Oracle Utilities Rate Cloud Service

Overview Guide

Release 21A

F39178-01

April 2021

Oracle Utilities Rate Cloud Service Release 21A Overview Guide

Contents

Chapter 1

Oracle Utilities Rate Cloud Service Overview

This chapter provides an overview of the Oracle Utilities Rate Cloud Service, including:

- Welcome to Oracle Utilities Rate Cloud Service
- Oracle Utilities Rate Cloud Service Applications
- Oracle Utilities Rate Cloud Service Documentation
- Notes on Applicability of Fields and Field Values
- Supported Client Platforms and Browsers
- Supported Integrations
- High-Level Roles and Responsibilities
- Performance Guidelines
- Operational Readiness Advisory

Welcome to Oracle Utilities Rate Cloud Service

Oracle Utilities Rate Cloud Service provides access to the rate calculation functionality of Oracle Utilities Customer To Meter.

Oracle Utilities Rate Cloud Service comprises the following functional areas:

- Rate calculation, including the ability to
    - Configure and test rate calculations via the user interface
    - Trigger the rate calculation process from an external system.

Note: Oracle Utilities Rate Cloud Service supports rate calculation for traditional scalar or volume-based billing quantities only. It does not include capabilities for generating billing determinants from interval data input.

Oracle Utilities Rate Cloud Service also includes Oracle Utilities Cloud Service Foundation, a set of tools used to orchestrate and automate infrastructure related processes and migrate data from legacy applications into the cloud service.

Oracle Utilities Rate Cloud Service Applications

Oracle Utilities Rate Cloud Service includes the following applications:

- Oracle Utilities Customer to Meter

- Oracle Utilities Cloud Service Foundation

- Oracle Utilities Testing Accelerator

- Oracle BI Publisher

Oracle Utilities Rate Cloud Service Documentation

Configuration and use of Oracle Utilities Rate Cloud Service is described in the following documentation:

- Oracle Utilities Customer to Meter v2.8.0.0 Business User Guide

- Oracle Utilities Customer to Meter v2.8.0.0 Administrative User Guide

- Oracle Utilities Cloud Services 21A documentation, including:

    - Oracle Utilities Cloud Service Foundation Administrative User Guide

    - Oracle Utilities Cloud Services Administration Guide

    - Oracle Utilities Cloud Services Implementation Guide

    - Oracle Utilities Cloud Services Database Changes Guide

    - Oracle Utilities Cloud Services Frequently Asked Questions Guide

- Oracle Utilities Testing Accelerator documentation

Notes on Applicability of Fields and Field Values

Oracle Utilities Rate Cloud Service is based on the rate calculation functionality of Oracle Utilities Customer To Meter. However, not all fields and field values available to Customer To Meter are used with Rate Cloud Service. For some specific portals, some tabs, fields, and field values may not be applicable.

The following sections provide a summary, for specific portals, of the tabs, fields, and field values that may not be applicable when using Oracle Utilities Rate Cloud Service.

Portals Accessed via the Main Menu

- **Rate Schedule**
  - Fields that are not applicable
    - Meter Configuration Type
    - Bill Message
    - Start Date
    - End Date
  - Field values that are not applicable
    - For Allow Estimates: 'No'
- **Calculation Rule**
  - Fields that are not applicable
    - For Apply To calculation rule business object
      - Execution Option
    - For Calculate Service Quantity calculation rule business object
      - Execution Option
      - Characteristic Value
      - Contract Quantity
      - Historical Service Quantity
      - Previous Quantity
    - For Summary calculation rule business object
      - Execution Option
  - Fields values that are not applicable
    - For Service Quantity calculation rule business object
      - GL Statistical Qty: 'Yes'
    - For Stepped Service Quantity calculation rule business object
      - GL Statistical Qty: 'Yes'
    - For all applicable calculation rule business objects
      - Criteria Field Type: 'Contract Quantity' and 'Historical Quantity'
    - On the **Main** tab

- Portals Profile User ID

- Favorite Profile User ID

- Lower Age Limit for Yellow Bar

- Upper Age Limit for Yellow Bar

- Calculation Rule business objects that are not applicable

    - Apply VAT to Cross Referenced Charges

    - Calculate Climate Charge Levy and Relief Charges

    - Copy SQ from Master Bill Segment

    - Determine Demand Value to Price

    - Get Sub-Usage Request SQ

    - Math

    - Miscellaneous Charges

- **Bill Factor**

    - Fields that are not applicable

        - On the **Main** tab

            - Tax Exemption

            - Value in Contract Term

            - Contract Rider Applicability

            - Use Sub SA Contract

            - Terms of Service Usage

    - Field values that are not applicable

        - On the **Main** tab

            - Bill Factor Type: 'Interval' and 'Time of Use'

- **Rate Check**

    - Fields that are not applicable

        - On the **Main** tab

            - Service Agreement

            - Bill Segment

            - Service Point ID

Portals Accessed via the Admin Menu

- **User**

    - Tabs that are not applicable

        - To Do Roles, Access Security, Portal Preferences, Favorite Links, Favorite Scripts, and Miscellaneous

    - Fields that are not applicable

- On the **Main** tab

  - Portals Profile User ID

  - Favorite Profile User ID

  - Lower Age Limit for Yellow Bar

  - Upper Age Limit for Yellow Bar

- **Installation Options - Framework**

  - Tabs that are not applicable

    - Message, Accessible Modules, and Installed Products

  - Fields that are not applicable

    - On the **Main** tab

      - Country

      - Seasonal Time Shift

- **Installation Options**

  - Tabs that are not applicable

    - Account, C&C, and Installed Products

  - Fields that are not applicable

    - On the **Main** tab

      - Quick Add Tender Type

      - Start Balance Tender Type

      - Create Field Activity Start Stop

      - Campaign

    - On the **Person** tab

      - Identifier Type (Person)

      - Identifier Type (Business)

    - On the **Billing** tab

      - Minimum Amount for Final Bill

      - User Can Override Bill Date

      - Base Time

      - Start Day Option

      - Use Alternative Bill ID / Alternative Bill ID Option

      - Bill Correction Option

    - On the **Financial Transaction** tab

      - GL Batch Code

      - A/P batch Code

- **Characteristic Type**

  - Fields that are not applicable

- On the **Main** tab
    - FK Reference
    - Allow Search By Char Value
- Field values that are not applicable
    - On the **Main** tab
        - For Type of Char: 'File Location Value' and 'Foreign Key Value'

- **Distribution Code**
    - Fields that are not applicable
        - On the **Main** tab
            - CIS Division
            - SA Type
            - Override Switch
    - Field values that are not applicable
        - On the **Main** tab
            - For Use for Non-Accrual Accounting - 'Checked' option

- **Device Type**
    - Fields that are not applicable
        - Item Business Object
        - Consumption Source
        - UOM
        - Device Type Service Quantity MO
        - Summarized Badged Items
        - Track Location
        - Device Configuration Type
    - Field values that are not applicable
        - For Use Estimate - 'Checked' option
        - For Summarize for Billing - 'Checked' option
        - For Multi-Equipment Assign - 'Checked' option
        - For Billable - 'Checked' option

- **Unit of Measure**
    - Fields that are not applicable
        - Decimal Positions
        - Base Unit of Measure
    - Fields values that are not applicable
        - For Allowed on Measuring Component - 'Yes'

Supported Client Platforms and Browsers

Users access Oracle Utilities Rate Cloud Service via a supported web browser.

Oracle Utilities Rate Cloud Service supports the following operating system & web browser combinations:

Operating System	Web Browser
Windows 8.1	Firefox ESR 78+ Google Chrome for Enterprise 86+ Microsoft Edge (Chromium-based) 86+
Windows 10	Firefox ESR 78+ Google Chrome for Enterprise 86+ Microsoft Edge (Chromium-based) 86+

The recommended monitor resolution is 1920 X 1080 or higher with the browser zoom level set at 100%. The application can be used with lower resolution monitors and/or at a greater than 100% browser zoom level, but users may need to use horizontal scrolling on some pages.

Supported Integrations

Oracle Utilities Rate Cloud Service supports integration with a number of other products. See the following section for details:

- Using Oracle Utilities Testing Accelerator with Oracle Utilities Rate Cloud Service

Using Oracle Utilities Testing Accelerator with Oracle Utilities Rate Cloud Service

Oracle Utilities Testing Accelerator (OUTA) is a testing framework based on Java and Selenium used for automated testing of Oracle Utilities applications and cloud services. It allows for developing, managing and executing web service and user interface based automated tests, using meta-data based approach, without any programming language. Oracle Utilities Testing Accelerator has a user friendly graphical web interface that enables people without much programming knowledge to develop automated test flows.

Along with the automation framework, Oracle Utilities Testing Accelerator includes an accelerator that supports automated testing of Oracle Utilities cloud services, such as Oracle Utilities Customer Cloud Service and Oracle Utilities Work and Asset Cloud Service. The accelerator contains several hundred re-usable components that are the modular building blocks of an automated test flow. The Oracle Utilities Testing Accelerator user interface allows for these components to be laced together to form an automated test flow. The test data can then be coupled to the automated test flow and executed using the browser-based execution engine within the Oracle Utilities Testing Accelerator web application.

The browser-based test execution engine should be used for the execution of web service based test automation flows. In addition to the web interface, Oracle Utilities Testing Accelerator includes an eclipse IDE plugin that supports the execution of tests from local desktops or laptops. This mode should be used for executing user interface based tests that are developed using the Oracle Utilities Testing Accelerator web application. The script generation engine in the Oracle Utilities Testing Accelerator web interface auto generates the scripts for user interface based tests, which can then be executed via the Eclipse IDE (with the Oracle Utilities Testing Accelerator plugin).

The following features of Oracle Utilities Testing Accelerator have been enhanced so that they work with Oracle Utilities cloud services:

1. For executing the web service based test automation flows, the Flow Configuration that contains the web service URL along with additional properties such as smtp server, etc is pre-defined to work with Oracle Utilities cloud services. Users need not create a new Flow Configuration.

   See the **Executing Test Flows** and **Executing Test Flows Using a Browser** sections in the *Oracle Utilities Testing Accelerator User Guide* for more information.

2. For generating components using the component generator tool, the complete WSDL URL need not be specified in the field, only the web service end point name needs to be provided.

   See the **Development Accelerator Tools** and **Component Generation Tool** sections in the *Oracle Utilities Testing Accelerator User Guide* for more information.

3. For fetching test data from the Oracle Utilities cloud services, the WSDL URL need not be specified, only the web service end point name should be specified.

See the **Fetching Test Data From an Utilities Application** section in the *Oracle Utilities Testing Accelerator User Guide* for more information.

4. Oracle Utilities Testing Accelerator is integrated with Oracle Identity Cloud Service when using it with cloud services The management of users in Oracle Utilities Testing Accelerator web application should be done through Oracle Identity Cloud Service. See the *Oracle Utilities Cloud Services End User Provisioning Guide* for more information about creating and managing users.

High-Level Roles and Responsibilities

This section outlines high-level roles and responsibilities involved in the deployment, configuration, and maintenance of Oracle Utilities cloud services, and the party responsible for each. The **Owner** column in the tables below indicates the party responsible for each role and responsibility.

Hardware, Storage, Technology, and Application Software

Role and Responsibility	Owner
Provide, deploy and monitor hardware and storage	Oracle
Provide, deploy, run and monitor all required technology (e.g containers, operating systems, databases, clustering, monitoring, tracing)	Oracle
Provide, deploy, run and monitor all Oracle Utilities base application software	Oracle

Security

Role and Responsibility	Owner
Monitor cloud service infrastructure security	Oracle
Administer Oracle network security	Oracle
Administer customer network security, including integrating with the Oracle networks	Customer
Configure & maintain cloud service users and access	Customer
Integrate with Oracle networks	Customer

Database

Role and Responsibility	Owner
Database administration services (monitoring, administration, etc)	Oracle
Backup and Restore	Oracle
Backup retention	Oracle
Data replication for Disaster Recovery (where applicable)	Oracle
Disaster Recovery database fail-over	Oracle
Refresh of TEST DB from PROD (upon request and within prescribed limits)	Oracle

Role and Responsibility	Owner
Information Lifecycle Management	Customer

Implementation, Configuration, and Extensions

Role and Responsibility	Owner
Plan and execute implementation project	Customer
Perform configuration of enterprise software features and functions	Customer
Execute functional, system, load and performance testing of configuration and extensions	Customer
Ensure operational readiness	Customer
Schedule all gate review services	Customer

Patching and Upgrading

Role and Responsibility	Owner
Patch and upgrade underlying infrastructure software	Oracle
Patch and upgrade Oracle Utilities base application software	Oracle
Decide the cloud service upgrade schedule (within prescribed limits)	Customer
Trigger environment upgrades (Development, Test and Production)	Customer
Perform regression testing of configuration and extensions after patching / upgrades	Customer

Batch Processing

Role and Responsibility	Owner
Monitor underlying batch infrastructure	Oracle
Provide infrastructure logs for batch incidents	Oracle
Resolve infrastructure batch issues	Oracle
Determine batch schedule	Customer
Monitor batch stream/job completion	Customer
Perform first level investigation of batch issues	Customer
Provide customer logs of batch incidents	Customer

Role and Responsibility	Owner
Resolve functional batch issues and stream/job restart	Customer
Resolve data issues	Customer

Support

Role and Responsibility	Owner
Triage, analyze, and resolve issues with the cloud service	Oracle
Triage, analyze, and resolve issues with configuration and extensions	Customer
Raise Service Requests via My Oracle Support and provide all requested information	Customer

Integration

Role and Responsibility	Owner
Provide productized integrations (where explicitly agreed)	Oracle
Integrate Oracle Utilities cloud services with all other services or applications	Customer

Performance Guidelines

This section provides a number of performance-related guidelines and recommendations to take into account when implementing Oracle Utilities Rate Cloud Service. This includes guidelines related to the following:

- User Interfaces
- General Topics

User Interfaces

- **Zones**: For better performance, user interface zones should be initially collapsed when not required for 90% or more of business processes. The initial state of zones (collapsed or not) can be controlled via the **Portal Preferences** tab on the **User** portal.

- **Number of Records**: The number of records returned to the user interface for a zone should be limited to 50 rows when building custom zones against large transactional tables.

- **Screen Troubleshooting**: To troubleshoot a screen in the user interface, click **Preferences** in the top right corner of the application and choose the **Portal Preference**s tab. Choose the appropriate portal and set all zones to "Initially Collapsed". Navigate back to the screen that has performance issues, expand the zones one by one, and measure the execution time of each zone. This should be an accurate step-by-step representation of the full screen execution.

- **Performance Optimization**: For optimal user interface performance, laptop users should ensure their computer is in high performance mode.

General Topics

- **Solution Updates**: Oracle should be consulted before significant solution changes are made. For example, configuration and solution extensions, adding a large number of customers, network changes, new integrations, etc.

Operational Readiness Advisory

This section outlines suggested validations as part of operational readiness testing:

- Confirm batch stability, day over day execution according to your production schedule, and that performance is within acceptable production window.

- Leverage production converted data, along with actual production files for critical batch inputs, including input files when testing batch execution

- Review and confirm that key output files are acceptable

- Review daily To Do entry volumes and confirm them to be acceptable based on available staffing

- Refresh database partitioning prior to go live

Chapter 2

Implementation Support and Live Operate Services

This chapter describes implementation support and live operate services for Oracle Utilities Rate Cloud Service:

- Implementation Support Services

- Live Operate Services

Implementation Support Services

Implementation Support Services are services that relate to the initial set up of Oracle Utilities cloud services. If Implementation Support Services are included in your Oracle Utilities cloud service(s), it will be stated in the relevant services descriptions.

The scope of the Implementation Support Services provided by Oracle is limited and currently includes (but it not limited to) the following:

Oracle will work to:

- Provide pre-configured templates (where available). These templates may be limited in scope (and may not completely align with the scope of the implementation project) and may only be available in the English language.

- Provide Utility Reference Model and other documentation describing the business processes that are the basis for the template configuration.

- Conduct any mandatory gate reviews

- To the extent necessary and under exceptional circumstances, execute scripts (authored by the customer) to resolve data issues.

  - Scripts submitted for execution to correct data issues will be subject to review for compliance with Oracle's Software Security Assurance standards. Scripts that do not comply will be returned for correction; resubmission will require a further compliance review with approval before execution will be scheduled.

  - There is a limit of four (4) script reviews in any calendar month. Review requests beyond this entitlement may be subject to additional fees.

Customers/Implementers retain complete responsibility for all other aspects of implementing the cloud service, including (but not limited to):

- Overall setup project management, including responsibility for management of the scope, the project plan/schedule and budget.

- End-user training activities and organizational change management.

- Leading and managing the user system review.

- Designing and testing all configurations and extensions to ensure they do not adversely affect performance.

- Identifying, designing, documenting and implementing any business process changes and system operation processes.

- Coordinating with external vendors or service providers to manage dependencies that could impact the overall project scope and schedule.

- Designating a project manager who shall be responsible for coordinating all customer/implementation related activities and responsibilities with respect to provisioning these Oracle Cloud Services.

- Business process change activities including end-user communication (e.g., status updates, newsletters, forums, etc.).

- Planning and executing all testing activities.

- All cut-over and roll-out activities.

- Business intelligence or data warehouse implementation/integration (if required).

- Procuring, setting up or otherwise provisioning any additional hardware, software or services as required.

- Providing any network hardware and/or software that may be required to connect to the Oracle Utilities cloud service(s).

- Scheduling any mandatory gate reviews, and ensuring that the customer and implementation meets any specified gate review entry conditions or other criteria.

- All data conversion/migration/cleansing activities such as:

  - Extracting, transforming and loading data into migration staging tables

  - Using cloud service data conversion tools (where available) to load data into the production environment

  - Creating or updating any required validation scripts

  - Any/all data cleansing activities that may be required (NB: these must be done in the source application(s) and not directly in the cloud service environment(s))

- Providing all in-scope data conversions and interfaces in formats supported by the relevant Oracle Utilities cloud service(s).

- The following interface/integration related activities:

  - Building and testing of any interfaces to or from the Oracle Utilities cloud service(s) (unless stated otherwise)

  - Any ongoing synchronization and interface monitoring activities between customer owned Customer Information System(s) (CIS) and Oracle Utilities cloud service(s)

  - Complete end to end integration flows using template interfaces

  - Any configuration of interfaces external to the Oracle Utilities cloud service(s) that are required to match the published specification for interfacing with the Oracle Utilities cloud service(s)

The provision of these Implementation Support Services is contingent on the following:

- Any integration middleware used to implement any integration will not be hosted within any Oracle Utilities cloud service(s).

- Turnaround time will be no longer than two (2) working days unless otherwise agreed. Turnaround time refers to time taken by the customer/implementation team to respond to and confirm design elements and decision points during the performance of the Implementation Support Services.

Live Operate Services

Live Operate services are services that Oracle provides to assist you with the ongoing operation of supported Oracle Utilities cloud services, once live and in production. If Live Operate Services are included in your Oracle Utilities cloud service(s), it will be stated in the relevant services descriptions.

The scope of the Live Operate Services provided by Oracle is limited and currently includes the following:

Oracle will work to:

- Assign a Customer Success Manager ("CSM") to manage delivery of the Oracle Utilities cloud service(s). The CSM will be the primary point of contact, will act as the first point for escalations, will monitor the progress of any related service requests ("SR") and confirm that all Oracle Utilities cloud services are performed in accordance with targets.

- Provide access to information about incidents and changes made to any of your Oracle Utilities cloud service environment(s).

- Upon request, create and deliver a Quarterly Status Report summarizing the activities undertaken over the past quarter and those scheduled as major future events.

- Upon request, offer quarterly meetings with customer/implementation oversight team to present, review and discuss the Quarterly Status Report.

- Monitor infrastructure and application availability and resolve any incident that is within Oracle's scope or responsibility.

- Provide primary Help Desk Services from 08:00 to 17:00 your local time on Oracle working days.

- Respond to severity 1 incidents 24 hours per day, 365 days per year.

- Provide incident management and problem management services for events related to Oracle Utilities Cloud Services, including:

  - Analyzing issues and resolving any incidents that are within Oracle's scope or responsibility

  - Escalating any issues not within Oracle's scope or responsibility to you for resolution

  - Provide infrastructure logs to assist in the diagnosis and remediation of incidents within your scope or responsibility. NB: these logs may be scrubbed for security purposes and other sensitive data.

  - Executing scripts authored by You to resolve data issues, but only to the extent such execution is necessary and the circumstances necessitating execution are exceptional

    - Scripts submitted for execution to correct data issues will be subject to review for compliance with Oracle's Software Security Assurance standards. Scripts that do not comply will be returned for correction; resubmission will require a further compliance review with approval before execution will be scheduled.

    - There is a limit of two (2) script reviews in any calendar month.

Customers remain completely responsible for all other aspects of using or otherwise operating the cloud service. Examples of customer obligations in this regard would be to:

- Assign a manager to act as the primary conduit for all issues relating to the delivery of these services.

- Provide Oracle with the dates for key business and technology events (i.e. testing calendar, refresh schedule etc.) at least thirty (30) days prior to the event.

- Assign appropriate resources to support your activities.

- Support scheduling of meetings as required.

- Participate in all scheduled meetings.

- Manage all activities, including:

  - Prioritizing work activities

  - Providing coordination across any teams and/or interested parties external to Oracle.

  - Escalation of issues to the Oracle CSM in a timely manner.

  - Providing any information required to progress service requests. Oracle is not responsible for meeting any agreed (or stated) targets or objectives if required or requested information is not forthcoming in a timely manner.

  - Assigning appropriate resources to conduct all required acceptance testing for all software packages delivered.

  - Accepting all software packages prior to promotion to the Production environment.

  - Maintaining a contact list for all persons performing governance functions.

  - Participating in Oracle's internal quality assurance processes on a mutually agreed schedule.

- Manage the Oracle Utilities cloud services, including:

  - Defining and (as necessary) modifying batch schedules to meet business needs.

  - Monitoring batch and interface processes to confirm and verify completion.

  - Defining, implementing, testing and deploying any changes to the configuration and extensions required to:

    - Resolve incidents or problems within the customers scope or responsibility

    - Meet evolving business needs

    - Conform with upgrades, patches or any other Oracle Utilities cloud service requirements or prerequisites.

- Notify Oracle of any incidents detected.

- Action each SR in accordance with the relevant Oracle Cloud Hosting and Delivery Policies.

- Establish the method of communication between the incident management team and the Oracle team for each incident.

- Redirect any SRs to the correct (non- Oracle) support team if the SR is not within the scope of the Oracle Utilities cloud service(s).

- Assist the Oracle team with SR analysis of data originating outside the applications.

- Correct business data as reasonably requested by Oracle to achieve closure of an identified problem.

- Monitor customer network and network connections to ensure sufficient bandwidth and performance.

- Conduct all functional, regression, performance, system integration, acceptance and/or user acceptance testing as appropriate, and accept and approve all software changes, prior to the production roll out of any change, in accordance with any agreed-on release management process, for any change resulting from:

  - An incident remedy or fix, or

  - Any service pack update or upgrade.

- Provide authorizations and/or validations for data correction and/or adjustments to the supported environments.

- Apply configuration changes that are within the customer's or implementation's scope as recommended by Oracle to prevent recurring incidents.

- At Oracle's request, provide approval through the environment change management process for the installation of fixes to prevent recurring incidents.

- Initiate documented escalation processes when the urgency of the incident has increased due to business requirements.

- Provide incident support where the remediation is within Oracle's scope or responsibility, specifically:

  - Provide Oracle with access to the user who reported the problem.

  - Provide all information as reasonably requested by Oracle and participate in diagnostics.

  - Provide a test case and access to an environment where the SR incident is reproducible.

- Provide Oracle, as necessary, with access to any other support teams.

- Acknowledge that the supplied break-fix resolves the incident or problem and accept the SR closure.

- Provide internal approvals to Oracle before the migration of any change recommended by Oracle into a production environment.

- When an incident or problem is determined by Oracle to be unrelated to an Oracle Utilities cloud service or to be caused by data problems arising from data conversion or some other error, a separate, paid contract may be required to cover Oracle's time spent investigating and, if relevant, correcting the problem at Oracle's prevailing time and materials rates, and to reimburse Oracle for all reasonable out of pocket expenses.

Chapter 3

Oracle Utilities Cloud Services Third Party Software and Licenses

This chapter information regarding third-party software used in Oracle Utilities cloud services, including:

- Third Party Software Notices

- Third Party Software Licenses

Refer to the *Oracle Utilities Customer To Meter v2.8.0.0 Licensing Information User Manual* for additional third-party licensing information.

Third Party Software Notices

Required notices for open source or other separately licensed software products or components distributed in this product are identified in the following table along with the applicable licensing information. Additional notices and/or licenses may be found in the included documentation or readme files of the individual third party software.

Note: A copy of each license appears in the Third-Party License section, unless otherwise noted.

Provider	Component	Version	License Information
ACE	ACE Code Editor for the Web	1.4.8	Copyright (c) 2010, Ajax.org B.V. All rights reserved.
Apache	Apache Commons JEXL	3.1	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Apache	Commons Codec	1.11	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Apache	Commons FileUpload	1.4	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Apache	Commons HttpClient	4.1.2	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Apache	commons-cli	1.3.1	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Apache	HttpCore	4.4.13	Copyright 2005-2019 The Apache Software Foundation
Apache	httpd	2.4.39	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Apache	Kafka	2.1.0 2.3.0	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Apache	Log4J	2.8.2 2.10.0	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Apache	lz4-java	1.4	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Apache	org.yaml/snakeyaml	1.19	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Apache	Tomcat Embed	9.0.12	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Apache	XML Beans	3.1.0	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Apache	ZooKeeper	3.4.14 3.5.4	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
The Apache Software Foundation	Apache HTTP Server	2.4.46	Copyright 2020 The Apache Software Foundation.

Provider	Component	Version	License Information
The Apache Software Foundation	Apache Portable Runtime (apr)	1.6.5	Copyright 2019 The Apache Software Foundation.
The Apache Software Foundation	Commons Beanutils	1.9.4	Copyright 2000-2019 The Apache Software Foundation.
The Apache Software Foundation	Commons IO	2.7	Copyright 2002-2019 The Apache Software Foundation.
The Apache Software Foundation	Commons Text	1.9	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
The Apache Software Foundation	OpenNLP-tools	1.9.1	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
The Apache Software Foundation	HttpComponents HttpClient	4.5.13	Copyright 1999-2020 The Apache Software Foundation Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
The Apache Software Foundation	Velocity Engine	2.2	Copyright (C) 2000-2007 The Apache Software Foundation Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Aslak Hellesøy	Gherkin	6.0.14	Copyright (c) Cucumber Ltd, Gaspar Nagy, Björn Rasmusson, Peter Sergeant
cliftonlabs	json-simple	3.0.2	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Codehaus	animal-sniffer-annotation	1.14	Released under the MIT license
Connect2id Ltd	Nimbus JOSE+JWT	6.7	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Elasticsearch	Curator	5.5.0	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Elasticsearch	Logstash (without x-pack)	6.2.3	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
GlassFish	aopalliance-repackaged	2.5.0-b05 2.5.0-b42	COMMON DEVELOPMENT AND DISTRIBUTION LICENSE (CDDL) Version 1.1 The GNU General Public License (GPL) Version 2, June 1991
Google	Common Protos	1.12.0	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Google	Google APIs	1.0.6	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
Google	Guava	29.0	Copyright (C) 2012 The Guava Authors Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/

Provider	Component	Version	License Information
Google	Protocol Buffers (aka Google protobuf)	3.6.1	Copyright 2008 Google Inc. All rights reserved.
Grafana Labs	Grafana	5.2.3	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
The gRPC Authors	grpc-java	1.16.1	Apache License, Version 2.0, January 2004 http://www.apache.org/licenses/
INRIA, France Telecom	ASM	8.0	Copyright (c) 2000-2011 INRIA, France Telecom All rights reserved.
Joe Walnes	XStream	1.4.13	Copyright (c) 2003-2006, Joe Walnes Copyright (c) 2006-2020, XStream Committers All rights reserved.
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Mersenne Twister

The _random module includes code based on a download from http://www.math.sci.hiroshima-u.ac.jp/~m-mat/MT/MT2002/emt19937ar.html. The following are the verbatim comments from the original code:

A C-program for MT19937, with initialization improved 2002/1/26.

Coded by Takuji Nishimura and Makoto Matsumoto.

Before using, initialize the state by using init_genrand(seed) or init_by_array(init_key, key_length).

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http://www.math.sci.hiroshima-u.ac.jp/~m-mat/MT/emt.html

email: m-mat @ math.sci.hiroshima-u.ac.jp (remove space)

Sockets

The socket module uses the functions, getaddrinfo(), and getnameinfo(), which are coded in separate source files from the WIDE Project, http://www.wide.ad.jp/.

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Modified by Jack Jansen, CWI, July 1995:

- Use binascii module to do the actual line-by-line conversion between ascii and binary. This results in a 1000-fold speedup. The C version is still 5 times faster, though.

- Arguments more compliant with Python standard

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Original location:

  https://github.com/majek/csiphash/

Solution inspired by code from:

Samuel Neves (supercop/crypto_auth/siphash24/little)

djb (supercop/crypto_auth/siphash24/little2)

Jean-Philippe Aumasson (https://131002.net/siphash/siphash24.c)

strtod and dtoa

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cfuhash

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Modules:

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slf4j-api

slf4j-simple

slf4j-nop

slf4j-jdk14

slf4j-log4j12

slf4j-ext

jcl-over-slf4j

log4j-over-slf4j

jul-to-slf4j

osgi-over-slf4j

integration

slf4j-site

slf4j-migrator

****

4P Dependencies:

****

ch.qos.cal10n call0n-api 0.8.1

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