



IBM Software Group

# New z/VM Systems and Storage Management Products from IBM

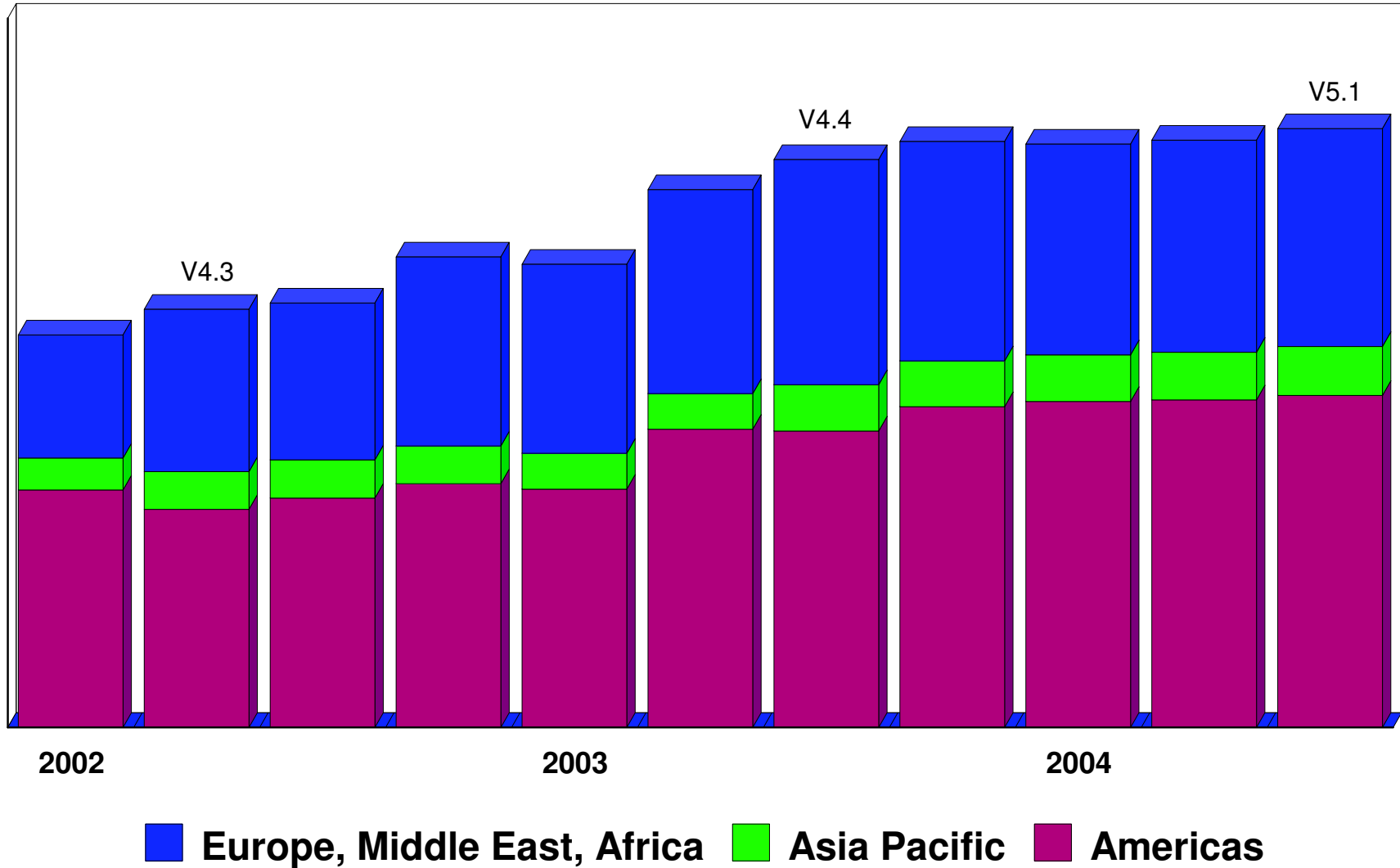
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# Agenda

- Overview
- Tape Manager for z/VM
- Backup and Restore Manager for z/VM
- Archive Manager for z/VM
- Operations Manager for z/VM
- Summary

# z/VM Market - Licenses and Releases/Versions



## Overall z/VM Marketplace

- **Traditional z/VM customers**
  - Longtime z/VM (VM/ESA, VM/SP) customers
  - Running business applications on z/VM
  - Also installing and using Linux on zSeries
  - Require full set of systems management solutions for z/VM and the Linux guests
  
- **Customers using z/VM to host Linux only**
  - New to z/VM
  - Understand the benefits of using z/VM to host Linux guests
  - Prefer Linux-based tools for systems management of Linux guests
  - Also need basic systems management tools for z/VM host
  
- **Total cost of ownership being scrutinized**
  - Automation
  - Efficiency and productivity
  - Software costs

# Tape Manager for z/VM

## ■ Tape management

- Define tapes in a catalog, including:
  - Free or used
  - Internal or external
  - Retention/expiration information
  - ATL or manual mount
- Group tapes together into pools
  - Ownership and access control
  - Media type
  - Include free and used tapes, with an optional link to a free pool

## ■ Device management

- Define devices
  - Dedicated or assignable
- Group devices together into device pools
  - ATL or manual mount
  - Any other grouping you choose (read only vs. write, location, etc.)

## ■ Product information

- Announced February 22, 2005
- GAed April 29, 2005

# Backup and Restore Manager for z/VM

## ■ Backup

- Full or incremental
- Source data on CMS minidisk, SFS, CKD images
- Target output to tape, twin tapes, disk
- Include/exclude minidisks or filepools
- Mask by filename

## ■ Restore

- Source data on tape or disk
- Target output to CMS minidisk, SFS, CKD DASD, virtual reader
- User or administrator requested
- Selection of data to restore
  - Individual files (with wildcard support), by minidisk, by volume, or by backup instance

## ■ Catalog

- Contains all metadata for backup jobs and files

## ■ Product information

- Announced February 22, 2005
- GAed April 29, 2005



# Archive Manager for z/VM

- **Archive - designed for users and administrators**
  - Manage disk space by moving infrequently used or accessed files to tape or other disk
  - Source data on CMS minidisk, SFS, CKD images
  - Select files by filename filetype filemode
    - Wildcard support for filename filetype, SFS directory (including all subdirectories, or not)
  - Target output (a parcel) to tape or disk
    - Always copied to staging disk first
- **Recall**
  - Source data on tape or disk
  - Target output to CMS minidisk, SFS, CKD DASD, virtual reader
  - User or administrator requested
  - Search for file(s) to recall
    - Wildcard support for filename and filetype
    - Selection by date
    - Can include other files in that archive parcel
- **Catalog**
  - Contains all metadata for archive jobs and files
- **Product information**
  - Announced August 23, 2005
  - GA August 26, 2005

# Operations Manager for z/VM

- **Monitor service machines**
  - Take predefined actions based on message text matching
  - Suppress messages
  - Highlight messages with color, blinking, etc.
- **Schedule events/actions**
- **Automate tasks with Terminal Device Manager**
- **Supports multiple installations of Operations Manager on one z/VM system**
  - Performance (monitoring a large number of consoles)
  - Separation of access control
- **Product information**
  - Announced August 23, 2005
  - GA August 26, 2005





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# Tape Manager for z/VM

Automation

Efficiency

Productivity

## Key Features

- **Dynamic sharing of existing tape devices between multiple images**
  - Devices must be assignable and not using multiuser attach feature of z/VM
- **Effective management of tapes in ATLs**
  - Granular access control
  - Expiration processing
  - Notification of low threshold for tape resource
    - Utilization information provided per pool
    - Report created and sent to administrator after expiration processing
- **Improved accuracy of manual tape processing**
  - Automatic request and notification of manual mounts
  - Internal label verification at attach/give and detach
  - Read/Write verification
- **Optional use of RMM as the tape catalog**
  - Tapes, access control, and retention managed by existing RMM catalog
  - Accessible via commands on z/VM

# Concepts and Terms

## ■ Tape pool

- Private pool
  - Logical group of physical tapes owned by a CMS userid
  - Free or used
  - Same media type, access control, and defaults
  - Internal or external
- System free pool
  - One (and only one) list of free tapes which are not in private pools

## ■ Device pool

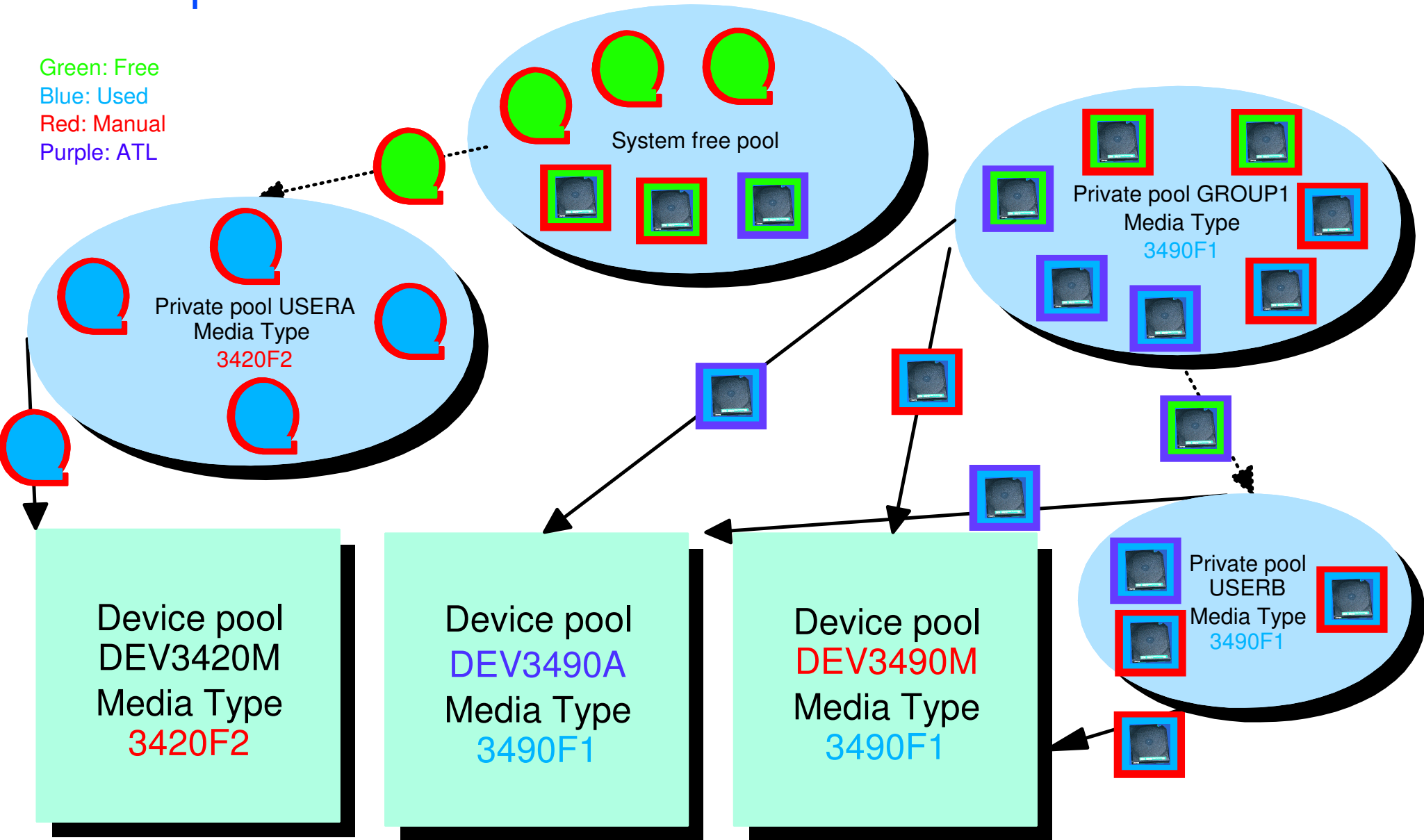
- Logical group of physical devices that can handle the same physical media
- Same mount attribute and media type
- Can define one or more
- One device can be in more than one pool
- Admin-specified name

## ■ Media type

- Admin defined name that associates devices in device pools with tapes in tape pools
- One media type can be associated with more than one device pool
- Example: 3590 drives on 1st floor vs. 3590 drives on 2nd floor

# Sample Pool Structure

Green: Free  
Blue: Used  
Red: Manual  
Purple: ATL



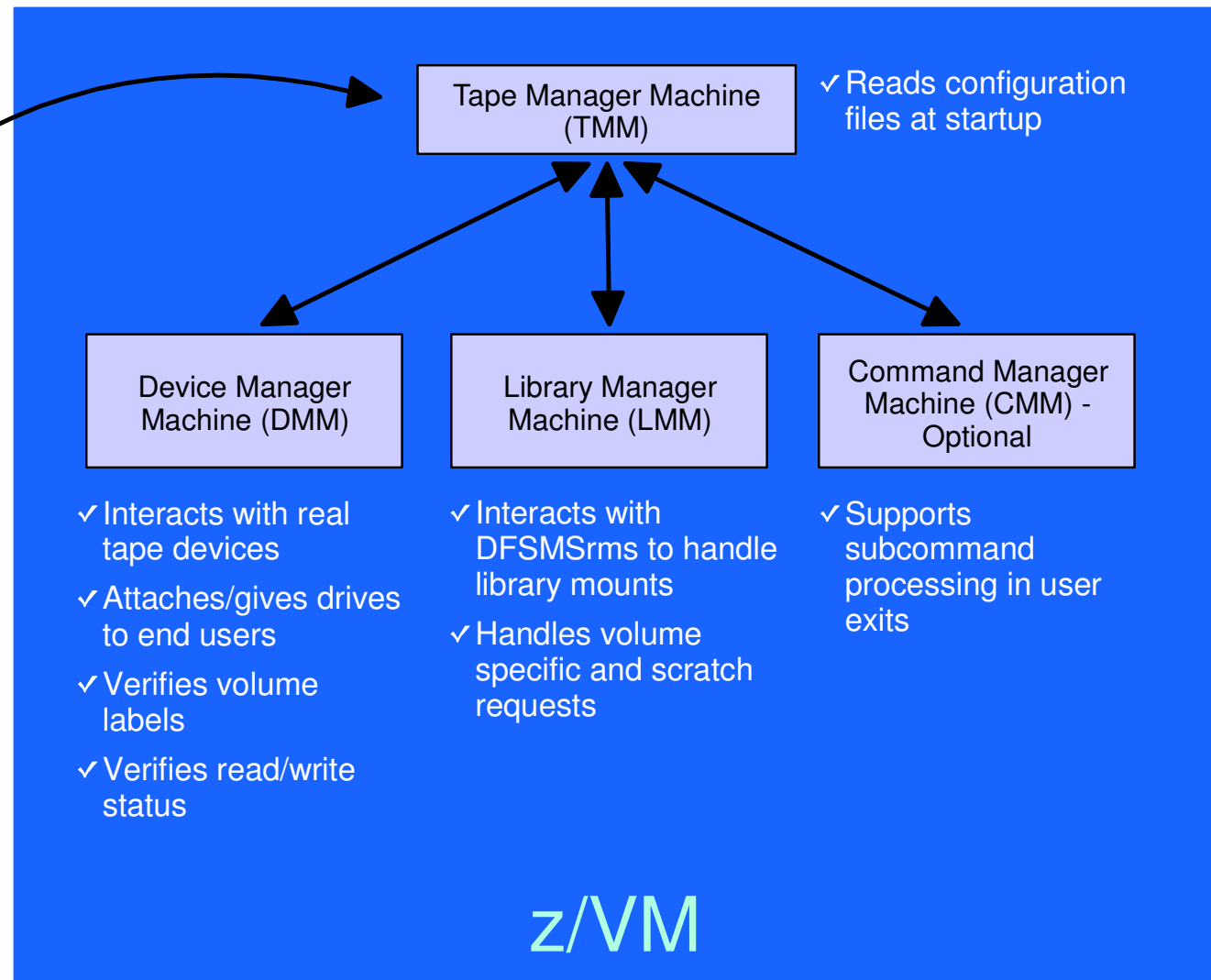
# Access Control

Authority	Modify Pool Attributes and Delete Pool	Modify Tape Attributes	Add/Delete Tapes to the Pool	Modify Tapes	Read Tapes	Tape Attributes Modified Only as a Byproduct of Other Commands	Use Tape Pool as a Free Pool
Sys Admin	✓	✓	✓			✓	
Pool Admin	✓	✓	✓	✓	✓	✓	
Tape			✓	✓	✓	✓	
Write				✓	✓	✓	
Read					✓	✓	
None							
Free							✓

- ▶ Defined using POOL commands
- ▶ Can set defaults for each pool, then add or restrict access via specific user authorization

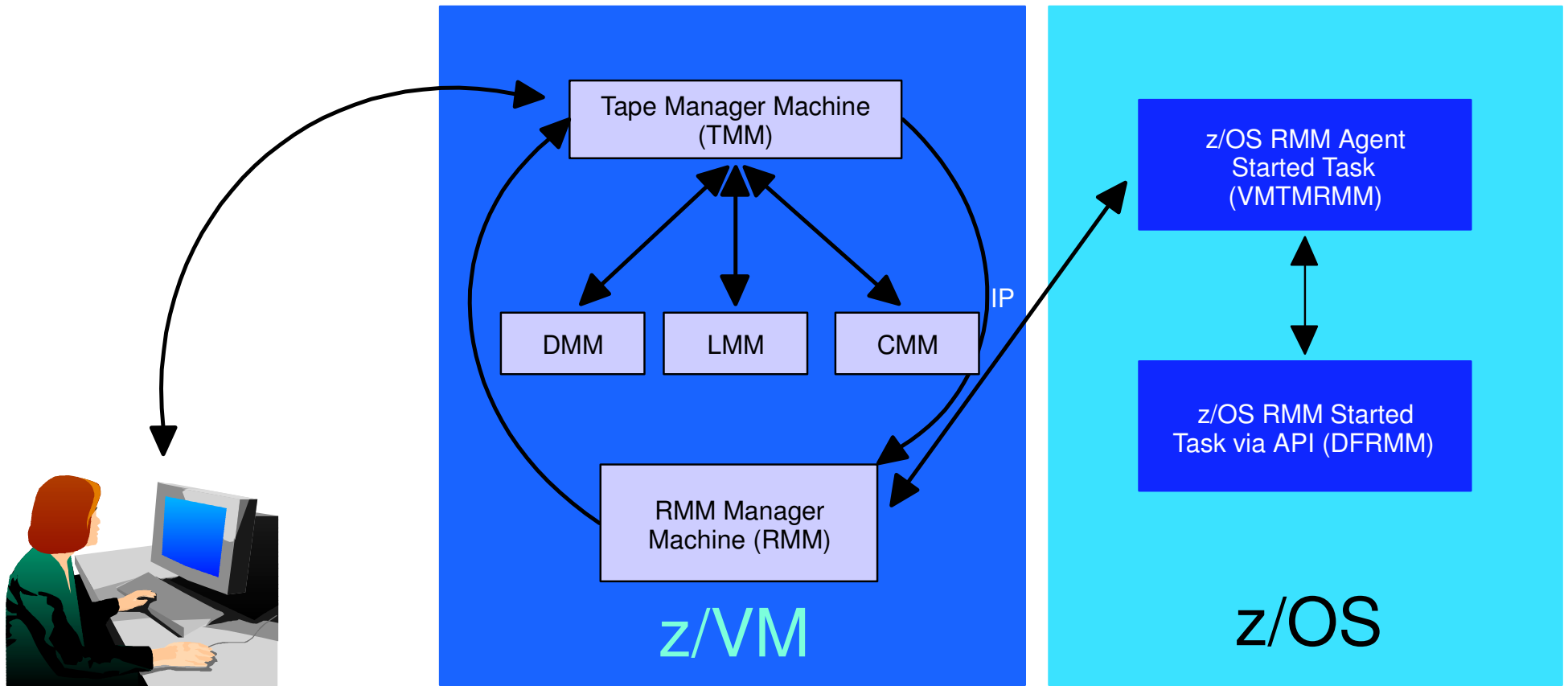


# Tape Manager - Standard Mode





# Tape Manager - Integration with RMM



- Communication within z/VM via SMSG/IUCV
  - ▶ IP for TMM to RMM
- Communication between z/VM and z/OS via TCP/IP

# Configuration File - Standard Mode

```

/* SAMPLE CONFIG FILE FOR STANDARD IMPLEMENTATIONS          */
/*                                                          */
ADMINS      TMADMN          /* Authorized users          */
/*                                                          */
ATTACH      500             /* Dedicated device list    */
/*                                                          */
/*      Init status Exit ID Xmit ACTN Intervals TO ACTN  SubCmd Secs */
/*      -----      - - - - -      - - - - -      - - - - -      - - - - - */
CMDEXIT ENABLE      TMCMM      RUN      3      RUN      60
/*                                                          */
/* Non-ATL device pool statement                            */
/*      Name      Devices                                     */
DEVPOOL     3490L   600-601
DEVPOOL     3490M   500-501
/*                                                          */
/* ATL device pool statements showing device list continuation */
DEVPOOL     3590A   ATL NWAATL1 530-531
DEVPOOL     3590A   630-631
/*                                                          */
DEVWAIT     4          /* Max device wait time in minutes */
/*                                                          */
/*      Name      Vaddr Mode                                 */
DISK DB1      0200   U
DISK DB2      0210   V
DISK USER     0191   Z

```

## ... Configuration File - Standard Mode

```

DMM          TMDMM          /* Userid for the Dev. Mgt. Machine */
/*
EXPSTART     13:30:00      /* Start time for expiration processing */
/*
FREEACC      NONE        /* Allow private pool use of sys scratch */
FREEAUTH     Y           /* Auth required for system scratch use */
/*
FILEOFF      OPERATIONS
/*
LIBRARY      NWAATL1 ONLINE TMLM1 /* Library / Initial status / Server */
/*
LIBTYPPRI    M           /* Primary scratch source MAN/ATL */
LIBTYPSEC    A           /* Secondary scratch source MAN/ATL */
/*
OPERATIONS   OPERATOR
/*
POOLAUTH     Y           /* Auth required to define pools */
POOLDEF      NONE        /* Auth required to define pools */
POOLMAX      1000        /* System default for maximum pool tapes */
POOLWARN     80          /* System default for pool warn percent */
RETNDFLT     100         /* Default retention days */
RETNMAX      1000        /* Maximum retention days */
/*
SCROWNER     *           /* Default scratch pool owner */
SCRNAME      POOL1       /* Default scratch pool name */
/*
VOLMIN       6           /* Minumum length of volume serial */
VOLMAX       6           /* Maximum length of volume serial <= 16 */
VOLWAIT      10          /* Max retries (1/min) for volume wait */

```

## ... Configuration File - RMM Mode

```

FILEOFF      OPERATIONS
/*
LIBRARY      NWAATL1 ONLINE TMLM1 /* Library / Initial status / Server */
/*
OPERATIONS CSHOWA
/*
DISK TCPIP  0592  Z
/*
/*  .- VM RMM service machine name
/* |      .- VM TCPIP service machine name
/* |      |      .- VM RMM service machine IP address
/* |      |      |      or Host Name
/* |      |      |      .- VM service machine port
/* |      |      |      |      .- z/OS agent IP address
/* |      |      |      |      |      or Host Name
/* |      |      |      |      |      .- z/OS agent port
/* '      '      '      '      '      '
RMM TMRMM TCPIP RS54          9999 RS52          35042
/*
RMMCMDWAIT 3
RMMSCRPOOL ATL ATL1 NWAATL1 SCRATCH0 VOL
RMMSCRPOOL MAN NOATL
/*
RMMSCRDFLT DEVP 3590A
/* RMMSCRDFLT SCRIP ATL1
/* RMMSCRDFLT DEVP 3590A
/* RMMSCRDFLT RDEV 530

```

# Tape Manager Summary

- Automate daily tape operations
  - Manage mount requests
  - Control tape access
  - Perform label verification
  - Expire tapes
- Efficiently manage tapes and tape devices
  - Share devices
  - Control access to individual tapes in an ATL
- Improve productivity
  - Notify and interact with operator on behalf of user
  - Support manual and ATL mount requests
  - Perform label verification before and after tape use
  - Verify read/write attribute on manual mounts



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# Backup and Restore Manager for z/VM

Flexibility

Productivity

Control



## Key Features

- **Modular design with an eye to the future**
  - Data handlers for each data type (minidisk, SFS, CKD, reader)
  - Media drivers for each media type (tape, twin tapes, CMS file)
- **Standard CMS interfaces**
  - Support for new hardware when CMS supports it
  - Backup/restore catalog housed as a hierarchical structure in SFS
- **Documented interfaces to data packaging tools**
- **Review of a defined backup job before submission**
- **Reduced backup window with concurrent processing**
  - Multiple service machines sharing the job
  - Assigned by master server
- **Automatic aging and pruning of the backup catalog**

# Access Control

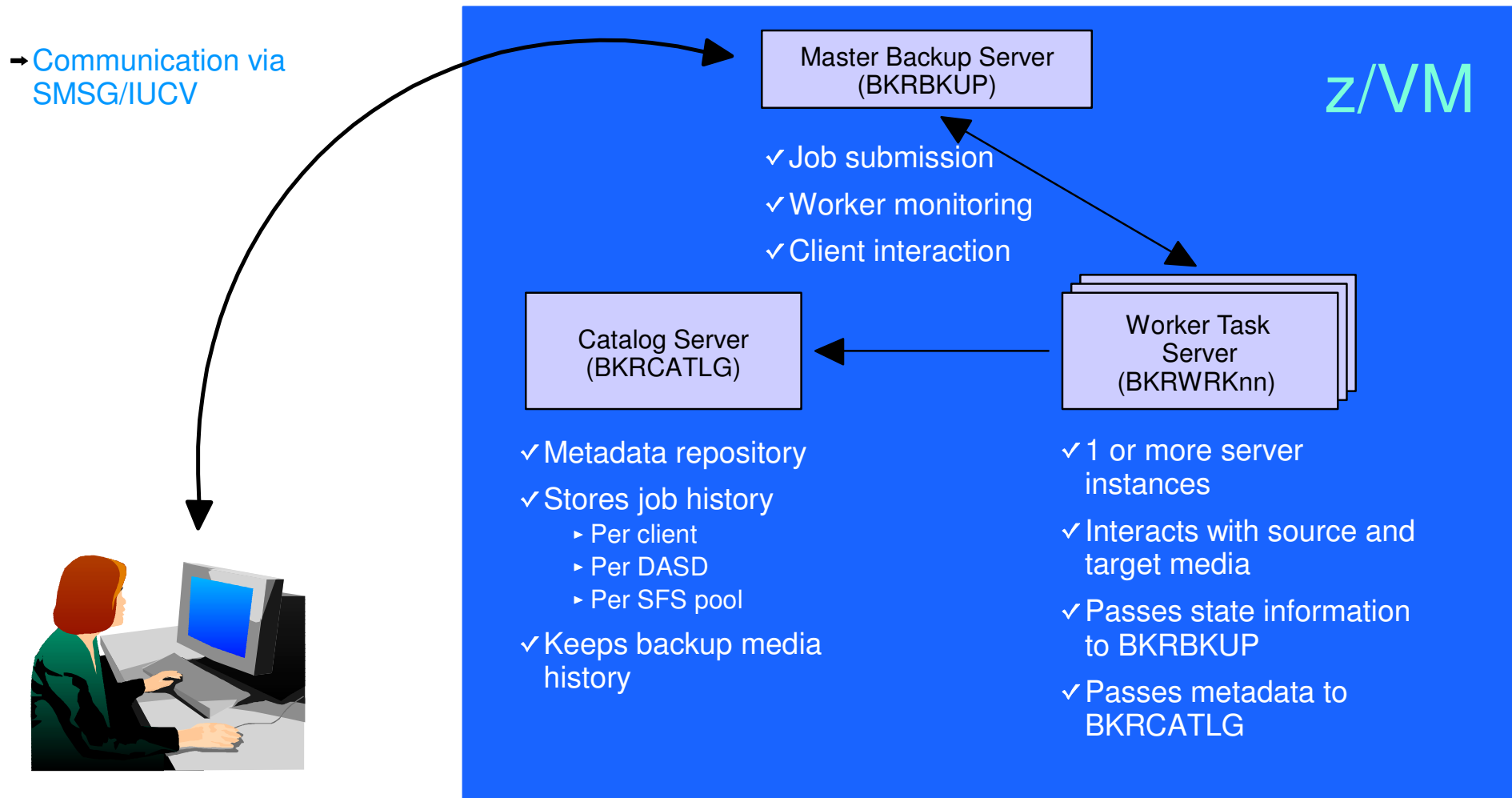
## ■ Administrators

- Review and submit jobs
- Manipulate contents of backup catalog
- Backup and restore from anywhere to anywhere
- Receive all service machine consoles
- Full screen interface for navigating the catalog and requesting restores
  - By job, then instance, ownerid, resource type, resource (specific filespace or minidisk)
  - By user, then resource, resource type, job name, instance objects
  - By DASD volid, then extent start, extent size, ownerid, minidisk address, job name, instance
  - By DASD volid, then ownerid, minidisk address, extent start, extent size, job name, instance

## ■ Users

- Restore files they own
- Full screen interface to find files available for restore

# Backup and Restore Manager - Architecture



# Configuration File

```
Local_Backup_Admin_ID   = BKRADMIN
Local_Backup_Master_ID = BKRBKUP
Local_Backup_Catalog_ID = BKRCATLG
*
Worker_Idle_Timeout = +00:15:00

* Temporary staging area info for worker virtual machines
Worker_Stage_Type = VFB-512

* Tunes the number of buffer pages allocated by GETMDSK for VMUDQ (diag 25c)
* reply during INCLUDE/EXCLUDE processing. For every 1MB (256 pages) of
* buffer allocated, GETMDSK can process 17,746 minidisk definitions.
Template_MDISK_Buffer_Pages = 512

BKR-Allow_EDF_Target_Format = 1

* Configuration for tape handling exits (BKRMOUNT, BKRMUNT, BKREOV):
Tape_Exit_Context = BKR
Tape_Operator = OPERATOR
Tape_Request_Method = EXEC TELL
Tape_Delay_Interval = +00:00:60
Tape_Times_To_Poll = 5
TAP1_Virtual_Address = 181
TAP2_Virtual_Address = 182
Tape_Retain_After_EOJ = 0

* Master Backup Catalog configuration:
CatalogPool = ROCKSFS2
CatalogSpace = RVBCATLG
```

# Job Template

```
CONFIG BKR_OUTPUT_SPEC = IBMTAPE SCRATCH RW 1
*CONFIG BKR_OUTPUT_SPEC = IBMTWIN SCRATCH RW 1 SCRATCH
*CONFIG BKR_OUTPUT_SPEC = CMSFILE DISK POOL X
*
CONFIG BKR_JOB_WORKERS = 3
CONFIG BKR_JOB_NAME      = RS54FULL
*
CONFIG BKR_JOB_CMS_FILEMASK = * * *
CONFIG BKR_JOB_SFS_PATHMASK = *
*
CONFIG BKR_JOB_CATALOG = Y
CONFIG BKR_CATALOG_RETENTION = 30
CONFIG BKR_CATALOG_VERBOSE = N
CONFIG BKR_OUT_EDF_VERBOSE = N
CONFIG BKR_OUT_TAPE_VERBOSE = N
*
CONFIG BKR_EDF_INCR_TOGGLE = N
CONFIG BKR_SFS_INCR_TOGGLE = N
```

# ... Job Template

```

/*****/
/* Include/Exclude definitions */
/*****/
FUNCTION MEDIATYPE OWNER VDEV VOLUME DEVTYPE START END SIZE RESERVED
-----|-----|-----|-----|-----|-----|-----|-----|-----|
INCLUDE MINIDISK * = * * * * = * = * = * *
EXCLUDE MINIDISK FDISK = * * * * = * = * = * *
EXCLUDE MINIDISK $ALLOC$ = * * * * = * = * = * *
EXCLUDE MINIDISK MACK0* = * * * * = * = * = * *
INCLUDE MINIDISK MACK0* = 019* * * * = * = * = * *
EXCLUDE MINIDISK MAINT = 0123 * * * * = * = * = * *
EXCLUDE MINIDISK MAINT = 0124 * * * * = * = * = * *
EXCLUDE MINIDISK ROCKSFS* = * * * * = * = * = * *
INCLUDE MINIDISK ROCKSFS* = 019* * * * = * = * = * *
EXCLUDE MINIDISK VMSERV* = * * * * = * = * = * *
INCLUDE MINIDISK VMSERV* = 019* * * * = * = * = * *
EXCLUDE MINIDISK * = * * * * = * = * > 3300 *
EXCLUDE MINIDISK * = * * * * = * = * = END *
INCLUDE MINIDISK MAINT = 012* * * * = * = * = * *

FUNCTION MEDIATYPE POOLNAME OWNER FS
-----|-----|-----|-----|-----|
INCLUDE SFS VMSYSU: * SFS
EXCLUDE SFS VMSYSU: DFSMS* *
INCLUDE SFS ROCKSFS2:* *
EXCLUDE SFS ROCKSFS2:RVBCATLG *
INCLUDE SFS VMDEVU: * *
    
```



# Backup and Restore Manager Summary

## ■ Flexibility

- Backup only what is needed via include, exclude, and masking statements
- Mix and match source and target types

## ■ Productivity

- Review of backup job before submission
- User driven restores with no administrator interaction

## ■ Control

- Each user can only access restore data owned by him/her
- Automatic aging and pruning of backup catalog
- Consistent backups using the object directory (not source)



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# Archive Manager for z/VM

Efficiency

Productivity

Control

## Key Features

- **Based on design of Backup and Restore Manager**
  - Modular data handlers and media drivers
  - Catalog housed as a hierarchical structure in SFS
  - Standard CMS interfaces
  - Recalls with original date
  - Expiration processing
- **Asynchronous user interface**
  - Immediate (synchronous) notification if no files found to archive
  - User warned not to modify files until archive complete
  - User notified when archive or recall is complete
- **Concurrent processing available when tapes are involved**
  - Multiple service machines available
  - 1 job assigned to 1 service machine
  - Assigned by master server
- **Automatic aging and pruning of the archive catalog and data**
  - Tape consolidation available to remove gaps created by expired archives

# Access Control

## ■ Administrators

- Submit archive and recall requests for any data
- Archive and recall from anywhere to anywhere
- Manipulate contents of archive catalog
- Receive all service machine consoles
- Full screen interface for navigating the catalog and requesting recalls

## ■ Users

- Archive and recall files they own
- Archive to any authorized storage class
- Full screen interface to find files available for recall

## ■ Groups

- Can recall files belonging to any storage group to which they are a member

# Storage Groups and Storage Classes

## AMVSRVR CONFIG

```

Begin_Groups
ALLUSERS
DSKUSERS
End_Groups
Begin_Classes
Define_Class DEFAULT TAPE SIMPLEX 1 365 365 SCRATCH ALLUSERS - N Y Y N N N N
Define_Class ADMINDSK EDF SIMPLEX 1 365 2555 E00 DSKUSERS - Y Y Y Y Y N N
End_Classes
    
```

### DEFAULT Storage Class

- Archives to single tape
- Default retention 365 days
- Min retention 1, max 365 days
- All users on system can archive here
- Users can remove and transfer archives
- Users can not extend expiration, move parcels to another storage class, create image parcels

### ALLUSERS GROUPLST

EVERYONE

### DSKUSERS GROUPLST

ADMINS  
DEPTABC

### EVERYONE ROSTER

\*

### ADMINS ROSTER

OPS\*

### DEPTABC ROSTER

USERA  
USERB  
USERC

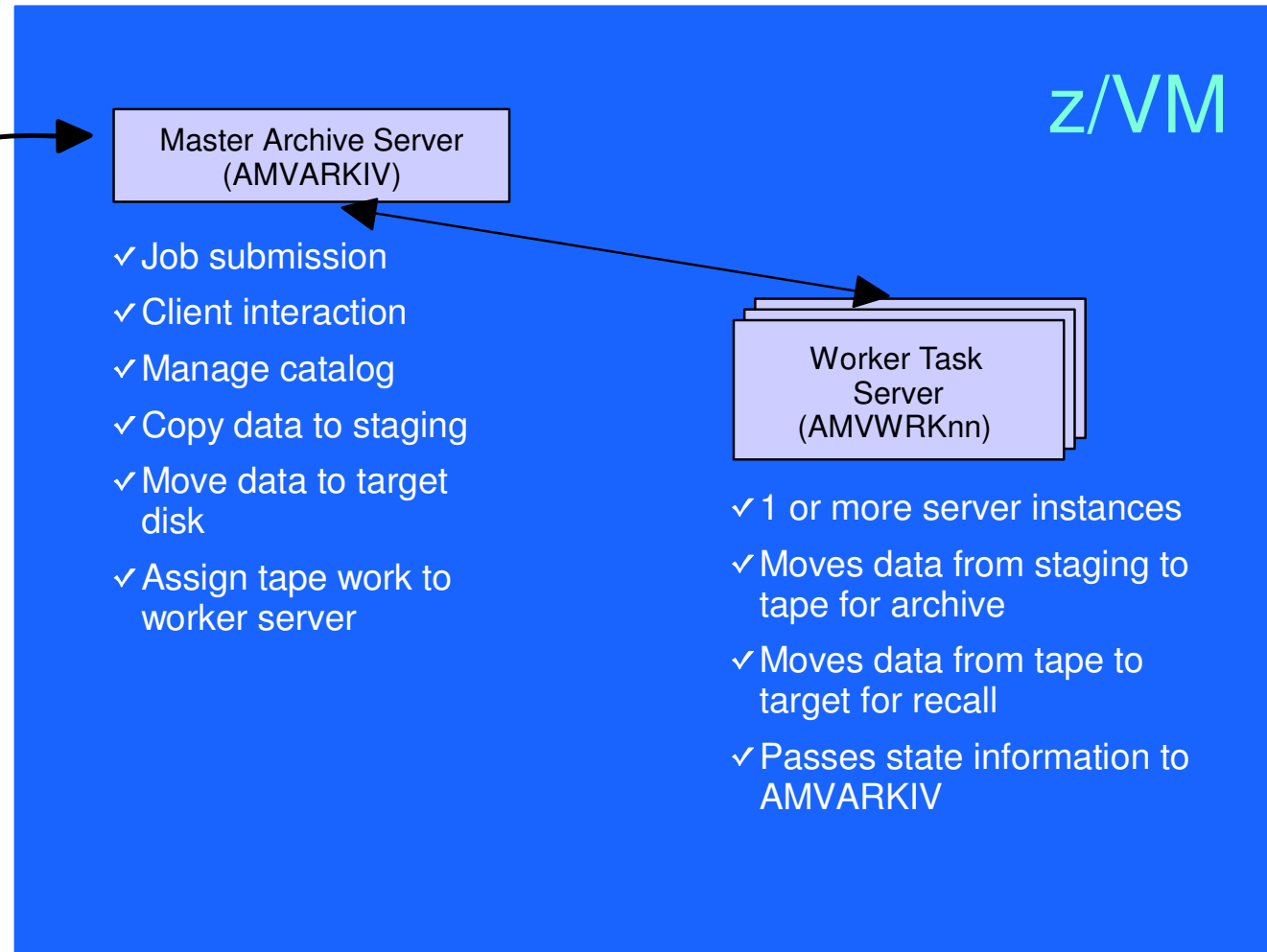
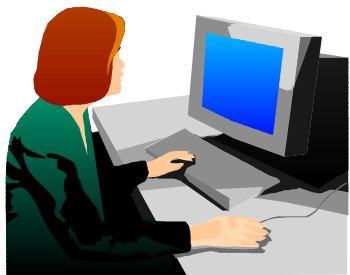
### ADMINDSK Storage Class

- Archive to AMVARKIV's E00 mdisk
- Default retention 365 days
- Min retention 1 day, max 7 years
- USERA, USERB, USERC, and OPS\* userids can archive here
- Users can extend expiration, remove and transfer archives, move parcels to another storage class, create image parcels



# Archive Manager - Architecture

→ Communication via  
MSG/IUCV





# Additional Configuration Information

```
Staging_Area = 292      * We access this as our parcel creation area...
Worker_Stage_Type = VFB-512
*
* Note:  Use of "DEFMDISK" allows archive processing of T-Disk contents. This
*       feature is unavailable if the "LINK" is specified.
*
* Archive_Minidisk_Via = LINK
Archive_Minidisk_Via   = DEFMDISK
*
* "Drop Dead" idle timer for worker task virtual machines
*
Worker_Idle_Timeout = +00:01:00
*
Tape_Exit_Context = AMV
Tape_Operator = OPERATOR
Tape_Request_Method = EXEC TELL
Tape_Delay_Interval = +00:00:60
Tape_Times_To_Poll = 5
TAP1_Virtual_Address = 181
TAP2_Virtual_Address = 182
Tape_Retain_After_EOJ = 0
Tape_Handled_Via_EUM = 0
* EUM_Pool_Owner = AMVARKIV
* EUM_Pool_Name = ARCHIVE
*
* Master Archivist Catalog configuration:
*
CatalogPool = AMVCPOOL
CatalogSpace = AMVCATLG
```



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# Operations Manager for z/VM

Monitoring

Scheduling

Task automation

# Monitor Service Machines

- **Capture console messages**
  - Must SECUSER to Operations Manager GOMMAIN server
  - Dataspaces used to hold the log of captured messages/console
  - Daily log includes captured message
    - Text, length, IUCV class, source
- **Define rules to**
  - Scan console messages for text matching
    - Includes wildcard support
  - Take actions based on matches
- **Multiple rules can apply to one message**
  - FINAL option available to indicate no additional rules should be evaluated
- **Predefined actions**
  - Suppress messages from the GOMMAIN console
    - Always sent to the log
  - Highlight messages with color, blinking, etc.
- **Customer defined actions**
  - CP or CMS command, or EXEC to be executed

# Schedule Events and Actions

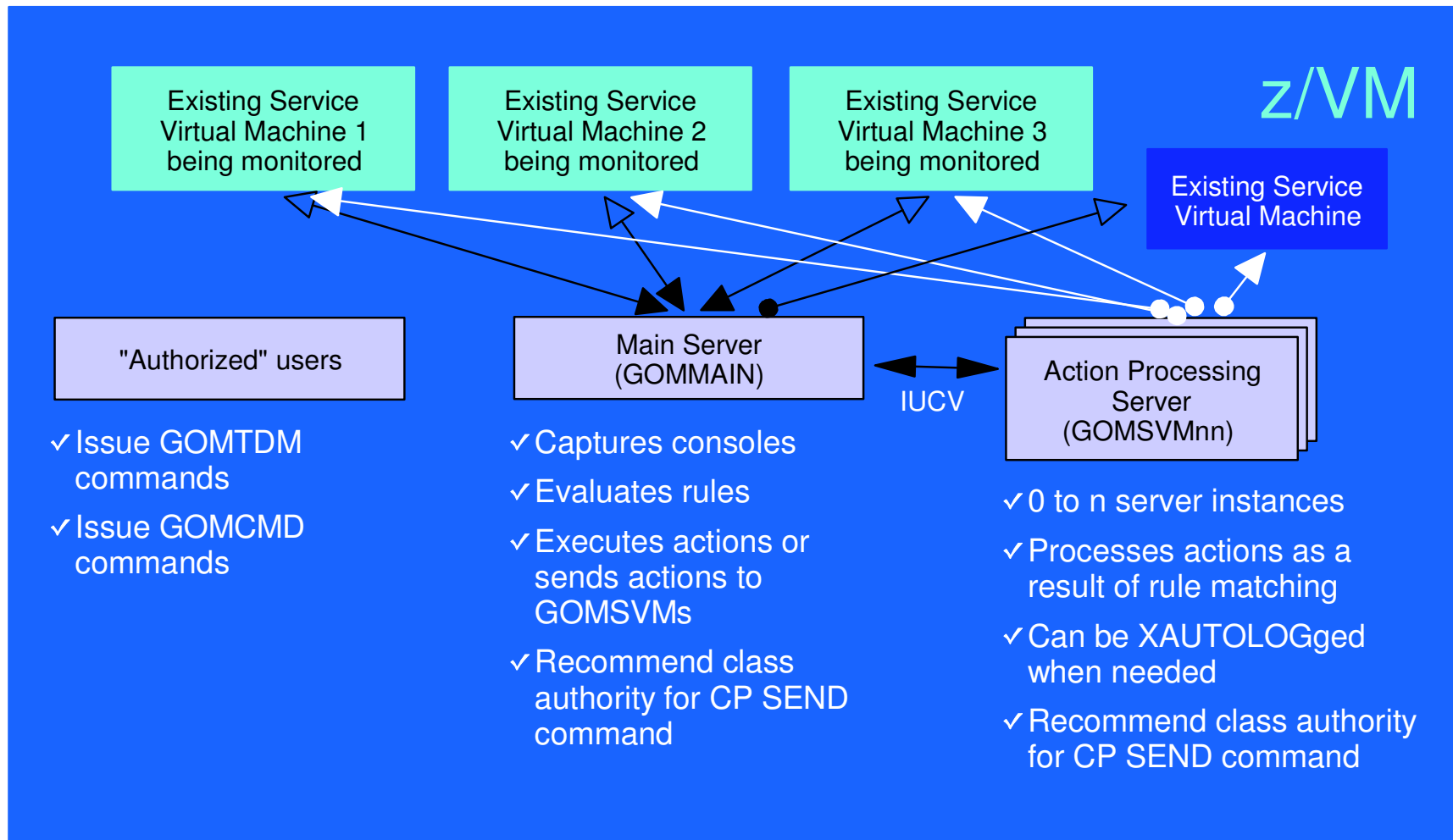
- Define timers to occur
  - Hourly at a specified number of minutes past the hour
  - Daily at a specified time
  - Weekly on a specified day of the week and at a specified time
  - Monthly on a specified day of the month and at a specified time
  - Yearly on a specified month and day and at a specified time
  - Once on specified month, day, year, and time
- Time based on local time of system
  - Same as Query TIME
  - Picks up dynamic time zone changes
- Specify the action associated with the timer
  - Actions specified the same as those for console rules
- Only future timers are activated on startup
  - Won't execute a timer scheduled for earlier today
  - Will execute it at its next occurrence

# Automate Multi-step Tasks

- Using Terminal Device Management (TDM)
  - Create scripts (REXX EXECs) to logon to a user and perform specific actions
  - EXEC contains special calls to Operations Manager GOMTDM functions
    - **OPTION:** set up the environment for this session
      - Suppressing or displaying messages
      - Imbedded delays after input or output displayed on console
      - Maximum wait for console response to a GOMTDM query
      - Stacking returned values LIFO vs. FIFO
      - Coded character set to use
      - Put all console output to a file or not
      - Wait for keyboard input lock to clear or not
    - **INIT:** start a new session at this z/VM system's logon screen and return session id (handle)
    - **INPUT:** enter data from session command line by specifying:
      - Handle
      - Data to enter
      - Cursor position
      - Key to simulate (Enter, Clear, PA1-PA3, PF1-PF24, Forward tab, Backward tab, Up, Down, Left, Right, Newline, Home, EraseEOF)
    - **QUERY:** get information about the session
      - Cursor position
      - Position of next occurrence of a specified string on the screen, based on cursor position
      - Put copy of the screen in a specified file
      - Version of Operations Manager code running
    - **TERM:** end a session specified by a handle
  - Using DIAG '7C' for logical device support



# Operations Manager - Architecture





## Monitoring GOMMAIN using the GOMCMD command

- Issued by users with access to the command
- Executes an Operations Manager command on GOMMAIN
  - User must have authorization to issue the command on GOMMAIN
  - Includes any valid Operations Manager control or configuration command
- Passes output back to user console
  - "Fullscreen mode" for log and console viewing
    - Scrolling up and down
    - Autoscrolling (on or off) as new output is displayed on the console
    - Can issue valid Operations Manager commands from fullscreen command line
  - "Linemode" for other commands
- Typically used to view a log or query status
  - Can be used to troubleshoot a service machine or user problem
  - Multiple administrators can view a console simultaneously

# Access Control

- Users defined with access to one or more:
  - Control commands
    - Manage the Operations Manager infrastructure
    - Define additional service machines to do monitoring
    - Authorize users
    - Display status
    - Send commands to a monitored console
  - Configuration commands
    - Define rules
    - Define timers
    - Define actions
  - Consoles
    - Define machines/consoles to monitor
- Additional access based on access to modules
  - GOMCMD: issue commands on GOMMAIN and return output
  - GOMTDM: terminal device management

# Sample Configuration File

```
* Define users with control authority to Operations Manager
*
AUTH USER(user1),CONTROL(Y)
AUTH USER(user2),CONTROL(Y)
*
* Define users with config authority to Operations Manager
*
AUTH USER(user1),CONFIG(Y)
AUTH USER(user3),CONFIG(Y)
*
* Define users and the consoles they can access to Operations Manager
* Must have control authority
*
AUTH USER(user1),CONSOLE(SFS)
AUTH USER(user1),CONSOLE(RSCS)
AUTH USER(user2),CONSOLE(*)
*
* Define servcie machines to Operations Manager
*
DEFSRVM USER(OPMGRS1)
DEFSRVM USER(OPMGRS2)
DEFSRVM USER(OPMGRS3)
DEFSRVM USER(OPMGRS4)
```

# Sample Configuration File

```
* Define rules to Operations Manager
*
DEFRULE NAME (CPREAD),MATCH (*HCP*150A*CP*),ACTION (CPREAD)
DEFRULE NAME (VMREAD),MATCH (*HCP*150A*VM*),ACTION (VMREAD)
DEFRULE NAME (PSWAIT),MATCH (*HCP*450W*),ACTION (PSWAIT)
* Define timers to Operations Manager
*
DEFTIMR NAME (STATS),WHEN (00),ACTION (STATUS)
DEFTIMR NAME (H00),WHEN (00),ACTION (STORMAP)
DEFTIMR NAME (WMON),WHEN (MON-00:00),ACTION (ACCOUNTS),PARM (WEEKLY)
DEFTIMR NAME (FIRSTM),WHEN (01-00:00),ACTION (NEWMONTH),PARM (MONTHLY)
*
* Define actions to Operations Manager
*
DEFACTN NAME (CPREAD),COMMAND (CP SEND &2 BEGIN),
INPUT (LOG,CRE),OUTPUT (LOG),ENV (LVM)
DEFACTN NAME (VMREAD),COMMAND (CP SEND &2 BEGIN),
INPUT (LOG,CRE),OUTPUT (LOG),ENV (LVM)
DEFACTN NAME (PSWAIT),COMMAND (CP SEND &U IPL CMS),
INPUT (LOG,CBL),OUTPUT (LOG),ENV (LVM)
DEFACTN NAME (STATUS),COMMAND (STATUS),OUTPUT (LOG),ENV (GOM)
DEFACTN NAME (STORMAP),COMMAND (STORMAP),OUTPUT (LOG),ENV (LVM)
DEFACTN NAME (ACCOUNTS),COMMAND (EXEC DOACCTS &P),OUTPUT (LOG),ENV (SVM)
DEFACTN NAME (NEWMONTH),COMMAND (EXEC DOACCTS &P),OUTPUT (LOG),ENV (SVM)
```

## Summary

- **New z/VM tools for systems and storage management**
  - Improved flexibility, productivity, and control of backup and restore operations
  - Automated, efficient, and productive tape management and operations
  - Improved user management of disk space with archive functions
  - Automated operations
- **April 29, 2005**
  - GAed Tape Manager for z/VM V1.1
  - GAed Backup and Restore Manager for z/VM V1.1
- **August 26, 2005**
  - GA Archive Manager for z/VM V1.1
  - GA Operations Manager for z/VM V1.1
- **Gathering and prioritizing additional customer requirements**
- **Web site:**
  - <http://www.ibm.com/software/stormgmt/zvm/>