VM Server Decommission

Virtualization Team

VM Server Decommission Virtualization Team Procedure

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Purpose

This document provides instructions for processing work requests to decommission a server: ensure the necessary data is saved and the server is properly removed from the network. These instructions apply to virtual and physical servers of the POC, Dev, QA, Staging, Production, Treat-as-Production environments, and for processing assets after decommission.

Decommission a server is a four-stage process; instructions are provided for each stage.

Scope

- This process applies to all servers managed by Corporate Data Center Operations.
- This process applies directly to Local operations. If decommissioning servers at other locations, contact the Data Center Manager for additional information.

Term	Definition
AD	Active Directory
BAN	Backup Area Network—a subnet used for backup
CD	Compact Disk
CIT	Corporate Infrastructure Technology
Cold storage	Machine is shut down and powered off for a specified time
DASD	Direct Attached Storage Device
Decom	See Decommission
Decommission	Remove a device from service
Dev	Development—an environment for developing services, applications, etc.
DMZ	Demilitarized Zone—external facing network
InfoSec	Information Security (team)
IP	Internet Protocol
ISO	A type of file for duplication
IT	Information Technology
ITG	IT Governance—help request system
Killdisk	Application—used for erasing disks
LAN	Local Area Network
NetBackup	Application—used for backup and recovery
NIC	Network Interface Card
OU	Organization Unit—a sub-container used with AD

Glossary

Term	Definition
POC	Proof of Concept—an environment used for prototyping and evaluation
Prod	Production—an environment accessed and used for business operations
QA	Quality Assurance—an environment used for verifying the quality and performance of a product
RAID	Redundant Array of Independent Disks
Staging	Pre-installation—verify operations before moving device, applications, etc. to Production environment
Service Desk	Application—used for tracking assets
VCB	VMware Consolidated Backup
VLAN	Virtual Local Area Network
VM	Virtual Machine
VMDK	File extension for VMware virtual disk file
WSUS	Windows Server Update Services

Roles and Responsibilities

Role	Responsibility
Requestor	 Submit a request to decommission a server; ensure the server has been backed up (such as data, image, applications, etc.); provide all necessary information to carry out the process
	Verifies the server is ready to be decommissioned Singling the request for Droduction Converse that were
	Approved for decommissioning and were not migrated
Information Security	Review and approve the decommission request
VM / Datacenter Operations	Suspend monitoring and alerts
	Decommission the server:
	Update inventory
Management	 Monitors the progress of decommissioning the server
	 Ensures this process is followed
Finance	 Verify if asset does or does not have value (remaining
	depreciation)
	Provide asset disposal form
Procurement	 Sell off fully depreciated assets

References and Additional Information

- Flow charts are provided in the *Flow Charts for Reference* section.
- Change Management Process NOTE—Change management is not required for all subnets.

Decommission Approvals and Processes

The following table lists whether Information Security is or is not required to review the decommissioning request for approval, and the actions to apply.

Production or Treat-as-Production?	Data Migrated?	Information Security Approval	Decommission Actions
Ν	Y	Implicit approval (review not required)	Kill (erase) disk, remove server from operations
Y	N	Explicit approval (review required)	Information Security reviews the request, approval/disapproval based on findings
Y	Y	Implicit approval (review not required)	Full tape backup and DASD
Ν	Ν	Implicit approval (review not required)	No tape backup and no DASD

Instructions

NOTE—While decommissioning a server, fill out and check off *Server Decommission—Checklist*.

1. Work Request

- 1.1. Contact the requestor and confirm that the server and its hosted application can be decommissioned:-either the server is no longer needed or it has been migrated.
- 1.2. Required information:

1.2.1.From Requestor/Application Admin

1.2.1.1. If the server is a database server, a statement that all backups have been performed on the file system.

1.2.2. Review the System State

- 1.2.2.1. Is the system *Production* or *Treat-as-Production*?
- 1.2.2.2. Was the information and/or data for the decommission target migrated to a new environment?
 - If migrated, to where was it migrated?
 - If not migrated, what is the content of the data and what is the application that used it?
- 1.2.2.3. If the system is Production or Treat-as-Production and the data has not been migrated, assign the Help Request to the Information Security Team.
 - 1.2.2.3.1. Information Security reviews the request.
 - If Information Security approves the Help Request, Information Security assigns the request back to the Requestor to finalize the required application and system shutdown steps. Afterwards, the Help Request is assigned to the Datacenter Operations Team.
 - If Information Security does not approve the Help Request, the rejection is recorded in ITG and the Help Request is closed.

2. Decommission Process

- 2.1. If the server resides in the XXX subnet, proceed to *Step 2.3*. Otherwise, continue to the next step.
- 2.2. File a Request for Change (RFC) to decommission the server. Go to <u>http://servicedesk</u> and click on *Changes* on the top. Include the Help Request number in the RFC.

2.2.1.If the RFC is not approved, the Help Request is closed with reference to the rejected RFC.

- 2.2.2.If the RFC is approved, update the status and continue the process.
 - 2.2.2.1. In Service Desk, click the *Assets Tab* and search for the server being decommissioned. The search field is located on the left side of the screen.
 - 2.2.2.2. After finding the server, change the system state to **Decom Pending**.
- 2.3. Suspend monitoring and alerts for the server being decommissioned.
- 2.4. Add the server to the Server Decommission List, which is located at http://server-decommission/
 - 2.4.1. Include the dates of the decommission process: Decommission Server start date; Cold Storage start date; Data Destruction date.
 - The Decommission Start date is determined after approval by Change Management.
 - The Cold Storage date is a minimum of two weeks after the Decommission Start date.

• The Data Destruction date must be two weeks after the Cold Storage start date.

2.5. Is the server located in DMZ?

- If YES, proceed to step 2.5.1.
- If *NO*, proceed to step 2.6.

2.5.1.DMZ Systems:

- NOTE—a DMZ system is decommissioned as a Production system.
- 2.5.1.1. Move the network connection to the corpnet.
- 2.5.1.2. Acquire a new IP address after moving the device.
 - 2.5.1.2.1. Submit a Help Request for NetEng to configure the port for a corpnet VLAN.
 - 2.5.1.2.2. Submit a Help Request to Unix Engineering-DNS for an IP on the subnet (provided in step 2.5.1.2.2). Include a request to forward the Help Request to CIT's Windows Core Application if UNIX Engineering-DNS cannot fulfill this request.
- 2.5.1.3. On the server, go to *System Properties*.
- 2.5.1.4. Change the current domain to *company.com* and use the appropriate credentials.
 - NOTE—credentials will be provided.

2.6. Production and Treat-As-Production System:

- 2.6.1.If the server is POC, Dev, QA or Staging, and not specified as Treat-as-Production in the Help Request, proceed to step 3.16.
 - NOTE—unless otherwise stated in the request, POC, Dev, QA/Staging severs do not require Full Month-End Backups or Images before decommissioning.
- 2.6.2. If the server is Production or Treat-as-Production, proceed to the next step.
- 2.6.3.Request a Month-End Full Backup for All Volumes with System State.
 - All servers to be decommissioned should be individually backed up (local and attached storage) and have full system state backups. These backups must be done using the month-end retention policy.
- 2.6.4.If the system is physical or virtual with raw device mappings, continue to step 2.6.5; otherwise, proceed to 2.6.6.

2.6.5. Physical Systems and Virtual Machines with Raw Device Mappings:

- 2.6.5.1. Assign the Help Request for the System Decommission to the Storage and Backup Team.
- 2.6.5.2. If backup network is not configured, do the following:
 - 2.6.5.2.1. *For physical systems only,* have the Data Center Operations Deployment Team run a Network Cable to the Backup Subnet.
 - 2.6.5.2.2. Obtain an IP address from Unix Engineering—open a Help Request to Engineering-DNS.
 - 2.6.5.2.3. Assign the IP address to the Backup Area Network (BAN) Network Interface Card (NIC).
 - 2.6.5.2.4. Open a Help Request with Network Engineering to create a Private VLAN between the newly connected BAN and NetBackup Servers.
 - 2.6.5.2.5. Have the Storage Team install the NetBackup Client and perform a full backup, including System State.
 - 2.6.5.2.6. If there are any issues connecting the BAN, have Backup Administration use the LAN Interface to perform full month-end backup.
 - 2.6.5.2.7. Proceed to step 2.6.7.

- 2.6.6. Virtual Machines without Raw Device Mappings (applies only to VMDK):
 - 2.6.6.1. Assign the Help Request for System Decommission to the Virtualization Team.
 - 2.6.6.2. Request a VMware Consolidated Backup (VCB) for all VMDK volumes, including the System State.
- 2.6.7. After backups are complete, make note of the IP address, subnet mask, gateway, and DNS and WINS servers for the device. This information will be used during the System Imaging process.

3. System Imaging

- 3.1. From your workstation, go to http://decom_images.
 - 3.1.1. If unable to access the folder, contact the Storage Team.
- 3.2. For a physical server, open the *Physical_Servers* folder.
- 3.3. For a virtual machine, open the *VM_Servers* folder.
- 3.4. Create a new folder or directory for the server being decommissioned. Example—if the server is named *server01*, then create a New Folder/Directory that is also named *server01*.
- 3.5. For a virtual machine, ensure the system is on a corporate network.
- 3.6. If the server is SAN connected, disconnect all SAN cables from the Server.
- 3.7. Boot to the Image CD xxx (or ISO).
- 3.8. Select the Enterprise Server with the full version of the Restore option.
- 3.9. In the Enterprise Server window, go to Tools->Options, expand out the Network adapters, and configure with the information gathered in step 2.6.7. Click *OK*.
- 3.10. Select *Backup*.
- 3.11. Select *My Computer* when prompted what is being backed up, and select the Drive to backup.
 - NOTE—select only one physical drive at a time. One physical drive image may contain multiple partitions.
- 3.12. Save the backup to **file**://name and name it
 - %computername%_Disk#_DriveLetter_DriveLabel_LastFull__<8-digit date>.
 - Example—if the name of the server is *server01* and the C: Drive is labeled as System Drive on Disk 1, it will be named *server01_Disk1_C_System_Drive_Last_Full__05222016*.
- 3.13. When prompted to Select Backup Mode, select *Create a new full backup archive*.
- 3.14. If prompted to Choose Backup Options, select *Validate backup archive upon its creation completion*.
- 3.15. After completing the first drive, repeat steps 3.10 3.14 for all remaining drives.
- 3.16. The following steps require information from the original Help Request filed by the Requestor. Refer to the section *Work Request*.
- 3.17. For physical servers, fill out, sign and attach a Red Server Decommissioning Tag and attach it to the front of the Server. In Local, the tags are located in the Datacenter x, room #x, top shelf. The information to fill out on the tag are listed below

Host	Cold Stage, start date
Manufacturer	Cold Stage, stop date
Model Type	Erase Disk (Killdisk)
Serial Number	Signature
Requestor	

- 3.18. For virtual machines, fill out the Decommission Date field (which should be two weeks from the date of the system's last full backup) in the Annotation box in the Summary Tab for the VM in VirtualCenter.
 - 3.18.1. If there is no Decommission Date field in the Annotation box of the Summary Tab, enter the Decommission Date in the Notes field.
- 3.19. Disable the system's computer object in Active Directory (AD) and move it to the disabled Organization Unit (OU).
 - 3.19.1. Enter the final decommission date in the information field.
- 3.20. Submit a Help Request to the Storage Group to reclaim all storage components *two* weeks after the start date of the cold storage phase.
- 3.21. Submit a Help Request to NetEng to remove custom ACLs associated with this system two weeks after the start date of the cold storage phase.
- 3.22. Shut down and power off the server for two weeks.
- 3.23. After two weeks of cold storage, proceed with the decommission process (*step 4, Post Cold Storage*).

4. Post Cold Storage

The following instructions apply to both Standard Decommissions and x2x migrations (P2V, P2P, V2V, V2P).

- 4.1. If the server is backed by NetBackup, submit a Help Request to the Storage-Backup/Restore Team to remove the backup policy of the server from the NetBackup environment.
- 4.2. Remove the server from Windows Server Update Services (WSUS).
- 4.3. Update the Server Decommission List with all the changes to the server's status. The list is located at http://Decommission-list
- 4.4. Data Destruction Phase

4.4.1.Physical Systems

- 4.4.1.1. Obtain the Killdisk CD or Killdisk ISO.
- 4.4.1.2. Modify the RAID configuration of the server: **1** logical raid **0** partition.
- 4.4.1.3. Insert the CD and power on the machine.
- 4.4.1.4. When Killdisk comes up, select 0 (zero) and hit *enter*. A DOS interface will appear.
- 4.4.1.5. Use the arrows to select the single hard drive partition that was created (refer to step 4.4.1.2).
- 4.4.1.6. Hit F10—another submenu will appear.
- 4.4.1.7. Select the erase method: **USDOD**.

- 4.4.1.8. Select *Ignore Errors*.
- 4.4.1.9. Do not select (deselect) *Confirmation*.

4.4.1.10. Hit F10 again to start process. This may run 24—48 hours, sometimes longer.

- 4.4.2.Virtual Machines
 - 4.4.2.1. Remove the virtual machine from Inventory in VirtualCenter.
 - 4.4.2.2. Remove the server from XX.
 - 4.4.2.3. If the server is in YY, remove it from YY.
 - 4.4.2.4. If the server is in ZZ for VI, remove it from ZZ.
- 4.5. Remove the server from DSView (and reclaim PS/2 or USB dongle).
- 4.6. Remove the server from its physical location.
- 4.7. If the physical asset has value (spare parts, whole system replacement, or new deployments) do the following:
 - 4.7.1. Move the server to the storage location.
 - 4.7.2.In Service Desk, update the (storage) location and the system state of the server.
- 4.8. If the asset has no value do the following:
 - 4.8.1.Obtain the serial number and the asset tag number.
 - 4.8.2.Confirm with the Finance Department that there is no remaining depreciation.
 - 4.8.3.Obtain and complete an *Asset Disposal Form* from the Finance Department for all noncurrent machines for management sign off and to remove the item from SAP.
 - 4.8.4.Contact the Procurement Manager to coordinate selling off this asset.
- 4.9. Close the Change Request.
- 4.10. Complete and close the Help Request.
- 4.11. Complete, sign and date the *Server Decommission—Checklist*.

Flow Charts

Flow Charts for Reference

The flow charts of this section provide overviews of the procedures.

- Work Request
- Decommission Process
- System Imaging
- Post Cold Storage

1. Work Request



2. Decommission Process



3. System Imaging



4. Post Cold Storage



Server Decommission—Checklist

This checklist must be used with the *Server Decommission* procedure. Refer to the procedure for complete instructions.

Work Request

NOTE—do not start the Server Decommission procedure until the Help Request has been approved.

After the Help Request has been approved:

- 1. Print your name, the date when you start decommissioning the server, the Help Request number and the Server Name below.
- 2. Start the Server Decommission procedure and check each step when it is done.
- 3. After the Request for Change (RFC) has been submitted and approved, enter the RFC ID below (refer to Step 2 under
- 4. Decommission Process).

Name (printed)	
Start Date	
Help Request Number	
Server Name	
RFCID	

Decommission Process

Step	Process		Done/ Yes	N.A./ No
1	File an RFC for server decommissioning.	2.1		
2	 Is the RFC approved? If no – stop the process, and sign off the checklist. If yes – continue the process. 	2.2.1		

Step	Process		Done/	N.A./
3	Suspend monitoring and alerts for the server	23		
		2.5		
4	Add the server to the Server Decommission List.	2.4		
	Is the server located in DMZ?			
5	If yes, continue to the next step.	2.5		
	• If no, proceed to Step 11.			
6	Move the network connection to the corpnet	2.5.1.1		
7	Acquire a new IP address.	2.5.1.2		
8	Submit a Help Request to configure the port for a corpnet VLAN.	2.5.1.2.1		
9	Submit a Help Request for an IP on the subnet.	2.5.1.2.2		
10	Change the server domain to company.com.	2.5.1.4		
11	Is the system Production or Treat-as-Production?	2.6		
	 If no, proceed to Step 44. 	2.0		
12	Request month-end backup: all volumes with	263		
	system state.	2.0.5		
12	Is the system physical?	264		
15	 If yes, proceed to Step 15. If no, continue to Step 14. 	2.0.4		
	Is the system virtual with Raw Device Mappings?			
14	 Is yes, proceed to Step 15. 	2.6.4		
	• If no, continue to Step xx. (2.5.8)			
15	Assign Help Request for System Decommission.	2.6.5.1		
	Is the backup network configured?			
16	• If yes, proceed to Step 28.	2.6.5.2		
	If no, continue to the next Step.			
	Is the system physical?			
17	• If yes, continue to the next Step.			
	If no, proceed to Step 19.			
18	to the Backup Subnet.	2.6.5.2.1		
19	Obtain an IP address.	2.6.5.2.2		
20	Assign the IP address to the BAN NIC.	2.6.5.2.3		
21	Open a Help Request for a Private VLAN.	2.6.5.2.4		
22	Have the Storage Team do a full backup.	2.6.5.2.5		
23	 Are there issues connecting the BAN? Is yes, continue to the next Step. If no, proceed to Step 25. 	2.6.5.2.6		

Step	Process		Done/ Yes	N.A./ No
24	Have Backup Administration use LAN to do the backup.	2.6.5.2.6		
25	Proceed to Step 28.	2.6.5.2.7		
26	Assign the Help Request for decommission to the Virtualization Team.	2.6.6.1		
27	Request VCB .	2.6.6.2		
28	Note the IP address, subnet mask, gateway, and DNS and WINS Servers, and proceed to the next step.	2.6.7		

System Imaging

Step	Process		Done/ Yes	N.A./ No
29	Open in image file from workstation. If unable to open the file, continue to Step 30. If able to open to open the file, proceed to Step 31.	3.1		
30	Contact the Storage Team to open the file.	3.1.1		
31	If the server is physical, open the physical folder.	3.2		
32	If the server is virtual, open the VM folder.	3.3		
33	Create a new folder for the server being decommissioned.	3.4		
34	Ensure the system is on a corporate network.	3.5		
35	If the server is SAN, disconnect all SAN cables.	3.6		
36	Boot Echo CD (or ISO).	3.7		
37	Select Server for Universal Restore.	3.8		
38	Configure the server (refer to Step 28).	3.9		
39	Select the drive to backup.	3.10, 3.11		
40	Save the backup.	3.12		
41	When prompted, create a new backup archive.	3.13		

Step	Process		Done/ Yes	N.A./ No
42	When prompted, select Validate Archive.	3.14		
43	 Are there other drives to back up? If yes, repeat Steps 39 – 42 and backup all drives, and check off Done when complete. If no, continue to the next Step. 	3.15		
44	If the server is physical, fill out and attach a decommissioning tag to the server.	3.16		
45	If the server is virtual, update the VirtualCenter.	3.18		
46	Disable the computer object in AD, and then move the object to Disabled OU.	3.19		
47	Submit a Help Request to reclaim storage components.	3.20		
48	Submit a Help Request to remove ACLs.	3.21		
49	Shut down and power off the server.	3.22		
50	Wait two weeks to proceed to Step 51.	3.23		

Post Cold Storage

Start Date of Post Cold Storage

Step	Process		Done/ Yes	N.A./ No
51	 Is the server backed by NetBackup? If yes, submit a Help Request to remove the backup policy. 	4.1		
52	Remove the server from WSUS.	4.2		
53	Update the Server Decommission List.	4.3		
54	If the system is physical, proceed to Step 56.	4.4		
55	If the system is virtual, proceed to Step 66.	4.4		
56	Obtain the Killdisk or ISO.	4.4.1.1		
57	Modify RAID: 1 logical raid 0 partition.	4.4.1.2		
58	Insert the CD and power on the machine.	4.4.1.3		

Step	Process		Done/ Yes	N.A./ No
59	Select 0.	4.4.1.4		
60	Select the hard drive partition (refer to Step 57).	4.4.1.4		
61	Hit F10	4.4.1.6		
62	Select method USOD 5.220.22-M.	4.4.1.7		
63	Select Ignore Errors.	4.4.1.8		
64	Do not select Confirmation.	4.4.1.9		
65	Hit F10 (start the process). Proceed to Step 67.	4.4.1.10		
66	Remove the VM from inventory.	4.4.2.1		
67	Remove the server from DSView.	4.5		
68	Remove the server from its physical location.	4.6		
69	 Does the asset have value? Is yes, continue to Step 70. If no, proceed to Step 72. 	4.7 4.8		
70	Move the server to storage.	4.7.1		
71	In Service Desk, update the location and state of the server.	4.7.2		
72	Obtain the server number and the asset tag number.	4.8.1		
73	Confirm with Finance the asset has no value.	4.8.2		
74	Obtain and complete an Asset Disposal Form.	4.8.3		
75	Contact Procurement to sell off the asset.	4.8.4		
76	Close the Change Request.	4.9		
77	Complete and close the Help Request.	4.10		

Signature

End Date

Additional information or comments