Deploy WordPress with Amazon RDS

PROJECT PROPOSAL

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TechPledge Consulting Services Pvt Ltd

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Version: 1.0
Department: Architect Department
Delivery: End of Month

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1. The Project Summary

Proposed Project Sponsor:	A member of TPCS
Proposed Project Board:	TechPledge Architect TechPledge Consultant TPCS IT Head TPCS IT Team
Proposed Project Manager:	Mr. Project Manager
Target start date:	Next Week
Target completion date:	Enter any fixed milestones or a fixed end date which should not slip (if any)
Outline business case:	
Background & Rationale	TPCS an Renowned Company based out of USA approached TechPledge Consulting regarding Setting up the WordPress Site to run a blog on Amazon aws. WordPress is a highly popular content management system (CMS) that is used for over 30% of all sites on the internet. It is most commonly used for blogs but can also be used for running e-commerce sites, message boards, and many other popular use cases. WordPress requires a MySQL database to store its data. Since the TPCS had limited experience in setting up the WordPress site on AWS. The TPCS engaged with TechPledge Consulting for both technical guidance and business support for the configuration.
Objectives	• Automated backup and recovery so that you won't lose data in the event of an accident; • Regular updates and patches, keeping your database secure and performant; • Easy installation with smart default parameters.

	• Minimize down-time with any service outages to be managed out-of-hours of the Production service. • Run the current services in Amazon AWS for the same cost or less than on-prem
Business Focus	• Understand the current business environment and economics. • Symbiosis between business and technical solutions • Understand the as-is architecture and constraints • Gather detailed as-is usage data
Options	**Option variations** **Baseline options:** • Stay on-premise option • Use Amazon AWS Cloud Capacity focused variations to consider in the Amazon AWS options (some can be combined as needed): • Database maintenance for your WordPress site is critical. Your database instance holds all of your important data for your WordPress site. If the database goes down, your website may go down with it, and you could even lose your data. • Database maintenance can also be difficult, and database administrators have years of specialized experience. When setting up a WordPress site, you want to stay focused on designing your page and generating your content, not worrying about database performance and backups. • Amazon RDS for MySQL helps with both of these problems. Amazon RDS for MySQL is a managed database offering from AWS. With Amazon RDS for MySQL, you get: • Tracking available capacity to actual demand in pseudo real-time, with a small buffer. • Pre-loading capacity for known peak cycles (e.g. start of business day logins, end of month batch run, etc.)

	• Consolidation of SQL hosts Solution focused variations in the Amazon AWS options (suitability depends on the applications used and will likely have architecture impact): • An Amazon EC2 instance to install and host the WordPress application; • An Amazon RDS for MySQL database to store your WordPress data.
Benefits	We have found that running Amazon AWS 24x7 is typically more expensive on average across the entire datacenter than the equivalent on-premise deployment, but factoring in actual utilization makes it cheaper. This is because Amazon AWS is more agile and can scale much quicker to changes in demand, and therefore can be deployed more efficiently (i.e. lower capacity previsioned for the same output performance) than the equivalent on-premise deployment. In particular, peaky and unpredictable workloads are a sweet-spot for Amazon AWS. In fact, any workload with large variations between the average and peak performance plays to Amazon AWS's pay-per-use strengths as you only pay for the capacity provided at a point in time. However, scaling Amazon AWS capacity up or down is not instantaneous and can take a few minutes depending on the application running, and where capacity requirements increase substantially in a short period then pre-loading nodes is a good idea, all of which needs to be factored into the financial model.
Outline Costs:	For the **TPCS**, more than half of their on-premise costs were due to networking and storage due to over-engineered network architecture and expensive SAN storage, which is atypical. From an environment viewpoint, 40% of their costs were due to pre-Production environments which were running 24x7.

Then from a functional viewpoint, **30%** of their costs were driven by SQL. Therefore, analyzing the costs through different lenses helped to identify potential optimization solutions.

Amazon AWS costs are driven by the CPU/RAM needed, with storage and networking costs tending to be a much smaller component of the total costs. However, interestingly this is typically different with on-premise costs where networking and storage (if SAN based) can be a much bigger cost driver.

See the Cost Comparison Below

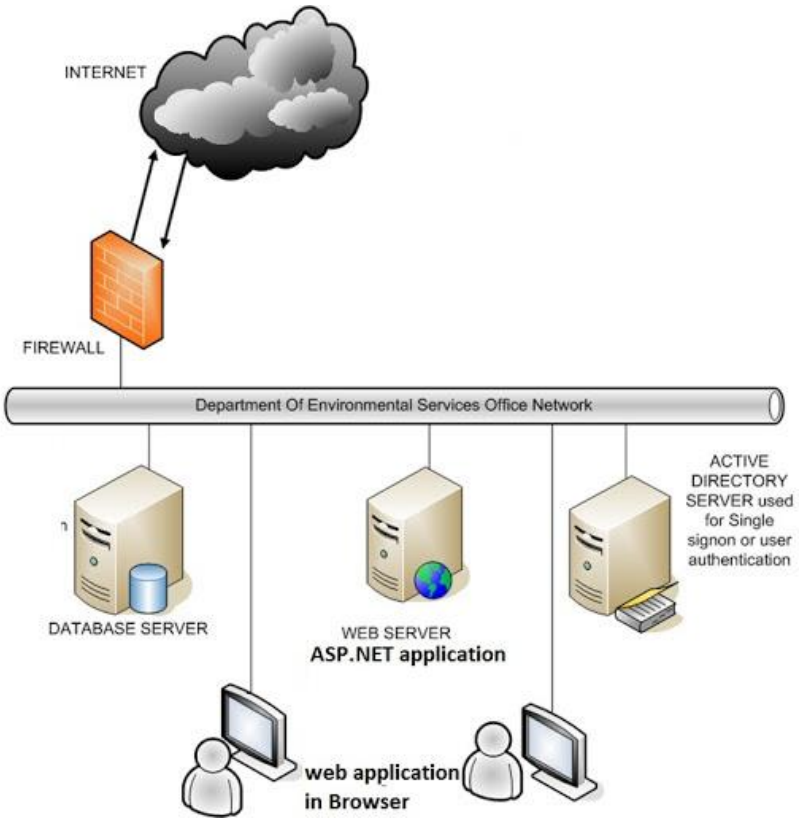
Financial Model	Anazon AWS model	On-premise model
Capital costs for hardware	For Anazon AWS you will have zero hardware capex costs, which can be important factor for the companyâ€™s CFO.	Capex for upfront hardware
	Resulting cash flow position will be improved.	Capex budget for replacement hardware due to failures (budget 2-5% annually)
	Hardware replacement due to failure already included.	Capex budget for hardware refresh (every 3-5 years depending on company strategy)
	Hardware refreshes already included.	Cost of capital (interest incurred on upfront capex)
Hardware support/ maintenance	Included	Hardware support resource costs must be added
		3rd-party infrastructure (e.g. SAN) maintenance contracts costs must be added
Redundancy	PAYG means cold standby nodes are minimal cost (no compute costs)	For disaster recovery, need to account for duplicate reserved infrastructure.
Utilities	Included within Anazon AWS datacenter network	Power costs must be added
		ISP bandwidth costs must be added (consider whether more or less internet bandwidth needed)
Security	Baseline included	Physical security costs must be added (upkeep of alarms, etc.)
		Manpower costs (guards, caretakers, Network Architects, etc.) must be added
		Costs for DDoS, intrusion protection, etc. must be added
Real-estate	Included	Cost of datacenter premise must be added (rent, upkeep, etc.)
		Real-estate manpower costs must be added

Key Deliverables:

- 24/7 running blog services.
- An Amazon EC2 instance to install and host the WordPress application;
- An Amazon RDS for MySQL database to store your WordPress data.

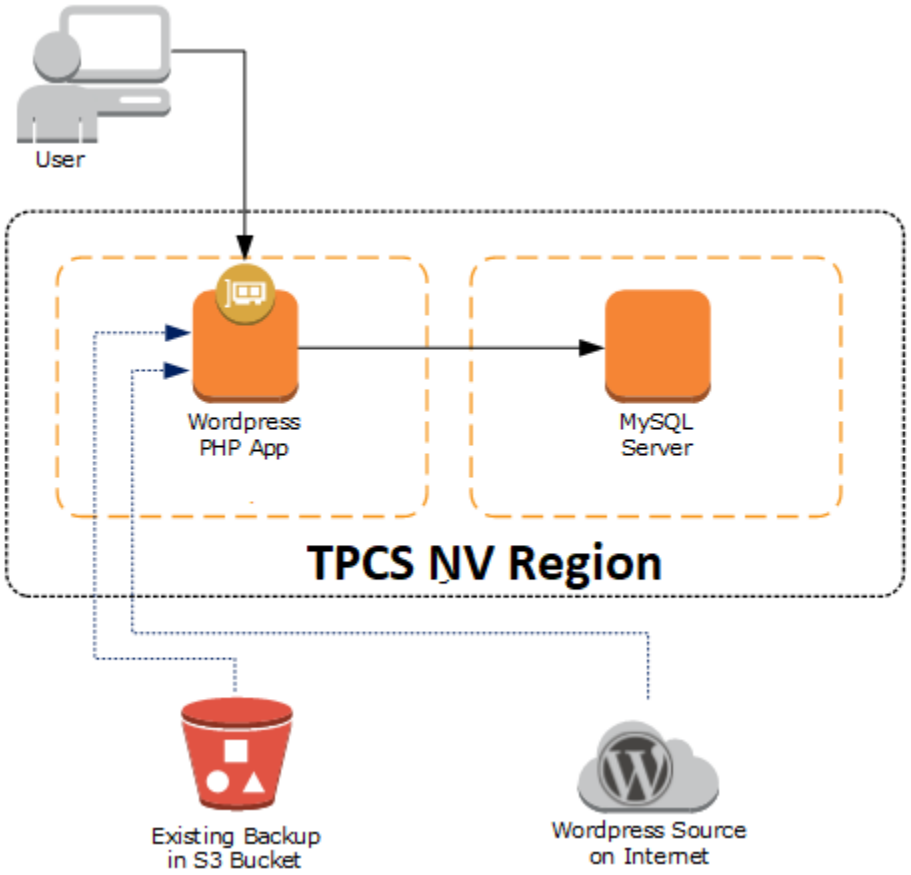
Key Stakeholders

- IT Infra Team
- Customer Cloud Team
- Customer Security Team
- Customer Business Team

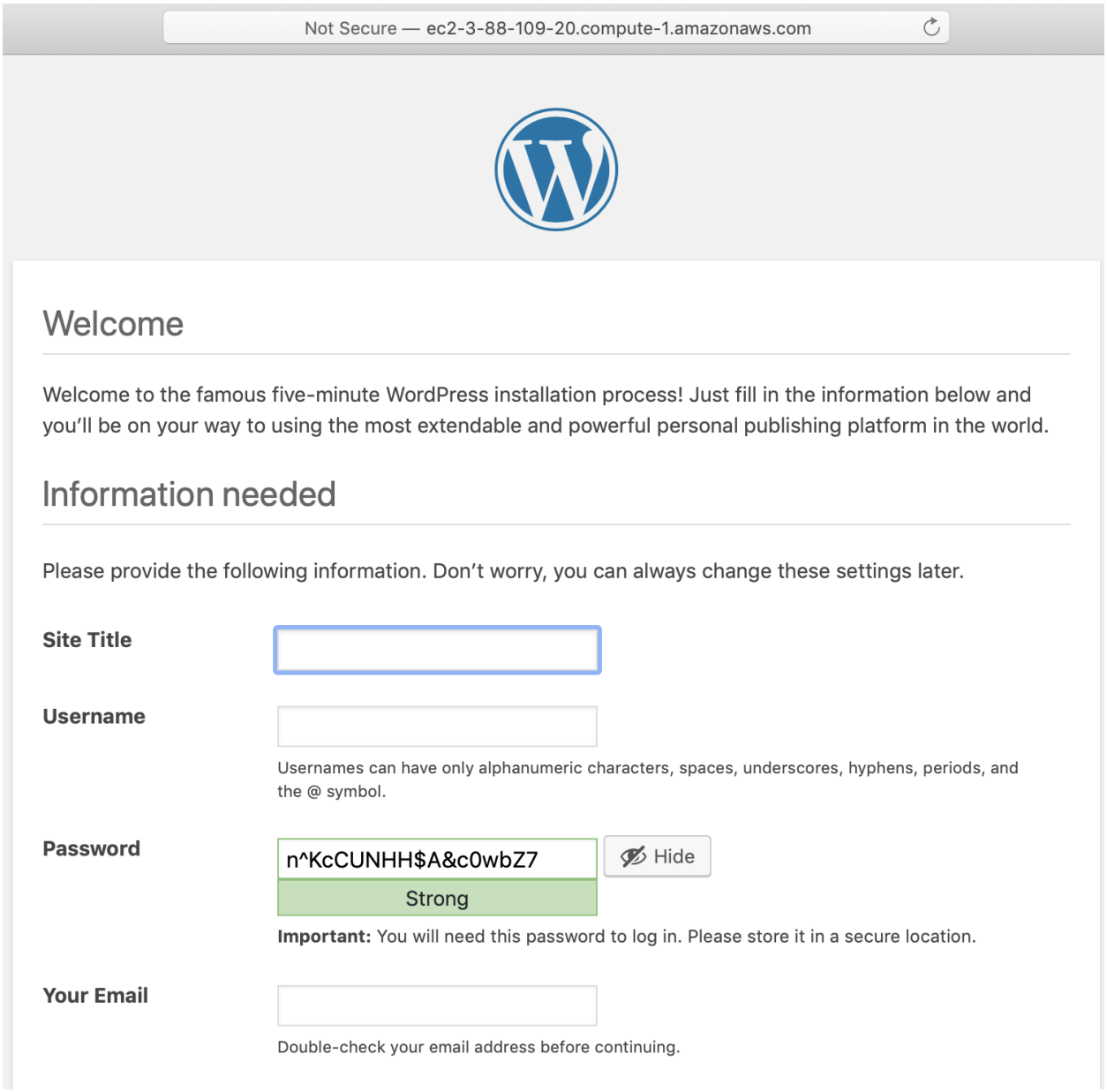
Key Resources	• Engineer 1 • DBA • Architect • PM.
Considerations	
IT environment	• Active Directory • VMware EXI/Hyper-V • Microsoft SQL 2016 • Windows Server with IIS 
Other considerations	• The agreed high-level solution • Agreed goals and KPIs for the partnership • The financial model headlines, e.g. MSP consumption/revenue expectations over time • Financial gives and gets across TechPledge Consulting and the TPCS (including resource commitments) • Technical gives and gets across TechPledge Consulting and the TPCS • High-level timeline for the change program, showing work-streams

	• Protection of TechPledge and/or Partner IP used during the program • Ownership of any new IP resulting from the program • Specific roles and responsibilities between TechPledge Consulting and the TPCS • Governance approach including Steering Committee membership and communication cadence • Escalation path and agreed criteria for escalation • Agreement from the TPCS to create a Case Study.

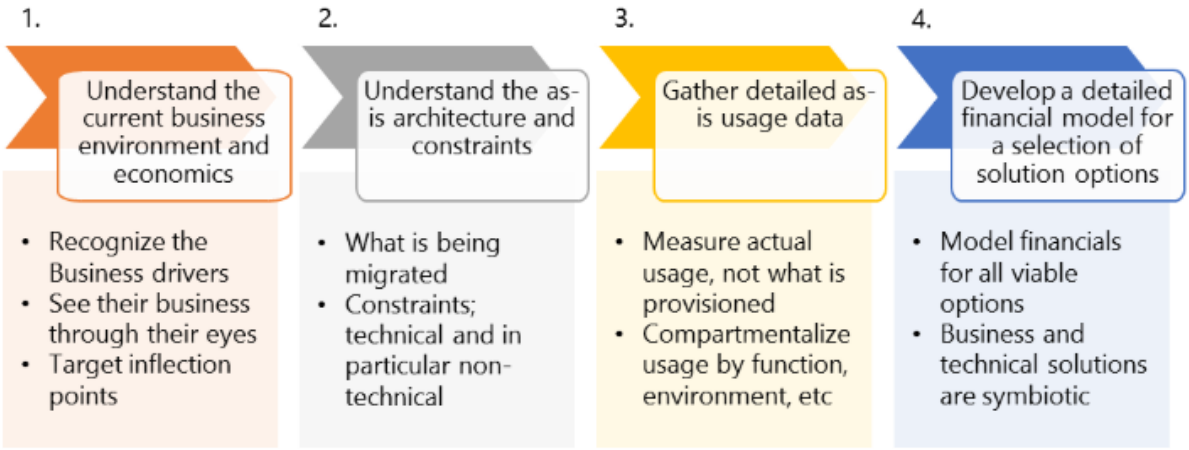
2. The Proposed Solutions (Logical Architecture)



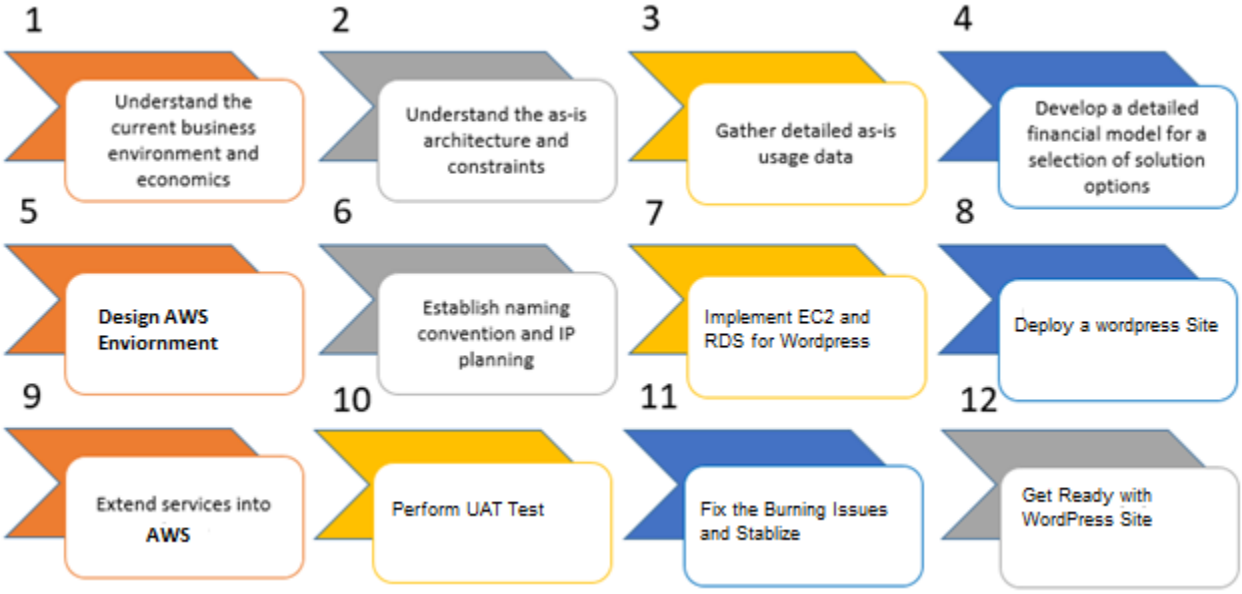
3. The Proposed Solutions (WordPress Site View)



4. Our Design Approach



5. Our Deployment Approach:

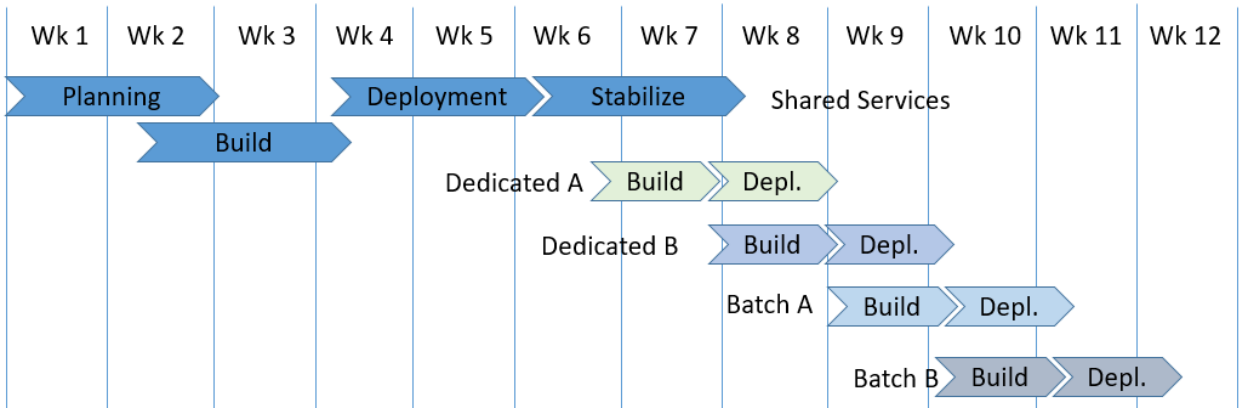


Deployment Timelines and Milestones

Milestone	Description	Duration	Start date	End date
M1	Deployment plan approved			
M2	Built plan approved			
M3	Customer provisioned within License			
M4	ut			
M5	Environment test plan completed			T - 1 week
M6	Start deployment of EC2 and WordPress			T

M7	Test The deployment			T + 4 hours
M8	End the deployment			T + 1 week
M9	Customer go Live			T + 2 weeks
M10	Completion The Project			

High Level Project Approach



Planning Phase

During the Planning phase, the team prepares the functional specification, works through the design and prepares design documents. Following the completion of this phase, the team moves forward to begin construction of the solution in the Build phase

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- Build initial Architectural blueprint
- Build initial deployment blueprints and planning for AWS Sertup.
- Setup initial project planning, team structure, tracking, and risk management
- Validate and finalize Architectural blueprint
- Validate and finalise Configuration blueprints
- Establish project organization and allocate resources
- Identify 3rd party dependencies and engage these 3rd parties.
- Define UAT procedure verification criteria
- Define platform acceptance tests on core components to support coexistence

Build Phase

During the Build phase, the team builds the core infrastructure and prepares the procedures and tools required for deployment of WordPress Site. Completion of this phase marks the transition to the Deployment phase.

The following are typical activities during this phase:

- Preparation of procedures to build core platform building blocks
- Execution of functional tests as defined in UAT procedure verification criteria
- Execution of functional tests as determined in the definition of platform acceptance test on core components to support coexistence
- Validation and finalization of procedures to build core platform building blocks
- Build platform core components within Amazon AWS

Deploy Phase

During the Deploy phase the actual Deployment will take place, commencing with the shared services environment followed by the various dedicated customer environments.

The following typical activities could be identified:

- Setup the New Tenants in Amazon AWS for Customer
- Configure Regions
- Create IAM roles
- Create a MySQL database for your WordPress site
- Configure connectivity and network configuration for RDS Instance
- Create an EC2 Instance
- Allow your EC2 instance to access your RDS database
- Create a database user for your WordPress application and give it permission to access the “wordpress” database
- Installing the Apache web server on EC2
- download the WordPress software and set up the configuration on EC2
- Deploying WordPress
- Explore your new web site

Stabilize Phase

During the Stabilize phase, the team focuses on resolving issues and bugs.

The following typical activities could be identified:

- Stabilize the environment and identify any issues. These issues will be triaged, prioritized and resolved.

6. Roles and Responsibilities

Role	Responsibilities
Program Manager	Makes key project decisions, assists in escalating unresolved issues to the Executive Steering Committee, and clears project roadblocks from a customer perspective
Project Manager	Primary point of contact for team Responsible for managing and coordinating the overall project Responsible for resource allocation, risk management, project priorities, and communication to executive management Manages day-to-day activities of the project Coordinates the activities of the team to deliver deliverables according to the project schedule
Technical Leader	Keeps technical oversight and responsible for long term technical alignment Advises program manager on technical decisions Advises program manager on deliverables sign off Primary technical point of contact for the team that is responsible for technical architecture and code deliverables Responsible for overall architecture and technical decisions as well as technical success. First level of quality control Coordinates technical status meetings Oversees all technical delivery streams from a technical perspective
Deployment Lead(s)	Responsible for end to end deployment Responsible for identification of dependencies Tenant/customer contact Performs and lead actual Deployment, if needed supported by SMEs

Subject Matter Expert(s)	Specific component related technical expertise Responsible for implementation of any infrastructure and application aspects required to support the transformation within the current local environment. Responsible for the build of target environment(s)Responsible for implementation of Deployment scripts and procedures