HCLTech | Supercharging Progress™

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G-Cloud 14 – RM1557.xiii

Lot 3 - Cloud Support

iAutomate

Intelligent Automation for IT Operations

Service Definition

Foreword

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Validity

This proposal and all information contained within are valid for a period of 180 days from October 29, 2024.

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Table of Contents

Service Description

About HCLTech

HCL Technologies is a next-generation global technology company that helps enterprises reimagine their businesses for the digital age. Our technology products, services and engineering are built on four decades of innovation, with a world-renowned management philosophy, a strong culture of invention and risk-taking, and a relentless focus on customer relationships.

Powered by a global team of 224,700+ diverse and passionate people across 60 countries, we deliver smarter, better ways for all our stakeholders to benefit from technology. With a worldwide network of Research and Development (R&D), innovation labs and delivery centres, along with expertise in Digital, Engineering and Cloud, we deliver solutions that fulfil the traditional, transformational and future needs of clients across the globe.

AI-Led & Human-Assisted Approach

In the last few decades, the technology industry has witnessed a massive phase shift. Earlier, it was easy to manage the environments with a limited set of tools, technologies, and resources with a high percentage of humans involved in decision making and problem solving, as the components were limited. Now, with more and more workloads moving to hybrid cloud, there is additional complexity which comes in because of disparate systems and technologies in the environment. This results in inefficiencies, lack of visibility and control, increase in operational costs and risks with respect to security and compliance to manage these diverse set of technologies.

Automation is not something new and has been existent for quite a while now in the IT domain in different forms like provisioning and patching, zero touch monitoring, Runbook Automation (RBA), Robotic Process Automation (RPA), automated reporting and many more. However, the majority of these were still human led and automation assisted

With the evolution of new age technologies like Artificial Intelligence (AI), Machine Learning (ML) and Natural Language Processing (NLP), we are further venturing into a new era where AI leads the operational management and the human assists when required.

Algorithm driven products now have the capability to perform triaging, event correlation and Root Cause Analysis (RCA), hence completely taking this job over from humans.

Extreme automation driven intelligent products take charge of automating the detect-to-correct lifecycle of an incident.

Cognitive assistants ensure 24X7 availability with high levels of First Call Resolution (FCR), directly providing a boost to efficiency and user experience.

The entire environment is now constantly monitored and validated and corrected by AI powered machines with minimal human intervention.

The AI powered products can go through the enormous amount of data to recognise and identify patterns in order to predict and flag any future outages or critical incidents. In a way, we are continuously evolving from a Human-Led approach to one where AI leads and humans assist only when required.

When it comes to Intelligent IT Operations, HCLTech brings an extensive experience and expertise across various third-party solutions and our organic product offerings, implemented successfully for its global customers with a large and complex IT landscape.

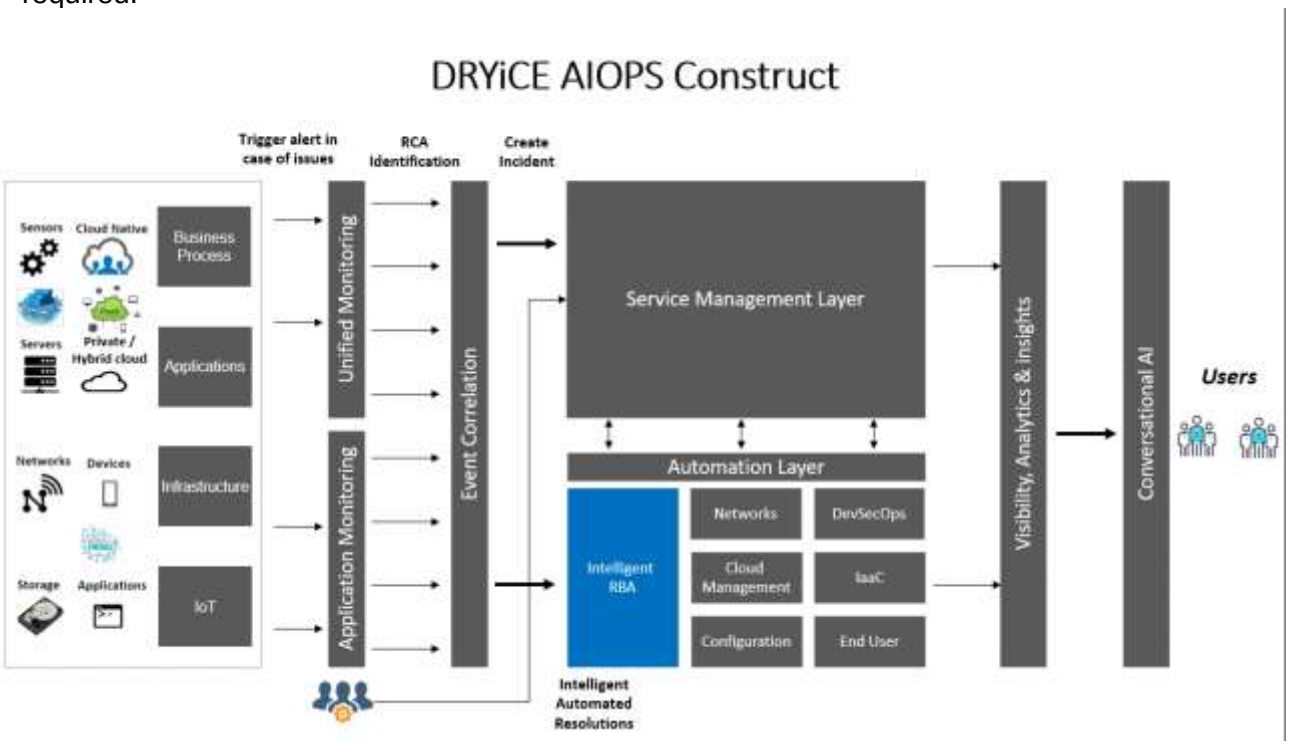
HCLTech's DRYiCE AIOPS is our market leading platform differentiator which changes the way IT Operations have been run for decades, by infusing Artificial Intelligence, Machine Learning and Cognitive Technologies. AI Ops focusses on simplifying and automating the IT operations for legacy, hybrid and cloud native applications.

With AIOPs we are entering into a new era which further increases optimisation and efficiency in our operations. IT brings machines and algorithms to the forefront and takes the user experience to the next level.

DRYiCE AIOPS Construct

At HCLTech, we follow an AI led approach for managing the end to end IT Operations lifecycle and deliver predictability, visibility, control and effectiveness for enterprise IT through a proven, integrated and modular architecture defined by five unique and intelligent layers, as described below.

- **Unified Monitoring** (Infrastructure, Application and User Experience) – This layer is responsible for monitoring all underlying elements, right from the infrastructure up to application down, as well as user experience and raises an alert if something is not working as expected.
- **Predictive Analytics based Event Correlation** – This layer uses Machine Learning to do auto event correlation. With advanced correlation we are now able to reduce the noise in the environment because of unwanted alerts, we can correlate events and merge them based on their relationships, we bring prediction capabilities and automated Root Cause Analysis to ensure that the self-healing AIOPS platforms have a strong foundation.
- **Intelligent Automation Layer;**
  - This layer is capable of observing and identifying the symptoms and recommend the necessary action. It also triggers actions to perform autonomous resolutions without human intervention.
  - Additionally, the entire lifecycle of hybrid cloud management is automated via the cloud management platform. It provides a unified interface to perform all activities associated with cloud management, including provisioning-decommissioning, policy driven orchestration, metering, billing and showback. The recommendation and advisory module provides proactive recommendations on cost optimisation and security threats.
  - It also encompasses various other areas like DevSecOps, end user automation, infrastructure as code and network automation.
- **Service Management** - The next layer is the service management layer which acts as a system of record for all the issues and requests in line with the ITIL guidelines. It enables standardisation of processes and elevates the user experience, enabling the self-service promise of DRYiCE.
- **Visibility, Analytics and Insights** – This layer provides analytics and insights into the operations and resource performance. It automates the governance processes, Service Level Agreement (SLA) measurements and provides a single pane of glass view into what is happening in your IT ecosystem, from a process, technology and people perspective.
- **Cognitive Virtual Assistant -** The top layer belongs to our Cognitive Virtual Assistant (CVA) which acts as an overarching layer that enables the interaction between end users and multiple underlying systems, thus enabling a conversational platform to address user queries and perform actions, as required.



Intelligent Automation for IT Operations

The automation tools supported in some instances are selected based on the technology environment analysis of the customer which includes:

- Analysis of the current technology stack
- Customer's requirements and fitment of tools as per the environment
- Leverage existing tools to optimise the returns on investment.

When it comes to Intelligent Automation, we leverage **DRYiCE iAutomate**, which is an Intelligent Runbook Automation (RBA) solution. It leverages Machine Learning (ML) and Natural Language Processing (NLP) to simplify and automate the incidents, service requests tasks and change requests tasks across various towers and technology stacks.

DRYiCE iAutomate

DRYiCE iAutomate is an intelligent runbook automation product that brings Artificial Intelligence (AI) and Automation together to simplify and automate enterprise IT operation lifecycle. It leverages Machine Learning (ML) and Natural Language Processing (NLP) to comprehend issues, recommend corrective actions, and initiate automatic resolution, enabling zero-touch automation. By leveraging a repository of over 1,500 configurable and reusable runbooks, it provides robust end-to-end incident remediation and task automation across the infrastructure and applications landscape.

It also enables algorithm driven ticket analysis using the data from IT Service Management platform, to identify potential automation candidates, which can then be configured as use cases to drive automation within the enterprise. This can also be enables a continuous and recurring activity to expand automation scope and coverage over time to derive maximum value. It offers semi-auto and full auto modes, to enable partial and zero-touch automation capabilities, with feedback loop enabling continuous learning for recommendation and resolution improvements.

Features

- Machine Learning (ML) and Natural Language Processing (NLP) enabled hyper-automation
- Observational self-learning
- Algorithm-driven identification of automation candidates
- Automation diversity, including incidents, Service and Change Request tasks
- Reusable, configurable and customisable out-of-the-box runbook repository
- Aggregates data from multiple sources and builds a unified knowledge base
- Contextual knowledge assistance for faster resolutions
- Supervised learning capability driven by human feedback
- Enterprise grade security
- Rich integration ecosystem with pre-built adapters with IT Service Management (ITSM), Runbook Automation (RBA), Event Management tools and Knowledge Repositories.

Benefits

- Achieve up to 85% reduction in Mean Time to Resolve (MTTR)
- Up to 60% reduction in manual effort in resolving redundant tasks
- Automate up to 30% of IT tasks
- Reduce escalations and SLA breaches by up to 20%
- Rapid implementation powered by out-of-the-box automation repository
- Avoid operational risks and ensure compliance by avoiding critical outages
- Greater business agility with optimum standardisation
- Improve performance and availability of systems and services
- Improve collaboration and employee productivity.

Technical Specifications

Integrations

DRYiCE iAutomate comes with a robust integration ecosystem with pre-built adapters for various tools like:

- IT Service Management – ServiceNow, BMC Remedy, Cherwell, BMC Remedyforce
- Runbook Automation (RBA)/ orchestration tools – HCLTech Bigfix, Ansible Tower, Ansible AWX, Broadcom ITPAM, Microsoft Systems Orchestrator, VMware vRealize Orchestrator, ServiceNow Orchestration, BMC Atrium Orchestrator, and Microfocus Operations Orchestration
- Event Management and Correlation Tools – Zenoss, Moogsoft and others
- Knowledge Repositories – ServiceNow Known Error Database (KeDB), SharePoint, file folder, web-based repositories and others which provide RESTful Application Programming Interfaces (APIs).

Deployment Options

Multiple deployment options are available like:

- On-Prem – Dedicated deployment in the customer environment
- Shared Software as a Service (SaaS) – Available through DRYiCE Managed Tools as a Service (MTaaS) as a shared offering with multi-tenancy
- Available on Google Cloud Marketplace as a Virtual Machine (VM) based offering
- Based on the customer requirements and environment analysis, further suggestions can be provided.

Requisite Hardware Sizing

Based on the analysis of the customer requirements, hardware sizing is arrived at considering the various parameters mentioned below:

- Number of IT Tickets - Total number of incidents, change request tasks, service requests tasks generated in ITSM tool on a monthly basis
- Number of unique automatable tickets
- Number of documents processed for analysis
- Concurrent executions requirement
- Data retention requirements.

Based on the mix of the above factors, we categorise the environment into small, medium, and large environment and accordingly the hardware requirements are factored.

Environment Indicator	# Tickets (per month)	# Unique Tickets (per month)	# Documents Processed**	# Search Queries** (per month)	Concurrent Executions***	Data Retention*
Small	Less than 30,000	Less than 500	Less than 1,000	Less than 5,000	up to 100	6 months
Medium	30,000 to 60,000	500 to 1,000	1,000 to 3,000	5,000 to 10,000	up to 200	6 months
Large	60,000 to 1,50,000	1,000 to 3,000	3,000 to 5,000	10,000 to 30,000	up to 400	6 months

Note - * Data Retention is only applicable for the tickets data ** Applicable when iKnowledge module is installed

*** Concurrent Executions have been arrived at based on the limitation of the RBA tool for runbook executions and the ITSM tool for pushing tickets into iAutomate.

All these environment configurations can be deployed in High Availability as well, based on the customer requirements. The detailed hardware configurations can be made available on demand.

Port Requirements

To enable proper communication between iAutomate's services, orchestrator and target machines, certain ports need to be enabled. Detailed information can be made available on demand.

Software Prerequisites

In addition to the hardware requirements, there are certain other software and non-software requirements which need to be catered for, before proceeding with the deployment, installation, and configuration of iAutomate. These can be made available on demand.

Implementation

Listed below is the high-level implementation approach and plan for your reference.

- Due Diligence;
  - Preparation of High-Level Design (HLD) and Low-Level Design (LLD) for iAutomate implementation
  - Requirement gathering of 3rd party applications
  - Gathering of detailed Standard Operating Procedures (SOPs) for all use cases
- Infrastructure Readiness;
  - Provisioning of servers for Dev & Prod
  - Base build and initial configuration
  - Implementation of application in Dev
  - Integration with third party applications in Dev
  - Integration with ITSM/Event Management and RBA in Dev
- Use Case Development;
  - Development of use cases in Dev
  - Unit testing of use cases
  - Use case configuration and testing
  - Demo of use cases
- Integrations;
  - Implementation of the application in Prod
  - Base build and initial configuration – iAutomate
  - Integration with third party applications in Prod
  - Integration with ITSM/ Event Management and RBA in Prod
  - Use case configuration and testing and User Acceptance Testing (UAT)
- Go-Live;
  - Go Live
  - Use case handover and documentation

Support Arrangements

Upgrade/ Patching Cycle

The regular patches/ product upgrades are released on a half-yearly basis with proper change management procedure as per the customer policies. In case of any bug fixing/ patch deployment, it is first tested in the DRYiCE Labs and then a Change Request is raised by the customer and needs to be approved. Post approval, the patch is rolled out. We ensure that the entire patching and upgrade process adheres to the customer's security policies.

Support Levels

Primarily, two different types of support models are available for the customers, looking deploy the solution on-prem or consume it as a service, as described below.

- Dedicated Support Model - 100% FTE allocation in a dedicated manner; SLA Support as per the agreed support window
- Shared Support Model - % based FTE allocation; SLA Support as per the agreed support window

Additionally, based on the severity of the issue, the following response and resolution SLAs are defined.

- P1 - Incident Ticket - Response SLA - 15 mins; Resolution SLA - 2 Hours
- P2 - Incident Ticket - Response SLA - 30 mins; Resolution SLA - 6 Hours
- P3 - Incident Ticket - Response SLA - 3 Hours; Resolution SLA - 16 Hours
- P4 - Incident Ticket - Response SLA - 6 Hours; Resolution SLA - 32 Hours

These can be customised further based on requirements and mutual agreement.

Extensive Documentation

To assist the users, a comprehensive set of documentation is available on demand. It includes Installation Guide, Configuration Guide, Prerequisite Guide, User Guide, Troubleshooting Guide, API Guide and Integration Guide.

Business Continuity/ Disaster Recovery

HCL Technologies recognises the potential impact associated with major service disruptions and the importance of maintaining viable recovery strategies. Business Continuity Management System (BCMS) implementation is key to meet strategic, operational, contractual, legal and regulatory requirements. The HCLTech board has endorsed having strong business continuity culture across our organisation which shall drive successful enterprise wide and sustainable BCMS. This programme has been implemented using a defined Business Continuity Management System (BCMS) which is based on leading industry standard ISO 22301:2012.

The Business Continuity Plan (BCP) is a set of documented activities/ processes that guide the required teams to respond, recover, resume and restore service to a pre-defined level of operation, within a predetermined time frame, following a business disruption.

HCLTech is committed to its employees, customers and interested parties to ensure that applicable requirements are met, critical client services are resumed at predefined levels in the event of any untoward incident and necessary efforts are made to safeguard the life and safety of personnel.

Towards this, HCLTech provides for a Business Continuity Management System that is appropriate to the purpose of the organisation and acts as a framework for identifying applicable requirements, setting objectives for business continuity and achieving them, while evaluating performance and continually improving them.

HCLTech has a common framework for developing business continuity and crisis management plans. This framework is referred to as HCLTech Business Continuity Management System (BCMS), which is based on leading industry standard ISO 22301:2012 (Societal security – Business continuity management systems – Requirements). Some of the areas that are included in this framework are:

- BCMS Manual and Business Continuity Procedures
- Actions to address risks and opportunities
- BCMS Legal and Regulatory Requirements
- BCM Communication
- Business Impact Analysis (BIA)
- Risk Assessment and Crisis Management
- BCM recovery, maintenance, measurement, analysis and evaluation.

As far as the platform and solution offerings are concerned, the platform/ product architecture supports deployment in High Availability mode.

In case of dedicated on-prem deployments, this will be taken care of by the customer at the infrastructure level as per the customer defined policies and requirements.

Data Backup/ Restore

As a default, all the data is stored for 365 days. Data backup and restore timelines and level can be further customised based on customer requirement and environment.

Security

DRYiCE iAutomate ensures security of your closed loop automations through its enterprise grade security mechanisms.

- Support for SAML 2.0 based authentication enabling users to leverage existing Single Sign-On and Active Directory integrations
- All sensitive information (data at rest and data in transit) is encrypted using various mechanisms.
  - Data at Rest - Password Encryption is done using Hashed version of Salt and actual key is used as final key (SHA-512 algorithms for hashing) for encryption of any sensitive information being stored. Symmetric encryption method (Algorithm: Rijndael), CBC (Cipher Block Chaining) is used for encryption of sensitive information in the system.
  - Data in Transit – We leverage TLS 1.2 for encrypting data in transit using a strong key exchange PSK (Pre-Shared Key).
- Token based authentication for Third Party Integrations using OAuth 2.0
- Enhanced security by reducing chances of disclosure, eavesdropping, etc. using Key Rotation System.

Account Management

A dedicated Account Manager and Service Delivery Manager will be appointed to discuss and manage issues, changes and enhancements to the service.

The location and extent of their involvement will depend upon the level of the engagement.

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