

vCenter Lifecycle Manager

USER MANUAL for LCM Tech Requester

Computer Services Centre, IIT Delhi

OVERVIEW

VMware vCenter Lifecycle Manager (LCM) automates the process of creating virtual machines and removing them from the service at the appropriate time. The following provides an overview of the LCM and its operational guidelines.

Lifecycle Manager Terminology

LCM uses specific terminology to describe lifecycle events and attributes.

Commission The creation of a requested virtual machine. The commission time is submitted during the request process.

Decommission The requested machine reaches the end of its life. A decommission date is submitted during the request process. The decommissioned machine can be archived or deleted.

Extension Extending the life of a virtual machine that is to be decommissioned. If approval is required, the request for extension must be approved before the owner of the virtual machine can continue to use it.

Infrastructure Attributes such as the network, domain, and data store affect where the requested virtual machine is placed in VMware Infrastructure.

Criteria Attributes attached to a requested virtual machine that are selected during the request process, such as location, organization, server environment, service level, and performance. The LCM Administrator maps this information to the infrastructure.

Template Profile The profile that is used when a requested virtual machine is cloned.

Customization Template The template that determines the resources that the requested virtual machine uses, such as memory reservation, memory limit, CPU shares, and disk shares. Only the LCM IT Staff, LCM Tech Requester, and LCM Administrator can modify the customization template.

Placing The requested virtual machine is created or moved into the infrastructure, based on the selected criteria and infrastructure

Life Cycle Manager Process

The following describes the step-by-step procedure involved in creation and decommissioning of a virtual machine.

STEPS

1. Log In to vCenter Lifecycle Manager (LCM).
2. Submit a Request for Virtual Machine.
3. After the request for a virtual machine is submitted, an email notification is sent to the LCM Administrator and the request is shown as "Waiting for Approval" in the "Request" tab.
4. Once the LCM Administrator approves it, the virtual machine is created.
5. After a virtual machine is created, it can be used until the decommissioning date.
6. Five days before the decommissioning date, an email notice is sent to the user who requested the virtual machine. The user can perform one of the following actions:
 - Request to extend the life of the machine.

If the extension is not approved, the virtual machine is decommissioned and is archived or deleted. The LCM Administrator determines whether decommissioned virtual machines are archived.
 - Manually decommission the virtual machine
7. The virtual machine is deleted on the decommissioning date. You cannot retrieve it, unless the LCM Administrator has configured LCM to archive the virtual machine. If virtual machines are archived, contact your LCM Administrator to retrieve it.
8. The LCM Administrator can choose to delete the virtual machine request. The LCM Administrator is the only role that can remove information about a virtual machine. When a request is deleted, no information about the virtual machine appears in reports, but the virtual machine is not deleted. If a virtual machine request is accidentally deleted, the LCM Administrator can recover the associated virtual machine.

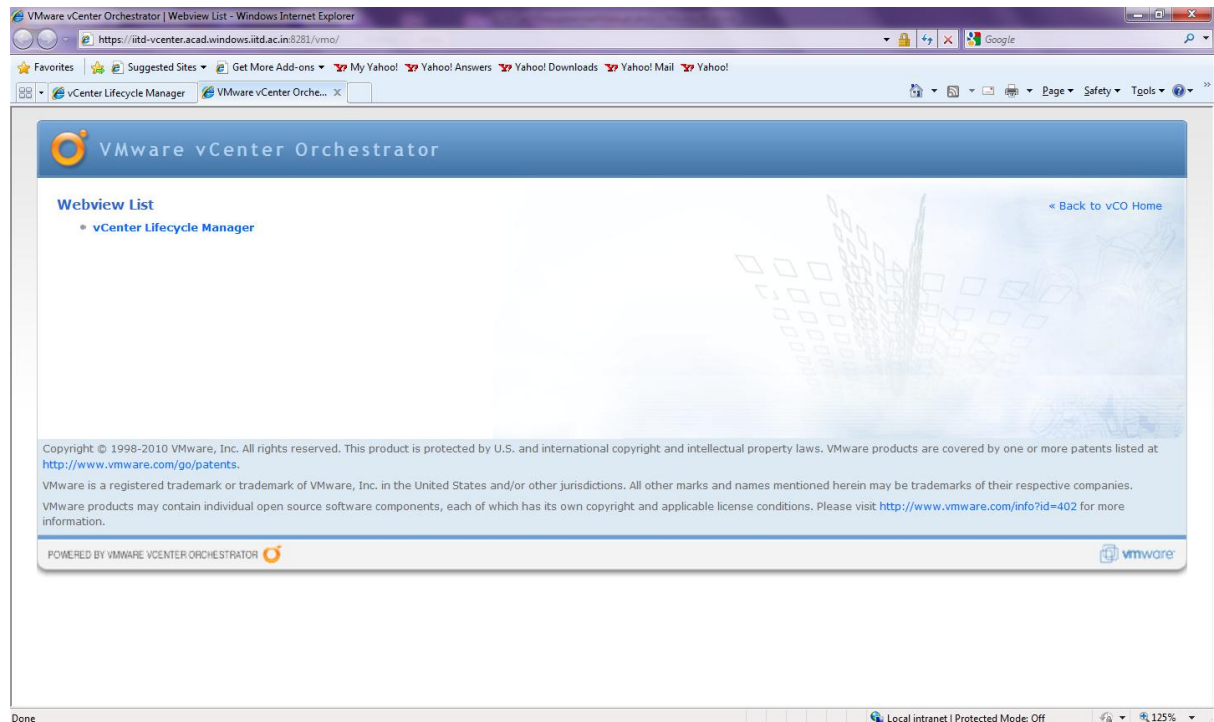
The following describes the above steps in detail:

I. Log In to vCenter Lifecycle Manager (LCM)

Procedure

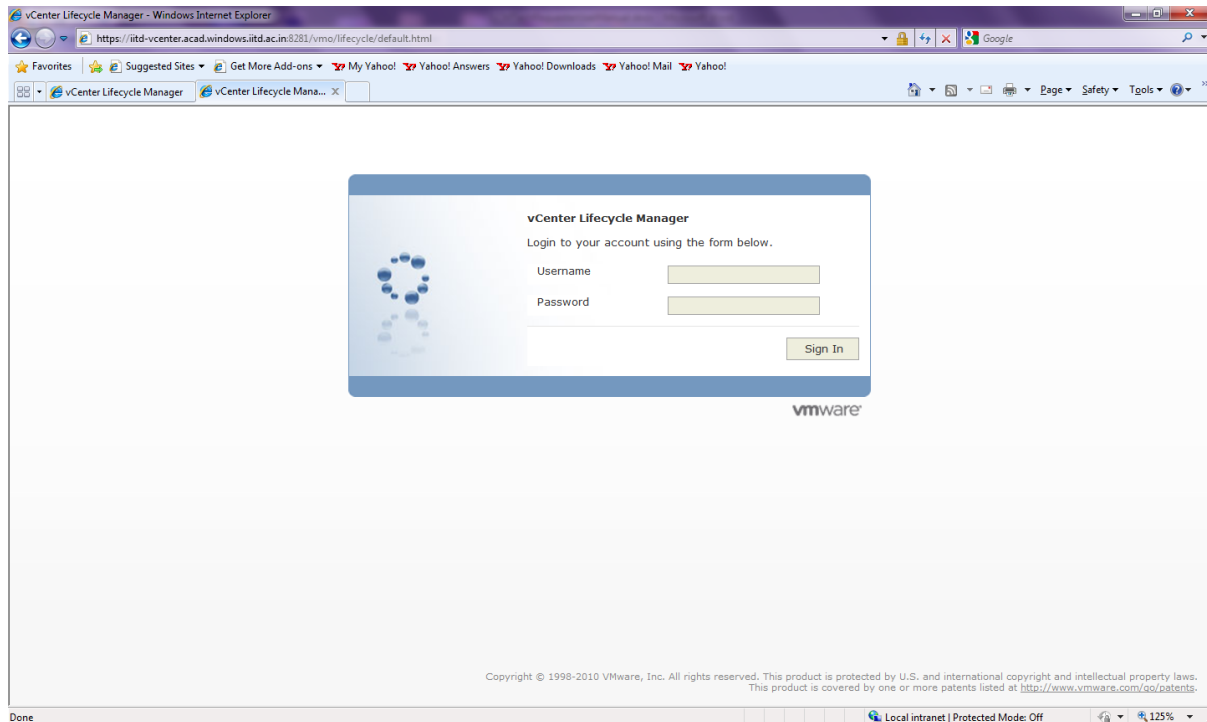
1. In any browser such as Internet Explorer 7 or 8, Mozilla FireFox 3.0x (where x is 8 or later), enter the following URL : <https://iitd-vcenter.acad.windows.iitd.ac.in:8281/vmo/>

The following screen appears on the browser window :



2. Click the following link under the “Webview List”
 - vCenter Lifecycle Manager

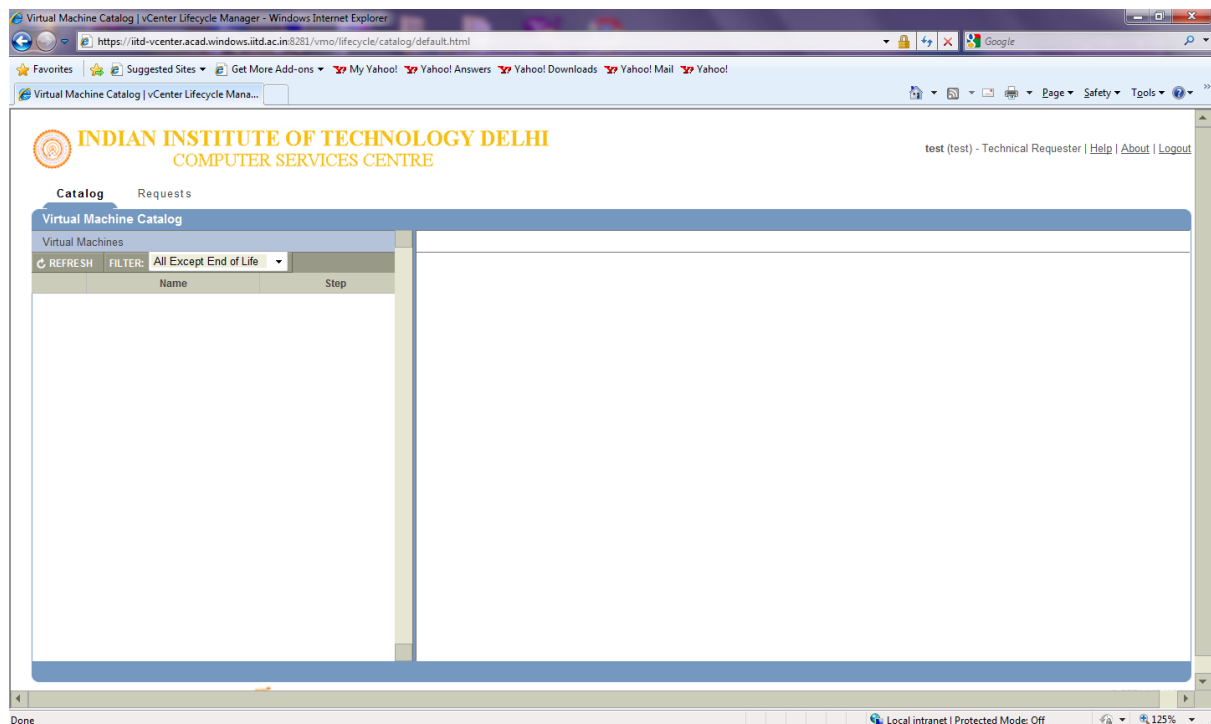
The following login screen appears on the browser window:



3. Enter your “Username” and “Password” and then click “Sign In”. “Username” and “Password” are the one you have registered with the LDAP/Active Directory. In case, your password does not work, then “Change your Kerberos password” using the following URL:

<https://www.cc.iitd.ernet.in/usermanage/index.html>

4. After successful login, the following screen appears:



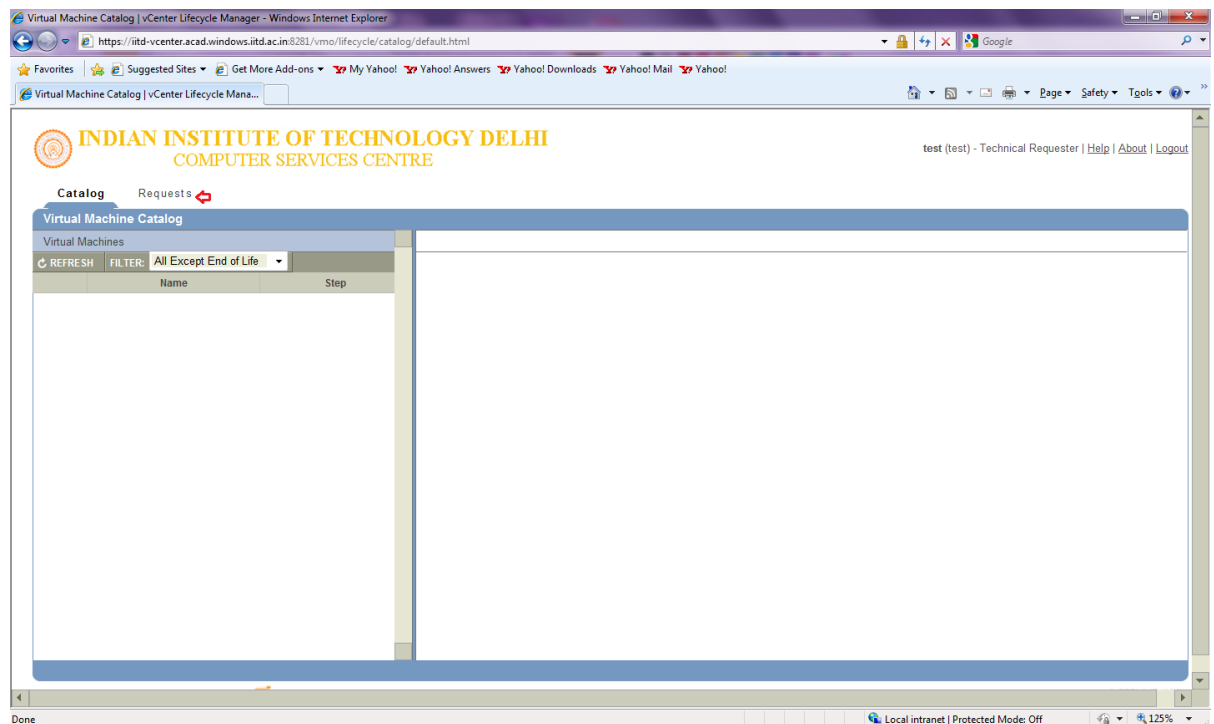
5. On the left side pane you can see two tabs “Catalog” and “Requests”.
- The “Catalog” tab when clicked displays “Virtual Machines Catalog”.
 - The “Request” tab when clicked displays “Virtual Machine Requests”.

II. Request a Virtual Machine

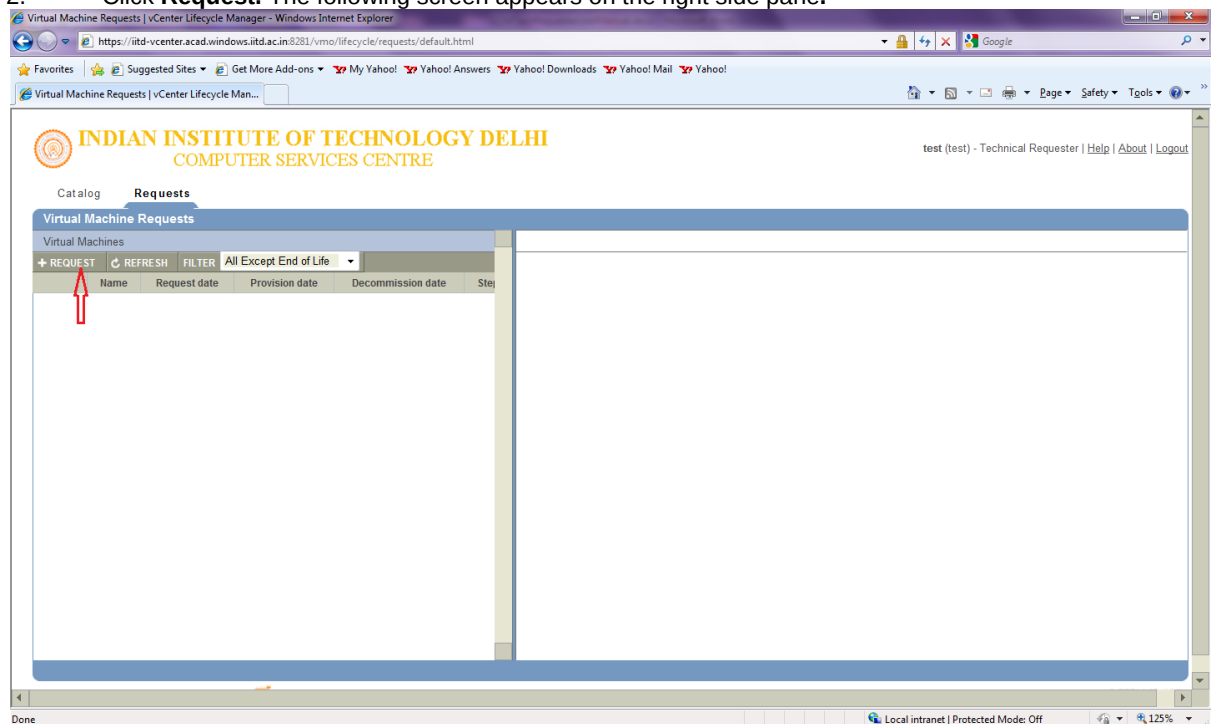
To obtain a virtual machine, you must submit a request. You can request a specific start date or accept the first available date. You can modify virtual machine parameters like CPU, memory, and shares, when you request the virtual machine. The options available are determined by the LCM Administrator. The modifications affect only the virtual machine that you are requesting at the time

Procedure

1. Log in to LCM as described above and click the **Requests** view



2. Click **Request**. The following screen appears on the right side pane.



Virtual Machine Requests | vCenter Lifecycle Manager - Windows Internet Explorer

https://iitd-vcenter.acad.windows.iitd.ac.in:8281/vmo/lifecycle/requests/default.html

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Catalog **Requests**

Virtual Machine Requests

Virtual Machines

+ REQUEST REFRESH FILTER All Except End of Life

Name	Request date	Provision date	Decommission date	Step
------	--------------	----------------	-------------------	------

Request Virtual Machine

Provisioning & Decommissioning Requester Information Virtual Machine Parameters Additional Information

(Fields marked with a * are required.)

Planning

This defines when the VM will be provisioned and decommissioned

Set commissioning date? ☐ Yes ☒ No

Set decommissioning date? ☐ Yes ☒ No

Group/User Authorizations

These groups/users define who can control or who can connect to the virtual machine. These are optional settings.

Virtual machine control by

Virtual machine view by

Reset Cancel Previous Next

3. (Optional) To specify a commissioning date, select **Yes** for **Set commissioning date?**, and select a date. If you do not specify a commissioning date, the virtual machine is created at the first available opportunity after approval.
4. (Optional) To specify a decommissioning date, select **Yes** for **Set decommissioning date?**, and select a date. If you do not specify a decommissioning date, the virtual machine remains in service until it is decommissioned manually.

Virtual Machine Requests | vCenter Lifecycle Manager - Windows Internet Explorer

https://iitd-vcenter.acad.windows.iitd.ac.in:8281/vmo/lifecycle/requests/default.html

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Catalog **Requests**

Virtual Machine Requests

Virtual Machines

+ REQUEST REFRESH FILTER All Except End of Life

Name	Request date	Provision date	Decommission date	Step
------	--------------	----------------	-------------------	------

Request Virtual Machine

Provisioning & Decommissioning Requester Information Virtual Machine Parameters Additional Information

(Fields marked with a * are required.)

Planning

This defines when the VM will be provisioned and decommissioned

Set commissioning date? ☒ Yes ☐ No

Provisioning date

Set decommissioning date? ☒ Yes ☐ No

Decommission date

Group/User Authorizations

These groups/users define who can control or who can connect to the virtual machine. These are optional settings.

Reset Cancel Previous Next

5. Specify Group/User Authorizations in the following screen:

(Optional) Specify who can control the virtual machine request. If you do not specify a user or group, only requestor and the LCM Administrator have control

- a. From the **Virtual machine control by** drop-down menu, select **User**.
- b. Type the name of the **User** (Ldap User) .
 - Type in User id in the square box. You can also enter the first letter of User id in the square box and the system will provide you a drop down list of all the matching User ids that begin with the letter you just typed in the square box ; you can now choose from the drop down list of User ids.

(For "Group" our Ldap has only eleven base groups i.e. faculty,phd,mtech,btech etc. So is not advisable to give control to group of large base.)

- c. Type the email address of the user.

6. (Optional) Specify who can connect to and view the virtual machine when it is running. If you do not specify a user or group, only you and the LCM Administrator can view the virtual machine.

- a. From the **Virtual machine view by** drop-down menu, select **Group** or **User**.
- b. Type the name of the user or group as explained in point II 5 above.
- c. Type the email address for the user or group.

Virtual Machine Requests | vCenter Lifecycle Manager - Windows Internet Explorer

https://iitd-vcenter.acad.windows.iitd.ac.in:8281/vmo/lifecycle/requests/default.html

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Catalog Requests

Virtual Machine Requests

Virtual Machines

+ REQUEST REFRESH FILTER All Except End of Life

Name	Request date	Provision date	Decommission date	St

Request Virtual Machine

Provisioning & Decommissioning Requester Information Virtual Machine Parameters Additional Information

These groups/users define who can control or who can connect to the virtual machine. These are optional settings.

Virtual machine control by User

* Control user skak

* Control user/group email address skak@cc.iitd.ac.in

* Re-enter control user/group email address skak@cc.iitd.ac.in

Virtual machine view by User

* View user ramlal

* View group/user email address ramlal@cc.iitd.ac.in

* Re-enter view group/user email address ramlal@cc.iitd.ac.in

Reset Cancel Previous Next

7. Click **Next**. The following screen appears on the screen. Select settings for the **Server Environment, Service Level, and Performance** options from the drop down list.

Virtual Machine Requests | vCenter Lifecycle Manager - Windows Internet Explorer

https://iitd-vcenter.acad.windows.iitd.ac.in:8281/vmo/lifecycle/requests/default.html#

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Catalog Requests

Virtual Machine Requests

Virtual Machines

+ REQUEST REFRESH FILTER All Except End of Life

Name	Request date	Provision date	Decommission date	St

Request Virtual Machine

Provisioning & Decommissioning Requester Information Virtual Machine Parameters Additional Information

(Fields marked with a * are required.)

Requester Information

These are the logical criteria that determine the availability of your virtual infrastructure resources

* Location Computer Center

* Organization IIT Delhi India

* Server Environment

* Service Level

* Performance

Contact

Reset Cancel Previous Next

Virtual Machine Requests | vCenter Lifecycle Manager - Windows Internet Explorer

https://iitd-vcenter.acad.windows.iitd.ac.in:8281/vmo/lifecycle/requests/default.html#

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Catalog Requests

Virtual Machine Requests

Virtual Machines

+ REQUEST REFRESH FILTER All Except End of Life

Name	Request date	Provision date	Decommission date	State

Request Virtual Machine

Provisioning & Decommissioning Requester Information Virtual Machine Parameters Additional Information

These are the logical criteria that determine the availability of your virtual infrastructure resources

* Location Computer Center

* Organization IIT Delhi India

* Server Environment Research

* Service Level Critical

* Performance High

Contact

* Requester email address requester@dept.iitd.ac.in

* Re-enter requester email address requester@dept.iitd.ac.in

Reset Cancel Previous Next

8. Type the requester email and click **Next**.

9. When you click **Next**, the following screen appears on the screen:

Virtual Machine Requests | vCenter Lifecycle Manager - Windows Internet Explorer

https://iitd-vcenter.acad.windows.iitd.ac.in:8281/vmo/lifecycle/requests/default.html#

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Catalog Requests

Virtual Machine Requests

Virtual Machines

+ REQUEST REFRESH FILTER All Except End of Life

Name	Request date	Provision date	Decommission date	State

Request Virtual Machine

Provisioning & Decommissioning Requester Information Virtual Machine Parameters Additional Information

(Fields marked with a * are required.)

Virtual Machine Information

This defines the type of server that is installed, if the server is started after being provisioned.

* Server type

Start virtual machine ☐ Yes ☒ No

Customization Information

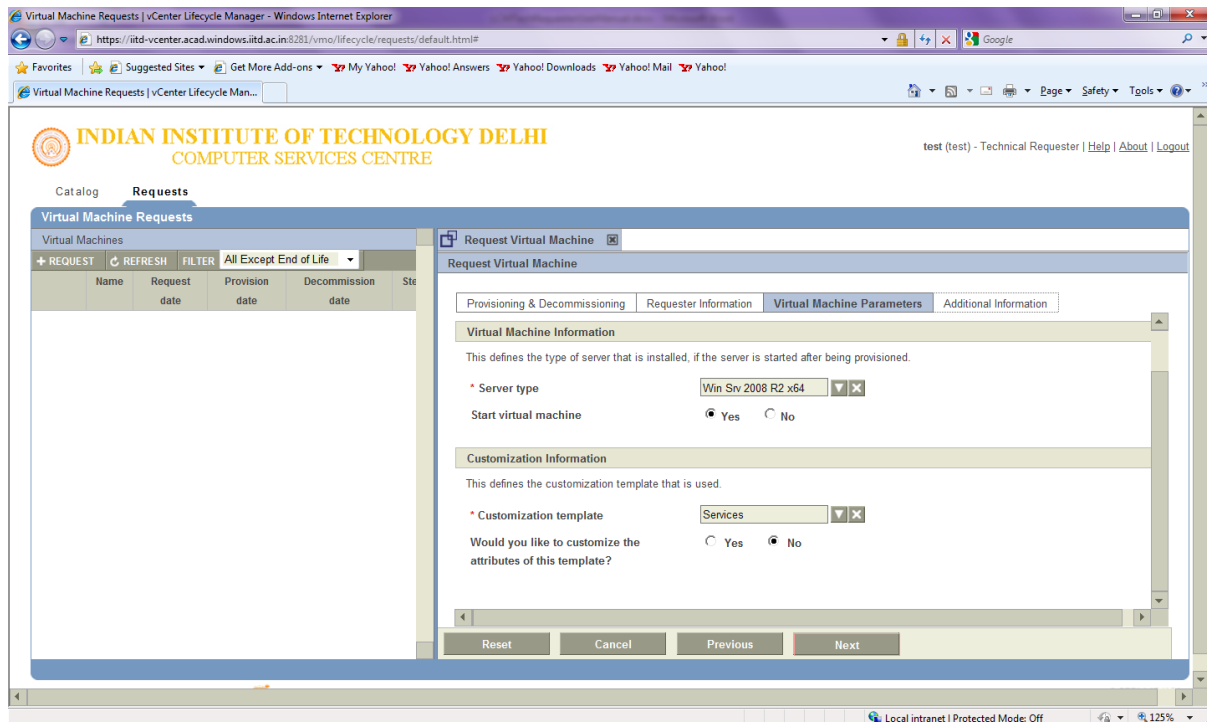
This defines the customization template that is used.

* Customization template

Would you like to customize the ☐ Yes ☒ No

Reset Cancel Previous Next

10. Select the **Server type**.



11. (Optional) To start the virtual machine as soon as it is provisioned, select **Yes** for **Start virtual machine**.
12. Select the customization template from the drop down list as shown in the following screen.

At present only “Services” is being provided as the Customization template. On selecting the customization template as “Services” the following values for the Memory, CPU and the Disk are considered automatically:

Memory reservation (MB) (Guaranty)	: 8192
Memory Limit/size (MB) (desired)	: 8192
Memory Shares	: high
CPU Reservation (MHz) (guaranty)	: 1000
CPU limit (MHz) (desired)	: 2000
CPU Count	: 2.0
CPU Shares	: high

13. (Optional) To modify the customization template, select **Yes** for **Would you like to customize the attributes of this template?**. The following screen gets displayed where you can scroll down and change the values of the attributes as per your computing needs. You may refer to Table III below for the “Customization Template Attributes”
14. However, if you select **No**, for **Would you like to customize the attributes of this template?**, then directly go to step 14

Scroll down to get the following screen:

Virtual Machine Requests | vCenter Lifecycle Manager - Windows Internet Explorer

https://iitd-vcenter.acad.windows.iitd.ac.in:8281/vmo/lifecycle/requests/default.html#

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Catalog **Requests**

Virtual Machine Requests

Virtual Machines

+ REQUEST REFRESH FILTER All Except End of Life

Name	Request date	Provision date	Decommission date	St

Request Virtual Machine

Provisioning & Decommissioning Requester Information **Virtual Machine Parameters** Additional Information

* Customization template Services

Would you like to customize the attributes of this template? ☒ Yes ☐ No

* Memory reservation (MB) (Guaranty) 8192

* Memory limit / size (MB) (desired) 8192

* Memory shares high

* CPU reservation (Mhz) (guaranty) 1000

* CPU limit (Mhz) (desired) 2000

* CPU count 2.0

* CPU shares high

* Disk shares high

Reset Cancel Previous **Next**

15. Click **Next**.

16. The following screen gets displayed. Type comments about the virtual machine, which are viewed in the approval process.

Virtual Machine Requests | vCenter Lifecycle Manager - Windows Internet Explorer

https://iitd-vcenter.acad.windows.iitd.ac.in:8281/vmo/lifecycle/requests/default.html#

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Catalog **Requests**

Virtual Machine Requests

Virtual Machines

+ REQUEST REFRESH FILTER All Except End of Life

Name	Request date	Provision date	Decommission date	St

Request Virtual Machine

Provisioning & Decommissioning Requester Information Virtual Machine Parameters **Additional Information**

(Fields marked with a * are required.)

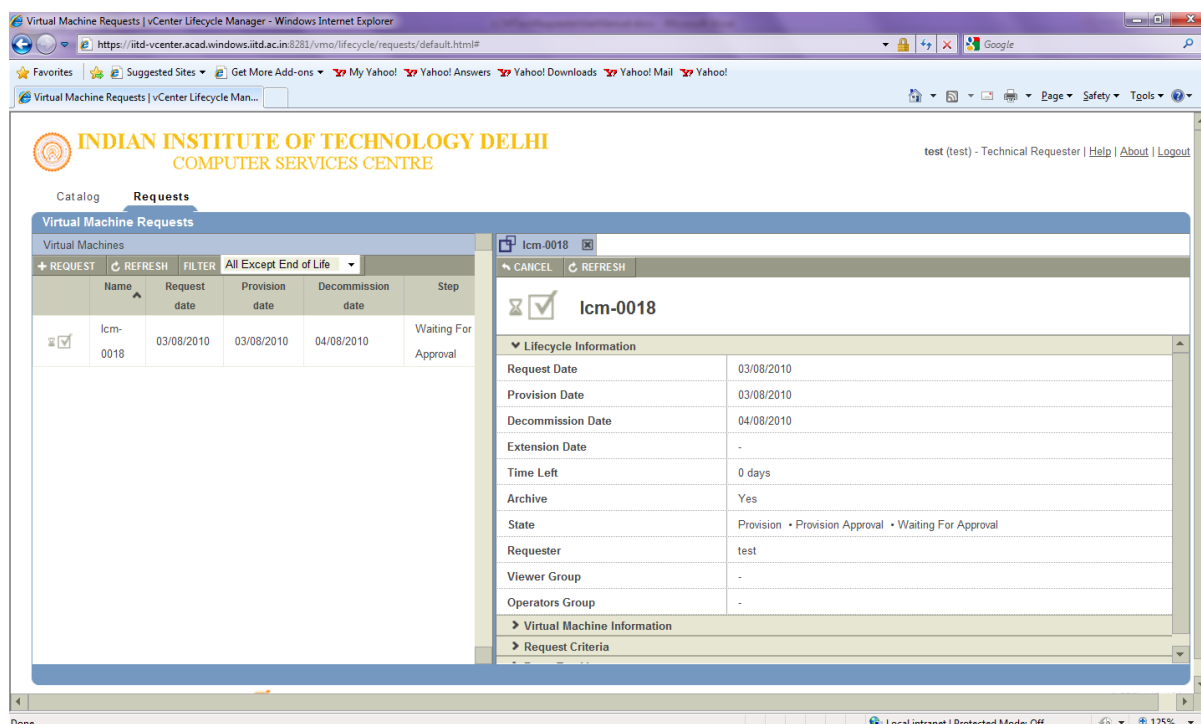
* Comment Request for a VM in CSC

Reset Cancel Previous **Submit**

17. Click **Submit**.

On the left side pane you can see that your "Request for the Virtual Machine" has been queued up and is waiting for approval. At this point an Email is automatically sent to the LCM Administrator

notifying him/her about your pending request for creation of a Virtual Machine. After the LCM Administrator approves your request your virtual machine is created and you will also be notified through an email from the LCM Administrator.



The virtual machine is deleted on the decommissioning date. You cannot retrieve it, unless the LCM Administrator has configured LCM to archive the virtual machine. If virtual machines are archived, contact your LCM Administrator.

III. Customization Template Attributes

If you are an LCM Tech Requester, you can assign custom values for template attributes.

Table 1: Customization Template Attributes

Attribute	Values
Memory reservation (MB)	Minimum is 0 (default is 256)
Memory limit / size (MB)	Minimum is -1; must be a multiple of 4 (default is 1024); must be greater than the Memory reservation value Selecting -1 maintains the same memory as the vCenter template
Memory share	low, normal, or high (default is normal)
CPU reservation (MHz)	Minimum is 0 (default is 200)
CPU limit (MHz)	Minimum is -1 (default is 2000); must be greater than the CPU reservation value Selecting -1 maintains the same CPU number as the vCenter template.

CPU count	1, 2, 3, or 4 (default is 1)
CPU shares	low , normal , or high (default is normal)
Disk shares	low , normal , or high (default is normal)

IV. Display Requested Virtual Machines

You can use filters to view the status of virtual machines that you have requested.

Procedure

1. Log in to LCM.
2. Click **Catalog** or **Requests**.
3. Select a filter.
4. Click a virtual machine request in the left pane to see a summary of the configuration and status

V. Check the Power State of a Virtual Machine

You can check whether a virtual machine is powered on or off or suspended.

Procedure

1. Log in to LCM.
2. Click the **Catalog** view.
The icon to the left of the virtual machine indicates its power state.
 - A green triangle indicates that the virtual machine is powered on.
 - A red square indicates that the virtual machine is powered off.
 - Two parallel yellow bars indicate that the virtual machine is suspended

VI. Power a Virtual Machine On or Off

Power commands are available to the users and groups that are given control when the virtual machine is requested. The LCM Administrator also has rights to control any virtual machine.

Procedure

1. Log in to LCM.
2. Click the **Catalog** view.
3. In the catalog list, click a virtual machine name.
4. In the right pane, click **Commands**.
5. Click **Power on** or **Shut down**.

VII. Suspend a Virtual Machine

Users and groups who were given control when the virtual machine was requested can suspend the virtual machine. The LCM Administrator also has rights to suspend any virtual machine.

Procedure

1. Log in to LCM.
2. Click the **Catalog** view.
3. In the catalog list, click a virtual machine name.
4. In the right pane, click **Commands**.
5. Click **Suspend**.

VIII. Create a Snapshot

A snapshot captures the states of a virtual machine's hard drives. A snapshot does not capture the virtual machine's memory and power state. Snapshot commands are available to the users and groups who were given control when the virtual machine was requested. You can access only one snapshot at a time. If you need to revert to a snapshot earlier than the most recent one, contact your LCM Administrator.

Procedure

1. Log in to LCM
2. Click the **Catalog** view.
3. In the catalog list, click a virtual machine name.
4. In the right pane, click **Commands**
5. Click **Snapshot**.

IX. Revert to a Snapshot

You can use the snapshot to return to the saved state. Snapshot commands are available to the users and groups who were given control when the virtual machine was requested. You can access only one snapshot at a time. If you need to revert to a snapshot earlier than the most recent one, contact your LCM Administrator.

Procedure

1. Log in to LCM.
2. Click the **Catalog** view.
3. In the catalog list, click a virtual machine name.
4. In the right pane, click **Commands**.
5. Click **Revert to snapshot**.

The virtual machine returns to the state it was in when the snapshot was taken.

X. Request to Extend the Life of a Virtual Machine

If you want to continue using a virtual machine beyond its scheduled decommissioning date, you can request an extension. An LCM Approver must approve the extension request if the LCM Administrator has configured LCM to require an approval.

Procedure

1. Log in to LCM.
2. Click the **Catalog** view.
3. In the catalog list, click a virtual machine name.
4. In the right pane, click **Extension**.
5. In the **Extend Until** field, select the new date for the virtual machine to be decommissioned.
6. In the **Comment** text box, type the reason for your request.
7. In the **Requester E-mail Address** text box, type your email address.
8. Click **Submit**.

XI. Decommission a Virtual Machine Immediately

You can decommission a virtual machine that you have requested before its scheduled date or if the virtual machine has no scheduled decommissioning date.

Procedure

1. Log in to LCM.
2. Click the **Catalog** view.
3. In the catalog list, click a virtual machine name.
4. In the right pane, click **Decommission**.
5. In the **Comment** text box, type the reason why you want to decommission the virtual machine.
6. Click **Submit**.

XII. Request to Change the Virtual Machine Customization Attributes

If you are an LCM Tech Requester, you can request to change the customization template attributes for a virtual machine that has been placed.

Procedure

1. Log in to LCM
2. Click the **Catalog** view.

3. In the catalog list, click a virtual machine name.
4. In the right pane, click **Change Request**.
5. In the **Comment** text box, type the reason for your request.
6. In the **Contact E-mail Address** text box, type your email address.
7. Click **Next**.
8. Change the attribute values as needed.
9. Click **Submit**.

XIII. Catalog View and Request View Filters

You can use filters to view only virtual machines that meet a certain criteria.

- a. In the **Catalog** view, you can use filters given in Table 1 below to view only virtual machines that meet the criteria as shown in the following screen:

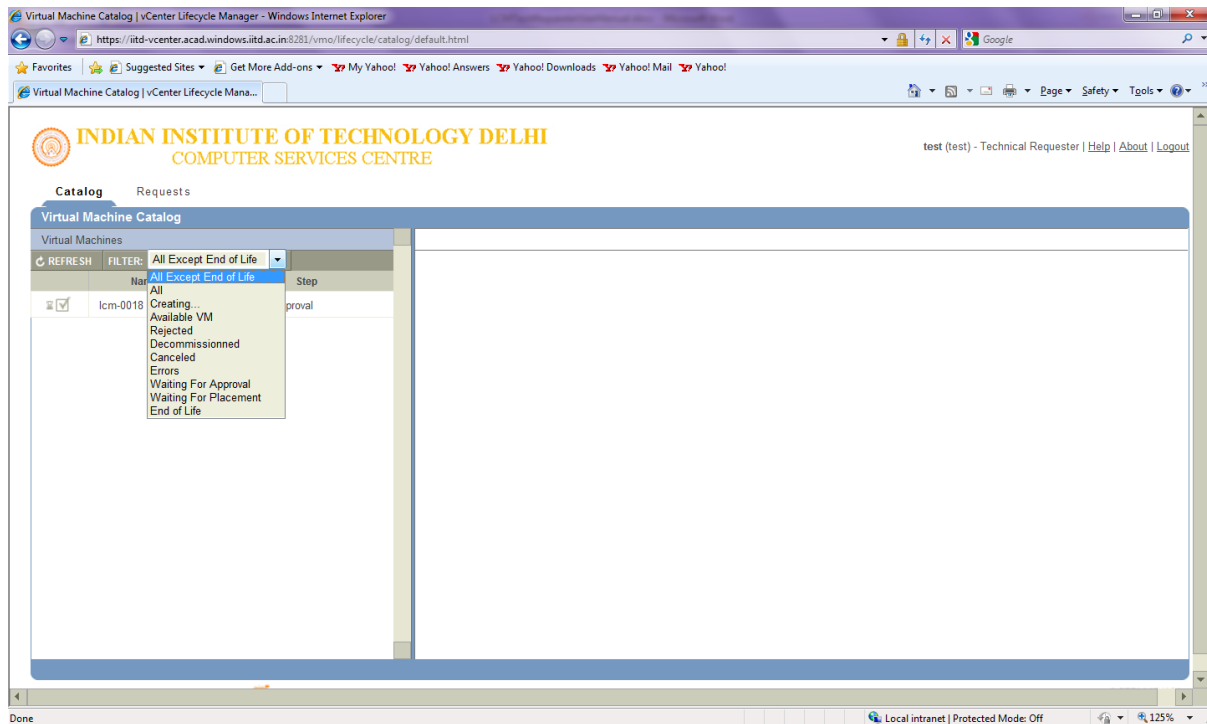


Table 1. Catalog View Filters

Filter	Description
All	Displays the virtual machines that you requested
Creating	Displays the virtual machines that you requested that are being created.
Available VM	Displays the available virtual machines that you created
Rejected	Displays the virtual machines that you requested that were rejected
Decommissioned	Displays the virtual machines that you created that have been decommissioned.

- b. In the **Requests** view, you can use the filters given in Table 2 below to view only virtual machines that meet the criteria as shown in the following screen :

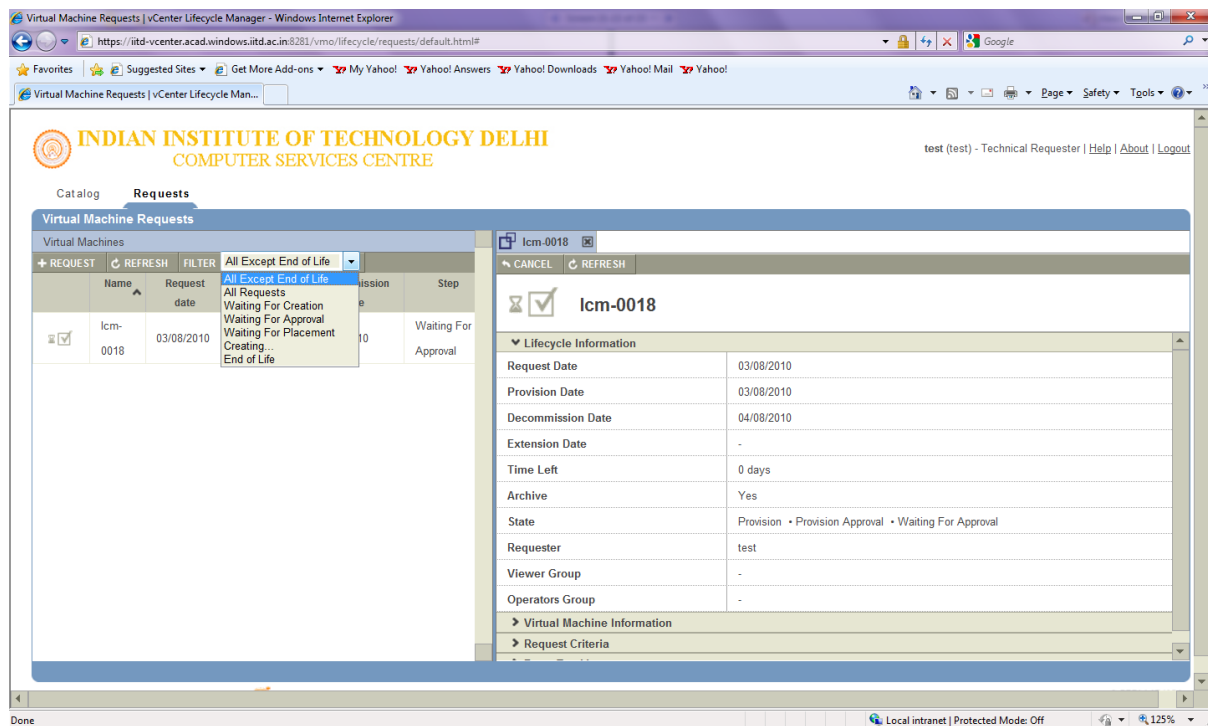


Table 2. Request View Filters

Filter	Description
All Requests	Displays the virtual machines that you requested.
Waiting For Creation	Displays the virtual machines that you requested that are waiting to be created.
Waiting For Approval	Displays the virtual machines that you requested that are waiting for approval.
Waiting For Placement	Displays the virtual machines that you requested that are waiting to be correctly placed
Creating	Displays the virtual machines that you requested that are being created.
End Of Life	Displays the requested virtual machines that you requested that are decommissioned, archived, rejected, or cancelled.
All Except End Of Life	Displays the requested virtual machines