

Chapter 1 : Cloud Services - Deploy web apps & APIs | Microsoft Azure

The main difference between a web service and a web application is, that a web application is typically intended for human-to-computer interaction, whereas web services are typically intended for computer-to-computer interaction.

Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. February Learn how and when to remove this template message The general distinction between a dynamic web page of any kind and a "web application" is unclear. Web sites most likely to be referred to as "web applications" are those which have similar functionality to a desktop software application, or to a mobile app. HTML5 introduced explicit language support for making applications that are loaded as web pages, but can store data locally and continue to function while offline. Single-page applications are more application-like because they reject the more typical web paradigm of moving between distinct pages with different URLs. Single-page frameworks like Sencha Touch and AngularJS might be used to speed development of such a web app for a mobile platform. Mobile web application[edit] Further information: Multiple phone web-based application framework There are several ways of targeting mobile devices when making a web application: Responsive web design can be used to make a web application - whether a conventional website or a single-page application viewable on small screens and work well with touchscreens. Progressive Web Apps are web applications that load like regular web pages or websites but can offer the user functionality such as working offline, push notifications, and device hardware access traditionally available only to native mobile applications. Native apps or "mobile apps" run directly on a mobile device, just as a conventional software application runs directly on a desktop computer, without a web browser and potentially without the need for Internet connectivity ; these are typically written in Java for Android devices or Objective-C or Swift for iOS devices. Recently, frameworks like React Native , Flutter , Xamarin , and FuseTools allow the development of native apps for all platforms using languages other than each standard native language. Hybrid apps embed a mobile web site inside a native app, possibly using a hybrid framework like Apache Cordova and Ionic or Appcelerator Titanium. This allows development using web technologies and possibly directly copying code from an existing mobile web site while also retaining certain advantages of native apps e. This section needs additional citations for verification. February Learn how and when to remove this template message In earlier computing models like clientâ€”server, the processing load for the application was shared between code on the server and code installed on each client locally. An upgrade to the server-side code of the application would typically also require an upgrade to the client-side code installed on each user workstation, adding to the support cost and decreasing productivity. In addition, both the client and server components of the application were usually tightly bound to a particular computer architecture and operating system and porting them to others was often prohibitively expensive for all but the largest applications. Nowadays, native apps for mobile devices are also hobbled by some or all of the foregoing issues. In contrast, web applications use web documents written in a standard format such as HTML and JavaScript , which are supported by a variety of web browsers. Web applications can be considered as a specific variant of clientâ€”server software where the client software is downloaded to the client machine when visiting the relevant web page, using standard procedures such as HTTP. Client web software updates may happen each time the web page is visited. During the session, the web browser interprets and displays the pages, and acts as the universal client for any web application. In the early days of the Web , each individual web page was delivered to the client as a static document, but the sequence of pages could still provide an interactive experience, as user input was returned through web form elements embedded in the page markup. However, every significant change to the web page required a round trip back to the server to refresh the entire page. In , Netscape introduced a client-side scripting language called JavaScript allowing programmers to add some dynamic elements to the user interface that ran on the client side. In , Macromedia introduced Flash , a vector animation player that could be added to browsers as a plug-in to embed animations on the web pages. It allowed the use of a scripting language to program interactions on the client side with no need to communicate with the server. In , the "web application" concept was introduced in the Java language in the Servlet

Specification version 2. In , HTML5 was finalized, which provides graphic and multimedia capabilities without the need of client side plug-ins. HTML5 also enriched the semantic content of documents. These have significant importance in creating truly platform and browser independent rich web applications. Interface[edit] Through Java , JavaScript , DHTML , Flash , Silverlight and other technologies, application-specific methods such as drawing on the screen, playing audio, and access to the keyboard and mouse are all possible. Many services have worked to combine all of these into a more familiar interface that adopts the appearance of an operating system. General purpose techniques such as drag and drop are also supported by these technologies. Web developers often use client-side scripting to add functionality, especially to create an interactive experience that does not require page reloading. Recently, technologies have been developed to coordinate client-side scripting with server-side technologies such as ASP. Ajax , a web development technique using a combination of various technologies, is an example of technology which creates a more interactive experience. Structure[edit] Applications are usually broken into logical chunks called "tiers", where every tier is assigned a role. For more complex applications, a 3-tier solution may fall short, and it may be beneficial to use an n-tiered approach, where the greatest benefit is breaking the business logic, which resides on the application tier, into a more fine-grained model. This allows the underlying database to be replaced without making any change to the other tiers. This can be a "smart" client that performs all the work and queries a "dumb" server, or a "dumb" client that relies on a "smart" server. February Learn how and when to remove this template message An emerging strategy for application software companies is to provide web access to software previously distributed as local applications. Depending on the type of application, it may require the development of an entirely different browser-based interface, or merely adapting an existing application to use different presentation technology. These programs allow the user to pay a monthly or yearly fee for use of a software application without having to install it on a local hard drive. A company which follows this strategy is known as an application service provider ASP , and ASPs are currently receiving much attention in the software industry. Security breaches on these kinds of applications are a major concern because it can involve both enterprise information and private customer data. Protecting these assets is an important part of any web application and there are some key operational areas that must be included in the development process. Building security into the applications from the beginning can be more effective and less disruptive in the long run. Cloud Computing model web applications are software as a service SaaS. There are business applications provided as SaaS for enterprises for fixed or usage dependent fee. Other web applications are offered free of charge, often generating income from advertisements shown in web application interface. Web application development Writing web applications is often simplified by the use of web application frameworks such as Django , Ruby on Rails , and Symfony. These frameworks facilitate rapid application development by allowing a development team to focus on the parts of their application which are unique to their goals without having to resolve common development issues such as user management. The use of web application frameworks can often reduce the number of errors in a program, both by making the code simpler, and by allowing one team to concentrate on the framework while another focuses on a specified use case. In applications which are exposed to constant hacking attempts on the Internet, security-related problems can be caused by errors in the program. In addition, there is potential for the development of applications on Internet operating systems , although currently there are not many viable platforms that fit this model.

Chapter 2 : Java Web Services Tutorial: Improve App Communication And Flexibility

If you wanted to, you could make a web application look like web services and visa versa. The main difference would be internal development options based on the platform you are using. If, for example, you are using Visual Studio then adding a WCF Service Application will give you a project which is by default geared towards WCF.

Java Web Services Tutorial: Basically, a web service is a method of sending a message between two devices through a network. In practical terms, this translates to an application which outputs communication in a standardized format for other client applications to receive and act on. Web services have been adopted so quickly because they bring several important advantages: This article will detail both, but put a stronger focus on REST. One of the advantages of SOAP is that it supports multiple protocols, has built-in security and error handling, and is somewhat strictly regulated, which can lead to a higher level of standardization. However, SOAP is also fairly difficult to use and requires significant resources, which excludes it as an option on some embedded or mobile devices. By contrast, REST is lighter, faster, more flexible and, as such, easier to use. You can read more about the differences between the two architectural approaches here. Both styles consist of a set of annotations to be applied to your classes, based on which the XML files are generated. First, you need to create an interface or class with the proper annotations, which will declare the methods to be accessed by other applications: The SoapBinding annotation specifies the style of web service. A Document-style service is declared in a similar manner, replacing the SoapBinding annotation with: Document The difference between the two styles is in the way the XML files are generated. Finally, you need to add an implementation class for the service interface: You can also make use of methods annotated with PostConstruct and PreDestroy for lifecycle event callbacks. You can add the annotations directly to the class, and JAX-WS will implicitly define a service endpoint interface. Finally, to publish the web service, use the Endpoint class: One way to do this is by creating a Java project and importing the web service definitions from the web service WSDL document. After creating the project, open a command line and move to the source folder of the new project; then execute the command: Now, you can easily make use of the generated classes: In a few short years, REST has overtaken SOAP in popularity due to its ease of use, speed, flexibility, and similarity to core architecture choices that power the web itself. Since this is only a specification “meaning a set of interfaces and annotations” you also need to choose an implementation of the spec. To start working with the Jersey JAX-RS implementation, you need to add the jersey-server dependency to your project classpath. Using curl, you can add a new user: Then, we do a GET, retrieve all users and verify the response to check if it contains the new user we just created. Of course, to run the test, you first need to make sure the API is running on localhost first. To start using the library, you first need to install node. At the end, a number of new files will be created. A good way to start bootstrapping a Spring application is making use of Spring Boot: The example will be the same as the previous one “handing User resources” to better illustrate the differences and similarities between the two approaches: You can define the endpoint URL using the value attribute, or specify the media type consumed or produced by the service by using the consumes or produces attributes. The main purpose of HATEOAS is to decouple client and server functionality so that changes to the service do not break client functionality, and the service can evolve independently of clients. Simply put, in addition to the standard responses, a service implementing HATEOAS will also include links to provide the client with a set of available operations they can perform with the API. First, you need to add the spring-boot-starter-hateoas dependency: Once you expose that URI, you of course also have to define a method to handle that endpoint mapping as well: Notice how each endpoint in the application is individually documented; you can expand each section to find details about the endpoint and even interact with it right from the Swagger UI. And, of course, the upcoming first-class Spring support for reactive architectures promises to keep this momentum strong and to address some of the limitations of the HTTP protocol, leading to even more performant APIs.

Chapter 3 : Application server - Wikipedia

A web application is an application that is accessed through a web browser running on client's machine whereas a web service is a system of software that allows different machines to interact with each other through a network.

Web - World Wide Web Over the last couple of years, Web services have expanded to become more popular with application developers and for good reason. Web services technology represents an important way for businesses to communicate with each other and with clients as well. Instead, Web services share business logic, data and processes through a programmatic interface across a network. The applications interface with each other, not with the users. Developers can then add the Web service to a GUI such as a Web page or an executable program to offer specific functionality to users. For example, one purchase-and-ordering application could communicate to an inventory application that specific items need to be reordered. Because of this level of application integration, Web services have grown in popularity and are beginning to improve business processes. In fact, some even call Web services the next evolution of the Web. Web Services Technology Web services are built on several technologies that work in conjunction with emerging standards to ensure security and manageability, and to make certain that Web services can be combined to work independent of a vendor. It allows designers to create their own customized tags, enabling the definition, transmission, validation, and interpretation of data between applications and between organizations. Because it is based on program-to-program interactions as opposed to human-to-program interaction, it is important for Web service security to address topics such as access control, authentication, data integrity and privacy. The Web service technology has been moving towards different XML-based security schemes for Web services. Some of the XML-based securities include the following: The X-KISS protocol allows a client of such a service to delegate part or all of the tasks required to process elements. The X-KRSS specification defines a protocol for a web service that accepts registration of public key information. As its name suggests, SAML allows business entities to make assertions regarding the identity, attributes, and entitlements of a subject an entity that is often a human user to other entities, such as a partner company or another enterprise application. This is essentially the single sign-on SSO feature being offered by all major vendors in their e-commerce products. In the absence of any standard protocol on sharing authentication information, vendors normally use cookies in HTTP communication to implement SSO. You can read more about the standards for XML-based security for Web services in our related links section. Who Is Using Web Services? The online auction king has been aggressively developing its Web services platform by extending application programming interfaces that essentially turn its Web site into a platform. By using the API, your application can provide a custom interface, functionality and specialized operations not otherwise afforded by the eBay interface. They include pricing information, buy-it-now features, and payment options through its PayPal subsidiary. The growth and use of APIs across the Web illustrate how rapidly Web services are spreading, even as technical issues such as security and authentication are worked out by standards bodies. Online retailing giant Amazon. Companies such as Microsoft and Sun Microsystems have been helping developers build and deploy Web Services and clients for close to four years now. Mash-ups mix at least two different services from disparate, and even competing, Web sites. A mash-up, for example, could overlay traffic data from one source on the Internet over maps from Yahoo, Microsoft, Google or any content provider. This capability to mix and match data and applications from multiple sources into one dynamic entity is considered by many to represent the promise of the Web service standard. WikiMap is just one of many examples of a mash-up. This "Find Cheap Gas" Web sites uses a Google Maps powered interface, to offer information tailored to suit specific needs of a consumer. This "Find Cheap Gas" Web sites uses a Google Maps powered interface to offer information tailored to suit specific needs of a consumer. With so many businesses and software companies building services on top of platforms, many expect to see the World Wide Web of today called Web 1. The term being used to refer to the World Wide Web as a platform is Web 2. The difference between Web 1.

Chapter 4 : Understanding Web Services - blog.quintoapp.com

Our dedicated web application development team of + experts brings in over 13 years of domain blog.quintoapp.com than web applications delivered by ScienceSoft power businesses across various industries: healthcare, banking, retail, manufacturing, and telecommunications.

A plethora of standard PC-based applications is now appearing online calendar and diary tools, text editors, and spreadsheets, among others that can be used in a distributed collaborative setting. Developing such applications is particularly challenging, partly due to the wide background required but also the rapid emergence of new technologies. This MSc will equip you with a sound understanding of the area and its emerging trends, while at the same time providing a very hands-on approach to current technologies. Over the course of this degree, you will develop a deep understanding of the nature and impact of current challenges faced by the IT industry so that you know what is expected from a mature professional. You will also develop an awareness of the methodologies and technologies that are available within computer science to address these challenges, so that you can evaluate and analyse specific situations and make informed choices. You will have opportunities to develop your interpersonal, communication, decision-making, and problem-solving skills, and to use these skills in an imaginative way. This MSc course will provide you with the knowledge and research skills to continue your studies at PhD level. The programme also offers the opportunity for IT professionals to acquire PG qualifications in advanced topics. If you have any questions about this course, join us for a live online chat with academic tutors and admissions staff. You can upgrade from the PGCert course to the MSc at any time during your studies, but not afterwards. This module will contribute towards an MSc or PGCert if you start your course within the next two years. Entry requirements For junior-level employees or recent graduates: For IT professionals, applications will take into account your number of years of experience. Please ensure that you include with your application detailed information about your software development roles and knowledge of programming languages you have used. If you do not meet these standard entry requirements, please include with your application detailed information about your software development roles and knowledge of programming languages you have used. Java You will need to be familiar with object-oriented programming languages such as Java before joining this course. If you have experience in using object-oriented programming but not specifically Java, you will need to complete some study of Java using online resources before the course starts. We can provide advice and recommend resources. We will only allow students to include credits of modules that they have gained in the last two years before formally applying for a PGCert or MSc. Upgrading will not be possible after completion of the study for PGCert. There might also be constraints on which MSc programme a student can upgrade to, as the student will need to cover all core modules of the MSc programme to satisfy regulations the MSc in Advanced Computer Science has no specific core modules, so this will always be an upgrade option. The time that you have already spent studying for the PGCert will be deducted from the duration of the MSc course. We will let you know your remaining study period when you are accepted onto the MSc. Please note that, as a general rule, we do not accept APL from courses studied at other institutions. If your first language is not English, you may need to provide evidence of your English language ability.

Chapter 5 : What is a Web-Based Application? - Definition from Techopedia

In computing, a web application or web app is a client-server computer program which the client (including the user interface and client-side logic) runs in a web browser. Common web applications include webmail, online retail sales, and online auction.

I need a web front end with background processing and database backend to run business applications integrated with on-premises assets. Azure App Service is a great solution for complex business applications. It lets you develop apps that scale automatically on a load balanced platform, are secured with Active Directory, and connect to your on-premises resources. It makes managing those apps easy through a world-class portal and APIs, and allows you to gain insight into how customers are using them with app insight tools. The Webjobs feature lets you run background processes and tasks as part of your web tier, while hybrid connectivity and VNET features make it easy to connect back to on-premises resources. Run your applications reliably on a self-healing, auto-patching cloud platform. Scale automatically across a global network of datacenters. Back up and restore for disaster recovery. Integrate with Active Directory I need a reliable way to host my corporate website that scales well and offers global reach. Azure App Service is a great solution for hosting corporate websites. It enables web apps to scale quickly and easily to meet demand across a global network of datacenters. It offers local reach, fault tolerance, and intelligent traffic management. All on a platform that provides world-class management tools, allowing you to gain insight into site health and site traffic quickly and easily. Run your websites reliably on a self-healing, auto-patching cloud platform. Manage logs and traffic with integrated tools. Azure App Service makes it easy to avoid the infrastructure costs associated with migrating older IIS6 applications. Microsoft has created easy to use migration tools and detailed migration guidance that enable you to check compatibility and identify any changes that need to be made. Once deployed, the Azure Portal provides robust management tools that enable you to scale down to manage costs and up to meet demand as necessary. With the migration tool you can: Quickly and easily migrate your legacy Windows Server web application to the cloud. Opt to leave your attached SQL database on-premises to create a hybrid application. Automatically move your SQL database along with your legacy application. Azure App Service is a great solution for this scenario, because you can start using it for free and then add more capabilities when you need them. There are many other services and scaling options that allow the site to evolve with increased user demand. With Azure App Service, you can: Begin with the free tier and then scale up as needed. Use the Application Gallery to quickly set up popular web applications, such as WordPress. Add additional Azure services and features to your application as needed. Some apps may belong to other customers. These tiers are intended to be used only for development and testing purposes. With App Service, you can: Work with popular languages such as. Net , PHP , Node. Select three different scaling levels for scaling up to very high capacities. And you can use the WebJobs feature for running backend processes. Choose Service Fabric for one or more of your tiers if you need more control over the server environment, such as the ability to remote into your server or configure server startup tasks. My application depends on highly customized Windows or Linux environments and I want to move it to the cloud. If your application requires complex installation or configuration of software and the operating system, Virtual Machines is probably the best solution. With Virtual Machines, you can: Use the Virtual Machine gallery to start with an operating system, such as Windows or Linux, and then customize it for your application requirements. Create and upload a custom image of an existing on-premises server to run on a virtual machine in Azure. My site uses open source software, and I want to host it in Azure If your open source framework is supported on App Service, the languages and frameworks needed by your application are configured for you automatically. App Service enables you to: Use many popular open source languages, such as. Migrate an existing application or create a new one from the Application Gallery. If your open source framework is not supported on App Service, you can run it on one of the other Azure web hosting options. With Virtual Machines, you install and configure the software on the machine image, which can be Windows or Linux-based. I have a line-of-business application that needs to connect to the corporate network If you want to create a

line-of-business application, your website might require direct access to services or data on the corporate network. On App Service you can use the VNET integration feature , which allows your Azure applications to run as if they were on your corporate network. These services are exposed from a web endpoint, so it is possible to use any web hosting technique on Azure to support this scenario. Migrate existing services or create new ones. Achieve SLA for availability with a single instance, or scale out to multiple dedicated machines. Note If you want to get started with Azure App Service before signing up for an account, go to <https://aka.ms/aspnetcore-get-started>: No credit card required, no commitments. Next Steps For more information about the three web hosting options, see [Introducing Azure](#). To get started with the chosen options for your application, see the following resources:

Chapter 6 : Web Application Security Testing: Products and Services | Rapid7

A web application can be simultaneously accessed by multiple users, making it very convenient for corporate use. This strong feature is the future of application development.

Try Now Every security team possesses unique goals and challenges. You might be focused on securing just a few critical applications that drive your business. You might be looking for outside help to measure and manage your application security risk. Point is, navigating an ever-expanding application footprint can feel overwhelming; Rapid7 can help you achieve success in your web application security testing program across all of your initiatives. Through the shared visibility, analytics, and automation of SecOps. Free Day Trial Try InsightAppSec Coverage and Accuracy Applications are ever-evolving, a collection of highly complex, interconnected components of which no two are alike. Our Universal Translator provides all of our application security solutions with the unprecedented ability to scan and simulate attacks on your applications. By translating and normalizing all attackable inputs into a common universal format, the Universal Translator enables you to expand your application area coverage and add support for future web technologies and emerging attack types. Our solutions not only minimize false negatives, i. Speed and Automation DevSecOps, or the practice of integrating security into your DevOps processes, is quickly changing the application security landscape. Security teams want faster, automated testing—our APIs enable just that. Our application security solutions integrate seamlessly into your SDLC: Automate scans with your Continuous Integration CI solution, like Jenkins , to catch vulnerabilities before they hit production and notify developers of new issues automatically by integrating with ticketing systems like Jira. This degree of collaboration and improvement in productivity is enabled by the practice of SecOps. Proven Expertise Web application security testing can be resource intensive; it requires not just security expertise, but also intimate knowledge of how the applications being tested are designed and built. For organizations looking to augment their team with experienced application security professionals, Rapid7 has both the technology and the industry leadership to help you establish a world-class program. Our resident experts can run and tune scans, validate and prioritize vulnerability results, and deliver actionable reports with no false positives. Our web application security solutions Rapid7 offers application security solutions to cover every need: Our cloud-powered application security testing solution gets you up and running quickly so you can secure the modern web. Internal apps are also supported with the installation of a lightweight on-premise engine. Leverage your security program investment; our managed service offering allows you to offload the entire process to our team of application security experts. Even better, this offering includes add-on services such as vulnerability validation and business logic testing. Our on-premise enterprise solution enables you to adopt the DevSecOps mindset and embed application security into CI, issue tracking, and testing automation. Docker and Container Security: Learn how Rapid7 solutions can help you assess, secure, and monitor all layers of your containerized application infrastructure. A Step-by-Step Guide to Shifting Left and Embracing a True DevSecOps Mentality Learn why the solution to staying fast, staying competitive, and staying secure is shifting the responsibility of application security left.

Chapter 7 : Application services | blog.quintoapp.com

This Securing Web Applications, Services & Servers course provides in-depth, hands-on experience securing Web-based applications and the servers they run on. You will gain in-depth experience securing web services, and learn how to integrate robust security measures into the web application.

Chapter 8 : RESTful Web Applications and Services

Web services are XML-based information exchange systems that use the Internet for direct application-to-application interaction. These systems can include programs, objects, messages, or documents. A web service is a collection of

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open protocols and standards used for exchanging data between applications or systems.

Chapter 9 : Difference between web application and web services | The blog.quintoapp.com Forums

Web Web Build, deploy, and scale powerful web applications quickly and efficiently Web Apps Quickly create and deploy mission critical web apps at scale API Management Publish APIs to developers, partners, and employees securely and at scale.