

Informatica® Cloud Application Integration September 2024

Azure OpenAl Prompt Chaining

Informatica Cloud Application Integration Azure OpenAl Prompt Chaining September 2024

© Copyright Informatica LLC 2024

This software and documentation contain proprietary information of Informatica LLC 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 LLC. 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, Informatica Master Data Management, and Live Data Map are trademarks or registered trademarks of Informatica LLC 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 © Anadcaht c.v. All rights reserved. Copyright © International Copyright © Anadcaht c.v. All rights reserved. Copyright © Oracle. All rights reserved. Copyright © Adobe Systems Incorporated. All rights reserved. Copyright © DataArt, Inc. All rights reserved. Copyright © Oracle. 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 © Information Builders, Inc. All rights reserved. Copyright © Information Builders, Inc. All rights reserved. Copyright © Information Builders, Inc. All rights reserved. Copyright © Informations, Inc. All rights reserved. Copyright © Informations, Inc. All rights reserved. Copyright © Informations, Inc. All rights reserved. Copyright © International Organization for Standardization 1986. All rights reserved. Copyright © Works GmbH. All rights reserved. Copyright © International Business Machines Corporation. All rights reserved. Copyright © Daniel Veillard. All rights reserved. Copyright © Unicode, Inc. Copyright © International Business Machines Corporation. All rights reserved. Copyright © Daniel Veillard. All rights reserved. Copyright © International Business Machines Corporation. All rights reserved. Copyright © Daniel Veillard. All rights reserved. Copyright © International Business Machines Corporation. All rights reserved. Copyright © Daniel Veillard. All rights reserved. Copyright © International Business Machines Copyright © Daviez All rights reserved. Copyright © Daviez All rights reserved. Copyright © Daviez All rights reserved. Copyright ©

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.

 $This product includes software \ licensed \ under \ the \ terms \ at \ http://www.tcl.tk/software/tcltk/license.html, \ http://www.bosrup.com/web/overlib/? License, \ http://www.bosrup.com/web/overlib/? License,$ www.stlport.org/doc/ license.html, http://asm.ow2.org/license.html, http://www.cryptix.org/LICENSE.TXT, http://hsqldb.org/web/hsqlLicense.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.y3.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://ssom.java.net; http://benalman.com/about/license/; https://github.com/CreateJS/ EaseIJS/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/jedisct1/libsodium/blob/master/LICENSE; https://code.google.com/p/lz4/; https://github.com/jedisct1/libsodium/blob/master/ LICENSE; http://one-jar.sourceforge.net/index.php?page=documents&file=license; https://github.com/EsotericSoftware/kryo/blob/master/license.txt; http://www.scalalang.org/license.html; https://github.com/tinkerpop/blueprints/blob/master/LICENSE.txt; http://gee.cs.oswego.edu/dl/classes/EDU/oswego/cs/dl/util/concurrent/ intro.html; https://aws.amazon.com/asl/; https://github.com/twbs/bootstrap/blob/master/LICENSE; https://sourceforge.net/p/xmlunit/code/HEAD/tree/trunk/ LICENSE.txt; https://github.com/documentcloud/underscore-contrib/blob/master/LICENSE, and https://github.com/apache/hbase/blob/master/LICENSE.txt.

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/cpf1.0.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-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.

See patents at https://www.informatica.com/legal/patents.html.

DISCLAIMER: Informatica LLC 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 LLC 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.

Publication Date: 2024-09-30

Table of Contents

Preface	5
Chapter 1: Introduction to Azure OpenAl Prompt Chaining recipe	6
Azure OpenAl Prompt Chaining recipe contents	6
Azure OpenAl Prompt Chaining recipe assets	6
Chapter 2: Using the Azure OpenAl Prompt Chaining recipe	8
Step 1: Copy and access the recipe	8
Step 2: Configure and publish the AzureOpenAl connection	9
Step 3: Configure and publish the process	9
Step 4: Publish and run the guide.	1

Preface

Use Azure OpenAl Prompt Chaining to learn how to design prompt chains and provide the desired responses from a Large Language Model (LLM). This guide assumes that you have an understanding of the Azure OpenAl Connector concepts.

CHAPTER 1

Introduction to Azure OpenAl Prompt Chaining recipe

The Azure OpenAl Prompt Chaining recipe is initiated using a guide or an HTTP request.

The process chains the prompts together and resolves them in the sequence in which they're provided. Chaining of these prompts augments the ability of the language model being used to deliver a highly curated response. When you send a query, the process first sets the behavior and topic, and then provides the additional instructions to answer the query. After receiving the response, you can ask a new question without changing the topic.

Azure OpenAl Prompt Chaining recipe contents

The Azure OpenAl Prompt Chaining recipe contains multiple assets, such as a process object, an app connection, a guide, and a process.

The following image shows the assets that the Azure OpenAl Prompt Chaining recipe package contains:



Azure OpenAl Prompt Chaining recipe assets

The following table lists the assets that the Azure OpenAl Prompt Chaining recipe package contains:

Asset Name	Asset Type	Description
AzureOpenAlConnection	App connection	Azure OpenAl connection
GenerationConfig_AzureAl	Process object	Settings for the prompt request

Asset Name	Asset Type	Description
Guide to use Azure OpenAl with two requests	Guide	When you send a query, the process first sets the behavior and topic, and then provides the additional instructions to answer the query. After receiving the response, you can ask a new question without changing the topic.
Prompt Chaining Azure OpenAl	Process	The process chains the prompts together and resolves them in the sequence in which they're provided. Chaining of these prompts augments the ability of the language model being used to deliver a highly curated response.

CHAPTER 2

Using the Azure OpenAl Prompt Chaining recipe

To use the Azure OpenAl Prompt Chaining recipe, you must perform the following steps manually:

- Step 1: Copy and access the recipe
- Step 2: Configure and publish the AzureOpenAI connection
- Step 3: Configure and publish the process
- Step 4: Publish and run the guide

Step 1: Copy and access the recipe

Copy the pre-configured assets in the recipe to a separate project or folder.

- Open the Azure OpenAl Prompt Chaining recipe and click Use.
- 2. Select the location where you want to copy the recipe, and then click Continue.
- In the Copying the recipe dialog box, click OK.
 It might take some time for the recipe to get copied. You will receive a notification when the recipe is ready for use.
- 4. After the recipe is copied, click **Explore** to access the recipe content.
- 5. Navigate to the project or folder where you copied the recipe or enter the recipe name in the **Find** box. All the assets in the recipe are displayed as shown in the following image:



Step 2: Configure and publish the AzureOpenAl connection

Configure the endpoint URL and API key in the AzureOpenAI connection, and then publish the connection.

- 1. Open the AzureOpenAl connection.
- 2. In the Type field, select AzureOpenAI.
- 3. In the Run On field, select Cloud Server or any Secure Agent.
- 4. In the Connection Properties section, enter values for the following properties:

Property	Description
Endpoint_URL	The REST API endpoint for Azure OpenAI. You can find this value in the Keys & Endpoint section when examining your resource from the Azure portal. Alternatively, you can find the value in Azure OpenAI Studio > Playground > Code View .
API_Key	The API key to authenticate Azure OpenAI connection requests. You can find this value in the Keys & Endpoint section when examining your resource from the Azure portal. Alternatively, you can find the value in Azure OpenAI Studio > Playground > Code View .

5. Save, test, and publish the connection.

Step 3: Configure and publish the process

Configure the deployment details of the LLM model and publish the processes.

- 1. Open the Prompt Chaining Azure OpenAl process.
- 2. On the **Temp Fields** tab of the **Start** step, enter values for the following fields:
 - In the api_version field, enter the API version of the LLM model. Default is 2024-06-01. You can
 optionally edit the api version.
 - In the deployment_id field, enter the user-specific deployment ID.
- 3. Optionally, in the Configure Request Parameters step, configure the prompt instructions in the Assignments field by updating the Prompt_Configuration field using the Expression Editor, as shown in the following sample code:

For the Prompt_Configuration field, enter values for the following properties:

Property	Description
max_tokens	Defines the maximum number of tokens that the model can generate in its response. Setting a limit ensures that the response is concise and fits within the desired length constraints.
temperature	Controls the randomness of the model's output. A lower value makes the output more deterministic, while a higher value increases randomness and creativity. For example, a temperature of 0.5 balances between deterministic and creative outputs.
topP	Determines the cumulative probability threshold for token selection. The model considers the smallest set of tokens whose cumulative probability meets or exceeds topP. For example, if topP is set to 0.1, the model considers only the top 10% most probable tokens at each step.

4. In the Create Prompt 1 step, enter the prompt instructions in the Assignments field by updating the Prompt_Request field using the Expression Editor as shown in the following sample code:

After configuring the prompt instructions, the process sends the details to the LLM to fetch the required response, and then stores the first response.

5. In the **Create Prompt 2** step, in the **Assignments** field, update the **Prompt_Request** field using the Expression Editor as shown in the following sample code:

```
<CreateChatCompletionRequest>
    <temperature>{$temp.Prompt Configuration[1]/temperature }</temperature>
    <top p>{$temp.Prompt_Configuration[1]/top_p }</top_p>
    <max_tokens>{$temp.Prompt_Configuration[1]/max_tokens }/max_tokens>
       <messages>
        <role>system</role>
        <content> {$input.First System Prompt} </content>
   </messages>
    <messages>
     <role>user</role>
      <content>{ $input.First User Prompt }</content>
    </messages>
     <messages>
      <role>assistant</role>
     <content>{ $temp.Prompt Response[1]/choices[1]/message[1]/content }
content>
    </messages>
   <messages>
     <role>user</role>
      <content>{$input.Second_User_Prompt }</content>
    </messages>
</CreateChatCompletionRequest>
```

The LLM uses both the requests as an instruction to prepare the final response.

6. Save and publish the process.

Step 4: Publish and run the guide

When you send a query to the LLM, the process first sets the behavior and topic, and then provides the additional instructions to answer the query.

To publish and run the guide, perform the following steps:

- 1. Open the Guide to use Azure OpenAl with two requests guide.
- 2. On the Start tab of the Start step, ensure that the Run As field is set to Current User.
- 3. Save and run the guide.
- 4. On the **Actions** menu, click **Run**. Alternatively, you can copy the execution URL from the **Properties Details** dialog box to run the guide.
- On the Instructions page, enter the requests in the Set Al Behavior and First User Prompt fields. The LLM uses these requests as instructions to prepare the final response to your query.
- Click Continue.
- 7. On the next screen, enter any additional instruction for your request and ask your query in the **Second User Prompt** field.

Note: You can't edit the behavior and topic fields on this page.

- Click Continue.
 The final response appears.
- 9. Click **New question** to ask another query, or click **End** to finish.

You can also use the embed code to embed the guide into an HTML document of a third-party application.