



# CHAPTER 1

## Getting Started with VFrame Data Center

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VFrame Data Center is a solution that helps you optimize resource usage in the data center by creating a virtualized view of the resources and rapidly provisioning application infrastructure. You use VFrame to create a network definition based on the logical requirements of the application that you want to run and to dynamically assign and configure physical resources to the defined network in a coordinated workflow.

These topics help you understand the product and the basics of using it:

- [Overview of VFrame Data Center, page 1-1](#)
- [Understanding How to Use VFrame, page 1-6](#)
- [Starting VFrame, page 1-10](#)
- [Working with the VFrame Interface, page 1-12](#)
- [Viewing Job Status, page 1-16](#)
- [Exiting VFrame, page 1-21](#)

## Overview of VFrame Data Center

These topics provide an overview of the product:

- [VFrame and Service-Oriented Data Center Provisioning, page 1-2](#)
- [VFrame Features, page 1-4](#)

## VFrame and Service-Oriented Data Center Provisioning

Cisco VFrame Data Center is an appliance-based network orchestration solution. Data center administrators using VFrame are able to define their application infrastructure as a logical service and have it powered by the physical devices in the data center. By providing this layer of abstraction, VFrame introduces a service-oriented provisioning model to the data center where physical resources need not be tied down to a particular application service. The infrastructure associated with an application service is defined in the form of a logical topology called a service template. This provides the catalog of all logical devices that need to be used for a particular application with their properties and the network relationships that they have to each other. The service template is a programmatic architecture of the application infrastructure.

By defining application requirements based on service requirements, you can treat the data center as pools of resource types and freely share resources among applications based on usage patterns and availability requirements. For example, at peak usage time, your database application might need ten servers, but after work hours, that requirement might drop to one server. Using traditional provisioning models, you would have to dedicate ten servers to the application; using the service model, you could provision ten servers during peak hours, but during off-hours you could provision one server, and reprovision the other nine servers to another application, such as network backup.

Physical resources are acquired only when you deploy a service network and are released when you undeploy it. VFrame monitors the service and remaps, reconfigures, reacquires, or otherwise alters the resources as required by the service's operations.

In general, service-oriented data center provisioning can provide these benefits:

- Utility resource pooling, reducing the time to add devices—By pooling resources, you can more easily share resources among applications. In addition, when you add resources, you add them to the pool instead of configuring each new resource to work for a specific application. By sharing resources, you can potentially use fewer resources than you would if each application had dedicated resources.
- Dynamic repurposing of the service network—When a service is not needed, you can undeploy it and deploy other services so that the same equipment is used for more than one service.

- Automated service level management—By defining templates and resource pools, you can specify the type of equipment required by the service, including processor speed, amount of memory, and other performance-related parameters. Thus, you can define the level of service required, providing high-performance or even low-performance services, as required by your service-level agreements.
- Automated failover—Resource pooling makes it possible to automate failover. If a device stops functioning, VFrame can provision another device in the pool to take over the failing resource's role. This can greatly reduce down time for your critical applications.
- Automated provisioning to handle increased application load—If an application requires additional resources due to a heavy load, VFrame can automatically provision additional resources to improve application performance. In general, application provisioning is policy based instead of based on dedicated resources.
- Improved resource usage—By pooling and provisioning resources based on service requirements, you can typically run your resources at higher usage levels. For example, with dedicated servers, during off-peak hours, an application might only use 10% of a server's capacity. With service-oriented provisioning, you might be able to consistently run your servers at high capacity by reprovisioning servers from off-peak applications to peak applications. Potentially, this can reduce the number of servers required by your data center or delay the need to acquire additional servers.
- Equipment standardization—It is easier to set standards for your data center devices such as servers, storage, and network equipment.
- Standardized application deployments—You can create standardized application network templates that can be shared by many service networks within the same VFrame system, or export service network templates and import them into other VFrame systems (perhaps in other data centers). This lets you quickly deploy standard, tested setups throughout your organization, speeding up application deployments.

## VFrame Features

VFrame includes these features:

- **Service Template Design**—You can create templates for your service networks. Templates make it easier for users to create service networks because they do not have to start from scratch. You can leverage your application and networking expertise and share it among groups in your organization, because you can export and import these designs.
- **Service Network Design**—Service network design is the creation of a service network to run an application. These designs are based on templates. Instead of configuring specific hardware devices, you define the device requirements in service terms, so that VFrame can choose devices from resource pools when you deploy the service network.
- **Service Network Operation**—VFrame includes features for operating and managing a service network when you deploy the network and start using it to run an application.
- **Service Network Policies**—You can define policies for your operating service networks that automate features such as server failover and dynamic resource provisioning.
- **End-to-End Infrastructure Visualization**—You can view network maps of your physical resources and of the service design of your service networks.
- **Device Discovery and Management**—You discover the devices you want to manage and use the VFrame mapping feature to lay out and view your network. From the map, you can view the types of devices you have, and their contents, such as modules for switches, or logical units for your storage area networks (SAN). Device discovery and management includes features for defining the credentials used to log into devices, and features for defining templates to use for discovering servers (LOM manager templates) and storage devices (storage manager templates) that are not supported by predefined templates.
- **Resource Pooling**—You can create resource pools to segment your resources in the manner that best fits your organization's requirements. You can create dynamic pools that automatically include devices that meet specified criteria, or you can create pools with a hand-picked set of devices.

- **Virtual Contexts**—Virtual contexts give you another way of limiting user access to VFrame features. By creating a virtual context, you can create users who can log into only that context. Then you can assign to the context just those resource pools and assets required by that set of users. Limiting the resources assigned to a context makes it easier for your users because they will not have to sort through resources that they cannot use.
- **User Management**—You can define users within VFrame. You can assign users roles that specify what types of actions they can perform in VFrame. You can also use Cisco Secure Access Control Server 3.3 or later to control user authentication to VFrame virtual contexts. This allows you to integrate VFrame user control with your organization’s core user management functions. For more information on configuring the ACS server to work with virtual contexts, see [Using an Access Control Server with Virtual Contexts, page 10-3](#).
- **Roles**—You can create roles that limit what users can do in the product, based on your organization’s rules for span of control. For example, you can create storage specialists who can do only storage-related actions when they log into VFrame.
- **Golden Image Management**—You can create golden images of your servers that you can then deploy to other servers. This lets you create a single image for an application and reuse it whenever a server is provisioned to an application, ensuring that you have consistent server configuration.
- **Macros and Variables**—You can create custom macros and variables for use in your templates.
- **Fault Management**—The fault management feature helps you monitor an operating network, identify problems, and respond to those problems. You can also configure VFrame to use your syslog server for logging system messages.
- **Reporting**—VFrame includes several reporting features to help you monitor and analyze the performance of your networks. You can have some of these reports e-mailed to specified users.
- **High Availability (Redundancy)**—You can configure two VFrame systems to work as a redundant pair. Redundancy ensures that if your primary VFrame Data Center Director fails, a backup takes over immediately.
- **Application Programming Interface (API)**—VFrame has an API you can use to integrate VFrame into your existing network monitoring systems.

# Understanding How to Use VFrame

VFrame is a highly flexible product, allowing you to divide work between many people in your organization. You can divide the work in any way that you see fit. You can take many different paths from the installation of the product to the deployment of real networks.

However, there is a generalized workflow to follow for going from a new system to deploying networks. [Table 1-1](#) describes this generalized workflow. Keep in mind that many steps can be done concurrently or iteratively.

Some steps must take place in the Admin context. Some steps can take place in the Admin context or within a specific virtual context that you can create. If you are completing the entire end-to-end workflow, you might need to log into the product in two contexts:

- AdminContext—Used for overall product management, device discovery and management, and virtual context creation and management. You can also perform service network design and operation.
- A user-defined virtual context—Used for service network design and operation.

**Table 1-1 Overall Process for Using VFrame**

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## Task

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The following steps must take place within the Admin context.

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### Step 1 Create VFrame user accounts and roles.

VFrame includes a default user account named admin that has access to all product features. Typically, however, you will want multiple users to have access to the system, and you might want to restrict each user's access to a specific area of expertise. For example, you might want a storage administrator to be able to only define storage device credentials and discover storage devices.

Create a user account for each user, and create roles to restrict access as appropriate for your organization's policies.

For more information, see [Managing Roles and Local Users, page 2-1](#).

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**Table 1-1 Overall Process for Using VFrame (continued)**

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<b>Task</b>
<b>Step 2 Verify the configuration of your data center network.</b> <p>VFrame requires that devices in your data center network be configured in specific ways to work with the product. Your switches, service modules, servers, and storage devices must have certain features installed or enabled. You might also need to install storage managers and lights-out management (LOM) managers. For more information about the data center network setup requirements, see <a href="#">Setting Up the Physical Network, page 3-1</a>.</p>
<b>Step 3 Add devices to VFrame.</b> <p>VFrame needs to know which devices you want it to manage, so you need to identify those devices and add them. The processes for adding devices to VFrame management differ, depending on the type of device, and you can have your device experts handle each type of device separately (such as network switches, servers, storage devices, and so forth). You need to complete these general steps:</p> <ol style="list-style-type: none"><li>1. Configure the credentials required to log into the devices you want to manage with VFrame.</li><li>2. Configure a DHCP range to define the scope of VFrame server discovery.</li><li>3. Create LOM managers for discovering servers.</li><li>4. Create storage managers for discovering non-natively supported storage, if needed.</li><li>5. Have VFrame discover the devices and add them to the resources list.</li><li>6. Select which devices you want to manage with VFrame.</li></ol> <p>For more information, see:</p> <ul style="list-style-type: none"><li>• <a href="#">Managing Device Credentials, page 4-1</a></li><li>• <a href="#">Configuring DHCP for VFrame, page 5-1</a></li><li>• <a href="#">Discovering Devices, page 6-1</a></li><li>• <a href="#">Managing Devices, page 7-1</a></li></ul>

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**Table 1-1 Overall Process for Using VFrame (continued)**

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<b>Task</b>
<p><b>Step 4 Create golden images for managed servers.</b></p> <p>Servers that VFrame manages must boot from the network and obtain their operating systems from VFrame. You need to create a golden image, that is, an image of the operating system and applications you want to run on the servers, for each type of server and application you are deploying. Install the VFrame Host Agent (VHA) on existing servers that you want to use as model servers for creating golden images.</p> <p>Alternatively, you can import golden images that were created by another VFrame system and exported.</p> <p>For more information, see <a href="#">Managing Server Images, page 8-1</a>.</p>
<p><b>Step 5 Create resource pools.</b></p> <p>A resource pool is collection of a particular type of device or other resource (such as VLANs). By pooling resources, you can assign a group of them to an application instead of individual devices or other resources. VFrame requires pooling so that failed resources can be easily replaced by other resources in the pool, for example, replacing a server that stops functioning. How you define your pools depends on the needs of your organization, but a general best practice is to create separate pools for each service network you will define.</p> <p>Besides creating pools for your discovered devices and other resources, you must also add ranges of IP addresses to the All IP Address Range pool. This pool includes all of the addresses that you are allowing VFrame to assign to devices acquired for use by service networks. Optionally, you can create other IP address range pools and copy address ranges to them, so that you can assign these pools to virtual contexts instead of the default pools (described in <a href="#">Step 7</a>).</p> <p>For more information, see <a href="#">Managing Resource Pools, page 9-1</a>.</p>

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**Table 1-1 Overall Process for Using VFrame (continued)**

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<b>Task</b>
<p><b>Step 6 Create templates to define the general design of service networks.</b></p> <p>Templates provide a basic structure that you can use to design service networks. By creating templates, you make it easier for your user community to create valid service networks, and to control the types of networks they can create. When creating templates, you also create variables that service network designers will use to specify the requirements for their specific network.</p> <p>Alternatively, you can import templates that were created on another VFrame system and exported.</p> <p>Users can also create templates in virtual contexts.</p> <p>For more information, see:</p> <ul style="list-style-type: none"><li>• <a href="#">Designing Templates, page 11-1</a></li><li>• <a href="#">Managing Variable Group Types from Global Libraries, page 12-1</a></li></ul>
<p><b>Step 7 (Optional) Create virtual contexts.</b></p> <p>A virtual context is a logically separate image of the VFrame system. A virtual context has its own resources, service networks, and user and role definitions, which cannot be seen by users of any other context except the Admin context. Thus, virtual contexts allow you to create separate systems for different groups in your organization without requiring you to purchase separate physical equipment for each. The single VFrame system appears to each group as their own system. Service network design and operation occur within virtual contexts.</p> <p>For more information, see <a href="#">Managing Virtual Contexts, page 10-1</a>.</p>
<hr/> <p><b>The following steps can take place within a specific virtual context or within the Admin context.</b></p> <hr/>
<p><b>Step 8 If necessary, create resource pools within a virtual context.</b></p> <p>If you are running more than one service network from a virtual context, you might want to create resource pools specific to each service network.</p> <p>For more information, see <a href="#">Managing Resource Pools, page 9-1</a>.</p> <hr/>

**Table 1-1 Overall Process for Using VFrame (continued)**

Task
<p><b>Step 9 Design a service network.</b></p> <p>In service network design, users use the provided templates to create the definition of a real network. Instead of specifying a specific server, for example, they define the type of server needed based on server features, such as processor speed. Because networks are based on service characteristics, when you deploy them, VFrame has the flexibility to choose appropriate, and available, hardware from the assigned resource pools.</p> <p>For more information, see <a href="#">Designing Service Networks, page 13-1</a>.</p>
<p><b>Step 10 Deploy, operate, and monitor the service network.</b></p> <p>After the service network is designed, you can deploy it so that your organization can use the applications running on the network. VFrame includes many features for managing and monitoring the network.</p> <p>For more information, see:</p> <ul style="list-style-type: none"> <li>• <a href="#">Managing Operations—Basic Workflow, page 14-1</a></li> <li>• <a href="#">Managing Fault Alarms, page 15-1</a></li> <li>• <a href="#">Viewing Reports, page 16-1</a></li> </ul>

## Starting VFrame

You access VFrame using your web browser.

### Before You Begin

You must install Sun Java 2 Runtime Environment (JRE) 1.5.x to run the product. The VFrame home page includes a link for downloading the JRE, or you can use this link to obtain the JRE from Sun Microsystems:

<http://java.sun.com/j2se/1.5.0/download.jsp>

Also, you can run the client only on computers running the Windows 2000 or XP operating systems.

## Procedure

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**Step 1** In your browser, open the VFrame home page. For example, if the DNS name of the VFrame Data Center Director management interface is `vframe.example.com`, the URL is **`http://vframe.example.com`**.

You can use the IP address of the management interface instead of the DNS name. If you are using a high-availability configuration, use the virtual IP address or its DNS name.



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**Note** To open a secure connection, use **`https://server_name:443`**.

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**Step 2** On the VFrame home page, click the link to open the client.

This downloads the client to your machine and starts it. If this is the first time you are starting the client, it might take a while to download, depending on the speed of your network connection. An updated client is also downloaded if the system was upgraded since the last time you started the client.

Click **Yes** on any security warnings. Eventually, the VFrame Logon dialog box appears.

**Step 3** In the Logon dialog box, enter your VFrame username, password, and select the name of the context to which you are logging in.

To log in to the administrative context, select **AdminContext**. Other context names are user-defined and thus unique to your organization. You can only log into contexts for which your user account is authorized.

The only preconfigured user is **admin**, and the admin password is configured during initial system setup.

Click **Login** to log onto the system.

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**Tips**

- If you cannot start the client, or it starts but does not function correctly, delete the cached version of the client and start over. To delete the cached client, select **Start > Run** and run **javaws** (the Java Web Start program). Select the VFrame client and click **Remove Selected Application**.
- If clearing the cache does not help, try connecting to VFrame using a different browser. For example, if you have trouble connecting through Internet Explorer, try Firefox. Also, analyze your browser security settings to ensure they do not prevent you from running Java programs.
- If you upgrade VFrame, you should clear the old client from the Java cache.

**Related Topics**

- [Working with the VFrame Interface, page 1-12](#)
- [Exiting VFrame, page 1-21](#)

## Working with the VFrame Interface

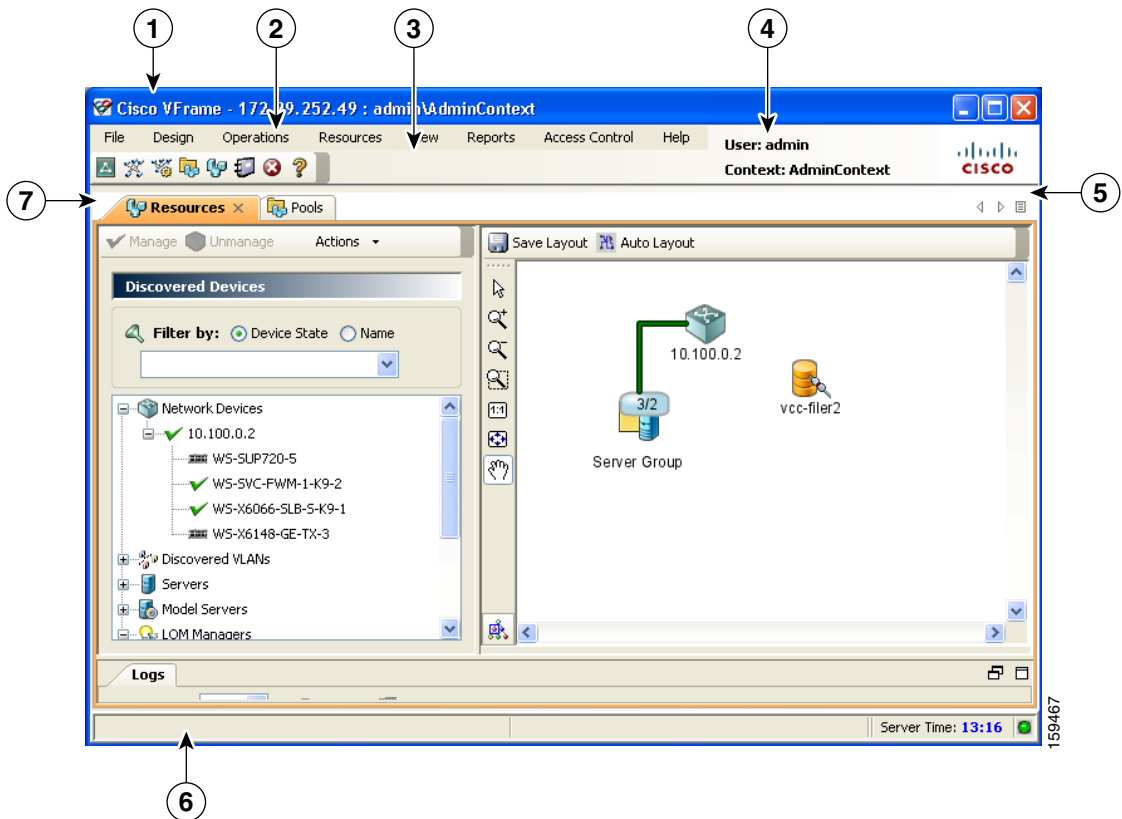
These topics explain how to use the VFrame interface:

- [Overview of the VFrame Interface, page 1-12](#)
- [Customizing the VFrame Interface, page 1-14](#)
- [Your Privileges Affect What You See!, page 1-14](#)
- [What Happens When More Than One User Logs In, page 1-15](#)
- [Changing Your Password, page 1-15](#)
- [Using Shortcut Menus, page 1-16](#)

## Overview of the VFrame Interface

[Figure 1-1](#) describes the major parts of the product's interface.

Figure 1-1 VFrame Main Window



1	Title bar. The name of the VFrame Data Center Director is displayed here.
2	Menu. Use the commands in these menus to access product features. You see only the commands to which you have authorization. As a result, you might read sections in the help that mention commands that you cannot see.
3	Toolbar. Some of the commands in the menus have toolbar buttons that you can use as shortcuts. Pass your mouse over the buttons to see the name of the feature.
4	Login status. This area shows the user account and virtual context name for this session.

5	Tab control. These buttons control the displayed feature tabs. Use the < and > buttons to scroll through the tabs when you open so many that they extend beyond the window frame. To go back to a tab that is already open, click on the tab name. Click the menu icon to get a list of open tabs, from which you can choose the tab you want to make active.
6	Status bar. Look for status here. The product displays a loading status bar when you select a feature and displays other messages when you perform various tasks. The status bar also displays the current time on the VFrame Data Center Director.
7	Feature tabs. This area is where you use most product features. In general, tabs are divided into two sections. The left side contains a list of the elements defined for the feature (for example, discovered devices on the Resources tab, or resource pools on the Pools tab), and the right side displays the contents of the item selected in the left tab. Click the <b>X</b> in the tab's title to close the tab.

## Customizing the VFrame Interface

You can set a user preference to control which tab is opened initially when you log in. To set the home page, select **File > User Preferences**, and select the desired home page. Click **Use Current** to use the tab that is current displayed in the interface.

## Your Privileges Affect What You See!

When you log into the product, what you are able to see and do depends on the privileges assigned to your user account. These privileges are defined by your assigned role.

If you cannot see a feature or modify a setting, it is usually because of your role assignment. If you believe you should be able to perform certain tasks in the product, contact your local administrator about changing your privileges.

Besides affecting what features you can see or tasks you can perform, your privileges also affect the types of events you might see.

For more information about user accounts and roles and their privileges, see [Understanding Roles and Local Users, page 2-1](#).

## What Happens When More Than One User Logs In

VFrame supports multiple simultaneous users. Thus, when you log in, another user might also be logged in. During service network operations, some items might be locked and prevent you from running discovery jobs. You can create the discovery job, but the lock delays the start of the job.

Other than service network operations, VFrame does not place locks on items that you are modifying, so there can be conflicts between your actions and the actions of the other users.

If the other users work in other areas of the product, for example, they control resources or system aspects to which you do not have access, then there is little likelihood that your changes will conflict with the other users' changes.

However, if another user can make changes to the same items that you can change, you might see these things happen:

- If another user saves changes to an item you are working on, you might not be able to save your changes. This can happen if the other user's changes invalidate your changes.
- If another user saves changes that do not invalidate your changes, when you save your changes, any differences with the other user are overwritten by your changes.
- If another user saves changes after you save your changes, the other user's changes can overwrite your changes.

You can check on whether other users are logged in by selecting **Reports > Logged-In Users**.

## Changing Your Password

After you log into the product, you can change your password. If you forget your password, contact the system administrator to have it changed.

### Before You Begin

You cannot change the admin user's password using this procedure. To change the admin password, you must use the command line. For more information, see [user password, page 18-83](#).

### Procedure

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- Step 1** Select **File > User Preferences** to open the User Preferences dialog box.
  - Step 2** Click **Reset Password**. The Reset Password dialog box opens for you to enter your new password.
  - Step 3** Enter your current password, then your new password. Reenter your new password to confirm it. When finished, click **OK**. Your password is changed.
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## Using Shortcut Menus

On many of the tabs in the VFrame interface, if you select an item and click the right mouse button (right-click), you are presented with a shortcut menu that includes many of the commands available as buttons or menu items for that type of resource. Using commands from shortcut menus has the same results as using the menu commands or buttons. In many cases, the procedures in the online help mention only one method of completing a task, but you can use whichever technique you prefer.

## Viewing Job Status

Most actions that you take in the product are considered jobs. You can schedule some of the actions, such as those involved in device discovery. In many places in the interface you will find a job status viewer where you can see the status of these jobs. The job status viewer is similar in all of these areas, so that once you understand how to view job status in one area, you will understand how to view it in others.

When you are logged into the Admin context, you can see a consolidated view of jobs by selecting **View > Jobs**. You can set a filter to view select types of jobs rather than all jobs. The jobs listed include those that you initiate and those that VFrame runs to manage the system.

[Table 1-2](#) describes the general use of the job status viewer, and applies to any place where you find a listing of jobs.

Table 1-2 Jobs Tab

Element	Description
<b>Job List (Upper Pane)</b>	
Filter button If a filter is applied to the list, the button name is shown as: Filter... (filtered)	Click this button to create a filter so that the list shows only the jobs that you want to see. The Filter dialog box is opened, and you can use these fields to set a filter: <ul style="list-style-type: none"> <li>• <b>Job Type</b>—The type of job you want to see, related to the action performed by the job, arranged hierarchically in folders. Select a folder to select all job types in the folder. If you want to select only one or two job types, first deselect <b>All</b>, then make your selections.</li> <li>• <b>Status</b>—The job status. For example, you can elect to view jobs that are currently running.</li> <li>• <b>Time Range</b>—Whether to view all jobs no matter when they ran (<b>All</b>), or to view jobs that ran on specific dates within specific times.</li> <li>• <b>Max Results</b>—The maximum number of results you want to see. For past jobs, the most recent ones are selected over older jobs.</li> <li>• <b>Apply button</b>—Click this button to apply your filter to the list without closing the Filter dialog box. Click <b>OK</b> to apply the filter and close the dialog box.</li> <li>• <b>Reset</b>—Click this button to reset all filter values to their defaults (which is to view all jobs without date and time restrictions).</li> </ul>
Show All button	Click this button to display all jobs, removing any filter that is currently set. To reapply the filter, click <b>Filter</b> to open the Filter dialog box (which retains the previous filter values) and click <b>OK</b> .
Context Name	The name of the context where the job runs.
Name	The name of the job.
Type	The type of job.
Status	The status of the job. The status Scheduled indicates the job is scheduled to run in the future. Scheduled and Unscheduled jobs do not have log entries.
Start Time	The date and time the job started. For scheduled jobs, when it is scheduled to run next.
Percent Complete	How much of the job has finished.

**Table 1-2**      **Jobs Tab (continued)**

Element	Description
Duration	The amount of time the job took to finish.
<b>Job Logs Tab (Lower Pane)</b>	
<p>The job log shows the messages for the job you select from the upper panel. To change the sorting order of the messages, click on the column title on which you want to sort.</p> <p>Some jobs, especially system-initiated jobs such as database pruning, do not include detailed messages, so the job log might not display detailed messages for a selected job.</p> <p>The columns displayed depend on the type of job you select in the upper pain:</p> <ul style="list-style-type: none"> <li>• <a href="#">Standard Job Log Columns, page 1-18</a>—For most jobs, these columns are shown.</li> <li>• <a href="#">Service Network Job Log Columns, page 1-18</a>—For jobs where the job type is for service networks, these columns are shown. Service network jobs include the words Fault, Service Network, or Logical Network in the job type.</li> </ul>	
<b>Standard Job Log Columns</b>	
Job Log Filters	Use the filter to reduce the size of the list and show only those messages you want to see. Filter elements include: <ul style="list-style-type: none"> <li>• Severity—The severity level of the message.</li> </ul>
Time	The date and time the message was logged.
Severity	The severity level of the message.
Entry	The job log message.
<b>Service Network Job Log Columns</b>	
Max Results	The maximum number of messages that you want to see. The most recent messages are shown.
Filter button	<p>Click this button to open the Filter Settings dialog box where you can define a filter to limit the types of messages displayed in the job log.</p> <p>In the Filter Settings dialog box, on the Filter tab, select the attributes that define the messages that you want to see. Click the More link to add other types of attributes. You can filter on most of the fields shown in the job log (described below).</p>

**Table 1-2**      **Jobs Tab (continued)**

Element	Description
Details button	Click this button to open the Log Record Details dialog box for the selected row, which is the same as double-clicking the row or selecting <b>Show Details</b> from the right-click shortcut menu.  The Log Record Details dialog box displays the message information in a more readable format. You can use the < and > buttons to scroll through the task result summaries.
Severity	The severity level of the message.
Time	The date and time the message was logged.
Job Name	The name of the job.
Entry	The job log message.
Event Name	The type of event that occurred. For a complete list of event types, see <a href="#">Events, page 11-6</a> .
Activity	The user-defined macro or system action.
Target Element	The name of the service network element affected by the activity.
Target Element Type	The type of service network element.
Target Resource	The physical resource affected by the activity, if any.
Target Resource Type	The type of physical resource.

**Task Results Tab (Lower Pane)**

The Task Results tab shows the messages for the macro events for the job you select from the upper panel, if any macros were executed during the job. To change the sorting order of the messages, click on the column title on which you want to sort.

Each task has an associated job log you can view to see detailed execution information.

Details button	Click this button to open the Log Record Details dialog box for the selected row, which is the same as double-clicking the row or selecting <b>Show Details</b> from the right-click shortcut menu.  The Log Record Details dialog box displays the message information in a more readable format. You can use the < and > buttons to scroll through the task result summaries.
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**Table 1-2**      **Jobs Tab (continued)**

Element	Description
Logs button	Click this button to open the macro execution log for the selected row, if there is a log associated with the action. The log includes the commands sent to the device and the device prompts and responses. Logs are only available for user-defined macros.
Perl Routine button	Click this button to open the Perl file that was generated before running the macro for the selected row. This button is active only for user-defined macros.
Variable File button	Click this button to view the variable values that were generated before running the macro for the selected row. This button is active only for user-defined macros.
Status	The status of the action, indicating whether it was successful.
Last Update Time	Time the action was completed.
Event Type	The type of event that occurred. Use the information in the Event Name field instead of this field.
Event Name	The type of event that occurred. For a complete list of event types, see <a href="#">Events, page 11-6</a> .
Action	The name of the action.
Action Type	Whether the action was system- or user-initiated. User-defined events or macros have the User action type.
Message	The error or informational message issued after the action occurred.
Resource	The physical resource associated with the target element.
Source SNE Name	The name of the service network element that performed the action. For LOM manager actions, this is the name of the LOM manager. In most cases, the source and target service network element are the same, which indicates that VFrame performed the action.
Target SNE Name	The name of the target service network element on which the action occurred.
Prev. Reset Status	The status of the error before it was cleared. If there is no previous status, NA is displayed.
Reset By	The username of the person who cleared the error. If there is no previous error reset, NA is displayed.

# Exiting VFrame

When you are finished using the product, select **File > Exit** to close the product.

Closing the product does not affect any running service networks or scheduled jobs; it only ends your session.

