Data Center Resiliency

Overview

Data Centers have the lowest tolerance for risk and therefore the greatest demand for resiliency than nearly any other type of facility. Whether for primary production, test & development or alternate site backup purposes, care should be taken to select sites that are sufficiently risk-free and protected against things like utility disruption, a local incident or a larger scale disaster. Alternate sites should be built and/or located to eliminate or mitigate risks that are in-common with the primary site, but close enough for ease of relocation. If it is a vendor/third-party site, the best fee schedule should be negotiated up front to meet business requirements, both present and projected. If it is an internal site, the infrastructure should be prepared to support the current and projected requirements and there needs to be clear ownership of responsibilities data center infrastructure (UPS, Generators, and CRACs).

A suitable alternate/back-up site can be validated by the following activities:

- Documentation of recovery requirements and the strategy to meet those requirements so that different solutions can be analyzed
- Comparison of the facility features (data center, work area, storage) provided at the alternate site against the strategy requirements
- Assessment of the data center infrastructure to confirm concurrent maintainability without costly service downtimes, along with other resiliency requirements for the facility
- Contract reviews with third party vendor selection. Examine areas such as the procedures for invoking the declaration to occupy the site, the time required between invoking and when access is actually permitted
- If the site is an internal location, a thorough understanding of who owns which responsibilities (facilities versus IT) and a review of the maintenance and test procedures required to keep the site in a state of readiness

Incorporation of an alternate/back-up site is a cornerstone of your resiliency strategy. In the event of a disaster impacting production, business will continue and market share will be maintained.

Network: Data and Voice

Your networks carrying data and voice are the core pieces of infrastructure which have zero tolerance for downtime. In this stage, critical single points of failure (SPOFs) need to be identified and mitigated. Investments to remove critical data or voice single points of failure are highly recommended.

The Eagle Rock Solution to keeping your network resilient:

- Having proper documentation is key
- Speak with the vendor's engineers to level set on where any potential SPOFs may exist off your property in the carrier network
- Go to your provider and get the CO detail and metro area drawing

Cloud and Colocations

When your current data center does not meet resiliency requirements for power and cooling or has other infrastructure risks, then Colocation or "Data Center as a Service" (DCaaS) is a great option to explore. The Colocation provides the data center infrastructure (power, cooling, raised floor). Many consider Colocation to be the first step towards exploiting the benefits of the Cloud.

Enterprises are also moving applications to the cloud to shift IT functions and corporate data off their network and away from their immediate responsibility. In addition to colocation options, there are three key service options that all start with browser-based access.

- **Software as a Service (SaaS)** - is the new way to get vendor hosted applications. SaaS vendors take care of it all from application layer thru to the network layer and provide a service very similar to traditional ASP vendors.
- **Infrastructure as a Service (IaaS)** - is where the vendor provides virtualization and manages all of the server hardware, storage and network and the client deals with the OS, server software and application layers.
- **Platform as a Service (PaaS)** - is for developing applications in the cloud where you buy (rent) computer, storage and network services. Compared to SaaS where the vendor does it all, here the client manages/controls the application layer.

The Eagle Rock Solution to Cloud:

The Cloud may enable positive change in the application landscape in an organization. It is important to get in front of this wave, learn what "Cloud" means to business options and help the organization to understand the benefits it may bring to the Risk Profile.

Eagle Rock performs current state assessments on cloud use/strategy for organizations who are trying to develop an enterprise strategy for deploying cloud applications/services. This assessment typically will start with an organization's "use scenarios."

Identify various "use scenarios" of cloud services appropriate to your organization. For each use scenario:

1. Evaluate potential of "self-service" provisioning for business units
2. Identify the financial and operational impact of implementing each cloud service
3. Determine impact to delivery/response times
4. Identify impact on Service Levels that are likely to result
5. Determine the high level impact to release management
6. Identify any security concerns

For the best use case opportunities for cloud, identify gaps in technology or operating model that need be addressed.

The Eagle Rock Solution for Colocations:

Colocation data centers are common throughout the world, are available in many different varieties and can be a great fit for many organizations. Eagle Rock can help from the initial assessment and strategy

development, all the way to site selection. Eagle Rock often manages one of the most critical steps in a colocation selection, the RFP process. We know the market and can help identify a short list of viable potential partners that meet important criteria for a firm to consider. Eagle Rock conducts the review, organizes the information gaps and leads the collaborative effort with the client team so that recommendations can be made and decision factors formulated for business negotiations to be successful.

Vendor Evaluations and Requests for Proposal (RFP)

There are times when it's a necessity to go outside the "four walls" of the company or switch current vendors for various services, tools or solutions to best support the business agenda and programs. Any such changes can be risky, time consuming, unfamiliar and a significant investment. A strong requirements document and proposal request (RFP) process will allow your team to concentrate on their day jobs while we guide you through the process. IT service providers should be selected on their ability to satisfy the full complement of requirements, acceptable risks, terms and fees, not just on a partial analysis on price when there is much more to consider. The bottom line is to diligently consider all aspects of the outsourced requirements before making a selection.

The Eagle Rock Solution to completing a vendor evaluations or request for proposal:

To perform an effective evaluation of service providers, do the following:

1. Create a list of the services and the scope of each service required
2. Develop a list of vendors that can deliver these services considering geographic, financial and technology factors
3. Develop the RFP template to be issued and the criteria sheet on which the vendors will be evaluated
4. Create the list of RFP participants and start the information exchange and non-disclosure NDA process
5. Launch the RFP with a defined schedule
6. Evaluate the responses of each of the potential providers
   a. Deep dive on the responses; Eagle Rock Vets, compiles and guides causing all key team members to be engaged
   b. Initial conference call with each vendor to make sure the team addresses any questions on the approach taken
   c. Complete the criteria matrix for each response and perform the financial analyses
7. Present a list of prioritized candidates who are capable of providing the desired service
8. Eagle Rock will make recommendations in a management presentation. Oftentimes, there is then a natural break in the process, often for business and finance decisions, and when you are ready to proceed we can also assist with negotiations