

The Use of DHCP Around the World

by Tami Winn and Marcus Werners

VA FileMan V21 Support for Internationalization

Two new files and supporting routines were created in VA FileMan V21. The files are the LANGUAGE and DIALOG files. Much credit for the work done in supporting internationalization in VA FileMan goes to Marcus Werners of the German Heart Institute. His institution uses VA FileMan, and each time a new version came out, he was required to make many changes to the code in order to convert dialogue to German. In March of 1994 Marcus spent several weeks of his personal vacation time working at the San Francisco ISC. We discussed our ideas for a DIALOG file, which VA FileMan needed primarily to support GUI development, and how the DIALOG file could be enhanced to support non-English dialogue. We also discussed the need for a way to do conversions of other things like dates, which resulted in the creation of the LANGUAGE file. Marcus helped with the file design and did a considerable amount of the work in changing classic FileMan to use the new files.

The LANGUAGE File

Certain types of data such as dates and numbers, should be formatted differently for display depending on the language of the end user. The VA FileMan LANGUAGE file has been designed to help solve this problem for users of interactive VA FileMan. The LANGUAGE file stores M code used to perform language-specific conversions on such data. A system variable identifies to VA FileMan the language currently in use.

At this time, VA FileMan distributes in the LANGUAGE file only the English equivalent of language-specific data conversions specified below.

Use of the LANGUAGE File

A system variable, DUZ("LANG"), identifies the language currently in use to VA FileMan. This system variable corresponds to the ID NUMBER of an entry in the LANGUAGE file. It tells VA FileMan where to find the appropriate data conversion code from the LANGUAGE file at the time the code needs to be executed (for example, when printing a date). For users running Kernel Version 8.0 or later, this variable is set automatically during signon. This system variable is also used to find appropriate non-English text in the DIALOG file as will be explained later.

Developers may enter or create their own entries in the LANGUAGE file. The FileMan developers will assign an ID NUMBER for each unique language entry in the LANGUAGE file. Code to populate each of the entries in the LANGUAGE file should be provided to the FileMan developers so that we can update our files. If the code is not filled in for any entry, FileMan defaults to use of the English format. If developers do not adhere to these guidelines, their language entry may be overwritten when new packages are installed.

In Version 21, parts of FileMan were converted to use the LANGUAGE file. Some examples of places that were changed are:

- The PRINT option was changed to do language conversions to any printed dates. The call DD ^%DT used to convert a date from internal to external format was changed to do the appropriate language conversion of the date. The reader call ^DIR for a YES/NO type of read was converted to accept the response to YES/NO in the language of the enduser. The ENTER/EDIT option was converted to accept the response to the question about whether user wishes to add a new entry to the file, in the language of the enduser.

Creating Language File Entries

The data conversion code for a LANGUAGE file entry is described below. At the time the code in any of these fields is executed, the data to be converted will be in the local variable Y. The M code in the field should put the transformed output back into Y without altering any other local variables. More detail can be found in the field description for each field. Looking at the English equivalent in entry number 1 can also be helpful.

ORDINAL NUMBER FORMAT

Changes 1 to 1ST, 2 to 2ND, etc.

CARDINAL NUMBER FORMAT

Changes 1234567 to 1,234,567

UPPERCASE CONVERSION

Converts text to uppercase

LOWERCASE CONVERSION

Converts text to lowercase

DATE/TIME FORMAT

Converts date in internal FileMan format to MDD,YYYY@HH:MM:SS

DATE/TIME FORMAT (FMTE)

Does other date conversions from date in internal FileMan format. This call has an additional input flag that indicates the conversion to be done. The flags are:

1 MMM DD, YYYY@HH:MM:SS space before year

2 MM/DD/YY@HH:MM:SS no leading zeros on month, day

3 DD/MM/YY@HH:MM:SS no leading zeros on month, day

4 YY/MM/DD@HH:MM:SS

5 MMM DD, YYYY@HH:MM:SS no space before year

6 MMDDYYYY @ HH:MM:SS special spacing for time

7 MMDDYYYY@HH:MM:SS

S Always return seconds

U Return upper case month (use only with 1 or 5)

P Return time with am,pm

D Return only date without time

The DIALOG File

The VA FileMan DIALOG file is used to store dialogue that would normally appear on a screen during interaction with a user, such as error messages or on-line help. The main reasons for originally creating the DIALOG file were:

- User interaction can be easily separated from the other program functionality, a necessary step in creating alternate interfaces to roll-and-scroll, such as GUI.
- Text stored in the DIALOG File can be reused.
- Package error lists can be identified and listed by error number in documentation. The DIALOG file was enhanced to assist developer support for non-English-speaking users. It allows for easy entry and retrieval of non-English dialogue without making any changes to code that is already using calls to retrieve text from the DIALOG file.

Use of the DIALOG File in Internationalization

A system variable, DUZ("LANG"), identifies to FileMan the language currently in use. This system variable is set equal to a number that corresponds to the ID NUMBER of an entry in the LANGUAGE file as previously described. This number is also used as a subscript for the TRANSLATION (LANGUAGE) multiple in which non-English text can be stored. For users running Kernel Version 8.0 or later, this variable is set automatically during signon.

For every entry in the DIALOG file needing translation, the developer should populate the FOREIGN TEXT field for the desired language. When either of the text retrieval routines, BLD^DIALOG or \$EZBLD^DIALOG is called, if DUZ("LANG") is greater than 1, FileMan will look at the language location specified by DUZ("LANG") to find the text. If text cannot be found at that location, FileMan defaults to use of the English equivalent from the TEXT field. As with English text, parameters to be inserted into the text can be passed to the call. If these parameters are also stored in the DIALOG file, then their appropriate language equivalent will be inserted into the text.

In Version 21, the user interaction seen by most endusers in Classic FileMan was converted to use the DIALOG file. In addition, all of the Data Base Server calls new in Version 21 take all of their text and messages from the DIALOG file.

Creating Non-English Text in the DIALOG file

Once an entry exists in the DIALOG file, developers may enter or edit non-English equivalents for the TEXT field, using VA FileMan Enter/Edit.

Example:

Select DIALOG: 10001 This is English text for a test message.

.
.

.

```
Select LANGUAGE: ?
Answer with TRANSLATION LANGUAGE
  You may enter a new TRANSLATION, if
  you wish
  Enter the number or name for a non-
  English language.
  English language cannot be selected.
  Answer with LANGUAGE ID NUMBER, or NAME
Choose from:
  2 GERMAN
  3 SPANISH
  4 FRENCH
```

```
Select LANGUAGE: 2 GERMAN
  Are you adding '2' as a new TRANSLATION (the
  1ST for this DIALOG)? y (Yes)
  FOREIGN TEXT:
  l>Hier wird der deutsche Text eingegeben.
```

DEMONSTRATION

Example Routine:

```
ZZTKMTA ; TEST ROUTINES FOR MTA MEETING ;3/18/96 17:10
ASKLANG ; WRITE TEXT WITH A DATE
  S DIR(0)="P^.85:AEQM" D ^DIR K DIR Q:$G(DIRUT) S DUZ("LANG")=+Y

Q
EN1 ; WRITE TEXT WITH A DATE OLD WAY
  NDIR,DTOUT,DIRUT,DIROUT,DUOUT,DUZ, S DUZ=7,DUZ(0)="@"
  W !!!,"Welcome to the M Technology Association 1996 Annual
  Conference!"
  W !!,"This presentation describes changes made to VA FileMan
  Version 21,"!,",in support of Internationalization."
  W !!
  S DIR("A",1)="This reader call was originally created in the
  English Language.",DIR("A",2)="Its purpose is to demonstrate changes
  needed in order to support"
  S DIR("A",3)="the same functionality in German.",DIR(~A~,4)=" "
  S DIR("A")="Would you like to continue",DIR(0)="Y",DIR("B")="YES"
  D ^DIR K DIR Q:$G(DIRUT)
  W !!,"The current date/time is: "
  D NOW^%DTC S Y=% D DD^%DT W Y,!
  Q
  ;
EN2
  N DIR,DTOUT,DIRUT,DIROUT,DUOUT,DUZ S DUZ=7,DUZ(0)="@"
  D ASKLANG Q:$G(DIRUT)
  D BLD^DIALOG(99003),MSG^DIALOG("WM")
  W !! D BLD^DIALOG(99004,"",",",",DIR("A"))"
  S DIR(0)="Y",DIR("B")=$P($P($ZEZBLD^DIALOG(7003),"; R ), n: ",2)
  D ^DIR K DIR Q:$G(DIRUT)
  D NOW^%DTC S Y=% D DD^%DT
  W !!,$ZEZBLD^DIALOG(99005,Y)
  ;
```

DIALOG Entry Numbering and Distribution

In order to avoid the possibility of having your DIALOG file entries overlaid when installing VA software, it is necessary to have a number space assigned for creating new entries to the DIALOG file. This number space is assigned by the Data Base Administrator of the Department of Veterans Affairs. For people within the VA, that number space is their assigned file number space multiplied by 10,000.

The new Kernel software and data distribution system (KIDS) supports sending entries from the DIALOG file.

Now let's run both entry points in English. They will do exactly the same thing.

>D EN1^ZZTKMTA

Welcome to the M Technology Association
1996 Annual Conference!

This presentation describes changes made to
VA FileMan Version 21 in support of inter-
nationalization.

This reader call was originally created in
English. Its purpose is to demonstrate
changes needed in order to support the same
functionality in German.

Would you like to continue? YES//

The current date/time is: MAR 21,1996@10:59:03

>D EN2^ZZTKMTA

Select LANGUAGE: 1 ENGLISH
Welcome to the M Technology Association
1996 Annual Conference!

This presentation describes changes made to
VA FileMan Version 21 in support of inter-
nationalization.

This reader call was originally created in
English. Its purpose is to demonstrate
changes needed in order to support the same
functionality in German.

Would you like to continue?? YES//

The current date/time is: MAR 21,1996@10:59:11.

Now let's look at the entries in the DIALOG file. Note the German text in the LANGUAGE multiple.

DIALOG LIST MAR21,1996 10:59 PAGE 1

DIALOG NUMBER: 99003 TYPE: GENERAL MESSAGE
PACKAGE: VA FILEMAN
DESCRIPTION: First message for test presen-
tation I18n at MTA.

TEXT:

Welcome to the M Technology Association
1996 Annual Conference!

This presentation describes changes made to
VA FileMan Version 21 in support of inter-
nationalization.

LANGUAGE: 2

FOREIGN TEXT: Willkommen zur jaehrlichen
Konferenz der M Technologie Vereinigung!

Diese Praesentation beschreibt neue
Funktionen in VA FileMan Version 21, die
Internationalisierung unterstuetzen.

DIALOGNUMBER: 99004 TYPE: GENERAL MESSAGE
PACKAGE: VA FILEMAN
DESCRIPTION: Second message for I18n pre-
sentation MTA 96

TEXT: This reader call was originally cre-
ated in English. Its purpose is to demon-
strate changes needed in order to support
the same functionality in German.

Would you like to continue?

LANGUAGE: 2

FOREIGN TEXT:

Dieser Programmaufruf wurde urspruenglich
in Englisch geschrieben.

Er soll zeigen, welche Veraenderungen
notwendig sind, um die selbe

Funktionalitaet in deutscher Sprache zur
Verfuegung zu stellen.

Wollen Sie fortfahren?

DIALOG NUMBER: 7003 TYPE: GENERAL MESSAGE
PACKAGE: VA FILEMAN
DESCRIPTION: Yes/No prompt for Reader

TEXT:

y: YES;n:NO

LANGUAGE: 2

FOREIGN TEXT:

j: JA;n: NEIN

DIALOG NUMBER: 99005TYPE: GENERAL MESSAGE
INTERNAL PARAMETERS NEEDED: YES PACKAGE:
VA FILEMAN
DESCRIPTION: Third message for I18n demo
at MTA.

TEXT:
The current date/time is: |1|.
LANGUAGE: 2
FOREIGN TEXT:
Aktuelles Datum und Uhrzeit sind: |1|.

Finally, we'll rerun the EN2 entry point, but this time we will select GERMAN as our language.

>D EN2^ZZTKMTA

Select LANGUAGE: 2 GERMAN
Willkommen zur jaehrlichen Konferenz der M
Technologie Vereinigung!

Diese Praesentation beschreibt neue
Funktionen in VA FileMan Version 21 die
internationalisierung unterstuetzen.

Dieser Programmaufruf wurde urspruenglich
in Englisch geschrieben. Er soll zeigen,
welche Veraenderungen notwendig sind, um
die selbe Funktionalitaet in deutscher
Sprache zur Verfuegung zu stellen. Wollen
Sie fortfahren? JAI//

Aktuelles Datum und Uhrzeit sind:
21.03.1996 11:00:07.

The VA FileMan database system is already in use worldwide. Thanks to those who have taken the time and trouble to translate the text, others can take advantage of the power and low-cost of VA FileMan. Future development of the LANGUAGE and DIALOG files will continue to make programmers' jobs easier and open VA FileMan to the world.

To develop a new LANGUAGE file entry, contact the VA FileMan developers by mail at:

VA FileMan Developer
IRM Field Office -- San Francisco
301 Howard Street, Suite 600
San Francisco, CA 94105
e-mail: G.FMTEAM@FORUM.VA.GOV



Tami Winn is the senior developer of the VA FileMan project. She has been using M and VA FileMan since 1981.

Marcus Werners is the senior developer at the German Heart Institute in Berlin, Germany. He is responsible for much of the design and programming effort to internationalize VA FileMan.

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