



Executive summary



UNIVERSIDAD
DE MÁLAGA

Victoriano Fco. Giralt García, ITC Director of the University of Málaga.

“Moodle is the first LMS platform with access to VDI thanks to the UDS Enterprise Virtual PC Plugin”

- **Client's name:** University of Málaga
- **Sector:** Education
- **Number of students:** 37,045
- **Number of professors:** 2,445
- **Number of ASS:** 1,264
- **Location:** 2 campuses in Málaga (Spain)

Windows & Linux VDI through Moodle

The University of Málaga (UMA) introduced in 2004 an eLearning system so that students and teachers could enjoy the advantages of this technology. They created their own Virtual Campus based on Moodle, the most used Open Source online teaching platform in the world.

Since then, the Virtual Campus of the UMA has hosted a multitude of subjects of the degrees that can be studied at this university. In addition, through Moodle you can also access other activities, since it has become "a training and collaboration space for students, teachers and administration and personnel services", explains Victoriano Giralt, ITC Director of the UMA.

A few years ago, the professionals of this Department decided to go a step further and began to work to offer a unique functionality to date in an LMS (Learning Management System) platform: access to Windows and Linux virtual desktops.

When they considered what technology to use, they were clear from the beginning. "We have trusted UDS Enterprise for a long time to deploy our VDI service, which we call Virtual PC, and has allowed us to offer the possibility to students to use, at any time and from anywhere, the programs they use in

their subjects without installing anything on their equipment", says Giralt, who also points out that the good experience with the software and the team that supports it "favored the selection of this VDI broker as a cornerstone for this new project".

“When we asked ourselves, what would be the best option to give access to the Virtual PC to the students, the answer was always the same: from the UMA Virtual Campus by the association with the subjects as a resource or activity”, says Giralt.

This is how they decided to develop the **Virtual PC Plugin**, which is available for download on the official Moodle website and allows "assigning a virtual desktop with Windows or Linux OS and virtual applications already installed as a didactic resource, through the UDS Enterprise broker and regardless of the authenticator that Moodle uses, since the plugin communicates the identity of the user to the UDS broker through its own protocol developed between the University of Malaga and VirtualCable", specifies the ITC Director.

Once inside Moodle, by just clicking the button to access the activity, the student enters the virtual desktop assigned to their user. In this way, "teachers can give access to virtual desktops from the Virtual Campus as an activity based on their planning, thus simplifying the management, access and use of VDI", says Giralt.

Faculty and students have already proven the advantages of integrating UDS Enterprise and Moodle. "Now they can create and access all the resources and content of the subjects from the Virtual Campus of the UMA", says Giralt.





For IT staff "the management and administration has been greatly simplified, since the permissions to access the virtual desktops are now determined by the subjects in which the student is enrolled, and UDS Enterprise automatically selects the most suitable connection protocol in function of the type of device and user's location", he explains.

Total support of UDS Enterprise team

The integration of the two solutions has been done through the development of a REST API and the UMA team has had the support of the developers of UDS Enterprise at all times. "It was essential to have their collaboration, we coordinated perfectly to join efforts and thus ensure the success of the project", says Giralt.

The Virtual PC Plugin for Moodle was made available to the community during the 2016/2017 academic year and only in the UMA, 2,100 users accessed more than 68,000 virtual desktops directly from their Virtual Campus subjects.

"Collaboration with UDS Enterprise's team has been the key to guarantee the success of the project."

The balance of the experience of administrator and user is "very positive", assesses the ITC Director, "the teachers stress that it is very easy to use and students only need a device with a web browser to see the notes, work or make an exam".

On the other hand, the IT professionals of the university highlight "the ease of management of the VDI infrastructure with the UDS Enterprise connection broker".

The ITC Director of the University of Malaga does not hesitate to recommend this pioneering integration of VDI with eLearning to any educational center that uses Moodle because "it offers a great versatility to the teaching activity", combining all the didactic resources and the advantages of the virtualization of desktops and applications in a single platform that is accessible 24 hours with "true guarantees of optimum performance", he concludes.

The use of the Virtual PC Plugin for Moodle with UDS Enterprise is already being extended to more teaching centers around the world.

VDI INFRASTRUCTURE

- ✓ **Broker:**
UDS Enterprise.
- ✓ **Hypervisor:**
VMware vSphere & oVirt.
- ✓ **Connection Protocol:** RDP, HTML5, Tunneler RDP, SPICE.
- ✓ **Authenticator:** Any authenticator that uses Moodle.
- ✓ **VDI OS:** Windows 7, Windows 10, Windows XP, Linux/Ubuntu.
- ✓ **Servers:**
4 servers of 700 GB of RAM with 56 processor.
- ✓ **Storage:**
2 iSCSI 10Gb storage arrays with 35 TB.

Support and professional services

VirtualCable markets UDS Enterprise through a subscription model, including support and updates, depending on the number of users.

In addition, VirtualCable offers professional services to install and configure UDS Enterprise and other virtualization technologies.

For more information visit www.udsenderprise.com or send us an email to info@udsenderprise.com