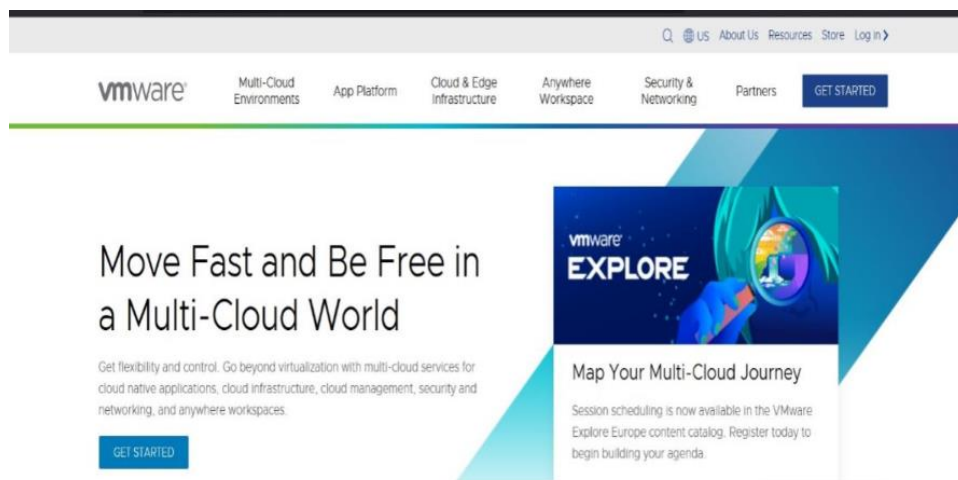


## Project 7-1: Creating a Virtual Machine from a Physical Computer

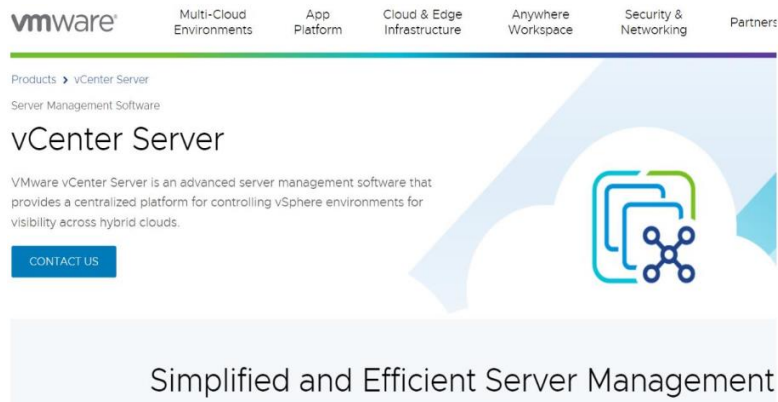
The VMware vCenter Converter creates a virtual machine from an existing physical computer.

In this project, you download and install vCenter to create a virtual machine.

1. Use your web browser to go to [www.vmware.com](http://www.vmware.com). (The location of content on the Internet may change without warning. If you are no longer able to access the program through this URL, use a search engine to search for “VMware”.)

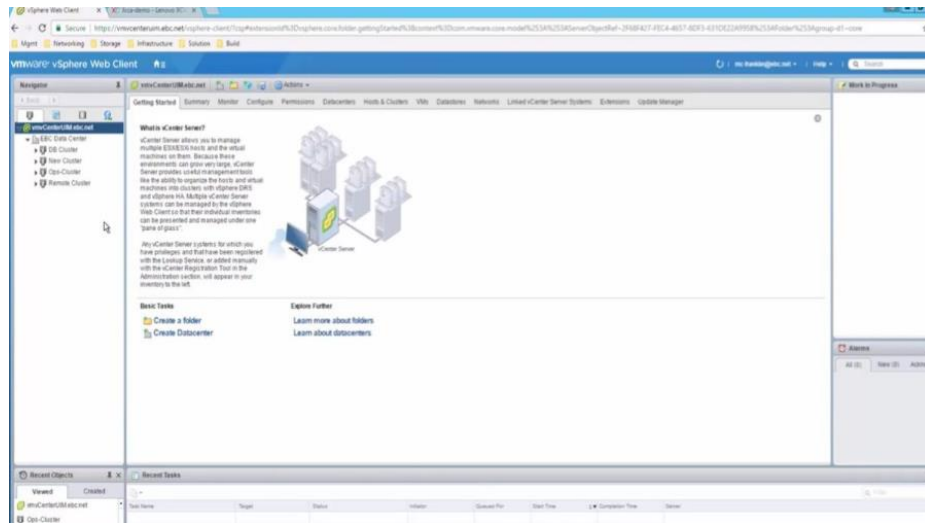


2. Click Downloads.
3. Click vCenter Converter.



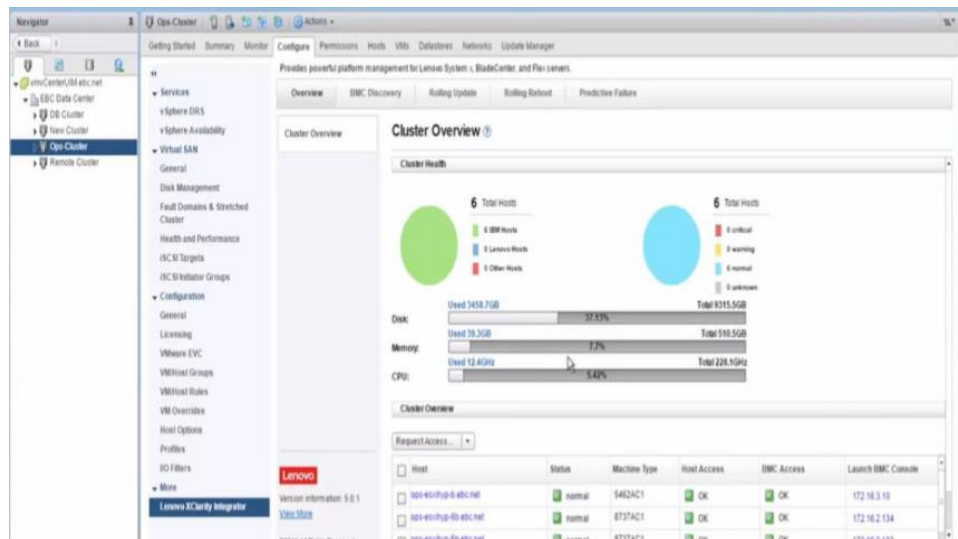
4. If necessary, click Create an account, enter the requested information, and log into VMware.
5. If necessary, accept the terms of use and click I agree.
6. Click Manually Download.
7. When the download completes, run the installation program to install vCenter by accepting the default settings.
8. Launch vCenter to display the VMware vCenter Converter Standalone menu.
9. Click Convert machine.
10. Under Select source type, choose This local machine. Click Next.
11. Next to Select destination type:, choose VMware Workstation or other VMware virtual machine.
12. Under Select a location for the virtual machine:, click Browse.
13. Navigate to a location to store the new virtual machine. Click Next and then click Next

Again.



14. Click Finish to create the virtual machine from the physical machine.

15. When the vCenter has finished, note the location of the image, which will be one or more \*.vmx and \*.vmdk files in the destination folder. It will be used in the next project.

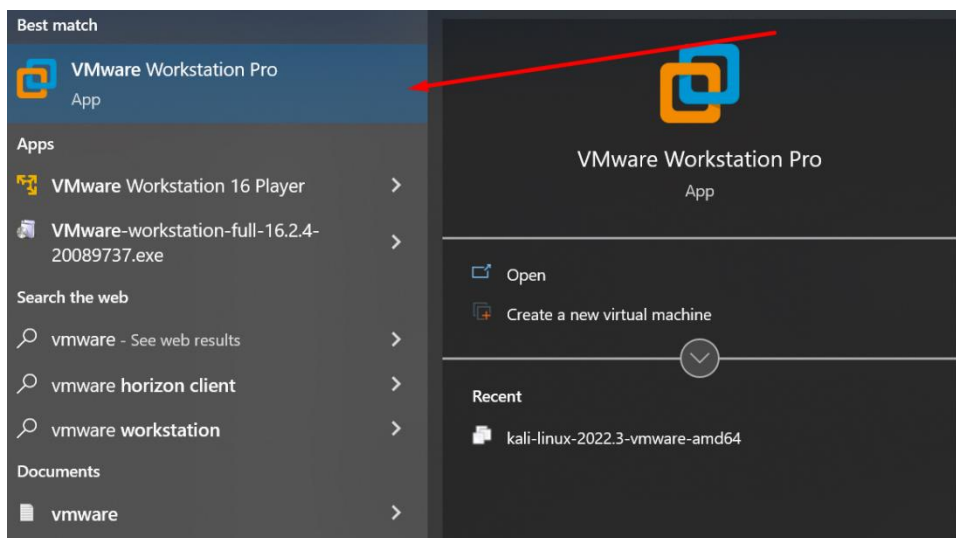


16. Close all windows.

## Project 7-2: Loading the Virtual Machine

In this project, you download a program to load the virtual machine created in Project 7-1.

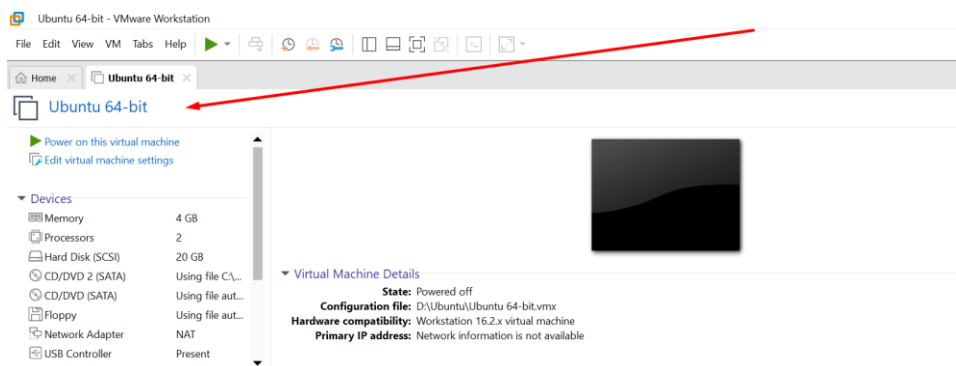
1. Use your web browser to go to [my.vmware.com](https://my.vmware.com). (The location of content on the Internet may change without warning. If you are no longer able to access the program through this URL, use a search engine to search for “VMware Workstation”).)
2. Click All Downloads.
3. Click View Download Components.
4. Select the Workstation Player for your computer’s operating system. Click Download.
5. When the download completes, launch the installation program to install VMware Workstation Player.
6. Start VMware Workstation Player after the installation completes.
7. Click Open a Virtual Machine.



8. Navigate to the location of the virtual machine that you created in Project 7-1. Click Open.

9. Click Edit virtual machine settings. Note the different options for configuring the hardware of the virtual machine. Click through these options and if desired change any of the settings. Click Close.

10. How easy was it to create a virtual machine from a physical machine?

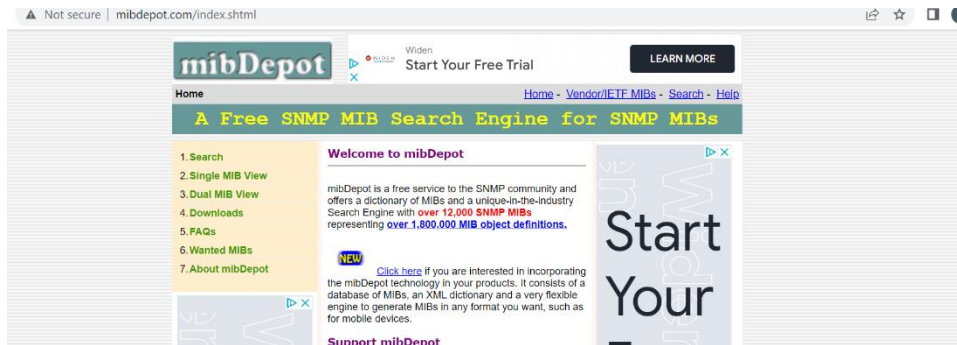


11. Close all windows.

### Project 7-3: Viewing SNMP Management Information Base (MIB) Elements

SNMP information is stored in a management information base (MIB), which is a database for different objects. In this project, you view MIBs.

1. Use your web browser to go to [www.mibdepot.com](http://www.mibdepot.com). (The location of content on the Internet may change without warning. If you are no longer able to access the program through this URL, use a search engine to search for “MIB Depot”.)



2. In the left pane, click Single MIB View.



3. Scroll down and click Linksys in the right pane. This will display the Linksys MIBs summary information.

4. In the left pane, click v1 & 2 MIBs to select the SNMP Version 1 and Version 2 MIBs.



5. In the right pane, click LINKSYS-MIB under MIB Name (File Name). This will display a list of the Linksys MIBs

0	<a href="#">Traps</a>
191	Total MIB Objects

#	SMI	v1 Top OID/v2 MIB OID	MIB Name (File Name)	Traps	TCs	OIDs	Scalars	Tables
1	v1	1.3.6.1.4.1.3955	<a href="#">LINKSYS-MIB</a> (LINKSYS.MIB)	0	0	4	22	3
2	v1	1.3.6.1.4.1.3955.1	<a href="#">LINKSYS-MODEL-MIB</a> (LINKSYS-MODEL-MIB.mib)	0	0	13	44	14

6. Click Tree under Viewing Mode in the left pane. The MIBs are now categorized by Object Identifier (OID). Each object in a MIB file has an OID associated with it, which is a series of numbers separated by dots that represent where on the MIB “tree” the object is located.



MIB Object	Type	Access	Syntax	Object Identifier
<a href="#">linksys</a>	OBJ ID			1.3.6.1.4.1.3955
<a href="#">linksys</a>	GROUP			1.3.6.1.4.1.3955
<a href="#">deviceId</a>	SCALAR	read-only	INTEGER	1.3.6.1.4.1.3955.1.0
<a href="#">etherHub</a>	OBJ ID			1.3.6.1.4.1.3955.5
<a href="#">etherHub</a>	GROUP			1.3.6.1.4.1.3955.5
<a href="#">ehHwVer</a>	SCALAR	read-only	INTEGER	1.3.6.1.4.1.3955.5.2.0
<a href="#">ehSwVer</a>	SCALAR	read-only	INTEGER	1.3.6.1.4.1.3955.5.3.0
<a href="#">ehNumber</a>	SCALAR	read-only	INTEGER	1.3.6.1.4.1.3955.5.4.0
<a href="#">sp2Hub</a>	OBJ ID			1.3.6.1.4.1.3955.5.5
<a href="#">sp2Statistic</a>	OBJ ID			1.3.6.1.4.1.3955.5.5.1
<a href="#">sp2Statistic</a>	GROUP			1.3.6.1.4.1.3955.5.5.1
<a href="#">statsOctets</a>	SCALAR	read-write	Counter64	1.3.6.1.4.1.3955.5.5.1.1.0
<a href="#">statsPkts</a>	SCALAR	read-write	INTEGER	1.3.6.1.4.1.3955.5.5.1.2.0
<a href="#">statsBroadcastPkts</a>	SCALAR	read-write	INTEGER	1.3.6.1.4.1.3955.5.5.1.3.0
<a href="#">statsMulticastPkts</a>	SCALAR	read-write	INTEGER	1.3.6.1.4.1.3955.5.5.1.4.0

7. Click Text in the left pane to display textual information about the Linksys MIBs.

Scroll through the Linksys MIBs and read several of the descriptions. How could this information be useful in troubleshooting?

[Home](#)  
[Help](#)  

Vendors  
v1&2 MIBs  
v1 MIBs  
v2 MIBs

[Search](#)  

**Viewing Mode**  
☒ Summary  
☐ Tree  
☐ Detail  
☒ Text

```

-- linksys.mib
LINKSYS-MIB DEFINITIONS ::= BEGIN

IMPORTS
    Counter64
        FROM SNMPv2-SMI
    enterprises,
    Counter
        FROM RFC1155-SMI
    OBJECT-TYPE
        FROM RFC-1212;

linksys OBJECT IDENTIFIER ::= { enterprises 3955 }

--linksysMib MODULE-IDENTITY
--    LAST-UPDATED "9902010000Z"
--    ORGANIZATION "Network Working Group"
--    CONTACT-INFO
--        ""
--    DESCRIPTION
--        "The MIB module"
--    ::= { linksys 0 }

-- subtree under device interface
deviceId OBJECT-TYPE

```

This information can be useful as we can know where the problem is and we will not be confused as we can see where the problem is coming from and which part should be updated without hampering all the components.

8. Now look at the Cisco MIBs. Click Vendors in the left pane to return to a vendor list.

9. Scroll down and click Cisco Systems in the right pane. How many total Cisco MIB objects are listed? Why is there a difference?

<a href="#">Bull</a>	<a href="#">CableLabs</a>
<a href="#">Cabletron</a>	<a href="#">CacheFlow</a>
<a href="#">Computer Associates</a>	<a href="#">Calista</a>
<a href="#">Ide Communications</a>	<a href="#">CastleRock</a>
<a href="#">Ayman Networks</a>	<a href="#">Chateau Systems</a>
<a href="#">At Software Technologies</a>	<a href="#">Cheyenne</a>
<a href="#">Romatis Networks</a>	<a href="#">Cisco Systems</a>
<a href="#">Citrix</a>	<a href="#">Clarent</a>
<a href="#">r Mountain Networks</a>	<a href="#">Computer Network Technology</a>
<a href="#">Codan</a>	<a href="#">Codex</a>

2491

[MIBs](#)



10. In the right pane, click the link Traps.

#	Trap Name	Version	Module	Object Identifier
1	<a href="#">acCsLogsTrap</a>	v1	ACTONA- ACTASTOR-MIB	SMIv1 OID: <a href="#">Enterprise: actona</a> <a href="#">specificTrapId: 0</a> SMIv2 OID: (actona.0.0) (1.3.6.1.4.1.17471.0.0) iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).
2	<a href="#">acCsLogsTrap</a>	v2	ACTONA- ACTASTOR-MIB	SMIv2 OID2:1.3.6.1.4.1.17471.0.0 iso(1).org(3).dod(6).internet(1).private(4).enterprises(1) acNotifications(0).acCsLogsTrap(0)
3	<a href="#">acctngFileFull</a>	v1	ACCOUNTING- CONTROL-MIB	SMIv1 OID: <a href="#">Enterprise: acctngNotifications</a> <a href="#">specificTrapId: 2</a> SMIv2 OID: (acctngNotifications.0.2) (1.3.6.1.4.1.9.10.17.3.0.2) iso(1).org(3).dod(6).internet(1).private(4).enterprises(1). ciscoExperiment(10).accountingControlMIB(17).acctngNotificat
4	<a href="#">acctngFileFull</a>	v2	ACCOUNTING- CONTROL-MIB	SMIv2 OID2:1.3.6.1.4.1.9.10.17.3.0.2 iso(1).org(3).dod(6).internet(1).private(4).enterprises(1) ciscoExperiment(10).accountingControlMIB(17).acctngNotificat acctngNotifyPrefix(0).acctngFileFull(2)
			ACCOUNTING-	SMIv1 OID: <a href="#">Enterprise: acctngNotifications</a> <a href="#">specificTrapId: 1</a> SMIv2 OID: (acctngNotifications.0.1) (1.3.6.1.4.1.9.10.17.3.0.1)

11. Scroll down to Trap 74, which begins the list of Cisco wireless traps. Notice the descriptive names assigned to the wireless traps.

12. Now scroll down to Traps 142-143 and click the name bsnAPIfDown. Read the description for this SNMP trap. When would it be invoked? Click the browser's Back arrow to return to the listing.

140	<a href="#">bsnApHasNoRadioCards</a>	v1	AIRESPACE- WIRELESS-MIB	iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).ciscoExperiment(10).airSpaceWirelessMIB(1).bsnWireless(2).bsnTrap(0)
141	<a href="#">bsnApHasNoRadioCards</a>	v2	AIRESPACE- WIRELESS-MIB	SMIv2 OID2:1.3.6.1.4.1.9.10.17.3.0.2 iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).ciscoExperiment(10).airSpaceWirelessMIB(1).bsnWireless(2).bsnTrap(0)
142	<a href="#">bsnAPIfDown</a>	v1	AIRESPACE- WIRELESS-MIB	SMIv1 OID: <a href="#">Enterprise: bsnTraps</a> <a href="#">specificTrapId: 0</a> SMIv2 OID: (bsnTraps.0) (1.3.6.1.4.1.9.10.17.3.0.2) iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).ciscoExperiment(10).airSpaceWirelessMIB(1).bsnWireless(2).bsnTrap(0)
143	<a href="#">bsnAPIfDown</a>	v2	AIRESPACE- WIRELESS-MIB	SMIv2 OID2:1.3.6.1.4.1.9.10.17.3.0.2 iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).ciscoExperiment(10).airSpaceWirelessMIB(1).bsnWireless(2).bsnTrap(0)
144	<a href="#">bsnAPIfUp</a>	v1	AIRESPACE- WIRELESS-MIB	SMIv1 OID: <a href="#">Enterprise: bsnTraps</a> <a href="#">specificTrapId: 1</a> SMIv2 OID: (bsnTraps.1) (1.3.6.1.4.1.9.10.17.3.0.2) iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).ciscoExperiment(10).airSpaceWirelessMIB(1).bsnWireless(2).bsnTrap(0)

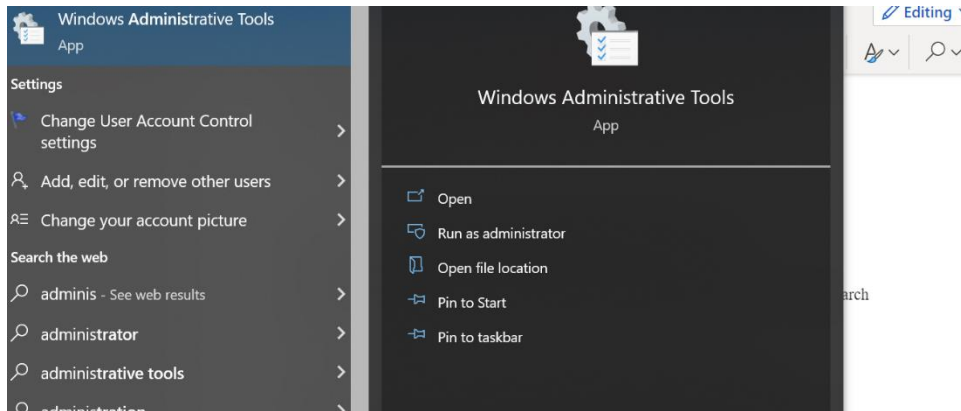
It is Enterprise Trap, and it will be invoked in the trap id 10 is called

13. Close all windows.

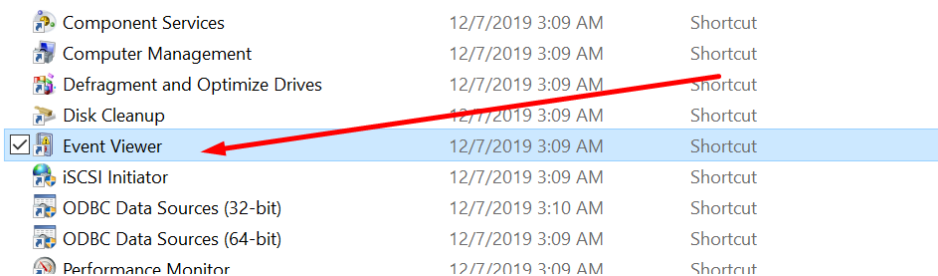
## Project 7-4: Viewing Logs Using the Microsoft Windows Event Viewer

In this project, you view logs on a Microsoft Windows computer.

1. Launch Event Viewer by clicking Start and then type Administrative Tools in the Search programs and files box.

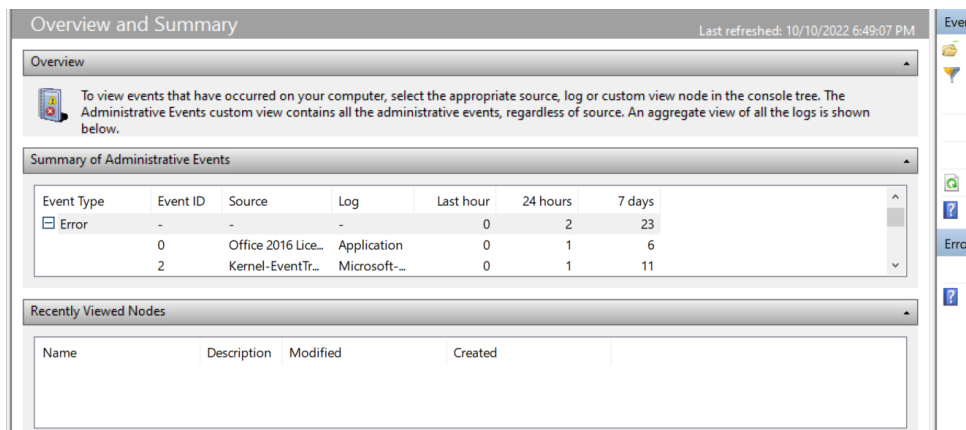


2. Click the Administrative Tools folder and then double-click Event Viewer.

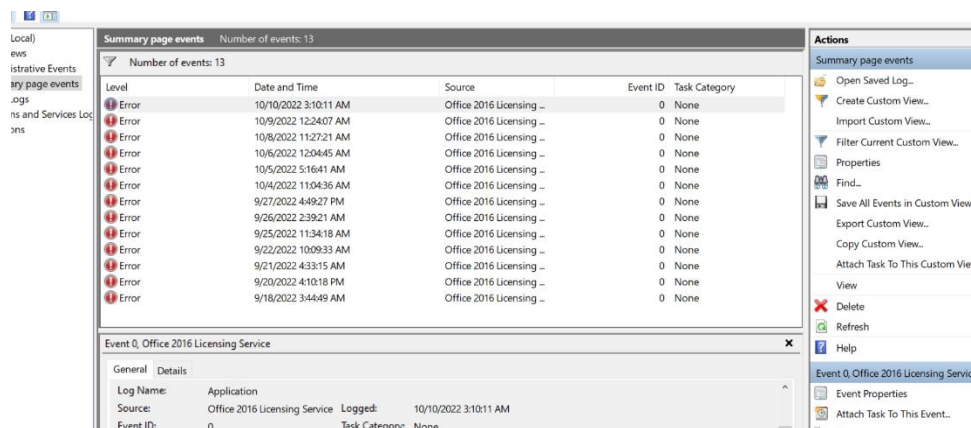


3. The Event Viewer opens to the Overview and Summary page that displays all events from all Windows logs on the system. The total number of events for each type that have occurred is displayed along with the number of events of each type that have occurred over the last seven days, the last 24 hours, or the last hour. Click the > sign under each type of event in the Summary of Administrative Events to view events that

have occurred on this system.



4. Select a specific event and then double-click it to display detailed information on the event. Is this information in a format that a custodian could use when examining a system? Is it in a format that an enduser would find helpful?

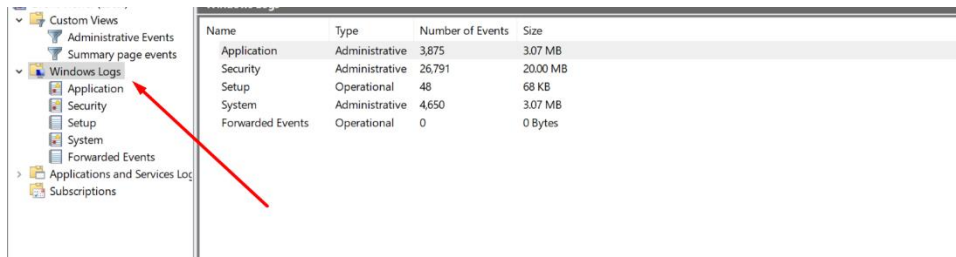


No, it is not in the format where it is helpful but it can be used to get some informations.

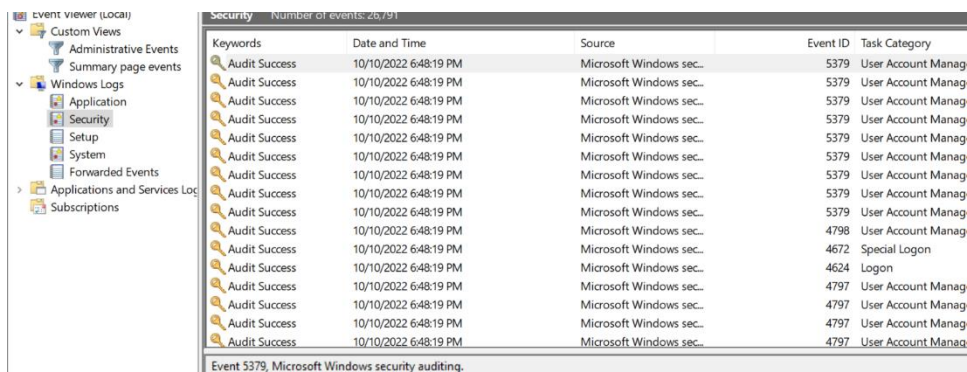
5. When finished, click the Back arrow to return to the Overview and Summary page.

6. In the left pane under Event Viewer (Local), double-click Windows Logs to display the

default generated logs, if necessary.



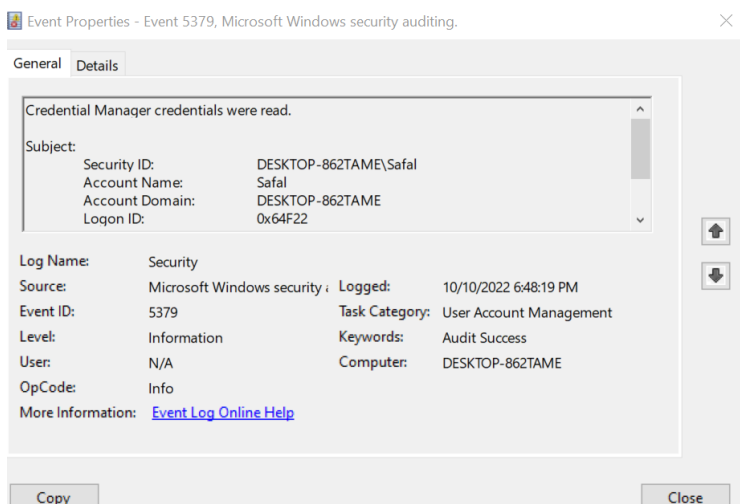
## 7. Double-click Security.



8. Select a specific event and then double-click it to display detailed information on the

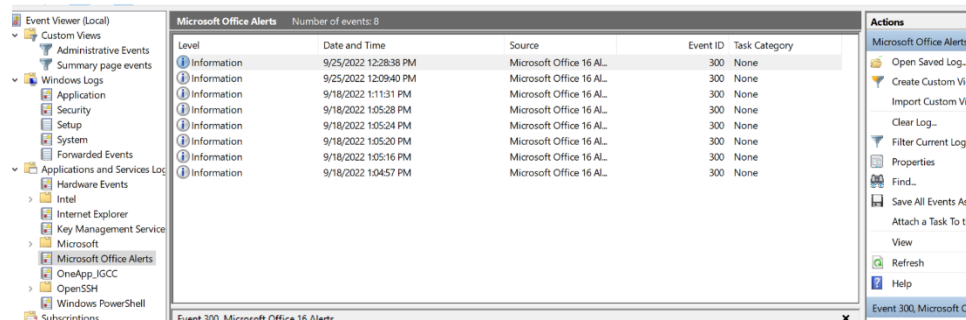
event. When finished, click Close and the Back arrow to return to the Overview and

Summary page.



9. In the left pane under Event Viewer (Local), double-click Applications and Services

Logs to display the default generated logs, if necessary.



10. Select a specific event and double-click it to display detailed information on the event.

When finished, click Close and then double-click Event Viewer (Local) in the left pane.

Leave this window open for the next project.

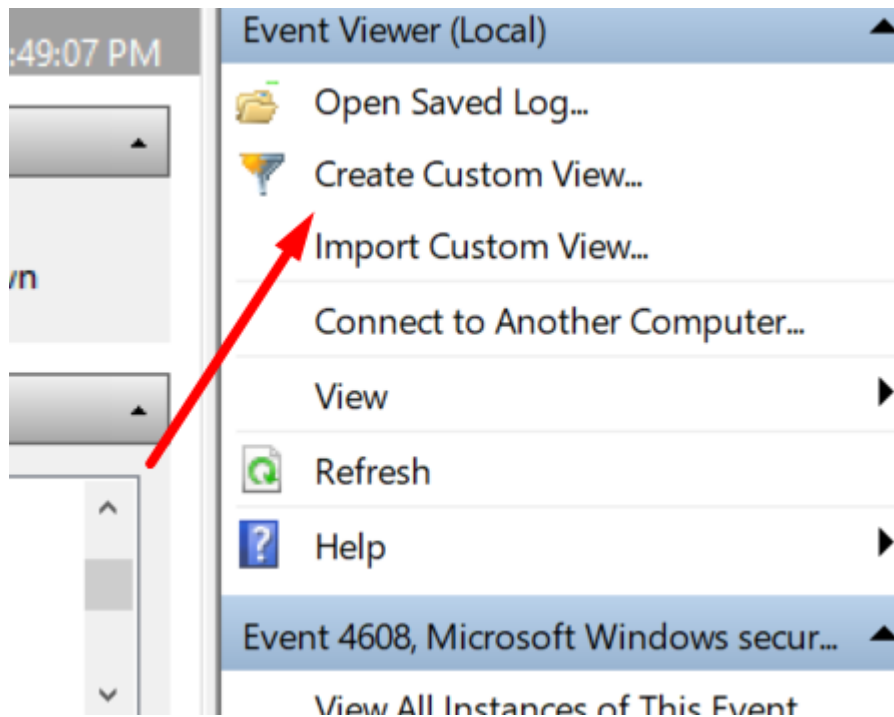
## Project 7-5: Creating a Custom View in Microsoft Windows Event Viewer

Microsoft Windows Event Viewer also can be used to create custom logs and collect copies of events from different systems. In this project, you use the Event Viewer to create a custom log.

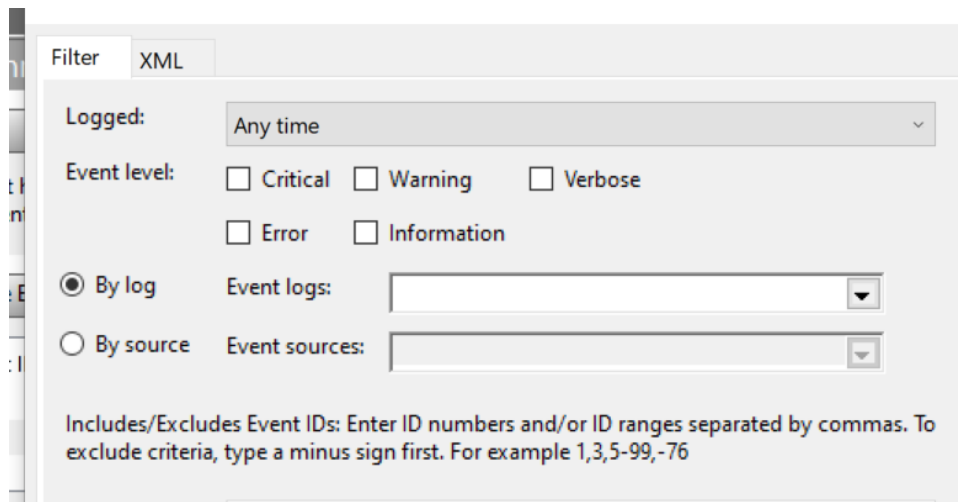
1. If necessary, launch Event Viewer by clicking Start and then typing Administrative

Tools in the Search programs and files box. Click the Administrative Tools folder and then double-click Event Viewer.

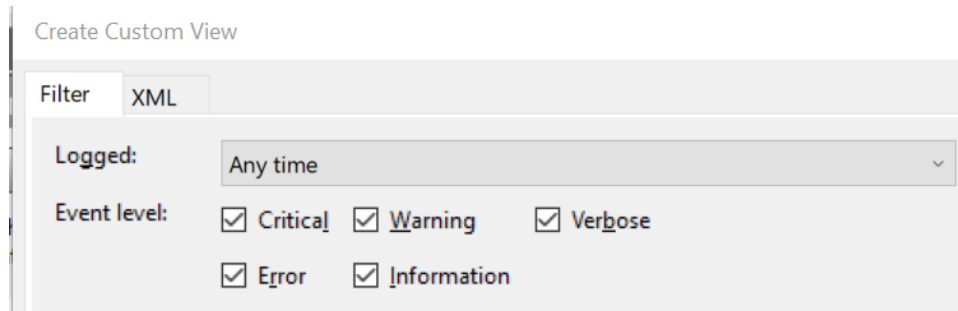
2. In the right pane entitled Actions, click Create Custom View.



3. Under Logged click the drop-down arrow next to Any time. Several options appear of times to log the events. Click Custom range and note that you can create a specific period to log these events. Click Cancel and be sure the Logged setting is Any time to capture all events.



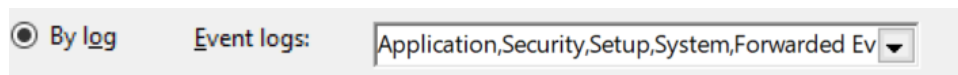
4. Under Event level, check each box (Critical, Error, Warning, Information, Verbose) to capture all levels of events.



5. Under By source, click the radio button if necessary and then click the drop-down arrow next to Event sources. Scroll through the list of sources that can be used to create a log entry.

6. For this custom view, instead of selecting specific sources, you will use log entries collected from default logs. Under By log, click the radio button if necessary and then click the drop-down arrow next to Event logs.

7. Click the > sign by Windows Logs and Applications and Services Logs. Any of these logs can be used as input into your custom logs. Click the box next to Windows Logs to select all the available Windows logs.



8. You also can include or exclude specific events. Be sure that <All Event IDs> is selected.

9. Next to Keywords select Classic.

10. Next to User be sure that <All Users> is selected so that any user who logs in to this system will have log entries created.
11. Your completed dialog box will look like that shown in Figure 7-11. Click OK. If an Event Viewer dialog box appears, click Yes.

Create Custom View

Filter XML

Logged: Any time

Event level: ☒ Critical ☒ Warning ☒ Verbose  
☒ Error ☒ Information

☒ By log Event logs: Application, Security, Setup, System, Forwarded Ev...  
☐ By source Event sources:

Includes/Excludes Event IDs: Enter ID numbers and/or ID ranges separated by commas. To exclude criteria, type a minus sign first. For example 1,3,5-99,-76

<All Event IDs>

Task category:

Keywords: Classic

User: <All Users>

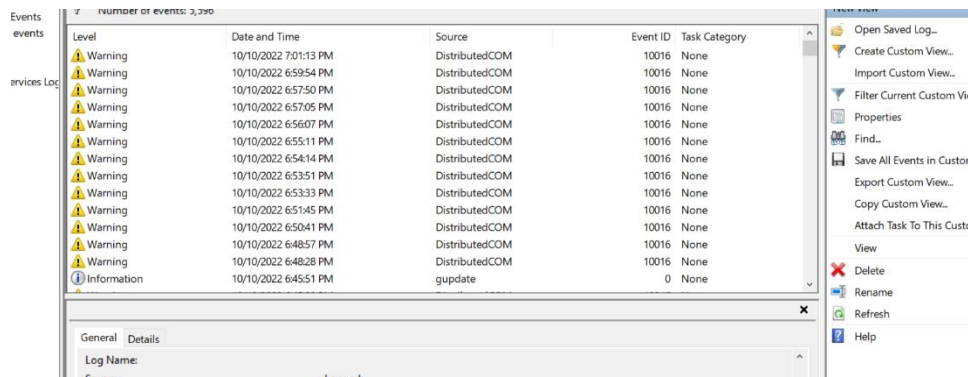
Computer(s): <All Computers>

Clear

OK Cancel

12. In the Save Filter to Custom View dialog box, next to Name, enter All Events.
13. Next to Description, enter All Events. Click OK.





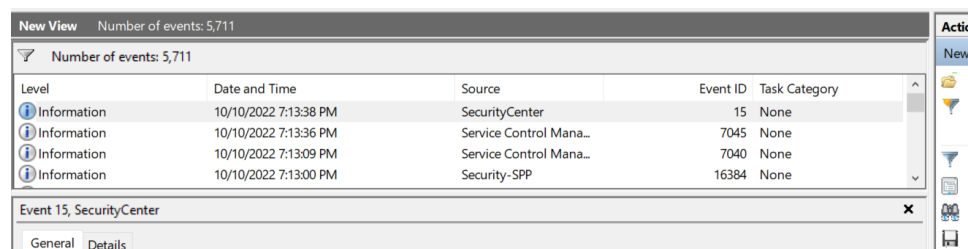
14. In the left pane under Event Viewer (Local), double-click Custom Views if necessary to display the custom view. Display your view by clicking on it.

15. Close Event Viewer and all windows.

16. Reboot the system.

17. If necessary, launch Event Viewer by clicking Start and then typing Administrative Tools in the Search programs and files box. Click the Administrative Tools folder and then double-click Event Viewer.

18. In the left pane under Event Viewer (Local), double-click Custom Views if necessary to display the custom views. Display your view by clicking it. What new events have Occurred?



Number of events: 5,711				
Level	Date and Time	Source	Event ID	Task Category
Information	10/10/2022 7:13:38 PM	SecurityCenter	15	None
Information	10/10/2022 7:13:36 PM	Service Control Mana...	7045	None
Information	10/10/2022 7:13:09 PM	Service Control Mana...	7040	None
Information	10/10/2022 7:13:00 PM	Security-SPP	16384	None
Information	10/10/2022 7:11:48 PM	Security-SPP	16394	None
Information	10/10/2022 7:11:34 PM	Security-SPP	16384	None
Warning	10/10/2022 7:11:27 PM	DistributedCOM	10016	None
Information	10/10/2022 7:11:02 PM	Service Control Mana...	7040	None
Information	10/10/2022 7:10:53 PM	Security-SPP	16394	None
Information	10/10/2022 7:10:16 PM	Security-SPP	16384	None
Information	10/10/2022 7:09:48 PM	SecurityCenter	15	None
Information	10/10/2022 7:09:46 PM	SecurityCenter	1	None
Warning	10/10/2022 7:09:46 PM	DistributedCOM	10016	None
Warning	10/10/2022 7:09:46 PM	DistributedCOM	10016	None
Warning	10/10/2022 7:09:46 PM	DistributedCOM	10016	None
Information	10/10/2022 7:09:45 PM	Security-SPP	16394	None
Information	10/10/2022 7:09:43 PM	Security-SPP	900	None
Information	10/10/2022 7:09:32 PM	gupdate	0	None
Information	10/10/2022 7:09:30 PM	edgeupdate	0	None
Warning	10/10/2022 7:09:24 PM	DistributedCOM	10016	None
Warning	10/10/2022 7:09:22 PM	DistributedCOM	10016	None
Information	10/10/2022 7:09:05 PM	Security-SPP	903	None
Information	10/10/2022 7:09:05 PM	Security-SPP	16384	None

These are the new events that have occurred after rebooting .

19. Close all windows.

### Case Project 7-1: Software Defined Network (SDN)

Use the Internet to research software defined network (SDN). How do they function? What are their features? What are the advantages of each type? What are the disadvantages? Create a table comparing SDNs with traditional networks. If you were to recommend a SDN for your school or business, what would be the reason(s)?

A recently developed computer networking architecture is called "software-defined networking" (SDN). The separation of the data plane from the control plane in routers and switches is a key differentiator. In other words, the control is implemented in software and is uncoupled from the hardware. In this architecture, the data plane is implemented within networking gear or equipment, whereas the control plane is implemented via software within servers and is independent of networking hardware. OpenFlow is the ideal illustration of this design.

A switch sends a route request to a controller for a packet that lacks a specific route in software-defined networking's so-called adaptive or dynamic operating mode. Adaptive routing, which does not use a controller and instead provides route requests through routers and algorithms based on the network topology, is distinct from this method.

With SDN, the administrator has the flexibility to modify the rules of any network switch as needed, prioritizing, de-prioritizing, or even banning types of packets with a high degree of control. This is especially useful in a multi-tenant cloud computing architecture since it enables the administrator to control traffic loads more effectively and flexibly. In essence, this gives the administrator greater control over network traffic flow and enables the use of less expensive commodity switches.

Advantages:

- Centralized network provisioning:

It is simpler to centralize enterprise administration and provisioning with software-defined networks since they offer a consolidated view of the entire network. For instance, increasing numbers of VLANs are included into actual LANs, resulting in a Gordian knot of interconnections and links. SDN can speed up service delivery and offer more agility in provisioning both virtual and physical network devices from a central location by abstracting the control and data planes.

- Holistic enterprise management:

For enterprise networks to support new processing demands, such as those for big data, new applications and virtual machines must be put up instantly. SDN enables IT managers to test different network configurations without having an influence on the whole network. Unlike SNMP, SDN permits management of network devices, including switches, from a central

controller, both physically and virtually. For the creation of a single administration console for both physical and virtual devices, SDN offers a single set of APIs.

- More granular security

Centralized security is one of the features of security defined networking that IT administrators find most appealing. Network administration has grown more difficult as a result of virtualization. Applying firewall and content filtering regulations consistently becomes increasingly challenging as virtual machines come and go as a component of physical systems. The security issue is made worse when complications like safeguarding BYOD devices are included.

Disadvantages:

- requires a change in the entire network infrastructure to implement SDN protocol and SDN controller. Therefore, the network must be completely reconfigured. These increases cost due to reconfiguration
- Staff need to be trained.
- New management tools need to be procured and everyone should be trained to use it.
- Security is a big challenge in SDN

### **Case Project 7-2: Securing Email**

Use the Internet to research different options for encrypting and securing email. Create a table that lists at least five options. Include the advantages and disadvantages of each. Which would you recommend? Why? Write a one-paragraph explanation along with your table.

Encryption options	Features	Recommendation
Enterprise email encryption	Transparent for employees, easy to enforce policies	<ul style="list-style-type: none"> <li>• For B 2 B emails and large business</li> <li>• Managing many employees</li> </ul>
Secure webmail	Easy Setup/ low cost	<ul style="list-style-type: none"> <li>• Independent professionals and businesses, who only send security to clients</li> </ul>
Encyro	Allows clients to send encrypted messages or documents without creating an account. Low cost, business friendly	<ul style="list-style-type: none"> <li>• Independent professionals and businesses, secure messages from/to clients</li> </ul>
TLS	You don't need to do anything, and it happens behind the scenes	<ul style="list-style-type: none"> <li>• For anyone who can't use other options mentioned</li> </ul>
DIY Encryption	You control keys and no organization is trusted here	<ul style="list-style-type: none"> <li>• Good for those who want to learn DIY</li> <li>• People who are trying to avoid government surveillance</li> </ul>

As you don't have to worry about what happens behind the scene and it runs and has good security features, I would prefer TLS. Data exchanged between applications over the Internet is secured end-to-end using the cryptographic protocol TLS. In instance, the padlock icon that appears in web browsers when a secure session is started makes it most familiar to consumers when used in secure web browsing. However, it may and should also be used for other applications, including voice over IP, file transfers, video/audio conferencing, instant messaging, and voice over IP, as well as for Internet services like DNS and NTP. Without TLS, not only are surfing patterns, email communications, online chats, and conference calls susceptible to surveillance, but also sensitive information like logins, credit card numbers, and personal details. It makes sure that data transported between client and server apps is encrypted with secure algorithms and cannot be viewed by other parties by enabling client and server programs to support TLS.

Reference:

<https://blog.encyro.com/email-encryption-service-comparisons-for-your-business-in-2017/>

### Case Project 7-3: Comparing Cloud Computing Features

As cloud computing increases in popularity, enhanced features are continually being added.

Compare Microsoft Azure with Amazon Web Services (AWS). Create a table that lists at least

five features. What are the advantages of each? What are the disadvantages? Which would

you recommend? Why? Write a one-page summary of your research.

	Azure	AWS
Feature	Has a deeper range of features like PaaS and IaaS	It has a wider range of features but requires more management
Hybrid cloud	It has a strong heritage with hybrid environments. Has stack called Azure stack	Previous cloud first mentality. Backtracking and slow responding
Developers	Access to more global data centers to support infrastructure	Better willingness to integrate with third parties
Compliance	Claims to have more certifications than other providers	Strong relationship with global agencies but lacks enterprise experience
Getting started	Most experimented provider till now for beneficial free trials	Competitive and always decreasing pricing model

Looking at the different features that AWS and Azure both have and are still developing, it is clear who appears to be meeting market demands the quickest. AWS entered the "cloud game" a few years earlier than Azure and has more than 4 times the income of Azure. The following graph, however, demonstrates how quickly Microsoft is catching up in terms of application workloads,

particularly with relation to IaaS. Their history of working with enterprise platforms serves as the foundation for this job.

Amazon breaks out its cloud goods using various codes and names, just like other cloud providers do. Having stated that, they can be divided into the following groups: analytics, applications services, databases, and migration. Moving on to Microsoft Azure, they are also constructing an end-to-end infrastructure there in order to meet the demands of their clients. However, their history with industrial computing has greatly helped them when it comes to creating contemporary, wanted solutions. Creating enterprise agreements is a part of this. These make it possible for big businesses to profit from committing usage to Azure. These advantages include flexible billing and more affordable prices.

Both Azure and AWS are well-suited from a development standpoint to handle the high pressure demands of architects. It is merely a matter of measuring relevance because, as has been mentioned, each platform tends to have its own advantages and disadvantages. For instance, Service Fabric and Container Services are components of Azure that are excellent for developing, deploying, and scaling applications. As a result, Microsoft has grown to be a significant player in the IaaS market. Additionally, there are fewer options available for app hosting on AWS. But their plan may not give this a high priority. That being said, AWS has gained a significant portion of its market share by making it simple for companies of all kinds to transfer massive amounts of data to the cloud, which, despite being more basic, is highly beneficial.

Reference:

<https://www.hpe.com/us/en/services/redpixie-azure.html>

## Case Project 7-4: Centralized Device Log Analyzers

Use the Internet to research four different centralized device log analyzers. Create a table comparing their benefits, the platforms they support, their advantages and disadvantages, and costs. Which would you recommend? Why?

	Splunk	LogRhythm	Logentries	LogPacker
Advantages	Alerting and reporting are built-in. customizable dashboards and charts. SaaS remedy. Scale up your system from one server to several data centers. Real-time analysis, visualization, and search	Real-time intelligent search. gathers information from all log sources, including databases and applications. 700 sources of logs. Monitoring in real-time and adaptable, role-based notifications. correlation with one click from any search. Users may easily correlate, search, and pivot through their data using the console.	intelligent search in real-time. pulls data from all log sources, including apps and databases. 70 logging sources. Real-time monitoring and flexible, role-based notifications. association with a single search-related click. The console allows users to effortlessly correlate, search, and pivot through their data.	More than 100 types of log sources are already supported natively. many storage companies. System for alerting and reporting through SMS, Slack, or Email. dependable clustering. Unix, Windows, mobile, and JS all have broad platform support. REST API to create unique solutions based on data saved. Aggregation of events and security. exemplary performance Cloud dashboard on disk
Disadvantages	Setting up and adding new sources is difficult. Each source needs to be individually inserted. 500 MB per day is insufficient to use it for free, whereas 1 GB per day costs 2.700 \$ per year.	large initial outlay. Documentation and user guides are not transparent.	Manual installation and maintenance of log sources. The cause of errors in third-party libraries cannot be found. 100 logs are the maximum allowed per server. Web client logger that isn't properly secure. No specialized JavaScript reporting	There is no built-in web interface in the standalone version. In Clust, the free version is limited to 5 servers.
Benefits	Additionally, Splunk includes built-in reporting capabilities with sophisticated charts and dashboards, as	In order to streamline not only log management but also loganalysis, event management, and reporting,	Agent-less and agent-based log gathering are two options provided by Logentries. When issues arise, Lo-	The key benefit is that LogPacker can locate and send to the Cluster all collected and aggregated logs on



	well as a pivot interface for creating visual reports with ease.	LogRhythm combines both into a single, centralized platform. But LogRhythm also offers a network server agent that may be installed.	Logentries offers a live tail view that aggregates all of your logs so you can see what is happening in real time. New instances can be readily configured to send all log data in real-time to Logentries as your environment dynamically scale	the server and operates solely from the box. Every LogPacker service is written in Go and designed for speed. Typically, the basic server installation uses 30–40 MB of memory for the Agent instance.
--	--	--	--	--

I would use Logentries because it is free, and the users can use up to 5 GB free so that you have plenty of storage to use it and test it out. In that time, you can always make sure that you like it and it is easy to use.

### Case Project 7-5: Cloud Computing Benefits

Would your school or place of work benefit from cloud computing? Identify at least two cloud computing vendors and research their features and costs. Then look at one element of your school or work network infrastructure and apply it to cloud computing. Would it be feasible?

Why or why not? Write a one-page paper on your research and opinions.

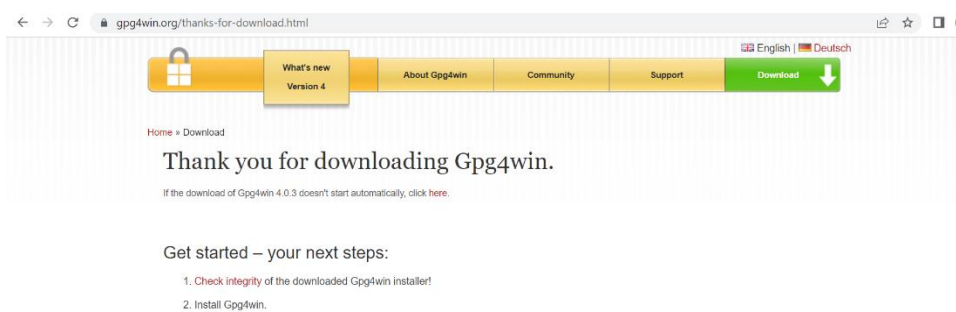
Dropbox is a cloud storage service that gives customers the opportunity to transfer files in a synchronized style as well as store them on faraway cloud servers. Dropbox offers a cloud-based infrastructure as a service model-based online storage solution (IaaS). Users of Dropbox get access to free online storage for up to 2 gigabytes of material, including music and document files. Users can view these files from any device with an internet connection using your Dropbox account. In this sense, Dropbox is a small-scale examination of cloud computing.

Google Drive is a cloud computing and cloud storage hybrid. In addition to being incorporated into what was once known as Google Docs, Google Drive is comparable to services like Dropbox, SugarSync, and Trend Micro's SafeSync. As a result, Google Drive functions as both a cloud storage service and a cloud computing platform. Google Drive is your best choice for cloud storage if you own a Chromebook because it is integrated into Google's Web-based operating system Chromium. Drive includes iOS and Android apps for viewing and managing your files from your phone, just like other cloud storage providers.

Google Drive comes with 15GB of free storage by default, which is far larger than Dropbox's initial 2GB of free storage. Even while Dropbox offers that option, Google Drive's free storage is ultimately superior. Both Dropbox and Google's cloud services are already effectively used by Busy Bee Tutoring. Tutors can share files and stay current on the most recent SMART Goals and other reports thanks to these IaaS services. The tutors can all stay up to date on criteria because of the accessibility and real-time updating.

### 3. Encrypted Assignment

Download gpg4win



gpg4win-4.0.3.exe  
7.4/29.6 MB, 21 secs left

- Install the software



## Generate the key pair

Key Pair Creation Wizard

### Enter Details

Please enter your personal details below. If you want more control over the parameters, click on the Advanced Settings button.

Name:  (optional)

Email:  (optional)

☐ Protect the generated key with a passphrase.

Safal Lamichhane

[Advanced Settings...](#)

## Key Pair Successfully Created

Your new key pair was created successfully. Please find details on the result and some suggested next steps below.

### Result

Key pair created successfully.  
Fingerprint: 080F EB6D 9891 5978 1FC4 AAE6 E7D2 7653 95BB 5C09

### Next Steps

Make a Backup Of Your Key Pair...

Send Public Key By EMail...

Upload Public Key To Directory Service...

## Sending public key

 Safal Lamichhane\_0x95BB5C09\_public - Notepad

File Edit Format View Help

-----BEGIN PGP PUBLIC KEY BLOCK-----

```
mDMEY0TDiRYJKwYBBAHwRw8BAQdAS7nEkiTrBCeuNeRswMcqQPavouVKD83CDtg1
waQHgDG0EFNhZmFsIExhbnw1jaGhhbmwImQOTFgoAQRyHBagP622YkV14H8Sq5ufS
d10Vu1wJBQJjRMOJAhsDBQkDw0SHBQsJCAcCAiICBhUKCQgLAgQwAgMBAh4HAheA
AAoJEOFSd10Vu1wJBQkA/2AmBFhd+UEL80fVyZgnXbktpCVYrpxPgy9CDWE2Uax9
AQC6uviYsRf4wEDEiJe23G8Tqb/xr2WgtKD2bI6b2S1tCLg4BGNEw4kSCisGAQQB
11UBBQE8B80AQyviX+8IrgPmMBED557gTPDUpcKiZMPf5VzC2+0iGGgMBCAeIfgQY
FgoAJhYhHBagP622YkV14H8Sq5ufSd10Vu1wJBQJjRMOJAhsMBQkDw0SHAAoJEOFS
d10Vu1wJBH/wBAJ+Cw9KwXzM+stR8/TPzut27VYQUJhPj6UkobBFADmFmAP0ZNbyX
3Qn1R5bNxZ5X0NgMxeqHsyuqR+FW9dLLwAfNAQ==
=/TNf
```

-----END PGP PUBLIC KEY BLOCK-----



But, Nowsh

To: Lamichhane, Safal



Mon 10/10/2022 7:53 PM

-----BEGIN PGP PUBLIC KEY BLOCK-----

```
mDMEY0SumBYJKwYBBAHaRw8BAQdANZLfd1j1uF1CkKTSctEDR5RJgbSaADwulgrw
J8HdGLW0BU5vd3NoiJkEEYKAEEWlQQtHMqX0EdwuXFed21JA1gRWQvwVgUCY0S
u
mAlbAwUJA8NZeAULCQgHAgIiAgYVCgkICwIEFgIDAQIeBwIXgAAKCRBJA1gRWQvw
VgaKAP9ojSyWiBEtOUm9jmD7RIw+Bg9VF54hJbMKnsx6dvJnlgD/fgODAZdyvFNM
6uVpGz3rs/i4RbhqjaZlszSREZKPNwq4OARjRK6YEgorBgEEAZdVAQUBAQdA1cEw
Ry6RTZRQI6QGqAGqZgKzGnTGICRKLDTWVgCz4DAQgHiH4EGBYKACYWlQQtHMqX
0EdwuXFed21JA1gRWQvwVgUCY0SumAlbDAUJA8NZeAAKCRBJA1gRWQvwVqS6AQ
Df
uuwxOCCGH0D538WNbzFYNR+jsZMQudMkyk191y0wwD/Yc0m1+ENGH3kUube+fk
9
t/noIDAFX9PmyoedPyv71w4=
=Qclp
-----END PGP PUBLIC KEY BLOCK-----
```

At first I will send the message using Nowsh Public key

This is nowsh public key

New Text Document - Notepad

File Edit Format View Help

-----BEGIN PGP PUBLIC KEY BLOCK-----

```
mDMEY0SumBYJKwYBBAHaRw8BAQdANZLfd1j1uF1CkKTSctEDR5RJgbSaADwulgrw
J8HdGLW0BU5vd3NoiJkEEYKAEEWlQQtHMqX0EdwuXFed21JA1gRWQvwVgUCY0S
u
mAlbAwUJA8NZeAULCQgHAgIiAgYVCgkICwIEFgIDAQIeBwIXgAAKCRBJA1gRWQvw
VgaKAP9ojSyWiBEtOUm9jmD7RIw+Bg9VF54hJbMKnsx6dvJnlgD/fgODAZdyvFNM
6uVpGz3rs/i4RbhqjaZlszSREZKPNwq4OARjRK6YEgorBgEEAZdVAQUBAQdA1cEw
Ry6RTZRQI6QGqAGqZgKzGnTGICRKLDTWVgCz4DAQgHiH4EGBYKACYWlQQtHMqX
0EdwuXFed21JA1gRWQvwVgUCY0SumAlbDAUJA8NZeAAKCRBJA1gRWQvwVqS6AQDf
uuwxOCCGH0D538WNbzFYNR+jsZMQudMkyk191y0wwD/Yc0m1+ENGH3kUube+fk9
t/noIDAFX9PmyoedPyv71w4=
=Qclp
-----END PGP PUBLIC KEY BLOCK-----
```

Sign/Encrypt... Decrypt/Verify... Import... Export... Certify... Lookup on Server... Certificates Notepad Smartcards

Sign / Encrypt Notepad

Decrypt / Verify Notepad

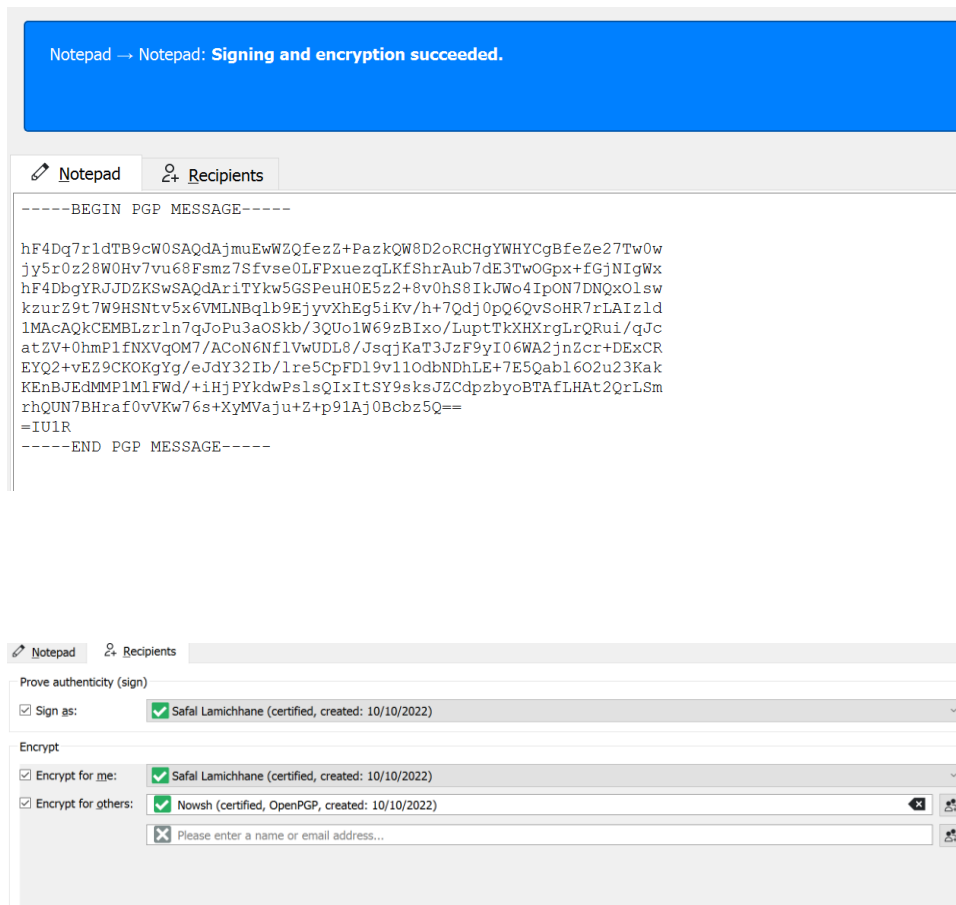
Revert

Notepad

Recipients

hello Nowsh how are you ?

The message is now encrypted and I will send him the key



Now he will decrypt the message to get the plain text.

I had send him my public key, now nowsh will send the encrypted message and I will decrypt it using private key.



**But, Nowsh**

To: Lamichhane, Safal



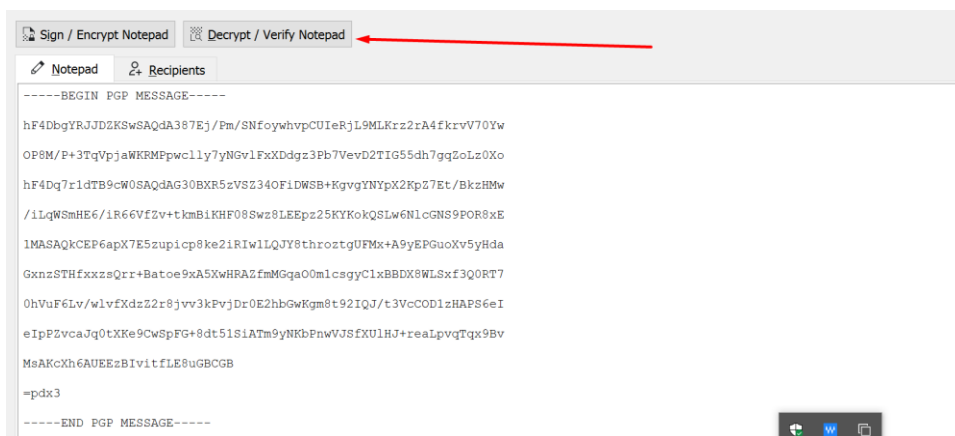
Mon 10/10/2022 8:39 PM


-----BEGIN PGP MESSAGE-----


hF4DbgYRJJDZKSWSAQdA387Ej/Pm/SNfoywhvpCUIeRjL9MLKrZ2rA4fkrvV70Yw  
OP8M/P+3TqVpjaWKRMPpwcly7yNGvIFxXDdgz3Pb7VevD2TIG55dh7gqZoLz0Xo  
hF4Dq7r1dTB9cW0SAQdAG30BXR5zVSZ34OFiDWSB+KgvYNYpX2KpZ7Et/BkzHMw  
/iLqWSmHE6/iR66VfZv+tkmBiKHF08Swz8LEEpz25KYKokQSLw6NlcGNS9POR8xE  
1MASAQkCEP6apX7E5zupicp8ke2iRIw1LQJY8throztgUfMx+A9yEPGuoXv5yHda  
GxnzSTHfxxzsQrr+Batoe9xA5XwHRAZfmMGqaO0m1csgyC1xBBDX8WLSxf3QORT7  
0hVuF6Lv/wlvfXdzZ2r8jvv3kPvjDr0E2hbGwKgm8t92IQJ/t3VcCOD1zHAPS6eI  
eIpPZvcaJq0tXKe9CwSpFG+8dt51SiATm9yNKbPnwVJSfXUIHJ+reaLpvqTqx9Bv  
MsAKcXh6AUEEzBIvitfLE8uGBCGB  
=pdx3


-----END PGP MESSAGE-----

This is the message he sent it to him lets decrypt it



 Sign / Encrypt Notepad

 Decrypt / Verify Notepad


 Revert


Notepad → Notepad: **Valid signature by Nowsh**

Recipients:

- Safal Lamichhane (E7D2 7653 95BB 5C09)
- Nowsh (4903 5811 590B F056)

Signature created on Monday, October 10, 2022 8:39:08 PM  
With certificate:  
Nowsh (4903 5811 590B F056)  
The signature is valid and the certificate's validity is fully trusted.

 Notepad

 Recipients

Hello How are you

We can see the plaintext here.