

Intel[®] Hybrid Cloud platform Version 2.5

User Guide

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1. About This Document

This User Guide describes in detail, the various features available for configuring and managing the Intel[®] Hybrid Cloud server. This user guide describes the features available on the latest version of the Intel[®] Hybrid Cloud platform.

1.1 Intended Audience

This User Guide is written for Remote Administrators and end users in the SMB segment, who may want to manage the Intel[®] Hybrid Cloud server, activate new virtual appliances on the server and monitor virtual appliances running on the server.

1.2 Abbreviations

The following table displays the abbreviations used in this document:

Term	Description
Intel [®] AMT	Intel [®] Active Management Technology refers to Intel's management architecture with consistent cross platform capabilities, interfaces, and protocols. It offers a HW chipset based solution for remote out-of-band management, using a secondary processor on the motherboard, with embedded firmware that runs on the Manageability Engine (ME).
Intel [®] Hybrid Cloud platform	Intel [®] Hybrid Cloud platform is a unique Hardware and Software solution that is remotely managed and is targeted at small and medium businesses that have a business need for simplified IT functionality.
ООВ	Out of Band channel, can be used to access a system that is powered down and does not have OS running
RAID	Redundant Array of Independent Disks
RBAC	 Role Based Access Control. Intel[®] Hybrid Cloud server manager follows an RBAC mechanism. There are two roles supported by the Intel[®] Hybrid Cloud server manager. 1. "admin" with default password "admin" 2. "user" with default password "user"
Remote Administrator	Or a Managed Service provider (MSP) who will be Intel's interface to end customer and he/she will be providing remote manageability services to customers
SMB	Small and Medium Businesses
Virtualization	Refers to Intel's hardware implementation of Intel [®] Virtualization Technology (that is, Intel [®] VT), that enables multiple guest OSs and applications (together known as Virtual Machines or VMs) to co-exist on the same computer platform.
VMM*	Virtualization Machine Monitor, refers to third party ISV SW that uses ${\rm Intel}^{\circledast}$ VT and enables remote management of VMs.

Table 1. Abbreviations

1.3 Additional Information

The following table lists the other useful documents.

Table 2. List of documents

Topic	Link to the document
Intel [®] Hybrid Cloud Troubleshooting Guide	http://www.intel.com/support/motherboards/server/hybrid/sb/CS- 031724.htm
Intel [®] Hybrid Cloud Software Log Guide	http://www.intel.com/support/motherboards/server/hybrid/sb/CS- 031723.htm

2. Intel[®] Hybrid Cloud platform Overview

The Intel[®] Hybrid Cloud platform offers small business customers cloud-like flexibility, providing an innovative solution, which implements a subscription-based model for providing locally-hosted server software on a pay-as-you-go basis. Small businesses get all of the benefits of services in the cloud, with the responsiveness and consistency of local applications, plus the security of having the data on site.

The Intel Hybrid Cloud platform offers four key ingredients:

- Intel[®] Hybrid Cloud server that resides on the customer premises and hosts the customer appliances and data.
- Intel[®] Hybrid Cloud software stack which runs on the Intel[®] Hybrid Cloud server on top of a Virtual Machine Monitor (VMM).
- Intel[®] Hybrid Cloud server manager which an administrator can use to remotely manage the Intel[®] Hybrid Cloud server.
- Intel[®] Hybrid Cloud management portal which is an internet reachable management portal that allows a remote administrator to manage all his/her Intel[®] Hybrid Cloud servers, controls server registration, and manages expiry & activation of appliances on each of the server.

Each of these components is briefly described below:



Figure 1: Components in Intel[®] Hybrid Cloud platform

2.1 Intel[•] Hybrid Cloud server

Intel[®] Hybrid Cloud server is a server that has the required technical ingredients to support the Intel Hybrid Cloud software stack, including Intel[®] Active Management Technology 6.0 for remote manageability and a Trusted Platform Module.

2.2 Intel[•] Hybrid Cloud software stack

Intel[®] Hybrid Cloud software stack is one of the core components of the Intel[®] Hybrid Cloud platform that runs on the Intel[®] Hybrid Cloud server on top of a Virtual Machine Monitor (VMM).

This software provides an abstraction layer over VMM, making it easy to deploy, configure and manage the Intel[®] Hybrid Cloud server. Both Linux* and Microsoft Windows* guest OSs are supported within the VMM, to run a variety of end-user applications.

2.3 Intel[•] Hybrid Cloud management portal

Registration and activation of Intel[®] Hybrid Cloud server and supported appliances will be controlled by an Internet reachable management portal named Intel[®] Hybrid Cloud management portal (will be referred to as management portal for the rest of this document). This portal requires a valid username and password for access and is available to authorized remote administrators. The management portal is described detail in chapter 5.



Figure 2. Intel[®] Hybrid Cloud management portal

2.4 Intel[•] Hybrid Cloud server manager

This simplified, UI-based application enables remote monitoring, management, and configuration of the server. Each software appliance runs on a separate virtual machine, allowing individual management of each appliance and isolation for reconfiguration or troubleshooting.

The details of Intel[®] Hybrid Cloud server manager (GUI) functionality are described in chapter 6 of the user guide.

Inte	l° Hybrid Cloud			Hello admin 👘 🔤 🖸
7	Testmachine123			
				Session Remote IP: 10.223.130.12 Local IP: 192.168.77.1
		No messa	ges available	0 Messages < 🕗
		(intel) Model:	45K2289 CPU:	Intel(R) Xeon(R) CPU X3460 @ 2.80GHz
	A Dashboard	Memory: Storage:	5145.2 MB free of 8126.3 MB Uptim 262.0 GB free of 398.3 GB	e: 0 Day(s) and 17 Hour(s)
	O. Analiana	Usage		Appliances
	Appliances	100		
	Configuration	90		
		70		
	X Controls	60		
		% 50		Stopped Stopped Kunning
	🕑 Logs	30		
		20		
		0		
			Time (Sec)	Stopped
		CPU 🗹 Memory 📋 Disk		
		Software Logs		
		View Log type: 💿 😑 Error (🔾 🌖 Alerts 🔾 🔥 Warning 🔾 🌔	Information
		Type Record ID Times	tamp Des	cription
		611 Wed J	un 16 12:31:19 +0530 2010 Man	agement Portal unreachable.Check Internet connection.
		610 Wed J	In 16 11:39:55 +0530 2010 Man	agement Portal on eachable.check internet connection.
		604 Wed I	in 16 11:39:47 +0530 2010 Man	anement Portal unreachable.Check Internet connection.
		597 Wed J	un 16 10:23:53 +0530 2010 Man	agement Portal unreachable.Check Internet connection.
		585 Wed July	un 16 09:45:29 +0530 2010 Man	agement Portal unreachable.Check Internet connection.
-				

Figure 3. Intel[®] Hybrid Cloud server manager

There is also a command line utility (from here on referred to as IXE) available as part of Intel[®] Hybrid Cloud server manager and can be used for configuring and managing the Intel[®] Hybrid Cloud server. Details of IXE commands can be found in chapter 10 of the user guide.

3. System Requirements

3.1 Intel[•] Hybrid Cloud management portal

Intel[®] Hybrid Cloud management portal is accessed via a web browser. This release of Intel[®] Hybrid Cloud management portal supports the following browsers (minimum version is mentioned)

- Mozilla Firefox* 3.6
- Microsoft Internet Explorer 7.0*
- Google Chrome* 10.0

3.2 Intel[•] Hybrid Cloud server manager

Intel[®] Hybrid Cloud server manager runs on a client machine. Following is the recommended system requirement for the client machine running Intel[®] Hybrid Cloud server manager.

Minimum hardware Requirement - Pentium-4 2GHZ, 1GB RAM.

List of supported operating systems:

- Microsoft Windows XP*
- Microsoft Windows 7*
- Microsoft Windows 2008*

Intel[®] Hybrid Cloud server manager requires Adobe* AIR 2.5* for its operation. It is available for free download at <u>http://get.adobe.com/air/</u>. It can also be downloaded along with the Intel[®] Hybrid Cloud server manager. To know the details on how to download tools, please see Section 4.3 of this User Guide.

4. Getting Started

This section describes the steps to start using the Intel[®] Hybrid Cloud platform.

- 1. Setting up the Intel[®] Hybrid Cloud server.
- 2. Registering the Intel[®] Hybrid Cloud server.
- 3. Downloading Intel[®] Hybrid Cloud server manager.
- 4. Completing Registration process on management portal.

Each of these steps is described below.

4.1 Setting up the Intel[•] Hybrid Cloud server



Figure 4. Basic Setup

- 1. Intel[®] Hybrid Cloud server has two Network interfaces a WAN interface and a LAN interface. Both interfaces are provided via RJ45 jacks at the back of the system.
- Connect the WAN port to the broadband access device (such as a cable modem, DSL modem etc).
- Connect the LAN port to the Ethernet interface of a Windows* based client machine (such as a desktop or a laptop). Supported operating systems on client machine are Windows XP*, Windows Vista* and Windows 7*.
- 4. Configure the network interface of the client system to use a static IP address and use following settings for its network configuration:
 - IP address: 192.168.77.42
 - Subnet Mask: 255:255:255:0
 - Default Gateway: 192.168.77.1
- 5. Power up the Intel[®] Hybrid Client Server. Wait ~10 minutes for server to boot completely.

Note: If the Intel[®] Hybrid Cloud server is behind an external firewall, the initial configuration needs to be different from the above setup. Please follow the setup explained below.



Figure 5. Setup if the Intel[®] Hybrid Cloud server is behind an external firewall

Default network settings for above setup are as follows (use the Intel[®] Hybrid Cloud server manager to change the settings as needed):

- The remote interface is configured for DHCP.
- The Local interface IP address is configured to 192.168.77.1 and subnet mask is configured to 255.255.255.0.
- Server can be accessed via <u>https://<IP address>:64440/login</u>

Intel[®] Hybrid Cloud server configuration has to follow the below steps:

- Server may not contain any Software Firewall appliance.
- All the client machines will be directly connected to the External Firewall.
- Move all the interfaces of the appliance on the server to WAN Link.

Manage the Intel[®] Hybrid Cloud server from external internet:

- Login to management portal and get the Internet IP Address of the server.
- Open the Intel[®] Hybrid Cloud server manager and connect to Internet IP with server username and password

Below are the ports that the Intel[®] Hybrid Cloud server uses to connect to the box externally and manage it. Please add appropriate entries in the external firewall.

Port	Function	Forward to IP Address
64440	Management port used for the managing Intel [®] Hybrid Cloud server	Server IP Address
22	SSH to the Intel [®] Hybrid Cloud server	Server IP Address
65222	for the script engine that helps in debugging and executing some critical tasks	Server IP Address
16993	Intel [®] AMT Management port used for the managing Intel [®] Hybrid Cloud server "out of band" (OOB)	Server IP Address
16994- 16995	Management port used for the managing Intel [®] Hybrid Cloud server via SOL	Server IP Address
5910- 5920	VNC ports used for accessing the Appliance remotely	Server IP Address

Table 3. Ports

Port	Function	Forward to IP Address
8282	BMC Management port used for the managing Intel [®] Hybrid Cloud server "out of band" (OOB)	BMC IP Address
443	RMM3	BMC IP Address

4.2 Initiating Registration for the Intel[•] Hybrid Cloud server

For the Intel[®] Hybrid server to be used for the first time, it needs to be registered first with the management portal.

Note: Registration for the Intel[®] Hybrid Cloud server can be done only by the Remote Administrator (that is, only by "admin" role).

- Once Intel[®] Hybrid server box is accessible on the LAN interface, open one of the supported internet browsers from your Windows* client machine and type <u>https://192.168.77.1:64440/login</u> in the address field.
- 2. Enter the default User Name and Password in the "Connect to Server" login box.
 - a. Default Username: admin
 - b. Default password: admin

Product version	n v2.5
Connect	
Password:	
Login	

Figure 6. Registration for the Intel[®] Hybrid Cloud server – Connect Page (Username, Password)

3. You will be presented with an End User License Agreement. Remote Administrator must accept the end user license to proceed further.



Figure 7. Registration for the Intel[®] Hybrid Cloud server – License Agreement Page

4. At this stage, Intel[®] Hybrid Cloud server will try to contact the management portal. It's possible that server is not able to reach the management portal because IP address settings used for WAN interface are not correct. If this happens then a web page to configure the Remote IP address appears (see screenshot below). Here the IP and other details can be provided.

Check Network	2 Register Server	
	The management por verify/update the	rtal is not reachable. Please WAN interface details.
	Protocol:	DHCP C Static
Configure	IP Address:	10.223.131.103
Network	Netmask:	255.255.255.128
	Gateway:	10.223.131.126
	DNS:	10.223.129.194
	Up	date Keep the same

Figure 8. Registration for the Intel[®] Hybrid Cloud server – Configure Network Page

- 5. Once Intel® Hybrid Cloud server is successfully able to contact management portal, a web page to register this server with management portal is shown. You must enter following details to register this server with the management portal:
 - Server Name -- This is the name by which this server will be shown in the management portal
 - Remote Administrator ID This is the login ID used by you to access management portal.
 - Click Register.

The status of the Intel[®] Hybrid Cloud server moves to Registration Pending. Now you can download available software tools (section 4.3) or skip the step, if you already have the software tools and move directly to completing registration process (section 4.4).

1 Check Network	Register Server	
		Please enter your Remote Administrator ID and register the Server
		System Asset Tag: 7755e666ac6260cf593176208a93fca4
		Software version: V2.5
Register Serve	r	System Name:
		Remote Administrator ID:
		Register

Figure 9. Registration for the Intel[®] Hybrid Cloud server – Register Server Page

4.3 Downloading Intel[•] Hybrid Cloud server manager.

Once the state of the Intel® Hybrid Cloud server is "Registration Pending" or "Registered", a Remote Administrator or a user can download the management tools by accessing the Intel® Hybrid Cloud server at https://192.168.77.1:64440/login.

There are three ways to manage Intel[®] Hybrid Cloud server.

- Windows* based CLI tool (IXE)
- Linux* based CLI tool (IXE)
- Adobe AIR* based GUI tool (Intel[®] Hybrid Cloud server manager)

User can download the software tools from this page as shown below.

tel(R) Hybrid Cloud	
Pleas	e activate the box on the management portal. Click here to login.
Server Configuration	System Asset Tag: f208d88eefc7c21bbfa6888521a4007e Registration Status: Pending Remote IP Address: 10.223.130.31 Local IP Address: 192.168.77.1 Internet IP Address: Not Available Server Name: myTestPR
	Intel@Hybrid Cloud Software Suite for managing the server
Download Tools	Download Intel® Hybrid Cloud Server Manager now. This application requires the Adobe® AIR ^{**} runtime. Install Adobe® Shockwave Flash player from Adobe® site for enhanced appearance.
	🔀 Intel® Hybrid Cloud Software user guide

Figure 10. Registration for the Intel[®] Hybrid Cloud server - Configuration and Download Tools Page

Notes:

- No management operations via these tools are allowed till the Intel[®] Hybrid Cloud server moves to registered state.
- Download duration of the tools may take time as it primarily depends on the link bandwidth between the client and server.
- For Intel[®] Hybrid Cloud server manager Installation, make sure Adobe* AIR runtime v2.5 is already installed. If the client is connected to internet clicking "Install Now" will download both Intel[®] Hybrid Cloud server manager and Adobe[®] AIR runtime v2.5 otherwise user has to download both tools separately.
- When you download Intel[®] Hybrid Cloud server manager, IXE command line tools are automatically downloaded to the client machine. Please refer to chapter 10 for more details on IXE tool usage.

4.4 Completing Registration process on Intel[•] Hybrid Cloud management portal.

1. Remote Administrator (or MSPs) needs to log in to the management portal and confirm the registration of a particular Intel[®] Hybrid Cloud server.

Intel Login +	
(intel) Login	
Login	
Login ID: more info	
Forgot your Login ID?	
Password:	
Forgot your Password?	
Remember my Login information - more info	
Login Lancel	
ontact us by Email and us an email (24-48 hour response)	
elect A Language English 🔹	
se of this system by unauthorized persons or in an unauthorized manner is strictly prohibited.	
Legal Information and Privacy Policy © 2010 Intel Corporation	

Figure 11. Intel[®] Hybrid Cloud management portal Login page

2. The list of registration activation appears in the pending task list. (See the screenshot below). Click Task tab in the left pane to view the list of pending registrations.

YZ					
🚔 Home	Servers awaiting regist	ration approval			
	Server Name A	Asset Tag	IP Address	Software Version	-
Servers	testMac	testM12ac	10.254.251.193	v2.5	activate
Tasks	testMac	testMac	NA	v2.5	activate
ılı Usage	VSIDPLUL	4428431a9107de6ce53cd84d61ed35c4	NA	v2.5	activate
	Appliances awarding reg	No Requests po	ndingt		
		no requests pe	inding:		
_					

Figure 12. Intel[®] Hybrid Cloud management portal Task List

3. The Remote Administrator can click on the activate button which shows the details of the Intel® Hybrid Cloud server and a list of appliances installed on that server. Remote Administrator can choose to activate each of the appliances and confirm the registration. This confirmation activates the Intel® Hybrid Cloud server and the appliances. Expiry date for the appliances is set to a default of 3 years. Remote Administrator can also enter end customer name for the selected server.

Intel Hybrid Cloud Web Portal	*				
Intel® Hybrid Cloud Web	Portal			Hello webscanuse	r <u>Profile</u> <u>Sign Out</u>
XYZ					
Allers	Servers awaiting registration a	Activate the Server			
Home	Server Name 🔺 Ass	Server Details	IP Address	Software Version	
Servers	testMac tes	Asset Tag: testMac Server Name: testMac	10.254.251.193	v2.5	activate
😰 Tasks	testMac tes	External IP Address: NA Software Version: v2 5	NA	v2.5	activate
II. Usage	VSIDPLUL 442	Customer Name: abd	NA	v2.5	activate
	Appliances awaiting registration	Confirm Cancel			
Dees					

Figure 13. Intel[®] Hybrid Cloud management portal - Activating the Server and appliances

For details on more Intel[®] Hybrid Cloud management portal operations, please go to next section.

4. Your Intel[®] Hybrid Cloud server is now ready to use.

5. Intel[®] Hybrid Cloud management portal

Channel Partners/Remote administrators/MSPs can register, activate and monitor usage of various Intel[®] Hybrid Cloud servers that they deploy and manage for end users via an easy to use Intel[®] Hybrid Cloud management portal.

Various features available under this management portal are described in detail below.

5.1 Accessing Intel[•] Hybrid Cloud management portal

Remote Administrator needs to login to the management portal as a first step before he/she can start. Please use a supported Web Browser and type <u>https://hybridcloud.intel.com</u> in the address field.

(intel) Login	
Login IDs more info Perget your Login ID? Passenotb Perget your Password? Examined any Login information - more info Login Concel	
If you are a new user, click here to register.	
Contact us by Email Send us an email (34-48 hour response)	
Select A Language English •	
Use of this system by unacharized persons or is an insufficient ensure is relative publicled. * Lagged Information and Privacy Policy & 2001 Just Corporation	

Figure 14. Intel[®] Hybrid Cloud management portal Login Screen

Intel® Hybrid Cloud management portal has a timeout of five minutes. Inactivity of more than five minutes would automatically logout the logged in user. In case if administrator forgets the password, one can refer to "Recovering Password" of the *Troubleshooting Guide*.

5.2 management portal Dashboard

Following is the screenshot of the dashboard screen of the management portal with an overview of the servers that the administrator owns and some of the pending requests for the administrator.



Figure 15. Intel[®] Hybrid Cloud management portal Dashboard

5.3 Managing Registered Servers

Once the server is registered and the administrator confirms the registration on the management portal, the server is listed in the "Manage Servers" list. Administrator can go to the Manage Servers page and modify the expiry date of appliance licenses or activate/deactivate the appliances. From the management portal, administrator will also be provided with a mechanism to launch the Intel[®] Hybrid Cloud server manager for each of the servers and can manage a specific server in detail using the same.

Intel Hybrid Cloud Web Portal	*						-
Intel® Hybrid Cloud Web Porta	I				Hello webscanuser	<u>Profile</u> <u>Sign</u>	Out
хүг							
	Server Service	Expiry					
A Home	List servers with Server na	me 🔻	Filter				
🕑 Tasks	Customer Name 🔺	Server Name	IP Address	Server Status			
L Usage	Customer	UBFIVCUQ	NA	Active	Info Services	Manage	
	EPSD	PerfTestServer16	143.182.252.114	Active	Info Services	Manage	
	EST	ILRWIHHG	NA	Active	Info Services	Manage	
	Express IT Services	VSRNRSFT	NA	Active	Info Services	Manage	
	G Naresh Kumar	cloudBeta4	10.223.131.96	Active	Info Services	Manage	
	Gadepalli	TestMachine	10.223.131.81	Active	Info Services	Manage	
	intel	CNYPTYXM	NA	Active	Info Services	Manage	
2000	Kumar	SHACDJGG	NA	Active	Info Services	Manage	

Figure 16. Intel[®] Hybrid Cloud management portal – Managing Registered Servers

In the above screen, following are the actions and corresponding details available:

- Click on Info for additional details about the deployed server (including VMM expiry, System Asset Tag, System HW serial number, Intel[®] Hybrid Cloud software stack version).
- Click on **Manage** to open the Intel[®] Hybrid Cloud server manager to manage the server.
- Click on the Services to view the list of appliance(s) installed on the server. Remote Administrator can activate/deactivate and change the expiry date of the appliance(s) license. Default appliance expiry is set to three years.

intel Hybrid Cloud Web Portal	*							
tel® Hybrid Cloud Web Po	rtal				Hell	o webscanus	ser <u>Profile</u>	Sign
хүг								
_								
	Server	vice Expiry						
🚔 Home	List servers with Se	ver name 🛛 🔻	Filter					
E Servers								
🗊 Tasks								_
1	Customer Name A	Server Name	IP Address	Server Status				-
II. Usage	Customer	UBFIVCUQ	NA	Active	Info	Services	Manage	
	EPSD	PerfTestServer16	143.182.252.114	Active	Info	Services	Manage	
	Statur	Name and Description	n		Expi	ry		
	Active	 Astaro Security Gateway 	ay + Email		05/28/2012	12		
	Active	 Astaro Security Gatewa Windows Server 2008 	ay + Email Std - 32Bit		05/28/2012 05/28/2012			
	Active Active Active	Astaro Security Gatewa Windows Server 2008 Windows Server 2008	ay + Email Std - 32Bit with TS - 32Bit		05/28/2012 05/28/2012 05/28/2012			
	Active Active	Astaro Security Gatewa Windows Server 2008 Windows Server 2008	ay + Email Std - 32Bit with TS - 32Bit		05/28/2012 05/28/2012 05/28/2012			
	Active	Astaro Security Gatewa Windows Server 2008 Windows Server 2008	ay + Email Std - 32Bit with TS - 32Bit Update C	ancel	05/28/2012 05/28/2012 05/28/2012			
	Active	Astaro Security Gatewa Windows Server 2008 Windows Server 2008 Click update to apply the ch	ay + Email Std - 32Bit with TS - 32Bit Update C anges on the Portal. Other	ancel view the changes wo	05/28/2012 05/28/2012 05/28/2012 uld not be saved			

Figure 17. Intel[®] Hybrid Cloud management portal –Servers Screen (Services tab)

Intel Hybrid Cloud Web Portal	*						
Intel® Hybrid Cloud Web Port	al				Hello webscanus	er <u>Profile</u> <u>Sign</u>	Out
хүх							
	Server Service	Expiry					
A Home	List servers with Server na	ame 🔻	Filter				
Servers							
🕼 Tasks	Customer Name 🔺	Server Name	IP Address	Server Status			
LL Usage	Customer	UBFIVCUQ	NA	Active	Info Services	Manage	
	EPSD	PerfTestServer16	143.182.252.114	Active	Info Services	Manage	
		System Asset Tag System Serial Num System License Expiry	 f5976b93b3aff6fb257 . .	'ea655334091e6			
	EST	ILRWIHHG	NA	Active	Info Services	Manage	
	Express IT Services	VSRNRSFT	NA	Active	Info Services	Manage	
Done	G Naresh Kumar	cloudBeta4	10.223.131.96	Active	Info Services	Manage	

Figure 18. Intel[®] Hybrid Cloud management portal – Servers Screen (Info Tab)

5.4 Viewing Intel[•] Hybrid Cloud server Usage

The management portal also provides the option for the administrator to view the usage of all the appliances on a server. Each server reports the appliance-specific usage to the management portal on a daily basis which gets populated in the database. The Usage report display provides a graph-based and a text-based report of each of the appliances as shown in the following screenshot for usage reports.

Intel Hybrid Cloud Web Portal	*				
	Server Service	Unreachable			
A Home	List servers with Server name	e ▼	Filter		
Servers					E
🕑 Tasks					
	Customer Name A	Server Name	IP Address	Last Usage Report Time	
IL Usage	Customer	UBFIVCUQ	NA	5/28/2010 1:00:00 PM	Show
	EPSD	PerfTestServer16	143.182.252.114	5/28/2010 1:00:00 PM	Show
		(< May 2010 >		
	Service Name		Usage Units	5	
	Windows SBS 2008		3		
	Vembu Storegrid		6	3	
	Windows SBS 2008		5	6	
	EST	ILRWIHHG	NA	5/28/2010 1:00:00 PM	Show
	Express IT Services	VSRNRSFT	NA	5/28/2010 1:00:00 PM	Show
Dana					

Figure 19. Intel[®] Hybrid Cloud management portal - Viewing Intel[®] Hybrid Cloud server Usage-1

Intel Hybrid Cloud Web Portal	*				
Intel® Hybrid Cloud Web Porta	al			Hello webscanuser	Profile Sign O
XYZ					
_					
	Server Service	Unreachable			
🚔 Home	List servers with Server name	e 🔻	Filter		
Servers					
Servers					
📴 Tasks	Customer Name	Server Name	ID Address	Last Usage Penort Time	
LL Usage	Customer	UBEIVCUO	NA	5/28/2010 1:00:00 PM	Show
		obineoQ	100	5/20/2010 1.00.00 PM	Silow
	EPSD	PerfTestServer16	143.182.252.114	5/28/2010 1:00:00 PM	Show
			< June 2010 >		
		No usage r	eported for the selected (month	
	EST	ILRWIHHG	NA	5/28/2010 1:00:00 PM	Show
	Express IT Services	VSRNRSFT	NA	5/28/2010 1:00:00 PM	Show
	Gadepalli	TestMachine	10.223.131.81	6/1/2010 11:27:00 AM	Show
one					

Figure 20. Intel[®] Hybrid Cloud management portal - Viewing Intel[®] Hybrid Cloud server Usage - 2

5.5 Viewing the Customer Profile

Management portal provides a read only access to the customer profile. Click on the **Profile** link on the top right corner to open the profile information as shown in following screen.



Figure 21. Intel[®] Hybrid Cloud management portal –Viewing Customer Profile

5.6 Reactivating the appliance

If the system has not connected to the management portal for consecutive 30 days, all the running appliances are stopped and appliances' licenses are revoked. Administrator needs to again activate those appliances using the management portal once the server comes online. Also, remote administrator should mange the expiry of appliance licenses from the management portal. Starting from 15 days prior to expiration of appliance licenses, warning messages are added on Intel[®] Hybrid Cloud server manager to indicate appliance license expiration. After expiration of licenses, user is allowed to use the appliance for 15 more days as grace period. Post the grace period, license for the corresponding appliance(s) is revoked and the appliance(s) is shutdown. Based on requirements of the end user, Remote Administrator can choose to extend the appliance license from the management portal.

6. Intel[®] Hybrid Cloud server manager

After the registration of Intel[®] Hybrid Cloud server, it can be managed using Intel[®] Hybrid Cloud server manager locally (via LAN link – add on card interface) or remotely (via WAN link – onboard NIC interface). Various management features will be available via both local and remote server manager depending on user role (admin/user)

Note: Maximum of 4 simultaneous remote connections (LAN + WAN) are allowed per Intel[®] Hybrid Cloud server.

6.1 Role Based Access Control for Intel[•] Hybrid Cloud server manager

Intel[®] Hybrid Cloud server manager follows a Role Based Access Control (RBAC) mechanism. There are two roles supported by the Intel[®] Hybrid Cloud server manager. A user can access the server with either of the following roles:

- 1. "admin" with default password "admin"
- 2. "user" with default password "user"

Once Intel[®] Hybrid Cloud server is configured for both local and remote access, end user and remote administrator can use Intel[®] Hybrid Cloud server manager to manage the server. In the sections hereafter, it is assumed that remote administrator is managing the server remotely with "admin" log in. User will have restricted view depending upon permissions given. The role with which the user has logged in determines the access control. However, "admin" has rights to modify the default access control for the "user" as needed. The rights can be modified using the Intel[®] Hybrid Cloud server manager.

Note: Intel[®] AMT features like HW inventory, HW events, Force shutdown, and Force restart are only available via the WAN interface. The admin/user must change the password after first login.

6.2 Login for managing multiple servers

Remote administrators can login to Intel® Hybrid Cloud server manager using Intel[®] Hybrid Cloud management portal login credentials and can see list of all active servers registered by them. They can then launch the Intel® Hybrid Cloud server manager for a specific Intel® Hybrid Cloud server.

	Connect to All Servers		
Connect	Web Portal Login:		
	Web Portal Password:		
All Servers		Connect	
	Connect to All Servers		
Connect	Mangement Portal Login:		
	Password:		
All Servers		Connect	

Figure 22. Intel[®] Hybrid Cloud server manager – Connecting to All Servers

6.3 Login to a specific Server

If the administrator/user chooses to connect to a particular server directly, the user will be asked to also provide IP address along with Server name.

Note: You can connect to a specific server only if it is already registered.

\int	Connect to Server	
nect	Server Name:	testmachine123
Con	User Name:	admin
2	SW Management Password:	****
All Serve	HW Management Password:	
		Connect Cancel
	Connect to Server	
nect	Server Name:	testmachine123
Con	User Name:	admin
2	Password:	******
All Server	Intel * AMT Password:	
		Connect

Figure 23. Intel[®] Hybrid Cloud server manager Login Window

When you access a server for the first time, you need to provide the IP address of the server. This information will be used to add the specific server to the hosts file.

Add Server	
Server Name:	testmachine123
Server IP:	
	Add Cancel

Figure 24. Intel[®] Hybrid Cloud server manager: Add server to hosts file

If the server is successfully registered and this is the first time Remote Administrator or user is logging in, they are required to change the default password and set a new password. Also, admin needs to give Intel[®] AMT password to access Intel[®] AMT features. If no password is given, Intel[®] AMT features will not be available in the UI. Login for user role will not have an option for accessing Intel[®] AMT features.

Notes:

- Entering IP address as the hostname is not allowed. User must enter hostname to connect to the server.
- User with Admin role can connect to server using Intel[®] AMT even when the server is powered off. In order to connect to Intel[®] AMT, it is necessary to give only hostname and Intel[®] AMT password. Using Intel[®] AMT, user can power on the system remotely. This feature is available only from remote connection (WAN IP) and only for admin role.

After clicking **Connect** to connect to the Intel[®] Hybrid Cloud server manager, the user is prompted to install an SSL server certificate (if not previously installed). This SSL certificate is presented every time the hostname of the server changes. User must install the certificate whenever prompted. Please refer to Troubleshooting guide if certificate prompts continue to appear even after installation of the certificate.

Certificate	3	
General Details Certification Path	_	
Certificate Information		
This CA Root certificate is not trusted. To enable trust, install this certificate in the Trusted Root Certification Authorities store.		
Issued to: Testmachine 123		
Issued by: Testmachine 123		
Valid from 3/ 4/ 2009 to 3/ 4/ 2019		
Install Certificate Issuer Statement		
ОК		

Figure 25. SSL Server Certificate

6.4 Windows 7*/Vista* Certificate Install process

6.4.1 Adding server name to the hosts file

When connecting to an Intel[®] Hybrid Cloud server, the Intel® Hybrid Cloud server manager first adds the IP Server name combination to the Windows^{*} hosts file. In Windows 7^{*} and Windows Vista^{*}, special privileges needs to be set to enable Intel® Hybrid Cloud server manager to update the hosts file. The following command needs to be run in command prompt logged in as Administrator:

attrib -h -s c:\windows\system32\drivers\etc\hosts

Note: One needs to log in to Server Management console as an administrator for the first login to enable adding server name to hosts file.

6.4.2 Installing SSL server Certificate

In Microsoft Windows 7* and Vista*, user has to install the server certificate in a specific location in order to avoid the repeated certificate that popup when the admin/user logs in.

When the user tries to login to the server, the certificate window displays a pop-up message as shown below":



Figure 26. Certificate pop-up window

User has to follow these steps:

1. Click on View Certificate.

	Connect to Server
ſ	Server Rame et al. 10
	Confident Editoration Confident Editoration The CA fact confidents and Theorem and The
	Second fair wyfers125 Innead fair wyfers125 Ywdd faine, 3,14,7200 fair 31 (9,201)
	Leer Nov allow galland

Figure 27. Installing the certificate

2. Click on Install Certificate.



Figure 28. Certificate Import Wizard window

3. Click on Next till the Certificate Store selection window is displayed.



Figure 29. Browsing the Certificate Wizard window

4. Select Place all certificates in the following store and click on Browse.

	Connect to Server
in the second	Sarver Kanner
	Centified Separation Street Section Street Section Sec
	Henrich Toll Henrich Coll Control Auflichter Seine Christian Auflichter
	clint _ here _ cent _

Figure 30. Completing the Certificate installation

5. Select the **Trusted Root Certification Authorities** store and click **Next** and **Finish** to complete the certificate installation.

The above process will ensure that certification prompts are not repeated once installed for a specific server.

6.5 Dashboard

Once connected to an the Intel® Hybrid Cloud server, Intel[®] Hybrid Cloud server manager "Default" view consists of Intel[®] Hybrid Cloud server details, main menu, log-in details and a dashboard view. Dashboard consists of three sections as shown in following screen:

- Usage Displays usage graph of Memory, CPU, Disk, LAN, WAN of the server
- Appliances Appliance status indicating the installed appliances on Intel[®] Hybrid Cloud server and their current power state (Starting/Stopping/suspending/halted/Suspended/Importing/Running)
- **Software Logs** Log table that can show latest five logs of information, warning, alert and error categories. Each entry has a record ID, timestamp and description

mvTestPR O					
				-	
			Session	23.130.31 🧅 HW mgmt IP: 10.223.130.	31 🥯 Local IP: 192.168.77.1
(No messages available			0 Messages < >
	(intol)	Model: To be filled by O.E.M.	CPU: Intel(R) Xeon(R) CPU E312	275 @ 3.40GHz	
	inter	Memory: 15016.7 MB free of 16276.7 MB	Uptime: 0 Day(s) and 02 Hour(s)		
A Dashboard					
	Usane			Appliances	
Appliances	obdge	CPU Memory Disk	LAN WAN	* oppinances	
A Coofiguration	100	100		V StoreGrid 3.5 SP Ed	Halted
‰r conniguration	90	90 -		W Windows SRS 200	Holted
Disaster Recovery	70	70		windows 3B3 200	nated
• Disaster Recovery	60	60			
X Controls	% 50	50			
	40	40 -			
😰 Logs	30	30 -			
	20	20			
	10	10			
	0	Time(s)			
	Software Loos				
	View Log type: 🧿	🖲 🗢 Error 🔾 🚺 Alerts 🔾 🚹 Warning	Information		
	Timestamn	Description			
	Wed Apr 20 11:	11:02 -0700 2011 Web Portal unreachable	. Please verify the certificate.		
			,		
lass 10 Links in Clause					
					Hallo admin 📃 🗖
					Hello admin 💧 🔔 🗖 🔇
Testmachine123					Hello admin 💧 🔔 🗖 😣
Testmachine123				 Session Remote IP: 10.223.130.1 	Hello admin 🗖 🔇
Testmachine123				Session	Hello admin 🗖 🔇
Testmachine123		No messages available		Session Remote IP: 10223.130.1	Hello admin C 2 • Local IP: 192.168.77.1 0 Messages < >
Testmachine 123	(intel)	No messages available Model: 45K2289	CPU: Intel(R) Xeon(R) CPU X3460	Session ● Remote IP: 10.223.130.1 D € 2800Hz	Helio admin C
Testmachine 123	(intel)	No messages available Model: 45x2283 Menory: 61452 MB free of 81263 MB	CPU: Intel(f) Xeon(R) CPU X3466 Uptime: 0 Day(s) and 17 Hour(s)	 Session Remote IP: 10.223.130.1 D ≥ 2.800Hz 	Hello admin C
Testmachine 123	(intel)	No messages available Model: 45x2289 Memory: 6145.2 MB free of 8126.3 MB Storage: 262.0 GB free of 398.3 GB	CPU: Intel(R) Xeon(R) CPU X3460 Uptime: O Day(s) and 17 Hour(s)	 Session Remote IP: 10.223.130.1 D ≥ 2800H: 	Hello admin 0
Testmachine 123	Usage	No messages available Model: 45K2289 Memory: 61452 MB free of 81263 MB Storage: 262.0 GB free of 398.3 GB	CPU: Intel(R) Xeon(R) CPU X3460 Uptime: D Day(s) and 17 Hour(s)	Session Remote IP: 10.223.130.1 C 2.80GH: Appliances	Hello admin C
Testmachine 123 A Dashboard Appliances	Usage	No messages available Model: 45K2289 Mernory: 61452 MB free of 81263 MB Storage: 262.0 GB free of 398.3 GB	CPU: Intel(R) Xeon(R) CPU X346C Uptime: O Day(s) and 17 Hour(s)	Session Remote IP: 10223.130.1 30 2.80042 Appliances	Hello admin 🗋 2 🗼 Local IP: 192.168.77.1 0 Messages < >
Testmachine 123	Usage	No messages available Model: 45K2289 Memory: 61452 MB free of 81263 MB Storage: 262.0 GB free of 3983 GB	CPU: Intel(ft) Xeon(R) CPU X3466 Uptime: 0 Day(s) and 17 Hour(s)	Session Remote IP: 10223.130.1 20 2.800H Appliances	Hello admin Hello admin C Hello admin Hello admin C Hello admin Hello admin
Testmachine 123	Usage	No messages available Model: 45k2289 Memory: 61452 MB free of 81263 MB Storage: 262.0 GB free of 3983 GB	CPU: Intel(R) Xeon(R) CPU X346C Uptime: 0 Day(s) and 17 Heur(s)	Session Remote IP: 10.223.130.1 D 2.230GH: Appliances EVEN	Helio admin C
Testmachine123 A Dashboard Appliances Configuration Controls	Usage	No messages available Model: 45x2289 Memory: 6145.2 MB free of 8126.3 MB Storage: 262.0 GB free of 398.3 GB	CPU: Intel(6) Xeon(R) CPU X3460 Uptime: O Day(s) and 17 Hour(s)	Session Remote IP: 10.223.130.1 D 2.800H:	Hello admin C
Testmachine 123 A Dashboard Appliances Configuration Controls	Usage	No messages available Model: 45K2289 Memory: 61452 MB free of 81263 MB Storage: 262.0 GB free of 398.3 GB	CPU: Intel(R) Xeon(R) CPU X3460 Uptime: D Day(s) and 17 Hour(s)	Session Remote IP: 10.223.130.1 De 2.80GH:	Hello admin C
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Testmachine 123	Usage 90 90 90 90 90 90 90 90 90 90 90 90 90	No messages available Model: 45x2289 Menony: 61452 MB free of 8126 3 MB Storage: 262.0 GB free of 398.3 GB	CPU: Intel(6) Xeon(R) CPU X346C Uptime: 0 Day(s) and 17 Hour(s)	Session Remote IP: 10.223.130.1 2 2.20GH:	Helio admin Carlos Construction
Testmachine 123	Usage 100 90 90 90 90 90 90 90 90 90 90 90 90 9	No messages available Model: 45k2289 Memory: 6145.2 MB free of 8126.3 MB Storage: 262.0 GB free of 398.3 GB	CPU: Intel(R) Xeon(R) CPU X3460 Uptime: 0 Day(s) and 17 Hour(s)	Session Remote IP: 10.223.130.1 P 2.2004: Appliances Stopped Stopped Stopped	Helio admin Caller 192.168.77.1
Testmachine123	Usage 100 90 70 80 80 70 80 80 80 80 80 80 80 80 80 80 80 80 80	No messages available Model: 45K2289 Memory: 61452 MB free of 81263 MB Storage: 262.0 GB free of 398.3 GB	CPU: Intel(R) Xeon(R) CPU X3460 Uptime: 0 Day(s) and 17 Hourts)	Session Remote IP: 10.223.130.1 D 2.500ft:	Hello admin C
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Testmachine 123	Usage Usage	No messages available Model: 45k2289 Memory: 61452 MB free of 81263 MB Storage: 262.0 GB free of 398.3 GB	CPU: Intel(R) Xcon(R) CPU X3460 Uptime: 0 Day(s) and 17 Hour(s)	Session Remote IP: 10.223.130.1 P 2.2004:	Helio admin
Testmachine123	Usage 100 90 70 80 70 80 70 80 70 80 80 70 90 80 70 90 80 90 90 90 90 90 90 90 90 90 90 90 90 90	No messages available Modek 45k2289 Memory: 61452 MB free of 8126.3 MB Storage: 262.0 GB free of 398.3 GB Time (Sec) Time (Sec) Time (Sec) Time (Sec) Construction of the second	CPU: Intelf[] Xeon(R) CPU X3460 Uptime: 0 Day(s) and 17 Hour(s)	Session Remote IP: 10.223.130.1 P 2.8004:	Hello admin C
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Testmachine123 Appliances Configuration Controls Controls Cogs	Usage 100 90 80 90 90 90 90 90 90 90 90 90 9	No messages available Model: 45X2289 Memory: 61452 MB free of 812E3 MB Storage: 262.0 GB free of 398.3 GB Time (sec) mory: Disk: LAN: WAN C C Fror ① Alerts ① ▲ Warning cord ID Time stamp C Time (sec) C C C C C C C C C C C C C C C C C C C	CPU: Intel(R) Xeon(R) CPU X3460 Uptime: 0 Day(s) and 17 Hour(s)	Session Remote IP: 10.223.130.1 P 2.20CH: Appliances Stopped Stopped Kinternet romeertion	Helio admin Carlos Construction
Testmachine 123	Usage Usage	No messages available Modek: 45k2289 Memory: 6145.2 MB free of 8126.3 MB Storage: 262.0 GB free of 398.3 GB Image: Image: Image: 262.0 GB free of 398.3 GB Image: Image:	CPU: Intel®) Xeon®) CPU X3467 Uptime: 0 Day(s) and 17 Hour(s)	Session Remote IP: 10.223.130.1 Appliances Support S	Helio admin Caller 192.168.77.1
Testmachine123	Usage 100 90 90 90 90 90 90 90 90 90	No messages available Model: 45/k2289 Memory: 6145.2 MB free of 8126.3 MB Storage: 262.0 GB free of 398.3 GB Image: 263.0 GB	CPU: Intel®) Xeon®) CPU X3460 Uptime: 0 Day(s) and 17 Hour(s) □ Day(s) and 17 Hour(s) □ Information □ Description Management Portal unreachable.Check Management Portal unreachable.Check	Session Remote IP: 10.223.130.1	Hello admin C
Testmachine123 Testmachine13 Testmachine13 Testmachine13 T	Usage	No messages available Model: 45K2289 Memory: 61452 MB free of 81263 MB Storage: 262.0 GB free of 3983 CB Image: Image:	CPU: Intel(R) Xeon(R) CPU X3460 Uptime: 0 Day(s) and 17 Hour(s) 0 Day(s) and 17 Hour(s) 0 Information 0 Escription Management Portal unreachable.Check Usage reporting failed.System activation.Check	Session Remote IP: 10.223.130.1	Helio admin Carlor Constraints (Constraints)
Testmachine 123	Usage 100 90 100 90 100 100 100 100	No messages available Model: 45X2289 Memory: 61452 MB free of 812E3 MB Storage: 262.0 GB free of 3983 GB Image: 262.0 GB free of 3983 GB Image: 262.0 GB free of 3983 GB Model: 45X10 Image: 262.0 GB free of 3983 GB Image: 1000	CPU: Intel(R) Xeon(R) CPU X3460 Uptime: 0 Day(s) and 17 Hour(s) 0 Day(s) and 17 Hour(s) 0 Day(s) and 17 Hour(s) 0 Description Management Portal unreachable.Check Usage reporting failed.System active Management Portal unreachable.Check	Session Remote IP: 10.223.130.1 P 220CH: Appliances Stopped Stopped K Internet connection.	Helio admin
Testmachine 123	Usage 100 90 70 60 80 70 100 90 70 100 90 100 10	No messages available Model: 4542269 Memory: 61452 MB free of B126.3 MB Storage: 262.0 GB free of B126.3 MB Storage: 262.0 GB free of B126.3 MB more: Time (sec) mory: Dick LAW WAN Storage: Model: LAW: WAN WAN Maring For O Alerts Waning Waning	CPU: Intel(R) Xeon(R) CPU X3460 Uptime: 0 Day(s) and 17 Hour(s) 0 Day(s) and 1	Session Remote IP: 10.223.130.1	Helio admin

Figure 31. Intel[®] Hybrid Cloud server manager Default view (Dashboard)

6.6 Hardware Inventory

This tab provides detailed HW information of the Intel[®] Hybrid Cloud server via Intel[®] AMT. This option is available only on "admin" role when connected through the remote interface and Intel [®] AMT password is provided. Following is a sample screen for system information. Similar data is available for processor, memory, and disk.

Intel(R) Hybrid Cloud	Helio admin 🕴 🔔 🗖 🕻
myTestPR ©	۳ ۲
	System Processor Memory Disk
A Dashboard	Platform
HW Inventory	Manufacturer : LENOVO Version : ThinkServer TS200v
Appliances	Serial Number : deepak System ID : 60c5bcfe-eff9-c8c5-06e6-c5f42f12c61c
Configuration	Baseboard
Controls	Manufacturer : LENOVO Product Name :
🕑 Logs	Serial Number: BIOS
	Vendor: LENOVO
	version : SK 15 IAUS Release Date : 11/02/2010

Figure 32. Intel[®] Hybrid Cloud server manager- Hardware Inventory: System Information window

6.7 Managing Appliances

Appliances installed on Intel[®] Hybrid Cloud server can be managed using the **Appliance** tab on the default screen. Default view under this option consists of icons for all the appliances available on top along with status of each of these appliances. User can select any appliance and manage it. Appliance details like Appliances name, vendor, and version are shown along with an option to either start/stop/suspend/resume the appliance depending upon its current state. For example, if an appliance is already started, the option to "stop" and "suspend" it and vice versa are available. Also, after installing the appliance, the default state is stopped. When the appliance is in this Stopped state, there is also an option to uninstall the appliance.

An appliance can be started or resumed (based on its current state) only when the license state of the appliance is activated via the Intel[®] Hybrid Cloud management portal. If the license of an appliance is inactive and Remote Administrator/user tries to start the appliance, the appliance license query is sent to the management portal. Only if the license is marked "active" on the management portal is the appliance allowed to start and license is marked "Active" on the Intel[®] Hybrid Cloud server manager. Else, an error message is displayed.

Likewise, an appliance can be remotely deactivated via the Intel[®] Hybrid Cloud management portal. However, this information is retrieved by the server only once in 24 hours (when usage information is reported to the management portal) or Remote Administrator can force the usage reporting (via IXE command) and thereby, the appliance state information is updated on the server. For details on IXE commands, please refer chapter 10.

If the appliance license has expired, the user is allowed to use the appliance for a grace period of 15 days post license expiry date, after which the appliance is suspended /shutdown (if suspend operation is not possible) Warning messages are logged in 15 days prior to expiry of the appliance license and error messages are logged in the grace period.
In addition to appliance details, there are four options available in this view:

6.7.1 Appliance Monitor

Usage details of resources like Memory, CPU, Disk, LAN, and WAN allocated to an appliance can be monitored via the graph available here. Also, allocated values to memory, CPU & disk are shown.



Figure 33. Intel[®] Hybrid Cloud server manager - Appliances Monitor window

6.7.2 Appliance Configure

This tab provides user the option to configure appliance specific parameters. These are similar to the ones required to be configured while installing the appliance. The user can update the appliance name, change the number of virtual CPUs, set the memory, add/delete HDD and add/delete network interfaces.

tel(R) Hybrid Cloud					Hello admin
myTestPR O					
			Session		HW momt IP: 10.223.130.31 🝚 Local IP: 192.
		۱ I I	🗸 🔰 🧖		
Dashboard	Add Applia	Store Cr	12 SP2 Juliadours SPS 20		
Anolianzes		ice Storeur	10 3.5 SP Windows SBS 20		
Приссэ		Ku	ming Kunning		
Configuration	Appliance Name:				
	Appliance Description				🥌 Suspend
Disaster Recovery					👄 Stop
Controls		Microsoft(R) Cor			
	Monitor	Configure	Control Console		
t Logs					
	Storage:				*Maximum Three harddisks can be added
		Select	Device Postion	Name	Total Size
			0	0	64.000 GB
	Network:				*Maximum three Network interfaces can be added
		Select	Network	MAC	IP Address
			local	1E:5D:1D:9E:46:9C	
					Add Network Remove Network
		_	Y Y. Y.		
CONTURIS		-			
	Monitor	Configure	Control Console		
r Logs					
	Storage				
					"Maximum Three harddisks can be added
		Select	Device Postion	Name	Total Size
					(Hon storage) (Honove storage)
	Network:				
		Select	Network	MAC	*Maximum three Network interfaces can be added IP Address
			in the treat		a roomest
			local	36:8E:3A:F5:26:BF	192.168.77.3
	-		local	36:8E:3A:F5:26:BF	192.168.77.3

Figure 34. Intel[®] Hybrid Cloud server manager - Appliances Configure window

Note: User can perform the actions like Add/remove network/hard disk only when the appliance is in stop state.

6.7.3 Appliance Control

The user can take a backup of an appliance from this view onto a USB disk directly connected to server. USB disk should have free space equal or greater than the size of the appliance to be backed up and must be formatted in NTFS format. The backed up appliance can then be restored back from the USB disk at a later time.

To know how to restore appliance go to section 6.8. Along with the backup, any appliances can be deleted from this view. The uninstall button (option) will uninstall the appliances selected.

Intel(R) Hybrid Cloud							He	llo admin 📃 🗔 🛽
myTestPR O								•
ingread it								
			2 🤪	iession 🥃 Remote IP:	10.223.130.31	🗕 HW mgmt IP:	10.223.130.31 🥥 Loo	cal IP: 192.168.77.1
A Dashboard								
T Dasribuaru	Add Applia	nce StoreGrid 3.5 St	- Windows SBS 20-					
A Appliances								
		Running	Running					
A Configuration		Medaure CDC 2000 Dra						
Se configuration	Appliance Name.	wildows 3B3 2008 Pre						Suspend
Director Decement	Appliance Description	Windows SBS 2008 Pre						- sespens
Ulsaster Recovery		VALID						😝 Stop
K Controla		Microsoft(R) Corporation						
✓ Controis								
Ch Loop	Monitor	Configure	Control					1. Sec.
Image: Logs								×
	C 1							
	Storage:					-14.	ximum Three harddisks can be a	dded
		Select	Device Postion		Name		Total Size	
			0		0		64.000 GB	
								_
						Add Stora	ge Kemove Storag	e
	Naturalu							
	Network:					*Maximum the	ree Network interfaces can be a	dded
		Select	Network		MAC		IP Address	
			local	16:50	:1D:9E:46:9C			
						Add Netwo	Remove Networ	
			1 I. I					1
Intel [®] Hybrid Cloud							Hel	lo admin 💧 🔔 🗖 🔇
Intel* Hybrid Cloud							Hel	lo admin 🕴 🔜 🖸
Intel® Hybrid Cloud Testmachine123							Hel	lo admin 🛛 🔤 🖸 🔇
Intel® Hybrid Cloud Testmachine123						Remote IP: 1	Hel 10.223.130.12 🝚 Loc	lo admin 🗖 🔇
Intel® Hybrid Cloud Testmachine123						Remote IP: 1	Hel	lo admin 📃 🗖 <table-cell></table-cell>
Intel® Hybrid Cloud Testmachine123					Session	Remote IP: 1	Hel	lo admin 🖸 🕲
Intel [®] Hybrid Goud	(+)			Session	Remote IP: 1	Hel	lo admin 📃 🗖 🔇
Intel* Hybrid Cloud Testmachine123	Ē)			Session	Remote IP: 1	Hel	lo admin 📃 🗖 🔇 al IP: 192.168.77.1
Intel® Hybrid Cloud Testmachine123 O	Add Applie	nce Windows Serve	r _ Windows Server _	LPI Onsite Mana.	Session	👻 Remote IP: 1	Hel	lo admin
Intel® Hybrid Cloud Testmachine123 O	Add Applie	ance Unindows Serve	r Windows Server	LPi Onsite Mana	Session	👄 Remote IP: 1	Hel	lo admin _ C
Intel [®] Hybrid Cloud Testmachine 123 O Dashboard Appliances	Add Appil	Ance Unidows Serve	r	LPI Onsite Mana	Session		Hel	Io admin
Intel® Hybrid Cloud Testmachine123 A Dashboard A Appliances O Configuration	Add Apple	ance Vindows Serve Stopped	r Virdows Server Stopsed	LPI Onsite Mana	© Session	Remote IP: 1	Hel	le admin _ C C
Intel® Hybrid Cloud Testmachine123 A Dashboard Appliances C Configuration	Applance Name	ince	r Stoped	UP Onsite Mana Barnici	Session Session	e Remote IP: 1	Het	lo admin C
Intel® Hybrid Cloud Testmachine 123 A Dashboard A Appliances Configuration Configuration	Appliance Name: Appliance Name:	UP Orsite Hanger	r Steped	LPI Orste Mana. Ranny	Session		Hel	lo admin 📃 🗋 🜑 al IP: 192.168.77.1
Intel® Hybrid Coud Testmachine123 A Dashboard A Dashboard Configuration Configuration Controls	Agriance Name Appliance Name Appliance Description Ucense	Level Partons Ordine VALD	r - Stoppet	LPI Dirsite Mana Ramoy	© Session	🗣 Remote IP: 1	Hel	lo admin Constraints and Pt 192.168.77.1
Intel® Hybrid Cloud Testmachine 123 A Dashboard Appliances Configuration Configuration Lors D Lors	Appliance Description Lonse Vendor:	unce Windows Serve Stopped LPI Onstate Manager et: Level Platforms OnState VALD LPI	r Undows Server Stopped	LP Orsite Pana	Session	Remote IP: 1	Het	io admin O
Intel® Hybrid Cloud Testmachine 123 A Dashboard A Appliances Configuration Controls Controls Controls Controls	Add Applie Add Applie Appliance Descriptio License Vendo:	ance Undows Serv Stopped LPI Onsite Manager ex: Level Platforms OnSite VALD LPI	r	LPI Orste Mana. Rancy	Session	Remote IP: 1	Hel	lo admin Constraints of the second se
Intel® Hybrid Coud Testmachine 123 Action 123 Configuration Configuration Controls Cont	Againce Name Appliance Name Appliance Name Ucense Verdor: Verdor:	Ance Windows Server Vindows Server Stopped UP Onsite Nanager In: Level Patterns Onder VALD UP Configure	r - Utros	LPI Orsite Hana Rannes	Session	Remote IP: 1	Hel	lo admin C
Intel® Hybrid Cloud Testmachine 123 A Dashboard Appliances Configuration Configuration Controls C	Ad Applance Name Applance Name Uconse Vendo: Hostor	ance Windows Serv Stopped LPI Onstate Manager ex: Level Platforms OnState VALD LPI Configure	r Vindows Server Vindows Server Stopped Manager Control Corso	LP Goste Mana. Kuring	Session	Remote IP: 1	Het	io admin O
Intel® Hybrid Cloud Testmachine 123 A Dashboard A Dashboard Configuration Configuration Controls C Logs	Add Applia Add Applia Appliance Name Appliance Descriptio Uronse Vendor Hontor	Ince Understand	rVindows Server Stepped Manager Control	LP Orate Mana. Ranny	Session	e Remote IP: 1	Hel	lo admin C
Intel® Hybrid Cloud Testmachine 123 Action 123 Controls Configuration Controls Controls	Applance Name Applance Name License Vendo: Vendo:	unce Windows Serve Stopped LPI Onside Konager In: Level Paintorns OnSite VALID LPI Configure	r	LPI Onsite Mana	Session	Remote IP: 1	Hel	io admin 📃 🖗 🖓
Intel® Hybrid Cloud Testmachine 123 A Dashboard A Appliances Configuration Configuration Controls	Applance Name Applance Name Uconse Vendo: Hostor Backup	unce Windows Serv Stopped LPI Onstan Manager ex: Level Platforms OnState VALD LPI Configure	r Vindows Server Vindows Server Stopped Manager Control Corso	LP Goste Hana. Ruma	Session	Remote IP: 1	Het	io admin O
Intel® Hybrid Cloud Testmachine123 A Dashboard A Dashboard Configuration Configuration Controls Co	Applance Name Applance Name Applance Description Uconse Vendor Vendor Backup	Ince Underson U	v Vindows Server Stepped Manager Control Costo	UP Desite Hana.	Session	Remote IP: 1	Hel	lo admin
Intel® Hybrid Cloud Testmachine123 Appliances Configuration Configuration Controls Contr	Applance Description License Vendor: Maximum Backup Univestal and	urce Windows Serve Vindows Serve UPI Onside Manager UPI Onside Manager UPI Onside Manager VALID UPI Configure Start	r Vindows Server Stopped Manager Control	LPI Orsite Mana.	Session indows SBS 20 Stopped	Remote IP: 1	Het	io admin Constraints and P: 192.168.77.1
Intel® Hybrid Cloud Testmachine 123 A Dashboard A Appliances Configuration Configuration Controls C Logs	Aplance Name Aplance Name Aplance Descripto Gense Vendor Hontor Backup Uninstal ap	nce Vindows Serv Stopper ER Onstan Manager v. Level Planforms OnStre VALD LP Contiguer Start plance Uninsta	rVindows Server stopper Monager Control Conto	LPI Orsite Mana.	Session	e Remote IP: 1	Hel	io admin
Intel® Hybrid Cloud Testmachine123 A Dashboard A Dashboard Configuration Configuration Controls Controls Logs	Agalance Description Leanse Verdor: Voltor Backup Uninstal ag	unce Undows Servic Stopped UN Goute Manager VALD UN Contigue Start plance Uninst	r _ Utindows Server _ Stopped	LPI Orsite Hana	Session	Remote IP: 1	Hel	lo admin C
Intel® Hybrid Cloud Testmachine 123 A Dashboard A Appliances Configuration Configuration Controls	Applance Name Applance Name License Vendo: Hoestor Backup Uninstal ap	unce Windows Serve Stopped UPI Outstan Manager In: Level Platforms Oncilie VALID UPI Configure Start	r Undows Server Stopper Manager	UP Onsite Plana	Session indows SBS 20 Stopped	Remote IP: 1	Het	e admin Constraints and the second seco
Intel® Hybrid Coud Testmachine 123 A Dashboard A Dashboard Configuration Configuration Controls C Logs	Apliance Name Apliance Name Apliance Descriptio Uronse Vendor Horstor Backup Uninstali ap	nce Vindows Serve Undows Serve Staged UN Onstate Manager WALD UR Configure Start plance Uninsta	rVindows Server Stopper Monager Control Conto	LP Orate Mana. Ranno	Session	Remote IP: 1	Hel	al IP: 192.168.77.1
Intel® Hybrid Cloud Testmachine123 A Dashboard A Appliances Configuration Controls Controls Logs	Applance Name Applance Name Applance Description License Verdor: Voltor Backup Uninstal ap	unce Undows Servic Stopped UN Onsite Manager IV Catelly Participants VALD UN Contigue Start plance Uninsta	r _ Utindows Server	LPI Orsite Hana	Session	Remote IP: 1	Hel	a dmin i i i i i i i i i i i i i i i i i i
Intel® Hybrid Cloud Testmachine 123 A Dashboard A Appliances C Configuration C Configuration C Controls C Logs	Aplance Name Applance Name Applance Descripto License Vendo: Vento: Backup Uninstal ap	unce Windows Serve Stopped LPI Ostate Manager LPI O	r Undows Server Steppert Manager	UP Orsite Plana	Session indows SBS 20 Stopped	Remote IP: 1	Het	e admin Constraints and the second seco
Intel® Hybrid Coud Testmachine 123 A Dashboard A Dashboard Configuration Configuration Controls C Logs	Aplance Name Aplance Name Aplance Descriptio Uranse Vendor Hostor Backup Uninstal ap	nce Level Pattors Order VALD LP Contiger Start glance Linista	r Steppet	UP Dosite Hana.	Session	Remote IP: 1	Hel	lo admin

Figure 35. Intel[®] Hybrid Cloud server manager -Appliances Control window

6.7.4 Appliance Console

Under this tab, user can launch the VNC console of the selected appliance (only for appliances that are running). User can open only one console per appliance & the same can be closed only from the session that started it.

The Server Manager will display the port it is using for launching the VNC console.

Users have the option of launching VNC console of their choice. To do so, one needs to connect to it using the "Server IP address":"Port Number" format.

Intel(R) Hybrid Cloud	Helio admin / 💶 🗖 🖸
myTestPR	Session
 Dashboard Appliances 	Add Appliance StoreGrid 3.5 SP_ Investore
Configuration	Applance Name: Windows SBS 2008 Prenium Applance Description: Windows SBS 2008 Prenium Edition 😅 Suspend
Disaster Recovery	Ucense VALID 曼 Stop
✗ Controls	Vendor: Microsoft(R) Corporation
The Loope	Monitor Configure Control Console
Eg Lugs	
	VNC Port: 5912
	1 Terrar and the second s
	Contraction of the local distance of the loc
	Refresh Connected Ctrl + Alt + Del
	disconnect UnDockVNC

Figure 36. Intel[®] Hybrid Cloud server manager -Appliances Console Screen

6.8 Appliance Restore

The appliances that were backed up on to a USB disk can be restored via this tab. Once the user connects the USB disk containing backed up appliances images, this tab will show a list of all the backed up appliances. User can select any appliance and click on the restore button provided. The restored appliance needs to be activated again via the management portal before it can be used. The restore operation will install the previously backed-up appliance. The older appliance will still be present and has to be deleted manually if required. Please refer section 6.7.3 to see how to delete an appliance.

Intel [®] Hybrid Cloud	Hello admin 🕴 💷 🗖
Testmachine123	
	Session Session Remote IP: 10.223.130.12 Local IP: 192.168.77.
 Dashboard Appliances 	Add Appliance SIS 2008 Astaro frevall Raming Raming
© Configuration	
✗ Controls	Please don't disconnect the USB while appliance restore or installation is going on, Refresh
🕼 Logs	
	Available Appliances Found a total of 14 service images in the 1 USBs plagged to the server.
	Seagate FreeAgent 0132 (14 Images found in this USB)
	CentOS (Backgrains at 44/2010 Disor 49nin.)
	CentOS_4_22010_13_40 (Better arter at 41/2019 (Better Tent.)
	CentOS_4.4_2010_13_40 (Ratio alex a 42700 Block back)
	firewall (Buring takes at #11/2219 12have 22min)
	firewall (Burby take at 471/2018 20ase 24aix)
	firewall (Bucky nine at 471/2010 Diser 20nic)



6.9 Configuring Intel[•] Hybrid Cloud server

This feature can be used to configure Intel[®] Hybrid Cloud server and also some other tasks like changing password, appliance boot settings, etc. Functionality of these features is explained in the following sections.

6.9.1 Server Details

This tab can be used to configure System name, update time zone and change password. Both system and Intel[®] AMT password can be changed. Upon successful update of the password, are login screen opens in which user must login again with a new password.

Intel(R) Hybrid Cloud				Hello admin 🛛 🔔 🗖 🕼
myTestPR O				
		🥥 Session (🥏 Remote IP: 10.223.130.31 🥃 HW mgmt II	P: 10.223.130.31 🥥 Local IP: 192.168.77.1
	No messages an	railable		0 Messages 💉 💌
	Model: To be Memory: 1034	filled by O.E.M. CPU: Int 8.9 MB free of 16276.7 MB Uptime: 0.0	el(R) Xeon(R) CPU E31275 @ 3.40GHz Jav(s) and O2 Hour(s)	
A Dashboard	Storage: 31.80			
Appliances	Server Settings Network Settings	Alerts Rebrand Server	Boot Settings	
O Configuration				
Oisaster Recovery	Update Settings		Change Password	
✗ Controls	Name:	myTestPR	 Server console 	 HW mgmt.
Logs ■	Date	04/20/2011	Old Password:	
	Time:	13 - 128 - 1	New Password:	
	Time Zone:	America/Dawson Cree ¥	Re-enter New Password:	
		Update		Change Password
				_

Figure 38. Intel[®] Hybrid Cloud server manager -Configure Server Settings window

6.9.2 Network Settings

This tab can be used to configure local and remote interfaces of the Intel[®] Hybrid Cloud server. If one updates the interface through which the user is connected, it shows a warning message before it proceeds.

Intel(R) Hybrid Cloud	Heloadmin 📜 🗖 🛙
myTestPR O	
	Session
	No messages available O Messages 🕢
A Dashboard	Model: To be filted by 0.04. CPU. Intel®(1) Ascr4[0] CPU (E31275 @ 3.400Hz Memory: 1034 09H free of 150275 XMI Uptime: 0 Dary(s) and 02:Hour(s) Storage: 31.8 C8 free of 100.0 C8 C9
Appliances	Server Settings Network Settings Alerts Rebrand Server Boot Settings
© Configuration	
Oisaster Recovery	Local Network Interface Remote Network Interface
✗ Controls	IP: 192.168.77.1
🕞 Logs	Netmask: 255.255.0 P: 10.223.130.31 Update Netmask: 255.255.0 P:
	Gateway: [10.223.130.251
	DNS: 10.248.2.1
	Update
	Note- Configure Handware Management Network interface before Server Network configuration.

Figure 39. Intel[®] Hybrid Cloud server manager -Configure Network Settings Screen

6.9.3 Configuring Email Alerts

This tab lets the admin and user to configure the email settings and select the software alerts that can be received from the Intel[®] Hybrid Cloud server by email. The Server email/SMTP configuration can be updated only by admin. IP address for SMTP server needs to be configured. The user and admin can configure their email addresses to which the alerts are sent and also the specific type of logs for which Intel[®] Hybrid Cloud server should send the alert emails.

Intel(R) Hybrid Cloud				Hello admin 🖉 📃 🖸 😋
myTestPR O				
		🥥 Se	rssion 🥃 Remote IP: 10.223.130.31 🥃 HW mgmt IP:	10.223.130.31 🥥 Local IP: 192.168.77.1
	No messages ava	allable		0 Messages < 💌
	Model: To be f Memory: 10348	lled by O.E.M. CPU: 9 MB free of 16276.7 MB Uptime:	Intel(R) Xeon(R) CPU E31275 @ 3.40GHz 0 Day(s) and 02 Hour(s)	
A Dashboard	Storage: 31.8 GE			
Appliances	Server Settings Network Settings	Alerts Rebrand Se	erver Boot Settings	
O Configuration				
Oisaster Recovery	Emai	I Server Configuration	Alert Configuration	
* Controls	SMTP	Server:	Enable Email Alerts	
4 001000	CMITD	Parts (ar #)	Receive alerts for:	
🕑 Logs	anir	Poit: 25 Y		
	Email	Address :	Alerts	
	Pacsu	ord:	🗌 🛕 Warnings	
	1020		Information	
		Update	Email address :	
			Update	

Figure 40. Intel[®] Hybrid Cloud server manager -Alerts (Email) Configuration window

6.9.4 Rebrand Intel[•] Hybrid Cloud server

This option helps OEM/ Remote Administrator/MSPs to rebrand server by changing Vendor name, Client name, logo, and EULA. This option is available only for "Admin" role.

Intel(R) Hybrid Cloud		Hello adr	nin 🗆 🖲
myTestPR O			
		Session	192.168.77.
A Dashboard	No messages available Model: To be filled by 0.E.M. Memory: 10348.9 MB free of 16276.7 MB Storage: 31.8 GB free of 100.0 GB	0 Messe CPU: Intel(R) Xeon(R) CPU E31275 @ 3.40GHz 3 Uptime: 0 Day(s) and 02 Hour(s)	iges < >
Appliances Server Settings Configuration	Network Settings Alerts	Rebrand Server Boot Settings	
 Disaster Recovery Controls Logs 	EULA Select a new End User License Agreement. Update	Eranding Product Name Intel(R) Hybrid Cloud Vendor Loge: Update Reset	

Figure 41. Intel[®] Hybrid Cloud server manager - Rebrand Server screen

6.9.5 Configure Boot Settings

This tab can be used to change the order in which appliances should automatically boot up post boot. User can do drag and drop to change the order. This order is applicable on the subsequent boot.

Note: Reorder option for appliances is available only for admin role. Appliances marked to run on boot should have valid licenses installed. Without a valid license, appliance will not be started automatically or otherwise.

Intel(R) Hybrid Cloud	Hello admin 🕴 🔤 🗔 🕄
myTestPR O	
	No messages available O Messages 🕥
🖨 Dashboard	Model: To be filled by 0.EM. CPU: Intel(R) Xeon(R) CPU E31275 @ 3.40GHz Memory: 10348.9 MB free of 16276.7 MB Uptime: 0 Day(s) and 02 Hour(s) Storage: 31.8 CB free of 100.0 GB
🖴 Appliances	Server Settings Network Settings Alerts Rebrand Server Boot Settings
Configuration	Run on Boot Don't Run on Boot
Controls	Spredict 3.5 GP Edean
Logs	StoreGrid 3.5 SP Windows 585.20
	Apply Cancel

Figure 42. Intel[®] Hybrid Cloud server manager -Configure Boot Settings window

6.10 Disaster Recovery

As the Intel[®] Hybrid Cloud platform works as a one-stop solution for all the IT requirements of an SMB, the Intel[®] Hybrid Cloud server will be the backbone of IT in the SMB premises. The Intel[®] Hybrid Cloud provides customers an option to subscribe for Disaster Recovery wherein the customer will get two Intel[®] Hybrid Cloud servers. One server acts as primary server and this server will run the customer applications and IT services. The second server is the secondary server and it will mirror the primary server, and, in an event of primary server failing, can be made active, and the customer can have its business up and running with very minimal downtime.

6.10.1 Setup

Setting up Disaster Recovery is a single step process. Once both the primary and secondary servers are booted, launch the Intel[®] Hybrid Cloud server manager of the primary server and navigate to the Disaster Recovery tab. This view provides a DR Setup option as given in the screenshot below.

The MSP must enter the Remote/WAN IP address of the secondary server and the Local/LAN IP address that the MSP wants to configure as the secondary server. Both machines must be able to reach each other on the Remote/WAN interface; they need not be on same network but must be reachable via a router or gateway. Both machines must be on the same LAN.

Additionally, a server should be set to factory defaults prior to being configured as secondary server.

Intel(R) Hybrid Cloud					Hello admin 📃 🗖 😣
myTestPR					
		🥥 Sessi	on 🥪 Remote IP: 10.223.130.31 👄 H	W mgmt IP: 10.223.130.3	1 🥌 Local IP: 192.168.77.1
	No messages available				0 Messages < >
A Dashboard	Model: To be filled by 0.E.M. Memory: 10348.9 MB free of 16276.7 MB Storage: 31.8 GB free of 100.0 GB	CPU: Uptime:	Intel(R) Xeon(R) CPU E31275 @ 3.40GHz O Day(s) and O2 Hour(s)		
Appliances Setup DR					
Configuration					
Disaster Recovery Secondary set	erver details				
Controls	255:				
Preferred Local	IP Address:				
	Apply				

Figure 43. Secondary server details window

Once the details are provided, Intel[®] Hybrid Cloud software stack configures LAN interfaces of the machines to enable the communication between the servers. Once the LAN is configured, Intel[®] Hybrid Cloud software stack waits for 5 minutes to connect the LAN interfaces of the two machines and thus enables the communication between machines.



Figure 44. Configuring Disaster Recovery between servers

Intel(R) Hybrid Cloud		Hello a	admin 📋 🗖 😆
myTestPR ©			Æ
Connected: Primary		Session	IP: 192.168.77.1
Configuration C	No messages available Modet: To be filled by 0.E.M. Memory: 1493.5 MB free of 10276.7 MB Storage: 31.8 GB free of 100.0 GB the Secondary system to come up. Pleas	CPU: Intel(R) Xeen(R) CPU E31275 © 340GHz CPU: Intel(R) Xeen(R) CPU E31275 © 340GHz 4B Uptime: O Day(s) and 02 Hour(s) Please check the LAN connections of both the servers.(Wait time: 300 sec)	19 192.106.77
I Logs			

Figure 45. Waiting for Secondary systems to come up

Once the communication between the machines is enabled, DR sync process starts.

After the DR setup is done, this view shows the present state of the servers for Disaster Recovery setup. It shows the DR Sync percentage for each appliance. Please refer the following screenshot.



Figure 46. Server synchronization in progress

During Sync, the resource on the mirror server would be in a non recoverable state. Please refer to the screenshot above.

Once the complete sync is done, the view would show the state of each of the servers. Please refer the following screenshot.

Intel(R) Hybrid Cloud					Hello admin 🕴 🔜 🛛 🛛
myTestPR C					•
Connected: Primary		🥥 Session 🥥 Remote IP:	10.223.130.31 🥥 HW mgmt IP:	10.223.130.31 🥥 l	ocal IP: 192.168.77.1
Appliances	No messages available Model: To be filled by O.E.M. Memory: 10248.9. MB free of 16276.7 MB Storage: 31.8 GB free of 100.0 GB	CPU: Intel(R) Xeon(R) CPU Uptime: O Day(s) and O9 Hou	J E31275 @ 3.40GHz ⊮(s)		0 Messages <>
Configuration	Primary	Secondary vice - Recoverable - synchronized			
✓ Controls ✓ StoreGrid ✓ StoreGrid Windows StoreGrid	3.5 SP Edition Insync SBS 2008 Premium Insync	Synchronized			

Figure 47. Synchronization complete

Intel[®] Hybrid Cloud software stack keeps syncing the VM metadata and various other system details (network details, API ACL, SMTP) between the servers so that the switch over during a failure would be as easy as possible for the MSP.

Once the DR setup is done, the dashboard of the Server Management console shows the usage of the mirror server too. Please refer to the following screenshot.

Intel(R) Hybrid Cloud					Hello admin 🛛 🔄 🖸
myTestPR O					•
Connected: Primary		🥥 Ses	sion 🥥 Remote IP: 10.223.130	0.31 🍚 HW mgmt IP: 10.223.130.31	l 🥥 Local IP: 192.168.77.1
A Dashboard	No messages available Model: To be filled & Memory: 10348.9 MB Storage: 31.8 GB free	y O.E.M. CPU: free of 16276.7 MB Uptime: of 100.0 GB	Intel(R) Xeon(R) CPU E31275 @ 3 O Day(s) and O2 Hour(s)	3.40GHz	0 Messages < ≥
Appliances	Usage CPU Memory Disk		LAN WAN	Appliances	
Configuration	Primary Server - In service - Synchronizin 100 - 80 -	100		Vindows SBS 200	Running
Disaster Recovery	% 60 - 40 - 20 -	60 40 20		Windows 555 200	ronning.
X Controls	0	chronizing			
☑ Logs	80 - % 60 - 20 - 0	80 - 60 - 40 - 0 - 0 - Time(s)			
	Software Logs View Log type:	rts 🔾 🛕 Warning 🔾 🚺 Inf	ormation		
	Timestamp D	escription			
	Wed Apr 20 11:11:02 -0700 2011 W	eb Portal unreachable. Please ver	ify the certificate.		

Figure 48. Server Management console displaying the usage of the mirror server

6.10.2 Recover from Primary Server Failure

Once the DR Setup is done, and, if at some point, the Primary server encounters a hardware/software failure, the secondary machine can be brought into service. This would bring back the IT infrastructure of the SMB in a matter of few minutes. When a user/MSP connects to the secondary server while the primary server is down, the following is displayed as the server status.

Intel(R) Hybrid Cloud	Hello admin 🕴 🔤 🗖
54ee129d1ce8d4e3 [©]	
Connected: Secondary	
A Dashboard	No messages available O Messages O Messages O Model: To be filled by 0.EM CPU: Intel(R) Xeon(R) CPU E31275 @ 3.40GHz O Messages > Memory: 15016.7 MB free of 16276.7 MB Uptime: O Day(s) and 09 Hour(s) Storage: 31.8 GB free of 1000 GB
Configuration	DR Status Recovery
 Disaster Recovery Controls 	The Secondary server is unable to reach the primary server. Please verify network settings or Use recovery tab to move this server to primary server
🕑 Logs	Primary Secondary Not Present Recoverable - Primary not found
	2 Windows SBS 2008 Premium
	▼ StoreGrid 3.5 SP Edition

Figure 49. Server status message

Also, the dashboard shows the appropriate status of the machines. Please refer to the screenshot below.

Intel(R) Hybrid Cloud						Hello admin 📃 🗖 🛽
54ee129d1ce8d4e3 [©]						
Connected: Secondary			🥥 Sessio	n 🥃 Remote IP: 10.223.13	0.11 🥃 HW mgmt IP: 10.223.130.11	Local IP: 192.168.77.34
	No messa	iges available				0 Messages < 🖻
	(intel) Model:	To be filled by O.E.M.		Intel(R) Xeon(R) CPU E31275 @		
A Dashboard	Memory: Storage:	15016.7 MB free of 16276.7 MB 31.8 GB free of 100.0 GB				
Configuration	Usage				Appliances	
	CPU Mem	ory Disk		LAN WAN		
Disaster Recovery	100 -	100			Windows SBS 200	Halted
	80	80			StoreGrid 3.5 SP Ed	Halted
🗶 Controls	% 40 -	Out of sync	C I			
	20	20 -				
🕑 Logs	Secondary Server - Becovera	ble - Primary not found				
	100	100 -				
	80 -	80 -				
	% 40	40				
	20	20				
		Time(s)				
	Software Logs					
	View Log type: 💿 🖨 Error	🔾 🌖 Alerts 🔾 🔺 Warning	🔾 🕕 Infor	mation		
	Timestamp	Description				
	Tue Apr 19 20:28:50 -0700 2	011 Web Portal unreachable	e. Please verif	y the certificate.		
~						

Figure 50. Machine status

MSP can use the Recovery tab to bring the appliance in service on this secondary server which will be the new Primary server post recovery. Please refer the screenshot below for the Recovery tab.

Intel(R) Hybrid Cloud		Hello admin 🕴 🔔 🗖 🕻
54ee129d1ce8d4e3		
Connected: Secondary		Session
 Connected: Secondary ▲ Dashboard ◆ Configuration ◆ Disaster Recovery ✔ Controls ֎ Logs 	No messages available Made: To be filled by 0.E4. Marcay: 15016.7 MB free of 160.00 DR Status Recovery Appliances available for recovery. Impliances available for recovery. Impliances available Premium Impliances available System Impliances available System Impliances available for recovery. Impliances available System Impliances available for recovery. Impliances available System Impliances available System Impliances available	Session Remote IP: 10.223.130.11 He Hw mgmt IP: 10.223.130.11 Le Local IP: 192.168.77.34 OMessages () OMessages () OMessages () OMessages () Recover Recover



6.10.3 Repair – Re-Create the Disaster Recovery Setup

Once the appliances are recovered, the original Secondary Server becomes the primary server. Now MSP can add a new secondary server and repair the setup to have disaster recovery capability once again. Repairing is a single step process where the MSP has to provide the WAN IP address of the new server. Please refer the screenshot below.



Figure 52. Re-Create the Disaster Recovery Setup

Just like in the first-time DR setup case, both the servers must be reachable on the Remote/WAN interface, and on the Local/LAN side, both servers have to be connected to the same network. Prior to setting up a server as secondary server, the server must be set to factory defaults, if not a new server.

Post-repair, the disaster recovery is setup again, and it ensures high availability of the customer's IT infrastructure.

6.11 Intel[•] Hybrid Cloud management controls

Various actions can be taken on the Intel[®] Hybrid Cloud server manager using this tab like System restart, shutdown. Force restart and shutdown can be done OOB using Intel[®] AMT. These Intel[®] AMT commands are available only on admin role. For others, admin can grant permission to user role.

There are four options available for software:

Software Reset — Resets the Intel[®] Hybrid Cloud software stack on the server.

Set System Defaults — Resets the Intel[®] Hybrid Cloud software stack configuration to initial default settings. This sets the user permissions to default permission levels for all the XML-RPC APIs and disables SSH for the user. It also configures the remote interface to 'dhcp' and sets local interface to 192.168.77.1/255.255.255.0 IP configuration. All Email alert configurations are removed. The boot orders of the appliances are also removed. There is no effect on the server registration and appliance activation state.

Upgrade — The Intel[®] Hybrid Cloud software stack can be patched using the upgrade option. There is option to patch both Intel® Hybrid Cloud server manager and Intel® Hybrid Cloud software stack. User needs to copy the patch to the client system and then using the upgrade feature, remotely patch the software stack, or patch the server manager on the client system.

Appliance network — There is also a provision for taking appliances off the network. This could be used in scenarios where a network threat is detected and admin may want to put appliances off network. Post diagnostics, he/she can put these networks back on the network. Remote Administrator logged in as "admin" can also allow user role to perform this action.

Note: A power cycle on an appliance after detaching it from network automatically brings the appliance back on the network.

Intel(R) Hybrid Cloud		Hello admin 👘 🔤 🗖 🛽
myTestPR O		· · · · · · · · · · · · · · · · · · ·
Connected: Primary		
	Maintenance Permissions Scripts	
A Dashboard		l l l l l l l l l l l l l l l l l l l
🖴 Appliances	System Reset and Shutdown	
	Soft Reset of the Server	Restart
& Configuration	Soft Shutdown of the Server	Shutdown
Disaster Recovery	Force restart of the Server	Force Restart
✗ Controls	Force shutdown of the Server	Force Shutdown
I Logs		
	Software Reset and Factory Defaults	
	Reset the Software stack on the server	Software Reset
	Restore software configuration to defaults	Restore Defaults
	Upgrade Server	
	Upgrade Server Software	Upgrade
	Upgrade Management Software	Upgrade
	Network Appliance	



Intel(R) Hybrid Cloud		Hello admin 🕴 🔔 🗖 🤅
myTestPR O		
Connected: Primary		
	Maintenance Permissions Scripts reastorie sortiware coninguration to defaults	RESIDI E DERAUIS
A Dashboard		
Appliances	Upgrade Server	
Configuration	Upgrade Server Software Upgrade Management Software	Upgrade
Disaster Recovery		
* Controls	Network Appliance	
🕞 Logs	Appliances on Network	Appliances off Network
	StoreGrid 3.5 SP.	 Windows SBS 20
		Update Cancel

Figure 54. Intel[®] Hybrid Cloud server manager - Maintenance Screen 2

6.11.1 Permissions

This screen is divided into 2 groups; system or hardware permissions and User permissions.

System permissions allow "Admin" to enable/disable SSH and SystemConsole.

User permissions allow "Admin" set permissions for user role. Once logged in as "admin", the Remote Administrator can change the default access permissions for the "user". The access permissions are limited to "allowed" or "denied" for various operations supported.

Intel(R) Hybrid Cloud	Hello admin 🖞 🔔 🗖 🕼
myTestPR O	
Connected: Primary	Gession
	Maintenance Permissions Scripts
A Dashboard	ſ
Appliances	Hardware permissions
	Enable SSH on remote interface
Configuration	Enable SSH on local interface
the Direct of D	Image: With the system Console
Uisaster Recovery	Update
Controls	User permissions
😰 Logs	
	Appliance network control - Controls the appliance network connectivity
	☑ Appliance network control
	Appliance power control - Changes the power state of the appliances
	✓ resume appliance
	stop appliance
	✓ suspend appliance
	Server console access - Controls the local console access
	Server console access

Figure 55. Intel[®] Hybrid Cloud server manager - Permissions Screen

6.11.2 Diagnostics (Controls \rightarrow Scripts)

This tab provides a window to execute scripts to perform operations on the server. The script engine is designed in such a way that the user can add customized scripts. Default scripts available include:

- 1. Attaching a USB to an appliance/VM.
- 2. Detaching a USB from appliance/VM.
- 3. Deleting ISO attached to appliance/VM.



Figure 56. Intel[®] Hybrid Cloud server manager - Diagnostics (Control > Scripts) window

6.12 Intel[•] Hybrid Cloud software logs

This tab shows detailed logs on Intel[®] Hybrid Cloud server. One can choose to see logs in any of these categories: information, warning, alerts, and errors.

There are three types of events:

- Software events that are captured by Intel[®] Hybrid Cloud software stack and RAID Controller.
- Hardware events that are captured by Intel[®] AMT.
- System events that are captured by Citrix* Xenserver*.

Intel[®] Hybrid Cloud software stack supports both Hardware and Software RAID to be configured on the server to provide maximum availability for the services installed on the server. RAID drives would be used as the default storage for installing all the appliances. Intel[®] Hybrid Cloud software stack collects the logs generated by RAID and adds them to the Intel[®] Hybrid Cloud software logs.

ntel(R) Hybrid Cloud						Hello admin
bmc ©						
				() Session 🧼 Remote IP: 10.223.131.83 🍚 HW mgmt IP: 10.223.131.69 👄	Local IP: 192.16
					•	٩
	Software		System Ha	irdware		
A Dashboard	View Log Ty	pe: 🗹 All [🗹 🖨 Error 🗹 🕕 /	Alerts 🗹 🔥 Warning	✓ 1 Information	
HW Inventory	Type	Record ID	Timestamp	Source	Description	
,	•	1	4/21/2011 4:14 pm	Intel(R) AMT	Authentication failed 5 times. The system may be under attack.	
Appliances		2	4/20/2011 5:05 am	BIOS	Starting operating system boot process.	
	Δ	3	4/20/2011 5:05 am	Unspecified entity	Starting operating system boot process.	
Configuration		4	4/20/2011 5:05 am	Add-in card	Starting ROM initialization.	
	A	5	4/20/2011 5:05 am	Add-in card	Starting ROM initialization.	
🔁 Disaster Recovery		6	4/20/2011 5:05 am	Disk or disk bay	Starting hard-disk initialization and test.	
	Δ	7	4/20/2011 5:05 am	Disk or disk bay	Starting hard-disk initialization and test.	
l Controls		8	4/20/2011 5:05 am	Disk or disk bay	Starting hard-disk initialization and test.	
	A	9	4/20/2011 5:05 am	Disk or disk bay	Starting hard-disk initialization and test.	
⊉ Logs	0	10	4/20/2011 5:05 am	BIOS	keyboard test.	
	0	11	4/20/2011 5:05 am	BIOS	Keyboard controller initialization.	
		12	4/20/2011 5:05 am	Add-in card	Starting ROM initialization.	
	0	13	4/20/2011 5:05 am	BIOS	Video initialization.	
	A	14	4/20/2011 5:05 am	BIOS	Performing PCI configuration.	
	A	15	4/20/2011 5:05 am	BIOS	Performing PCI configuration.	
	Δ	16	4/20/2011 5:05 am	BIOS	USB resource configuration.	
	Δ	18	4/20/2011 5:02 am	Unspecified entity	Starting operating system boot process.	
	Δ	19	4/20/2011 5:02 am	Add-in card	Starting ROM initialization.	
		20	4/20/2011 5:02 am	Add-in card	Starting ROM initialization.	
	Δ	21	4/20/2011 5:02 am	Disk or disk bay	Starting hard-disk initialization and test.	
				Sho	wing 390 - 1 of 390	Page 1 of 1

Figure 57. Intel[®] Hybrid Cloud server manager Logs Screen

6.12.1 Software and Hardware Logs Deletion:

Clicking on the **Trash Bin** icon highlighted below will delete all software or hardware logs. There is no option to delete specific set of logs. Also, system logs cannot be deleted.

Intel(R) Hybrid Cloud				He
54ee129d1ce8d4e3 ©				
Connected: Primary				Session
A Dathbard	Software		System	\bigcirc
A Dashboard	View Log Tyr	ne: 🗹 All 🕟	🖌 🖨 Error 🗹 🕕 Alerts 🗹 🔥	Warning 🔽 🊯 Information
🖴 Appliances	Type	Record ID	Timestamo	Description
	С	28	Wed Apr 20 16:31:04 -0700 2011	Web Portal unreachable.Check Internet connection. If problem persist please contact support pro
Configuration		27	Wed Apr 20 16:30:35 -0700 2011	License of appliance XenServer DDK 5.5.0-25727p import has expired.
	0	26	Wed Apr 20 16:30:27 -0700 2011	Usage reporting successful.
Disaster Recovery	0	25	Wed Apr 20 16:24:50 -0700 2011	System will reboot in three seconds.
✗ Controls		24	Wed Apr 20 16:24:24 -0700 2011	Appliance 'Windows SBS 2008 Premium' could not be started because of insufficient memory. other appliances and try again.
	0	23	Wed Apr 20 16:19:40 -0700 2011	System will reboot in three seconds.
Cr Logs	Δ	22	Wed Apr 20 16:18:00 -0700 2011	Appliance 'Windows SBS 2008 Premium' could not be started because of insufficient memory. F other appliances and try again.
	A	21	Wed Apr 20 16:17:01 -0700 2011	Appliance 'Windows SBS 2008 Premium' could not be started because of insufficient memory. other appliances and try again.
	Δ	20	Wed Apr 20 16:16:40 -0700 2011	Appliance 'Windows SBS 2008 Premium' could not be started because of insufficient memory. I other appliances and try again.
	0	19	Wed Apr 20 16:15:39 -0700 2011	Initial sync of the appliancess has completed. Any change in the appliances on primary would be automatically synchronized to the secondary.
	0	18	Wed Apr 20 15:44:22 -0700 2011	Secondary server registered with the portal.
	0	17	Wed Apr 20 15:43:08 -0700 2011	Initial sync of the appliancess has started. Please verify the setup by connecting to the seconda
	•	16	Wed Apr 20 15:40:17 -0700 2011	Server on 10.223.130.31 does not seem to be a fresh machine. To start the repair process, pleat the IP of a fresh server or perform factory defaults on the replacement server and try again.
	A	15	Wed Apr 20 15:37:44 -0700 2011	VMs on the secondary machine are shutdown as the VMs are running on this server. Please try r Disaster Recovery setup.
	0	14	Wed Apr 20 13:04:30 -0700 2011	New appliance registration successfully. Please activate the appliance in Web Portal.
		17		Access denied due to Invalid Session ID this might be due to Server Manager not closed property Showing 28 - 1 of 28 Pag

Figure 58. Software and Hardware Logs Deletion

6.12.2 Software Logs Download

The entire software log set can be exported to CSV (Comma Separated Values) file. This file can also be used to import data to an excel sheet. This feature is available only for saving software logs. Clicking on icon highlighted below can download software logs.

Intel(R) Hybrid Cloud				Hello admin 🔰 🔤 🗍
54ee129d1ce8d4e3				
Connected: Primary				Session
脅 Dashboard	Software		System	
	View Log Typ	e: 🗹 All 🕨	🖌 🖨 Error 🗹 🌖 Alerts 🗹 🛕	Warning 🗹 🕦 Information 🔛 Download Logs
Appliances	Type	Record ID	Timestamp	Description
ALC 1	•	28	Wed Apr 20 16:31:04 -0700 2011	Web Portal unreachable.Check Internet connection. If problem persist please contact support pro
	•	27	Wed Apr 20 16:30:35 -0700 2011	License of appliance XenServer DDK 5.5.0-25727p import has expired.
Disastas Pasavasv	0	26	Wed Apr 20 16:30:27 -0700 2011	Usage reporting successful.
Uisaster Recovery	0	25	Wed Apr 20 16:24:50 -0700 2011	System will reboot in three seconds.
X Controls	Δ	24	Wed Apr 20 16:24:24 -0700 2011	Appliance 'Windows SBS 2008 Premium' could not be started because of insufficient memory. Please stop other appliances and try again.
	0	23	Wed Apr 20 16:19:40 -0700 2011	System will reboot in three seconds.
C Logs	Δ	22	Wed Apr 20 16:18:00 -0700 2011	Appliance 'Windows SBS 2008 Premium' could not be started because of insufficient memory. Please stop other appliances and try again.
	A	21	Wed Apr 20 16:17:01 -0700 2011	Appliance 'Windows SBS 2008 Premium' could not be started because of insufficient memory. Please stop other appliances and try again.
	Δ	20	Wed Apr 20 16:16:40 -0700 2011	Appliance 'Windows SBS 2008 Premium' could not be started because of insufficient memory. Please stop other appliances and try again.
	0	19	Wed Apr 20 16:15:39 -0700 2011	Initial sync of the appliancess has completed. Any change in the appliances on primary would be automatically synchronized to the secondary.
	0	18	Wed Apr 20 15:44:22 -0700 2011	Secondary server registered with the portal.
	0	17	Wed Apr 20 15:43:08 -0700 2011	Initial sync of the appliancess has started. Please verify the setup by connecting to the secondary server.
	•	16	Wed Apr 20 15:40:17 -0700 2011	Server on 10.223.130.31 does not seem to be a fresh machine. To start the repair process, please provide the IP of a fresh server or perform factory defaults on the replacement server and try again.
	A	15	Wed Apr 20 15:37:44 -0700 2011	VMs on the secondary machine are shutdown as the VMs are running on this server. Please try repairing the Disaster Recovery setup.
	0	14	Wed Apr 20 13:04:30 -0700 2011	New appliance registration successfully. Please activate the appliance in Web Portal.
		10	11 14 20125024 0700 2011	Access denied due to Invalid Session ID this might be due to Server Manager not closed properly or an Showing 28 - 1 of 28 Page 1 of 1

Figure 59. Software Logs Download

6.13 Intel[•] Hybrid Cloud server manager Multiple Servers Management

The **All Servers** tab of the Intel[®] Hybrid Cloud server manager lists all the registered and active servers for the connected Remote Administrator. Remote Administrator needs to provide management portal login credentials for this server list to be populated on this page. The **All Servers** window is displayed below.

Intel	Intel(R) Hybrid Cloud Server Manager Hello admin / _ 🗖 🖗									
	myTestPR Servers									
	Lis	st of servers	Inte	I® Hybrid Cloud Web Portal						
	#	Customer	Server Name	Version	IP Address	HWMgt IP Address	DR IP Address			
	1	amttest	eco1	V2.0	10.223.130.29		ĥ			
	2	IHCDEMO	ts200v	V2.0	122.166.127.135					
	з	sdg	bc194172d855ecaa	V2.0	10.223.130.9	10.223.130.9				
	4	sdf	gloStreamUser1	V2.5	10.223.130.33	NA				
	5	kirk	IHCDEMO	V2.0	10.223.130.35					
	6	Mayank	ts200v	V2.0	10.223.130.3					
	7	kiran	24feb2.5	V2.5	10.223.130.81	10.223.130.81				
	8	kiran	25feb2.5	V2.5	10.223.130.81	10.223.130.81				
	9	Not Available	Deepak	V2.0	10.223.130.36					
	10	Not Available	xenserver	V2.0	10.223.130.14	NA				
	11	Not Available	NewMachine	V2.5	10.223.130.14	10.223.130.14				
	12	Not Available	xmlrpc	V2.0	10.223.130.12					
	13	Not Available	eco1	V2.0	10.223.130.36					
	14	Not Available	xenTest	V2.0	10.223.130.47					
	15	Not Available	eco1	V2.0	10.223.130.29					
	16	Not Available	finalTest	V2.0	10.223.130.6	10.223.130.6				
	17	Not Available	venserver1	V2.0	10 223 130 39		The second se			

Figure 60. Intel[®] Hybrid Cloud server manager - All Servers page

Remote Administrator can then connect to any of the servers listed by clicking **Connect** and entering user credentials of the specific server in the **Connect to Server** dialog that appears as follows:

Intel(R) H	lybrid Cloud Server Manager						Hello admin	@ @
	myTestPR Se	rvers O						
Li	st of servers					Ь	ntel® Hybrid Cloud Web Portal	
							Connect SOL	
#	Customer	Server Name		Version	IP Address	HWMgt IP Address	DR IP Address	
1	amttest	eco1		V2.0	10.223.130.29		Å	
2	IHCDEMO	ts200v		V2.0	122.166.127.135			
з	sdg	bc194172d855ecaa	Connect to Server			10.223.130.9		
4	sdf	gloStreamUser1	Conver Name	ſ	he104172d055ocoa	NA		
5	kirk	IHCDEMO	Server Hume.	L.	0(1341720033608			
6	Mayank	ts200v	User Name:					
7	kiran	24feb2.5	SW Management P	Password:		10.223.130.81		
8	kiran	25feb2.5	Hel Management	Hild Management Parsured:		10.223.130.81		
9	Not Available	Deepak	nw nanayementi	assword.				
10) Not Available	xenserver			Connect Cancel	NA		
11	Not Available	NewMachine		V2.5	10.223.130.14	10.223.130.14		
12	Not Available	xmlrpc		V2.0	10.223.130.12			
13	8 Not Available	eco1		V2.0	10.223.130.36			
14	Not Available	xenTest		V2.0	10.223.130.47			
15	Not Available	eco1		V2.0	10.223.130.29			
16	i Not Available	finalTest		V2.0	10.223.130.6	10.223.130.6		
- 17	Not Available	venserver1		V2.0	10 223 130 39			1

Figure 61. Intel[®] Hybrid Cloud server manager - All servers \rightarrow Connect to Server window

A new tab opens within the existing Intel[®] Hybrid Cloud server manager UI for the specified server.

- Click **Portal** button in the **All Servers** page to open the management portal page in the default browser of the client machine.
- Click SOL to open a Serial over LAN access to a specific server. This will need Intel [®] AMT login credentials. One can use this for recovering a server remotely via Intel [®] AMT.
- If the Configured system is a BMC supported, on clicking SOL RMM3 (Remote management module) we page will open. This allows user to perform all other kvm and out of band other actions
- Click Remote on the All Servers page to open Intel[®] AMT password dialog; enter password to open a new tab with Intel [®] AMT features like Hardware Inventory, Intel[®] AMT logs and system force restart/shutdown options. One can use this for restarting server when the server software is not reachable.

Intel(R)	ntel(R) Hybrid Cloud Server Manager Hello admin 🕴 🔤 💿							
	myTestPR Se	rvers						æ
L	ist of servers					Int	el® Hybrid Cloud W	eb Portal
							Connect	SOL
#	Customer	Server Name		Version	IP Address	HWMgt IP Address	DR IP Address	
1	amttest	eco1		V2.0	10.223.130.29			Â
2	IHCDEMO	ts200v		V2.0	122.166.127.135			
з	sdg	bc194172d855ecaa	Connect to Ser	rial Over L	AN	10.223.130.9		
4	sdf	gloStreamUser1	Server Name	í	b=104172+055	NA		
5	kirk	IHCDEMO	Jerver Name.	ļ	DC19417200558088			
6	Mayank	ts200v	User Name:	Į	admin			
7	kiran	24feb2.5	HW Management I	Password:		10.223.130.81		
8	kiran	25feb2.5			Connect Cancel	10.223.130.81		
9	Not Available	Deepak						
1	0 Not Available	xenserver				NA		
1	1 Not Available	NewMachine		V2.5	10.223.130.14	10.223.130.14		
1	2 Not Available	xmlrpc		V2.0	10.223.130.12			
1	3 Not Available	eco1		V2.0	10.223.130.36			
1	4 Not Available	xenTest		V2.0	10.223.130.47			
1	5 Not Available	eco1		V2.0	10.223.130.29			
1	6 Not Available	finalTest		V2.0	10.223.130.6	10.223.130.6		
	7 Not Available	venserver1		V2 0	10 223 130 39			T Description 11 67 91 4
e 🖉	💙 🚺 🥵 🚺 🗰		🗠 🕬 🚺 🤊 🔤 F	M M	· · · · · · · · · · · · · · · · · · ·	······································	- 🔟 🔫 🖫 🏭 💭 🌢	у Deepak 11:57 РМ

Figure 62. Intel[®] Hybrid Cloud server manager - All servers → Connect to Server window (via Intel[®] AMT)

6.14 Logging out of Intel[•] Hybrid Cloud server manager

User can log out of the management console anytime by using the sign out option as highlighted in following screen OR clicking the UI close (X) button.

Intel	htel ^a Hybrid Cloud Server Manager Hello admin /				
	Testmachine123 Servers			· · · · · · · · · · · · · · · · · · ·	
	List of servers Intel® Hybrid Cloud Web Ports				
				Connect SOL	
	#	Customer	Server Name	IP Address	
	1	sample	1Beta4	10.223.131.83	
	2	PreFinal	86beta42	10.223.131.94	
	з	PreFinal	86beta41	10.223.131.117	
	4	test	ExpressITS	10.223.131.84	
	5	1beta4	ExpressITS	10.223.131.65	
	6	Itest	ExpressITS	10.223.131.89	

Figure 63. Intel[®] Hybrid Cloud server manager: Logging Out

7. Saving and Restoring System Configuration

Once the Intel[®] Hybrid Cloud server is configured, the system configuration can be saved and can be applied back to the same machine in case of Intel[®] Hybrid Cloud server stack or VMM crash. There is an IXE command to save a particular configuration. The saved software configuration can be applied back through another IXE command later. IXE command to restore software configuration does not require the server to be registered.

Following are the settings that can be saved and restored.

- IP table settings: Secure Shell (SSH), Citrix XenServer* management
- Remote & Local IP configuration
- Email alerts configuration
- System Asset Tag
- Appliance store URL
- System brand info
- System name, time-zone
- User permissions
- User & Admin passwords
- System Host Name

Note: The configuration file can only be restored back to the same server for which it was originally saved after reinstalling the Intel[®] Hybrid Cloud software stack.

- User can save a specific server configuration to any location and apply the same later instead of applying an auto save configuration. Appliance metadata configuration save is not allowed and that is saved by system automatically as incorrect appliance metadata will result in unstable server state.
 - IXE commands for saving user-specified server configuration:

```
IXE -h <server IP> -u <user name> -p <password> -o save-
restore-configuration <directory path>.
```

IXE commands for restoring user-specified server configuration:

```
IXE -h <server IP> -u <user name> -p <password> -o apply-
restore-configuration user <file name>
```

The server will reboot after successfully restoring and applying the configuration.

Details of the IXE command are provided in chapter 10.

8. Activating Appliances

8.1 Activating Windows* Appliances

Once the Microsoft Windows* appliance is activated on the management portal and the Remote Administrator tries to start the appliance for the first time via the Intel[®] Hybrid Cloud server manager, the server manager opens a customer profile page giving an option to fill in appliance specific information (name, login name, business name, machine name, and password) as shown in following figure: This information is used for creating auto answer file for Windows* configuration and will vary from one version of Windows* OS to other.

Intel® Hybrid Cloud			Hello admin 📋 🗖 😣
R Dashboard	Appliance Auto Con Customer Information	figuration Information	
Appliances Configuration Appliance	First Name (*):	Last Name (*):	
Appliance	Address 1:	Address 2:	
Vendor:	City:	State:	
Monit	Zip code:	Country: Afghanistan	
	Appliance Information		
	Common Name (*):	Login Name (*):	
	Business Name (*):	Machine Name (*):	
	Password (*):	Re-password (*):	
	(*) Manadatory	Update	

Figure 64. Activating Microsoft Windows* Appliances - Customer Profile page

After the Remote Administrator fills the information and clicks **Update**, server manager gets the available appliance activation key from the management portal, activates the appliance with that key, and configures the appliance with the Remote Administrator given information (like login name, password and so on).

8.2 Activating Other Appliances

All other appliances except Windows* appliances need to be simply activated through Intel® Hybrid Cloud management portal by remote administrator. If needed, a license is downloaded by Server manager from the management portal. License mechanism varies depending on the type of an appliance. In some cases, an appliance key is emailed to MSP/Remote administrator and remote administrator may have to apply the license key manually for fully activating the appliance functionality. Once the appliance is installed on the server, the information would be sent to the management portal. Remote administrator can login to the management portal and activate the appliance.

9. Intel [°] Hybrid Cloud server BMC Configuration

This section is applicable only for Intel[®] Hybrid Cloud servers that are BMC based and not applicable to those which are AMT-based.

A baseboard management controller (BMC) is a specialized service processor that monitors the physical state of a computer, network server or other hardware device using sensors and communicates with the system administrator through an independent connection. It provides remote management capability similar to Intel[®] AMT technology.

To access the hardware information via the BMC, please use the Intel® Hybrid Cloud server manager Configuration \rightarrow Network Settings tab to change BMC IP ("HW mgmt") address from the default of "0.0.0.0" to the appropriate value. Both BMC ("HW mgmt") IP address and software stack ("Server console") IP address must be different. (Configure \rightarrow Network Settings \rightarrow Hardware Mgmt \rightarrow IP address). Also, the BMC password needs to be configured using Change Password feature (Configure \rightarrow Server Settings \rightarrow Hardware Mgmt \rightarrow Change Password)

Intel(R) Hybrid Cloud		Hello admin 🕴 🔔 🗖 😋
bmc O		
	No messages available	O Messages < 🕞
A Dashboard	Model: S5520HC Memory: 7475.8 MB free of 8132.0 MB Storage: 820.9 GB free of 826.7 GB	CPU: Intel(R) Xeon(R) CPU E5620 @ 2.40GHz Uptime: 0 Day(s) and 10 Hour(s)
Appliances	Server Settings Network Settings Alerts	Rebrand Server Boot Settings
Configuration		
Disaster Recovery	Local Network Interface	Remote Network Interface
✗ Controls	IP: 192.168.77.1	○ Server console
🕼 Logs	Netmask: 255.255.255.0	IP: 10.223.131.69
	Update	Netmask: 255.255.128
		Gateway: 10.223.131.126
		DNS:
		Update
		Note:- Configure Hardware Management Network interface before Server Network configuration.

Figure 65. Intel[®] Hybrid Cloud server manager -- Configuration Page: Hardware Management Network Settings

Intel(R) Hybrid Cloud				Hello admin 📔 🔳 🛽
bmc 🔍				•
		🥥 Sessic	on 🥃 Remote IP: 10.223.130.55 🥃 HW mgmt II	P: 10.223.131.69 🥥 Local IP: 192.168.77.1
A Dashboard	No messages a Model: S55; Memory: 7473 Storage: 820	available 20HC CPU: Ir 5.8 MB free of 8132.0 MB Uptime: 0 9 GB free of 826.7 GB	ntel(R) Xeon(R) CPU E5620 @ 2.40GHz Day(s) and 10 Hour(s)	O Messages 🕥 >
🖴 Appliances	Server Settings Network Setting	s Alerts Rebrand Server	r Boot Settings	
Configuration				
Disaster Recovery	Update Setting	S	Change Password	
✗ Controls	Name:	bmc	 Server console 	⊙ HW mgmt
🖻 Logs	Date:	04/21/2011	Old Password:	
	Time:	15 × : 19 ×	New Password:	
	Time Zone:	America/Dawson_Cree	Re-enter New Password:	
		Update		Change Password
 Disaster Recovery Controls Logs 	Update Setting Name: Date: Time: Time Zone:	S Dmc D4/21/2011 S S S S S S S S S S S S S	Change Password Server console Old Password: New Password: Re-enter New Password:	HW mgmt

Figure 66. Intel[®] Hybrid Cloud server manager -- Configuration Page: Hardware Management password set

Note: After configuring the BMC, the user has to disconnect and connect to the server again with Hardware management credentials to access Hardware related information from the BMC.

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10. Intel[®] Hybrid Cloud command line tool (IXE)

Intel[®] Hybrid Cloud server can also be managed using *ixe* command line tool. The tool is a one-operation-at-a-time type of tool that can be scripted using any of the scripting languages the user may want to use. Both Linux* & Windows* variants of the tool are supported.

10.1 IXE command Line Format

A number of operations are supported by $\mathtt{ixe},$ and the syntax of each operation can be found below.

Command Line Format:

```
# ixe -h | --host <IP Address/Hostname of the target machine>
-u | --user <target machine username> -p | --pass <target machine
password> -o | --operation <command name> [ <arg1><arg2>...]
```

Intel[®] AMT command format:

```
# ixe -h | --host < Intel<sup>®</sup> AMT IP Address/HostName> -u | --
user < Intel<sup>®</sup> AMT username> <-p | --pass> < Intel<sup>®</sup> AMT password> -
o | --operation < Intel<sup>®</sup> AMT command>
```

[AMT Commands: force-system-poweroff, force-system-reset, force-system-poweron, hwsystem-information, hw-processor-information, hw-memory-information, hw-disk-information, and hw-event-log, change-hw-management-password]

[] \rightarrow optional variable

 \rightarrow compulsory variable

- or -- \rightarrow is fixed and must

Command Time out: 3 minutes

Help : > ixe help or > ixe help <command>

10.2 List of IXE Commands

Below in each table, all the supported Intel[®] Hybrid Cloud commands are explained. The error codes are explained at the end of this section separately.

For each command Description, Result, Supported User (Admin means Remote Administrator) and appropriate Examples are given. The result portion of each command shows the example on how the result may look like after executing the command. The result or output in your system may not be the same.

Command: get-number-of-appliances

Required Parameter	Null
Description	Returns the total number appliance installed on the system
Supported User	{'user, 'admin'}
Usage	ixe –h <server> –u admin –p admin –o get-number-of-appliances</server>
Result	2

Command: get-installed-appliances

Required Parameter	Null
Description	Returns the names and UUIDs of the appliances installed on the system.
Supported User	{'user, 'admin'}
Usage	ixe –h <server ip=""> –u <user name=""> –p <password> –o get- installed-appliances</password></user></server>
Result	Appliance1 : 75d37ba0-40cb-d4cc-8adc-42de1d519487 Appliance2 : 127ba0-40cb-d4cc-7dc-42de1d519423

Command: get-appliance-power-state

Required Parameter	<appliance name=""></appliance>
Description	Returns the power state of the requested appliance
Supported User	{'user, 'admin'}
Usage	ixe –h <server ip=""> –u <user name=""> –p <password> –o get- appliance-power-state Backup</password></user></server>
Result	name : Appliance1 uuid : 75d37ba0-40cb-d4cc-8adc-42de1d519487 powerstate : Halted

Command: start-appliance

Required Parameter	<appliance name=""></appliance>
Supported User	{'admin'}
Description	Starts the requested appliance in the system.
Usage	ixe –h <server ip=""> –u <user name=""> –p <password> –o start- appliance Backup</password></user></server>
Result	Command successful

Command: stop-appliance

Required Parameter	<appliance name=""></appliance>
Supported User	{'admin'}
Description	Stop the requested appliance in the system
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o stop-</password></user></server>
-	appliance <appliance name=""></appliance>
Result	Command successful

Command: change-password

Required Parameter	<appliance name=""></appliance>
Supported User	{'user', 'admin'}
Description	Change the password for the requested user
Usage	ixe –h <server ip=""> –u <user name=""> –p <password> –o change- password <new password=""></new></password></user></server>
Result	Command successful

Command: install-appliance-license

Required Parameter	<appliance file="" license="" location=""></appliance>
Supported User	{ 'admin'}
Description	Install the license for the requested appliance. [Note :- File location
	both relative/absolute]
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o install-</password></user></server>
	appliance-license <license file="" path=""></license>
Result	Command successful

Command: is-appliance-license-valid

Required Parameter	<appliance name=""></appliance>
Supported User	{ 'admin'}
Description	Returns the status of the license installed on the requested appliance
Usage	ixe –h <server ip=""> –u <user name=""> -p <password>–o is-appliance- license-valid <appliance name=""></appliance></password></user></server>
Result	valid/invalid

Command: revoke-appliance-license

Required Parameter	<appliance name=""></appliance>
Supported User	{ 'admin'}
Description	Uninstall (revoke) the license of the requested appliance
Usage	ixeh <server ip="">u admin -p <password>o revoke-appliance-</password></server>
	license <appliance name=""></appliance>
Result	Command successful

Command: get-event-log

Required Parameter	<error level=""> (0 - > to get logs of all level) Level 1 - > Information Level 2 -> Warnings Level 3 - > Alerts Level 4 -> Error</error>
Supported User	{'user', 'admin'}
Description	returns all logs for the requested level
Usage	ixe –h <i><server ip=""> –</server></i> u <i><user name=""> -</user></i> p <i><</i> password>–o <i>get-event-log</i> 1
Result	Detailed Logs for example 1,233, Mon Mar 09 06:16:48 +0530 2009, Access granted 1,232, Mon Mar 09 06:16:40 +0530 2009, Session Successfully Disconnected

Command: delete-event-log

Required Parameter	<error (delete="" 0="" all="" in="" level="" level)="" logs="" =""></error>
Supported User	{'user'}
Description	Deletes all logs from requested level.
Usage	ixe -h <server ip=""> -u <user name="">-p <password>-o delete-event-log <error level=""></error></password></user></server>
Result	Event log cleared

Command: system-reset

Required Parameter	null
Supported User	{'user', 'admin'}
Description	Restarts the System.
Usage	ixe –h < <i>server ip> –</i> u < <i>user name></i> -p
	<password>-o system-reset</password>
Result	Command successful

Command: system-poweroff

Required Parameter	null
Supported User	{'user', 'admin'}
Description	power off the system
Usage	ixe –h <server ip=""> –u <user name=""> -p <password>–o system-poweroff</password></user></server>
Result	Command successful

Command: software-reset

Required Parameter	null
Supported User	{'user', 'admin'}
Description	Restarts the Intel [®] Hybrid Cloud software stack.
Usage	ixe -h <server ip=""> -u admin -p <password>-o software-reset</password></server>
Result	Command successful

Command: update-system-name-label

Required Parameter	<system name=""></system>
Supported User	{'user', 'admin'}
Description	Update the system label with the requested
	name
Usage	ixe –h <server ip=""> –u <user name=""> -p</user></server>
	<pre><password>-o update-system-name-label</password></pre>
	<new name=""></new>
Result	Command successful

Command: set-appliance-boot-order

Required Parameter	<appliance in="" name="" order="" required="" separated<="" th=""></appliance>
	by space>
Supported User	{ 'admin'}
Description	set the appliance to boot during the system reboot Note: - If the Arguments are Empty the Command Clears the Boot order set previously.
Example	ixe –h <server ip="">-u <user name=""> -p <password> –o set-appliance-boot-order Backup Windows</password></user></server>
Result	Command successful

Command: get-system-parameters

Required Parameter	null
Supported User	{'user', 'admin'}
Description	Returns the system parameters
Example	ixe -h <server ip="">-u <user name="">-p</user></server>
	<password> –o get-system-parameters</password>
Result	disktotal : 151 GB Name : system name cpumodel : Intel(R) Core(TM)2 Quad CPU Q6600 @ 2.40GHz memorytotal : 3.90 GB version : 1.0 uptime : 1 Day(s) 12:09:47 systemmodel : DQ45CB

Command: get-system-usage

Required Parameter	null
Supported User	{'user', 'admin'}
Description	returns the system usage like wan, lan, cpu etc
Usage	ixe –h <server ip=""> -u <user name=""> -p <password> –o get-system-usage</password></user></server>
Result	lan : 0.0 memory : 37.38 wan : 10.0 cpu : 12.8 ts : 03/09/2009 09:38:07 IST Disk : 92.93

Command: get-network-parameters

Required Parameter	<local remote="" =""></local>
Supported User	{'user', 'admin'}
Description	returns the network parameters for the requested interface
Usage	ixe –h <server ip="">-u <user name="">-p <password> –o get-network-parameters local</password></user></server>
Result	netmask : 255.255.255.0 ip : 192.168.1.1 boot-protocol : static

Command: configure-network-parameters

Required Parameter	<local remote="" =""> <static dhcp="" or=""> <ip address=""> <net mask=""> [gateway] [DNS server] (IP Address and Netmask is required for static and gateway is compulsory for remote for static)</net></ip></static></local>
Supported User	{'user', 'admin'}
Description	returns the network parameters for the requested interface
Usage	ixe -h <server ip=""> -u <user name="">-p <password> -o configure-network-parameters <remote local=""> <local remote="" =""> <static or<br="">dhcp> <ip address=""> <net mask=""> [gateway] [DNS server]</net></ip></static></local></remote></password></user></server>
Result	Command successful

Command: get-appliance-boot-order

Required Parameter	null
Supported User	{'user', 'admin'}
Description	Appliances name and the UUID are returned in
	the order they are set to boot
Example	ixe -h <server ip="">-u <user name="">-p</user></server>
	<password> –o get-appliance-boot-order</password>
Result	Appliance1 : 075d37ba0-40cb-d4cc-8adc-
	42de1d519487
	Appliance2 : 127ba0-40cb-d4cc-7dc-
	42de1d519423

Command: get-appliance-activation-license-all

Required Parameter	null
Supported User	{'admin'}
Description	Returns the activation license file for all the appliances installed on the Little Mountain server
Usage	ixe –h < <i>server ip>-</i> u <user name="">-p <password> –o get-appliance-activation- license-al</password></user>
Result	Appliance1- 4abeacc3deeefa58620cc734607486ab.lic Appliance2- 5aaec7eedefa47381ee734601234ab.lic

Command: get-appliance-parameters

Required Parameter	<appliance name=""></appliance>
Supported User	{'admin','user'}
Description	returns all the appliances specific parameters
Usage	ixe –h <server ip="">-u <user name="">-p <password> –o get-appliance-parameters <appliance name=""></appliance></password></user></server>
Result	disktotal : 8.59 GB Numcpu : 1 Nos Memorytotal : 1.00 GB Uptime : 1 Day(s) 21:29:58

Command: get-appliance-usage

Required Parameter	<appliance name=""></appliance>
Supported User	{'admin','user'}
Description	returns all the appliances specific usage
	[note :- ts - > time stamp
	Usage is in percentage]
Usage	ixeh <server ip="">-u <user name="">-p</user></server>
	<password> –o get-appliance-usage <appliance< td=""></appliance<></password>
	name>
Result	disktotal : 8.59 GB
	Numcpu : 1 Nos
	Memorytotal : 1.00 GB
	Uptime : 1 Day(s) 21:29:58

Command: detach-appliances-from-network

Required Parameter	<appliance name=""></appliance>
Supported User	{'admin','user'}
Description	Detaches the requested appliances from the
	network
Usage	ixe –h <server ip=""> -u <user name=""> -p</user></server>
	<password> –o attach-appliance-network</password>
	<appliance name=""></appliance>
Result	Command successful

Command: attach-appliances-to-network

Required Parameter	<appliance name=""></appliance>
Supported User	{'admin','user'}
Description	attaches the requested appliances to the network
Usage	ixe –h <server ip=""> -u <user name=""> -p <password> –o attach-appliance-network <appliance name=""></appliance></password></user></server>
Result	Command successful

Command: get-network-detached-appliances

Required Parameter	null
Supported User	{'admin','user'}
Description	returns all the appliances that are detached
	from the network
Usage	ixe –h < <i>server ip>-</i> u <user name="">-p</user>
	<password> –o get-network-detached-</password>
	appliances
Result	Appliance1 : 75d37ba0-40cb-d4cc-8adc-
	42de1d519487
	Appliance2 : 127ba0-40cb-d4cc-7dc-
	42de1d519423

Command: block-remote-login

Required Parameter	<remote local="" =""></remote>
Supported User	{'admin','user'}
Description	Disable the remote login (SSH) option for the requested interface.
Usage	ixe –h <server ip="">-u <user name="">-p <password> –o block-remote-login <remote local=""></remote></password></user></server>
Result	Command successful

Command: allow-remote-login

Required Parameter	<remote local="" =""></remote>
Supported User	{'admin','user'}
Description	Enable the remote login (SSH) option
Usage	ixeh <server ip="">-u <user name="">-p</user></server>
	<password> _o allow-remote-login</password>
	<remote local=""></remote>
Result	Command successful

Command: get-network-policy

Required Parameter	<remote local="" =""></remote>
Supported User	{'admin','user'}
Description	Enable the remote login (SSH) option
Usage	ixe –h < <i>server ip>-</i> u <user name="">-p <password> –o <i>get-network-policy</i> <<i>remote/local</i></password></user>
Result	Command successful

Command: set-console-enable

Required Parameter	null
Supported User	{'admin'}
Description	Enable the Console (USB) option
Usage	ixe -h <server ip=""> -u <user name=""> -p</user></server>
	<password> –o set-console-enable</password>
Result	Command successful

Command: set-console-disable

Required Parameter	null
Supported User	{'admin'}
Description	Disable the Console (USB) option
Usage	ixe _h < <i>server ip></i> -u <user name=""> -p <password> -o <i>set-console-disable</i></password></user>
Result	Command successful

Command: get-console-status

Required Parameter	null
Supported User	{'admin', 'user'}
Description	Returns the Console(USB) status
Usage	ixeh <server ip=""> -u <user name=""> -p</user></server>
	<password> –o get-console-status</password>
Result	Command successful

Command: suspend-appliance

Required Parameter	<appliance name=""></appliance>
Supported User	{'admin'}
Description	Suspends the requested appliance
Example	ixe –h < <i>server ip>-</i> u <user name="">-p <password> –o <i>suspend-appliance <appliance< i=""> <i>name></i></appliance<></i></password></user>
Result	Command successful

Command: resume-appliance

Required Parameter	<appliance name=""></appliance>
Supported User	{'admin','user'}
Description	Resume the requested appliance
Example	ixe –h < <i>server ip>-</i> u <user name="">-p <password> –o <i>resume-appliance <appliance< i=""> <i>name></i></appliance<></i></password></user>
Result	Command successful

Command: get-system-brand-info

Required Parameter	null
Supported User	{'admin','user'}
Description	Returns the Intel [®] Hybrid Cloud server Brand
	Info set by the admin
Example	ixe –h < <i>server ip>-</i> u <user name="">-p</user>
	<password> –o get-system-brand-info</password>
Result	product : Intel [®] Hybrid Cloud
	client : Client name
	logo : test.png

Command: set-system-product-name

Required Parameter	<product name=""></product>
Supported User	{'admin'}
Description	Updates the Intel [®] Hybrid Cloud system vendor
	name.
Example	ixe –h < <i>server ip>-</i> u <user name="">-p</user>
	<password> –o set-system-product-name</password>
	<product name=""></product>
Result	Command successful
Command: set-system-client-name

Required Parameter	<name></name>
Supported User	{'admin'}
Description	Updates the Intel [®] Hybrid Cloud server client
	name.
Example	ixe –h <i><server ip="">-</server></i> u <user name="">-p</user>
	<password> -o set-system-client-name <new< td=""></new<></password>
	client name>
Result	Command successful

Command: set-system-logo

Required Parameter	<logo file="" location=""></logo>
Supported User	{'admin'}
Description	Updates the Intel [®] Hybrid Cloud server logo.
Example	ixe –h <server ip="">-u <user name="">-p</user></server>
	<password> –o set-system-logo <file location=""></file></password>
Result	Command successful

Command: get-appliance-brand-info

Required Parameter	<appliance name=""></appliance>
Supported User	{'admin'}
Description	Returns the appliances brand info set by the admin
Example	ixe –h < <i>server ip>-</i> u <user name="">-p <password> –o <i>get-appliance-brand-info</i> <<i>appliance name></i></password></user>
Result	Command successful

Command: get-appliance-brand-info

Required Parameter	<appliance name=""></appliance>
Supported User	{'admin'}
Description	Returns the appliances brand info set by the
	admin
Example	ixe –h < <i>server ip>-</i> u <user name="">-p</user>
	<password> –o get-appliance-brand-info</password>
	<appliance name=""></appliance>
Result	Command successful

Command: set-appliance-vendor-name

Required Parameter	<appliance name=""> <vendor name=""></vendor></appliance>
Supported User	{'admin'}
Description	Updates the requested Appliance Vendor name.
Usage	ixe -h <server ip=""> -u <user name=""> -p <password>-o set-appliance-</password></user></server>
	vendor-name <appliance name=""> <vendor name=""></vendor></appliance>
Result	Command successful

Command: set-appliance-client-name

Required Parameter	<applaince name=""><client name=""></client></applaince>
Supported User	{'admin'}
Description	Updates the requested Appliance Client name.
Usage	ixe -h <server ip=""> -u <user name=""> -p <password>-o get-appliance- client-name <applaince name=""><client name=""></client></applaince></password></user></server>
Result	Command successful

Command: set-appliance-logo

Required Parameter	<appliance name=""><logo location=""></logo></appliance>
Supported User	{'admin'}
Description	Uploads the requested Appliance Logo.
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o set-appliance- logo <appliance name=""><logo location=""></logo></appliance></password></user></server>
Result	Command successful

Command: execute-xen-command

Required Parameter	<xen be="" command="" executed="" to=""></xen>
Supported User	{'admin'}
Description	Executes the requested XE command on the server and returns the value
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o execute-xen- command <xen be="" command="" executed="" to=""></xen></password></user></server>
Result	The requested xen command result

Command: update-eula

Required Parameter	license file>
Supported user	{'admin' }
Description	Updates the eula on the Little Mountain System.
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o update-eula <license file=""></license></password></user></server>
Result	Command successful

Command: set-system-defaults

Required Parameter	Null
Supported user	{'admin'}
Description	Reset the system to factory defaults
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o set-system- defaults</password></user></server>
Result	Command successful

Command: upgrade-system-software

Required Parameter	<system file="" stack=""></system>
Supported user	{'admin','user'}
Description	Upgrade the system software stack
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o update-system- software <system file="" stack=""></system></password></user></server>
Result	Command successful

Command: upgrade-management-software

Required Parameter	<applications. zip=""></applications.>
Supported user	{'admin','user'}
Description	Upgrade the system software stack
Usage	ixe –h <server ip=""> -u <user name=""> -p <password> –o upgrade- management–software <applications. zip=""></applications.></password></user></server>
Result	Command successful

Command: get-system-timezones

Required Parameter	Null
Supported user	{'user', 'admin'}
Description	returns list of time zone
Usage	ixe -h <server ip=""> -u <username> -p <password> -o get-system- timezones</password></username></server>
Result	returns the list of time zone

Command: update-system-timezone

Required Parameter	<time zone=""></time>
Supported user	{'user','admin'}
Description	Update the system time zone
Usage	ixe -h <server ip=""> -u <username> -p <password> -o update-system- timezone <time zone=""></time></password></username></server>
Result	Command Successful

Command: get-system-time

Required Parameter	null
Supported user	{'user','admin'}
Description	returns system time and time zone
Usage	ixe -h <server ip=""> -u <username> -p <password> -o get-system-time</password></username></server>
Result	returns the system time and time zone

Command: update-system-time

Required Parameter	<system time=""></system>
Supported user	{'user','admin'}
Description	Update the system time
Usage	ixe -h <server ip=""> -u <username> -p <password> -o update-system-</password></username></server>
	time <system time=""></system>
Result	Command Successful

Command: get-command-permissions

Required Parameter	null
Supported user	{'user','admin'}
Description	returns the api and the permission status set by admin
Usage	ixe -h <server ip=""> -u <username> -p <password> -o get-command - permisssions</password></username></server>
Result	returns the api and the permission status set by admin

Command: get-power-state-for-all-appliances

Required Parameter	null
Supported user	{'user','admin'}
Description	returns the power state of all the appliance installed in the System
Usage	<i>ixe -h <server ip=""> -u <username> -p <password> -o</password></username></server></i> get-power-state- for-all-appliances
Result	returns the power state of all the appliance installed in the System

Command: connect-appliance-console

Required Parameter	null
Supported user	{'user','admin'}
Description	Connect to the Appliance console
Usage	<i>ixe -h <server ip=""> -u <username> -p <password> -o</password></username></server></i> connect-appliance- console
Result	Command Successful (launches the appliance console)

Command: get-system-asset-tag

Required Parameters	null
Supported user	{'user','admin'}
Description	Display the System uniquely identified tag.
Usage	ixe -h <server ip=""> -u <username> -p <password> -o get-system-asset-</password></username></server>
	tag
Result	System unique asset tag

Command: install-system-license

Required Parameters	<system license=""></system>
Supported user	{admin'}
Description	Applies the system license for the xenserver
Usage	ixe -h <server ip=""> -u <username> -p <password> -o install-system-</password></username></server>
	license <system license=""></system>
Result	Command successful

Command: get-system-event-log

Required Parameters	null
Our manufacture an	
Supported user	{ user , admin }
Description	Displays xensource system event logs
Becchption	Biopiaye Acheedice Cyclem event loge.
Usage	ixe -h <server ip=""> -u <username> -p <password> –o get-system-event-</password></username></server>
	log
Result	Xensource System event logs (only warning and error logs)

Command: configure-email-alerts

Required Parameters	<disable <msp="" email="" enable="" user="" =""> <loglevels>></loglevels></disable>
Supported user	{'user','admin'}
Description	Update the email parameters to which the alerts will be sent.
Usage	ixe -h <server ip=""> -u <username> -p <password> -o configure-email-</password></username></server>
	alerts <disable <msp="" email="" enable="" user="" =""> <loglevels>></loglevels></disable>
Result	Command successful

Required Parameters	<pre><smtp address="" ip="" server=""> <smtp port=""> <box username=""> <box password=""></box></box></smtp></smtp></pre>
Supported user	{'admin'}
Description	Update Update the server email parameters from which the alerts will be sent.
Usage	ixe -h <server ip=""> -u <username> -p <password> -o configure-server- email-parameters <smtp address="" ip="" server=""> <smtp port=""> <box username> <box password=""></box></box </smtp></smtp></password></username></server>
Result	Command successful

Command: configure-server-email-alerts

Command: get-email-alert-parameters

Required Parameters	null
Supported user	{'user','admin'}
Description	Displays the email alert parameters configured for the requested user.
Usage	ixe -h <server ip=""> -u <username> -p <password> -o get-email-alert- parameters</password></username></server>
Result	Email aler configuration for the user requested

Command: delete-appliance-store-url

Required Parameters	null
Supported user	{'admin'}
Description	Deletes the configured local ftp appliance store URL.
Usage	ixe -h <server ip=""> -u <username> -p <password> -o delete-appliance- store-url</password></username></server>
Result	Command successful

Command: update-appliance-store-url

Required Parameters	null
Supported user	{'admin'}
Description	Updates the local ftp store URL.
Usage	ixe -h <server ip=""> -u <username> -p <password> -o update-appliance-</password></username></server>
-	Store-un 10.223.130.10
Result	Command successful

Command: destroy-appliacen-hdd

Required Parameters	<appliance name=""> <harddisk device="" position=""></harddisk></appliance>
Supported user	{'admin'}
Description	Destroy harddisk connected to the appliance.
Usage	<i>ixe -h <server ip=""> -u <username> -p <password> -o destroy-appliance- hdd</password></username></server></i> <appliance name=""> <harddisk device="" position=""></harddisk></appliance>
Result	Command successful

Command: add-appliance-hard-disk-drive

Required Parameters	<appliance name=""> <hard disk="" gb="" in="" size=""></hard></appliance>
Supported user	{'admin'}
Description	Attach new harddisk to appliance.
Usage	ixe -h <server ip=""> -u <username> -p <password> -o add-appliance-</password></username></server>
	hard-disk-drive <appliance name=""> <hard disk="" gb="" in="" size=""></hard></appliance>
Result	Command successful

Command: delete-appliance-network-interface

Required Parameters	<appliance name=""> <mac address="" interface="" network="" of="" the=""></mac></appliance>
Supported user	{'admin'}
Description	Destory a network interface for the appliance
Usage	ixe -h <server ip=""> -u <username> -p <password> -o delete-appliance- network-interface <appliance name> <mac address="" of="" the<br="">network interface></mac></appliance </password></username></server>
Result	Command successful

Command: create-appliance-network-interface

Required Parameters	<appliance name=""> <remote local="" =""></remote></appliance>
Supported user	{'admin'}
Description	Create a new network interface for the appliance.
Usage	ixe -h <server ip=""> -u <username> -p <password> -o create-appliance- network-interface <appliance name=""> <remote local="" =""></remote></appliance></password></username></server>
Result	Command successful

Command: change-appliance-memory

Required Parameters	<appliance name=""> <memory in="" mb=""></memory></appliance>
Supported user	{'admin'}
Description	Create Increase or Descrease the apliance Memory.
Usage	ixe -h <server ip=""> -u <username> -p <password> -o change-appliance- memory <appliance name=""> <memory in="" mb=""></memory></appliance></password></username></server>
Result	Command successful

Command: update-appliance-name

Required Parameters	<appliance name=""> <new appliance="" name=""></new></appliance>
Supported user	{'admin'}
Description	Set new appliance name.
Usage	ixe -h <server ip=""> -u <username> -p <password> -o update-appliance- name <appliance name=""> <new appliance="" name=""></new></appliance></password></username></server>
Result	Command successful

Command: set-appliance-cpu-number

Required Parameters	<appliance name=""> <number of="" vcpu=""></number></appliance>
Supported user	{'admin'}
Description	Increase appliance virtual CPU numbers.
Usage	ixe -h <server ip=""> -u <username> -p <password> -o set-appliance-cpu- number <appliance name=""> <number of="" vcpu=""></number></appliance></password></username></server>
Result	Command successful

Command: get-appliance-download-percentage

Required Parameters	null
Supported user	{'user','admin'}
Description	Returns the percentage of the appliance installation process
Usage	<i>ixe -h <server ip=""> -u <username> -p <password> -o</password></username></server></i> get-appliance- download-percentage
Result	NA(if no appliance is getting installed) 29% (percentage of the appliance getting installed)

Command: start-appliance-backup

Required Parameters	<appliance name=""></appliance>
Supported user	{'user','admin'}
Description	initiates the backup for the requested appliance.
Usage	<i>ixe -h <server ip=""> -u <username> -p <password> -o</password></username></server></i> start-appliance- backup <appliance name=""></appliance>
Result	Command successful

Command: appliance-backup-status

Required Parameters	null
Supported user	{'user','admin'}
Description	returns the progress of the appliance backup
Usage	<i>ixe -h <server ip=""> -u <username> -p <password> -o</password></username></server></i> appliance-backup-
	status
Result	NA/NA-Success/NA-failure/percentage

Command: appliance-uninstall

Required Parameters	<appliance name=""></appliance>
Supported user	{'user','admin'}
Description	uninstalls the requested appliance from system
Usage	<i>ixe -h <server ip=""> -u <username> -p <password> -o</password></username></server></i> appliance-uninstall
	<appliance name=""></appliance>
Result	Command successful

Command: set-oem-factory-defaults

Required Parameters	\diamond
Supported user	{'admin'}
Description	Set the Server to OEM factory defaults(removes all VMS)
Usage	ixe -h <server ip=""> -u <username> -p <password> -o set-oem-factory- defaults</password></username></server>
Result	Command successful

Command: upgrade-host-server

Required Parameters	<xen file="" patch="" update=""></xen>
Supported user	{'admin'}
Description	upgrade the server Software
Usage	ixe -h <server ip=""> -u <username> -p <password> -o ,upgrade-host-server XenServer-5.5.0-Update2.xsupdate</password></username></server>
Result	Command successful

Command: save-restore-configuration

Required Parameters	<path configuration="" file="" restore="" store="" the="" to=""></path>
Supported user	{'user','admin'}
Description	Retrieves the current system configuration. This can be used by the
Usage	ixe -h 192.168.1.1 -u <username> -p <password> -o save-restore- configuration</password></username>
Result	File Name of the system configuration

Command: get-internet-ip-address

Required Parameters	\diamond
Supported user	{'user','admin'}
Description	displays the internet accessable ip address which can be used to connect to the server.
Usage	ixe -h 192.168.1.1 -u <username> -p <password> -o get-internet-ip-address</password></username>
Result	Internet accessible IP Address

Command: change-default-password

Required Parameters	<newpassword></newpassword>
Supported user	{'user','admin'}
Description	Resets the system password to new password this is a mandatory step before connecting to stack.
Usage	ixe -h 192.168.1.1 -u <username> -p <password> -o change-default- password <newpassword></newpassword></password></username>
Result	Command successful

Command: get-alert-messages

Required Parameters	<>
Supported user	{'user','admin'}
Description	This command provides the messages related to box and appliances.
Usage	ixe -h 192.168.1.1 -u <username> -p <password> -o get-alert- messages</password></username>
Result	Returns the Stack messages for the User and MSP

Command: get-system-serial-id

Required Parameters	<>
Supported user	{'user','admin'}
Description	This command retrieves the unique serial number of the box.
Usage	ixe -h 192.168.1.1 -u <username> -p <password> -o get-system- serial-id</password></username>
Result	Returns the system unique serial id

Required Parameters	<system> [<user> <restore file="">]</restore></user></system>
Supported user	{'user','admin'}
Usage	ixe -h 192.168.1.1 -u <username> -p <password> -o apply-restore- configuration <system> [<user> <restore file="">]</restore></user></system></password></username>
Description	restore the system to old configurations.
Result	Command successful. (Restores the system to original configurations.)

Command: apply-restore-configuration

Command: apply-vm-metadata

Required Parameters	\diamond
Supported user	{'user','admin'}
Description	apply the appliance metadata to the server host
Usage	ixe -h 192.168.1.1 -u <username> -p <password> -o apply-vm- metadata</password></username>
Result	Command successful. (Restores the appliance metadata)

Command: update-ntp-servers

Required Parameters	<ntp 1="" server="">[server2] {max 3 serves}</ntp>
Supported user	{'admin'}
Description	apply new ntp settings
Usage	ixe -h 192.168.1.1 -u <username> -p <password> -o update-ntp-</password></username>
	server <ntp ip="" server=""></ntp>
Result	Command successful.

Command: set-appliance-default-brand-info

Required Parameters	<app id=""> <vendor name=""> <vendor logo=""></vendor></vendor></app>
Supported user	{'admin'}
Description	Updates the appliance brand information in the stack
Usage	ixe -h 192.168.1.1 -u <username> -p <password> -o set- appliance-default-brand-info <app id=""> <vendor name=""> <vendor Logo></vendor </vendor></app></password></username>
Result	Command successful.

Command: update-active-aeon-md5sum

Required Parameters	< new active aeon md5sum>
Supported user	{'admin'}
Description	Updates active aeon md5sum for usage reporting
Usage	ixe -h 192.168.1.1 -u <username> -p <password> -o update- active-aeon-md5sum <active aeon="" md5sum=""></active></password></username>
Result	Command successful.

Command: upload-system-scripts

Required Parameters	<script location=""></script>
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Required Parameters	<unattended template=""></unattended>
Supported user	{'admin'}
Description	Uploads template for unattended installation.
Usage	ixe -h 192.168.1.1 -u <username> -p <password> -o update- appliance-unattend-template <unattended template=""></unattended></password></username>
Result	Command successful.

10.3 IXE AMT Commands

Command:	force-system-powero:	Ef
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Required Parameter	null
Supported user	{'admin'}
Description	AMT system power off (force fully shutdowns the system)
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o force-system- poweroff</password></user></server>
Result	Command successful

Command: force-system-reset

Required Parameter	null
Supported user	{'admin'}
Description	AMT system reboot (force fully reboot the system)
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o force-system- reset</password></user></server>
Result	Command successful

Command: hw-system-information

Required Parameter	null
Supported user	{'admin'}
Description	Returns system hardware Information
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o hw-system- information</password></user></server>
Result	returns hardware system information

Command: hw-processor-information

Required Parameter	null
Supported user	{'admin'}
Description	Returns Hardware Processor Information
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o hw-processor-</password></user></server>
	information
Result	returns hardware processor information

Command: hw-memory-information

Required Parameter	null
Supported user	{'admin'}
Description	Returns Hardware memory Information
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o hw-memory- information</password></user></server>
Result	returns hardware memory information

Command: hw-disk-information

Required Parameter	null
Supported user	{'admin'}
Description	Returns Hardware Disk Information
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o hw-disk- information</password></user></server>
Result	returns hardware disk information

Command: hw-event-log

Required Parameter	null
Supported user	{'admin'}
Description	Returns Hardware event logs
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o hw-event-log</password></user></server>
Result	returns hardware event logs
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Command: force-system-poweron

Required Parameter	null
Supported user	{'admin'}
Description	AMT system power off (force fully shutdowns the system)
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o force-system- poweron</password></user></server>
Result	Command successful

Command: change-hw-management-password

Required Parameter	<new password=""></new>
Supported user	{'admin'}
Description	AMT password change
Usage	ixe –h <server ip=""> -u <user name=""> –p <password> –o change-hw- management-password <new password=""></new></password></user></server>
Expected Result	Command successful

Command: get-hw-network-parameters

Required Parameter	null
Supported user	{'admin'}
Description	AMT network details
Usage	ixe -h < <i>server ip></i> -u < <i>user name></i> -p < <i>password></i> -o get- hw- network-parameters
Expected Result	AMT Network details {IP,Netmask,gateway etc}

Required Parameter	<dhcp static>[if static <ip> <netmask> <gateway> [dns]]</gateway></netmask></ip></dhcp static>
Supported user	{'admin'}
Description	Configure hardware management network details
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o configure-hw- network-parameters <dhcp static>[if static <ip> <netmask> <gateway> [dns]]</gateway></netmask></ip></dhcp static></password></user></server>
Expected Result	Command successful

Command: configure-hw-network-parameters

Command: get-hw-system-power-state

Required Parameter	null
Supported user	{'admin'}
Description	System power state.
Usage	ixe -h <server ip=""> -u <user name=""> -p <password> -o get-hw-system- power-state</password></user></server>
Expected Result	System state

10.4 IXE Error Messages

All the IXE commands explained in the previous section will return error messages in case there is a failure. A brief description of some of the error messages are provided here. For more information, please refer to the support site at:

http://www.intel.com/p/en_US/support/highlights/server/hcserver

Table 4. IXE Error Messages

Failure Messages	Description
Command failed	Command could not be executed successfully.
Invalid parameters	Wrong arguments are supplied to the command.
Invalid session	Session to the Intel [®] Hybrid Cloud server is lost.
Invalid server response	Invalid response received.
Authentication failed	User name or password provided is incorrect.
No appliance Installed	No appliance available in Intel [®] Hybrid Cloud server.
No response from server	Command has reached timeout

Glossary

Word/Acronym	Definition
ARP	Address resolution protocol
BMC	Baseboard Management Controller
CLI	Command line interface
DDC	Display Data Channel
DHCP	Dynamic Host Configuration Protocol
DVC	Dambrackas Video Compression
DVO	Dynamic Visual Output
FPGA	Field Programable Gate Array
ICMP	Internet Control Message Protocol
Intel [®] RMM3	Intel [®] Remote Management Module 3
IPMI	Intelligent Platform Management Interface
ITE	Information Technology Equipment
KVM	Keyboard, video and mouse
MAC	Media Access Controller
OOB	Out-Of-Band- No operating system interaction on Server
PBDE	Polybrominated Biphenyls Diphenyl Ethers
RMII	Reduced Media Independent Interface
RTC	Real-Time Clock
TCP/IP	Transmission Control Protocol/Internet Protocol
TPS	Technical Product Specification
UART	Universal asynchronous receiver transmitter
UDP	User Datagram Protocol