Microsoft Windows Azure

- Microsoft's Azure platform is a little different to develop apps for. It is similar to Google App Engine in that you have to download an SDK, but its features are a little more rich.

- You develop applications within Visual Studio, which you then publish to the Windows cloud.

- The Azure Services Platform is designed to help you quickly and easily create, deploy, manage, and distribute web services and applications on the Internet.

- Windows Azure is an operating system for the cloud that serves as the development, run-time, and control environment for the Azure Services Platform.

- Windows Azure provides developers with on-demand compute and storage to host, scale, and manage web applications on the Internet through Microsoft datacenters.

SDK :

- To get started developing applications for Azure, you must first download the SDK.
- The January 2009 release is located at http://www.microsoft.com/downloads/details
- .aspx?FamilyID=80e3eabf-0507-4560-aeb6-d31e9a70a0a6&displaylang=en.

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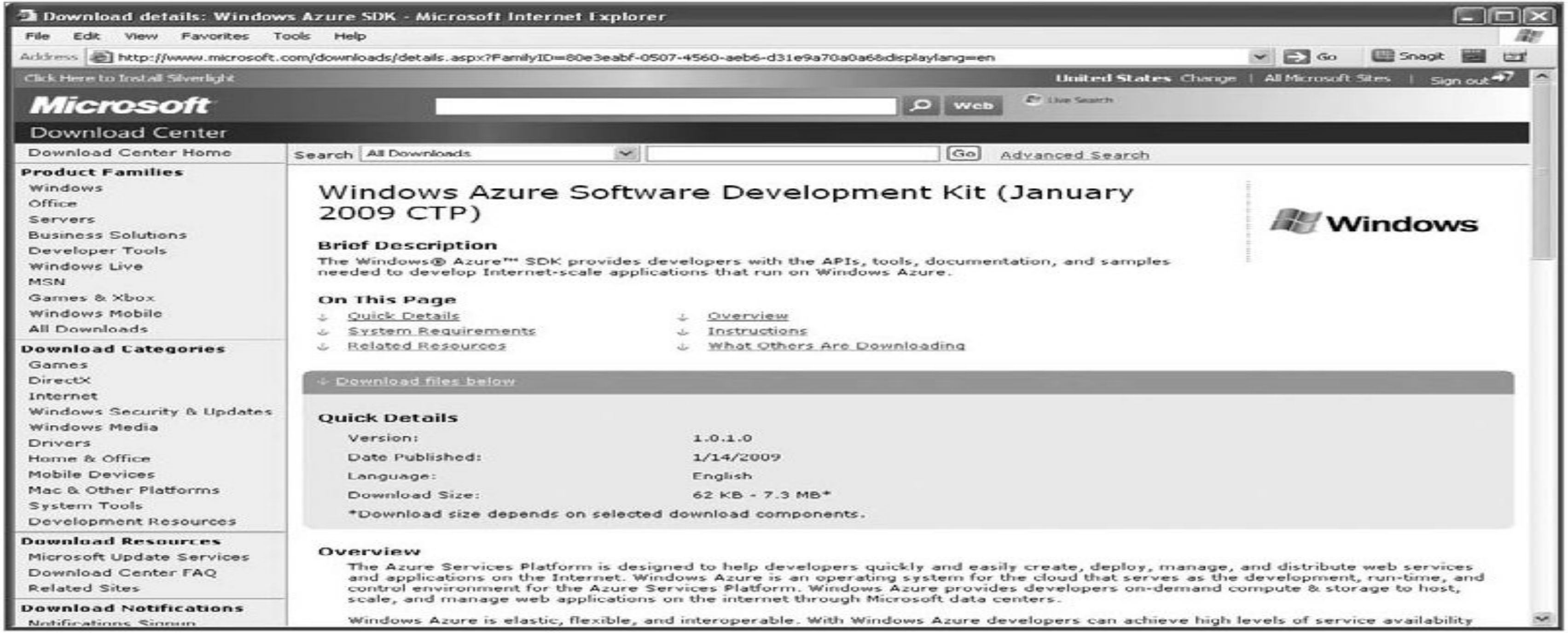

Windows Azure Software Development Kit (January 2009 CTP)

Brief Description

The Windows® Azure™ SDK provides developers with the APIs, tools, documentation, and samples needed to develop Internet-scale applications that run on Windows Azure.

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Download files below

Quick Details

Version:	1.0.1.0
Date Published:	1/14/2009
Language:	English
Download Size:	62 KB - 7.3 MB*

*Download size depends on selected download components.

Overview

The Azure Services Platform is designed to help developers quickly and easily create, deploy, manage, and distribute web services and applications on the Internet. Windows Azure is an operating system for the cloud that serves as the development, run-time, and control environment for the Azure Services Platform. Windows Azure provides developers on-demand compute & storage to host, scale, and manage web applications on the internet through Microsoft data centers.

Windows Azure is elastic, flexible, and interoperable. With Windows Azure developers can achieve high levels of service availability

NOTE *There have been several different releases of the SDK. Check the Microsoft web site for the most current version.*

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- The Google App Engine, which has been written for Windows, Linux, and Mac OS X, Azure only operates on the latest Windows machines.

- Take a look at the system requirements to see if your machine is capable of running the SDK.

Supported operating systems include :

- Windows Server 2008 Enterprise
- Windows Server 2008 Standard
- Windows Vista Business
- Windows Vista Business 64-bit edition
- Windows Vista Home Premium
- Windows Vista Home Premium 64-bit edition
- Windows Vista Ultimate
- Windows Vista Ultimate 64-bit edition

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- If you have a 64-bit machine, you need to use the 64-bit version of the SDK. The 32-bit version will not work.

Other software requirements include :

- Windows Vista SP1 (when installing on Windows Vista)
- .NET Framework 3.5 SP1
- IIS 7.0 (with ASP.NET and WCF HTTP Activation)
- Microsoft SQL Server Express 2005 or Microsoft SQL Server Express 2008
- Windows PowerShell (optional)
- Microsoft also recommends that you have the Windows Azure Tools for Microsoft
- Visual Studio installed.
- Once you install the Azure SDK, it will add new templates:
- Blank Cloud Service
- Web Cloud Service
- Web and Worker Cloud Service
- Worker Cloud Service
- Windows Azure SDK includes two development utilities. This helps us develop our
- Windows Azure application in our local machine:

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- The Development Fabric This tool helps us to run and test Windows Azure application locally before deploying into Cloud.

- The Development Storage This simulates the Blob, Queue, and Table Storage services available in the cloud. Enabling IIS 7.0 on Windows Server 2008.

- You will need to enable IIS 7.0 with WCF HTTP Activation on Windows Server 2008. To do this, follow these steps:

- 1. Click the Start button and then point to All Programs.

- 2. Point to Administrative Tools and then click Server Manager.

- 3. In Server Manager under Features Summary, click Add Features.

- 4. In the resulting dialog box, under .NET Framework 3.0, click .NET Framework 3.0.

- 5. Under WCF Activation, click HTTP Activation.

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- 6. Click Next to start HTTP Activation.
- 7. In Server Manager, under Roles Summary, verify that Web Server (IIS) is on the list of available roles. If it is not on the list, click Add Roles to install Internet Information Services.
- 8. In Server Manager, under Roles Summary, click Web Server (IIS).
- 9. In the resulting window, click Add Role Services.
- In the next window, expand Web Server, expand Common HTTP Features, and then click Static Content.
- 11. In the Add Role Services dialog box, expand Web Server, expand Application Development, and then click ASP.NET.
- 12. Click Next to enable Static Content and ASP.NET.

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- Enabling IIS 7.0 on Windows Vista
- To enable IIS 7.0 with ASP.NET and WCF HTTP Activation on Windows Vista, follow these steps:
- 1. Click the Start button, click Settings, click Control Panel, click Programs, and then click Programs and Features.
- 2. Click Turn Windows Features On or Off.
- 3. Under Microsoft .NET Framework 3.0, click Windows Communication Foundation HTTP Activation.
- 4. Under Internet Information Services, expand World Wide Web Services.
- 5. Under Application Development Features, click ASP.NET.
- 6. Under Common HTTP Features, click Static Content.
- 7. Install the selected features.

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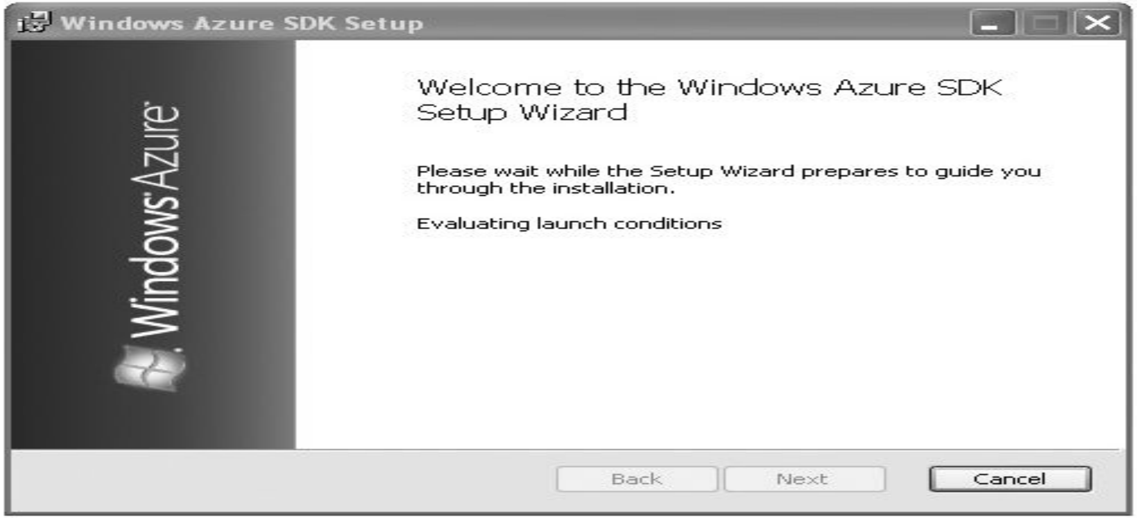
Install the Windows Azure SDK :

- If you have an old version of the Windows Azure SDK on your machine, you must remove it before installing the new version. Right-click the Microsoft Windows Installer file, and then click Uninstall to remove the previous version of the SDK.
- Next, install the SDK on your computer by running the Windows Installer file.
- By default, the SDK is installed into the C:\Program Files\Windows Azure SDK\ directory.



Windows Azure SDK Setup

Welcome to the Windows Azure SDK Setup Wizard

Please wait while the Setup Wizard prepares to guide you through the installation.

Evaluating launch conditions

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Test the SDK :

- The SDK comes with a number of samples that you may find useful. Here, we're going to use them to test out the new installation.

- Navigate to the aforementioned SDK directory and unzip the file to a directory where you have write access.

To test the SDK installation, follow these steps:

- 1. Open the Windows Azure SDK command prompt by clicking the Start button, clicking Program Files, and then clicking Window Azure SDK (January 2009 CTP).
- 2. Navigate to the sample directory, and then run the RunDevStore.cmd utility to build the samples, create local tables required by the samples, and launch development storage. Running development storage starts the local Blob, Queue, and Table services.
- 3. Navigate to the HelloWorld application directory, and then run runme.cmd.
- 4. The development fabric icon will appear in the system tray after a moment.
- Running the sample automatically launches your web browser and points to the service's default web page.
- The web interface for the Hello World sample will be displayed in the browser window.

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Creating the App :

Creating cloud apps with Windows Azure is accomplished through Microsoft Visual Studio 2008. To start making your apps, follow these steps:

1. Run Visual Studio 2008 as an administrator. Click the Start button and then point to all programs.
2. Point to Microsoft Visual Studio 2008, right-click Microsoft Visual Studio 2008, and click Run as Administrator.
3. When the User Account Control box appears, click Continue.
4. From the File menu, click New, and then click Project.
5. In the resulting dialog box, select Cloud Services from the Visual C# project type.
6. In the Templates list, click Web Cloud Service. This creates a web role.
7. Enter the names for your project and solution, and make sure that the Create Directory for Solution box is checked.
8. In the Solution Explorer, you’ll see that the solution structure was created. You'll see two projects, a Cloud Compute project and an ASP.NET project. The ASP.NET project will contain your code. The Cloud Compute project contains a reference to the ASP.NET project, as well as the service definition file (.csdef) and service configuration file (.cscfg).
9. Change the Default.aspx page to display some custom text for this example.

Running the App Locally :

Next, test the application locally before publishing it to the Azure cloud. You can do that by following these steps:

1. Press F5. This starts the service in the development fabric.

2. Expand the tree on the left panel to see the service deployments.

3. Expand the HelloFabric node to see the web role and worker role that are running within the service.

4. Expand the node for the web role or worker role to view the running instances of the role.

5. Click on a numbered node to see the messages being written to the log for this role instance.

6. Click the Service Details node. This shows you the roles and ports that were requested and issued.

7. Switch back to Visual Studio, and press SHIFT+F5 to stop debugging

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Troubleshooting :

- Troubleshooting on the cloud is a different animal than in a traditional IT environment.
- Conventional troubleshooting tools and processes were developed around the hub-and-spoke concept, with remote applications being the spokes to the centralized datacenter being the hub.
- Applications delivered from an off-site provider's datacenter defy traditional monitoring and require a different way to troubleshoot.
- At your organization, you have local visibility and control of applications. That control is much more limited with SaaS applications. In particular, it is difficult to distinguish SaaS traffic from other Internet usage going in and coming out of remote locations.
- IT staff do not have the local ability to determine whether the service is running or if the client has connectivity to the hosted application.
- Deep packet inspection (DPI) can deliver this granularity, but this technology is expensive to deploy throughout the enterprise.

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- Another issue is that when users face performance problems or have other issues, they are not going to contact the SaaS provider. They're going to call the IT support desk.

- Before your IT department relays the problem to the SaaS provider, they must first pursue the problem on their end to rule out local problems.

- For instance, there could be a legitimate issue with Amazon, for which you need to invoke the service level agreement (SLA). On the other hand, the problem could simply be the result of contention for the Internet.

- The problem could be exacerbated by SaaS users within the enterprise working from different remote sites, using different types of access and competing for resources. This can quickly eat up bandwidth.

- The user could be on a wireless LAN competing for shared bandwidth with other applications that have fluctuating usage needs, are experiencing slowdowns, or have issues with signal interference.

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- To troubleshoot SaaS problems, you must be able to understand the perspective of the application and the end user, and to see all the variations inside and outside the infrastructure.

- Visibility is not available with traditional management tools and technology, but new tools are available.

- By using this tracking information, profiles are created for all applications and for the networked application experiences of each end user that allow IT to detect unusual behavior and figure out the root cause of the performance problems.

- IT can discover hidden causes of SaaS performance problems by figuring out which applications are generating high bandwidth on the link or by finding applications that are causing congestion.

- When IT staff has this information, they can quickly shut down problematic users and alert SaaS providers about problems at their datacenter.

Application Management

- Once you’ve got your application on the cloud, you need to be able to manage it. While the application isn’t in your datacenter, there are still ways you can manage it.

- A lot will depend on the terms of service you have with your cloud provider. They may not allow for you to manage the applications at all.

- When you do decide to manage your cloud application, you can use a product like Kaavo’s (www.kaavo.com) cloud application management software: **Infrastructure and Middleware on Demand (IMOD).**

- IMOD is the first solution with an application-focused approach to IT infrastructure management through public and private clouds.

- Companies traditionally manage their servers individually, which is complex and costly and impedes business growth across an enterprise.

Application Management

- By tapping the capabilities of cloud computing, however, IMOD enables users to manage infrastructure as a unified system and **provides the following benefits:**
- Application and service–centric n-tier configuration IMOD automatically brings online one or multiserver systems for running applications.
- Business continuity An interface to schedule automatic data backups ensures business continuity.
- Security and access control IMOD provides a point-and-click interface to secure data in the clouds through the National Security Association’s recommended AES 256-bit data encryption.
- It allows users to easily and securely connect to servers, transfer data to and from internal datacenters, and configure custom firewall rules on cloud servers.
- Effective monitoring and alerts Users can monitor resources used by their applications and set up alerts to proactively manage application service levels.

Application Management

- “Moving infrastructure to the cloud is gaining momentum. Kaavo will enable organizations to effectively reap the benefits of cloud computing and to maximize fewer resources.

- This is particularly critical given current economic conditions and the growing need for companies to reduce their carbon footprint,” said Jamal Mazhar, founder and CEO of Kaavo.

- “Through patent-pending technology, we are pleased to launch IMOD and provide simplicity, flexibility, and security for users. This in turn, allows them to focus on innovation and core business activities necessary for business growth.”

- IMOD is available for a free 30-day trial at https://imod.kaavo.com. Developing your own apps is definitely doable, and there is no lack of places that would welcome you to host your apps on their clouds.

- The differences come down to the features they offer and how much they charge, but if there is a specific function you want done, just point your programmers to the cloud and get them started.