

**LIVEWIRE**  
**CLOUD**

Applies to Livewire's Cloud offering Available from all Tier3 and Tier1 Datacenters

# **Support Guide and Support Procedures**

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## 1. Introduction

Livewire – Support Guide and Procedures are intended for audience with basic level of understanding about Livewire Cloud Infrastructure. This support guide outlines steps and procedures that one can follow to receive optimal response and turnaround time from Livewire support team. We intend to setup right expectations with our customers and therefore its important for us to clearly highlight roles and responsibilities between customers and Livewire Support teams.

## 2. How to contact Livewire Cloud Support Team?

### 2.1 Phone

**Regular Support Line / Board Line:**

**8317559020**

**Support Hours:** 24x7 | 365 Days

**Sales / Presales Hours:** Monday to Friday | 9 AM – 5 PM PST

**Back office / Accounting:** Monday to Friday | 9 AM – 5 PM PST

**Important:** Out of business hours' support is strictly reserved for emergency support request only. Any other request that is made out of business hour will responded on next business day.

**Emergency Support Line:**

**8317559010**

**Support Hours:** 24x7 | 24x7 | 365 Days

**Important:** emergency support channel is strictly reserved for emergency support requests only. Our support personnel will validate the nature of the problem / incident reported by you. Anything that does not constitute to direct downtime of production infrastructure will be dealt via regular support tickets / emails.

### 2.2 Tickets

<https://support.livewirecloud.com/>

Livewire Cloud Support Center / Ticketing portal requires login. In case you would not have credentials, please contact your Sales Rep or send email to [presales@Livewirecloud.com](mailto:presales@Livewirecloud.com)

### 2.3 Chat

Our chat support channel is integrated within our support center (Ticketing Portal). Only authorized users (registered customers) are allowed to initiate chat with support team. In case if you are valid customer and do not have access to support center, please contact your Sales Rep or send email to [presales@Livewirecloud.com](mailto:presales@Livewirecloud.com)

## 2.4 Rescue Session / Shared Remote Session

Our rescue session / shared remote session is based on a unique on demand invitation code. Once you create support ticket / initiate chat session depending on nature of the problem our Support engineer shall provide you rescue session code if we need to share remote session for troubleshooting purpose.

## 2.5 Email

All our email distribution lists are configured for email to ticket conversion. Any email sent to these email IDs by registered partners / customers will be converted to a ticket in our support center. You will receive an email acknowledgment with ticket number. Please not emails from email IDs / users that are not registered in our support center will not be converted to a ticket and will be marked as spam.

Email Distribution List	Function
<a href="mailto:support@Livewirecloud.com">support@Livewirecloud.com</a>	General Support
<a href="mailto:vAdmin@Livewirecloud.com">vAdmin@Livewirecloud.com</a>	Vmware Administrators
<a href="mailto:dcmon@Livewirecloud.com">dcmon@Livewirecloud.com</a>	Datacenter Monitoring and Management
<a href="mailto:migrations@Livewirecloud.com">migrations@Livewirecloud.com</a>	Cloud Migrations
<a href="mailto:dr@Livewirecloud.com">dr@Livewirecloud.com</a>	Backup and Disaster Recovery
<a href="mailto:accounting@Livewirecloud.com">accounting@Livewirecloud.com</a>	Billing and Accounting
<a href="mailto:presales@Livewirecloud.com">presales@Livewirecloud.com</a>	Presales, Delivery and Technical Consulting

## 3. Support Request Types

### 3.1 Urgent | Critical | Major | High

These Support Request can be requested for events resulting into Production **down Time** of your cloud environment which is affecting functionality of all VMs / all Users / LoB Application(s)

### 3.2 Normal | Minor

These Support Request can be requested for all issues that do not constitute to production downtime for your entire cloud environment. Its meant for all regular / general support OR when the services are affected partially for users OR where the product / service does not behave as expected.

### 3.3 Low | No Priority Set

These Support Request can be requested to get specific Information OR for allocations. For e.g. creating new user, allocating IPs, requesting RV Tools reports etc. Partners / customers are expected to file these requests after consulting the Product Manuals, Trouble Shooter and Knowledgebase since most of the information is available there.

## 4. Expected Response and Resolution Time

	First reply time	Next reply time	Resolution time
No priority set	1 hours	8 hours	2 days
Low	1 hours	8 hours	2 days
Normal	1 hours	8 hours	2 days
High	15 minutes	45 minutes	4 hours
Urgent	15 minutes	45 minutes	4 hours
Minor	1 hours	8 hours	2 days
Major	15 minutes	45 minutes	6 hours
Critical	15 minutes	45 minutes	6 hours

### Expected Resolution Time / Turnaround time with proposed solution / PoA (\*):

In order to start resolving the issue, the 1<sup>st</sup> Line support might require additional information from you. If this information is not available our NOC support engineers cannot start pursuing a solution and will inform you about the missing topics.

Based upon the information that is offered by you and/or collected by our Support Teams, a solution will be offered. We always aim to reach the resolution times as listed above.

(\* ) Livewire is highly committed to its customers and will spend the necessary efforts to achieve all response and resolution times. Unfortunately, we cannot always guarantee the resolution timings listed above.

## 5. Managed Cloud Services

This section lists the areas that are considered as “Managed Cloud Services” in Livewire Cloud. It covers, core infrastructure support and vAdmin Vs the areas that require customers to manage them.

Area	Managed by Livewire Cloud Support
<b>Virtualization</b>	<ul style="list-style-type: none"> <li>• Management service VMs and Appliances</li> <li>• Managing Storage Services VMs and Appliances</li> </ul>
<b>Hardware</b>	<ul style="list-style-type: none"> <li>• Manage Datacenter Setup, maintenance, and availability</li> <li>• Management, Setup, and Provisioning of hardware</li> <li>• Procurement of spare parts and break-fix equipment</li> <li>• Livewire’s Managed shared SAN / shared storage</li> <li>• Storage cluster maintenance and management</li> <li>• Network equipment maintenance and management</li> <li>• External DDoS mitigation and IDS services appliance (Provisioned by Livewire)</li> <li>• Private / Internal DDoS mitigation and IDS services appliance (Provisioned by Livewire)</li> </ul>

Area	Managed by Livewire Cloud Support
<b>Network</b>	<ul style="list-style-type: none"> <li>• Architecture design, review, and consultation</li> <li>• Configure physical routing and switching equipment</li> <li>• Allocate public and private IP blocks to customers</li> <li>• Manage physical firewalls</li> <li>• Manage physical routers</li> <li>• Manage physical intrusion-detection systems (External and Internal)</li> <li>• Monitor bandwidth consumption</li> <li>• Troubleshoot network connectivity</li> <li>• Manage virtual firewall rule set (co-managed with customer)</li> </ul>
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>• Core infrastructure monitoring (Compute, Storage and Network Fabric)</li> <li>• Maintaining and monitoring networking equipment backup with change and revision history.</li> <li>• Monitoring external and internal DDoS and IPS services</li> <li>• Configure and respond to infrastructure monitoring (Ping, Alarms, Thresholds)</li> <li>• Configure and respond to VMware services monitoring (vCenter, vSAN, vCD, vROPs)</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>• Monitoring and Management of Storage cluster</li> <li>• Routine maintenance and delta cleanup.</li> <li>• Availability of Storage Services</li> <li>• Performance monitoring and overall on the fly optimizations</li> </ul>
<b>Vmware Updates</b>	<ul style="list-style-type: none"> <li>• Tracked and managed by Livewire. A prior notification is sent to customers for approval before deploying any update.</li> </ul>
<b>Security</b>	<ul style="list-style-type: none"> <li>• Maintaining security of core network and backbone infrastructure of Livewire Cloud</li> </ul>
Area	Managed by customer
<b>Virtualization</b>	<ul style="list-style-type: none"> <li>• VM troubleshooting</li> <li>• Remote administration of VMs</li> </ul>
<b>Network</b>	<ul style="list-style-type: none"> <li>• IP management of IP blocks assigned to customers</li> <li>• Manage virtual firewall rule set</li> <li>• Manage VM DNS</li> </ul>
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>• Provide, configure, and respond to monitoring of the OS and applications at virtual machine level.</li> <li>• Monitor for capacity utilization and request additional capacity in advance</li> </ul>
<b>Operating systems</b>	<ul style="list-style-type: none"> <li>• Provision guest OS</li> <li>• Ensure OS licensing compliance if using own licenses</li> <li>• OS Patch Management</li> </ul>
<b>Security</b>	<ul style="list-style-type: none"> <li>• Maintain security specifications for VMs, like complex password, OS firewall etc.</li> </ul>

## 6. Managed Backups

If any component of customer's cloud environment encounters a failure, Livewire might determine that a restore of the component is required from backup images. If a customer wants to request a restore of any component, contact vAdmin / Livewire support team. Its important that customers must use any backup tool of their choice OR use backup software and hybrid storage provided by Livewire to back up their virtual machines. Customers may also backup their VMs to external providers / any other location of their choice. If customer do not want to back up their VMs (by choice), Livewire will be under no obligation to restore their VMs / Data if there is any data corruption, ransomware attack any problem of similar nature that may affect data integrity and data consistency.

## 7. Roles, Responsibilities & Expectations

### 7.1 Customer

- System Administrators at the partner Side / client side are responsible for collecting and submitting the necessary information for each support session / support ticket when it's an inbound support request.
- System Administrators at the partner side / client side should set the correct expectation regarding resolution times with their customers' / end users.
- System administrators / clients are requested to go through required best practices to make sure they are not over provisioning the system OR making any changes at storage / hypervisor level that are unknown to Livewire support team.
- It's advisable for System administrators / clients to consult Livewire support team before making any changes to default configuration of VMware vSphere / vSAN / Management Firewall.
- In case hardware appliance is procured by partner / customer (*wherein Livewire is only providing VMware Software and Managed Cloud Hosting and VMware Support for servers*), we shall not maintain any spares at Datacenter. Partner needs to provide these spares for emergency hardware replacements.
- In such case, our team shall help you identify if it's a hardware issue and shall also perform replacement of hardware by coordinating with datacenter team, but RMA / procurement of new part will be managed by partner / customer. If this involves shipment of faulty spare outside datacenter, shipment will be charged as per actuals to partner / customer.

### 7.2 Livewire Cloud Support Team

- Our support teams will manage your cloud environments 24x7 that are under contract agreement of "Managed Cloud Services" and hosted at one of our Datacenters.
- Livewire Support team will be accountable for end to end support for VMware stack which includes managing alerts, proactive checks, diagnosis and troubleshooting of problems.
- Our support team shall perform periodic maintenance activity (no physical movement) of VMware stack with prior consent from partner.
- "Managed Cloud Services" also includes remote hand support at our datacenter, which means should we require any assistance in replacing hardware / performing remote activities, it will be handled by our support team with datacenter support.
- If the hardware is purchased / rented from Livewire, our support team shall also manage the RMA replacement of hardware. In such case we shall also maintain spare hardware components like disk, SSDs, NIC, power supply for emergency replacements.
- Support team shall also manage, periodic updates of Hypervisor and upgrades of VMware software with prior consent from partner / customer and with planned downtime.

## 8. Deliverables

Below is list of deliverables which is part of “Managed Cloud Services” agreement.

		Livewire Cloud Support	Partner / Customer
<b>General</b>			
	24x7 Monitoring and Management	<input checked="" type="checkbox"/>	
	Livewire Ticketing System	<input checked="" type="checkbox"/>	
	Third Party Ticketing System		<input checked="" type="checkbox"/>
	Helpdesk with phone support	<input checked="" type="checkbox"/>	
	Sysprep OS Templates	<input checked="" type="checkbox"/>	
	Custom OS Templates		<input checked="" type="checkbox"/>
	Custom application installers		<input checked="" type="checkbox"/>
<b>Network and Security</b>			
	VLANs	<input checked="" type="checkbox"/>	
	Firewall and Load Balancer (Virtual Appliance)	<input checked="" type="checkbox"/>	
	Public IPs	<input checked="" type="checkbox"/>	
	Switch Ports	<input checked="" type="checkbox"/>	
	Gateway / Router (Virtual Appliance)	<input checked="" type="checkbox"/>	
	DNS Management		<input checked="" type="checkbox"/>
	IP whitelisting		<input checked="" type="checkbox"/>
<b>Storage &amp; Compute</b>			
	Burst Storage Capacity for Production   DR   Archive   Backup <i>(Charged as per actuals)</i>	<input checked="" type="checkbox"/>	
	Designated NAS Share to upload images	<input checked="" type="checkbox"/>	
	Optional Filer / SAN for backup		<input checked="" type="checkbox"/>
	Burst Compute Capacity for expansion <i>(Charged as per actuals)</i>	<input checked="" type="checkbox"/>	
	External USB to copy images		<input checked="" type="checkbox"/>
<b>Installations and Upgrades</b>			
	Installation and Upgrade of an Operating System		<input checked="" type="checkbox"/>
	Installation and Upgrade of an Application		<input checked="" type="checkbox"/>



	Hardware installation of Vmware Cluster and relevant components	<input checked="" type="checkbox"/>	
	Hardware installation of add on devices	<input checked="" type="checkbox"/>	
	vSphere installation, Configuration and upgrades	<input checked="" type="checkbox"/>	
	VMware vSAN installation, configuration and upgrades	<input checked="" type="checkbox"/>	
	Firewall, Network installation and Configuration.	<input checked="" type="checkbox"/>	
<b>Replacements</b>		<input checked="" type="checkbox"/>	
	Replacement of faulty component where hardware is purchased / rented from Livewire	<input checked="" type="checkbox"/>	
	Replacement of faulty component where hardware is purchased by partner / customer from third party but spares are supplied to Livewire datacenter team for replacement.	<input checked="" type="checkbox"/>	
<b>Licensing</b>			
	Microsoft Licenses ( <i>Charged as per actuals</i> )	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Vmware Licenses ( <i>Charged as per actuals</i> )	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Application Licenses		<input checked="" type="checkbox"/>
	NVIDIA Grid Licenses ( <i>Charged as per actuals</i> )	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Backup Software Licenses ( <i>Charged as per actuals</i> )	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Procurements</b>			
	Procurement of spares where hardware is purchased / rented from reseller other than Livewire		<input checked="" type="checkbox"/>
	Procurement of software, applicable software upgrades for line of business applications / custom applications deployed by partner / customer		<input checked="" type="checkbox"/>
	Procurement of spares where hardware is purchased / rented from Livewire	<input checked="" type="checkbox"/>	

## 9. Bandwidth and Latency Test

Livewire's Looking Glass Appliance is deployed in all datacenters for partners / customers to test packet loss, network latency and jitter to examine their connection speed from Livewire's datacenter to specific location.

The line test above works by sending packets from our server straight to defined IP (Gateway / Firewall / Machine) and reporting as it is doing so. This allows our test to see if there is any packet loss, what the average network latency of your line is from our datacenter and provides a jitter measure. A reasonable line test result would show minimum packet loss and latency below 100 milliseconds and jitter below 20 milliseconds. Follow below procedure to simulate different bandwidth tests.

**East Coast Mirror:** <http://mirroreast.livewirecloud.com/>

**West Coast Mirror:** <http://mirrorwest.livewirecloud.com/>

### 9.1 IPv4 Download Test

These files are provided to help users test their download speeds from our servers. Below are the 3 options available for IPv4 Download Test.

- a) 100 MB
- b) 500 MB
- c) 1000 MB

Click the file you want to download to start the download process. You can check download speed under your default download manager.

### 9.2 Host Resolution / DNS Resolution

Each web server (and indeed any host connected to the internet) has a unique IP address in textual form, translating it to an IP address (in this case, 172.217.2.174) is a process known as Host Resolution or DNS resolution or DNS lookup; here DNS stands for Domain Name Service.

### 9.3 MTR

The MTR test is based on the linux program MTR, which combines the functionality of the "traceroute" and "ping" programs in a single network diagnostic tool. The test investigates the network connection between the chosen monitoring location and the specified host. Its a better version of ping and traceroute that also provided statistics on packet loss and jitter.

### 9.4 Ping Test

A ping test is a method of checking if the computer is connected to a network. It also determines the latency or delay between two computers. It is used to ensure that a host computer which your computer tries to access is operating. A ping test is run for troubleshooting to know connectivity as well as response time.

### 9.5 Traceroute

Traceroute is a [utility](#) that traces a [packet](#) from your computer to an [Internet host](#), showing how many [hops](#) the packet requires to reach the host and how long each hop takes. If you're visiting a [Web site](#) and [pages](#) are appearing slowly, you can use traceroute to figure out where the longest delays are occurring.

## 10. Image Repositories

Livewire's Cloud Environment have image / template repository in each datacenter for customers. We have variety of SysPrep OS Images available which can be used by customers to deploy virtual machines. The operating system inside the template is not licensed. All OS templates are on default EVAL license supplied by software provider. Depending upon your choice, you may either opt in for Livewire's SPLA licenses for Microsoft Products for monthly pricing OR Procure your own perpetual licenses / use existing volume license with SA pack. Please connect with your sales rep OR presales team ([presales@livewirecloud.com](mailto:presales@livewirecloud.com)) to know the pricing for SPLA licenses. At this time, we do not provide license for Linux Operating System. Customers are required to purchase / subscribe for Red Hat / Linux operating system from authorized resellers.

Below are links for image repositories for respective datacenters.

**SV4 (Santa Clara):** <https://imagesv4.livewirecloud.com>

**NY2 (New Jersey):** <https://imageny2.livewirecloud.com>

Customer can use these links in vCenter to deploy Virtual Machines using any one of the Templates.

Sr. No	Template Name	OS Flavor	Architecture	Activation	Username	Password	Non-Admin user	Password
1	CentOS-GUI-6.8.ova	CentOS - 6.8	64Bit	N\A	root	rooter	cloud	cloud
2	CentOS-Minimal-7.ova	CentOS – 7 (Bare OS – no GUI)	64Bit	N\A	root	rooter	cloud	cloud
3	Fedora.ova	Fedora - 25	64Bit	N\A	root	rooter	cloud	cloud
4	CentOS-GUI-7.ova	CentOS – 7 (with GUI)	64Bit	N\A	root	rooter	cloud	cloud
5	FreeBSD-11.ova	FreeBSD – 11	64Bit	N\A	root	rooter		
6	Ubuntu-Server-1404.ova	Ubuntu Server – 14.04	64Bit	N\A	cloud	cloud		
7	Ubuntu-Server-1604.ova	Ubuntu Server - 16.04	64Bit	N\A	cloud	cloud		
8	Ubuntu-Desktop-1404.ova	Ubuntu Desktop – 14.04	64Bit	N\A	cloud	cloud		
9	Ubuntu-Desktop-1604.ova	Ubuntu Desktop – 16.04	64Bit	N\A	cloud	cloud		
10	Debian-Server-8.ova	Debian-Server – 8	64Bit	N\A	cloud	cloud		
11	W2008R2-DeskExp-Template-50G.iva	Windows 2008 R2 Desktop Experience	64Bit	EVAL	NA (Sysprep)	NA (Sysprep)		
12	W2008R2-StdSrvr-Template-50G.iva	Windows 2008 R2 Standard	64Bit	EVAL	NA (Sysprep)	NA (Sysprep)		
13	W2012R2-DeskExp-Template-50G.iva	Windows 2012 R2 Desktop Experience	64Bit	EVAL	NA (Sysprep)	NA (Sysprep)		
14	W2008R2-StdSrvr-Template-50G.iva	Windows 2008 R2 Standard	64Bit	EVAL	NA (Sysprep)	NA (Sysprep)		
15	W2016-StdSrvr-Template-50G.iva	Windows 2016	64Bit	EVAL	NA (Sysprep)	NA (Sysprep)		
16	pfSenseFW.ova	FreeBSD – 11 (PFsense version 2.3.4)	64Bit	N\A	admin	PFsense		
17	Win7-Pro-x64-Template-50G.ova	Win7 Pro	64Bit	EVAL	Admin	P@\$swOrd@123		
18	Win10-Pro-x64-Template-50G.ova	Win10 Pro	64Bit	EVAL	Admin	P@\$swOrd@123		

## 11. Uptime Reports

Livewire's Cloud Environment uptime reports / status pages are available for public access at below link. You can also access these pages from our website "https://www.livewirecloud.com/Support/Uptime Reports. The uptime report provides uptime data for last 90 days for our datacenters, monitoring framework, support systems and management portals.

East Coast: <https://statureast.livewirecloud.com/>

West Coast: <https://statuswest.livewirecloud.com/>

Management Portals: <https://statusmgmt.livewirecloud.com/>

## 12. Knowledge Matrix – Livewire Vs Partners / Customers

		Livewire Support				Partner / Customer
		1st Line	2nd Line	3rd Line	ENG	System Admin
<b>General</b>						
	ERP software					<input checked="" type="checkbox"/>
	Relational Databases					<input checked="" type="checkbox"/>
	Mail Servers/Clients					<input checked="" type="checkbox"/>
	Terminal/Server setups					<input checked="" type="checkbox"/>
	Third Party Applications					<input checked="" type="checkbox"/>
<b>Networking</b>						
	Basic TCP/IP + DHCP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Firewall & Load Balancers			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Static routing		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Dynamic routing			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	VLAN			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Storage</b>						
	Storage Frontends (iSCSI, NFS, CIFS, FTP, S3 etc)		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Storage Provisioning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Partitioning / File Systems	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	RAID Concepts		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Vmware vSAN Functionality	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Storage Policies		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	vSAN Disk group Configuration			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Redundancy and Failover		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	S3 Storage Bucket Provisioning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

	Storage Troubleshooting		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Storage Monitoring	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<b>Operating Systems</b>						
	Basic OS Knowledge	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Advanced OS Knowledge		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Windows Server Roles		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Active Directory		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Remote Desktop Session Host (RDSH)			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Windows Networking	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Linux basic knowledge	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Linux advanced knowledge		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Linux networking		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Vmware Suite</b>						
	Vmware vSphere	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Advanced vSphere Troubleshooting		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Vmware vCenter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Vmware vROPs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Vmware vCloud Director	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Vmware vSAN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Vmware vRealize Operations	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Vmware vRealize Log Insight	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Vmware Horizon	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Vmware AppVolume	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Vmware Chargeback Manager	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Vmware NSX-V	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Backup and Restores</b>						
	Basic Backup concepts and archiving	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Advanced backup concepts			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Basic restore and troubleshooting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Advanced restore and troubleshooting			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Migration</b>						
	Assessment Tools (Private / Public Cloud)		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Physical to Virtual Migrations		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Virtual to Physical Migrations		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	Replication and Migration Tools	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

## 13. Livewire - vAdmin Support

Livewire Cloud Support offers 24x7x365 support. We are “Vmware Professional Cloud Provider” with Vmware and have elevated access to technical specialists for rapid resolution of unexpected software-related issues within the Vmware stack.

Livewire's “vAdmin Team” consist of Vmware Certified Professionals (VCPs) who will assist you in the architecture, deployment, and troubleshooting of your Vmware cloud environment. Livewire Cloud Support monitors and maintains the VMware software stack, including installing and configuring the Vmware stack, hardware and datacenter networks. Our partners / customers can leverage our Vmware expertise under Managed Cloud Services agreement namely on below Vmware products and any other Vmware products / acquired technologies by Vmware that will be listed in this guide in near future.

- Vmware vSphere
- Vmware vCenter
- Vmware vSAN
- Vmware vSphere SRM
- Vmware vRealize Operations
- Vmware vCloud Director
- Vmware vRealize Tenant App
- Vmware NSX-V
- Vmware vRealize Operations Manager
- Vmware vRealize Log Insight
- Vmware Horizon View Stack
- Vmware App Volume
- Vmware ThinApp
- Vmware Chargeback Manager / Usage Meter

Livewire Cloud Support manages and supports the physical infrastructure and Vmware clusters. However, customers are expected to manage the virtual systems that they deploy, including VMs and the guest OS of those systems.

VMs or other virtual systems deployed, configured, or created by the customer within the Livewire cloud environment do not qualify for vAdmin managed services unless specifically enabled by an add-on service. Services for VMs such as OS or application monitoring, OS patching, antivirus, and application backups are customer's responsibility.

## 14. Functional Responsibilities

Feature	Responsibility	Description
Creating one or more VMs	Customer	Creating VMs from template provided by Livewire Cloud Support.
Creating one or more VMs from a template provided by customer	Customer	Creating VMs from template provided by partner / customer.
Power on/off and suspend/resume VMs	Customer	Stop, start and suspend a VM.
Modify a VM	Customer	Changing the resources of a VM, such as the CPU, memory, disk, or name.
Deleting a VM	Customer	Deleting a VM.
Access to the vCloud API	vAdmin	The Restful vCloud API used to enable automation and integration of third-party tools into Dedicated VMware vCloud.
Uploading a customer-provided OVA as template	Customer	VMs created by uploading an OVA/OVF template into Livewire Cloud Environment. Customer needs to upload required template in compatible format to their designated NAS share.
Uploading a customer-provided ISO to a designated NAS share	Customer	ISO files are stored in NAS share by uploading into a designated NAS share space.
Access for end customers to the vCenter Server.	Customer	Viewing vCenter information from the vSphere web or full client, or third-party software. (Customer-provided vSphere plugins are not supported.)
Accessing the vCenter, vCloud Tenant Portal, vROPs Tenant Portal	Customer	Using vCloud Director Tenant UI and provisioned VMware management suites to operate shared / dedicated cloud environment.
Manual migration of VMs from customer's infrastructure to Livewire Cloud Support	Customer	Migrating VMs from customer's existing infrastructure to Livewire Cloud using export and import function. This is a manual process that requires downtime for the VM.
Installing and Configuring Backups	vAdmin	Installation and configuration of desired backup tools and setting up backup retention and backup alerting as requested by partner / customer.
Monitoring Backups	Customer	Alerting will be configured to send backup failure notification to customers. Livewire Cloud do not monitor every backup job, customers are expected to create a ticket when they see a backup failure alerts. Our vAdmin team shall work with you / resolve backup issue for you.
Managing Backups	vAdmin	vAdmin team will manage your backup infrastructure / backup cluster with respect to required configuration changes, optimizations and best practices. vAdmin team is available for partners / customers to even consult and design backup strategy for their cloud environment.
File Level Restore	Customer	Customers are expected to perform file level restore using their backup management UI / Self Service portal. In an event if customer wants vAdmin team to perform file level restore for them it would be handled as per regular support ticket.

Feature	Responsibility	Description
Test Virtualization	Customer / vAdmin	Customers can do a test virtualization using Self-Service portal OR initiate a support request to Livewire team. These support requests will be handled as per regular / normal priority.
Live DR	vAdmin	Livewire's Cloud environment is designed to sustained on several different type of hardware, network, component and service failures without causing downtime for customers. In an unlikely event if customer wants to restore any specific VM / do a DR for entire cluster, they can send a support request to vAdmin Team with "High" / "Critical" priority. These support requests will be handled by us with top most priority and our team shall work with you till completion of entire DR activity.
Ticket notification	vAdmin	Configuring initial notification for customers within vCenter, vCloud Director, vRealize Tenant Portal, Backup Tools, Backup Portal.

## 15. Emergency Maintenance Window

Livewire is committed to keep your cloud environment performing at a maximum level and shall provide hot fixes even when your environment / cluster did not suffer from a specific problem. These fixes sometime mandatory and might require downtime for your environment / cluster. Should you choose not to allow deployment of these hot fixes, it may affect our ability to maintain reliability and (or) integrity of your cloud environment / cluster.

## 16. Summary and Conclusion

The support procedures and specific support instructions within this guide are intended to make sure that your overall experience with Livewire support team goes seamlessly. At any given point we do not wish to program our customers / block them within procedures to make user experience cumbersome.

Based on the structure and support lines defined within NOC; these support outlines are formed by us and we assured best attention and in time resolution from Livewire teams when these guidelines are followed.