Configuring server advanced security (optional)

System programmers typically configure advanced security during Accelerator Loader server customization. The Accelerator Loader server provides protection for its resources by using RACF classes, Top Secret classes, and ACF2 generalized resource rules.

The overall RACF class (or resource type for ACF2) for the server is specified with the configuration parameter `RESOURCETYPE`. This parameter is located in data set *hlq*.SHLVEXEC member *hlvid*IN00, where *hlvid* represents the name of the Accelerator Loader server started task that was customized by using Tools Customizer. If a value is not specified, `RESOURCETYPE` defaults to NON (none), which disables all product authorization checking.

If authorization checking is disabled, any user with a valid TSO user ID can access the product ISPF interface, where they are fully authorized to perform the functions that are provided by the interface.

To enable authorization checking, change the value of `RESOURCETYPE` to HLV:

```
"MODIFY PARM NAME(RESOURCETYPE) VALUE(HLV)"
```

The following table describes the resources that are protected by the product security mechanism.

Note: You cannot modify the resource names.

Name	Description
ADA.ADABAS-file-name	Access to an ADABAS file name.
ADAxxxxx.FILyyyyy	Access to an ADABAS file ID number.
ATHZOOM	Access to server trace authorization event PF4 Zoom information.
GLOBALS	Access to global variables.
PARMS	Access to the ISPF/SDF parameter display.

Configuring security access to Adabas data (optional)

Configure security to provide access to Adabas.

Procedure

Edit and submit one of the following jobs, which are in the *hlq*.CNTL*hlq*.CNTL library:

- HLVRAADA is for IBM Resource Access Control Facility (RACF) security.
- HLVA2ADA is for CA Access Control Facility (ACF2) security.
- HLVTSADA is for CA Top Secret Security (TSS).

Virtual table (VTB) events

Virtual table events are generated by the SQL Engine when a table name is found in an SQL statement. These events are only generated if the **SEFVTBEVENTS** startup parameter is set to allow them. The rules allow for creating virtual tables dynamically from a DMF model map and for modifying certain table values.

No keywords are currently defined for VTB event procedures. Only the SQL engine schedules execution of enabled VTB event procedures for each table name in an SQL statement. VTB event procedures allow you to modify information in the DMF map. VTB event procedures make it possible to access multiple data sets using one DMF map by creating alias maps using a model map. Each alias map can specify a different data set name. The model map must be a map created using DMF.

Only the event procedure criterion value is allowed (and *must* be present).

To specify the header statement, use the following syntax:

```
/*VTB criterion
```

where:

- *criterion* is the criterion value for VTB event procedures. This *criterion* is one of the two event types shown in the following table.

Each VTB event procedure has access to server-wide global variables.

In addition, VTB-specific variables are created before the VTB event procedure is invoked. The variables that are created differ depending on the criterion.

Criterion	Variable	Contents	Data type
Any criterion	VTB.USER	The user area is passed between all event procedures that fire for the same event.	Read-write
Any criterion	VTB.OPTBSRID	The search id field contains the criterion used to fire the current event procedure. The format of the criterion is the string 'MODIFYTABLE.' followed by the table name found in the SQL statement.	Character Read-only

Criterion	Variable	Contents	Data type
Any criterion	VTB.OPTBTBNA	The 1 to 128-character table name from the SQL statement.	Character Read-only
MODIFYTABLE.*tablename*	VTB.OPTBMTNA	Set the model table name. This is the 1 to 50-character name of a DMF map that will be used to create a virtual table with the alias name *tablename*	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBMRDI	Disable MapReduce. Set this value to 1 to disable map reduce. Setting this value to 0 has no effect. VTB.OPTBMRDI and VTB.OPTBMREN are mutually exclusive.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBMREN	Enable MapReduce. Set this value to 1 to enable map reduce. Setting this value to 0 has no effect. VTB.OPTBMREN and VTB.OPTBMRDI are mutually exclusive.Enabling MapReduce requires that the MapReduce feature is enabled.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBMRTC	Set the number of MapReduce thread to use.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBFLAT	Flatten this table. Set this value to 1 to flatten the table. All columns and occurrences are returned in a single table Setting this value to 0 has no effect. VTB.OPTBFLAT and VTB.OPTBSUBT are mutually exclusive.	Character, write

Criterion	Variable	Contents	Data type
MODIFYTABLE.*tablename*	VTB.OPTBSUBT	Create subtables. Set this value to 1 to create subtables Columns that are part of an occurs or occurs-depending-on are returned as separate tables. Setting this value to 0 has no effect. VTB.OPTBFLAT and VTB.OPTBSUBT are mutually exclusive.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBCLSQ	Clear sequential data set map related fields. Set this value to 1 to clear the data set member name, pre-write exit name, and post read exit name. Setting this value to 0 has no effect. The fields are cleared before any other variables are processed.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBCLCI	Clear VSAMCICS map related fields. Set this value to 1 to clear the pre-write exit name, post read exit name, CICS file control table entry names, CICS connection name, and CICS transaction name fields. Setting this value to 0 has no effect. The fields are cleared before any other variables are processed. Clearing those fields will cause a VSAMCICS file to be processed as a native VSAM file.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBCLAD	Clear Adabas map related fields. Set this value to 1 to clear the database ID, file number, and subsystem name fields. Setting this value to 0 has no effect. The fields are cleared before any other variables are processed.	Character, write

Criterion	Variable	Contents	Data type
MODIFYTABLE.*tablename*	VTB.OPTBCLD2	Clear DB2 map related fields. Set this value to 1 to clear the table name, subsystem map name, table creator name, plan name, and user ID fields. Setting this value to 0 has no effect. The fields are cleared before any other variables are processed.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBCLIM	Clear IMS DB map related fields. Set this value to 1 to clear the segment name, DBD name, and PSB name fields. Setting this value to 0 has no effect.The fields are cleared before any other variables are processed.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBCLIV	Clear IMS view map related fields. Set this value to 1 to clear the segment name, DBD name, and PSB name fields. Setting this value to 0 has no effect. The fields are cleared before any other variables are processed.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBDSNA	Set the 1 to 44-character VSAM or sequential data set name.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBMEMA	Set the 1 to 8-character sequential data set member name.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBPRWR	Set the 1 to 8-character VSAM, VSAMCICS, or sequential data set pre-write exit name.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBPSRD	Set the 1 to 8-character VSAM, VSAMCICS, or sequential data set post read exit name.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBVSBF	Set the 1 to 8-character CICS file control table entry name for the base file.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBCONN	Set the 1 to 4-character CICS connection name.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBCITR	Set the 1 to 4-character CICS transaction name.	Character, write

Criterion	Variable	Contents	Data type
MODIFYTABLE.*tablename*	VTB.OPTBADBI	Set the Adabas database ID (DBID) number.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBAFNR	Set the Adabas file number.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBSUBS	Set the 1 to 4-character Adabas subsystem name.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBD2TN	Set the 1 to 128-character DB2 table name.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBD2SN	Set the 1 to 50-character DB2 subsystem map name.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBD2TC	Set the 1 to 8-character DB2 table creator ID.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBD2PN	Set the 1 to 8-character DB2 plan name.	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBIMSN	Set the 1 to 8-character IMS DB segment name	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBIMDN	Set the 1 to 8-character IMS DB DBD name	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBPSB	Set the 1 to 8-character IMS DB PSB name	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBIVSG	Set the 1 to 8-character IMS view segment name	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBIVDB	Set the 1 to 8-character IMS view DBD name	Character, write
MODIFYTABLE.*tablename*	VTB.OPTBIVPS	Set the 1 to 8-character IMS view PSB name	Character, write
GETALIASES.*tablename*	VTB.OPTBLIST	Set a list of 1 to 50-character table names that are the aliases of map *tablename*. There is room for up to 637, 50-character alias names separated by a blank. More alias names are possible if they are shorter.	Character, write

Filtering log entries by creating a profile

To view a subset of the log entries, create a profile. In the profile, you specify the criteria to use to select entries to display, and you select the specific events to display. The profile that you create affects only how you view log entries. Other users can create their own profiles.

Procedure

1. On the Server Trace panel, type `PROFILE` (with no operands) on the command line.
2. On the Trace Browse Profile panel, enter `criteria` in one or more of the following fields. If you enter multiple criteria, the values are joined with the logical AND operator. If you enter multiple values for a criterion, the values are joined with the logical OR operator. You can enter up to four values for each criterion.

Table 17. Profile filtering criteria

Criterion	Description
JOBNAME	Limits entries to those that contain the specified value in the JOBNAME column. You can use an asterisk (*) as a wildcard character.
USERID	Limits entries to those that contain the specified value in the USERID column. You can use an asterisk (*) as a wildcard character.
CONNECT	Limits entries to those that contain the specified value in the CONNECT column.
VCID	Limits entries to those that contain the specified value in the VCID (virtual connection ID) column.
HOST NAME	Limits entries to those that contain the specified value in the HOST NAME column. You can use an asterisk (*) as a wildcard character.
TCB	Limits entries to those that contain the specified value in the TCB column.
SSID	Limits entries to those that contain the specified value in the SSID column. You can use an asterisk (*) as a wildcard character.
XIDTOKEN	Limits entries to those that contain the specified value in the XIDTOKEN (XA token ID) column.
GTRIDTKN	Limits entries to those that contain a matching GTRIDTKN (global transaction ID).
CONVTKN	Limits entries to those that contain a matching CONVTKN (conversation token ID).
MSGORIGIN	Limits entries to those that contain a matching MSGORGIN (message origin). You can use an asterisk (*) as a wildcard character. Use the following format to enter the values: *SYSIDALS_SSIDSISID* where: • *SYSID* is the system ID. • *ALS_SSID* is the Accelerator Loader server subsystem ID. • *SISID* is the instrumentation server ID.

3. Enter `Y` or `N` to include or exclude the following specific types of events from the result set:

Table 18. Profile filtering events

Event	Description
ABN	Abend entries.
ADA	Adabas entries.
APM	APPC/MVS entries.
ATH	Authorization entries.
BKR	ACI broker entries.
CMD	Command entries.
CPG	C program entries.
DET	Detach entries.
DIS	Disable entries.
ECI	CICS EXCI entries.
ENA	Enable entries.
EXC	Exception entries.
FIL	File entries.
GLV	Global variable entries.
IMS	IMS entries.
ITC	Interlink TCP/IP entries.
MFL	MicroFlow (MFL) entries.
MQS	MQ message entries.
OTC	IBM OE sockets TCP/IP entries.
OTM	IMS/OTMA entries.
PUB	Accelerator Loader server z/Events entries.
RPC	RPC entries.
RRS	RRS entries.
RSF	RRSAF entries.
SIS	Instrumentation Server entries.
SQL	SQL entries.
SOM	Security Optimization Management entries.
SQM	SQM entries.
SSL	SSL entries.
STG	Storage alteration entries.
STR	System trace entries.
TOD	Time-of-day entries.
TSO	TSO entries.
TXT	Product initialization, termination, and general execution entries.
TYP	TYP entries.
WLM	Workload Manager entries.
WWW	WWW entries.

Table 18. Profile filtering events (continued)

Event	Description
XCF	Coupling Facility entries.
XTX	Extended text entries.
ZSR	Services entries.
6.2	LLU 6.2 entries.

4. Press **Enter** to save the profile.

Table 24. Subtype 13 Record Information (continued)

Offset	Field Name	Field Subtype or Value	Description
541	SM13SQCD	F	SQL CODE
545	SM13ABCD	F	ABEND CODE
549	SM13STNM	F	STATEMENT NUMBER
553	SM13STTY	F	STATEMENT TYPE

Enabling Subtype 17 Records

Subtype 17 Records are written at session termination whenever the session has accessed an Adabas database. There is one record that is written for each Database ID (DBID) referenced and it contains counts of the Adabas commands that are issued against the database.

Procedure

1. In data set *hlq*.SHLVEXEC, locate member *hlvid*IN00, where *hlvid* represents the name of the Accelerator Loader server started task that was customized by using Tools Customizer.
2. Add the following ADABASDBIDSMF parameter:

   ```
   "MODIFY PARM NAME(ADABASDBIDSMF) VALUE(YES)"
   ```

   Where ADABASDBIDSMF causes one SMF record to be written per DBID accessed at the end of each session. The records contain command usage statistics.

SMF Subtype 17: ADABAS Command by DBID Records

The following table provides subtype 17 record information.

Table 25. Subtype 17 Record Information

Offset	Field Name	Field Subtype or Value	Description
1	SMFHFG	BL1	Header flag byte: • X'10' = MVS/ESA 4 • X'08' = MVS/XA • X'04' = MVS/ESA • X'02' = VS2
2	SMFHRCTY	BL1	Record Type
3	SMFHTIME	BL4	Record written time (TIME BIN)
7	SMFHDATE	PL4	Record written date (0CYYDDDF)
11	SMFHSYID	CL4	System identification (SMFID)
15	SMFHSSID	CL4	Subsystem ID (*hlvid*, where *hlvid* represents the name of the Accelerator Loader server started task that was customized by using Tools Customizer)
19	SMFHSUTY	BL2	Record subtype
21	SMFHVRCD	CL8	Accelerator Loader server version code
37	SM17SMID	CL4	Host system SMF identification
41	SM17PDSS	CL4	Product subsystem NAME

Table 25. Subtype 17 Record Information (continued)

Offset	Field Name	Field Subtype or Value	Description
45	SM17ID	CL8	Connection ID
53	SM17LID	CL8	Logon user ID
61	SM17DBID	H	ADABAS identifier (DBID)
65	SM17A1	F	A1 COUNT
69	SM17BT	F	BT COUNT
73	SM17C1	F	C1 COUNT
77	SM17C3	F	C3 COUNT
81	SM17C5	F	C5 COUNT
85	SM17E1	F	E1 COUNT
89	SM17ET	F	ET COUNT
93	SM17HI	F	HI COUNT
97	SM17L1	F	L1 COUNT
101	SM17L4	F	L4 COUNT
105	SM17L2	F	L2 COUNT
109	SM17L5	F	L5 COUNT
113	SM17L3	F	L3 COUNT
117	SM17L6	F	L6 COUNT
121	SM17L9	F	L9 COUNT
125	SM17LF	F	LF COUNT
129	SM17N1	F	N1 COUNT
133	SM17N2	F	N2 COUNT
137	SM17RC	F	RC COUNT
141	SM17RE	F	RE COUNT
145	SM17RI	F	RI COUNT