

Expression of Interest (EoI)

FOR

**Subscription to Basic/Advanced Cloud Services (IaaS, PaaS, SaaS,
and FaaS) to enable Digital Transformation**

Reference No. CIL/SYS/6342 Dated: 11.10.2021

1. Introduction

This Expression of Interest (Eoi) is being floated by Coal India Limited for the purpose of identifying latest technologies being serviced by different CSPs and MSPs in Cloud Services procurement **Subscription to Basic/Advanced Cloud Services (IaaS, PaaS, SaaS, and FaaS) to enable Digital Transformation for Coal India Limited.**

The objective of this Expression of Interest (Eoi) is to identify efficient solutions with a clear understanding of the scope, approach and technical architecture & other technical conditions as per the requirement of Coal India Ltd for a period of six (6) years.

2. Project Background

Coal India Ltd's Headquarter at Kolkata is going to procure **Subscription to Basic/Advanced Cloud Services (IaaS, PaaS, SaaS, and FaaS) to enable Digital Transformation in Analytics/Application Development** to enable improvements in business processes.

Business Requirements

Turning the traditional application to a cloud native solution which can take advantages of automation, the ability to scale up and down with demand, automated testing and rollback, automated staging, etc. The website has been built with Django and wagtail CMS, postgres.

In addition to the above CIL would provision additional resources as per BoQ. MSP has to provide support in implementing the projects as per scope outlined in this document.

Other potential Projects:

1. Centralized CCTV Monitoring
2. Image Analytics Workloads which can be utilized for various use cases on top of CCTV Monitoring footage
3. Chatbot services for various business processes with natural language processing
4. Intelligent document Search for Scanned Documents
5. Data Forecasting based on historical data for Mine wise production, Grade Slippage and upgrades, Weight aberrations for Overloading and Underloading charges.

6. Anomaly Detection on Data for Vigilance Use cases
7. Aggregation of Streaming Data from Sensors Deployed in HEMMS which can be later used for Preventive Maintenance

3. Objectives of EoI

The following are the objectives of the EOI for procuring **Subscription to Basic/Advanced Cloud Services (IaaS, PaaS, SaaS, and FaaS) to enable Digital Transformation in Analytics/Application Development at Coal India Limited:**

- i. CSPs/MSP may submit their interest along with Clarifications of the technical proposal/Eligibility Criteria/Scope of Work/ BOQ.
- ii. No commercial offer should be provided with this EOI.
- iii. Obtain confirmation as to how the service providers/system integrators/CSPs/MSPs would technologically, operationally provide and support these services.
- iv. The minimum required specifications for the proposed solution/infrastructure are mentioned in this document. If CSPs & MSPs feels that any of specification is inadequate, they can add/modify on with remarks and supporting document.
- vi. CSPs & MSPs should confirm compliance with each of the specifications/ in the respective columns with documentation (if any) to support the same.

4. Eligibility Criteria

This tender is open to authorized Managed Service Providers (MSPs) of MeitY and empanelled Cloud Service Providers (CSPs) or Empaneled CSPs who are also MSPs themselves.

MSP can make only one bid with the authorization of any CSP.

The choice of CSP and MSP should meet all the technical specifications and compliances outlined in this Document(s) read together.

4.1 MSP criteria

Criteria: 1	Bidder should be a registered company in India under the Companies Act 1956 or registered with Directorate of Industries / NSIC with a valid GSTN registration. The bidder should be in the business of providing Cloud Services for a minimum period of 3 years as on bidding date.
Documents Required from the Bidder <ol style="list-style-type: none">Valid Certificate of Incorporation and Memorandum & Articles of Association / Certificate of registration with Directorate of Industries, NSIC for MSE bidders. In case of any name change bidder needs to submit all the supporting documents.The bidder should submit any one of the following to prove that the bidder is in business of providing cloud services for at least 3 years as on bidding date.<ol style="list-style-type: none">Certificate(s) from client(s).Copy of final invoice(s).Certificate from authorize signatory or company secretary.Valid GSTN Registration Certificate.	
Criteria: 2	MSP or any of its sister concern company should not have been blacklisted by the Government of India or any regulatory authority or PSU or by any law enforcement authority for breach of any regulations or laws as on date of submission of the RFP
Documents Required from the Bidder <p>An undertaking duly signed by authorized signatory or company secretary on the company letter head in support of not being barred or holiday listed by any of the Organizations as mentioned.</p>	
Criteria: 3	The bidder should bid for providing Cloud Services only from those Cloud Service Providers (CSP) who comply with the following CSP should be empanelled with Ministry of Electronics and Information Technology (MeitY) and must be STQC Audit Compliant as on bidding date. CSP should have its Data Centres within India and CIL data should not be stored in any location outside India.
Documents Required from the Bidder <ol style="list-style-type: none">A Certificate / Documentary evidence to support that CSP is empanelled with MeitY & STQC Compliant.Undertaking on letter head from CSP that they have Data Centres within India and CIL data will not be stored in any location outside India.	

Criteria: 4	<ol style="list-style-type: none"> 1. The bidder should be registered partner with one of the CSPs who qualify Criteria No 4 as on bidding date. 2. Bidder should have back-to-back support agreement with the CSP which is valid for the contract period. 3. Bidder should be Large Selling Partner / Premier Partner with the CSP during the contract period. 4. Bidder must be running 24 x 7 NOC (Network Operation Centre) /SOC (Security Operation Centre) for cloud platform in India. 5. Bidder should have at least 10 IT Professionals certified by the CSP on their roles as on bidding date (certified in the following.
<p style="text-align: center;">Documents Required from the Bidder</p> <ol style="list-style-type: none"> 1. The bidder should submit a copy of valid agreement with the CSP and the agreement should be valid for a minimum period of six months as on bidding date. If the backend agreement with CSP is not valid for the full contract period of CIL, then the bidder should give a declaration that he will extend the agreement validity with CSP for CIL contract period. The bidder should submit a copy of the agreement as and as when the agreement with CSP is renewed. 2. Bidder should submit a letter from CSP giving details of the level of partnership. 3. Bidder shall submit documentary evidence of having 24 x 7 NOC (Network Operation Centre) / SOC (Security Operation Centre) for cloud platform in India. 4. Bidder must submit self-declaration that they have running 24 x 7 NOC (Network Operation Centre) / SOC (Security Operation Centre) for cloud platform in India. 5. Self-declaration from bidder that they have at least 10 IT Professionals certified by the CSP in on their payroll as on the bidding date. 	
<p style="text-align: center;">MSP Should have the following Certifications.</p> <ul style="list-style-type: none"> · CMMI Level 3 · ISO/IEC 20000-1:2011 ITSM · 27001:2013 ISMS · ISO 9001:2008/ISO 9001:2015 Quality Management 	

4.2 Eligibility criteria for Choice of Cloud Service Providers.

S. No.	SPECIFICATION & Eligibility	COMPLIANCE (Y/N)	Cross Reference (with Public Link And Certificates)
1	CSP should have at least 2 data centers Empaneled by MEITY (Ministry of Electronics and Information Technology) on MEITY Website,		CSP MEITY Empanelment Certificate and Security Audit Certificate from STQC
2	The Bidder (in case of CSP) or CSP of which the bidder is an authorized partner should be in leader's quadrant for Cloud Infrastructure as a Service, Worldwide as per latest Gartner Report.		All Certificates along with signature from authorised signatory and/or Public links for all below points
3	<p>he cloud service provider should have the following certification:</p> <p>CSP Should have ISO 27701 certification to comply with General Data Protection Regulation (GDPR) guidelines.ISO 27001:2013 certification</p> <ul style="list-style-type: none"> · ISO/IEC 27017:2015-Code of practice for information security controls based on ISO/IEC 27002 for cloud services and Information technology · ISO 27018 - Code of practice for protection of personally identifiable information (PII) in public clouds. · CSP or Service Partner's ISO 20000-1:2011 certification for Service Management System. · PCI DSS -compliant technology infrastructure for storing, processing, and transmitting 		

	<p>credit card information in the cloud.</p> <ul style="list-style-type: none"> Conform to at least Tier III standard, certified under TIA 942 or Uptime Institute certifications by a 3rd party SOC 1,2,3 compliant - System and Organization Controls attestation reports as mandated by SSAE 16 and SSAE 18. 		
4	<p>Cloud platform should provide the below:</p> <p>Certified Market Place with first and 3rd party products and services</p> <p>Services should be available in IAAS, PAAS and SAAS consumption models</p> <p>Should have atleast 5000 products and services from atleast 50 ISV partners</p> <p>Should support free software trials and test drives</p> <p>The pricing model should support free, pay-as-you-go and BYOL</p> <p>Should have compute, database, containers, blockchain, devops, IOT, storage, security and media services</p> <p>Private Marketplace where customer can publish and govern which third-party solutions their internal users can use</p> <p>Template library</p> <p>Artifact repo</p>	Self certificates with cross ref from Public links for all below points	

5	<p>CSP should have published following details on its public facing website-</p> <ul style="list-style-type: none"> · Rates for its cloud services · Exhaustive Documentation for services · Programatic access to API Objects for all the services in the BoQ. · Service Level Agreements (SLAs) for its cloud services · Dashboard with Realtime service health for all its cloud services across all datacenters · Declare all outages in its cloud services along with Root cause analysis over past 90 days · Programmatic Case Management · Access to the billing , consumption API. 		Self certificates with cross reference from Public links for all points
6	<p>CSP must have their own native security service in cloud (instead of 3rd party) for-</p> <ul style="list-style-type: none"> · Network Firewall · Web Application Firewall · DDoS Protection · Data Encryption at rest · Automated Security Assessment 		Self certificates with cross reference from Public links for all points
7	<p>Identity and Access Management - fine grained access control for access to cloud resources: Only the resource with appropriate permissions and grants has access to any specific resource and All access and changes carried out are logged, cannot be tampered with and be auditable.</p>		Self certificates with cross reference from Public links for all points

8	The CSP should offer a library of vetted architecture diagrams and solutions implementations as a reference.		
9	The CSP should offer guidance on reviewing workloads on specific industry and technology domains and identifying areas for improvement.		
10	<p>CSP must have their own native PAAS service for managed databases having feature of inbuilt scaling, HA & backup for the databases-</p> <ul style="list-style-type: none"> · PostgreSQL DB, · NoSQL DB · MS SQL Server DB <p>Should also Support</p> <ul style="list-style-type: none"> · Native Licensing support for RHEL, Windows · 		Self certificates with cross reference from Public links for all below points
11	CSP should Support offer fully managed Redhat OpenShift with ticketing by CSP directly.		Self certificates with cross ref from Public links for all below points
12	CSP Should Have More than two centers and should support Active-Active Configurations		Self certificates with cross ref from Public links for all below points

5. Proposed Scope of Work

Following are the Proposed Scope of work. CSPs can confirm compliance with each of the specifications/ in the respective columns with documentation to support the same.

Implementation Technical details for Django application and infrastructure for onetime implementation

- Template for Webserver with Git Integration
- Webservers should be deployed from the latest code from Version Control system
- CI/CD Pipelines for testing with native services
- Web Server Config
- CI/CD pipeline from git checkin to dev /testing and prod deployment.
- The configuration for the apache server should be templated
- Mod Security configuration to be included in webserver configuration and templated
- Postgres Config
- The configuration of the postgres Database server should be optimized and templated for on demand replication to Staging/ DR Area
- Load Balancer Config
- The configuration of the Load Balancer should be in code so as to replicate it to the DR Site
- Web Application Firewall Config
- The configuration of the WAF should be in code so as to replicate it to the DR Site
- Static Files to be served from CDN
- Ansible Playbooks for on demand staging / development subnet
- Automation scripts for on demand staging and development for making changes and cost saving
- Ansible Playbooks for DR Scenarios
- Automation Scripts for DR Scenarios so that failover can happen just by initializing the scripts
- RTO and RPO for DR would be 30 minutes and 15 Min respectively and will be fully automated from latest source code from Git
- Log data from all the configured services should flow to elastic search search instance with basic dashboards in kibana and log aggregation through logstashd

Managed Service Provider(MSP) Support Scope

SNo.	Support requirement	Details	Compliance(Y/N)
1..	Implementation and migration of CIL Corporate website as per technical details mentioned in Annexure -I	<ol style="list-style-type: none"><li data-bbox="711 415 1185 485">1. Automated Backup and Recovery configurations to DR as per scope<li data-bbox="711 531 1185 905">2. Benchmark specifications for various types of components to be supplied & operationalized as part of this project are given in Annexure II. Bidders are required to ensure that components proposed are capable to meet these benchmark specifications and are also able to adhere to the functional requirements specified in RFP	

2.	Guaranteed Business Support and Response as per agreed SLA.	<ul style="list-style-type: none">· Service desk tool for creation/tracking of service tickets, troubleshooting, new service requirement and timely closure as per SLA.· The service desk tool should be fully compatible with the CSP Ticketing system so as to prevent double ticketing· The cost of the service desk tool should be included in the cost of support and no additional services shall be procured to that end. <p>The Service Provider should provide support desk details with escalation matrix for handling of support related services during the contract period.</p> <p>CIL shall be able to directly log any issue with Service Provider and interact with support personnel for resolution of any issue, obtaining technical guidance for any further changes in the software or its configuration, upgrades, updates and all other types of technical queries.</p>	
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<p>3</p>	<p>Provide end to end support in case exit management is invoked</p>	<p>Exit Mangement Plan</p> <ol style="list-style-type: none"> 1. Support for Transfer out for the Corporate website <ol style="list-style-type: none"> a. Has to be comprehensive with zero downtime and post stabilization support in the new environment 2. Support for transfer out of other projects <ol style="list-style-type: none"> a. Has to extend support to the incoming MSP regarding architecture and resource access and end to end coordination with the New MSP <p>An Exit Management plan shall be furnished by Bidder in writing to the Purchaser within 60 days from the date of signing the Contract, which shall deal with at least the following aspects of exit management in relation to the Contract as a whole and in relation to the Project Implementation, and Service Level monitoring</p> <ol style="list-style-type: none"> a. A detailed program of the transfer process that could be used in conjunction with a Replacement Managed Service Provider including details of the means to be used to ensure continuing provision of the Services throughout the transfer process or until the cessation of the Services and of the management structure to be used during the transfer 	
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		<p>b. Plans for provision of contingent support to Project and Replacement Managed Service Provider for a reasonable period after transfer</p> <p>c. Exit Management plan in case of normal termination of Contract period</p> <p>d. Exit Management plan in case of any eventuality due to which Project is terminated before the Contract period</p> <p>e. Exit Management plan in case of termination of the Bidder</p> <p>The exit management plan has to be updated every quarter and submitted to CIL and should include any new projects provisioned on the infrastructure.</p> <p>Exit Management plan at the minimum adhere to the following:</p> <p>a. Three (3) months of the support to Replacement Managed Service Provider post termination of the Contract</p> <p>b. Complete handover of the Planning documents, bill of materials, functional requirements specification, technical specifications of all equipment, change requests if any, sources codes, reports, documents and other relevant items to the Replacement Managed Service Provider / Purchaser</p> <p>c. Certificate of Acceptance from authorized representative of Replacement Managed Service</p>	
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		<p>Provider issued to the Bidder on successful completion of handover and knowledge transfer</p> <p>d. In the event of termination or expiry of the Contract, Project Implementation, or Service Level monitoring, both Bidder and Purchaser shall comply with the Exit Management Plan</p> <p>e. During the exit management period, the Bidder shall use its best efforts to deliver the Services</p> <p>f. usage and quarterly support charges would be paid.</p>	
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4.	Reports and Logs	<ul style="list-style-type: none">· Service Provider shall provide periodic reports pertaining to utilization of resources viz. Network, Storage, Compute etc., with budget utilization in the context of predefined monthly utilization limits. · Service Provide shall provide access to log files to CIL.	
5.	Downtime and Incident Reporting	<ul style="list-style-type: none">· Service Provider shall inform CIL at least 1 week in advance for any planned system downtime for the Corporate Website.· Service Provider shall inform CIL at least 3 business days in advance for any other planned system downtime activities. · Service Provider shall inform CIL immediately in case of any unplanned downtime, and cyber incidents.	

6.	ON-Site Support	<p>MSP shall provide on onsite engineer with 5 years experience in Enterprise cloud administration and support</p> <p>Onsite deployment 6 days a week from 9 AM to 6 PM</p> <p>Support engineer has to CSP Certified with atleast associates level certification from CSP in Devops/Sysops/Solutions Architect or equivalent.</p> <p>Support engineer should be experienced in implementing and supporting CI/CD pipelines Support engineer should support CIL Developers or contractual developers in utilizing cloud native services and implementation</p>	
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CSP or MSP Support Scope

S No.	Support for	Terms	Compliance(Y/N)
1	Priority routing & escalation services	<ul style="list-style-type: none"> · 24x7 technical support · 1 hour response for critical cases · Priority routing · Crisis management support 	

2	Account Managers	<ul style="list-style-type: none"> · Access to Delivery Managers · Proactively monitor high severity cases · Provide escalation assistance for critical issues · Advocate on behalf of CIL · Facilitate communication and action with MSP and CSP support engineers. 	
3	Service reviews	<ul style="list-style-type: none"> · Track progress toward business goals · Review case wellness 	

CSP Directly through Enterprise/Business Support Scope

SNo	Support for	Terms	Compliance (Y/N)
1	Priority routing & escalation services	<ul style="list-style-type: none"> · 24x7 technical support · 1 hour response for critical cases · Priority routing · Crisis management support 	

2	Delivery Managers	<ul style="list-style-type: none"> · Access to Delivery Managers · Proactively monitor high severity cases · Provide escalation assistance for critical issues · Advocate on behalf of CIL · Facilitate communication and action with MSP and CSP support engineers 	
3	Service reviews	<ul style="list-style-type: none"> · Create a customized delivery plan · Track progress toward business goals · Review case wellness · Collect product improvement suggestions 	
4	Enhanced advisory services	<ul style="list-style-type: none"> ○ PDMs research the request and provide documents to help maximize CIL's cloud investment ○ Examples include: <ul style="list-style-type: none"> Optimize performance Improve reliability and recoverability Migration from on-premises Enhance security Staffed by a Tech champ specialized in top workloads 	

5	App Consultants	<ul style="list-style-type: none"> · App consultants will help design, architect, migrate or grow application(s) · Bring proven practices and design principles to enable the successful deployment · Both delivered by a CSP Engineer <p>Third-Party Software Support:</p> <ul style="list-style-type: none"> ● Interoperability and configuration guidance and troubleshooting 	
6	Technical webinars	<ul style="list-style-type: none"> · Exclusive webinars to be conducted for CIL · Experts present and demonstrate on a current topic · Time allocated for live Q&A · Delivered monthly and live · Available on-demand 	

4.01 Specifications for Cloud Resources

S.No	Service Category	Configuration/Description	CSP Service Specifications	Unit of Measurement
A.1	Compute Services on-demand	Linux with enterprise support	Linux VM 4vCPU 16GB RAM 200GB SSD	Hourly
A.2		Window Server with Bundled License	Windows VM 4vCPU 8GB RAM	Hourly
A.3		Virtual Machine for Training Models (Including Deep Learning),25hours	Linux VM 32 vCPU 256GB RAM	Hourly

A.4	Storage Services	Permanent non-ephemeral Block storage (Solid State Drive designed to offer minimum 2000 IOPS to a maximum of 3,000 and provide up to 125 MB/s of throughput per volume)	300 GB per VM	no. of disk of size 300 GB each per month
A.5		Low Cost Archival Storage	GB per Month	GB per month
A.6		Object Storage with Redundancy in same datacenter/region with three redundant copies	1 TB	per GB per month
A.7	Network Services	Load Balancers having 5 rules evaluating for every request with data being processed upto 1TB/month and 1/MN request/month	20 Load balancer unit for Layer 7 load balancing	Load Balancer/ month
A.8		VPN Connectivity as Site-to-Site VPN	Site-to-site VPN connection for 24x7x4 hours every month	No of hours per month
A.9		Data Transfer Egress and Ingress from Compute & database directly to internet	1 TB dataout	per GB per month
A.10		Static IPv4 address	Associated with running instance	Per running instance
A.11		Managed Network out gateway for secure internet access	1 count of Managed NAT service with capacity of 1000 GB data per month	Nat gateway/month
A.12		Content Delivery Network (CDN)	per TB egress / data transfer out over CDN, with more than 3 pop locations, with one PoP location present in Kolkata	Monthly
A.13	Security Services	Firewall With Access Control(IP-PORT Based)	Setting up inbound and outbound rule based on ip address and port basic. For 5 VPCs having 4 subnet each having 10 rules)	Per Subnet /Per Month

A.14		Dedicated FIPS 140-2: level 3 cloud managed self-serve provisioning HSM. Proposed HSM should be a managed service of same cloud service provider for ease of integrations, manageability and deeper integrations with rest of the services. Should be able to provide availability of HSM within 1 hour, in case of any failure of HSM device.	HSM device with HA	No of HSM device unit per month
A.15		WAF Firewall	10 WAF with 10 rules each having 10000 hits per month	Monthly
A.16		Basic DDoS protection for managed services endpoints	Per resource Per Month	Monthly
A.17		Data Encryption in-transit and at Rest	per GB of data encrypted with AES-256 or equivalent standard	per GB per month
A.18		Patch Management	per-instance per month	Monthly
A.19		Managed network firewall / IPS	hourly rate for each firewall endpoint, traffic processed in GB/Hour	Monthly
A.20		Managed threat detection service	per events analysed / per GB logs analysed	Monthly
A.21	Logging & Monitoring: Alerts	Monitoring and observability service, with data and actionable insights to monitor applications, respond to system-wide performance changes, optimize resource utilization, and a unified view of operational health and notifications	per Metric and event captured	Monthly
A.22	Logging & Monitoring: Log capture	Centralized Logging	per GB	Monthly
X.1	Managed Elastic Search	4(Four) VCPU, x86 processor, 16GB RAM, 100 GB SSD, Managed Service	4(Four) VCPU, x86 processor, 16GB RAM, 100 GB SSD, Managed Service	Hourly

X.2	Fully managed machine learning service with natural language processing (NLP) capabilities to find insights and relationships in text	Number of text documents to be analyzed Average number of characters in each text document to be analyzed		Per Unit
X.3	Managed machine learning service to annotate the data of various types and various annotations.	Number of reviewed objects per month		Price per reviewed object
X.4	Fully managed machine learning service that automatically extracts text and data from scanned documents	Number of pages processed		
X.5	Chatbot Service	10,000 transactions per month Across Web, Mobile, IVR		
X.6	Data Forecasting	Number of Generated forecasts, 20 GB of data , 50 training hours per month		
X.7	Image Recognition/ computer vision	Facial recognition services with identification and storage for 10000 faces/10000 transactions per day		Per month
X.8	Stream video from connected devices for analytics, machine learning, playback and	Data Ingested into Video Streams service (per GB data ingested) - 50,000 MB per day Data Consumed from Video Streams service (per GB data egressed) - 1,500 MB per day Data Stored in Video Streams service (per GB-Month data stored) - 50,000 MB/day for 14 days		Per month

	other processing`			
X.9	Fully managed IoT Device Management service to track, monitor and manage connected	Registered devices (Device Registry)	Billed separately for the number of devices registered , number of remote actions (e.g. a firmware update) sent to devices, and the number of index updates and queries for Fleet Index.	Per month
X.10	Fully managed IoT gateway service to interact and communicate with multiple of devices	Billed separately for Connectivity, Messaging, Device Shadow usage (device state storage), Registry usage (device metadata storage), and Rules Engine usage (message transformation and routing)	Billed separately for Connectivity, Messaging, Device Shadow usage (device state storage), Registry usage (device metadata storage), and Rules Engine usage (message transformation and routing)	Per month
X.11	Fully managed service and edge solution to allow running containers on device, run ML inference on device and to connect with cloud	No of Devices connecting with cloud		
X.12	Language Understanding	No. of Transactions (Text = 500 characters / Speech = 15 sec)		
X.13	Video on Demand - HD Output	Minutes of Input		
X.14	Stored Video Analysis with content Moderation	Minutes of videos stored - 10000 min /month Minutes of video processed with content moderation - 5000 min/month		Per month
X.15	Fully managed message queues	Number of queue requests		Per Month

X.16	Fully managed pub/sub messaging, SMS, email, and mobile push notifications	Number of notifications/requests per month		Per Month
X.17	Application Performance monitoring			Per GB data stored
X.25	Anti-Virus with End point protection - Gartner MQ Leader	Anti-Virus with End point protection - Gartner MQ Leader		
B.1	Managed Database services: On Demand	Cloud Platform Managed Database - MySQL with Enterprise Support	8 vCPU 32 GB instances with 500GB of database storage deployed with High Availability	Hourly
B.2		Cloud Platform Managed Database for PostgreSQL with PostgreSQL enterprise support	4 vCPU 16 GB instances with 200GB of database storage deployed with High Availability with cloud platform managed PostgreSQL.	Hourly
B.3	Managed Database services: For 1 year Committed Usage	Cloud Platform Managed Database - MySQL with Enterprise Support/ License Included	8 vCPU 32 GB instances with 500GB of database storage deployed with High Availability	Hourly
B.4		Cloud Platform Managed Database for PostgreSQL with PostgreSQL enterprise support	8 vCPU 32 GB instances with 500GB of database storage deployed with High Availability with cloud platform managed PostgreSQL.	Hourly
B.5	Managed Database services: For 3 year	Cloud Platform Managed Database - MySQL with Enterprise Support/ License Included	8 vCPU 32 GB instances with 500GB of database storage deployed with High Availability	Hourly

B.6	Committed Usage	Cloud Platform Managed Database for PostgreSQL with PostgreSQL enterprise support	8 vCPU 32 GB instances with 500GB of database storage deployed with High Availability with cloud platform managed PostgreSQL.	Hourly
B.7	Mangaged Data Base NoSQL services: On-Demand	JSON-based Key-value store (Fully Managed)	Autoscaling key-value store with average attribute size of 4kb assuming 300000 reads and 300000 writes every month with total dataset size of 500GB with peak concurrency of 5000 transactions per second.	Monthly
B.8	Mangaged Data Base NoSQL services: For 1 year committed usage	JSON-based Key-value store (Fully Managed)	Autoscaling key-value store with average attribute size of 4kb assuming 300000 reads and 300000 writes every month with total dataset size of 500GB with peak concurrency of 5000 transactions per second.	Monthly
B.9	Mangaged Data Base NoSQL services: For 3 year committed usage	JSON-based Key-value store (Fully Managed)	Autoscaling key-value store with average attribute size of 4kb assuming 300000 reads and 300000 writes every month with total dataset size of 500GB with peak concurrency of 5000 transactions per second.	Monthly
B.10	API Management	Cloud Platform Managed API Gateway	Supporting throughput of 10000 requests per second and ensuring at least 99.95% monthly up time SLA	Per Million REST API calls

B.11	Serverless Compute	Managed function as a service	1 Million Executions for 2000ms seconds with 512MB of allocated memory	Monthly
B.12	Managed Container Orchestration	Managed Docker Container Orchestration Platform	Cloud Platform managed container instances running for 730 hours monthly	Monthly
B.15	Developer Tools	DevOps CI/CD Pipeline	5 active pipeline with 100 minutes of jobs per pipeline per month with 4 core build machine.	Monthly
B.16		Fully managed container registry	Per GB	Per GB / month
B.17		Highly scalable, managed source control service	5 users with 10GB storage each	Monthly
C.1	Managed Hadoop Cluster (open source frameworks including Spark, Flink, Hbase, Hive, Presto, Zookeeper)	1 x Master Node	2 vCPU and 16 GB RAM, running RHEL or CSP supported Linux	Hourly
C.2		4 x Data Nodes	4 vCPU and 16 GB RAM, 500 GB HDFS Storage running RHEL or CSP supported Linux	Hourly
C.3		2 x Task Nodes	4 vCPU and 16 GB RAM, running RHEL or CSP supported Linux	Hourly
C.4		HDFS Storage	1 TB of managed HDFS storage per month	per TB per Month
C.5	Data warehouse	Data Warehouse supporting independently scalable compute and storage.	2 TB Data Storage with processing unit of having 12vcpu, with minimum of 96GB RAM.Datawarehouse should be in-memory and support compression upto 70% for better performance.	Hourly

C.6	BI and Data Visualization	Enterprise Wide, 500+ Users Approximately 100 end users, 10 developers with capacity of 1-50 visualization renders per day		
C.7	Collect streaming data for real-time analytics	Number of records/duration, Average record size, Data retention period		
C.8	ETL, fully managed	ETL platform should be able to support scheduling of jobs internally as well as provide support for workflow orchestration using Apache Airflow or other open-source options supported by the CSP	ETL job supporting 4 vCPU and 16 GB RAM, running per hour, (considering 100 hours per month)	Hourly

Payment and Additional Cloud Services:

Implementation of Corporate Website based on Technical Scope

Payment Schedule for one time implementation cost for deploying Corporate Website

Item	Description	Payment %
1	Implementation of architecture using ansible according to technical details given in scope of work with documentation	50%
2	Penetration testing of architecture and required changes Efficiency Audit, GO LIVE and Stabilization	30%
3	Knowledge Transfer after Go Live	20%

Usage charges of Cloud shall be paid quarterly after adjustments based on the SLA Report and the appropriate penalties

Components of the quarterly bill other than cloud resources

1. Managed Services Cost(As percentage of Cloud Resource Cost)
2. On-site Resource Cost
3. CSP Business Support
4. Exit Management
5. Marketplace Items

Additional resources(Cloud Native Services) utilized beyond the rates discovered during Bidding shall be utilized at a discount against the List price on the CSP Website.

The Discount % will be calculated based on the overall cost provided by bidders and the Total of list Price

CIL would be free to opt for any service or configuration of service in the host of offerings of the CSP (Cloud Service Provider) at the same rate of discount.

For any additional services (not included as part of BoQ), CIL will utilize the published price available on the public portal of CSP and apply same level of "Discount"

5.0 EOI Submission Model

CSP & MSP should submit the offer in soft copy

- (a) Expression of Interest Letter
- (b) Technical offer with terms and conditions
 - a. CSP & MSP should submit a letter explicitly mentioning their expression of interest in participating in the project duly signed with office stamp.
 - b. Technical offer should cover
 - i. Architecture, deployment, interface with all components, data flow diagram among various components (if any), data communication, existing data migration, installation for offered solution.
 - ii. Supporting documents qualifying CSP / MSP and Solution Provider.

- iii. CSPs / MSPs should submit their compliance (Yes/No) with each of the specification in above section 4.0 in the respective column. Any special remark may be provided. If better specification is provided then corresponding documentary proof should be attached.
- iv. CSP / MSP designated personnel should put signature with stamp on each page.

5. General Eligibility conditions and Instructions to Prospective CSPs /MSPs

5.1 Procedure for submission for EoI

The EoI shall be submitted containing the response in soft copy through <https://coalindiatenders.nic.in> and also at **Email: krakshit.cil@coalindia.in**

5.2 Availability of EoI document

The EoI document can be downloaded from the Coal India Web Portal i.e. www.coalindia.in or <https://coalindiatenders.nic.in>. Prospective EoI participants are requested to please contact the following address for any queries related to EoI document:

Email krakshit.cil@coalindia.in or pandey.arun@coalindia.in

6. Submission of Eol response

6.1 Eol Response format

The Prospective CSPs / MSPs should submit response to Eol with information mentioned in 5.0

6.2 Schedule of events

The Eol Participants are requested to note that dates mentioned in the schedule of events Coal India Ltd. Kolkata reserves rights to modify these dates at any time.

S. No.	Event	Timeline
1.	Publication of Expression of Interest (Eol)	11.10.2021
4.	Last Date and time for Submission of Eol response	25-10-2021 by 2.00 PM
5.	Date and time of opening of Eol response	26-10-2021 at 3.00 PM
6.	Discussion with the Prospective CSP	03-11-2021 and 04-11-2021 at 11.00 am

6.3 Clarifications

If deemed necessary, Coal India may seek clarifications on any aspect from the participating CSPs & MSPs. Coal India will ask the EoI Participants to make a presentation for the purpose of clarification of the tender. All expenses for this purpose, as also for the preparation of documents and other meetings, will be borne by the prospective CSPs & MSPs.

6.4 Presentation of solution

The detail and in depth presentation of the solution proposed in EoI will be done as such the prospective bidder should provide an extensive solution understanding of the project. The presentation should contain all the points mentioned in the proposed solution .

The presentations may be used in the EoI to select the best of available solution(s) for the Coal India Ltd. project.

6.5 The information submitted in the response to the EoI may be subjected to public release (As per RTI norms). CSPs responding to this notice assume the risk of public disclosure if confidential information is included.

The EoI does not constitute a commitment to offer a Contract or prospective contract. CIL shall not be liable for any cost incurred by any potential CSP/MSP in preparation and submission of information in response to this EOI.