blueprism®

Software Robots - the Virtual Workforce

Blue Prism Cloud Deployment Datasheet

REFERENCE GUIDE

Version: 5.0.30

blueprism®

Contents

1. Introduction

1.1. Intended audience

This reference guide is intended for use by system architects and designers who are seeking to gain an understanding of the options and considerations for deploying a Blue Prism environment in the cloud.

1.2. About this document

The document provides an overview of the key considerations for a cloud based deployment of Blue Prism. It is intended as a high level overview of the common concepts and considerations and how they relate to the Blue Prism design. An understanding of the Blue Prism application architecture (as documented in the Infrastructure Reference guide and other documents) is expected. Further platform specific Reference Architecture is available separately.

2.   Blue Prism Cloud Deployments – Terms of Reference

The concepts and subject matter for Cloud are very broad and may cover many different patterns of deployment. This section outlines some of the common concepts involved in assessing a Cloud based deployment of Blue Prism and the pre-requisite considerations for determining the appropriate model and platform. Further specific documentation is available, where reference architecture is documented for a specific platform.

2.1.   Cloud Deployment Models

There are several common cloud deployment models that are referred to. These are briefly explained in the following table, along with some key points that would need to be considered for a Blue Prism design.

Cloud Model	Examples	High Level Considerations
Public Cloud – Refers to the provision of applications, platforms or storage over the internet.	AWS, Microsoft Azure, Google Cloud, Softlayer	• Consider the overall Cloud strategy. Selection of a cloud deployment pattern for Blue Prism is likely to need to align closely to this. • The limitations of shared hardware resources and facilities of the cloud platform should be taken into account.
Private Cloud – Refers to the deployment of an environment that has similar advantages to public cloud – eg elasticity, platform services) – but through a proprietary architecture that is dedicated to an organisation. Either within the organisations datacenter or increasingly, referring to the provision of dedicated components within a cloud provider's datacenter.	VMware, Rackspace, Softlayer, OVH	• The underlying virtualization and orchestration technology is likely to be the primary factor in determining suitability for a Blue Prism deployment
Infrastructure as a Service (IAAS) – Refers to the provision of infrastructure (compute / VMs) within a cloud environment, where the underlying hardware platform is supported by the vendor.	AWS, Microsoft Azure, Google Cloud, Softlayer	• The platform specific limitations around High Availability and Disaster Recovery should be carefully considered against the non-functional requirements. Offerings in this space vary between platforms and need to be compared against the generic requirements for the Blue Prism platform (as documented within the Infrastructure Reference Guide)
Platform as a Service (PAAS) – Refers to cloud deployment patterns where the underlying platform (eg Microsoft SQL) is supported by the cloud provider. Some limitations will exist around the flexibility of the service as a result.	AWS, Microsoft Azure, Google Cloud, Softlayer	• Suitability of Platform as a Service database patterns may be restricted by non- functional requirements, such as scalability, security and availability. • Blue Prism as an application in it's own right is not currently offered directly via PAAS platforms such as Azure and AWS marketplace.

Software as a Services (SAAS) – Refers to a delivery model where software is licensed and hosted on a subscription model (generally public cloud hosted).	Vendor dependant.	• Blue Prism does not directly provide a SAAS offering. Partners may choose to deliver this type of model. • Designing a SAAS deployment model is complex and will need to consider many aspects. These include – physical segregation, logical segregation (within the platform and software), security, cost vs simplicity, external network connectivity.
Hybrid – Generally refers to a scenario where a public cloud and on premise solution are combined to provide an overall architecture.	Various	• Support for a hybrid deployment of Blue Prism (eg Database and App server in the cloud, runtimes on premise) is not currently formally supported. Some workarounds may be discussed on an individual basis and formal support will be added soon.
Hosted Bare Metal – Some cloud providers offer the ability to provision and self manage an environment from OS and above. For example, an orchestrated build of a Hypervisor, such as VMware Vsphere.	Softlayer, Rackspace, OVH	• Some advantages may be gained in highly security conscious clients, where the management and security of the operating system and hypervisor layer must be contained.

3.   Common Design Considerations

The deployment of Blue Prism on a Cloud environment does not change the core requirements of the Blue Prism application. The Infrastructure Reference Guide has full details on the sizing and communication requirements of the application, however some commonly applicable points to consider when deploying in a cloud hosting environment will be:

3.1.   Network Connectivity

The primary consideration for assessing the suitability of deploying Blue Prism on cloud is the proximity and connectivity to the managed applications and between Blue Prism components. Consider that the Runtimes and Development Interactive Clients will need to have connectivity and sufficient bandwidth to automate target applications in external networks. The following should be assessed:

- The communication that takes place between Blue Prism components requires the ability to resolve the IP address of the target machine by name. The DNS and DHCP configuration within the cloud hosting environment should be understood before deployment.

- Location of the applications - are the applications in scope primarily cloud hosted, internet, or on premise hosted?

- Type of applications – are the applications to be automated web based or thick client? This will have an impact on bandwidth and performance requirements.

- Are the applications routable from the cloud network – this may well require some routing changes or Network Address Translation for the target applications
- What is the available connectivity - what connectivity is in place / will be in place between the cloud hosting network and the target network(s)?
- What is the available bandwidth – what is the total bandwidth required by the applications to be automated and is this within the parameters of available bandwidth?

3.1.1.   Application Management

The runtimes and development interactive clients will require the full stack of applications locally installed to automate their target processes (unless an additional application virtualization technology will be used to layer this on top). The mechanism for installing, licensing and maintaining these applications must be considered in determining whether a cloud hosting pattern is feasible. Some implications of considering a cloud deployment pattern are:

- How will applications be deployed, patched and scanned?
- Licensing of the applications – terms may change if moved to the cloud

3.1.2.   Orchestration and Scaling

The orchestration and auto-scaling of Blue Prism components must consider the following:

- Blue Prism licensing – Any scaling out of Runtimes must be within the licensed capacity of the Blue Prism environment
- Application stack – The scaling out of Runtimes or Interactive Clients for development will need to also consider the deployment of any managed application stacks
- Blue Prism configuration – The configuration of the Runtimes or Interactive Clients and connectivity to the appropriate application server will need to be considered in any orchestration scripts
- Database objects – A Blue Prism runtime or Interactive Client will create objects within the Blue Prism database on first connection. If scaling down or redeploying dynamically, these objects will need to be cleaned up.

3.1.3.   Hybrid Deployments

The deployment of a hybrid pattern (where the Blue Prism environment is deployed in the Cloud and Runtimes are deployed remotely) is not formally supported in versions that rely on .NET remoting, as it does not support Network Address Translation (NAT). Blue Prism will add support for this type of pattern in the future release that moves to using WCF. At this time, the reference architectures will be updated to reflect these supported patterns and any recommendations.

3.1.4.   Load Balancing

The use of load balancers within IAAS providers (such as Azure or AWS) is not supported in versions that rely on .NET remoting, for the same reasons as above (limitations of .NET remoting). The support for load balancing will be added alongside the support of WCF in version 6.0.