

NORTHWEST REGIONAL DATA CENTER

NWRDC'S KOMAND HISTORY DATA RETRIEVAL AND REPORTING SYSTEM

What data is available, how to get it and what can be done with it.

10/20/2008

This document describes the technical aspects of the data retrieval and reporting system provided by the Northwest Regional Data Center.

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SYSTEM DOCUMENTATION

Performance and billing data is available for all the interactive and batch processes available through the NWRDC. That data is available in daily and monthly collections:

- CICS
- DB2
- BATCH and TSO
- SHADOW DIRECT
- SHADOW WEB

Billing data is available for all other costs centers associated with running at the NWRDC and is available in monthly collections.

- DASD by the pack
- DASD by the Data Set
- Tape by volume
- Tape Underutilization Fee
- Multi-Session IDs
- Server Hosting Services
- Miscellaneous
 - JES Nodes
 - Data Circuits
 - Control/M tasks

Detail Data vs. Summary Data

Most of the data presented here is in the detail category; one record for one event. That event may be a CICS transaction on a given day or a particular tape volume charge for the month.

One collection (**Summary Data**) contains no detail data. Everything is summarized to the account, type of charge (debit code) and the Logon-id level. For example, there is one record for all the CICS transactions charged against a given logon id. There is one record for all the three year old cartridge tapes charged against a given logon id and so on. Charges of all types are presented together in a single daily or monthly collection.

The EXTRACT Process

The access to this performance and billing data is a secure batch process. ACF2 controls the extent of all data retrievals to ensure all appropriate data privacy.

NWRDC provides a batch procedure (PROC) for each type of data to be extracted.

All performance and billing data **MUST** be extracted using either one of the PROCs provided or a copy of that JCL.

The name of the PROC determines the type of data to be extracted.

The "SELECT" parameter is required and determines the extent of the data to be extracted. Additional parameters detail the time frame of the extracted data.

EXTRACT PROCEDURES AND THEIR PARAMETER MATRIX

EXTRACT PROC	DATA TYPE PROCESSED	SELECT = 'xxx'	GEN=nn 0 is Default	MTD=YES	MONTH=nn and YEAR=nnnn
KMDECICS	CICS	R	O	X	O
KMDEDB2	DB2	R	O	O	O
KMDEDISK	DASD by the pack	R	X	X	O
KMDEDSNS	DASD by the data set	R	X	X	O
KMDEJOBS	JOB and TSO	R	O	O	O
KMDEMISC	Miscellaneous	R	X	X	O
KMDEMULT	Multisession	R	X	X	O
KMDESDIR	Shadow Direct	R	O	O	O
KMDESERV	Non-mainframe Servers	R	X	X	O
KMDESUMM	Summary Data	R	O	O	O
KMDESWEB	Shadow Web	R	O	O	O
KMDETAPE	Tape Storage	R	X	X	O
KMDEUNDR	Underutilized Tape	R	X	X	O
KMDECOPY	Copy selected data to a permanent data set	X	X	X	X
KMDEDEL	Delete the internal selection temporary data set	X	X	X	X

R	Required	O	Optional	X	Not permitted
---	----------	---	----------	---	---------------

NOTE: several steps with condition code 4 are expected with each execution of the extract procedures.

PARAMETERS COMMON TO THE EXTRACT PROCEDURES

SELECT	<p>Identifies the data to be extracted. It may be 3 to 32 characters long.</p> <p>This parm is usually set to the three character institution code "SELECT=WAK" but may be used to further limit the extracted data via a longer selection setting. Any portion of the NWRDC Account String may be specified:</p> <table border="1" data-bbox="527 491 1073 764"> <tr> <td>Institution Code</td> <td>3 characters</td> </tr> <tr> <td>Customer ID</td> <td>5 characters</td> </tr> <tr> <td>Account Number</td> <td>4 characters</td> </tr> <tr> <td>Group Code</td> <td>4 characters</td> </tr> <tr> <td>Sub-Group Code</td> <td>4 characters</td> </tr> <tr> <td>Project (inactive)</td> <td>4 characters</td> </tr> <tr> <td>Logon-id</td> <td>8 characters</td> </tr> </table> <p>Any field that is not part of the selection is set to an asterisk. To limit the selection to a particular logon id XXYYYYY from institution ZZZ would look like: KEY = IIICCCCAAAGGGSSSSPPPLLLLLLLL SELECT=' ZZZ*****XXYYYYY'</p>	Institution Code	3 characters	Customer ID	5 characters	Account Number	4 characters	Group Code	4 characters	Sub-Group Code	4 characters	Project (inactive)	4 characters	Logon-id	8 characters
Institution Code	3 characters														
Customer ID	5 characters														
Account Number	4 characters														
Group Code	4 characters														
Sub-Group Code	4 characters														
Project (inactive)	4 characters														
Logon-id	8 characters														
GEN	<p>The daily data is kept on a generation data set (GDG). GEN species the relative generation desired. Specify a number and the proc will add the appropriate negative sign. For example say GEN=2 and the proc will specify (-2). this parm defaults to 0, which represents the most recent day's processing.</p>														
MONTH	<p>Specify the two digit month. This parameter must be paired with the YEAR parameter.</p>														
MTD	<p>Specify "YES" if a month to data selection is needed. If MTD is specified, the only other parameter permitted is SELECT</p>														
YEAR	<p>Specify the four digit year. This parameter must be paired with the MONTH parameter.</p>														

What can be done with extracted data

The extract procedures will build a temporary data set containing the extracted data.

That temporary data set can be

- Stacked with other extracted data of the same type
- Saved as a user file
- Passed to a NWRDC provided report program
- Passed to a customer provided report program
- Re-formatted and sent to a work station.

GETTING DAILY DATA

If you want the most recent daily data (CICS, DB2, JOB/TSO, Shadow Direct, Shadow Web, Summary data) execute the extract PROC with just the SELECT parameter.

```
//SELECT EXEC KMDECICS,SELECT=NWR
```

If you want a recent day's detail data, specify the relevant GEN parameter in addition to the SELECT parameter.

```
//SELECT EXEC KMDEJOBS,SELECT=NWR,GEN=3
```

GETTING MONTH-TO-DATE DATA

If you want to process a partial months data (where that is supported) specify MTD=YES.

```
//SELECT EXEC KMDESUMM,  
//          SELECT=NWR,MTD=YES
```

GETTING A MONTHS DATA

If you want to process an entire month's data specify both the MONTH and YEAR parameters.

```
//SELECT EXEC KMDEDB2,  
//          SELECT=NWR,MONTH=10,YEAR=2007
```

SAVING EXTRACTED DATA

If you want the extracted data to be saved in a permanent data set, you can execute the KMDECOPY procedure
For example

```
//EX1 EXEC KMDECICS,SELECT=iii  
//EX2 EXEC KMDECOPY  
//SYSUT2 DD DSN=your.data.set.name,  
//          UNIT=SYADA,DISP=(,CATLG,DELETE),  
//          SPACE=(CYL,(xx,xx)),RLSE)
```

STACKING EXTRACT RUNS

Data may be stacked by multiple executions of the extract procedures; the data will be combined.

For example:

```

//EX1 EXEC KMDECICS,SELECT=WAL
//EX2 EXEC KMDECICS,SELECT=WAK
OR
//EX1 EXEC KMDEDB2,
// SELECT='NWR*****NWXXX'
//EX2 EXEC KMDEDB2,
// SELECT='NWR*****NWYYY'

```

Be very sure never to stack extract data from different collections. Some very strange reports can come out such combinations.

UNSTACKING EXTRACT RUNS

Those who do not want the data combined must execute the KMDEDEL procedure between the extract procedures.

For example

```

//EX1 EXEC KMDECICS,SELECT=WAL
//EX2 EXEC KMDECOPY
//SYSUT2 DD DSN=your.data.set.name1,
// UNIT=SYADA,DISP=(,CATLG,DELETE),
// SPACE=(CYL,(xx,xx)),RLSE)
//DEL EXEC KMDEDEL
//EX1 EXEC KMDECICS,SELECT=WSH
//EX2 EXEC KMDECOPY
//SYSUT2 DD DSN=your.data.set.name2,
// UNIT=SYADA,DISP=(,CATLG,DELETE),
// SPACE=(CYL,(xx,xx)),RLSE)

```


NWRDC PROVIDED REPORTS

We offer a series of reports tailored to each type of data type available.

Generally speaking, we have detail, summary and highest cost reports.

Most reports have the capability for you to add selection or exclusion code to limit the data in the report.

Some institutions have only one account code. Some have several. Some of the provided reports will combine multiple accounts to show an institution wide view, others will separate multiple accounts. If your institution only has one account, those different reports will show the same data.

REPORT PROCEDURES AND THIER PARAMETER MATRIX

REPORT PROC	DATA TYPE PROCESSED	REPORT	KMDIN	MSELECT
KMDRCICS	Process CICS data	R	O	O
KMDRDB2	Process DB2 data	R	O	O
KMDRDISK	Process DASD data	R	O	X
KMDRDSNS	Process Data Set Name data	R	O	X
KMDRJOB	Process JOB and TSO data	R	O	O
KMDRMISC	Process miscellaneous	R	O	X
KMDRMULT	Process Multisess	R	O	X
KMDRSDIR	Process Shadow Direct data	R	O	O
KMDRSERV	Process Server Hosting data	R	O	O
KMDRSUMM	Process account summary data	R	O	O
KMDRSWEB	Process Shadow Web data	R	O	O
KMDRTAPE	Process Tape data	R	O	X
KMDRUNDR	Process underutilized tape data	R	O	X
KMDRCOPY	Copy report data	X	X	X
KMDRDEL	Delete report data	X	X	X
KMDRPRNT	Print temporary data set	See	details	below

R	Required	O	Optional	X	Not permitted
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PARAMETERS COMMON TO MOST OF THE REPORT PROCEDURES

REPORT	Specify the name of the desired report. See the next section for options
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KMDIN	Specify the data set name of the file that was previously save in a data extract run with the KMDECOPY procedure
MSELECT	Specify the data set name of the Easytrieve MACRO PDS that contains code to be incorporated into the desired report program

PROVIDED REPORTS

CICS (KMDRCICS) REPORTS

DAYTRSUM	Transactions are summarized by day and transaction id. This report may be most useful when combined with some transaction code selection routine and a month-to-day or monthly data source. See quick-start guide for an example..	The addition of selection or exclusion code supported
DETAIL	CICS transactions are shown in region, date and time sequence	The addition of selection or exclusion code supported.
TOP50	The 50 most expensive CICS transactions are shown	
TRANSUMM	Transactions are summarized, by transaction id.	The addition of selection or exclusion code supported.
UIDSUMM	CICS transactions are summarized by region and Logon Ids.	The addition of selection or exclusion code supported.

DB2 (KMDRDB2) REPORTS

APPLSUMM	DB2 Transactions are summarized by the invoking application name.	The addition of selection or exclusion code supported
CORRSUMM	DB2 Transactions are summarized by the invoking application and correlation id.	The addition of selection or exclusion code supported.
DETAIL	DB2 transactions are shown in date and time sequence	The addition of selection or exclusion code supported.
TOP50	The 50 most expensive DB2 transactions are detailed	

TOP50CPU	The 50 most CPU consumptive DB2 transactions are detailed. Since much of DB2's charges are included in the cost of the invoking application, this report can help you zero in on just the DB2 CPU cycles being consumed.	
UIDDET	DB2 transactions are shown in user id sequence.	The addition of selection or exclusion code supported
UIDSUMM	DB2 Transactions are summarized by the invoking logon id.	The addition of selection or exclusion code supported

DISK by the PACK (KMDRDISK) REPORTS

DETAIL	DASD charges are shown	
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DISK by the DATA SET (KMDRDSNS) REPORTS

DETAIL	DASD charges are shown	
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JOB and TSO sessions (KMDRJOBS) REPORTS

ACLIDDET	All job and TSO sessions are detailed in Account, Logon ID and time sequence	The addition of selection or exclusion code supported.
CLASS	All jobs in the various charge adjusted classes (V, E, G and C) are shown.	The addition of selection or exclusion code supported.
CLASSEV	All class E and V jobs are shown	The addition of selection or exclusion code supported.
CLASSSUM	A summary of all the classes use by your jobs is provided.	The addition of selection or exclusion code supported.
COUNTS	A simple matrix of job types is presented.	The addition of selection or exclusion code supported.
DETAIL	All job and TSO sessions are detailed in date and time sequence	The addition of selection or exclusion code supported.
JOBNDDET	A detail report that is sorted by Job Name	The addition of selection or exclusion code supported.
JOBNSUMM	A summary report of the various Job Names showing counts and averages	The addition of selection or exclusion code supported.
JURDET	All job and TSO sessions are detailed in accounting	The addition of selection or exclusion code supported.

	generation sequence	
LIDDET	All job and TSO sessions are detailed in logon id sequence	The addition of selection or exclusion code supported.
LIDSUMM	A summary report of the various Logon Ids showing counts and averages	The addition of selection or exclusion code supported.
DAYJNSUM	Jobs are summarized by day and job name. This report may be most useful when combined with a job name selection routine and a month-to-day or monthly data source. See quick-start guide for an example.	The addition of selection or exclusion code supported
DAYLISUM	Jobs are summarized by day and Logon ID. This report may be most useful when combined with a Logon ID selection routine and a month-to-day or monthly data source. See quick-start guide for an example.	The addition of selection or exclusion code supported
TOP50	The 50 most expensive Jobs and TSO sessions are detailed	

Miscellaneous (KMDRMISC) REPORTS

DETAIL	All Miscellaneous charges are detailed	
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Multi-Session (KMDRMULTI) REPORTS

DETAIL	ALL Multi-Session charges are detailed	
--------	--	--

Shadow Direct (KMDRSDIR) REPORTS

CLNTSUMM	A summary report of all the names of the applications that invoked Shadow Direct.	The addition of selection or exclusion code supported.
DETAIL	Shadow Direct transactions are detailed in date and time sequence	The addition of selection or exclusion code supported.
TOP50	The 50 most expensive Shadow Direct transactions are detailed	

UIDSUMM	A summary report of all the Logon Ids that invoked Shadow Direct	The addition of selection or exclusion code supported.
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Off-mainframe Server (KMDRSERV) REPORTS

DETAIL	All off-mainframe server charges are detailed	
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Shadow Web (KMDRSWEB) REPORTS

DETAIL	Shadow Web transactions are detailed in date and time sequence	The addition of selection or exclusion code supported.
RULESUMM	A summary report showing all Shadow Direct event-names were used to invoke Shadow Web.	The addition of selection or exclusion code supported.
TOP50	The 50 most expensive Shadow Web transactions are detailed	
UIDSUMM	A summary report of all the Logon Ids that invoked Shadow Web	The addition of selection or exclusion code supported.

Summary Data (KMDRSUMM) REPORTS

ACDEBDET	For each account, this report will show you which Logon-ids have contributed to each Debit code.	The addition of selection or exclusion code supported.
ACDEBSUM	All Logon-ids are summarized to the Account and Debit Code level. You see one line per debit code per Account. All the debit codes for each account will be listed together.	The addition of selection or exclusion code supported.
ACGRPSUM	Accounts are summarized to the accounting group, sub-group and logon id level.	The addition of selection or exclusion code supported.
ACLIDDET	this report will show all the debit codes for each Logon-id sorted by account code	The addition of selection or exclusion code supported.
DEBDET	This report will show you which Logon-ids have contributed to each Debit code.	The addition of selection or exclusion code supported.

DEBSUM	All accounts and Logon-ids are summarized to the Debit Code level. You see one line per debit code per institution.	The addition of selection or exclusion code supported.
LIDDET	this report will show all the debit codes for each Logon-id	The addition of selection or exclusion code supported.
LIDSUM	This report will show a total charge per logon ID	The addition of selection or exclusion code supported.

Tape Charges (KMDRTAPE) REPORTS

AGEDET	All tape related charges are detailed sorted by descending age.	The addition of selection or exclusion code supported.
DSNDET	All tape related charges are detailed sorted by data set name.	The addition of selection or exclusion code supported.
LIDDET	All tape related charges are detailed sorted by Logon-id	The addition of selection or exclusion code supported.
VOLDET	All tape related charges are detailed sorted by volume serial.	The addition of selection or exclusion code supported.

Under-utilized Tape Charges (KMDRUNDR) REPORTS

ACDET	All under-utilized tape charges are shown in account sequence.	
DSNDET	All under-utilized tape charges are shown in Data Set Name sequence.	

What do to with report data

The data generated by one of the KMDRxxxx procedures can be:

- Sent to a printer via the KMDRPRNT procedure
- Report data can be saved as a data set with the KMDRCOPY procedure.
- Report data can be stacked with other report data

KMDRPRNT - Send Report data to a printer

Parameters:

CLASS	SYSOUT class (default is *)
FORMS	FORMS parameter associated with the

	CLASS parameter (no default)
COPIES	the number of copies that should be printed (default is 1)
FCB	Used to specify the various parameters available with the JES2 FCB parameter. (no default)

For example:

```
//PRINT EXEC KMDRPRNT ,SYSOUT=J ,FORM=STD ,COPIES=2
```

KMDRCOPY - Copy Report Data to a data set

This PROC has no parameters but requires a complete SYSUT2 DD statement.

```
//COPY EXEC KMDRCOPY
//SYSUT2 DD DSN=your.data.set.name,
//      DISP=( ,CATLG) ,UNIT=SYSDA,
//      SPACE=(CYL,(xx,xx) ,RLSE)
```

How to stack reports

More than one report can be run produced after data has been selected. Simply run as many KMDRxxxx executions as needed before the KMDRPRNT or KMDRCOPY step.

For example:

```
//SELECT EXEC KMDECICS ,SELECT=UCF ,MONTH=12 ,YEAR=2007
//REPORT EXEC KMDRCICS ,REPORT=TRANSUMM
//REPORT EXEC KMDRCICS ,REPORT=TOP50
//PRINT EXEC KMDRPRNT
```

KMDRDEL - How NOT to stack reports

The PROC KMDRDEL is used to delete the relevant temporary data set if report stacking is not desired.

```
//SELECT EXEC KMDECICS ,SELECT=UCF ,MONTH=11 ,YEAR=2007
//REPORT EXEC KMDRCICS ,REPORT=TRANSUMM
//REPORT EXEC KMDRCICS ,REPORT=TOP50
//PRINT EXEC KMDRPRNT
//DELETE EXEC KMDRDEL
//SELECT EXEC KMDECICS ,SELECT=UCF ,MONTH=10 ,YEAR=2007
//REPORT EXEC KMDRCICS ,REPORT=TRANSUMM
```

```
//REPORT EXEC KMDRCICS,REPORT=TOP50
//PRINT EXEC KMDRPRNT
```

How to customize the data included in the report

The sample reports are written in CA-Easytrieve and that language's MACRO support is used to allow you to specify which records are included in the report or to specify which records are not to be included in the report.

The MSELECT parameter is used to identify the PDS (PDSE) that contains the code that is to be added to the sample program. The member name included is the one that matches the name of the procedure being EXECuted..

The following examples illustrate typical inclusion and exclusion technique.

<pre>*INCLUSION EXAMPLE. ONLY RECORDS *FOR NWSLM WILL BE INCLUDED MACRO IF CICS-LOGON-ID = 'NWSLM' ELSE GO TO JOB END-IF CUSTOM-TITLE = 'NWSLM ONLY'</pre>	<pre>*EXCLUSION EXAMPLE. NO *NWSLM RECORDS ARE INCLUDED MACRO IF CICS-LOGON-ID = 'NWSLM' GO TO JOB END-IF CUSTOM-TITLE = 'ALL BUT NWSLM'</pre>
--	--

A complete example:

```
//ADDCODE EXEC PGM=IEBGENER
//SYSPRINT DD DUMMY
//SYSIN DD DUMMY
//SYSUT1 DD *
MACRO
IF CICS-TRANS-ID = 'GTXA' 'GT3F'
ELSE
    GO TO JOB
END-IF
CUSTOM-TITLE = '          - - GTXA AND GT3F ONLY - -'
END-MACRO
//SYSUT2 DD DISP=SHR,DSN=NW.SLM.KMD.MSELECT(KMDRCICS)
//*
//EXTRACT EXEC KMDECICS,SELECT=WAS,MONTH=01,YEAR=2008
//REPORT EXEC KMDRCICS,REPORT=DETAIL,
//      MSELECT=NW.SLM.KMD.MSELECT
//PRINT EXEC KMDRPRNT
```

The value provided in **CUSTOM-TITLE** will be printed as the third title line.

A pre-existing PDS member can also be re-utilized.

Assuming the data set YOUR.DATA.SET contains a member names KMDRDB2, the following JCL will produce a report that incorporates that member in the report program APPLSUMM

```
//REPORT EXEC KMDRDB2,REPORT=APPLSUM,  
//      MSELECT=YOUR.DATA.SET
```

Generating reports from a saved selection file:

The KMDECOPY procedure can be used to save extracted data into a sequential data set. That sequential data set can be named as the input to any of the KMDRxxxx procedures.

For example:

```
//REPORT EXEC KMDRCICS,REPORT=HIGH50,  
//      KMDIN=your.data.set.name  
//REPORT EXEC KMDRCICS,REPORT=TRANSUMM,  
//      KMDIN=your.data.set.name  
//PRINT EXEC KMDRPRNT
```