

To: MTB Distribution  
From: Art Beattie  
Date: 1979 March 4  
Subject: New MRDS display tool

### Introduction

As data models grow in size and complexity, it becomes increasingly more difficult to visualize the relations and the attributes in each relation. Increased data model size also results in a maintenance problem for users who reference data bases using structures within their pl1 programs. These structures must constantly be updated to represent the current configuration of the data models.

### Proposed Solution

Two new commands, `create_mrds_dm_include` (`cmdmi`) and `create_mrds_dm_table` (`cmdmt`), are described in detail in the attached MPM documentation.

The `create_mrds_dm_include` command will generate an include file which can be used in a pl1 program to extract or modify information in a data base.

The `create_mrds_dm_table` command will generate a table displaying the relations as a row of boxes. Each box names an attribute in the relation, giving its PL/I data type with flags indicating if it is a key and/or index attribute in the relation.

### Miscellaneous

These commands currently work only on a data model, not a data sub-model. The interfaces to data sub-models will change in the next release. As soon as these interfaces are ready, data sub-models can be included in these tools.

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create\_mrds\_dm\_include

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create\_mrds\_dm\_include

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Name: create\_mrds\_dm\_include, cmdmi

This command is a MRDS data base display tool which creates an include segment suitable for use in accessing the data base from PL/I programs.

### Usage

create\_mrds\_dm\_include path {-control\_args}

where:

1. path  
is the pathname of the data base. The user must have "retrieve" access to some relation of the data base. The pathname must be the first argument.
2. control\_args  
can be chosen from the following:
  - order rel\_name1 rel\_name2 ... rel\_namei  
specifies that the structures generated for the relations whose names follow this argument are to be placed first in the output segment in the order of their names on the command line. The structures for relations not named in the ordered list are placed at the end of the output segment in the order in which their names are defined in the data model. The names following the -order control argument are separated by spaces.
  - page\_length N, -pl N  
specifies the number of lines allowed between new page characters in the output segment. The value N must be in the range of 30 to 127. The default page length is 59 lines.

### Notes

The output is written to a segment whose name is constructed as follows;

<entryname of data base>.incl.pl1

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create\_mrds\_dm\_include

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create\_mrds\_dm\_include

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If the segment doesn't exist, it is created.

The output segment begins with a title block which displays: the name of the output segment, the current date and time of command execution, the name of the command and its version number, the absolute pathname of the data base, the date and time of its creation, the version of the data base, and the process group ID of the data base author.

At the bottom of the output segment, a p11 comment line is created containing the name of the output segment and padded with "\*" characters to a total line length of 100 characters.

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create\_mrds\_dm\_table

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create\_mrds\_dm\_table

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Name: create\_mrds\_dm\_table, cmdmt

This command is a display tool which creates a pictorial representation of a MRDS data model. Each box names an attribute in the relation, giving its PL/I data type with flags indicating if it is a key and/or index attribute in the relation.

### Usage

create\_mrds\_dm\_table path {-control\_args}

where:

1. path

is the pathname of the data model of the data base. The user must have "retrieve" access to some relation in the data base. The pathname must be the first argument.

2. control\_args

can be chosen from the following:

-brief, -bf

suppresses the PL/I data type information normally displayed below the attribute name inside each box.

-line\_length N, -ll N

specifies the maximum line length (in characters) available for the display of boxes across the page. The value N must be in the range of 64 to 136. The default line length is 136.

-order rel\_name1 rel\_name2 ... rel\_namei

specifies that the displays generated for the relations whose names follow this argument are to be placed first in the output segment in the order of their names on the command line. The displays for relations not named in the ordered list are placed at the end of the output segment in the order in which their names are defined in the data model. The names following the -order control argument are separated by spaces.

-page\_length N, -pl N

specifies the number of lines allowed between new page characters in the output segment. The value N must be in the range of 30 to 127. The default page length is 59 lines.

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create\_mrds\_dm\_table

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create\_mrds\_dm\_table

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### Notes

The output is written to a segment whose name is constructed as follows;

<entryname of data base>.table

If the segment doesn't exist, it is created.

The output segment begins with a title block which displays: the name of the output segment, the current date and time of command execution, the name of the command and its version number, the absolute pathname of the data base, the date and time of its creation, the version of the data base, and the process group ID of the data base author.

The output continues with a legend which describes the format of a display box. The legend appears to the right or below the title block, depending upon the `-line_length` control argument and the width of the title block.

The display of a relation begins with its relation name, right-justified in a field long enough to contain the longest relation name in the data base. The name is followed by a row of connected boxes which describe each attribute in the relation. Box width is determined by the attribute name length and length of the attribute's PL/I data type (unless the `-brief` control argument is used). The display may span several rows in the output segment if the relation name field and attribute boxes are longer than the available line length. If a display which spans several rows will not fit on the current output page, then the entire display is placed on a new page.

```

/* *****
* BEGIN tr_log.table * LEGEND:
* created: 03/07/79 2323.5 mst Wed *
* by: create_mrds_dm_table (1.2) * relation |*-----/ /-----|
* | Attribute | | |
* | Data Type | | |
* |-----/ /-----|
* Data model >udd>sm>TR>tr_log *
* created: 01/02/79 0941.6 mst Tue *
* version: 7 * * = Key Attribute
* by: Alvarado.SysMaint.a * I = Index Attribute
*
***** */

```

affected	no	affected_no	area	topic
	char(8)	fixed bin	char(32)	char(32)

bypass	no	date	text
	char(8)	char(35)	char(4800) var

cause	no	date	text
	char(8)	char(35)	char(4800) var

comment	no	com_no	date	text
	char(8)	fixed bin	char(35)	char(4800) var

dev	pers	proj	at	name	phone	address	group	editor	all_new
	char(22)	char(9)	char(32)	char(40) var	char(32) var	char(100) var	char(16)	char(32) var	char(3)
	dp_mail	dp_dest	dp_head	date_updated	date_checked	no_tr_answered	no_tr_info_added		
	char(6)	char(24)	char(64)	char(35)	char(35)	fixed bin	fixed bin		

fix	no	date	text
	char(8)	char(35)	char(4800) var

group	group	leader	at	unit	date_updated
	char(16)	char(22)	char(32)	char(16)	char(35)

COMMAND LINE= cmdmt tr\_log

related	*	*	
	no	rel_no	related_to
	char(8)	fixed bin	char(16)

report	*									
	no	type	mr_found	mr_first	mr_fix	system_rep	site	pers	proj	summary
	char(8)	char(16)	char(8)	char(8)	char(8)	char(22)	char(32)	char(22)	char(9)	char(256) var
		symptom	urgency	holder	status	date_entered	date_mod	affected_no	rel_no	
		char(2600) var	char(16) var	char(12)	char(16)	char(35)	char(35)	fixed bin	fixed bin	
		tran_no	test_path_no	com_no	fields					
		fixed bin	fixed bin	fixed bin	bit(36)					

report_priv	*					
	no	hold_pers	hold_proj	real_mr_fix	priority	date_task_list_mod
	char(8)	char(22)	char(9)	char(8)	char(4)	char(35)

responsible	*	*	*			
	area	topic	pers	at	interest	date_updated
	char(32)	char(32)	char(22)	char(32)	char(12)	char(35)

site	*				
	site	release	primary_system_rep	date_updated	date_checked
	char(32)	char(8)	char(22)	char(35)	char(35)

support	*	
	no	materials
	char(8)	char(100) var

system	*	*		
	area	topic	group	date_updated
	char(32)	char(32)	char(16)	char(35)

system_rec	*	pers	proj	at	site	name	phone	address	editor	all_new
		char(22)	char(9)	char(32)	char(32)	char(40) var	char(32) var	char(100) var	char(32) var	char(3)
		dp_mail	dp_dest	dp_head	date_updated	date_checked	no_tr_entered	no_tr_info_added		
		char(6)	char(24)	char(64)	char(35)	char(35)	fixed bin	fixed bin		

test_case	*	no	proj
		char(8)	char(4800) var

test_path	*	test_path_no	test_path
		fixed bin	char(162) var

tran	*	tran_no	date_entered	date_handled	action	pers	proj	text	urgency
		fixed bin	char(35)	char(35)	char(16)	char(22)	char(9)	char(4800) var	char(16) var
		status	holder						
		char(16)	char(12)						

tran_priv	*	tran_no	hold_pers	hold_proj	real_mr_fix	priority	date_task_list_mod
		fixed bin	char(22)	char(9)	char(8)	char(4)	char(35)

unit	*	unit	manager	at	date_updated
		char(16)	char(22)	char(32)	char(35)

user	*	pers	proj	at	name	phone	address	editor	all_new	dp_mail
		char(22)	char(9)	char(32)	char(40) var	char(32) var	char(100) var	char(32) var	char(3)	char(6)
		dp_dest	dp_head	date_updated	date_checked	no_tr_entered	no_tr_info_added			
		char(24)	char(64)	char(35)	char(35)	fixed bin	fixed bin			



COMMAND LINE= cmdmt tr\_log -ll 75

```
/* *****  
*  
* BEGIN tr_log.table *  
*   created: 03/09/79 2334.3 mst Fri *  
*   by: create_mrds_dm_table (1.2) *  
*  
* Data model >udd>sm>TR>tr_log *  
*   created: 01/02/79 0941.6 mst Tue *  
*   version: 3 *  
*   by: Alvarado.SysMaint.a *  
*  
***** */
```

LEGEND:

relation	*	I	/	/		
	Attribute					
	Data Type					

\* = Key Attribute  
I = Index Attribute

affected	*	*		I	I
	no	affected_no	area	topic	
	char(8)	fixed bin	char(32)	char(32)	

bypass	*				
	no	date	text		
	char(8)	char(35)	char(4800) var		

cause	*				
	no	date	text		
	char(8)	char(35)	char(4800) var		

comment	*	*			
	no	com_no	date	text	
	char(8)	fixed bin	char(35)	char(4800) var	

dev	*	pers char(22)	proj char(9)	*	I	at char(32)	name char(40) var
-----	---	------------------	-----------------	---	---	----------------	----------------------

		phone char(32) var				address char(100) var	I	group char(16)
--	--	-----------------------	--	--	--	--------------------------	---	-------------------

		editor char(32) var		all_new char(3)		dp_mail char(6)		dp_dest char(24)
--	--	------------------------	--	--------------------	--	--------------------	--	---------------------

		dp_head char(64)		date_updated char(35)		date_checked char(35)		
--	--	---------------------	--	--------------------------	--	--------------------------	--	--

		no_tr_answered fixed bin		no_tr_info_added fixed bin				
--	--	-----------------------------	--	-------------------------------	--	--	--	--

fix	*	no char(8)	date char(35)			text char(4800) var
-----	---	---------------	------------------	--	--	------------------------

group	*	group char(16)	leader char(22)	at char(32)	unit char(16)	date_updated char(35)
-------	---	-------------------	--------------------	----------------	------------------	--------------------------

related	*	no char(8)	*	rel_no fixed bin		I	related to char(16)
---------	---	---------------	---	---------------------	--	---	------------------------



site	*	site char(32)	release char(8)	primary_system_rep char(22)	date_updated char(35)

date_checked char(35)
--------------------------

support	*	no char(8)	materials char(100) var

system	*	area char(32)	topic char(32)	I	group char(16)	I	date_updated char(35)

system_rep	*	pers char(22)	proj char(9)	*	at char(32)	I	site char(32)	name char(40) var

phone char(32) var	address char(100) var	editor char(32) var
-----------------------	--------------------------	------------------------

all_new char(3)	dp_mail char(6)	dp_dest char(24)	dp_head char(64)
--------------------	--------------------	---------------------	---------------------

date_updated char(35)	date_checked char(35)	no_tr_entered fixed bin
--------------------------	--------------------------	----------------------------

no_tr_info_added fixed bin
-------------------------------

test_case	*	no char(8)	prog char(4800) var

test_path	* no char(8)	* test_path_no fixed bin	test_path char(168) var
-----------	--------------------	--------------------------------	----------------------------

tran	* no char(8)	* tran_no fixed bin	date entered char(35)	date handled char(35)
------	--------------------	---------------------------	--------------------------	--------------------------

action char(16)	pers char(22)	proj char(9)	text char(4800) var
--------------------	------------------	-----------------	------------------------

urgency char(16) var	status char(16)	holder char(12)
-------------------------	--------------------	--------------------

tran_priv	* no char(8)	* tran_no fixed bin	hold pers char(22)	hold proj char(9)	real mr_fix char(8)
-----------	--------------------	---------------------------	-----------------------	----------------------	------------------------

priority char(4)	date task_list_mod char(35)
---------------------	--------------------------------

unit	* unit char(16)	manager char(22)	at char(32)	date updated char(35)
------	-----------------------	---------------------	----------------	--------------------------

user	* pers char(22)	proj char(9)	I * at char(32)	I name char(40) var	
	phone char(32) var		address char(100) var	editor char(32) var	
	all_new char(3)	dp_mail char(6)	dp_dest char(24)	dp_head char(64)	
	date_updated char(35)		date_checked char(35)	no_tr_entered fixed bin	
	no_tr_info_added fixed bin				

```

*****
* REGIN tr_log.incl.pl1
* created: 03/07/79 2311.0 mst Wed
* by: create_mrds_dm_include (1.?)
*
* Data model >udd>sm>TR>tr_log
* created: 01/02/79 0941.6 mst Tue
* version: 3
* by: Alvarado.SysMaint.a
*
***** */

```

```

dcl 1 affected aligned,
  2 no character (8) unaligned, /* Key */
  2 affected_no real fixed binary (17,0) aligned, /* Key */
  2 area character (32) unaligned, /* Index */
  2 topic character (32) unaligned; /* Index */

dcl 1 bypass aligned,
  2 no character (8) unaligned, /* Key */
  2 date character (35) unaligned,
  2 text character (4800) varying aligned;

dcl 1 cause aligned,
  2 no character (8) unaligned, /* Key */
  2 date character (35) unaligned,
  2 text character (4800) varying aligned;

dcl 1 comment aligned,
  2 no character (8) unaligned, /* Key */
  2 com_no real fixed binary (17,0) aligned, /* Key */
  2 date character (35) unaligned,
  2 text character (4800) varying aligned;

dcl 1 dev aligned,
  2 pers character (22) unaligned, /* Key */
  2 proj character (9) unaligned,
  2 at character (32) unaligned, /* Key, Index */
  2 name character (47) varying aligned,
  2 phone character (32) varying aligned,
  2 address character (100) varying aligned,
  2 group character (16) unaligned, /* Index */
  2 editor character (72) varying aligned,
  2 all_new character (3) unaligned,
  2 dn_mail character (6) unaligned,
  2 dn_dest character (24) unaligned,
  2 dn_head character (64) unaligned,
  2 date_updated character (35) unaligned,
  2 date_checked character (35) unaligned,
  2 no_tr_answered real fixed binary (17,0) aligned,
  2 no_tr_info_added real fixed binary (17,0) aligned;

dcl 1 fix aligned,
  2 no character (8) unaligned, /* Key */
  2 date character (35) unaligned,
  2 text character (4800) varying aligned;

```

COMMAND LINE= cmdmi tr\_log

```

dcl 1 group aligned,
  2 group character (16) unaligned, /* Key */
  2 leader character (22) unaligned,
  2 at character (32) unaligned,
  2 unit character (16) unaligned,
  2 date_updated character (35) unaligned;

dcl 1 related aligned,
  2 no character (8) unaligned, /* Key */
  2 rel_no real fixed binary (17,0) aligned, /* Key */
  2 related_to character (16) unaligned; /* Index */

dcl 1 report aligned,
  2 no character (8) unaligned, /* Key */
  2 type character (16) unaligned, /* Index */
  2 mr_found character (8) unaligned, /* Index */
  2 mr_first character (8) unaligned, /* Index */
  2 mr_fix character (8) unaligned, /* Index */
  2 system_rep character (22) unaligned, /* Index */
  2 site character (32) unaligned, /* Index */
  2 pers character (22) unaligned, /* Index */
  2 proj character (9) unaligned,
  2 summary character (256) varying aligned,
  2 symptom character (9600) varying aligned,
  2 urgency character (16) varying aligned,
  2 holder character (12) unaligned, /* Index */
  2 status character (16) unaligned, /* Index */
  2 date_entered character (35) unaligned, /* Index */
  2 date_mod character (75) unaligned, /* Index */
  2 affected_no real fixed binary (17,0) aligned,
  2 rel_no real fixed binary (17,0) aligned,
  2 tran_no real fixed binary (17,0) aligned,
  2 test_path_no real fixed binary (17,0) aligned,
  2 com_no real fixed binary (17,0) aligned,
  2 fields bit (36) unaligned;

dcl 1 report_priv aligned,
  2 no character (8) unaligned, /* Key */
  2 hold_pers character (22) unaligned, /* Index */
  2 hold_proj character (9) unaligned,
  2 real_mr_fix character (8) unaligned, /* Index */
  2 priority character (4) unaligned, /* Index */
  2 date_task_list_mod character (35) unaligned; /* Index */

dcl 1 responsible aligned,
  2 area character (32) unaligned, /* Key */
  2 topic character (32) unaligned, /* Key */
  2 pers character (22) unaligned, /* Key, Index */
  2 at character (32) unaligned, /* Key */
  2 interest character (12) unaligned, /* Index */
  2 date_updated character (35) unaligned;

dcl 1 site aligned,
  2 site character (32) unaligned, /* Key */
  2 release character (8) unaligned,
  2 primary_system_rep character (22) unaligned,
  2 date_updated character (35) unaligned,
  2 date_checked character (35) unaligned;

```



```

1 support aligned,
2 no character (8) unaligned,
2 materials character (100) varying aligned;
/* Key */

dcl 1 system aligned,
2 area character (32) unaligned,
2 topic character (32) unaligned,
2 group character (16) unaligned,
2 date_updated character (35) unaligned;
/* Key */
/* Key, Index */
/* Index */

dcl 1 system_rep aligned,
2 pers character (22) unaligned,
2 proj character (9) unaligned,
2 at character (32) unaligned,
2 site character (32) unaligned,
2 name character (47) varying aligned,
2 phone character (32) varying aligned,
2 address character (100) varying aligned,
2 editor character (32) varying aligned,
2 all_new character (7) unaligned,
2 dn_mail character (6) unaligned,
2 dn_dest character (24) unaligned,
2 dn_head character (64) unaligned,
2 date_updated character (35) unaligned,
2 date_checked character (35) unaligned,
2 no_tr_entered real fixed binary (17,0) aligned,
2 no_tr_info_added real fixed binary (17,0) aligned;
/* Key */
/* Index */

dcl 1 test_case aligned,
2 no character (8) unaligned,
2 prog character (4800) varying aligned;
/* Key */

dcl 1 test_path aligned,
2 no character (8) unaligned,
2 test_path_no real fixed binary (17,0) aligned,
2 test_path character (168) varying aligned;
/* Key */
/* Key */

dcl 1 tran aligned,
2 no character (8) unaligned,
2 tran_no real fixed binary (17,0) aligned,
2 date_entered character (35) unaligned,
2 date_handled character (35) unaligned,
2 action character (16) unaligned,
2 pers character (22) unaligned,
2 proj character (9) unaligned,
2 text character (4800) varying aligned,
2 urgency character (16) varying aligned,
2 status character (16) unaligned,
2 holder character (12) unaligned;
/* Key */
/* Key */

dcl 1 tran_priv aligned,
2 no character (8) unaligned,
2 tran_no real fixed binary (17,0) aligned,
2 hold_pers character (22) unaligned,
2 hold_proj character (9) unaligned,
2 real_mr_fix character (8) unaligned,
2 priority character (4) unaligned,
2 date_task_list_mod character (35) unaligned;
/* Key */
/* Key */

```

```
dcl 1 unit aligned,  
2 unit character (16) unaligned, /* Key */  
2 manager character (22) unaligned,  
2 at character (32) unaligned,  
2 date_updated character (35) unaligned;  
  
dcl 1 user aligned,  
2 pers character (22) unaligned, /* Key */  
2 proj character (9) unaligned, /* Index */  
2 at character (32) unaligned, /* Key, Index */  
2 name character (40) varying aligned,  
2 phone character (32) varying aligned,  
2 address character (100) varying aligned,  
2 editor character (72) varying aligned,  
2 all_new character (3) unaligned,  
2 dp_mail character (6) unaligned,  
2 dp_dest character (24) unaligned,  
2 dp_head character (64) unaligned,  
2 date_updated character (35) unaligned,  
2 date_checked character (35) unaligned,  
2 no_tr_entered real fixed binary (17,0) aligned,  
2 no_tr_info_added real fixed binary (17,0) aligned;  
  
/* END of tr_log.incl.pl1 *****/
```

```

*****
* RRCID tr_log.incl.pl1
*   created: 07/07/79  2324.7 mst Wed
*   by: create_mrd_sdm_include (1.2)
*
* Data model >udd>sm>TP>tr_log
*   created: 07/07/79  0041.6 mst Tue
*   version:
*   by: Alvarado,SysMaint,a
***** */

```

```

dcl 1 fix aligned,
    2 no character (8) unaligned,
    2 date character (35) unaligned,
    2 text character (4800) varying aligned;
/* Key */

dcl 1 cause aligned,
    2 no character (8) unaligned,
    2 date character (35) unaligned,
    2 text character (4800) varying aligned;
/* Key */

dcl 1 user aligned,
    2 user character (22) unaligned,
    2 prof character (9) unaligned,
    2 at character (32) unaligned,
    2 name character (40) varying aligned,
    2 phone character (32) varying aligned,
    2 address character (100) varying aligned,
    2 editor character (72) varying aligned,
    2 all_new character (3) unaligned,
    2 dp_mail character (6) unaligned,
    2 dp_dest character (24) unaligned,
    2 dp_head character (64) unaligned,
    2 date_updated character (35) unaligned,
    2 date_checked character (35) unaligned,
    2 no_tr_entered real fixed binary (17,0) aligned,
    2 no_tr_info_added real fixed binary (17,0) aligned;
/* Key */
/* Index */
/* Key, Index */

dcl 1 test_case aligned,
    2 no character (8) unaligned,
    2 proc character (4800) varying aligned;
/* Key */

dcl 1 affected aligned,
    2 no character (8) unaligned,
    2 affected_no real fixed binary (17,0) aligned,
    2 area character (32) unaligned,
    2 topic character (32) unaligned;
/* Key */
/* Key */
/* Index */
/* Index */

dcl 1 bypass aligned,
    2 no character (8) unaligned,
    2 date character (35) unaligned,
    2 text character (4800) varying aligned;
/* Key */

```

```
dcl 1 comment aligned,  
  ? no character (8) unaligned, /* Key */  
  ? cor_no real fixed binary (17,0) aligned, /* Key */  
  ? date character (35) unaligned,  
  ? text character (4800) varying aligned;  
  
dcl 1 dev aligned,  
  ? pers character (22) unaligned, /* Key */  
  ? proj character (9) unaligned,  
  ? at character (32) unaligned, /* Key, Index */  
  ? name character (47) varying aligned,  
  ? phone character (32) varying aligned,  
  ? address character (100) varying aligned,  
  ? group character (16) unaligned, /* Index */  
  ? editor character (32) varying aligned,  
  ? all_new character (3) unaligned,  
  ? dp_mail character (6) unaligned,  
  ? dp_dest character (24) unaligned,  
  ? dp_head character (64) unaligned,  
  ? date_updated character (35) unaligned,  
  ? date_checked character (35) unaligned,  
  ? no_fr_answered real fixed binary (17,0) aligned,  
  ? no_fr_info_added real fixed binary (17,0) aligned;  
  
dcl 1 group aligned,  
  ? group character (16) unaligned, /* Key */  
  ? leader character (22) unaligned,  
  ? at character (32) unaligned,  
  ? unit character (16) unaligned,  
  ? date_updated character (35) unaligned;  
  
dcl 1 related aligned,  
  ? no character (8) unaligned, /* Key */  
  ? rel_no real fixed binary (17,0) aligned, /* Key */  
  ? related_to character (16) unaligned; /* Index */
```

```

dcl 1 report aligned,
  2 no character (8) unaligned, /* Key */
  2 type character (14) unaligned, /* Index */
  2 mr_found character (8) unaligned, /* Index */
  2 mr_first character (8) unaligned, /* Index */
  2 mr_fix character (8) unaligned, /* Index */
  2 system_rep character (22) unaligned, /* Index */
  2 site character (32) unaligned, /* Index */
  2 pers character (22) unaligned, /* Index */
  2 proj character (9) unaligned,
  2 summary character (256) varying aligned,
  2 symptom character (9600) varying aligned,
  2 urgency character (16) varying aligned,
  2 holder character (12) unaligned, /* Index */
  2 status character (16) unaligned, /* Index */
  2 date_entered character (35) unaligned, /* Index */
  2 date_mod character (35) unaligned, /* Index */
  2 affected_no real fixed binary (17,0) aligned,
  2 rel_no real fixed binary (17,0) aligned,
  2 tran_no real fixed binary (17,0) aligned,
  2 test_path_no real fixed binary (17,0) aligned,
  2 com_no real fixed binary (17,0) aligned,
  2 fields bit (36) unaligned;

dcl 1 report_priv aligned,
  2 no character (8) unaligned, /* Key */
  2 hold_pers character (22) unaligned, /* Index */
  2 hold_proj character (9) unaligned,
  2 real_mr_fix character (8) unaligned, /* Index */
  2 priority character (4) unaligned, /* Index */
  2 date_task_list_mod character (35) unaligned; /* Index */

dcl 1 responsible aligned,
  2 area character (32) unaligned, /* Key */
  2 topic character (32) unaligned, /* Key */
  2 pers character (22) unaligned, /* Key, Index */
  2 at character (32) unaligned, /* Key */
  2 interest character (12) unaligned, /* Index */
  2 date_updated character (35) unaligned;

dcl 1 site aligned,
  2 site character (32) unaligned, /* Key */
  2 release character (8) unaligned,
  2 primary_system_rep character (22) unaligned,
  2 date_updated character (35) unaligned,
  2 date_checked character (35) unaligned;

dcl 1 support aligned,
  2 no character (8) unaligned, /* Key */
  2 materials character (100) varying aligned;

dcl 1 system aligned,
  2 area character (32) unaligned, /* Key */
  2 topic character (32) unaligned, /* Key, Index */
  2 group character (16) unaligned, /* Index */
  2 date_updated character (35) unaligned;

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dcl 1 svstem_rep aligned,
  2 pers character (22) unaligned, /* Key */
  2 proj character (9) unaligned,
  2 at character (32) unaligned, /* Key */
  2 site character (32) unaligned, /* Index */
  2 name character (40) varying aligned,
  2 phone character (32) varying aligned,
  2 address character (100) varying aligned,
  2 editor character (32) varying aligned,
  2 all_new character (3) unaligned,
  2 do_mail character (6) unaligned,
  2 do_dest character (24) unaligned,
  2 dp_head character (64) unaligned,
  2 date_updated character (35) unaligned,
  2 date_checked character (35) unaligned,
  2 no_tr_entered real fixed binary (17,0) aligned,
  2 no_tr_info_added real fixed binary (17,0) aligned;

dcl 1 test_path aligned,
  2 no character (8) unaligned, /* Key */
  2 test_path_no real fixed binary (17,0) aligned, /* Key */
  2 test_path character (168) varying aligned;

dcl 1 tran aligned,
  2 no character (8) unaligned, /* Key */
  2 tran_no real fixed binary (17,0) aligned, /* Key */
  2 date_entered character (35) unaligned,
  2 date_handled character (35) unaligned,
  2 action character (16) unaligned,
  2 pers character (22) unaligned,
  2 proj character (9) unaligned,
  2 text character (400) varying aligned,
  2 urgency character (16) varying aligned,
  2 status character (16) unaligned,
  2 holder character (12) unaligned;

dcl 1 tran_priv aligned,
  2 no character (8) unaligned, /* Key */
  2 tran_no real fixed binary (17,0) aligned, /* Key */
  2 hold_pers character (22) unaligned,
  2 hold_proj character (9) unaligned,
  2 real_mr_fix character (8) unaligned,
  2 priority character (4) unaligned,
  2 date_task_list_mod character (35) unaligned;

dcl 1 unit aligned,
  2 unit character (16) unaligned, /* Key */
  2 manager character (22) unaligned,
  2 at character (32) unaligned,
  2 date_updated character (35) unaligned;

/* END of tr_log.incl.pl1 *****/

```