

Use IBM Lotus Forms on the cloud

Create a car repair application with Lotus Forms Turbo AMI on EC2

Skill Level: Introductory

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29 Jun 2010

IBM Lotus Forms help organizations of all sizes automate their business processes through data capture, review, approval, and submission of eForms. Lotus Forms can be run from the cloud, which significantly lowers the cost of ownership and dramatically increases scalability. In this tutorial, learn how to write a simple application that allows a small car repair company to track its customers using Lotus Forms, and then run it on the cloud using Amazon Elastic Compute Cloud (EC2). No prior cloud computing experience is necessary.

Section 1. Before you start

This tutorial is for programmers who want to get some experience with cloud computing by creating a Lotus eForm on EC2. Prior forms design experience is desirable, but not necessary. Some familiarity with configuring software on Linux® and with SSH would also be beneficial, but is not required.

About this tutorial

The cloud computing revolution began in 2006 when Amazon started providing access to its services through Amazon Web Services (AWS) on a pay-as-you-use basis. The definitions of cloud computing vary, but this technology is often defined as something that involves hosting services over the Internet. There are a few other requirements for cloud computing, which are discussed in the next section. Amazon continues to be one of the major players in cloud computing, and IBM is fast becoming an important player as well. Some of the other leaders are Akamai and Joyent.

Lotus eForms can help customers create surveys, applications, feedback mechanisms, orders, requests for submission, and more. Later in the tutorial, you will learn that building a Lotus eForm is very simple.

This tutorial teaches you to write a simple application for the Car Care Repair Shop that tracks important information about its customers using Lotus Forms and how to run it on Amazon EC2. By completing this tutorial, you will learn about the following:

- The cloud computing revolution
- Getting started with AWS
- Launching an EC2 instance preloaded with Lotus Forms
- Configuring Lotus Forms
- Writing a simple application using Lotus Forms
- Running the application

Prerequisites

To follow along with this tutorial, you will need to have the following access and software installed and running on your computer:

- An AWS account. You'll receive detailed instructions on setting up an account in the *Getting started with AWS* section.
- SSH Client. Several instances are available based on OS/distribution. For Windows®, we will use PuTTY.
- Secure Copy. Several are available. We will use WinSCP.

Find links for all of the tools in [Resources](#).

Section 2. The cloud computing revolution

Before creating an AWS account and creating a Lotus Form in the cloud, take a minute to understand what cloud computing is and why you should consider implementing it as a solution.

What is cloud computing?

Cloud computing refers to anything that involves hosting services over the Internet and has three distinct characteristics. First, it is sold on demand, typically by the minute or the hour. Second, it is elastic, which means users can access as much or as little as they want at any given time. Third, it is fully managed by the provider, who owns the data center hardware and software assets. Cloud computing can significantly reduce IT costs and complexities while improving workload optimization and service delivery. It is massively scalable and provides a superior user experience.

Four years of dramatic growth

Cloud computing started in 2006, but by 2010, the number of companies that have tapped into the cloud number in the thousands. In 2008, the Gartner Group saw an opportunity for cloud computing "to shape the relationship among consumers of IT services, those who use IT services, and those who sell them," and observed that "organizations are switching from company-owned hardware and software assets to per-use service-based models" so that the "projected shift to cloud computing ... will result in dramatic growth in IT products in some areas and significant reductions in other areas" (see [Resources](#)).

The promise of large cost savings in data center hardware and software cost of ownership as well as a dramatic improvement in scalability is driving the growth of cloud computing. In 2007, SmugMug, a successful photography community, saved \$1 to \$2 million USD by using Amazon S3 cloud storage.

Amazon's cloud computing platform

Amazon's cloud computing platform is called Amazon Web Services (AWS). A central part of the platform is Amazon EC2. EC2 allows users to rent virtual computers on which to run their own computer applications. EC2 allows for the scalable deployment of applications by providing a web service through which a user can boot an Amazon Machine Image (AMI) to create a virtual machine (which

Amazon calls an instance) that contains any software desired. A user can create, launch, and terminate server instances as needed. IBM has AMI versions of most of its software products. For more information, see [Resources](#).

The cloud's two biggest concerns addressed

The biggest concerns about cloud computing are security and privacy. The idea of handing over important data can be troubling. Corporate executives might hesitate to take advantage of a cloud computing system because they can't keep their company's sensitive information under lock and key or assure their customers that security is foolproof.

A strong rebuttal to this position is that the companies offering cloud computing services live and die by their reputations. It benefits cloud computing vendors such as Amazon to have reliable security measures in place. Otherwise, they would lose all of their clients. It's in their interest to employ the most advanced techniques to protect their clients' data.

But privacy is another matter. If a client can log in from any location to access data and applications, it is quite possible that the client's privacy might be compromised. Cloud computing companies have to find ways to protect client privacy. One way is to use authentication techniques such as user names and passwords. Another is to employ an authorization format—each user can access only the data and applications relevant to his or her job.

Amazon's AWS cloud computing platform has robust security and addresses all of the top seven threats to cloud computing cited by the Cloud Security Alliance:

1. Abuse and nefarious use of cloud computing
2. Insecure application programming interfaces
3. Malicious insiders
4. Shared technology vulnerabilities
5. Data loss/leakage
6. Account, service, and traffic hijacking
7. Unknown risk profile

Through its partnership with Amazon, IBM is able to assure its cloud customers that their companies' mission-critical applications and data are in fact safe and secure on the web.

IBM has written many AMIs that can be used with Amazon EC2. Later in this tutorial, you will make use of one of the IBM AMIs.

IBM and AWS

The IBM and AWS partnership was a response to customer demand to make IBM software available on AWS. This relationship provides customers and developers with unprecedented options for building and delivering solutions on IBM software, including Lotus Forms.

According to the IBM EC2 AMI FAQ (see [Resources](#)):

IBM has a four-pronged strategy to capture the cloud computing opportunity by: 1) delivering its own cloud services portfolio; 2) helping ISVs and developers design, build, deliver, and market cloud services; 3) helping clients integrate cloud services into their business; and 4) providing cloud computing environments to businesses. The Amazon AWS EC2 partnership primarily supports the second prong but can potentially support other aspects of IBM's strategy.

Based on the adoption of initial AMIs, IBM and AWS plan to release additional development and production AMIs and support options for developers and customers.

Section 3. Getting started with AWS

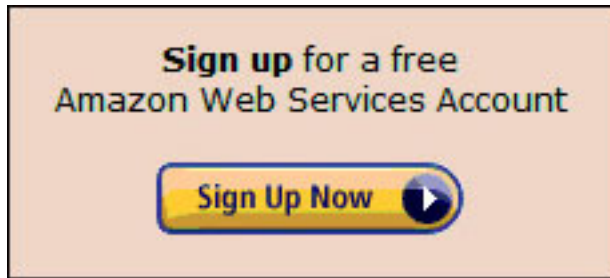
Now that you've explored some of the high-level aspects of cloud computing, it's time to take the next step, which is to first create an AWS account and learn how to secure it. Once you finish these steps, you can move on to Amazon's EC2 environment.

Creating an AWS account

To create your AWS account, simply follow the steps that are outlined in this section.

1. Go to the Amazon Web Services website (<http://aws.amazon.com>), and click **Sign Up Now**, as shown in [Figure 1](#).

Figure 1. Sign Up Now button



2. The Get Started window appears, as shown in [Figure 2](#).
Figure 2. Get Started window

A screenshot of a web form titled "My e-mail address is:" with a text input field containing "boucot@gmail.com". Below the input field are two radio button options: "I am a new user." (selected) and "I am a returning user and my password is:" followed by a password input field. At the bottom right is a yellow rounded button with a blue border and a blue arrow pointing right, containing the text "Sign in using our secure server".

3. Enter your email address. Make sure it is web accessible for this tutorial. You will need to check your email in order to complete the registration process.
4. Click **I am a new user**.
5. Click **Sign in using our secure server**. The Amazon.com Sign-in window appears, as shown in [Figure 3](#).
Figure 3. Sign-in window

New to Amazon.com? Register Below.

My name is:

My e-mail address is:

Type it again:

Protect your information with a password
This will be your only Amazon.com password.

Enter a new password:

Type it again:

6. Enter your information, and click **Create account**. The Registration screen appears, as shown in [Figure 4](#).

Figure 4. Registration screen

Full Name: Sam Boucot

Address Line 1*:
Street address, P.O. box, company name, c/o

Address Line 2:
Apartment, suite, unit, building, floor, etc.

City*:

State, Province or Region*:

ZIP or Postal Code*:

Country*:

Phone number*:

Company or Web Site Name:

Web Site URL:

7. Fill in the contact information, and click **Continue** to proceed to the Security check, as shown in [Figure 5](#).

Figure 5. Security check

Amazon Web Services™ Customer Agreement

Updated February 9, 2010

PLEASE NOTE, TERMS AND CONDITIONS GOVERNING USE OF THE AMAZON ASSOCIATES WEB SERVICE™ ARE NOW LOCATED AT: <http://affiliate-program.amazon.com/gp/advertising/api/detail/agreement.html>

PLEASE READ CAREFULLY — THIS IS A BINDING CONTRACT

Check here to indicate that you have read and agree to the terms of the Amazon Customer Agreement.

Security Check

Image: 

[Try a different image](#)

Type the characters in the above image*:

[Having Trouble? Contact us.](#)

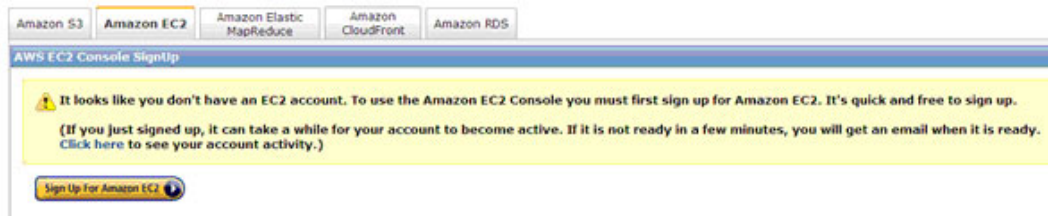
8. Type the characters you see in the security image, and click **Continue**.
9. On the following screen, click the **Amazon Elastic Compute Cloud** link, as shown in [Figure 6](#). (Optionally, check your email to access your confirmation email.)

Figure 6. Amazon Elastic Compute Cloud link



10. Click **Sign Up For Amazon EC2**.
11. A message like the one shown in [Figure 6A](#) will be displayed. Disregard the first paragraph. If your account is not ready in a few minutes, you should receive an email when it is ready.

Figure 6A. Console Sign-up confirmation message



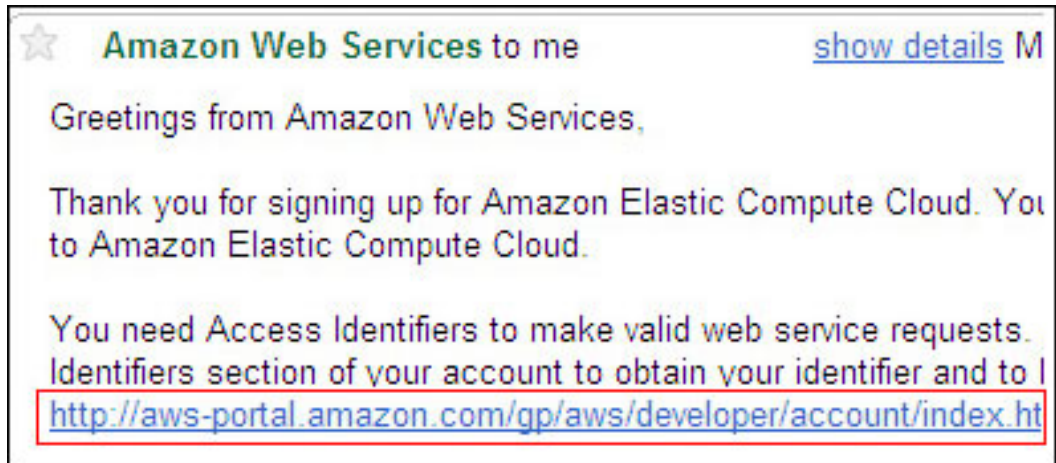
Now that you've created your account, learn how to secure it.

Securing your EC2 environment

Now that you have an AWS account and have received a confirmation email from Amazon, follow these steps to secure your cloud environment.

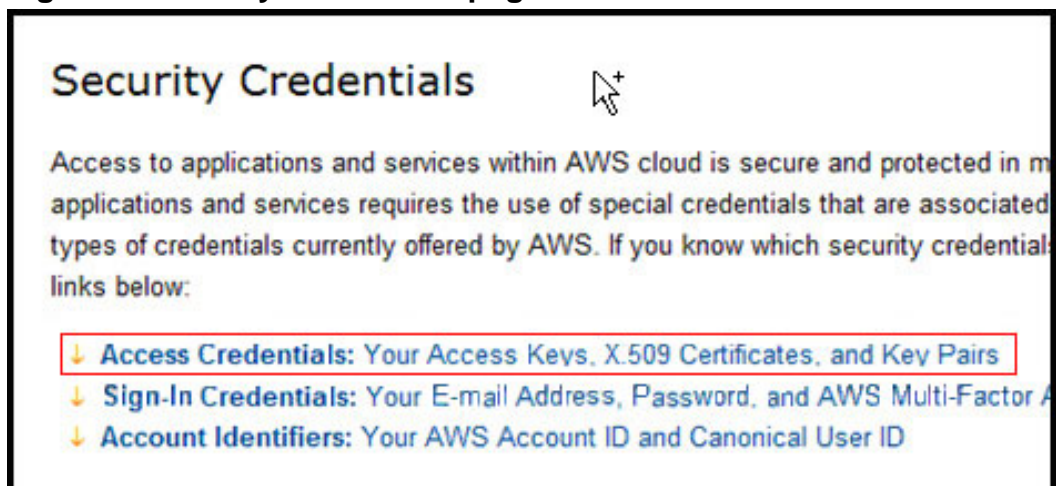
1. Click the **Access Identifiers** link in the confirmation email to go to the next page (see [Figure 7](#)).

Figure 7. Confirmation email from Amazon.com



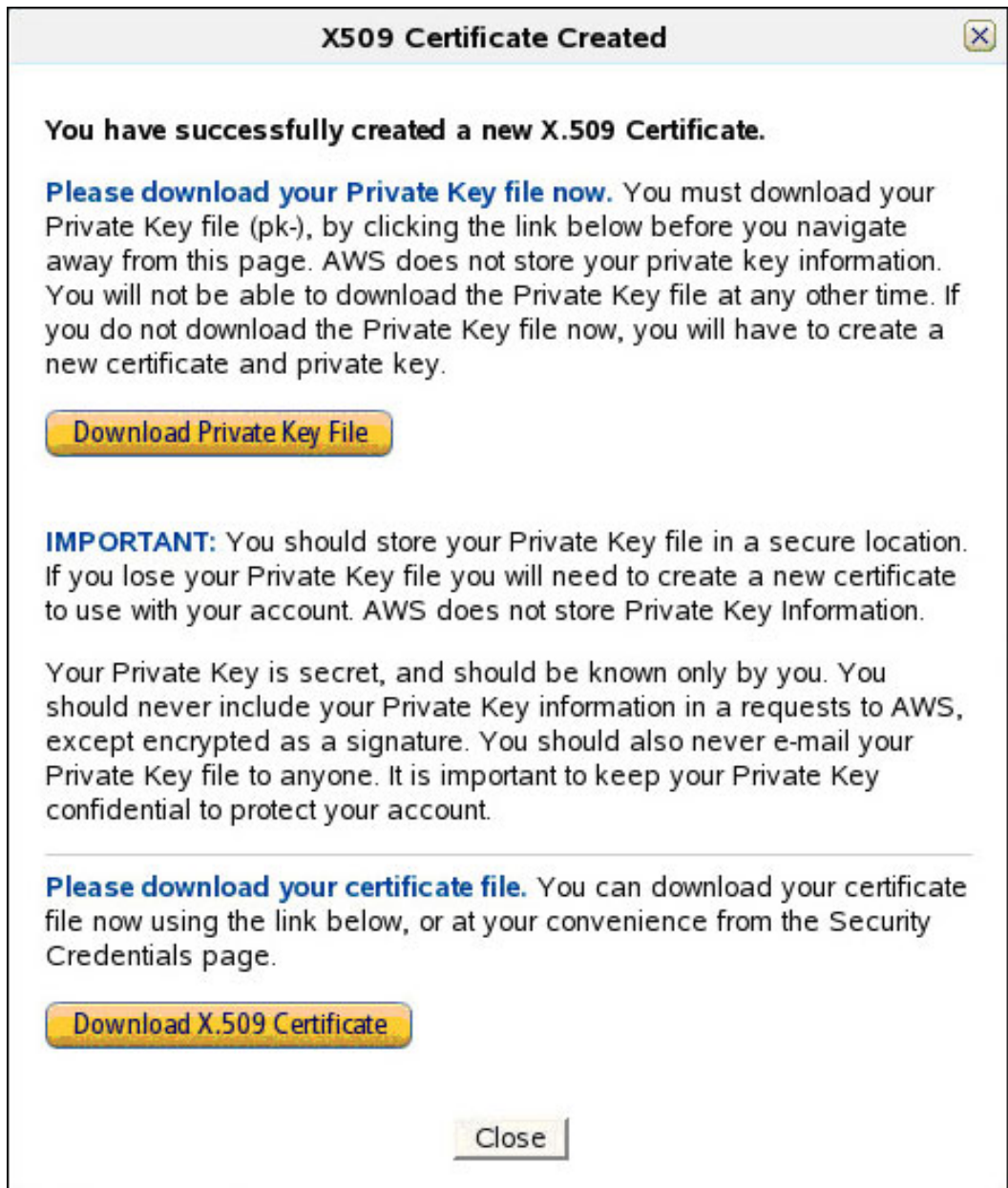
2. Now you are on the Security Credentials page. Click the **Access Credentials** link, as shown in Figure 8. Digital certificates are the electronic counterparts to driver licenses; they provide an electronic means of verifying an identity. The most widely accepted format is the X.509 certificate, which you will create now.

Figure 8. Security Credentials page



3. Click **Download Private Key File** as shown in Figure 9. You will choose **Save to disk**, and specify a location such as \$HOME/.ec2 in which to save the .pem file, before returning to the screen shown in Figure 9.
4. Click **Download X.509 Certificate** as shown in Figure 9. You will choose **Save to disk**, and specify a location such as \$HOME/.ec2 in which to save the .pem file, before returning to the screen shown in Figure 9.
5. Click **OK**, and click **Close**. The window showing successful X.509 Certificate creation appears.

Figure 9. Download Private Key and X.509 Certificate



Used in conjunction with encryption, Digital certificates provide a more complete security solution, assuring secrecy of identity for all parties involved in a transaction. Now that you have downloaded the X.509 certificate, you have an electronic version of a driver's license that will help to verify your electronic identity.

Section 4. Launching an EC2 instance preloaded with

Lotus Forms

Now that you've created a secure AWS account, follow these steps to launch an AMI instance preloaded with Lotus Forms Turbo.

Registering Lotus Forms AMI link

Lotus Forms Turbo has been developed to help nontechnical users quickly create web-based eForms. Navigate to the Lotus Forms Turbo V3.5.1 Development AMI, as shown in [Figure 10](#) and [Figure 11](#).

Figure 10. Lotus Forms AMI link

Lotus Forms Turbo has been developed to help non-technical users to quickly create web based eForms. Lotus Forms Turbo is easy and quick to deploy, requires no training and is designed to help customers address basic form software requirements such as surveys, applications, feedback, orders, request for submission, and more - without involvement from the IT department.

Submitted By:	ibmaws
US East AMI ID:	ami-9c7e9ef5
AMI Manifest:	ibm-lfturbo351-dev-21sep2009/ibm_LotusForms_Turbo351_dev_21sep2009.manifest.xml
License:	Paid
Operating System:	Linux/Unix

Click the Purchase button above to register and access this AMI. There is no charge from IBM, you are responsible for the Amazon EC2 charges associated with the AMI once you launch an instance.

[Figure 11](#) shows the second part of the Lotus Forms AMI link. This is for a developer version of the AMI, which is being offered by IBM free of charge. You will only be charged a modest fee by Amazon based on the actual time spent on EC2.

Figure 11. Lotus Forms AMI link, Part 2



1. Click **Purchase**, as shown in [Figure 11](#).
2. Review the pricing details, and click **Place your order**.
3. Write down the activation key. You can generate a new activation key any time. (See [Resources](#).)
4. Optionally, check your email to receive your confirmation message.
5. Return to the AWS Management Console and make sure you are in the EC2 dashboard.
6. Click **Launch instance**.
7. Click the **Community AMIs** tab. The window that shows Community AMIs will appear.

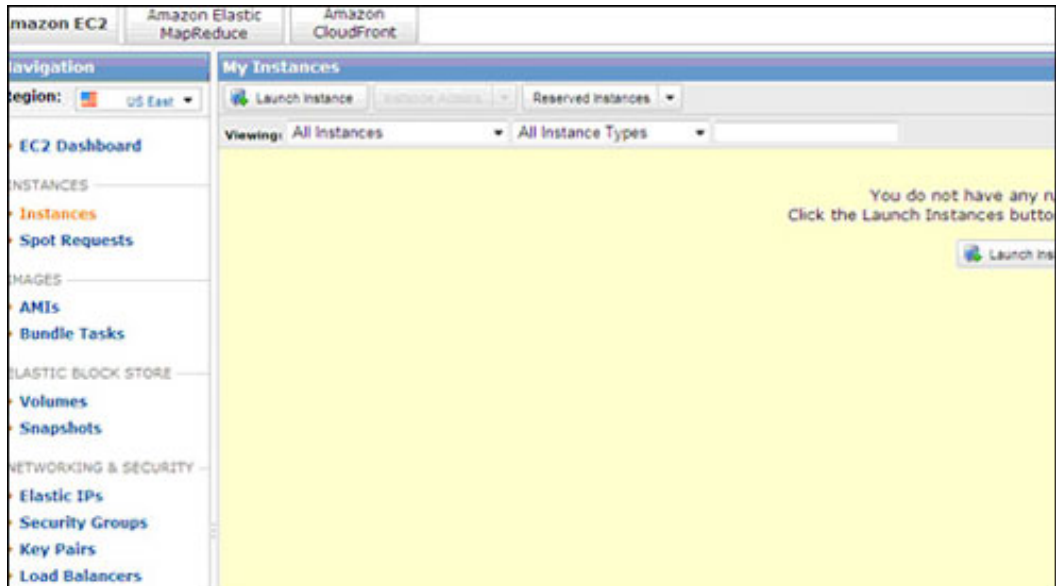
Configuring Lotus Forms

Before beginning the Car Care eForm, you must first configure the Lotus Forms server, which involves the following:

- Adding the certificates that you created earlier to the instance
- Allocating the elastic memory (that contracts or expands according to what functions are being executed)
- Assigning passwords

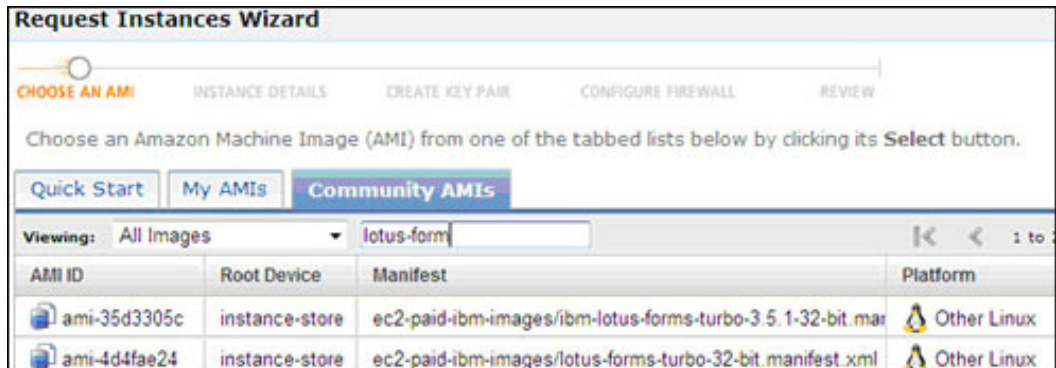
Follow these steps to configure the Lotus Forms server:

1. Go to the Standard AWS console, as shown in [Figure 12](#), and click **Launch instance**.
Figure 12. Standard AWS console



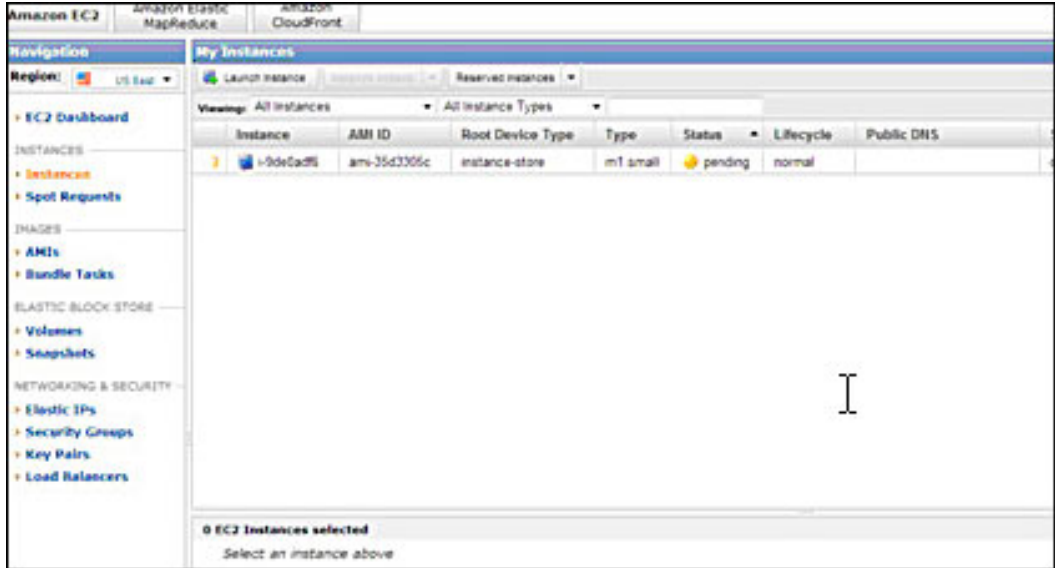
2. Go to the **Community AMIs** tab, and search for `lotus-form`, as shown in [Figure 13](#).

Figure 13. Community AMIs tab



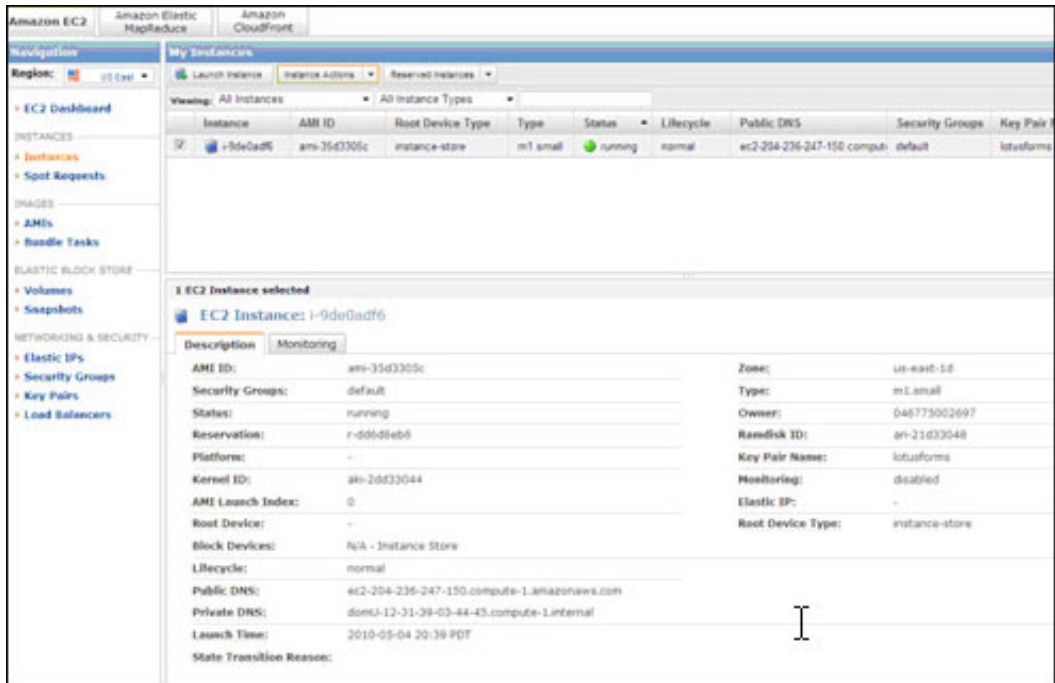
3. Select the list item. This puts the AMI instance in the console and sets the status to pending as it starts up, as shown in [Figure 14](#).

Figure 14. Instance starting up



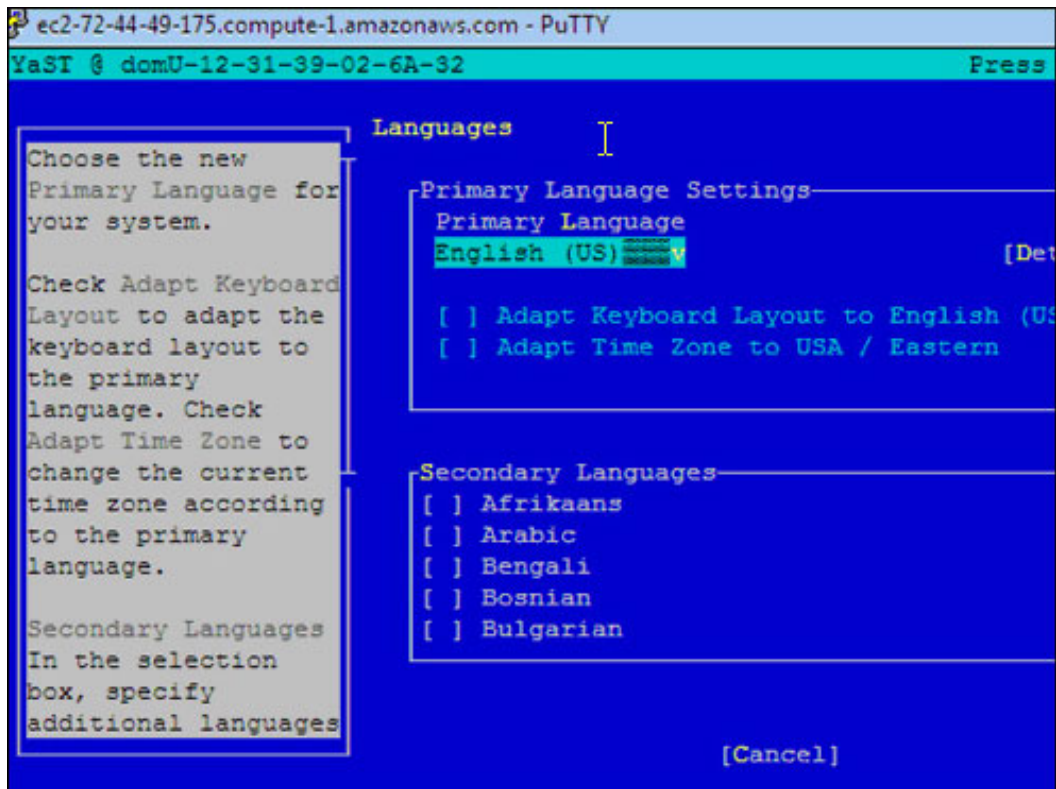
- 4. The AMI instance is now running and is accessible via public DNS, as shown in Figure 15.

Figure 15. AMI instance is running

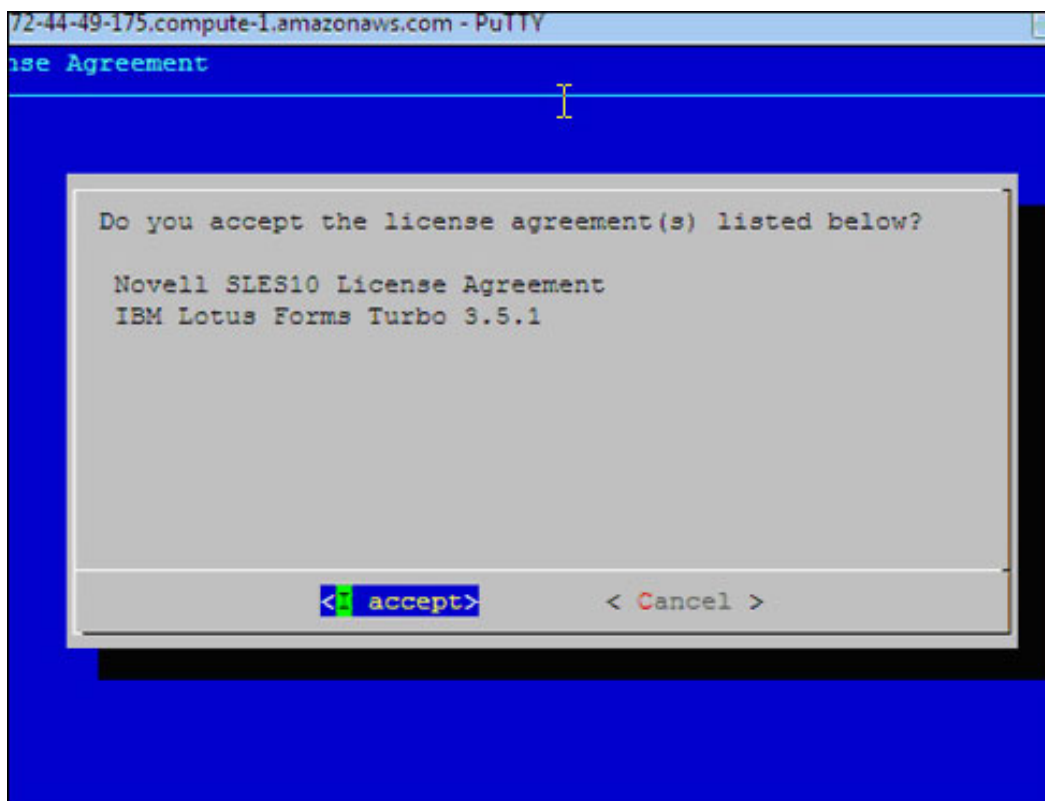


- 5. Now you're ready to remote connect to the Public DNS. To do this, set up PuTTY with the private key and certification created earlier.
- 6. Remote connect to the Public DNS on SSH port 22 YAST configuration for SUSE, as shown in Figure 16.

Figure 16. Public DNS on SSH port 22 YAST configuration for SUSE

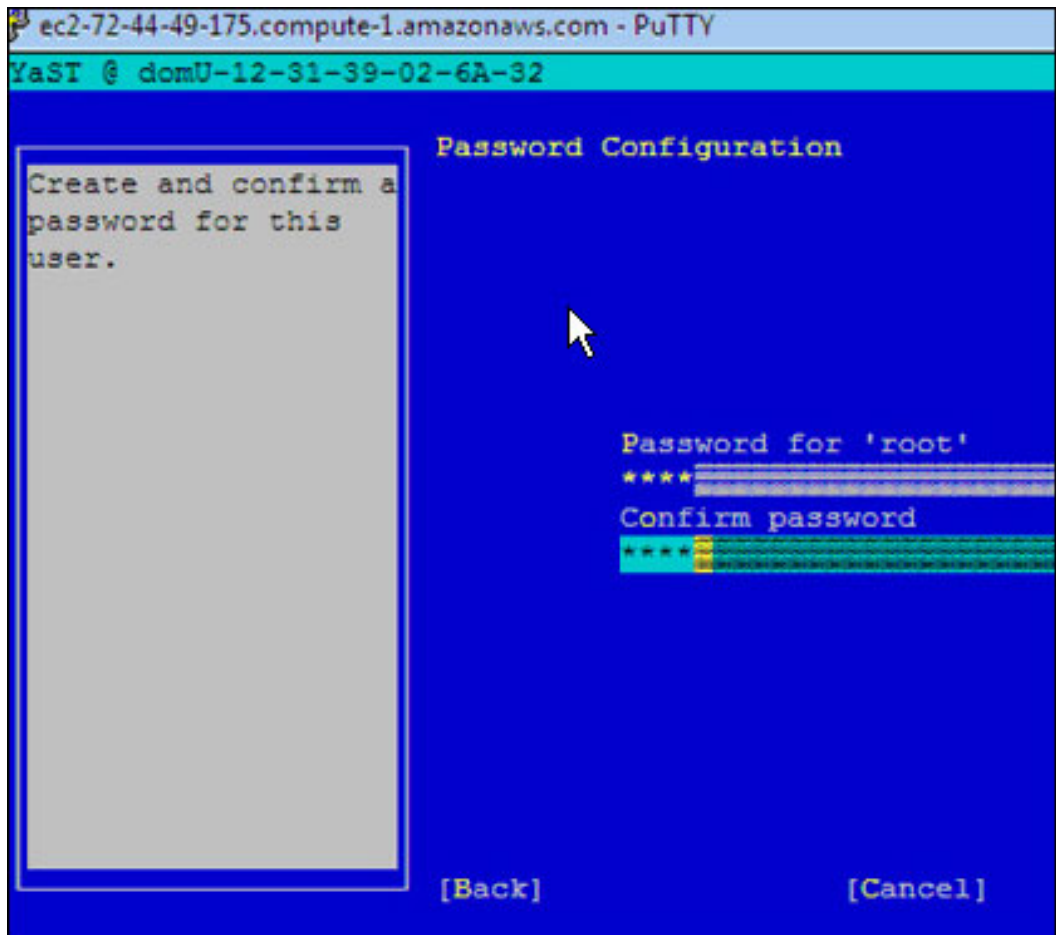


7. Accept the license, as shown in [Figure 17](#).
Figure 17. Prompt to accept license agreement



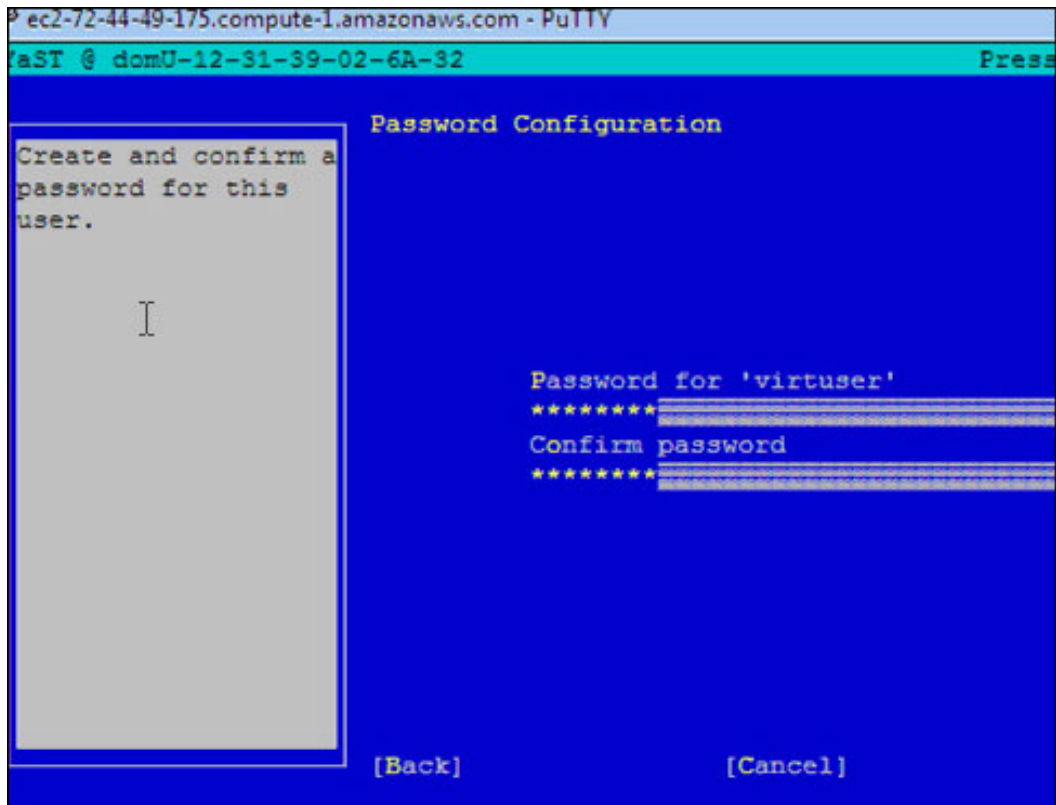
8. Because you will later need full administrative privileges to copy the keys and certificate created earlier, configure the root password now, as shown in [Figure 18](#).

Figure 18. Configure the root password



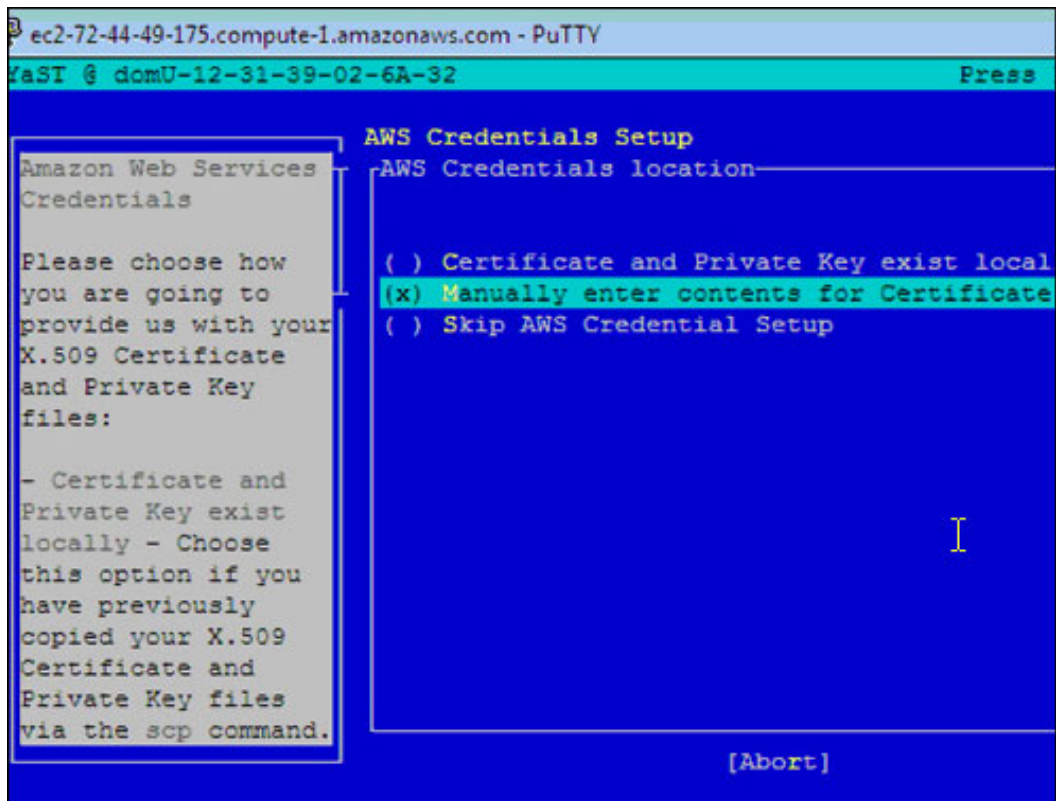
9. Next, configure the *virtuser* password that will be used with the virtual user associated with the AMI instance, as shown in [Figure 19](#).

Figure 19. Configure virtuser password



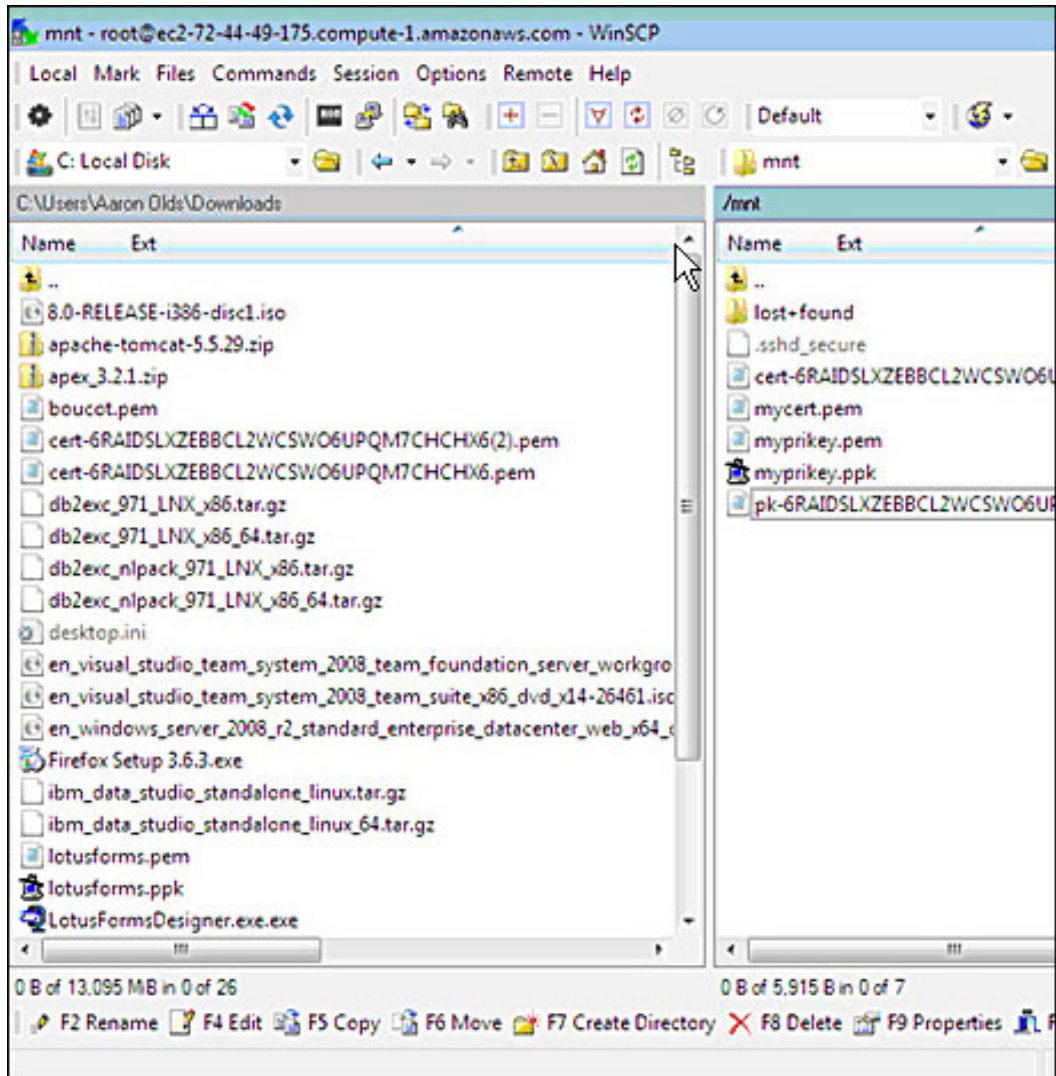
10. In the AWS Credentials Setup page, be sure to select the **Manual setup** option (as shown in [Figure 20](#)), which lets you specify the private key and certification on the server.

Figure 20. AWS Credentials Setup page



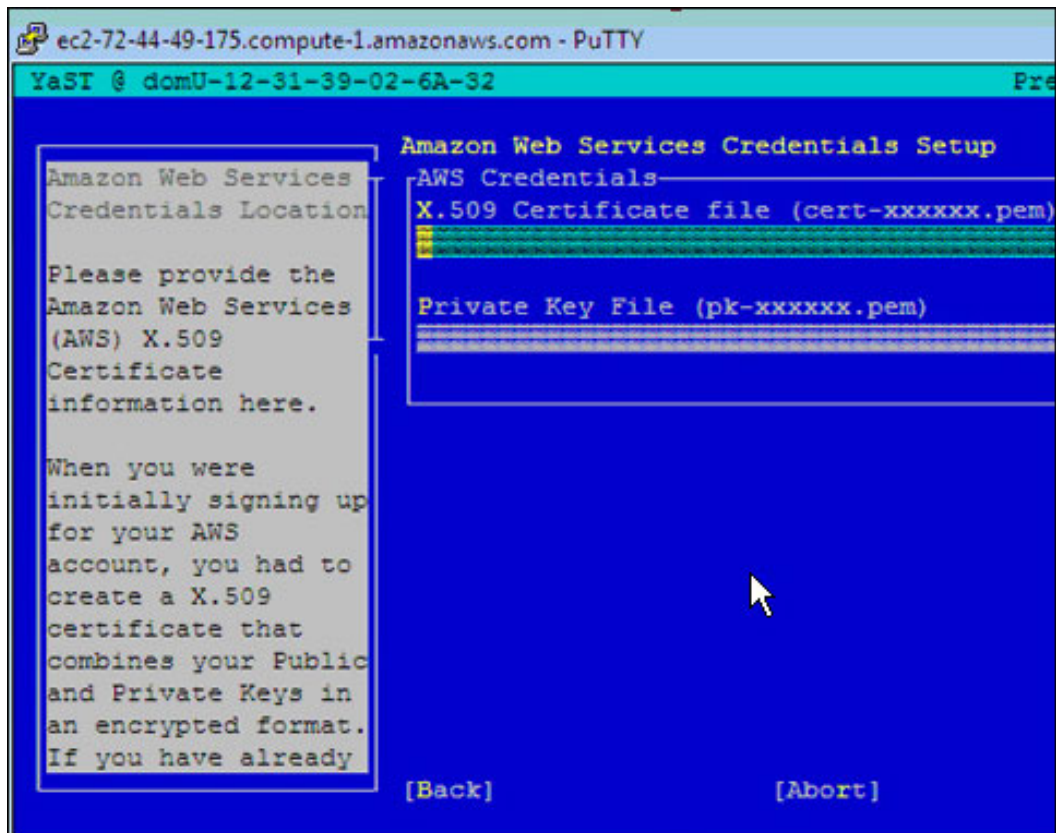
11. Copying the private keys and certificate to the server will give the server an electronic driver's license, which is an easy way to verify identity. Use WinSCP to copy the private key and certification to the server so you can complete the manual setup, as shown in [Figure 21](#). If you are not familiar with private key encryption, consider reading the article on the subject in [Resources](#).

Figure 21. WinSCP used to copy private key and certification

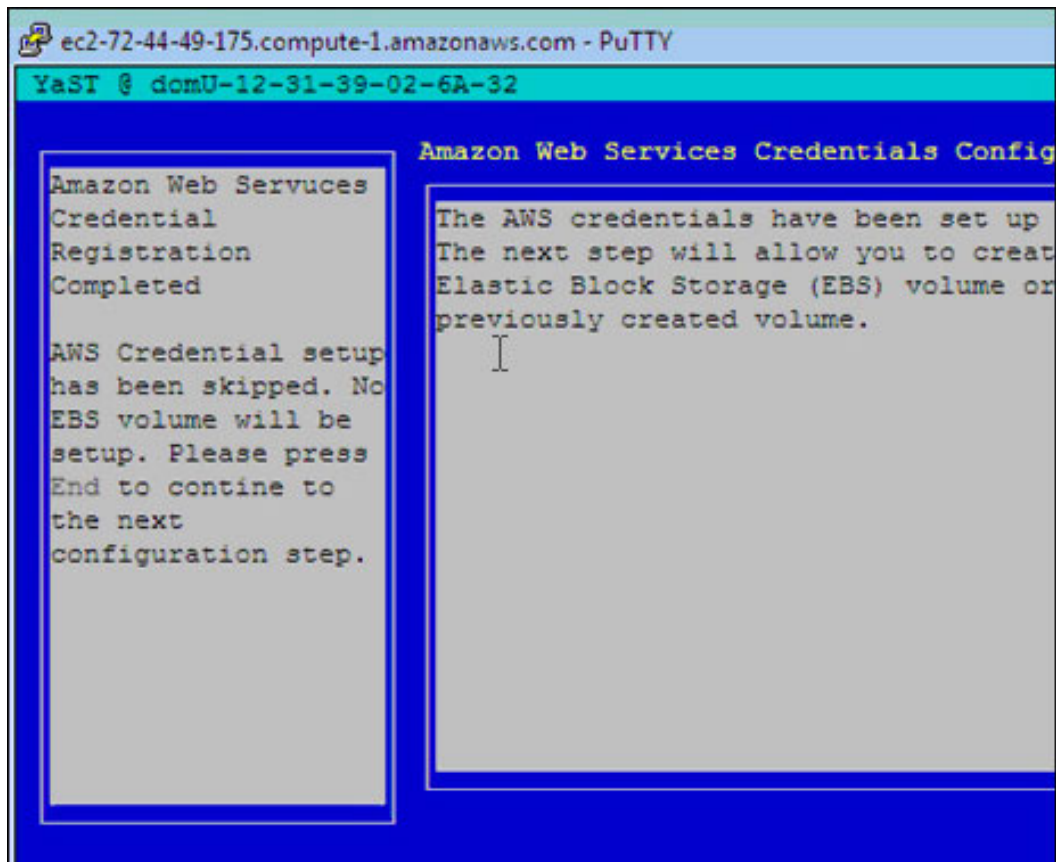


12. Now that the private key and certification have been copied, you can return to the manual setup. Enter the file names of the private key and the certification in the AWS Credentials page, as shown in [Figure 22](#).

Figure 22. Amazon Web Services Credentials Setup page

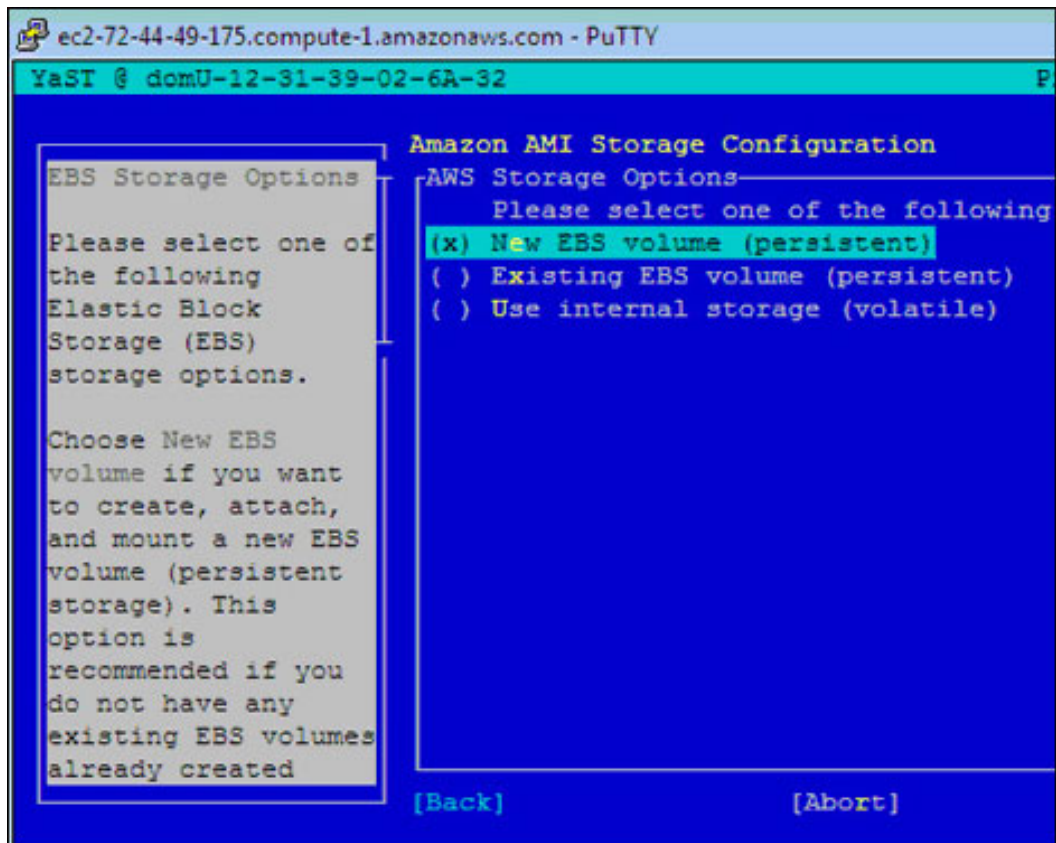


13. After the keys are successfully uploaded and processed, the AWS Credentials Confirmation page will be displayed, as shown in [Figure 23](#). **Figure 23. Amazon Web Services Credentials Confirmation page**



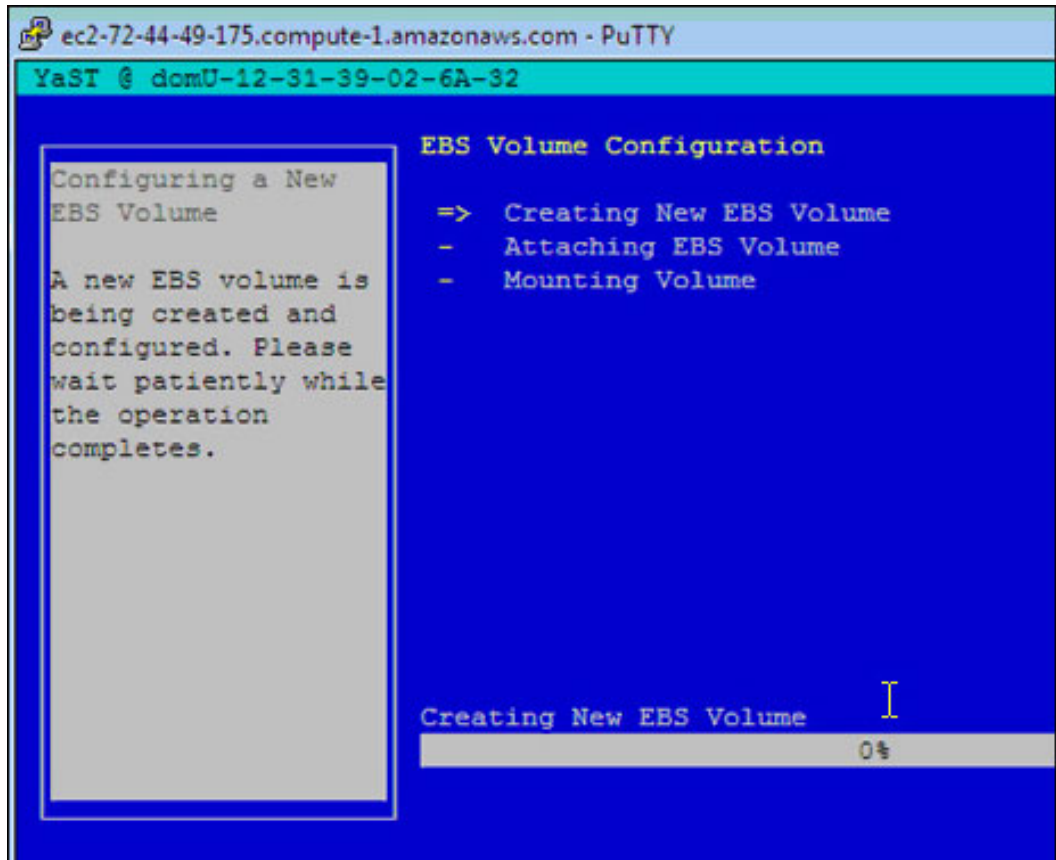
14. Press the **End** key to jump to the page that will be used to create the Elastic Block Storage (EBS) volume, as shown in [Figure 24](#). The EBS contracts or expands based on what functions the users are executing, so that they are charged less by the cloud provider when they use less storage.

Figure 24. Create Elastic Block Storage (EBS) volume



15. The progress of the creation of the new EBS Volume will be displayed, as shown in [Figure 25](#).

Figure 25. Progress of the creation of the new EBS Volume



16. After the EBS volume is created, a confirmation of the AMI configuration will be displayed in two places, as shown in [Figure 26](#) and [Figure 27](#). **Figure 26. Final configuration confirmation from menu**

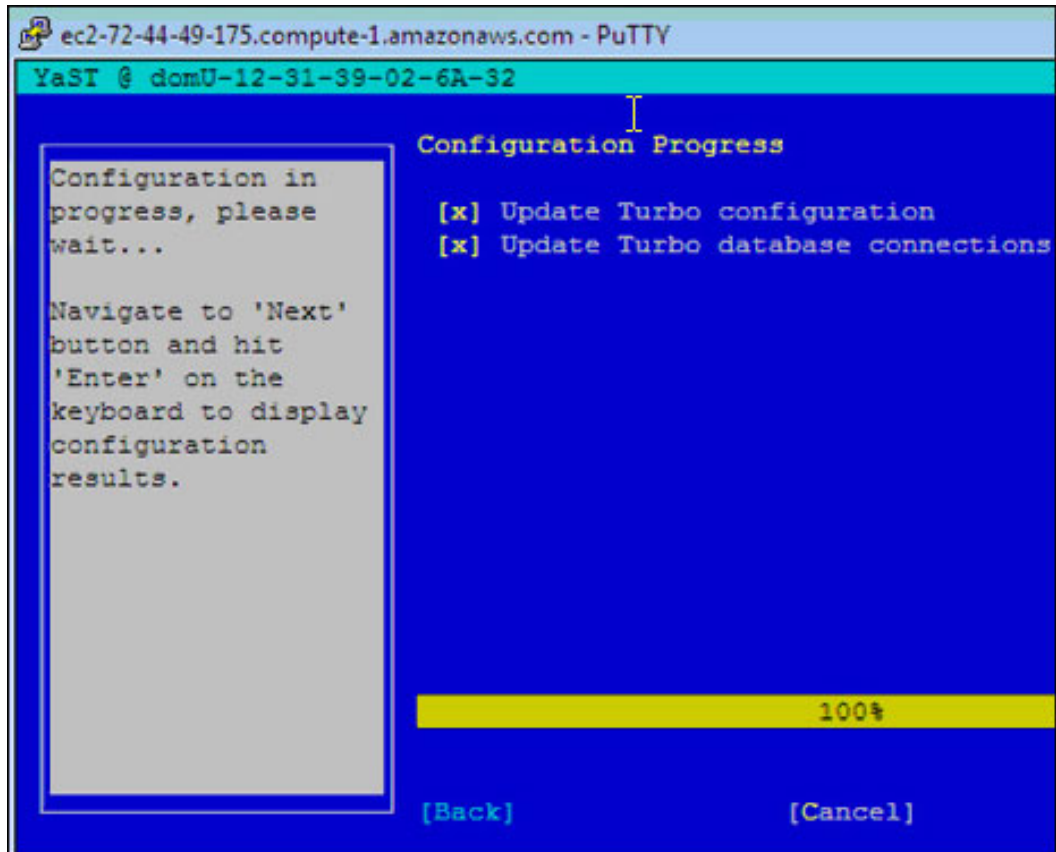
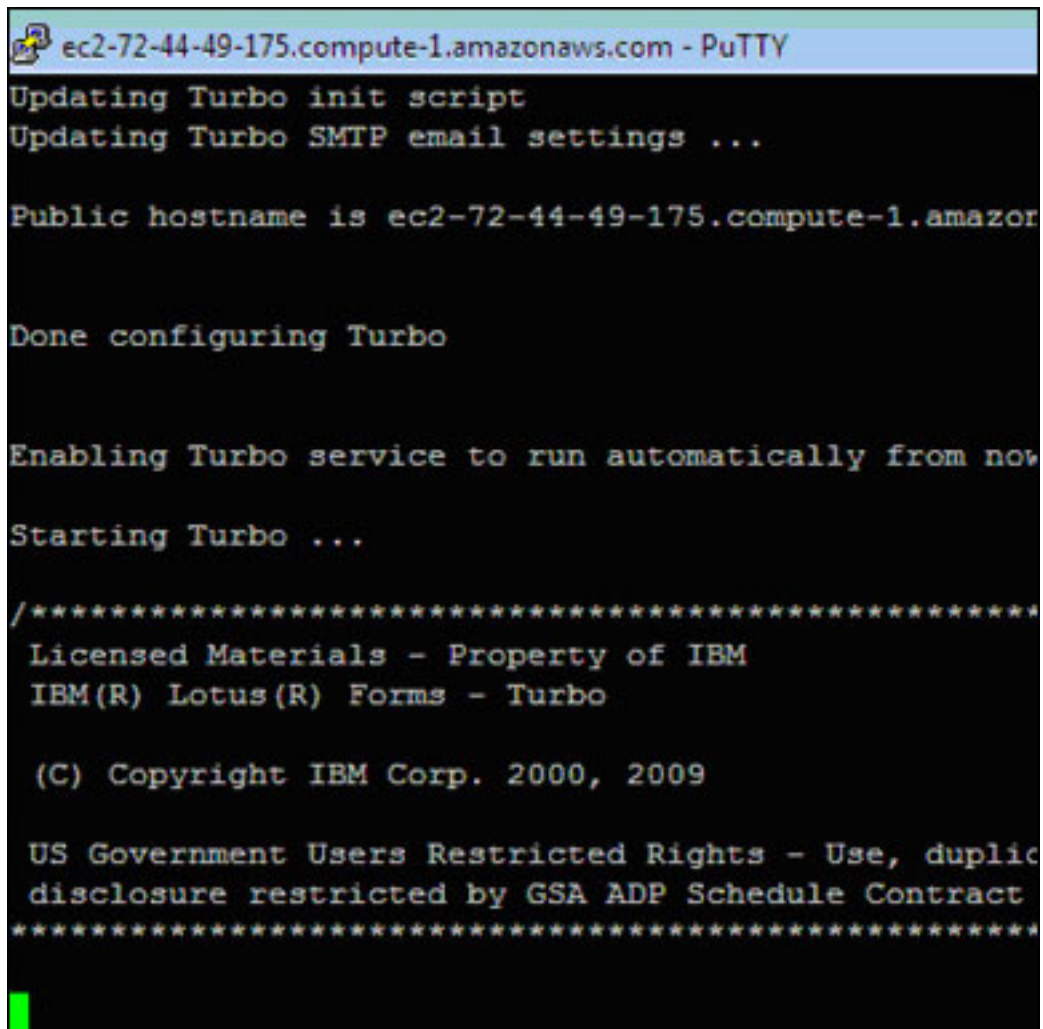


Figure 27 shows the final configuration confirmation from the command line.

Figure 27. Final configuration confirmation from the command line



```
ec2-72-44-49-175.compute-1.amazonaws.com - PuTTY
Updating Turbo init script
Updating Turbo SMTP email settings ...

Public hostname is ec2-72-44-49-175.compute-1.amazon

Done configuring Turbo

Enabling Turbo service to run automatically from now

Starting Turbo ...

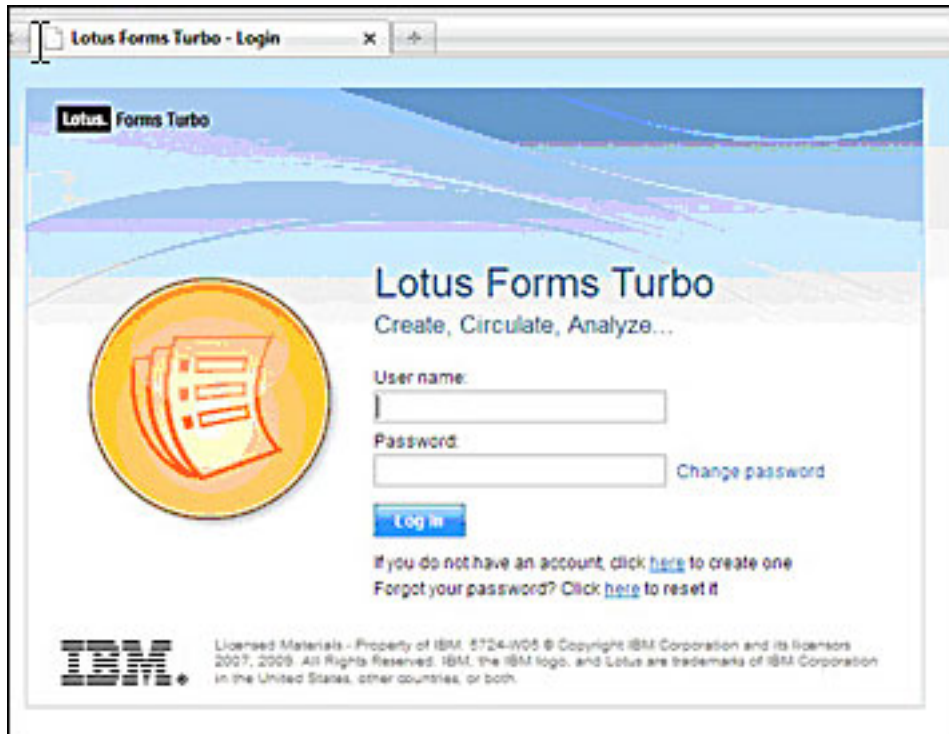
/*****
Licensed Materials - Property of IBM
IBM(R) Lotus(R) Forms - Turbo

(C) Copyright IBM Corp. 2000, 2009

US Government Users Restricted Rights - Use, duplic
disclosure restricted by GSA ADP Schedule Contract
*****/
```

17. For the final step, log on to the recently set up Lotus Forms server via port 9080, as shown in [Figure 28](#). Be sure to use the virtuser account and password.

Figure 28. Log on to Lotus Forms server



You're halfway there. You've created and secured an AWS account, launched an AMI instance, and configured a Lotus Forms server.

Section 5. Write a simple application using Lotus Forms

Now that the Lotus Forms server has been loaded to the cloud, you can create a Lotus eForm. Earlier in the tutorial, we promised that building one of these forms is simple. Now we'll show you.

Information for the eForm

Suppose you are the owner of a fictitious company called Car Care Repair that is in need of an eForm to handle repair requests. After discussing it with your employees, you decide that the following information will appear on the eForm:

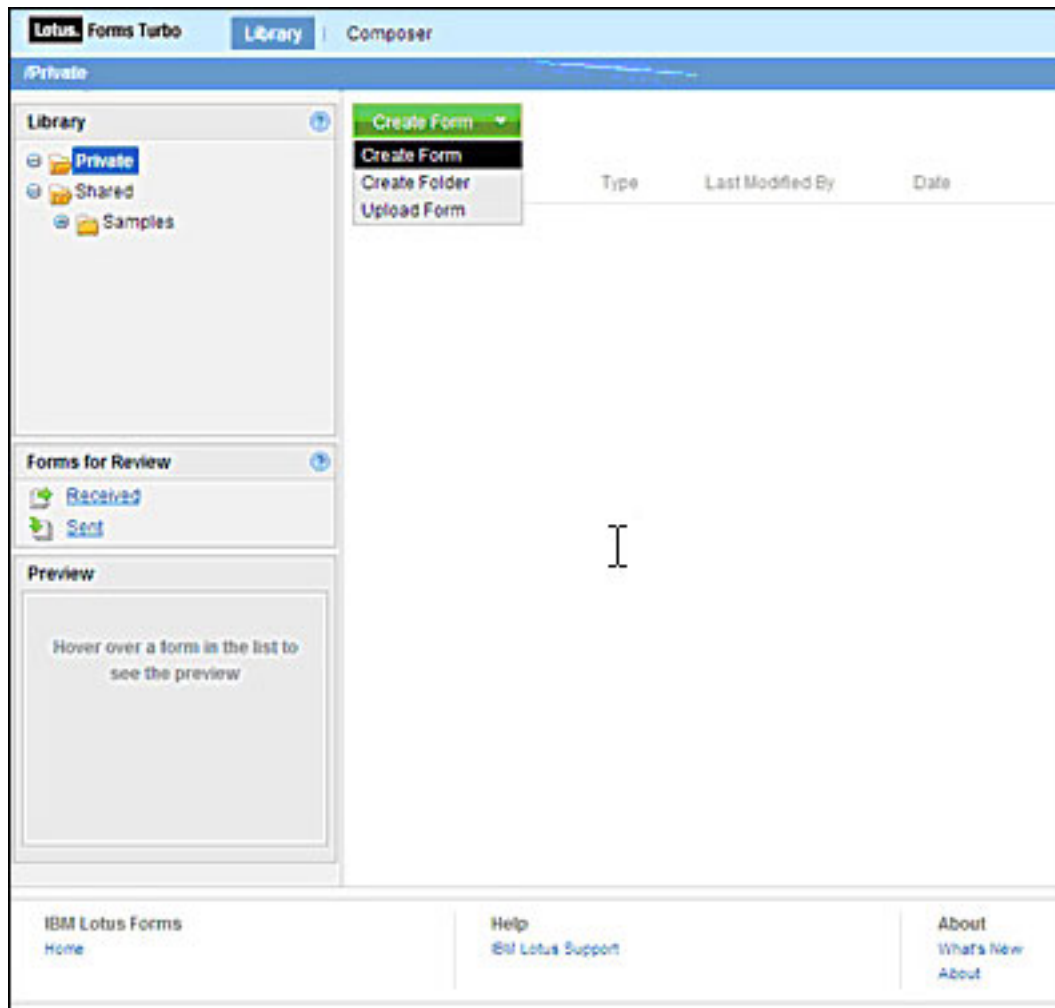
- Form Title: Car Care Request Form
- Full Name field (required)

- Address field (required)
- City / State / Zip field (required)
- Phone Number field (optional)
- E-mail field (optional)
- How did you hear about us? drop-down list (optional) [Reference, Advertisement, TV Commercial, Other]
- Are you an AAA member? radio button (optional) [Yes, No]
- Vehicle Make drop-down list (optional) [Ford, General Motors, Chrysler, BMW, Mercedes, Fiat, Jaguar, Toyota, Nissan, Subaru, Hyundai, Mitsubishi, Jeep, Buick, Saturn, Cadillac, Pontiac, GMC, Lexus, Infiniti, Renault, Saab, Volvo]
- Vehicle Year drop-down list (optional) [Start year = 1900 and End year = 2050]
- Submit button

Go to landing page

Go to the landing page, and select **Create Form** from the drop-down list, as shown in [Figure 29](#).

Figure 29. Lotus Forms landing page



The first step in creating a Lotus eForm is to determine the objects that will appear on it, such as fields, drop-down lists, radio and other buttons, and text boxes. For each one of these objects, fill out an easy-to-use property sheet. Several representative entries are shown below.

Create a data entry field

To create a data entry field for the customer's address, make the following entries in a property sheet, as shown in [Figure 30](#) and [Figure 31](#).

- Enter `Address` : for the Label.
- Select `Text` from the Data type drop-down list.
- Do not enter anything for Initial value.
- Select `Medium` from the Size drop-down list.

- Select *Left* from the Alignment drop-down list.
- Enter 1 for Lines to display.

Figure 30. Field Property Sheet, Part 1

Entry Field Properties

Label:
Address :
[More Label properties...](#)

Data type:
Text

Initial value:

▼ Hide

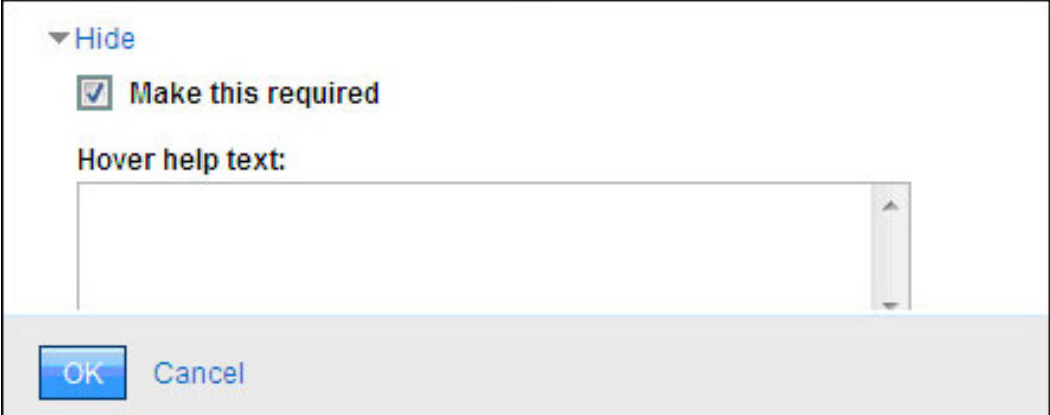
Size:
Medium

Alignment:
Left

Lines to display:
1

Allow scrolling

- Do not check the Allow Scrolling check box.
- Check the *Make this required* check box, as shown in [Figure 31](#).

Figure 31. Field Property Sheet, Part 2

- Do not enter anything in the Hover help text field.

To create a drop-down list to identify how the customer heard about Car Care Repair, make the following entries in a property sheet, as shown in [Figure 32](#) and [Figure 33](#).

- Enter `How did you hear about us?` for the Label.
- For the first entry, enter `Reference` for both the Display value and the Report value.
- For the second entry, enter `Advertisement` for both the Display value and the Report value.
- For the third entry, enter `TV Commercial` for both the Display value and the Report value.
- For the fourth entry, enter `Other` for both the Display value and the Report value (see [Figure 32](#)).

Figure 32. Drop-down list properties

Dropdown List Properties

Label:

▶ More Label properties...

List items:

	Display value	Sort	Report value	Initial value
1.	<input type="text" value="Reference"/>		<input type="text" value="Reference"/>	<input type="radio"/>
2.	<input type="text" value="Advertisement"/>		<input type="text" value="Advertisement"/>	<input type="radio"/>
3.	<input type="text" value="TV Commercial"/>		<input type="text" value="TV_Commercial"/>	<input type="radio"/>
4.	<input type="text" value="Other"/>		<input type="text" value="Other"/>	<input type="radio"/>
5.	<input type="text"/>		<input type="text"/>	<input type="radio"/>

- Do not check the Make this required check box.
- Do not enter anything in the Hover help text field (see [Figure 33](#)).

Figure 33. Additional properties of the drop-down list

▶ More List items properties...

▼ Hide

Make this required

Hover help text:

To create a radio button to identify whether the customer is an AAA member, make the following entries in a property sheet, as shown in [Figure 34](#).

- Enter Are you a AAA member? for the Label.

- For the first entry, enter `Yes` for the Display value and `TRIPA_YES` for the Report value.
- For the second entry, enter `No` for the Display value and `TRIPA_NO` for the Report value.

Figure 34. Radio button property sheet

Choices Properties

Label:
Are you a AAA member?

[More Label properties...](#)

Choices:

	Display value	Sort	Report value	Initial value
1.	Yes		TRIPA_YES	<input type="radio"/>
2.	No		TRIPA_NO	<input type="radio"/>
3.				<input type="radio"/>
4.				<input type="radio"/>

Allow submitters to select multiple choices

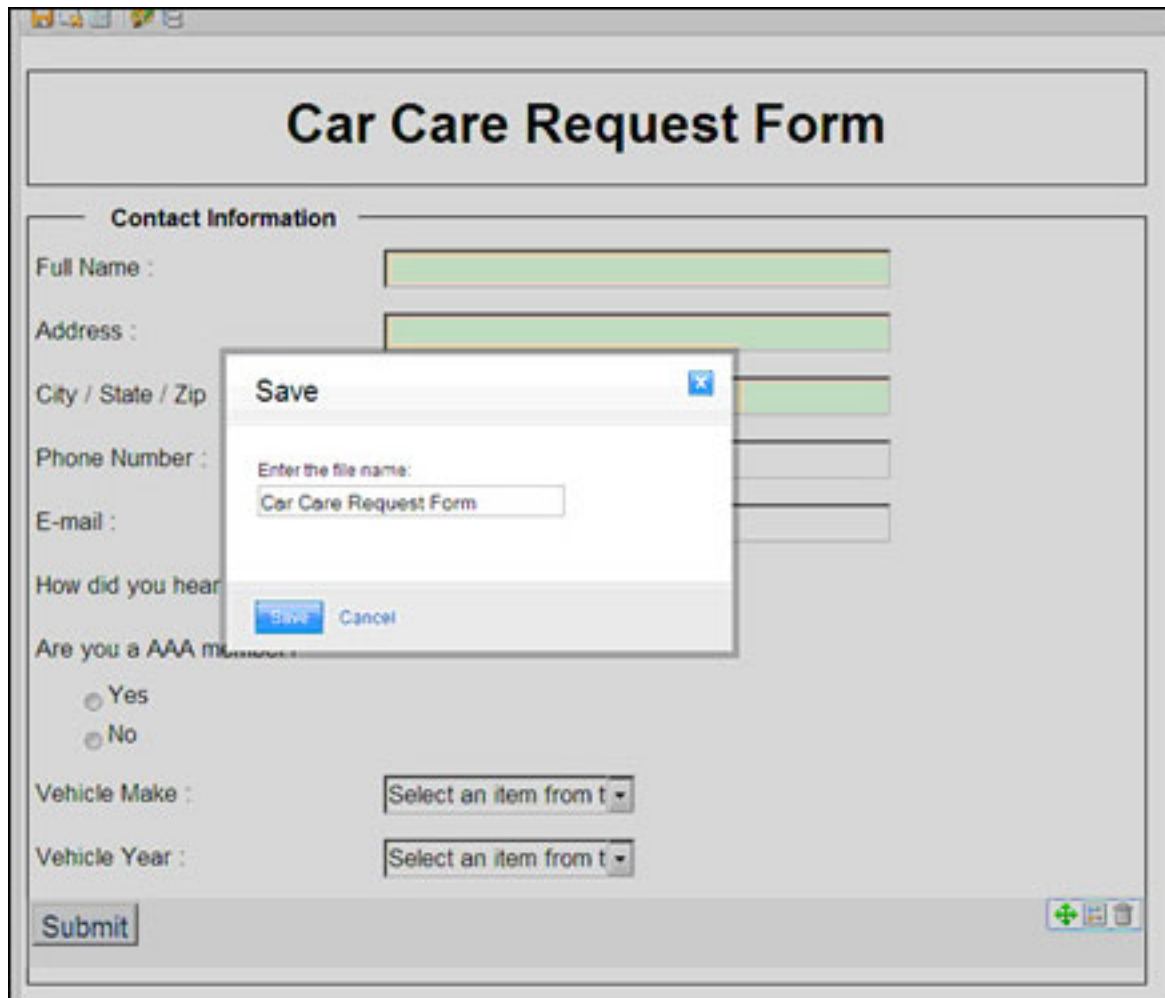
- Do not check the Make this required check box.
- Do not enter anything in the Hover help text field.

You have just defined all of the fields, drop-down lists, and other customer information objects that will appear on the eForm.

Save form

To save the eForm, press **Submit**, as shown in [Figure 35](#).

Figure 35. Save dialog box

The image shows a web browser window displaying a 'Car Care Request Form'. The form is titled 'Car Care Request Form' and is divided into a 'Contact Information' section and a vehicle information section. The 'Contact Information' section includes fields for 'Full Name', 'Address', 'City / State / Zip', 'Phone Number', 'E-mail', and 'How did you hear...'. Below these are radio buttons for 'Are you a AAA member?' with options 'Yes' and 'No'. The vehicle information section includes dropdown menus for 'Vehicle Make' and 'Vehicle Year', both currently showing 'Select an item from t'. A 'Submit' button is at the bottom left. A 'Save' dialog box is open in the center, with the title 'Save' and a close button. It contains the text 'Enter the file name:' followed by a text input field containing 'Car Care Request Form'. At the bottom of the dialog are 'Save' and 'Cancel' buttons.

Now the form property definitions are safely stored.

Circulate form

You have just defined all of the objects on the Car Care Request form and have saved it. The next step is to circulate the form. In a nutshell, the form circulation process answers several questions, many of which have several possible answers:

- Where is the form located?
 1. The URL where the form code is stored (for example, <http://ec2-72-44-49-175.compute-1.amazonaws.com:9080/turbo/open/route/view/>)
- Who can submit the form?
 1. Anonymous users can submit forms that will not be reviewed.

2. Registered users can submit forms that will be reviewed.
 3. Anonymous and registered users can submit forms that might or might not be reviewed.
 4. Car Care uses anonymous users.
- How often can the form be submitted?
 1. Submit a form only once.
 2. Submit the same form multiple times.
 3. Car Care allows the form to be submitted multiple times.
 - When can the form be used?
 1. A start date indicates the beginning of form use.
 2. An end date indicates the termination of form use.
 3. For Car Care, the form can be run anytime, because no date restrictions were entered.
 - Where is the data that is gathered by the form sent?
 1. The URL with the data that the form will query is stored. This is important when using pre-filled values on the form.
 2. Car Care elected not to pre-fill any of the fields on the form, so no URL was provided.
 - Who can run applications on the form data?
 1. The URL for the third-party that will do the application.
 2. Car Care decided not to allow third-party software access to the form.

In [Figure 36](#) and [Figure 37](#), the circulation process of the Car Care Request form is displayed. When you finish filling out the options, click **Apply** at the bottom of the page. The Car Care Request form will be displayed again.

Figure 36. Circulation options page, basic options

Circulate for Submission ✕

Circulate options for the form: *Car Care Request Form*

Form URL:

`http://ec2-72-44-49-175.compute-1.amazonaws.com:9080/turbo/open/route/view/start?formName=hiCT0ePP9rWiqCho1273117943505`

Copy the Form URL and then provide it to submitters to access this form.

Who can submit:

Registered users (required for Submit for Review forms)

Anonymous users

Registered and anonymous users

Each submitter can submit:

Once


Multiple times - updating existing submission


Multiple times - creating new submission

Figure 37 shows the additional options for the Circulations options page.

Figure 37. Circulation options page, additional options

Set circulation period

Start: 

Stop: 

Retrieve form information from

server URL:

to update the following:

Pre-fill data values

The entire form

Upon submit, allow third-party application at

server URL:

to have access to the following:

User-submitted data

The entire form

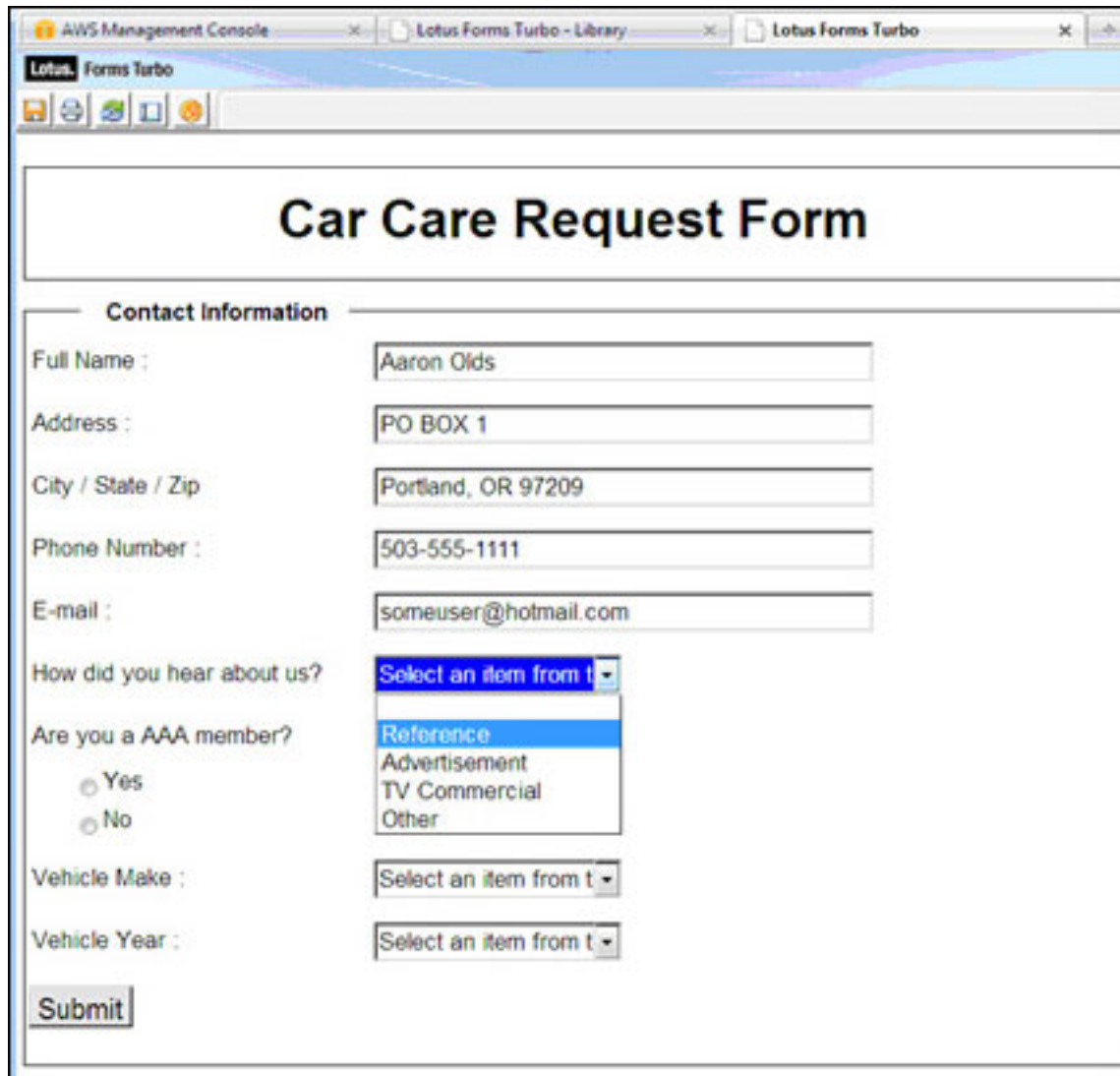
Section 6. Run the application

The Car Care Request form is now ready to be used by the Car Repair Shop's front office. The shop workers, who only have regular security privileges, will only be able to fill out and submit forms on behalf of the customers. Their supervisors, who have administrative security privileges, will be able to review the results and export the data of submitted forms in PDF files that can ultimately be imported into Excel spreadsheets.

Submit form

After an employee finishes entering customer information on a form, he or she will submit it for review by clicking **Submit**, as shown in [Figure 38](#).

Figure 38. Form ready for submission

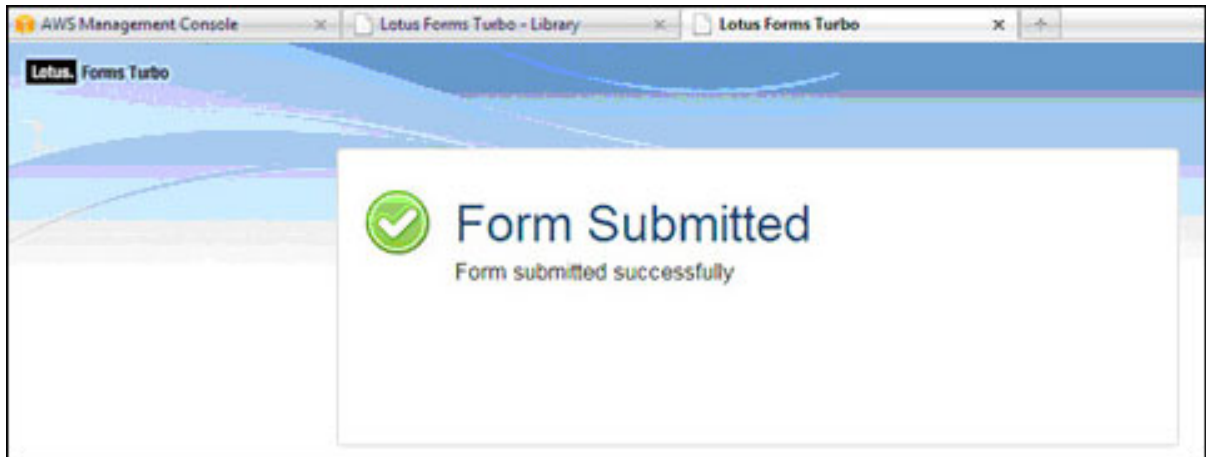


The screenshot shows a web browser window with the title 'Lotus Forms Turbo'. The browser's address bar shows 'Lotus Forms Turbo - Library' and 'Lotus Forms Turbo'. The main content area displays a form titled 'Car Care Request Form'. The form is divided into a 'Contact Information' section and a 'Vehicle Information' section. The 'Contact Information' section includes fields for Full Name (Aaron Olds), Address (PO BOX 1), City / State / Zip (Portland, OR 97209), Phone Number (503-555-1111), and E-mail (someuser@hotmail.com). There is also a dropdown menu for 'How did you hear about us?' with 'Reference' selected, and radio buttons for 'Are you a AAA member?' (Yes/No). The 'Vehicle Information' section includes dropdown menus for 'Vehicle Make' and 'Vehicle Year'. A 'Submit' button is located at the bottom left of the form.

Confirm the form was successfully submitted

After the form is submitted, a confirmation page will be displayed like the one in [Figure 39](#).

Figure 39. Submitted form confirmation



Review and export submitted data

The Submissions Data tab is used to review the submitted Car Care Request forms. After the results have been reviewed, they can be exported to CVS or PDF files. To export the data, perform the following two steps:

1. Select the export data file type from the Export File Type drop-down list.
2. Click **Export** to export data to a file.

You have just submitted your first Lotus eForm on the cloud. The AMI instance is still running on EC2, but the Car Care Repair Shop has reviewed a customer's car repair request information for accuracy before exporting it to a file for records retention.

Section 7. Summary

Congratulations! You have experienced cloud computing by developing a Lotus Form on the cloud. Now you can automate your business processes with eForms that are easy to learn and simple to write. eForms can also be integrated with e-commerce products from Amazon, Google, SAP, and other technology heavyweights. You have saved your company time and money by tapping into the cloud.

Resources

Learn

- [IBM Cloud Computing](#): Learn all about the IBM vision for cloud computing.
- [IBM EC2 AMI Frequently Asked Questions](#): Get answers to general questions about using IBM development AMIs in the AWS EC2 environment.
- Watch this [introduction to the world of cloud computing](#) tutorial.
- Learn about innovative ideas that address [how IBM cloud computing can be used by your company](#).
- To learn more about [IBM Lotus Forms](#), read the developerWorks page on the topic.
- Learn more about [configuring Lotus Forms](#).
- Check out in-depth documentation on [Lotus Forms](#).
- "[Integrating IBM Lotus Forms with SAP using the Lotus Forms Services Platform](#)" (Padraig O'Dowd and Bernd Beilke, developerWorks, September 2007) teaches you to integrate Lotus Forms with SAP.
- "[Getting started with Lotus Forms in the WebSphere business process management suite](#)" (developerWorks, June 2008) shows you different methods for integrating IBM Lotus Forms into your business processes and human tasks using IBM WebSphere business process management V6.1 products.
- Read Amazon's guide to [getting started with EC2](#).
- Author Spencer Reiss discusses [Amazon's cloud computing initiatives](#) and its game-changing nature (Wired magazine, Apr 2008).
- "[Cloud computing with Amazon Web Services, Part 1: Introduction](#)" (Prabhakar Chaganti, developerWorks, July 2008): Learn more about AWS.
- Watch this video tutorial if you'd like to [know more about Amazon EC2](#).
- Learn about [X.509 public key certificates](#).
- Generate a new [activation key for the developer version of the AMI](#) at any time.
- The [cloud computing entry on Wikipedia](#) is a helpful overview and includes the Gartner quotes and sources cited in this tutorial.
- Visit [IBM developerWorks' cloud computing zone](#) for the latest cloud resources.
- In the [developerWorks' Web development zone](#), get the resources you need to advance your skills in the architecture arena.

Get products and technologies

- [Lotus Forms Turbo V3.5.1 Development AMI](#): Lotus Forms Turbo has been developed to help nontechnical users quickly create web-based eForms.
- Download [IBM product evaluation versions](#) and get your hands on application development tools and middleware products from DB2®, Lotus®, Rational®, Tivoli®, and WebSphere®.
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