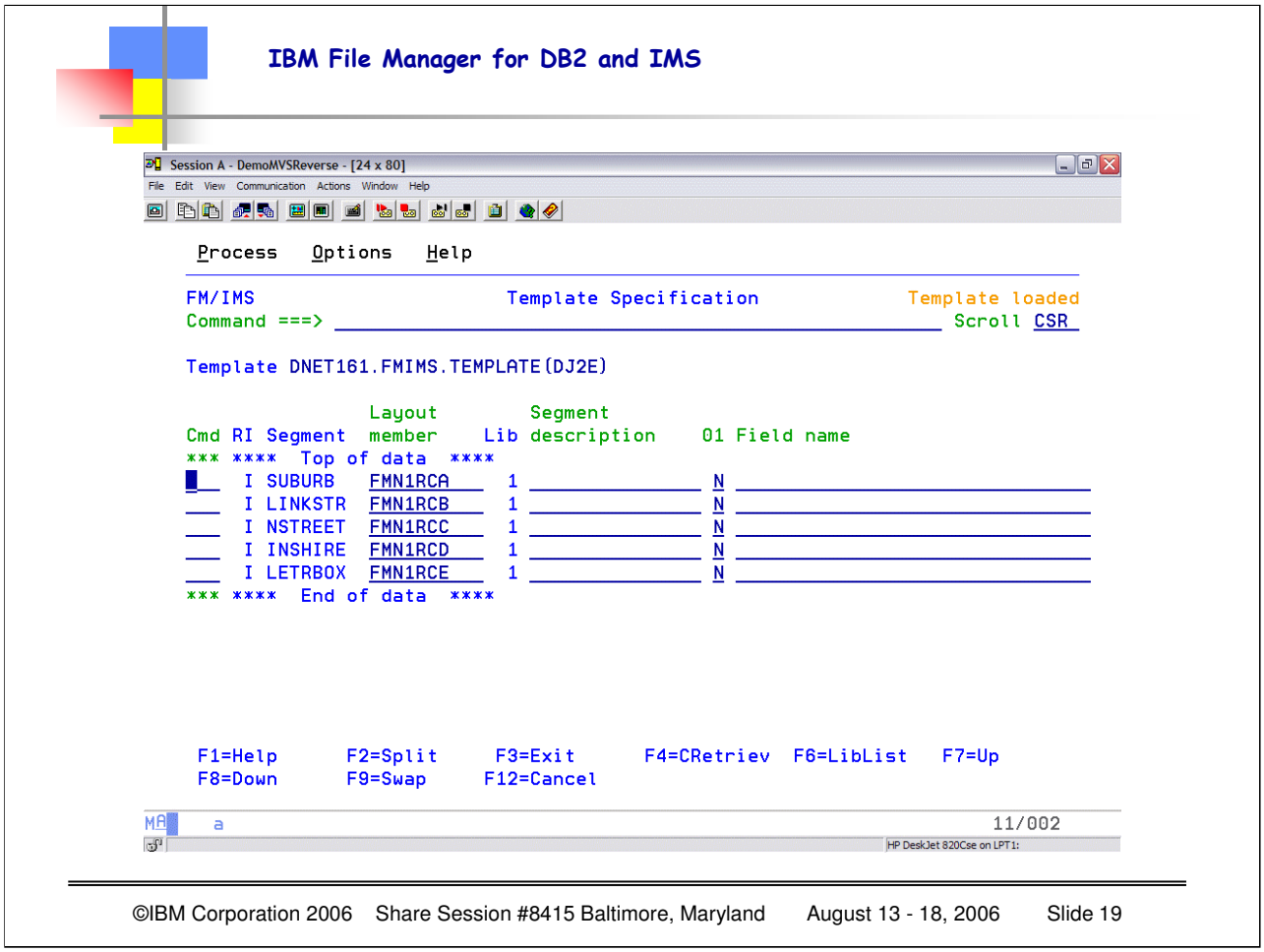
Member name The name of the database the template is for. If you leave the field blank or enter a pattern, a member selection list is displayed. You can select a member from this list.

Template Data set name Enter either the name of the partitioned data set that you want a new template stored in, or the name of the partitioned data set that contains the template that you want to update, edit or view. The template member name is always the name of the database the template is for.



FM/IMS displays the Library List panel:

- After you have entered all required data on the Template Entry Panel and pressed Enter, and a template does not exist for the referenced DBD member or for old version templates that do not contain the library information.
- You enter the LIBLIST primary command from the Template Specification panel.
- You use this panel to add, remove, or modify the names of partitioned data sets or Panvalet libraries containing the COBOL or PL/I copybooks that describe the segment layouts of the specified DBD.



When you press Enter on the Template Entry panel, FM/IMS displays the Template Specification panel, listing the segment types in the DBD:

For each segment type, you enter a member name of a copybook and, optionally, a description:

Template This displays the name of the partitioned data set where the template being created is to be stored.

Cmd Prefix command field. Segment header rows are rows that contain a non-blank segment value. These rows cannot be deleted or moved. You cannot insert a row before the first segment header row. Available commands are:

E Create (if necessary) the template and edit it.

A Identifies the row after which data is to be moved or copied.

B Identifies the row before which data is to be moved or copied.

C Copy one row. **C***n* Copy *n* rows. **CC** Copy block of rows. Marks the start and end of the block.

D Delete one row. **D***n* Delete *n* rows. **DD** Delete block of rows. Marks the start and end of the block.

E Edit the segment layout.

I Insert one empty row. **I***n* Insert *n* empty rows.

M Move one row. **M***n* Move *n* rows.

MM Move block of rows. Marks the start and end of the block.

R Repeat row once. **R***n* Repeat row n times. **RR** Repeat block of rows. Marks the start and end of the block. **RR***n* Repeat block of rows *n* times. Marks the start and end of the block.

S Edit the copybook member. (For copybooks managed by other library products, view is substituted). This allows you to specify the criteria that identify the layout occurrences of this segment type or view the layouts of the segment types. If the segment type to be edited has multiple layouts, FM/IMS displays the Segment Layout Selection panel. If the segment type has only one layout, FM/IMS displays the Segment Layout panel.

U Update and edit the segment layout to which this copybook belongs.

V View the copybook member.

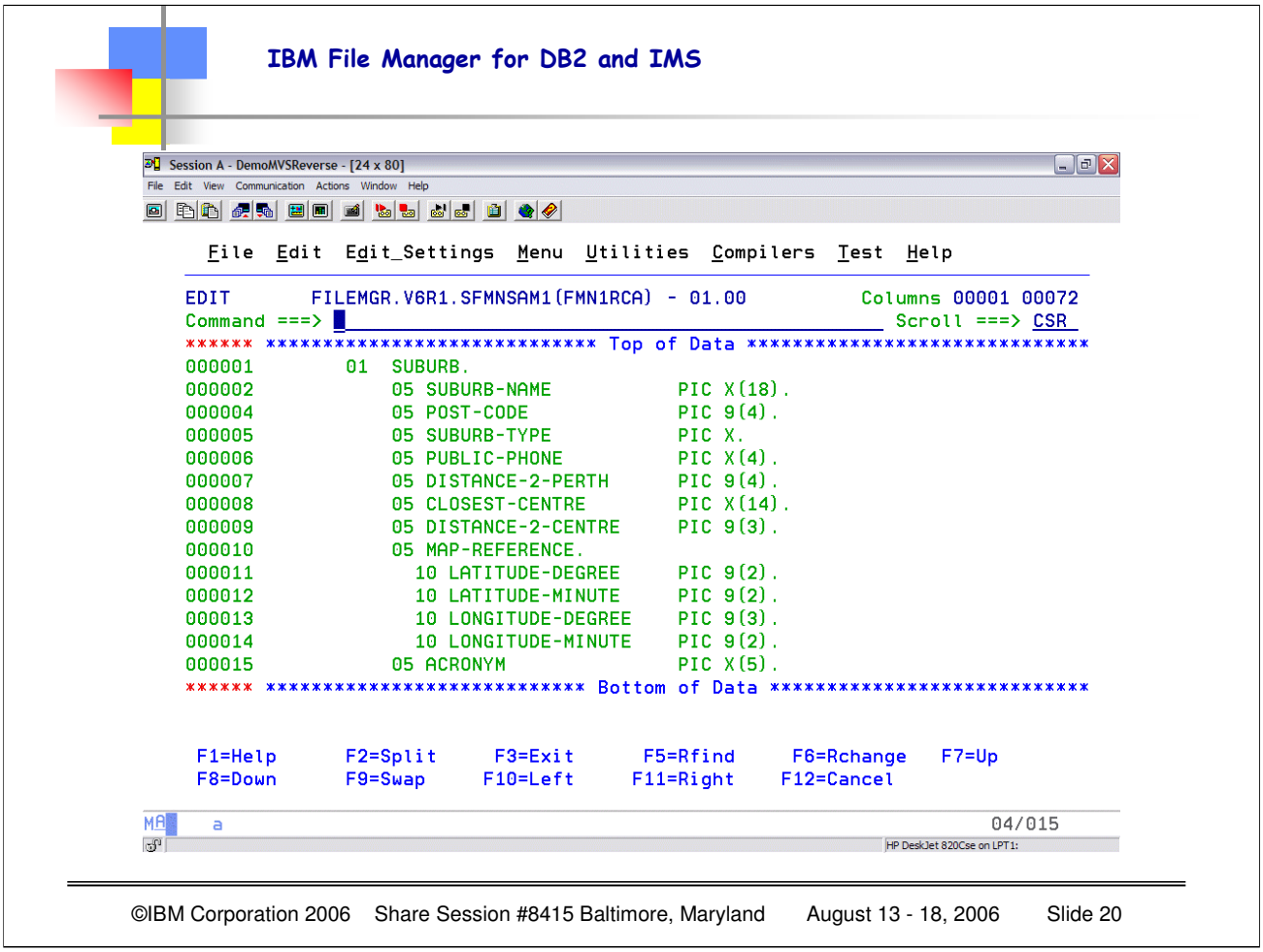
X Displays the Redefines / Range Specifications panel.**R** This column contains the value “R” if redefines or range parameters have been specified for the corresponding layout member.

I This column contains: **Blank** When a new template is being created. **I** When the template has been created and either:

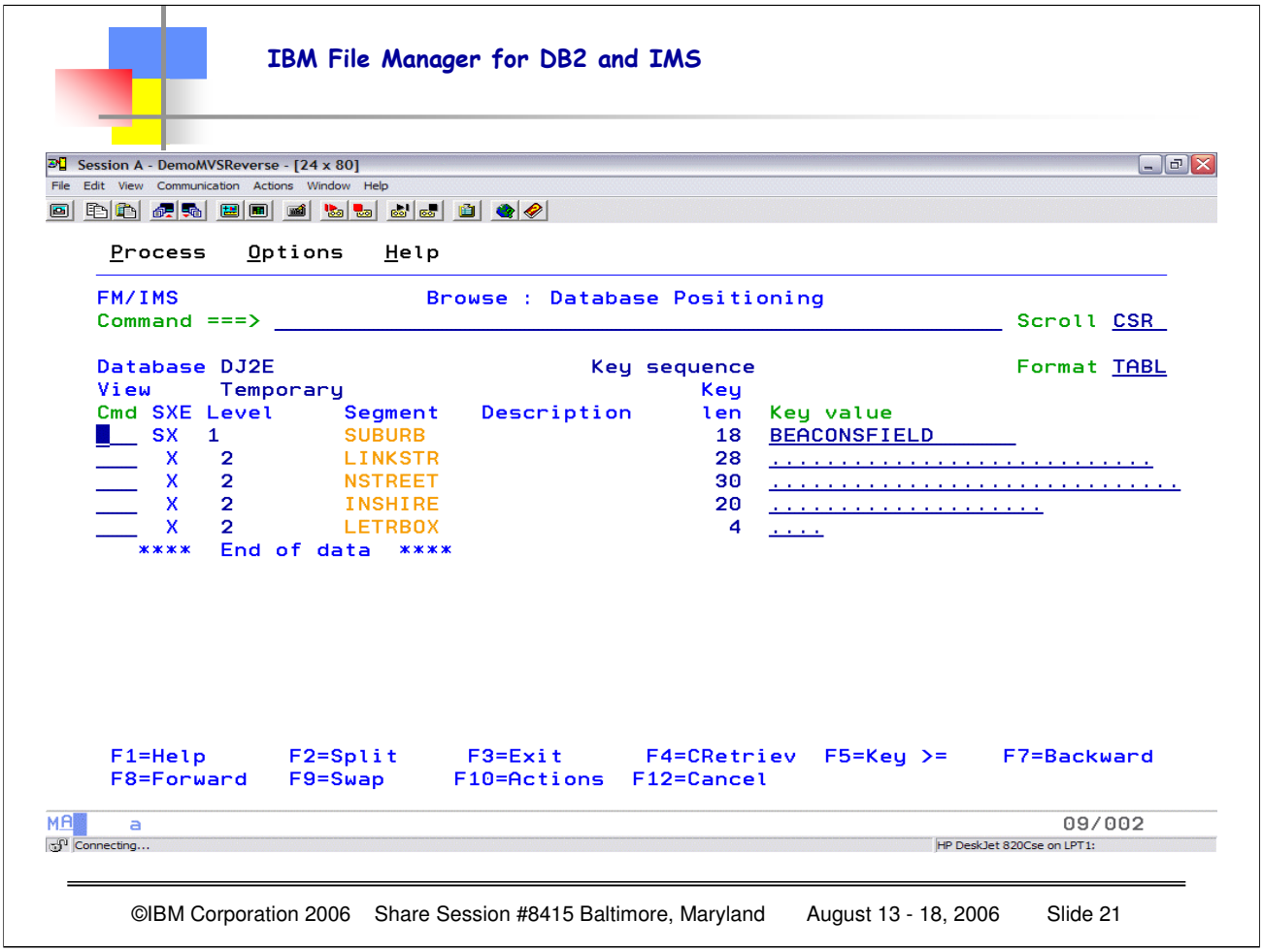
Only one layout has been specified for the segment or

Criteria have been provided for each layout for a given segment

The I value is only displayed on segment header rows.



When you select one of the layout members, you will get the actual copybook information displayed. Notice here the copybook is FMN1RCA, and it originates in FILEMGR.V6R1.SFMNSAM1.That is the dataset name specified in the library list panel to identify the datasets containing the source copybook members.

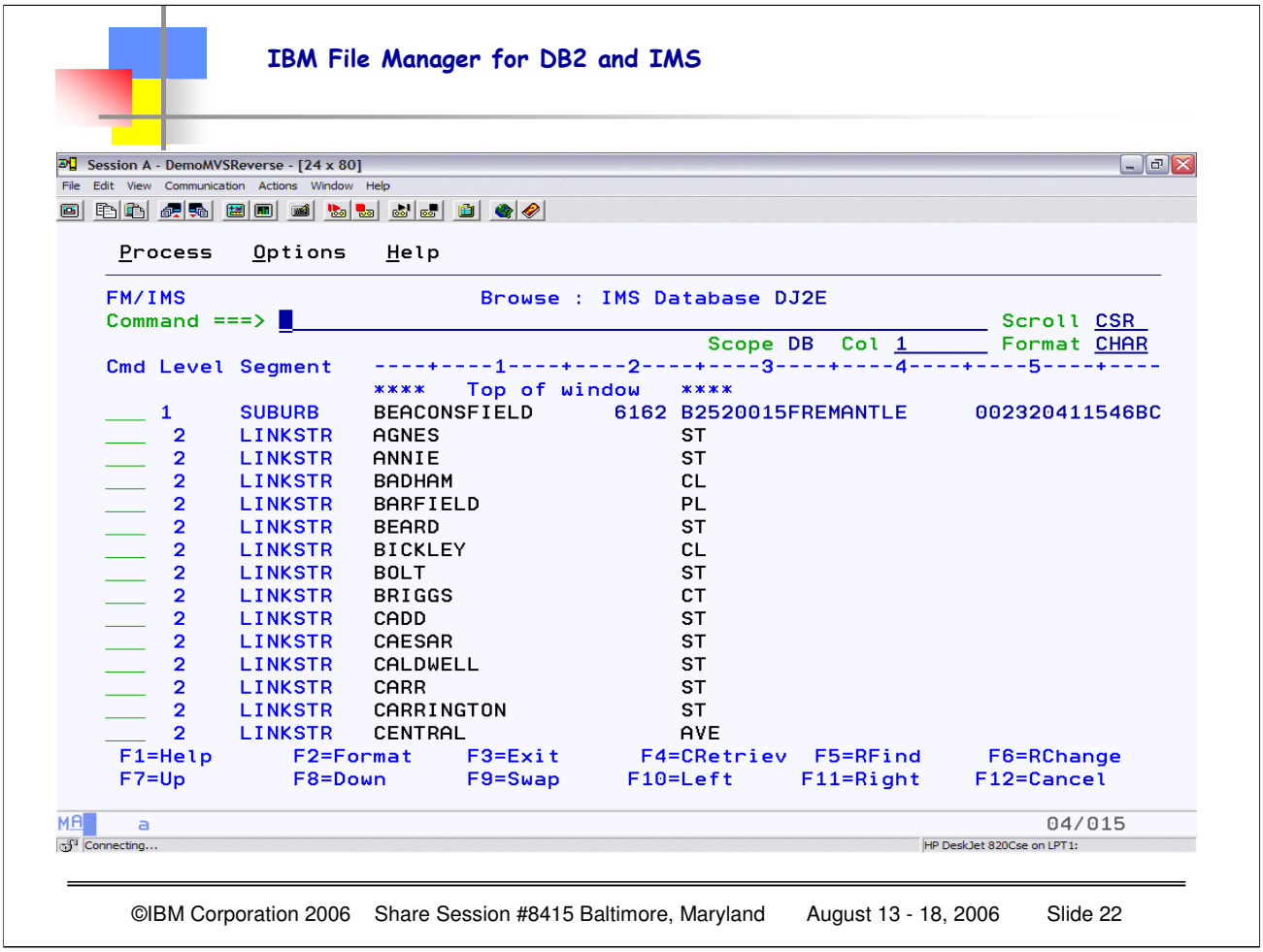


You can determine your starting position within a database, by entering values in the segment key fields displayed on the Database Positioning panel. In this panel you specify unformatted key values, regardless of whether or not you are using a view.

For binary and packed decimal numeric keys, this typically involves specifying byte values in hexadecimal ('HEX ON').

If you are accessing your database using a Dynamic PSB, the panel displays all of the segments listed in your DBD.

If you are using a Static PSB, the panel only displays those segments that are referenced in the PSB.

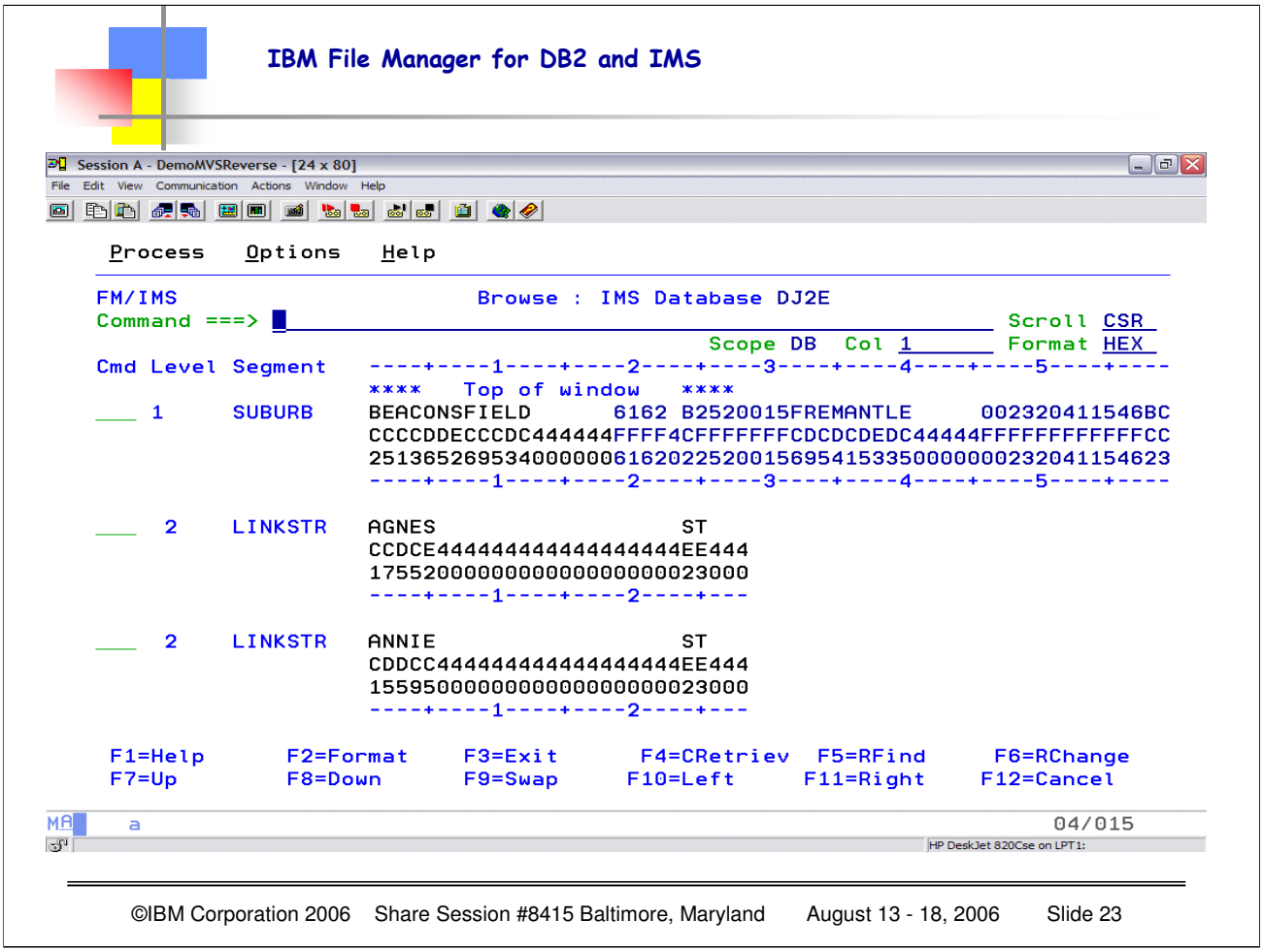


When you browse a database WITHOUT a template, you get the raw data, but it is very difficult to determine individual FIELDS within a SEGMENT. That is the benefit of using TEMPLATES.

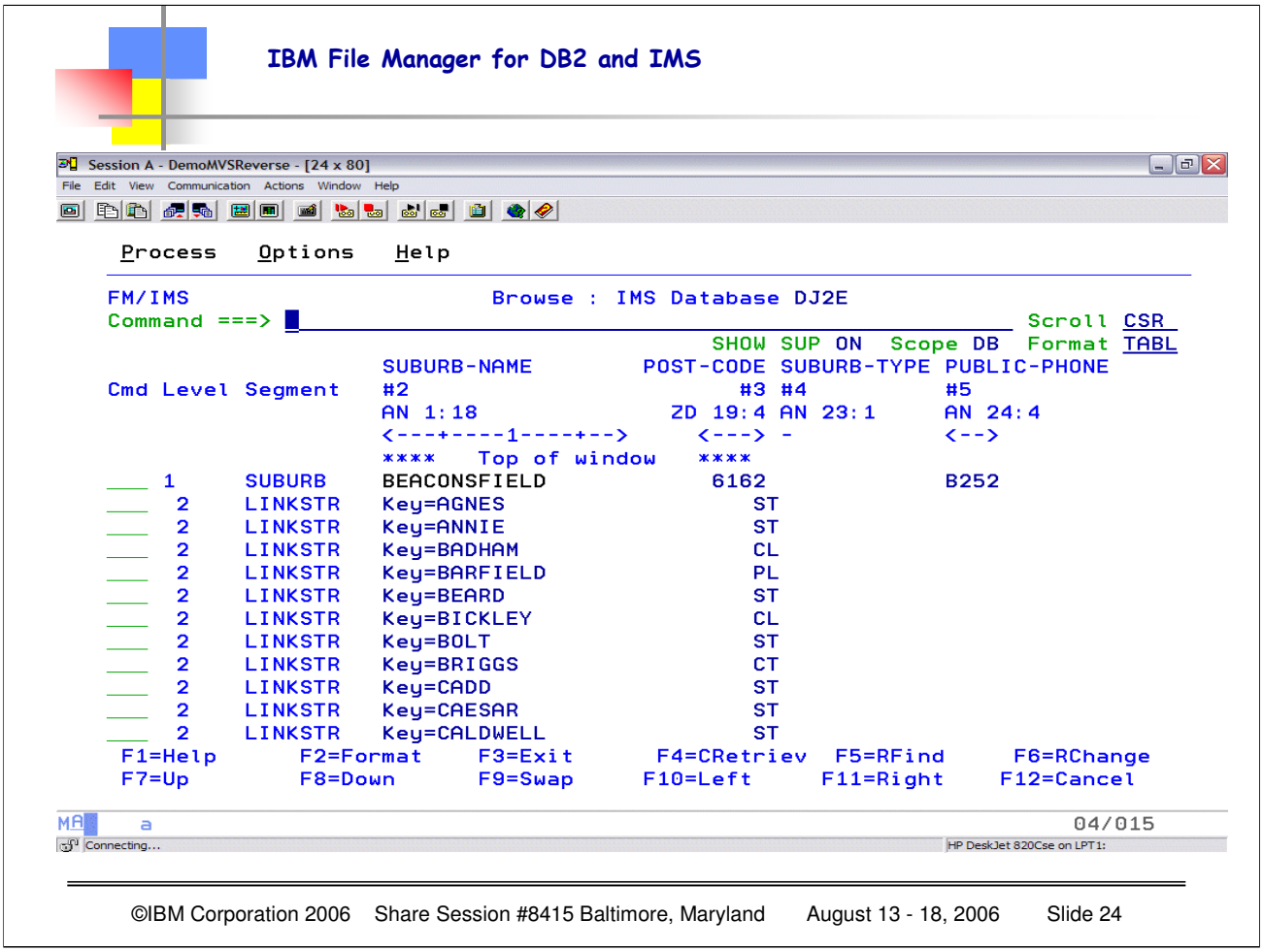
Data displayed without a template and view appears as unformatted text, with no indication that the segments consist of individual fields. Fields containing numeric data encoded in binary or packed decimal format are represented by double line hexadecimal values.

To display your data without applying a view:

1. Follow the instructions provided in “Accessing your databases” in the File Manager/IMS User's Guide, making sure that you clear the **Use view** option on the Browse Entry or Edit Entry panel.
2. When you have fully specified the access mode, database data sets and PSB to use, the Database Positioning panel is displayed



You CAN display the information in HEX format, which gives you the data (raw indeed) for each segment. The COLOR coding identifies the KEY field for each segment. So you can see that the SUBURB segment key is BEACONSFIELD with 6 spaces, the LINKSTR segment key is AGNES + 18 spaces then ST then 3 spaces. NOT EASY to pick out the fields in the SUBURT segment, since the data is unformatted.



Now we have browsed the SAME data using a TEMPLATE. The individual fields are now available with data names, format, and length. You can scroll RIGHT or LEFT, UP or DOWN. In order to get the FIELD display you need to select TABL for the format.

Within the currently selected segments, only the currently formatted type is displayed in TABL display mode. All other selected segments are represented by shadow lines. A shadow line can represent one or many segment.

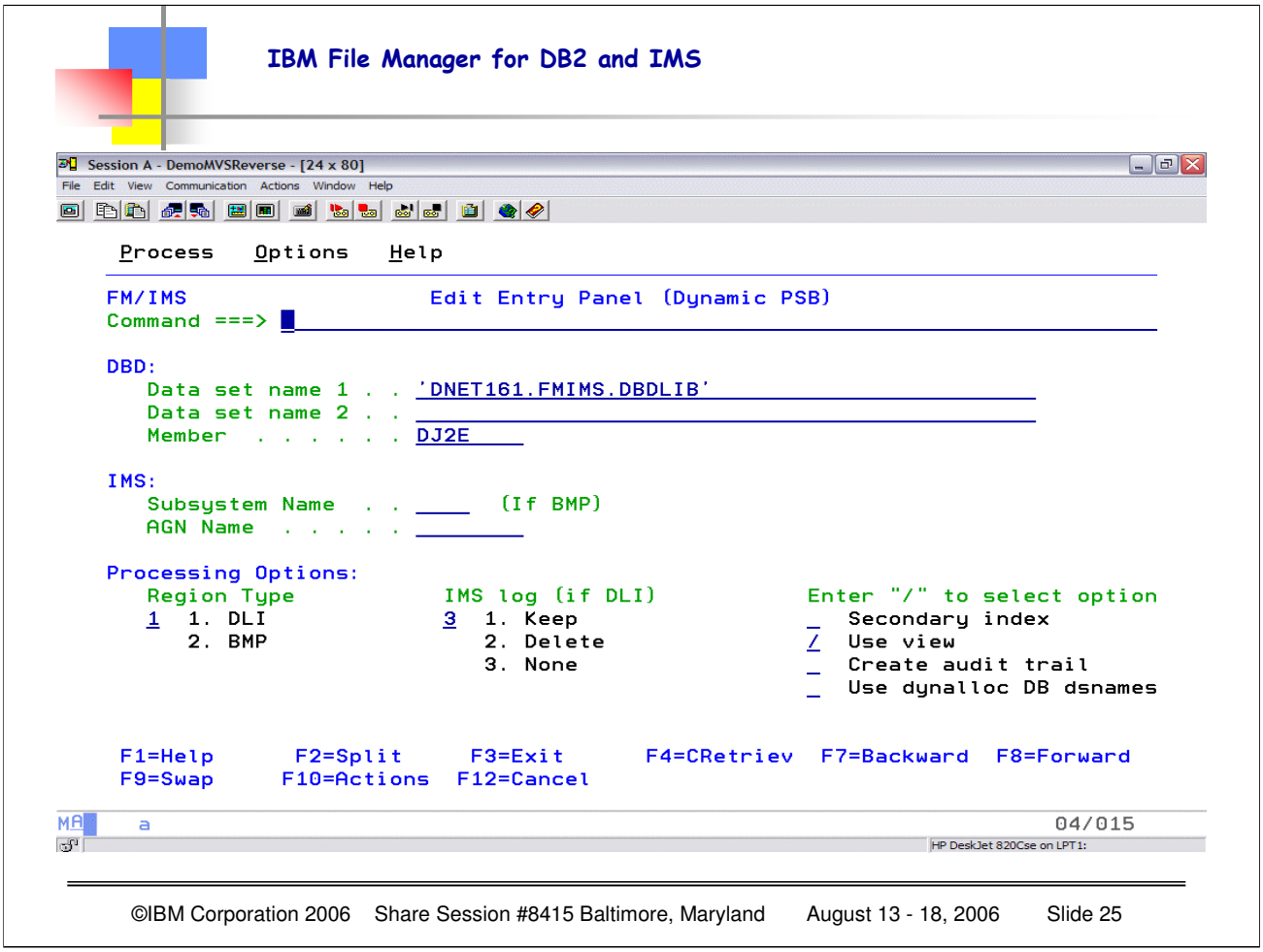
To change a line from being a shadow line to being the currently formatted segment, enter V (VIEW) in the **Cmd** line against the segment. The display changes to show the new "currently formatted" segments with the field headings from that segment layout.

In SNGL display format, the VIEW command is not needed as the current layout automatically changes to match the segment being displayed as you scroll through the segments.

If SHOW SUP OFF is in effect, then suppressed segments are skipped.

In CHAR/HEX/LEX modes the segments are only suppressed if SHOW SUP OFF is used.

All segments are displayed if SHOW SUP ON is used.



The Edit Entry Panel (Dynamic PSB) is displayed when:

- You select option 2 (Edit) from the Primary Option Menu, and
- You have selected a Dynamic PSB Type on the Systems Settings panel (option 0.2)

On this panel, you specify:

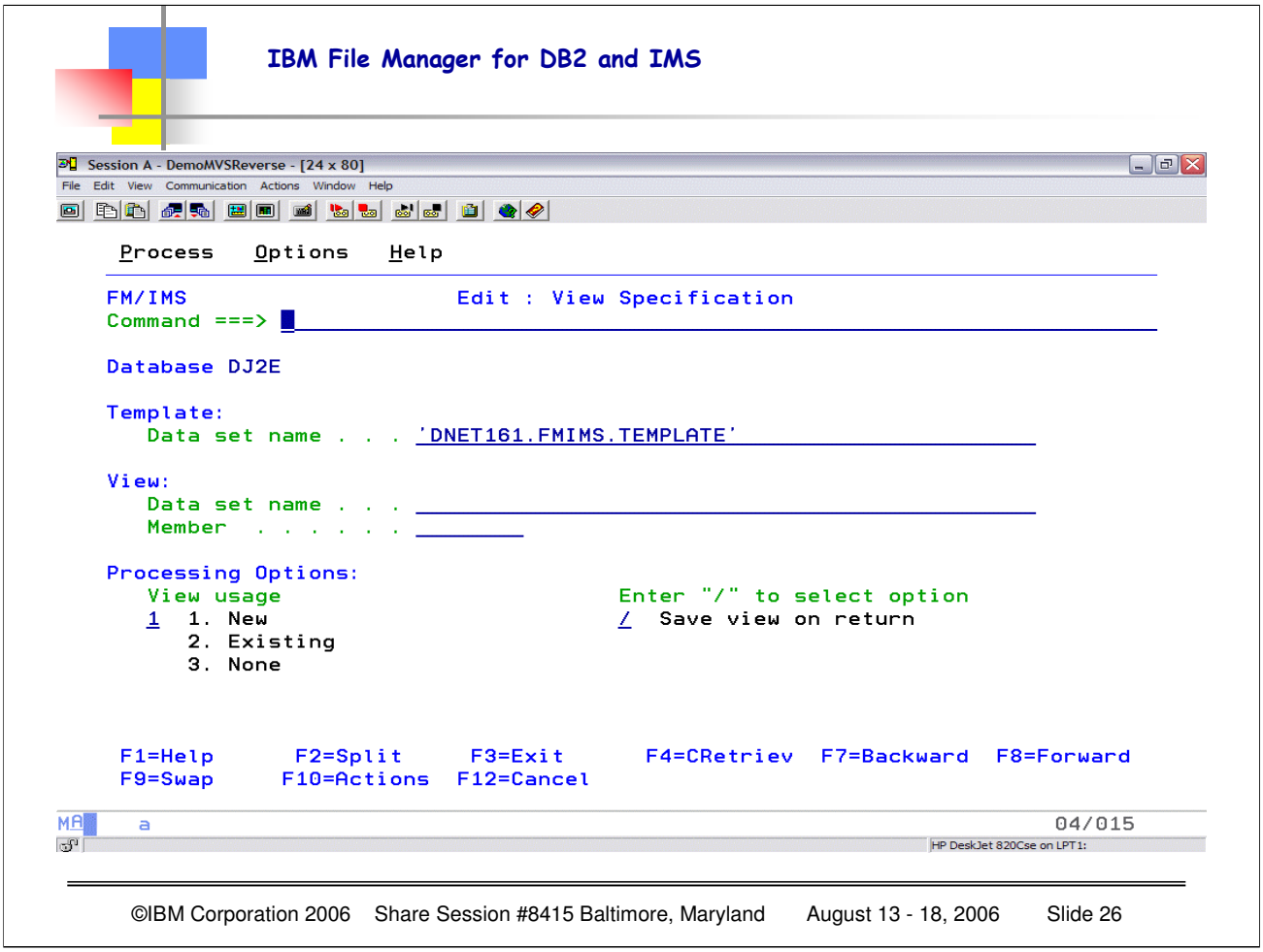
- The type of region that you want the edit to run in
- The name of the database that you want to edit
- The DBD library (or libraries) that the database definitions are to be obtained from
- Whether or not you want to use a secondary index for the processing sequence
- Whether or not you want to use a view when editing the database
- Whether or not you want FM/IMS to create an audit trail of the updates you make to the database during your edit session

If you are running the edit in a BMP region, you also specify:

- The ID of the IMS subsystem that the database you want to edit is defined in
- When the IMS subsystem uses Application Group Names (AGNs) to secure dependent regions, the AGN that is to be used for the BMP region

If, on the other hand, you are running the edit in a DL/I batch processing region, you specify:

- Whether or not you want an IMS log to be allocated at the start of the edit session and, if you do, whether the IMS log should be kept when the edit session ends normally.
- Whether the database data set names displayed on the Database Data Set Specification panel should be obtained from the DFSMDA dynamic allocation module or from your user profile.



Template: Data set name The name of the PDS that contains the template for the DBD specified on the Edit Entry panel. FM/IMS uses the database name for the member name of the template.

The **Data set name** field may also include a member name or name pattern in parentheses. If a member or member pattern is specified here, the associated **Member** field must be blank.

The template associates one or more COBOL or PL/I segment layouts with each segment type in the DBD. FM/IMS uses this field when you select the **View usage** processing option 1 (New).

View: Data set name The sequential data set or partitioned data set containing the view that you want to use. **Member** The member name of the view (for a partitioned data set).

FM/IMS uses the View fields when you select the **View usage** processing option 2 (Existing).

Processing options:

View usage The view you want to use when you are looking at the data:

1. New Use a new view created from the specified template.

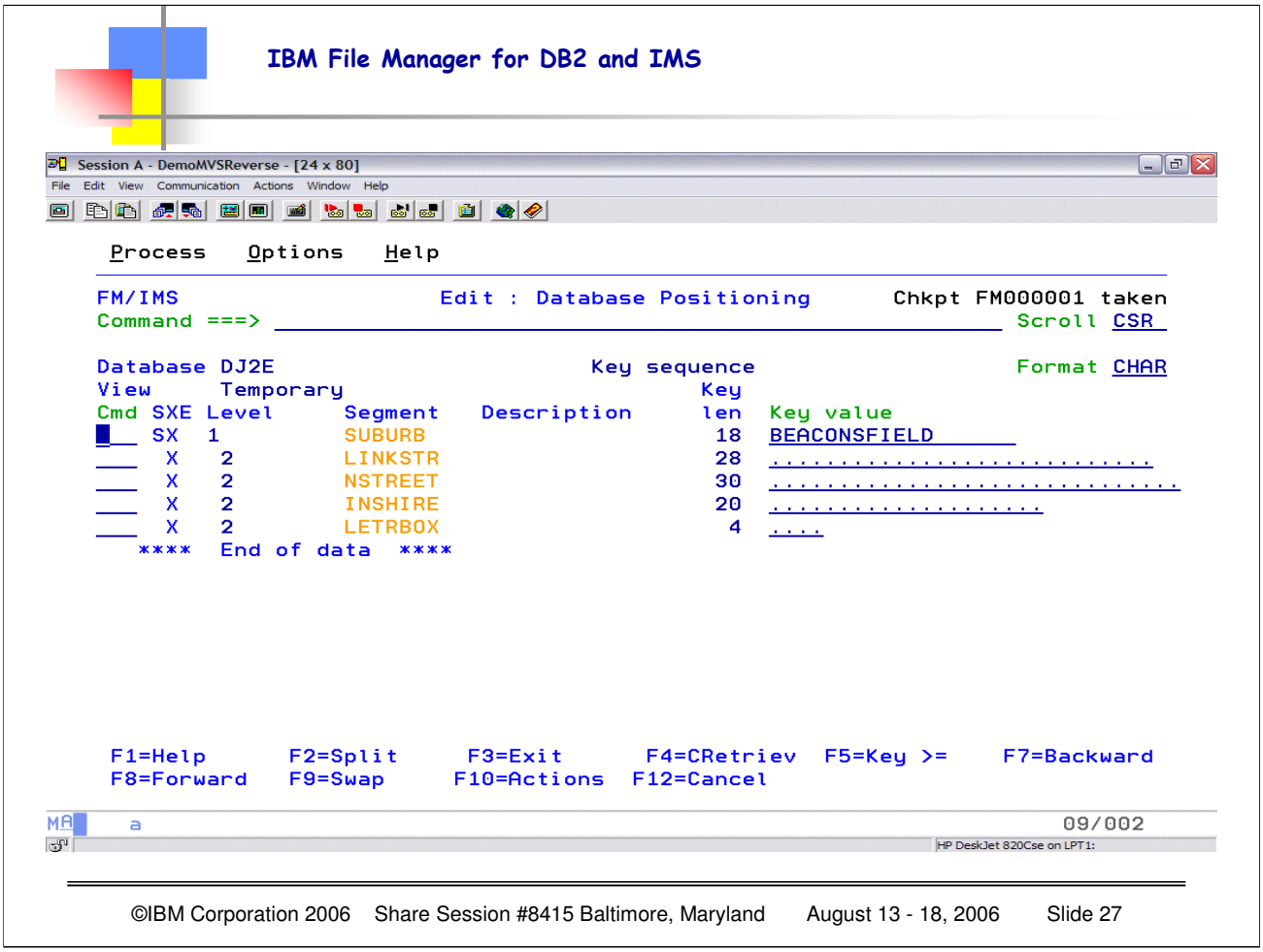
Unless you edit this view and save it, this is a “temporary” view that is discarded after use.

2. Existing Use the existing specified view.

Note: This option is not available when the database is empty as FM/IMS is not able to process a view with selection criteria.

3. None Do not use a view. In this case, you are restricted to unformatted displays.

Save view in return If you select this option and you have selected options **1** or **2** for the **View usage** processing option, and the view was altered, the View Save panel is displayed to allow you to save your view when exiting the browse/edit session. If you have selected option **3** for the **View usage** processing option, selecting **Save view on return** has no effect.



You use the Database Positioning panel to specify the position in the database at which you want to start editing, and the format in which you want the data displayed.

When you return to the Database Positioning panel after editing a database, the panel uses the **Pos** and **Key value** fields to indicate your position in the database when you finished editing.

If you are using a dynamic PSB, then the panel lists all segment types in the DBD.

If you are using a static PSB, then the panel lists segment types in the DBD that the PCB is sensitive to

Database This displays the name of the DBD entered on the Edit Entry or Browse Entry panel. This line also contains the Key sequence for the following types of database: HSAM, SHSAM, HISAM, SHISAM, HIDAM, GSAM, INDEX, MSDB.

View This displays the View data set and member being used. If you are not using a view on this session, this displays as None. If the view is generated from a template (a new view), the name displayed is “Temporary”. If this view has been changed (by line or primary commands), a **C** indicator is shown until the view is saved.

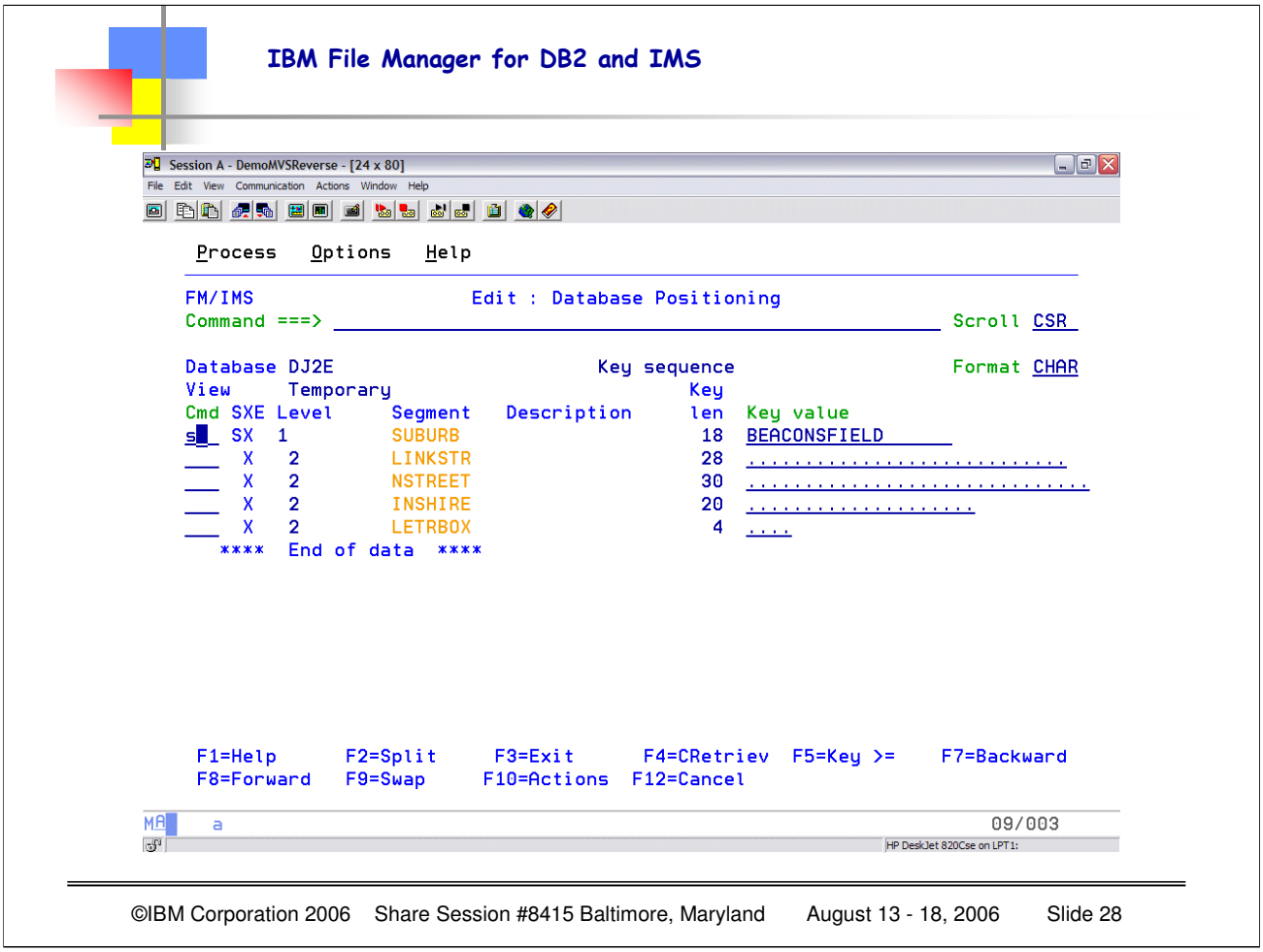
Cmd The line command field. Line commands available on this panel are:

E (Edit) Enter e in the Cmd field of the segment type you want to edit the view for. This is only available when a view is used.

K (Key value) Enter k in the Cmd field of the segment type you want to display, to display the Key Specification panel. On this panel you can specify the key fields of all segment types in the hierarchical path of the segment type you selected.

S (Position) Enter s in the Cmd field of the segment type you want to position on to begin retrieval of segments for the data display panels and specify the key values in the Key value field(s) for all the segment types in the hierarchical path of the segment occurrence you want. Pressing ENTER uses the entered specific key values as an equals search. When used with the GE command (assigned by File Manager to function key F5), you can enter a partial key in the key value field.

For example, entering a S in the Cmd field a M in the root segment key value field and press F5 to display segments starting from those whose root segments start with M. For database types that are not key-sequenced, you must enter a specific key at the root segment level (even when using the GE command), but you may enter a partial key at lower levels.



An S code will "position" the database so that segment retrieval will begin with this segment.

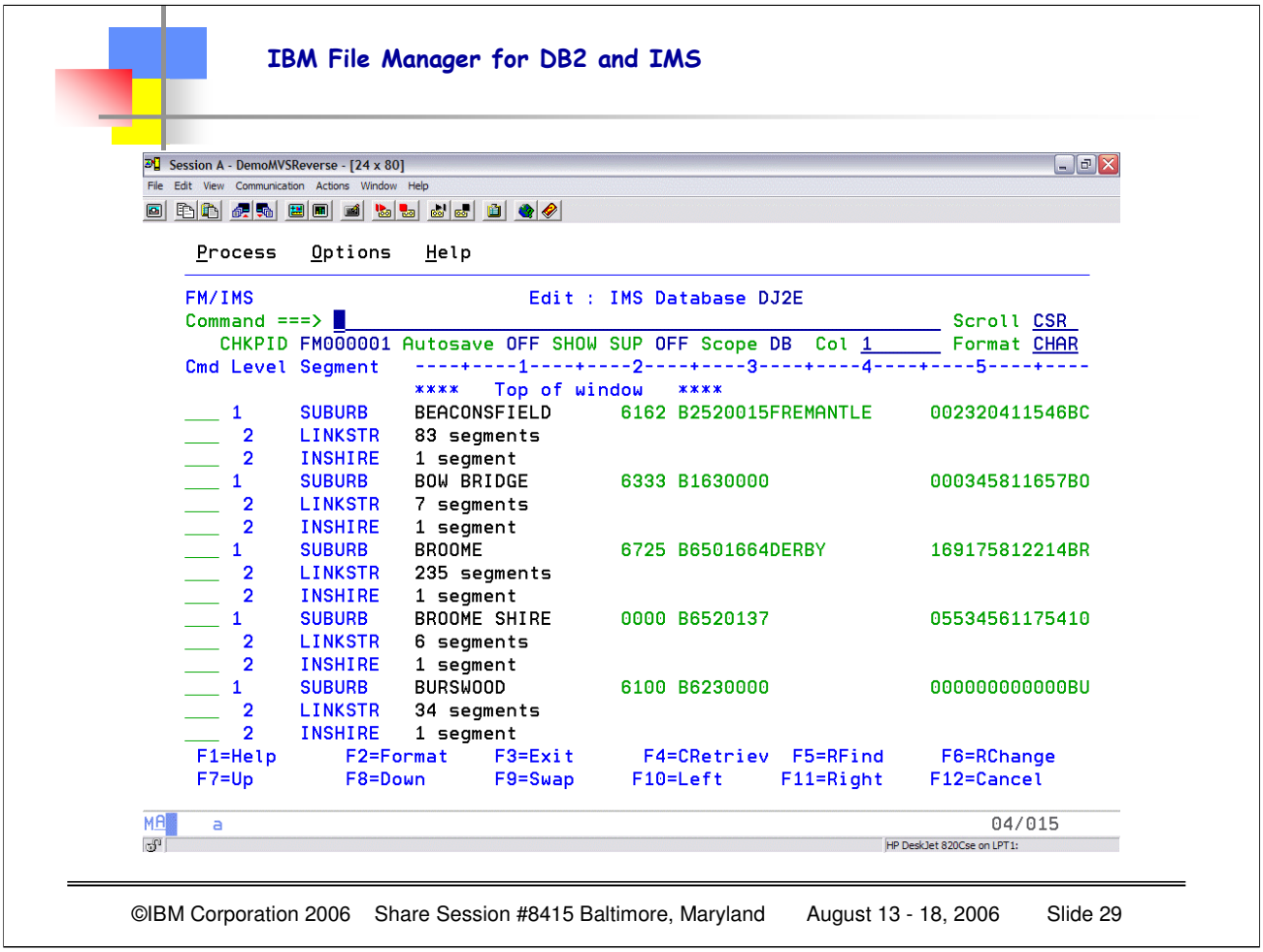
Notice the SXE designators.

The S means the segment type is in the hierarchical path of the current position.

The X is shown for those segments that are selected in the current VIEW. If no VIEW is used then all segments are considered selected.

The E is shown for those segments that have selection expression or expressions in the current VIEW.

Notice the FORMAT is CHAR for the current information.



You now have the segments beginning with the BEACONSFIELD (where we positioned the database)

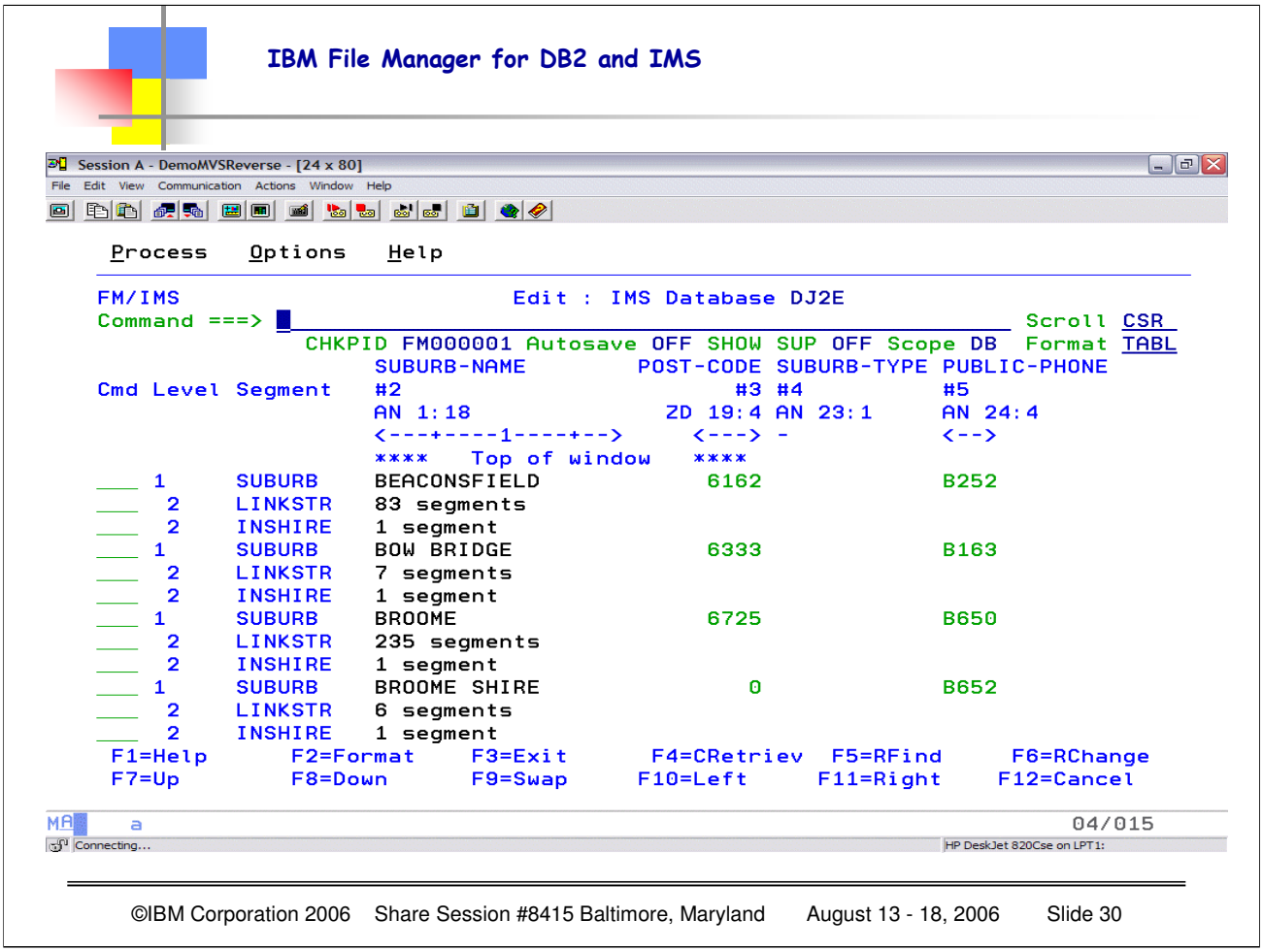
Notice the FORMAT is CHAR for the current information.

Autosave is set to OFF

SHOW SUPPRESSED is set to OFF.

If you want to see ALL segments then you can change SHOW SUP to ON (but not while you are in the edit session itself – plan ahead) Now you can use V against the "suppressed" segments to see their contents

NOTE that this edit session is NOT using a TEMPLATE, no fields are identified, only the raw data.



You now have the segments beginning with the BEACONSFIELD (where we positioned the database)

Notice the FORMAT is TABL for the current information.

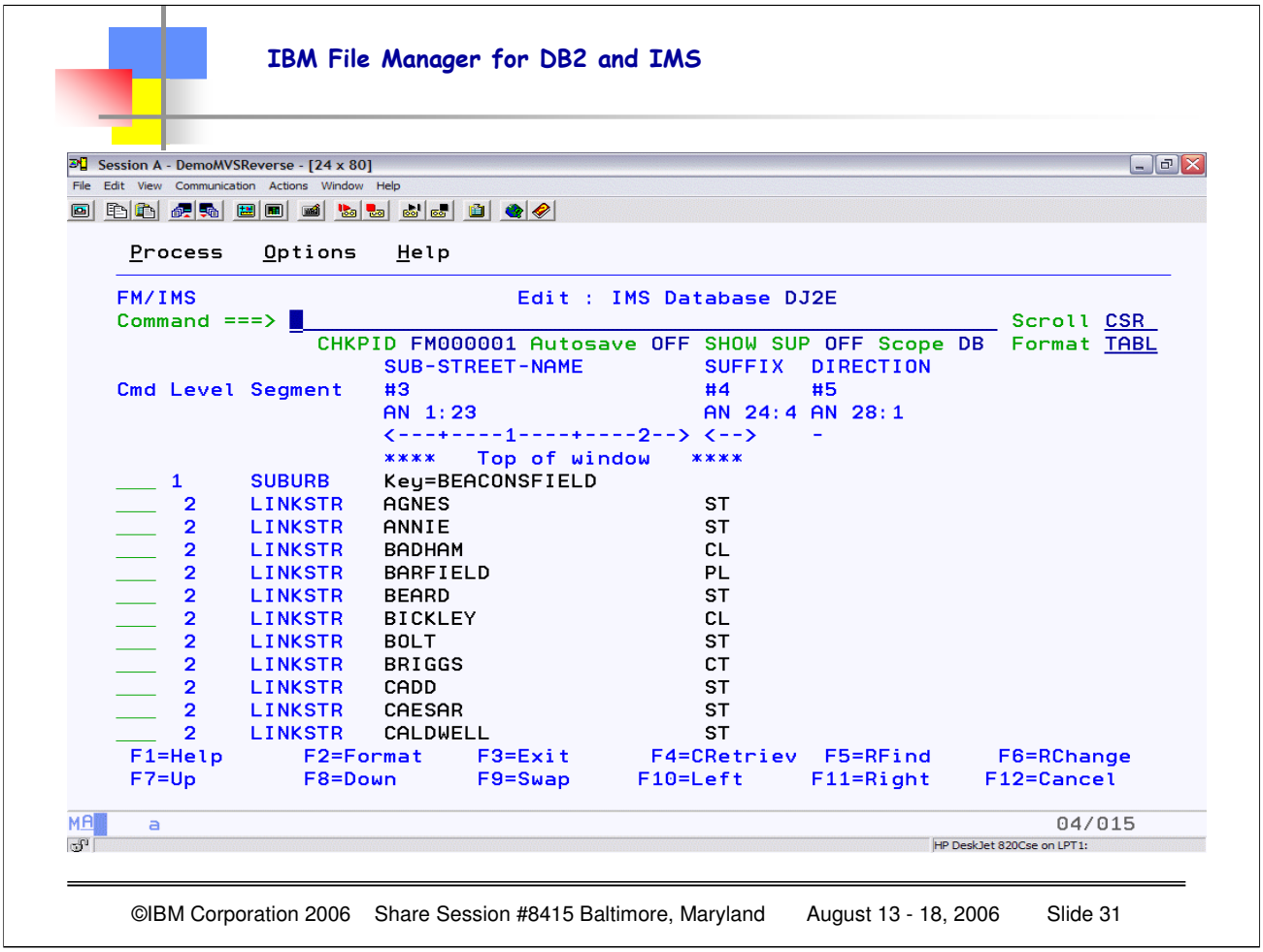
Autosave is set to OFF

SHOW SUPPRESSED is set to OFF.

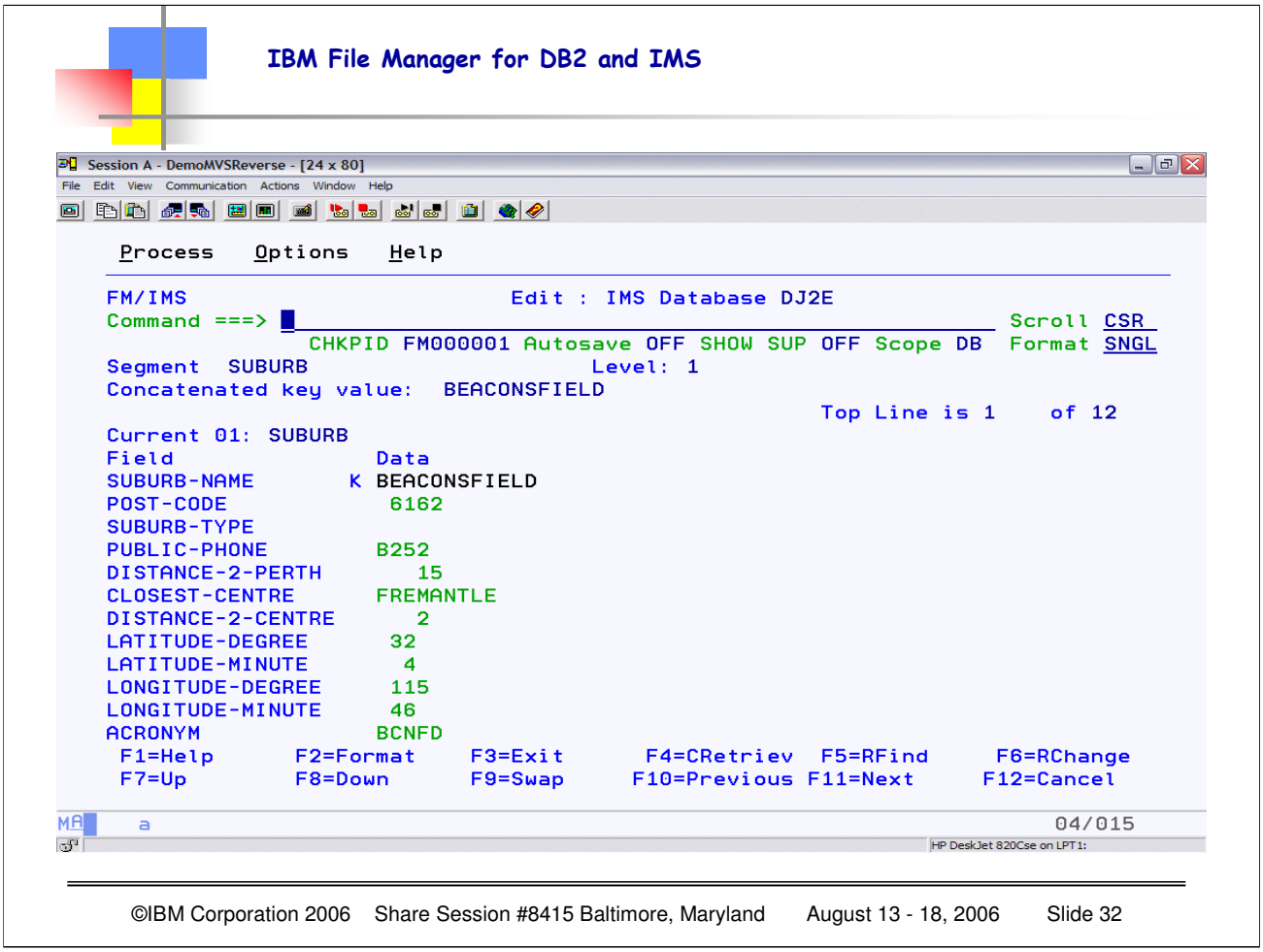
If you want to see ALL segments then you can change SHOW SUP to ON (but not while you are in the edit session itself – plan ahead) Now you can use V against the "suppressed" segments to see their contents

Note that THIS EDIT SESSION is using a TEMPLATE, so we get ALL THE DATA FIELDS IDENTIFIED ACROSS THE TOP.

If you want to view one of the children, simply put a V in the CMD for that segment to view the details for the "suppressed" segments.

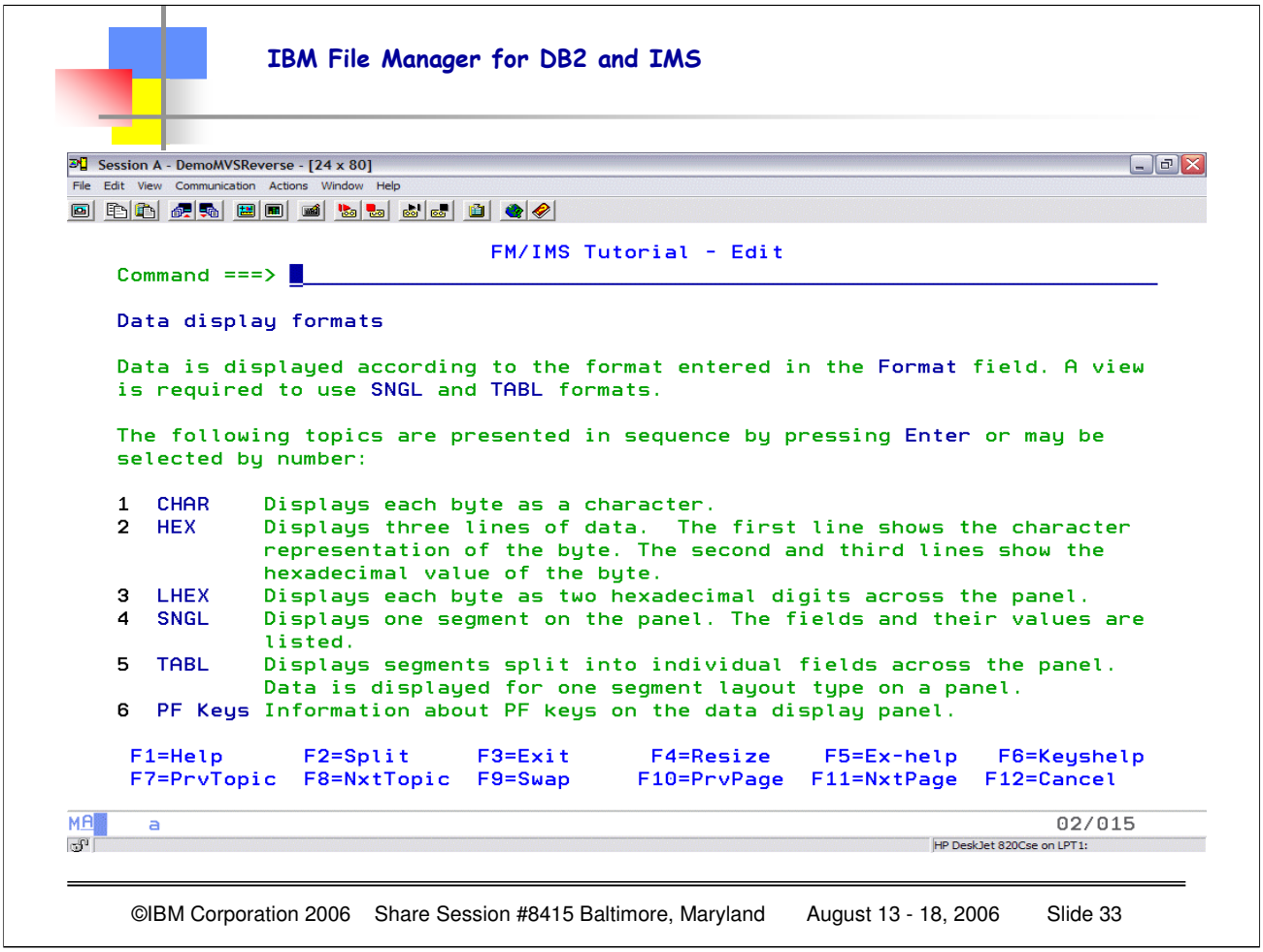


By putting a V next to the "suppressed" LINKSTR segments, you can now view them BY CHOICE. To "re-suppress" them, simply enter a V against the SUBURB segment and the suppressed segments are then again suppressed. When you are working with the segments using the CHAR format or TABL format then you can show/suppress segments. When working in SNGL format, the view will change as you "step through" each segment, so the VIEW command is not necessary.

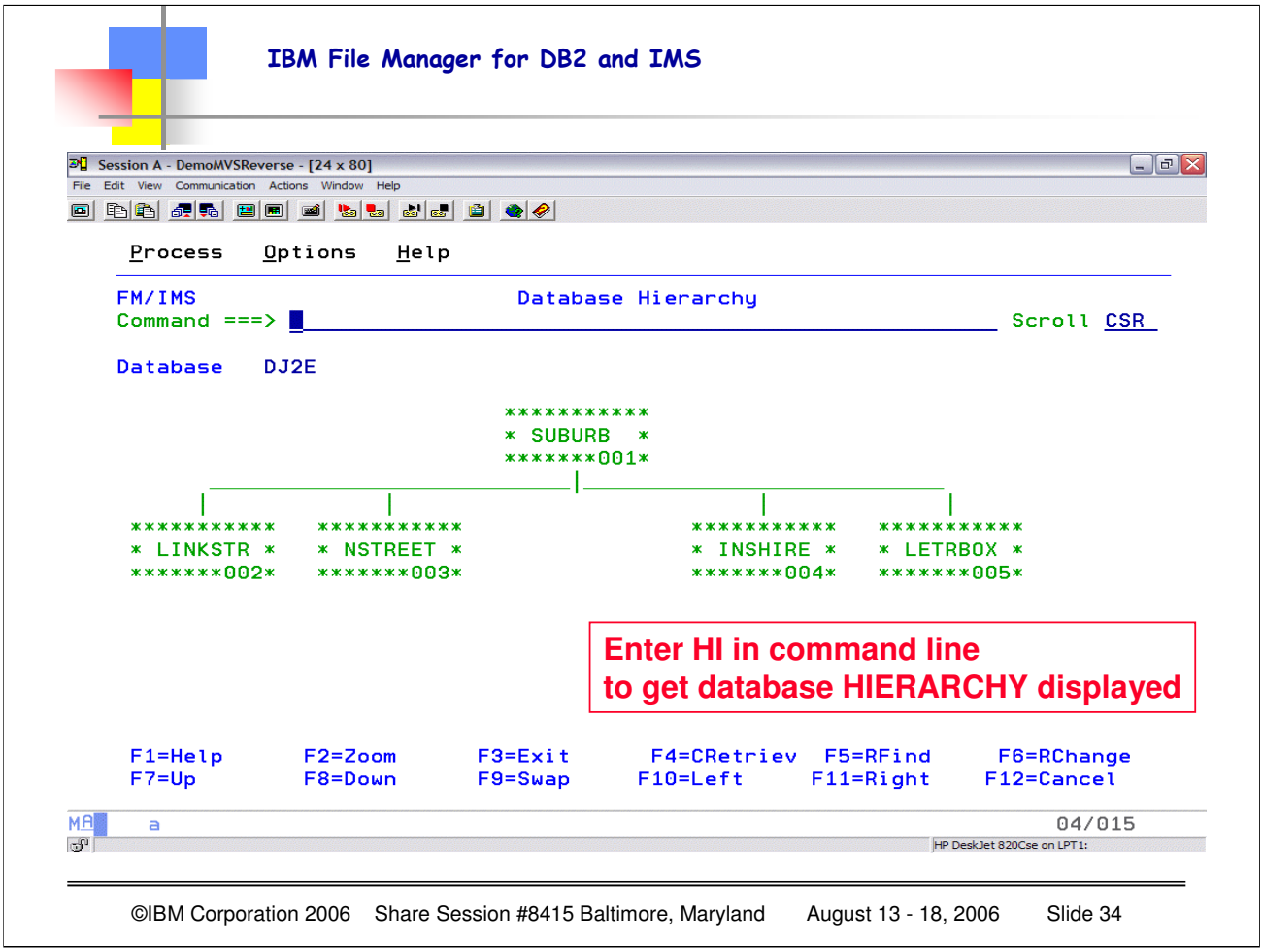


Here you see the data when using SNGL format, you get the field names and the data, and you can go FORWARD within THIS SEGMENT, using F8 (DOWN), OR, if you want to go to the NEXT segment in the database, then use F11, NEXT.

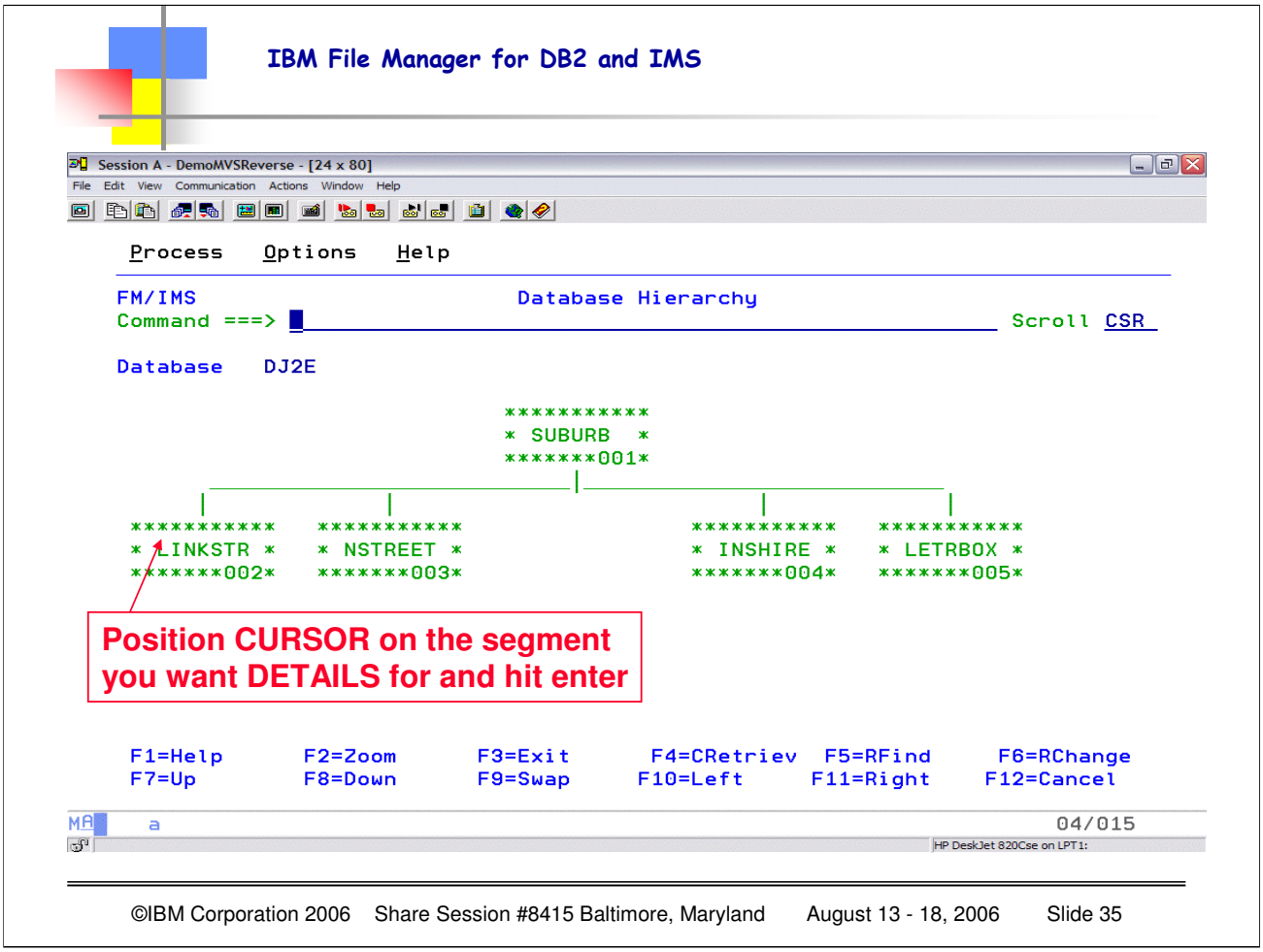
The elements in GREEN in the segment are updatable, if you have the appropriate authority.



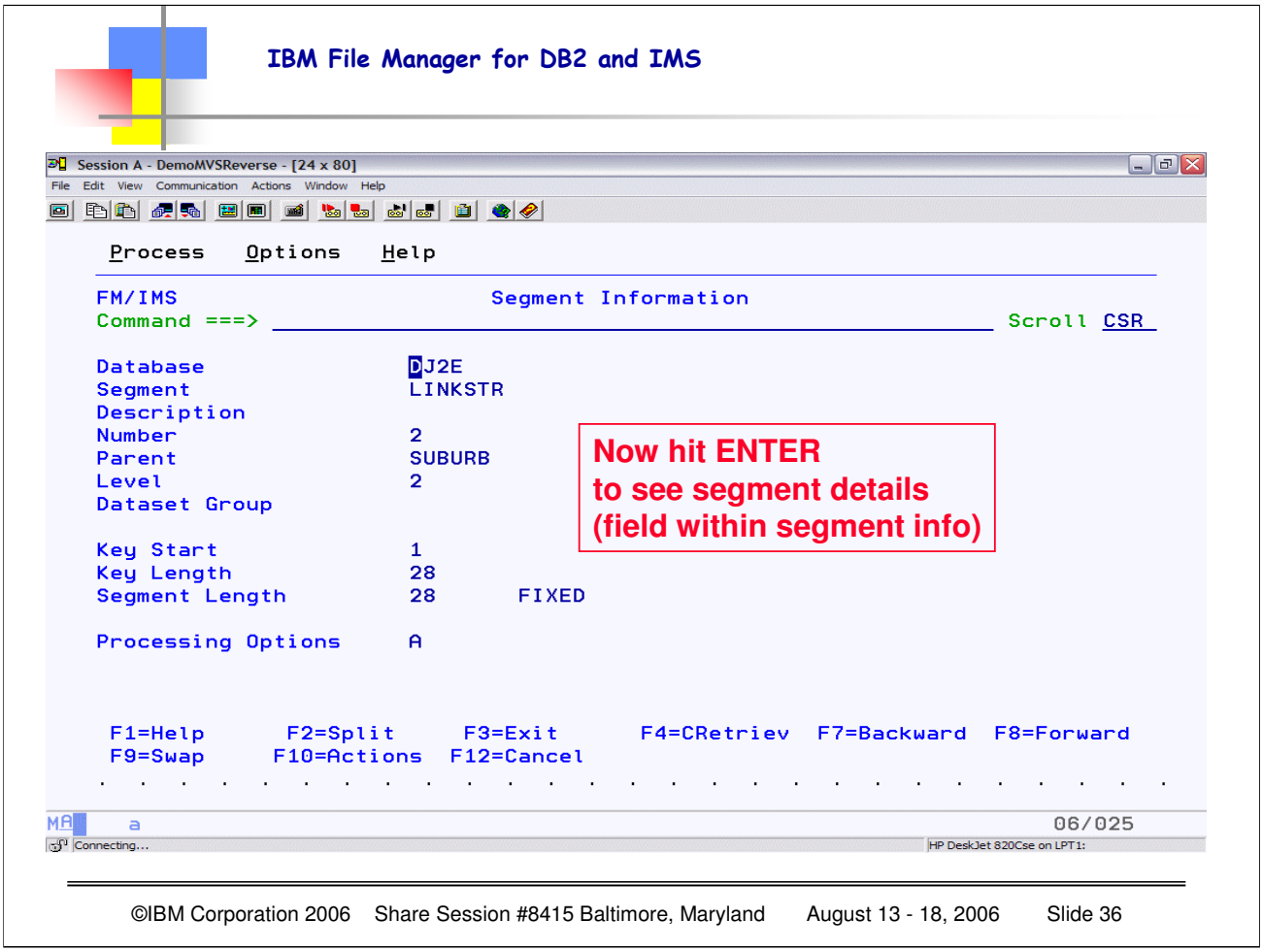
Position cursor on primary command line and hit ENTER to get some HELP.
Here you see the data formats that are POSSIBLE when viewing/editing data.



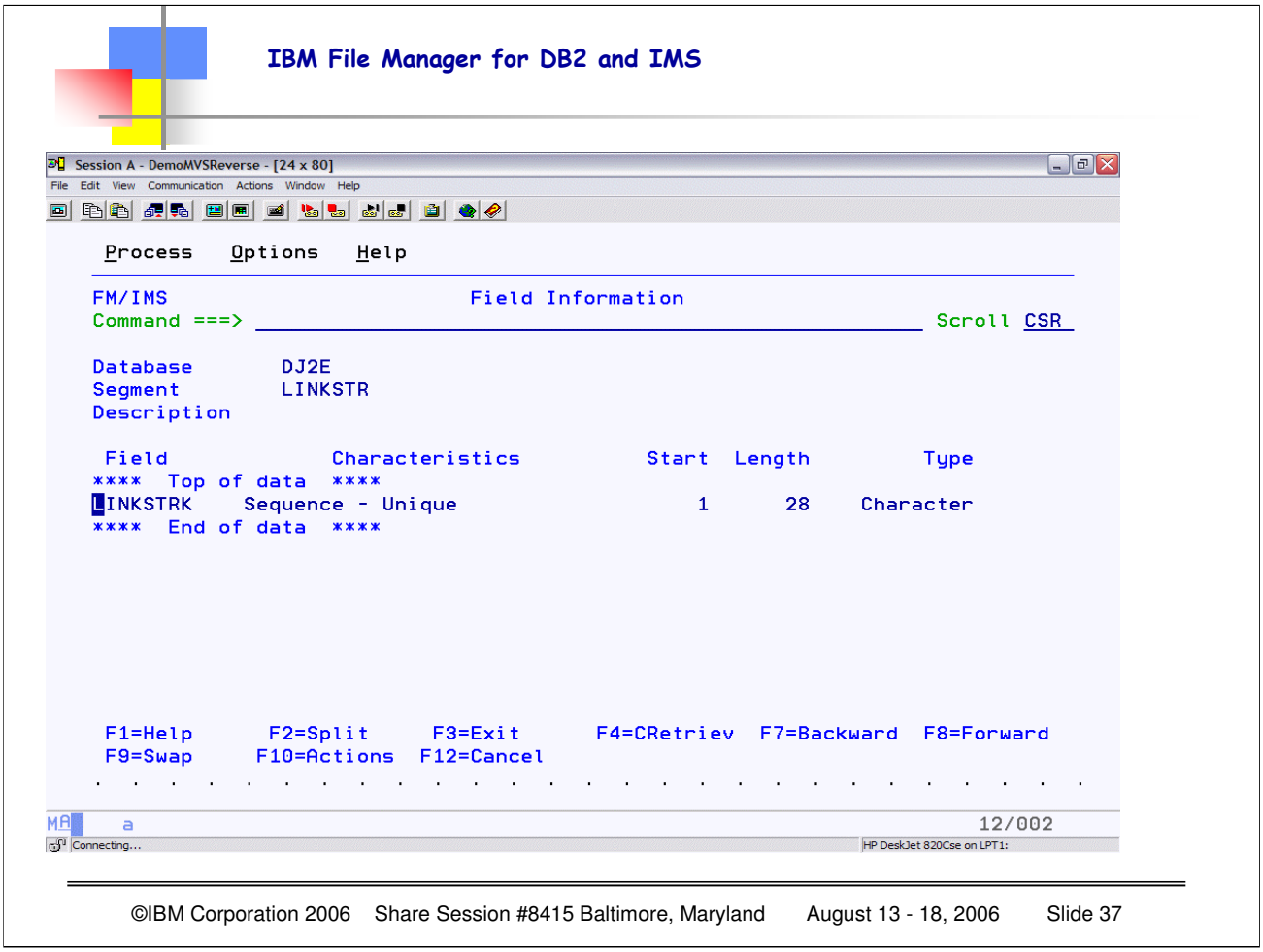
Type HI in the command line and hit enter to see the HIERARCHY of the database. Each segment is represented by a box which contains the segment name and a segment code.



Type HI in the command line and hit enter to see the HIERARCHY of the database. Each segment is represented by a box which contains the segment name and a segment code.



To see detailed information about a specific segment, position the cursor on the first character of the segment name and hit enter. Here I am looking at the information for the LINKSTR segment.



From the SEGMENT INFORMATION panel, if you hit ENTER you will get the FIELD information.

Database Shows the name of the current database.

Segment Shows the name of the current segment.

Description Shows the description of the segment as entered on the Template Specification panel.

Field Shows the name of the field as defined in the DBD for the database.

Characteristics Shows one of the following to indicate the type of key field.

- Sequence – Unique
- Sequence – Multiple
- Secondary index source

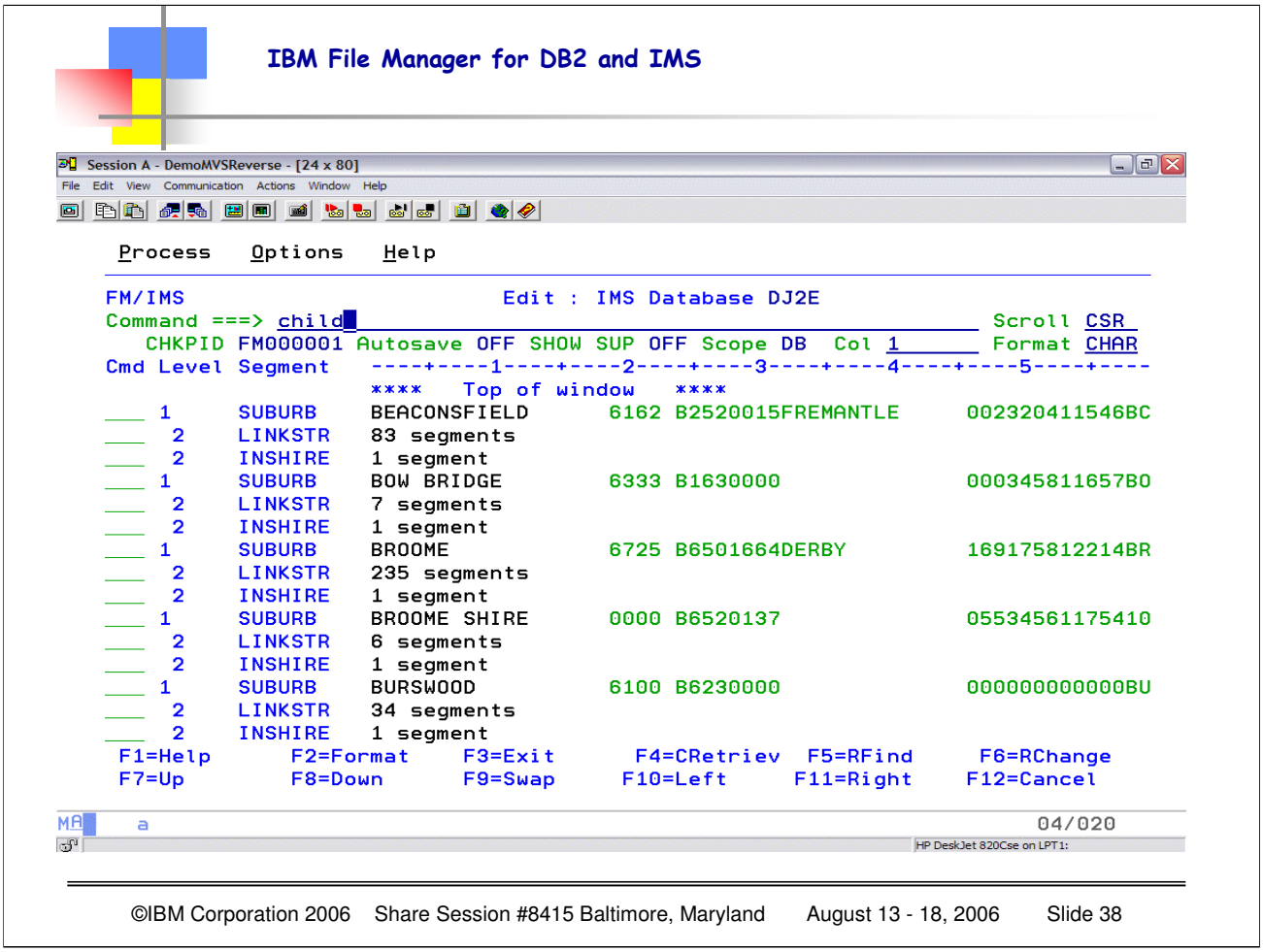
This field is blank for a non-key field.

Start Shows the starting position of the field.

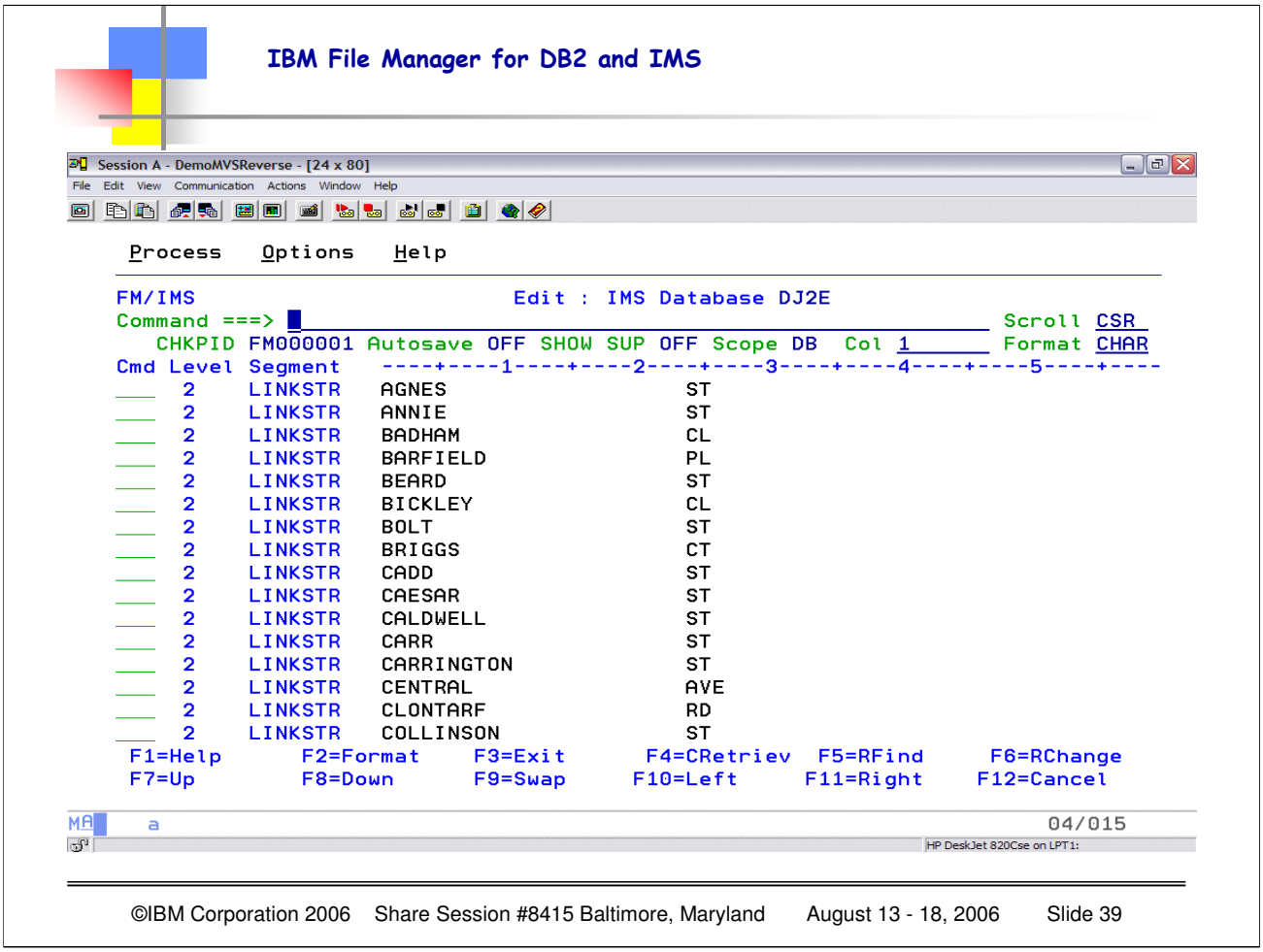
Length Shows the length of the field.

Type Shows one of the following to indicate the data type for the field:

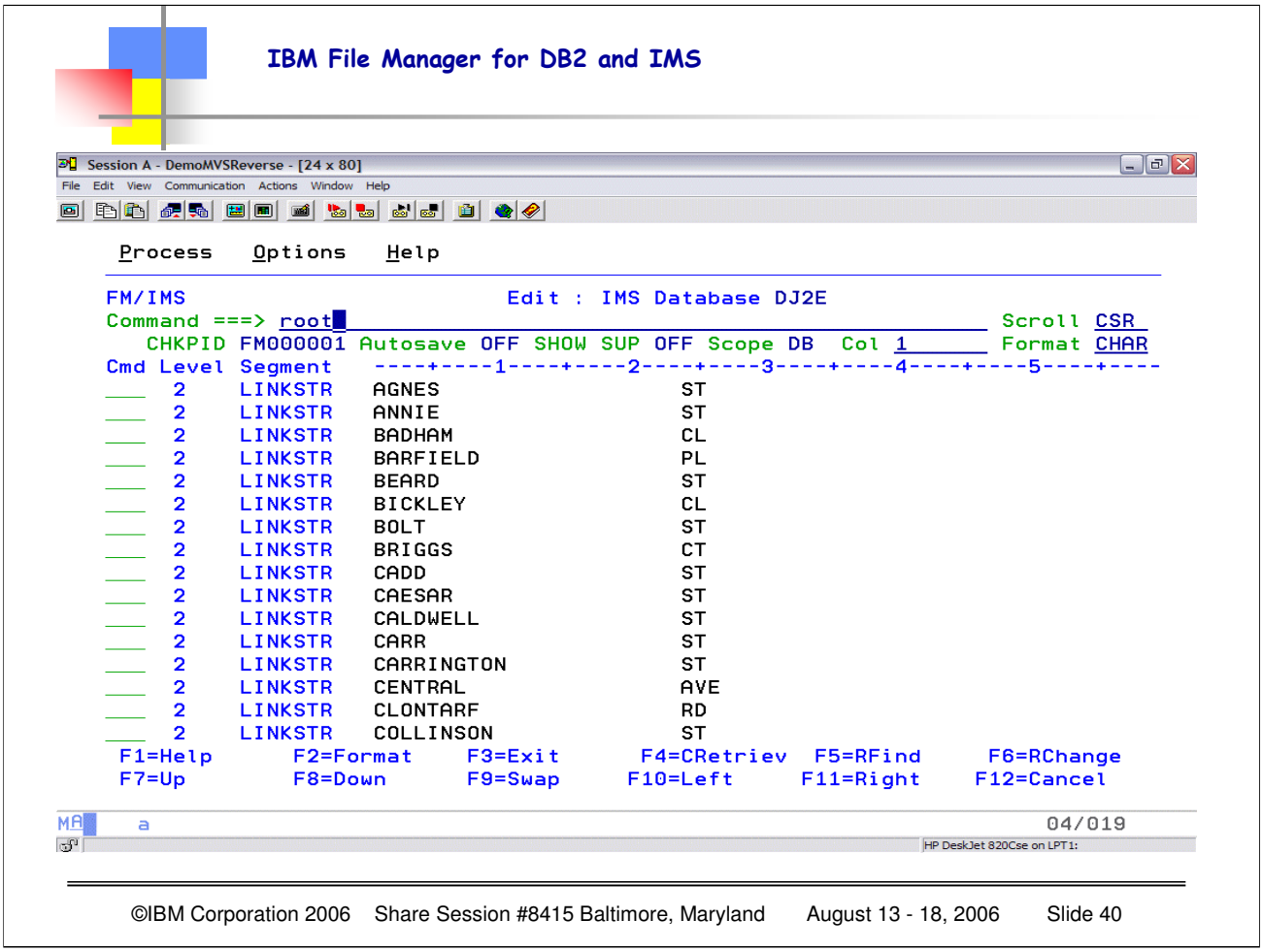
- Hexadecimal
- Packed decimal
- Character
- Binary full word
- Binary half word



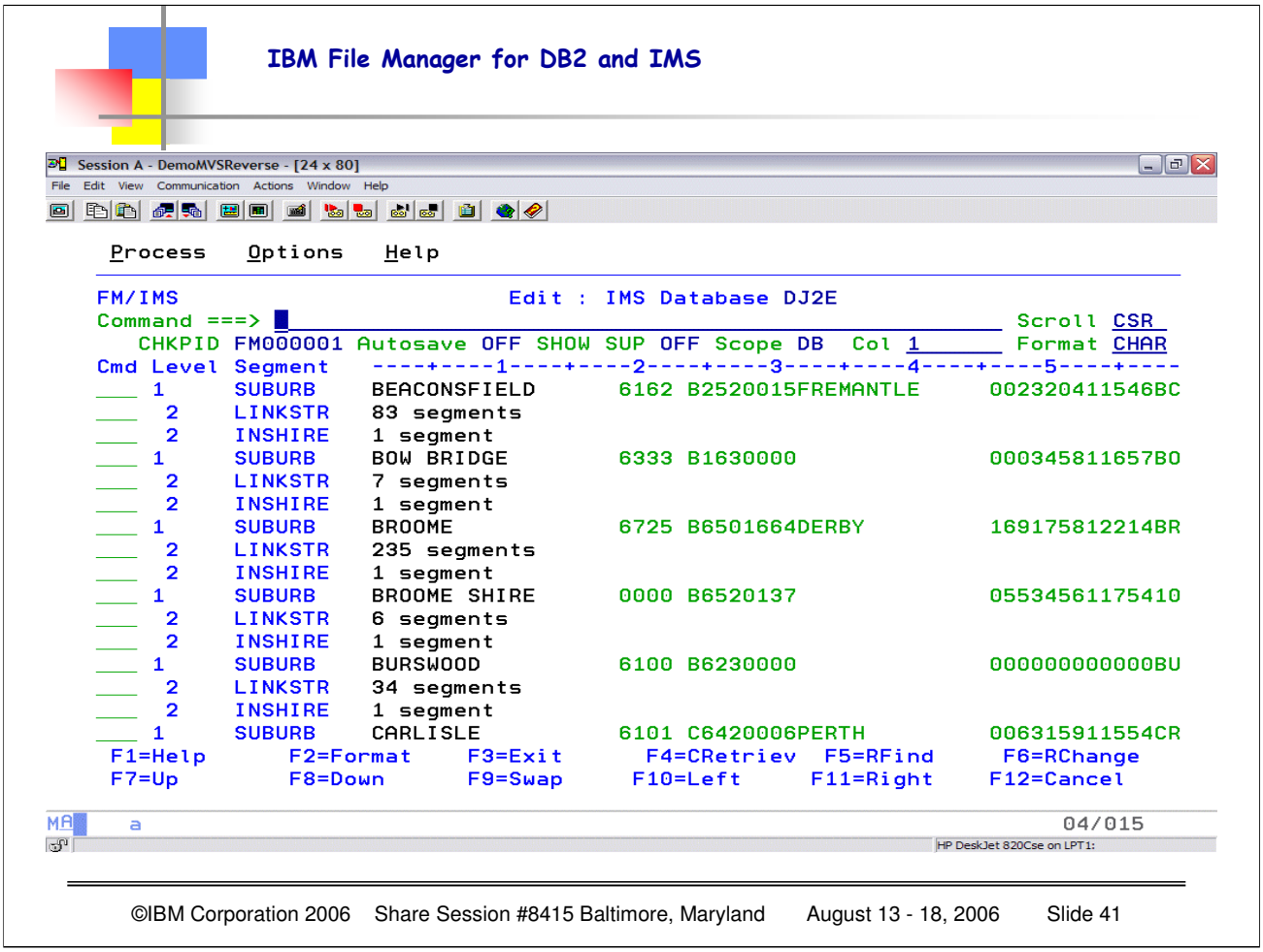
When you are browsing SEGMENTS and are positioned on a specific "root" segment, in this case BEACONSFIELD, if you type CHILD in the command line you will get all the child segments.



These are CHILD segments for the ROOT BEACONSFIELD – you can scroll forward or back through the children and issue CMD commands against the children. In this case BEACONSFIELD has about 83 LINKSTR children segments.



When you want to return to the ROOT segment positioning you can type ROOT. (the command PAR (PARENT) also works, it just depends on where you want to re-position within the data hierarchy).



The ROOT primary command changes your position in the database from the current segment to either the root segment in the current hierarchical path or to the first root segment in the database

If the FIRST operand is specified, then the ROOT command repositions on the first root segment in the database. Otherwise the ROOT command positions on the root segment in the current hierarchical path

SO, you can either use the primary command ROOT, or ROOT FIRST to reposition your view.

The PARENT primary command changes your position in the database from the current segment to any other segment occurrence in the hierarchical path to the current segment.

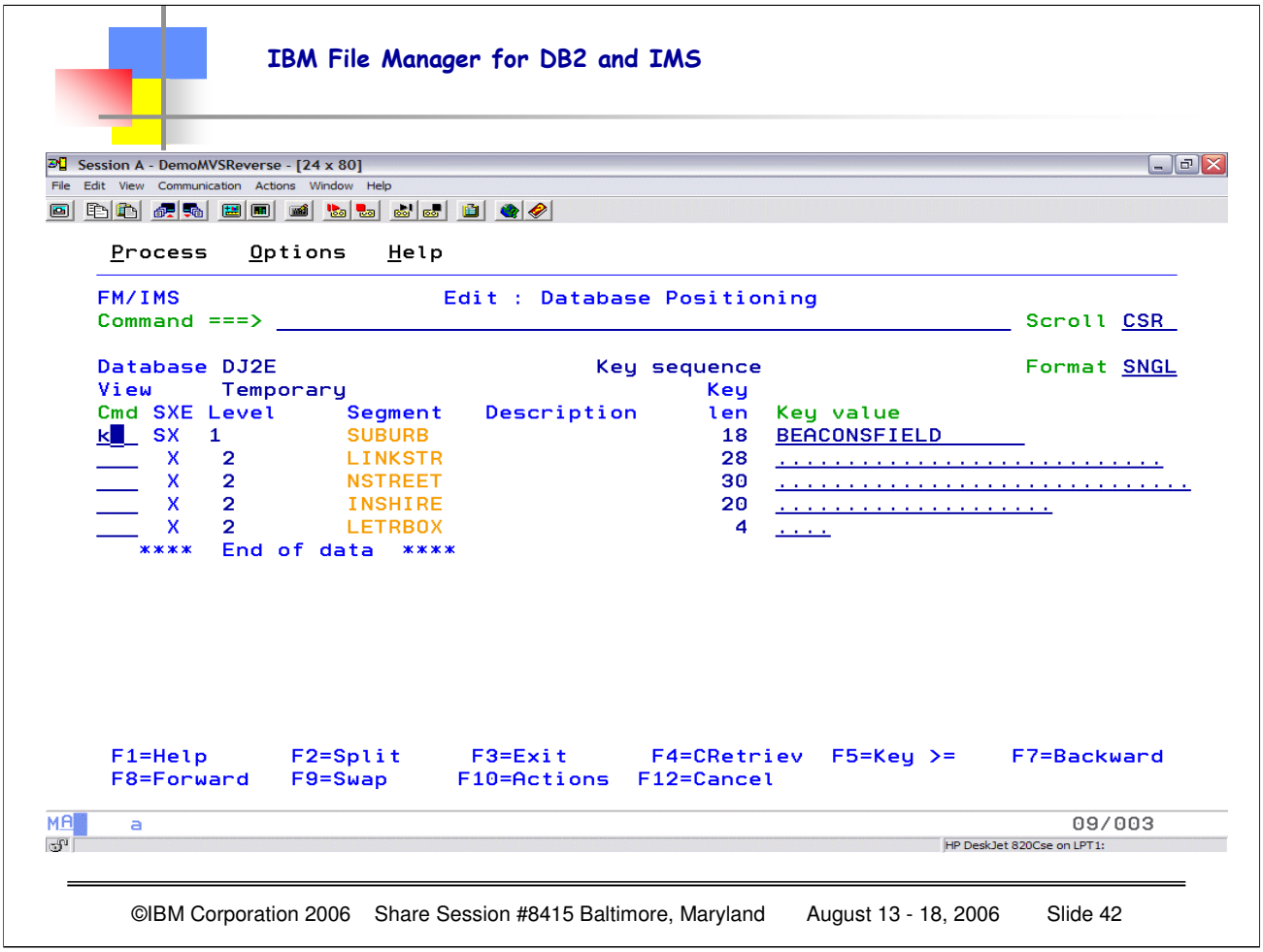
PARENT *segment-name* where segment-name is the name of the segment type you want to position on. The segment type must be a parent of the current segment type but it does not have to be an immediate parent. When *segment-name* is not specified, the PARENT command positions on the immediate parent of the current segment. When the PARENT command is issued and the current segment is a root segment, FM/IMS displays a message and does not change the current segment position.

The CHILD primary command allows you to change your position in the database from the current segment to any dependent segment of the current segment.

When using a view, the CHILD command only operates on those segments that the view has made available.

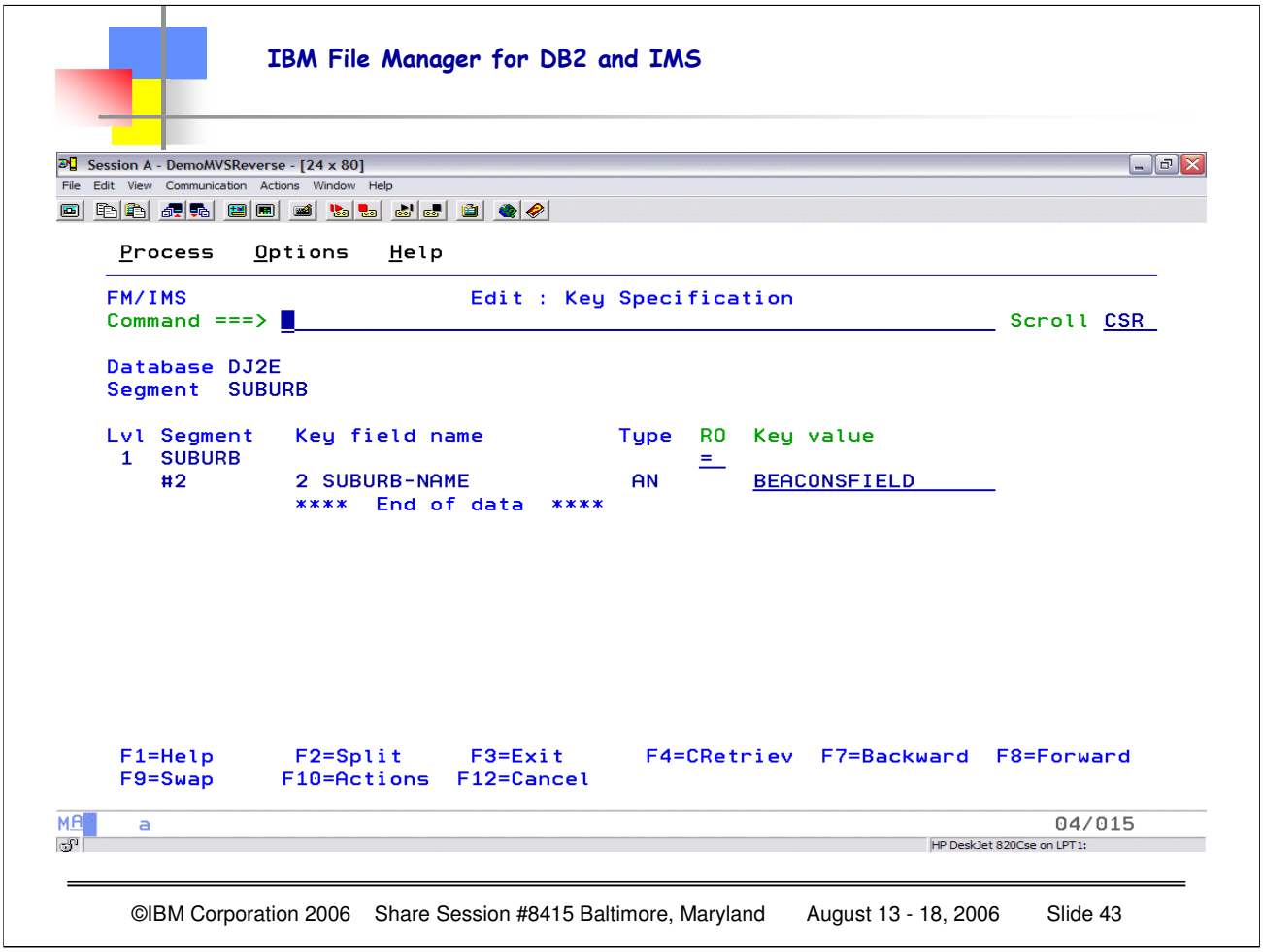
If the specified segment is found, then the current layout is changed to match the new current segment.

If the specified segment is not found, a message is issued and the database position is unchanged.



To re-specify your data base position, enter a 'k' in the Cmd field next to the segment you wish to position on, and hit enter. You will then have the Key Specification panel where you can supply as much or as little of the key to reposition. Note that CASE COUNTS, if you enter a lower case letter and the key value is uppercase, it will not match.

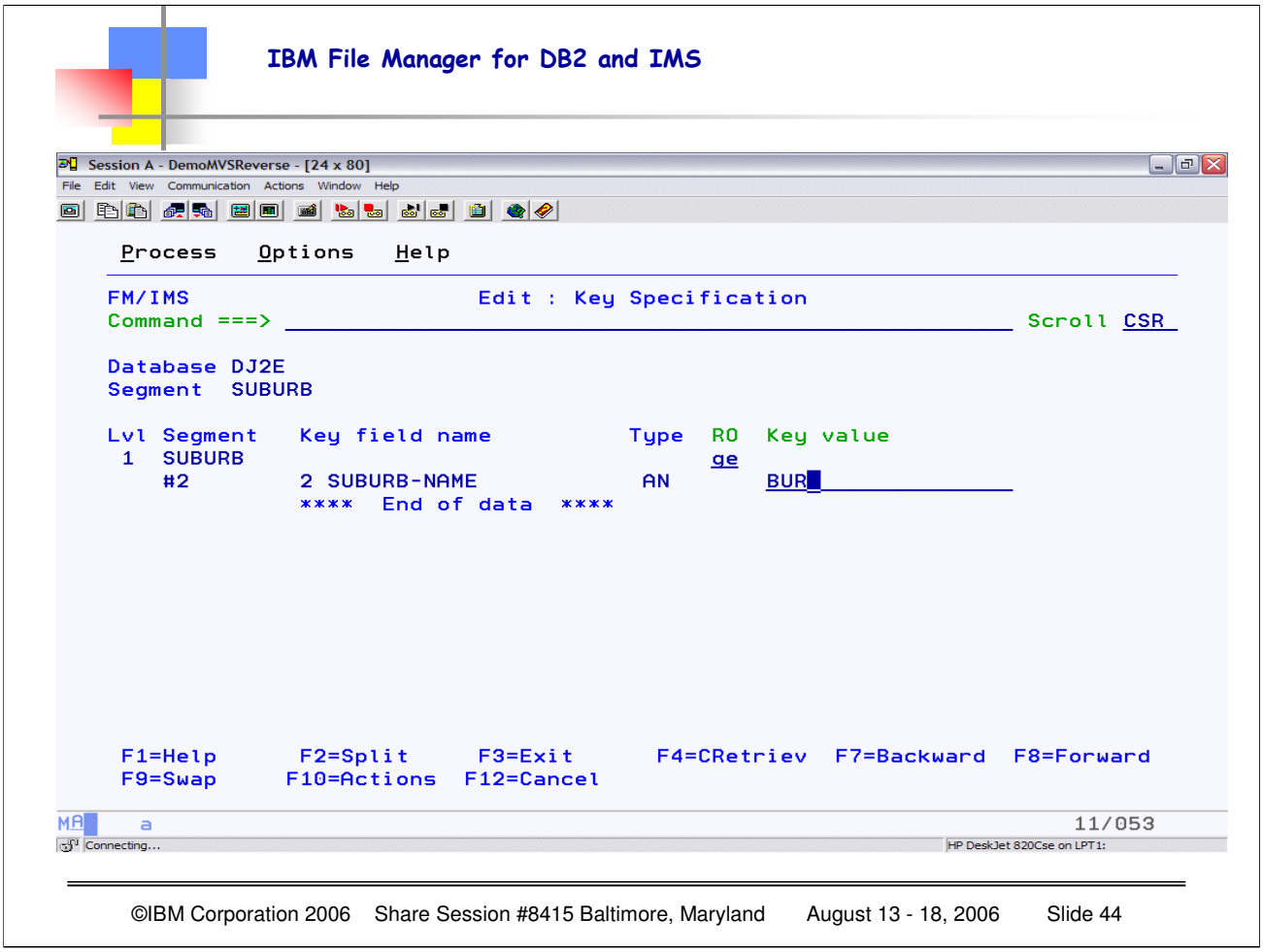
The Key Specification panel provides an alternative to the Database Positioning panel for specifying the position in the database at which you want to start browsing or editing.



On the **Key Positioning** panel, you are able to enter the following relational operators in the **RO** field:

- or **GT** Greater than
- **>=**, **=>** or **GE** Greater than or equal to
- **=** or **EQ** Equal to
- **<** or **LT** Less than
- **<=**, **=<** or **LE** Less than or equal to
- **¬=**, **=¬** or **NE** Not equal to
- Or you can enter: **UQ** FM/IMS uses an unqualified SSA at this level (if the **Key value** field does contain a value, it is ignored).

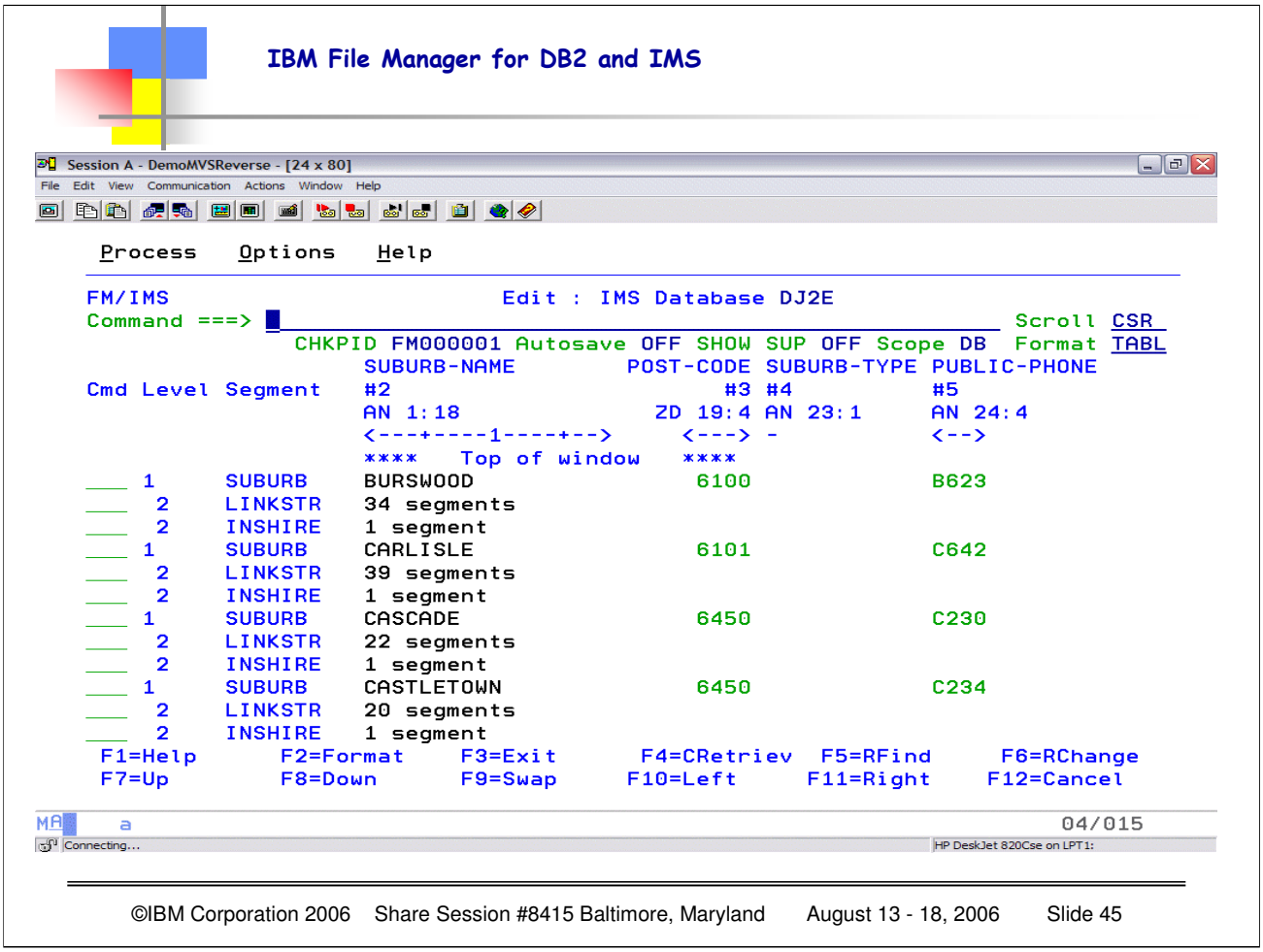
Note that the position STARTS with your CURRENT POSITION in the database.



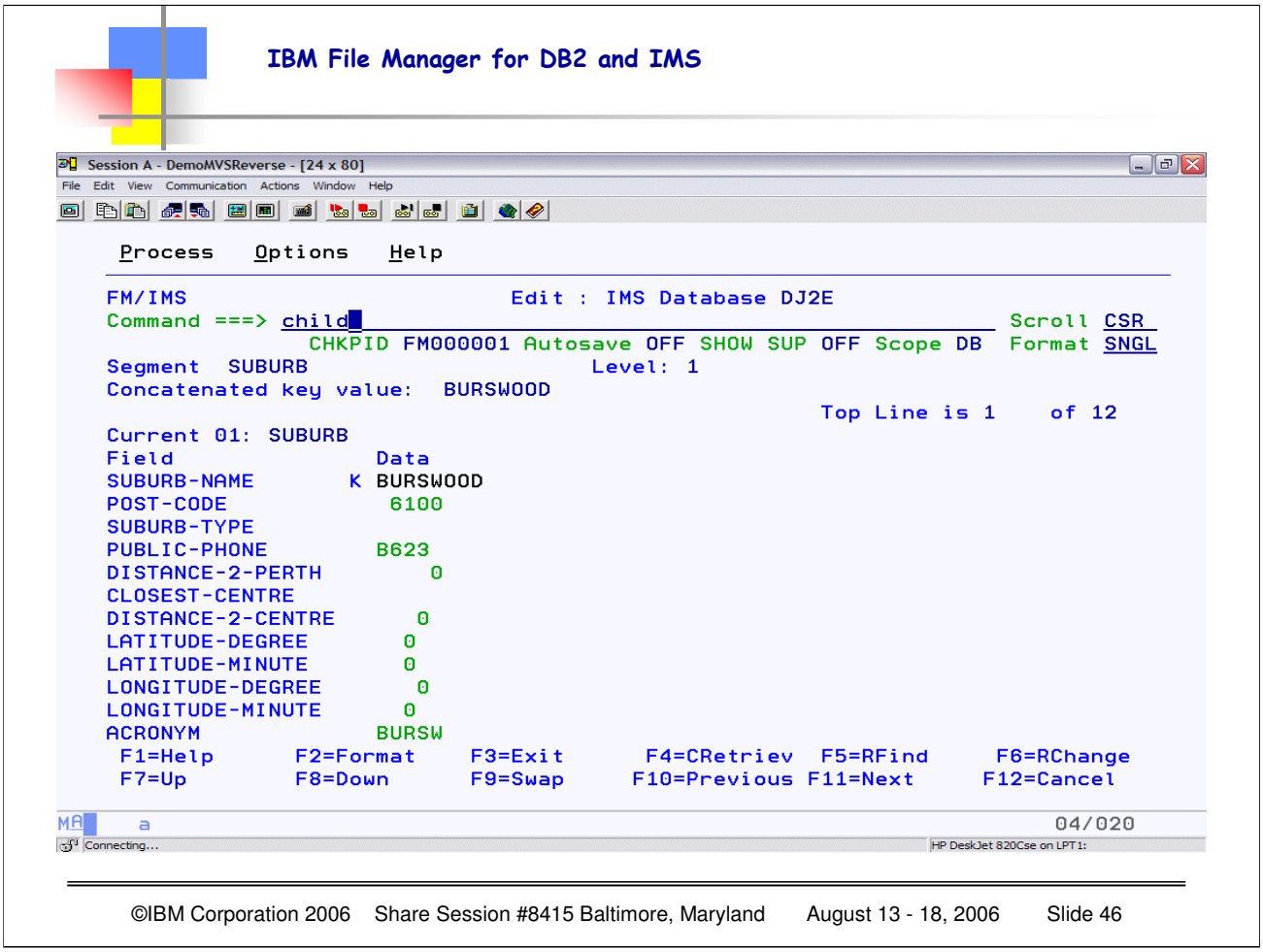
Here the search will be for a SUBURB segment where the key is Greater Than or EQUAL to BUR

(as much of the key or as little of the key as you wish).

Note that CASE COUNTS as this will be used to build the Segment Search Argument (SSA) and the match will be on what you typed. If you have Mixed Case or lower-case keys you need to keep in mind the REAL FORMAT when you use the KEY SPECIFICATION panel.



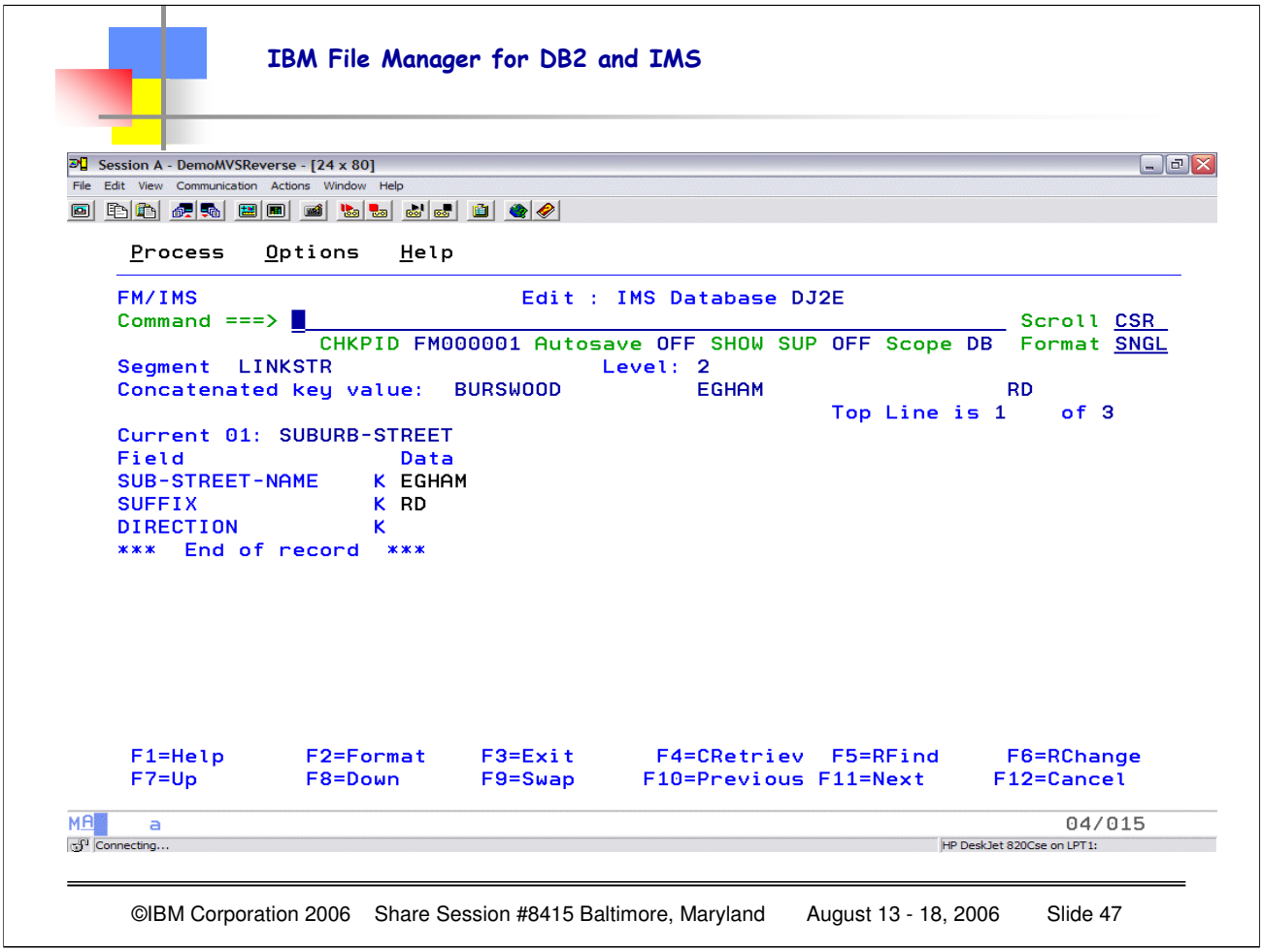
You are now repositioned based upon the key value you specified. If you are using a view you can specify your key values as "formatted" data. That is, binary and packed-decimal values can simply be entered as numeric values rather than as byte values specified in HEXADECIMAL, as you must do in the DATABASE POSITIONING PANEL.



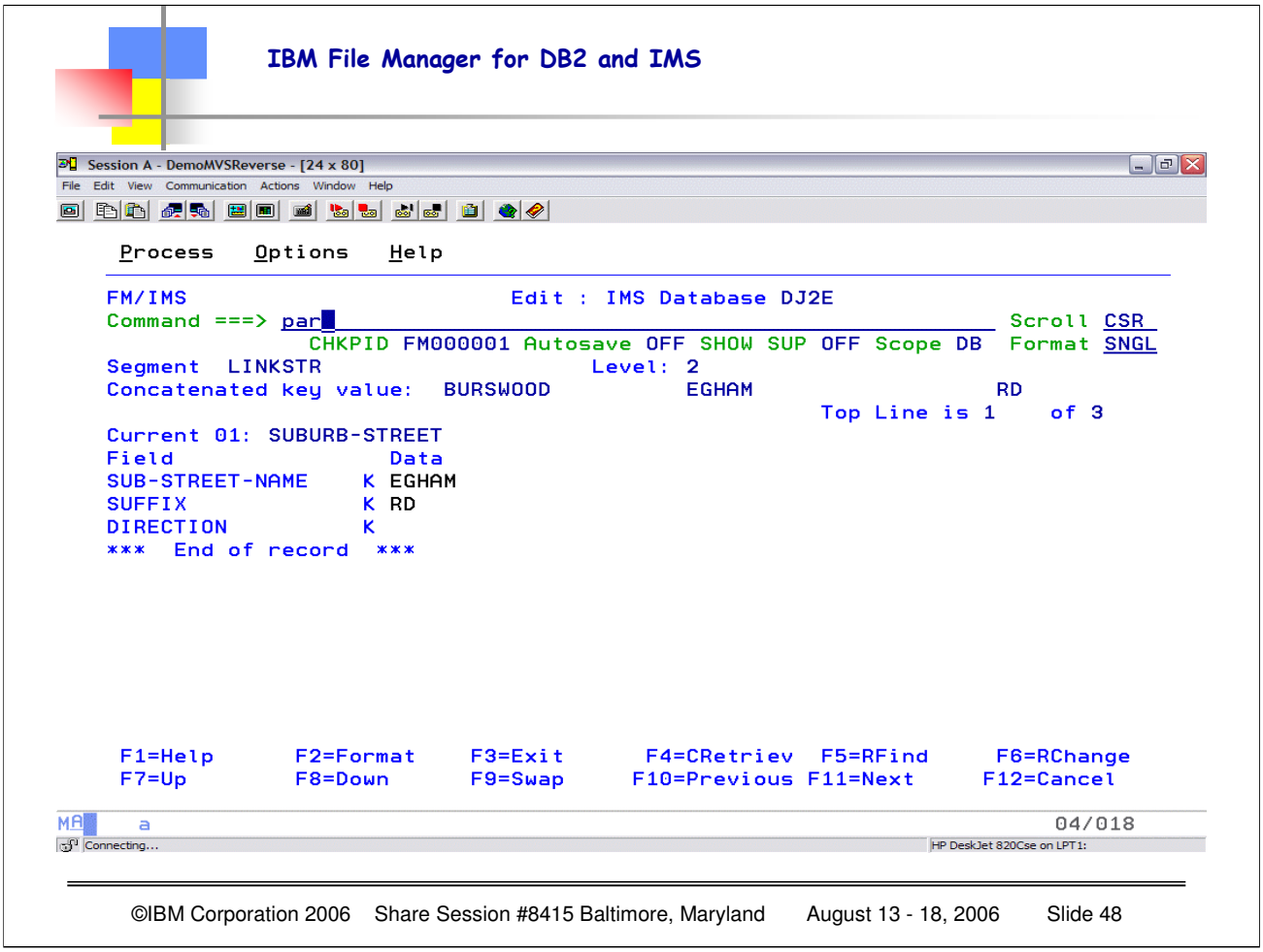
The PARENT primary command changes your position in the database from the current segment to any other segment occurrence in the hierarchical path to the current segment.

PARENT segment name, where you SPECIFY the name of the segment type you want to position on. The segment type must be a parent of the current segment type but it does not have to be an immediate parent. When *segment-name* is not specified, the PARENT command positions on the immediate parent of the current segment.

In contrast the ROOT primary command changes your position in the database from the current segment to either the root segment in the current hierarchical path or to the first root segment in the database.

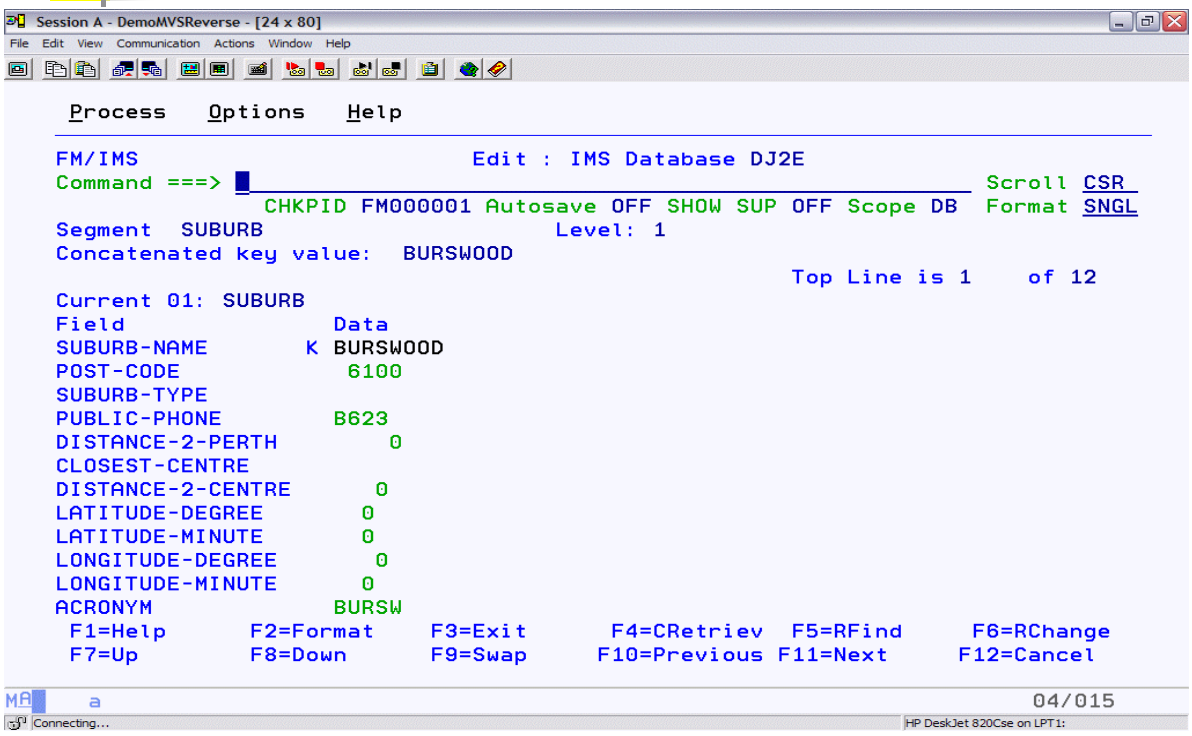


Now we are using F11 NEXT to navigate through the various CHILDREN – notice the concatenated key value is maintained for information and reference.

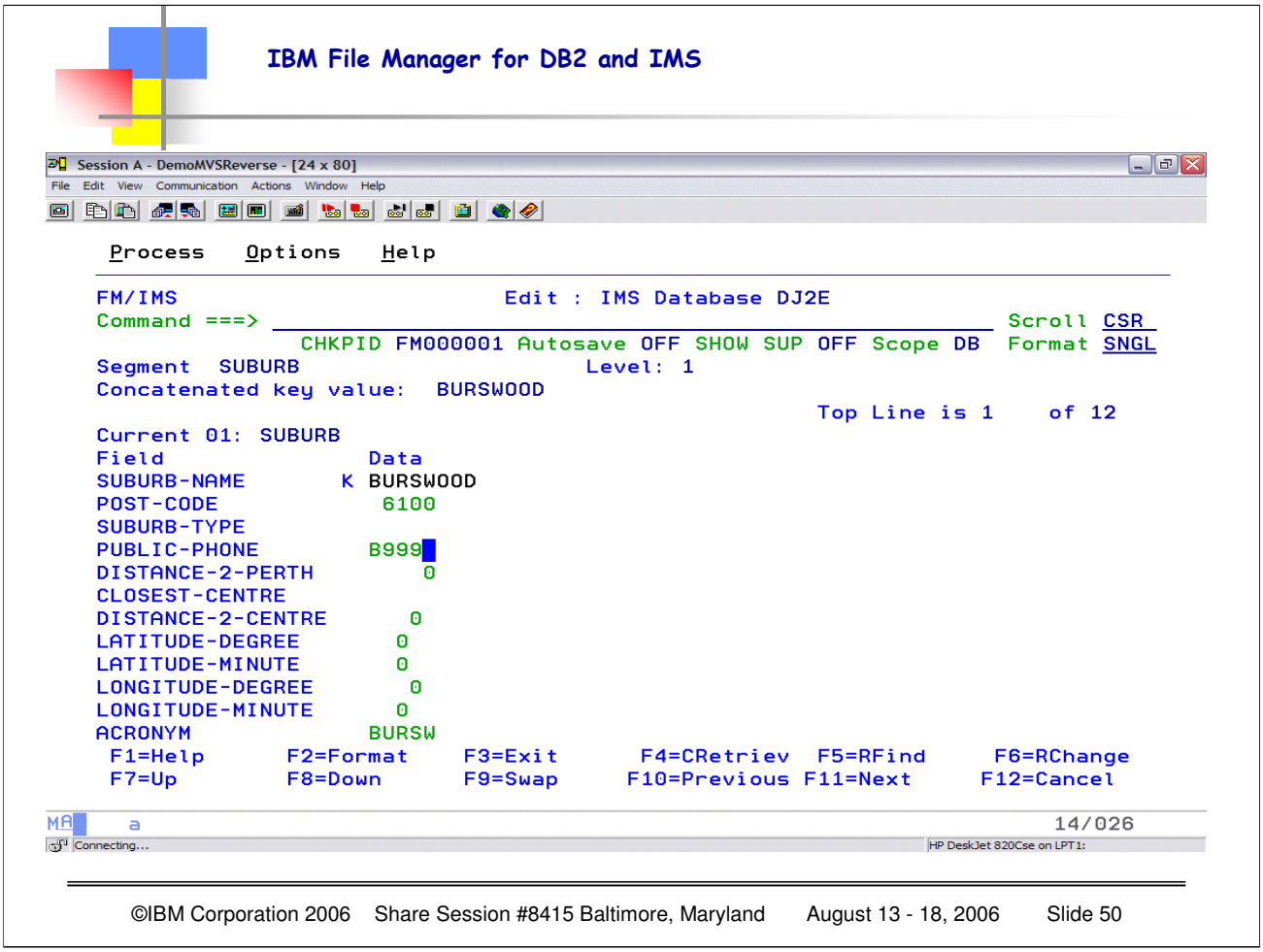


Entering PAR (parent) without any additional segment information will "return" the position to the PARENT segment for THIS SEGMENT.

IBM File Manager for DB2 and IMS



Now we have repositioned DUE TO THE PARENT command on the previous slide. We are back at the SUBURB BURSWOOD, still in SNGL mode, where you can see the data fields individually identified. The GREEN fields (on this display) are the UPDATABLE elements within this segment.



Here I have CHANGED the public-phone number for this database segment.

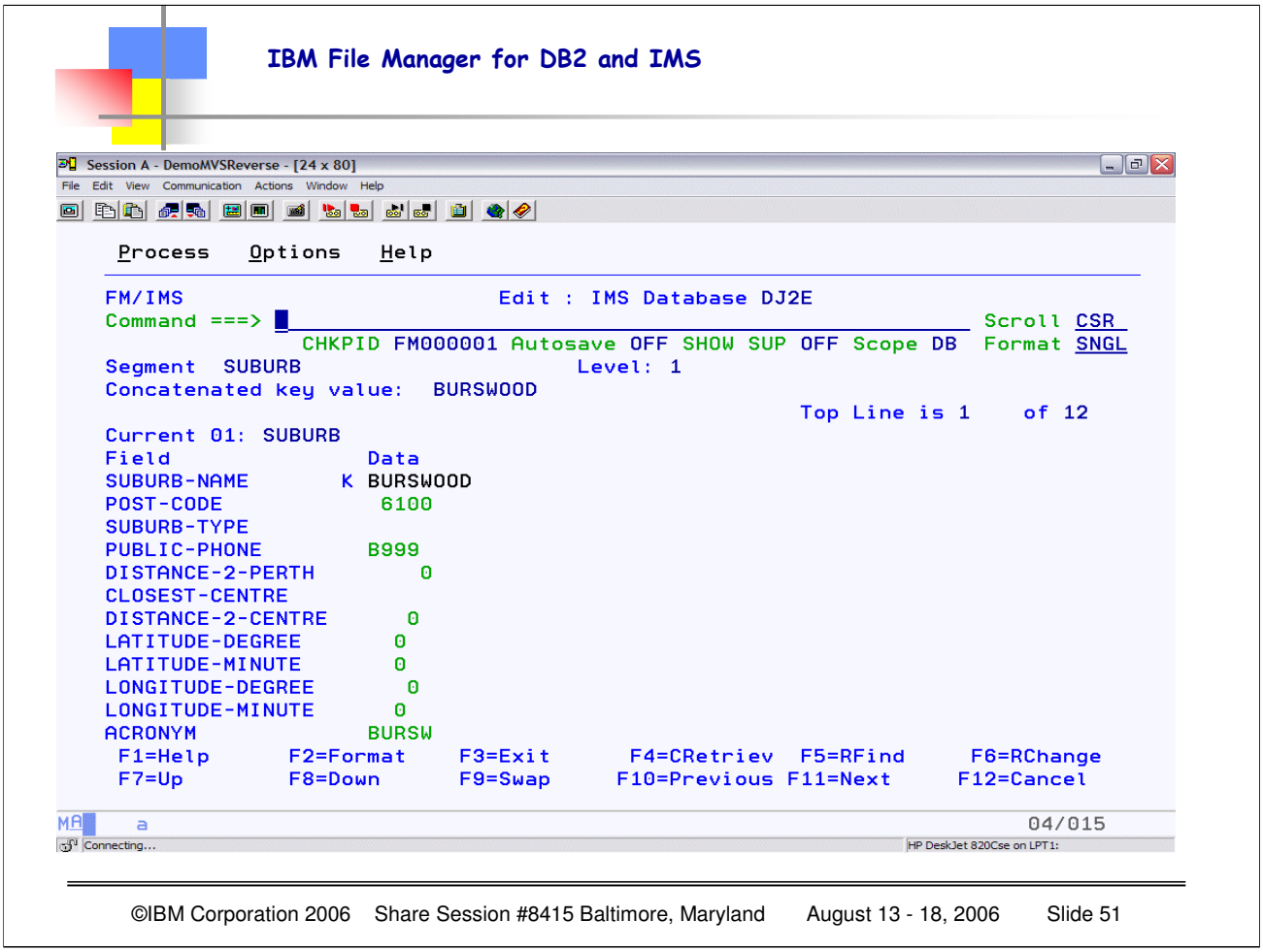
As you first enter the Database Positioning panel during the Edit dialog, FM/IMS issues a checkpoint, marking the current state of the segment data.

Each time that you commit your data (via a SAVE or EXIT command, or when FM/IMS automatically saves the data for you), a new checkpoint is issued.

At any time up until you commit the data, you can revert to the last checkpoint position by undoing or canceling your changes.

If you are working in DLI mode and the Dynamic Backout option is selected, FM/IMS reverts to the last checkpoint position when an abend occurs.

If you are working in BMP mode, this rollback occurs automatically.



Until I "commit" the change, the actual segment information has not been updated. I will be presented with the BUFFER version of the segment, so I will see the apparent change, but I either have to issue the SAVE command or exit FM/IMS in order to effect updated any segments that are held in buffers awaiting the COMMIT phase.

As you first enter the Database Positioning panel during the Edit dialog, FM/IMS issues a checkpoint, marking the current state of the segment data.

Each time that you commit your data (via a SAVE or EXIT command, or when FM/IMS automatically saves the data for you), a new checkpoint is issued.

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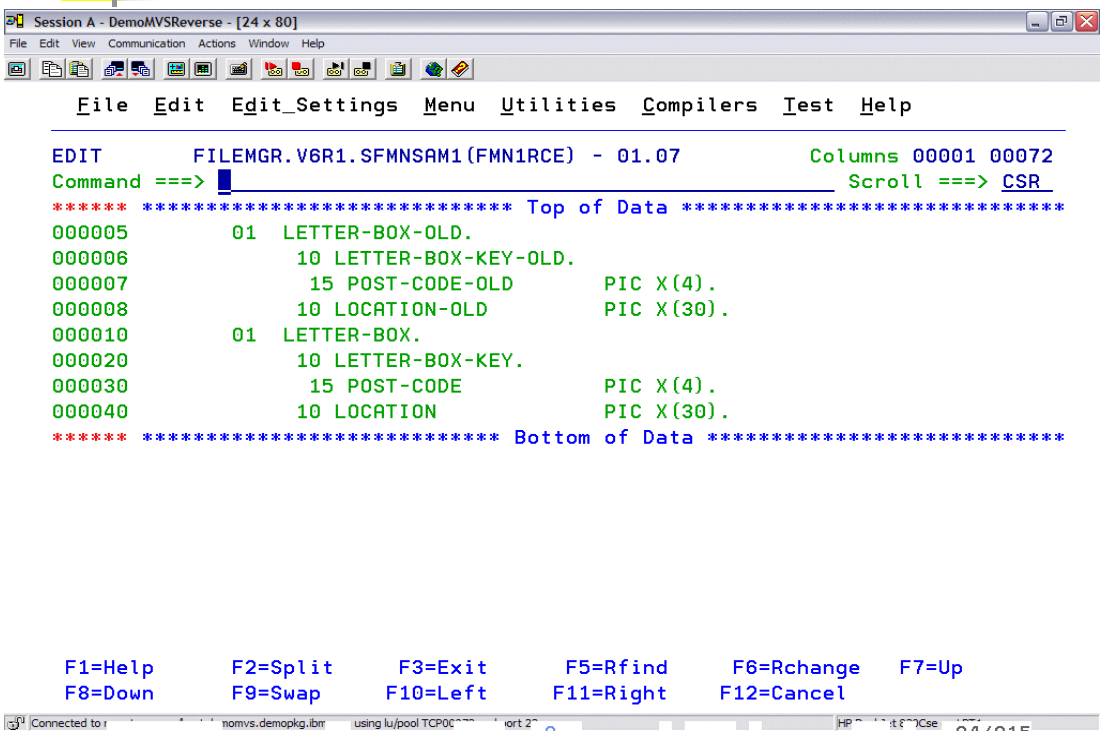
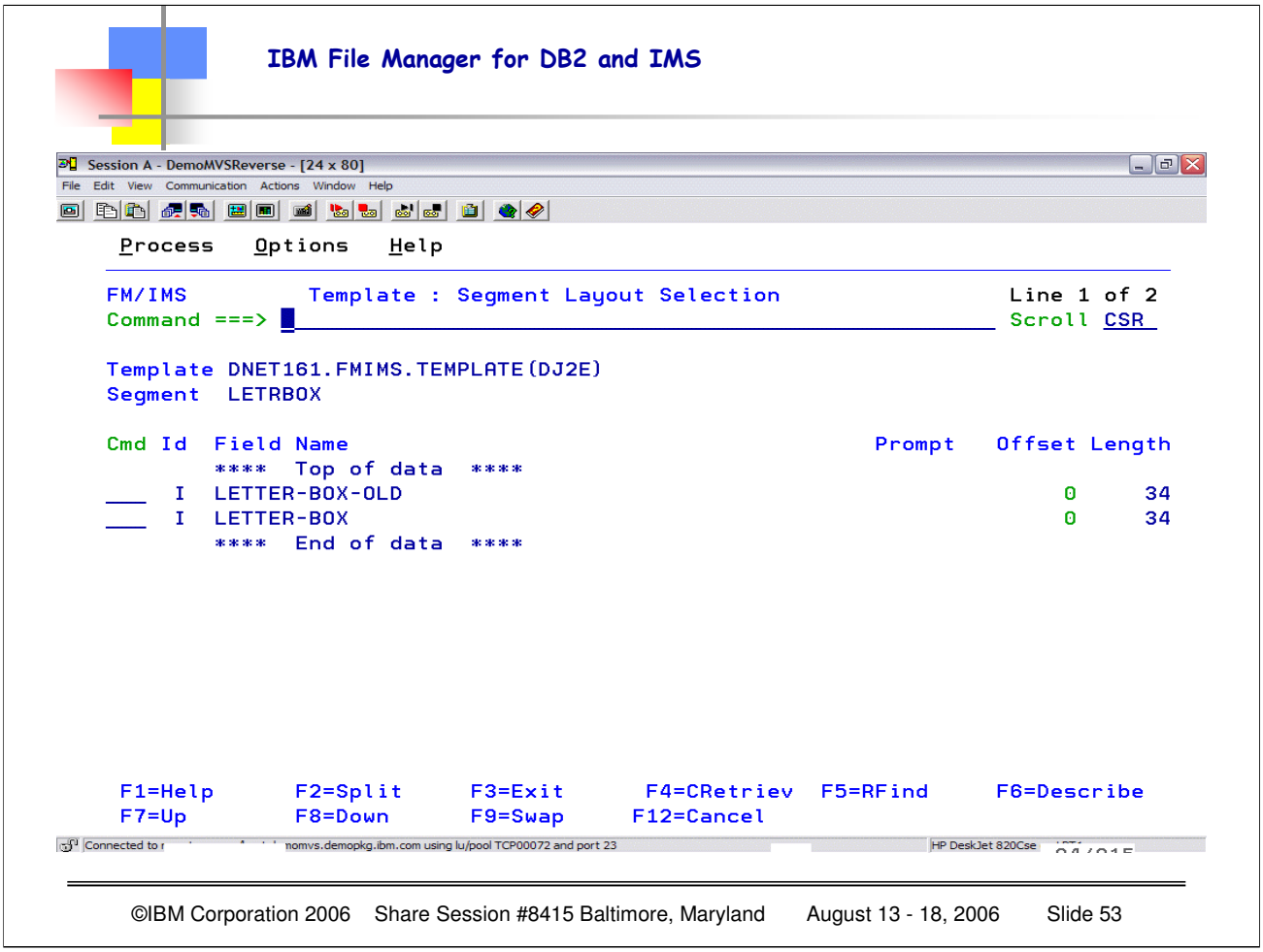


You may have a segment that has "multiple" layouts or descriptions. FM/IMS simply needs to know WHAT code in the segment identifies the layout to use. Here is the copybook for the LETTER-BOX segment in my database, where I have 2 record layouts (even though they are actually the same, this will demonstrate the "functionality".



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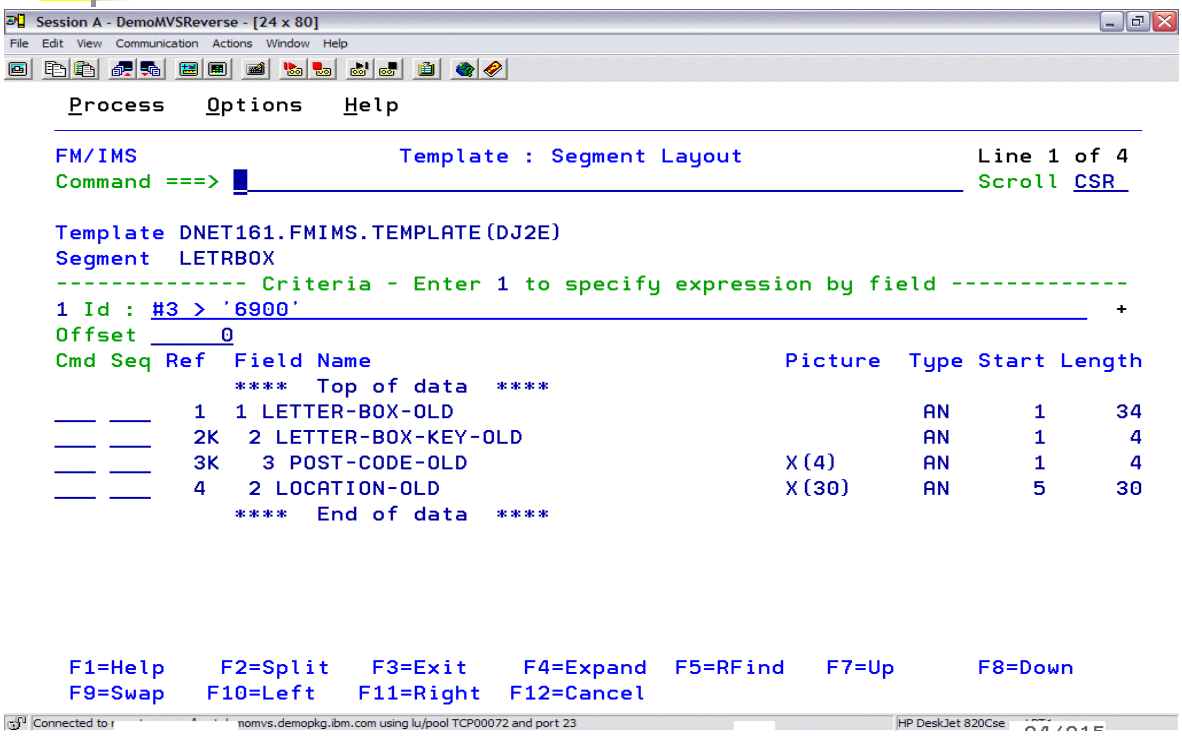
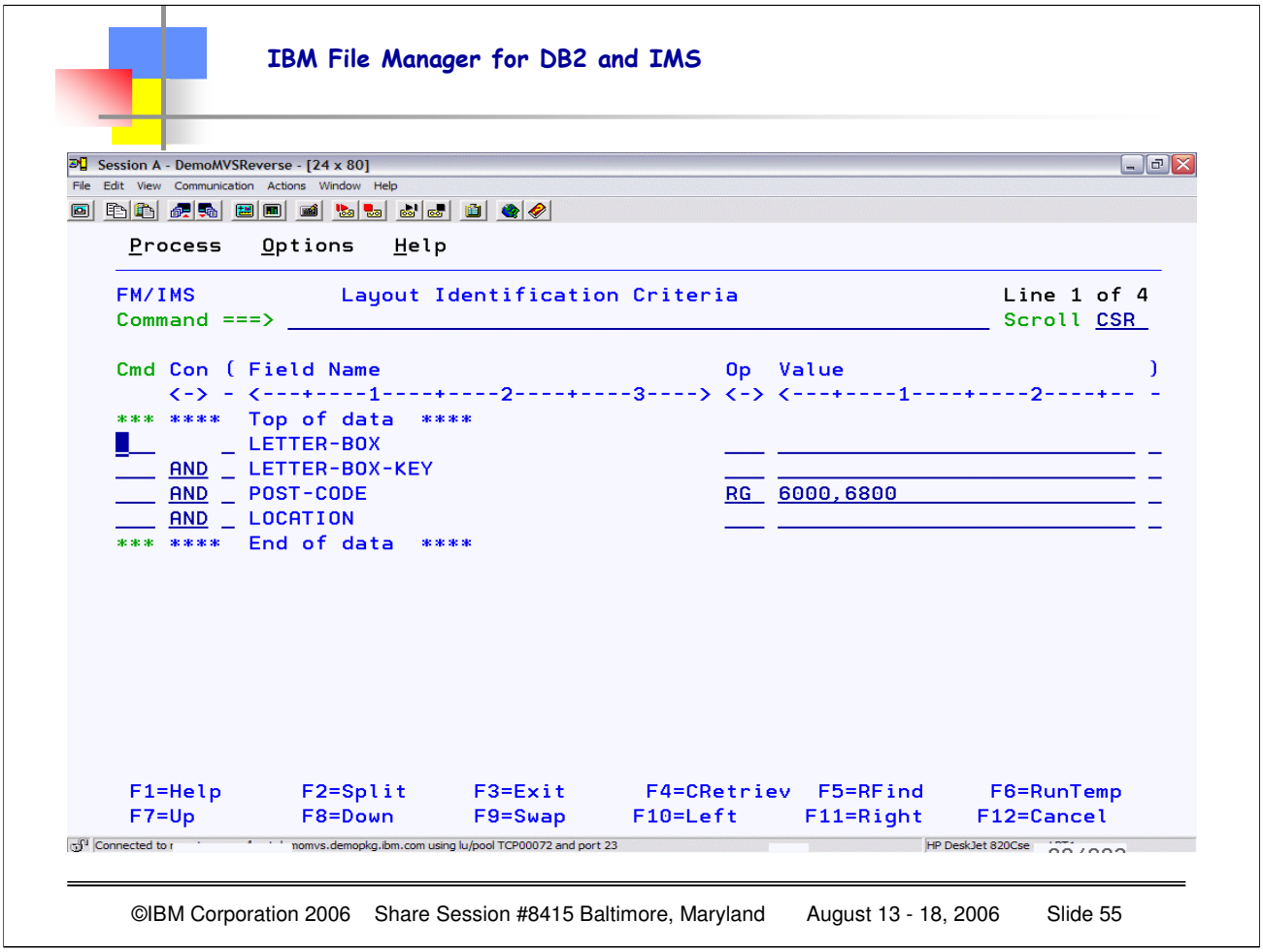
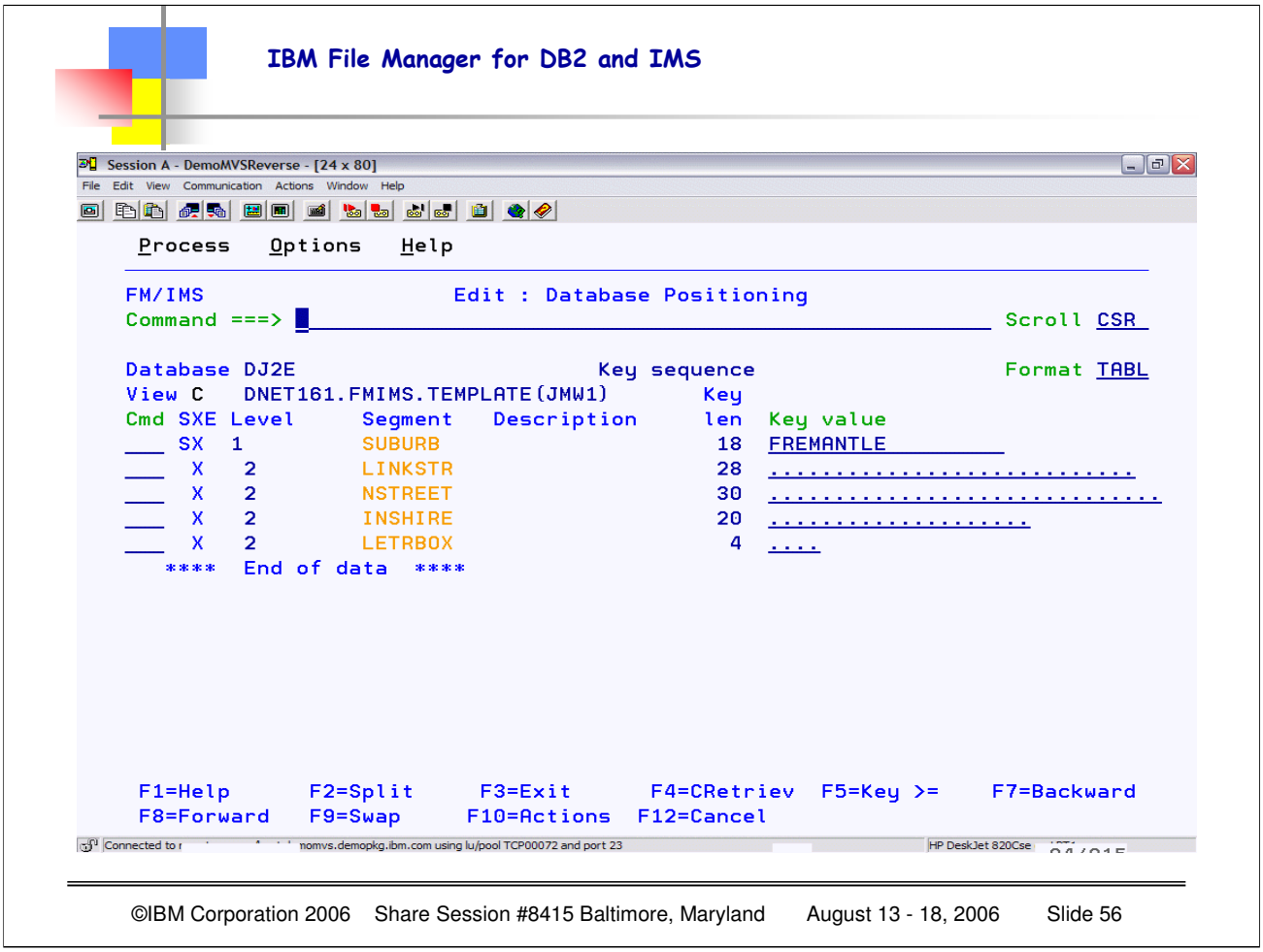
IBM File Manager for DB2 and IMS



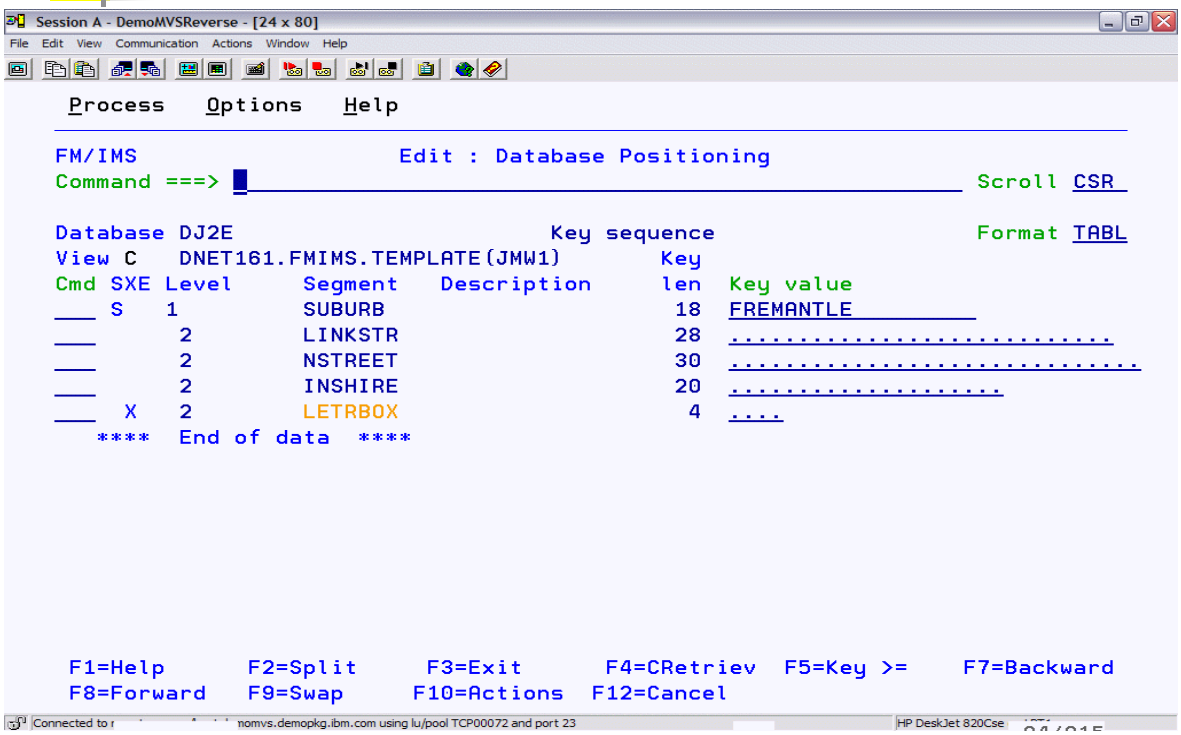
You can enter the criteria free form using the reference number, as shown here. This is showing that to apply the LETTER-BOX-OLD layout, the post-code-old field must be greater than 6900. Notice you could also put a 1 in the Primary Command line, and then you would get the various FIELDS where you could enter your selection criteria.



Or, I can EDIT the layout and hit enter, and then on the panel presented from the EDIT (which shows the layout of the segment) I can type an E next to the layout I want to specify criteria for, hit enter, and I will have THIS panel which lets me specify the identification criteria…in this example I am saying that ANY post-codes' between 600 and 6800 should use the LETTER-BOX layout.

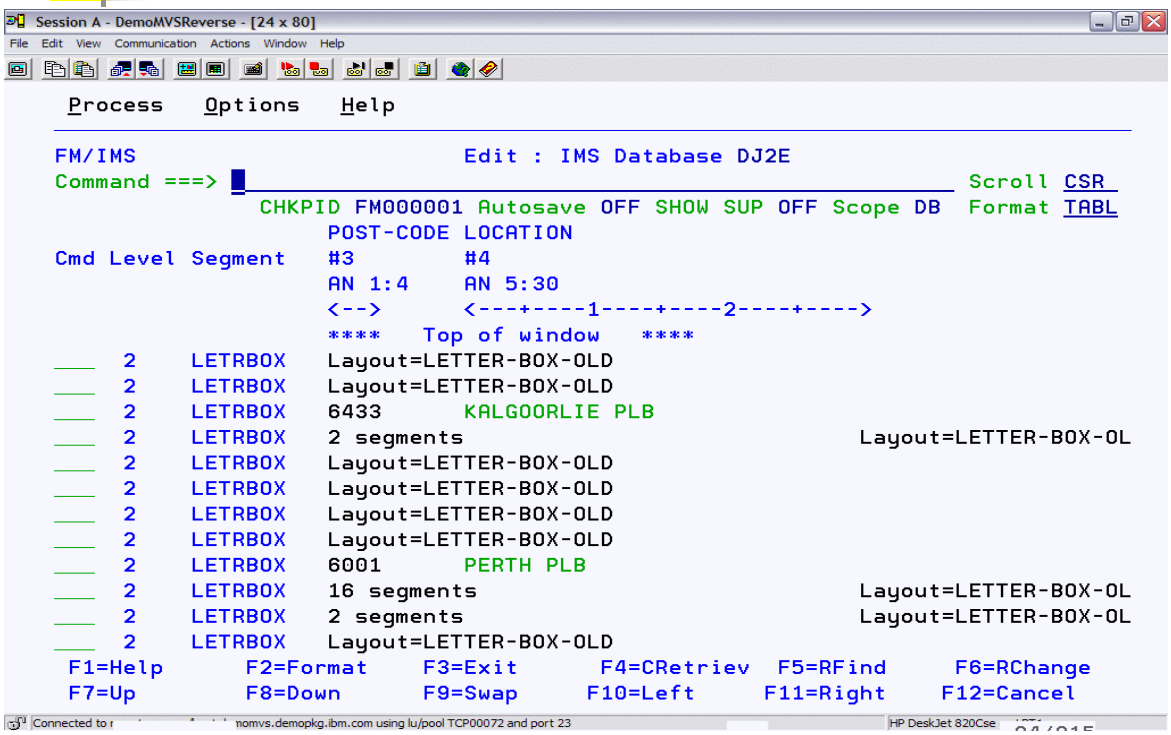


Here I am going to specify that I ONLY want to see the LETRBOX segments, so I am going to "deselect" all the other segments by putting an X in each of those columns in the Cmd field.



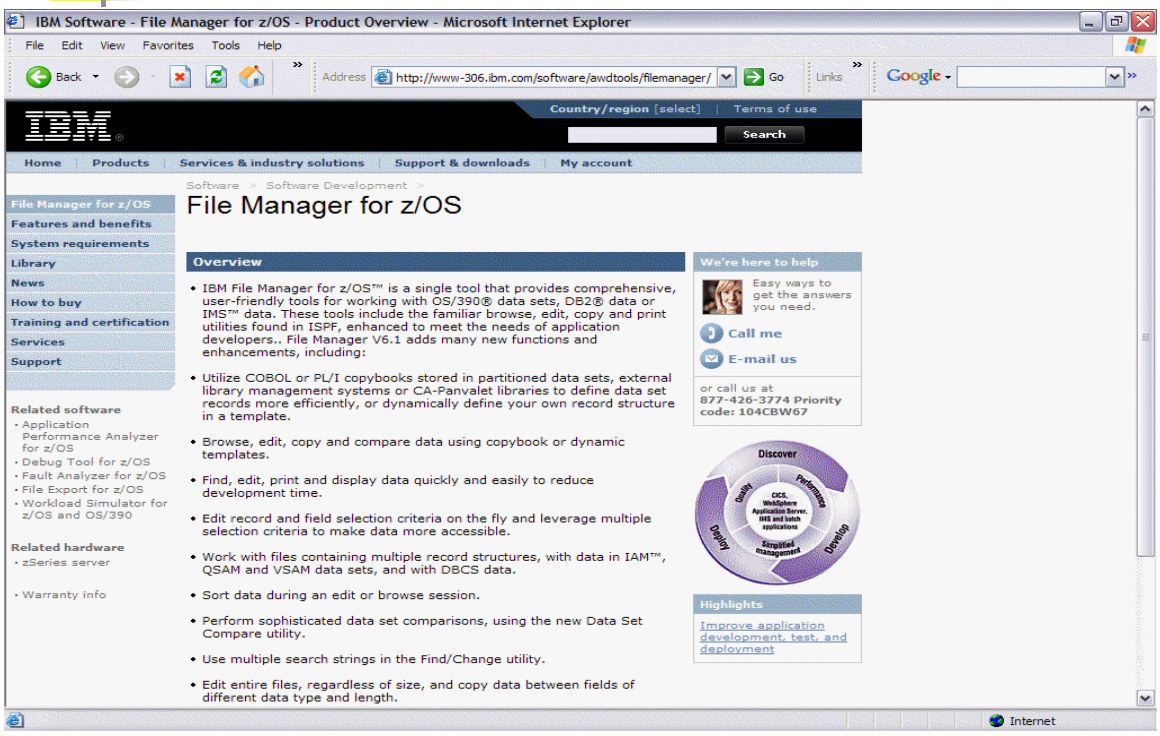
Now the ONLY segment that is selected is LETRBOX (no X for any other segment).

IBM File Manager for DB2 and IMS



Here is the result of my "query". As you can see, some of the segments are shown (those are the LETTER-BOX segments where the POST-CODE is between 6000 and 6800). The other segments show the LETTER-BOX-OLD layout, and you can simply chose 'V' to view the alternative layouts. When you put a V on the LETTER-BOX-OLD segments you will see all of those segments. If you have multiple or many layouts, you simply V(iew) the layout you wish to see from the command line.

IBM File Manager for DB2 and IMS



For the latest File Manager information and navigation to other relevant sites:

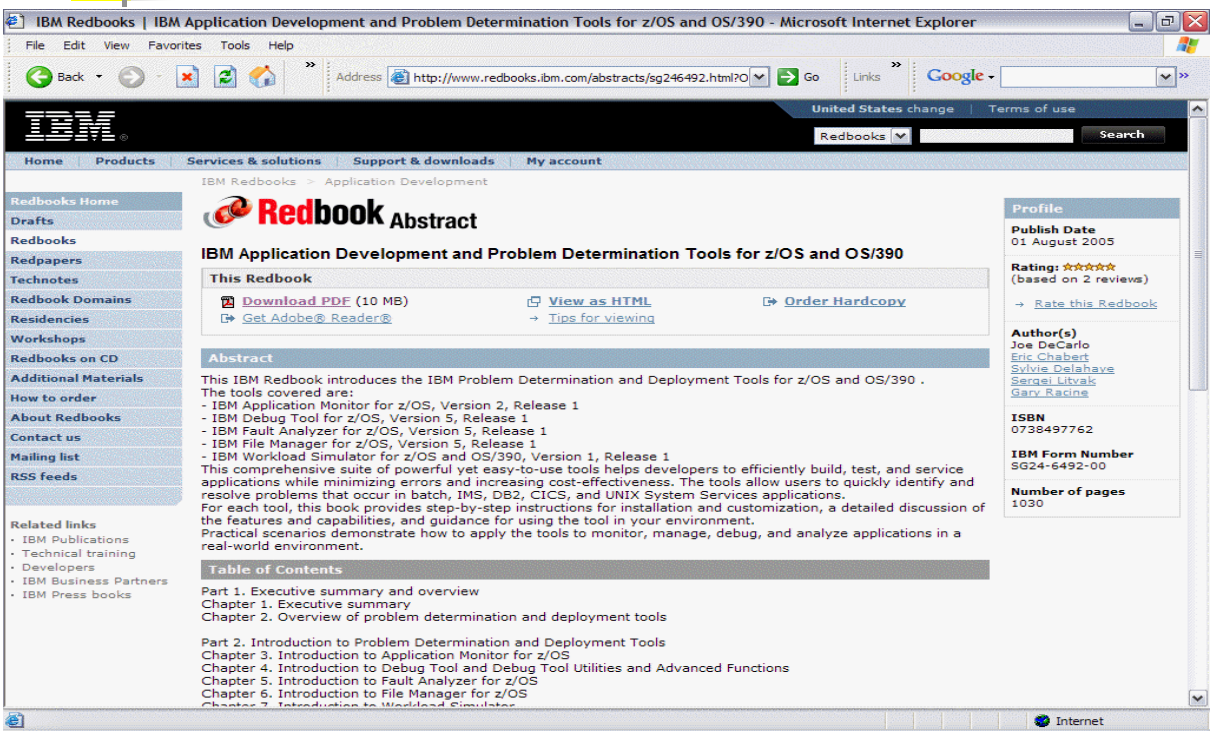
http://www-306.ibm.com/software/awdtools/filemanager/

For IBM redbook information, here is the URL:

http://www.redbooks.ibm.com/

I have BETTER luck using one of the tools rather than simply using AD TOOLS as a search argument.

I go in with File Manager or Debug Tool or Application Performance Analyzer, and then I get the top red books or drafts.



For the latest File Manager manuals (for the base product as well as for DB2 and IMS) go to:

http://www-306.ibm.com/software/awdtools/filemanager/library/

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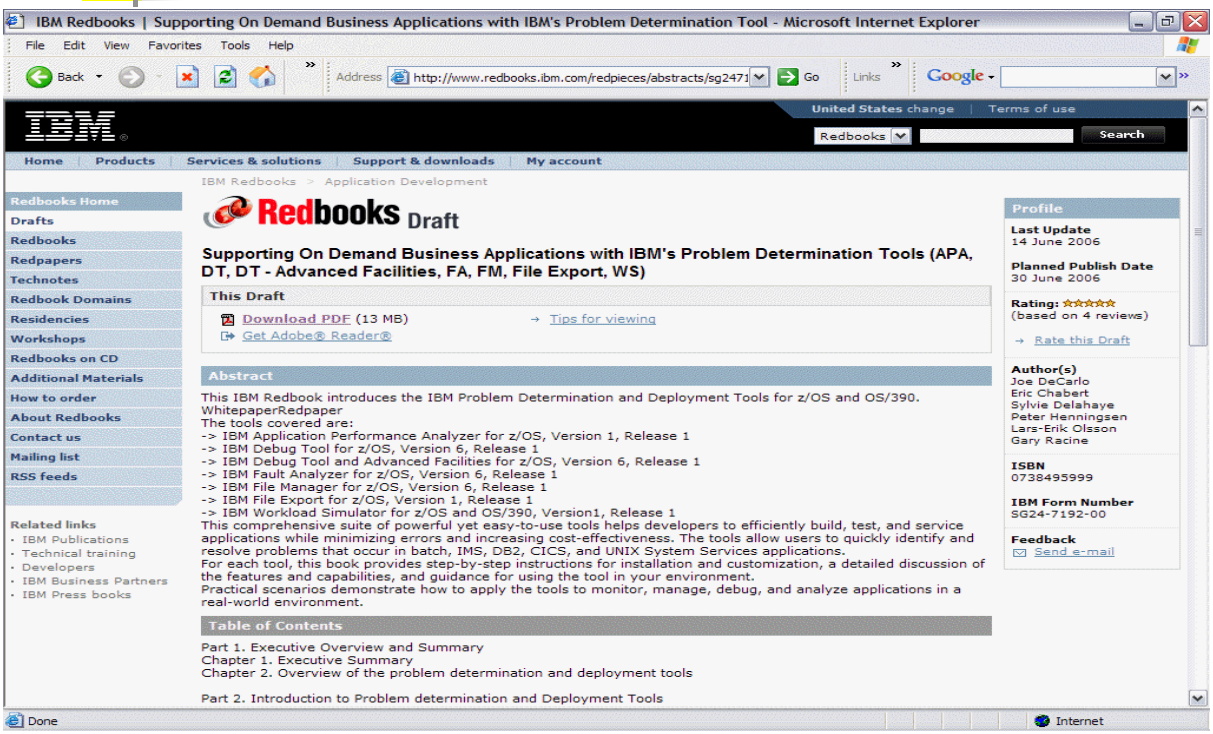
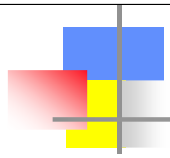


Here is a "draft" of a most interesting REDBOOK that discusses using the IBM TOOLS in support of On Demand Business applications. Notice that MANY of the Problem Determination Tools are covered in this redbook. This is a nice "all in one" manual which covers the various IBM Problem Determination tools. This manual is a very good "beginning" piece for all the tools, and then you can get the detailed information from each tool site with the specific manuals for the specific products.



IBM File Manager for DB2 and IMS

File Manager has 3 "parts" – the BASE FILE MANAGER and the optional additional pieces for DB2 and/or IMS

FMID	COMPID	Component Name	Retain
HAB9610	5655P1700	FILE MANAGER BASE	610
JAB9612	5655P1700	FILE MANAGER DB2	612
JAB9614	5655P1700	FILE MANAGER IMS	614

- **For more details specific to File Manager go to:**
  - **http://www-306.ibm.com/software/awdtools/filemanager/**
- **For more details on ANY of the PDTOOLS products go to:**
  - **http://publib.boulder.ibm.com/infocenter/pdthelp/v1r1/index.jsp**

Here you see the 3 separate components for File Manager. FM/BASE is required for either the DB2 and/or IMS component as the products are "additive" not stand-alone. Also note the while the PDTOOLS Information Center (infocenter shown here) has a wealth of information, there can be a difference between the multiple sites as to which one has the most CURRENT manuals. Generally the 1st url shown gets updated "first", ad the infocenter has a much larger suite of information to update and maintain. Recommendation is to always go to the 1st URL when you are looking for the LATEST manuals.