THE EXECUTIVE LEADERSHIP COUNCIL™

THE POWER OF INCLUSIVE LEADERSHIP

Historically Black Colleges and Universities

Cloud Computing with IBM

Problem

Historically Black Colleges and Universities (HBCUs) need to enhance research, teaching, learning and information and communication technology cost controls. Cloud Computing architecture is an excellent solution that can satisfy all of these requirements.

Solution

Virtual Computing Lab / VCL

Goals

- Encourage faculty at Technology Transfer Project (TTP) partner Historically Black Collages and Universities (HBCUs) to participate in the Apache Open Source initiative related to VCL (virtual computing lab).
- Encourage TTP partner HBCUs to setup VCL Cloud Computing pilot projects.
- Utilize the experience and work of existing organizations that have or are in the process of developing Cloud Computing environments. These include Apache.org, George Mason University, IBM, North Carolina Central University and North Carolina State University.
- Develop a funding strategy that will support the initial development and implementation of the HBCU Cloud Computing Environment and a strategy for financial self-maintenance.
- Establish a governance and management structure for the development and implementation of the HBCU Cloud Computing environment.

IBM Cloud Academy

IBM's Cloud Computing architecture helps Historically Black Colleges and Universities expand computing abilities—and minds.

The Cloud Computing initiative for Historically Black Colleges and Universities

When colleges and universities need to expand their online learning environment, IBM is there to help. IBM Cloud Computing architecture, including BladeCenter® hardware, has helped unite disciplines, students, faculty and even different campuses with Cloud environments that foster collaboration. IBM's Cloud Computing solutions give students a single point of access to the applications they need, crossing barriers between disciplines and schools of study. This frees communication, creating an online space where students can share and develop ideas, deepening their education. School administrations benefit too, as Cloud Computing lowers IT costs and complexity while delivering high-performance computing.

IBM solutions have already enriched learning environments at North Carolina State, Georgia State and George Mason Universities. Historically Black Colleges and Universities (HBCUs) are the next schools to receive new benefits, as Cloud Computing is currently being implemented on their campuses. As with all IBM roll-outs, solutions will be tailored to the computing and budget needs of each institution. And implementation works to fit the school's convenience, following timetables for smooth transitions. And in the case of HBCUs, IBM's implementation works closely with the Technology Transfer Project.

The Technology Transfer Project has been a 15-year initiative supported by The Executive Leadership Council® and Foundation to assist Historically Black Colleges and Universities with planning, developing, integrating and utilizing information and communication technology (ICT) for enhancing teaching and learning. It works to enhance the overall competitiveness and effectiveness of the institutions.

Progress

- Four TTP HBCUs have committed to being anchors for the HBCU Cloud Computing initiative.
- Two of the four HBCUs have the required hardware for establishing the VCL Cloud Computing environment.
- One HBCU is completely operational and another is in the final VCL implementation phase.
- Proposals have been submitted for acquiring the requisite hardware for the final two HBCU sites.
- All four HBCUs are scheduled for extensive VCL training.

The Technology Transfer Project (TTP) has acted and will continue to act as a catalyst, coordinator and focal point in the development, implementation and on-going operations of HBCU Cloud Computing environments. The TTP will concentrate its energies on the establishment of enterprise Clouds. An enterprise Cloud is one in which the ownership and responsibility of the Cloud environment rests with the leadership team of the institution. The traditional responsible focal point of the leadership team would be the CIO. Through this alignment the Cloud Computing environment would be supported by institutional resources used throughout the curriculum and exploited for enhancing the delivery of services.

The successful implementation of an HBCU Cloud Computing environment requires the commitment and involvement of presidents, chancellors and members of the institution's leadership team. Additionally, a significant change in the culture of participating institutions will be required, especially as it relates to the use of technology. To that end, the TTP has identified four HBCUs that share that approach. They are: Norfolk State University (NSU), North Carolina Central University (NCCU), Southern University—Baton Rogue (SUBR) and Tennessee Sate University (TSU).

NCCU has had a VCL Cloud environment for approximately two years. However, their servers are being hosted by MCNC (Microelectronic Computing Center of North Carolina) while the School of Business has responsibility and ownership. The process has begun to move the ownership and responsibility to the office of the CIO at NCCU. Southern University—Baton Rogue is currently in the implementation stage of establishing their VCL Cloud environment, and NSU and TSU are in the process of securing equipment for the development of their VCL Cloud environments. These four institutions will be the pillars of the HBCU Cloud Computing environment. They will provide self-service, service to other institutions of higher education and maintain, enhance, or establish initiatives with local educational authorities. Additionally, they will comprise and anchor the initial network for the HBCU Cloud Computing environment (HBCU-CCE) and act as hubs for other institutions to access and supply resources to the HBCU-CCE.

The HBCU Cloud will use the VCL model developed by North Carolina State University. This model uses the Apache.org open source code and IBM blade server technology. This environment and its users will also take full advantage of the offerings and assets available via the IBM Academic Initiative and the IBM Cloud Academy. The TTP is one of the founding charter members of the IBM Cloud Academy. The goal is for each of the

anchor HBCU sites to secure a VCL "starter" hardware configuration, which includes IBM blades servers, storage, and software.

When we see the success Cloud Computing has had, we know that HBCUs have much to look forward to. A holistic approach to providing ICT services, the break-down of inter-disciplinary information silos and relief from the burden of implementing and maintaining expensive IT hardware and systems all add up to better education for students. IBM is bringing these benefits to HBCU campuses. Cloud Computing architecture can help expand online learning environments—and minds—at your university's campus, too.

"The impact of VCL on NCCU computing has been remarkable. Faculty and students now truly have anywhere/anytime access to any application they need. Faculty do not need to be concerned if a particular application is installed on a particular workstation or at a student's home. All they have to do is create an image with their application and direct students to it. This makes the job of our IT support much easier, in that they no longer need to be concerned with installing software that may conflict with other applications on the workstation. All they have to do is make sure the Internet connection to the workstation is active, and the student can find what they need via VCL."

— Cameron Seay, Ph.D.
Assistant Professor Computer Information Systems
North Carolina Cental University

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