

Version 9.6.1 HotFix 2

Informatica on Amazon EC2 Quick Start Guide

Copyright (c) 2014-2015 Informatica. All rights reserved.

Contents

Legal.....	1
Informatica Installation on Amazon EC2.....	5
Informatica on Amazon EC2.....	5
Informatica on EC2 with AWS CloudFormation Scripts.....	5
Prerequisites for Manual Installation.....	10
Amazon EC2 Instance Configuration.....	10
Generating the Password and Logging into a Windows Instance.....	15
Generating the password for a Linux Instance with PuTTYgen.....	15
Manual Installation of Informatica on an Amazon EC2 Instance.....	16
Best Practices.....	16

Legal

This software and documentation contain proprietary information of Informatica Corporation and are provided under a license agreement containing restrictions on use and disclosure and are also protected by copyright law. Reverse engineering of the software is prohibited. No part of this document may be reproduced or transmitted in any form, by any means (electronic, photocopying, recording or otherwise) without prior consent of Informatica Corporation. This Software may be protected by U.S. and/or international Patents and other Patents Pending.

Use, duplication, or disclosure of the Software by the U.S. Government is subject to the restrictions set forth in the applicable software license agreement and as provided in DFARS 227.7202-1(a) and 227.7702-3(a) (1995), DFARS 252.227-7013[©](1)(ii) (OCT 1988), FAR 12.212(a) (1995), FAR 52.227-19, or FAR 52.227-14 (ALT III), as applicable.

The information in this product or documentation is subject to change without notice. If you find any problems in this product or documentation, please report them to us in writing.

Informatica, Informatica Platform, Informatica Data Services, PowerCenter, PowerCenterRT, PowerCenter Connect, PowerCenter Data Analyzer, PowerExchange, PowerMart, Metadata Manager, Informatica Data Quality, Informatica Data Explorer, Informatica B2B Data Transformation, Informatica B2B Data Exchange Informatica On Demand, Informatica Identity Resolution, Informatica Application Information Lifecycle Management, Informatica Complex Event Processing, Ultra Messaging and Informatica Master Data Management are trademarks or registered trademarks of Informatica Corporation in the United States and in jurisdictions throughout the world. All other company and product names may be trade names or trademarks of their respective owners.

Portions of this software and/or documentation are subject to copyright held by third parties, including without limitation: Copyright DataDirect Technologies. All rights reserved. Copyright © Sun Microsystems. All rights reserved. Copyright © RSA Security Inc. All Rights Reserved. Copyright © Ordinal Technology Corp. All rights reserved. Copyright © Aandacht c.v. All rights reserved. Copyright Genivia, Inc. All rights reserved. Copyright Isomorphic Software. All rights reserved. Copyright © Meta Integration Technology, Inc. All rights reserved. Copyright © Intalio. All rights reserved. Copyright © Oracle. All rights reserved. Copyright © Adobe Systems Incorporated. All rights reserved. Copyright © DataArt, Inc. All rights reserved. Copyright © ComponentSource. All rights reserved. Copyright © Microsoft Corporation. All rights reserved. Copyright © Rogue Wave Software, Inc. All rights reserved. Copyright © Teradata Corporation. All rights reserved. Copyright © Yahoo! Inc. All rights reserved. Copyright © Glyph & Cog, LLC. All rights reserved. Copyright © Thinkmap, Inc. All rights reserved. Copyright © Clearpace Software Limited. All rights reserved. Copyright © Information Builders, Inc. All rights reserved. Copyright © OSS Nokalva, Inc. All rights reserved. Copyright Edifecs, Inc. All rights reserved. Copyright Cleo Communications, Inc. All rights reserved. Copyright © International Organization for Standardization 1986. All rights reserved. Copyright © ej-technologies GmbH. All rights reserved. Copyright © Jaspersoft Corporation. All rights reserved. Copyright © International Business Machines Corporation. All rights reserved. Copyright © yWorks GmbH. All rights reserved. Copyright © Lucent Technologies. All rights reserved. Copyright (c) University of Toronto. All rights reserved. Copyright © Daniel Veillard. All rights reserved. Copyright © Unicode, Inc. Copyright IBM Corp. All rights reserved. Copyright © MicroQuill Software Publishing, Inc. All rights reserved. Copyright © PassMark Software Pty Ltd. All rights reserved. Copyright © LogiXML, Inc. All rights reserved. Copyright © 2003-2010 Lorenzi Davide, All rights reserved. Copyright © Red Hat, Inc. All rights reserved. Copyright © The Board of Trustees of the Leland Stanford Junior University. All rights reserved. Copyright © EMC Corporation. All rights reserved. Copyright © Flexera Software. All rights reserved. Copyright © Jinfonet Software. All rights reserved. Copyright © Apple Inc. All rights reserved. Copyright © Telerik Inc. All rights reserved. Copyright © BEA Systems. All rights reserved. Copyright © PDFlib GmbH. All rights reserved. Copyright © Orientation in Objects GmbH. All rights reserved. Copyright © Tanuki Software, Ltd. All rights reserved. Copyright © Ricebridge. All rights reserved. Copyright © Sencha, Inc. All rights reserved. Copyright © Scalable Systems, Inc. All rights reserved. Copyright © jQWidgets. All rights reserved.

This product includes software developed by the Apache Software Foundation (<http://www.apache.org/>), and/or other software which is licensed under various versions of the Apache License (the "License"). You may obtain a copy of these Licenses at <http://www.apache.org/licenses/>. Unless required by applicable law or agreed to in writing, software distributed under these Licenses is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the Licenses for the specific language governing permissions and limitations under the Licenses.

This product includes software which was developed by Mozilla (<http://www.mozilla.org/>), software copyright The JBoss Group, LLC, all rights reserved; software copyright © 1999-2006 by Bruno Lowagie and Paulo Soares and other software which is licensed under various versions of the GNU Lesser General Public License Agreement, which may be found at <http://www.gnu.org/licenses/lgpl.html>. The materials are provided free of charge by Informatica, "as-is", without warranty of any kind, either express or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.

The product includes ACE(TM) and TAO(TM) software copyrighted by Douglas C. Schmidt and his research group at Washington University, University of California, Irvine, and Vanderbilt University, Copyright (©) 1993-2006, all rights reserved.

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (copyright The OpenSSL Project. All Rights Reserved) and redistribution of this software is subject to terms available at <http://www.openssl.org> and <http://www.openssl.org/source/license.html>.

This product includes Curl software which is Copyright 1996-2013, Daniel Stenberg, <daniel@haxx.se>. All Rights Reserved. Permissions and limitations regarding this software are subject to terms available at <http://curl.haxx.se/docs/copyright.html>. Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

The product includes software copyright 2001-2005 (©) MetaStuff, Ltd. All Rights Reserved. Permissions and limitations regarding this software are subject to terms available at <http://www.dom4j.org/license.html>.

The product includes software copyright © 2004-2007, The Dojo Foundation. All Rights Reserved. Permissions and limitations regarding this software are subject to terms available at <http://dojotoolkit.org/license>.

This product includes ICU software which is copyright International Business Machines Corporation and others. All rights reserved. Permissions and limitations regarding this software are subject to terms available at <http://source.icu-project.org/repos/icu/icu/trunk/license.html>.

This product includes software copyright © 1996-2006 Per Bothner. All rights reserved. Your right to use such materials is set forth in the license which may be found at <http://www.gnu.org/software/kawa/Software-License.html>.

This product includes OSSP UUID software which is Copyright © 2002 Ralf S. Engelschall, Copyright © 2002 The OSSP Project Copyright © 2002 Cable & Wireless Deutschland. Permissions and limitations regarding this software are subject to terms available at <http://www.opensource.org/licenses/mit-license.php>.

This product includes software developed by Boost (<http://www.boost.org/>) or under the Boost software license. Permissions and limitations regarding this software are subject to terms available at http://www.boost.org/LICENSE_1_0.txt.

This product includes software copyright © 1997-2007 University of Cambridge. Permissions and limitations regarding this software are subject to terms available at <http://www.pcre.org/license.txt>.

This product includes software copyright © 2007 The Eclipse Foundation. All Rights Reserved. Permissions and limitations regarding this software are subject to terms available at <http://www.eclipse.org/org/documents/epl-v10.php> and at <http://www.eclipse.org/org/documents/edl-v10.php>.

This product includes software licensed under the terms at <http://www.tcl.tk/software/tcltk/license.html>, <http://www.bosrup.com/web/overlib/?License>, <http://www.stlport.org/doc/license.html>, <http://asm.ow2.org/license.html>, <http://www.cryptix.org/LICENSE.TXT>, <http://hsqldb.org/web/hsqLicense.html>, <http://httpunit.sourceforge.net/doc/license.html>, <http://jung.sourceforge.net/license.txt>, http://www.gzip.org/zlib/zlib_license.html, <http://www.openldap.org/software/release/license.html>, <http://www.libssh2.org>, <http://slf4j.org/license.html>, <http://www.sente.ch/software/OpenSourceLicense.html>, <http://fusesource.com/downloads/license-agreements/fuse-message-broker-v-5-3-license-agreement>; <http://antlr.org/license.html>; <http://aopalliance.sourceforge.net/>; <http://www.bouncycastle.org/licence.html>; <http://www.jgraph.com/jgraphdownload.html>; <http://www.jcraft.com/jsch/LICENSE.txt>; http://jotm.objectweb.org/bsd_license.html; <http://www.w3.org/Consortium/Legal/2002/copyright-software-20021231>; <http://www.slf4j.org/license.html>; <http://nanoxml.sourceforge.net/orig/copyright.html>;

<http://www.json.org/license.html>; <http://forge.ow2.org/projects/javaservice/>, <http://www.postgresql.org/about/licence.html>, <http://www.sqlite.org/copyright.html>, <http://www.tcl.tk/software/tcltk/license.html>, <http://www.jaxen.org/faq.html>, <http://www.jdom.org/docs/faq.html>, <http://www.slf4j.org/license.html>; <http://www.iodbc.org/dataspace/iodbc/wiki/iODBC/License>; <http://www.keplerproject.org/md5/license.html>; <http://www.toedter.com/en/jcalendar/license.html>; <http://www.edankert.com/bounce/index.html>; <http://www.net-snmp.org/about/license.html>; <http://www.openmdx.org/#FAQ>; http://www.php.net/license/3_01.txt; <http://srp.stanford.edu/license.txt>; <http://www.schneier.com/blowfish.html>; <http://www.jmock.org/license.html>; <http://xsom.java.net>; <http://benalman.com/about/license/>; <https://github.com/CreateJS/EaselJS/blob/master/src/easeljs/display/Bitmap.js>; <http://www.h2database.com/html/license.html#summary>; <http://jsoncpp.sourceforge.net/LICENSE>; <http://jdbc.postgresql.org/license.html>; <http://protobuf.googlecode.com/svn/trunk/src/google/protobuf/descriptor.proto>; <https://github.com/rantav/hector/blob/master/LICENSE>; <http://web.mit.edu/Kerberos/krb5-current/doc/mitK5license.html>; <http://jibx.sourceforge.net/jibx-license.html>; <https://github.com/lyokato/libgeohash/blob/master/LICENSE>; <https://github.com/hjiang/jsonxx/blob/master/LICENSE>; and <https://code.google.com/p/lz4/>.

This product includes software licensed under the Academic Free License (<http://www.opensource.org/licenses/afl-3.0.php>), the Common Development and Distribution License (<http://www.opensource.org/licenses/cddl1.php>) the Common Public License (<http://www.opensource.org/licenses/cpl1.0.php>), the Sun Binary Code License Agreement Supplemental License Terms, the BSD License (<http://www.opensource.org/licenses/bsd-license.php>), the new BSD License (<http://opensource.org/licenses/BSD-3-Clause>), the MIT License (<http://www.opensource.org/licenses/mit-license.php>), the Artistic License (<http://www.opensource.org/licenses/artistic-license-1.0>) and the Initial Developer's Public License Version 1.0 (<http://www.firebirdsql.org/en/initial-developer-s-public-license-version-1-0/>).

This product includes software copyright © 2003-2006 Joe Walnes, 2006-2007 XStream Committers. All rights reserved. Permissions and limitations regarding this software are subject to terms available at <http://xstream.codehaus.org/license.html>. This product includes software developed by the Indiana University Extreme! Lab. For further information please visit <http://www.extreme.indiana.edu/>.

This product includes software Copyright (c) 2013 Frank Balluffi and Markus Moeller. All rights reserved. Permissions and limitations regarding this software are subject to terms of the MIT license.

This Software is protected by U.S. Patent Numbers 5,794,246; 6,014,670; 6,016,501; 6,029,178; 6,032,158; 6,035,307; 6,044,374; 6,092,086; 6,208,990; 6,339,775; 6,640,226; 6,789,096; 6,823,373; 6,850,947; 6,895,471; 7,117,215; 7,162,643; 7,243,110; 7,254,590; 7,281,001; 7,421,458; 7,496,588; 7,523,121; 7,584,422; 7,676,516; 7,720,842; 7,721,270; 7,774,791; 8,065,266; 8,150,803; 8,166,048; 8,166,071; 8,200,622; 8,224,873; 8,271,477; 8,327,419; 8,386,435; 8,392,460; 8,453,159; 8,458,230; 8,707,336; 8,886,617 and RE44,478, International Patents and other Patents Pending.

DISCLAIMER: Informatica Corporation provides this documentation "as is" without warranty of any kind, either express or implied, including, but not limited to, the implied warranties of noninfringement, merchantability, or use for a particular purpose. Informatica Corporation does not warrant that this software or documentation is error free. The information provided in this software or documentation may include technical inaccuracies or typographical errors. The information in this software and documentation is subject to change at any time without notice.

NOTICES

This Informatica product (the "Software") includes certain drivers (the "DataDirect Drivers") from DataDirect Technologies, an operating company of Progress Software Corporation ("DataDirect") which are subject to the following terms and conditions:

1. THE DATADIRECT DRIVERS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.
2. IN NO EVENT WILL DATADIRECT OR ITS THIRD PARTY SUPPLIERS BE LIABLE TO THE END-USER CUSTOMER FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES ARISING OUT OF THE USE OF THE ODBC DRIVERS, WHETHER OR NOT INFORMED OF THE POSSIBILITIES OF DAMAGES IN ADVANCE. THESE LIMITATIONS APPLY TO ALL CAUSES OF ACTION, INCLUDING, WITHOUT LIMITATION, BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, MISREPRESENTATION AND OTHER TORTS.

Informatica Installation on Amazon EC2

Informatica on Amazon EC2

You can install Informatica services and Informatica client tools on an Amazon EC2 instance.

When you install Informatica on Amazon EC2, you use the Amazon cloud infrastructure instead of relying on the on-premise hardware in your network. You can scale up and scale down the environment based on your requirement with zero investment on hardware.

You can also create a mixed environment that contains on-premise machines and Amazon EC2 instances. You can also setup Informatica services on Amazon EC2 and use Informatica clients from your on-premise machines.

You can choose to run an AWS CloudFormation script that installs Informatica services and creates a multi-node Informatica domain on Amazon EC2 or you can install Informatica services manually on an Amazon EC2 AMI.

Informatica on EC2 with AWS CloudFormation Scripts

You can create an Informatica domain on Amazon EC2 with AWS CloudFormation scripts.

The scripts create a VPC infrastructure for a single availability zone, multi-tier deployment of PowerCenter in a DMZ tier with an Oracle database on a private database tier within the VPC. You can choose to set up an Informatica domain that has one, two, three, or four nodes. You can choose whether to setup Informatica services on a Linux AMI or a Windows AMI. The scripts create a PowerCenter Repository Service and a PowerCenter Integration Service. You can create other services based on the license key.

To create an Informatica domain on Amazon EC2, perform the following steps:

- Launch an existing m3.large or greater Amazon EC2 instance to copy the Informatica installation files and configure the shell scripts that install Informatica services. Create an AMI of the instance.
- Upload the AWS CloudFormation scripts to Amazon S3.
- Create a stack on Amazon CloudFormation that runs the CloudFormation scripts to create an Informatica domain.

Creating an AMI to Launch Informatica Domain on Windows

You must configure a Windows instance on Amazon EC2 and create an AMI of that instance. You can use the AMI to launch a stack that deploys Informatica domain on Amazon EC2.

1. Log in to an existing Windows instance on Amazon EC2. Ensure the the instance type is m3.large or greater.
2. Copy the Informatica installation file and the license key to the following location:C:\infainstaller
3. Extract the installer to the following location:C:\Informatica9.6.1
4. Rename the folder source in the extracted files to source1 and create the following folder hierarchy:C:\Informatica9.6.1\source\java\bin\jar.
5. Create the following directory:C:\InfaEc2Scripts
6. Copy the powershell scripts, winInfaEc2Installer.ps1 and generateTnsOra.ps1 to the following location:C:\InfaEc2Scripts
7. Open the following file in a text editor: C:\Program Files\Amazon\Ec2Config\config.xml
8. Set the following State tag of the following plugins as Enabled in config.xml:
 - Ec2SetPassword
 - Ec2SetComputerName
 - Ec2HandleUserData

The following snippet shows the edited section of the XML file:

```
<Plugin>
  <Name>Ec2SetPassword</Name>
  <State>Enabled</State>
</Plugin>
<Plugin>
  <Name>Ec2SetComputerName</Name>
  <State>Enabled</State>
</Plugin>
<Plugin>
  <Name>Ec2HandleUserData</Name>
  <State>Enabled</State>
</Plugin>
```

9. Save the changes you made to config.xml.
10. Open the firewall options and disable the Guest or public networks firewall.
11. Install Oracle client and set TNS_ADMIN as recommended by Oracle. Ensure that you install the version compatible with Informatica.
12. Open the Amazon EC2 console.
13. Right-click the instance and select **Image > Create Image**.
14. Enter a name and description, and click **Create Image**.
15. After the AMI is available, copy the AMI ID and replace the AMI ID in the region map of the AWS CloudFormation script.

The following snippet shows an example:

```
"Mappings" : {
  "RegionMap" : {
```

```

        "us-east-1"      : { "32" : "ami-6411e20d"},
        "us-west-1"     : { "32" : "ami-c9c7978c"},
        "eu-west-1"     : { "32" : "ami-37c2f643"},
        "ap-southeast-1" : { "32" : "ami-66f28c34"},
        "ap-northeast-1" : { "32" : "ami-9c03a89d"}
    }
}

```

Creating an AMI to Launch Informatica Domain on Linux

You must configure a Linux instance on Amazon EC2 and create an AMI of that instance. You can use the AMI to launch a stack that deploys Informatica domain on Amazon EC2.

1. Log in to an existing Linux instance on Amazon EC2. Ensure the the instance type is m3.large or greater.
2. Increase the root volume partition to a larger size. Set the partition size as at least 50 GB.
3. Download cfn helper scripts for RedHat Enterprise Linux from the following location:
<http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/cfn-helper-scripts-reference.htm>
4. Copy the Informatica installation file and the license key to the following location: `/home/ec2-user/infainstaller`
5. Extract the installer to the following location: `/home/ec2-user/Informatica/9.6.1`
6. Rename the folder source in the extracted files to `source1`.
7. Create the following folder hierarchy: `/home/ec2-user/Informatica/9.6.1/source/java/bin/jar`
8. Create the following directory: `/home/ec2-user/InfEc2Scripts`
9. Copy the shell scripts, `linInfEc2Installer.sh` and `generateTnsOra.sh` to the following location: `/home/ec2-user/InfEc2Scripts`
10. Install Oracle client and set `TNS_ADMIN` as recommended by Oracle. Ensure that you install the version compatible with Informatica.
11. Open the Amazon EC2 console.
12. Right-click the instance and select **Image > Create Image**.
13. Enter a name and description, and click **Create Image**.
14. After the AMI is available, copy the AMI ID and replace the AMI ID in the region map of the AWS CloudFormation script.

The following snippet shows an example:

```

    "Mappings" : {
        "RegionMap" : {
            "us-east-1"      : { "32" : "ami-6411e20d"},
            "us-west-1"     : { "32" : "ami-c9c7978c"},
            "eu-west-1"     : { "32" : "ami-37c2f643"},
            "ap-southeast-1" : { "32" : "ami-66f28c34"},
            "ap-northeast-1" : { "32" : "ami-9c03a89d"}
        }
    }
}

```

Creating an AMI for PowerCenter client tools on Windows

You must configure a Windows instance on Amazon EC2 and create an AMI of that instance. You can use the AMI to launch a stack that deploys PowerCenter client tools on Amazon EC2.

1. Log in to an existing Windows instance on Amazon EC2. Ensure the the instance type is m3.large or greater.
2. Copy the Informatica installation file to the following location: C:\clientinstaller
3. Extract the installer to the following location: C:\Informatica9.6.1
4. Create the following directory: C:\clientEc2Scripts
5. Copy the powershell script winInfaEc2Installer.ps1 to the following location:C:\InfaEc2Scripts
6. Open the following file in a text editor: C:\Program Files\Amazon\Ec2Config\config.xml
7. Set the following State tag of the following plugins as Enabled in config.xml:
 - Ec2SetPassword
 - Ec2SetComputerName
 - Ec2HandleUserData

The following snippet shows the edited section of the XML file:

```
<Plugin>
  <Name>Ec2SetPassword</Name>
  <State>Enabled</State>
</Plugin>
<Plugin>
  <Name>Ec2SetComputerName</Name>
  <State>Enabled</State>
</Plugin>
<Plugin>
  <Name>Ec2HandleUserData</Name>
  <State>Enabled</State>
</Plugin>
```

8. Save the changes you made to config.xml.
9. Open the firewall options and disable the Guest or public networks firewall.
10. Open the Amazon EC2 console.
11. Right-click the instance and select **Image > Create Image**.
12. Enter a name and description, and click **Create Image**.
13. After the AMI is available, copy the AMI ID and replace the AMI ID in the region map of the AWS CloudFormation script.

The following snippet shows an example:

```
"Mappings" : {
  "RegionMap" : {
    "us-east-1"      : { "32" : "ami-6411e20d"},
    "us-west-1"      : { "32" : "ami-c9c7978c"},
    "eu-west-1"      : { "32" : "ami-37c2f643"},
    "ap-southeast-1" : { "32" : "ami-66f28c34"},
    "ap-northeast-1" : { "32" : "ami-9c03a89d"}
  }
}
```


Uploading AWS CloudFormation Scripts to Amazon S3

You must upload the AWS CloudFormation scripts to Amazon S3 before you can deploy the script in Amazon CloudFormation.

1. Open the Amazon S3 console.
2. Select a bucket to which you want to upload the scripts.
3. Click **Upload**, and select the instance template script.
4. Browse and select the instance template, click **Start Upload**.
5. Click the properties tab and copy the link URL for the instance template.
6. Open the master template script and update the TemplateURL value of the PCInstances property with the link URL.

The following snippet shows an example:

```
"PCInstances" : {  
  "Type" : "AWS::CloudFormation::Stack",  
  "DependsOn" : "RDSInstance",  
  "Properties" : {  
    "TemplateURL" : "https://s3-ap-southeast-1.amazonaws.com/infatemplates/  
linux/1node/1nodepc-instance.template",
```

7. Upload the updated master template.

Deploying the Informatica Domain with Amazon CloudFormation

You can deploy the Informatica Domain on Amazon EC2 when you run the master template script on Amazon CloudFormation.

1. Open the Amazon CloudFormation console.
2. Click **Create New Stack**.
3. Enter a name for the stack.
4. Select **Specify an Amazon S3 template URL** and enter the URL of the master template that you uploaded in Amazon S3.
5. Enter the following parameters and click **Next**:
 - AZ1 - Name of the Availability Zone that contains the public and private subnets.
 - AZ2 - Name of the secondary Availability Zone that contains the public and private subnets.
 - Database Type - The type of database that you want to use for the Informatica domain database and PowerCenter repository database. You can use only Oracle on Amazon RDS. Amazon CloudFormation creates a database on Amazon RDS.
 - DBPassword - The database user password for the Oracle RDS database.
 - DBUser - Database user name for the Oracle RDS database.
 - InformaticaDomainPassword - Password to access the Informatica domain that you deploy.
 - Key Name - Public/private key pairs that allow you to securely connect to the instance.
 - PassKeyPhrase - Pass phrase for the site specific key.
 - PlacementGroupName - Placement group to which you want to assign the instance.
6. Optionally, you can specify tags for resources and set stack policy. Click **Next**.

7. Review the details of the stack and click **Create**.

Amazon CloudFormation launches the instances and the scripts install Informatica services.

Informatica Domain Information

After you deploy the domain you can get the log in details of the instance from the Amazon EC2 console.

After you log in to the instance, configure the security group to allow traffic from your machine. The port for the first node in the domain is 6005 and the port for other worker nodes is 7005.

You can view the following logs on the machine:

- Installation error log - You can view the installation error log, `silentError.log` in `C:\` on Windows and `/root/` on Linux.
- Installation command log - You can view the installation command logs in `C:\Informatica\9.6.1\` on Windows and `/home/ec2-user/Informatica/9.6.1` on Linux.
- Service creation log - You can view the service creation log, `InfraServiceLog.log` in `C:\` on Windows and `/root/` on Linux.
- CloudFormation log and user data - You can view the CloudFormation log and user data in `C:\Program Files\Amazon\Ec2ConfigService\Logs\Ec2ConfigLog` on Windows and `/home/ec2-user/InfraServiceLog.log` on Linux.

Prerequisites for Manual Installation

You must complete the prerequisites before you install Informatica on an Amazon EC2 instance.

Perform the following tasks before you install Informatica on an Amazon EC2 instance:

- Ensure that you have the requisite permissions to create Amazon Machine Instances in the Amazon EC2 console.
- Place the Informatica installation files and in a location accessible by the Amazon EC2 instance.
- Review the requirements to install Informatica services and ensure that the Amazon EC2 instance that you use meet all the hardware and operating system requirements.

Amazon EC2 Instance Configuration

Create and configure an Amazon EC2 instance from an Amazon Machine Image (AMI) before you install Informatica services.

Perform the following configurations when you create an Amazon EC2 instance:

- Region. The region to which the instance belongs.
- AMI. The Amazon Machine Image to use for the instance.
- Hardware information. The hardware configuration of the instance.
- Storage details. The storage details of the instance.
- Security group. The security group to which the instance belongs on Amazon EC2.
- Key pairs. The private key - public key configuration to get the instance password.

After you configure the instance, you can login to the instance with Remote Desktop Connection on Windows and with SSH on Linux.

Instance Detail Configuration

You must configure the properties of the instance before you launch an instance.

The following table describes the properties that you must configure before you launch an instance:

Property	Description
Number of instances	The number of instances that you want to launch.
Network	The network on which the instance runs. Amazon provides EC2-classic and EC2-VPC platforms.
Shutdown behavior	You can choose whether to terminate or stop the instance when you shut down the instance.
Enable termination protection	Provides protection to prevent accidental termination.
Monitoring	Monitors the instance with Amazon CloudWatch.
EBS-Optimized instance	Amazon EBS-optimized instance has an optimized configuration stack and provides additional, dedicated capacity for Amazon EBS I/O operations.
Tenancy	<p>Tenancy refers to the hardware on which your instance runs.</p> <p>You can choose between default tenancy or dedicated tenancy. If the instance uses default tenancy, the instance runs on shared hardware.</p> <p>If you launch the instance into a VPC, you can select dedicated tenancy to run the instance on isolated, dedicated hardware.</p>
Network interfaces	<p>Network interfaces to use for the network.</p> <p>If you launch the instance into a VPC and select a subnet, you can specify up to two network interfaces.</p>
Kernel ID	<p>ID for the kernel that you want to use in the instance.</p> <p>You can use a specific kernel or choose the default kernel.</p>
RAM disk ID	<p>ID for the RAM disk that you want to use in the instance.</p> <p>If you chose a specific kernel, you might need to select a specific RAM disk with drivers to support the kernel. You can choose default RAM disk ID if you choose default kernel.</p>

Property	Description
Placement group	Logical grouping for your cluster instances. You can select an existing placement group or create a placement group. This option is available only if you select an instance type that supports placement groups. For better performance, ensure that all the nodes that you create belong to the same placement group.
User data	User data to configure an instance during launch or to run a configuration script.

Network Configuration

When you configure the instance, you must enter the details of Amazon EC2 network on which the instance runs.

Amazon provides the following network options:

EC2-classic

If you launch the instance in EC2-classic, you must select the availability zone. If you want Amazon AWS to choose an availability zone, select **No Preference**.

EC2-VPC

If you launch the instance in EC2-VPC, you can launch the instance into your default VPC, select an existing VPC, or create a new VPC.

You must also select a subnet into which to launch the instance. If you want Amazon AWS to choose a subnet, select **No Preference**. You can also create a new subnet. You can also choose to request whether the instance receives a public IP address.

If you launch the instance into a VPC and select a subnet, you can specify up to two network interfaces. You can assign more than one IP address to the selected interface. If you choose to use public IP, you can only assign a public IP address to a single, new network interface with the device index of eth0.

Storage Configuration

You can specify the volumes and configure the properties of storage in the instance.

The following table lists the properties of storage available in the Amazon EC2 instance:

Property	Description
Type	You can select instance store or Amazon EBS volumes to associate with your instance. The type of volume available in the list depends on the instance type.
Device	You can choose from a list of devices available for the volume.
Snapshot	Name or ID of the snapshot from which to restore a volume. You can also search for public snapshots by typing text into the Snapshot field. Note: Snapshot descriptions are case-sensitive.
Size	Storage space for Amazon EBS volumes. Note: If you select an AMI and instance that are eligible for the free usage tier, you need to keep under 30 GB of total storage to stay within the free usage tier.
Volume type	You can choose between a Standard or Provisioned IOPS volume for Amazon EBS volumes.
IOPS	Number of I/O operations per second (IOPS) that the volume can support. Applicable if you choose Provisioned IOPS.
Delete on termination	You can choose whether to delete an Amazon EBS volume when you terminate the instance.

Hard Disk Expansion in Linux

In Linux, you can use a file system-specific command to resize the file system to a larger size of the new volume.

You can use the `resize2fs` command for `ext2`, `ext3`, and `ext4` file systems. The command works even if the volume you want to extend is the root volume.

If you are unsure of which file system you are using, you can use the `file -s` command to list the file system data for a device.

The following example shows how to use the `file -s` command:

```
[Ec2-user~]$ sudo file -s /dev/xvda1
/dev/xvda1: Linux rev 1.0 ext4 filesystem data.....
```

The following example shows how to extend the volume with the `resize2fs` command:

```
[Ec2-user~]$ sudo resize2fs /dev/xvda1
```

Security Group Configuration

A security group defines the firewall rules for your instances.

When you launch an Amazon EC2 instance, you can configure the security group of the instance. The system automatically defines the launch-wizard-x security group to allow you to connect to your instance. By default, the launch-wizard-x security group allows traffic on either SSH (port 22) for Linux instances or RDP (port 3389) for Windows instances.

Note: By default, the launch-wizard-x security group enables all IP addresses to access your instance over SSH and RDP ports. For a secure production environment, you must authorize a specific IP address or a range of IP addresses to access the instance.

You can modify the default rules of the launch-wizard-x security group. For example, to use the instance as a web server, open ports 80 (HTTP) and 443 (HTTPS) to allow internet traffic.

To add the public IP address of your client computers, select **My IP** from the source list in the **Configure Security Group** page. If you connect through an ISP or from behind a firewall without a static IP address, you must enter the range of IP addresses used by the client computers.

Launching an Amazon EC2 Instance from an AMI

You can launch an Amazon EC2 instance from an AMI through the Amazon EC2 console.

1. Open the Amazon EC2 console.
2. Select the region for the instance from the navigation bar at the top of the screen.
3. In the Amazon EC2 console dashboard, click **Launch Instance**.

The **Choose an Amazon Machine Image (AMI)** page appears.

4. From the left pane, choose one of the following types of AMI:
 - Quick Start. List of popular AMIs to help you get started quickly. AWS marks the AMIs that are available in the free usage tier.
 - My AMIs. Private AMIs that you own or the AMIs shared with you.
 - Community AMIs. List of public AMIs that AWS community members have made available for others to use.
5. Click **Select**.

The **Choose an Instance Type** page appears.

6. Select the hardware configuration and size of the instance to launch and click **Next: Configure Instance Details**.

Choose t1.micro instance to stay within the free tier.

The **Configure Instance Details** page appears.

7. Click **Advanced details** and configure the instance details.
8. Click **Next: Add Storage**.

The **Add Storage** page appears.

9. Configure the storage details and click **Next: Tag Instance**.

The **Tag Instance** page appears.

10. Enter tags for the instance by providing key and value combinations.
Click **Create Tag** to add more than one tag to your resource.
11. Click **Next: Configure Security Group** when you are finished
The **Configure Security Group** page appears.
12. Configure the security group, and click **Review and Launch**.
The system defines the launch-wizard-x security group to allow you to connect to the instance. You can change the default rules.
The **Review Instance Launch** appears.
13. Review the details of the instance and make required changes. Click **Launch**.
The **Select an existing key pair or create a new key pair** dialog box appears.
14. In the **Select an existing key pair or create a new key pair** dialog box, you can select an existing key pair or create a key pair.
Note: Do not use the **Proceed without key pair** option unless you create your own AMI and do not need to connect to the instance.
15. To launch the instance, select the acknowledgment check box, and then click **Launch Instances**.

Generating the Password and Logging into a Windows Instance

After you launch the Amazon EC2 instance, you must retrieve the initial password to log in to the instance. The user name is Administrator.

1. On the Amazon EC2 console, in the **Navigation** pane, click **Instances**.
The **My Instances** pane appears.
2. Right-click the instance and click **Get Windows Password**.
You can download and save a .pem file.
3. On the **Retrieve Default Windows Administrator Password** page, click **Browse** and browse to the location on your computer where you saved the .pem file.
The contents of the file appear in the window.
4. Click **Decrypt Password**.
The password appears on the screen.

Note: It is recommended that you can log in to the instance and change the default password.

You can log in to the Windows instance with Remote Desktop Connection.

Generating the password for a Linux Instance with PuTTYgen

PuTTY does not natively support the .pem file that Amazon EC2 generates. Use PuTTYgen to convert the .pem file to the native .ppk file before you connect to your Linux instance with PuTTY.

1. Start PuTTYgen.
2. Select **SSH-2RSA** as the type of key to generate.

Use the default value 1024 as the number of bits in the generated key.

3. Click **Load**.

By default, PuTTYgen displays only .ppk files. To locate your .pem file, select the option to display files of all types.

4. Select the .pem file and click **Open** and then click **OK** to confirm.
5. Click **Save private key** to save the key as a .ppk file.

Note: PuTTYgen displays a warning about saving the key without a passphrase. A passphrase is an additional security for the private key. If you use a passphrase, you must enter the passphrase when you log in to the machine or copy files to the instance, which can decrease automation performance.

6. Specify the same name for the key that you used for the key pair and save the .ppk file.

Logging into a Linux instance with PuTTY

You can use .ppk file that you generated with PuTTY gen to log in to a Linux instance.

1. Start PuTTY.
2. In the **Category** pane, select **Session**.
3. Enter root@IP as the host name.
4. Select SSH as the connection type and ensure that the port is 22.
5. In the **Category** pane, select **Connection > SSH > Auth** and click **Browse**.
6. Select the .ppk file that you generated for your key pair, and click **Open** to start the SSH session with the Linux instance.

Manual Installation of Informatica on an Amazon EC2 Instance

You can install Informatica services and Informatica client tools on an Amazon EC2 instance.

Before you install the Informatica services and Informatica client tools, copy the binaries to a shared folder on the Amazon EC2 instance. You can set up all the services like an on-premise installation. For more informatica about installing Informatica tools and setting up application services, see [Informatica Installation and Configuration Guide](#).

Best Practices

When you use Informatica on Amazon EC2, you can employ certain best practices to improve the quality of service.

Use the following guidelines when you use Informatica services on Amazon EC2:

- In a multi-node setup, ensure that all the instances belong to the same availability zone.
- Set the JVM heap of the Model repository to 1 GB for a single user, 2 GB for up to five users, and 4 GB for more than five users.
- Set the Database Open Cursors property as at least 1000 when you deploy an application.
- Response time is faster if you run the client on the same instance as Informatica services.

- For best performance, use Microsoft SQL Server or Oracle databases on Amazon RDS for the Informatica domain database or for the services. If you want to use on premise databases, use VPN and Amazon VPC to avoid performance issues.
- If the client is on an on-premise machine, at least 32Mbps of bandwidth is recommended.
- Use Amazon Direct Connect when you connect a client over a WAN.
- For better performance, use Amazon EBS Provisioned IOPS.
- Informatica services on Amazon EC2 environment is well suited for instances with network I/O intensive operations like read/write.