Fact Sheet

What is HSM Adminisaurus?

HSM Adminisaurus (HSA) is a consolidated DFSMShsm management tool, for the novice or the expert, which provides extensive reporting, comprehensive auditing, in-depth processing analysis, and simplified administrative functions for establishing and maintaining a healthy HSM environment. HSA allows proactive management to maximize storage utilization, optimize physical resources, minimize CPU cycles, and conserve time to ensure availability and business continuity.

HSA audits, interrogates, compiles reports, and provides error correction facilities on current and historical mission critical data managed within the HSM environment. HSA contains health analysis processing to save time and money by reducing the time and effort required to manage and maximize the contribution of HSM.

HSA's functionality can be further enhanced through Universal Data Manager (UDM)* to extend its capabilities and include:

- Alert Notification
- Automation
    - Monitoring
    - Reporting
    - Audits
    - Corrective actions

Why is HSM Adminisaurus necessary?

Under ordinary circumstances, understanding what HSM is doing and monitoring the health of the HSM environment is tedious. Administrators require years of experience in storage management with HSM before they can somewhat manage it. To interpret what functions of HSM are executing successfully takes hours of work. HSA greatly simplifies managing HSM by providing over thirty (30) pre-established quick scans to give insight into HSM's processing, overall health, and ability to store and retrieve data, thus expediting the overall learning curve, assessment, diagnosis, and resolution. Because every HSM environment is fluid, constantly changing, each

having its own unique set of challenges, HSA provides a wide range of customizable reports and analysis tools, from the simple to the complex, so the administrator can quickly create and implement solutions to improve productivity. With HSA's robust and easy-to-use interface, an administrator is empowered to identify problems and resolve them with very little effort.

Who is HSM Adminisaurus designed for?

HSA has been designed to be utilized in every HSM environment, whether small or extremely large with peta bytes of storage, by the aficionado and/or the novice. Accessible via its menus, HSA has a mix of analytical tools and detail reporting that storage administrators of all experience levels will find very useful. Whether looking for reports on CDS records or an in-depth summarization of failed activity, HSA gives storage administrators the critical information they need to manage HSM effectively and efficiently.

Additionally, any TSO user can use HSA to view and recover their own data from HSM, removing this burden from the storage administrator. HSA tailors its interface to the security level of the user accessing the product. If the user accessing HSA has full storage administrator authority to HSM, they will have full access to all HSA facilities. Otherwise, the user will be shown a limited set of reports and commands within HSA.

When should HSM Adminisaurus be used?

HSA audits, health reports, and other tools should be, and can be, scheduled on a regular basis to avoid any issues within the HSM environment, to ensure HSM's successful operation. Additionally, HSA should be utilized after any outage (such as the HSM address space abnormally ending), whenever HSM encounters an error (such as being unable to recall a data set), or any other time when HSM is unable to successfully complete a request.

HSM does not immediately report all errors that it encounters. Some problems can lie dormant for years and may not be discovered until a data set is needed for recall or recovery. With HSA, it is easy to detect and correct any problems within HSM and avoid bigger issues that may come later if problems aren't addressed in a timely manner.

How can HSM Adminisaurus save me money?

HSM, when managed properly, contributes to effective storage utilization and thereby reduces DASD costs by moving dormant data from faster and more expensive storage to less expensive mediums. However, when HSM is not routinely

governed, it can quickly go from keeping storage costs low to wasting valuable CPU cycles and storage resources.

HSA easily locates errors in HSM processing and can be used to establish solutions for eliminating those errors. It can also identify processing patterns and users who are unintentionally compromising HSM's ability to successfully manage the storage environment.

Therefore, with HSA, immediate savings can be found in identifying tape resources that HSM is not efficiently utilizing, reclaiming the underutilized, recycling the excessive number of tapes in use by HSM, and eliminating wasted CPU resources when HSM has gone rogue. Common findings include HSM not migrating data enough, or not at all, or being overly aggressive in migrating data, causing excessive recalls to occur.

What are some specifics of HSM Adminisaurus?

- Contains a wide range of reports to ease the burden of managing HSM.
    - Full set of CDS record reports displayed in an easy to read format.

```
CDS Records

MCD  - Migrated Data Sets
MCV  - Migration Volumes
MCB  - Backed Up Data Sets
MCB  - Backup Versions
MCC  - Backup Copy Data Sets
MCT  - Backup Volumes
TTOC - Tape Table of Contents
TTOC - Data Sets on Tape Volumes
MCA  - Alias Entries
MCL  - Changed Migration Data Sets
MCU  - Auth User Records
        Volume Free Space
        Needed
```

    - HSM activity reporting from log, PDA, or SMF sources to support any HSM configuration.

```
3.   DFSMShsm Logs

4.   DFSMShsm PDOs
5.   DFSMShsm SMF FSR Records
```

- Reports on HSM internals, such as queue contents, parameter settings, resource usage, etc. so you know what HSM is doing in real-time.

```
  2.  DFSMShsm Function Status
  3.  DFSMShsm Management Work Elements (MWE)
  4.  DFSMShsm ENQs
  5.  DFSMShsm Exits
  6.  DFSMShsm Host Memory Usage
  7.  DFSMShsm Host Active TCBs
  8.  Outstanding DFSMShsm WTORs

      DFSMShsm Internal Data

 11.  DFSMShsm CSA Limits
 12.  DFSMShsm Mounted Volumes
 13.  DFSMShsm Patches
 14.  DFSMShsm Host Maximum Subtasks
 15.  DFSMShsm Return/Reason Codes
 16.  DFSMShsm SETSYS Control Parameters
 17.  Class Transition Prediction
 18.  DFSMShsm Message Templates
 19.  Volume Statistics Reco
```

- Determining the overall health of HSM is made understandable using reports summarized by:
    - HSM action and return/reason codes
    - High level qualifier
    - Hourly trending
    - Job name
    - User id
    - Automatic function – migration, backup, dump, and recycle

```
Summary Information

DFSMShsm Text Message Summary
FSR Record Summary by RC/Reason
FSR Record Summary by Management Class
FSR Record Summary by Storage Class
FSR Record Summary by HLQ
FSR Activity Trends by Action
FSR Record Summary by Job Name
FSR Record Summary by User Id
Auto Migration Activity Summary
Auto Backup Activity Summary
Auto Dump Activity Summary
Recycle Activity Summary
```

- Eliminates and avoids HSM wasting resources or ineffectively managing the storage environment by using extensive health reporting. Problems areas such as:
    - Thrashing activity
    - Failures in HSM processing
    - CDS and data integrity
    - And much more…

```
Resource Usage

Thrashing Activity by Data Set Name
Thrashing Activity by Management Class Name
Thrashing Activity by Storage Group Name
Function Failures
Tapes in Failed Create Status
Tapes in Failed Recycle Status
Old Invalid Migrated Data Sets
Requests Taking Over 5 Minutes

Integrity

CDS Space Information
Migrated Data Sets Without Backups
CDS Backup Settings
CDS Backup Information
CDS Backup Activity Summary
DFSMShsm ENQs
DFSMShsm Host Memory Usage
    m Host
```

- A built-in health summary scan identifies current issues within HSM as well as detects instances where HSM should have processed data but didn't.

```
Health
Type       Count Description
--------   ----- ---------------------------------------
HLTH0002       0 Volumes NOT Meeting Migration Criteria
HLTH0003      11 Volumes With Excessive Migration Failure
HLTH0004      36 Volumes NOT Meeting Backup Criteria
HLTH0005       0 Volumes With Excessive Backup Failures
HLTH0006       1 Volumes NOT Meeting Volume Dump Criteria
HLTH0007       0 Volumes With Excessive Dump Failures
HLTH0008      87 Volumes NOT Meeting Threshold Values
HLTH0009       0 SDSP Incorrectly Defined
HLTH0010       0 SDSP Component   Reached High Threshold
    0011
               0 Tapes in Fai
HLTH0022       0 Tapes in Failed Create State
HLTH0023       2 Tapes Eligible for Recycle
HLTH0024    4663 Old Migration Level 1 Data Sets
HLTH0025    3854 Migrated Data Sets Without a Backup
HLTH0026       0 DFSMShsm Action Failures - CPU Wasted=0
HLTH0027       3 CDS Space
    0028      20 Storage Group Summary
               0 Limited             Functions
```

- Full CDS auditing and error fix facility to identify and correct issues within the HSM environment to ensure data availability. This includes both manual and

automatic fix capabilities provided to the user.

```
Error   Error
Type    Count Description
------  ----- -------------------------------------------
ERR003   861 MCD entry has no BCS entry
ERR009     5 MCD entry has BCS entry not cataloged to MIGRAT
ERR010 1585K Catalog entry has no MCD/MCA entry
ERR017    11 Missing TTOC record
ERR020     1 Missing MCV record
ERR021     1 Device type mismatch
ERR022     3 MCD entry is missing its corresponding MCA entry
ERR023     0 MCO entry is missing for MCD entry
ERR024    18 MCO entry has BCS entry not cataloged to MIGRAT
ERR025     0 MCA entry is missing for MCO record
ERR026     3 Missing MCL record
ERR027     1 Missing MCD record for MCO
             or invalid MCD record for MCA
             TOC record
```

- Full featured and customizable interface that supports both batch and ISPF, allowing users to perform any task in their preferred method.

```
FILTER    - Syntax= FILTER <no parameters available>
Change the filtering values used for gathering data.
SORT      - Syntax= SORT <column> <A or D>
Sort data on the report.
BATCH     - Syntax= BATCH <no parameters available>
Generate JCL to execute the selected report in batch
Any report customization will also be preserved so
the report matches the ISPF version.
GENCMD    - Syntax= GENCMD <member>
Generate a command from the data on the report.
Select rows to be processed by using the TAG line
primary command, then follow the steps to select
member to generate free form commands.
If no rows are tagged, then all rows will be proces
if no member name is provided, a list of available
 layed.  If a member name is provided and that
    rate the command data.
     Syntax= LAYOUTS <member>
          associated with the
```

- In all, over 200 reports and commands are available within HSA for the storage administrator to easily manage HSM.

```
         Alter Request Priority
  DSUM    Audit Results
 TOMENU DFSMShsm Automatic Function Activity
 SBCKST CDS Backup Settings
 SBCKUP CDS Backup Information
  DCL    Dump Classes (DCL)
  DSR    Daily Statistics (DSR) Summary
  DVL    Dump Volumes (DVL)
 SENQS  DFSMShsm CDS Users
 SMCB    Data Sets With Backups (MCB)
 SMCC    Backup Versions (MCC)
 SMCD    Migrated Data Sets (MCD)
 SMCT    Backup Volumes (MCT)
 SMCV    Managed Volumes (MCV)
 DSRECS  CDS Record Relationships
 DSSPACE CDS Space Information
 DSTTOC  Tape Volumes (TTOC)
 DSVSR   Volume Statistics (VSR) Summary
CPPLNDSD DASD Volume Capacity Planning
CPPLNTAP Tape Volume Capacity Planning
DATACLAS DFSMS Data Classes
DUMPDSNS Data Sets on Dump Volumes
HBACKDS  Backup a Data Set
HCANCEL  Cancel a Request
HDELETE  Delete a Migrated Data Set
HMIGRATE Migrate a Data Set
HOSTCLTR Class Transition Prediction
HOSTCSA  DFSMShsm CSA Limits
HOSTENQS DFSMShsm ENQs
HOSTEXIT DFSMShsm Exits
 OSTFUNC DFSMShsm Function Status
 OSTMWE  DFSMShsm Management Work Elements (MWE)
 OSTPTCH DFSMShsm Patches
 STSSYS DFSMShsm SETSYS Control Parameters
 STVSR  Volume Statistics Records (VSR) Summary
  TVSRF Volume Function Statistics (VSR)
   WTOR Outstanding DFSMShsm WTORs
       Recall a Data Set
```

INTERCHIP

Alte Landstr 25
85521 Ottobrunn
+49 - 89 - 99 14 99 0
http://www.interchip.de

*Universal Data Manager (UDM) is separately sold and licensed by Dino-Software.