



PureLoad

Testing SIP calls for massive traffic surges – helping Queen Mary University of London to cope with unprecedented student demand

It's common for many sectors to experience surges in inbound calls. This may be due to seasonal holidays, such as Christmas, or it may be due to something that's unique to a particular sector.

Flexible testing for agile validation of SIP-based contact centres

Whatever the reason, it's essential to ensure that service platforms and call handling solutions can cope with the surge. Can they flex up to meet demand? Can they ensure that calls are distributed effectively, to avoid long waiting times?

In the UK, the education sector experiences a seasonal surge in August. In this case study, we'll explore how one leading university planned for and anticipated this surge – and took steps to ensure that it could handle what were expected to be unprecedented call volumes. It highlights the flexibility of a powerful SIP test solution – PureLoad – and illustrates why planned stress testing is essential before entering a busy period.

Clearing – high call volumes, high pressure and anxious students

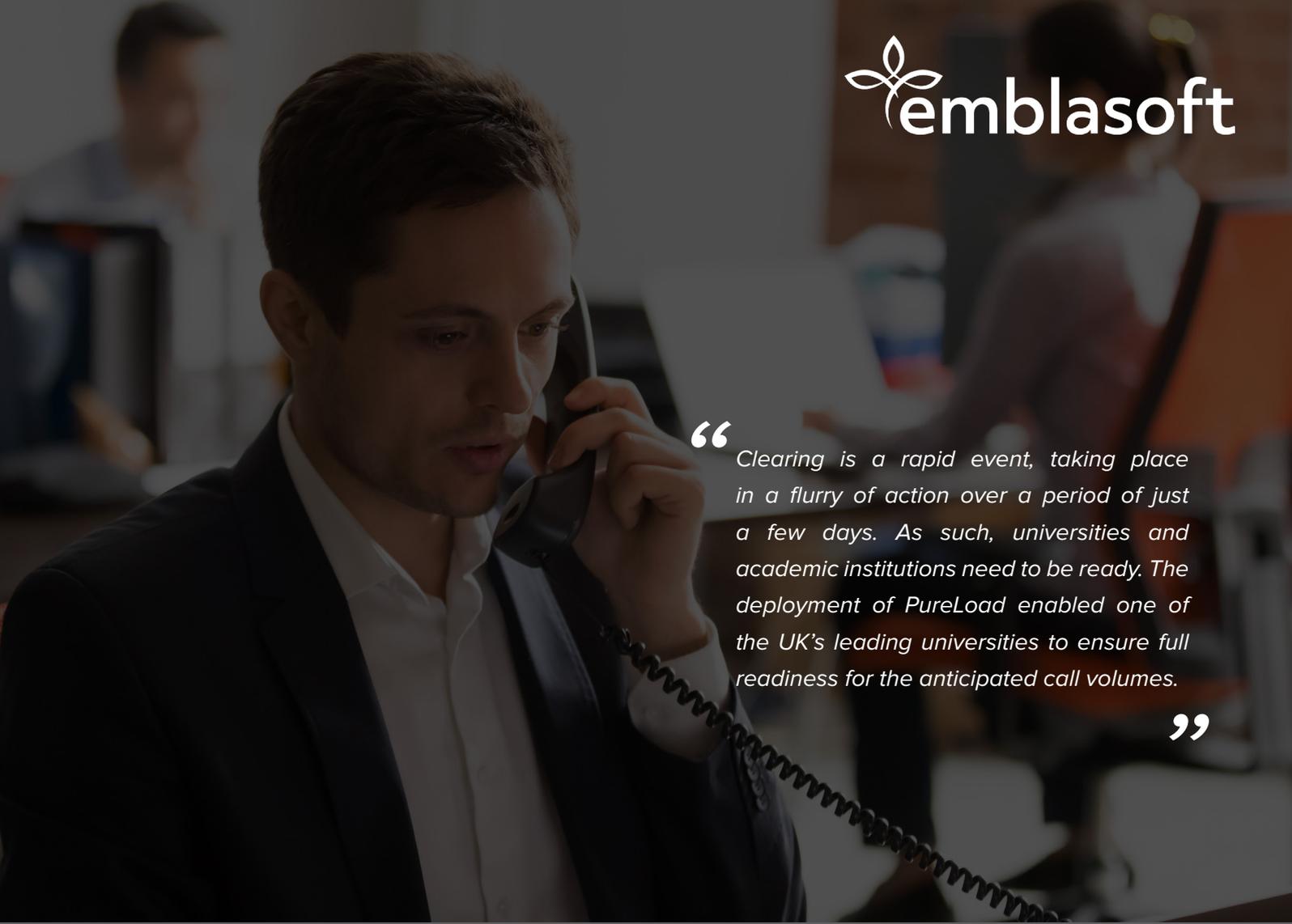
Queen Mary University of London (QMUL) is a leading academic and research university in the UK. Its admissions procedures mirror the release of exam results for British sixth-form (12th grade or senior year) students. Normally, entrance offers are conditional on securing specific results.

Students who just miss those results – or who have failed to achieve those required by a different institution for their chosen course enter into a nationwide process known as 'clearing'. During this period, such students phone institutions to enquire about available alternatives.

It's a busy – and stressful – time, particularly as those students whose places have already been confirmed may also be calling their chosen university or further educational institute to confirm arrangements, accommodation and so on, so adding to the expected call volumes.

In anticipation of an unusually busy clearing period, the technical team at QMUL wanted to see if their call centre and agent distribution system could withstand the anticipated call volumes. Due to the COVID-19 pandemic and due to a change in the award of key exams, call volumes were expected to surge beyond even the normal annual peak.

“*In anticipation of an unusually busy clearing period, the technical team at QMUL wanted to see if their call centre and agent distribution system could withstand the anticipated call volumes.*”

A man in a dark suit and white shirt is shown in profile, talking on a black telephone. The background is a blurred office or call center environment with other people and computer monitors.

“ Clearing is a rapid event, taking place in a flurry of action over a period of just a few days. As such, universities and academic institutions need to be ready. The deployment of PureLoad enabled one of the UK’s leading universities to ensure full readiness for the anticipated call volumes.

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Can the call centre perform?

QMUL has a Mitel Call Centre platform with ACD to ensure efficient routing of calls to different departments, teams and agents. It was the ability of this deployed system to scale and cope with the traffic peak that needed to be tested.

The question was, how?

The technical team at QMUL turned to solutions experts, Infuse IT. It was determined that what was required was a test solution that could:

1. Generate high volumes of simulated user traffic - with up to 1000 concurrent calls
2. Model different flows and call scenarios to emulate call distribution via the ACD.

However, Infuse needed a tool to accomplish these tasks. The team turned to its partner network and discovered PureLoad.

Effective SIP bulk call testing

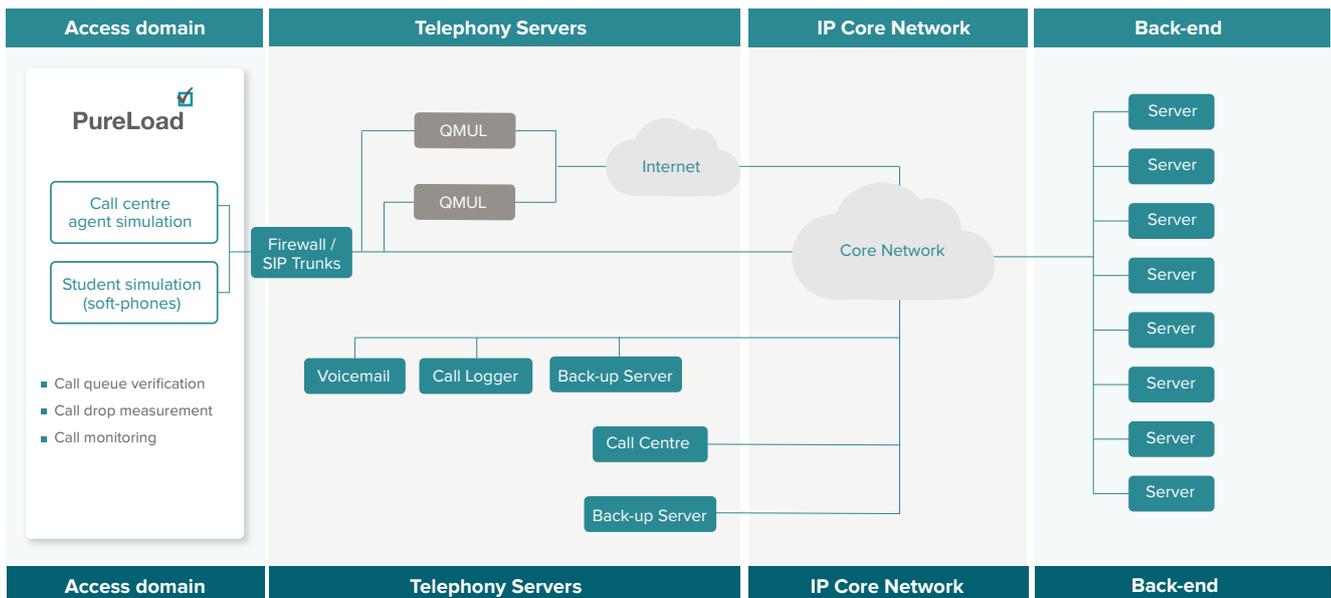
PureLoad is a high-performance test solution that can simulate IP (SIP) traffic, as well as other interfaces commonly used in mobile and fixed networks. It enables large volumes of calls to be generated, automatically, and fully integrated into an agile test environment. It can be controlled via APIs, and complex scenarios can be designed – such as, for example, testing call paths through a call centre – and then run, continuously.

In this case, while the focus was primarily on inbound traffic, it was also necessary to test outbound traffic from agents. This is because not all enquiries can be resolved in a single session, so agents would have to contact prospective students to provide relevant information and answers.

However, time was short. The pandemic situation had led to uncertainty about how this year’s process would be handled. Once this had been decided, there was little time remaining to ensure the smooth operation of the system.

PureLoad

SIP bulk call testing



Getting ready for clearing

The test activity spanned two weeks. A key benefit offered by the PureLoad team was close collaboration with Infuse and other stakeholders to define the test requirements and to deliver a solution. This definition occupied the team for the first week. In the second, the testing was accomplished.

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Connectivity to the Mitel platform was enabled via SIP trunks, while IP connectivity to simulated agent clients was also provided from the platform.

This means that not only could calls to live devices be tested, they could also be tested from emulated clients. The final test environment is shown in the figure above.

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Results and Conclusion

During the test phase, incoming calls via two, 1000-concurrent call capacity SIP trunks was simulated. The traffic was configured such that a minimum of 450 calls were held in a queue, with 200 live agents being available to answer the calls as they were processed by the Mitel Call Centre.

The testing validated the stability and performance of the Mitel platform, but also exposed several system configuration and signalling parameter issues, which could be tuned prior to the busy period to ensure optimised performance.

Clearing is a rapid event, taking place in a flurry of action over a period of just a few days. As such, universities and academic institutions need to be ready. The deployment of PureLoad enabled one of the UK's leading universities to ensure full readiness for the anticipated call volumes.

"In 2020, we expected a much higher volume of calls during the crucial clearing period. Ensuring effective service to prospective students was essential – thanks to the work of Infuse and our team, together with the capabilities of PureLoad, we were able to plan and prepare for this," commented QMUL.

Subsequent to the testing, the call centre operated at full capacity, with more than 20,000 calls in just a few days – and no failures or issues, enabling effective service delivery to students seeking admission through clearing.

As Ben Stokes, a Mitel expert from Pulsecomm, who advised during the project noted, "I've been so busy with clearing that I never got round to replying and saying how impressed I was with the load testing provided by Infuse. I thought the product worked really well and certainly identified a few issues, which then prompted us to apply some changes to improve the effectiveness of the Mitel system. So, all in all an enjoyable experience working with you guys! Clearing took 20,000+ calls, with no failures on the Mitel at all."

PureLoad is ideal for such scenarios. Already, other universities are exploring the option to perform similar tests for the next clearing period, while other organisations that experience such short, sharp bursts of traffic are also investigating how it can help them prepare.

Call centre operators, academic institutions, service providers with hosted call centre capabilities, and more can all benefit from the high-performance, flexible and agile test capabilities offered by PureLoad.

At Emblasoft, we are passionate about building software products that enable our customers to innovate and drive the evolution of the communications industry. We are a global provider of Service Enablement, Performance Management and Test and Verification systems for VoLTE, IMS and 5G infrastructure. With Emblasoft's solutions, CSPs and equipment manufacturers can obtain and deliver new products and services that are at the forefront of technology.

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