

SCHEDULE E: SERVICE DEFINITION FOR ENHANCED OPERATIONAL MANAGEMENT LEVEL – HCI PLATFORM MANAGED

The Enhanced Operational Management Level – HCI Platform Managed provides operational management for the Supported Items as detailed in this Schedule E for HCI platform environments covered by the Functional Capability section below (the “HCI Platform”). This Enhanced Operational Management Level provides a fully maintained hardware and Operating System environment configured by the Service Desk to the Customer’s requirements.

The HCI Platform Managed service provides the following components:

- Installation and configuration of the required software needed to support Exponential-e’s service delivery of the HCI Platform.
- Configuration and management of the HCI Platform, including any OS and functionality options, features, or supported applications installed to manage the HCI Platform.
- Provisioning of the HCI Platform licenses, where purchased by the Customer through Exponential-e.
- Continuous (24x7x365) HCI Platform monitoring and alerting.
- Automated analysis and resolution of incidents raised for HCI Platform alarms and warnings.
- Manual analysis and resolution of incidents raised for HCI Platform alarms and warnings that cannot be automatically resolved.
- Manual changes raised for the HCI Platform recommended by Exponential-e.
- Delivery of approved changes raised by Exponential-e and the Customer.
- Patch Management of the HCI Platform in line with Exponential-e’s standard, ITIL compliant patching process as detailed in this Service Document.
- Exponential-e administration and user account management.

Functional Capability

Exponential-e manages and supports the Supported Item hardware and the OS of the HCI Platform to Exponential-e’s standard build specification for the vendor’s products under Mainstream Support, as detailed in the following list and amended from time to time:

- Dell EMC VxRail

Management of virtual servers, applications, workstations and all activities required to manage these systems are excluded from this service.

Operation

The HCI Platform is subject to the following management by Exponential-e and Exponential-e’s responsibilities with respect to management of the HCI Platform are as follows. The Customer is responsible for all management aspects other than those for which Exponential-e is responsible.

Aspect	Exponential-e Responsibilities
Capacity Planning	• HCI Platform performance capacity monitoring and analysis • Collect and aggregate OS performance data from automated monitors as it relates to the HCI Platform • Provide reports on this collected data on a monthly basis • Recommend and dialog with the Customer to enact environment changes, including the addition of additional HCI nodes • Discuss possible remediation options with the Customer to address capacity bottlenecks

	• Ongoing planning for future growth of the storage service involving trending of storage performance and utilisation patterns.
Disaster Recovery and Business Continuity	• Provide the Customer with a standard format Disaster Recovery and Business Continuity document for the HCI Platform (excluding VMs replicated using RecoverPoint). • Request sign off from the Customer stakeholders for the standard format Disaster Recovery and Business Continuity document for the HCI Platform (excluding VMs replicated using RecoverPoint). • Participate in isolated DR exercises for the HCI Platform once a year (to support DR failover exercises delivered remotely on a sample and isolated HCI Platform environment as detailed in the Disaster Recovery and Business Continuity document, unless agreed otherwise in writing by the Parties). • Participate in chargeable Disaster Recovery simulations with the Customer for the HCI Platform if requested by the Customer. This is subject to a minimum of five (5) Working Days' notice provided to the Service Desk by the Customer. • Coordinate with the Customer's representatives to execute DR processes in line with the Customer's IT Disaster Recovery and Business Continuity Plan, at the Customer's request. Exponential-e is responsible for carrying out all activities agreed for completion by Exponential-e in the Customer's IT Disaster Recovery and Business Continuity Plan. • Participate with the Customer on an annual basis to review and improve the Disaster Recovery and Business Continuity document for HCI Platform.
Documentation	• Maintain solution design documentation for the HCI Platform in the CMDB. • Maintain solution configuration documentation for the HCI Platform in the CMDB. • Ensure that the CMDB includes the day-to-day operational procedures for the HCI Platform. • Implement and maintain version control for all documentation.
End of Life Management	• Advise the Customer at least three (3) months in advance of upcoming End of Life dates of any Supported Items. End of Life meaning the relevant vendor no longer supports the applicable item. • If the Customer is not able to upgrade the hardware or OS by the End of Life date, Exponential-e will use reasonable endeavours to continue to deliver the operational support level in accordance with this document however the Flex Manage service level agreement shall not apply to any Supported Items that have reached their End of Life date.
Licensing	• Exponential-e is responsible for licensing and licensing maintenance under this Contract to cover: ○ In scope Microsoft Datacenter Edition licenses ○ In scope VMWare vSphere and vSAN ○ In scope Dell EMC RecoverPoint licenses
Monitoring	• Monitor and alert on the HCI Platform

	- Configuring and maintaining standard, automated hardware and OS monitors for Supported Items to notify Exponential-e of hardware and OS issues and outages - Document all monitoring settings for all Supported Items during the On Boarding activity and make this information visible to the Customer in the CMDB. Update the documentation when monitoring changes are made
Operating System Upgrades	- Minor upgrades include all updates to the OS of the Supported Items that can be performed on the existing system. These upgrades do not require the existing supported OS environment to be rebuilt to perform the upgrades. The following upgrades are included alongside the OS-level minor upgrades: - Hardware firmware upgrades Minor Upgrades are included within the HCI Platform Managed Enhanced Operational Management Level. - Major Upgrades (including all updates to the OS or other parts of the Supported Item that require a new physical or virtual OS to be built) are not included with the HCI Platform Managed Enhanced Operational Management Level and if required, will be undertaken by Exponential-e subject to additional Charges. - All upgrades to Supported Items will be subject to the change management process, and the Customer will be required to approve all upgrade changes before the Service Desk will carry them out.
Patch & Firmware Management	- Updating the HCI Platform manually or via an alternate management platform, at Exponential-e's discretion - Review and test critical VMWare and Dell/EMC updates - Install critical and security updates onto the HCI Platform - Install non-critical updates onto the HCI Platform - Notify the Customer of proposed updates to the HCI Platform - Carry out software patches to the HCI Platform - Configure the HCI Platform for manual update installation by the Service Desk
Proactive Remediation	- Investigate the cause of issues generated through the monitoring and alerting toolsets, or reported by the Customer - Communicate recommended remediation activities to the Customer and request approval from the Customer for carrying out remediation activities - Provide proactive remediation of issues as agreed with the Customer
Protection Planning	- Recommend and dialog with the Customer to enact environment changes. - Discuss possible remediation options with the Customer to address capacity bottlenecks and location protection i.e. recommendation of where to replicate data to.
Storage	Exponential-e will monitor and manage all storage components (at source and destination) that are covered as Supported Items by Exponential-e. Storage components (at source or destination) that are not Exponential-e

	Supported Items will be monitored and managed by the Customer exclusively.
--	--

Customer Pre-requisite Requirements

To start HCI Platform management of a Supported Item, Exponential-e requires the following pre-requisites to be fulfilled by the Customer during the On Boarding period.

- Conducting the On Boarding activities (as identified by Exponential-e during the On Boarding process) including provision of information needed by Exponential-e to correctly manage and support the Supported Items.
- Provision of design documentation for currently running Supported Items, where this exists.
- Provision of Configuration documents or CMDB information for currently running Supported Items where it exists.

Customer Dependencies

For Exponential-e to deliver the HCI Platform Managed enhanced operational support, the following Customer dependencies exist. Failure of the Customer to meet these Customer Dependencies may affect the service Exponential-e is able to deliver to the Customer, and Exponential-e's obligations under the Flex Manage service level agreement.

- The Customer shall provide documented naming conventions for all Supported Items.
- The Customer shall provide documented active Customer IT policies for all Supported Items at the time of starting the On Boarding process.
- The Customer shall provide Exponential-e with advice in advance of any peculiar, special, or particular modifications made to the Supported Items. This includes advice on the Exponential-e HCI Platform base level configuration as well as Exponential-e's standard HCI Platform Managed practices.
- The Customer shall be responsible for documenting and maintaining any differing configuration and build requirements pertaining to the existing environment that is peculiar, special, or has had particular modifications applied.
- The Customer shall provide, in accordance with the timelines defined during the On Boarding activity, approval for patching events, the approved list of updates to be installed, and approved list of firmware to be installed on physical Supported Items.
- The Customer shall undertake application and pre-deployment compatibility testing before authorising Exponential-e to deploy recommended patches to Supported Items.
- The Customer shall have reviewed the compatibility of all custom and non-standard applications or line of business applications with the HCI Platform OS version numbers and service packs to be used.
- The Customer shall ensure that the Customer endpoints and management environments are secured, patched, and maintained in accordance with Good Industry Practice.
- The Customer shall assess in advance the application suitability for virtualisation of their applications, and for use with the hypervisor used for VMs.
- The Customer shall work with Exponential-e to replace all End of Life Supported Items before the arrival of the End of Life date.
- The Customer shall review the compatibility and suitability of the selected Supported Item configuration for its intended application usage.
- Exponential-e shall retain administrative rights on the Supported Items in order to provide the HCI Platform Managed enhanced operational support level on Supported Items.
- Exponential-e shall provide administrative rights on the Supported Items to the Customer in order for Customer staff to correctly make use of the HCI Platform Managed environment.

- The Customer is responsible for all VMs to be protected by AV software. Supported Items not deployed with AV software are not covered by the HCI Platform Managed enhanced operational support level for virus infections free of charge.
- Meeting the requirements set out in the solution design documents

Service Education

Exponential-e will provide education to Customer staff about the details of the service provided, and how to make use of the provided HCI Platform Managed service. Exponential-e will provide the following service education.

Education	Timeline	Method
Raising incidents for faults/issues	On Boarding	Face-to-face CMDB document
Raising changes for system changes	On Boarding	Face-to-face CMDB document
Reporting	On Boarding	Face-to-face CMDB document
Requesting the creation of new Supported Items	On Boarding	Face-to-face CMDB document
Requesting the addition of Supported Item resources	On Boarding	Face-to-face CMDB document
Disaster Recovery and Business Continuity design and process	On Boarding	Face-to-face CMDB document
Solution design documentation for Supported Items	First 3 months of BAU	CMDB document
Solution configuration documentation for Supported Items	First 3 months of BAU	CMDB document
Solution testing documentation for Supported Items	First 3 months of BAU	CMDB document

Accountabilities and Responsibilities

RACI

A responsibility assignment (RACI) matrix showing whether Exponential-e, the Customer or any relevant third parties are Responsible, Accountable, Consulted or Informed in respect of a particular aspect will be drawn up to ensure a joint understanding. The RACI is bespoke to the Customer, is formalised during the On Boarding phase, and is documented in the CMDB.

The following table details who is responsible for high level ITIL-level RACI activities for HCI Platform Managed enhanced operational support. Some activities are shared between Exponential-e and the Customer, where the Customer will be responsible for activities such as raising or approving change requests. Specific details are documented within the CMDB.

ITIL Process	Exponential-e	Customer
Asset Management	RA	CI
Change Management	RA	RACI

ITIL Process	Exponential-e	Customer
Configuration Management	RA	CI
Event Management	RA	CI
Incident Management	RA	CI
Patch Management	RA	CI
Release Management	RA	CI
Request Management	RA	RACI

The Customer is responsible for all RACI activities for areas that Exponential-e is not responsible for. During the On Boarding activity the Customer shall identify key internal and 3rd line primary and back-up contacts to the Service Desk and promptly inform the Service Desk of any changes during the term of the Contract.

Service Requests

Service Requests are requested changes to a Supported Item or a request for an operational task made by the Customer. Types of Service Requests may include those set out in the table on the following pages.

Where a Quantity and Frequency are specified in the table on the following pages, this is a maximum allowance included free of additional Charges over the corresponding timeframe. Service Requests in excess of this allowance will be accepted by Exponential-e but shall be invoiceable in arrears in accordance with the Exponential-e's standard Professional Services rates. For the avoidance of doubt, allowances apply on a "use it or lose it" basis and unused portions of any allowance cannot be rolled-over or the subject of any credit. Where the Quantity is designated as N/A, there is no maximum allowance and no additional charges shall apply.

All Service Requests that are designated in the table on the following pages as PR and any other Service Requests of a type not listed in the table are not included within the Charges for the HCI Platform and will be invoiceable in arrears in accordance with Exponential-e's standard Professional Services rates plus any additional charges that apply as agreed in writing at the time of Service Request acceptance.

All Service Requests will be reviewed, verified and subject to approval by Exponential-e and Exponential-e will confirm if additional charges apply.

Service Requests will be subject to the applicable Target Time to Complete (if any) set out in the table on the following pages. Exponential-e shall use reasonable endeavours to complete the Service Request within this timeframe. The Customer may request the delivery time for all Service Requests to be scheduled for a future date/time in which event, the Target Time to Complete will commence at the relevant date/time.

Service Requests will be carried out by Exponential-e during the Hours stated in the table on the following pages.

ID	Request Description	Availability		Type *	Hours	Time to Complete	Quantity	Frequency
		Email	Phone					
SRHPM 01	Shut down HCI Platform	Yes	Yes	OSR	24 x 7 x 365	1 hour	10	Per month
SRHPM 02	Reboot HCI Platform	Yes	Yes	OSR	24 x 7 x 365	1 hour	10	Per month

ID	Request Description	Availability		Type *	Hours	Time to Complete	Quantity	Frequency
		Email	Phone					
SRHPM 03	Request new physical HCI Platform	Yes	Yes	PR	UK Normal Business Hours	7 Working Days following hardware delivery	N/A	As required
SRHPM 04	Complete emergency patching	Yes	Yes	OSR	24 x 7 x 365	8 hours	1	Per quarter
SRHPM 05	Complete additional backups	Yes	Yes	OSR	24 x 7 x 365	8 hours	5	Per quarter
SRHPM 06	Create and format physical disk volumes	Yes	Yes	PR	UK Normal Business Hours	2 Working Days following hardware delivery	N/A	As required
SRHPM 07	Create and format virtual disk volumes	Yes	Yes	OSR	24 x 7 x 365	1 Working Day	1	Per month
SRHPM 08	Create fault tolerant physical disk systems	Yes	Yes	PR	UK Normal Business Hours	2 Working Days following hardware delivery	N/A	As required
SRHPM 09	Create fault tolerant virtual disk systems	Yes	Yes	OSR	24 x 7 x 365	1 Working Day	1	Per month
SRHPM 10	Complete one-time performance trend analysis of SI environments (CPU, RAM, disk space, network utilisation)	Yes	Yes	OSR	24 x 7 x 365	2 Working Days	1	Semi annually
SRHPM 11	Review DR and BC plan	Yes	Yes	OSR	UK Normal Business Hours	5 Working Days	1	Per annum
SRHPM 12	HCI Platform patch installation	Yes	Yes	OSR	24 x 7 x 365	8 hours	1	Per month
SRHPM 13	HCI Platform firmware installation	Yes	Yes	OSR	24 x 7 x 365	2 hours	1	Semi annually
SRHPM 14	Reset HCI Platform management account password	Yes	Yes	OSR	24 x 7 x 365	1 hour	1	Per quarter
SRHPM 15	Review HCI Platform audit logs	Yes	Yes	OSR	24 x 7 x 365	2 Working Days	1	Per annum

* PR = Project Requirement, OSR = Operational Support Request