Vodafone Group Internet

CORE SLA REPORTING EXPLAINED

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Introduction

Core SLA reporting

Our Core SLA reporting provides performance data relating to Vodafone's global Internet backbone, operated by Vodafone Group.

This document explains what you can expect to find and how we calculate the data.

| Core SL | A Reporting | | | | | | | |
|---|-------------|-----------------|--------|-------------------|--------|-----------------|-------------|--|
| Core SLA Reporting Reporting Round Trip Delay, Packet Loss statistics across the AS1273 network | | | | | | | | |
| Zone * | × ~ | From | 4 | To | X× | Time interval * | X× | |
| eity | ~ | The ones second | | , at one settered | Clear | filters Su | ibmit query | |
| Round trip time (ms) Packet loss (%) | | | | | | | | |
| Cities | Amsterdam | Ashburn | Athens | Barcelona | Berlin | Birmingham | Bracknell | |
| Amsterdam | | 80.86 | 52.84 | 30.14 | 15.61 | 13.43 | 10.41 | |
| Ashburn | 80.78 | | 123.67 | 94.89 | 93.17 | 79.08 | 75.06 | |

Reports are available at: https://portal.vodafone.com/web/as1273coresla



1. Our Data

1.1 How we measure

Data shown are averages of measurements taken from packets of test data sent and received by routers on the edge of our global Internet backbone.

For each link, a real-time performance monitoring probe is sent. A group of probes consists of 10 pings, each separated by a 1 second interval. The interval between groups of probes is 300 seconds. The average value from these 10 probes is recorded.

This means that values are recorded approximately 309 seconds apart.

1.2 Between where are our measurements?

Each router is in a city, within a country, within a designated region, as shown in the table below.

Asia

Hong Kong Japan (Tokyo and Maruyama) Singapore

Australia

Sydney

Europe

Austria Belgium Bulgaria Czech Republic Denmark France Germany Greece Hungary Ireland Italy Luxembourg Netherlands Portugal Romania Russia Spain Sweden Switzerland Turkey Ukraine (Kyiv)

Middle East

UAE (Dubai)

North America

Dallas (Texas) Chicago (Illinois) Miami (Florida) New York (New York State) San Jose (California) Ashburn (Virginia) Los Angeles (California)

United Kingdom

Bracknell (Berkshire) Birmingham Leeds London Manchester Slough (Berkshire) Swindon (Wiltshire) Uxbridge (Middlesex) Watford (Hertfordshire)

1.2.1 Intra-region boundary routers

Each region is considered to have an eastern boundary and a western boundary. Network performance is measured between the two boundaries.

The intra-region report is based on the average of the performance of links between routers at the East and West boundaries of each region.



| | Asia W | Asia E | | |
|-----------|-------------|-------------|--|--|
| Asia | Singapore | Maruyama | | |
| | | Tokyo | | |
| Europe | Europe W | Europe E | | |
| | Dublin | Izmir | | |
| | Lisbon | Moscow | | |
| | Porto | Stockholm | | |
| | | Tuzla | | |
| N America | N America W | N America E | | |
| | San Jose | Ashburn | | |
| | | New York | | |
| UK | UK W | UK E | | |
| | Leeds | London | | |
| | Manchester | Swindon | | |

1.2.2 Inter-region boundary routers

Inter-region performance between two regions is based on the average of the performance of the links defined in the inter region link groups. Each interregion link group contains exactly two routers.

Note: in some cities there are multiple routers and hence more routes than the list shows below.

Asia - UK

Hong Kong - London Maruyama - London Maruyama - Slough Singapore - London Tokyo - London Tokyo – Slough

Asia - Europe

Hong Kong - Marseilles Hong Kong - Milan Singapore - Milan Singapore - Marseilles

Asia - North America

Hong Kong - Los Angeles Maruyama - Los Angeles San Jose - Tokyo Singapore - Los Angeles Tokyo - Los Angeles

Europe - North America

Amsterdam - New York Paris - Ashburn Paris - New York

UK - North America

Bracknell - New York London - Ashburn London - New York Slough - New York

UK - Europe

Bracknell - Paris London - Amsterdam London - Frankfurt London - Paris Slough - Amsterdam Slough - Paris

1.2.3 Metro interconnects

Metro areas have multiple routers within the same local area. The Metro Interconnect report shows the average of the performance of multiple links between that therefore exist between the selected metro areas.

1.2.4 Cloud providers

This report is the average of the performance of the links between routes in selected cities and each cloud service provider interconnect site.

1.3 Time Intervals

Last month uses data from the last 30 days

Last year uses data from the last 365 days

Previous 12 months uses data from the whole of the selected month



2. Reports

2.1 General

All the reports are available from the 'Zone' dropdown list.

To generate a report, select the options in the 'From' and 'To' drop-down lists and the appropriate time interval. Then click the 'Submit query' button.

Each report will show the round-trip times in milliseconds, by default. If you would like to see the packet loss data, simply click on the 'Packet Loss (%)' heading. To return to the round-trip time, select that heading similarly.

If you have selected a large number of data points, you may need to scroll to see the whole table.

It is also possible to export the data to Microsoft Excel .xlsx format, using the button below the table.

2.2 Region report

Select this report to show the performance between regions. Please note that it is not possible to obtain intra-region reporting for Australia and the Middle East.

2.3 Country report

Select this report to show the performance between different countries.

2.4 City report

This report shows the performance between different cities.

2.5 Metro interconnect report

Select this report to show the performance between different metro locations.

2.6 Cloud providers report

This report shows the average of the performance of the links between routes in selected cities and each cloud service provider interconnect site.

2.7 Optimal routing report

2.7.1 What is it for?

The Optimal Routing report can be used to identify the best point of interconnect between Vodafone and Microsoft to help you get optimal performance from your Microsoft 365 or Azure services.

2.7.2 What does it show me?

We interconnect directly with Microsoft at cities all around the world. Find the one that offers you the lowest Round Trip Delay for a given site.



The report shows the Round Trip Delay between various Microsoft Azure Peering Service metro locations and other Vodafone Access Points of Presence (POPs). The Access POPs are where we connect your site to our network.

The interconnect that provides the lowest round trip delay for your site will be highlighted.

2.7.3 What do I do with the information?

You can visit your Microsoft Azure portal and tell Microsoft to route traffic to a particular site of yours via the optimal MAPS metro location, using Vodafone as your Internet Service Provider.



2.7.4 When should I use the IP Address and when should I use the city?

The results are most accurate if you provide us your IP Address. However, this only works for existing, live Vodafone customer sites connected with our Dedicated Internet Access service. This is because we can be certain of the Internet Edge Router to which you are connected. This is located in the Access POP.

If your site does not have a live Vodafone service, use the City option. Click on the 'Search by city' link below the 'To' drop down. These cities are the locations of our Access POPs.





Together we can

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